

5 Port Solenoid Valve

SY3000/5000/7000 Series

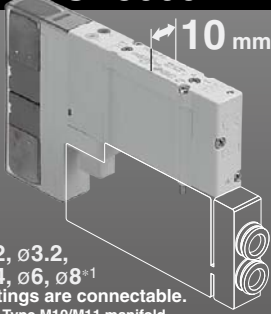
Plug-in Type

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



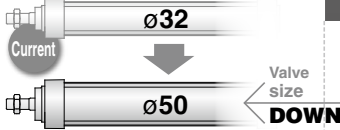
SJ
SY
SY
S0700
S0700

SY3000



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

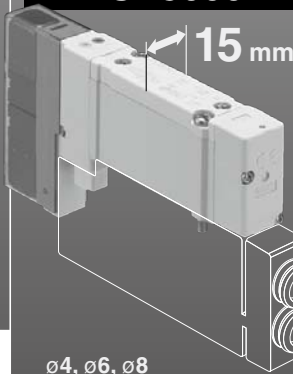
At 300 mm/s



Possible to drive cylinders

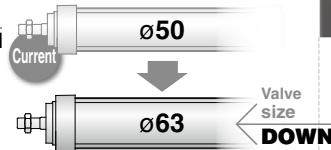
Up to **∅50***2
(∅80 at 100 mm/s)

SY5000



∅4, ∅6, ∅8
fittings are connectable.

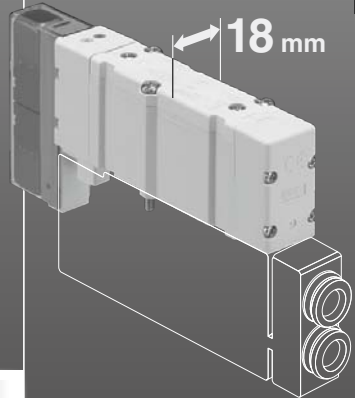
At 300 mm/s



Possible to drive cylinders

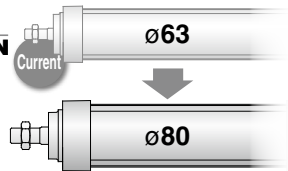
Up to **∅63***2
(∅125 at 100 mm/s)

SY7000



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

At 300 mm/s



Possible to drive cylinders

Up to **∅80***2
(∅160 at 100 mm/s)

*2: Values based on comparison with the current SMC model. For details, refer to page 134.

Power consumption

*1: Refer to page 125.

0.1 w (With power saving circuit)

0.35 w (Standard)

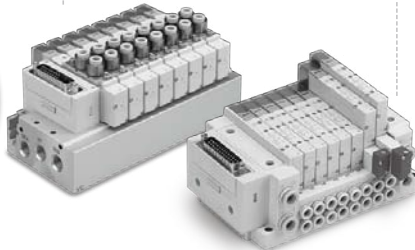
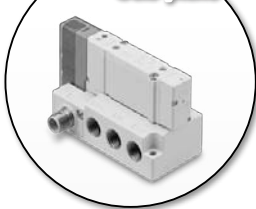
Rubber seal (Service life: 70 million cycles)

Metal seal (Service life: 200 million cycles)

*: According to SMC life test conditions

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Plug-in Sub-plate

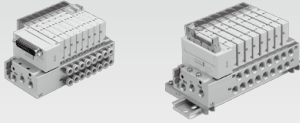


- Vacuum Release Valve with Restrictor
- EX500 Gateway Decentralized System 2
- SUP Stop Valve Spacer (With Residual Pressure Release Valve)
- With Residual Pressure Release Valve (SY7000)
- Dual port EX600 EtherNet/IP™ product

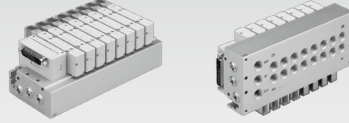
5 Port Solenoid Valve

Plug-in Metal Base [IP40]

Side ported [From page 168](#)



Bottom ported [From page 168](#)



Top ported [From page 188](#)



Plug-in Connector Connecting Base [IP67*1]

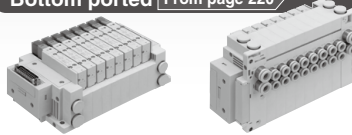
*1: Refer to page 216 for details on IP67.

Manifold

Side ported [From page 220](#)



Bottom ported [From page 220](#)



Top ported [From page 232](#)

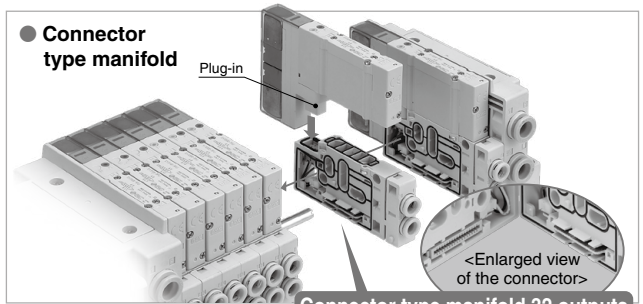


Plug-in Compatible sub-plate type



- 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



Connector type manifold 32 outputs

Wiring

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

Lead Wire Circular Connector Serial Transmission

Serial Transmission Variations

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

Power Saving

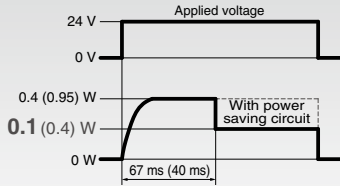
Power Consumption

0.1 w **0.35 w**

With power saving circuit

Standard

[Electrical power waveform with power saving circuit]



Power consumption is reduced by power saving circuit.

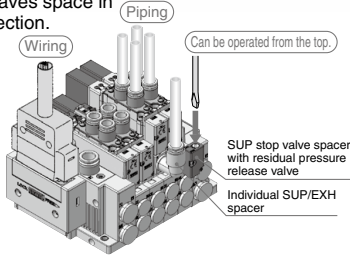
Power consumption is decreased by approx. 1/3 by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 67 ms at 24 VDC.) Refer to the electrical power waveform as shown on the left.

*1 Only products with the indicator light are equipped with the power saving circuit.

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

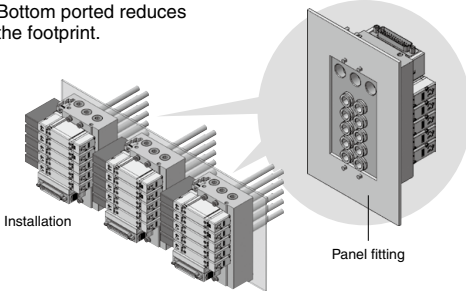
Space Saving / Improved Operability

Wiring, piping and operation are integrated on one side. Multiple layer type is available as an option. This saves space in the lateral direction. **From page 373**



Bottom ported is prepared (A, B port). Space saving

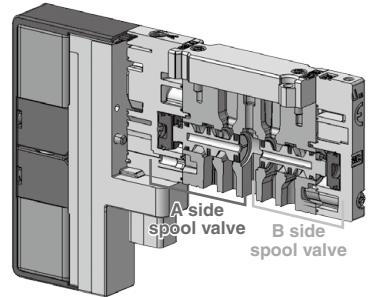
Bottom ported reduces the footprint.



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 ₃ 0	N.C. valve	N.C. valve
SY□B ₃ 0	N.O. valve	N.O. valve
SY□C ₃ 0	N.C. valve	N.O. valve

Different sizes (SY3000/5000 or SY5000/7000) can be mixed! **From page 376**

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

Manifold overall length

Approx. 29% reduction

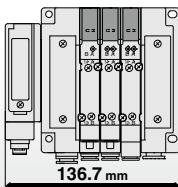
For serial transmission EX260

SY5000 manifold
SY5000 3 stations

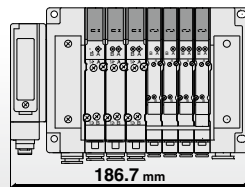
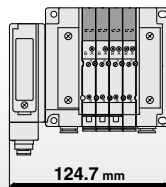
SY3000 manifold
SY3000 4 stations

Mixed manifold
SY5000 3 stations SY3000 4 stations

Installation space



+



Number of serial units



2 sets



1 set

5 Port Solenoid Valve

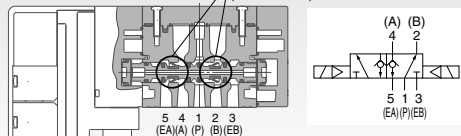
Improved Safety

Back Pressure Check Valve

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

Built-in valve type

Back pressure check valve
(Check seal)

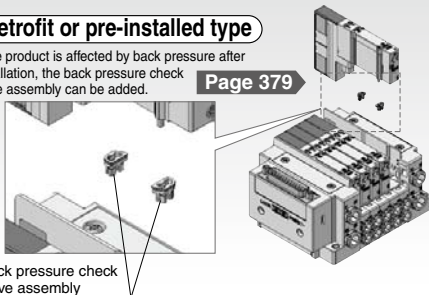


*1: For back pressure check valve precautions, refer to the Specific Product Precautions on page 390.

Retrofit or pre-installed type

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

Page 379



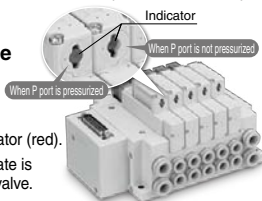
Back pressure check valve assembly

With residual pressure release valve (SY5000/7000) Page 146

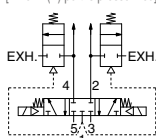
IP67 compliant

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

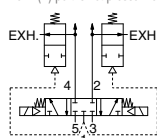
- The pressure of the 4 (A) and 2 (B) ports is also exhausted automatically at the same time when the pressure of the 1 (P) port is exhausted.
- The pressure can be visualized using the indicator (red).
- Since this valve is not a spacer type, the flow rate is equivalent to that of the normal closed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



[When 1(P) port is pressurized]



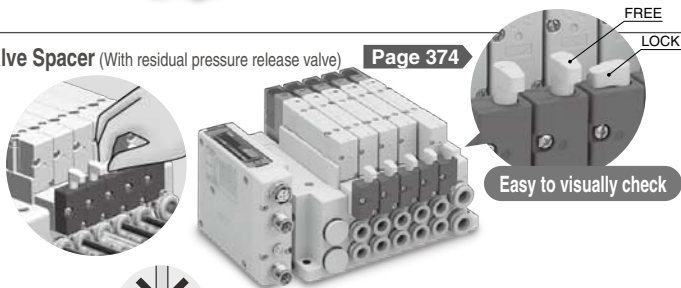
[When 1(P) port is not pressurized]



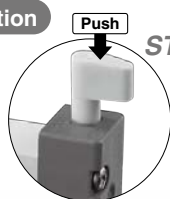
Lever Type SUP Stop Valve Spacer (With residual pressure release valve) Page 374

Lever type is added to manual override button!

Solenoid valves can be replaced individually without shutting off the main pressure!*1



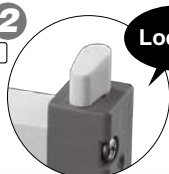
2 action



STEP 1

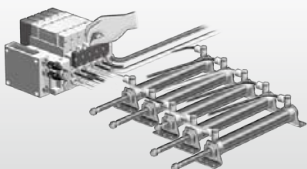


STEP 2



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.

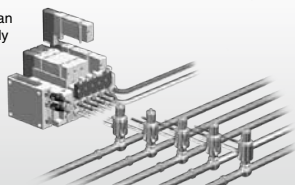


Solenoid valves can be replaced individually!

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

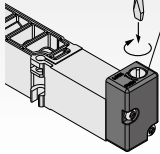
Slotted Type

SUP Stop Valve Spacer (With residual pressure release valve) **Page 374**

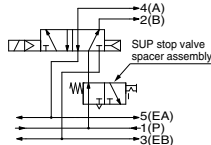
Air supply to each valve can be stopped individually. The valve and cylinder can be replaced without stopping other devices and equipment.

Button for manual release of residual pressure

To exhaust residual pressure on cylinder side.



2-position single valve



2-position single valve example

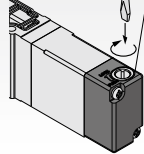
Slotted Type

Double Check Spacer (With residual pressure release valve) **Page 374**

Long time of intermediate stop and position holding are possible.

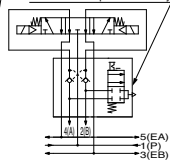
Button for manual release of residual pressure

To exhaust residual pressure on cylinder side.



[Intermediate stop]

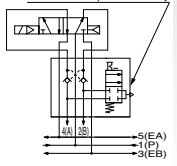
Double check spacer assembly



Exhaust center

[Drop prevention]

Double check spacer assembly



2-position single/double

With slide locking manual override

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

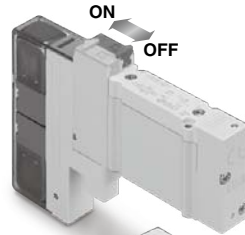


Yellow B side

Blue A side

ON/B side

OFF/A side



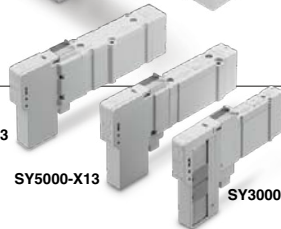
ON/OFF state can be checked at a glance.

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

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Double action manual override prevents incorrect operation!

SY7000-X13



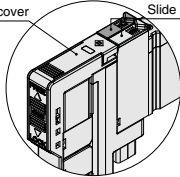
SY5000-X13

SY3000-X13

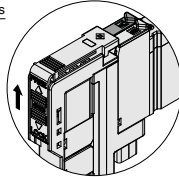
● Double action operation

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

Safety slide cover Slide manual overrides

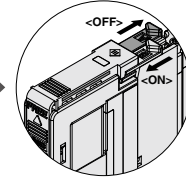


Operation 1 Operates the safety slide cover upward. (Unlocked)



<Vertical sliding>

Operation 2 The slide manual overrides can be operated.

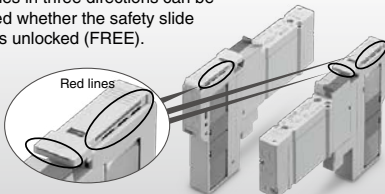


<Horizontal sliding>

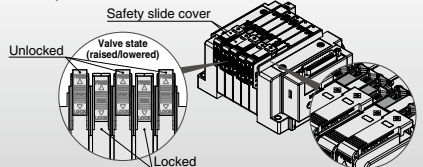
*: The safety slide cover cannot be locked when the slide manual override is turned ON.

● Visual check

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



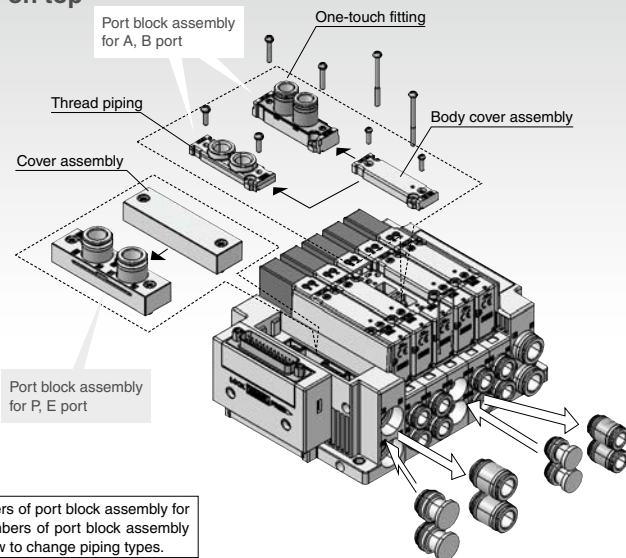
Safety slide covers can be checked from their raised and lowered positions.



5 Port Solenoid Valve

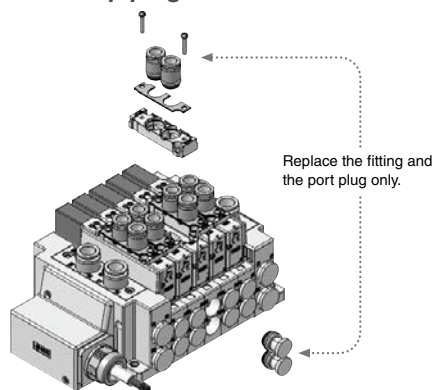
Piping Options

To mount the piping on top

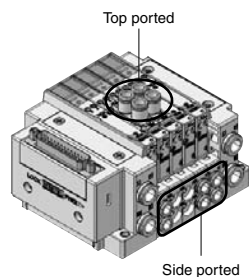


Refer to page 144 for part numbers of port block assembly for A, B port, page 370 for part numbers of port block assembly for P, E port and page 394 for how to change piping types.

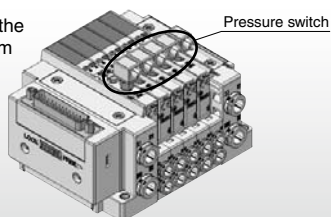
To mount the piping on the side



Mixed mounting of top ported and side ported is possible.



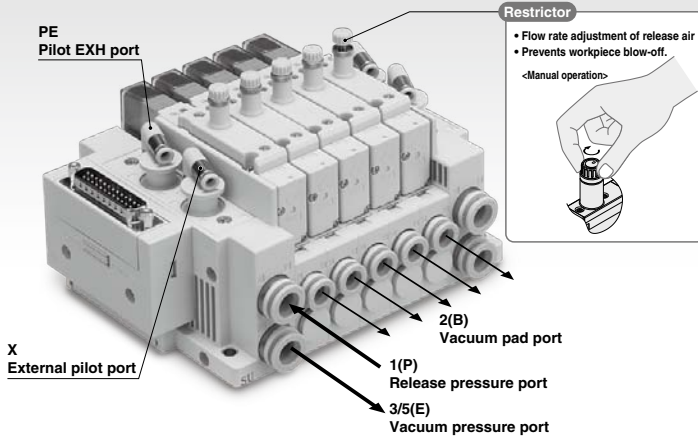
It is possible to detect the output of 4(A) and 2(B) port with a pressure switch by mounting the top ported valve onto the side ported or bottom ported manifold. (Pressure switch etc., needs to be ordered separately.)



Variation

Only for External Pilot Vacuum Release Valve with Restrictor SY³A□R Series Page 148

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



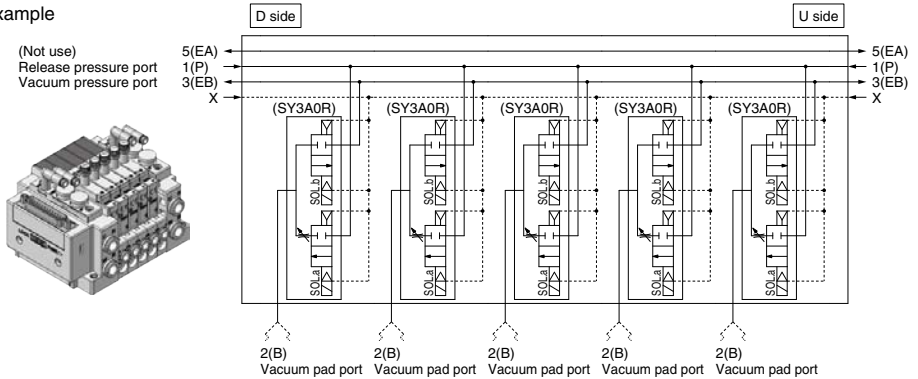
■ Can be mounted on the same manifold with the standard valve.

※: When the individual EXH spacer is used.

■ Mountable manifolds

Connector connecting base SS5Y²-10/11/12 type manifold
Metal base SS5Y²-50/52 type manifold

■ Example



SJ
SY
SY
S0700
S0700

5 Port Solenoid Valve

Variations

Variations		Valve Series	Wiring											A, B									
			Connection											Common specification									
			D-sub connector	Flat ribbon cable	PC wiring	Terminal block box (Spring type)	Terminal block box	Lead wire	Circular connector	M12 connector	Serial transmission					Positive common	Negative common	M5	1/8	1/4	3/8	Straight piping	G2
											EX510	EX500 (128 points)	EX500 (64 points)	EX600	EX250								
5 ports																							
Plug-in Sub-plate	M12 connector	SY3□ ₃ □																					
		SY5□ ₃ □							●														
		SY7□ ₃ □																					
Plug-in Metal Base	Side ported	Type 50□	SY3□0□																				
		From page 168	SY5□0□																				
		SY7□0□	●	●	●																		
	Bottom ported	Type 51□	SY3□0□																				
		From page 168	SY5□0□	●	●	●																	
		SY7□0□	●	●	●																		
	Top ported	Type 52□	SY3□3□																				
		From page 188	SY5□3□	●	●																		
		SY7□3□	●	●	●																		
Plug-in Connector Connecting Base	Side ported	Type 10□	SY3□0□																				
		From page 220	SY5□0□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		SY7□0□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Bottom ported	Type 11□	SY5□0□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		From page 220	SY7□0□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Type 12□	SY3□3□																				
	Top ported	From page 232	SY5□3□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		SY7□3□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● Standard ○ Option ▲ Made-to-Order (Refer to page 154.)

Port Size		Manifold Options (Pages 373 to 382)												Valve Options						Valves with Function													
One-touch fittings																																	
	C3 (N3)	C4 (N3)	C6 (N7)	C8 (N9)	C10 (N11)	C12	Blanking plate	Individual SUP spacer	Individual EXH spacer	SUP stop valve spacer with residual pressure release valve	Double check spacer with residual pressure release valve	Interface regulator	Individual SUP block assembly	Individual EXH block assembly	SUP/EXH blocking disk	Label for blocking disk	Back pressure check valve assembly (Manifold installed type)	Dual flow fitting	Silencer (One-touch fitting connection type)	Plug (White)	Name plate	SY3000/5000 mixed mounting	SY5000/7000 mixed mounting	Oil resistant (Other than designated turbine oil)	Vacuum/Low pressure specification	Different pressures	Reverse pressure	Mixed fitting sizes	Enclosure IP67	With residual pressure release valve	Vacuum release valve with restrictor		
Straight piping	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	○	—	—	—	—	●	●	—	
Straight piping	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	○	—	○	●	—	—	●	●	—
Elbow piping ^{*1}	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	●	—	—
Straight piping	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Elbow piping ^{*1}	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Straight piping	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Elbow piping ^{*1}	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Straight piping	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Elbow piping ^{*1}	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Straight piping	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Elbow piping ^{*1}	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Straight piping	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Elbow piping ^{*1}	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Straight piping	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Elbow piping ^{*1}	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Straight piping	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Elbow piping ^{*1}	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Straight piping	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Elbow piping ^{*1}	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Straight piping	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Elbow piping ^{*1}	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Straight piping	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—
Elbow piping ^{*1}	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	▲	—	○	—	—	—	—	—	—	—

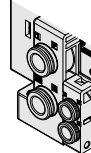
*1: Elbow piping may specify size only in millimeters, depending on the port size. Refer to How to Order Manifold for details.

*2: Refer to Manifold Specifications on page 216 for details on IP67.

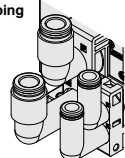
*3: Only SY5000/7000

*4: Only SY3000/5000

● One-touch fittings Straight piping



Elbow piping (Upward)

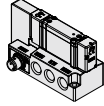


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Sub-plate

Plug-in Sub-plate Page 155



M12 connector

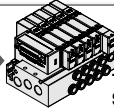


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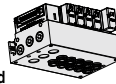
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Manifold

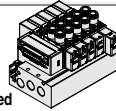
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Type 50/
Side ported



Type 51/
Bottom ported



Type 52/
Top ported

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

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

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D-sub connector



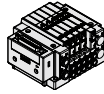
Flat ribbon cable



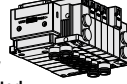
PC wiring



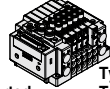
EX510



Type 10/
Side ported

















Type 11/
Bottom ported



Type 12/
Top ported

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

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		Specific Product Precautions Page 389

SJ

SY

SY

S0700

S0700

Optimum Actuation Size Chart of Air Cylinder

Applicable cylinder speed	Main valve seal type	Series	Applicable cylinder				
			ø6	ø10	ø16	ø20	ø25
100 mm/s or less	Rubber seal	SY3000					
		SY5000					
		SY7000					
	Metal seal	SY3000					
		SY5000					
		SY7000					
300 mm/s or less	Rubber seal	SY3000					
		SY5000					
		SY7000					
	Metal seal	SY3000					
		SY5000					
		SY7000					
500 mm/s or less	Rubber seal	SY3000					
		SY5000					
		SY7000					
	Metal seal	SY3000					
		SY5000					
		SY7000					

[Common conditions]

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

Connector type manifold (for side and bottom ported type)

*: Use as a guide for selection.

Please check the actual conditions with SMC Model Selection Software.

	Applicable cylinder								
	ø32	ø40	ø50	ø63	ø80	ø100	ø125	ø140	ø160
					●				
							●		
									●
					●				
							●		
								●	
			●						
				●					
					●				
			●						
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			●						
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			●						
				●					
					●				
			●						
				●					

- SJ
- SY**
- SY
- S0700
- S0700

SY3000/5000/7000 Series 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	—	—
	SY7000	3-position	3	10 ^{*1}
		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 ²]		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 0.4, Holding 0.1], High pressure type: 0.4 ^{*5} (With indicator light only) [Inrush 0.95, Holding 0.4]		
Surge voltage suppressor		Diode (Varistor for non-polar type)		
Indicator light		LED		

*1: Use below 5 Hz 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 energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)
Refer to page 394 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 389).

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

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

*5: For details, refer to page 391.

Response Time

Series	Seal type	Model	Type of actuation	Response time ms (at 0.5 MPa) <small>Note)</small>					
				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.

SJ
SY
SY
S0700
S0700

SY3000/5000/7000 Series

Valve Weight

SY3000 series

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

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

Valve model	Seal type	Type of actuation		Port size 4, 2 (A, B)	Weight [g]
SY3□30-M5		2-position	Single	M5 x 0.8	74
			Double		83
		3-position	Closed center		87
			Exhaust center		
			Pressure center		
SY3□30-C2		2-position	Single	C2 ø2 One-touch fitting	83
			Double		91
		3-position	Closed center		95
			Exhaust center		
			Pressure center		
SY3□30-C3	Rubber seal	2-position	Single	C3 ø3.2 One-touch fitting	85
			Double		94
		3-position	Closed center		98
			Exhaust center		
			Pressure center		
SY3□30-C4		2-position	Single	C4 ø4 One-touch fitting	77
			Double		86
		3-position	Closed center		90
			Exhaust center		
			Pressure center		
SY3□30-C6		2-position	Single	C6 ø6 One-touch fitting	86
			Double		80
		3-position	Closed center		89
			Exhaust center		
			Pressure center		
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		2-position	Single	M5 x 0.8	76
			Double		86
		3-position	Closed center		90
			Exhaust center		
			Pressure center		
SY3□31-C2	Metal seal	2-position	Single	C2 ø2 One-touch fitting	84
			Double		94
		3-position	Closed center		98
			Exhaust center		
			Pressure center		
SY3□31-C3		2-position	Single	C3 ø3.2 One-touch fitting	87
			Double		97
		3-position	Closed center		101
			Exhaust center		
			Pressure center		
SY3□31-C4		2-position	Single	C4 ø4 One-touch fitting	79
			Double		89
		3-position	Closed center		93
			Exhaust center		
			Pressure center		
SY3□31-C6		2-position	Single	C6 ø6 One-touch fitting	82
			Double		92
		3-position	Closed center		96
			Exhaust center		
			Pressure center		

SY5000 series

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

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

Valve model	Seal type	Type of actuation		Port size 4, 2 (A, B)	Weight [g]
SY5□30-01		2-position	Single	1/8	102
			Double		110
		3-position	Closed center		120
			Exhaust center		
			Pressure center		
SY5□30-C4	Rubber seal	2-position	Single	C4 ø4 One-touch fitting	110
			Double		115
		3-position	Closed center		123
			Exhaust center		
			Pressure center		
SY5□30-C6		2-position	Single	C6 ø6 One-touch fitting	123
			Double		110
		3-position	Closed center		118
			Exhaust center		
			Pressure center		
SY5□30-C8		2-position	Single	C8 ø8 One-touch fitting	118
			Double		99
		3-position	Closed center		107
			Exhaust center		
			Pressure center		
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		2-position	Single	1/8	111
			Double		121
		3-position	Closed center		131
			Exhaust center		
			Pressure center		
SY5□31-C4	Metal seal	2-position	Single	C4 ø4 One-touch fitting	124
			Double		134
		3-position	Closed center		144
			Exhaust center		
			Pressure center		
SY5□31-C6		2-position	Single	C6 ø6 One-touch fitting	120
			Double		130
		3-position	Closed center		140
			Exhaust center		
			Pressure center		
SY5□31-C8		2-position	Single	C8 ø8 One-touch fitting	108
			Double		118
		3-position	Closed center		128
			Exhaust center		
			Pressure center		

Valve Weight

SY7000 series

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

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

Valve model	Seal type	Type of actuation		Port size 4, 2 (A, B)	Weight [g]
SY7□30-02	Rubber seal	2-position	Single	1/4	125
			Double		133
		3-position	Closed center		147
			Exhaust center		
			Pressure center		
4-position	Dual 3-port valve	129			
SY7□30-C6	Rubber seal	2-position	Single	C6 ø6 One-touch fitting	163
			Double		171
		3-position	Closed center		186
			Exhaust center		
			Pressure center		
4-position	Dual 3-port valve	167			
SY7□30-C8	Rubber seal	2-position	Single	C8 ø8 One-touch fitting	151
			Double		159
		3-position	Closed center		174
			Exhaust center		
			Pressure center		
4-position	Dual 3-port valve	155			
SY7□30-C10	Rubber seal	2-position	Single	C10 ø10 One-touch fitting	136
			Double		144
		3-position	Closed center		159
			Exhaust center		
			Pressure center		
4-position	Dual 3-port valve	140			
SY7□30-C12	Rubber seal	2-position	Single	C12 ø12 One-touch fitting	146
			Double		154
		3-position	Closed center		169
			Exhaust center		
			Pressure center		
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 center		164
			Exhaust center		
			Pressure center		
SY7□31-C6	Metal seal	2-position	Single	C6 ø6 One-touch fitting	174
			Double		186
		3-position	Closed center		202
SY7□31-C8	Metal seal	2-position	Single	C8 ø8 One-touch fitting	162
			Double		174
		3-position	Closed center		190
SY7□31-C10	Metal seal	2-position	Single	C10 ø10 One-touch fitting	148
			Double		159
		3-position	Closed center		176
SY7□31-C12	Metal seal	2-position	Single	C12 ø12 One-touch fitting	157
			Double		169
		3-position	Closed center		185

SJ

SY

SY

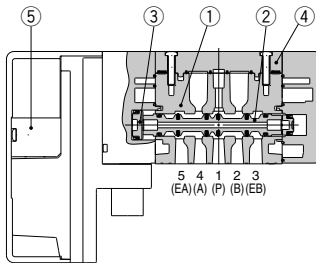
S0700

S0700

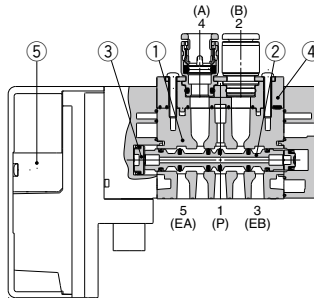
SY3000/5000/7000 Series Valve Construction

Rubber Seal

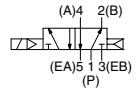
2-position single



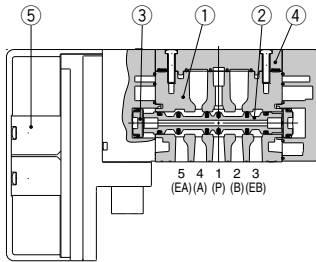
Top ported



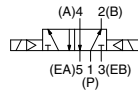
2-position single



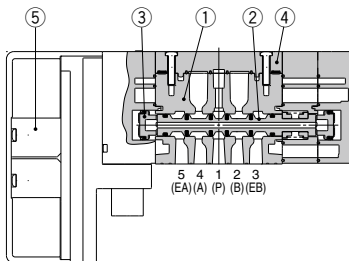
2-position double



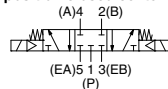
2-position double



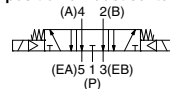
3-position closed center/exhaust center/pressure center



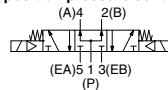
3-position closed center



3-position exhaust center



3-position pressure center

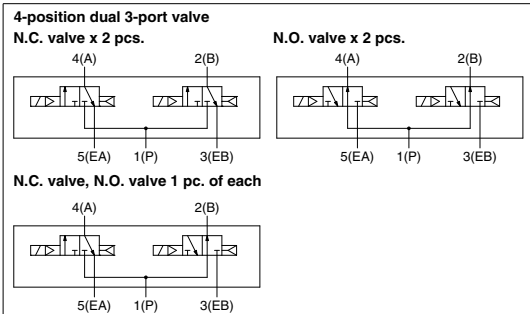
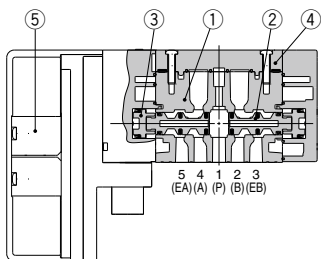


Component Parts

No.	Description	Material	Note
1	Body	SY3000: Zinc die-casted SY5000/SY7000: Aluminum die-casted	
2	Spool valve	Special resin/HNBR (3-position valve: Aluminum/HNBR)	
3	Piston	Resin	
	Body cover assembly	Resin	For side/bottom ported
4	Port block assembly	SY3000: Resin SY5000: Zinc die-casted SY7000: Aluminum die-casted	For top ported
5	Pilot valve assembly	—	Refer to page 145.

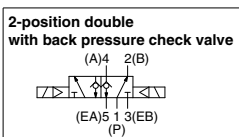
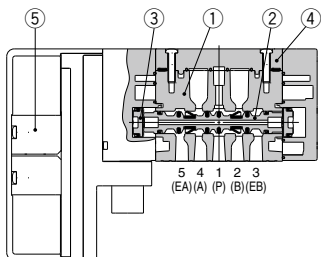
Rubber Seal

4-position dual 3-port valve



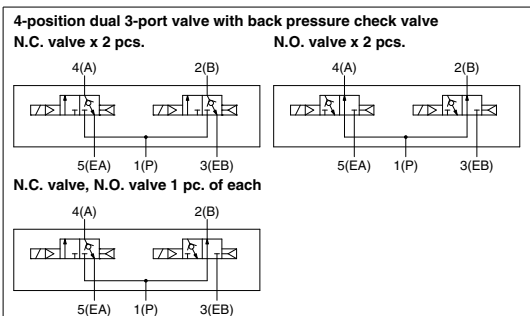
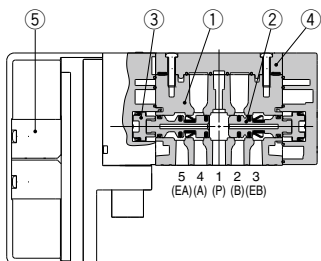
SJ
SY
SY
S0700
S0700

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)

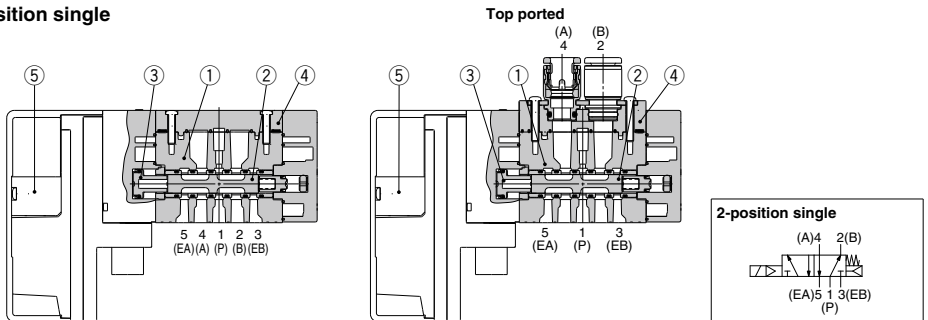


*: The built-in valve type back pressure check valve is not available for the SY7000.

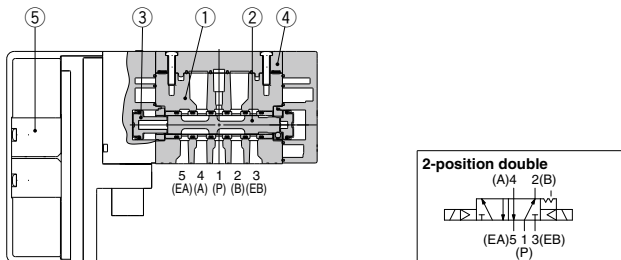
SY3000/5000/7000 Series

Metal Seal

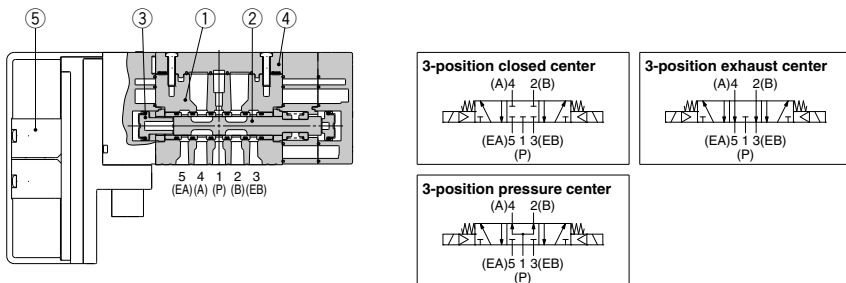
2-position single



2-position double



3-position closed center/exhaust center/pressure center



Component Parts

No.	Description	Material	Note
1	Body	SY3000: Zinc die-casted SY5000/SY7000: Aluminum die-casted	
2	Spool, Sleeve	Stainless steel/HNBR	
3	Piston	Resin	
	Body cover assembly	Resin	For side/bottom ported
4	Port block assembly	SY3000: Resin SY5000: Zinc die-casted SY7000: Aluminum die-casted	For top ported
5	Pilot valve assembly	—	Refer to page 145.

SY3000/5000/7000 Series Valve Replacement Parts

How to Order Port Block Assembly

SY 0V-6A - - -

● **Series**

3	3000
5	5000
7	7000

● **Pilot type**

Nil	Internal pilot
R	External pilot

● **Option for mounting**

Nil	Standard (Valve mounting screw "hoof" falling-out-prevention type)
1	Valve mounting screw falling-out-prevention type

● **Thread type**

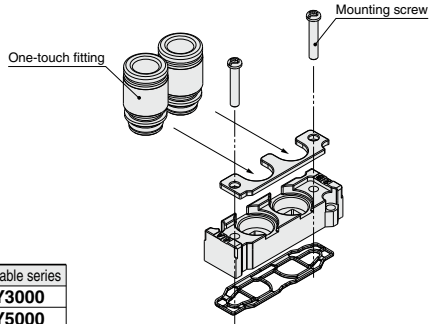
Nil	Rc
F	G
N	NPT
T	NPTF

*: Except M5

● **A, B port size**

Thread piping

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



● **Metric size (One-touch fitting)**

Symbol	Port size	Applicable series		
		SY3000	SY5000	SY7000
C2	ø2	●	—	—
C3	ø3.2	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

● **Inch size (One-touch fitting)**

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

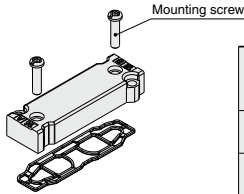
● **Possible to replace only the One-touch fitting.**

	Port size	SY3000	SY5000	SY7000
Metric size	ø2	VVQ1000-50A-C2	—	—
	ø3.2	VVQ1000-50A-C3	—	—
	ø4	VVQ1000-50A-C4	VVQ1000-51A-C4	—
	ø6	VVQ1000-50A-C6	VVQ1000-51A-C6	VVQ2000-51A-C6
	ø8	—	VVQ1000-51A-C8	VVQ2000-51A-C8
	ø10	—	—	VVQ2000-51A-C10
	ø12	—	—	KQ2H12-17-X899
Inch size	ø1/8"	VVQ1000-50A-N1	—	—
	ø5/32"	VVQ1000-50A-N3	VVQ1000-51A-N3	—
	ø1/4"	VVQ1000-50A-N7	VVQ1000-51A-N7	VVQ2000-51A-N7
	ø5/16"	—	VVQ1000-51A-N9	VVQ2000-51A-N9
	ø3/8"	—	—	VVQ2000-51A-N11

Refer to pages 394 and 395 for how to replace the port block assembly, One-touch fitting and body cover assembly.

Body Cover Assembly

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



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

※: The part number is not indicated on the product.

SJ
SY
SY
S0700
S0700

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

V112 - **A**

Pilot valve option

Nil	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

Nil	Standard
T	With power saving circuit

Rated voltage

5	24 VDC
6	12 VDC

⚠ Caution

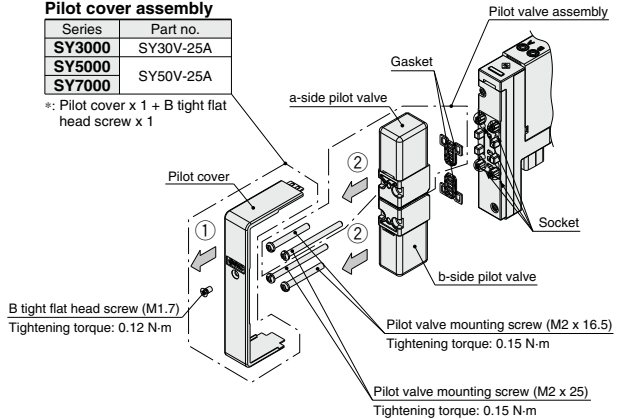
- The coil specification and voltage (including light/surge voltage suppressor) cannot be changed by changing the pilot valve assembly.
- When selecting the coil type with power saving circuit, it is not possible to change to high pressure/power saving circuit type.

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.

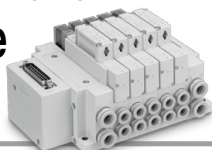
*: Assemble by following the removal procedure in reverse.

*: 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.

SY5000/7000 Series

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** **0** **0** **1** - **E**

Series

5	SY5000
7	SY7000

Base mounted

(Top ported is not available.)

Type of actuation

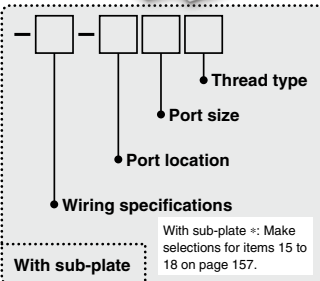
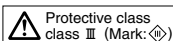
3	3-position closed center ¹
---	---------------------------------------

*1: Only closed center type is available.

With residual pressure release valve

E With residual pressure release valve¹

*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

Nil	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

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

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

*2: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

4 Rated voltage

5	24 VDC
6	12 VDC

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

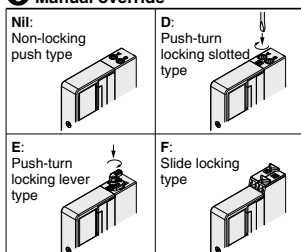
5 Light/surge voltage suppressor and common specification

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

*1: For the non-polar type, be careful of surge voltage intrusion. Refer to page 392 for details.

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

6 Manual override



*1: Refer to page 154 for with the safety slide locking manual override.

*2: **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 212 or 367 for part numbers of the base gasket and mounting screw.

Valve Specifications

Valve construction	Rubber seal	Metal seal
	3-position closed center 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
		177

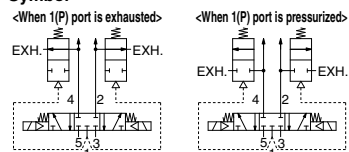
*1: Rubber seal is used for the residual pressure release valve.

*2: Internal pilot type only

*3: Other specifications are common to the valve specifications on page 136.

*4: When using in combination with an individual SUP/EXH spacer or an interface regulator, the length of the required mounting screws will differ. Please contact SMC for details.

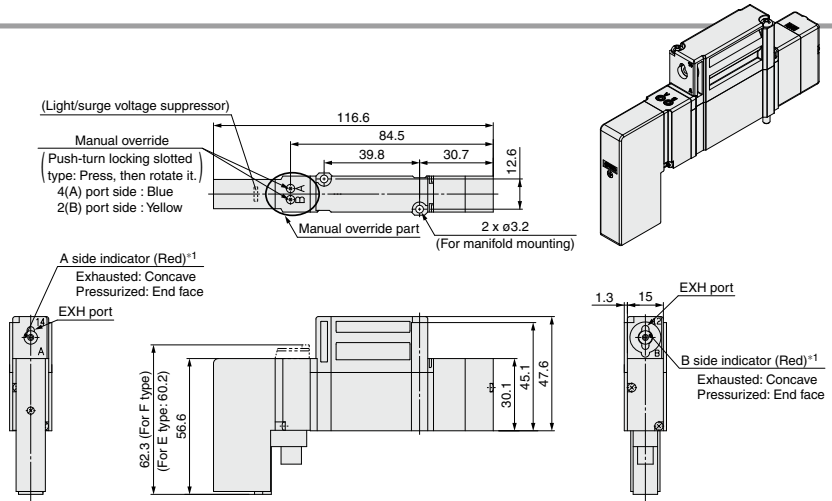
Symbol



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

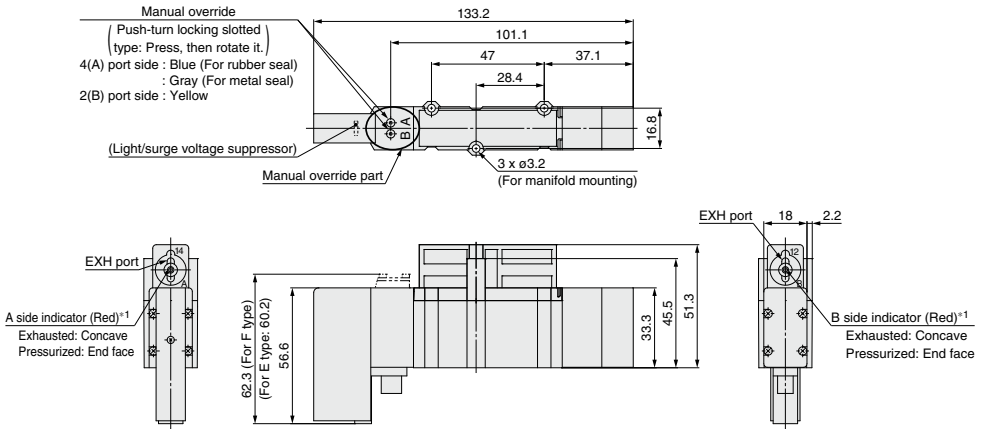
Dimensions

SY5000



SJ
SY
SY
S0700
S0700

SY7000

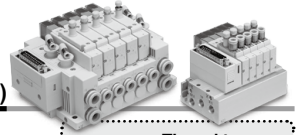


*1: The indicator shows the pressurization status. Do not push it.

Only for External Pilot

Vacuum Release Valve with Restrictor $\text{C}\ \text{E}$

SY3000/5000 Series



Mountable manifold [External pilot]
 SS5Y3/5-50/52 type manifold
 SS5Y3/5-(M)10/11/12 type manifold
 Sub-plate single unit (Except SS5Y3-11 type)

How to Order (With mounting screw)

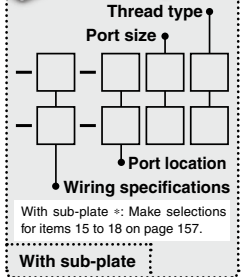
Side ported/
Bottom ported

Top ported

SY **3** A 0 R - **5** **1**

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 VDC
6	12 VDC

3 Coil type

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

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

*: Note the specified energizing time when power saving circuit is selected. Refer to page 391 for details.

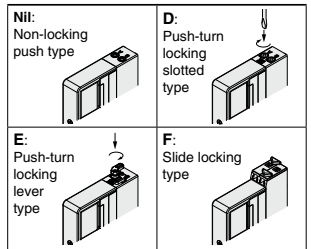
5 Light/surge voltage suppressor and common specification

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

*: For the non-polar type, be careful of surge voltage intrusion. Refer to page 392 for details.

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

6 Manual override



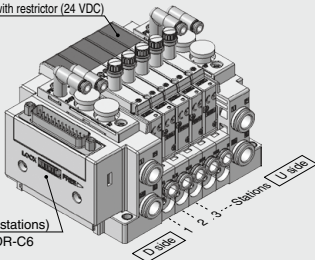
*: Refer to page 154 for with the safety slide locking manual override.

Protective class class III (Mark: \diamond)

How to Order Manifold Assembly

Example (SS5Y3-10F1-□□R)

3-position 3-port valve with restrictor (24 VDC)
 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	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

One-touch fitting (Inch size)

Symbol	B port	SY3000	SY5000
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" 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

Nil	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. Refer to page 212 or 367 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 Specifications

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

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

*: Other specifications are common to the valve specifications on page 136.

*: Quick response type is not available.

Weight

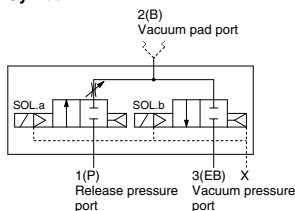
Valve model	Weight [g]
SY3A0R	90

Valve model	Port size	Weight [g]
	2(B) port	
	C4	
SY3A3R	C6	93

Valve model	Weight [g]
SY5A0R	94

Valve model	Port size	Weight [g]	
	2(B) port		
	C4		118
	C6		115
SY5A3R	C8	121	

Symbol



Response Time

Valve model	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		S/Z type	R/U type
SY3A□R	18	26	18
SY5A□R	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 ³ /(s·bar)]	b	C [dm ³ /(s·bar)]	b
SS5Y3-50R (Side ported)	1/8	C6	0.7	0.24	1.0	0.16
SS5Y3-52R (Top ported)	1/8	C6	1.0	0.25	1.1	0.25
SS5Y5-50R (Side ported)	1/4	C8	1.0	0.30	2.3	0.10
SS5Y5-52R (Top ported)	1/4	C8	1.4	0.16	2.4	0.14

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 ³ /(s·bar)]	b	C [dm ³ /(s·bar)]	b
SS5Y3-10R (Side ported)	C8	C6	0.7	0.36	1.2	0.22
SS5Y3-12R (Top ported)	C8	C6	1.0	0.26	1.2	0.20
SS5Y5-10R (Side ported)	C10	C8	1.0	0.20	2.9	0.17
SS5Y5-11R (Bottom ported)	C10	C8	1.0	0.30	3.3	0.24
SS5Y5-12R (Top ported)	C10	C8	1.4	0.15	2.6	0.24

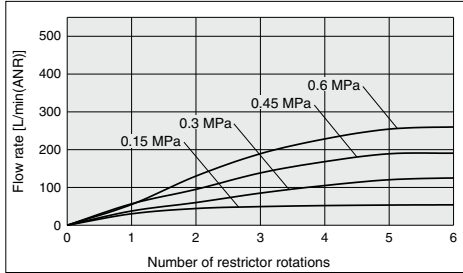
*1: The value is for manifold base with 5 stations.

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

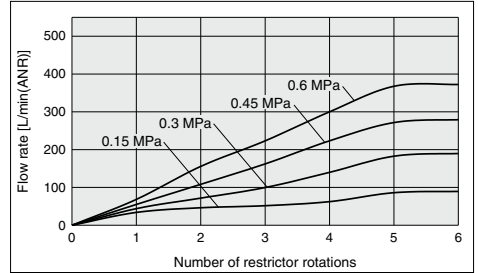
SY3000/5000 Series

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

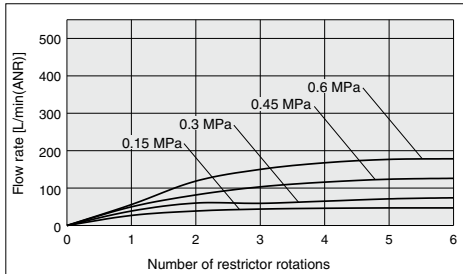
SY3A0R



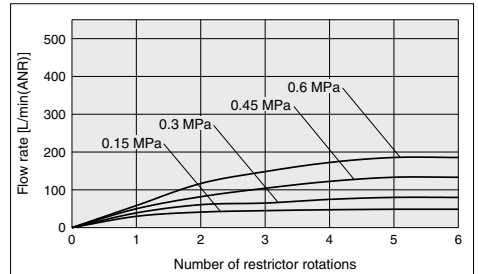
SY5A0R



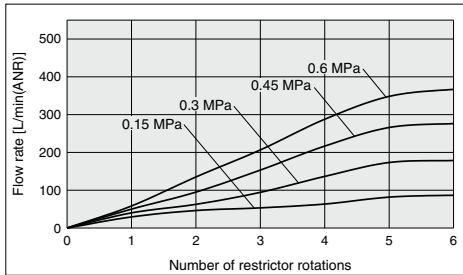
SY3A3R-C4



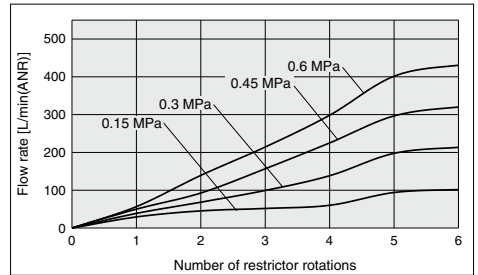
SY5A3R-C4



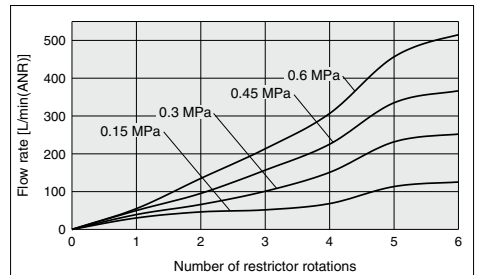
SY3A3R-C6



SY5A3R-C6

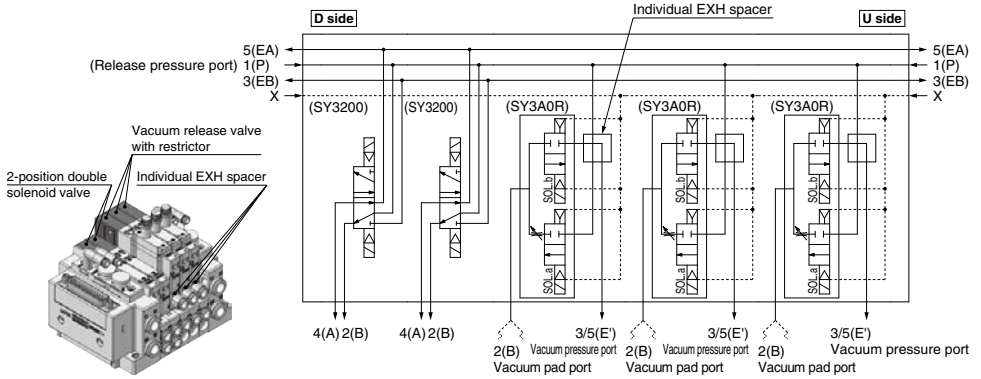


SY5A3R-C8



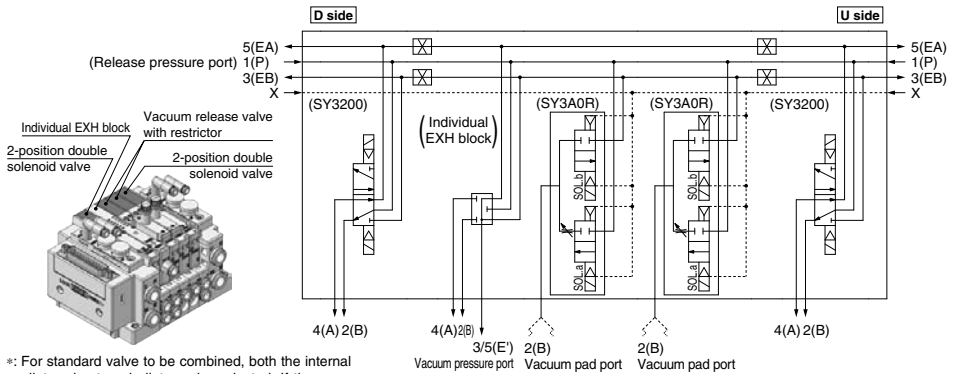
Circuit Example

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



SJ
SY
SY
S0700
S0700

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

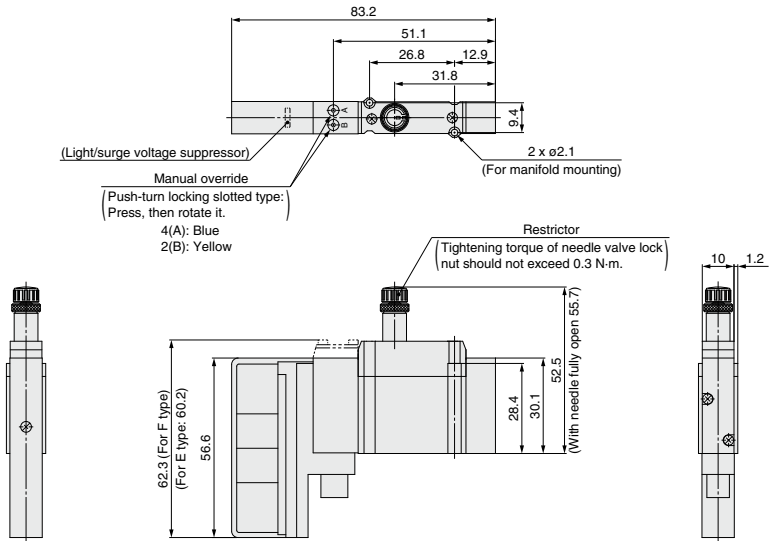


*: For standard valve to be combined, both the internal pilot and external pilot can be selected. If the pressure drop may occur when the 1(P) port releases the vacuum, use the external pilot type.

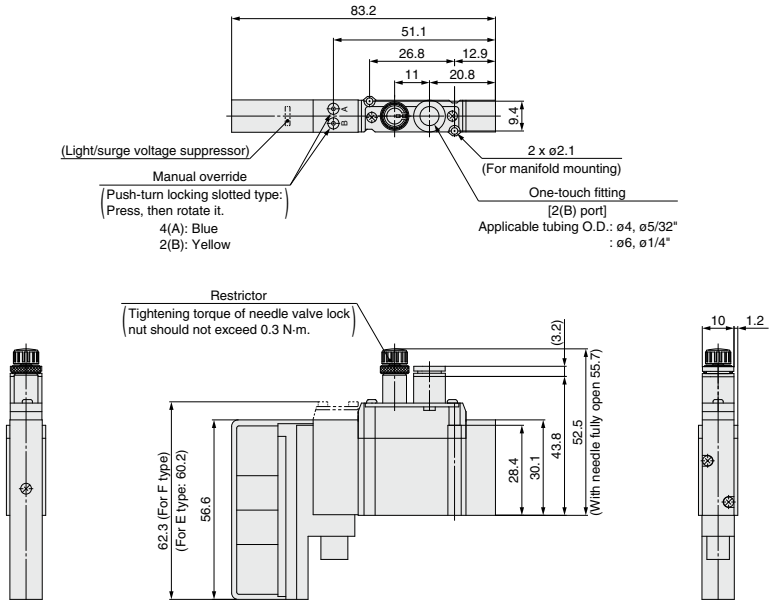
SY3000/5000 Series

Dimensions: SY3000

Side ported SY3A0R



Top ported SY3A3R

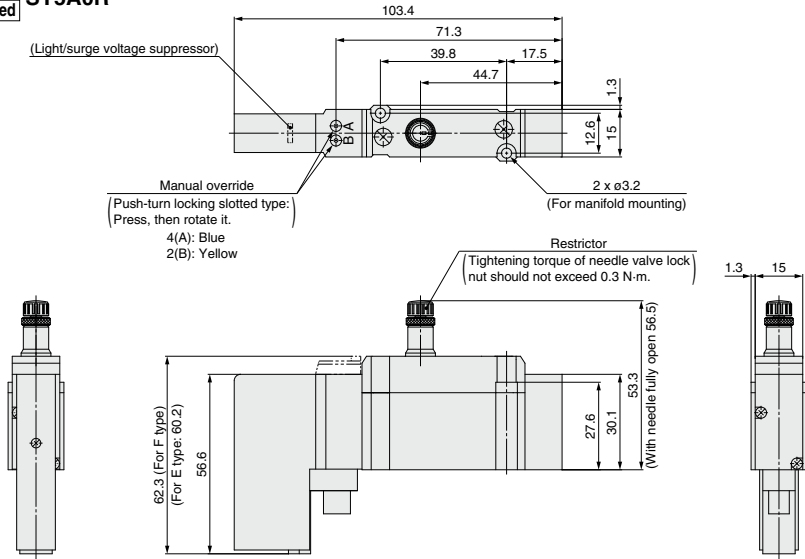


Dimensions: SY5000

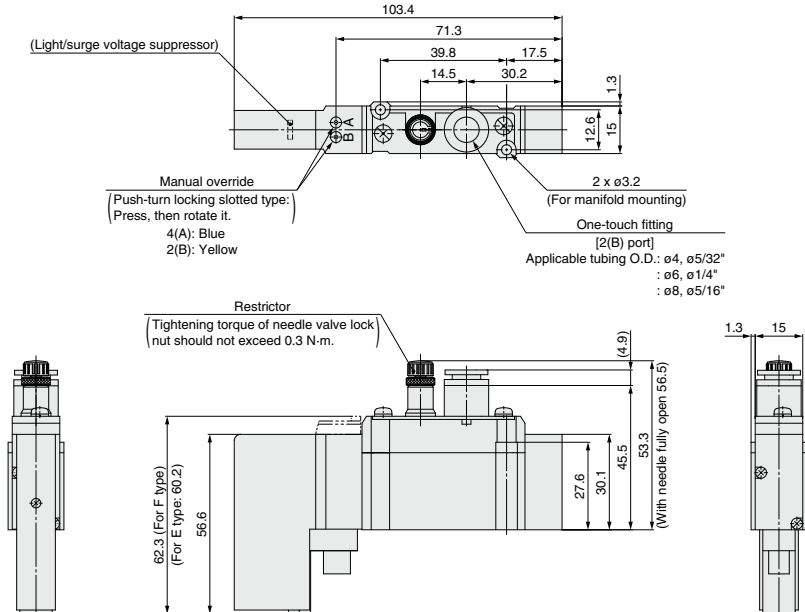
Side ported

Bottom ported

SY5A0R



Top ported **SY5A3R**



SJ
SY
SY
S0700
S0700

SY3000/5000/7000 Series

Made to Order

Please contact SMC for detailed dimensions, specifications and lead times.



1 Main Valve Fluororubber Specification

Symbol
-X90

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

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

Applicable valves series SY3□□₃0, SY5□□₃0, SY7□□₃0 (Only rubber seal type)

SY³₅□□₇ 0□□□□□□ - □□□□ 1 - □□□ - X90

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

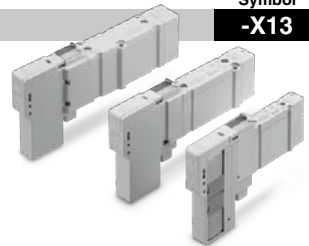
2 With Safety Slide Locking Manual Override

Symbol
-X13

A safety lock is added to the slide locking manual override.
(Refer to page 127.)

SY³₅□□₇ 00□□□□□□ - □□□□ G1 - □□□ - X13

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



3 Metal Seal Valve, Main/Pilot Valve Common Exhaust

Symbol
-X16

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

SY³₅□□₇ 0□□ 1□□□□□□ - □□□□ 1 - □□□ - X16

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

Plug-in Sub-plate Type [IP67 Compliant]

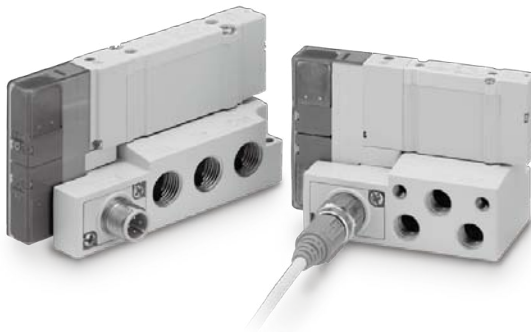
SJ

SY

SY

S0700

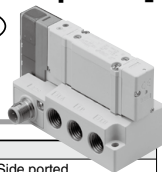
S0700



SY3000/5000/7000 Series

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	
Compliant with the valve.*1					
Enclosure (Based on IEC60529)		IP67			
Weight: W [g]**2	SY3000	Side ported	99		
		Bottom ported	109		
		Top ported	104		
	SY5000	Side ported	145		
		Bottom ported	172		
		Top ported	159		
	SY7000	Side ported	205		
		Bottom ported	232		
		Top ported	227		

*1: Refer to page 136 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 138, and to include the cable weight, add the connector cable weight on page 158.

Plug-in Sub-plate Flow Rate Characteristics

Rubber Seal

Series	Sub-plate piping location	Fitting port size		1 → 4/2		4/2 → 5/3	
		(P,E)	(A,B)	C	b	C	b
SY3000	Side ported	1/8	1/8	1.8	0.27	1.7	0.26
	Bottom ported	1/8	1/8	1.7	0.23	1.4	0.27
	Top ported	1/8	C6	1.3	0.34	1.5	0.27
SY5000	Side ported	1/4	1/4	4.2	0.21	4.0	0.26
	Bottom ported	1/4	1/4	4.0	0.19	4.0	0.23
	Top ported	1/4	C8	2.9	0.29	4.1	0.33
SY7000	Side ported	3/8	3/8	6.5	0.24	6.3	0.23
	Bottom ported	3/8	3/8	6.4	0.22	6.3	0.22
	Top ported	3/8	C12	5.4	0.30	6.0	0.27

Metal Seal

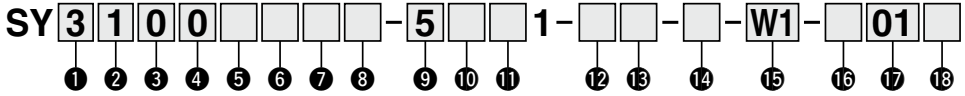
Series	Sub-plate piping location	Fitting port size		1 → 4/2		4/2 → 5/3	
		(P,E)	(A,B)	C	b	C	b
SY3000	Side ported	1/8	1/8	1.4	0.14	1.3	0.26
	Bottom ported	1/8	1/8	1.3	0.13	1.3	0.22
	Top ported	1/8	C6	1.2	0.22	1.4	0.29
SY5000	Side ported	1/4	1/4	3.2	0.13	3.5	0.16
	Bottom ported	1/4	1/4	3.0	0.12	3.2	0.17
	Top ported	1/4	C8	2.6	0.23	3.2	0.19
SY7000	Side ported	3/8	3/8	4.6	0.10	4.9	0.16
	Bottom ported	3/8	3/8	4.6	0.10	4.9	0.17
	Top ported	3/8	C12	4.0	0.18	4.7	0.16

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

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

How to Order

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



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
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 Valve piping type

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

4 Seal type

0	Rubber seal
1	Metal seal

5 Pilot type

Nil	Internal pilot
R	External pilot

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

Nil	None
H	Built-in

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

7 Pilot valve option

Nil	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

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

*1: Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.
*2: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

9 Rated voltage

5	24 VDC
6	12 VDC

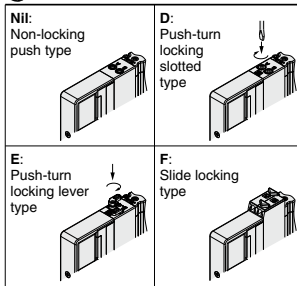
10 Light/surge voltage suppressor and common specification

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

*1: For the non-polar type, be careful of surge voltage intrusion. Refer to page 392 for details.

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

11 Manual override



*1: Refer to page 154 for with the safety slide locking manual override.

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

Thread piping

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

Metric size (One-touch fitting)

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

Inch size (One-touch fitting)

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

*1: 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 158.

*2: When selecting a product with residual pressure release valve or vacuum release valve with restrictor, after selecting a model from page 146 or 148, make selections for items 15 to 18 above.

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

Nil	Rc
F	G
N	NPT
T	NPTF

*1: Only Nil is available for M5.

14 Type of mounting screw

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

*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.

*2: Refer to page 158 when the base gaskets and mounting screws are required for maintenance.

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

15 Wiring specifications (Sub-plate)

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)

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

16 Port location (Sub-plate)

Nil	Side ported
B	Bottom ported
V ⁻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 Thread type (Sub-plate)

Nil	Rc
F	G
N	NPT
T	NPTF

SJ

SY

SY

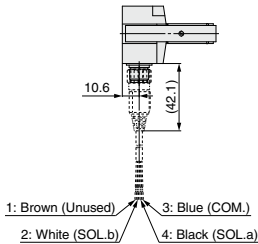
S0700

S0700

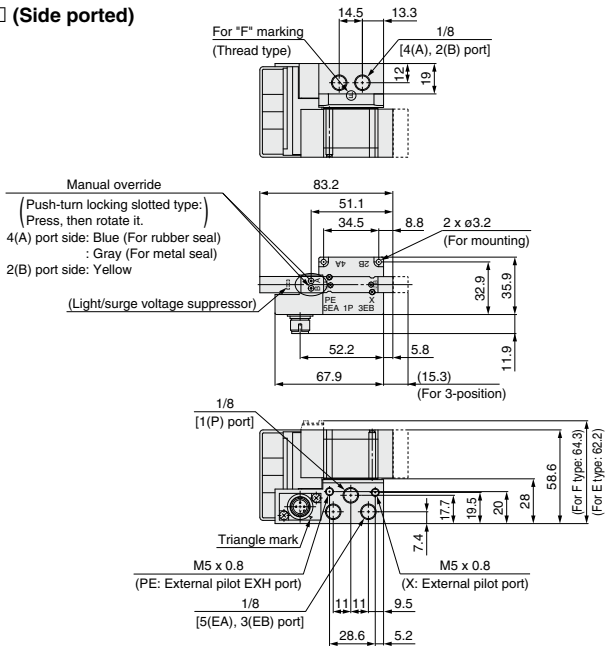
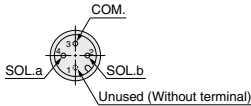
Dimensions: SY3000 Series

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

SY3000□□□□□□□□□□1-W□-01□ (Side ported)

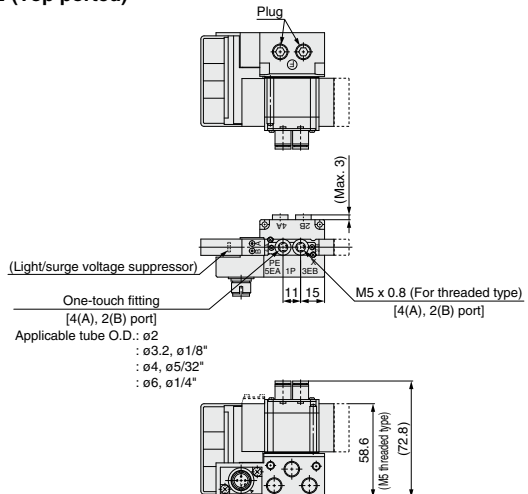
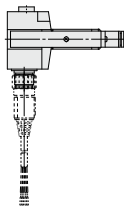


Sub-plate side pin arrangement
(No numeric indication)



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

SY3030□□□□□□□□□□1-□□-W□-V01□ (Top ported)



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

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

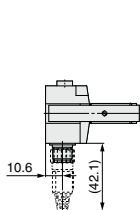
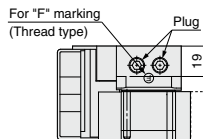
SJ
SY
SY
S0700
S0700

SY3000/5000/7000 Series

Dimensions: **SY3000 Series**

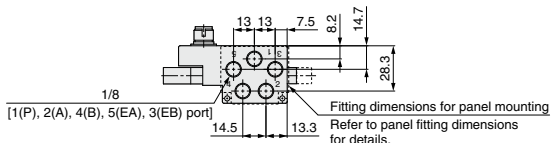
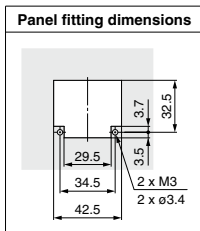
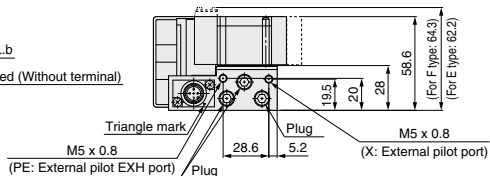
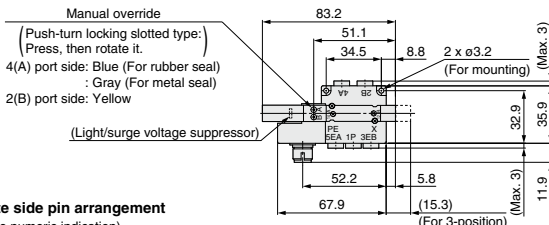
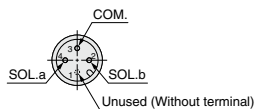
Plug-in
Single Unit/Sub-plate **Bottom Ported**

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



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

Sub-plate side pin arrangement
(No numeric indication)



*: These figures show the "SY3200-5Z1-W0-B01F".

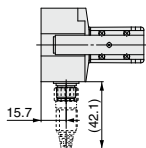
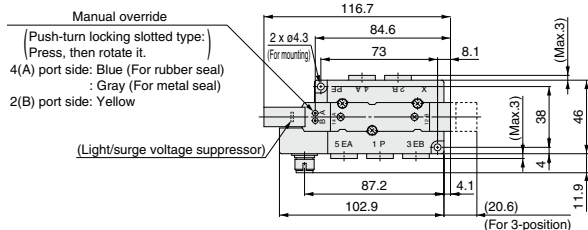
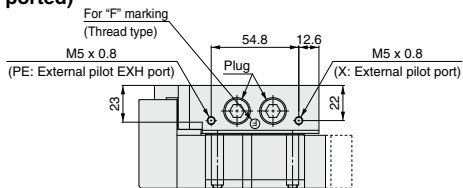
SY3000/5000/7000 Series

Dimensions: SY7000 Series

Plug-in
Single Unit/Sub-plate

Bottom Ported

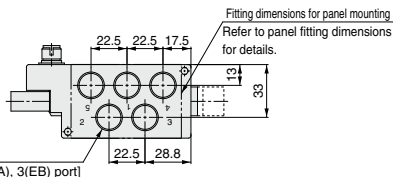
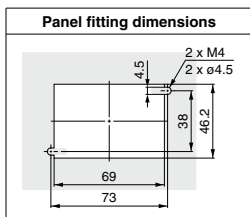
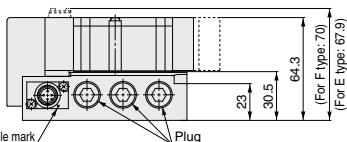
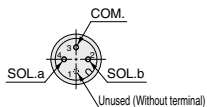
SY7000□□□□□□□□□□1-W□-B03□ (Bottom ported)



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 "SY7200-5Z1-WO-B03F".

