

5-Port Solenoid Valve

SY3000/5000/7000 Series

Plug-in Type

The EX250/500 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.

The connection cable and various units for PLC connection in PC wiring systems have been discontinued by the manufacturer. Therefore, while they can no longer be provided, the valve manifold (manifold with built-in valves) can still be ordered. For details, refer to the [Web Catalog](#).



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

SY3000

10 mm

ø2, ø3.2, ø4, ø6, and ø8*1 fittings are connectable.

*1 Type M10/M11 manifold

SY5000

15 mm

ø4, ø6, and ø8 fittings are connectable.

SY7000

18 mm

ø6, ø8, ø10, and ø12 fittings are connectable.

At 300 mm/s

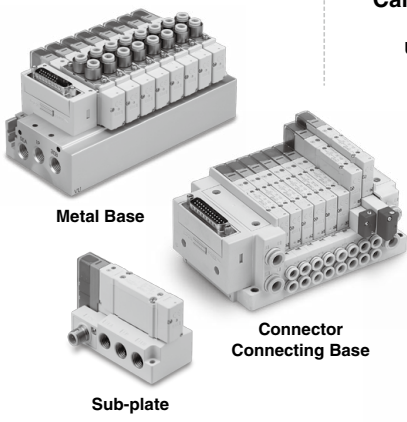
Can drive cylinders of up to **ø50***2 (ø80 at 100 mm/s)

At 300 mm/s

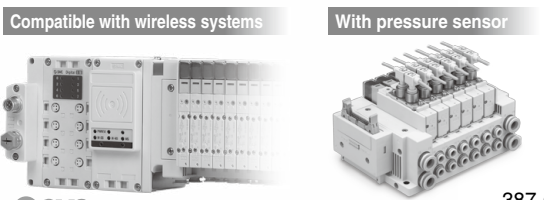
Can drive cylinders of up to **ø63***2 (ø125 at 100 mm/s)

At 300 mm/s

Can drive cylinders of up to **ø80***2 (ø160 at 100 mm/s)



*2 Values based on comparison with the existing SMC model. For details, refer to page 402.



5-Port Solenoid Valve

Plug-in Connector Connecting Base [IP67*1]

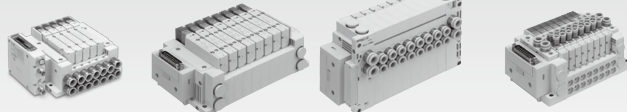
*1 Refer to page 426 for details on IP67.

Manifold

Side ported [From p. 430]

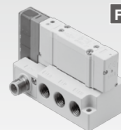
Bottom ported [From p. 430]

Top ported [From p. 442]

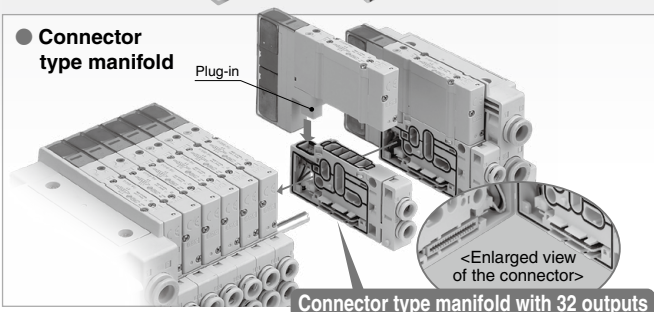


Plug-in Compatible sub-plate type

From p. 693



Connector type manifold



- IP67 enclosure for standard specifications
- The M12 waterproof connector type ensures easy attaching/detaching and wiring.
- Applicable to the side, top, and bottom-porting types (4A and 2B ports)

Plug-in Metal Base [IP40]

Side ported [From p. 636]

Bottom ported [From p. 636]

Top ported [From p. 656]



Wiring

D-sub Connector Flat Ribbon Cable Terminal Block Box Lead Wire

Circular Connector Serial Transmission

Serial Transmission Variations

Series	Gateway-type		Integrated-type (for input/output)			Integrated-type (for output)			
	EX510	EX500	EX600	EX245	EX250	EX260	EX126	EX120	EX180
Applicable protocol									
DeviceNet®	●		●		●	●			●
PROFIBUS DP	●		●			●			
CC-Link	●		●			●	●	●	●
EtherNet/IP™		●	●		●	●			
EtherCAT						●			
PROFINET		●	●	●		●			
AS-Interface					●				
CompoNet®								●	
Ethernet POWERLINK						●			
IO-Link						●			
EtherNet/IP™ compatible wireless base			●						
PROFINET compatible wireless base			●						
PROFIsafe						●			

Power Saving

Power Consumption

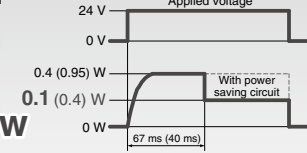
[Electrical power waveform with power saving circuit]

With power saving circuit

0.1 w

Standard

0.35 w



Power consumption is reduced by the power saving circuit.