Plug-in Metal Base

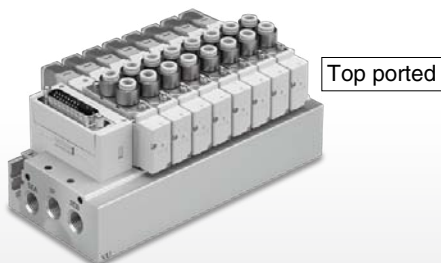
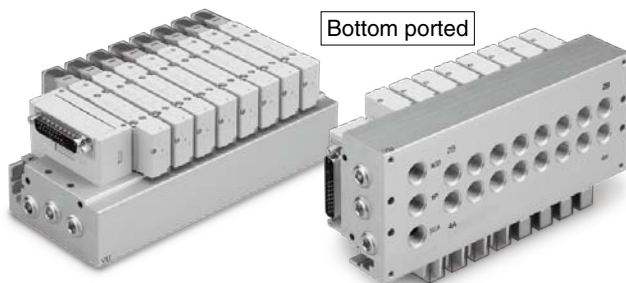
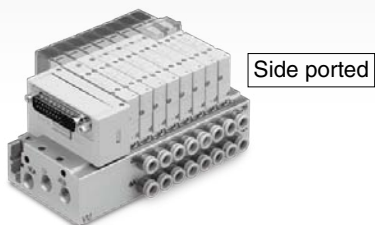
SJ

SY

SY

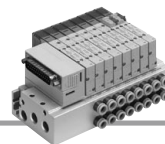
S0700

S0700



SY3000/5000/7000 Series 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)	
Manifold type		Plug-in metal base					
SUP/EXH port type		Common SUP/EXH					
Valve stations	All double wiring	2 to 12 stations		2 to 9 stations (J type: 2 to 8 stations)	2 to 4 stations	2 to 8 stations	
	All single wiring			2 to 12 stations	2 to 8 stations	2 to 12 stations	
Applicable connector		D-sub connector 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		
Internal wiring		Positive common, Negative common					
Port size	1(P), 3/5(E) port	SY3000	1/8				
		SY5000	1/4				
		SY7000	3/8				
	4(A), 2(B) port	SY3000	M5 x 0.8, 1/8 ø2 One-touch fitting, ø3.2 One-touch fitting, ø4 One-touch fitting, ø6 One-touch fitting ø1/8" One-touch fitting, ø5/32" One-touch fitting, ø1/4" One-touch fitting				
		SY5000	1/8, 1/4 ø4 One-touch fitting, ø6 One-touch fitting, ø8 One-touch fitting ø5/32" One-touch fitting, ø1/4" One-touch fitting, ø5/16" One-touch fitting				
		SY7000	1/4 ø6 One-touch fitting, ø8 One-touch fitting, ø10 One-touch fitting, ø12 One-touch fitting ø1/4" One-touch fitting, ø5/16" One-touch fitting, ø3/8" One-touch fitting				
Enclosure (Based on IEC60529)		IP40				IP20	

Manifold Flow Rate Characteristics^{*1}/Manifold Weight

Valve Seal Type: Rubber Seal

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

SJ

SY

SY

S0700

S0700

Valve Seal Type: Metal Seal

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

*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 138 for the appropriate number of stations.

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

Type 50
Side Ported

Type 51
Bottom Ported

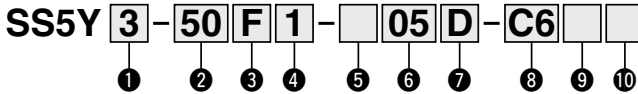
Plug-in Metal Base

D-sub Connector Flat Ribbon Cable PC Wiring

SY3000/5000/7000 Series



How to Order Manifold



1 Series

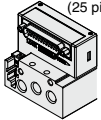
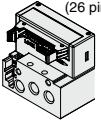
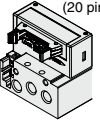
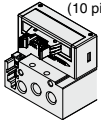
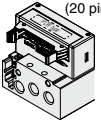
3	SY3000
5	SY5000
7	SY7000

2 Type

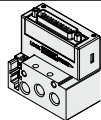
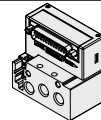
50	Side ported
51	Bottom ported
50R	Side ported, External pilot

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

3 Connector type

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

4 Connector entry direction

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

5 Wiring type

Nil	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.

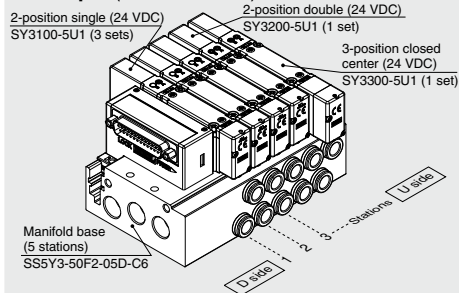
*2: All single wiring: Available only for the manifold which has 2-position single for all stations.

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 center part no.)

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

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

*: When mixing top ported configurations, select from page 189.

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

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

PH: Flat ribbon cable (10 pins)			J: PC wiring (20 pins)		
Symbol	Stations	Note	Symbol	Stations	Note
02	2 stations	All	02	2 stations	All
:	:	double wiring	:	:	double wiring
04	4 stations	All	08	8 stations	All
02	2 stations	All	02	2 stations	All
:	:	single wiring	:	:	single wiring
08	8 stations	All	12	12 stations	All

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

7 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).

9 Thread type

Nii	Rc
F	G
N	NPT
T	NPTF

10 Mounting

Nii	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	Specify a longer rail than the standard length.
⋮	⋮	
D12	For 12 stations	

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

*: Refer to page 394 for the fixation of DIN rail mounting type manifold.

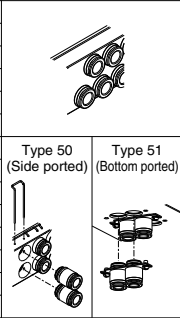
8 A, B port size

Thread piping

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

One-touch fitting (Metric)

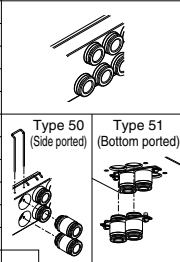
Symbol	A, B port	SY3000	SY5000	SY7000
Fixed	C2	ø2	●	—
	C3	ø3.2	●	—
	C4	ø4	●	●
	C6	ø6	●	●
	C8	ø8	—	●
	C10	ø10	—	—
Replaceable	KC2	ø2	●	—
	KC3	ø3.2	●	—
	KC4	ø4	●	●
	KC6	ø6	●	●
	KC8	ø8	—	●
	KC10	ø10	—	—
	KC12	ø12	—	—
	M¹	Mixed sizes	●	●



P, E port size (Thread piping)	1/8	1/4	3/8
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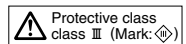
One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000	SY7000
Fixed	N1	ø1/8"	●	—
	N3	ø5/32"	●	—
	N7	ø1/4"	●	●
	N9	ø5/16"	—	●
	N11	ø3/8"	—	—
	Replaceable	KN1	ø1/8"	●
KN3		ø5/32"	●	—
KN7		ø1/4"	●	●
KN9		ø5/16"	—	●
KN11		ø3/8"	—	—
M¹		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.



SY3000/5000/7000 Series

How to Order Valves (With mounting screw)

Refer to page 136 for valve specifications.

SY **3** **1** **0** **0** **□** **□** **□** **□** - **5** **□** **□** **1** - **□**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

• Base mounted

① Series

3	SY3000
5	SY5000
7	SY7000

② Type of actuation

1	Single	
2	2-position	Double
3	3-position	Closed center
4		Exhaust center
5	Pressure center	
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

Nil	Internal pilot
R	External pilot

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

Nil	None
H	Built-in

*: Only rubber seal type

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

⑥ Pilot valve option

Nil	Standard (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

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

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

*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

⑧ Rated voltage

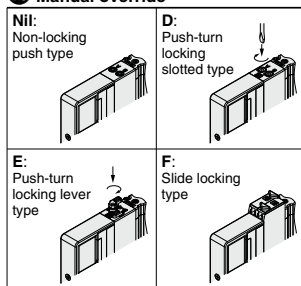
5	24 VDC
6	12 VDC

⑨ Light/surge voltage suppressor and common specification

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

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

⑩ Manual override



*: Refer to page 154 for with the safety slide locking manual override.

⑪ Type of mounting screw

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

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

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

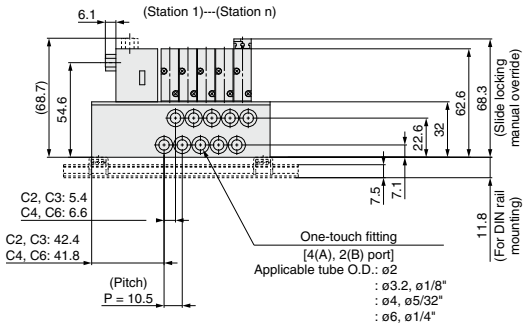
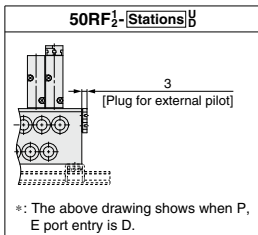
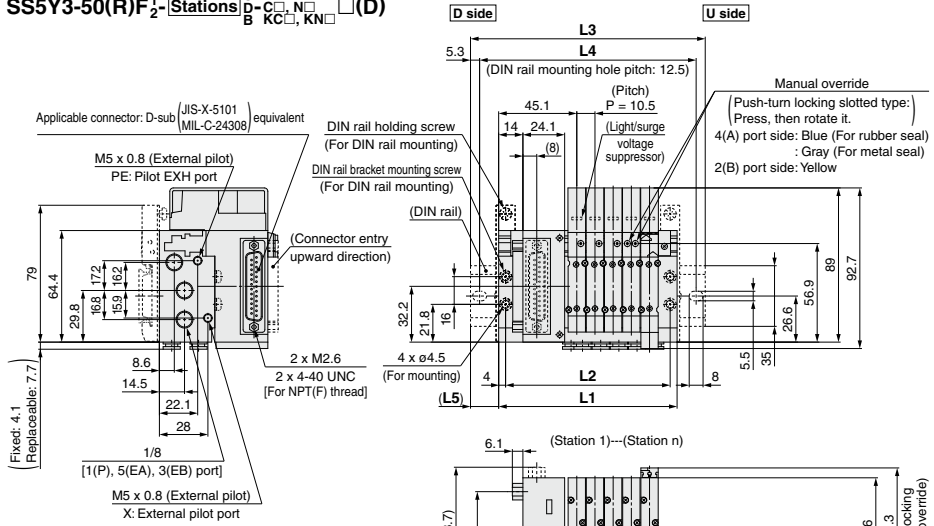
Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 212 for part numbers of the base gasket and mounting screw.

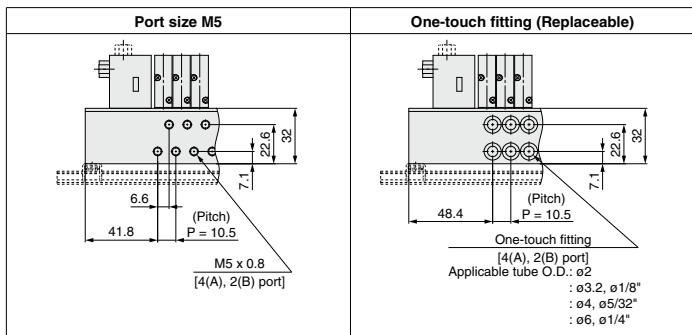
*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: SY3000 Series

SS5Y3-50(R)F₂-Stations $\frac{U}{D}$ M5 \square C \square N \square \square (D)
 B \square KC \square , KN \square \square (D)



*: These figures show the "SS5Y3-50F2-05B-C6".



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

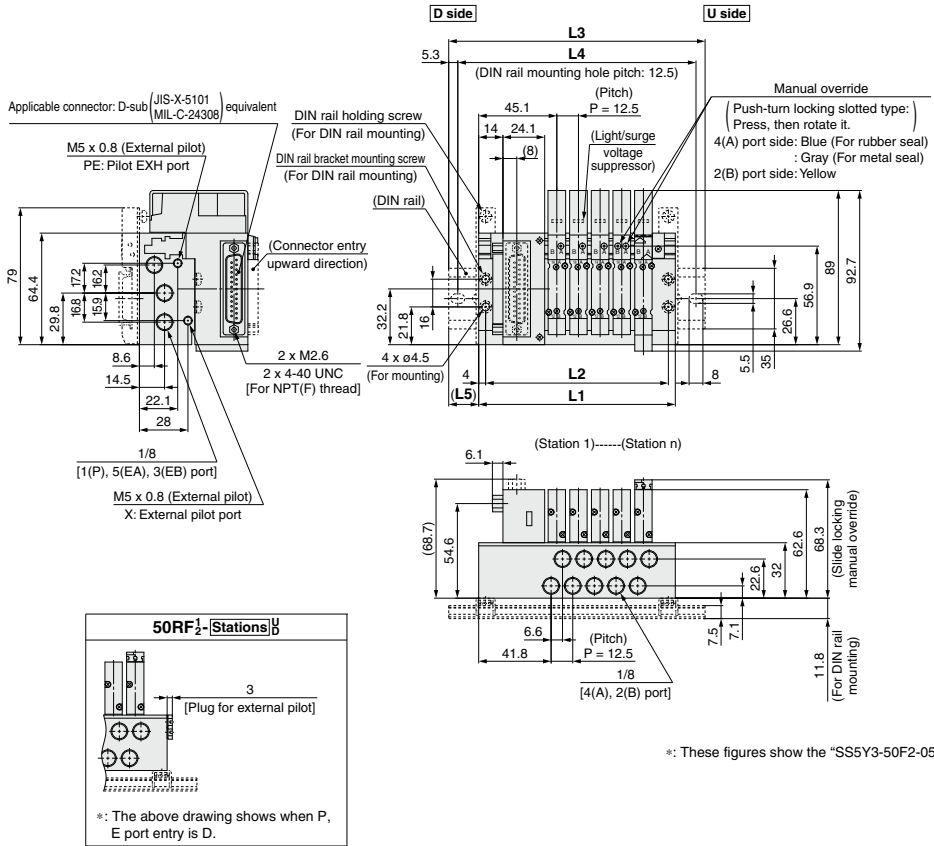
SY3000/5000/7000 Series

Dimensions: **SY3000 Series**

**Plug-in
Metal Base**

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

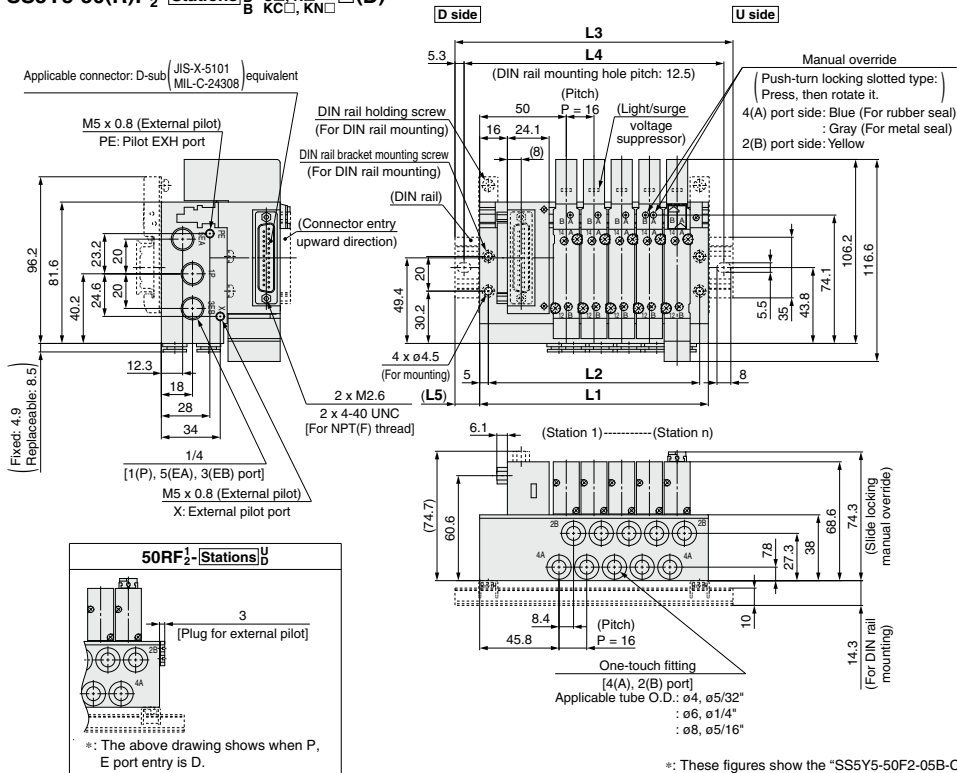
SS5Y3-50(R)F₂-Stations_U_D01□(D)



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

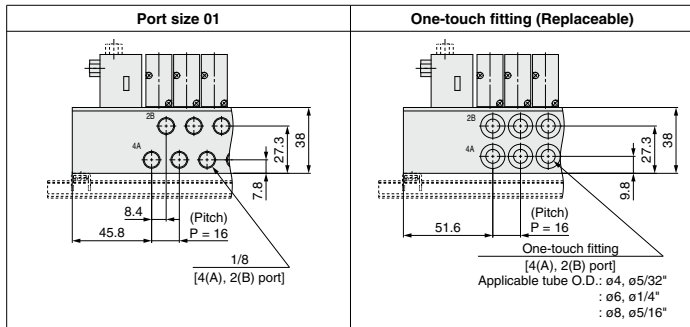
Dimensions: SY5000 Series

SS5Y5-50(R)F₂-[Stations] $\frac{U}{B}$ 01 $\frac{C}{K}$ $\frac{N}{K}$ $\frac{N}{K}$ $\frac{N}{K}$ $\frac{N}{K}$ (D)



- SJ
- SY
- SY
- S0700
- S0700

*: These figures show the "SS5Y5-50F2-05B-C8".

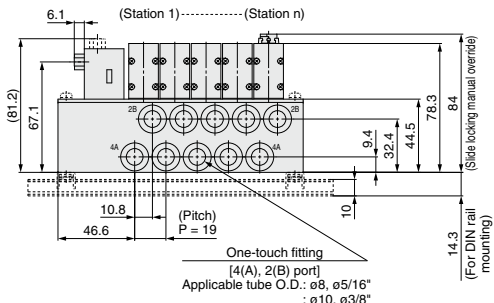
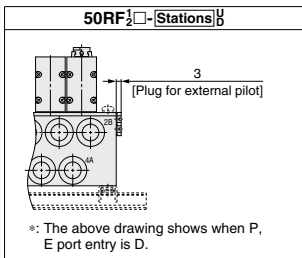
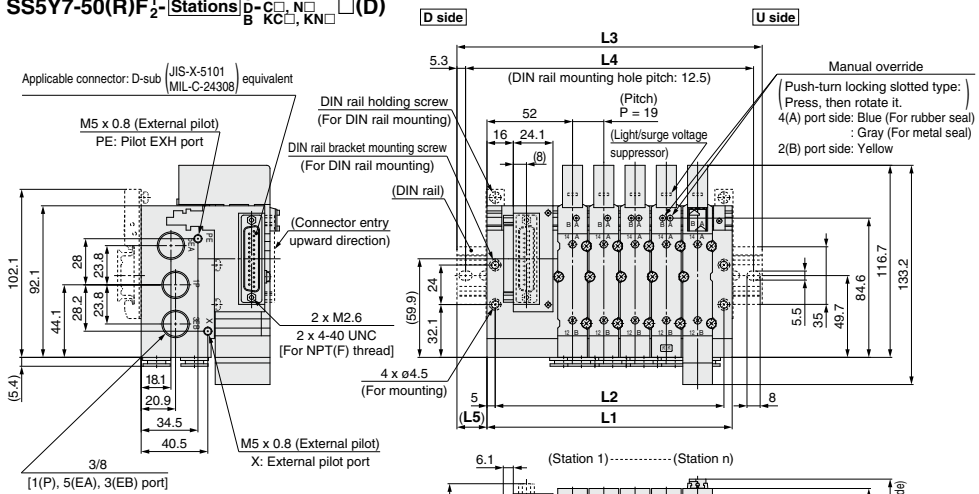


n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	110.5	135.5	148	160.5	173	198	210.5	223	248	260.5	273
L4	100	125	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5
L5	13.5	18	16	14.5	12.5	17	15.5	13.5	18	16.5	14.5

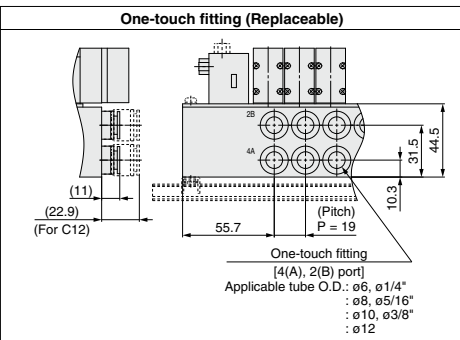
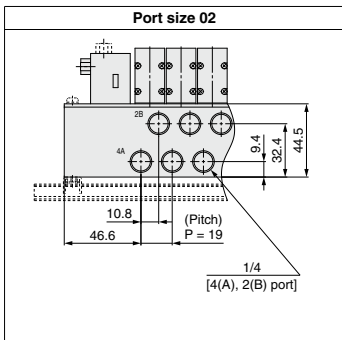
Plug-in Metal Base Type 50/Side Ported D-sub Connector

Dimensions: SY7000 Series

SS5Y7-50(R)F₂-[Stations]^U_B □_C □_N □_{KN} □(D)



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



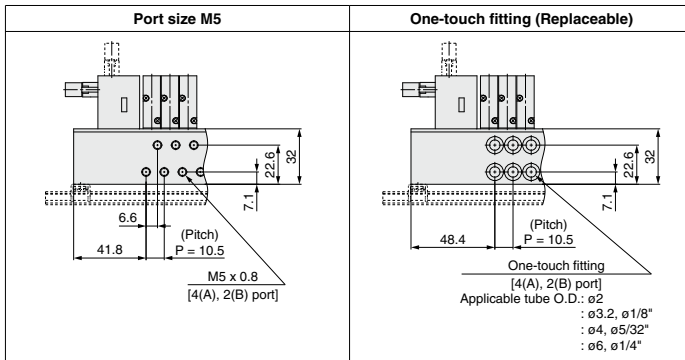
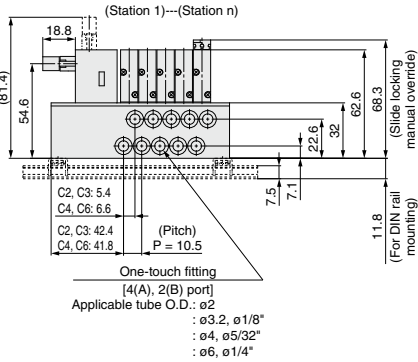
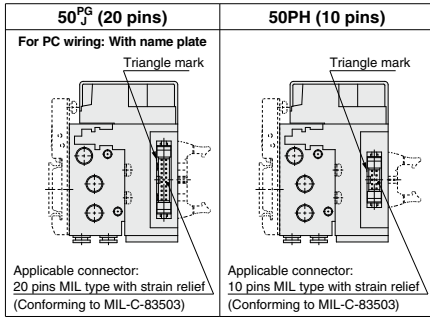
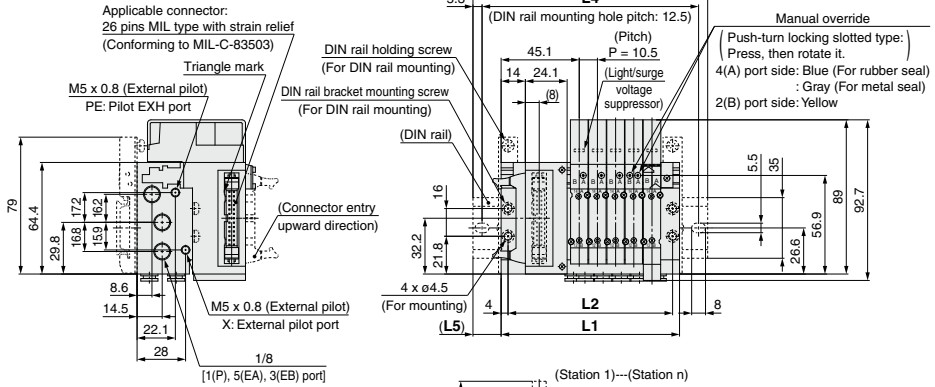
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	92	111	130	149	168	187	206	225	244	263	282
L2	82	101	120	139	158	177	196	215	234	253	272
L3	123	148	160.5	185.5	198	223	235.5	260.5	273	298	310.5
L4	112.5	137.5	150	175	187.5	212.5	225	250	262.5	287.5	300
L5	15.5	18.5	15.5	18.5	15	18	15	18	14.5	17.5	14.5

SY3000/5000/7000 Series

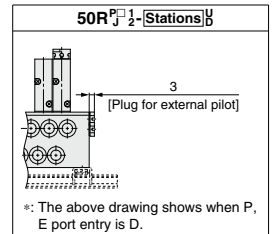
Plug-in
Metal Base
Type 50/Side Ported
Flat Ribbon Cable

Dimensions: SY3000 Series

SS5Y3-50(R) $\frac{P}{J} 1-2$ -(Stations) $\frac{U}{B} \frac{M5}{C}, N, \square, \square (D)$



*: 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.

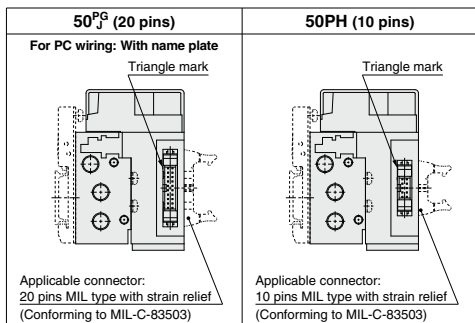
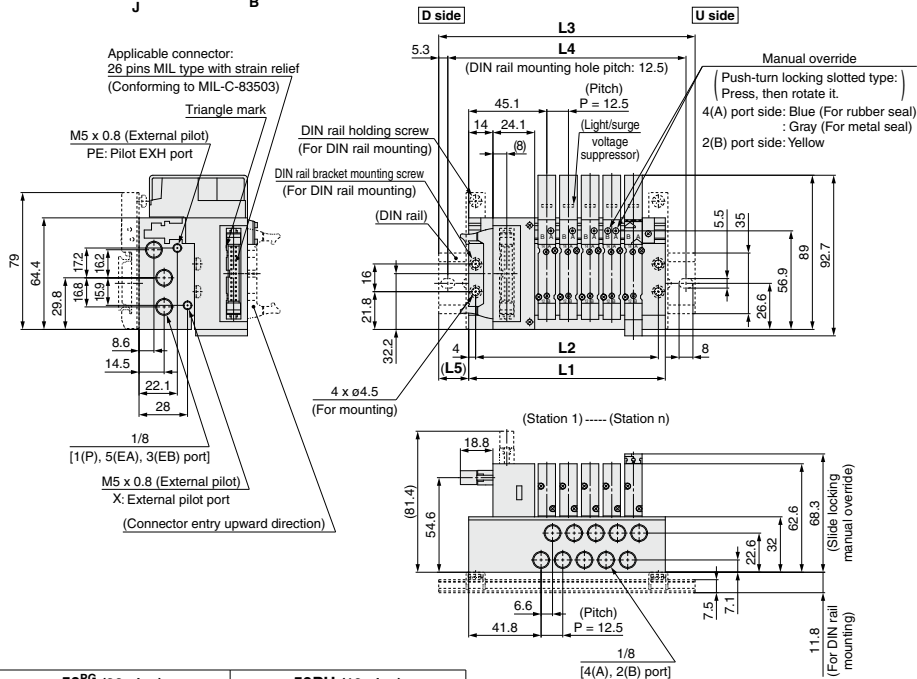


n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5
L4	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200
L5	13.5	14.5	15.5	16.5	17.5	18.5	13	14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

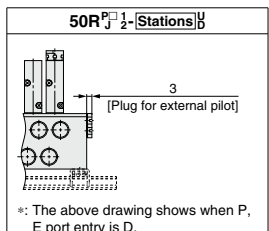
Plug-in Metal Base Type 50/Side Ported Flat Ribbon Cable

Dimensions: SY3000 Series

SS5Y3-50(R) $\frac{P}{PH} \frac{1}{2}$ - 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.



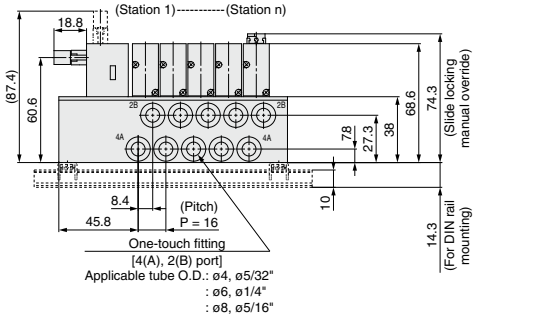
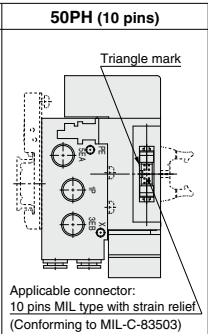
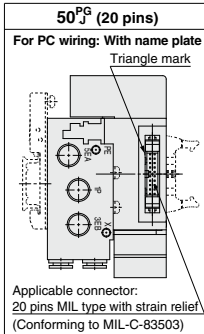
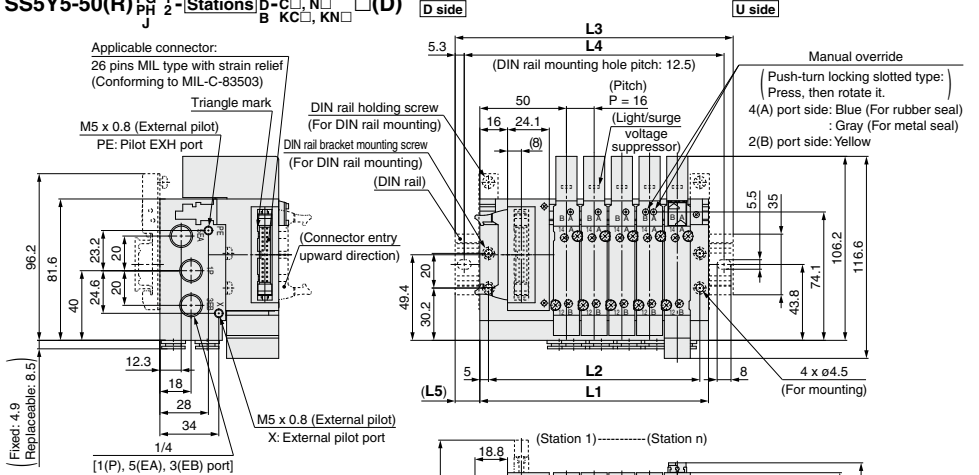
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	76	88.5	101	113.5	126	138.5	151	163.5	176	188.5	201
L2	68	80.5	93	105.5	118	130.5	143	155.5	168	180.5	193
L3	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5
L4	100	112.5	125	137.5	150	162.5	175	187.5	200	212.5	225
L5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5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

SY3000/5000/7000 Series

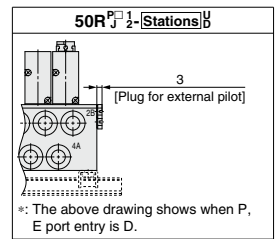
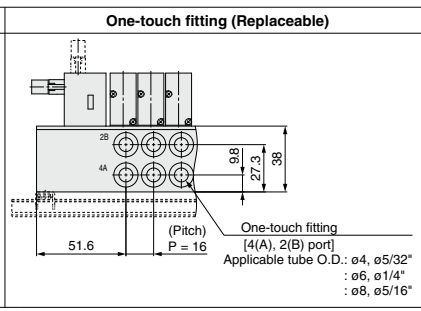
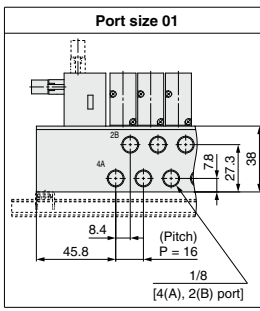
Plug-in Metal Base Type 50/Side Ported Flat Ribbon Cable

Dimensions: SY5000 Series

SS5Y5-50(R)^P_J 1 - Stations^U_B 01
 C□, N□, □ (D)
 K□C□, K□N□ □ (D)



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

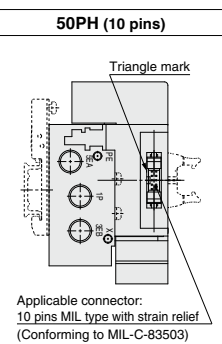
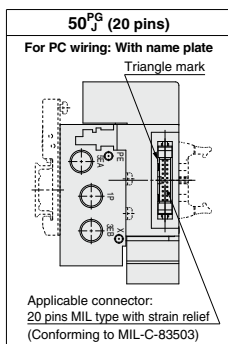
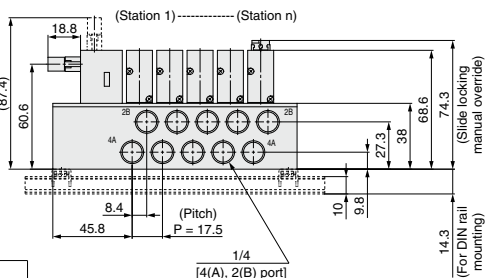
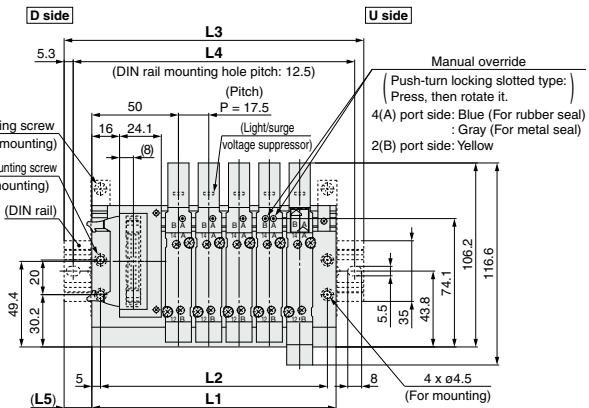
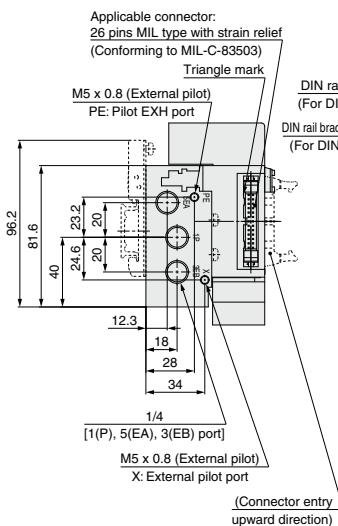


n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	110.5	135.5	148	160.5	173	198	210.5	223	248	260.5	273
L4	100	125	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5
L5	13.5	18	16	14.5	12.5	17	15.5	13.5	18	16.5	14.5

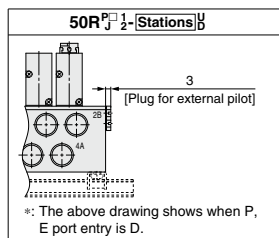
Plug-in Metal Base Type 50/Side Ported Flat Ribbon Cable

Dimensions: **SY5000 Series**

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



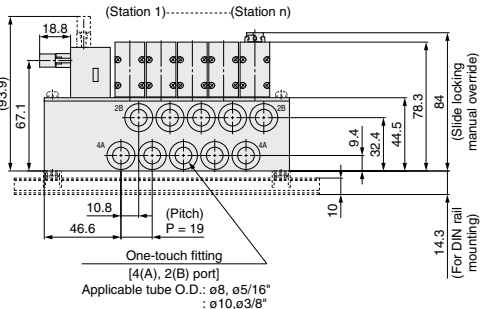
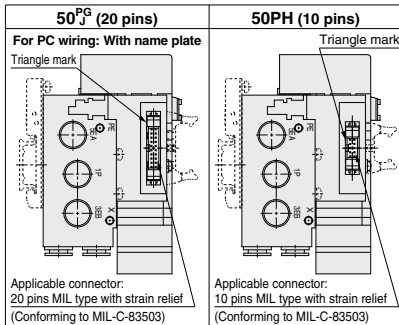
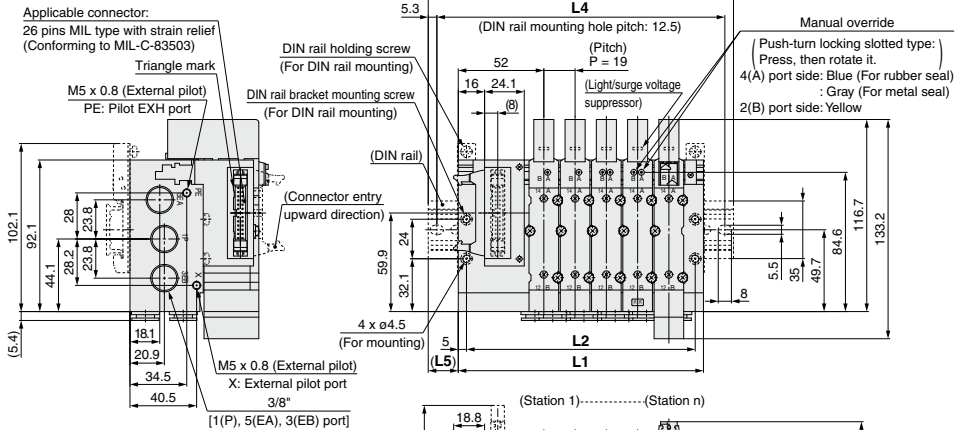
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	123	135.5	148	173	185.5	210.5	223	235.5	260.5	273	298
L4	112.5	125	137.5	162.5	175	200	212.5	225	250	262.5	287.5
L5	17.5	15	12.5	16	13.5	17.5	15	12.5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

SY3000/5000/7000 Series

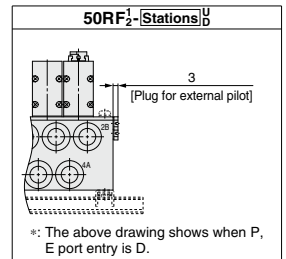
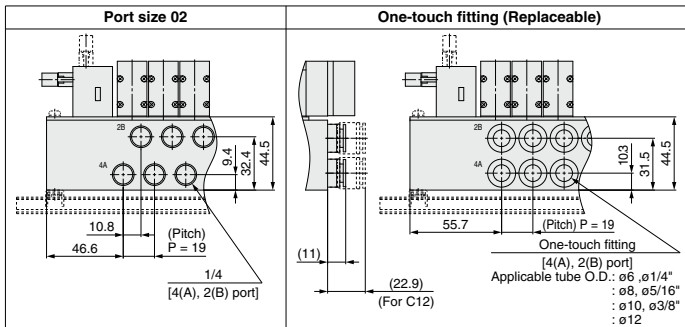
Dimensions: **SY7000 Series**

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

SS5Y7-50(R) $\begin{matrix} P \\ PG \\ PH \end{matrix} 1-2$ Stations $\begin{matrix} U \\ D \\ B \end{matrix} 02$ $\begin{matrix} C \\ N \\ K \\ KN \end{matrix}$ (D) $\begin{matrix} D \\ L \\ L5 \end{matrix}$ side $\begin{matrix} U \\ D \end{matrix}$ side



*: These figures show the "SS5Y7-50P2-05B-C10".

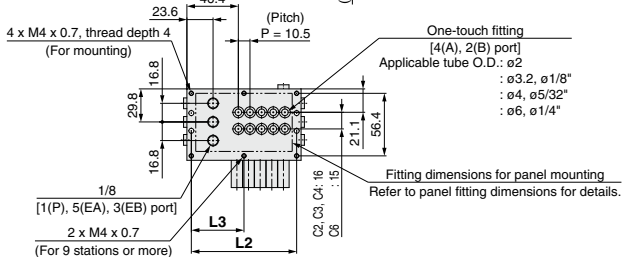
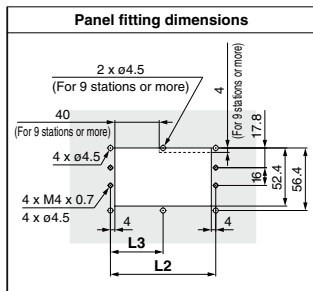
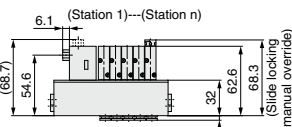
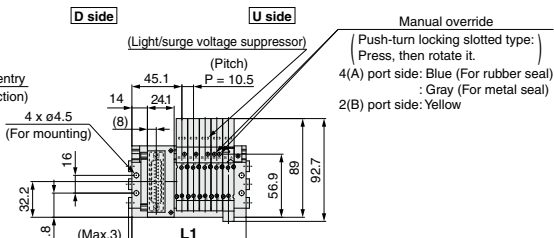
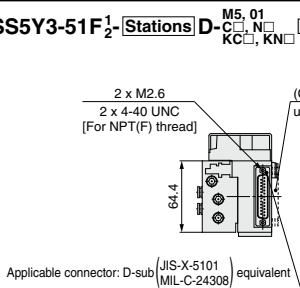


n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	92	111	130	149	168	187	206	225	244	263	282
L2	82	101	120	139	158	177	196	215	234	253	272
L3	123	148	160.5	185.5	198	223	235.5	260.5	273	298	310.5
L4	112.5	137.5	150	175	187.5	212.5	225	250	262.5	287.5	300
L5	15.5	18.5	15.5	18.5	15	18	15	18	14.5	17.5	14.5

Dimensions: **SY3000 Series**

Plug-in Metal Base	Type 51/Bottom Ported
	D-sub Connector

SS5Y3-51F₂ (Stations) **D-** **M5**, **01**
C- **N**, **01**
KC- **KN**, **01**



Port size M5	Port size 01	One-touch fitting (Replaceable)
<p>32</p> <p>(Pitch) P = 10.5</p> <p>46.4, 17, 20.1</p> <p>M5 x 0.8 [4(A), 2(B) port]</p>	<p>32</p> <p>(Pitch) P = 12.5</p> <p>46.4, 14, 21.1</p> <p>1/8 [4(A), 2(B) port]</p>	<p>32</p> <p>(Pitch) P = 10.5</p> <p>46.4, 17, 20.1</p> <p>(C6: 12.8) (N7: 16.6)</p> <p>One-touch fitting [4(A), 2(B) port]</p> <p>Applicable tube O.D.: ø2</p> <ul style="list-style-type: none"> : ø3.2, ø1/8" : ø4, ø5/32" : ø6, ø1/4"

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

Port Size M5, C, N, KC, KN

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

Port Size 01

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

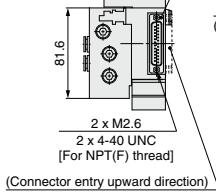
SY3000/5000/7000 Series

Plug-in Metal Base Type 51/Bottom Ported D-sub Connector

Dimensions: SY5000 Series

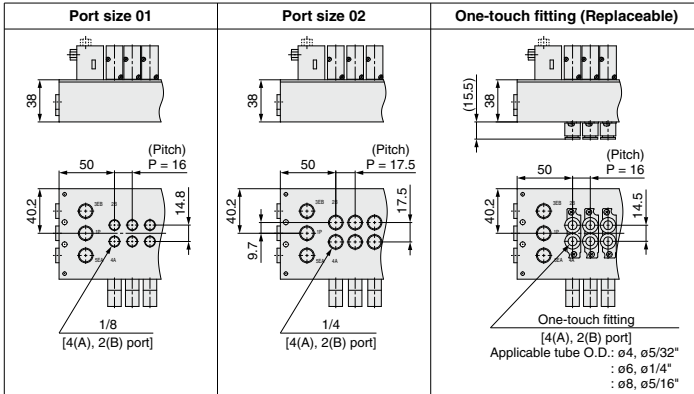
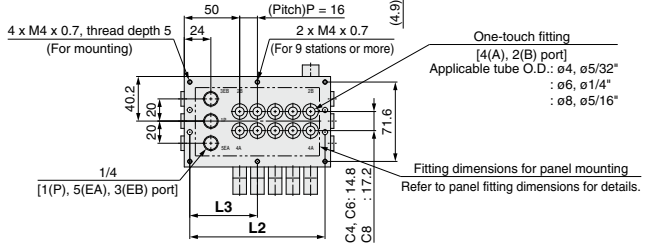
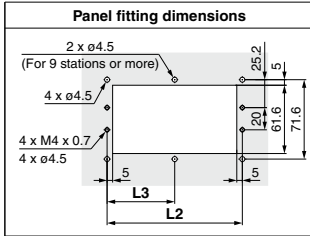
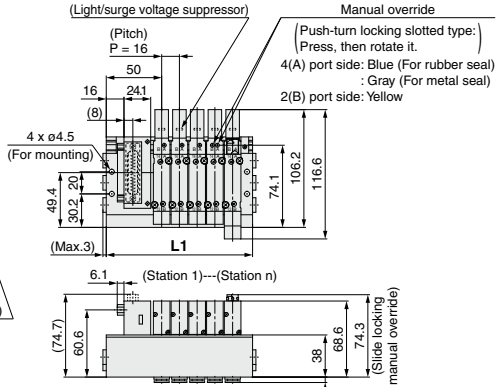
SS5Y5-51F₂-(Stations) D-C_□N_□
KC_□KN_□

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



D side

U side



*: 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

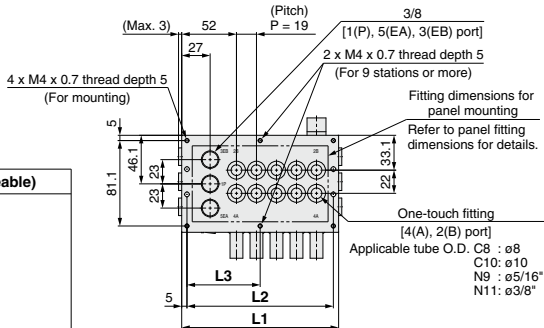
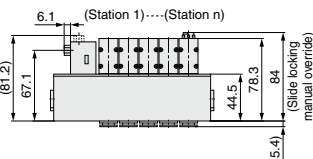
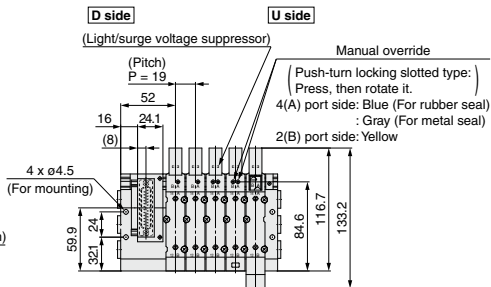
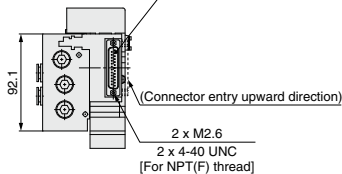
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	—	—	—	—	—	—	—	100.5	109.3	118	126.8

Dimensions: **SY7000 Series**

Plug-in Metal Base	Type 51/Bottom Ported
	D-sub Connector

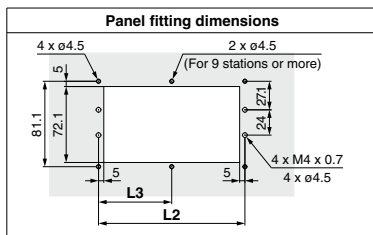
SS5Y7-51F₂ - (Stations) $\overset{02}{D}$ - \square \square \square \square \square (D)
 KC \square \square \square \square \square (D)

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



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

Port size 02	One-touch fitting (Replaceable)
	One-touch fitting [4(A), 2(B) port] Applicable tube O.D.: ø6, ø1/4" : ø8, ø5/16" : ø10, ø3/8" : ø12



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

SY3000/5000/7000 Series

Dimensions: SY3000 Series

Plug-in
Metal Base

Type 51/Bottom Ported
Flat Ribbon Cable

SS5Y3-51 $\begin{matrix} P \\ PG \\ PH \\ J \end{matrix}$ 2 - Stations $\begin{matrix} D \\ M5, 01 \\ C\Box, N\Box, \\ KC\Box, KN\Box \end{matrix}$

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

Triangle mark

4 x $\phi 4.5$
(For mounting)

(8)

14

24.1

45.1

(Pitch)

P = 10.5

16

21.6

32.2

(Max. 3)

L1

89

56.9

92.7

64.4

(Connector entry
upward direction)

D side

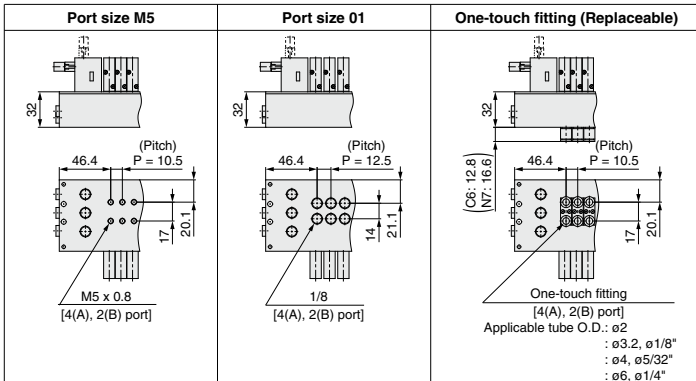
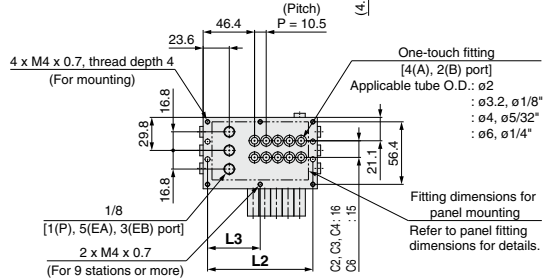
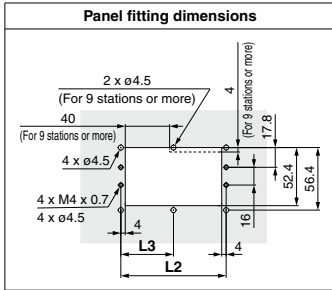
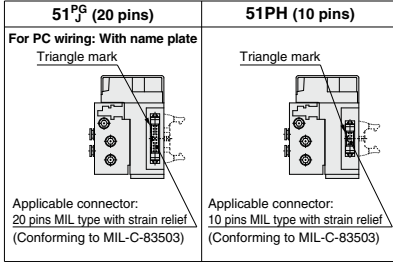
U side

(Light/surge voltage suppressor)

Manual override

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

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



*: These figures show the "SS5Y3-51P2-05D-C6".

Port Size M5, C \Box , N \Box , KC \Box , KN \Box

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

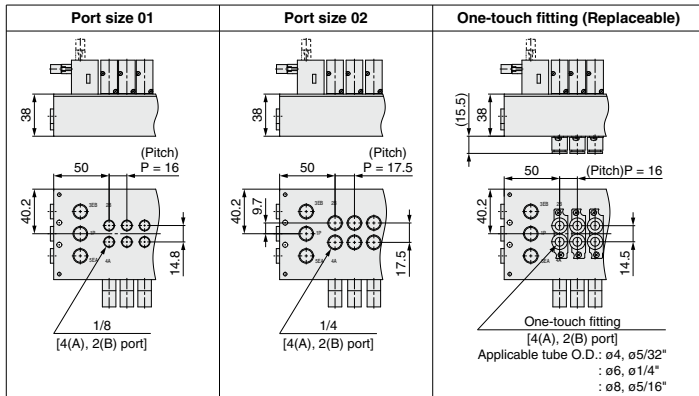
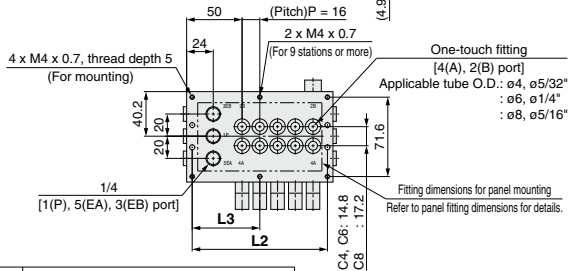
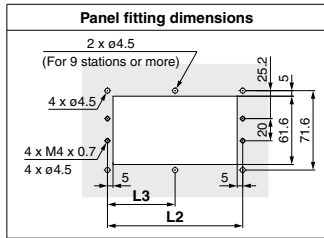
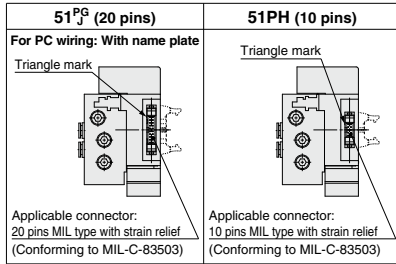
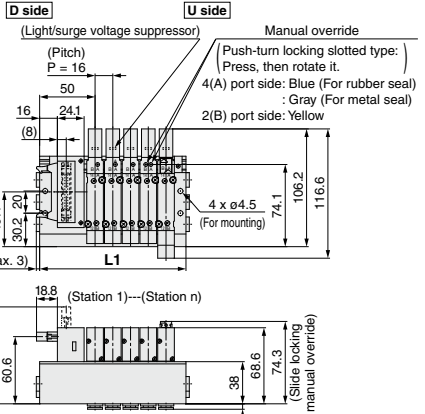
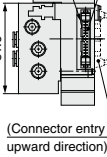
Dimensions: **SY5000 Series**

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

SS5Y5-51^P_J 1^{PG} 2^{PH} - Stations D-01, 02
 C□, N□, KC□, KN□

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

Triangle mark



*: 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

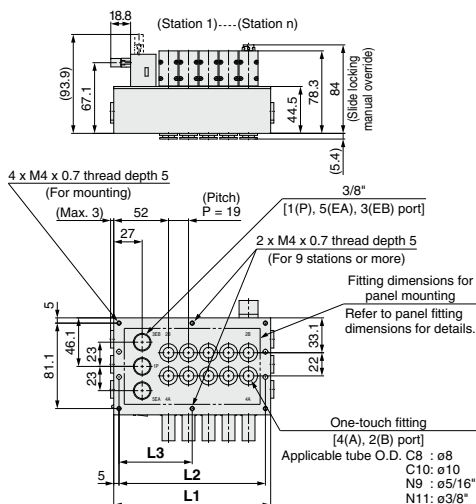
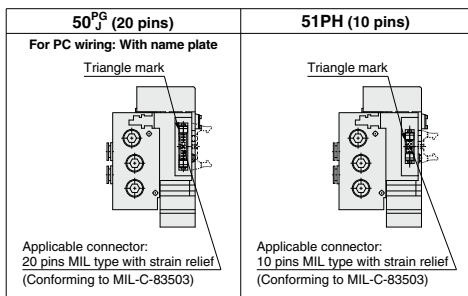
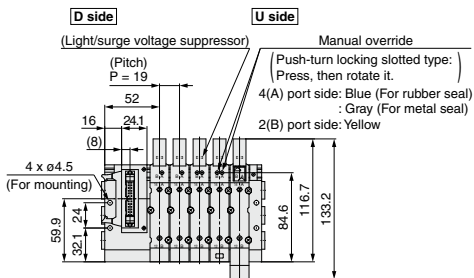
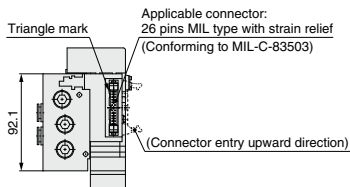
SJ
 SY
 SY
 S0700
 S0700

SY3000/5000/7000 Series

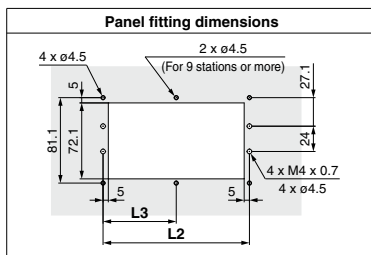
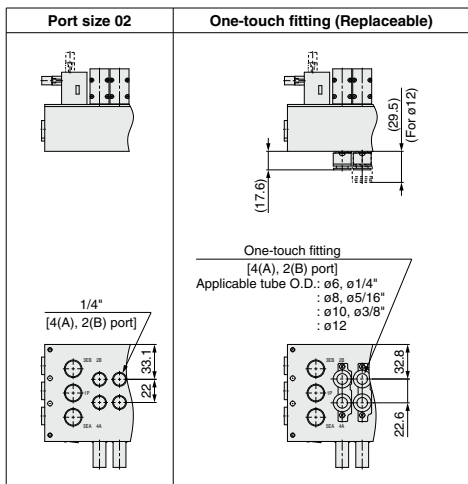
Plug-in Metal Base | **Type 51/Bottom Ported**
Flat Ribbon Cable

Dimensions: SY7000 Series

SS5Y7-51^P_J PG 1/2 - Stations D-02 C□, N□ □(D)
 KC□, KN□ □(D)



*: 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

Plug-in Metal Base

D-sub Connector

Flat Ribbon Cable

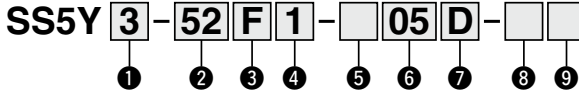
PC Wiring

Type 52
Top Ported

SY3000/5000/7000 Series



How to Order Manifold



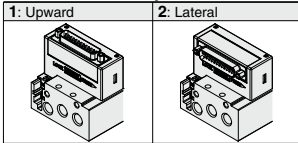
1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type

52	Top ported
52R	Top ported, External pilot

4 Connector entry direction



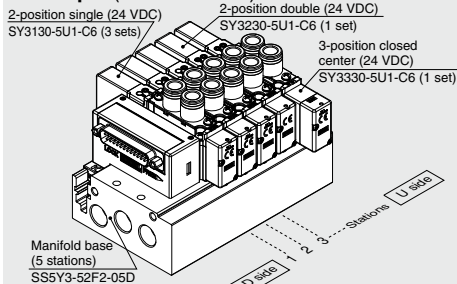
5 Wiring type

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

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

How to Order Manifold Assembly

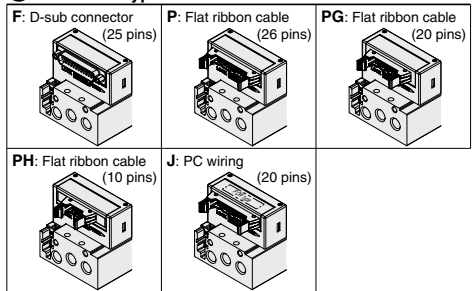
Example (SS5Y3-52F2-□)



- SS5Y3-52F2-05D 1 set (Type 52 5-station manifold base part no.)
 *SY3130-5U1-C6 3 sets (2-position single part no.)
 *SY3230-5U1-C6 1 set (2-position double part no.)
 *SY3330-5U1-C6 1 set (3-position closed center part no.)
- The asterisk denotes the symbol for assembly.
 Prefix it to the part numbers of the valve etc.

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

3 Connector type



6 Valve stations

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

PH: Flat ribbon cable (10 pins) J: PC wiring (20 pins)

Symbol	Stations	Note	Symbol	Stations	Note
02	2 stations	All	02	2 stations	All
⋮	⋮	double wiring	⋮	⋮	double wiring
04	4 stations	All	08	8 stations	All
⋮	⋮	single wiring	⋮	⋮	single wiring
02	2 stations	All	12	12 stations	All
08	8 stations	wiring			

※: This also includes the number of blanking plate assembly.

7 P, E port entry

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

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

8 Thread type

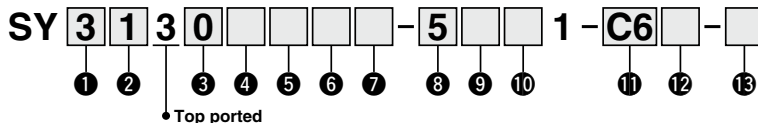
Nil	Rc
00F	G
00N	NPT
00T	NPTF

9 Mounting

Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
⋮	Specify a longer rail than the standard length.
D12	For 12 stations

※: Refer to page 394 for the fixation of DIN rail mounting type manifold.

How to Order Valves (With mounting screw) Refer to page 136 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 center
4		Exhaust center
5		Pressure center
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

Nil	Internal pilot
R	External pilot

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

Nil	None
H	Built-in

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

6 Pilot valve option

Nil	Standard (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

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

*: Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage


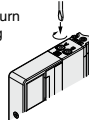
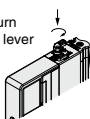

5	24 VDC
6	12 VDC

9 Light/surge voltage suppressor and common specification

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

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

10 Manual override

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

*: Refer to page 154 for with the safety slide locking manual override.

11 A, B port size

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

One-touch fitting (Metric)

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

One-touch fitting (Inch)

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

12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

*: Only Nil is available for M5.

13 Type of mounting screw

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

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

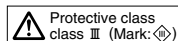
*: **When ordering a valve individually, the base gasket is not included.**

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

Refer to page 212 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.

SY
S0700
S0700



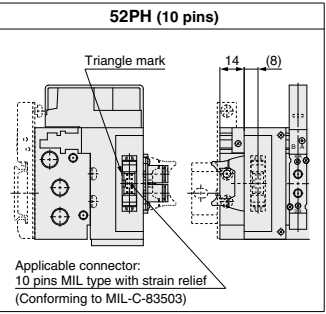
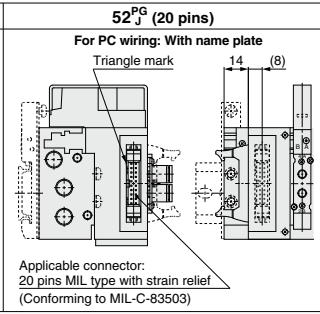
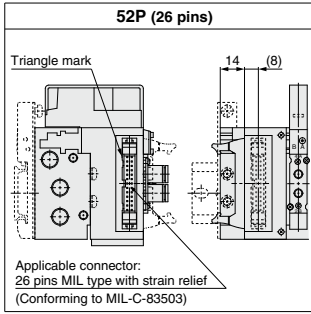
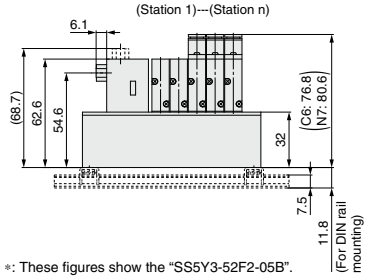
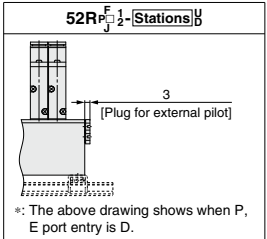
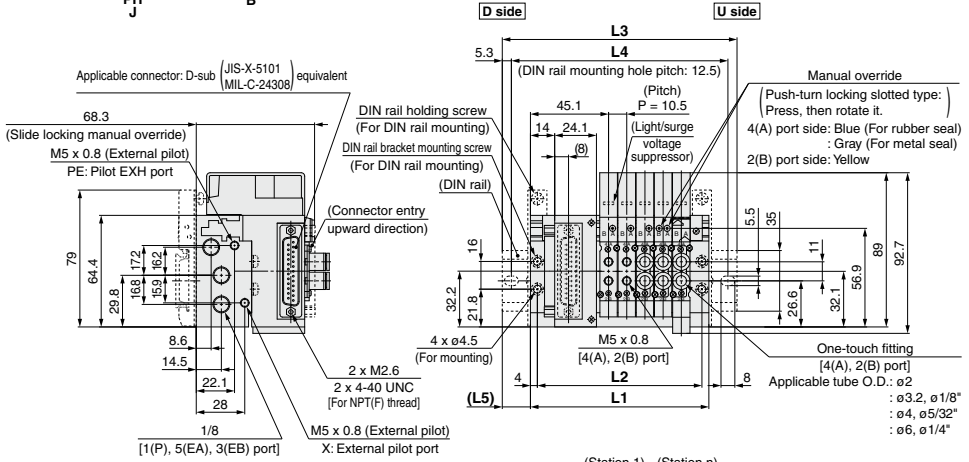
SY3000/5000/7000 Series

Dimensions: **SY3000 Series**

**Plug-in
Metal Base**

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

SS5Y3-52(R) $\overset{F}{P} \frac{1}{2}$ - Stations $\overset{U}{B}$ □ (D)



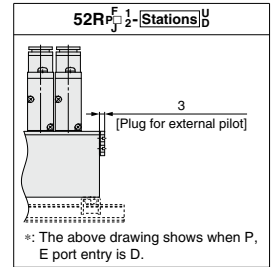
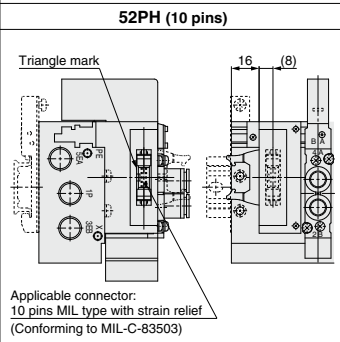
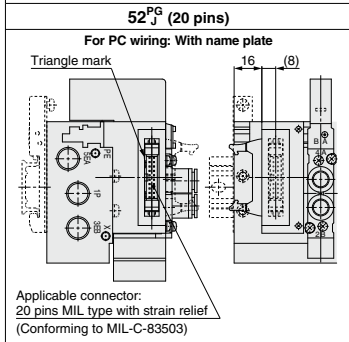
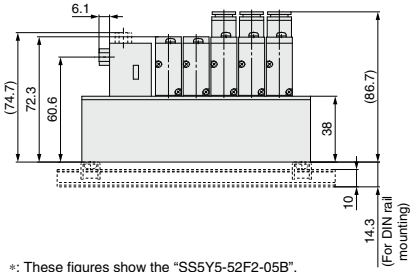
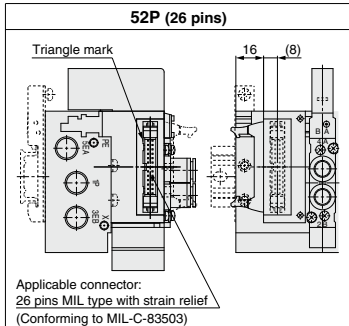
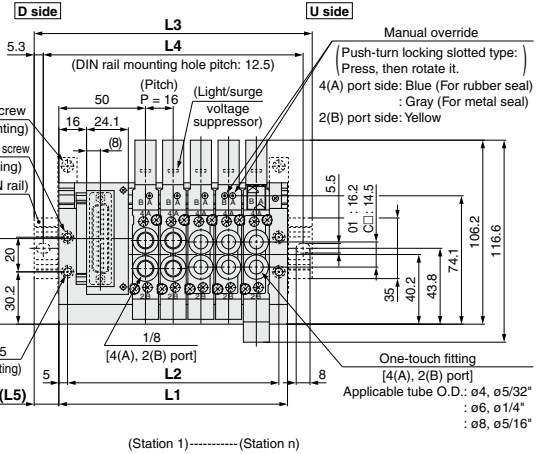
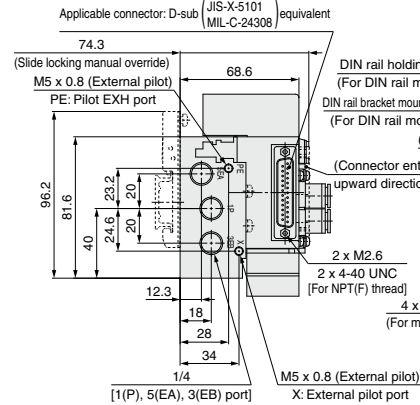
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5
L4	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200
L5	13.5	14.5	15.5	16.5	17.5	18.5	13	14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

Dimensions: SY5000 Series

**Plug-in
Metal Base**

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

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



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

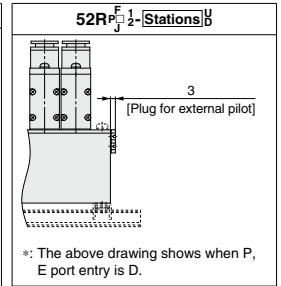
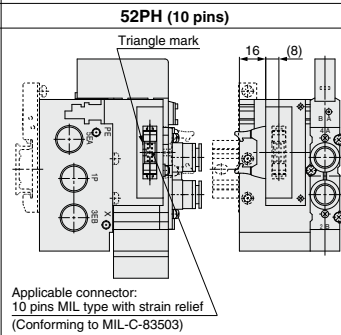
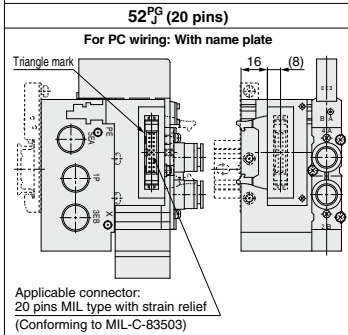
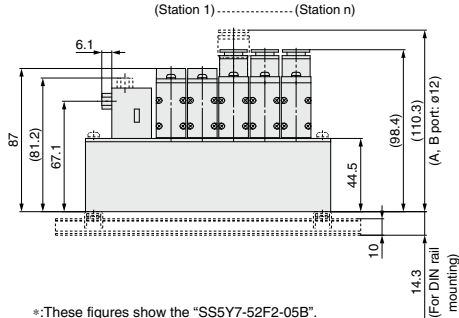
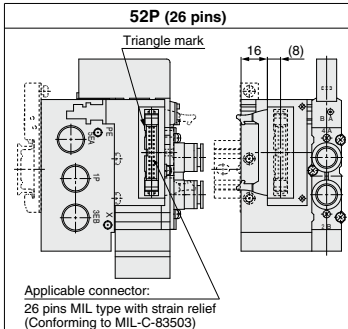
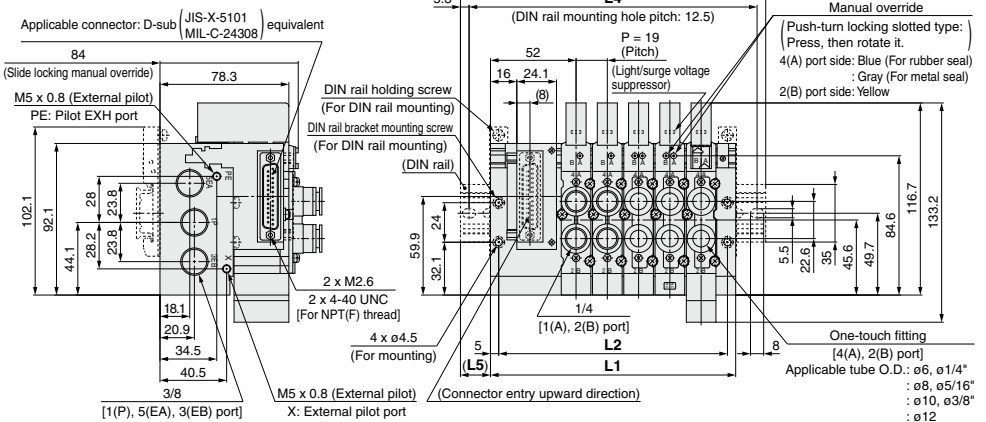
SY3000/5000/7000 Series

Dimensions: **SY7000 Series**

**Plug-in
Metal Base**

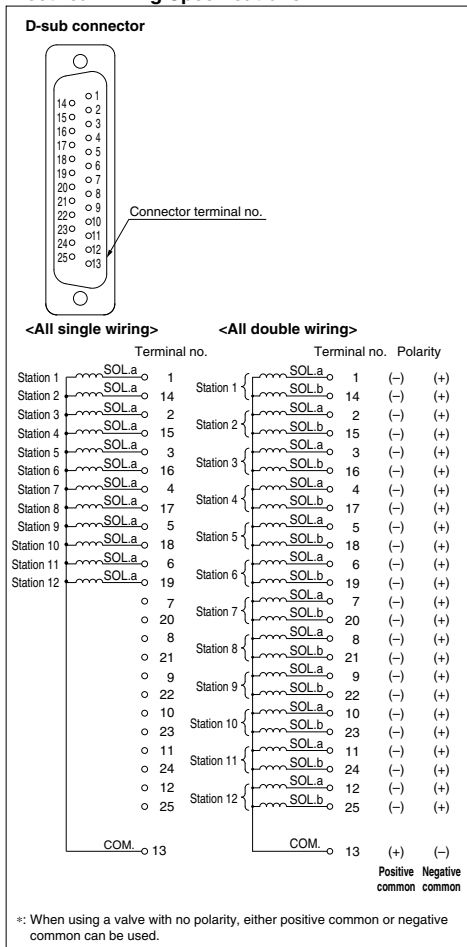
Type 52/Top Ported
D-sub Connector, Flat Ribbon Cable

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

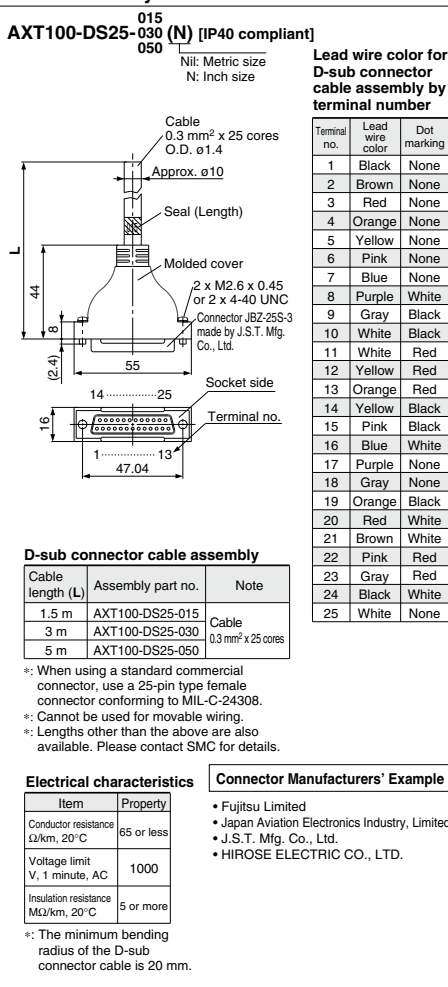


n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	92	111	130	149	168	187	206	225	244	263	282
L2	82	101	120	139	158	177	196	215	234	253	272
L3	123	148	160.5	185.5	198	223	235.5	260.5	273	298	310.5
L4	112.5	137.5	150	175	187.5	212.5	225	250	262.5	287.5	300
L5	15.5	18.5	15.5	18.5	15	18	15	18	14.5	17.5	14.5

Electrical Wiring Specifications



Cable Assembly



SJ

SY

SY

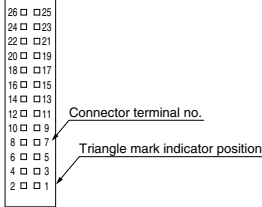
S0700

S0700

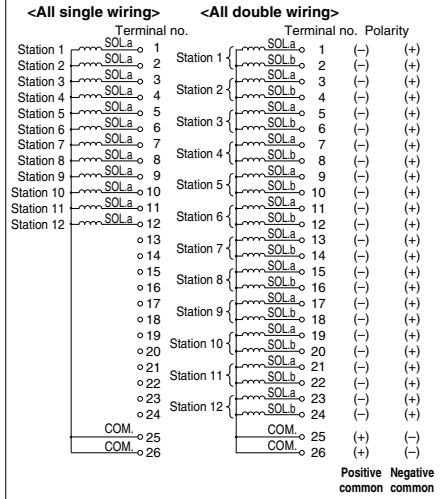
SY3000/5000/7000 Series

Electrical Wiring Specifications

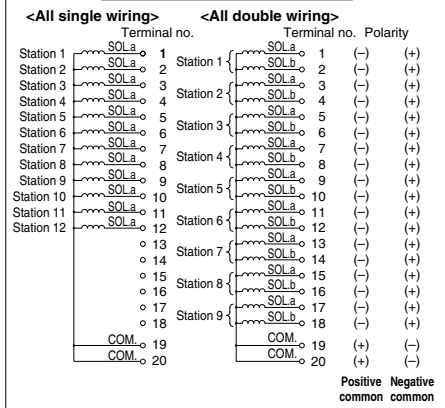
Flat ribbon cable connector



P: Flat ribbon cable (26 pins)



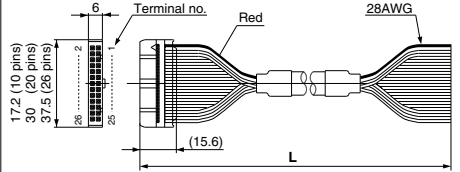
PG: Flat ribbon cable (20 pins)



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

Cable Assembly

10 1
AXT100-FC20-2
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.

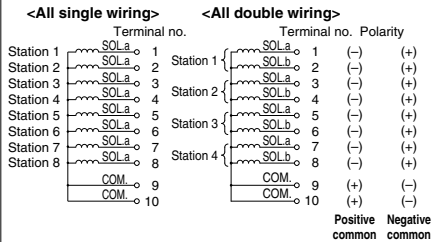
*: Cannot be used for movable wiring.

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

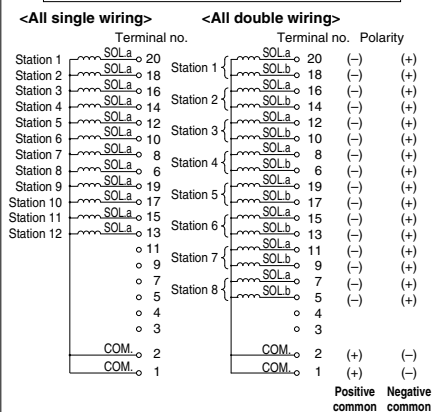
Connector Manufacturers' Example

- HIROSE ELECTRIC CO., LTD.
- 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



Type 50
Side Ported

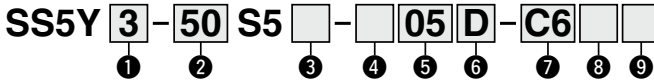
Type 51
Bottom Ported

Plug-in Metal Base EX510

SY3000/5000/7000 Series



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

NII	Positive common
N	Negative common

4 Wiring type

NII	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	ø2	●	—
	C3	ø3.2	●	—
	C4	ø4	●	●
	C6	ø6	●	●
	C8	ø8	—	●
	C10	ø10	—	●
Replaceable	KC2	ø2	●	—
	KC3	ø3.2	●	—
	KC4	ø4	●	●
	KC6	ø6	●	●
	KC8	ø8	—	●
	KC10	ø10	—	●
	KC12	ø12	—	●
M ^{*1}	Mixed sizes	●	●	

P, E port size (Thread piping) 1/8 1/4 3/8

One-touch fitting (Inch)

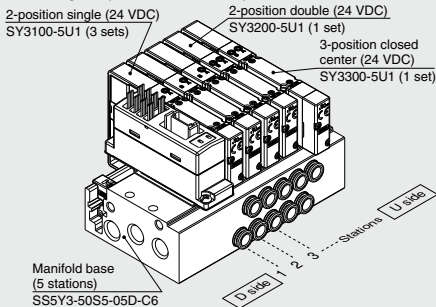
Symbol	A, B port	SY3000	SY5000	SY7000
Fixed	N1	ø1/8"	●	—
	N3	ø5/32"	●	—
	N7	ø1/4"	●	●
	N9	ø5/16"	—	●
	N11	ø3/8"	—	●
	Replaceable	KN1	ø1/8"	●
KN3		ø5/32"	●	—
KN7		ø1/4"	●	●
KN9		ø5/16"	—	●
KN11		ø3/8"	—	●
M ^{*1}	Mixed sizes	●	●	

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.

How to Order Manifold Assembly

Example (SS5Y3-50S5-□)



SS5Y3-50S5-05D-C6 ... 1 set (Type 50 5-station manifold base part no.)

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

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

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

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

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

*: When mixing ported configurations, select from page 207.

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.

SY
SY
S0700
S0700

8 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

9 Mounting

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

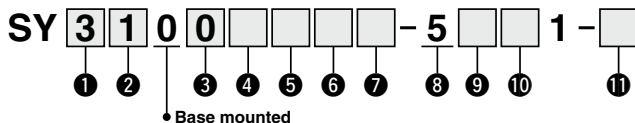
Specify a longer rail than the standard length.

- *: Only direct mounting is available for Type 51 (Bottom ported).
- *: Refer to page 394 for the fixation of DIN rail mounting type manifold.

For details about the EX510 Gateway-type Serial Transmission System, refer to pages 878 to 906 and the Operation Manual. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

How to Order Valves (With mounting screw)

Refer to page 136 for valve specifications.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A ⁻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

Nil	Internal pilot
R	External pilot

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

Nil	None
H	Built-in

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

6 Pilot valve option

Nil	Standard (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

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

- *: Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.
- *: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

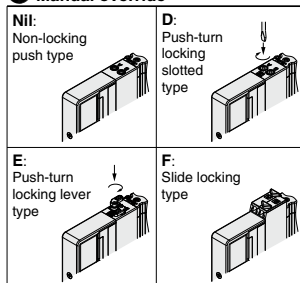
5	24 VDC
---	--------

9 Light/surge voltage suppressor and common specification

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

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

10 Manual override

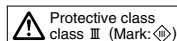


- *: Refer to page 154 for with the safety slide locking manual override.

11 Type of mounting screw

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

- *: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.
- *: **When ordering a valve individually, the base gasket is not included.** Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to page 212 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.

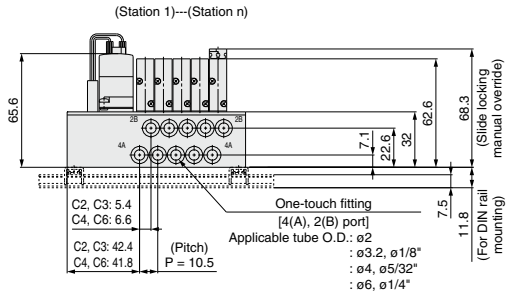
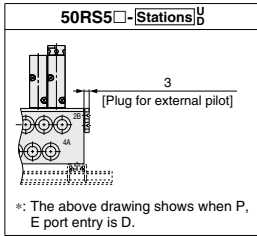
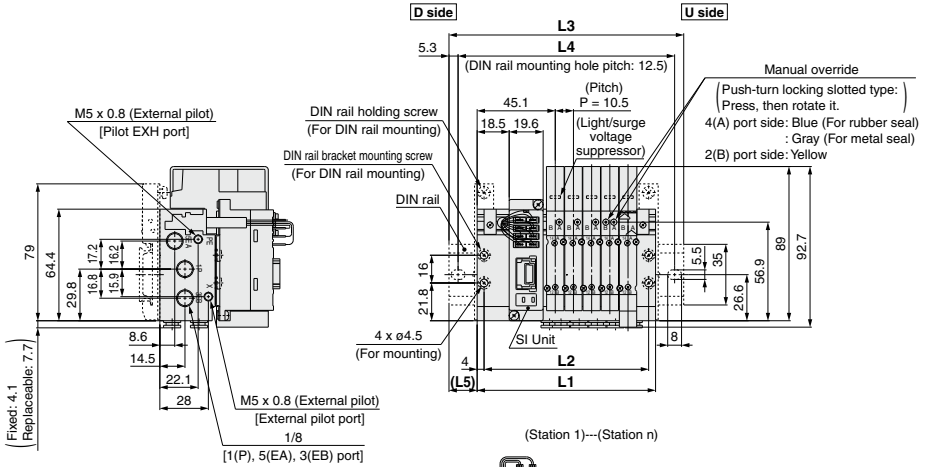


SY3000/5000/7000 Series

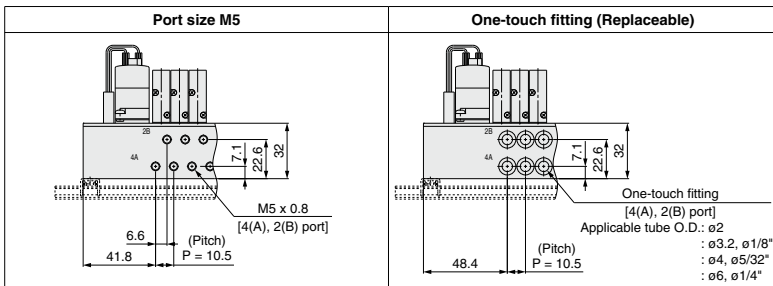
Plug-in Metal Base	Type 50/Side Ported
	EX510

Dimensions: SY3000 Series

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



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



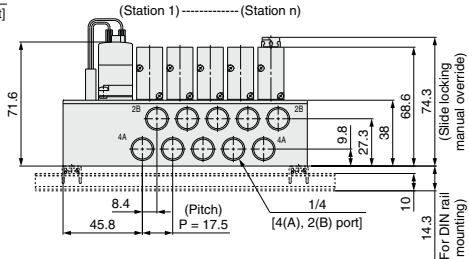
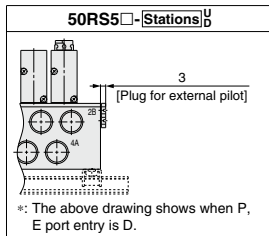
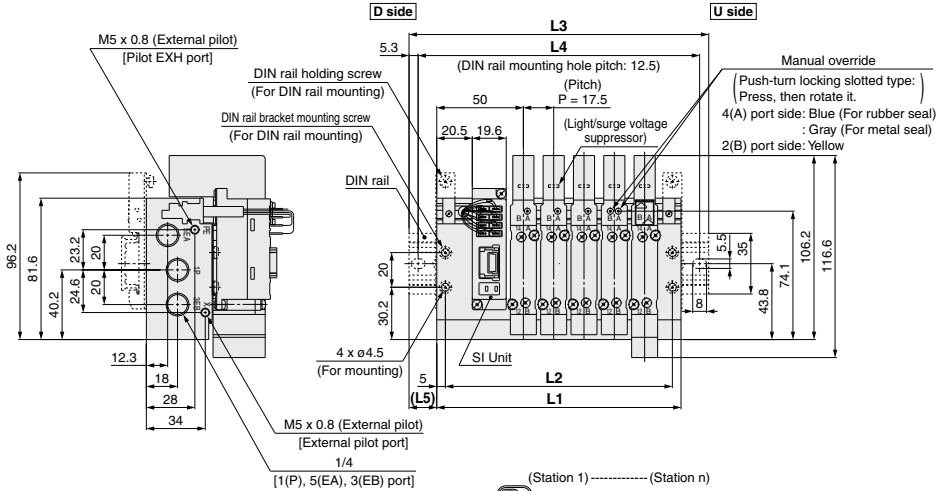
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5
L4	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200
L5	13.5	14.5	15.5	16.5	17.5	18.5	13	14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

Plug-in
Metal Base

Type 50/Side Ported
EX510

Dimensions: **SY5000 Series**

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



*: 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

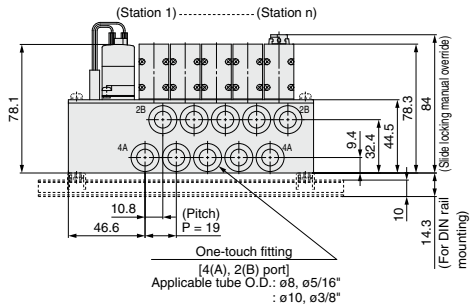
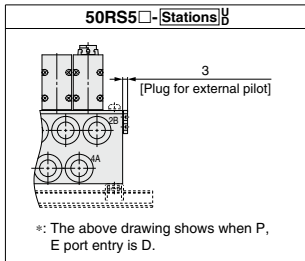
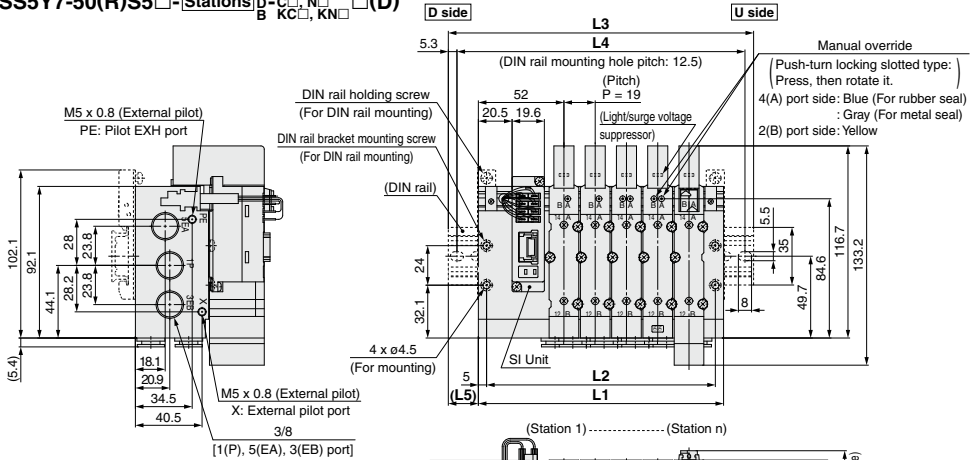
SY3000/5000/7000 Series

**Plug-in
Metal Base**

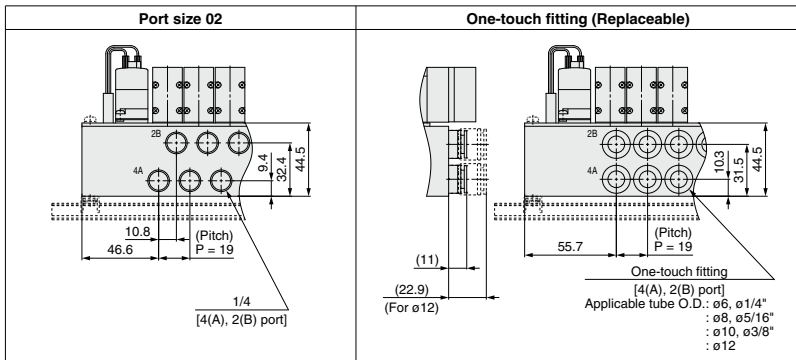
**Type 50/Side Ported
EX510**

Dimensions: SY7000 Series

SS5Y7-50(R)S5□-(Stations) $\frac{U}{B}$ C□, N□, KC□, KN□ (D)



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



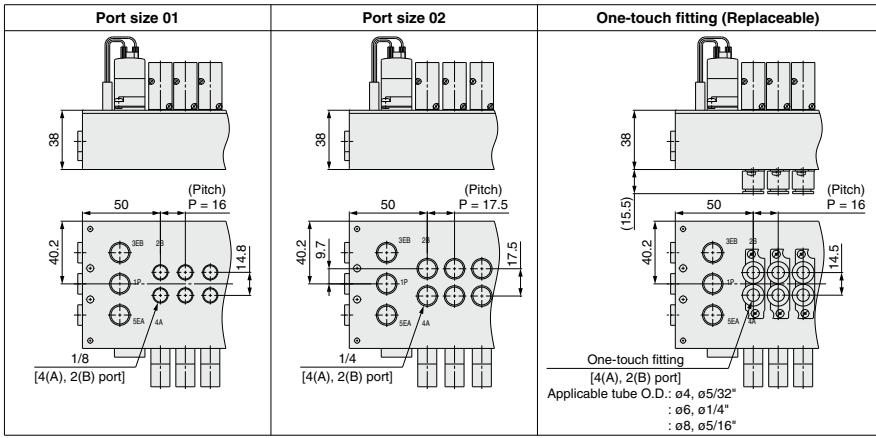
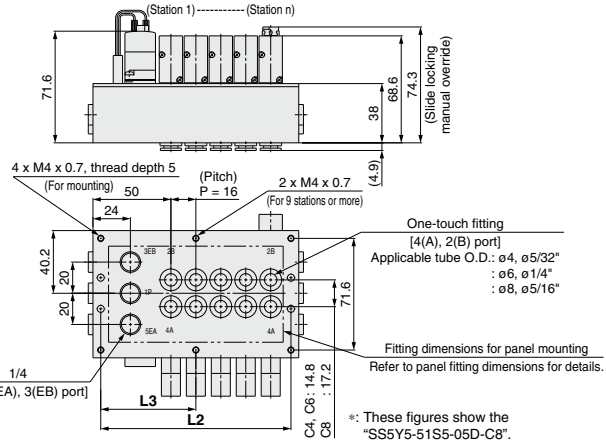
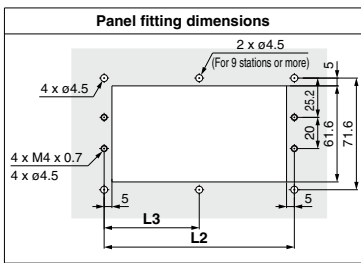
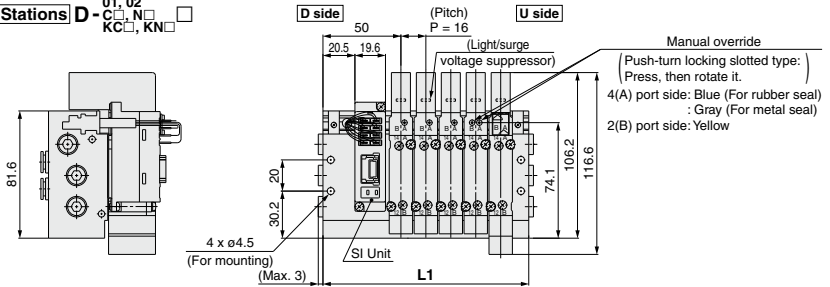
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	92	111	130	149	168	187	206	225	244	263	282
L2	82	101	120	139	158	177	196	215	234	253	272
L3	123	148	160.5	185.5	198	223	235.5	260.5	273	298	310.5
L4	112.5	137.5	150	175	187.5	212.5	225	250	262.5	287.5	300
L5	15.5	18.5	15.5	18.5	15	18	15	18	14.5	17.5	14.5

SY3000/5000/7000 Series

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

Dimensions: SY5000 Series

SS5Y5-51S5-[Stations] D-01, 02
 C□, N□, KC□, KN□



Port Size 01, C□, N□, KC□, KN□

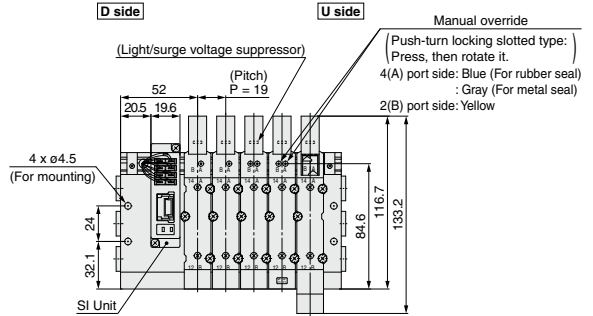
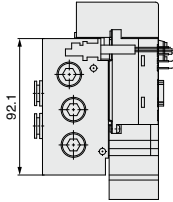
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	—	—	—	—	—	—	—	93	101	109	117

Port Size 02

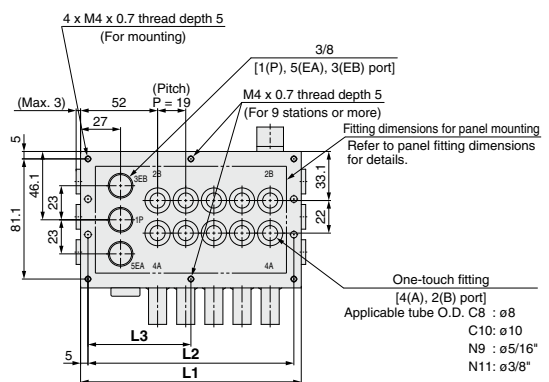
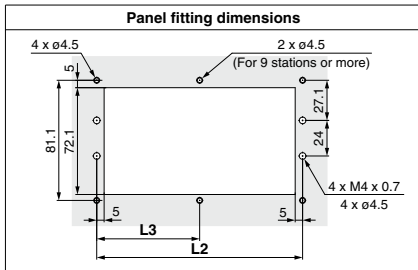
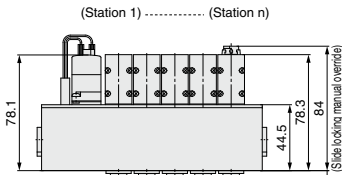
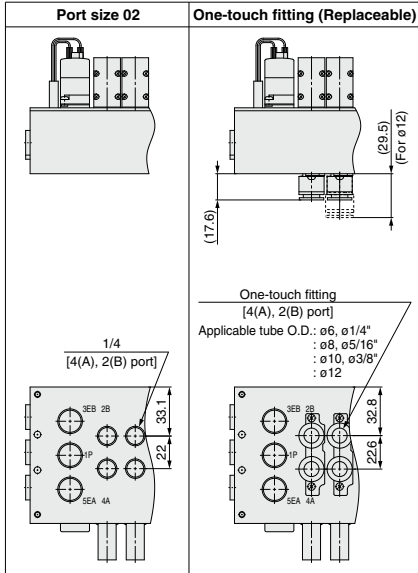
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	—	—	—	—	—	—	—	100.5	109.3	118	126.8

Dimensions: **SY7000 Series**

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



SJ
SY
SY
S0700
S0700



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

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

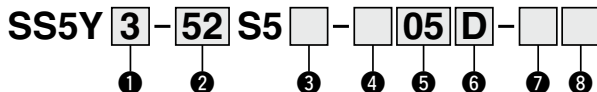
Type 52
Top Ported

Plug-in Metal Base EX510

SY3000/5000/7000 Series



How to Order Manifold



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type

52	Top ported
52R	Top ported, External pilot

3 SI Unit output polarity

Nil	Positive common
N	Negative common

4 Wiring type

Nil	All double wiring ^{*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.

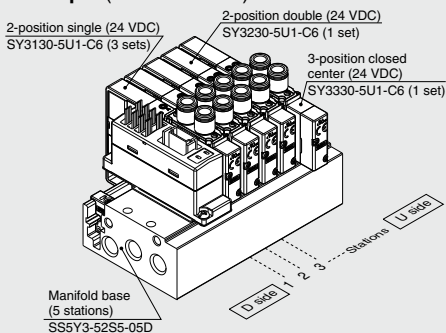
6 P, E port entry

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 center part no.)

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

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

7 Thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

8 Mounting

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

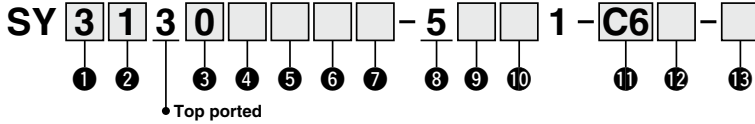
Specify a longer rail than the standard length.

*: Refer to page 394 for the fixation of DIN rail mounting type manifold.

For details on the EX510 Gateway-type Serial Transmission System, refer to pages 878 to 906 and the Operation Manual. Please download the Operation Manual via SMC website, <http://www.smworld.com>

How to Order Valves (With mounting screw)

Refer to page 136 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 center
4	3-position	Exhaust center
5	3-position	Pressure center
A*1	4-position dual	N.C./N.C.
B*1	4-position dual	N.O./N.O.
C*1	3-port	N.C./N.O.

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

3 Seal type

0	Rubber seal
1	Metal seal

4 Pilot type

NII	Internal pilot
R	External pilot

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

NII	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

NII	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

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

*: Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.
*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

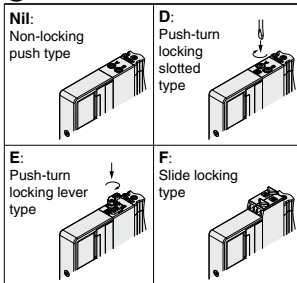
5	24 VDC
---	--------

9 Light/surge voltage suppressor and common specification

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

*: 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 NII (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 154 for with the safety slide locking manual override.

11 A, B port size

Thread piping

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

One-touch fitting (Metric)

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

One-touch fitting (Inch)

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

12 Thread type

NII	Rc
F	G
N	NPT
T	NPTF

*: Only NII is available for M5.

13 Type of mounting screw

NII	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)

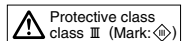
*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

*: **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 212 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.



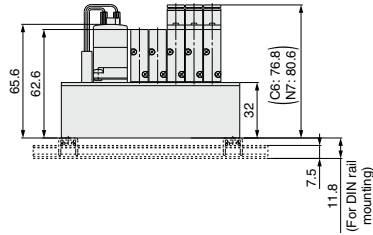
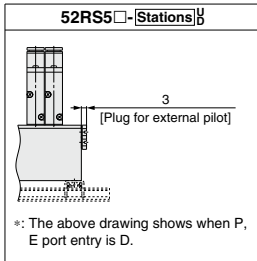
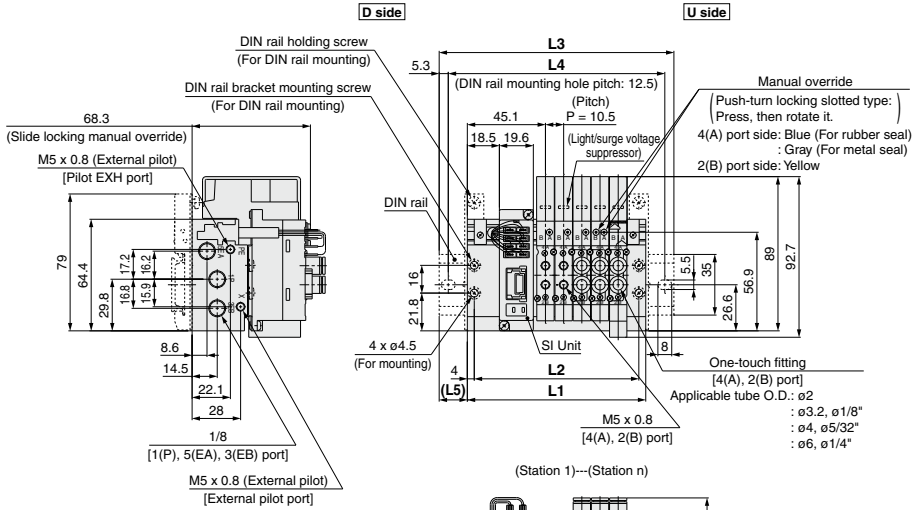
SY3000/5000/7000 Series

Plug-in
Metal Base

Type 52/Top Ported
EX510

Dimensions: **SY3000 Series**

SS5Y3-52(R)S5□- $\frac{U}{b}$ -□(D)



*: 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

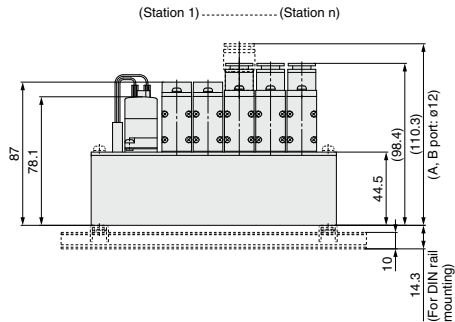
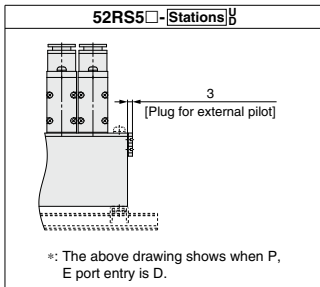
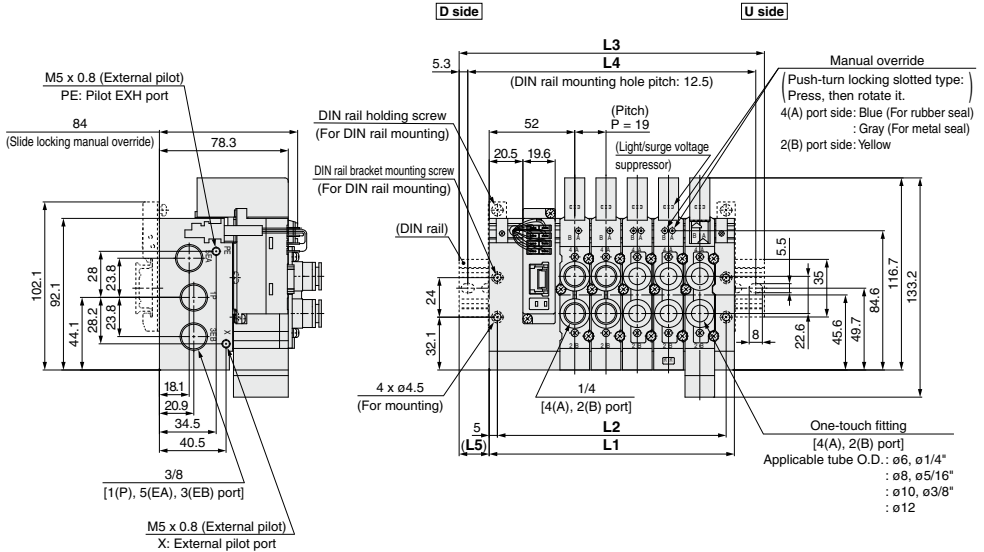
SY3000/5000/7000 Series

Dimensions: SY7000 Series

Plug-in
Metal Base

Type 52/Top Ported
EX510

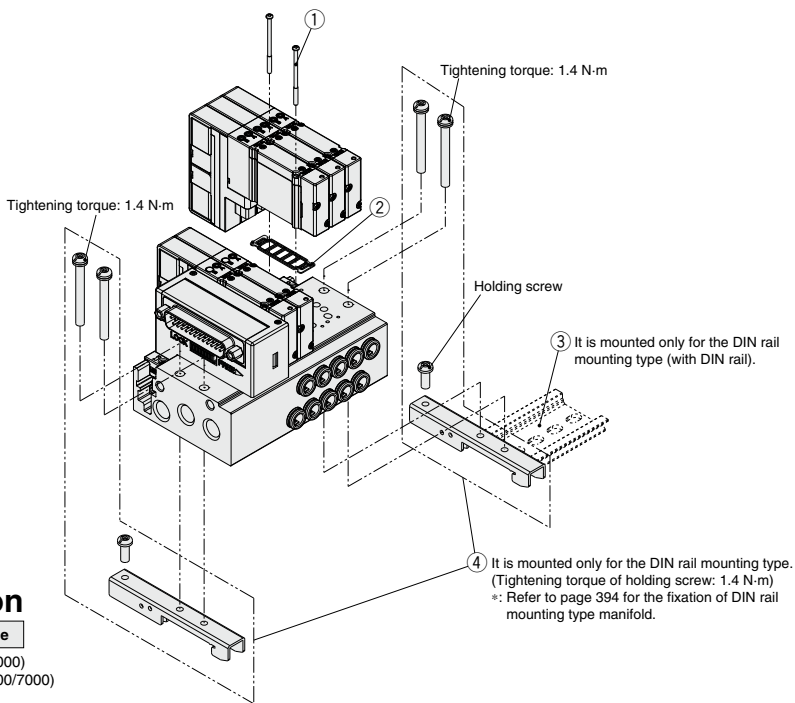
SS5Y7-52(R)S5□-Stations_U□□(D)



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

SY3000/5000/7000 Series 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)

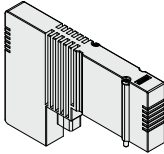
Manifold Parts No.

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 plug-in 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 372.
④	Clamp bracket assembly (for plug-in 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).

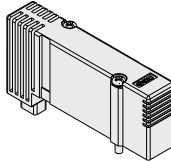
Manifold Parts No.**Blanking plate assembly (With mounting screw)**

Used when expecting valve additions, or for maintenance.

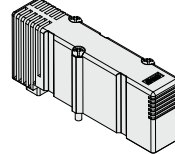
A structure to prevent screws falling out is in place on the blanking plate, making it much harder for the mounting screws to fall out.



SY30M-26-2A (-B)



SY50M-26-2A (-B)



SY70M-26-2A (-B)

Refer to pages 383, 385, 387 for dimensions.

Refer to pages 373 to 377 for individual SUP/EXH and other options.

How to Order Blanking Plate Assembly

SY OM-26-2A-

● **Series**

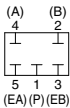
3	SY3000
5	SY5000
7	SY7000

● **Option for mounting**

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

● **Base type**

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



Circuit diagram

SJ

SY

SY

S0700

S0700

Plug-in Connector Connecting Base

SJ

SY

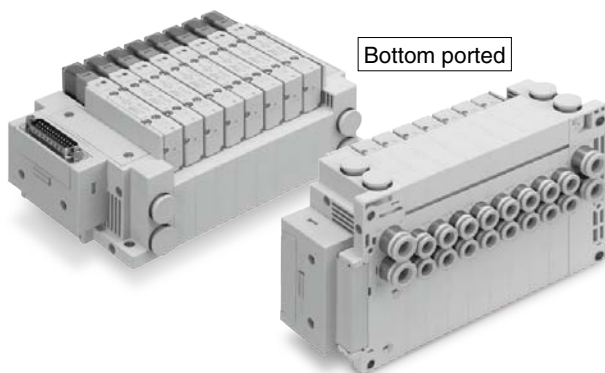
SY

S0700

S0700



Side ported



Bottom ported



Top ported

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

Plug-in Connector Connecting Base



Manifold Specifications

Model	D-sub connector		Flat ribbon cable			Terminal block box (Spring type)	Terminal block box	Lead wire	Circular connector	Serial wiring			
	F type	FW type	P type	PG type J type G type	PH type	TC type	T type	L type	M type	S6□ type (EX600)	SA2 type (EX500) SA4□ type (EX126)	SA3 type (EX500) S□ type (EX250) (EX260)	S3□ type (EX120)
Manifold type	Plug-in connector connecting base												
SUP/EXH port type	Common SUP/EXH (Common for 3/5 port)												
Valve stations	2 to 24 stations		2 to 18 stations (J/G type: 2 to 16 stations)	2 to 8 stations	2 to 24 stations	2 to 20 stations	2 to 24 stations		2 to 16 stations	2 to 24 stations	2 to 16 stations		
Applicable connector	D-sub connector Conforming to MIL-C-24308 JIS-X-5101 (Refer to page 234.)	Dedicated connector (Refer to page 234.)	Flat ribbon cable connector with strain relief Conforming to MIL-C-83503 (Refer to page 236.)			Socket: 26 pins MIL type	Socket: 20 pins MIL type	Socket: 10 pins MIL type	—				
Internal wiring	Positive common, Negative common												
Port size	1(P), 3/5(E) port	SY3000	ø8 One-touch fitting ø5/16" One-touch fitting										
		SY5000	ø10 One-touch fitting ø3/8" One-touch fitting										
		SY7000	ø12 One-touch fitting ø1/2" One-touch fitting										
	4(A), 2(B) port	SY3000	ø2 One-touch fitting, ø3.2 One-touch fitting, ø4 One-touch fitting, ø6 One-touch fitting ø1/8" One-touch fitting, ø5/32" One-touch fitting, ø1/4" One-touch fitting										
		SY5000	ø4 One-touch fitting, ø6 One-touch fitting, ø8 One-touch fitting ø5/32" One-touch fitting, ø1/4" One-touch fitting, ø5/16" One-touch fitting										
		SY7000	ø6 One-touch fitting, ø8 One-touch fitting, ø10 One-touch fitting, ø12 One-touch fitting ø1/4" One-touch fitting, ø5/16" One-touch fitting, ø3/8" One-touch fitting										
Enclosure (Based on IEC60529)	IP40	IP67 ^{*1}	IP40			IP67 ^{*1}		IP67 ^{*1} I/O Unit: partially IP40	IP67 ^{*1} EX500 GW Unit: Input Unit: IP65	IP67 ^{*1} EX260 D-sub communication connector: IP40 EX500 GW Unit: IP65	IP20		

*1: In the case of a metal seal, there are restrictions in the operating environment. Refer to the Specific Product Precautions (page 389).

Manifold Flow Rate Characteristics¹/Manifold Weight

Valve Seal Type: Rubber Seal

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

SJ

SY

SY

S0700

S0700

Valve Seal Type: Metal Seal

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

*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 138 for the appropriate number of stations.

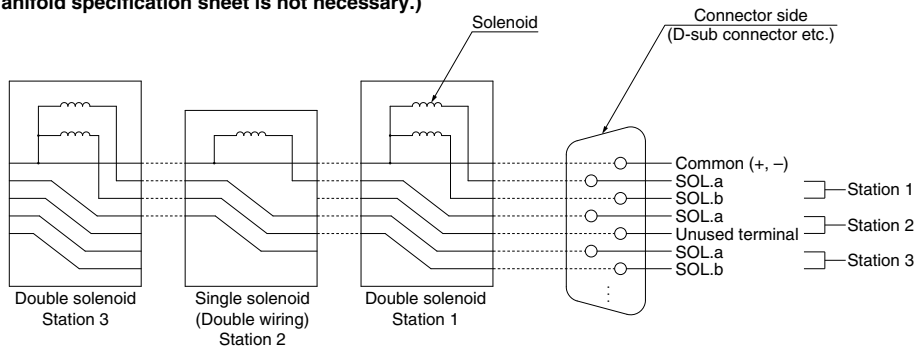
*: Calculation of effective area S and sonic conductance C: $S = 5.0 \times C$

SY3000/5000/7000 Series

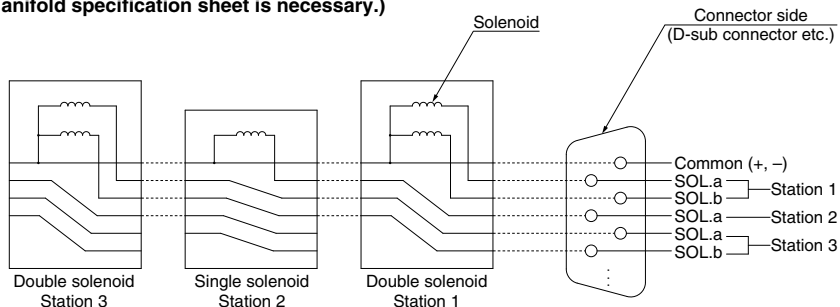
Connector Wiring Layout

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.

Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base

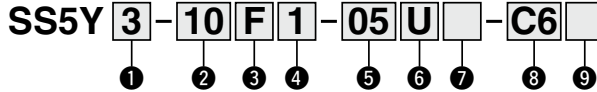
D-sub Connector Flat Ribbon Cable PC Wiring

SY3000/5000/7000 Series



How to Order Manifold

Refer to pages 331 (SY5000) and 332 (SY7000) for dimensions of Type 11/Bottom ported type.



1 Series

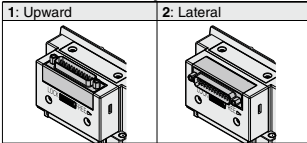
3	SY3000
5	SY5000
7	SY7000

2 Type

10	Side ported
11	Bottom ported*1

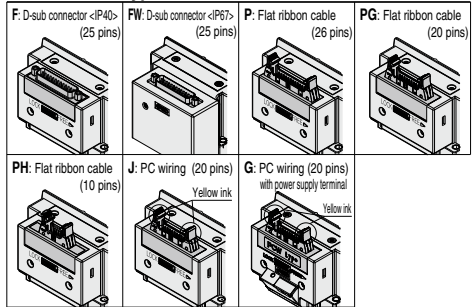
*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 336).

4 Connector entry direction



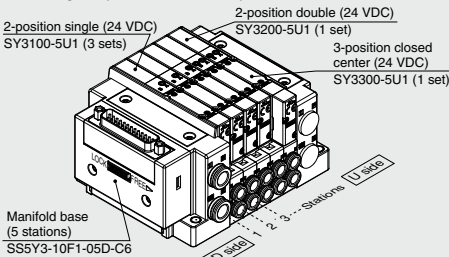
*: the connector entry direction for connector type "FW" D-sub connector <IP67> can not be rotated. If it is necessary to change, order connector block assembly (page 354) separately.

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 center part no.)

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

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

*: When mixing top ported configurations, select from page 233.

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)		P: Flat ribbon cable (26 pins)	
Symbol	Stations	Symbol	Stations
02	2 stations	02	2 stations
⋮	⋮	⋮	⋮
12	12 stations	12	12 stations
02	2 stations	02	2 stations
⋮	⋮	⋮	⋮
24	24 stations	24	24 stations
Note		Note	
Double wiring*1		Double wiring*1	
Specified layout*2 (Available up to 24 solenoids)		Specified layout*2 (Available up to 24 solenoids)	

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

J/G: PC wiring (20 pins)	
Symbol	Stations
02	2 stations
⋮	⋮
08	8 stations
02	2 stations
⋮	⋮
16	16 stations
Note	
Double wiring*1	
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

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

7 SUP/EXH block assembly

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

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

9 Mounting and Option

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

DIN Rail Option

Nil	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 394 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
C2	Straight	ø2	●	—	—	—
		ø3.2	●	—	—	—
		ø4	●	●	—	●
		ø6	●	●	●	●
		ø8	—	●	●	●
		ø10	—	—	●	●
C12	Straight	ø12	—	—	●	●
		ø12	—	—	●	●
CM⁻¹	Straight port, mixed sizes	●	●	●	●	
L4	Upward	ø4	●	●	—	—
		ø6	●	●	—	—
		ø8	—	●	●	—
		ø10	—	—	●	—
		ø12	—	—	●	—
B4	Downward	ø4	●	●	—	—
		ø6	●	●	—	—
		ø8	—	●	●	—
		ø10	—	—	●	—
		ø12	—	—	●	—
LM⁻¹	Elbow port, mixed sizes (Including upward and downward piping)	ø8	●	●	—	—
		ø10	●	●	—	—
P, E port size (One-touch fittings)		ø8	ø10	ø12	ø10	ø12

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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
N1	Straight	ø1/8"	●	—	—	—
		ø5/32"	●	●	—	●
		ø1/4"	●	●	—	●
		ø5/16"	—	●	●	●
		ø3/8"	—	—	●	●
CM⁻¹	Straight port, mixed sizes	●	●	●	●	
LN3	Upward	ø5/32"	●	—	—	—
		ø1/4"	●	—	—	—
		ø5/16"	—	●	—	—
		ø3/8"	—	—	●	—
		ø1/2"	—	—	—	●
BN3	Downward	ø5/32"	●	—	—	—
		ø1/4"	●	—	—	—
		ø5/16"	—	●	—	—
		ø3/8"	—	—	●	—
		ø1/2"	—	—	—	●
LM⁻¹	Elbow port, mixed sizes (Including upward and downward piping)	ø5/16"	●	●	—	—
		ø3/8"	●	●	—	—
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"

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

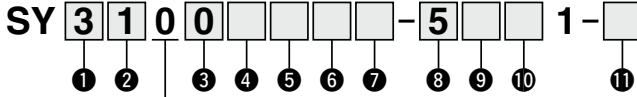
The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 373 to 375).

SY3000/5000/7000 Series

How to Order Valves (With mounting screw)

Refer to page 136 for valve specifications.



Base mounted

1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A ^{*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

NII	Internal pilot
R	External pilot

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

NII	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 379 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

NII	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

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

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

*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

5	24 VDC
6	12 VDC

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

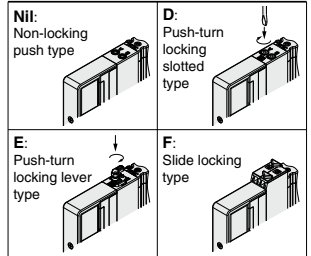
9 Light/surge voltage suppressor and common specification

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

*: 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 154 for with the safety slide locking manual override.

11 Type of mounting screw

NII	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.

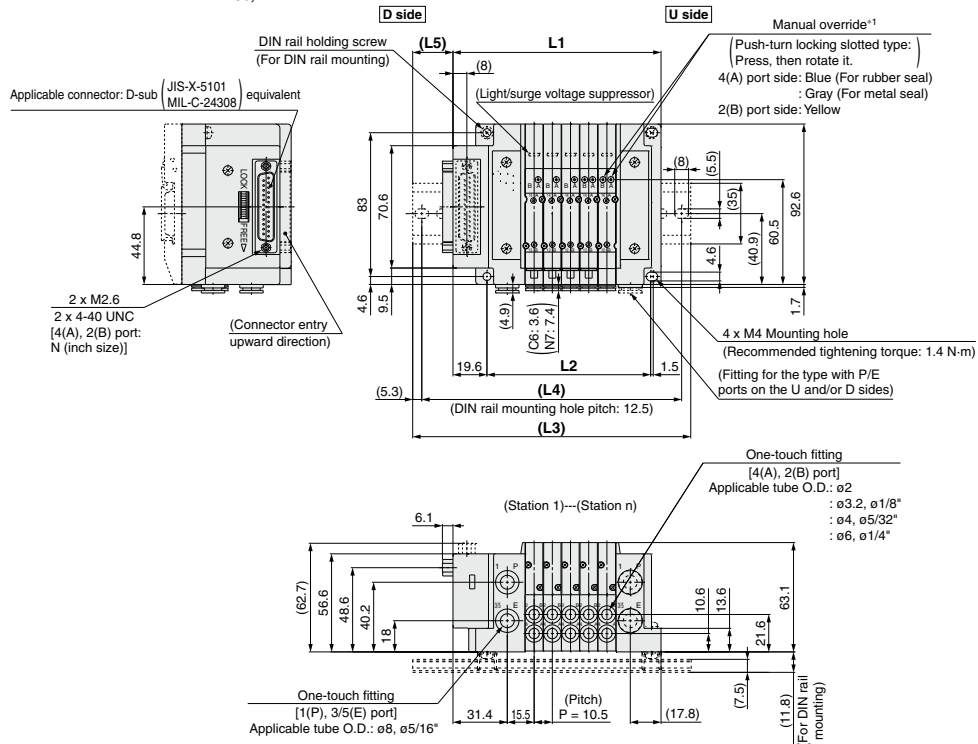
Refer to page 367 for part numbers of the base gasket and mounting screw.

*: "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: **SY3000 Series**

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

SS5Y3-10F₂ Stations $\begin{matrix} \text{U} \\ \text{D} \end{matrix}$ $\begin{matrix} \text{C2} \\ \text{C3} \\ \text{C4} \\ \text{C6} \end{matrix}$ $\begin{matrix} \text{N1} \\ \text{N3} \\ \text{N7} \end{matrix}$ (D)



SJ
SY
SY
S0700
S0700

*1: Refer to page 328 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
*2: These figures show the "SS5Y3-10F2-05D-C6".
*3: Refer to page 333 for dimensions of A or B port top-ported type.

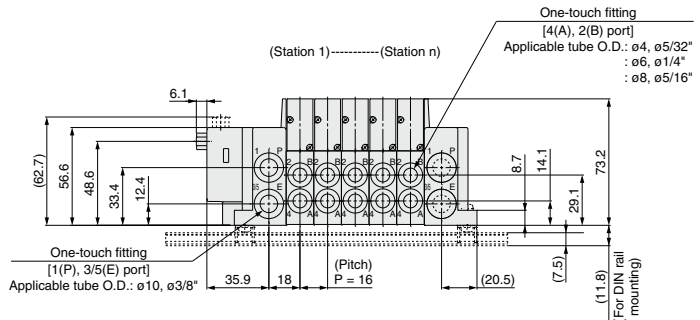
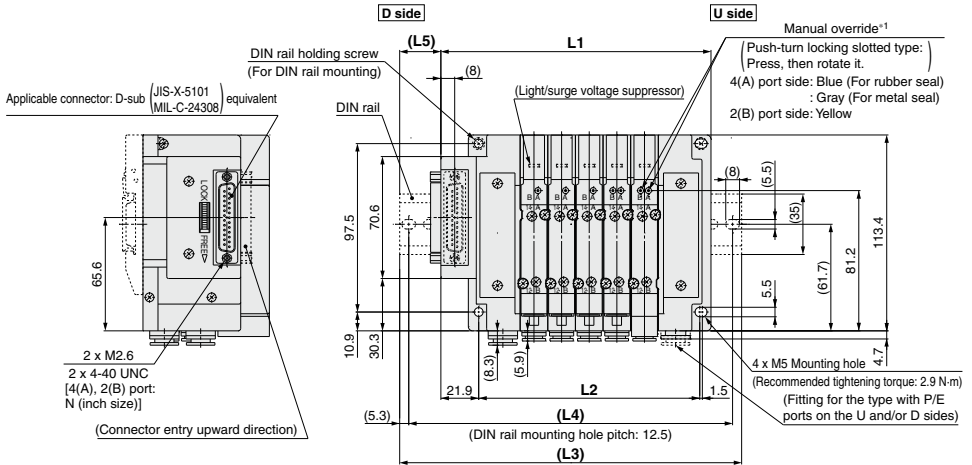
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	88.6	99.1	109.6	120.1	130.6	141.1	151.6	162.1	172.6	183.1	193.6	204.1	214.6	225.1	235.6	246.1	256.6	267.1	277.6	288.1	298.6	309.1	319.6
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5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

SY3000/5000/7000 Series

Dimensions: **SY5000 Series**

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

SS5Y5-10F₂ - Stations $\begin{matrix} U & C4, N3 \\ D & C6, N7 (D) \\ B & C8, N9 \end{matrix}$



*1: Refer to page 329 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

*2: These figures show the "SS5Y5-10F2-05D-CB".

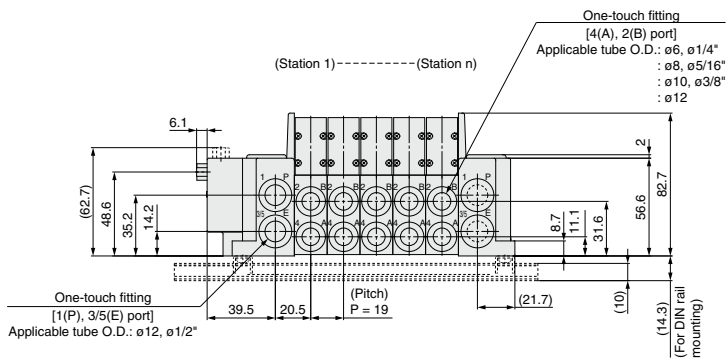
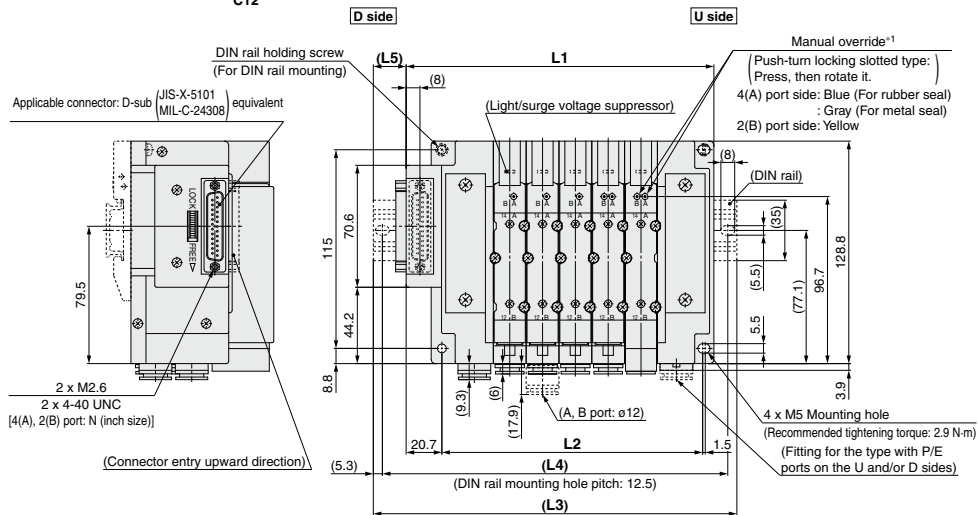
*3: Refer to page 334 for dimensions of A or B port top-ported type.

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

Dimensions: **SY7000 Series**

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

SS5Y7-10F₂-Stations $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$ $\begin{matrix} \text{C6, N7} \\ \text{C8, N9} \\ \text{C10, N11,} \\ \text{C12} \end{matrix}$ (D)



*1: Refer to page 330 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
 *: These figures show the "SS5Y7-10F2-05D-C10".
 **: Refer to page 335 for dimensions of A or B port top-ported type.

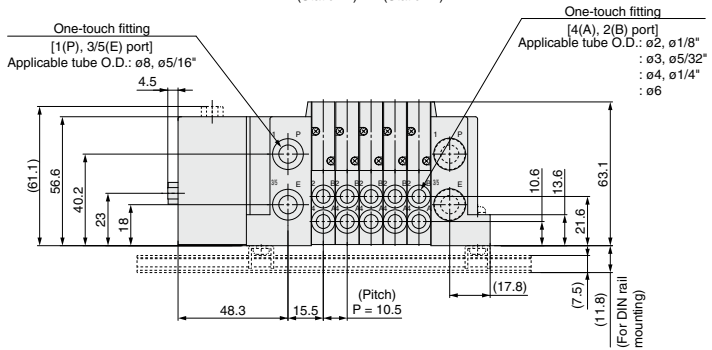
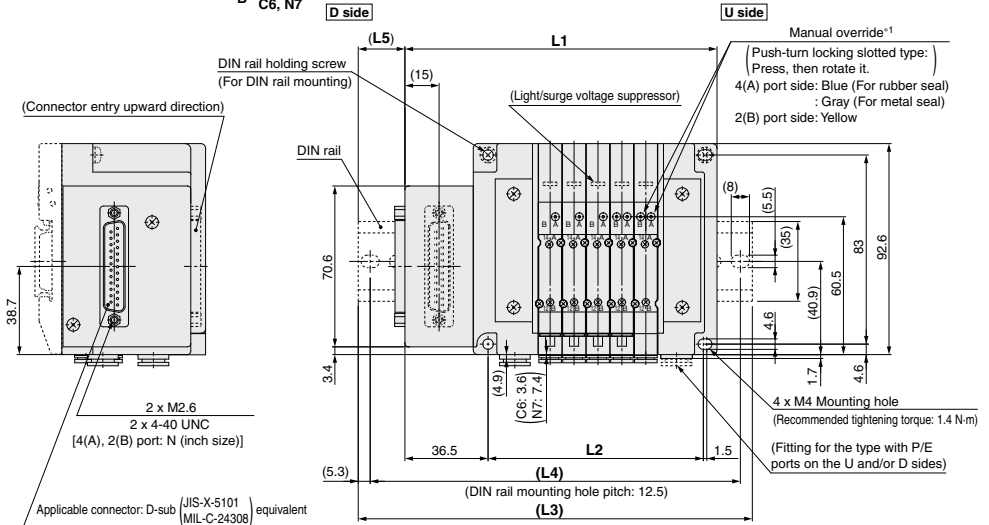
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	121.2	140.2	159.2	178.2	197.2	216.2	235.2	254.2	273.2	292.2	311.2	330.2	349.2	368.2	387.2	406.2	425.2	444.2	463.2	482.2	501.2	520.2	539.2
L2	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360	379	398	417	436	455	474	493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

SY3000/5000/7000 Series

Dimensions: **SY3000 Series**

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

SS5Y3-10FW_{1/2} - 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)



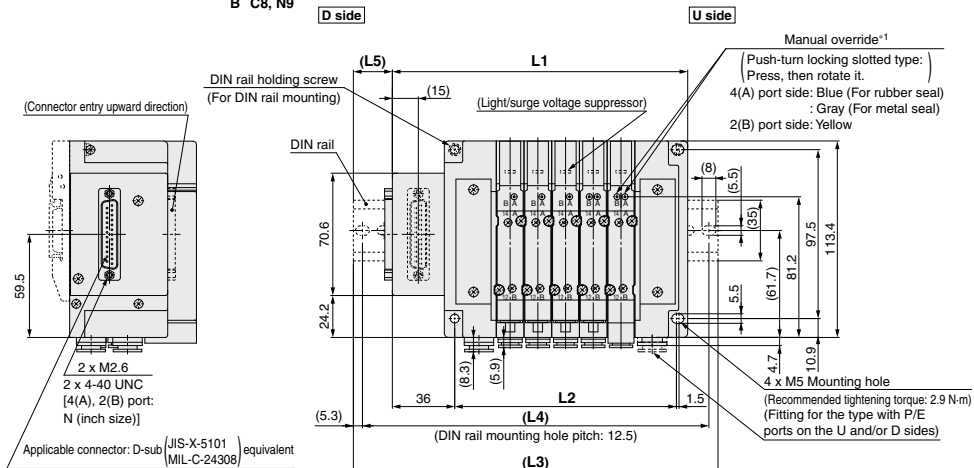
*1: Refer to page 328 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
 *: These figures show the "SS5Y3-10FW2-05D-C6".
 *: Refer to page 333 for dimensions of A or B port top-ported type.

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	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
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	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
L4	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
L5	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

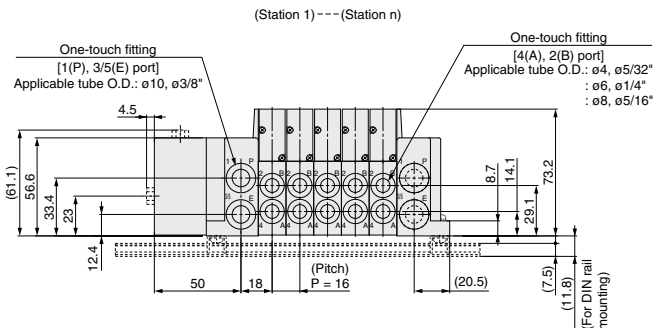
Dimensions: **SY5000 Series**

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

SS5Y5-10FW₂ - Stations U C4, N3
D C6, N7 (D)
B C8, N9



- SJ**
- SY**
- SY**
- S0700**
- S0700**



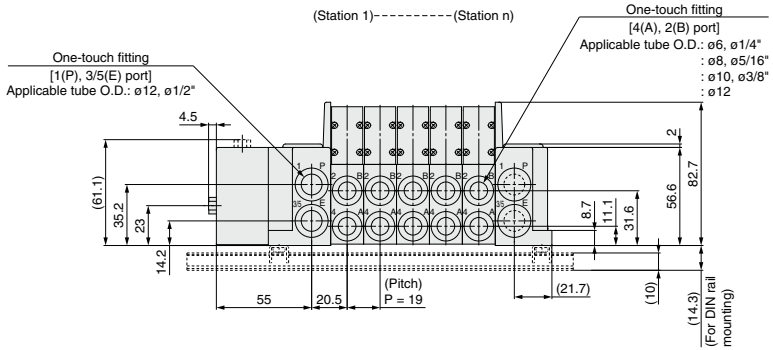
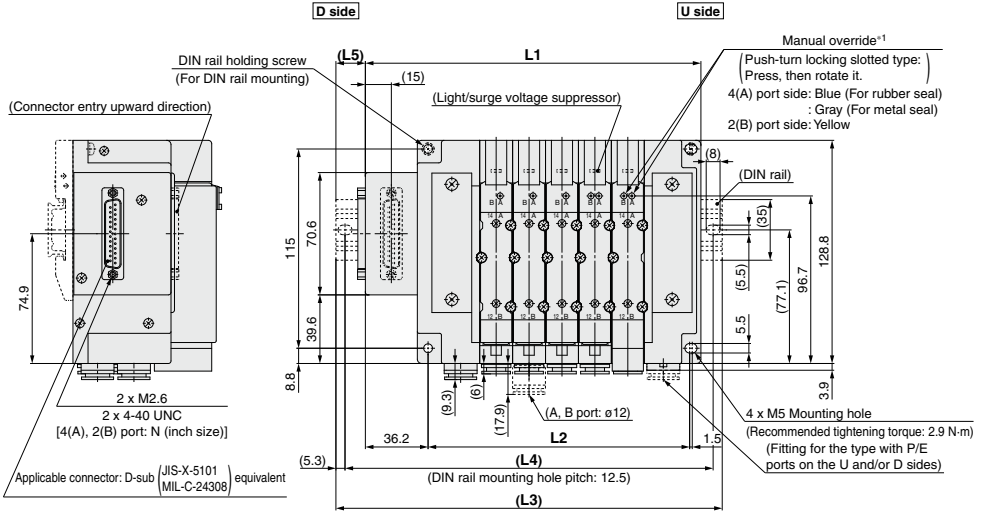
*1: Refer to page 329 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
*: These figures show the "SS5Y5-10FW2-05D-C8".
*: Refer to page 334 for dimensions of A or B port top-ported type.

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

SY3000/5000/7000 Series

Dimensions: SY7000 Series Plug-in Connector Connecting Base Type 10/Side Ported D-sub Connector (IP67)

SS5Y7-10FW₂ - Stations U C6, N7
D C8, N9
B C10, N11(D)
C12



*1: Refer to page 330 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

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

*: Refer to page 335 for dimensions of A or B port top-potted type.

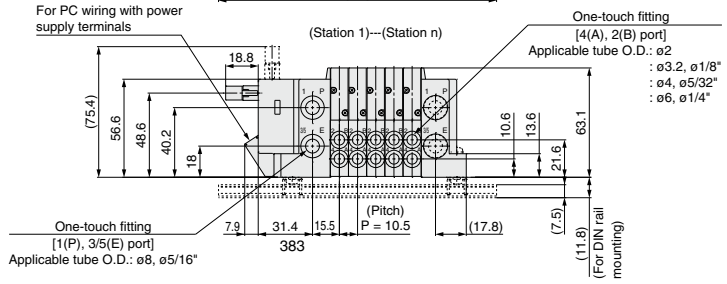
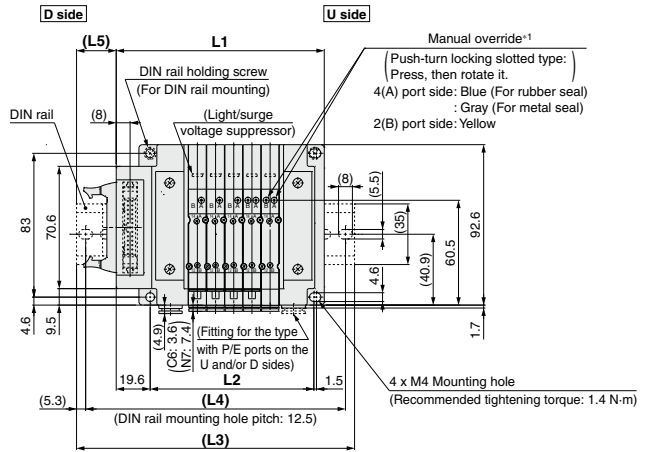
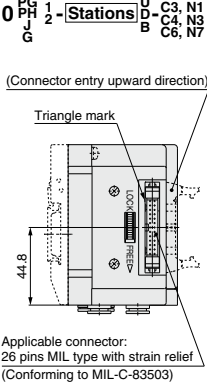
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	136.7	155.7	174.7	193.7	212.7	231.7	250.7	269.7	288.7	307.7	326.7	345.7	364.7	383.7	402.7	421.7	440.7	459.7	478.7	497.7	516.7	535.7	554.7
L2	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360	379	398	417	436	455	474	493	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: SY3000 Series

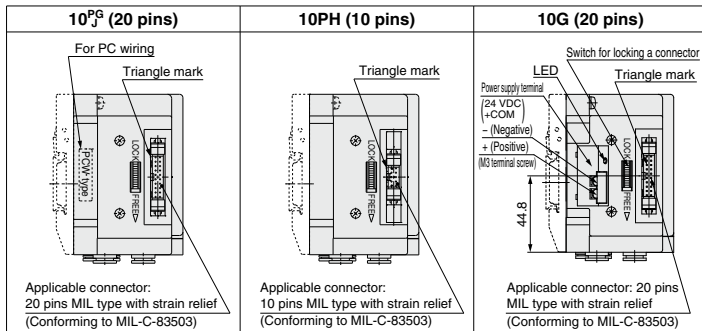
Plug-in Connector Connecting Base

Type 10/Side Ported
Flat Ribbon Cable

SS5Y3-10^P_{PH}^G - (Stations) U_B C₂ C₃ N₁ (D)
C₄ C₅ N₃ C₆ N₇



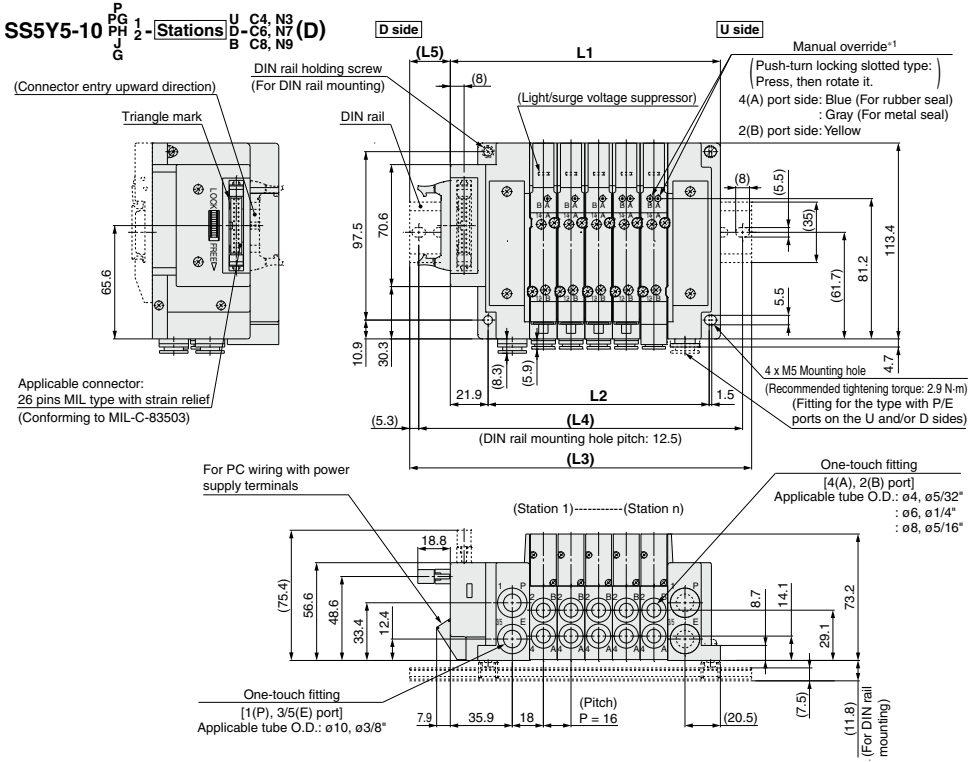
- *1: Refer to page 328 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
- *2: These figures show the "SS5Y3-10P2-05D-C6".
- *3: Refer to page 333 for dimensions of A or B port top-port type.
- *4: Only connectors are different for 10PG, 10PH, 10J and 10G. L1 to L5 dimensions are the same as 10P type.



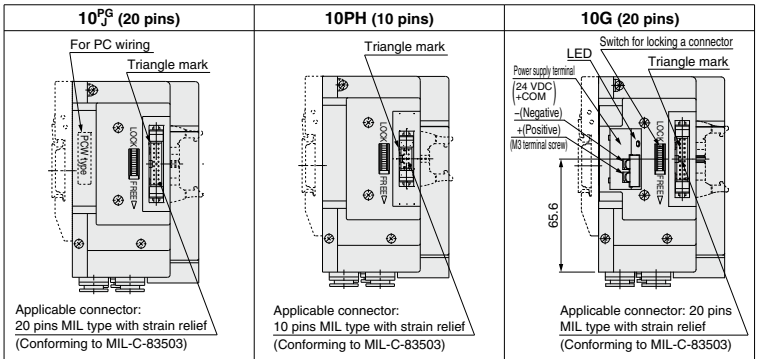
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
L1	88.6	99.1	109.6	120.1	130.6	141.1	151.6	162.1	172.6	183.1	193.6	204.1	214.6	225.1	235.6	246.1	256.6	267.1	277.6	288.1	298.6	309.1	319.6	
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252	262.5	273	283.5	294	
L3	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	323	335.5	348	360.5				
L4	112.5	125	137.5	150	162.5	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	297.5	300	312.5	325	337.5	350			
L5	20.5	21.5	22.5	23.5	18	19	20	21	22	23	18	19	20	21	22	23	23.5	18.5	19.5	20.5	21.5	22.5	23.5	

SY3000/5000/7000 Series

Dimensions: SY5000 Series Plug-in Connector Connecting Base Type 10/Side Ported Flat Ribbon Cable



- *1: Refer to page 329 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
- *2: These figures show the "SS5Y5-10P2-05D-C8".
- *3: Refer to page 334 for dimensions of A or B port top-ported type.
- *4: Only connectors are different for 10PG, 10PH and 10J. L1 to L5 dimensions are the same as 10P type.

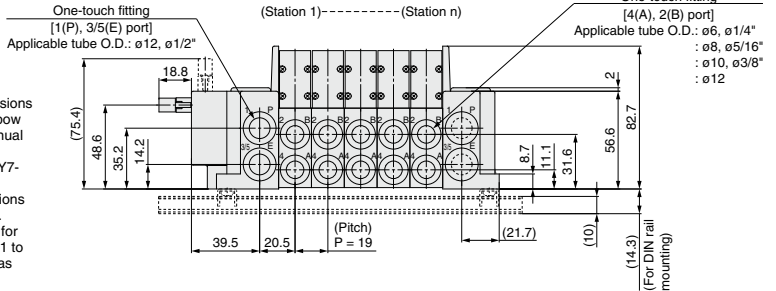
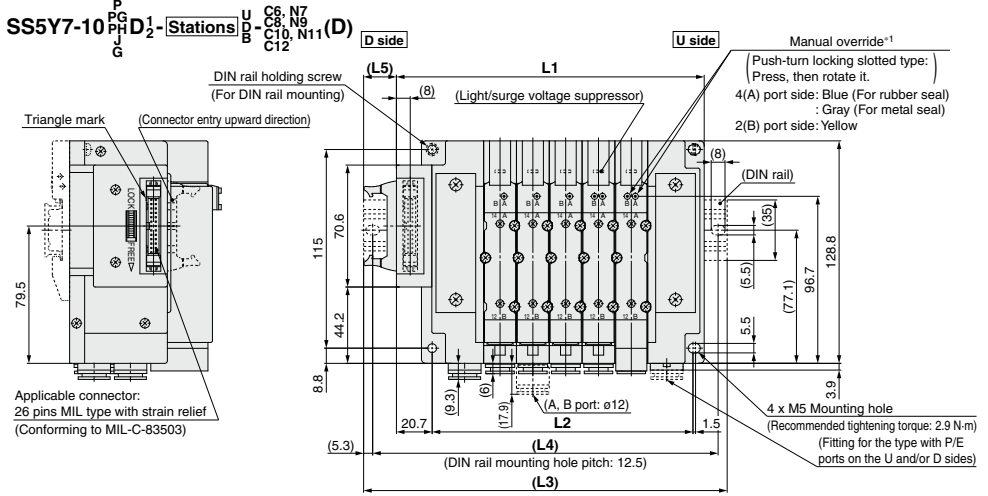


n Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	108.4	124.4	140.4	156.4	172.4	188.4	204.4	220.4	236.4	252.4	268.4	284.4	300.4	316.4	332.4	348.4	364.4	380.4	396.4	412.4	428.4	444.4	460.4
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416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

Dimensions: **SY7000 Series**

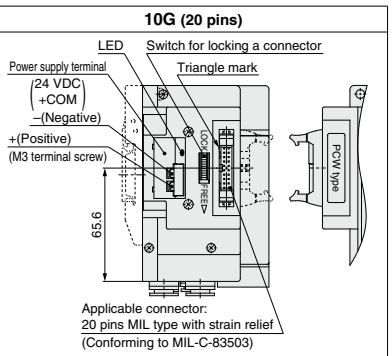
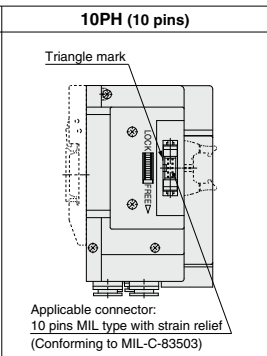
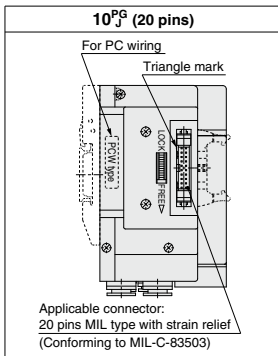
Plug-in
Connector Connecting Base

Type 10/Side Ported
Flat Ribbon Cable



- *1: Refer to page 330 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
- *2: These figures show the "SS5Y7-10P2-05D-C8".
- *3: Refer to page 335 for dimensions of A or B port top-ported type.
- *4: Only connectors are different for 10PG, 10PH, 10J and 10G. L1 to L5 dimensions are the same as 10P type.

- SJ
- SY
- SY
- S0700
- S0700



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

Plug-in Connector Connecting Base

D-sub Connector

Flat Ribbon Cable

PC Wiring

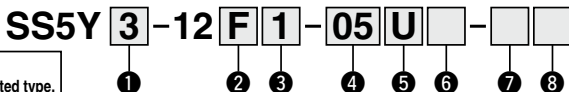


Type 12
Top Ported

SY3000/5000/7000 Series



How to Order Manifold

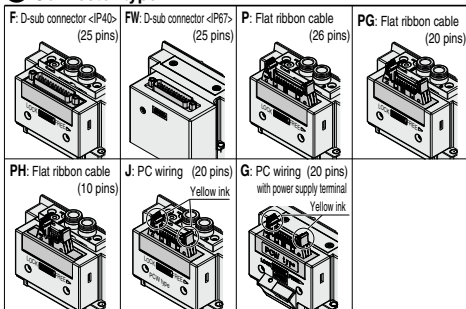


Refer to pages 333 to 335 for dimensions of Type 12/Top ported type.