Power consumption is decreased to 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 to the left.

- Only products with an indicator light are equipped with the power saving circuit.
- The value in () is for the quick response and high pressure types.

Long Service Life

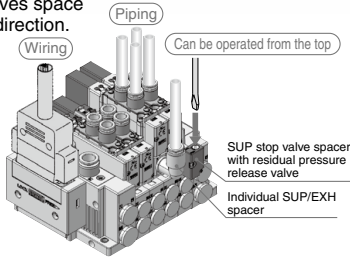
Metal seal

(Service life: **200 million cycles**)*1

- *1 According to SMC life test conditions
- *2 Please contact SMC if life test data is required.

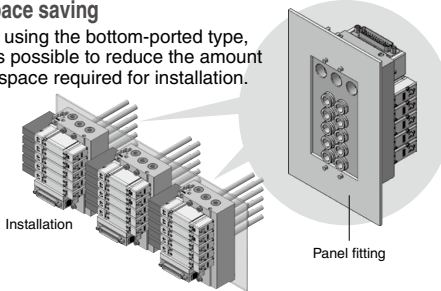
Space Saving / Improved Operability

Wiring, piping, and operation are integrated on one side. A multiple-layer type is available as an option that saves space in the lateral direction.



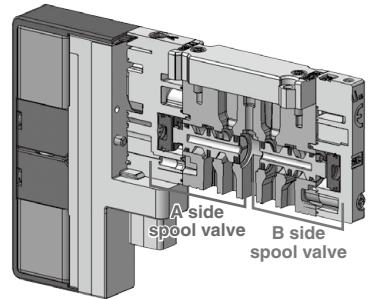
A bottom-ported type is available (A and B ports). Space saving

By using the bottom-ported type, it is possible to reduce the amount of space required for installation.



A 4-position dual 3-port valve is available. (Only for the rubber seal type)

- Two 3-port valves built into one body



- 3-port valves on the A and B sides can be operated 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
- A 4-position dual 3-port valve with a back pressure check valve is also 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 p. 574

It is possible to reduce installation space, the number of serial units, and the amount of wiring.

Overall manifold length

Approx. 29% reduction

For serial transmission EX260

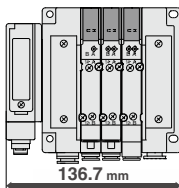
SY5000 manifold
SY5000: 3 stations

SY3000 manifold
SY3000: 4 stations

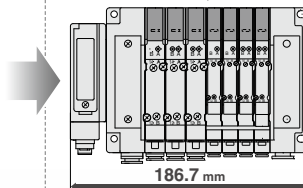
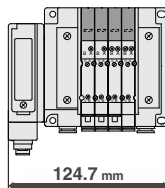
Mixed manifold

SY5000: 3 stations, SY3000: 4 stations

Installation space



+



Number of serial units



2 sets



1 set

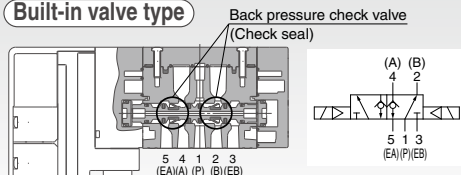
5-Port Solenoid Valve

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

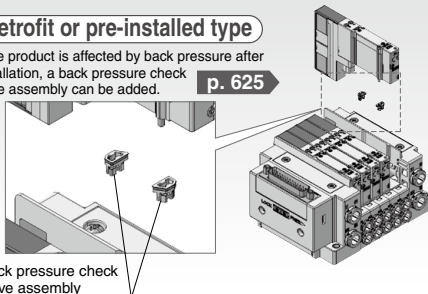


*1 For back pressure check valve precautions, refer to the "Specific Product Precautions" on page 704.

Retrofit or pre-installed type

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

p. 625

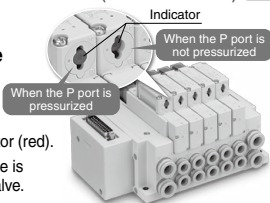


Back pressure check valve assembly

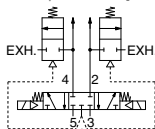
With residual pressure release valve (SY5000/7000) p. 413

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

- The pressure of the 4 (A) and 2 (B) ports is exhausted automatically 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.