1 Series

3	SY3000
5	SY5000
7	SY7000

2 Connector type



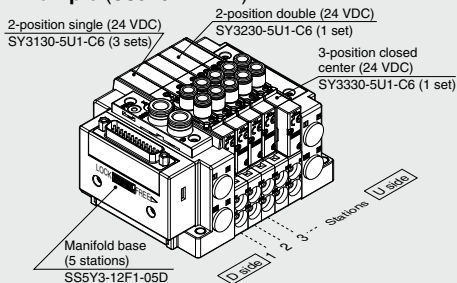
5 P, E port entry

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

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

How to Order Manifold Assembly

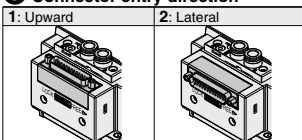
Example (SS5Y3-12F1-□)



- SS5Y3-12F1-05D 1 set (Type 12 5-station manifold base part no.)
 - *SY3130-5U1-C6 3 sets (2-position single part no.)
 - *SY3230-5U1-C6 1 set (2-position double part no.)
 - *SY3330-5U1-C6 1 set (3-position closed center part no.)
- The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

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

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 354) 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)
02	2 stations	
:	:	
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)
02	2 stations	
:	:	
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)
02	2 stations	
:	:	
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)
02	2 stations	
:	:	
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)
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.

6 SUP/EXH block assembly

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

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

8 Mounting

Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations Specify a longer rail than the standard length.
D24	For 24 stations

*: Refer to page 394 for the fixation of DIN rail mounting type manifold.

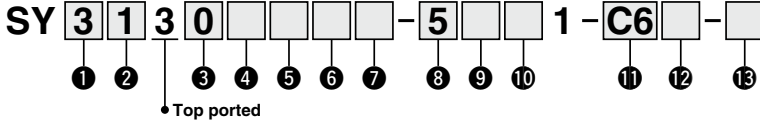
7 P, E port size (One-touch fittings)

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

*: For N, sizes are in inches.

How to Order Valves (With mounting screw)

Refer to page 136 for valve specifications.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A ⁻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

Nil	Internal pilot
R	External pilot

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

Nil	None
H	Built-in

*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 379 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

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

6 Pilot valve option

Nil	Standard (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

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

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

*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

5	24 VDC
6	12 VDC

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

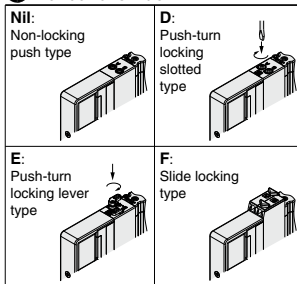
9 Light/surge voltage suppressor and common specification

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

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

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

10 Manual override



*: Refer to page 154 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	ø2	●	—	—
C3	ø3.2	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

One-touch fitting (Inch)

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

12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

*: Only Nil is available for M5.

13 Type of mounting screw

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

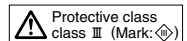
*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

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

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

Refer to page 367 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.



SY3000/5000/7000 Series

Electrical Wiring Specifications

D-sub connector

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

Connector terminal no.

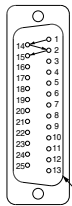
Station	SOL. a	SOL. b	Terminal no.	Polarity	
Station 1	1	14	1	(-)	(+)
Station 2	2	2	2	(-)	(+)
Station 3	3	15	3	(-)	(+)
Station 4	4	3	4	(-)	(+)
Station 5	5	16	5	(-)	(+)
Station 6	6	4	6	(-)	(+)
Station 7	7	17	7	(-)	(+)
Station 8	8	5	8	(-)	(+)
Station 9	9	18	9	(-)	(+)
Station 10	10	6	10	(-)	(+)
Station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

Positive common Negative common

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

Specified Layout

(25 pins)



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

COM.

Cable Assembly

AXT100-DS25-030 (N) [IP40]

015
050
Nil: Metric
N: Inch

SY30M-DS25-015 (N) [IP67]

015
050
Nil: Metric
N: Inch

D-sub connector cable assembly [IP40]

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-DS25-015	Cable 0.3mm² x 25 cores
3 m	AXT100-DS25-030	
5 m	AXT100-DS25-050	

*: When using a standard commercial connector, use a 25-pin type female connector conforming to MIL-C-24308.
*: Cannot be used for movable wiring.
*: Lengths other than the above are also available. Please contact SMC for details.

D-sub connector cable assembly [IP67]

Cable length (L)	Assembly part no.	Note
1.5 m	SY30M-DS25-015	Cable 0.3mm² x 25 cores
3 m	SY30M-DS25-030	
5 m	SY30M-DS25-050	

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

Electrical characteristics

Item	Property
Conductor resistance Ω/km, 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 D-sub connector cable is 20 mm.

Connector Manufacturers' Example

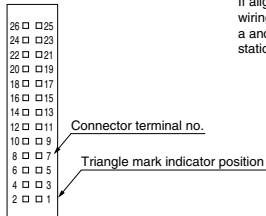
- Fujitsu Limited
- Japan Aviation Electronics Industry, Limited
- J.S.T. Mfg. Co., Ltd.
- HIROSE ELECTRIC CO., LTD.

D-sub connector cable assembly terminal numbers

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

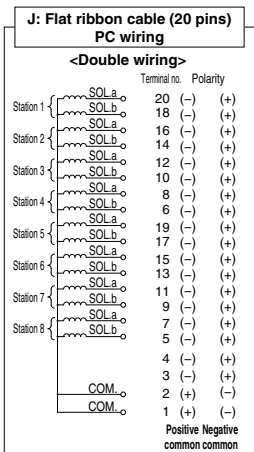
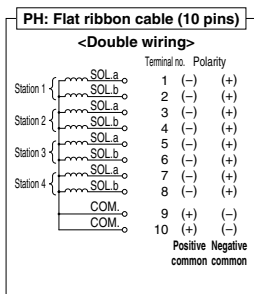
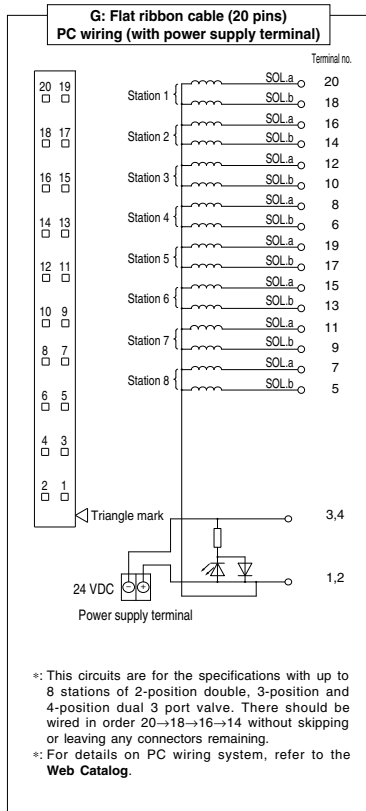
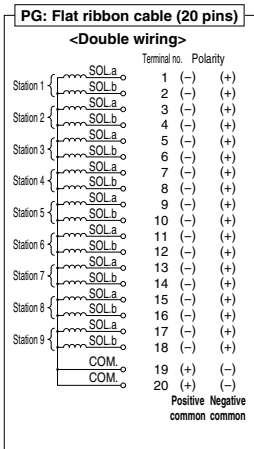
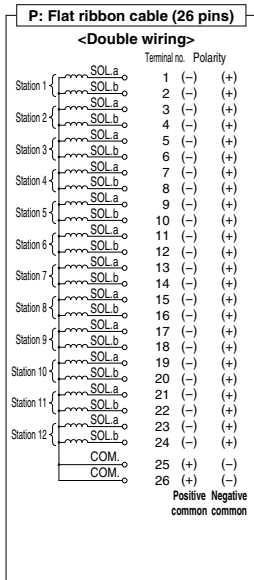
Electrical Wiring Specifications

Flat ribbon cable connector



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

SJ
SY
SY
S0700
S0700



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

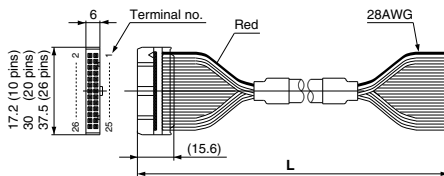
*: This circuits are for the specifications with up to 8 stations of 2-position double, 3-position and 4-position dual 3 port valve. There should be wired in order 20→18→16→14 without skipping or leaving any connectors remaining.

*: For details on PC wiring system, refer to the **Web Catalog**.

SY3000/5000/7000 Series

Flat Ribbon Cable Assembly

AXT100-FC20-2
 10 1
 26 3



Flat ribbon cable connector assembly

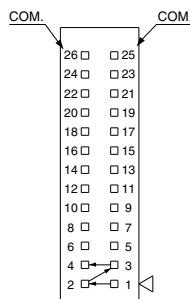
Cable length (L)	Assembly part no.		
	26 pins	20 pins	10 pins
1.5 m	AXT100-FC26-1	AXT100-FC20-1	AXT100-FC10-1
3 m	AXT100-FC26-2	AXT100-FC20-2	AXT100-FC10-2
5 m	AXT100-FC26-3	AXT100-FC20-3	AXT100-FC10-3

- *: 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.

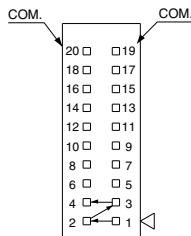
Connector Manufacturers' Example

- 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.

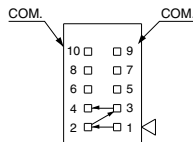
Specified Layout



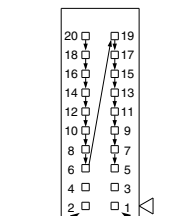
(P: 26 pins)



(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.

Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base

Terminal Block Box (Spring Type)

SY3000/5000/7000 Series



How to Order Manifold

Refer to pages 331 (SY5000) and 332 (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 SY3000. When ordering, refer to the "Plug-in Mixed Mounting Type Manifold" (From page 336).

4 P, E port entry

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

5 SUP/EXH block assembly

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

*3 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.

3 Valve stations

TC: Spring type terminal block box

Symbol	Stations	Note
02	2 stations	Double wiring *1
:	:	
:	:	
16	16 stations	Specified layout *2 (Up to 32 solenoids available)
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 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.

7 Mounting and Option

Symbol	Mounting	Option
Nil	None	
AA	Direct mounting	Name plate (with station number)
BA		Name plate (without station number)
D		Without name plate
A	DIN rail mounting	Name plate (with station number)
B		Name plate (without station number)

DIN Rail Option

Nil	DIN rail mounting (with DIN rail)
0	DIN rail mounting (without DIN rail)
3	For 3 stations Specify a longer rail than the
:	:
24	For 24 stations standard length.

* Enter the number of stations inside □. (Refer to "DIN Rail Option" above).
* Only direct mounting is available for Type 11 (Bottom ported).

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	
C2	ø2	●	—	—	—		
C3	ø3.2	●	—	—	—		
C4	ø4	●	●	—	●		
C6	ø6	●	●	●	●		
C8	ø8	—	—	●	●		
C10	ø10	—	—	—	●		
C12	ø12	—	—	—	●		
CM*1	Straight port, mixed sizes	●	●	●	●		
L4	ø4	●	—	—	—		
L6	ø6	●	●	—	—		
L8	ø8	—	—	●	—		
L10	ø10	—	—	—	●		
L12	ø12	—	—	—	●		
B4	ø4	●	●	—	—		
B6	ø6	●	●	—	—		
B8	ø8	—	—	●	—		
B10	ø10	—	—	—	●		
B12	ø12	—	—	—	●		
LM*1	Elbow port, mixed sizes (including upward and downward piping)	●	●	—	—		
P, E port size (One-touch fittings)		ø8	ø10	ø12	ø10	ø12	

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

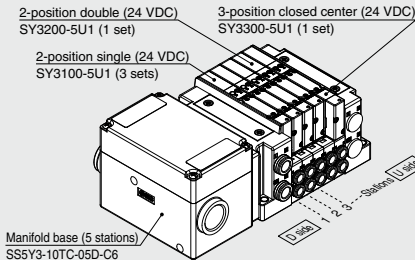
Symbol	A, B port	Type 10/Side ported		Type 11/Bottom ported			
		SY3000	SY5000	SY7000	SY5000	SY7000	
N1	ø1/8"	●	—	—	—		
N3	ø5/32"	●	—	—	—		
N7	ø1/4"	●	●	—	●		
N9	ø5/16"	●	●	●	●		
N11	ø3/8"	—	—	●	●		
CM*1	Straight port, mixed sizes	●	●	●	●		
LN3	ø5/32"	●	—	—	—		
LN7	ø1/4"	●	—	—	—		
LN9	ø5/16"	—	—	●	—		
LN11	ø3/8"	—	—	—	●		
BN3	ø5/32"	●	—	—	—		
BN7	ø1/4"	●	●	—	—		
BN9	ø5/16"	—	—	●	—		
BN11	ø3/8"	—	—	—	●		
LM*1	Elbow port, mixed sizes (including upward and downward piping)	●	●	—	—		
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"	

*1 Indicate the sizes on the manifold specification sheet in the case of "CM" or "LM." The direction of P, E port fittings is the same as for the 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 a downward elbow port when mounting the optional spacer assembly.

How to Order Manifold Assembly

Example (SS5Y3-10TC-□)



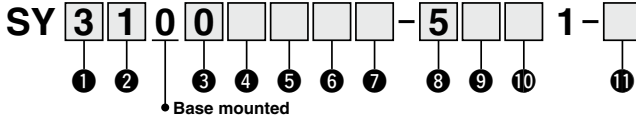
SS5Y3-10TC-05D-C6.....1 set (Type 10 5-station manifold base part no.)
 * SY3100-5U1 3 sets (2-position single part no.)
 * SY3200-5U1 1 set (2-position double part no.)
 * SY3300-5U1 1 set (3-position closed center part no.)

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

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

Refer to page 136 for valve specifications.

How to Order Valves (With mounting screw)



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

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

*1 Only the 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

NII	Internal pilot
R	External pilot

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

NII	None
H	Built-in

* Only the rubber seal type. The manifold installed type is available if the back pressure check valve is required for a valve with a metal seal. Refer to page 379 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

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

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

7 Coil type

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

* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

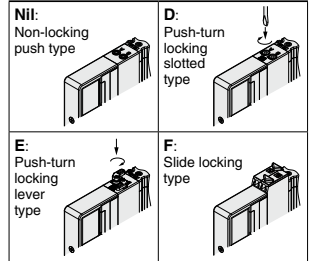
5	24 VDC
6	12 VDC

9 Light/surge voltage suppressor and common specification

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

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

10 Manual override



* Refer to page 154 for the safety slide locking manual override.

11 Type of mounting screw

NII	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Fall-out prevention type)
H	Hexagon socket head cap screw (Fall-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 367 for base gasket and mounting screw part numbers.

* "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.

SJ

SY

SY

S0700

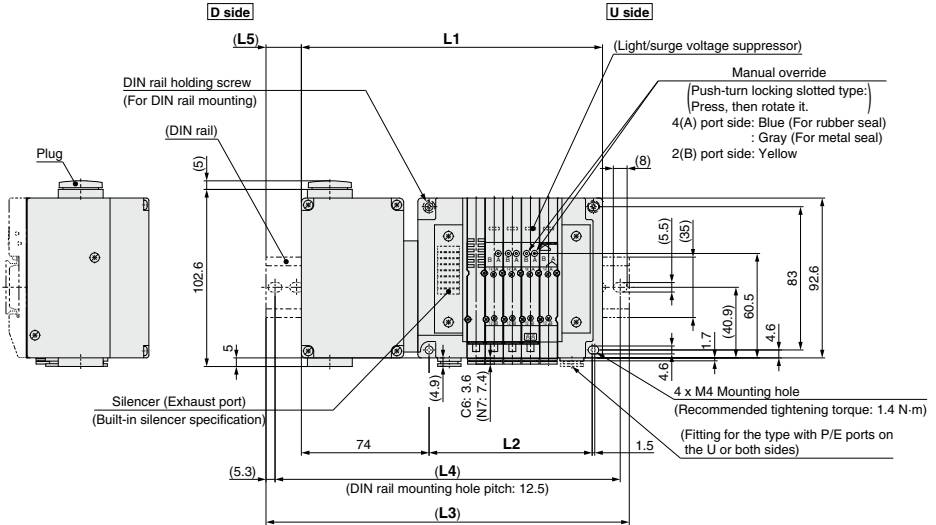
S0700

SY3000/5000/7000 Series

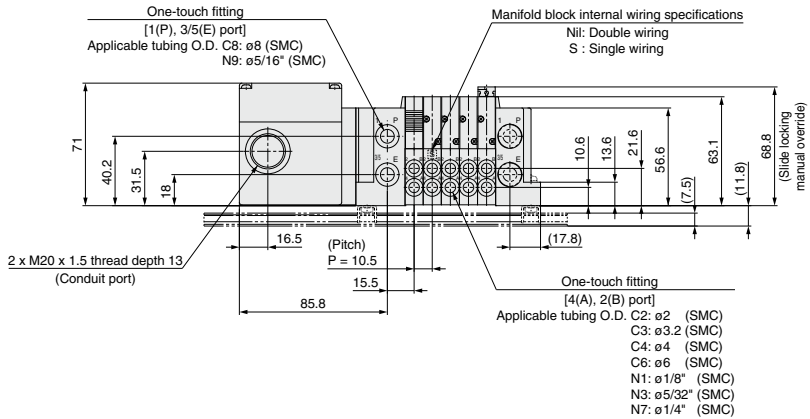
Dimensions: **SY3000 Series**

Plug-in
Connector Connecting Base
Type 10/Side Ported
Terminal Block Box

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



(Station 1) (Station n)



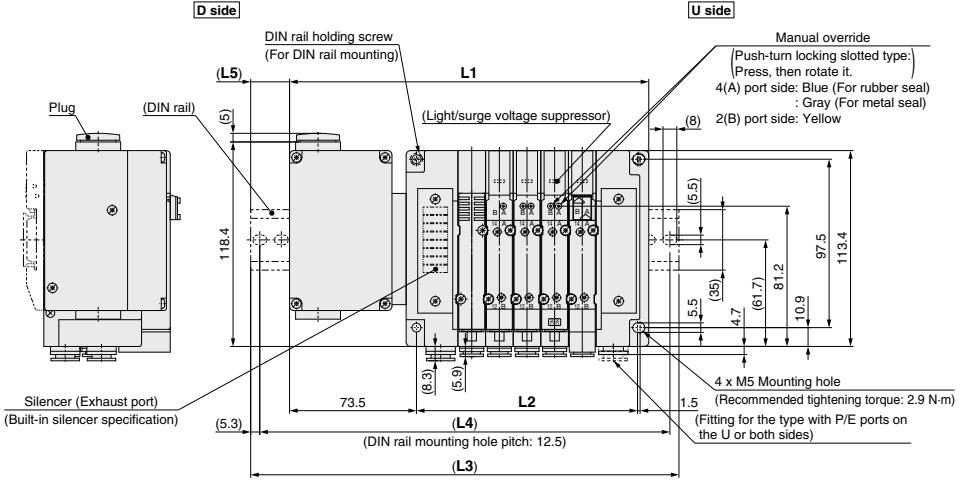
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	143	153.5	164	174.5	185	195.5	206	216.5	227	237.5	248	258.5	269	279.5	290	300.5	311	321.5	332	342.5	353	363.5	374
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252	262.5	273	283.5	294
L3	173	185.5	198	210.5	223	235.5	235.5	248	260.5	273	285.5	298	298	310.5	323	335.5	348	360.5	360.5	373	385.5	398	410.5
L4	162.5	175	187.5	200	212.5	225	225	237.5	250	262.5	275	287.5	287.5	300	312.5	325	337.5	350	350	362.5	375	387.5	400
L5	17.5	18.5	19.5	20.5	21.5	22.5	17	18	19	20	21	22	17	18	19	20	21	22	16.5	17.5	18.5	19.5	20.5

Plug-in
Connector Connecting Base

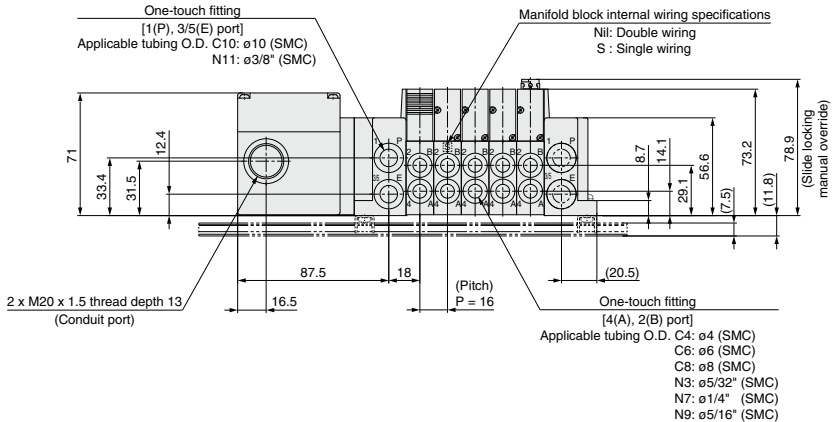
Type 10/Side Ported
Terminal Block Box

Dimensions: **SY5000 Series**

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



(Station 1) (Station n)



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	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432	448	464	480	496	512
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	198	210.5	223	248	260.5	273	285.5	310.5	323	335.5	348	373	385.5	398	423	435.5	448	460.5	485.5	498	510.5	535.5	548
L4	187.5	200	212.5	237.5	250	262.5	275	300	312.5	325	337.5	362.5	375	387.5	412.5	425	437.5	450	475	487.5	500	525	537.5
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

Plug-in Connector Connecting Base

Terminal Block Box (Spring Type)

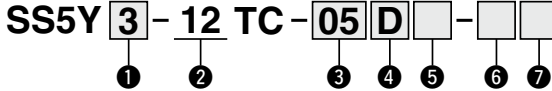
Type 12
Top Ported

SY3000/5000/7000 Series



How to Order Manifold

Refer to pages 333 to 335 for dimensions of Type 12/Top ported type.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type

12	Top ported
----	------------

3 Valve stations

TC: Spring type terminal block box

Symbol	Stations	Note
02	2 stations	Double wiring *1
⋮	⋮	
16	16 stations	
02	2 stations	Specified layout *2 (Up to 32 solenoids available)
⋮	⋮	
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 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 24 stations)

5 SUP/EXH block assembly

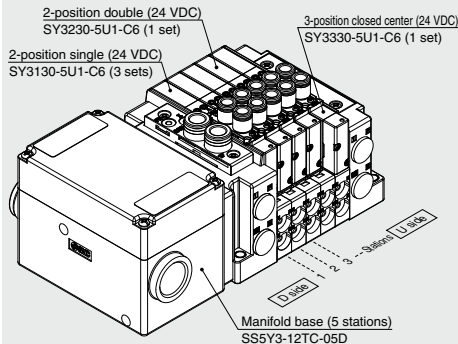
Nii	Internal pilot
S	Internal pilot Built-in silencer
R	External pilot

* 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 (SS5Y3-12TC-□)



SS5Y3-12TC-05D 1 set (Type 12 5-station manifold base part no.)
 * SY3130-5U1-C6 3 sets (2-position single part no.)
 * SY3230-5U1-C6 1 set (2-position double part no.)
 * SY3330-5U1-C6 1 set (3-position closed center part no.)
 The asterisk denotes the symbol for assembly.
 Prefix it to the part numbers of the valve etc.

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

6 P, E port size (One-touch fittings)

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

* For N, sizes are in inches.

7 Mounting

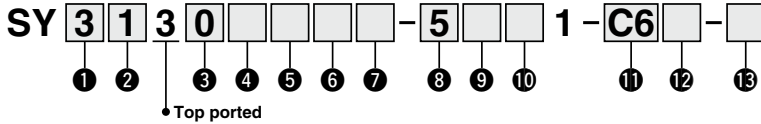
Nii	Direct mounting
D	DIN rail mounting (with DIN rail)
D0	DIN rail mounting (without DIN rail)
D3	For 3 stations
⋮	⋮
D24	For 24 stations

Specify a longer rail than the standard length.

* Refer to page 394 (SY3000/5000/7000 series: Specific product precautions 6) for instructions on fastening the DIN rail mounting type manifold.

How to Order Valves (With mounting screw)

Refer to page 136 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 center
4		Exhaust center
5	4-position dual 3-port	Pressure center
A*1		N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

*1 Only the 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

NII	Internal pilot
R	External pilot

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

NII	None
H	Built-in

* Only the rubber seal type. The manifold installed type is available if the back pressure check valve is required for a valve with a metal seal. Refer to page 379 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

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

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

7 Coil type

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

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

* Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

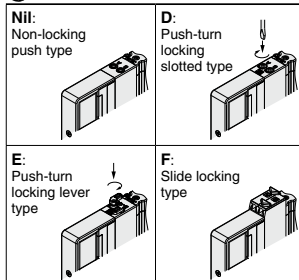
5	24 VDC
6	12 VDC

9 Light/surge voltage suppressor and common specification

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

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

10 Manual override



* Refer to the **Web Catalog** for the safety slide locking manual override.

11 A, B port size

Thread piping

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

One-touch fitting (Metric)

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

One-touch fitting (Inch)

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

12 Thread type

NII	Rc
F	G
N	NPT
T	NPTF

* Only NII is available for M5.

13 Type of mounting screw

NII	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Fall-out prevention type)
H	Hexagon socket head cap screw (Fall-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.

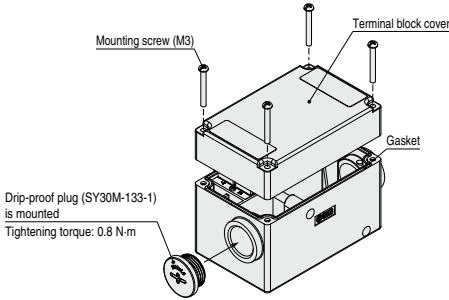
Refer to page 367 for base gasket and mounting screw part numbers.

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

Terminal Block Connection

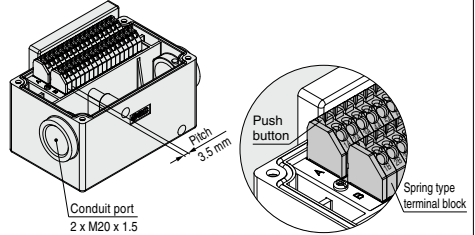
Step 1. Remove the terminal block cover

Loosen the 4 mounting screws (M3) to remove the terminal block cover.



Step 2. The diagram below 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. Be sure to connect the wire with the push button pressed down.



Step 3. Mount the terminal block cover

Securely tighten the mounting screws (M3) to the torque shown in the table below only after confirming that the gasket is installed correctly.

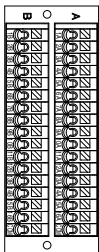
Proper tightening torque [N·m]
0.54 to 0.66

• Applicable wire range: Conductor diameter $\phi 0.5$ to $\phi 1.2$ mm, Stranded wire AWG24 to 16

SY
SY
S0700
S0700

Electrical Wiring Specifications (IP67 compatible)

Standard wiring



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

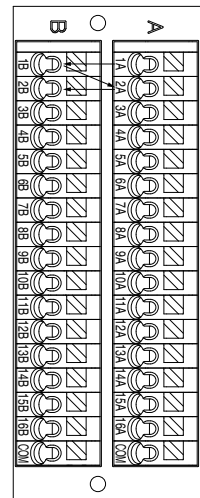
* When using a valve with no polarity, either positive common or negative common can be used.

	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 (-)	(+)
Station 11	SOL.a	11A (-)	(+)
	SOL.b	11B (-)	(+)
Station 12	SOL.a	12A (-)	(+)
	SOL.b	12B (-)	(+)
Station 13	SOL.a	13A (-)	(+)
	SOL.b	13B (-)	(+)
Station 14	SOL.a	14A (-)	(+)
	SOL.b	14B (-)	(+)
Station 15	SOL.a	15A (-)	(+)
	SOL.b	15B (-)	(+)
Station 16	SOL.a	16A (-)	(+)
	SOL.b	16B (-)	(+)
	COM.	(+) (-)	
	COM.	(+) (-)	

Positive Negative
common common

Specified Layout

A mixture 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 32 or less. 1 solenoid is required for the 2-position single, and 2 solenoids for the 2-position double, 3-position, and 4-position.



Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base

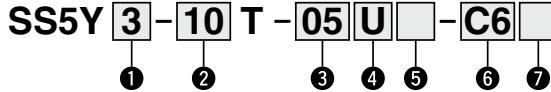
Terminal Block Box

SY3000/5000/7000 Series



How to Order Manifold

Refer to pages 331 (SY5000) and 332 (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 336).

3 Valve stations

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

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

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

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

4 P, E port entry

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

5 SUP/EXH block assembly

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

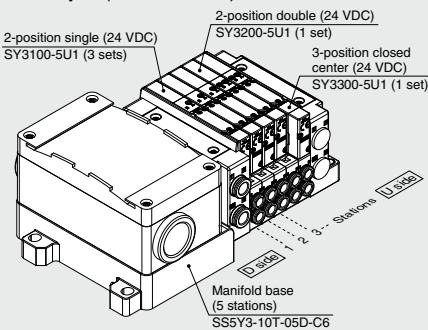
*: 3/5(E) port is plugged for the built-in silencer type.

*: 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 center part no.)

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

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

*: When mixing top ported configurations, select from page 245. 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
Nii	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.)

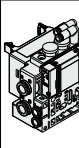

*: Only direct mounting is available for Type 11 (Bottom ported).

*: Refer to page 394 for the fixation of DIN rail mounting type manifold.


DIN Rail Option

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

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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported			
		SY3000	SY5000	SY7000	SY5000	SY7000		
C2 C3 C4 C6 C8 C10 C12 CM ^{*1}	Straight	ø2	●	—	—	—		
		ø3.2	●	—	—	—		
		ø4	●	●	—	●		—
		ø6	●	●	●	●		●
		ø8	—	●	—	●		●
		ø10	—	—	●	—		●
		ø12	—	—	●	—		●
L4 L6 L8 L10 L12 B4 B6 B8 B10 B12 LM ^{*1}	Elbow ^{*2}	Straight port, mixed sizes		●	●	●		
		Upward	ø4	●	●	—		—
			ø6	●	●	●		—
			ø8	—	●	—		—
		Downward	ø10	—	—	●		—
			ø12	—	—	●		—
			ø4	●	●	—		—
ø6	●		●	●	—			
ø8	—	●	—	—				
ø10	—	—	●	—				
ø12	—	—	●	—				
Elbow port, mixed sizes (including upward and downward piping)		●	●	●	—	—		
P, E port size (One-touch fittings)		ø8	ø10	ø12	ø10	ø12		

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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported				
		SY3000	SY5000	SY7000	SY5000	SY7000			
N1 N3 N7 N9 N11 CM ^{*1} LN3 LN7 LN9 LN11 BN3 BN7 BN9 BN11 LM ^{*1}	Straight	ø1/8"	●	—	—	—			
		ø5/32"	●	●	—	●			
		ø1/4"	●	●	●	●		●	
		ø5/16"	—	●	●	●		●	
		ø3/8"	—	—	●	—		—	
		Straight port, mixed sizes		●	●	●		●	●
		Elbow ^{*2}	Upward	ø5/32"	●	—		—	—
ø1/4"	●			●	—	—			
ø5/16"	—			●	—	—			
Downward	ø3/8"		—	—	●	—			
	ø5/32"		●	—	—	—			
	ø1/4"		●	●	—	—			
	ø5/16"		—	●	—	—			
ø3/8"	—	—	●	—	—				
Elbow port, mixed sizes (including upward and downward piping)		●	●	●	—	—			
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"			

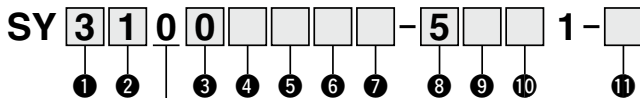
*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

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 373 to 375).

SY3000/5000/7000 Series

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



• Base mounted

① Series

3	SY3000
5	SY5000
7	SY7000

② Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A ^{*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

Nil	Internal pilot
R	External pilot

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

Nil	None
H	Built-in

*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 379 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

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

⑥ Pilot valve option

Nil	Standard (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

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

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

*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

⑧ Rated voltage

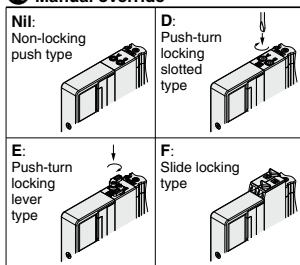
5	24 VDC
6	12 VDC

⑨ Light/surge voltage suppressor and common specification

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

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

⑩ Manual override



*: Refer to page 154 for with the safety slide locking manual override.

⑪ Type of mounting screw

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

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

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

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

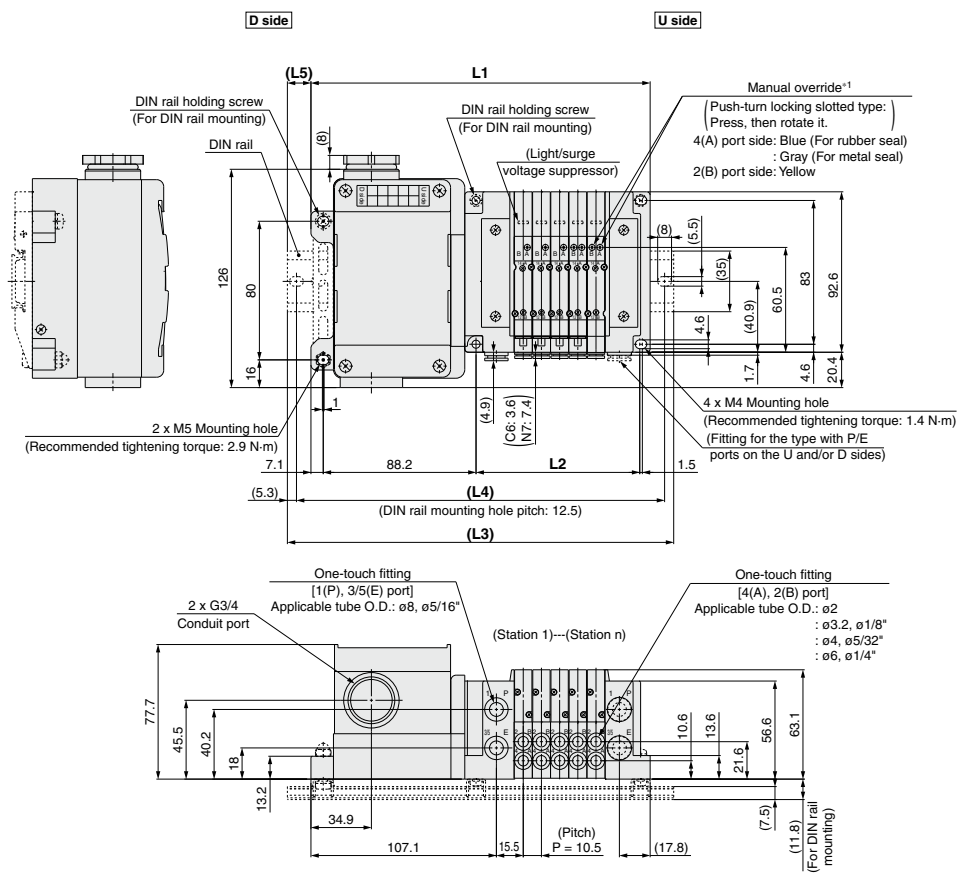
Refer to page 367 for part numbers of the base gasket and mounting screw.

*: "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: **SY3000 Series**

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 328 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
 *: These figures show the "SS5Y3-10T-05D-C6".
 **: Refer to page 333 for dimensions of A or B port top-ported type.

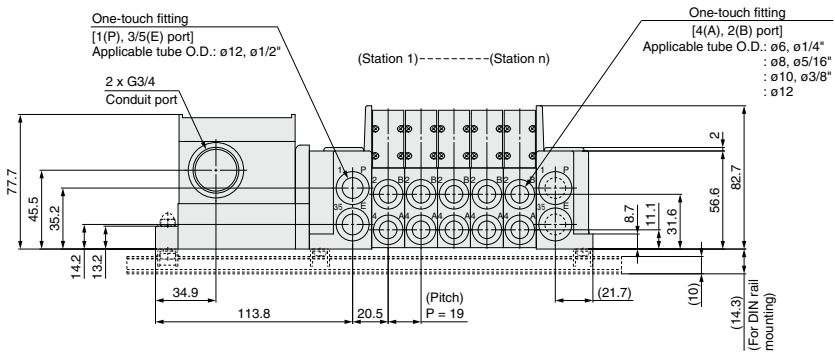
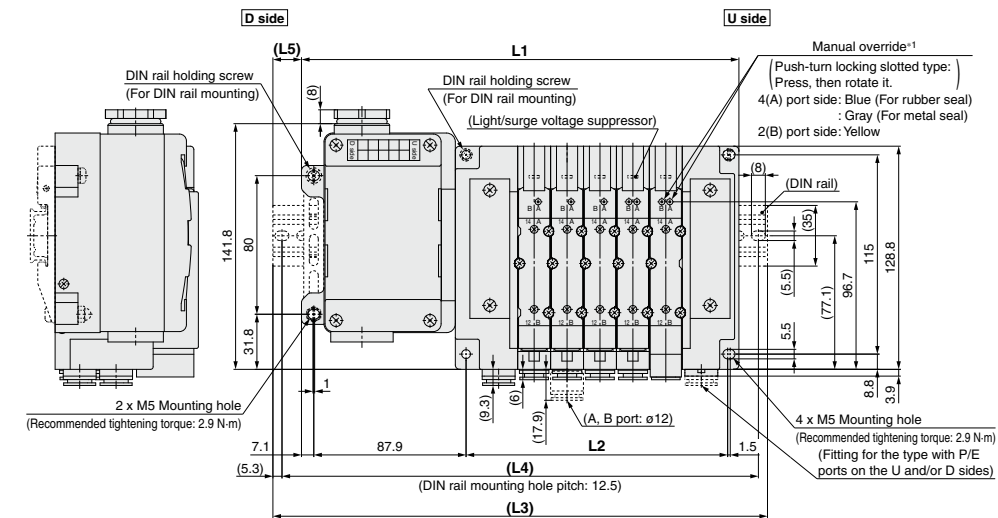
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	164.3	174.8	185.3	195.8	206.3	216.8	227.3	237.8	248.3	258.8	269.3	279.8	290.3	300.8	311.3	321.8	332.3	342.8	353.3
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252
L3	198	198	210.5	223	235.5	248	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

- SJ
- SY
- SY
- S0700
- S0700

Dimensions: **SY7000 Series**

Plug-in
Connector Connecting Base
Type 10/Side Ported
Terminal Block Box

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



*1: Refer to page 330 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
 *: These figures show the "SS5Y7-10T-05D-C10".
 **: Refer to page 335 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	195.5	214.5	233.5	252.5	271.5	290.5	309.5	328.5	347.5	366.5	385.5	404.5	423.5	442.5	461.5	480.5	499.5	518.5	537.5
L2	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360	379	398	417	436
L3	223	248	260.5	285.5	298	323	335.5	360.5	373	398	410.5	435.5	448	473	485.5	510.5	523	548	573
L4	212.5	237.5	250	275	287.5	312.5	325	350	362.5	387.5	400	425	437.5	462.5	475	500	512.5	537.5	562.5
L5	14	17	13.5	16.5	13.5	16.5	13	16	13	16	12.5	15.5	12.5	15.5	12	15	12	15	18

Plug-in Connector Connecting Base

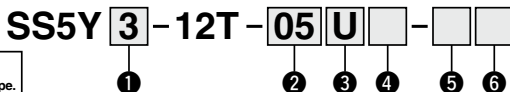
Terminal Block Box

Type 12
Top Ported

SY3000/5000/7000 Series



How to Order Manifold



Refer to pages 333 to 335 for dimensions of Type 12/Top ported type.

1 Series

3	SY3000
5	SY5000
7	SY7000

3 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)

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

2 Valve stations

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

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

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

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

4 SUP/EXH block assembly

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

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

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

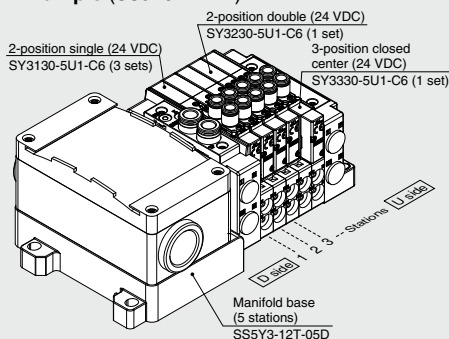
5 P, E port size (One-touch fittings)

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

*: For N, sizes are in inches.

How to Order Manifold Assembly

Example (SS5Y3-12T-□)



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

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

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

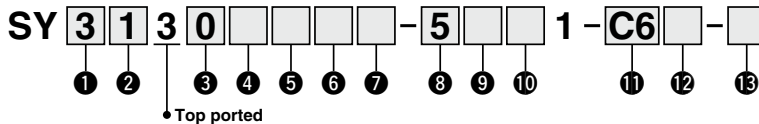
6 Mounting

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

Specify a longer rail than the standard length.

*: Refer to page 394 for the fixation of DIN rail mounting type manifold.

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

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

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

3 Seal type

0	Rubber seal
1	Metal seal

4 Pilot type

NII	Internal pilot
R	External pilot

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

NII	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 379 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

NII	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

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

*: Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.
 *: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

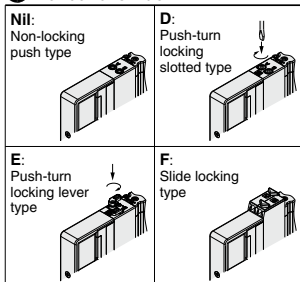
5	24 VDC
6	12 VDC

9 Light/surge voltage suppressor and common specification

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

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

10 Manual override



*: Refer to page 154 for with the safety slide locking manual override.

11 A, B port size

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

One-touch fitting (Metric)

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

One-touch fitting (Inch)

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

12 Thread type

NII	Rc
F	G
N	NPT
T	NPTF

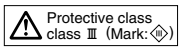
*: Only NII is available for M5.

13 Type of mounting screw

NII	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 367 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.

SY
SY
S0700
S0700

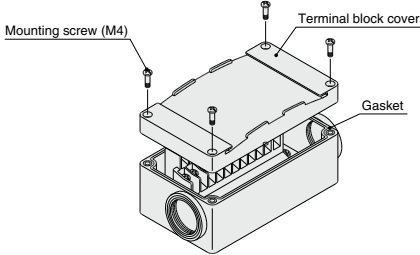


SY3000/5000/7000 Series

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

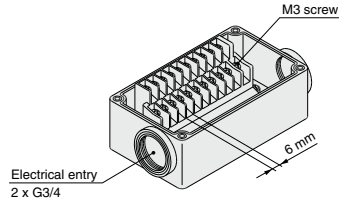
Securely tighten the screws to the torque shown in the below table only after confirming that the gasket is installed correctly.

Proper tightening torque [N·m]
0.7 to 1.2

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

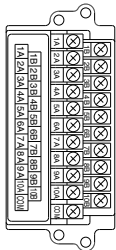
All stations are provided with double wiring regardless of the mounted valves.

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 G3/4): 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.

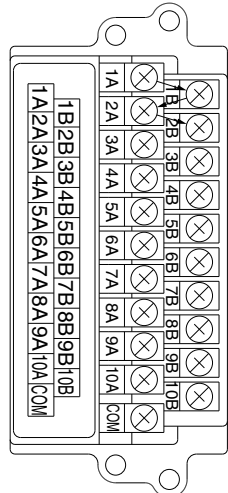
Standard wiring

Terminal no.	Polarity	
	Positive	Negative
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.



Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base

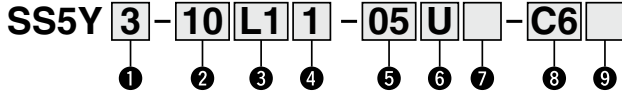
Lead Wire

SY3000/5000/7000 Series



How to Order Manifold

Refer to pages 331 (SY5000) and 332 (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 336).

3 Number of cores (Lead wire)

L1	34 cores
L2	17 cores
L3	9 cores

4 Lead wire length

1	0.6 m
2	1.5 m
3	3 m

5 Valve stations

(L1□)

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

(L3□)

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

(L2□)

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

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

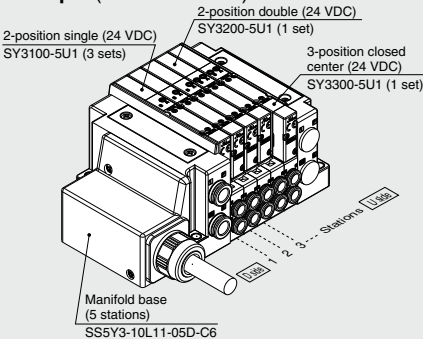
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

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

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

How to Order Manifold Assembly

Example (SS5Y3-10L11-□)



SS5Y3-10L11-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)
 *SY3100-5U1 3 sets (2-position single part no.)
 *SY3200-5U1 1 set (2-position double part no.)
 *SY3300-5U1 1 set (3-position closed center part no.)

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

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

*: When mixing top ported configurations, select from page 255.

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

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

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

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

SY
S0700

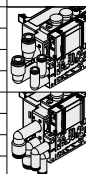
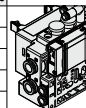
8 A, B port size (Metric/One-touch fitting)

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported		
		SY3000	SY5000	SY7000	SY5000	SY7000	
C2 C3 C4 C6 C8 C10 C12	Straight	ø2	●	—	—	—	
		ø3.2	●	—	—	—	
		ø4	●	●	—	●	
		ø6	●	●	●	●	
		ø8	—	●	●	●	
		ø10	—	—	●	—	●
CM ^{*1}	Straight port, mixed sizes	●	●	●	●		
L4 L6 L8 L10 L12 B4 B6 B8 B10 B12	Upward	ø4	●	●	—	—	
		ø6	●	●	—	—	
		ø8	—	●	●	—	
		ø10	—	—	●	—	
		ø12	—	—	—	—	
		ø4	●	●	—	—	
	Downward	ø6	●	●	●	—	
		ø8	—	●	●	—	
		ø10	—	—	●	—	
		ø12	—	—	●	—	
		Elbow port, mixed sizes (including upward and downward piping)		●	●	●	—
		P, E port size (One-touch fittings)		ø8	ø10	ø12	ø10



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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
N1 N3 N7 N9 N11	Straight	ø1/8"	●	—	—	—
		ø5/32"	●	●	—	●
		ø1/4"	●	●	●	●
		ø5/16"	—	●	●	●
		ø3/8"	—	—	●	●
		CM ^{*1}	Straight port, mixed sizes	●	●	●
LN3 LN7 LN9 LN11 BN3 BN7 BN9 BN11	Upward	ø5/32"	●	—	—	—
		ø1/4"	●	●	—	—
		ø5/16"	—	●	—	—
		ø3/8"	—	—	●	—
		ø5/32"	●	—	—	—
		ø1/4"	●	●	—	—
	Downward	ø5/16"	—	●	—	—
		ø3/8"	—	—	●	—
		ø5/32"	—	—	—	—
		ø1/4"	—	—	—	—
		ø5/16"	—	—	—	—
		ø3/8"	—	—	—	—
LM ^{*1}	Elbow port, mixed sizes (including upward and downward piping)	●	●	●	—	
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"



- *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 373 to 375).

9 Mounting and Option

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

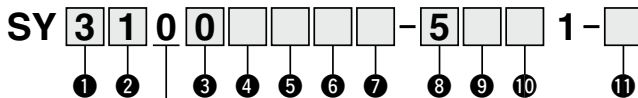
DIN Rail Option

DIN Rail Option		Direct mounting
Nil		Without DIN rail (with bracket)
3	For 3 stations	Specify a longer rail than the total length of specified stations.
:	:	
24	For 24 stations	

- *1: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" above.)
- *2: Only direct mounting is available for Type 11 (Bottom ported).
- *3: Refer to page 394 for the fixation of DIN rail mounting type manifold.

SY3000/5000/7000 Series

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



• Base mounted

① Series

3	SY3000
5	SY5000
7	SY7000

② Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A*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

Nil	Internal pilot
R	External pilot

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

Nil	None
H	Built-in

*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 379 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

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

⑥ Pilot valve option

Nil	Standard (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

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

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

*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

⑧ Rated voltage

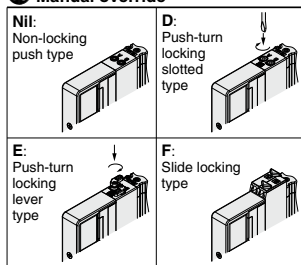
5	24 VDC
6	12 VDC

⑨ Light/surge voltage suppressor and common specification

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

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

⑩ Manual override



*: Refer to page 154 for with the safety slide locking manual override.

⑪ Type of mounting screw

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

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

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

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

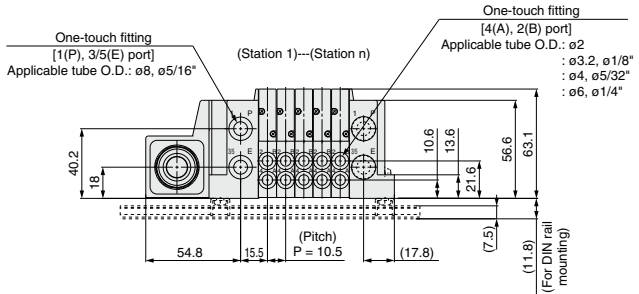
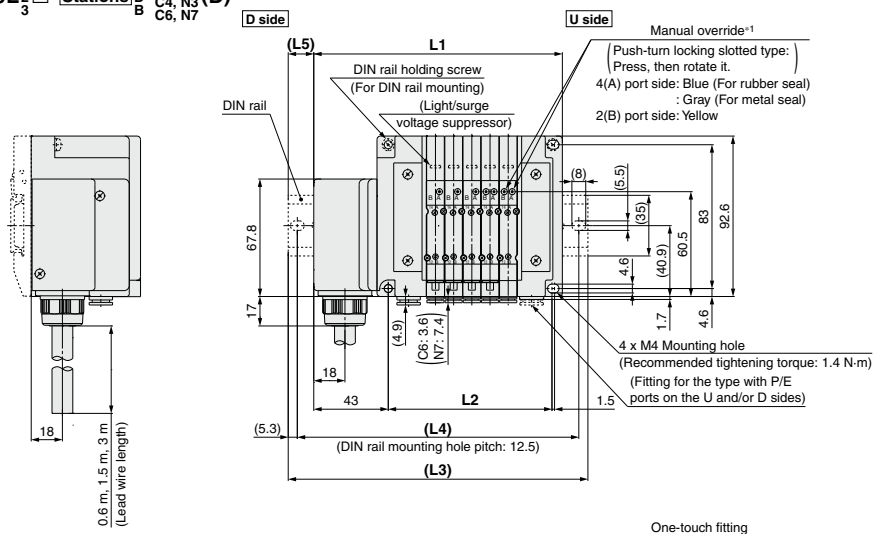
Refer to page 367 for part numbers of the base gasket and mounting screw.

*: "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: **SY3000 Series**

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

SS5Y3-10L₃¹ □ - Stations U C2
B C3, N1 (D)
C4, N3
C6, N7



*1: Refer to page 328 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
 *: These figures show the "SS5Y3-10L1 □-05D-C6".
 **: Refer to page 333 for dimensions of A or B port port-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	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

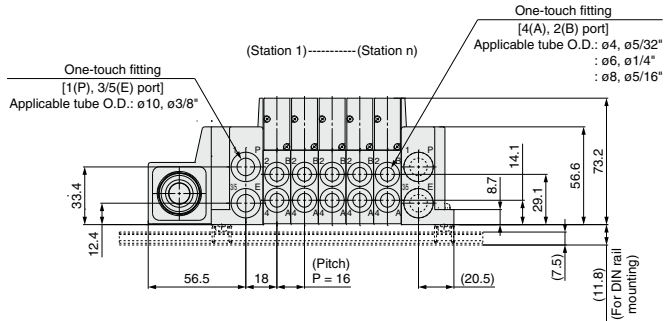
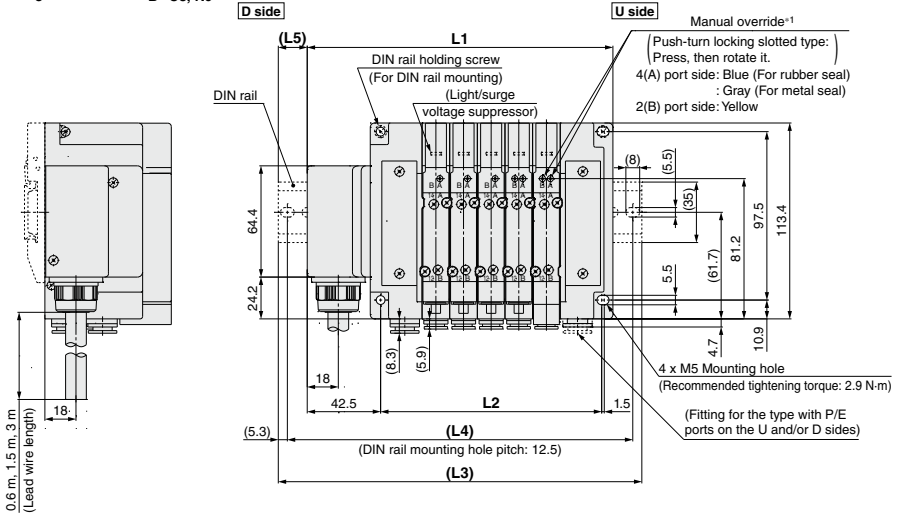
SY3000/5000/7000 Series

Dimensions: **SY5000 Series**

**Plug-in
Connector Connecting Base**

**Type 10/Side Ported
Lead Wire**

SS5Y5-10L $\frac{1}{2}$ □ - Stations $\frac{U}{D}$ C4, N3
C6, N7 (D)
C8, N9



*1: Refer to page 329 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
*: These figures show the "SS5Y5-10L1□-05D-C8".

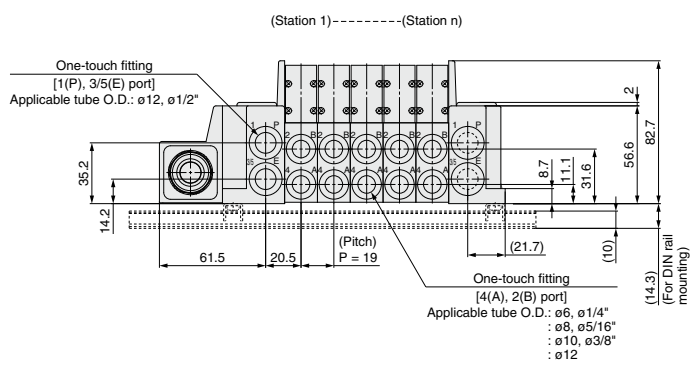
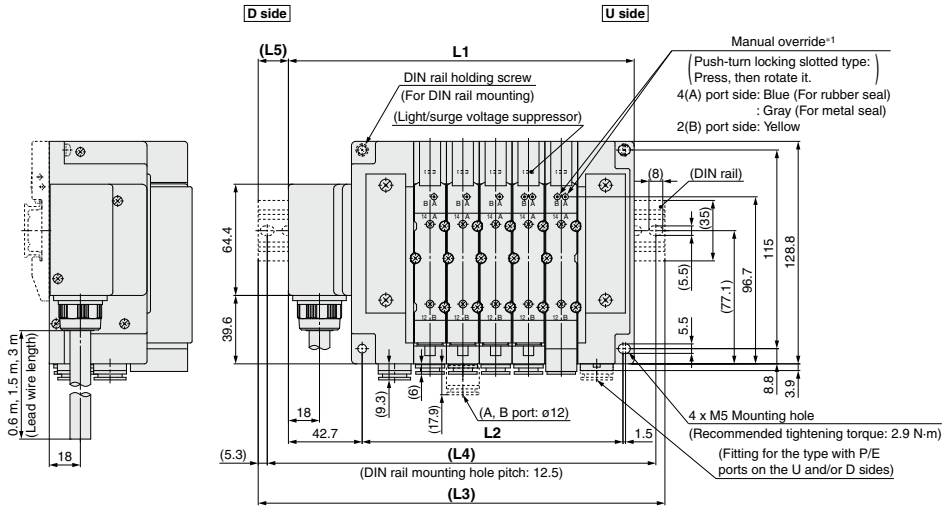
*2: Refer to page 334 for dimensions of A or B port top-ported type.

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: **SY7000 Series**

Plug-in Connector Connecting Base	Type 10/Side Ported
	Lead Wire

SS5Y7-10L $\frac{1}{3}$ □ - Stations $\frac{1}{2}$ U C6, N7
 B C8, N9
 D C10, N11 (D)
 C12



*1: Refer to page 330 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
 *: These figures show the "SS5Y7-10L1□-05D-C10".
 **: Refer to page 335 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

- SJ
- SY
- SY
- S0700
- S0700

Plug-in Connector Connecting Base

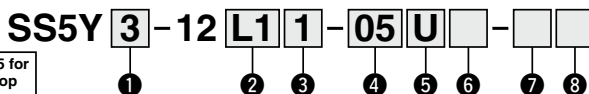
Lead Wire

Type 12
Top Ported

SY3000/5000/7000 Series



How to Order Manifold



Refer to pages 333 to 335 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: For type "S" supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

4 Valve stations

(L1□)

Symbol	Stations	Note
02	2 stations	Double wiring ^{*1}
16	16 stations	
02	2 stations	Specified layout ^{*2} (Available up to 32 solenoids)
24	24 stations	

(L3□)

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

(L2□)

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

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

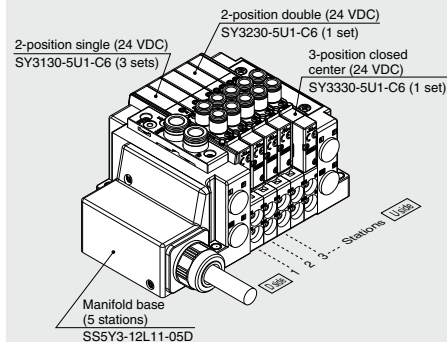
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

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

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

How to Order Manifold Assembly

Example (SS5Y3-12L11-□)



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

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

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

6 SUP/EXH block assembly

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

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

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

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

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

*: For N, sizes are in inches.

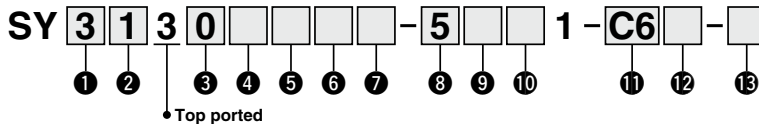
8 Mounting

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

Specify a longer rail than the standard length.

*: Refer to page 394 for the fixation of DIN rail mounting type manifold.

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A ⁻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

NII	Internal pilot
R	External pilot

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

NII	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 379 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

NII	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

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

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

*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

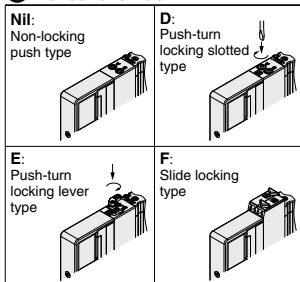
5	24 VDC
6	12 VDC

9 Light/surge voltage suppressor and common specification

Symbol	With light	Surge voltage suppressor	Common specification
NII	—	—	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 154 for with the safety slide locking manual override.

11 A, B port size

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

One-touch fitting (Metric)

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

One-touch fitting (Inch)

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

12 Thread type

NII	Rc
F	G
N	NPT
T	NPTF

*: Only NII is available for M5.

13 Type of mounting screw

NII	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)

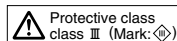
*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

*: **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 367 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.

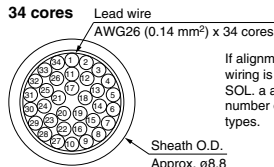


SY3000/5000/7000 Series

Electrical Wiring Specifications

Lead wire

34 cores



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

Electrical characteristics

Item	Property
Conductor resistance $\Omega/\text{km}, 20^\circ\text{C}$	143 or less
Voltage limit V, 1 minute, AC	2000
Insulation resistance $M\Omega/\text{km}, 20^\circ\text{C}$	10 or more

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

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

Positive common Negative common

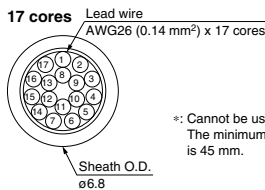
*: For negative common specification, a valve for negative common or a valve without polarity should be used.

Specified Layout

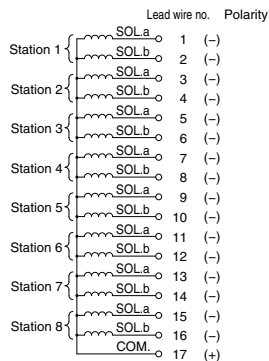
Mixed wiring of single and double wiring can be specified on the manifold specification. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 32 or less. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position 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.



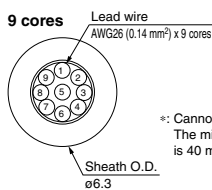
Positive common **Negative common**

*: For negative common specification, a valve for negative common or a valve without polarity should be used.

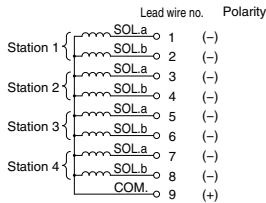
Lead wire color	Printed mark (Both sides)	
	Type	Color
Orange	—	Red
	—	Black
Light gray	—	Red
	—	Black
White	—	Red
	—	Black
Yellow	—	Red
	—	Black
Pink	—	Red
	—	Black
Orange	—	Red
	—	Black
Light gray	—	Red
	—	Black
White	—	Red
	—	Black
Yellow	—	Red
	—	Red

Electrical characteristics

Item	Property
Conductor resistance $\Omega/\text{km}, 20^\circ\text{C}$	143 or less
Voltage limit V, 1 minute, AC	2000
Insulation resistance $\text{M}\Omega/\text{km}, 20^\circ\text{C}$	10 or more



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



Positive common **Negative common**

Lead wire color	Printed mark (Both sides)	
	Type	Color
Orange	—	Red
	—	Black
Light gray	—	Red
	—	Black
White	—	Red
	—	Black
Yellow	—	Red
	—	Black
Pink	—	Red
	—	Red

SJ

SY

SY

S0700

S0700

Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base

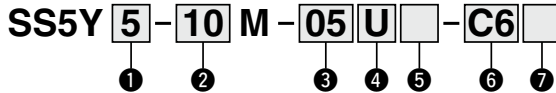
Circular Connector

SY3000/5000/7000 Series



How to Order Manifold

Refer to pages 331 (SY5000) and 332 (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 336).

3 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.

4 P, E port entry

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

5 SUP/EXH block assembly

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

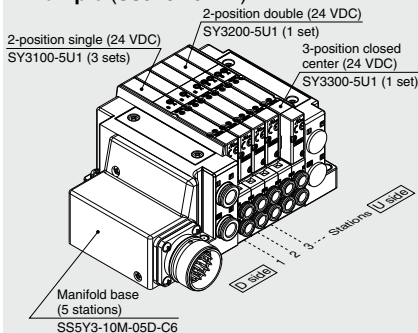
*: 3/5(E) port is plugged for the built-in silencer type.

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

Refer to the page on the right for 6.

How to Order Manifold Assembly

Example (SS5Y3-10M-□)



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

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

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

*: When mixing top ported configurations, select from page 265.

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

7 Mounting and Option

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

*: 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).

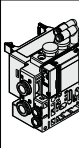
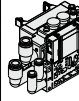

*: Refer to page 394 for the fixation of DIN rail mounting type manifold.

DIN Rail Option




Nil	Direct mounting
0	Without DIN rail (with bracket)
3	For 3 stations
⋮	⋮
24	For 24 stations

Specify a longer rail than the total length of specified 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				
C2 C3 C4 C6 C8 C10 C12 CM ^{*1}	Straight	ø2	●	—	—	—				
		ø3.2	●	—	—	—				
		ø4	●	●	—	●		—		
		ø6	●	●	●	●		●		
		ø8	—	●	—	●		●		
		ø10	—	—	●	—		—		
		ø12	—	—	●	—		●		
L4 L6 L8 L10 L12 B4 B6 B8 B10 B12	Upward	ø4	●	●	—	—				
		ø6	●	●	●	—		—		
		ø8	—	●	—	—		—		
		ø10	—	—	●	—		—		
		ø12	—	—	●	—		—		
		B4 B6 B8 B10 B12	Downward	ø4	●	●		—	—	
				ø6	●	●		●	—	
ø8	—			●	—	—	—			
ø10	—			—	●	—	—			
LM ^{*1}	Elbow port, mixed sizes (Including upward and downward piping)	ø8	●	●	—	—				
		ø10	—	—	●	—				
P, E port size (One-touch fittings)		ø8	ø10	ø12	ø10	ø12				

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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported					
		SY3000	SY5000	SY7000	SY5000	SY7000				
N1 N3 N7 N9 N11 CM ^{*1}	Straight	ø1/8"	●	—	—	—				
		ø5/32"	●	●	—	●		—		
		ø1/4"	●	—	●	●		●		
		ø5/16"	—	●	●	●		●		
		ø3/8"	—	—	●	—		●		
		CM ^{*1}	Straight port, mixed sizes	●	●	●		●	●	
LN3 LN7 LN9 LN11 BN3 BN7 BN9 BN11	Upward	ø5/32"	●	—	—	—				
		ø1/4"	●	—	—	—		—		
		ø5/16"	—	●	—	—		—		
		ø3/8"	—	—	●	—		—		
		BN3 BN7 BN9 BN11	Downward	ø5/32"	●	—		—	—	
				ø1/4"	●	●		—	—	
ø5/16"	—			●	—	—	—			
LM ^{*1}	Elbow port, mixed sizes (Including upward and downward piping)	ø5/16"	●	●	—	—				
		ø3/8"	—	—	●	—		—		
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"				

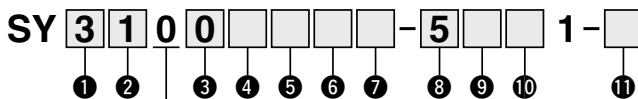
*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

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 373 to 375).

SY3000/5000/7000 Series

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



• Base mounted

1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5	4-position dual 3-port	Pressure center
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 Seal type

0	Rubber seal
1	Metal seal

4 Pilot type

NII	Internal pilot
R	External pilot

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

NII	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 379 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

NII	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

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

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

*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

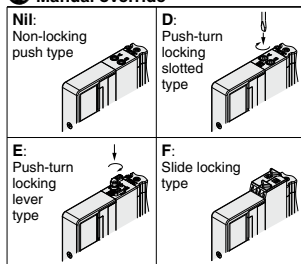
5	24 VDC
6	12 VDC

9 Light/surge voltage suppressor and common specification

Symbol	With light	Surge voltage suppressor	Common specification
NII	—	—	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 154 for with the safety slide locking manual override.

11 Type of mounting screw

NII	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.

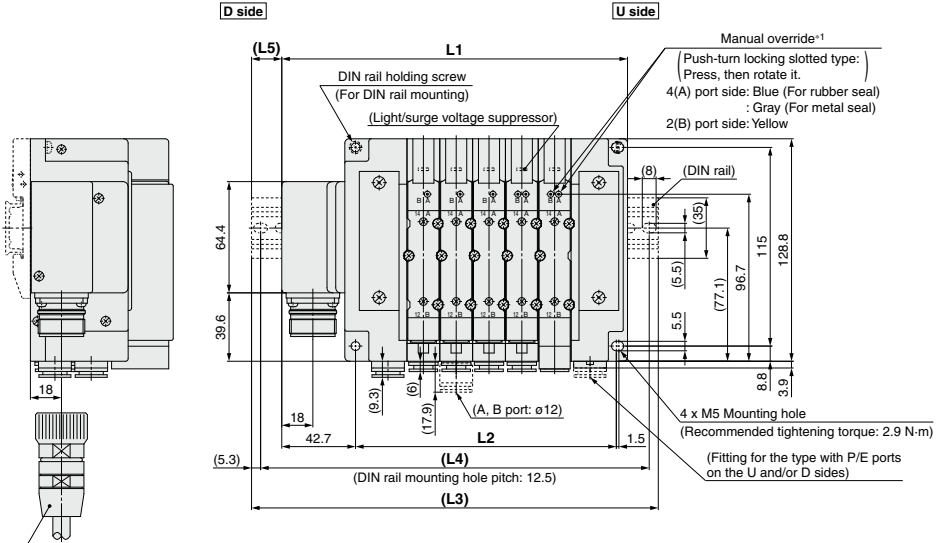
Refer to page 367 for part numbers of the base gasket and mounting screw.

*: "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: **SY7000 Series**

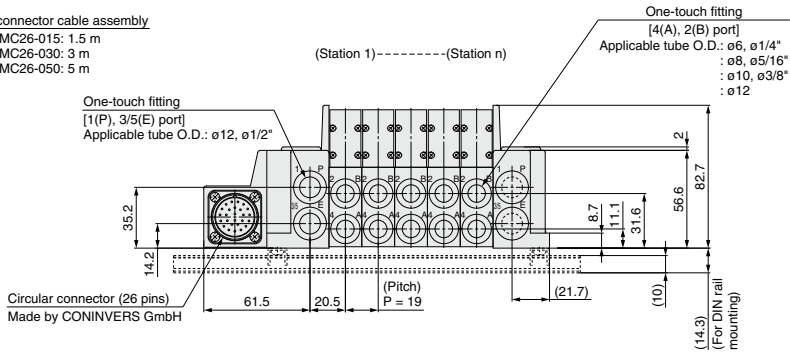
Plug-in
Connector Connecting Base
Type 10/Side Ported
Circular Connector

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



SJ
SY
SY
S0700
S0700

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



*1: Refer to page 330 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
*: These figures show the "SS5Y7-10M-05D-C10".
*: Refer to page 335 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	143.2	162.2	181.2	200.2	219.2	238.2	257.2	276.2	295.2	314.2	333.2	352.2	371.2	390.2	409.2	428.2	447.2	466.2	485.2	504.2	523.2	542.2	561.2
L2	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360	379	398	417	436	455	474	493	512
L3	173	185.5	210.5	235.5	248	273	285.5	310.5	323	348	360.5	385.5	398	423	435.5	460.5	473	498	510.5	535.5	548	573	585.5
L4	162.5	175	200	225	237.5	262.5	275	300	312.5	337.5	350	375	387.5	412.5	425	450	462.5	487.5	500	525	537.5	562.5	575
L5	15	11.5	14.5	17.5	14.5	17.5	14	17	14	17	13.5	16.5	13.5	16.5	13	16	13	16	12.5	15.5	12.5	15.5	12

Plug-in Connector Connecting Base

Circular Connector

Type 12
Top Ported

SY3000/5000/7000 Series



How to Order Manifold

SS5Y **3** - 12M - **05** **U** - - -

① ② ③ ④ ⑤ ⑥

Refer to pages 333 to 335 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

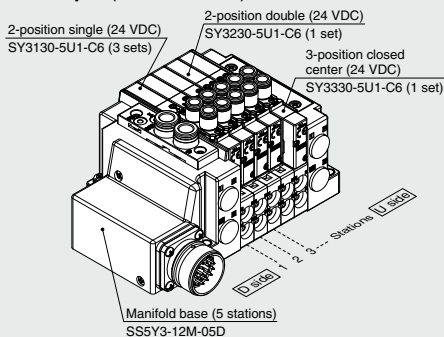
NII	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

*: 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 center part no.)

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

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

⑤ P, E port size (One-touch fittings)

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

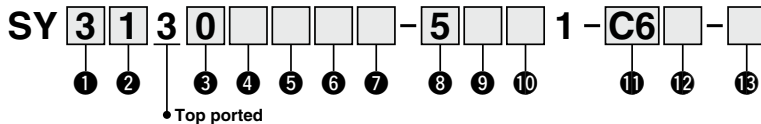
*: For N, sizes are in inches.

⑥ Mounting

NII	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 394 for the fixation of DIN rail mounting type manifold.

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A ⁻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

NII	Internal pilot
R	External pilot

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

NII	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 379 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

NII	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

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

*: Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.
 *: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

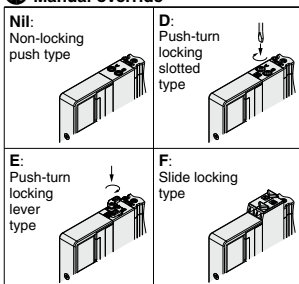
5	24 VDC
6	12 VDC

9 Light/surge voltage suppressor and common specification

Symbol	With light	Surge voltage suppressor	Common specification
NII	—	—	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 154 for with the safety slide locking manual override.

11 A, B port size

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

One-touch fitting (Metric)

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

One-touch fitting (Inch)

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

12 Thread type

NII	Rc
F	G
N	NPT
T	NPTF

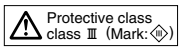
*: Only NII is available for M5.

13 Type of mounting screw

NII	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 367 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.

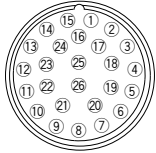
SY
S0700
S0700



SY3000/5000/7000 Series

Electrical Wiring Specifications

Circular connector



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

	Terminal no.	Polarity	
Station 1	SOL.a	1 (-)	(+)
	SOL.b	2 (-)	(+)
Station 2	SOL.a	3 (-)	(+)
	SOL.b	4 (-)	(+)
Station 3	SOL.a	5 (-)	(+)
	SOL.b	6 (-)	(+)
Station 4	SOL.a	7 (-)	(+)
	SOL.b	8 (-)	(+)
Station 5	SOL.a	9 (-)	(+)
	SOL.b	10 (-)	(+)
Station 6	SOL.a	11 (-)	(+)
	SOL.b	12 (-)	(+)
Station 7	SOL.a	13 (-)	(+)
	SOL.b	14 (-)	(+)
Station 8	SOL.a	15 (-)	(+)
	SOL.b	16 (-)	(+)
Station 9	SOL.a	17 (-)	(+)
	SOL.b	18 (-)	(+)
Station 10	SOL.a	19 (-)	(+)
	SOL.b	20 (-)	(+)
Station 11	SOL.a	21 (-)	(+)
	SOL.b	22 (-)	(+)
Station 12	SOL.a	23 (-)	(+)
	SOL.b	24 (-)	(+)
	COM.	25 (+)	(-)
	COM.	26 (+)	(-)

Positive Negative
common common

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

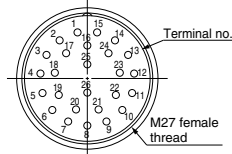
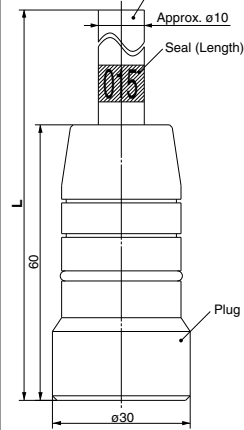
Specified Layout

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

Cable Assembly

015
AXT100-MC26-030
050

Cable
0.3 mm² x 26 cores
O.D. ø 1.4



Lead wire color for circular connector cable assembly by terminal number

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

Electrical characteristics

Item	Property
Conductor resistance Ω/km, 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.

Circular connector cable assembly

Cable length (L)	Assembly part no.
1.5 m	AXT100-MC26-015
3 m	AXT100-MC26-030
5 m	AXT100-MC26-050

※: Cannot be used for movable wiring.

※: Lengths other than the above is also available. Please contact SMC for details.

Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base

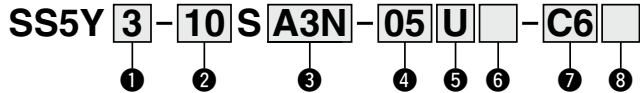
EX500 Gateway Decentralized System 2 (128 Points)

SY3000/5000/7000 Series



How to Order Manifold

Refer to pages 331 (SY5000) and 332 (SY7000) for dimensions of Type 11/Bottom ported type.



1 Series

3	SY3000
5	SY5000
7	SY7000

*: For mixed mounting, refer to page 336 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 336).

*: When mixing top ported configurations, select from page 281.

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*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 Decentralized System 2 (128 points).

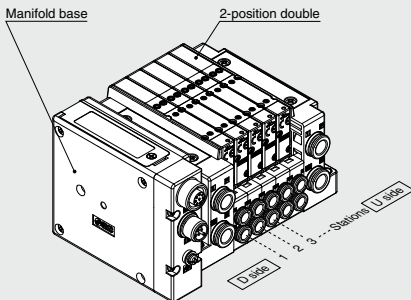
4 Valve stations

Stations	Note
02	Double wiring*1
16	
02	Mixed wiring, Specified layout*2 (Available up to 32 solenoids)
16	
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)
 * SY3200-5U15 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

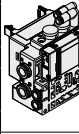
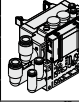
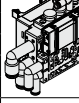
Nii	Internal pilot
S	Internal pilot, Built-in silencer*1*2
R	External pilot

- *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.

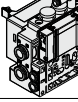

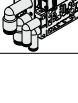
*: A separate GW Unit and communication cable are required.

For details about the EX500 Gateway-type Serial Transmission System, refer to pages 845 to 876 and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 358. Please download the Operation Manual via SMC website, <http://www.smworld.com>

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	ø2	●	—	—	—		
	C3	ø3.2	●	—	—	—		
	C4	ø4	●	●	—	—		
	C6	ø6	●	●	●	●		
	C8	ø8	—	●	●	●		
	C10	ø10	—	—	●	—		●
Elbow ^{*2}	Upward	CM ^{*1}	Mixed sizes	●	●	●	●	
		L4	ø4	●	●	—	—	
		L6	ø6	●	●	—	—	
		L8	ø8	—	●	●	—	
		L10	ø10	—	—	●	—	
		L12	ø12	—	—	●	—	
	Downward	B4	ø4	●	●	—	—	
		B6	ø6	●	●	—	—	
		B8	ø8	—	●	●	—	
		B10	ø10	—	—	●	—	
		B12	ø12	—	—	●	—	
		LM ^{*1}	Mixed sizes	●	●	●	—	
P, E port ^{*3}		ø8	ø10	ø12	ø10	ø12		

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	ø1/8"	●	—	—	—			
	N3	ø5/32"	●	●	—	—			
	N7	ø1/4"	●	●	●	●			
	N9	ø5/16"	—	●	●	●			
	N11	ø3/8"	—	—	●	—		●	
	CM ^{*1}	Mixed sizes	●	●	●	●		●	
Elbow ^{*2}	Upward	LN3	ø5/32"	●	—	—	—		
		LN7	ø1/4"	●	●	—	—		
		LN9	ø5/16"	—	●	—	—		
		LN11	ø3/8"	—	—	●	—		
		BN3	ø5/32"	●	—	—	—		
		BN7	ø1/4"	●	●	—	—		
	Downward	BN9	ø5/16"	—	●	—	—		
		BN11	ø3/8"	—	—	●	—		
		LM ^{*1}	Mixed sizes	●	●	●	—		—
		P, E port ^{*3}		ø5/16"	ø3/8"	ø1/2"	ø3/8"		ø1/2"

*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 373 to 375).

*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
Nii	Direct mounting	—	—
AA		●	●
BA		●	—
D□ ^{*1}	DIN rail mounting	—	—
A□ ^{*1}		●	●
B□ ^{*1}		●	—

*1: Refer to "DIN Rail Option" below.

*2: Select the direct mounting type for Type 11 (Bottom ported).

DIN Rail Option

Nii	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.

*2: 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 372 for the DIN rail part number.

*3: Refer to page 394 for the fixation of DIN rail mounting type manifold.

SY3000/5000/7000 Series

How to Order Valves (With mounting screw)

Refer to page 136 for valve specifications.

SY **3** **1** **0** **0** - **5** **1** -

1
2
3
4
5
6
7
8
9
10
11

• Base mounted

1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A ^{*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

Nil	Internal pilot
R	External pilot

5 Back pressure check valve

Nil	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 379. 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 "Nil" for 3-position type and the SY7000.

6 Pilot valve option

Nil	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

Nil	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 energized for long periods of time.

*2: Be careful of the energizing time when the power saving circuit is selected. For details, refer to page 391.

8 Rated voltage

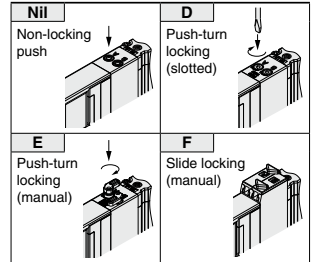
5	24 VDC
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9 Light/surge voltage suppressor and common specification

	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 154 for with the safety slide locking manual override.

11 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type) ^{*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 367 for part numbers of the base gasket and mounting screw.

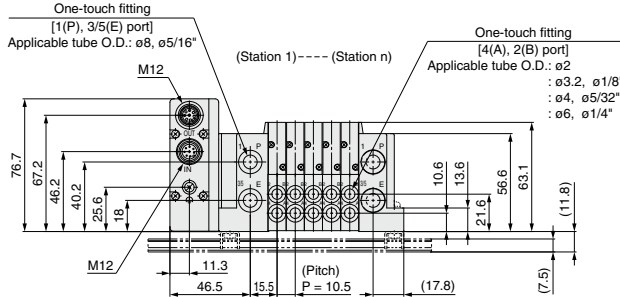
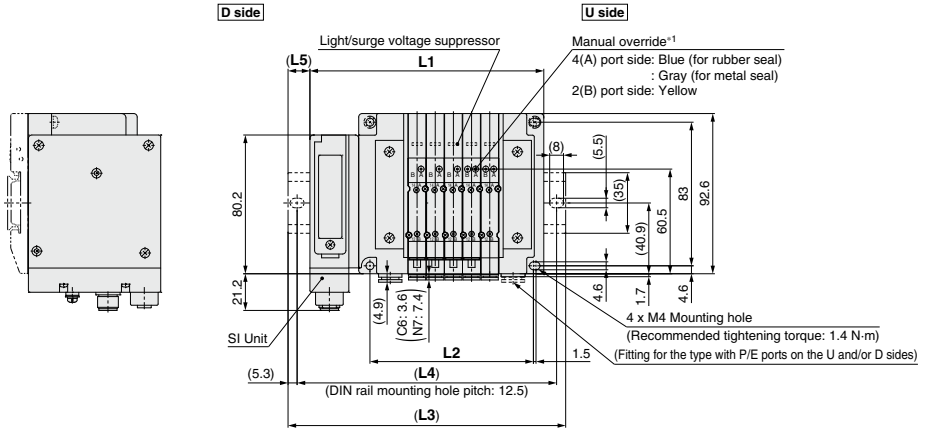
*: Select "Nil" or "K" for the optional individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: SY3000 Series

Plug-in Connector Connecting Base

Type 10/Side Ported
EX500 (128 Points)

SS5Y3-10SA3N-**Stations** $\begin{matrix} \text{U} \\ \text{D} \end{matrix} \begin{matrix} \text{C2} \\ \text{C3} \\ \text{C4} \\ \text{C6} \end{matrix} \begin{matrix} \text{N1} \\ \text{N3} \\ \text{N7} \end{matrix} \text{(D)}$



*1: Refer to page 328 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
*: These figures show the "SS5Y3-10SA3N-05D-C6".
*: Refer to page 333 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

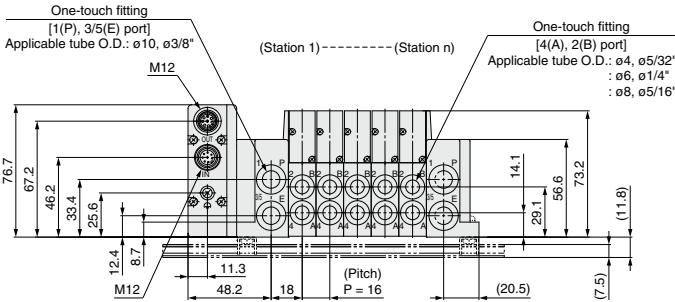
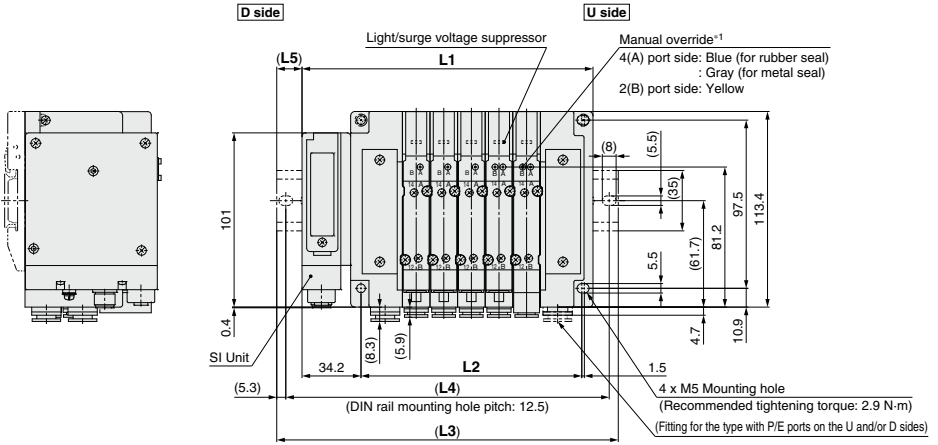
SY3000/5000/7000 Series

Dimensions: SY5000 Series

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 329 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
 *: These figures show the "SS5Y5-10SA3N-05D-C8".
 **: Refer to page 334 for dimensions of A or B port top-ported type.

L: Dimensions

n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	120.7	136.7	152.7	168.7	184.7	200.7	216.7	232.7	248.7	264.7	280.7	296.7	312.7	328.7	344.7
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
L3	148	160.5	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5	373
L4	137.5	150	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5
L5	13.5	12	16.5	14.5	13	17.5	15.5	14	12	16.5	15	13	17.5	16	14

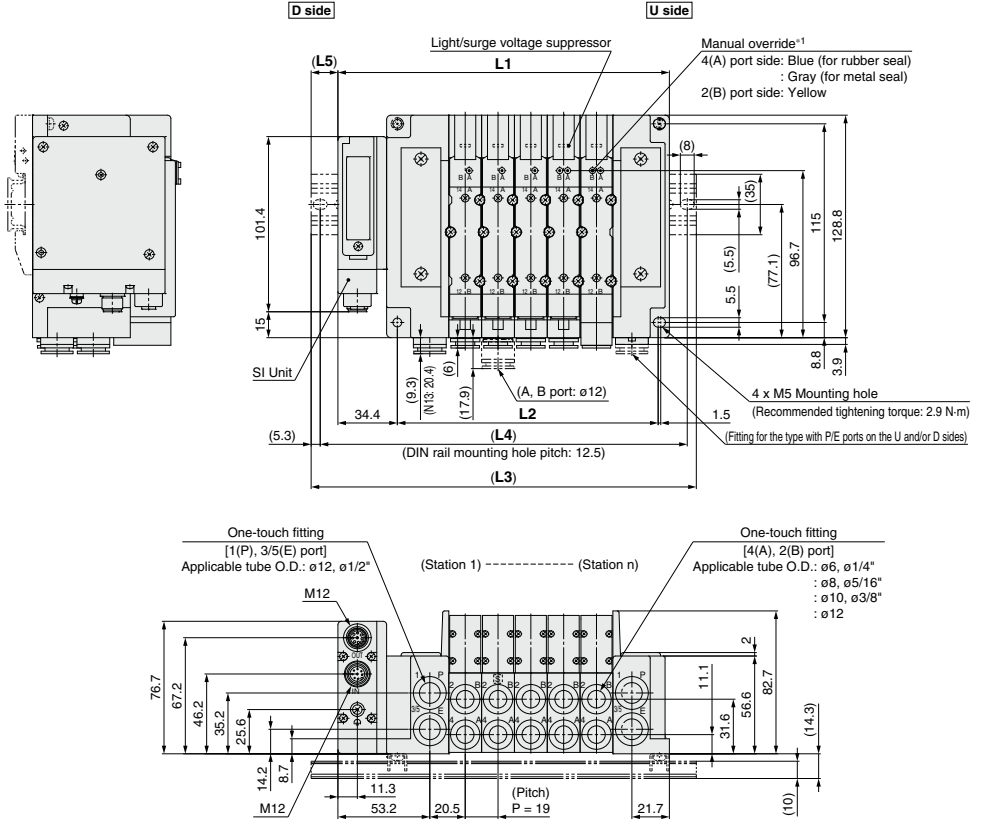
L \ n	17	18	19	20	21	22	23	24
L1	360.7	376.7	392.7	408.7	424.7	440.7	456.7	472.7
L2	320	336	352	368	384	400	416	432
L3	385.5	410.5	423	435.5	448	473	485.5	498
L4	375	400	412.5	425	437.5	462.5	475	487.5
L5	12.5	17	15	13.5	11.5	16	14.5	12.5

Dimensions: **SY7000 Series**

Plug-in
Connector Connecting Base

Type 10/Side Ported
EX500 (128 Points)

SS5Y7-10SA3N- Stations $\begin{matrix} \text{U} \\ \text{D} \end{matrix}$ C6, N7
C8, N9
C10, N11 (D)
C12



*1: Refer to page 330 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
 *: These figures show the "SS5Y7-10SA3N-05D-C10".
 *: Refer to page 335 for dimensions of A or B port top-ported type.

L: Dimensions

n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	134.9	153.9	172.9	191.9	210.9	229.9	248.9	267.9	286.9	305.9	324.9	343.9	362.9	381.9	400.9
L2	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360
L3	160.5	185.5	198	223	235.5	260.5	273	298	310.5	335.5	348	373	398	410.5	435.5
L4	150	175	187.5	212.5	225	250	262.5	287.5	300	325	337.5	362.5	387.5	400	425
L5	13	16	12.5	15.5	12.5	15.5	12	15	12	15	11.5	14.5	17.5	14.5	17.5

L \ n	17	18	19	20	21	22	23	24
L1	419.9	438.9	457.9	476.9	495.9	514.9	533.9	552.9
L2	379	398	417	436	455	474	493	512
L3	448	473	485.5	510.5	523	548	560.5	585.5
L4	437.5	462.5	475	500	512.5	537.5	550	575
L5	14	17	14	17	13.5	16.5	13.5	16.5

Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base

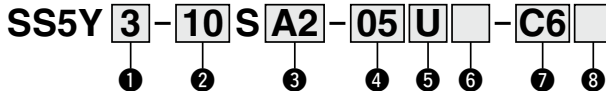
EX500 Gateway Decentralized System (64 Points)

SY3000/5000/7000 Series



How to Order Manifold

Refer to pages 331 (SY5000) and 332 (SY7000) for dimensions of Type 11/Bottom ported type.



1 Series

3	SY3000
5	SY5000
7	SY7000

*: For mixed mounting, refer to page 336 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 336).

*: When mixing top ported configurations, select from page 283. 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 16 outputs, Positive common*1, 1 to 18 stations (16 stations)*2
A2	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.

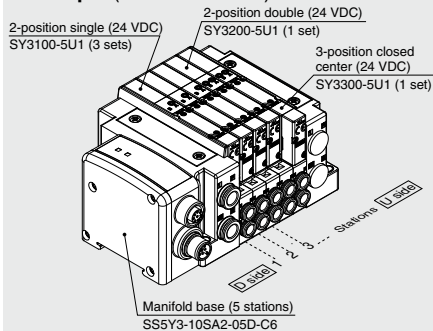
4 Valve stations

Stations	Note
02	2 stations
:	:
:	Double wiring*1
08	8 stations
02	2 stations
:	:
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.)
*: 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 center part no.)

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

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

5 P, E port 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



Nii	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 pages 845 to 876 and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 359. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

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

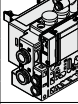

	A, B port	Type 10/Side Ported			Type 11/Bottom Ported			
		SY3000	SY5000	SY7000	SY5000	SY7000		
C2 C3 C4 C6 C8 C10 C12	Straight	ø2	●	—	—	—		
		ø3.2	●	—	—	—		
		ø4	●	●	—	●		—
		ø6	●	●	●	●		●
		ø8	—	●	●	●		●
		ø10	—	—	●	—		●
C12	ø12	—	—	●	—	●		
CM ^{*1}	Mixed sizes	●	●	●	●	●		
L4 L6 L8 L10 L12 B4 B6 B8 B10 B12	Upward	ø4	●	●	—	—		
		ø6	●	●	●	—		—
		ø8	—	●	●	●		—
		ø10	—	—	●	—		—
		ø12	—	—	—	—		—
		ø4	●	●	—	—		—
	Downward	ø6	●	●	●	—	—	
		ø8	—	●	●	●	—	
		ø10	—	—	—	—	—	
		ø12	—	—	●	—	—	
		ø4	●	●	—	—	—	
		ø6	●	●	●	—	—	
B10	ø8	—	—	—	—	—		
B12	ø12	—	—	●	—	—		
LM ^{*1}	Mixed sizes	●	●	●	—	—		
P, E port ^{*3} (One-touch fittings)		ø8	ø10	ø12	ø10	ø12		

*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 373 to 375).

*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.

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

	A, B port	Type 10/Side Ported			Type 11/Bottom Ported			
		SY3000	SY5000	SY7000	SY5000	SY7000		
N1 N3 N7 N9 N11	Straight	ø1/8"	●	—	—	—		
		ø5/32"	●	●	—	—		
		ø1/4"	●	●	●	●		●
		ø5/16"	—	●	●	●		●
		ø3/8"	—	—	●	—		●
		ø3/8"	—	—	—	—		—
CM ^{*1}	Mixed sizes	●	●	●	●	●		
LN3 LN7 LN9 LN11 BN3 BN7 BN9 BN11	Upward	ø5/32"	●	—	—	—		
		ø1/4"	●	●	—	—		
		ø5/16"	—	●	—	—		—
		ø3/8"	—	—	●	—		—
		ø5/32"	●	—	—	—		—
		ø1/4"	●	●	—	—		—
	Downward	ø3/8"	—	—	●	—	—	
		ø5/16"	—	—	—	—	—	
		ø5/16"	—	—	●	—	—	
		ø3/8"	—	—	—	—	—	
		ø5/16"	—	—	—	—	—	
		ø3/8"	—	—	●	—	—	
LM ^{*1}	Mixed sizes	●	●	●	—	—		
P, E port ^{*3} (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"		

8 Mounting and Option

	Mounting	Option	
		Name plate	Station number
N11	Direct mounting	—	—
AA		●	●
BA		●	—
D□ ^{*1}	DIN rail mounting	—	—
A□ ^{*1}		●	●
B□ ^{*1}		●	—
B□ ^{*1}		●	—

*1: Refer to "DIN Rail Option" below.

*2: Select the direct mounting type for Type 11 (Bottom ported).

DIN Rail Option

N11	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

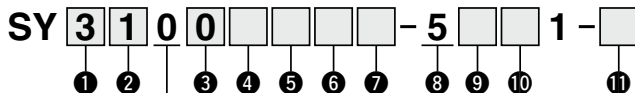
*1: Specify a longer rail than the length of valve stations.

*2: 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 372 for the DIN rail part number.

*3: Refer to page 394 for the fixation of DIN rail mounting type manifold.

SY3000/5000/7000 Series

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



• Base mounted

① Series

3	SY3000
5	SY5000
7	SY7000

② Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A*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

Nii	Internal pilot
R	External pilot

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

Nii	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 379 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

Nii	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

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

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

*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

⑧ Rated voltage

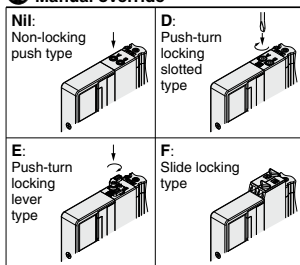
5	24 VDC
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⑨ Light/surge voltage suppressor and common specification

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

*: Only "Z" and "NZ" are available for with the power saving circuit. Select a valve from R, U, S or Z when the SI Unit specification is A2 (positive common). Select a valve from R, U, NS or NZ when the SI Unit specification is A2N (negative common).

⑩ Manual override



*: Refer to page 154 for with the safety slide locking manual override.

⑪ Type of mounting screw

Nii	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.

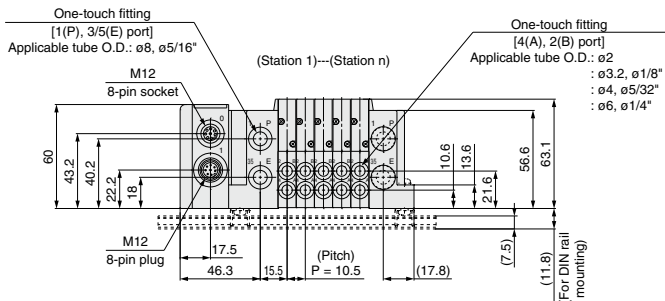
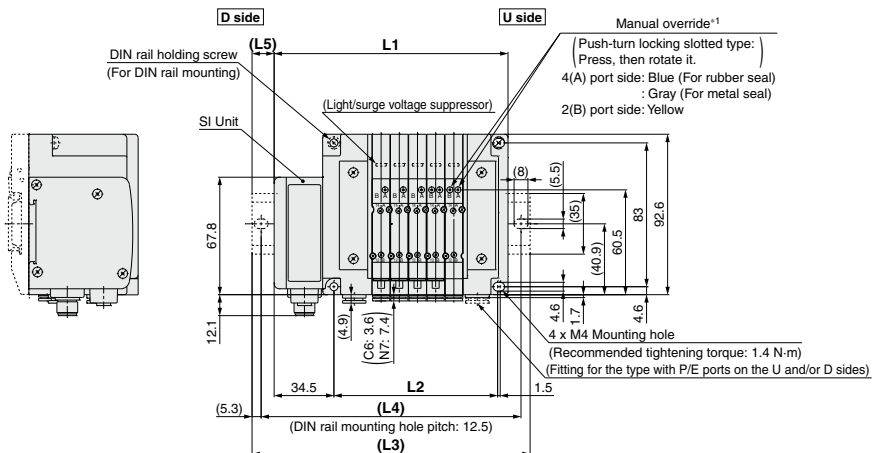
Refer to page 367 for part numbers of the base gasket and mounting screw.

*: "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: **SY3000 Series**

Plug-in
Connector Connecting Base
Type 10/Side Ported
EX500 (64 Points)

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



*1: Refer to page 328 or dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

*: These figures show the "SS5Y3-10SA2-05D-C6".

*: Refer to page 333 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

SY
SY
S0700
S0700

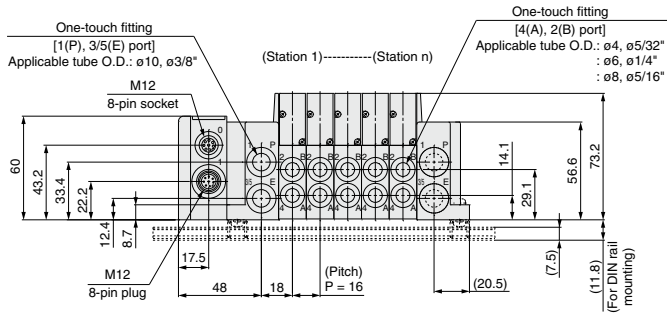
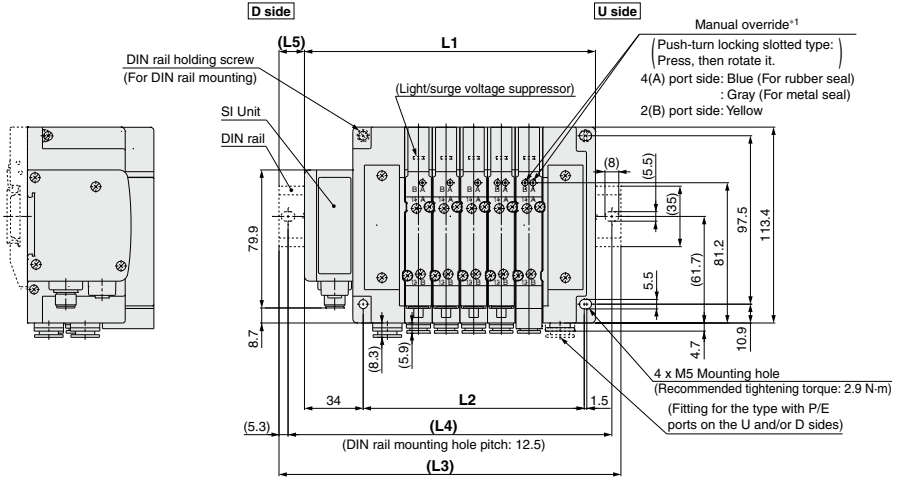
SY3000/5000/7000 Series

Dimensions: **SY5000 Series**

Plug-in
Connector Connecting Base

Type 10/Side Ported
EX500 (64 Points)

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



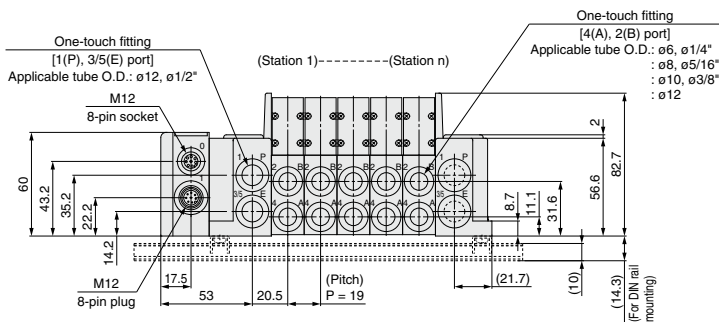
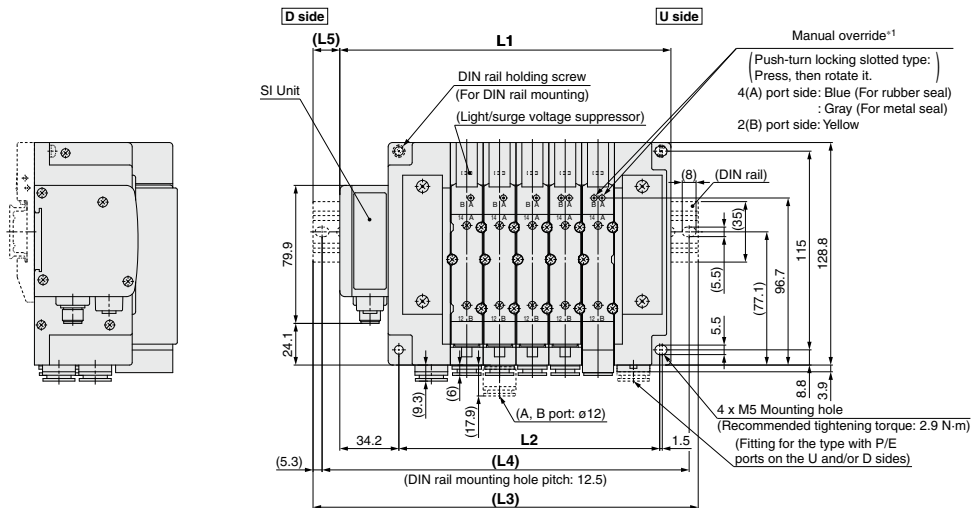
*1: Refer to page 329 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
 *: These figures show the "SS5Y5-10SA2-05D-C8".
 **: Refer to page 334 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	120.5	136.5	152.5	168.5	184.5	200.5	216.5	232.5	248.5	264.5	280.5	296.5	312.5	328.5	344.5
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
L3	148	160.5	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5	373
L4	137.5	150	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5
L5	14	12	16.5	15	13	17.5	16	14	12.5	17	15	13.5	18	16	14.5

Dimensions: **SY7000 Series**

Plug-in Connector Connecting Base	Type 10/Side Ported
	EX500 (64 Points)

SS5Y7-10SA2-**Stations** U C6, N7
D C8, N9
B C10, N11 (D)
C C12



*1: Refer to page 330 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
 *: These figures show the "SS5Y7-10SA2-05D-C10".
 **: Refer to page 335 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

SJ
SY
SY
S0700
S0700

Plug-in Connector Connecting Base

EX500 Gateway Decentralized System 2 (128 Points)

Type 12
Top Ported

SY3000/5000/7000 Series



How to Order Manifold

SS5Y **3** - 12S **A3N** - **05** **U** **□** - **□** **□**

① ② ③ ④ ⑤ ⑥ ⑦

Refer to pages 333 to 335 for dimensions of Type 12/Top ported type.

1 Series

3	SY3000
5	SY5000
7	SY7000

*: For mixed mounting, refer to page 336 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 Decentralized System 2 (128 points).

3 Valve stations

Stations	Note
02	2 stations
⋮	⋮
16	16 stations
02	2 stations
⋮	⋮
24	24 stations

(Available up to 32 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.)
- *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.

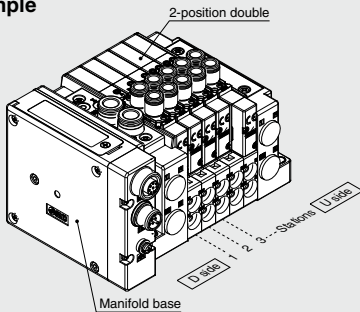
5 SUP/EXH block assembly

Nii	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-SU1-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
Nii	ø8	ø10	ø12
N ^{*1}	ø5/16"	ø3/8"	ø1/2"

*1: For "N", sizes are in inches.

7 Mounting

Nii	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

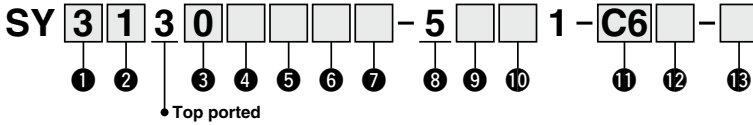
- *1: Specify a longer rail than the length of valve stations.
- *: If the DIN rail must be mounted without an SI Unit, select "D0". Then, refer to L3 of the dimensions for the DIN rail length and order separately. Refer to page 372 for the DIN rail part number.
- *: Refer to page 394 for the fixation 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 pages 845 to 876 and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 358. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

How to Order Valves (With mounting screw)

Refer to page 136 for valve specifications.



① Series

3	SY3000
5	SY5000
7	SY7000

② Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A ⁻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

NII	Internal pilot
R	External pilot

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

NII	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 379. 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.

*2: Select "NII" for 3-position type and the SY7000.

⑥ Pilot valve option

NII	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

NII	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 energized for long periods of time.

*2: Be careful of the energizing time when the power saving circuit is selected. For details, refer to page 391.

⑧ Rated voltage

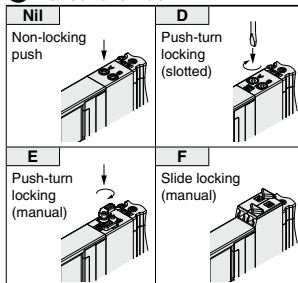
5	24 VDC
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⑨ Light/surge voltage suppressor and common specification

	With light	Surge voltage suppressor	Common specification
R	—	—	Non-polar
U	●	●	
NS	—	—	
NZ	●	—	

*: Select "NZ" for with the power saving circuit.

⑩ Manual override



*: Refer to page 154 for with the safety slide locking manual override.

⑪ A, B port size

Thread piping

	Port size	SY3000	SY5000	SY7000
M5	M5 x 0.8	●	—	—
O1	1/8	—	●	—
O2	1/4	—	—	●

One-touch fitting (Metric)

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

One-touch fitting (Inch)

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

⑫ A, B port thread type

NII	Rc
F	G
N	NPT
T	NPTF

*: Select "NII" for M5.

⑬ Type of mounting screw

NII	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})

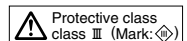
*1: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

*: **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 367 for part numbers of the base gasket and mounting screw.

*: Select "NII" or "K" for the optional individual SUP/EXH spacer assembly or interface regulator.



Plug-in Connector Connecting Base

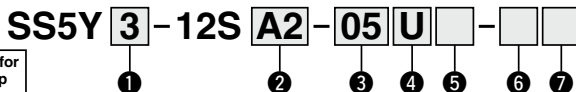
EX500 Gateway Decentralized System (64 Points)

Type 12
Top Ported

SY3000/5000/7000 Series



How to Order Manifold



Refer to pages 333 to 335 for dimensions of Type 12/Top ported type.

1 Series

3	SY3000
5	SY5000
7	SY7000

*: For mixed mounting, refer to page 336 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: **U** For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

5 SUP/EXH block assembly

NII	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.

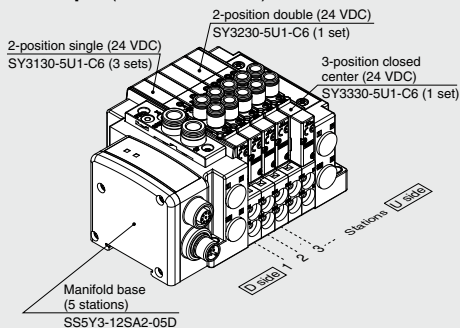
3 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring ^{*1}
:	:	
08	8 stations	
02	2 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.)
*: 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 center part no.)

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

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

6 P, E port size (One-touch fittings)

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

*: For N, sizes are in inches.

7 Mounting

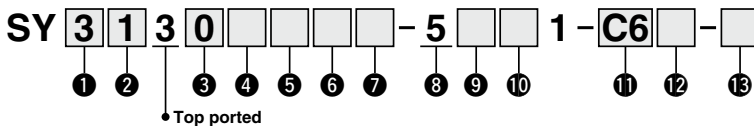
NII	Direct mounting
D	With DIN bracket, DIN rail with standard length
D0	With DIN bracket, without DIN rail
D3 ^{*1}	With DIN bracket, DIN rail for 3 stations
:	:
D16 ^{*1}	With DIN bracket, DIN rail for 16 stations

*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 372 for the DIN rail part number.
*: Refer to page 394 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 pages 845 to 876 and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 359. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A ^{*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

NII	Internal pilot
R	External pilot

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

NII	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 379 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

NII	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

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

*: Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.
 *: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

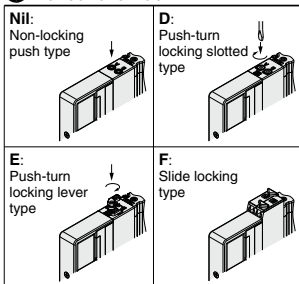
5	24 VDC
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9 Light/surge voltage suppressor and common specification

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

*: Select "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 154 for with the safety slide locking manual override.

11 A, B port size

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

One-touch fitting (Metric)

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

One-touch fitting (Inch)

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

12 Thread type

NII	Rc
F	G
N	NPT
T	NPTF

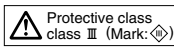
*: Only NII is available for M5.

13 Type of mounting screw

NII	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 367 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.

SY
SY
S0700
S0700



Type 10
Side Ported

Type 11
Bottom Ported

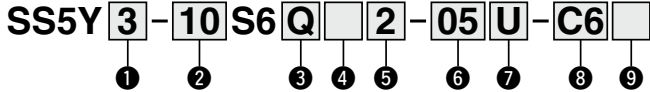
Plug-in Connector Connecting Base

EX600

SY3000/5000/7000 Series



How to Order Manifold



Refer to pages 331 (SY5000) and 332 (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 336).

③ SI Unit

0	Without SI Unit
Q	DeviceNet™ (Version A)
N	PROFIBUS DP (Version A)
V	CC-Link
ZE	EtherNet/IP™ (1 port)
EA	EtherNet/IP™ (2 ports)
D	EtherCAT
F	PROFINET
WE	EtherNet/IP™ compatible wireless master*1
WF	PROFINET compatible wireless master*1
WS	Wireless slave*1

*1: The wireless system is suitable for use only in a country where it is in accordance with the Radio Act and regulations of that country.
 *: I/O Unit cannot be mounted without SI Unit.
 *: Valve plate which connects manifold and SI Unit is included, but it is not mounted to a valve without SI Unit. Refer to the EX600 (page 843) 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: INOUT pin arrangement 1	Power supply with M12 connector: INOUT pin arrangement 2
Without SI Unit	Nil			
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 nil.

⑤ I/O Unit stations

Nil	None
1	1 station
:	:
9	9 stations

*: Without SI Unit, the symbol is nil.
 *: 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
Nil	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 394 for the fixation of DIN rail mounting type manifold.

DIN Rail Option

Nil	Direct mounting	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations.
:	:	
24	For 24 stations	

*: If the DIN rail must be mounted without an SI Unit, select D0. Then, refer to L3 of the dimensions for the DIN rail length and order separately. (Refer to page 372 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 pages 815 to 843 and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to pages 360 and 361. (IP40 specifications may be required according to the I/O Unit to be selected.) Please download the Operation Manual via SMC website, <http://www.smccworld.com>

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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
C2 C3 C4 C6 C8 C10 C12	Straight	ø2	●	—	—	—
		ø3.2	—	—	—	—
		ø4	●	●	—	●
		ø6	●	●	●	●
		ø8	—	—	●	●
		ø10	—	—	●	●
C12 ¹	Straight port, mixed sizes	—	—	●	●	
CM ¹		●	●	●	●	
L4 L6 L8 L10 L12	Upward	ø4	●	●	—	—
		ø6	●	●	●	—
		ø8	—	—	●	—
		ø10	—	—	●	—
		ø12	—	—	●	—
		ø4	●	●	—	—
B6 B8 B10 B12	Downward	ø6	●	●	●	—
		ø8	—	—	●	—
		ø10	—	—	●	—
		ø12	—	—	●	—
LM ¹	Elbow port, mixed sizes (including upward and downward piping)	●	●	●	—	
P, E port size (One-touch fittings)		ø8	ø10	ø12	ø10	ø12

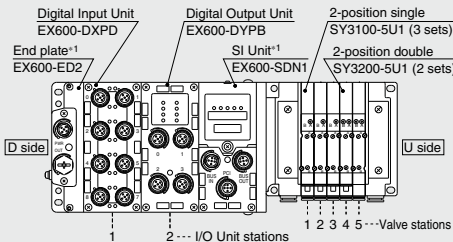
- *1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".
The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.
- *2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 373 to 375).

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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
N1 N3 N7 N9 N11	Straight	ø1/8"	●	—	—	—
		ø5/32"	●	●	—	—
		ø1/4"	●	●	●	●
		ø5/16"	—	●	●	●
		ø3/8"	—	—	●	●
CM ¹	Straight port, mixed sizes	●	●	●	●	
LN3		ø5/32"	●	—	—	
LN7	Upward	ø1/4"	●	—	—	
LN9		ø5/16"	—	—	—	
LN11		ø3/8"	—	●	—	
BN3		ø5/32"	●	—	—	
BN7 BN9 BN11	Downward	ø1/4"	●	—	—	
		ø5/16"	—	●	—	
		ø3/8"	—	—	●	
LM ¹	Elbow port, mixed sizes (including upward and downward piping)	●	●	●	—	
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"

How to Order Manifold Assembly

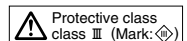
Example (SS5Y3-10S6□-□)



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)

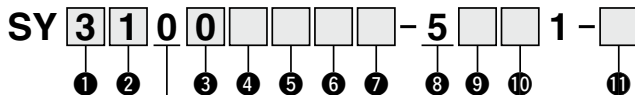
The asterisk denotes the symbol for assembly.
 Prefix it to the part numbers of the valve etc.

- 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 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.
- *2: When mixing top ported configurations, select from page 295. 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.



SY3000/5000/7000 Series

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



• Base mounted

1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A ^{*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

Nii	Internal pilot
R	External pilot

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

Nii	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 379 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

Nii	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

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

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

*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

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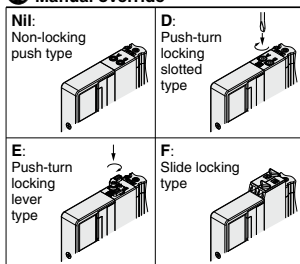
9 Light/surge voltage suppressor and common specification

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

*: Select a valve from R, U, S or Z when the SI Unit polarity is positive common. Select a valve from R, U, NS or NZ when the SI Unit output polarity is negative common.

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

10 Manual override



*: Refer to page 154 for with the safety slide locking manual override.

11 Type of mounting screw

Nii	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.

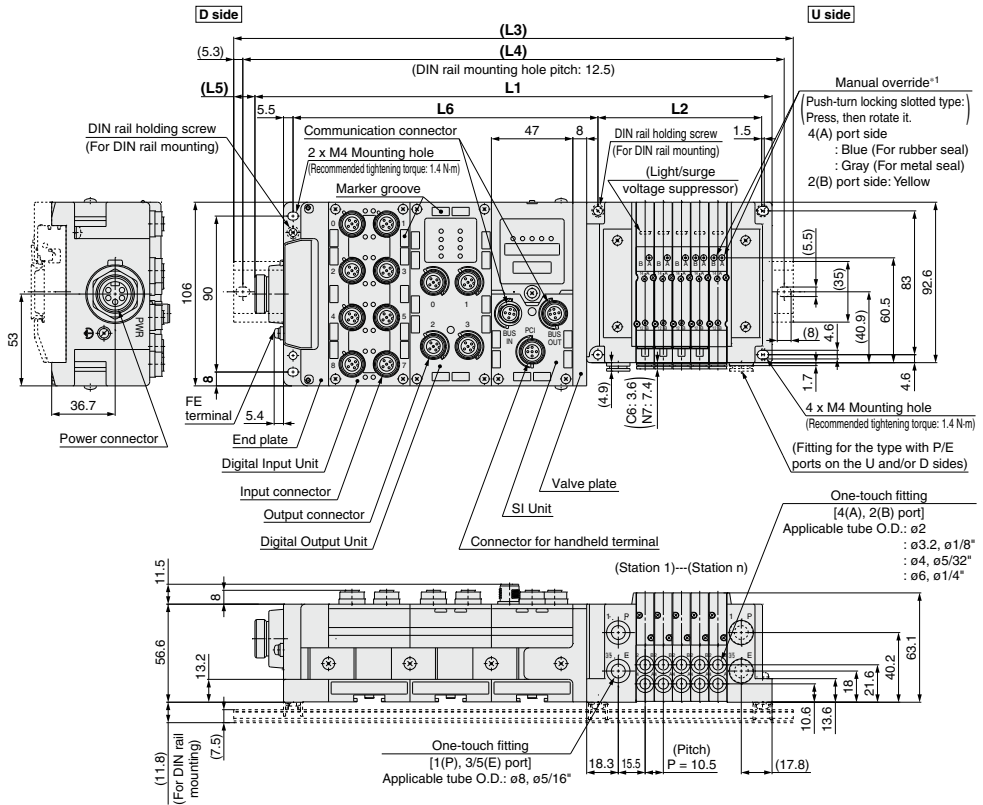
Refer to page 367 for part numbers of the base gasket and mounting screw.

*: "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.

SY3000/5000/7000 Series

Dimensions: SY3000 Series	Plug-in Connector Connecting Base	Type 10/Side Ported EX600 (7/8 Inch Connector)
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SS5Y3-10S6 □ □ □ - Stations $\begin{matrix} U \\ D \\ B \end{matrix} \begin{matrix} C2 \\ C3, N1(D) \\ C4, N3 \\ C6, N7 \end{matrix}$



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

n1: Valve stations
n2: I/O Unit stations

*1: Refer to page 328 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
*2: These figures show the "SS5Y3-10S6Q32-05D-C6".
*3: Refer to page 333 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	398	410.5	423	423	435.5	448
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	485.5
2	298	310.5	323	335.5	348	360.5	373	385.5	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	498	510.5	523	535.5	548	548
3	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	573	585.5	598	610.5	623	623
4	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5	523	535.5	548	560.5	573	585.5	598	610.5	623	635.5	648	660.5	660.5
5	435.5	448	460.5	473	485.5	498	510.5	523	535.5	548	560.5	573	585.5	598	610.5	623	635.5	648	660.5	673	685.5	698	710.5	710.5
6	485.5	498	510.5	523	535.5	548	560.5	573	585.5	598	610.5	623	635.5	648	660.5	673	685.5	698	710.5	723	735.5	748	760.5	760.5
7	535.5	548	560.5	573	585.5	598	610.5	623	635.5	648	660.5	673	685.5	698	710.5	723	735.5	748	760.5	773	785.5	798	810.5	810.5
8	573	585.5	610.5	623	635.5	648	660.5	673	685.5	698	710.5	723	735.5	748	760.5	773	785.5	798	810.5	823	835.5	848	860.5	860.5
9	623	635.5	648	660.5	673	685.5	698	710.5	723	735.5	748	760.5	773	785.5	798	810.5	823	835.5	848	860.5	873	885.5	898	910.5

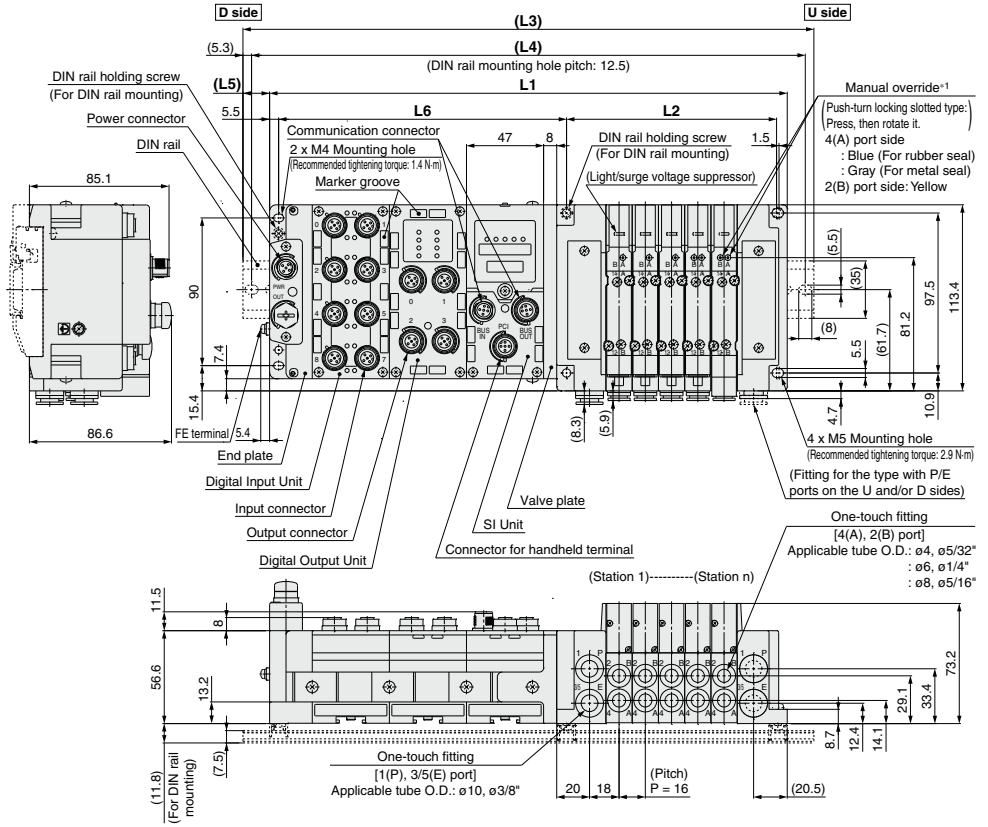


Dimensions: **SY5000 Series**

Plug-in Connector Connecting Base

Type 10/Side Ported EX600 (M12 Connector)

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



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

*1: Refer to page 329 for dimensions of external pilot, silencer, elbow fittings and side locking manual override.
 *: These figures show the "SS5Y5-10S6Q22-05D-C6".
 **: Refer to page 334 for dimensions of A or B port top-ported type.

n1: Valve stations
 n2: I/O Unit stations

L3: DIN Rail Overall Length

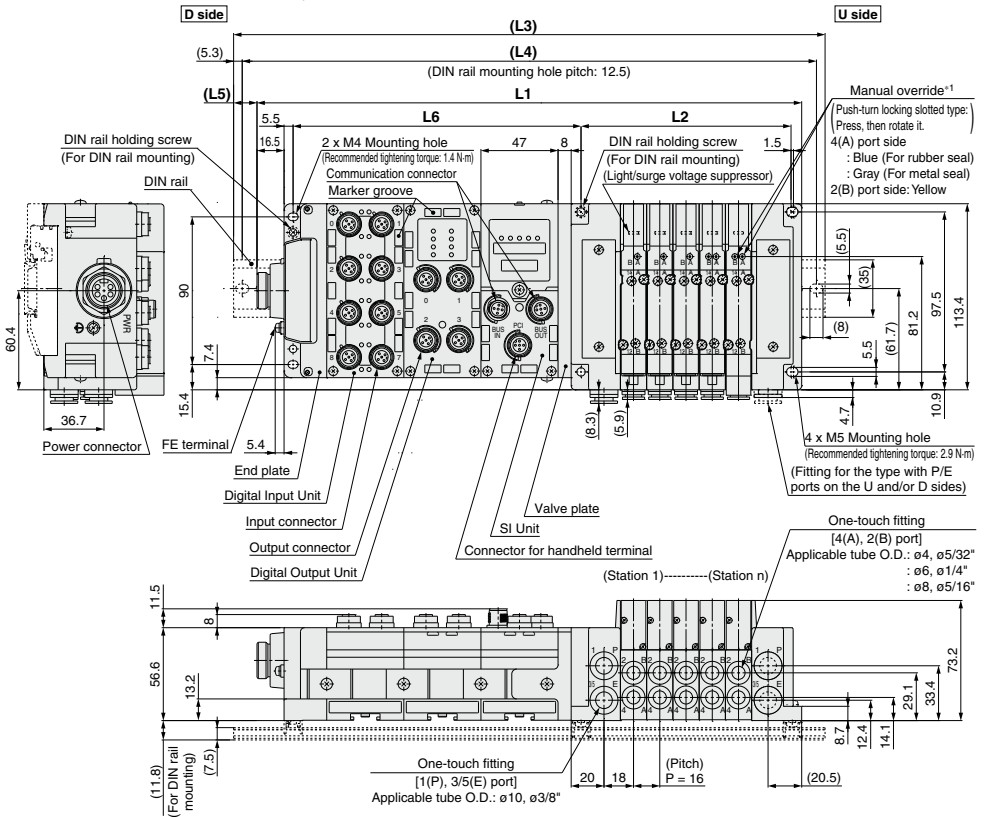
I/O Unit stations (n2) \ Valve stations (n1)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
0	198	223	235.5	248	273	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	548	560.5
1	248	260.5	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	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	

SJ
 SY
 SY
 S0700
 S0700

SY3000/5000/7000 Series

Dimensions: SY5000 Series	Plug-in Connector Connecting Base	Type 10/Side Ported EX600 (7/8 Inch Connector)
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SS5Y5-10S6 □ $\frac{3}{8}$ □ - Stations $\begin{matrix} U & C4, N3 \\ D & C6, N7 (D) \\ B & C8, N9 \end{matrix}$ (D)



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

n1: Valve stations
n2: I/O Unit stations

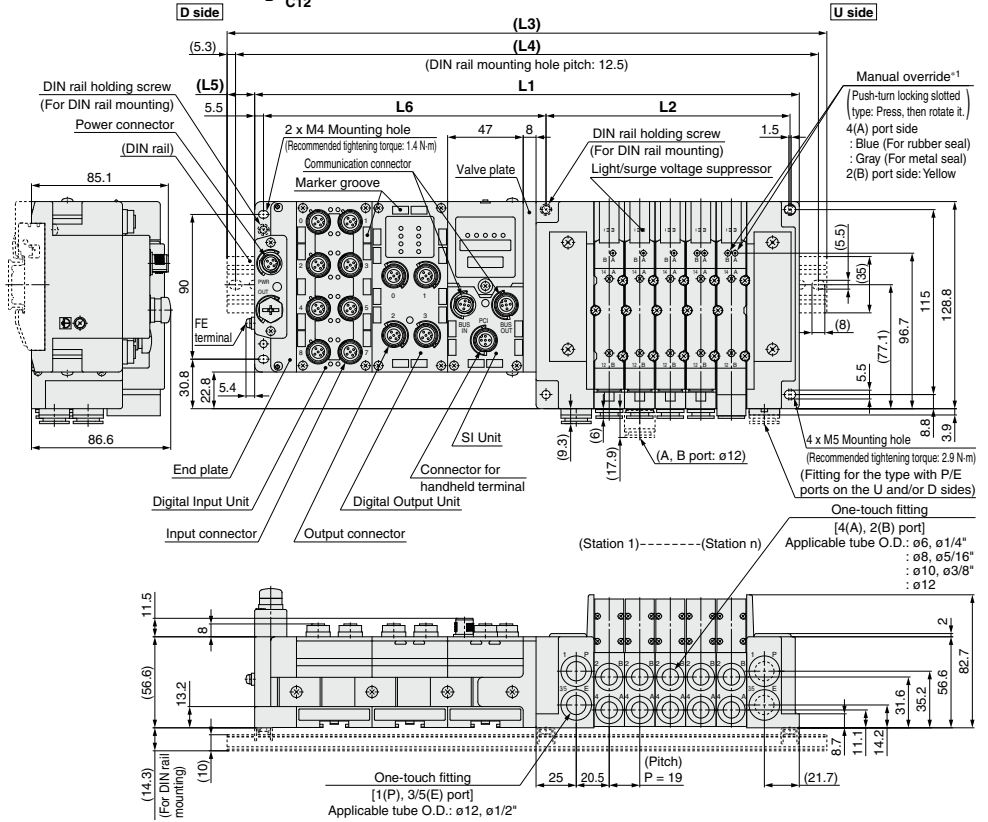
*1: Refer to page 329 for dimensions of external pilot, silencer, elbow fittings and side locking manual override.
*2: These figures show the "SS5Y5-10S6Q32-05D-C8".
*3: Refer to page 334 for dimensions of A or B port top-ported type.

L3: DIN Rail Overall Length

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	373	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	610.5	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	798	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: **SY7000 Series** **Plug-in Connector Connecting Base** **Type 10/Side Ported EX600 (M12 Connector)**

SS5Y7-10S6 □ 4 □ - Stations U C6, N7
B C8, N9
C10, N11 (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

n1: Valve stations
 n2: I/O Unit stations

*1: Refer to page 330 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
 *: These figures show the "SS5Y7-10S6Q22-05D-C10".
 **: Refer to page 335 for dimensions of A or B port top-ported type.

L3: DIN Rail Overall Length

I/O Unit stations (m2)	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	648	673	
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	673	685.5	710.5	723	
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	748	760.5	773
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	748	760.5	785.5	798	823	835.5
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	835.5	848	873
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	885.5	910.5	923
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	935.5	948	973
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	973	—	—
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	—	—	—	—	—	—	—

SY
 SY
 S0700
 S0700

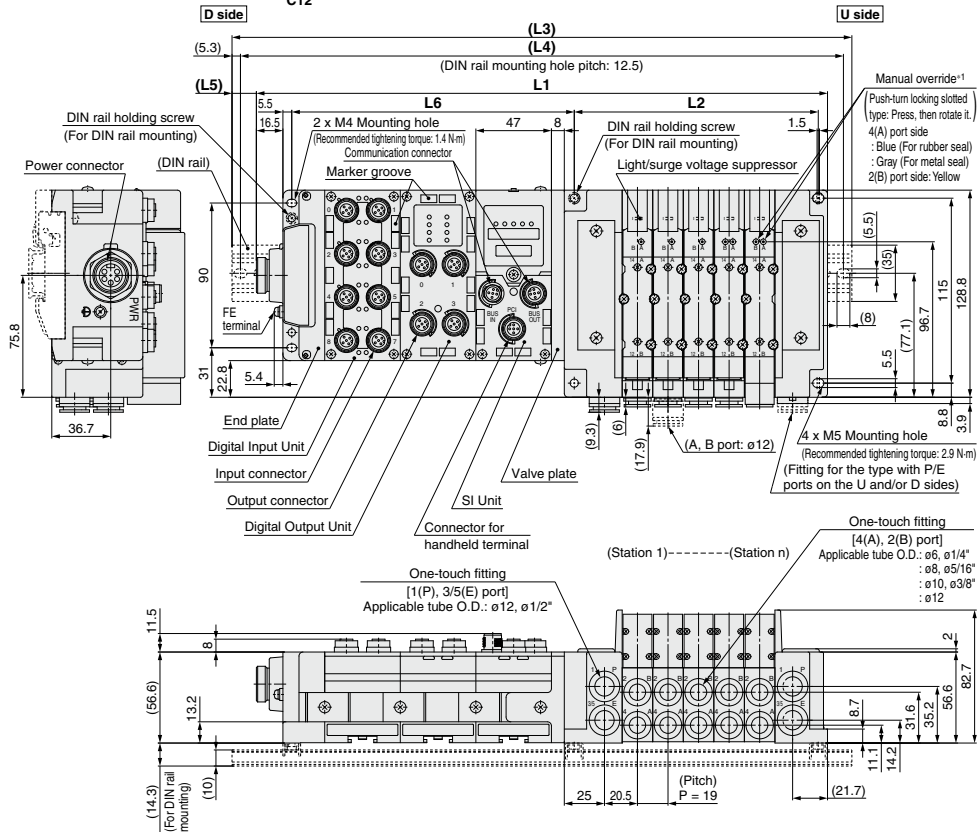
SY3000/5000/7000 Series

Dimensions: **SY7000 Series**

Plug-in Connector Connecting Base

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

SS5Y7-10S6 \square_3 \square_8 - Stations $\begin{matrix} \text{U} \\ \text{D} \end{matrix}$ $\begin{matrix} \text{C6, N7} \\ \text{C8, N9} \\ \text{C10, N11 (D)} \\ \text{C12} \end{matrix}$



L1 = 19 x n1 + 166.2 + 47 x n2
 L2 = 19 x n1 + 56
 L4 = L3 - 10.5
 L5 = (L3 - L1)/2
 L6 = 47 x n2 + 81.7

n1: Valve stations
 n2: I/O Unit stations

*1: Refer to page 330 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
 *: These figures show the "SS5Y7-10S6Q32-05D-C10".
 **: Refer to page 335 for dimensions of A or B port top-ported type.

L3: DIN Rail Overall Length

I/O Unit stations (n2)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0	235.5	248	273	285.5	310.5	323	348	360.5	385.5	410.5	423	448	460.5	485.5	498	523	535.5	560.5	573	598	610.5	635.5	648
1	285.5	298	323	335.5	360.5	373	398	410.5	435.5	448	473	485.5	510.5	523	548	560.5	585.5	598	623	635.5	660.5	685.5	698
2	323	348	360.5	385.5	398	423	435.5	460.5	485.5	498	523	535.5	560.5	573	598	610.5	635.5	648	673	685.5	710.5	723	748
3	373	398	410.5	435.5	448	473	485.5	510.5	523	548	560.5	585.5	598	623	635.5	660.5	673	698	710.5	735.5	760.5	773	798
4	423	435.5	460.5	473	498	510.5	535.5	560.5	573	598	610.5	635.5	648	673	685.5	710.5	723	748	760.5	785.5	798	823	835.5
5	473	485.5	510.5	523	548	560.5	585.5	598	623	635.5	660.5	673	698	710.5	735.5	748	773	785.5	810.5	835.5	848	873	885.5
6	510.5	535.5	548	573	585.5	610.5	635.5	648	673	685.5	710.5	723	748	760.5	785.5	798	823	835.5	860.5	873	898	910.5	935.5
7	560.5	585.5	598	623	635.5	660.5	673	698	710.5	735.5	748	773	785.5	810.5	823	848	860.5	885.5	910.5	923	948	960.5	985.5
8	610.5	623	648	660.5	685.5	710.5	723	748	760.5	785.5	798	823	835.5	860.5	873	898	910.5	935.5	948	973	985.5	—	—
9	660.5	673	698	710.5	735.5	748	773	785.5	810.5	823	848	860.5	885.5	898	923	935.5	960.5	985.5	—	—	—	—	—

Plug-in Connector Connecting Base

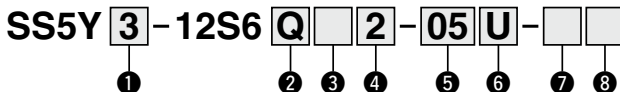
EX600

Type 12
Top Ported

SY3000/5000/7000 Series



How to Order Manifold



Refer to pages 333 to 335 for dimensions of Type 12/Top ported type.

1 Series

3	SY3000
5	SY5000
7	SY7000

2 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: INOUT pin arrangement 1	Power supply with M12 connector: INOUT pin arrangement 2
Without SI Unit	Nil			
SI Unit positive common	2	3	6	8
SI Unit negative common	4	5	7	9

*: Without SI Unit, the symbol is nil.

*: Ensure a match with the common specification of the valve to be used.

2 SI Unit

0	Without SI Unit
Q	DeviceNet™ (Version A)
N	PROFIBUS DP (Version A)
V	CC-Link
ZE	EtherNet/IP™ (1 port)
EA	EtherNet/IP™ (2 ports)
D	EtherCAT
F	PROFINET
WE	EtherNet/IP™ compatible wireless master*1
WF	PROFINET compatible wireless master*1
WS	Wireless slave*1

*1: The wireless system is suitable for use only in a country where it is in accordance with the Radio Act and regulations of that country.

*: I/O Unit cannot be mounted without SI Unit.

*: Valve plate which connects manifold and SI Unit is included, but it is not mounted to a valve without SI Unit. Refer to the EX600 catalog (page 843) for mounting.

4 I/O Unit stations

Nil	None
1	1 station
:	:
9	9 stations

*: Without SI Unit, the symbol is nil.

*: 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	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.

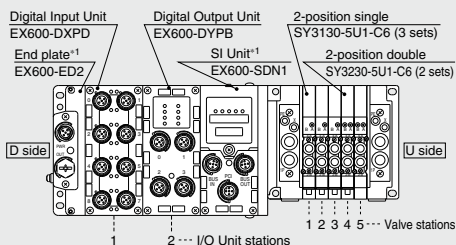
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

*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.)

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

How to Order Manifold Assembly

Example (SS5Y3-12S6□-□)



SS5Y3-12S6Q42-05B 1 set (Type 12 5-station manifold base part no.)
 +SY3130-5U1-C6 3 sets (2-position single part no.)
 +SY3230-5U1-C6 2 sets (2-position double part no.)
 +EX600-DXPD 1 set I/O Unit part number (Station 1)
 +EX600-DYPB 1 set I/O Unit part number (Station 2)

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

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

*1: Do not enter the SI Unit part number and the end plate part number together.

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
Nil	ø8	ø10	ø12
N	ø5/16"	ø3/8"	ø1/2"

*: For N, sizes are in inches.

8 Mounting

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

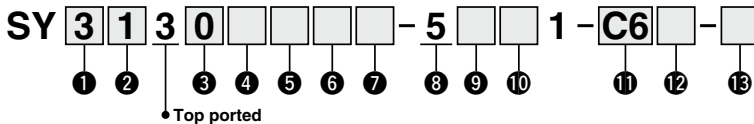
Specify a longer rail than the standard length.

*: 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 372 for part numbers of DIN rail.)

*: Refer to page 394 for the fixation of DIN rail mounting type manifold.

For details about the EX600 Integrated-type (For Input/Output) Serial Transmission System, refer to pages 815 to 843 and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to pages 360 and 361. (IP40 specifications may be required according to the I/O Unit to be selected.) Please download the Operation Manual via SMC website, <http://www.smcworld.com>

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A ^{*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

Nil	Internal pilot
R	External pilot

5 Back pressure check valve

Nil	None
H	Built-in

*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 379 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.
 *: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

6 Pilot valve option

Nil	Standard (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

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

*: Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.
 *: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

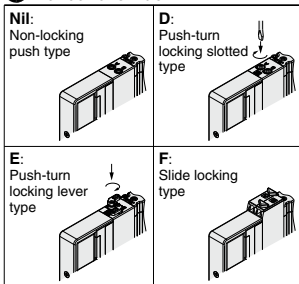
5	24 VDC
---	--------

9 Light/surge voltage suppressor and common specification

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

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

10 Manual override



*: Refer to page 154 for with the safety slide locking manual override.

11 A, B port size

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

One-touch fitting (Metric)

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

One-touch fitting (Inch)

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

12 Thread type

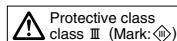
Nil	Rc
F	G
N	NPT
T	NPTF

*: Only Nil is available for M5.

13 Type of mounting screw

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

*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.
 *: **When ordering a valve individually, the base gasket is not included.** Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to page 367 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

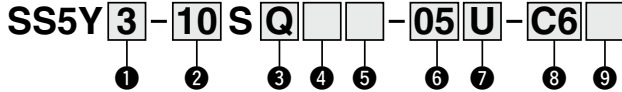
EX250

SY3000/5000/7000 Series



How to Order Manifold

Refer to pages 331 (SY5000) and 332 (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 336).

4 Input block stations

Nil	None
1	1 station
:	:
8	8 stations

*: Without SI Unit, the symbol is nil. The maximum number of stations is limited for the AS-Interface applicable SI Unit.

3 SI Unit

0	Without SI Unit	
Q	DeviceNet™ (Negative common)	
N	PROFIBUS DP (Negative common)	
V	CC-Link (Positive common)	
TA	2 power supply systems	8 in/8 out, 31 slave modes
TB	AS-Interface (Negative common)	4 in/4 out, 31 slave modes
TC	1 power supply systems	8 in/8 out, 31 slave modes
TD		4 in/4 out, 31 slave modes
Y	CANopen (Negative common)	
ZE	EtherNet/IP™ (Negative common)	

- *: 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	Nil	
M12, 2 inputs	A	D
M12, 4 inputs	B	E
M8, 4 inputs	C	F

*: Without SI Unit, the symbol is nil.

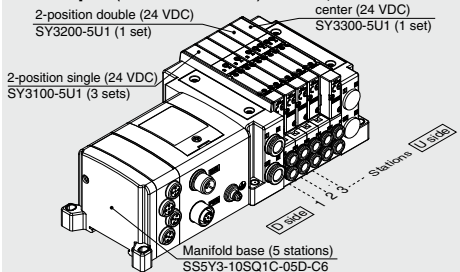
6 Valve stations

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 (SS5Y3-10S□-□)



SS5Y3-10SQ1C-05D-C6... 1 set (Type 10 5-station manifold base part no.)
 *SY3100-5U1 3 sets (2-position single part no.)
 *SY3200-5U1 1 set (2-position double part no.)
 *SY3300-5U1 1 set (3-position closed center part no.)

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

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

*: When mixing top ported configurations, select from page 303. 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

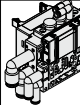
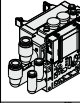
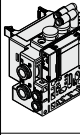
P, E port entry	Internal pilot	Internal pilot, Built-in silencer	External pilot
U side (2 to 10 stations)	U	C	G
D side (2 to 10 stations)	D	E	H
Both sides (2 to 24 stations)	B	F	J

- *: 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 pages 802 to 814 and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 362. Please download the Operation Manual via SMC website, <http://www.smccworld.com>

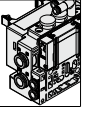
8 A, B port size (Metric/One-touch fitting)

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
C2 C3 C4 C6 C8 C10 C12	Straight	ø2	●	—	—	—
		ø3.2	●	—	—	—
		ø4	●	●	—	●
		ø6	●	●	●	●
		ø8	—	●	●	●
		ø10	—	—	●	—
C12 ¹	ø12	—	—	●	●	
CM ¹	Straight port, mixed sizes	●	●	●	●	
L4 L6 L8 L10 L12 B4 B6 B8 B10 B12	Upward	ø4	●	●	—	—
		ø6	●	●	—	—
		ø8	—	●	●	—
		ø10	—	—	●	—
		ø12	—	—	—	—
		ø4	●	●	—	—
	Downward	ø6	●	●	●	—
		ø8	—	●	●	—
		ø10	—	—	●	—
		ø12	—	—	●	—
		ø4	●	●	—	—
		ø6	●	●	●	—
LM ¹	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	
P, E port size (One-touch fittings)		ø8	ø10	ø12	ø10	ø12



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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
N1 N3 N7 N9 N11	Straight	ø1/8"	●	—	—	—
		ø5/32"	●	●	—	—
		ø1/4"	●	●	●	●
		ø5/16"	—	●	●	●
		ø3/8"	—	—	●	●
		CM ¹	Straight port, mixed sizes	●	●	●
LN3 LN7 LN9 LN11 BN3 BN7 BN9 BN11	Upward	ø5/32"	●	—	—	—
		ø1/4"	●	●	—	—
		ø5/16"	—	●	—	—
		ø3/8"	—	—	●	—
		ø5/32"	●	—	—	—
		ø1/4"	●	—	—	—
	Downward	ø5/32"	●	—	—	—
		ø1/4"	●	—	—	—
		ø5/16"	—	●	—	—
		ø3/8"	—	—	●	—
		ø5/16"	—	—	●	—
		ø3/8"	—	—	●	—
LM ¹	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"



*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 373 to 375).

9 Mounting and Option

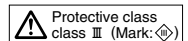
Symbol	Mounting	Option		DIN Rail Option	
		Name plate	Station number	Nil	Direct mounting
Nil	Direct mounting	—	—	0	Without DIN rail (with bracket)
AA		●	●	3	For 3 stations
BA		●	—	:	Specify a longer rail than the total length of specified stations.
D□		—	—	24	
A□	DIN rail mounting	●	●		
B□		●	—		

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

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

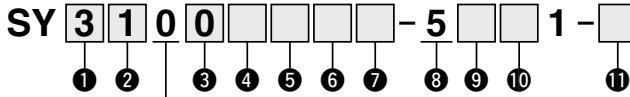
*: Refer to page 394 for the fixation of DIN rail mounting type manifold.

*: 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 372 for part numbers of DIN rail.)



SY3000/5000/7000 Series

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



• Base mounted

1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A*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

NII	Internal pilot
R	External pilot

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

NII	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 379 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

NII	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

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

*: Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.
 *: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

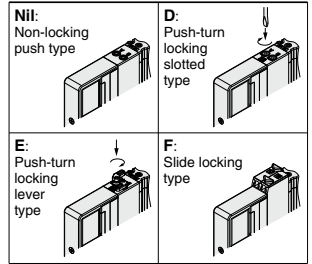
5	24 VDC
---	--------

9 Light/surge voltage suppressor and common specification

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

*: "R" and "U" are applicable for every SI Unit. However, "S" and "Z" can be used only for CC-Link applicable Unit and "NS" and "NZ" are for Units which are not CC-Link applicable.
 *: Only "Z" and "NZ" types are available for with the power saving circuit.

10 Manual override



*: Refer to page 154 for with the safety slide locking manual override.

11 Type of mounting screw

NII	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)

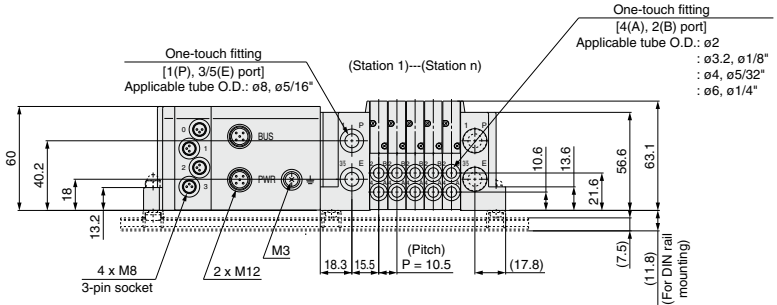
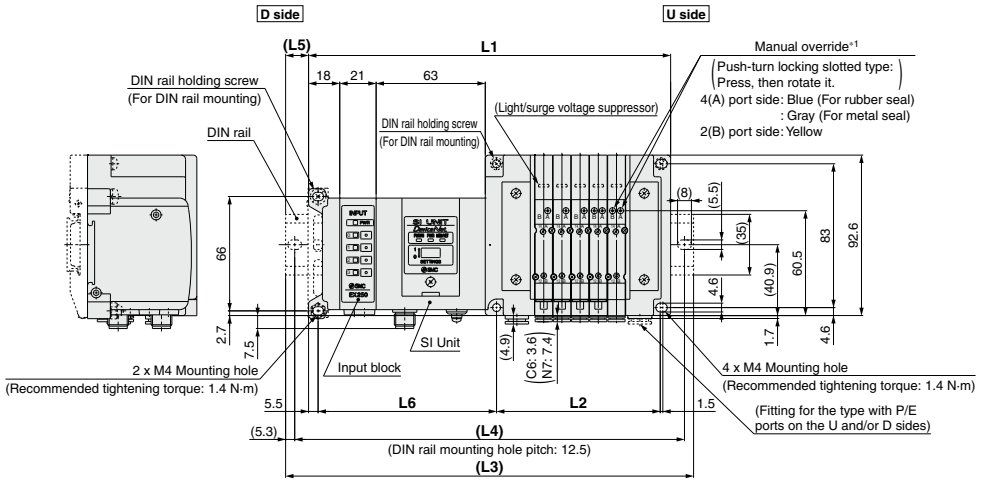
*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.
 *: **When ordering a valve individually, the base gasket is not included.** Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to page 367 for part numbers of the base gasket and mounting screw.
 *: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Plug-in Connector Connecting Base

Type 10/Side Ported
EX250

Dimensions: SY3000 Series

SS5Y3-10S□□□-Stations $\begin{matrix} C2 \\ C3, N1 \\ C4, N3 \\ C6, N7 \end{matrix}$ (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

*1: Refer to page 328 for dimensions of external pilot, silencer, elbow fittings and side locking manual override.
*2: These figures show the "SS5Y3-10SQ1A-05D-C6".
*3: Refer to page 333 for dimensions of A or B port top-ported type.