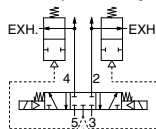


[When the 1(P) port is pressurized]



IP67 compliant

[When the 1(P) port is not pressurized]

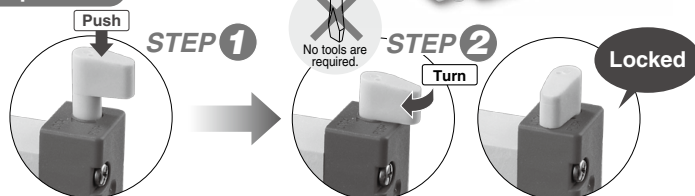


Lever Type SUP Stop Valve Spacer (With residual pressure release valve) p. 618

A lever has been added to manual override button!

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

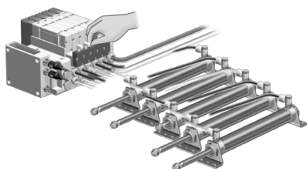
2-action operation



Easy to visually check

Air for solenoid valves can be shut off individually!

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

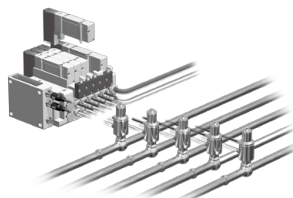


Solenoid valves can be replaced individually!

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

<Application example>

For air operated valves, such as sanitary valves, and automatic valve control



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

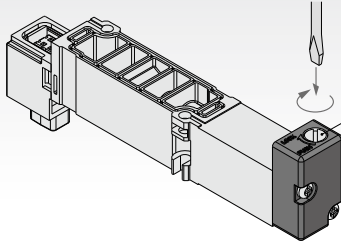
Improved Safety

Slotted Type

SUP Stop Valve Spacer

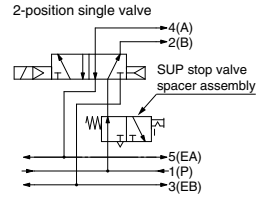
(With residual pressure release valve) **p. 618**

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 the cylinder side



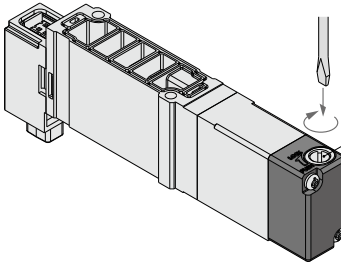
2-position single valve example

Slotted Type

Double Check Spacer

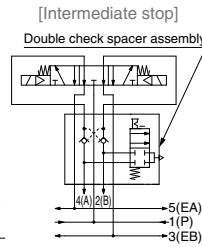
(With residual pressure release valve) **p. 619**

Long intermediate stops and position holding are possible.

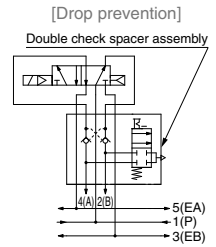


Button for manual release of residual pressure

To exhaust residual pressure on the cylinder side



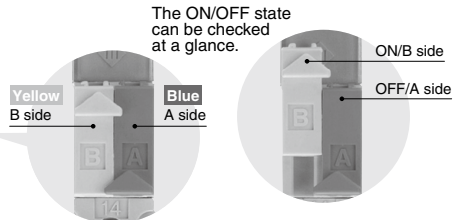
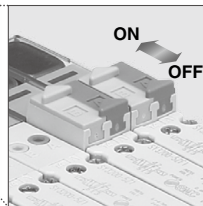
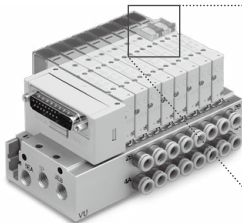
Exhaust center



2-position single/double

With slide locking manual override

ON/OFF operation and locking can be performed manually.



The ON/OFF state can be checked at a glance.

Yellow B side Blue A side

ON/B side OFF/A side

5-Port Solenoid Valve

Improved Safety

Made to Order

With safety slide locking manual override
 SY3000/5000/7000-X13 **p. 423**

The double action manual override prevents accidental operation!

SY7000-X13

SY5000-X13

SY3000-X13

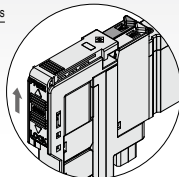
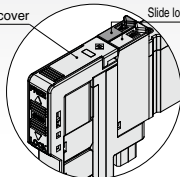
●Double-action operation

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

Operation 1 The safety slide cover is operated and moves upward. (Unlocked)

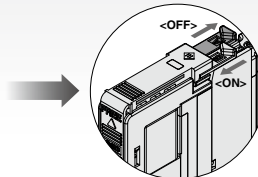
Operation 2 The slide locking manual overrides can be operated.