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
2		223	235.5	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5
3		248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5
4		273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498
5		285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523
6		310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523	535.5	548
7		335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523	535.5	548	548	560.5
8		348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	498	510.5	523	535.5	548	548	560.5	573	585.5	

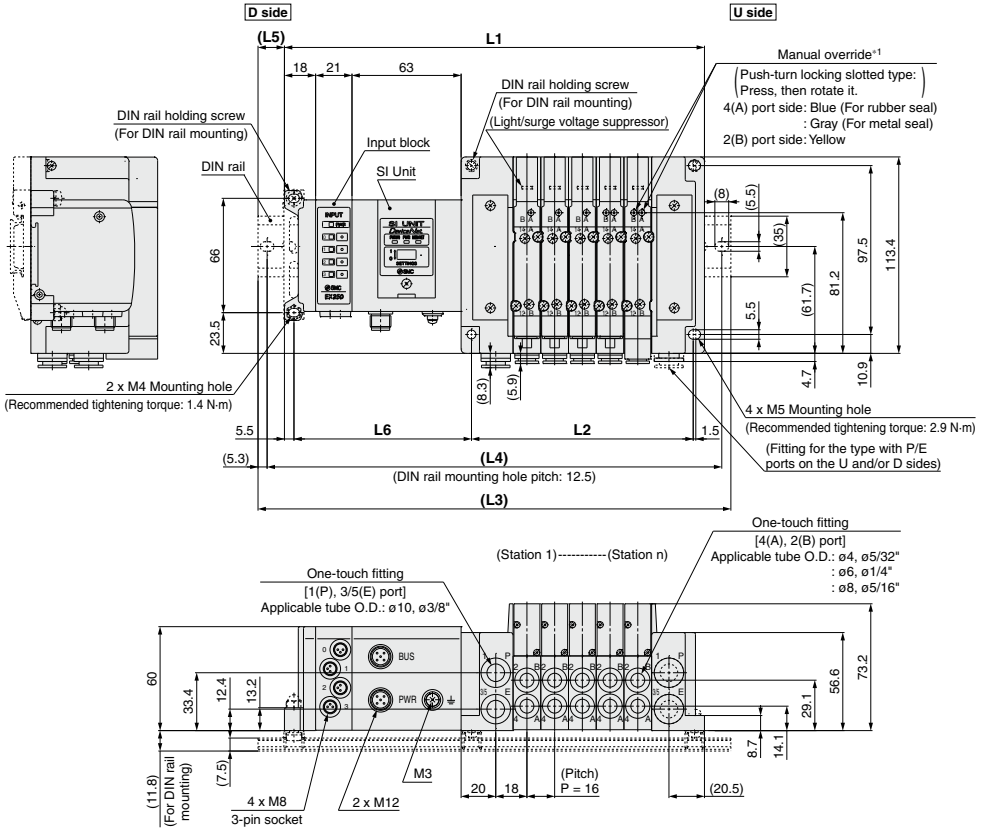
SY3000/5000/7000 Series

Dimensions: **SY5000 Series**

Plug-in Connector Connecting Base

Type 10/Side Ported
EX250

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



$$\begin{aligned} L1 &= 16 \times n1 + 141.5 + 21 \times n2 \\ L2 &= 16 \times n1 + 48 \\ L4 &= L3 - 10.5 \\ L5 &= (L3 - L1)/2 \\ L6 &= 21 \times n2 + 81.5 \end{aligned}$$

n1: Valve stations
n2: Input block stations

*1: Refer to page 329 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
*2: These figures show the "SS5Y5-10SQ1A-05D-C8".
*3: Refer to page 334 for dimensions of A or B port top-ported type.

L3: DIN Rail Overall Length

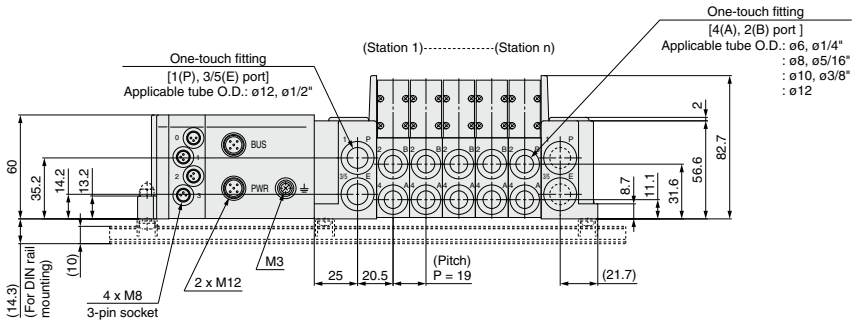
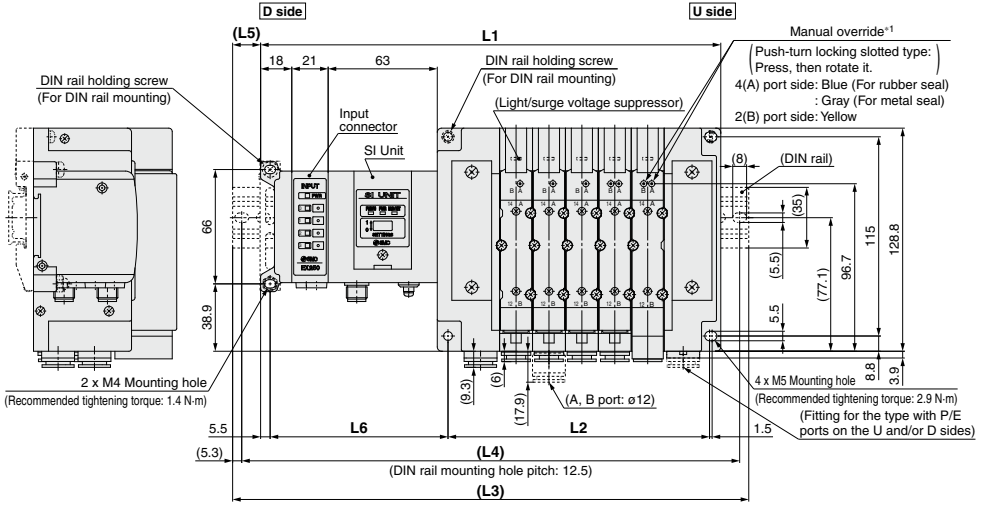
Input block stations (n2)	Valve stations (n1)																							
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
0	198	223	235.5	248	273	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	560.5	
1	223	235.5	260.5	273	285.5	298	323	335.5	348	373	385.5	398	410.5	435.5	448	473	485.5	498	523	535.5	548	560.5	585.5	
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: **SY7000 Series**

Plug-in
Connector Connecting Base

Type 10/Side Ported
EX250

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



L1 = 19 x n1 + 149.7 + 21 x n2
L2 = 19 x n1 + 56
L4 = L3 - 10.5
L5 = (L3 - L1)/2
L6 = 21 x n2 + 81.7

n1: Valve stations
n2: Input block stations

*1: Refer to page 330 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
*: These figures show the "SS5Y7-10SQ1A-05D-C10".
*: Refer to page 335 for dimensions of A or B port top-ported type.

L3: DIN Rail Overall Length

I/O Unit stations (n2)	Valve stations (n1)																							
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
0	223	235.5	260.5	273	298	310.5	335.5	348	373	385.5	410.5	423	448	460.5	485.5	498	523	535.5	560.5	573	598	610.5	635.5	
1	235.5	260.5	273	298	310.5	335.5	348	373	385.5	410.5	423	448	460.5	485.5	498	523	548	560.5	585.5	598	623	635.5	660.5	
2	260.5	273	298	310.5	335.5	348	373	398	410.5	435.5	448	473	485.5	510.5	523	548	560.5	585.5	598	623	635.5	660.5	673	
3	285.5	298	323	335.5	360.5	373	398	410.5	435.5	448	473	485.5	510.5	523	548	560.5	585.5	598	623	635.5	660.5	673	698	
4	298	323	335.5	360.5	373	398	410.5	435.5	448	473	485.5	510.5	523	548	573	585.5	610.5	623	648	660.5	685.5	698	723	
5	323	335.5	360.5	373	398	423	435.5	460.5	473	498	510.5	535.5	548	573	585.5	610.5	623	648	660.5	685.5	698	723	735.5	
6	348	360.5	385.5	398	423	435.5	460.5	473	498	510.5	535.5	548	573	585.5	610.5	623	648	660.5	685.5	698	723	748	760.5	
7	360.5	385.5	398	423	435.5	460.5	473	498	510.5	535.5	548	573	598	610.5	635.5	648	673	685.5	710.5	723	748	760.5	785.5	
8	385.5	398	423	448	460.5	485.5	498	523	535.5	560.5	573	598	610.5	635.5	648	673	685.5	710.5	723	748	760.5	785.5	798	

Plug-in Connector Connecting Base

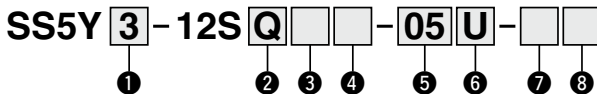
EX250

Type 12
Top Ported

SY3000/5000/7000 Series



How to Order Manifold



Refer to pages 333 to 335 for dimensions of Type 12/Top ported type.

1 Series

3	SY3000
5	SY5000
7	SY7000

3 Input block stations

Nil	None
1	1 station
:	:
8	8 stations

*: Without SI Unit, the symbol is nil. The maximum number of stations is limited for the AS-Interface applicable SI Unit.

4 Input block type

	PNP sensor input	NPN sensor input
Without input block	Nil	
M12, 2 inputs	A	D
M12, 4 inputs	B	E
M8, 4 inputs	C	F

*: Without SI Unit, the symbol is nil.

2 SI Unit

0	Without SI Unit	
N	DeviceNet™ (Negative common)	
Q	PROFIBUS DP (Negative common)	
V	CC-Link (Positive common)	
TA	AS-Interface (Negative common)	2 power supply systems
TB		4 in/8 out, 31 slave modes
TC	1 power supply systems	4 in/4 out, 31 slave modes
TD		8 in/8 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.

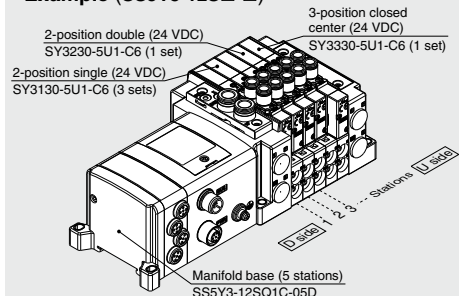
5 Valve stations

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

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

6 P, E port entry, SUP/EXH block assembly

P, E port entry	Internal pilot	Internal pilot, Built-in silencer	External pilot
U side (2 to 10 stations)	U	C ⁻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
Nil	ø8	ø10	ø12
N	ø5/16"	ø3/8"	ø1/2"

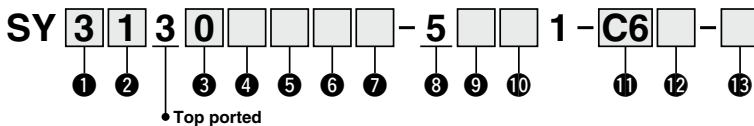
*: For N, sizes are in inches.

8 Mounting

Nil	Direct mounting	*: 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 372 for the DIN rail part number.) *: Refer to page 394 for the fixation of DIN rail mounting type manifold.
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	
:	:	
D24	For 24 stations	

For details about the EX250 Integrated-type (For Input/Output) Serial Transmission System, refer to pages 802 to 814 and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 362. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A ^{*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

NII	Internal pilot
R	External pilot

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

NII	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 379 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

NII	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

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

*: Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.
 *: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

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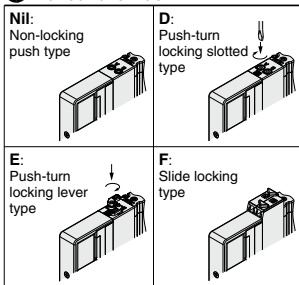
9 Light/surge voltage suppressor and common specification

Symbol	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		
S	—		Positive common
Z	●		
NS	—		
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 154 for with the safety slide locking manual override.

11 A, B port size

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

One-touch fitting (Metric)

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

One-touch fitting (Inch)

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

12 Thread type

NII	Rc
F	G
N	NPT
T	NPTF

*: Only NII is available for M5.

13 Type of mounting screw

NII	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)

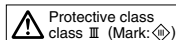
*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

*: **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 367 for part numbers of the base gasket and mounting screw.

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



Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base

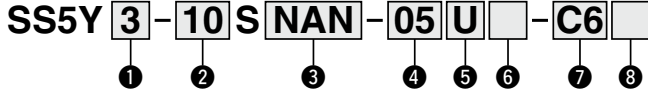
EX260

SY3000/5000/7000 Series



How to Order Manifold

Refer to pages 331 (SY5000) and 332 (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 336).

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 (NPN)			
0*1				
QA	QAN	DeviceNet™	32	M12
QB	QBN		16	
NA	NAN		32	
NB	NBN		16	
NC	NCN	PROFIBUS DP	32	D-sub*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	
—*3	KAN	IO-Link	32*5	M12

*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.

*5: Only the 32 outputs type is available.

4 Valve stations

In the case of the 32-output SI Unit

Symbol (Stations)	Note
02	2 stations
⋮	⋮
16	16 stations
02	2 stations
⋮	⋮
24	24 stations

Double wiring*1

Specified layout*2
(Available up to 32 solenoids)

In the case of the 16-output SI Unit

Symbol (Stations)	Note
02	2 stations
⋮	⋮
08	8 stations
02	2 stations
⋮	⋮
16	16 stations

Double wiring*1

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.)

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

*4: For the model without the SI Unit (S0), note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

5 P, E port entry

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

6 SUP/EXH block assembly

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

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

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

Refer to the page on the right for 7.

8 Mounting and Option

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

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

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

*3: Refer to page 394 for the fixation of DIN rail mounting type manifold.

DIN Rail Option

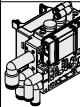
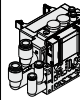
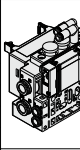
Symbol	Standard length	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations.
⋮	⋮	
24	For 24 stations	

*: 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 372 for part numbers of DIN rail.)

For details about the EX260 Integrated-type (For Output) Serial Transmission System, refer to pages 789 to 800 and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 363. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

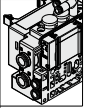
7 A, B port size (Metric/One-touch fitting)

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
C2 C3 C4 C6 C8 C10 C12	Straight	ø2	●	—	—	—
		ø3.2	●	—	—	—
		ø4	●	●	—	—
		ø6	●	●	●	●
		ø8	—	—	●	●
		ø10	—	—	—	●
C12	Straight port, mixed sizes	ø12	—	—	●	●
CM ^{*1}		●	●	●	●	
L4 L6 L8 L10 L12	Upward	ø4	●	●	—	—
		ø6	●	●	●	—
		ø8	—	—	●	—
		ø10	—	—	—	●
		ø12	—	—	—	—
		B4 B6 B8 B10 B12	Downward	ø4	●	●
ø6	●			●	●	—
ø8	—			—	●	—
ø10	—			—	—	●
ø12	—			—	—	—
LM ^{*1}	Elbow port, mixed sizes (including upward and downward piping)			●	●	●
		P, E port size (One-touch fittings)		ø8	ø10	ø12



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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
N1 N3 N7 N9 N11	Straight	ø1/8"	●	—	—	—
		ø5/32"	●	●	—	—
		ø1/4"	●	●	●	●
		ø5/16"	—	●	●	●
		ø3/8"	—	—	●	●
CM ^{*1}	Straight port, mixed sizes	●	●	●	●	
LN3		ø5/32"	●	—	—	
LN7 LN9 LN11 BN3 BN7 BN9 BN11	Upward	ø1/4"	●	●	—	—
		ø5/16"	—	●	—	—
		ø3/8"	—	—	●	—
		ø5/32"	●	—	—	—
		ø1/4"	●	●	—	—
		ø5/16"	—	●	—	—
BN7 BN9 BN11	Downward	ø3/8"	—	—	●	—
		ø5/16"	—	●	—	—
		ø3/8"	—	—	●	—
LM ^{*1}	Elbow port, mixed sizes (including upward and downward piping)	●	●	●	—	—
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"



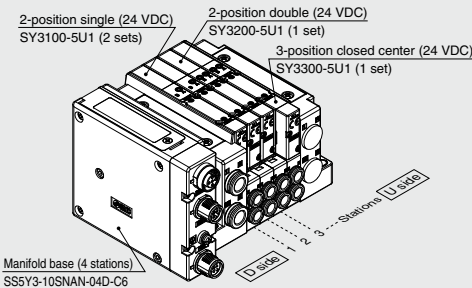
*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

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 373 to 375).

How to Order Manifold Assembly

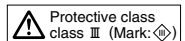
Example (SS5Y3-10SNAN-□)



SS5Y3-10SNAN-04D-C6...1 set (Type 10 4-station manifold base part no.)
 *SY3100-5U12 sets (2-position single part no.)
 *SY3200-5U11 set (2-position double part no.)
 *SY3300-5U11 set (3-position closed center part no.)
 ↳ The asterisk denotes the symbol for assembly.
 ↳ Prefix it to the part numbers of the valve etc.

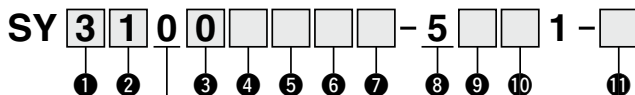
- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

*: When mixing top ported configurations, select from page 311. Specify on a manifold specification sheet if plugs are required on the A and B port on the manifold.



SY3000/5000/7000 Series

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



• Base mounted

1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A ^{*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

Nil	Internal pilot
R	External pilot

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

Nil	None
H	Built-in

*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 379 for details. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

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

6 Pilot valve option

Nil	Standard (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

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

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

*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

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

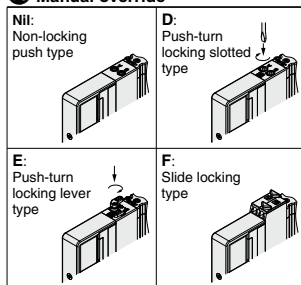
9 Light/surge voltage suppressor and common specification

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

*: Select a valve from R, U, S or Z when the SI Unit output polarity is Nil (positive common). Select a valve from R, U, NS or NZ when the SI Unit output polarity is N (negative common).

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

10 Manual override



*: Refer to page 154 for with the safety slide locking manual override.

11 Type of mounting screw

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

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

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

Refer to page 367 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.

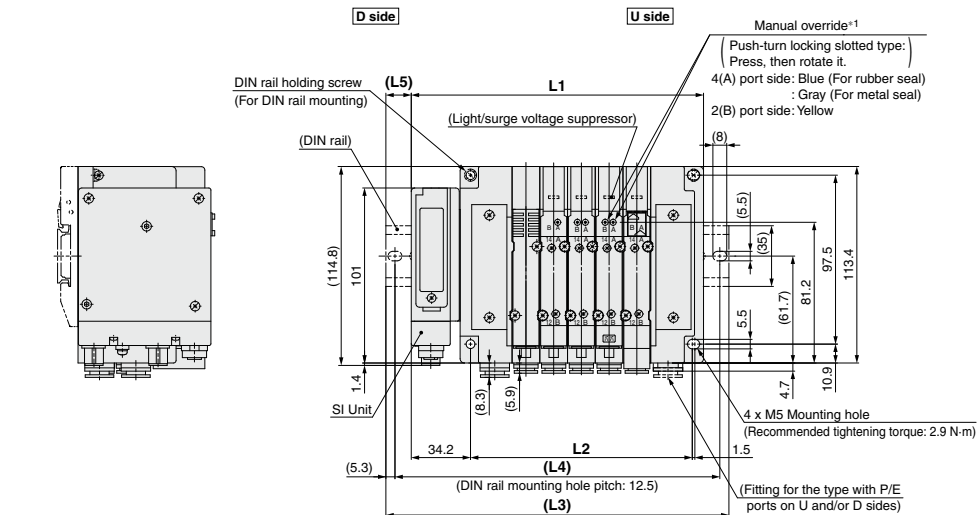
SY3000/5000/7000 Series

Dimensions: **SY5000 Series**

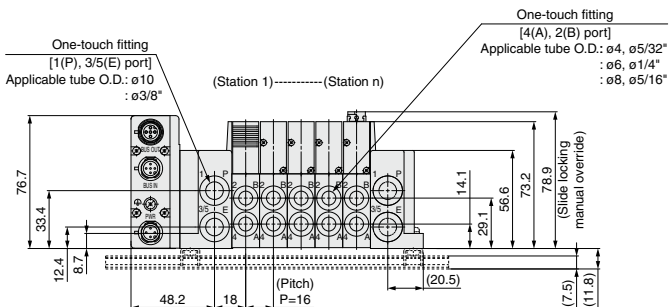
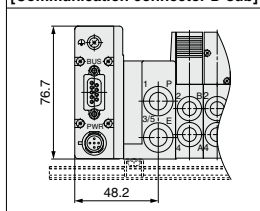
Plug-in
Connector Connecting Base

Type 10/Side Ported
EX260

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



[Communication connector D-sub]



*1: Refer to page 329 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

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

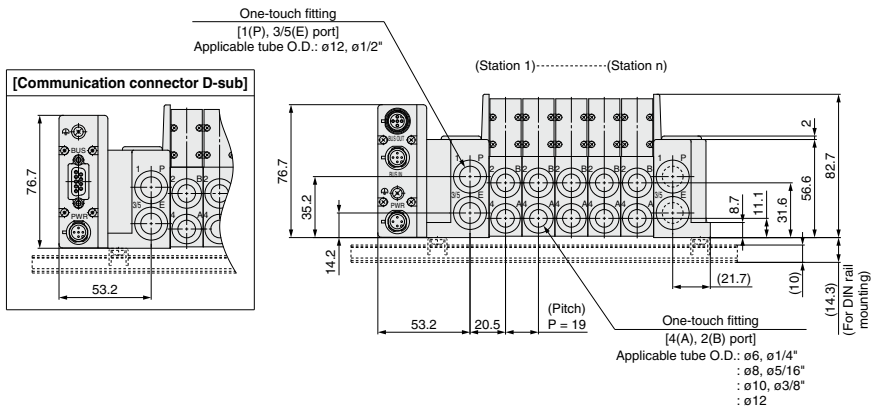
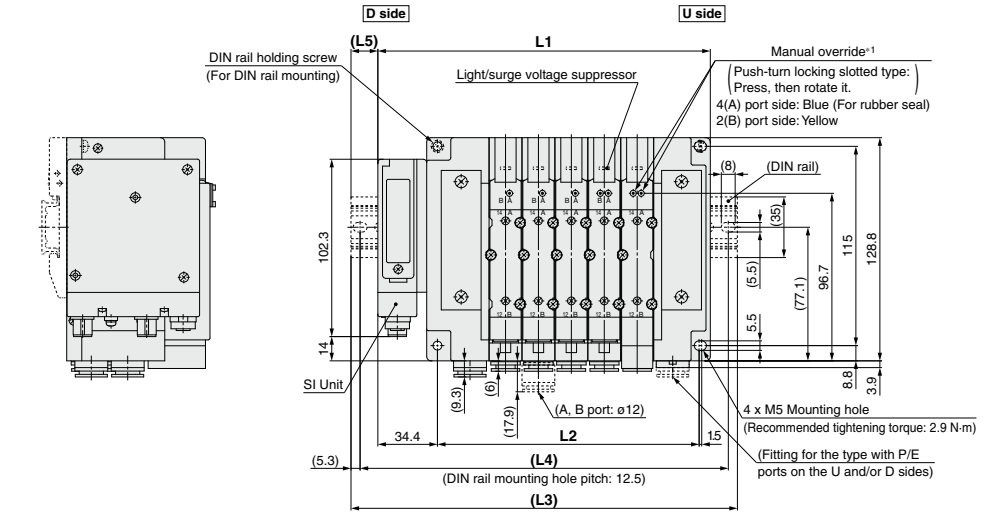
*: Refer to page 334 for dimensions of A or B port top-ported type.

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: **SY7000 Series** **Plug-in Connector Connecting Base** **Type 10/Side Ported**
EX260

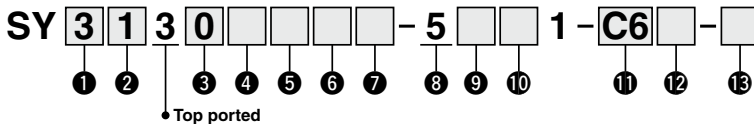
SS5Y7-10S□□□ Stations $\begin{matrix} U \\ D \\ B \end{matrix}$ C6, N7
 C8, N9 C10, N11 (D)
 C12



*1: Refer to page 330 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
 *: These figures show the "SS5Y7-10SQA-05D-C10".
 **: Refer to page 335 for dimensions of A or B port top-ported type.

n Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	134.9	153.9	172.9	191.9	210.9	229.9	248.9	267.9	286.9	305.9	324.9	343.9	362.9	381.9	400.9	419.9	438.9	457.9	476.9	495.9	514.9	533.9	552.9
L2	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360	379	398	417	436	455	474	493	512
L3	160.5	185.5	198	223	235.5	260.5	273	298	310.5	335.5	348	373	398	410.5	435.5	448	473	485.5	510.5	523	548	560.5	585.5
L4	150	175	187.5	212.5	225	250	262.5	287.5	300	325	337.5	362.5	387.5	400	425	437.5	462.5	475	500	512.5	537.5	550	575
L5	13	16	12.5	15.5	12.5	15.5	12	15	12	15	11.5	14.5	17.5	14.5	17.5	14	17	14	17	13.5	16.5	13.5	16.5

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

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

Nil	Internal pilot
R	External pilot

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

Nil	None
H	Built-in

*1: 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 379 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.

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

6 Pilot valve option

Nil	Standard (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

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

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

*2: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

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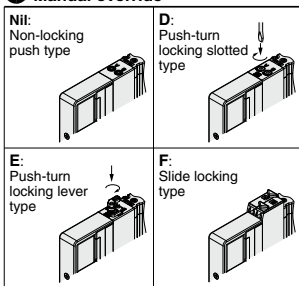
9 Light/surge voltage suppressor and common specification

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

*1: Select a valve from R, U, S or Z when the SI Unit output polarity is Nil (positive common). Select a valve from R, U, NS or NZ when the SI Unit output polarity is N (negative common).

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

10 Manual override



*1: Refer to page 154 for with the safety slide locking manual override.

11 A, B port size

Thread piping

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

One-touch fitting (Metric)

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

One-touch fitting (Inch)

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

12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

*1: Only Nil is available for M5.

13 Type of mounting screw

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

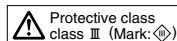
*1: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

*2: **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 367 for part numbers of the base gasket and mounting screw.

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



Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base

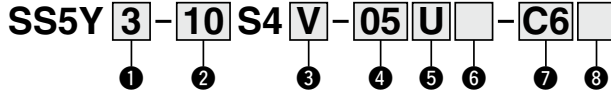
EX126

SY3000/5000/7000 Series



How to Order Manifold

Refer to pages 331 (SY5000) and 332 (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 336).

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	
02	2 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.

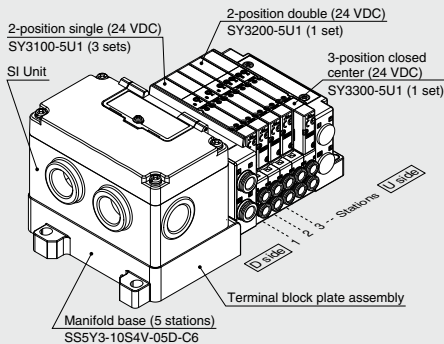
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

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

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

How to Order Manifold Assembly

Example (SS5Y3-10S4V-□-□)



SS5Y3-10S4V-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)
 *SY3100-5U1 3 sets (2-position single part no.)
 *SY3200-5U1 1 set (2-position double part no.)
 *SY3300-5U1 1 set (3-position closed center part no.)
 ↳ The asterisk denotes the symbol for assembly.
 Prefix it to the part numbers of the valve etc.

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

*: When mixing top ported configurations, select from page 319.
 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

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

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

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

For details about the EX126 Integrated-type (For Output) Serial Transmission System, refer to pages 781 to 783 and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 364 in this catalog. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported			
		SY3000	SY5000	SY7000	SY5000	SY7000		
C2 C3 C4 C6 C8 C10 C12	Straight	ø2	●	—	—	—		
		ø3.2	●	—	—	—		
		ø4	●	●	—	●		—
		ø6	●	●	●	●		●
		ø8	—	—	●	●		●
		ø10	—	—	●	—		●
C12	Straight port, mixed sizes	ø12	—	—	●	●		
CM ^{*1}		●	●	●	●	●		
L4 L6 L8 L10 L12 B4 B6 B8 B10 B12	Upward	ø4	●	●	—	—		
		ø6	●	●	●	—		—
		ø8	—	●	●	—		—
		ø10	—	—	●	—		—
		ø12	—	—	●	—		—
		ø12	—	—	●	—		—
	Downward	ø4	●	●	—	—		
		ø6	●	●	●	—		—
		ø8	—	●	●	—		—
		ø10	—	—	●	—		—
		ø12	—	—	●	—		—
		ø12	—	—	●	—		—
LM ^{*1}	Elbow port, mixed sizes (including upward and downward piping)	●	●	●	—	—		
P, E port size (One-touch fittings)		ø8	ø10	ø12	ø10	ø12		

*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 373 to 375).

8 Mounting and Option

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

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

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

*3: Refer to page 394 for the fixation of DIN rail mounting type manifold.

DIN Rail Option

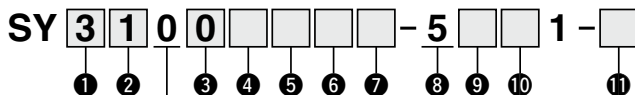
Nll	Direct mounting	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations.
:	:	
16	For 16 stations	

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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported			
		SY3000	SY5000	SY7000	SY5000	SY7000		
N1 N3 N7 N9 N11	Straight	ø1/8"	●	—	—	—		
		ø5/32"	●	●	—	●		—
		ø1/4"	●	●	●	●		●
		ø5/16"	—	●	●	●		●
		ø3/8"	—	—	●	●		●
		CM ^{*1}	Straight port, mixed sizes	●	●	●		●
LN3 LN7 LN9 LN11 BN3 BN7 BN9 BN11	Upward	ø5/32"	●	—	—	—		
		ø1/4"	●	●	—	—		—
		ø5/16"	—	●	—	—		—
		ø3/8"	—	—	●	—		—
		ø5/32"	●	—	—	—		—
		ø5/16"	—	—	—	—		—
	Downward	ø5/32"	●	—	—	—	—	
		ø1/4"	●	●	—	—	—	
		ø5/16"	—	●	—	—	—	
		ø3/8"	—	—	●	—	—	
		ø5/16"	—	—	—	—	—	
		ø3/8"	—	—	—	—	—	
LM ^{*1}	Elbow port, mixed sizes (including upward and downward piping)	●	●	●	—	—		
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"		

SY3000/5000/7000 Series

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



• Base mounted

① Series

3	SY3000
5	SY5000
7	SY7000

② Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A ^{*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

Nii	Internal pilot
R	External pilot

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

Nii	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 379 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

Nii	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

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

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

*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

⑧ Rated voltage

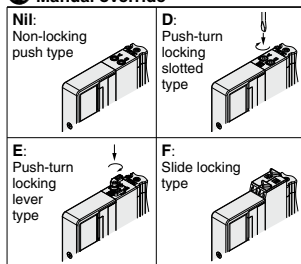
5	24 VDC
---	--------

⑨ Light/surge voltage suppressor and common specification

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

*: Only "Z" type is available for with the power saving circuit.

⑩ Manual override



*: Refer to page 154 for with the safety slide locking manual override.

⑪ Type of mounting screw

Nii	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 367 for part numbers of base gasket and mounting screw.

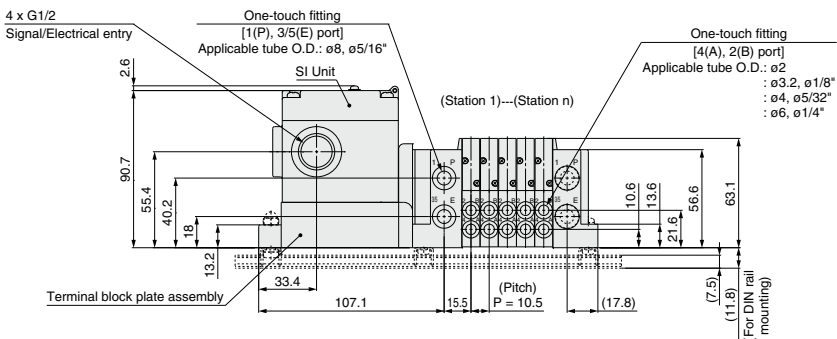
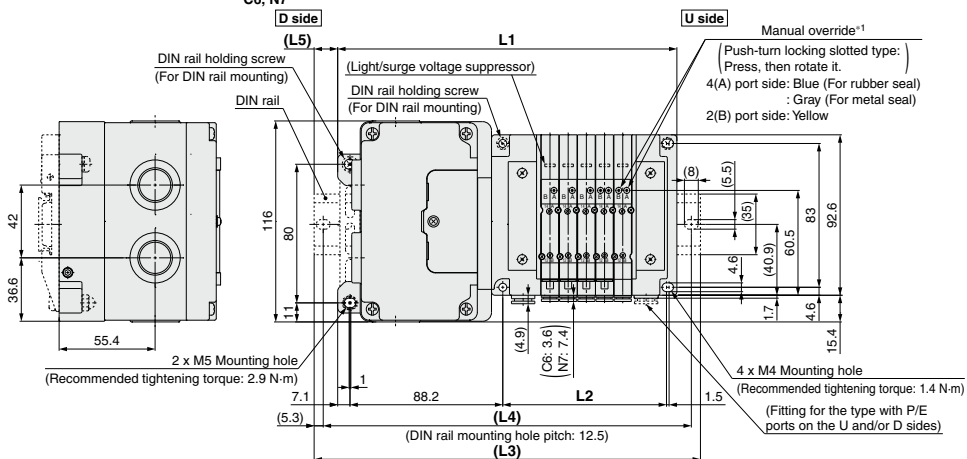
*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: **SY3000 Series**

Plug-in
Connector Connecting Base

Type 10/Side Ported
EX126

SS5Y3-10S4V - Stations $\begin{matrix} \text{U} & \text{C2} \\ \text{D} & \text{C3, N1 (D)} \\ \text{B} & \text{C4, N3} \\ & \text{C6, N7} \end{matrix}$



*1: Refer to page 328 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

*2: These figures show the "SS5Y3-10S4V-05D-C6".

*3: Refer to page 333 for dimensions of A or B port top-ported type.

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

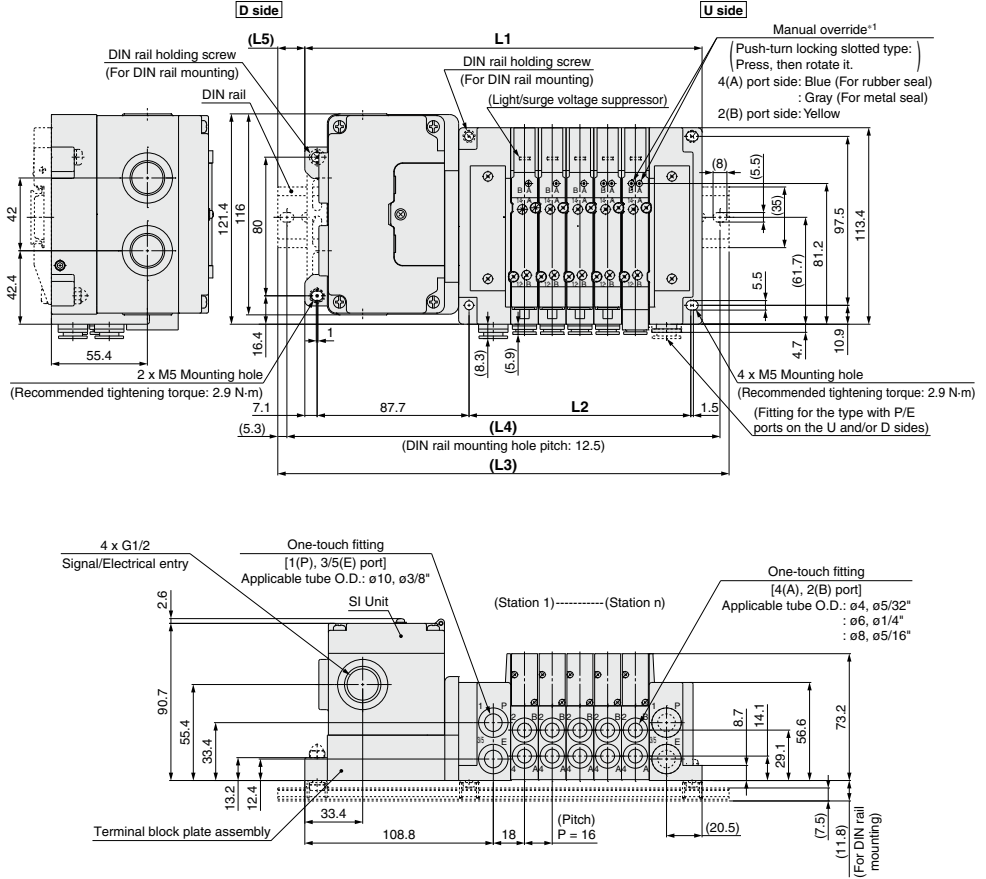
SY3000/5000/7000 Series

Dimensions: **SY5000 Series**

Plug-in
Connector Connecting Base

Type 10/Side Ported
EX126

SS5Y5-10S4V - Stations U C4, N3
D C6, N7 (D)
B C8, N9



*1: Refer to page 329 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

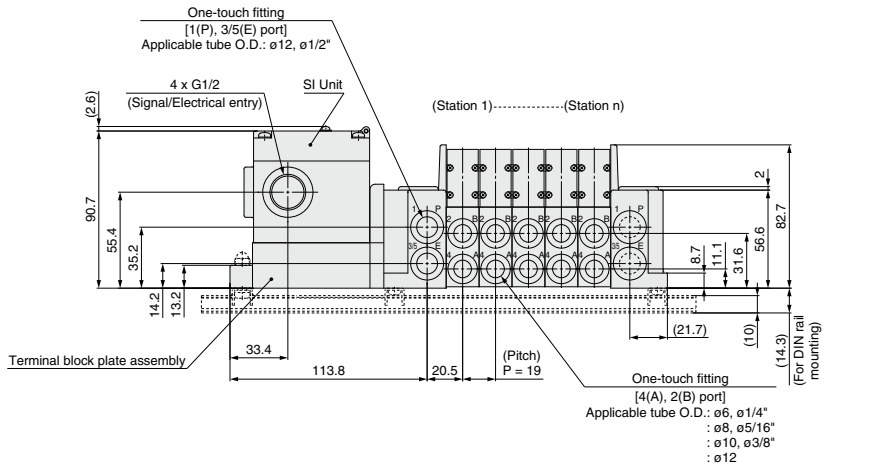
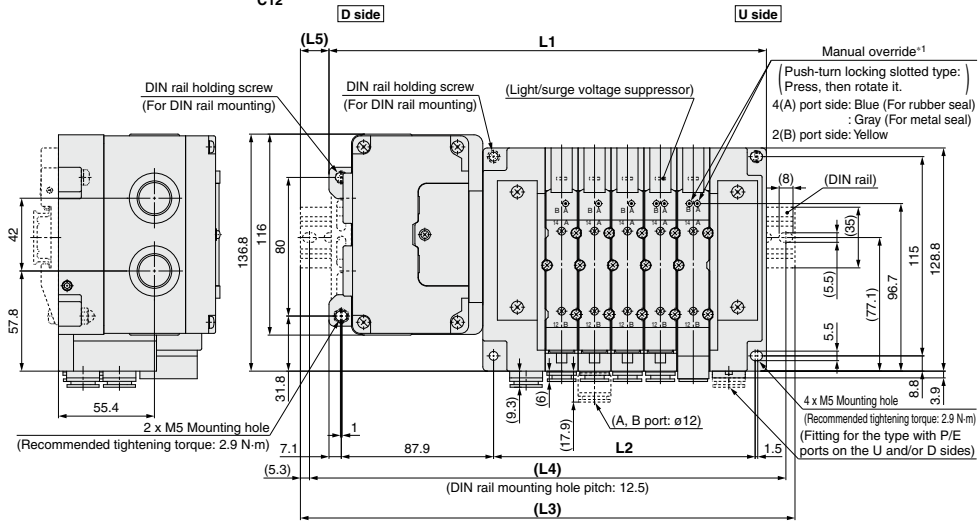
*: These figures show the "SS5Y5-10S4V-05D-C8".

*: Refer to page 334 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: SY7000 Series **Plug-in Connector Connecting Base** **Type 10/Side Ported** **EX126**

SS5Y7-10S4□ - Stations U C6, N7
D C8, N9
B C10, N11 (D)
C12



*1: Refer to page 330 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
 *: These figures show the "SS5Y7-10S4V-05D-C10".
 *: Refer to page 335 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	195.5	214.5	233.5	252.5	271.5	290.5	309.5	328.5	347.5	366.5	385.5	404.5	423.5	442.5	461.5
L2	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360
L3	223	248	260.5	285.5	298	323	335.5	360.5	373	398	410.5	435.5	448	473	485.5
L4	212.5	237.5	250	275	287.5	312.5	325	350	362.5	387.5	400	425	437.5	462.5	475
L5	14	17	13.5	16.5	13.5	16.5	13	16	13	16	12.5	15.5	12.5	15.5	12

Plug-in Connector Connecting Base

EX126

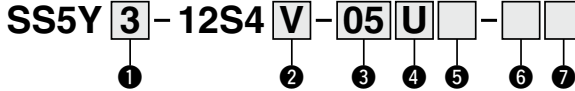
Type 12
Top Ported

SY3000/5000/7000 Series



How to Order Manifold

Refer to pages 333 to 335 for dimensions of Type 12/Top ported type.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 SI Unit

0	Without SI Unit
V	CC-Link (Positive common NPN)

*1: 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	
02	2 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.

4 P, E port entry

U*1	U side (2 to 10 stations)
D*1	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

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

5 SUP/EXH block assembly

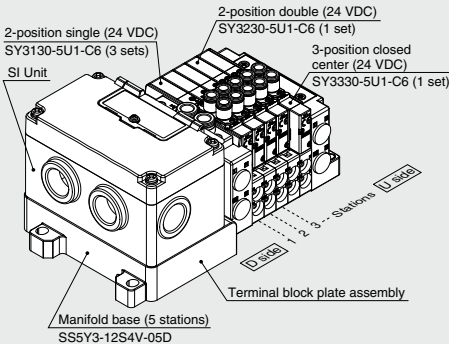
Nii	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

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

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

How to Order Manifold Assembly

Example (SS5Y3-12S4V-□-□)



SS5Y3-12S4V-05D ... 1 set (Type 12 5-station manifold base part no.)
 *SY3130-5U1-C6 3 sets (2-position single part no.)
 *SY3230-5U1-C6 1 set (2-position double part no.)
 *SY3330-5U1-C6 1 set (3-position closed center part no.)

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

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

6 P, E port size (One-touch fittings)

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

*: For N, sizes are in inches.

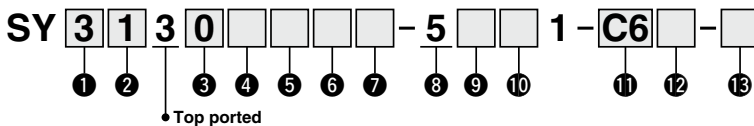
7 Mounting

Nii	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 394 for the fixation of DIN rail mounting type manifold.

For details about the EX126 Integrated-type (For Output) Serial Transmission System, refer to pages 781 to 783 and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 364. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A ⁻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

NII	Internal pilot
R	External pilot

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

NII	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 379 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

NII	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

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

*: Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.
 *: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

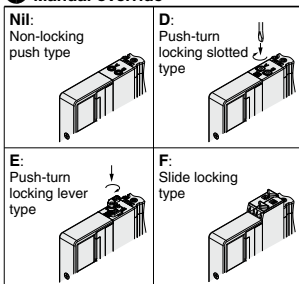
5	24 VDC
---	--------

9 Light/surge voltage suppressor and common specification

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

*: Only "Z" type is available for with the power saving circuit.

10 Manual override



*: Refer to page 154 for with the safety slide locking manual override.

11 A, B port size

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

One-touch fitting (Metric)

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

One-touch fitting (Inch)

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

12 Thread type

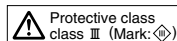
NII	Rc
F	G
N	NPT
T	NPTF

*: Only NII is available for M5.

13 Type of mounting screw

NII	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 367 for part numbers of base gasket and mounting screw.
 *: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.



Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base

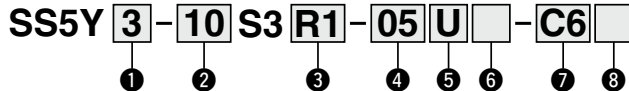
EX120

SY3000/5000/7000 Series



How to Order Manifold

Refer to pages 331 (SY5000) and 332 (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 336).

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	
02	2 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.

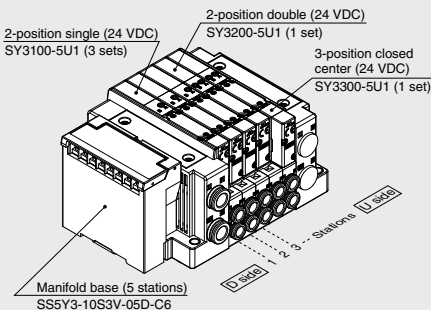
*2: Specified layout. Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

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

*: 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 center part no.)

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

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

*: When mixing top ported configurations, select from page 327.

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)

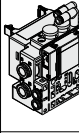

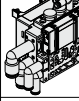
⑥ SUP/EXH block assembly

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

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

For details about the EX120 Integrated-type (For Output) Serial Transmission System, refer to pages 777 to 780 and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 365. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported			
		SY3000	SY5000	SY7000	SY5000	SY7000		
C2 C3 C4 C6 C8 C10 C12	Straight	ø2	●	—	—	—		
		ø3.2	●	—	—	—		
		ø4	●	●	—	●		—
		ø6	●	●	●	●		●
		ø8	—	—	●	●		●
		ø10	—	—	●	—		●
CM ¹	Straight port, mixed sizes	—	●	●	●	●		
		—	●	●	●	●		
L4 L6 L8 L10 L12 B4 B6 B8 B10 B12	Upward	ø4	●	●	—	—		
		ø6	●	●	—	—		
		ø8	—	—	●	—		—
		ø10	—	—	●	—		—
		ø12	—	—	●	—		—
		ø12	—	—	●	—		—
	Downward	ø4	●	●	—	—		
		ø6	●	●	—	—		
		ø8	—	—	●	—		—
		ø10	—	—	●	—		—
		ø12	—	—	●	—		—
		ø12	—	—	●	—		—
LM ¹	Elbow port, mixed sizes (including upward and downward piping)	●	●	●	—	—		
P, E port size (One-touch fittings)		ø8	ø10	ø12	ø10	ø12		

*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 373 to 375).

8 Mounting and Option

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

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

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

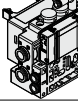

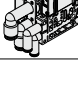
*3: Refer to page 394 for the fixation of DIN rail mounting type manifold.

DIN Rail Option

Nll	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 372 for part numbers of DIN rail.)

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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported			
		SY3000	SY5000	SY7000	SY5000	SY7000		
N1 N3 N7 N9 N11	Straight	ø1/8"	●	—	—	—		
		ø5/32"	●	●	—	●		—
		ø1/4"	●	●	●	●		●
		ø5/16"	—	—	●	●		●
		ø3/8"	—	—	●	—		●
		ø3/8"	—	—	●	—		●
CM ¹	Straight port, mixed sizes	●	●	●	●	●		
LN3 LN7 LN9 LN11 BN3 BN7 BN9 BN11	Upward	ø5/32"	●	—	—	—		
		ø1/4"	●	●	—	—		—
		ø5/16"	—	—	●	—		—
		ø3/8"	—	—	●	—		—
		ø5/32"	●	—	—	—		—
		ø3/8"	—	—	●	—		—
	Downward	ø5/32"	●	—	—	—	—	
		ø1/4"	●	●	—	—	—	
		ø5/16"	—	—	●	—	—	
		ø3/8"	—	—	●	—	—	
		ø5/32"	●	—	—	—	—	
		ø3/8"	—	—	●	—	—	
LM ¹	Elbow port, mixed sizes (including upward and downward piping)	●	●	●	—	—		
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"		

SY3000/5000/7000 Series

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.

SY 3 1 0 0 - 5 1 -

1
2
3
4
5
6
7
8
9
10
11

• Base mounted

1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1		Single
2	2-position	Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
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

Nil	Internal pilot
R	External pilot

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

Nil	None
H	Built-in

*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 379 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

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

6 Pilot valve option

Nil	Standard (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

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

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

*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

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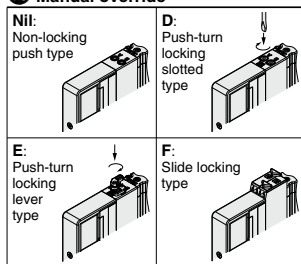
9 Light/surge voltage suppressor and common specification

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

*: Select a valve from R, U, S or Z when the SI Unit specification is positive common. Select a valve from R, U, NS or NZ when the SI Unit specification is ZBN (negative common).

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

10 Manual override



*: Refer to page 154 for with the safety slide locking manual override.

11 Type of mounting screw

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

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

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

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

Refer to page 367 for part numbers of the base gasket and mounting screw.

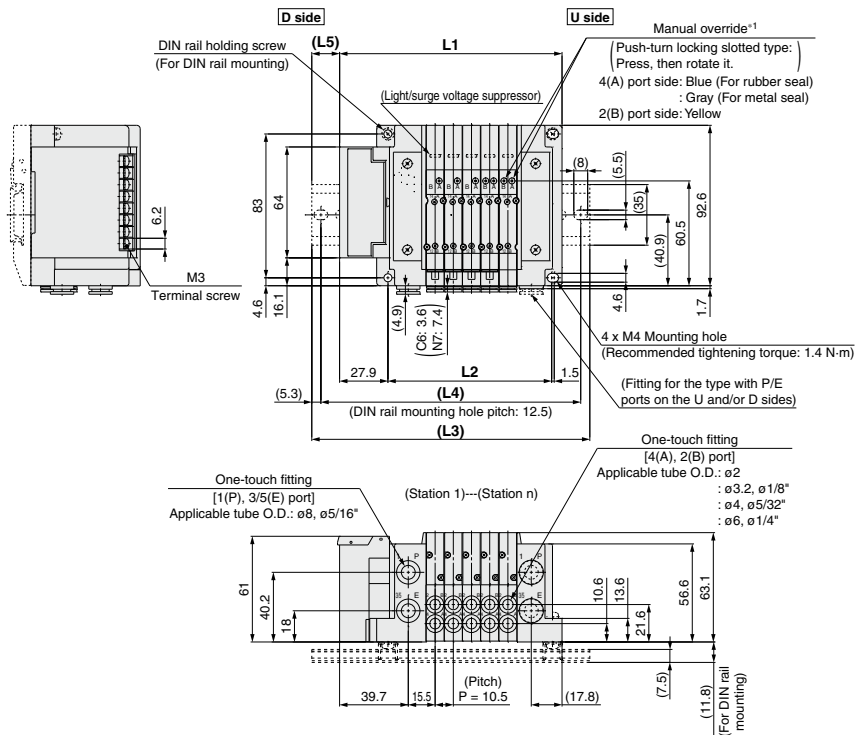
*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: **SY3000 Series**

Plug-in
Connector Connecting Base

Type 10/Side Ported
EX120

SS5Y3-10S3 □ - Stations $\begin{matrix} \text{U} & \text{C2} \\ \text{D} & \text{C3, N1} \\ \text{B} & \text{C4, N3} \\ & \text{C6, N7} \end{matrix}$ (D)



*1: Refer to page 328 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

*: These figures show the "SS5Y3-10S3V-05D-C6".

*: Refer to page 333 for dimensions of A or B port top-ported type.

SJ
SY
SY
S0700
S0700

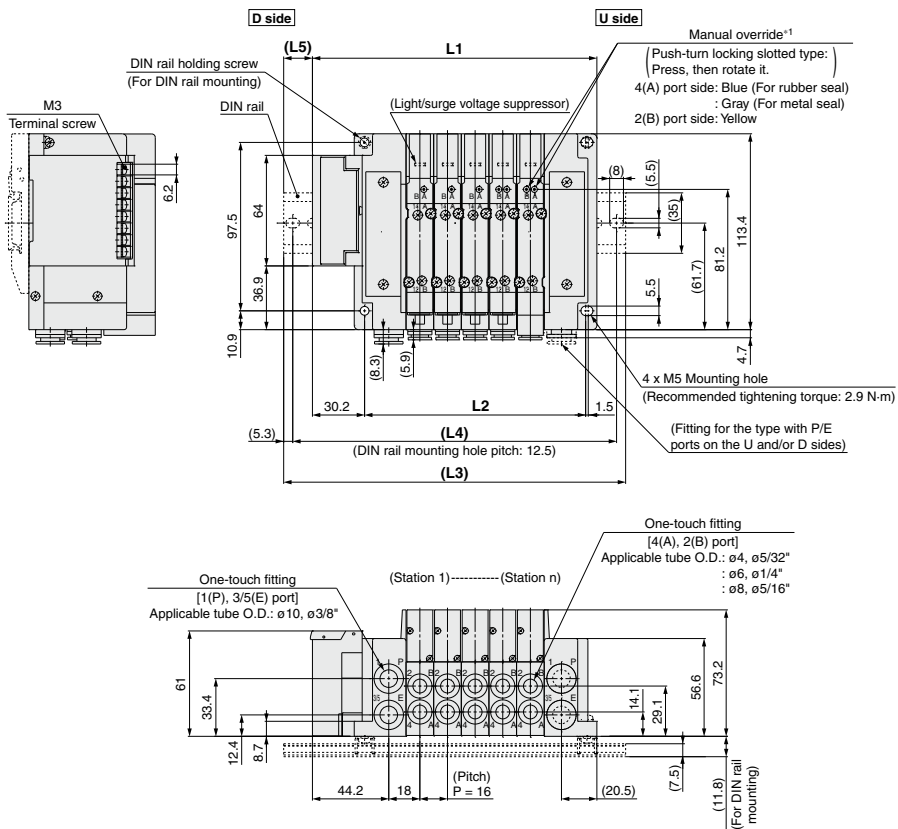
SY3000/5000/7000 Series

Dimensions: **SY5000 Series**

Plug-in
Connector Connecting Base

Type 10/Side Ported
EX120

SS5Y5-10S3□- [Stations] $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7} \\ \text{B} & \text{C8, N9} \end{matrix}$ (D)



*1: Refer to page 329 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

*2: These figures show the "SS5Y5-10S3V-05D-C8".

*3: Refer to page 334 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	116.7	132.7	148.7	164.7	180.7	196.7	212.7	228.7	244.7	260.7	276.7	292.7	308.7	324.7	340.7
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
L3	148	160.5	173	198	210.5	223	248	260.5	273	285.5	310.5	323	335.5	348	373
L4	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5	275	300	312.5	325	337.5	362.5
L5	15.5	14	12	16.5	15	13	17.5	16	14	12.5	17	15	13.5	11.5	16

Plug-in Connector Connecting Base

EX120

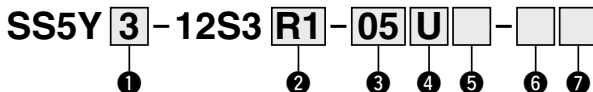
Type 12
Top Ported

SY3000/5000/7000 Series



How to Order Manifold

Refer to pages 333 to 335 for dimensions of Type 12/Top ported type.



① Series

3	SY3000
5	SY5000
7	SY7000

② SI Unit

0	Without SI Unit	
Q	DeviceNet™ (Positive common NPN)	
R1	OMRON CompoBus/S	16 outputs
R2	(Positive common NPN)	8 outputs
V	CC-Link (Positive common PNP)	
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.

*2: Ensure a match with the common specification of the valve to be used.

③ Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
08	8 stations	
02	2 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.)

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

*4: Since R2 type SI Unit has 8 outputs, note that up to 8 solenoids can be accommodated.

④ P, E port entry

U ⁻¹	U side (2 to 10 stations)
D ⁻¹	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

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

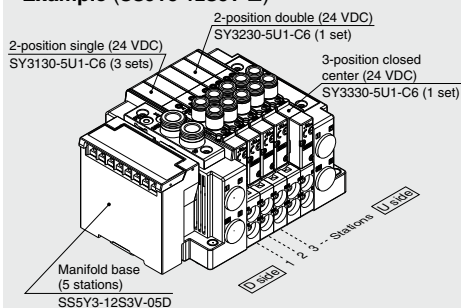
⑤ SUP/EXH block assembly

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

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

How to Order Manifold Assembly

Example (SS5Y3-12S3V-□)



SS5Y3-12S3V-05D ... 1 set (Type 12 5-station manifold base part no.)
 *SY3130-5U1-C6 3 sets (2-position single part no.)
 *SY3230-5U1-C6 1 set (2-position double part no.)
 *SY3330-5U1-C6 1 set (3-position closed center part no.)

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

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

⑥ P, E port size (One-touch fittings)

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

*: For N, sizes are in inches.

⑦ Mounting

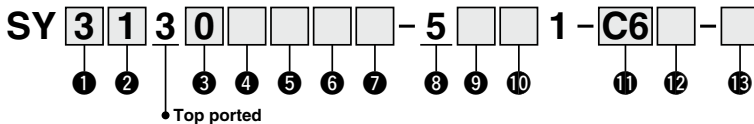
Nii	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	Specify a longer rail than the standard length.
:	:	
D16	For 16 stations	

*: When mounted on the DIN rail without the SI Unit, please select D0 and refer to L3 of the dimensions for the DIN rail length, then order separately. (Refer to page 372 for the DIN rail part number.)

*2: Refer to page 394 for the fixation of DIN rail mounting type manifold.

For details about the EX120 Integrated-type (For Output) Serial Transmission System, refer to pages 777 to 780 and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 365. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

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

Nil	Internal pilot
R	External pilot

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

Nil	None
H	Built-in

*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 379 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

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

6 Pilot valve option

Nil	Standard (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

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

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

*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

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

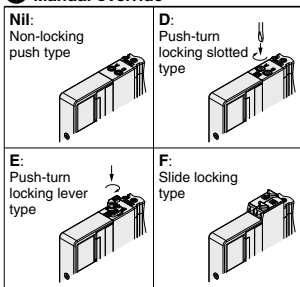
9 Light/surge voltage suppressor and common specification

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

*: Select a valve from R, U, S or Z when the SI Unit 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 the power saving circuit.

10 Manual override



*: Refer to page 154 for with the safety slide locking manual override.

11 A, B port size

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

One-touch fitting (Metric)

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

One-touch fitting (Inch)

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

12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

*: Only Nil is available for M5.

13 Type of mounting screw

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

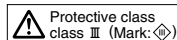
*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

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

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

Refer to page 367 for part numbers of the base gasket and mounting screw.

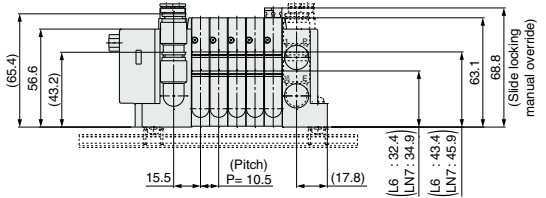
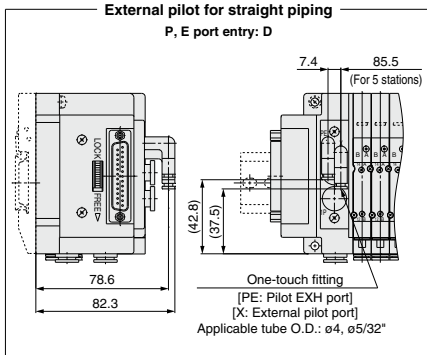
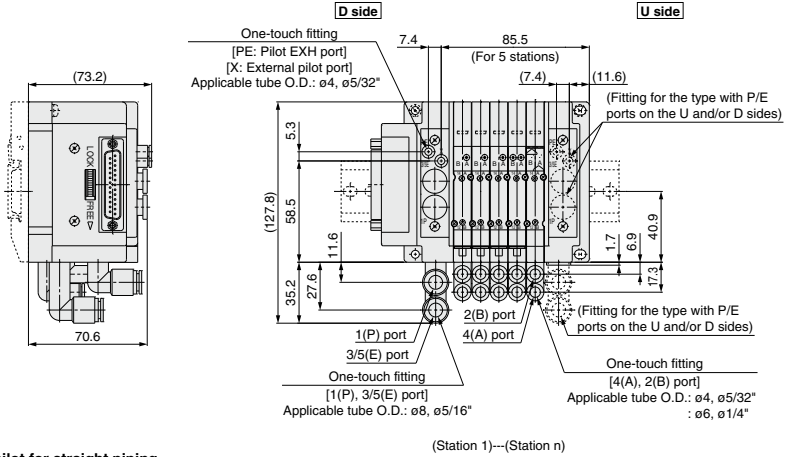
*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.



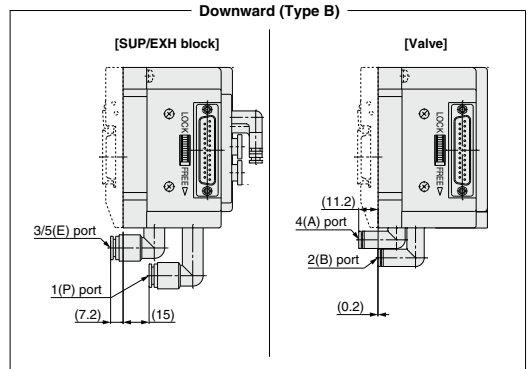
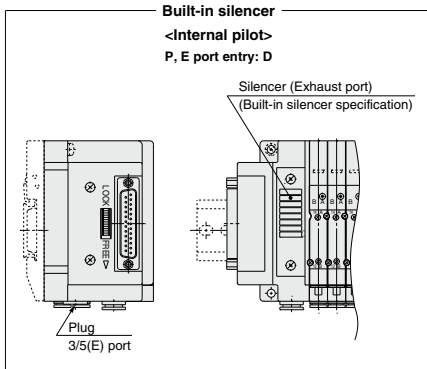
SY3000/5000/7000 Series Common Dimensions

SY3000 Series **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)-□□

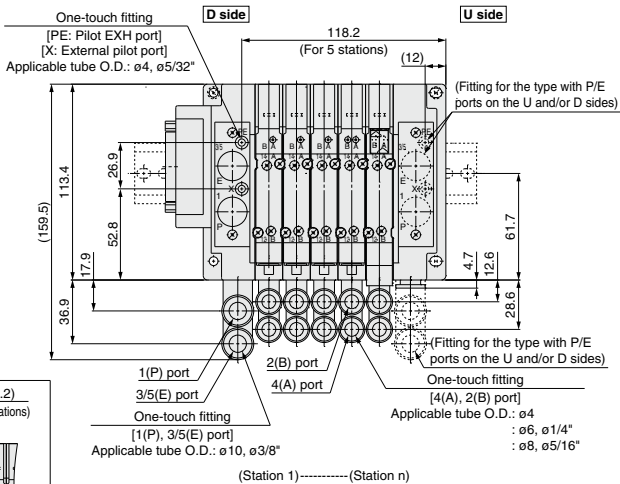
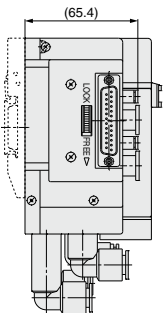


*: These figures show the "SS5Y3-10F2-05DR-L6".



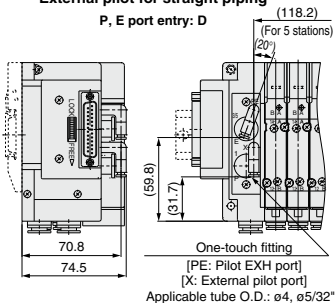
SY5000 Series **Plug-in Connector Connecting Base** **Type 10/Side Ported**
 External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override

SS5Y5-10□-Stations $\frac{U}{D}$ (S, R) $\frac{L}{B}$ □

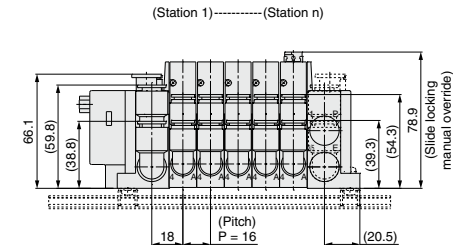
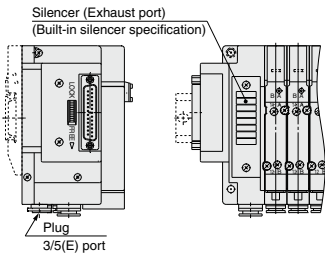


SY
SY
S0700
S0700

External pilot for straight piping
 P, E port entry: D

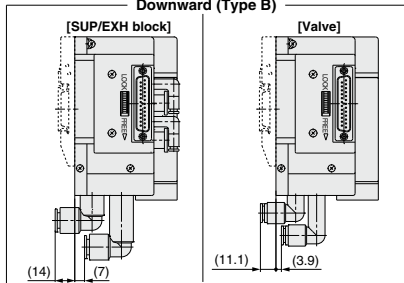


Built-in silencer
 P, E port entry: D



*: These figures show the "SS5Y5-10F2-05DR-L8".

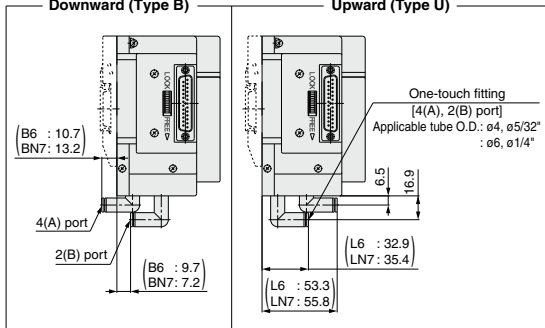
Downward (Type B)



Valve/SY3000 Series (Mixed Mounting)

Downward (Type B)

Upward (Type U)

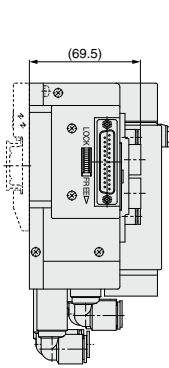


SY3000/5000/7000 Series

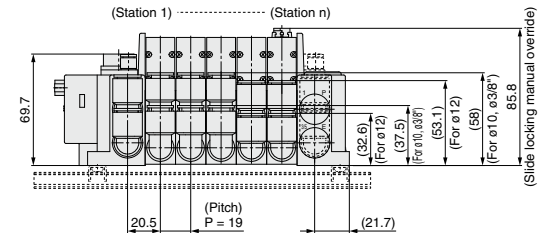
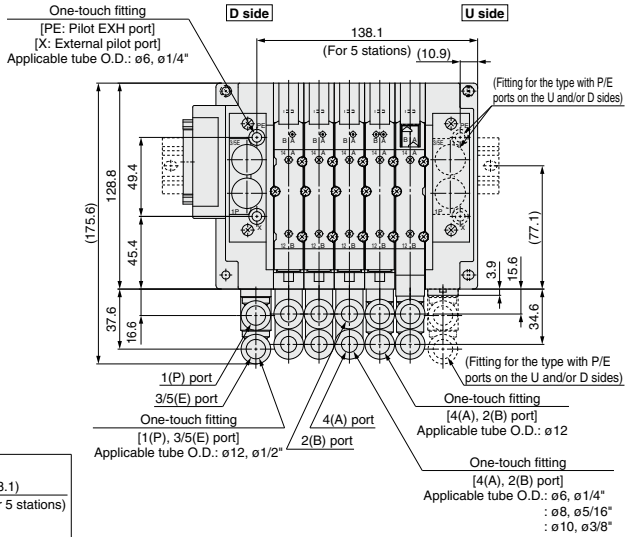
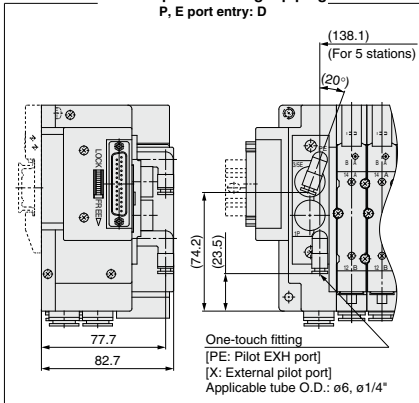
SY7000 Series **Plug-in Connector Connecting Base**

Type 10/Side Ported
External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override

SS5Y7-10□-Stations $\frac{U}{D}$ (S, R)- $\frac{D}{L}$ □

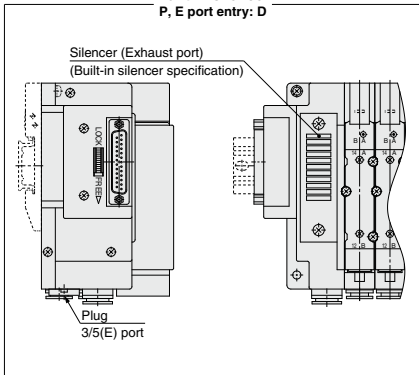


External pilot for straight piping
P, E port entry: D

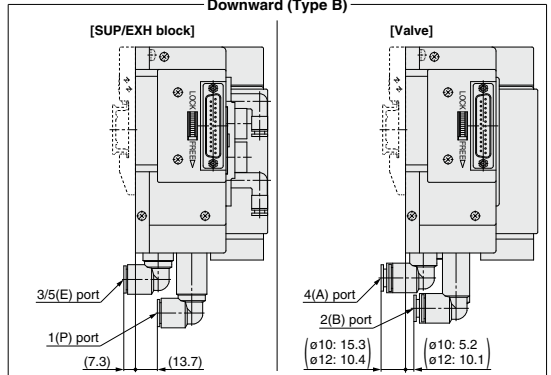


*: These figures show the "SS5Y7-10F2-05DR-LM".

Built-in silencer
P, E port entry: D



Downward (Type B)

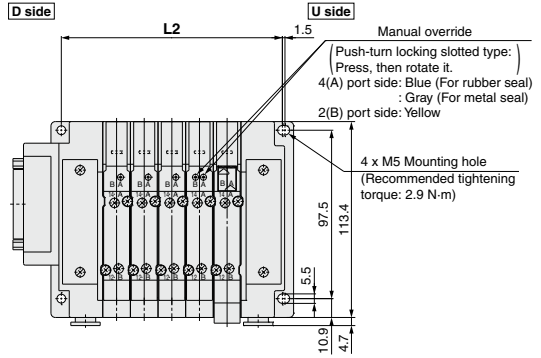
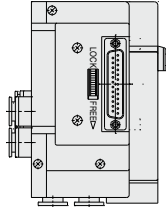


SY5000 Series

SS5Y5-11□-Stations $\begin{matrix} U \\ D \\ B \end{matrix}$

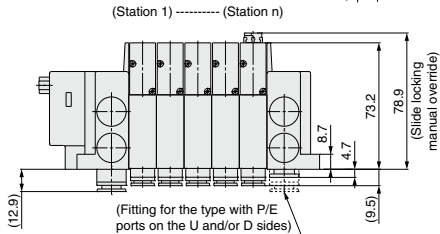
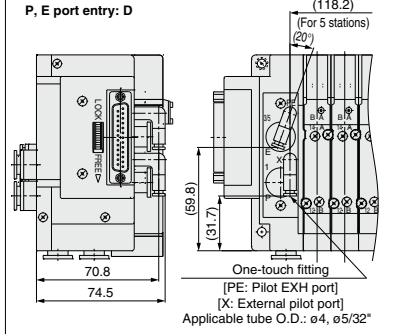
Plug-in Connector Connecting Base

Type 11/Bottom Ported
All Wirings

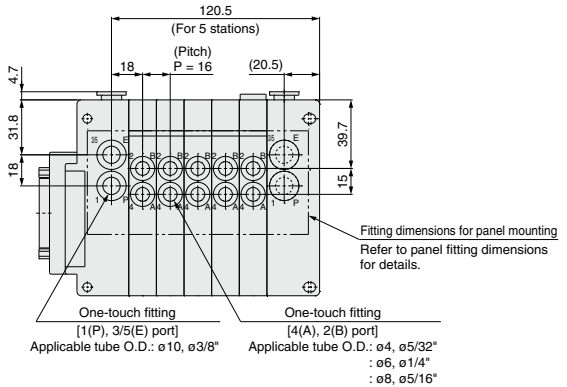
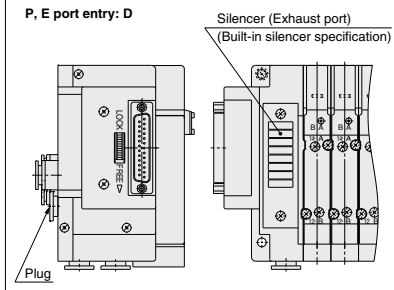


SJ
SY
SY
S0700
S0700

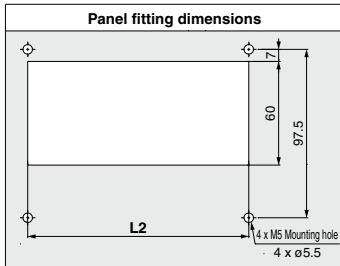
External pilot



Built-in silencer



Panel fitting dimensions



- *: 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. 224
- D-sub connector <IP67> : P. 227
- Flat ribbon cable : P. 230
- Terminal block box (Spring type) : P. 237-4
- Terminal block box : P. 242
- Lead wire : P. 252
- Circular connector : P. 262
- EX500 (128 points) : P. 272
- EX500 (64 points) : P. 278
- EX600 : P. 289, 290
- EX250 : P. 300
- EX260 : P. 308
- EX126 : P. 316
- EX120 : P. 324

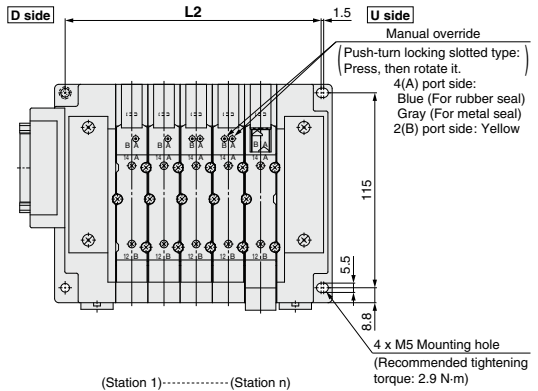
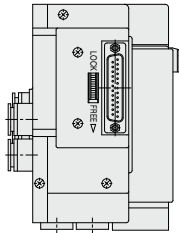
SY3000/5000/7000 Series

SY7000 Series

SS5Y7-11□-Stations $\frac{U}{D}$

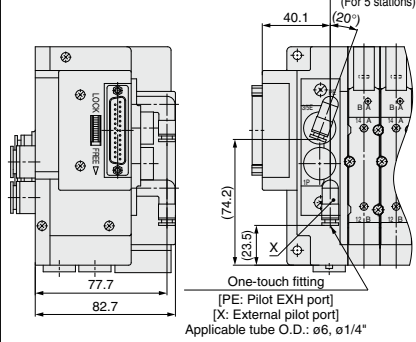
Plug-in Connector Connecting Base

Type 11/Bottom Ported All Wirings

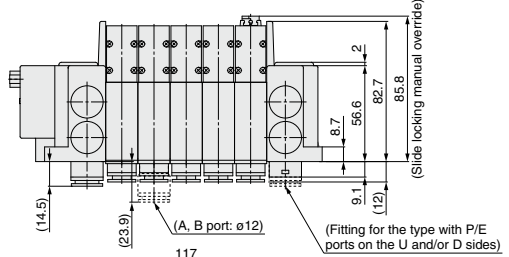


External pilot

P, E port entry: D

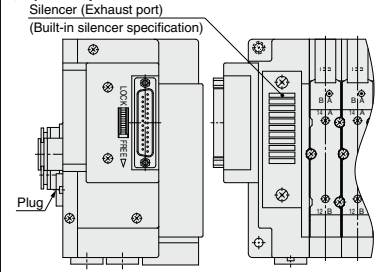


(Station 1).....(Station n)



Built-in silencer

P, E port entry: D

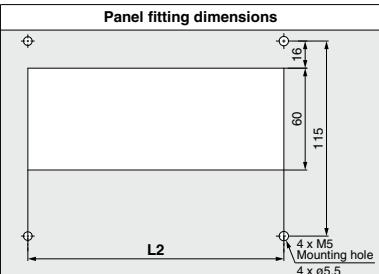


*: These figures show the "SS5Y7-11F2-05D-C10".

*: Refer to the below pages for L2 dimensions and other dimensions that are not specified in each wiring specification.

- D-sub connector <IP40> : P. 225
- D-sub connector <IP67> : P. 228
- Flat ribbon cable : P. 231
- Terminal block box (Spring type) : P. 237-5
- Terminal block box : P. 243
- Lead wire : P. 253
- Circular connector : P. 263
- EX500 (128 points) : P. 273
- EX500 (64 points) : P. 279
- EX600 : P. 291, 292
- EX250 : P. 301
- EX260 : P. 309
- EX126 : P. 317
- EX120 : P. 325

Panel fitting dimensions



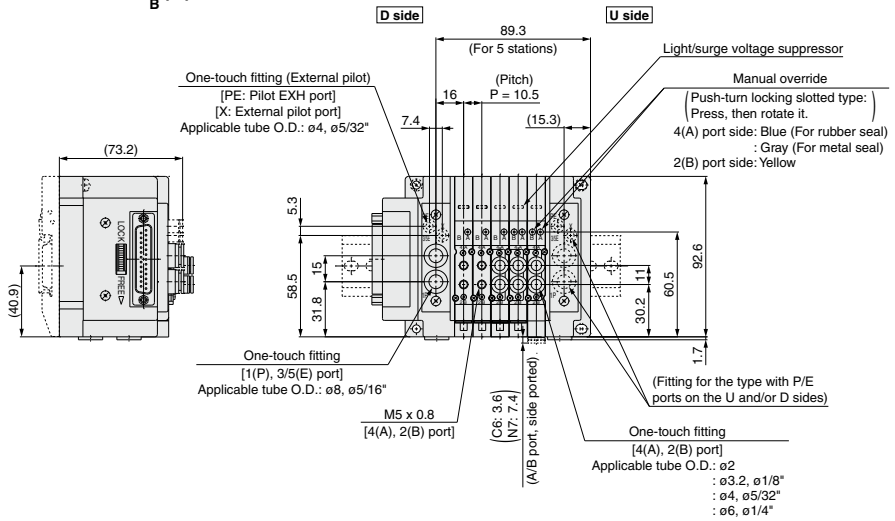
Common Dimensions **SY3000/5000/7000 Series**

SY3000 Series

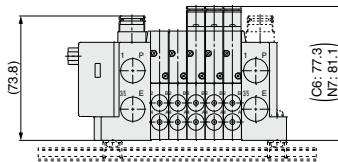
Plug-in Connector Connecting Base

Type 12/Top Ported
All Wirings

SS5Y3-12□-Stations $\frac{U}{D}$ (R)



(Station 1)---(Station n)



- *: 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 328 for dimensions of silencer.
- *: Refer to the below pages for dimensions that are not specified in each wiring specification.
 - D-sub connector <IP40> : P. 223
 - D-sub connector <IP67> : P. 226
 - Flat ribbon cable : P. 229
 - Terminal block box (Spring type) : P. 237-3
 - Terminal block box : P. 241
 - Lead wire : P. 251
 - Circular connector : P. 261
 - EX500 (128 points) : P. 271
 - EX500 (64 points) : P. 277
 - EX600 : P. 287, 288
 - EX250 : P. 299
 - EX260 : P. 307
 - EX126 : P. 315
 - EX120 : P. 323

SJ
SY
SY
S0700
S0700

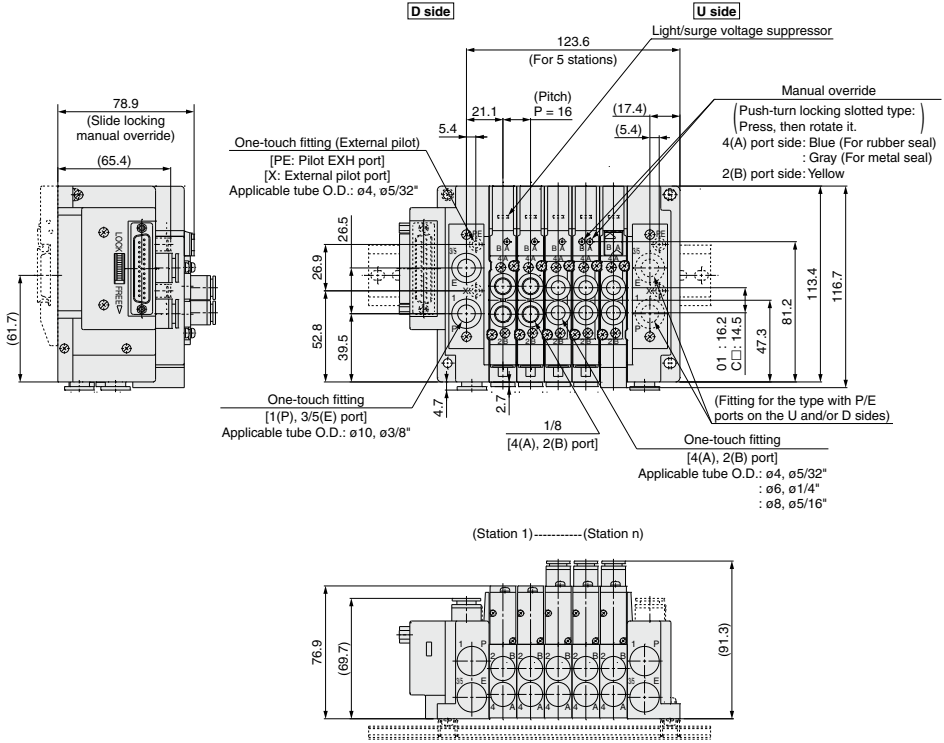
SY3000/5000/7000 Series

SY5000 Series

Plug-in Connector Connecting Base

Type 12/Top Ported
All Wirings

SS5Y5-12□-Stations^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 329 for dimensions of silencer.

*: Refer to the below pages for dimensions that are not specified in each wiring specification.

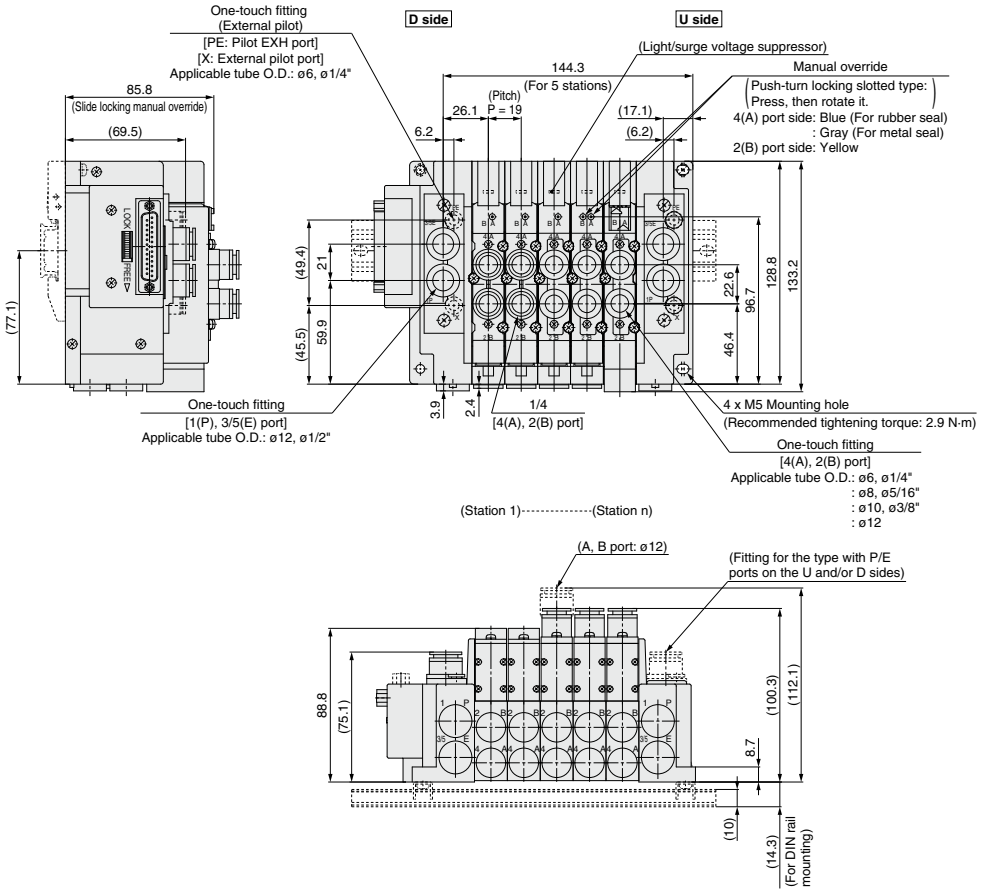
D-sub connector <IP40>	: P. 224
D-sub connector <IP67>	: P. 227
Flat ribbon cable	: P. 230
Terminal block box (Spring type)	: P. 237-4
Terminal block box	: P. 242
Lead wire	: P. 252
Circular connector	: P. 262
EX500 (128 points)	: P. 272
EX500 (64 points)	: P. 278
EX600	: P. 289, 290
EX250	: P. 300
EX260	: P. 308
EX126	: P. 316
EX120	: P. 324

SY7000 Series

Plug-in Connector Connecting Base

Type 12/Top Ported
All Wirings

SS5Y7-12□-Stations $\frac{U}{D}$ (R)



SJ
SY
SY
S0700
S0700

- *: 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 330 for dimensions of silencer.
 - *: Refer to the below pages for dimensions that are not specified in each wiring specification.
- | | |
|----------------------------------|---------------|
| D-sub connector <IP40> | : P. 225 |
| D-sub connector <IP67> | : P. 228 |
| Flat ribbon cable | : P. 231 |
| Terminal block box (Spring type) | : P. 237-5 |
| Terminal block box | : P. 243 |
| Lead wire | : P. 253 |
| Circular connector | : P. 263 |
| EX500 (128 points) | : P. 273 |
| EX500 (64 points) | : P. 279 |
| EX600 | : P. 291, 292 |
| EX250 | : P. 301 |
| EX260 | : P. 309 |
| EX126 | : P. 317 |
| EX120 | : P. 325 |

Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold

D-sub Connector (IP40/67) Flat Ribbon Cable PC Wiring Terminal Block Box/Spring Type (IP67)

Terminal Block Box (IP67) Lead Wire (IP67) Circular Connector (IP67) EX500 (IP67)

EX600 (IP67) EX250 (IP67) EX260 (IP67) EX126 (IP67) EX120

Type 10
Side Ported

Type 11
Bottom Ported

SY3000/5000 Series



The SY3000 can be mounted onto the SY5000 size manifold.

How to Order Manifold

Refer to page 345 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 (25 pins)	220		
FW	IP40			
P	26 pins	220		
PG	Flat ribbon cable (20 pins)			
PH	10 pins	220		
J	PC wiring (20 pins)			
G	— With power supply terminal	237-1		
TC	Terminal block box/Spring type (IP67)			
T	Terminal block box	238		
L1	Lead wire (34 cores)	248		
L2			17 cores	
L3			9 cores	
M	Circular connector	258		
S□	Serial transmission (EX500 Gateway Decentralized System 2 (128 Points))	268		
S□		Serial transmission (EX500 Gateway Decentralized System (64 Points))	274	
S6□			EX600	284
S□			EX250	296
S□			EX260	304
S4□¹			EX126	312
S3□¹			EX120	320

*1: EX126, EX120 are not yet UL-compatible.
*2: 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 284 for the EX600 and ⑦ on page 296 for the EX250.

⑦ Fitting type: One-touch fitting

Symbol	A, B port	
C	Straight	
L	Metric size	Elbow
		Upward ² Downward ²
B	Straight	
N	Inch size	Elbow
		Upward ² Downward ²
LN	Straight	
BN	Straight	
CM¹	Mixed sizes	Elbow (Including upward and downward piping) ²
LM¹		

*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 373 to 375). Elbow fittings are not available for Type 11 (Bottom ported).

*: Elbow fittings: ø2, ø3.2 and ø1.8" are not available for the SY3000 series. ø2, ø3.2, ø1.8" and ø5/32" are not available for the SY5000 series.

SJ
SY
SY
S0700
S0700

8 SY5000: A, B port size

(Metric/One-touch fitting)

Symbol	Port size
4	ø4
6	ø6
8	ø8
Nil	For all stations of SY3000

(Inch/One-touch fitting)

Symbol	Port size
3	ø5/32"
7	ø1/4"
9	ø5/16"
Nil	For all stations of SY3000

*: No symbol needs to be specified when fitting type "CM", "LM" is selected.

9 SY3000: A, B port size

(Metric/One-touch fitting)

Symbol	Port size
2	ø2
3	ø3.2
4	ø4
6	ø6
8	ø8*1

(Inch/One-touch fitting)

Symbol	Port size
1	ø1/8"
3	ø5/32"
7	ø1/4"
9	ø5/16"*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

Symbol	Mounting
Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations Specify a longer rail than the standard length. [The SY5000 valve is now at a mountable length (manifold block length of 16 mm).]
:	:
D24	For 24 stations

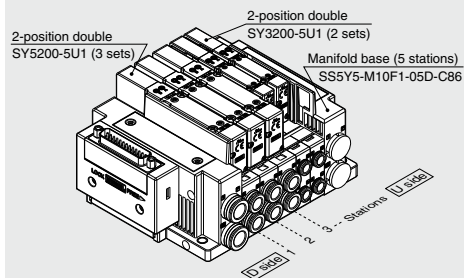
*: Only direct mounting is available for Type 11 (Bottom ported).

*: Refer to page 343 to determine the L3 using "Calculation formula" for the DIN rail length.

*: Refer to page 394 for the fixation of DIN rail mounting type manifold.

How to Order Manifold Assembly

Example (SS5Y5-M10F1-□)



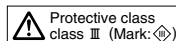
SS5Y5-M10F1-05D-C86 ... 1 set (Type M10 5-station manifold base part no.)
 *SY5200-5U1 3 sets (2-position double part no.)
 *SY3200-5U1 2 sets (2-position double part no.)
 — The asterisk denotes the symbol for assembly.
 Prefix it to the part numbers of the valve etc.

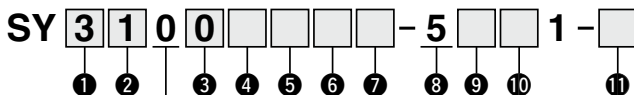
- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

*: When mixing top ported configurations, select from page 349.

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.





• Base mounted

1 Series

3	SY3000
5	SY5000

2 Type of actuation

1		Single
2	2-position	Double
3		Closed center
4	3-position	Exhaust center
5		Pressure center
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

NII	Internal pilot
R	External pilot

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

NII	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 379 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

NII	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

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

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

*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

5	24 VDC
6	12 VDC

*: Only 24 VDC is available for the serial transmission type.

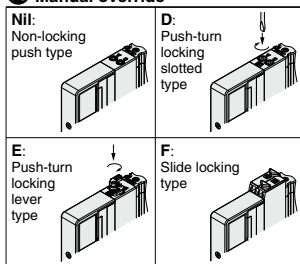
9 Light/surge voltage suppressor and common specification

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

*: "NII" 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.270, 276 EX600: P.286
 EX250: P.298 EX260: P.306
 EX128: P.314 EX120: P.322

10 Manual override



*: Refer to page 154 for with the safety slide locking manual override.

11 Type of mounting screw

NII	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 367 for part numbers of the base gasket and mounting screw.

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

Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold

D-sub Connector (IP40/67) Flat Ribbon Cable PC Wiring Terminal Block Box/Spring Type (IP67)

Terminal Block Box (IP67) Lead Wire (IP67) Circular Connector (IP67) EX500 (IP67)

EX600 (IP67) EX250 (IP67) EX260 (IP67) EX126 (IP67) EX120

Type 10
Side Ported

Type 11
Bottom Ported

SY5000/7000 Series



The SY5000 can be mounted onto the SY7000 size manifold.

How to Order Manifold

Refer to page 346 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 (25 pins)	IP40
FW		IP67
P		26 pins
PG	Flat ribbon cable	20 pins
PH		10 pins
J	PC wiring (20 pins)	—
G		With power supply terminal
TC	Terminal block box/Spring type (IP67)	237-1
T	Terminal block box	238
L1	Lead wire	34 cores
L2		17 cores
L3		9 cores
M	Circular connector	258
S□	Serial transmission	EX500 Gateway Decentralized System 2 (128 Points)
S□		EX500 Gateway Decentralized System (64 Points)
S6□		EX600
S□		EX250
S□		EX260
S4□¹		EX126
S3□¹		EX120
		268
		274
		284
	296	
	304	
	312	
	320	

*1: EX126, EX120 are not yet UL-compatible.
*2: 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 284 for the EX600 and ⑦ on page 296 for the EX250.

⑦ Fitting type: One-touch fitting

Symbol	A, B port		
C	Metric size	Straight	
L		Elbow	Upward ²
B			Downward ²
N	Inch size	Straight	
LN		Elbow	Upward ²
BN			Downward ²
CM¹			Straight
LM¹	Mixed sizes	Elbow (Including upward and downward piping) 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 373 to 375). Elbow fittings are not available for Type 11 (Bottom ported).

*: Elbow fittings: $\phi 1/4"$ and $\phi 5/16"$ are not available.

SJ
SY
SY
S0700
S0700

8 SY7000: A, B port size

(Metric/One-touch fitting)

Symbol	Port size
6	ø6
8	ø8
10	ø10
12	ø12
Nil	For all stations of SY5000

∗: No symbol needs to be specified when fitting type "CM", "LM" is selected.

(Inch/One-touch fitting)

Symbol	Port size
7	ø1/4"
9	ø5/16"
11	ø3/8"
Nil	For all stations of SY5000

9 SY5000: A, B port size

(Metric/One-touch fitting)

Symbol	Port size
6	ø6
8	ø8
10	ø10
12	ø12

∗: The valve pitch is 19 mm, the same as the SY7000.
∗: No symbol needs to be specified when fitting type "CM", "LM" is selected.

(Inch/One-touch fitting)

Symbol	Port size
7	ø1/4"
9	ø5/16"
11	ø3/8"

10 Mounting and Option

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

DIN Rail Option

Nil	Direct mounting
0	Without DIN rail (with bracket)
3	For 3 stations Specify a longer rail than the total length of specified stations.
⋮	⋮
24	For 24 stations

- ∗: 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 343 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 394 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.)

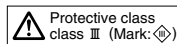
∗SY7200-5U1 3 sets (2-position double part no.)

∗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 349.
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 136 for valve specifications.

SY 7 1 0 0 - 5 1 -

1
2
3
4
5
6
7
8
9
10
11

• Base mounted

1 Series

5	SY5000
7	SY7000

2 Type of actuation

1		Single
2	2-position	Double
3		Closed center
4	3-position	Exhaust center
5		Pressure center
A ^{*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

NII	Internal pilot
R	External pilot

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

NII	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 379 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

NII	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

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

*: Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

5	24 VDC
6	12 VDC

*: Only 24 VDC is available for the serial transmission type.

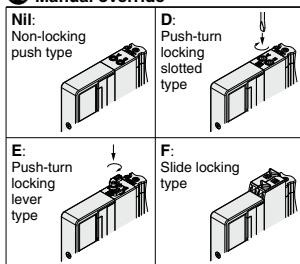
9 Light/surge voltage suppressor and common specification

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

*: "NII" 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.270, 276 EX600: P.286
EX250: P.298 EX260: P.306
EX128: P.314 EX120: P.322

10 Manual override



*: Refer to page 154 for with the safety slide locking manual override.

11 Type of mounting screw

NII	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 367 for part numbers of the base gasket and mounting screw.

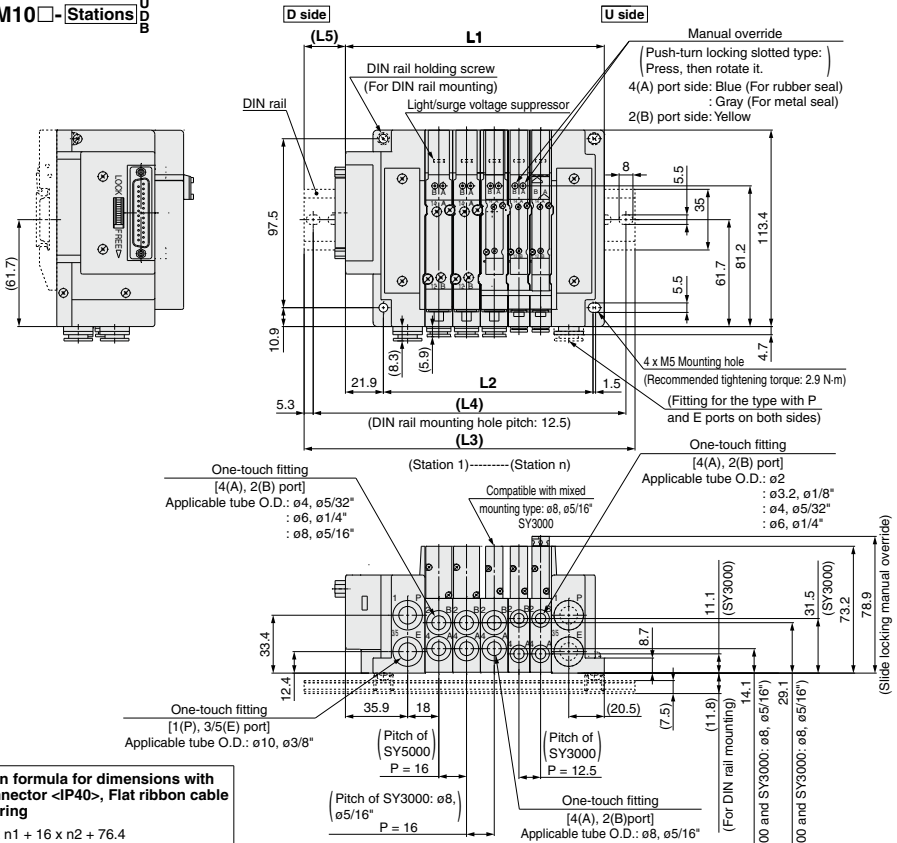
*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: SY3000/5000 Series

Plug-in Connector Connecting Base

Type 10/Side Ported Mixed Mounting Type

SS5Y5-M10 □ - Stations $\frac{U}{D}$



Calculation formula for dimensions with D-sub connector <IP40>, Flat ribbon cable and PC wiring

L1 = 12.5 x n1 + 16 x n2 + 76.4
 L2 = 12.5 x n1 + 16 x n2 + 48
 M = (L1 + 6.1)/12.5 + 1 Decimal fractions are truncated.
 L3 = 12.5 x M + 23
 L4 = L3 - 10.5
 L5 = (L3 - L1)/2

n1: Number of valve stations of the SY3000
 n2: Number of valve stations of the SY5000
 (Including the stations of the SY3000: ø8, ø5/16")

Calculation formula for dimensions with D-sub connector <IP67>, Terminal block box (Spring type), Terminal block box, Lead wire, Circular connector, EX500/600/250/260/126/120 serial transmission

L1 = 12.5 x n1 + 16 x n2 + a + b x n3
 L2 = 12.5 x n1 + 16 x n2 + 48
 M = L1/12.5 + 1 Decimal fractions are truncated.
 L3 = 12.5 x M + 23
 L4 = L3 - 10.5
 L5 = (L3 - L1)/2
 L6 = b x n3 + c

n1: Number of valve stations of the SY3000
 n2: Number of valve stations of the SY5000
 (Including the stations of the SY3000: ø8, ø5/16")
 n3: Number of I/O Units or input block stations
 *: Refer to pages 289 and 290 for dimensions of the EX600 serial transmission with I/O Unit and page 300 for the EX250 serial transmission with input block when L6, b and c are used for the calculation formula.

*: Refer to pages 328 and 329 for dimensions of external pilot, built-in silencer and elbow fittings.

	Coefficient	a	b	c
D-sub connector <IP67>		90.5	—	—
Terminal block box (Spring type)		128	—	—
Terminal block box or Serial transmission: EX126		149.3	—	—
Lead wire or Circular connector		97	—	—
EX500 Gateway Decentralized System 2 (128 Points)		88.7	—	—
EX500 Gateway Decentralized System (64 Points)		88.5	—	—
Serial transmission: EX600 (M12 connector)		141.5	47	81.5
Serial transmission: EX600 (7/8 inch connector)		158	47	81.5
Serial transmission: EX250		141.5	21	81.5
Serial transmission: EX260		88.7	—	—
Serial transmission: EX120		84.7	—	—

- SY
- S0700
- S0700

SY3000/5000/7000 Series

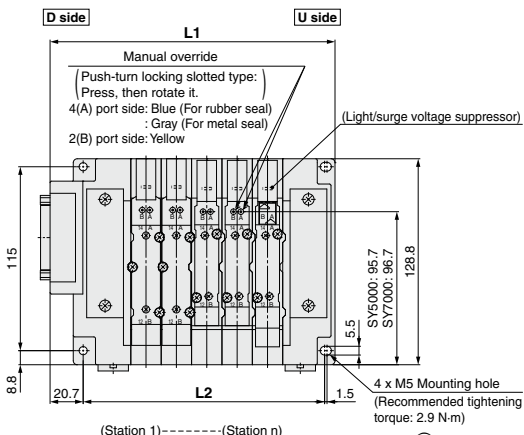
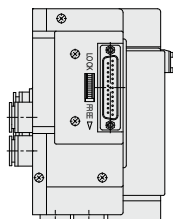
Dimensions: SY5000/7000 Series

Plug-in Connector Connecting Base

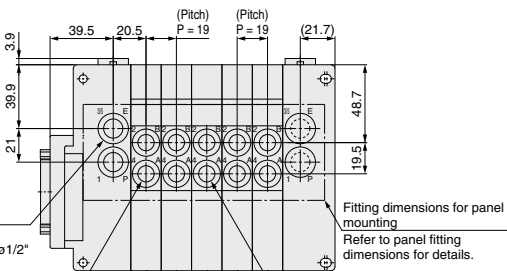
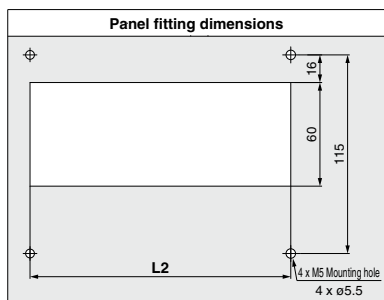
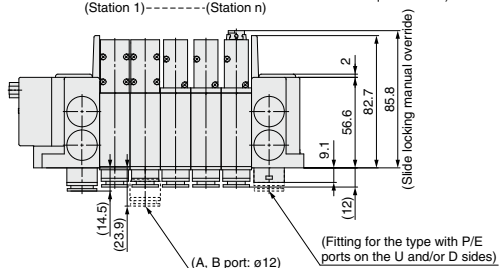
Type 11/Bottom Ported

Mixed Mounting Type

SS5Y7-M11 □ - [Stations] $\frac{U}{D}$



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



∗∗: Refer to page 332 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. 332
D-sub connector <IP40>	: P. 225
D-sub connector <IP67>	: P. 228
Flat ribbon cable	: P. 231
Terminal block box (Spring type)	: P. 237-4, 5
Terminal block box	: P. 243
Lead wire	: P. 253
Circular connector	: P. 263
EX500 (128 points)	: P. 273
EX500 (64 points)	: P. 279
EX600	: P. 291, 292
EX250	: P. 301
EX260	: P. 309
EX126	: P. 317
EX120	: P. 325

One-touch fitting (For SY7000) [4(A), 2(B) port]	Applicable tube O.D.: ø6, ø1/4" : ø8, ø5/16" : ø10, ø3/8" : ø12
One-touch fitting (For SY5000) [4(A), 2(B) port]	Applicable tube O.D.: ø6, ø1/4" : ø8, ø5/16" : ø10, ø3/8" : ø12

Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold

D-sub Connector (IP40/67) Flat Ribbon Cable PC Wiring Terminal Block Box/Spring Type (IP67)

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

SY3000/5000/7000 Series

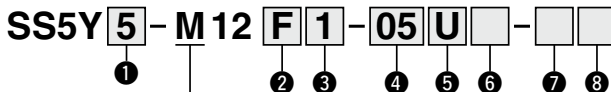


* Refer to the connector type.

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 334 and 335 for dimensions of Type 12/Top ported type.



Mixed Mounting Type

For the SY5000 series, it is possible to mount the SY3000 size valves on all stations. However, the SY3000 manifold block width should be 12.5 mm. (16 mm for ø8 or ø5/16" One-touch fitting)

Also, for the SY7000 series, it is possible to mount the SY5000 size valves on all stations. However, the SY3000 cannot be mounted onto the SY7000 series.

1 Series

5	SY5000
7	SY7000

3

• With Lead wire

Lead wire length

1	0.6 m
2	1.5 m
3	3 m

• With D-sub connector (IP40/67), Flat ribbon cable and PC wiring

Connector entry direction

1	Upward
2	Lateral

*: It is not necessary to select the items above for the valve with terminal block box or with circular connector or the serial transmission type.

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
N11	ø10	ø12	Metric size
N	ø3/8"	ø1/2"	Inch size

2 Connector type

Symbol	Type	Page
F	D-sub connector IP40	
FW	D-sub connector (25 pins) IP67	
P	26 pins	
PG	Flat ribbon cable 20 pins	232
J	10 pins	
PH	PC wiring	
H	(20 pins)	
G	With power supply terminal	
TC	Terminal block box/Spring type (IP67)	237-1
T	Terminal block box	244
L1	34 cores	
L2	Lead wire 17 cores	254
L3	9 cores	
M	Circular connector	264
S□	EX500 Gateway Decentralized System 2 (128 Points)	280
S□	EX500 Gateway Decentralized System (64 Points)	282
S6□	EX600	294
S□	EX250	302
S□	EX260	310
S4□*1	EX126	318
S3□*1	EX120	326

*1: EX126, EX120 are not yet UL-compatible.
*: 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 294 for the EX600 and ⑥ on page 302 for the EX250.

6 SUP/EXH block assembly

N11	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 294 for the EX600 and ⑥ on page 302 for the EX250.

8 Mounting

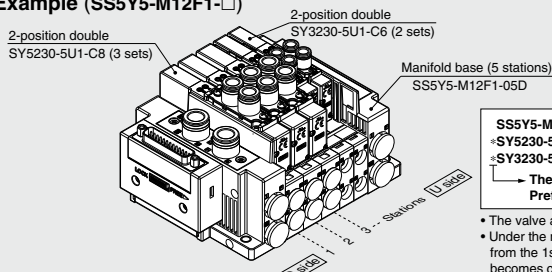
N11	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations [Specify a longer rail than the standard length.]
:	:
:	[For the SS5Y5-M12, the SY5000 valve is now at a mountable length (manifold block length of 16 mm).]
D24	For 24 stations

*: Refer to page 350 to determine the L3 using "Calculation formula" for the DIN rail length. (For the SY3000 and SY5000 mixed mounting type)

*: Refer to page 394 for the fixation of DIN rail mounting type manifold.

How to Order Manifold Assembly

Example (SS5Y5-M12F1-□)

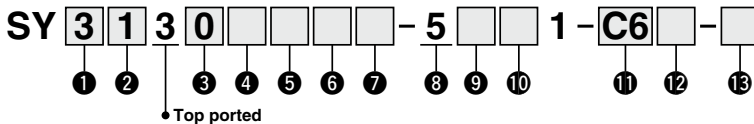


SS5Y5-M12F1-05D ... 1 set (Type M12 5-station manifold base part no.)
 *SY5230-5U1-C8 3 sets (2-position double part no.)
 *SY3230-5U1-C6 2 sets (2-position double part no.)

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 above. If the arrangement becomes complicated, specify on a manifold specification sheet.

How to Order Valves (With mounting screw) Refer to page 136 for valve specifications.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

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

Nil	Internal pilot
R	External pilot

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

Nil	None
H	Built-in

*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 379 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

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

6 Pilot valve option

Nil	Standard (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

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

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

*: Be careful of the energizing time when the power saving circuit is selected. Refer to page 391 for details.

8 Rated voltage

5	24 VDC
6	12 VDC

*: Only 24 VDC is available for the serial transmission type.

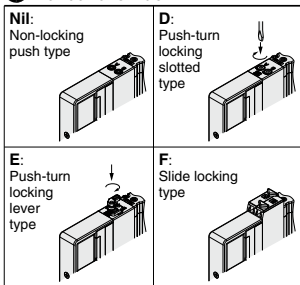
9 Light/surge voltage suppressor and common specification

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

*: "Nil" is not available for the SI Unit manifold.
 *: Only "Z" and "NZ" types are available for with the power saving circuit. Select a valve which is suited to the SI Unit output polarity or SI Unit specification when the SI Unit is selected.

Refer to the pages below for details.
 EX500: P.281, 283 EX600: P.295
 EX250: P.303 EX260: P.311
 EX126: P.319 EX120: P.327

10 Manual override



*: Refer to page 154 for with the safety slide locking manual override.

11 A, B port size

Thread piping

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

One-touch fitting (Metric)

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

One-touch fitting (Inch)

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

12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

*: Only Nil is available for M5.

13 Type of mounting screw

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

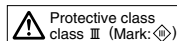
*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

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

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

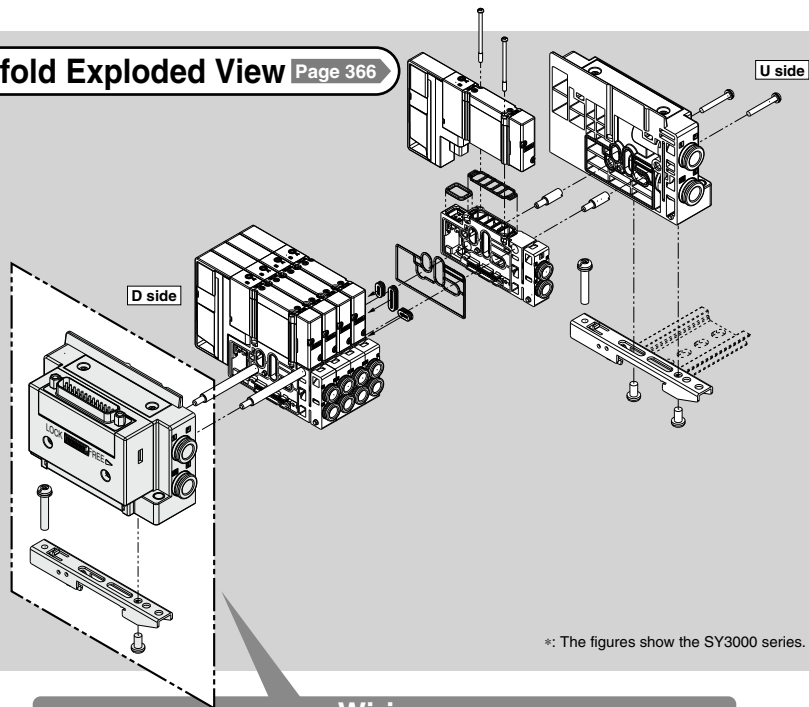
Refer to page 367 for part numbers of the base gasket and mounting screw.

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
















SY3000/5000/7000 Series Type 10, 11, 12 Connector Connecting Base Manifold Exploded View

Manifold Exploded View [Page 366](#)



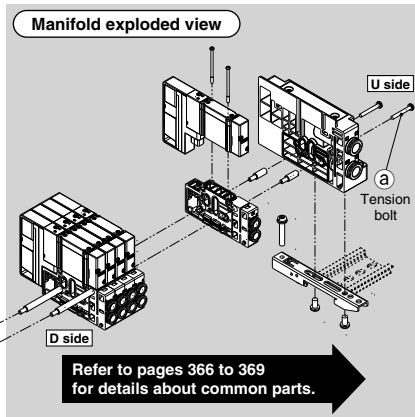
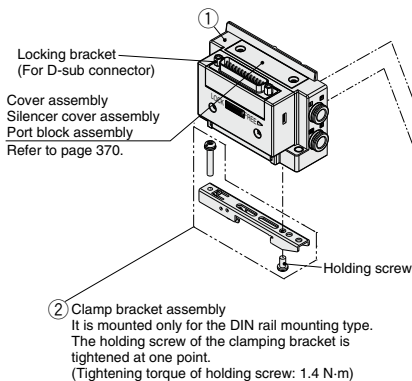
Wiring

D-sub Connector <IP40>/Flat Ribbon Cable Page 353 	D-sub Connector <IP67> Page 354 	Terminal Block Box /Spring Type Page 354-1 	Terminal Block Box Page 355 	Lead Wire Page 356 
Circular Connector Page 357 	EX500 Gateway Decentralized System 2 (128 Points) Page 358 	EX500 Gateway Decentralized System (64 Points) Page 359 	EX600 Page 360 	
EX250 Page 362 	EX260 Page 363 	EX126 Page 364 	EX120 Page 365 	

Connector Connecting Base Manifold Exploded View **SY3000/5000/7000 Series**

Wiring

D-sub Connector <IP40>/Flat Ribbon Cable



SJ
SY
SY
S0700
S0700

Manifold Parts No.

① SUP/EXH block assembly

SY 3 0M-1-11 A 1-C8 - Mounting

Series

3	SY3000
5	SY5000
7	SY7000

SUP/EXH block assembly

11	D-sub connector <IP40>
12	Flat ribbon cable (26 pins)
13	Flat ribbon cable (20 pins)
14	Flat ribbon cable (10 pins)
15	PC wiring (20 pins)
35	PC wiring (20 pins) with power supply terminal

Connector entry direction

1	Upward
2	Lateral

Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	
S	●	—	●	Side
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.

Mounting

Nil	Direct mounting
D0	DIN rail mounting (Without DIN rail)

*: For bottom ported, the symbol is nil.

P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	ø8	●	—	—	Side/Bottom/Top ported
C10	ø10	—	●	—	Top ported
C12	ø12	—	—	●	Metric size
N9	ø5/16"	●	—	—	Side/Bottom/Top ported
N11	ø3/8"	—	●	—	Top ported
N13	ø1/2"	—	—	●	Inch size
L8	ø8	●	—	—	Side ported
L10	ø10	—	●	—	Top ported
L12	ø12	—	—	●	Metric size
LN9	ø5/16"	●	—	—	Side ported
LN11	ø3/8"	—	●	—	Inch size
LN13	ø1/2"	—	—	●	
B8	ø8	●	—	—	Side ported
B10	ø10	—	●	—	Metric size
B12	ø12	—	—	●	
BN9	ø5/16"	●	—	—	Side ported
BN11	ø3/8"	—	●	—	Inch size
BN13	ø1/2"	—	—	●	
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 (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

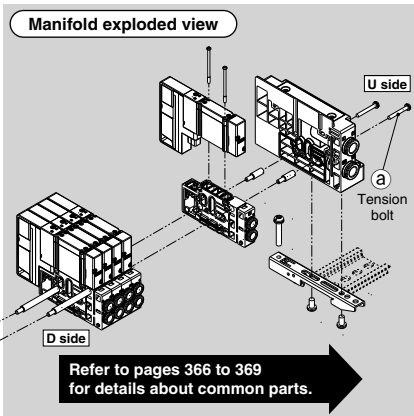
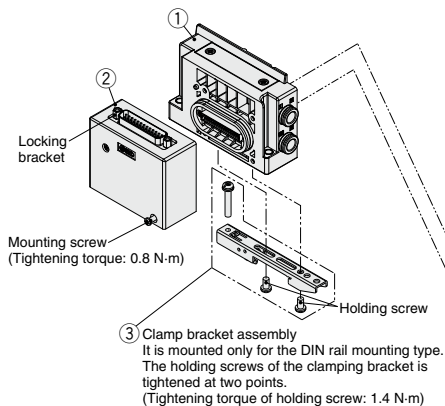
Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

*: Part number is for one assembly.

SY3000/5000/7000 Series

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

Nil	Direct mounting
DO	DIN rail mounting (Without DIN rail)

*: For bottom ported, the symbol is nil.

• Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	—
S	●	—	●	Side
R	—	●	—	—
V	●	—	—	—
RV	—	●	—	Top
B	●	—	—	—
BS	—	●	—	Bottom
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	ø8	●	—	—	Side/Bottom/Top ported
C10	ø10	—	●	—	Top ported
C12	ø12	—	—	●	Metric size
N9	ø5/16"	●	—	—	Side/Bottom/Top ported
N11	ø3/8"	—	●	—	Top ported
N13	ø1/2"	—	—	●	Inch size
L8	Upward elbow ø8	●	—	—	Side ported
L10		—	●	—	
L12		—	—	●	
LN9	Downward elbow ø5/16"	●	—	—	Side ported
LN11		—	●	—	
LN13		—	—	●	
B8	Upward elbow ø8	●	—	—	Side ported
B10		—	●	—	
B12		—	—	●	
BN9	Downward elbow ø5/16"	●	—	—	Side ported
BN11		—	●	—	
BN13		—	—	●	
00 ⁻¹	Plug	—	—	—	P/E port entry on one side or Top ported
00U ⁻²	Plug	●	●	●	—

*1: *1 can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

*2: "00U" has an inch size locking bracket.

SUP/EXH block assembly (D side)

accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000
	a Tension bolt	None ^{*1}

*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

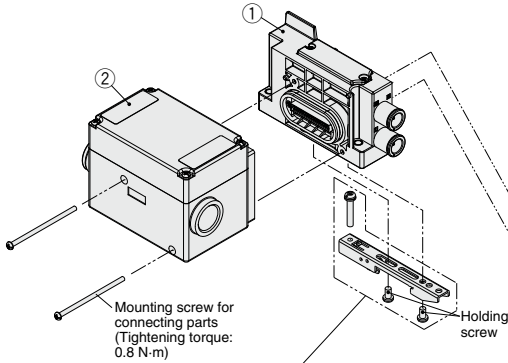
Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

*: Part number is for one assembly.

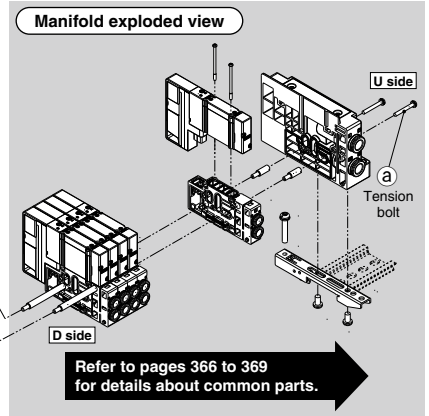
SY3000/5000/7000 Series

Wiring

Terminal Block Box (Spring Type)



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

● Series

3	SY3000
5	SY5000
7	SY7000

● Mounting

Nil	Direct mounting
D0	DIN rail mounting (Without DIN rail)

*: For bottom ported, the symbol is nil.

● P, E port size (One-touch fittings)

● Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	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
② Tension bolt	None ^{*1}	3 pcs.

*1: Since the nuts are embedded in the SUP/EXH block.

Symbol	P, E port	SY3000	SY5000	SY7000	Note	
C8	ø8	●	—	—	Side/Bottom/Top ported	
C10	ø10	—	●	—	Top ported	
C12	ø12	—	—	●	Metric size	
N9	ø5/16"	●	—	—	Side/Bottom/Top ported	
N11	ø3/8"	—	●	—	Top ported	
N13	ø1/2"	—	—	●	Inch size	
L8	ø8	●	—	—	Side ported	
L10	ø10	—	●	—		Metric size
L12	ø12	—	—	●		
LN9	ø5/16"	●	—	—	Side ported	
LN11	ø3/8"	—	●	—		Metric size
LN13	ø1/2"	—	—	●		Inch size
B8	ø8	●	—	—	Side ported	
B10	ø10	—	●	—		Metric size
B12	ø12	—	—	●		
BN9	ø5/16"	●	—	—	Side ported	
BN11	ø3/8"	—	●	—		Metric size
BN13	ø1/2"	—	—	●		Inch size
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.

② Terminal block assembly

SY30M-130-1A

③ Clamp bracket assembly

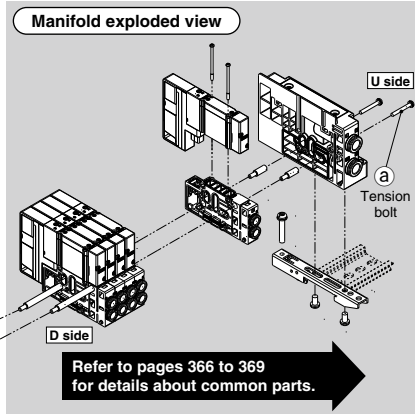
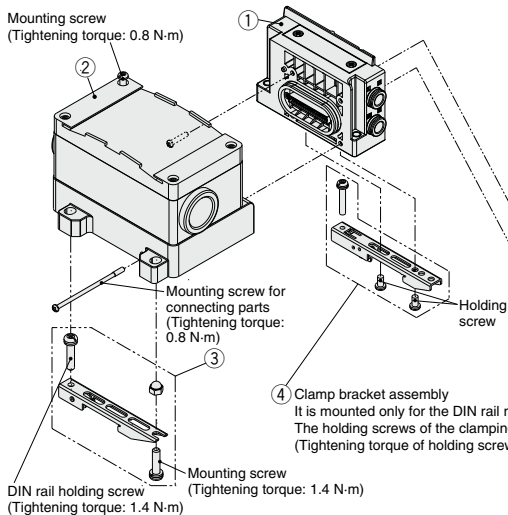
Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

*1: Part number is for one assembly.

Wiring

Terminal Block Box

Mounting screw
(Tightening torque: 0.8 N·m)



SJ
SY
SY
S0700
S0700

Manifold Parts No.

① SUP/EXH block assembly

SY 3 0M-1-1A □ - **C8** - □

● Mounting

Nil	Direct mounting
DO	DIN rail mounting (Without DIN rail)

*: For bottom ported, the symbol is nil.

● Series

3	SY3000
5	SY5000
7	SY7000

● Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	—	
R	—	●	—	
V	●	—	—	
RV	—	●	—	Top
VP	●	—	● ^{*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	ø8	●	—	—	Side/Bottom/Top ported	
C10	ø10	—	●	—	Top ported	
C12	ø12	—	—	●	Metric size	
N9	ø5/16"	●	—	—	Side/Bottom/Top ported	
N11	ø3/8"	—	●	—	Top ported	
N13	ø1/2"	—	—	●	Inch size	
L8	ø8	●	—	—	Side ported	
L10	ø10	—	●	—		Metric size
L12	ø12	—	—	●		
LN9	ø5/16"	●	—	—	Side ported	
LN11	ø3/8"	—	●	—		Top ported
LN13	ø1/2"	—	—	●		Inch size
B8	ø8	●	—	—	Side ported	
B10	ø10	—	●	—		Metric size
B12	ø12	—	—	●		
BN9	ø5/16"	●	—	—	Side ported	
BN11	ø3/8"	—	●	—		Top ported
BN13	ø1/2"	—	—	●		Inch size
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

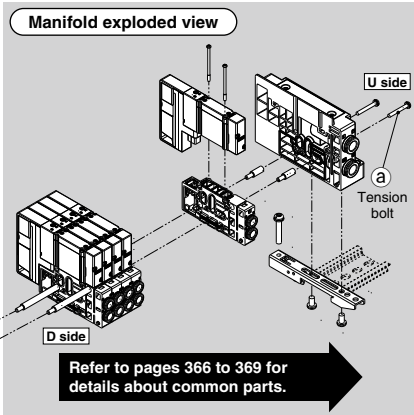
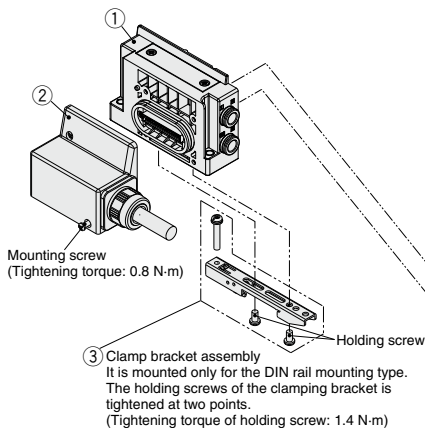
Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

*: Part number is for one assembly.

SY3000/5000/7000 Series

Wiring

Lead Wire



Manifold Parts No.

① SUP/EXH block assembly

SY 3 0M-1-1A □ - C8 - □ ● Mounting

● Series

3	SY3000
5	SY5000
7	SY7000

Nil	Direct mounting
DO	DIN rail mounting (Without DIN rail)

*: For bottom ported, the symbol is nil.

● Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	—	—	
V	●	—	—	Top
RV	—	●	—	
VP	●	—	●*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	ø8	●	—	—	Side/Bottom/Top ported
C10	ø10	—	●	—	Top ported
C12	ø12	—	—	●	Metric size
N9	ø5/16"	●	—	—	Side/Bottom/Top ported
N11	ø3/8"	—	●	—	Top ported
N13	ø1/2"	—	—	●	Inch size
L8	ø8	●	—	—	Side ported
		—	●	—	
		—	—	●	
L10	ø10	—	●	—	Metric size
		—	—	●	
		—	—	—	
LN9	ø5/16"	●	—	—	Side ported
		—	●	—	
		—	—	●	
LN11	ø3/8"	—	●	—	Inch size
		—	—	●	
		—	—	—	
LN13	ø1/2"	—	—	●	Side ported
		—	—	—	
		—	—	—	
B8	ø8	●	—	—	Side ported
		—	●	—	
		—	—	●	
B10	ø10	—	●	—	Metric size
		—	—	●	
		—	—	—	
B12	ø12	—	—	●	Side ported
		—	●	—	
		—	—	—	
BN9	ø5/16"	●	—	—	Inch size
		—	●	—	
		—	—	●	
BN11	ø3/8"	—	●	—	Side ported
		—	—	●	
		—	—	—	
BN13	ø1/2"	—	—	●	Top ported
		—	—	—	
		—	—	—	
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
① Tension bolt	None*1	3 pcs.	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

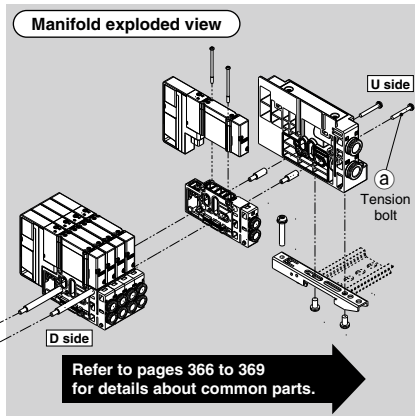
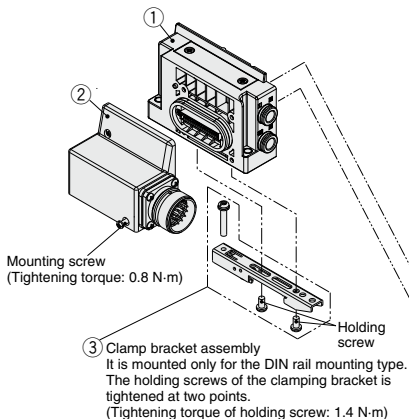
③ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

*: Part number is for one assembly.

Wiring

Circular Connector



SJ
SY
SY
S0700
S0700

Manifold Parts No.

① SUP/EXH block assembly

SY 3 0M-1-1A [] - **C8** - [] • Mounting

Series

3	SY3000
5	SY5000
7	SY7000

Nil	Direct mounting
D0	DIN rail mounting (Without DIN rail)

*: For bottom ported, the symbol is nil.

• Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	—	—	
V	●	—	—	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	ø8	●	—	—	Side/Bottom/ Top ported	
C10	ø10	—	●	—	Top ported	
C12	ø12	—	—	●	Metric size	
N9	ø5/16"	●	—	—	Side/Bottom/ Top ported	
N11	ø3/8"	—	●	—	Top ported	
N13	ø1/2"	—	—	●	Inch size	
L8	ø8	●	—	—	Side ported	
L10	ø10	—	●	—		Metric size
L12	ø12	—	—	●	Metric size	
LN9	ø5/16"	●	—	—	Side ported	
LN11	ø3/8"	—	●	—		Inch size
LN13	ø1/2"	—	—	●		Inch size
B8	ø8	●	—	—	Side ported	
B10	ø10	—	●	—		Metric size
B12	ø12	—	—	●	Metric size	
BN9	ø5/16"	●	—	—	Side ported	
BN11	ø3/8"	—	●	—		Inch size
BN13	ø1/2"	—	—	●		Inch size
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
① 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

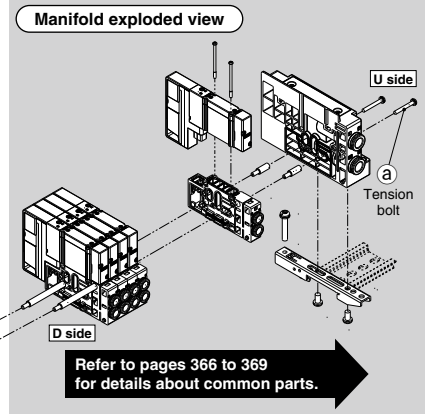
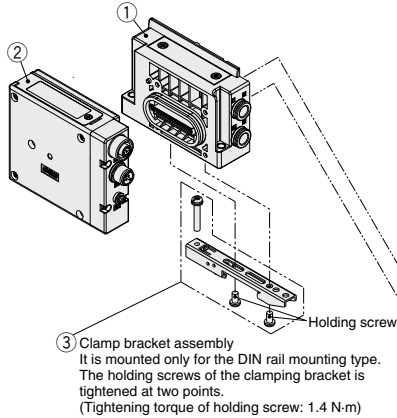
Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

*: Part number is for one assembly.

SY3000/5000/7000 Series

Wiring

EX500: Gateway Decentralized System 2 (128 Points)



Manifold Parts No.

① SUP/EXH block assembly

SY 3 0M-1-1A □ - C8 - □ • Mounting

• Series

3	SY3000
5	SY5000
7	SY7000

Nil	Direct mounting
DO	DIN rail mounting (Without DIN rail)

*: For bottom ported, the symbol is nil.

• Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	
RV	●	●	—	Top
VP	●	—	● ^{*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	ø8	●	—	—	Side/Bottom/Top ported
C10	ø10	—	●	—	Top ported
C12	ø12	—	—	●	Metric size
N9	ø5/16"	●	—	—	Side/Bottom/Top ported
N11	ø3/8"	—	●	—	Top ported
N13	ø1/2"	—	—	●	Inch size
L8	ø8	●	—	—	Side ported
L10	ø10	—	●	—	
L12	ø12	—	—	●	Metric size
LN9	ø5/16"	●	—	—	Side ported
LN11	ø3/8"	—	●	—	
LN13	ø1/2"	—	—	●	
B8	ø8	●	—	—	Side ported
B10	ø10	—	●	—	
B12	ø12	—	—	●	Metric size
BN9	ø5/16"	●	—	—	Side ported
BN11	ø3/8"	—	●	—	
BN13	ø1/2"	—	—	●	
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 EX500 SI Unit

EX500-S103

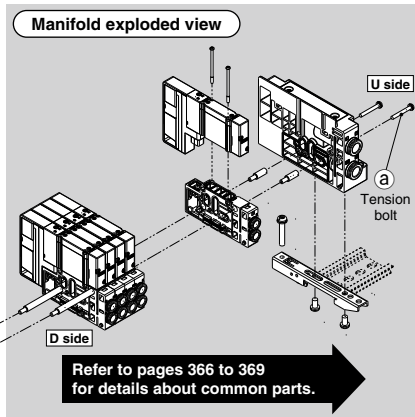
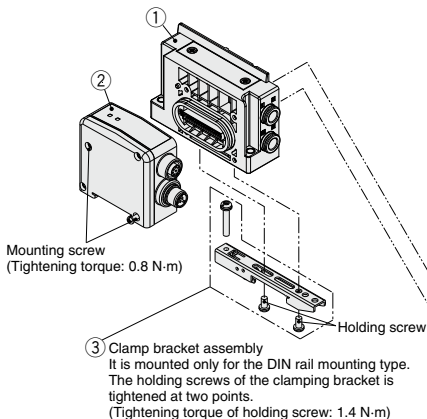
③ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

*: Part number is for one assembly.

Wiring

EX500: Gateway Decentralized System (64 Points)



SJ
SY
SY
S0700
S0700

Manifold Parts No.

① SUP/EXH block assembly

SY 3 0M-1-1A [] - **C8** - [] ● Mounting

● Series

3	SY3000
5	SY5000
7	SY7000

Nil	Direct mounting
DO	DIN rail mounting (Without DIN rail)

*: For bottom ported, the symbol is nil.

● Pilot, Silencer/Piping type

Symbol	Pilot type Internal External	Built-in silencer	Piping direction
Nil	●	—	—
S	●	—	Side
R	—	—	—
V	●	—	—
RV	—	●	Top
VP	●	—	—
B	●	—	Bottom
BS	—	●	—
BR	—	●	—

*1: For silencer (supply side). E port is plugged.

*: "B" for bottom ported can be selected for the SY5000/7000 series.

● P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	ø8	●	—	—	Side/Bottom/Top ported
C10	ø10	—	●	—	Metric size
C12	ø12	—	—	●	Metric size
N9	ø5/16"	●	—	—	Side/Bottom/Top ported
N11	ø3/8"	—	●	—	Inch size
N13	ø1/2"	—	—	●	Inch size
L8	ø8	●	—	—	Side ported
L10	ø10	—	●	—	Metric size
L12	ø12	—	—	●	Metric size
LN9	ø5/16"	●	—	—	Side ported
LN11	ø3/8"	—	●	—	Inch size
LN13	ø1/2"	—	—	●	Inch size
B8	ø8	●	—	—	Side ported
B10	ø10	—	●	—	Metric size
B12	ø12	—	—	●	Metric size
BN9	ø5/16"	●	—	—	Side ported
BN11	ø3/8"	—	●	—	Inch size
BN13	ø1/2"	—	—	●	Inch size
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
① Tension bolt	None*1	3 pcs.

*1: Since the nuts are embedded in the SUP/EXH block.

② EX500 SI Unit

EX500-Q [0] [01]

● Output specifications

0	NPN (Positive common)
1	PNP (Negative common)

③ Clamp bracket assembly

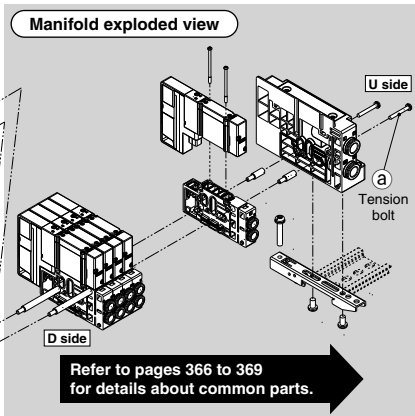
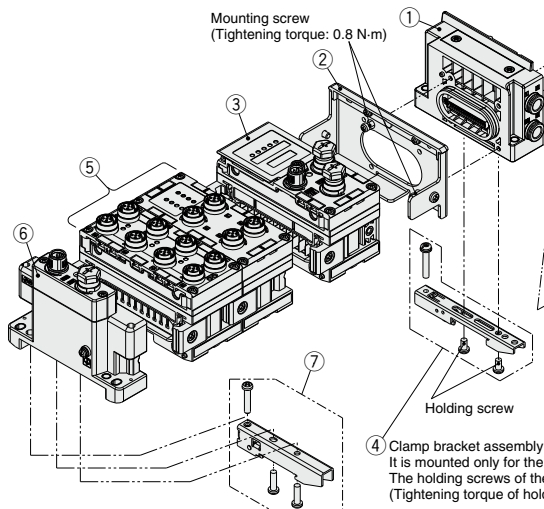
Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

*: Part number is for one assembly.

SY3000/5000/7000 Series

Wiring

EX600



Refer to pages 366 to 369 for details about common parts.

Manifold Parts No.

① SUP/EXH block assembly

SY **3** 0M-1-1A □ - C8 - □

•Series

3	SY3000
5	SY5000
7	SY7000

•Mounting

Nil	Direct mounting
DO	DIN rail mounting (Without DIN rail)

*: For bottom ported, the symbol is nil.

•Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	—	—	—	
R	—	●	—	
V	—	—	—	
RV	—	●	—	Top
VP	—	—	●*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	ø8	●	—	—	Side/Bottom/ Top ported Metric size	
C12	ø12	—	—	●		
N9	ø5/16"	●	—	—	Side/Bottom/ Top ported Inch size	
N11	ø3/8"	—	●	—		
N13	ø1/2"	—	—	●		
L8	Upward elbow ø8	●	—	—	Side ported Metric size	
		L10	—	●		
		L12	—	—		●
LN9	Upward elbow ø5/16"	●	—	—	Side ported Inch size	
		LN11	—	●		
		LN13	—	—		●
B8	Downward elbow ø8	●	—	—	Side ported Metric size	
		B10	—	●		
		B12	—	—		●
BN9	Downward elbow ø5/16"	●	—	—	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.

Manifold Parts No.

② Valve plate

EX600-ZMV2

*: With mounting screws
(2 pcs. of M4 x 6 and 2 pcs. of M3 x 8)

③ EX600 SI Unit

EX600-S PR 1

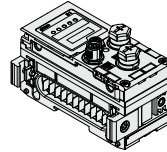
Symbol	Description
PR	PROFIBUS DP
DN	DeviceNet™
MJ	CC-Link
EN	EtherNet/IP™*1
EC	EtherCAT*1
PN	PROFINET*1

*1: Cannot be communicated with the EX600-HT1-□.

Symbol	Description
Nil	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

Symbol	Description
1	PNP (Negative common)
2	NPN (Positive common)

●Protocol

Symbol	SI Unit type	Description
EN	Wireless master unit	EtherNet/IP™*2
PN	Wireless master unit	ROFINET*2
SV	Wireless slave unit	—*1,2

*1: Cannot be communicated with the EX600-HT1-□.

*2: The wireless system is suitable for use only in a country where it is in accordance with the Radio Act and regulations of that country.

④ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

*: Part number is for one assembly.

SJ

SY

SY

S0700

S0700

Manifold Parts No.

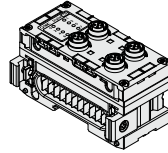
⑤ EX600 Digital Input Unit

EX600-DX **P** **B**

Input type	
Symbol	Description
P	PNP
N	NPN

● Number of inputs, open circuit detection, and connector

Symbol	Number of inputs	Open circuit detection	Connector
B	8	No	M12 connector (5 pins) 4 pcs.
C	8	No	M8 connector (3 pins) 8 pcs.
D	8	Yes	M8 connector (3 pins) 8 pcs.
E	16	No	M12 connector (5 pins) 8 pcs.
F	16	No	D-sub connector (25 pins) ^{*1*2}
F	16	No	Spring type terminal block (32 pins) ^{*1*2}



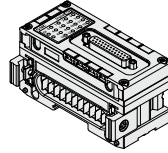
⑤ EX600 Digital Output Unit

EX600-DY **P** **B**

Output type	
Symbol	Description
P	PNP
N	NPN

● Number of outputs and connector

Symbol	Number of outputs	Connector
B	8	M12 connector (5 pins) 4 pcs.
E	16	D-sub connector (25 pins) ^{*1*2}
F	16	Spring type terminal block (32 pins) ^{*1*2}



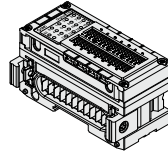
⑤ EX600 Digital Input/Output Unit

EX600-DM **P** **E**

Input/Output type	
Symbol	Description
P	PNP
N	NPN

● Number of inputs/outputs and connector

Symbol	Number of inputs	Number of outputs	Connector
E	8	8	D-sub connector (25 pins) ^{*1*2}
F	8	8	Spring type terminal block (32 pins) ^{*1*2}



⑤ EX600 Analog Input/Output Unit

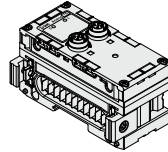
EX600-AX **A**

Analog input/output	
Symbol	Description
AX	Analog input
AY	Analog output

● Number of input channels and connector

Symbol	Number of input channels	Connector
A	2 channels	M12 connector (5 pins) 2 pcs. ^{*3}

*3: Refer to *1 and *2 below for AY.



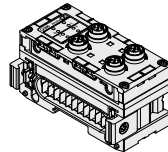
⑤ EX600 Analog Input/Output Unit

EX600-AM **B**

Analog input/output

● Number of input/output channels and connector

Symbol	Number of input channels	Number of output channels	Connector
B	2 channels	2 channels	M12 connector (5 pins) 4 pcs. ^{*1*2}



⑥ EX600 end plate

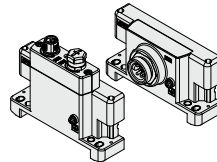
EX600-ED **2** - **□**

● Power connector

Symbol	Connector
2	M12 (5 pins)
3	7/8 inch (5 pins)
4	M12 (4 pins/5 pins)
5	M12 (4 pins/5 pins)

● Mounting

Symbol	Description
Nil	Without DIN rail mounting bracket
3	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.

SJ

SY

SY

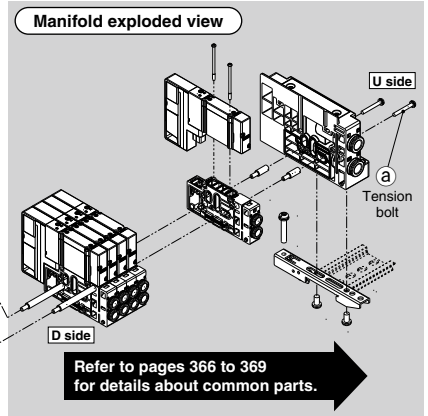
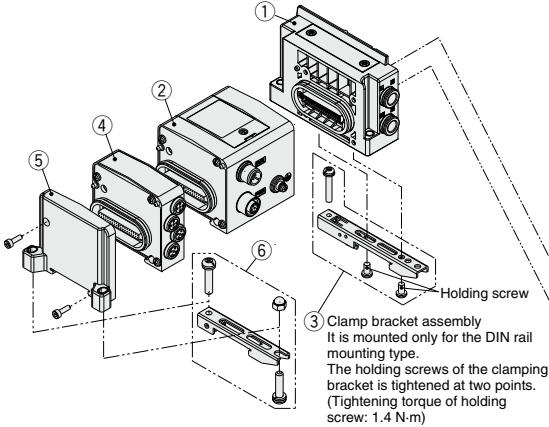
S0700

S0700

SY3000/5000/7000 Series

Wiring

EX250



Manifold Parts No.

① SUP/EXH block assembly

SY **3** 0M-1-1A [] - **C8** - []

•Mounting	Nil	Direct mounting
	DO	DIN rail mounting (Without DIN rail)

*: For bottom ported, the symbol is nil.

•Series	3	SY3000
	5	SY5000
	7	SY7000

•Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	Top
RV	—	●	—	
VP	●	—	●*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	ø8	●	—	—	Side/Bottom/Top ported
C10	ø10	—	—	—	Top ported
C12	ø12	—	—	●	Metric size
N9	ø5/16"	—	—	—	Side/Bottom/Top ported
N11	ø3/8"	—	—	●	Inch size
N13	ø1/2"	—	—	●	Inch size
L8	ø8	●	—	—	Side ported
		—	—	—	
		—	—	—	
L10	ø10	—	—	—	Metric size
		—	—	—	
		—	—	—	
LN9	ø5/16"	●	—	—	Side ported
		—	—	—	
		—	—	—	
LN11	ø3/8"	—	—	—	Inch size
		—	—	—	
		—	—	—	
LN13	ø1/2"	—	—	—	Inch size
		—	—	—	
		—	—	—	
B8	ø8	●	—	—	Side ported
		—	—	—	
		—	—	—	
B10	ø10	—	—	—	Metric size
		—	—	—	
		—	—	—	
B12	ø12	—	—	—	Inch size
		—	—	—	
		—	—	—	
BN9	ø5/16"	●	—	—	Side ported
		—	—	—	
		—	—	—	
BN11	ø3/8"	—	—	—	Inch size
		—	—	—	
		—	—	—	
BN13	ø1/2"	—	—	—	Inch size
		—	—	—	
		—	—	—	
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.	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/4 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)

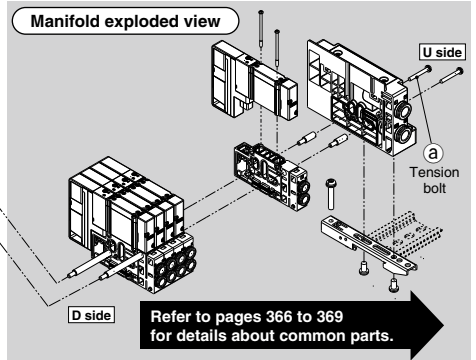
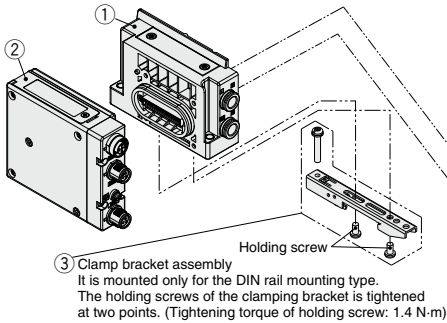
⑥ Clamp bracket assembly for EX250 SI Unit

SY30M-15-3A

*: Part number is for one assembly.

Wiring

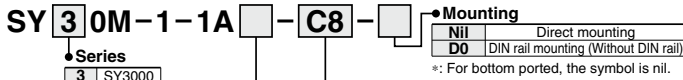
EX260



- SJ**
- SY**
- SY**
- S0700**
- S0700**

Manifold Parts No.

① **SUP/EXH block assembly**



Series

3	SY3000
5	SY5000
7	SY7000

Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	—
S	●	—	●	Side
R	—	●	—	—
V	●	—	—	—
RV	—	●	—	Top
VP	●	—	● ^{*1}	—
B	●	—	—	Bottom
BS	—	—	●	—
BR	—	●	—	—

P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	ø8	●	—	—	Side/Bottom/ Top ported
C10	ø10	—	●	—	Top ported
C12	ø12	—	—	●	Metric size
N9	ø5/16"	—	—	●	Side/Bottom/ Top ported
N11	ø3/8"	—	—	●	Inch size
N13	ø1/2"	—	—	●	—
L8	ø8	●	—	—	Side ported
L10	ø10	—	●	—	
L12	ø12	—	—	●	
LN9	ø5/16"	●	—	—	Metric size
LN11	ø3/8"	—	—	●	
LN13	ø1/2"	—	—	●	
B8	ø8	●	—	—	Side ported
B10	ø10	—	●	—	
B12	ø12	—	—	●	
BN9	ø5/16"	—	—	●	Side ported
BN11	ø3/8"	—	—	●	
BN13	ø1/2"	—	—	●	
00^{*1}	Plug	●	●	●	P/E port entry on one side of 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.

*1: For silencer (supply side). E port is plugged.
 *: "B" for bottom ported can be selected for the SY5000/7000 series.

② **EX260 SI Unit**

EX260-S PR1

Communication protocol

Symbol	Protocol	Number of outputs	SI Unit output polarity	Communication connector	Manifold symbol	Symbol	Protocol	Number of outputs	SI Unit output polarity	Communication connector	Manifold symbol					
DN1	DeviceNet™	32	Source/PNP (Negative common)	M12	QAN	EC1	EtherCAT®	32	Source/PNP (Negative common)	M12	DAN					
DN2			Sink/NPN (Positive common)			EC2			Sink/NPN (Positive common)		DA					
DN3			Source/PNP (Negative common)			EC3			Source/PNP (Negative common)		DBN					
DN4			Sink/NPN (Positive common)			EC4			Sink/NPN (Positive common)		DB					
PR1	PROFIBUS DP	32	Source/PNP (Negative common)	M12	NAN	PN1	PROFINET	32	Source/PNP (Negative common)	M12	FAN					
PR2			Sink/NPN (Positive common)			PN2			Sink/NPN (Positive common)		FA					
PR3			Source/PNP (Negative common)			PN3			Source/PNP (Negative common)		FBN					
PR4			Sink/NPN (Positive common)			PN4			Sink/NPN (Positive common)		FB					
PR5			Source/PNP (Negative common)			D-sub ^{*1}			NCN		EN1	EtherNet/IP™	32	Source/PNP (Negative common)	M12	EAN
PR6			Sink/NPN (Positive common)						NC		EN2			Sink/NPN (Positive common)		EA
PR7			Source/PNP (Negative common)						NDN		EN3			Source/PNP (Negative common)		EBN
PR8			Sink/NPN (Positive common)						ND		EN4			Sink/NPN (Positive common)		EB
IJ1	CC-Link	32	Source/PNP (Negative common)	M12	VAN	PL1	Ethernet POWERLINK	32	Source/PNP (Negative common)	M12	GAN					
IJ2			Sink/NPN (Positive common)			PL3			Sink/NPN (Positive common)		GBN					
IJ3			Source/PNP (Negative common)			IL1			IO-Link		32	Source/PNP (Negative common)	M12	KAN		
IJ4			Sink/NPN (Positive common)			VB										

*1: Enclosure is IP40 when the communication connector is D-sub.