Safety slide cover Slide locking manual overrides



<Vertical sliding>

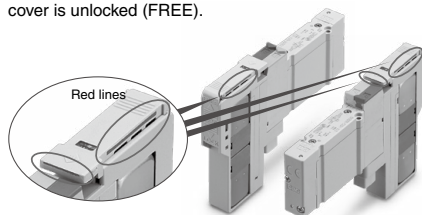
* The safety slide cover cannot be locked when the slide locking manual override is turned ON.



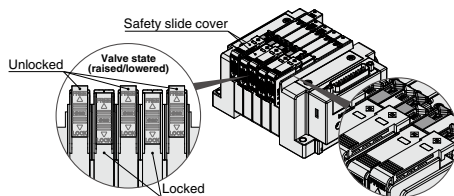
<Horizontal sliding>

●Visual check

Red lines visible from three directions can be checked to confirm whether the safety slide cover is unlocked (FREE).



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

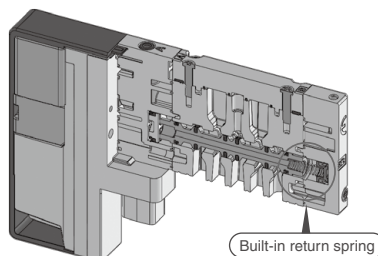


Made to Order

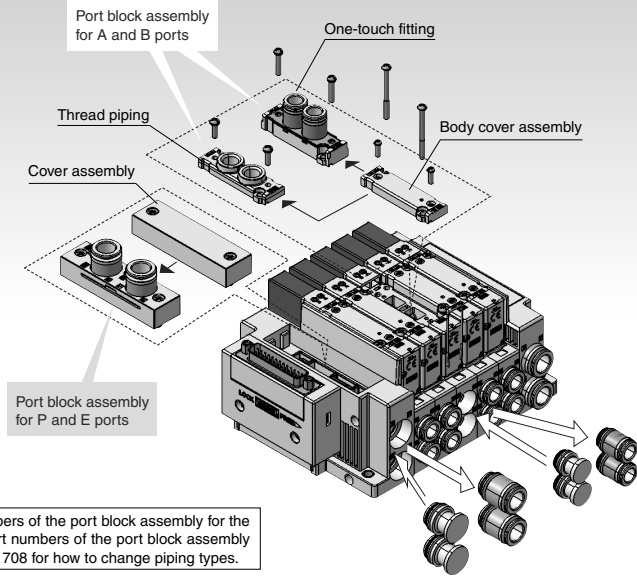
2-Position Single Solenoid Valve with Built-in Return Spring (Only rubber seal type)
 SY3000/5000/7000-X350 **p. 423**

The main valve returns to the OFF position when it is not pressurized.

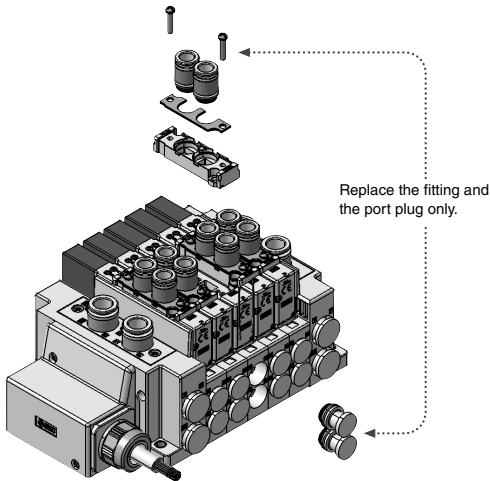
The main valve has a built-in spring which allows it to return to origin (the OFF position) when the supply pressure is stopped. This product can be used in SRP/CS (safety-related parts of control systems) constructions in accordance with safety standards (ISO 13849).



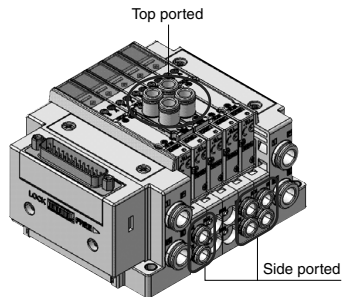
To mount the piping on top



To mount the piping on the side



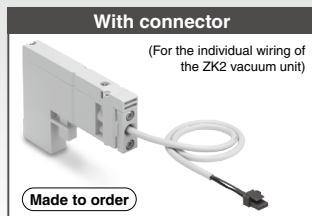
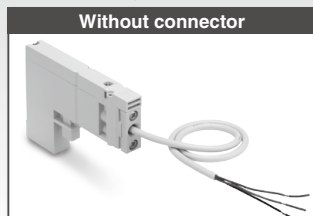
Mixed top-ported and side-ported mounting is possible.