③ **Clamp bracket assembly**

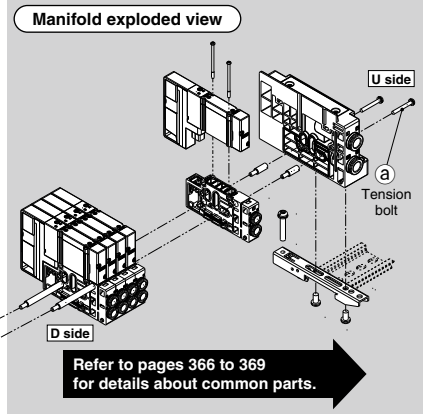
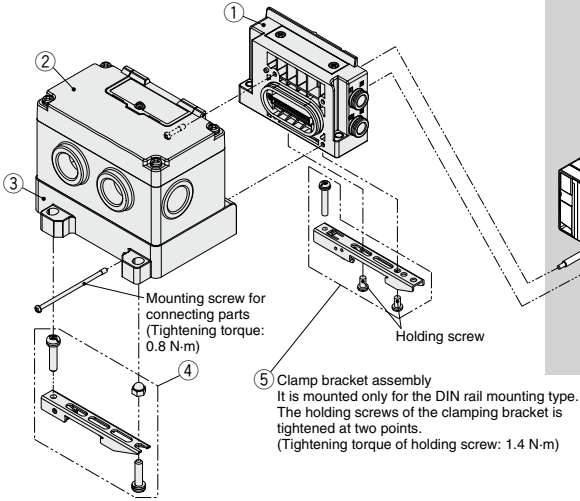
Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

*: Part number is for one assembly.

SY3000/5000/7000 Series

Wiring

EX126



Manifold Parts No.

① SUP/EXH block assembly

SY 3 0M-1-1A

Mounting

Nil Direct mounting

D0 DIN rail mounting (Without DIN rail)

*: For bottom ported, the symbol is nil.

Series

3	SY3000
5	SY5000
7	SY7000

● Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	—	
R	—	●	—	
V	●	—	—	
RV	—	●	—	Top
VP	●	—	● 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	ø8	●	—	—	Side/Bottom/Top ported Metric size
C12	ø12	—	—	—	
N9	ø5/16"	●	—	—	Side/Bottom/Top ported Inch size
N11	ø3/8"	—	●	—	
N13	ø1/2"	—	—	●	Side ported Metric size
L8	ø8	●	—	—	
L10	ø10	—	●	—	
L12	ø12	—	—	●	
LN9	ø5/16"	●	—	—	
LN11	ø3/8"	—	●	—	
LN13	ø1/2"	—	—	●	
B8	ø8	●	—	—	
B10	ø10	—	●	—	
B12	ø12	—	—	●	
BN9	ø5/16"	●	—	—	
BN11	ø3/8"	—	●	—	
BN13	ø1/2"	—	—	●	
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
Ⓐ 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.

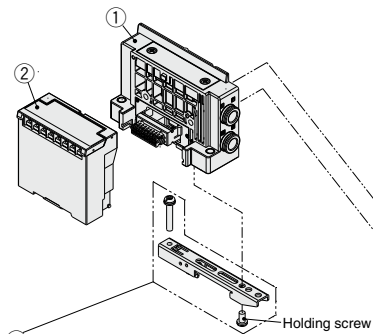
⑤ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

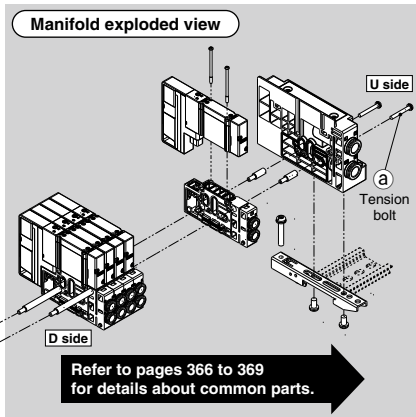
*: Part number is for one assembly.

Wiring

EX120



③ Clamp bracket assembly
It is mounted only for the DIN rail mounting type.
The holding screw of the clamping bracket is tightened at one point.
(Tightening torque of holding screw: 1.4 N·m)



SJ
SY
SY
S0700
S0700

Manifold Parts No.

① SUP/EXH block assembly

SY **3** **0M-1-16A** **C8** **Mounting**

● Series

3	SY3000
5	SY5000
7	SY7000

Nil	Direct mounting
DO	DIN rail mounting (Without DIN rail)

*: For bottom ported, the symbol is nil.

● Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	●	—	—	
V	●	—	—	Top
RV	—	●	—	
VP	●	—	● ^{*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	ø8	●	—	—	Side/Bottom/Top ported	
C10	ø10	—	●	—	Metric size	
C12	ø12	—	—	●	Metric size	
N9	ø5/16"	●	—	—	Side/Bottom/Top ported	
N11	ø3/8"	—	●	—	Inch size	
N13	ø1/2"	—	—	●	Inch size	
L8	Upward elbow	ø8	●	—	Side ported	
L10		ø10	—	●		Metric size
L12		ø12	—	—		Metric size
LN9	Downward elbow	ø5/16"	●	—	Side ported	
LN11		ø3/8"	—	●		Inch size
LN13		ø1/2"	—	—		Inch size
B8	Upward elbow	ø8	●	—	Side ported	
B10		ø10	—	●		Metric size
B12		ø12	—	—		Metric size
BN9	Downward elbow	ø5/16"	●	—	Side ported	
BN11		ø3/8"	—	●		Inch size
BN13		ø1/2"	—	—		Inch size
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
① 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)

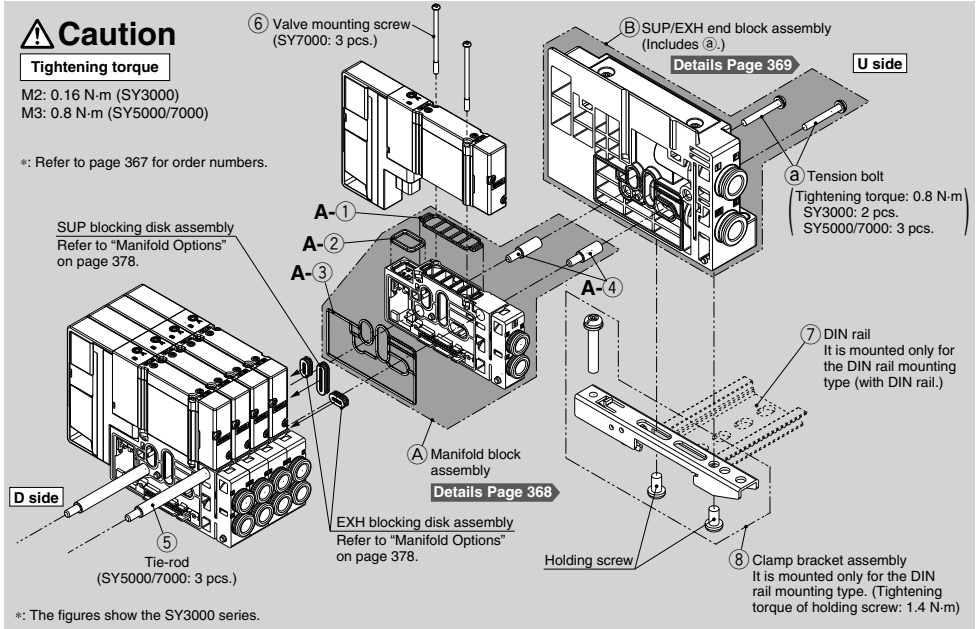
③ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

*: Part number is for one assembly.

SY3000/5000/7000 Series

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.

<For SY3000>

2 Screw in (4) tie-rods for additional stations to the (5) tie-rod of the manifold.

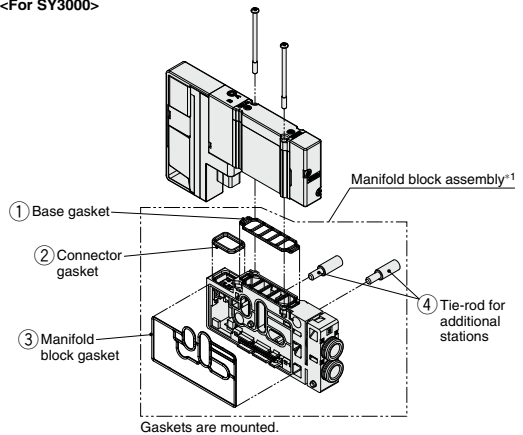
(Screw them in until there is no gap) between the tie-rods.

3 Connect the (A) manifold block assembly and (B) SUP/EXH end block assembly to be added, and tighten the tension bolt (a).

Tightening torque for tension bolt (a) (M3): 0.8 N-m

⚠ Caution

1. Be sure to shut off the power and air supplies before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
2. When disassembly and assembly are performed, air leakage may result if the tightening of the tension bolt is inadequate.



*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 367 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	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 ø8, ø5/16"	SV2000-55-2A-A (16 mm pitch)			—	3 pcs. supplied.
		For mixed mounting of SY3000/5000: SY3000 except A, B port size ø8, ø5/16" 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 ⁵⁾	SY50M-49-1-□-A ³⁾⁴⁾ (12.5 mm pitch)		—	□: Manifold stations (2 stations to 24 stations) 3 pcs. supplied.
			SS5Y7-M ⁵⁾	—	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 372.	
⑧	Clamp bracket assembly (for connector connecting base)		SY30M-15-1A	SY50M-15-1A		Supplied individually.	
⑨	Tension bolt (for connector connecting base) ⁶⁾		AC00530	SX3000-145-21		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 ø8, ø5/16").

*4: The port sizes except A, B port size ø8, ø5/16" are the following: ø2, ø3.2, ø4, ø6, ø1/8", ø5/32", ø1/4".

*5: When mounting only the SY3000 (16 mm pitch A, B port size ø8, ø5/16").

*6: For the SY3000 SUP/EXH end block or the SY5000 and SY7000 SUP/EXH (end) block

SY3000/5000/7000 Series

Manifold Parts No.

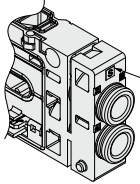
(A) Manifold block assembly

SY **3** OM-2-**1** **D** A-C**6**

Series	
3	SY3000
5	SY5000
7	SY7000

Piping direction	
1	Side/Top ported
2	Bottom ported

*: "2" for bottom ported can be selected for the SY5000/7000 series.



Single wiring
Marked with **S**

Wiring type	
S	Single wiring
D	Double wiring

● A, B port size (One-touch fittings)

Symbol	A, B port	SY3000	SY5000	SY7000	Note
C2	ø2	●	—	—	
C3	ø3.2	●	—	—	Side/Bottom ported
C4	ø4	●	●	—	Metric size
C6	ø6	●	●	●	Metric size
C8	ø8	—*1	—	—	
C10	ø10	—	—	●	
C12	ø12	—	—	●	
N1	ø1/8"	●	—	—	Side/Bottom ported
N3	ø5/32"	●	●	—	Inch size
N7	ø1/4"	●	●	●	
N9	ø5/16"	—*1	—	—	
N11	ø3/8"	—	—	●	

*1: Refer to mixed mounting type for ø8, ø5/16".

Symbol	A, B port	SY3000	SY5000	SY7000	Note
L4	ø4	●	●	—	Side ported Metric size
L6	ø6	●	●	—	
L8	ø8	—*1	—	—	
L10	ø10	—	—	●	
L12	ø12	—	—	●	Side ported Inch size
LN3	ø5/32"	●	—	—	
LN7	ø1/4"	●	—	—	
LN9	ø5/16"	—*1	—	—	
LN11	ø3/8"	—	—	●	
B4	ø4	●	—	—	Side ported Metric size
B6	ø6	●	—	—	
B8	ø8	—*1	—	—	
B10	ø10	—	—	●	
B12	ø12	—	—	●	Side ported Inch size
BN3	ø5/32"	●	—	—	
BN7	ø1/4"	●	—	—	
BN9	ø5/16"	—*1	—	—	
BN11	ø3/8"	—	—	●	
00	Plug	●	●	●	Top ported

(A) Mixed mounting of the SY3000/5000 Manifold block assembly for mounting the SY3000

SY **50M**-2-**3** **D** A-C**6**

Piping direction	
3	Side/Top ported
4	Bottom ported

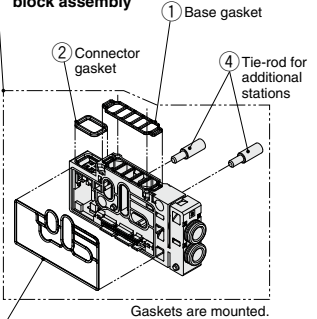
● Wiring type

S	Single wiring
D	Double wiring

● A, B port size (One-touch fittings)

Symbol	A, B port	Note	Symbol	A, B port	Note
C2	ø2		L4	ø4	Side ported
C3	ø3.2	Side/Bottom ported	L6	ø6	Metric size
C4	ø4	Metric size	LN3	ø5/32"	Side ported
C6	ø6		LN7	ø1/4"	Inch size
N1	ø1/8"	Side/Bottom ported	B4	ø4	Side ported
N3	ø5/32"	Inch size	B6	ø6	Metric size
N7	ø1/4"		BN3	ø5/32"	Side ported
			BN7	ø1/4"	Inch size
			00	Plug	Top ported

(A) Manifold (All parts inside ----- are included.) block assembly



Gaskets are mounted.

(A) Mixed mounting of the SY3000/5000 Manifold block assembly for mounting the SY3000 for ø8, ø5/16"

(A manifold block assembly for mounting the SY3000 valves on the SY5000 manifolds at A, B port size: ø8, ø5/16")

SY **50M**-2-**5** **D** A-C**8**

Piping direction	
5	Side ported
6	Bottom ported

● Wiring type

S	Single wiring
D	Double wiring

● A, B port size (One-touch fittings)

Symbol	A, B port	Note	Symbol	A, B port	Note
C8	ø8	Side/Bottom ported	L6	ø6	Side ported
N9	ø5/16"	Metric size	L8	ø8	Side ported
LN9	ø8	Side ported	L10	ø10	Metric size
L8	ø8	Side ported	L12	ø12	
LN9	ø8	Side ported	LN11	ø3/8"	Side ported
B8	ø8	Side ported			
BN9	ø5/16"	Side ported			

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

SY **70M**-2-**3** **D** A-C**10**

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	Symbol	A, B port	Note
C6	ø6	Side/Bottom ported	L6	ø6	Side ported	B6	ø6	Side ported
C8	ø8	Metric size	L8	ø8	Side ported	B8	ø8	Side ported
C10	ø10	Metric size	L10	ø10	Metric size	B10	ø10	Metric size
C12	ø12		L12	ø12		B12	ø12	
N7	ø1/4"	Side/Bottom ported	LN11	ø3/8"	Side ported	BN11	ø3/8"	Side ported
N9	ø5/16"	Inch size				00	Plug	Top ported
N11	ø3/8"							

Manifold Parts No.

⑧ SUP/EXH end block assembly

SY 3 0M-3-1A - **C8** -

● **Series**

3	SY3000
5	SY5000
7	SY7000

● **Mounting**

Nil	Direct mounting
DO	DIN rail mounting (Without DIN rail)

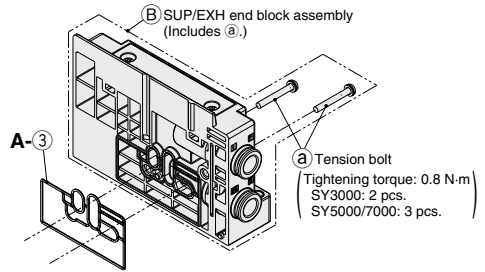
*: For bottom ported, the symbol is nil.

● **Pilot, Silencer/Piping type**

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	Top
RV	—	●	—	
VP	●	—	●*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	ø8	●	—	—	Side/Bottom/Top ported Metric size
C10	ø10	—	●	—	
C12	ø12	—	—	●	
N9	ø5/16"	●	—	—	Side/Bottom/Top ported Inch size
N11	ø3/8"	—	●	—	
N13	ø1/2"	—	—	●	
L8	ø8	●	—	—	Side ported Metric size
L10					
L12					
LN9	ø5/16"	●	—	—	Side ported Inch size
LN11	ø3/8"	—	●	—	
LN13	ø1/2"	—	—	●	
B8	ø8	●	—	—	Side ported Metric size
B10					
B12					
BN9	ø5/16"	●	—	—	Side ported Inch size
BN11	ø3/8"	—	●	—	
BN13	ø1/2"	—	—	●	
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
① Tension bolt	2 pcs.	3 pcs.
A-③ Manifold block gasket	1 pc.	

Gasket is mounted.

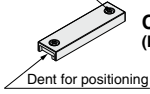
SJ
SY
SY
S0700
S0700

SY3000/5000/7000 Series

Manifold Parts No.

■ Cover assembly/Silencer cover assembly/Port block assembly for SUP/EXH (end) block assembly

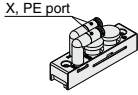
Mounting screw (M3)



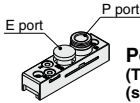
Cover assembly
(Internal pilot)



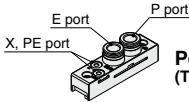
Silencer cover assembly
(Internal pilot, Built-in silencer)



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
Nil	Metric size	ø4	●	●	—
		ø6	—	—	●
U	Inch size	ø5/32"	●	●	—
		ø1/4"	—	—	●

SY **3** 0M-6- 3AV - **C8**

SY **3** 0M-6- 1A V - **C8**

Series	
3	SY3000
5	SY5000
7	SY7000

Pilot type	
Nil	Internal pilot
R	External pilot

P, E port size (One-touch fittings)				
Symbol	P, E port	SY3000	SY5000	SY7000
C8	ø8	●	—	—
C10	ø10	—	●	—
C12	ø12	—	—	●
N9	ø5/16"	●	—	—
N11	ø3/8"	—	●	—
N13	ø1/2"	—	—	●
00-1	Plug	●	●	●

*1: Cannot be selected for the SY□0M-6- (1, 3) AV-00.

SY3000/5000/7000 Series One-touch Fittings and Plug Assembly/Part No.

Refer to "Changing One-touch Fittings" on page 395 for replacement method.

■ One-touch fittings

		Port size		SY3000	SY5000	SY7000	
A, B port ¹⁾	Metric size	Straight type	ø2	VVQ1000-50A-C2	—	—	
			ø3.2	VVQ1000-50A-C3	—	—	
			ø4	VVQ1000-50A-C4	VVQ1000-51A-C4	—	
			ø6	VVQ1000-50A-C6	VVQ1000-51A-C6	VVQ2000-51A-C6	
			ø8	—	VVQ1000-51A-C8	VVQ2000-51A-C8	
			ø10	—	—	VVQ2000-51A-C10	
		Elbow type	ø4	SZ3000-73-1A-L4	SZ3000-74-1A-L4	—	
			ø6	SZ3000-73-1A-L6	SZ3000-74-1A-L6	SZ3000-83-1A-L6	
			ø8	—	SZ3000-74-1A-L8	SZ3000-83-1A-L8	
			ø10	—	—	SZ3000-83-1A-L10	
			ø12	—	—	KQ2L12-17N-X224	
			Long elbow type	ø4	SZ3000-73-2A-L4	SZ3000-74-2A-L4	—
	ø6	SZ3000-73-2A-L6		SZ3000-74-2A-L6	SZ3000-83-2A-L6		
	ø8	—		SZ3000-74-2A-L8	SZ3000-83-2A-L8		
	ø10	—		—	SZ3000-83-2A-L10		
	ø12	—		—	KQ2W12-17N-X224		
	Inch size	Straight type		ø1/8"	VVQ1000-50A-N1	—	—
			ø5/32"	VVQ1000-50A-N3	VVQ1000-51A-N3	—	
			ø1/4"	VVQ1000-50A-N7	VVQ1000-51A-N7	VVQ2000-51A-N7	
			ø5/16"	—	VVQ1000-51A-N9	VVQ2000-51A-N9	
		Elbow type	ø3/8"	—	—	VVQ2000-51A-N11	
			ø5/32"	KJL03-95-X224	—	—	
			ø1/4"	KJL07-95-X224	KQ2L07-14-X224	—	
			ø5/16"	—	KQ2L09-14-X224	—	
Long elbow type		ø3/8"	—	—	KQ2L11-14-X224		
		ø5/32"	KJL03-95-X225	—	—		
		ø1/4"	KJL07-95-X225	KQ2L07-14-X225	—		
		ø5/16"	—	KQ2L09-14-X225	—		
P, E port	Metric size	Straight type	ø8	VVQ1000-51A-C8	—	—	
			ø10	—	VVQ2000-51A-C10	—	
			ø12	—	—	VVQ4000-50B-C12	
		Elbow type	ø8	SZ3000-74-1A-L8	—	—	
			ø10	—	SZ3000-83-1A-L10	—	
			ø12	—	—	KQ2L12-19N-X224	
	Long elbow type	ø8	SZ3000-74-2A-L8	—	—		
		ø10	—	SZ3000-83-2A-L10	—		
		ø12	—	—	KQ2W12-19N-X224		
		Inch size	Straight type	ø5/16"	VVQ1000-51A-N9	—	—
				ø3/8"	—	VVQ2000-51A-N11	—
				ø1/2"	—	—	VVQ4000-50B-N13
Elbow type	ø5/16"		KQ2L09-14-X224	—	—		
	ø3/8"		—	KQ2L11-14-X224	—		
	ø1/2"		—	—	KQ2L13-19N-X224		
Long elbow type	ø5/16"	KQ2L09-14-X225	—	—			
	ø3/8"	—	KQ2L11-14-X225	—			
	ø1/2"	—	—	KQ2W13-19N-X224			

*1: A and B ports (ø8 and ø5/16") of the SY3000 and 5000 mixed mounting type are the same as those of the SY5000.

*: 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

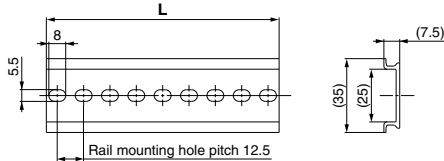
*: Purchasing order is available in units of 10 pieces.

SY3000/5000/7000 Series 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 □.

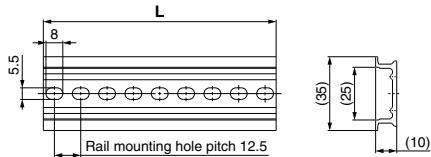


No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	323
Weight [g]	17.6	19.9	22.1	24.4	26.6	28.9	31.1	33.4	35.6	37.9	40.1	42.4	44.6	46.9	49.1	51.4	53.6	55.9	58.1
No.	19	20	21	22	23	24	25	26	27	28	29	30	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				

SY3000/5000/7000 Series

⚠ Caution

Tightening torque for mounting screw
M2: 0.16 N·m (SY3000)
M3: 0.8 N·m (SY5000/7000)

Manifold Options

∴ Refer to pages 383 to 388 for dimensions.

■ SUP stop valve spacer assembly with residual pressure release valve

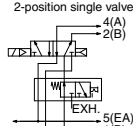
[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

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.

SY 3 0M - 50 - 1A E

Series	Manual override
3 SY3000	Nil Push-turn locking slotted type
5 SY5000	E Push-turn locking lever type
7 SY7000	



SUP stop valve spacer assembly with residual pressure release valve
Circuit diagram
 (Mounting example of a 2-position single valve)

[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.
- *: If the product is equipped with a 3-position closed center, residual pressure cannot be released, so use in combination with a 3-port valve, which can be connected to the A, B piping port.

*: For lever type

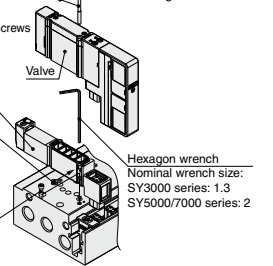
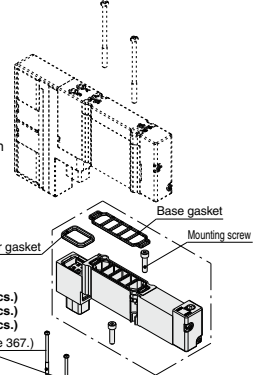
When locking the lever type manual override, push the lever down in the PUSH position with your fingers until it stops, then turn the lever 90° clockwise. (PUSH → LOCK)
 Turning the lever without pushing it down until it stops can cause damage to the manual override and other problems such as air leakages.

To unlock the manual override, turn the lever counterclockwise. (LOCK → PUSH)

Part numbers of mounting screw (For repairs)
SY3000: SY30M-56-1A (2 pcs.)
SY5000: SY50M-56-1A (2 pcs.)
SY7000: SY70M-56-1A (3 pcs.)

Valve mounting screw (See page 367)
 Tightening torque:
 SY3000 series: 0.16 N·m
 SY5000/7000 series: 0.8 N·m
 For Hexagon socket head cap screws
 Nominal wrench size:
 SY3000 series: 1.5
 SY5000/7000 series: 2.5

SUP stop valve spacer assembly with residual pressure
 Plate type nut
 SY3000 series: SY30M-57-1A (10 pcs. included)
 SY5000/7000 series: SY50M-57-1A (10 pcs. included)
 SUP stop valve mounting screw
 Tightening torque:
 SY3000 series: 0.16 N·m
 SY5000/7000 series: 0.8 N·m



■ Double check spacer assembly with residual pressure release valve (Side/Bottom ported)

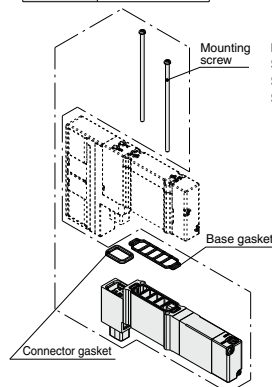
[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]
 It is used to hold the intermediate position of the cylinder for a long period of time. Use a 3-position exhaust center valve when the double check spacer assembly with residual exhaust valve is used.

It can also be used for drop prevention at the cylinder stroke end when supply residual pressure is released by using a 2-position single/double valve.

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.

Series	Part no.	Applicable valve	Intermediate stop	Drop prevention
SY3000	SY30M-60-1A		SY ³ ₇ 40 [†]	SY ³ ₇ 2 0 [†]
SY5000	SY50M-60-1A			
SY7000	SY70M-60-1A			



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.)

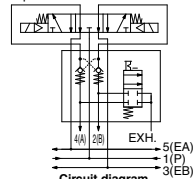
⚠ Caution

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long period of time. Check the leakage using neutral household detergent, such as dish washing soap. Also, check the cylinder's tube gasket, piston packing and rod packing for air leakage.
- Combining with 3-position closed center or pressure center valve will not work.
- If the exhaust of the double check spacer is restricted too much, the cylinder may not operate properly and may not stop intermediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

<Example>

Double check spacer assembly with residual pressure release valve

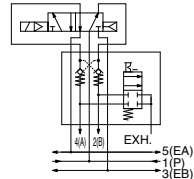
3-position exhaust center valve



(Intermediate stop: When 3-position exhaust center 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)

Specifications

Max. operating pressure	1.0 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-10 to 50°C
Flow rate characteristics: C	SY3000 0.3 dm ³ /(s·bar) SY5000 0.7 dm ³ /(s·bar) SY7000 1.1 dm ³ /(s·bar)
Max. operating frequency	3 Hz

Manifold Options SY3000/5000/7000 Series

Caution

Tightening torque for mounting screw
M2: 0.16 N·m (SY3000)
M3: 0.8 N·m (SY5000/7000)

Manifold Options

*: Refer to pages 384, 386, 388 for dimensions.

Interface regulator

[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

Used when the supply pressure for each valve on the same manifold must be individually set (reduced pressure).

How to Order

SY 3 0M - 05 - P - □

Series

3	SY3000
---	--------

Pressure gauge option¹

M1	No pressure gauge
05	Pressure gauge with MPa display (For odd number station)
06	Pressure gauge with MPa display (For even number station)
N5	Pressure gauge with psi display (For odd number station) ²
N6	Pressure gauge with psi display (For even number station) ²

Applicable valve³

Nil	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.

SY 5 0M - 00 - P

Series

5	SY5000
7	SY7000

Pressure gauge option

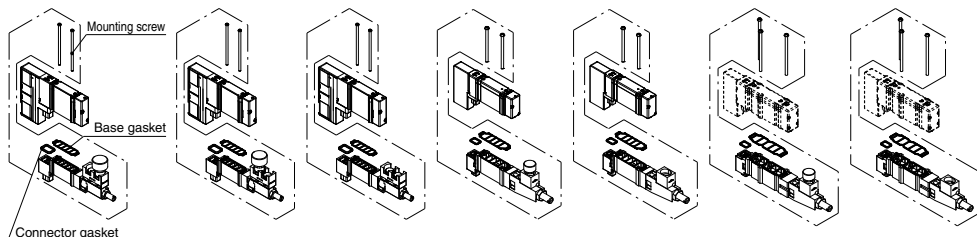
M1	No pressure gauge
00	Pressure gauge with MPa display
N0	Pressure gauge with psi display ²

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-□ SY30M-06/N6-□ SY30M-M1-□ SY50M-00/N0-□ SY50M-M1-□ SY70M-00/N0-□ SY70M-M1-□
 (With pressure gauge/ (With pressure gauge/ (Without pressure gauge) (With pressure gauge) (Without pressure gauge) (With pressure gauge) (Without pressure gauge)
 For odd number station) For even number station)

Specifications

Interface regulator model	SY30M-□□□□	SY50M-□□□	SY70M-□□□
Applicable valve model ¹	SY3□□□(R)	SY5□□□(R)	SY7□□□(R)
Regulating port		1(P), 4(A), 2(B)	
Set pressure range		0.1 to 0.7 MPa	
Maximum operating pressure		1.0 MPa	
Fluid		Air	
Ambient and fluid temperature		-10 to 50°C (No freezing)	
Weight [g] ²	With pressure gauge	33(35) ³	75
	Without pressure gauge	27(29) ³	69
			87

*1: 3-position closed center and pressure center, and 4-position dual 3-port valves are only available for 1(P) port pressure regulation.

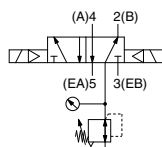
*2: Gasket and mounting screws are included in the weight.

*3: () : Denotes the values of SY30M-□□□□.

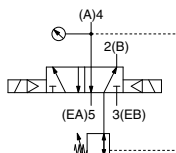
*: Always apply pressure from 1(P) port in the base for interface regulator.

*: When using in combination with the SY⁵30□□□□-E (With residual pressure release valve), the length of the required mounting screws will differ. Please contact SMC for details.

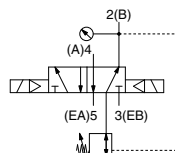
Symbol



1(P) port regulation (P)



4(A) port regulation (P controlled type, A port regulation) (P)



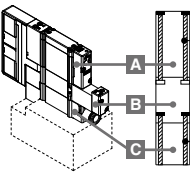
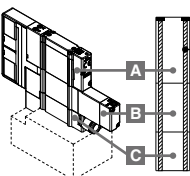
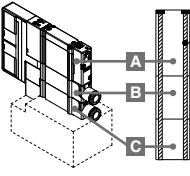
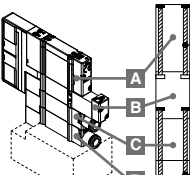
2(B) port regulation (P controlled type, B port regulation) (P)

SY3000/5000/7000 Series

⚠ 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> <Round head combination screw> ①: SY3000-23-24A ②: SY5000-221-1A ③: SY7000-221-1A </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> <Hexagon socket head cap screw> 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> <Round head combination screw> 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> <Round head combination screw> ①: SY3000-23-24A ②: SY5000-221-1A ③: SY7000-221-1A </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							

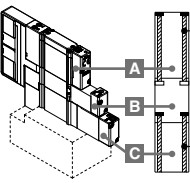
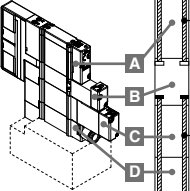
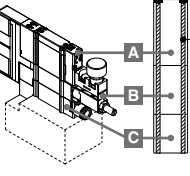
*: Mounting onto a manifold follows the order explained above.

*: 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> <Round head combination screw> ①: SY3000-23-24A ②: SY5000-221-1A ③: SY7000-221-1A <Hexagon socket head cap screw> ①: SY3000-222-1A ②: SY5000-222-1A ③: SY7000-222-1A 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						
 <p> <Round head combination screw> ①: SY3000-23-24A ②: SY5000-221-1A ③: SY7000-221-1A <Hexagon socket head cap screw> ①: SY3000-222-1A ②: SY5000-222-1A ③: SY7000-222-1A 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						
	D Individual EXH (SUP) spacer assembly						
 <p> <Round head combination screw> 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.

SJ

SY

SY

S0700

S0700

SY3000/5000/7000 Series

⚠ Caution

Tightening torque for mounting screw
M2: 0.16 N·m (SY3000)
M3: 0.8 N·m (SY5000/7000)

Manifold Options

*: Refer to pages 384, 386, 388 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 flow is required for additional air flow. Individual SUP block assembly occupies 1 station.

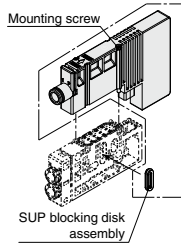
Blocking disks also supplied (2 pieces). Can be used to block both sides of the number of stations being isolated for individual air supply (as shown in example).

*: 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.)

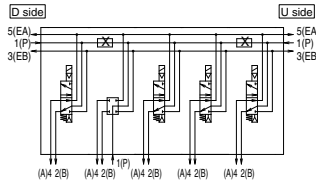
*: Electrical wiring is connected to a number of stations in the individual SUP block manifold.

*: When used in M10/11/12 (mixed mounting type), select the SY50M type for SS5Y5 and the SY70M type for SSSY7.

*: 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	ø4	●	●	—
L6	ø6	●	●	●
L8	ø8	—	●	●
L10	ø10	—	—	●
L12	ø12	—	—	●

Port size (Inch/One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
LN3	ø5/32"	●	—	—
LN7	ø1/4"	●	●	—
LN9	ø5/16"	—	●	—
LN11	ø3/8"	—	—	●

Port size (Metric/One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
C2	ø2	●	—	—
C3	ø3	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

Port size (Inch/One-touch fittings)

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

■ Individual EXH 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.

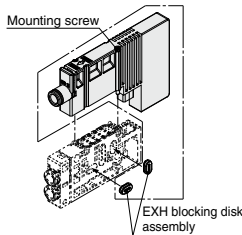
Blocking disks also supplied (4 pieces). Can be used to block both sides of the number of stations being isolated for individual exhaust. (as shown in example).

*: 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.)

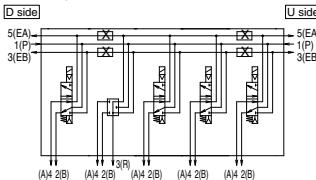
*: Electrical wiring is connected to a number of stations in the individual EXH block manifold.

*: When used in M10/11/12 (mixed mounting type), select the SY50M type for SS5Y5 and the SY70M type for SSSY7.

*: 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

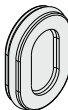
■ SUP/EXH blocking disk assembly (for connector type manifold, Type 10, 11, 12)

[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.)

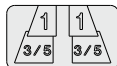


Series	SUP blocking disk assembly	EXH blocking disk assembly
SY3000	SY30M-40-1A	SY30M-40-2A
SY5000	SY50M-40-1A	SY50M-40-1A
SY7000	SY70M-40-1A	SY70M-40-1A

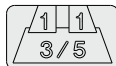
■ Label for blocking disk

Label to indicate and confirm on the manifold where the SUP/EXH blocking disk assemblies were inserted. (3 sheets each)

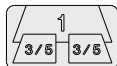
SUP/EXH blocking disk label



SUP blocking disk label



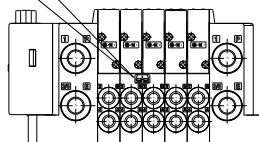
EXH blocking disk label



Series	Part no.
SY3000	SJ3000-155-1A
SY5000	
SY7000	



*: 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.

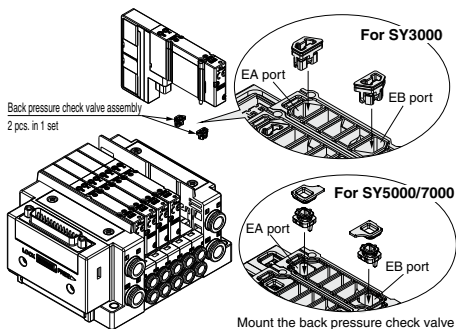
*: When ordering assemblies incorporated with a manifold, refer to the Ordering Example below (when installed in all stations.)

*: 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.
SY3000	SY30M-24-1A
SY5000	SY50M-24-1A
SY7000	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.

SY3000/5000/7000 Series

Manifold Options

■ Dual flow fitting (for connector connecting base, Type 10, side ported)

This is a fitting for cylinder ports which enables simultaneous actuation and increase in flow rate of valves for 2 stations.

*: When ordering assemblies incorporated into a manifold, refer to the Ordering Example below and specify on the manifold specification sheet.

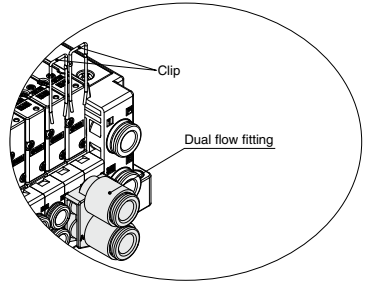
How to Order Dual Flow Fitting

SY **3** OM-120-1A-C**8**

Series	
3	SY3000
5	SY5000

● A, B port size (One-touch fittings)

Symbol	A, B port	SY3000	SY5000
C8	Metric size	●	—
C10		—	●
N9	Inch size	●	—
N11		—	●



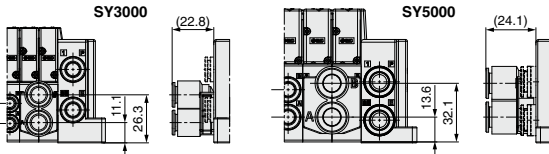
Ordering Example

SSSY3-10F1-08B-CM

*SY3100-5U1

*SY30M-120-1A-C8

The asterisk denotes the symbol for assembly.



*: Specifically for side porting for a connector connecting base. Cannot be attached to bottom or top ported, or mixed mounting types that are metal or connector connecting bases.

*: When adding or changing clips, push them into the very end of the manifold for each station. Also, make sure to use the clip that was packed together, as the clip and the fitting for one station differ among products that can be used with the SY5000.

*: Not available for the SY7000 series.

*: SY3000

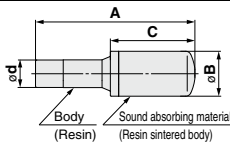
Not available when the following options are selected.

- SUP stop valve spacer assembly with residual pressure release valve
- Double check spacer assembly with residual pressure release valve
- Interface regulator

■ Silencer (One-touch fitting connection type)

This silencer can be mounted to the 3/5 (E: EXH) port of the manifold in one step.

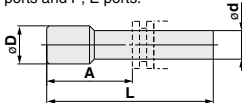
*: Shipped together with the product.



Series	Model	Effective area	A	B	C
For SY3000 (ø8)	AN15-C08	20 mm ²	45	13	20
For SY5000 (ø10)	AN20-C10	30 mm ²	57.5	16.5	30.5
For SY7000 (ø12)	AN30-C12	41 mm ²	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 ød (Metric size)	Model	A	L	øD
2	KJP-02	8.2	17	3
3.2	KQ2P-23	16	31.5	5
4	KQ2P-04	16	32	6
6	KQ2P-06	18	35	8
8	KQ2P-08	20.5	39	10
10	KQ2P-10	22	43	12
12	KQ2P-12	24	45.5	14

Applicable fitting size ød (Inch size)	Model	A	L	øD
1/8"	KQ2P-01	16	31.5	5
5/32"	KQ2P-03	16	32	6
1/4"	KQ2P-07	18	35	8.5
5/16"	KQ2P-09	20.5	39	10
3/8"	KQ2P-11	22	43	11.5
1/2"	KQ2P-13	24	46	15

Manifold Options

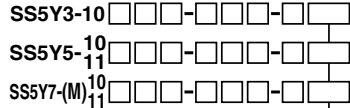
A transparent plastic plate to put a label with the name of the function of the solenoid valve.

■ 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		Specified length	Direct mounting
	Yes	No	With	Without		
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.

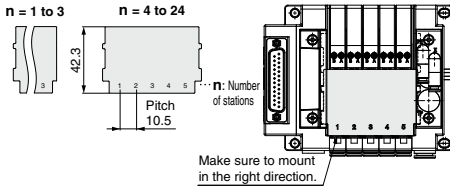
*: No name plate settings are available for the SY3000/SY5000 mixed mounting types. However, they are available for the SY5000/SY7000 mixed mounting types.

Ordering Example

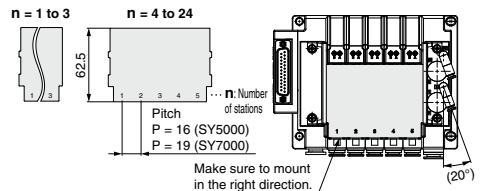
SS5Y3-10F1-05UR-C6AA 1 set
 *SY3200R-SU1 5 sets

The asterisk denotes the symbol for assembly.

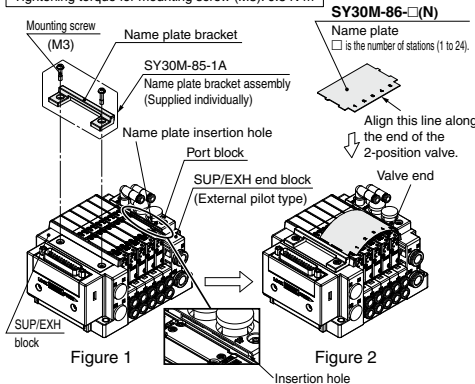
<SY3000>



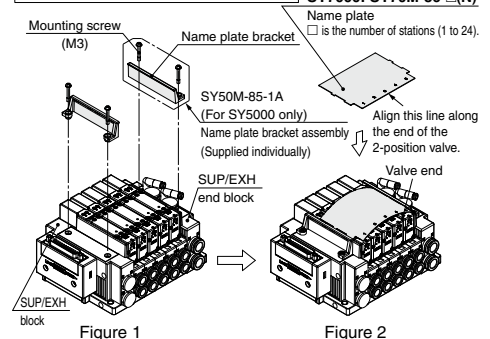
<SY5000/7000>



Tightening torque for mounting screw (M3): 0.8 N·m



Tightening torque for mounting screw (M3): 0.8 N·m



SY3000/5000/7000 Series

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		SY30M-85-1A	SY50M-85-1A
Manifold SUP/EXH block assembly Pilot type and P, E port entry	Internal pilot U/D piping	2 pcs.	2 pcs.
	Internal pilot double sided piping	2 pcs.	
	External pilot U/D piping	1 pc.*1	
	External pilot double sided piping	Not required*1	

⚠ Caution

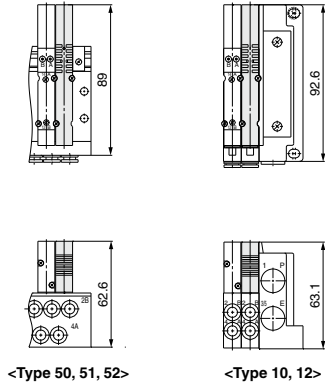
1. Be sure to shut off the power and air supplies before mounting the name plate bracket assembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
2. When disassembly and assembly are performed, air leakage may result if the tightening of the bracket mounting screws is inadequate.

*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.

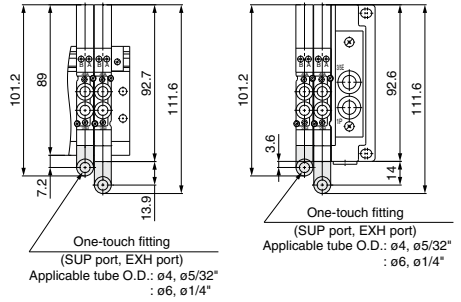
*2: Name plate bracket assembly is not required for the SY7000.

Dimensions: Manifold Options/SY3000 Series

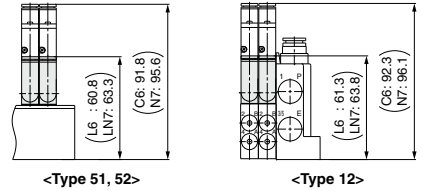
■ **Blanking plate assembly**



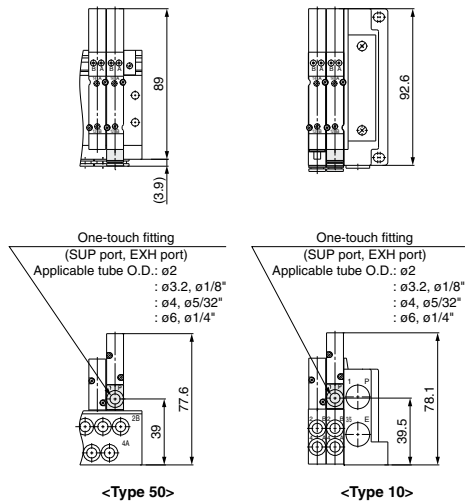
■ **Individual SUP/EXH spacer assembly (Top/Bottom ported)**



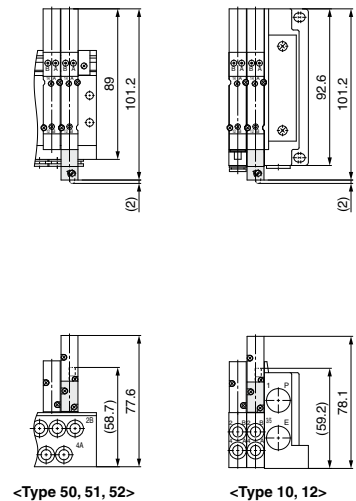
SJ
SY
SY
S0700
S0700



■ **Individual SUP/EXH spacer assembly (Side ported)**



■ **SUP stop valve spacer assembly with residual pressure release valve**

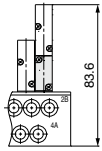
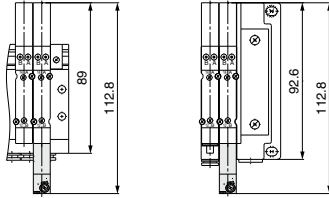


*: The dimensions within () applies to the SY30-50-1AE.

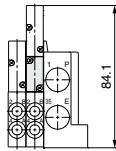
SY3000/5000/7000 Series

Dimensions: Manifold Options/SY3000 Series

Double check spacer assembly with residual pressure release valve

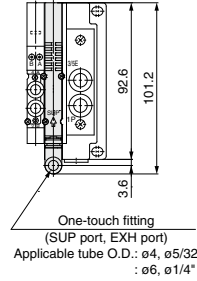


<Type 50, 51>

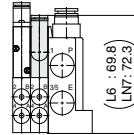


<Type 10>

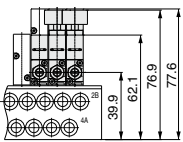
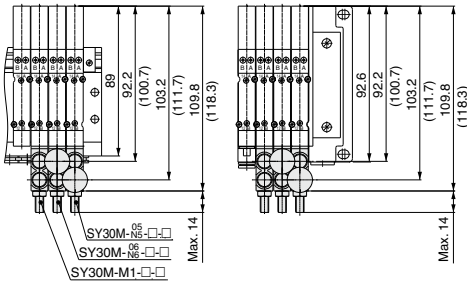
Individual SUP/EXH block assembly (Top ported)



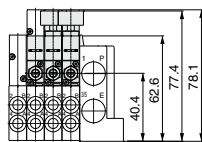
<Type 12>



Interface regulator

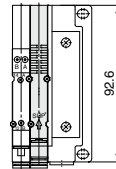


<Type 50, 51, 52>

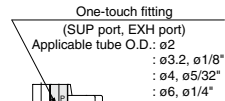


<Type 10, 12>

Individual SUP/EXH block assembly (Side ported)



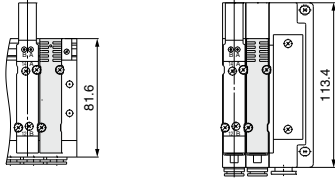
<Type 10>



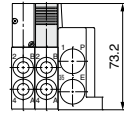
*: The dimensions within () applies to the SY30M-□-□-3.

Dimensions: Manifold Options/SY5000 Series

■ Blanking plate assembly

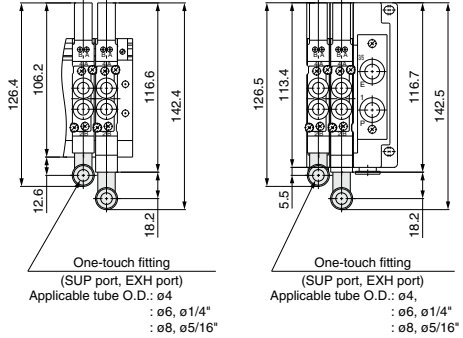


<Type 50, 51, 52>



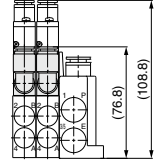
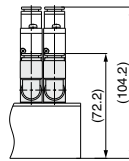
<Type 10, 11, 12>

■ Individual SUP/EXH spacer assembly (Top/Bottom ported)

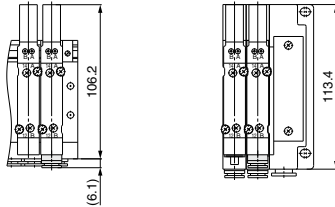


<Type 51, 52>

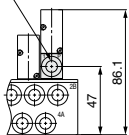
<Type 11, 12>



■ Individual SUP/EXH spacer assembly (Side ported)

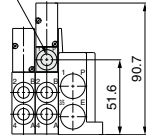


One-touch fitting
(SUP port, EXH port)
Applicable tube O.D.: ø4, ø5/32"
: ø6, ø1/4"
: ø8, ø5/16"



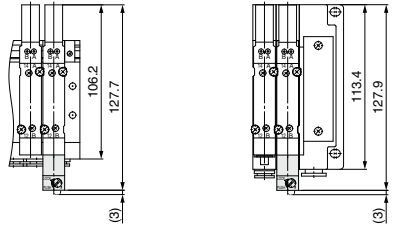
<Type 50>

One-touch fitting
(SUP port, EXH port)
Applicable tube O.D.: ø4, ø5/32"
: ø6, ø1/4"
: ø8, ø5/16"



<Type 10>

■ SUP stop valve spacer assembly with residual pressure release valve



<Type 50, 51, 52>

<Type 10, 11, 12>

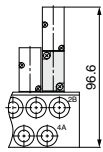
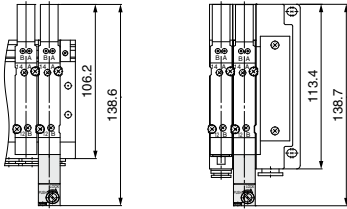
*: The dimensions within () applies to the SY50-50-1AE.

SJ
SY
SY
S0700
S0700

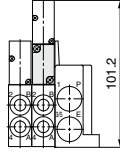
SY3000/5000/7000 Series

Dimensions: Manifold Options/SY5000 Series

Double check spacer assembly with residual pressure release valve

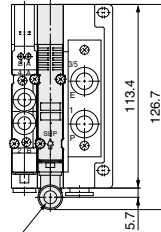


<Type 50, 51>

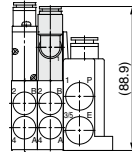


<Type 10, 11>

Individual SUP/EXH block assembly (Top ported)

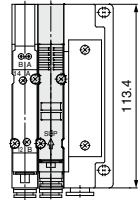


One-touch fitting
(SUP port, EXH port)
Applicable tube O.D.: $\phi 4$
: $\phi 6, \phi 1/4"$
: $\phi 8, \phi 5/16"$

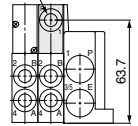


<Type 12>

Individual SUP/EXH block assembly (Side ported)

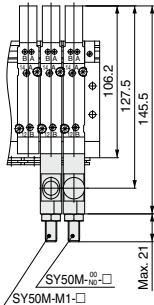


One-touch fitting
(SUP port, EXH port)
Applicable tube O.D.: $\phi 4, \phi 5/32"$
: $\phi 6, \phi 1/4"$
: $\phi 8, \phi 5/16"$

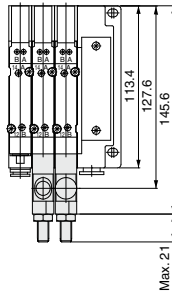


<Type 10>

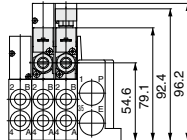
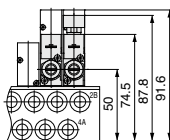
Interface regulator



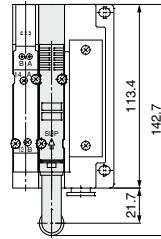
<Type 50, 51, 52>



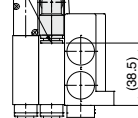
<Type 10, 11, 12>



Individual SUP/EXH block assembly (Bottom ported)



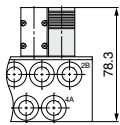
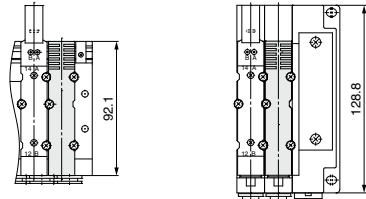
One-touch fitting
(SUP port, EXH port)
Applicable tube O.D.: $\phi 4$
: $\phi 6, \phi 1/4"$
: $\phi 8, \phi 5/16"$



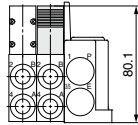
<Type 11>

Dimensions: Manifold Options/SY7000 Series

■ Blanking plate assembly

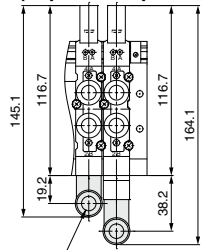


<Type 50, 51, 52>

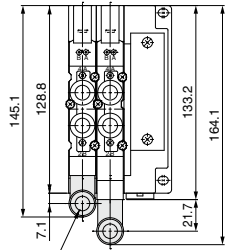


<Type 10, 11, 12>

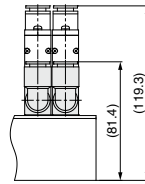
■ Individual SUP/EXH spacer assembly (Top/Bottom ported)



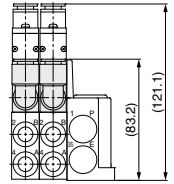
One-touch fitting
(SUP port, EXH port)
Applicable tube O.D.: $\phi 6, \phi 3/8"$
: $\phi 8$
: $\phi 10$
: $\phi 12$



One-touch fitting
(SUP port, EXH port)
Applicable tube O.D.: $\phi 6, \phi 3/8"$
: $\phi 8$
: $\phi 10$
: $\phi 12$

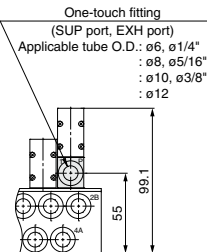
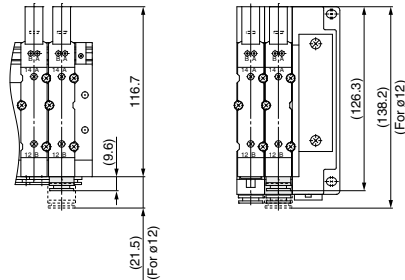


<Type 51, 52>

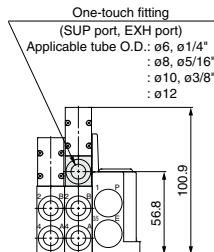


<Type 11, 12>

■ Individual SUP/EXH spacer assembly (Side ported)

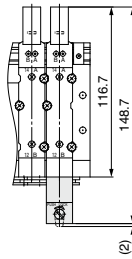


<Type 50>

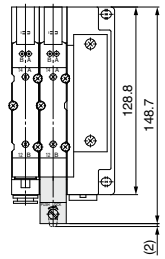


<Type 10>

■ SUP stop valve spacer assembly with residual pressure release valve



<Type 50, 51, 52>



<Type 10, 11, 12>

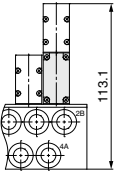
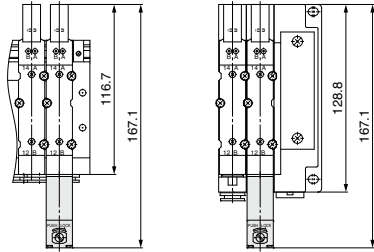
*: The dimensions within () applies to the SY70-50-1AE.

SJ
SY
SY
S0700
S0700

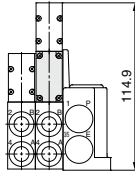
SY3000/5000/7000 Series

Dimensions: Manifold Options/SY7000 Series

■ Double check spacer assembly with residual pressure release valve

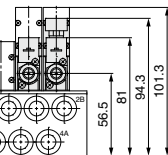
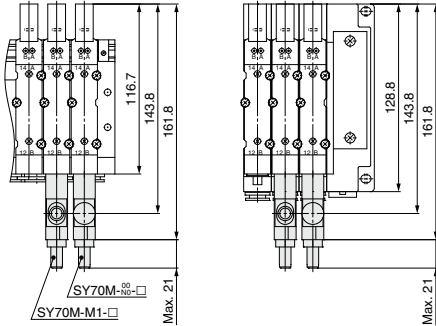


<Type 50, 51>

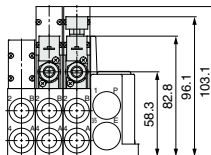


<Type 10, 11>

■ Interface regulator

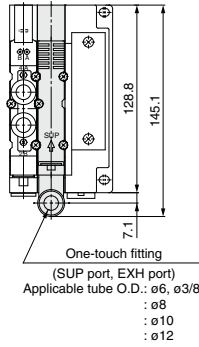


<Type 50, 51, 52>

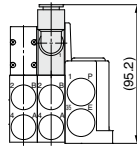


<Type 10, 11, 12>

■ Individual SUP/EXH block assembly (Top ported)

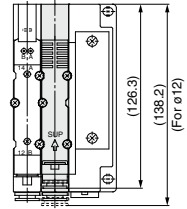


One-touch fitting
(SUP port, EXH port)
Applicable tube O.D.: $\phi 6$, $\phi 3/8"$
: $\phi 8$
: $\phi 10$
: $\phi 12$

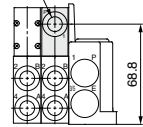


<Type 12>

■ Individual SUP/EXH block assembly (Side ported)

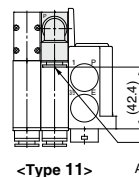
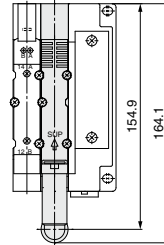


One-touch fitting
(SUP port, EXH port)
Applicable tube O.D.: $\phi 6$, $\phi 3/8"$
: $\phi 8$
: $\phi 10$
: $\phi 12$



<Type 10>

■ Individual SUP/EXH block assembly (Bottom ported)



<Type 11>

One-touch fitting
(SUP port, EXH port)
Applicable tube O.D.: $\phi 8$, $\phi 3/8"$
: $\phi 10$
: $\phi 12$



SY3000/5000/7000 Series Specific Product Precautions 1

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

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.

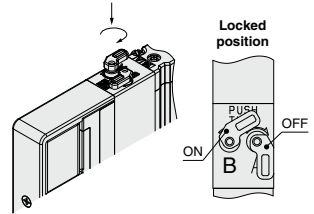
Series	Thread size	Tightening torque
SY3000	M2	0.16 N·m
SY5000/7000	M3	0.8 N·m

Manual Override

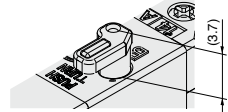
Warning

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



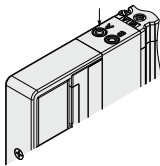
Manual Override

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

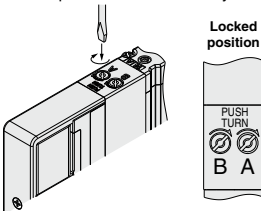
Push down on the manual override button until it stops.



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.



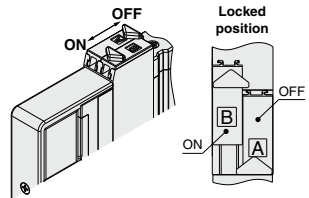
Caution

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.



SJ

SY

SY

S0700

S0700



SY3000/5000/7000 Series

Specific Product Precautions 2

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

Back Pressure Check Valve

⚠ Caution

- There are two types of back pressure check valves; the one which is built into a valve (with rubber seal type only) and the one which is built in on the manifold side with connector connection. Both of them have a check valve built-in to prevent back pressure. For this reason, use caution that the valves with external pilot specification cannot be pressurized from exhaust port [3/5(E)]. As compared with the types which do not integrate the back pressure check valve, C value of the flow rate characteristics goes down. Please contact SMC for details.
- The manifold installed type back pressure check valve assembly is assembly parts with a check valve structure. However, since slight air leakage against the back pressure is allowed due to its structure, adverse effects of the back pressure due to increase in exhaust resistance cannot be prevented if the manifold exhaust port and other exhaust ports are put together for piping or if the piping diameter is narrowed. As a result, this may cause the actuator and air operated equipment to malfunction. So, be careful not to restrict the exhaust air. If the exhaust resistance becomes large, select a built-in valve type with rubber seal.
- Do not switch valves when A or B port is open to the atmosphere, or while the actuators and air operated equipment are in operation. For built-in valve type with rubber seal, the back pressure prevention seal may be peeled off, which may cause air leakage or malfunctions. Use caution especially when performing a trial operation or maintenance work.

Valve and Manifold Combination

The SY series plug-in valve has the common configuration of the valve mounting surface between base mounted type (SY $\frac{3}{8}$ □□□) and top ported type (SY $\frac{3}{8}$ □□□), 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 3(EB) (P)</p>	<p>(A)4 2(B) (EA)5 3(EB) (P)</p>
	Double	<p>(A)4 2(B) (EA)5 3(EB) (P)</p>	<p>(A)4 2(B) (EA)5 3(EB) (P)</p>



SY3000/5000/7000 Series Specific Product Precautions 3

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

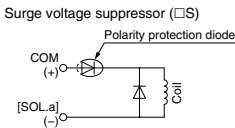
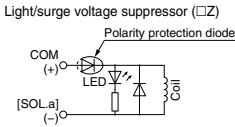
Light/Surge Voltage Suppressor

⚠ Caution

■ Polar type

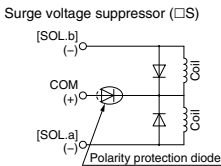
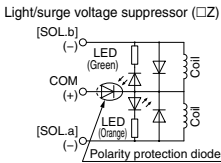
Positive common

Single solenoid



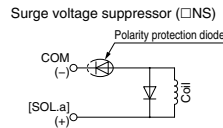
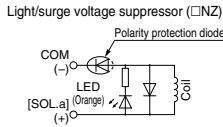
Positive common

Double solenoid, 3-position, 4-position



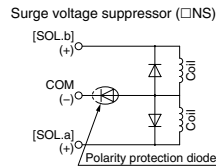
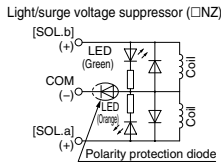
Negative common

Single solenoid



Negative common

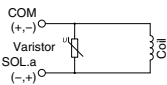
Double solenoid, 3-position, 4-position



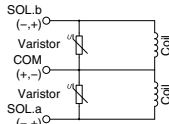
■ Non-polar type

With surge voltage suppressor (□R)

Single solenoid

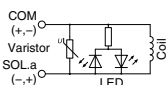


Double solenoid

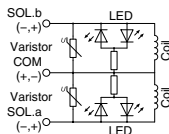


With light/surge voltage suppressor (□U)

Single solenoid



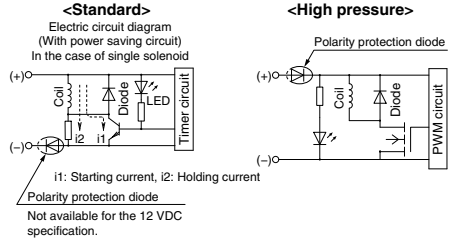
Double solenoid



■ With power saving circuit

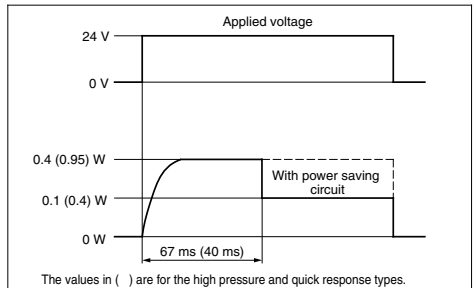
Power consumption is decreased by approx. 1/3 by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 67 ms at 24 VDC.)

*: Be careful of the energizing time, as quick response and high pressure types will become operational when the energizing time is over 40 ms.



The above circuit reduces the power consumption for holding in order to save energy. Refer to the electrical power waveform as shown below.

<Electrical power waveform with power saving circuit>



- The 12 VDC specification with power saving circuit (standard specification) does not have the polarity protection diode. Do not make a mistake with the polarity.
- Since the voltage will drop by approx. 0.5 V due to the transistor, pay attention to the allowable voltage fluctuation. (For details, refer to the solenoid specifications of each type of valve.)

Residual voltage of the surge voltage suppressor

*: 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 137.

Residual Voltage

Surge voltage suppressor	DC	
	24 V	12 V
S, Z	Approx. 1 V	
R, U	Approx. 47 V	Approx. 32 V



SY3000/5000/7000 Series

Specific Product Precautions 4

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

Continuous Duty


⚠ Caution

If a valve is energized continuously for a long period of time, the rise in temperature due to heat-up of the coil assembly may cause a decline in solenoid valve performance, reduce service life, or have adverse effects on peripheral equipment. If the valve is energized continuously for a long period of time, be sure to use a valve with power saving circuit. In particular, if three or more adjacent stations on the manifold are energized simultaneously for extended periods of time or if the valves on A side and B side are energized simultaneously for a long period of time, take special care as the temperature rise will be greater.

UL approved product

⚠ Caution

When conformity to UL is required, the SI unit should be used with a UL1310 Class 2 power supply.

The SI unit is a UL approved product only if they have a  mark on the body.

Countermeasure for Surge Voltage Intrusion

■ Sneak-in of surge voltage

With non-polar type valves, at times of sudden interruption of the loading power supply, such as emergency shutdown, surge voltage intrusion may be generated from loading equipment with a large capacity (power consumption), and the valve in a de-energized state may switch over (see Figure 1). When installing a breaker circuit for the loading power supply, consider using a valve with polarity (with polarity protection diode), or install a surge absorption diode between the loading equipment COM line and the output equipment COM line (see Figure 2).

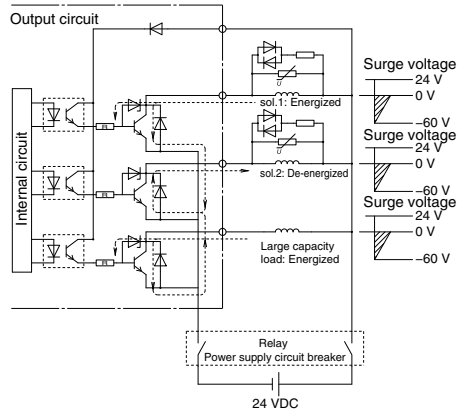


Figure 1. Surge intrusion circuit example (NPN outlet example) (24 VDC)

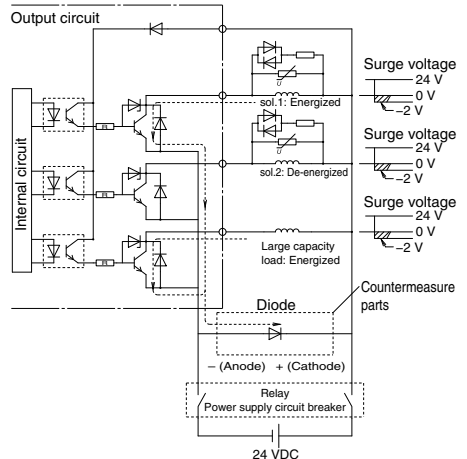


Figure 2. Surge intrusion circuit example (NPN outlet example) (24 VDC)

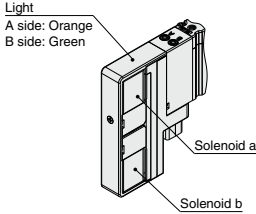


SY3000/5000/7000 Series Specific Product Precautions 5

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

Light Indication

When equipped with indicator light and surge voltage suppressor, the light window turns orange when solenoid a is energized, and it turns green when solenoid b is energized.

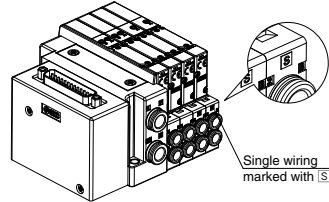


How to Order Manifold

⚠ Caution

The letter "S" is indicated on manifold blocks for the SY series Type 1 □ (connector connecting base) as shown below. This indication refers to the type of substrate assembly (single wiring) inside the manifold blocks. When there is no symbol, double wiring is used.

When the manifold specification sheet does not include a wiring specification, all stations will be double wiring specification. In this case, single and double solenoid valves can be mounted in any position, but when a single valve is used, there will be an unused control signal. To avoid this, indicate positions of manifold blocks for single wiring specification and double wiring specification on a manifold specification sheet. (Note that double, 3-or 4-position valves cannot be used for manifolds blocks with single wiring specification [S].)

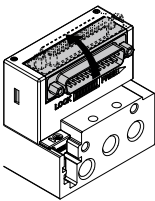


Type 5 □ (Metal Base), Type 1 □ (Connector Connecting Base) Changing Connector Entry Direction

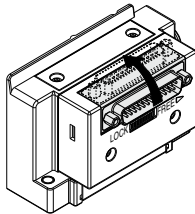
⚠ Caution

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.



Type 5 □
(Metal base)



Type 1 □
(Connector connecting base)

SJ
SY
SY
S0700
S0700



SY3000/5000/7000 Series Specific Product Precautions 6

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

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

- 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.
- 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.

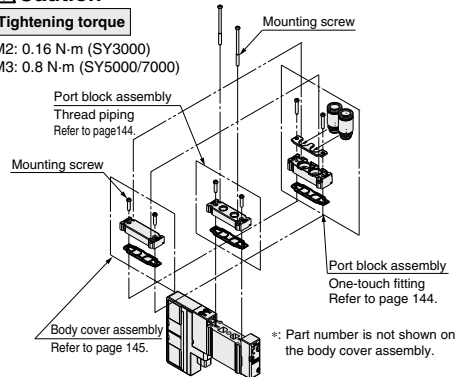
Refer to page 144 for part numbers of port block assembly and body cover assembly for A, B port and page 370 for part numbers of port block assembly and body cover assembly for P, E port.

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.

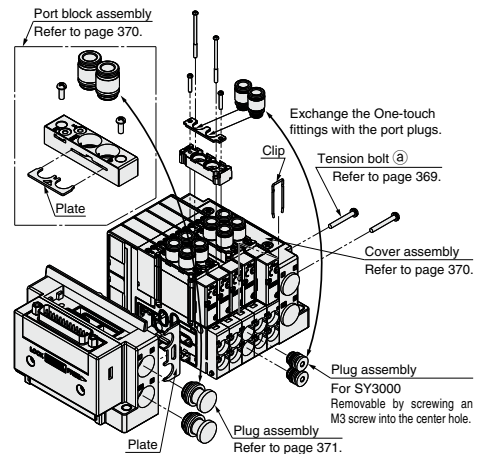
⚠ Caution

Tightening torque

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



■ How to change while mounted on a manifold





SY3000/5000/7000 Series Specific Product Precautions 7

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

Changing One-touch Fittings

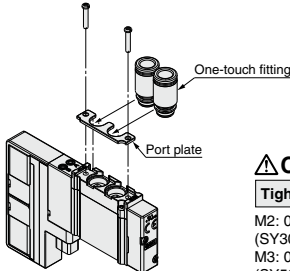
⚠ Caution

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 371 for part numbers of One-touch fittings for valve or manifold.

■ Valve



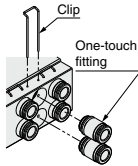
⚠ Caution

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)

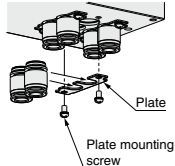


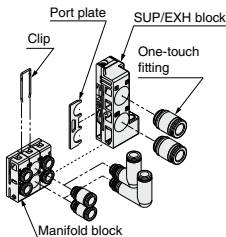
Plate assembly part no. (10 pcs. included)

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	A, B port size	Part no.
SY3000	—	SY30M-19-1A
SY5000	—	SY50M-19-6A
SY7000	—	SV3000-70-1A
SY3000/5000	ø2, ø3, ø4	SY50M-19-1A
Mixed mounting type (For mounting the SY3000) ^{*1}	ø6, ø1/8"	
	ø5/32", ø1/4"	
	ø8, ø5/16"	

*1: The part number for mounting the SY5000 is SY50M-19-6A.

*: The part number for the SY5000/7000 mixed mounting type is SV3000-70-1A.
*: 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.

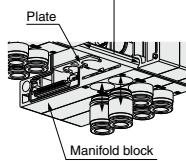


Plate part no. (10 pcs. included)

Series	A, B port size	Part no.
SY5000	—	SY50M-10-4A
SY7000	—	SY70M-10-4A
SY3000/5000	ø2, ø3, ø4	SY50M-10-5A
Mixed mounting type (For mounting the SY3000) ^{*1}	ø6, ø1/8"	
	ø5/32", ø1/4"	
	ø8, ø5/16"	

*1: The part number for mounting the SY5000 is SY50M-10-4A.

*: The part number for the SY5000/7000 mixed mounting type is SY70M-10-4A.

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
–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.



SY3000/5000/7000 Series Specific Product Precautions 8

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

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: KQ2H, KQ2S Series

Series	Model	Piping port	Port size	Fittings	Applicable tube O.D.							
					ø2	ø3.2	ø4	ø6	ø8	ø10	ø12	
SY3000	SY3□30-□□-M5	4A, 2B	M5	KQ2H	█							
				KQ2S		█						
	SS5Y3-50/51/52 (R) Manifold base	1P, 5EA, 3EB	1/8	KQ2H	█							
				KQ2S		█						
		X, PE	M5	KQ2H	█							
				KQ2S		█						
		4A, 2B	1/8	KQ2H	█							
			KQ2S		█							
	M5	KQ2H	█									
		KQ2S		█								

Series	Model	Piping port	Port size	Fittings	Applicable tube O.D.						
					ø2	ø3.2	ø4	ø6	ø8	ø10	ø12
SY5000	SY5□30-□□-01	4A, 2B	1/8	KQ2H	█						
				KQ2S		█					
	SS5Y5-50/51/52 (R) Manifold base	1P, 5EA, 3EB	1/4	KQ2H	█						
				KQ2S		█					
		X, PE	M5	KQ2H	█						
				KQ2S		█					
	4A, 2B	1/4	KQ2H	█							
		KQ2S		█							
	1/8	KQ2H	█								
		KQ2S		█							

Series	Model	Piping port	Port size	Fittings	Applicable tube O.D.						
					ø2	ø3.2	ø4	ø6	ø8	ø10	ø12
SY7000	SY7□30-□□-02	4A, 2B	1/4	KQ2H	█						
				KQ2S		█					
	SS5Y7-50/51/52 (R) Manifold base	1P, 5EA, 3EB	3/8	KQ2H	█						
				KQ2S		█					
		X, PE	M5	KQ2H	█						
				KQ2S		█					
	4A, 2B	1/4	KQ2H	█							
		KQ2S		█							

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