5-Port Solenoid Valve

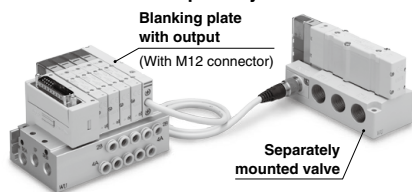
For SY3000 Blanking Plate with Output p. 624

■ The blanking plate extracts the individual signal of the manifold valve.

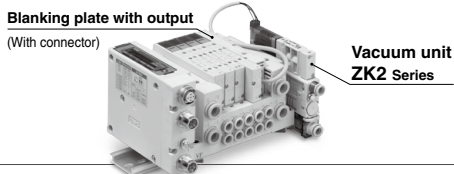


Application Examples

■ For the control of separately mounted valves



■ For the control of vacuum ejectors by means of Fieldbus unit signals



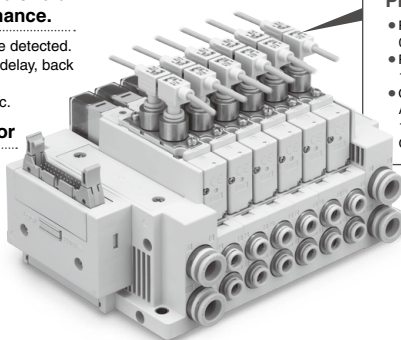
Valve with Pressure Sensor p. 421

■ Monitoring the output pressure of the solenoid valve contributes to preventive maintenance.

- The output pressure of the 4(A) and 2(B) ports can be detected.
- Detects errors such as incorrect switching, response delay, back pressure interference, pressure drop, etc.
- Identifies faulty parts of actuators, solenoid valves, etc.

■ Space saving, Reduced installation labor

- The required amount of space and installation labor can be reduced by directly mounting pressure switches on the solenoid valves.



Pressure sensor

- Rated pressure range: 0 to 1 MPa
- Power supply voltage: 12 to 24 VDC $\pm 10\%$
- Output specifications: Analog output 1 to 5 V (In rated pressure range) Output impedance: Approx. 1 k Ω

Mountable manifolds

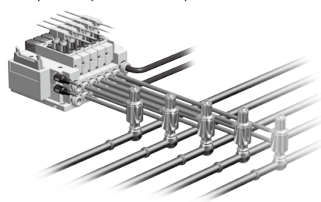
Metal base Side ported/Type 50
 Bottom ported/Type 51

Connector connecting base Side ported/Type 10
 Bottom ported/Type 11

Application Examples

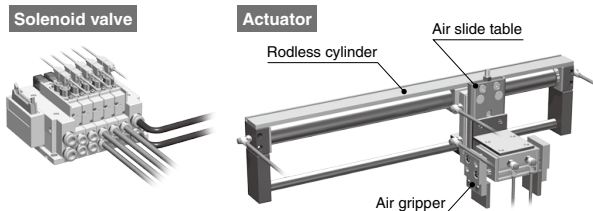
■ For the detection of output pressure

Operation can be checked by monitoring the pressure required to open or close air operated valves.



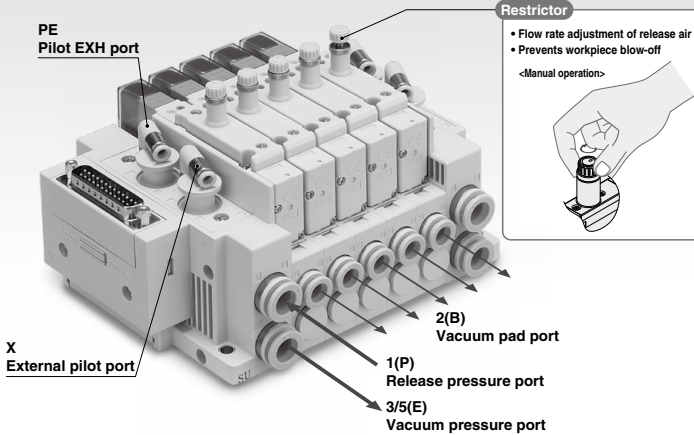
■ For the identification of faulty parts

A faulty part can quickly be identified by monitoring the operation of solenoid valves.



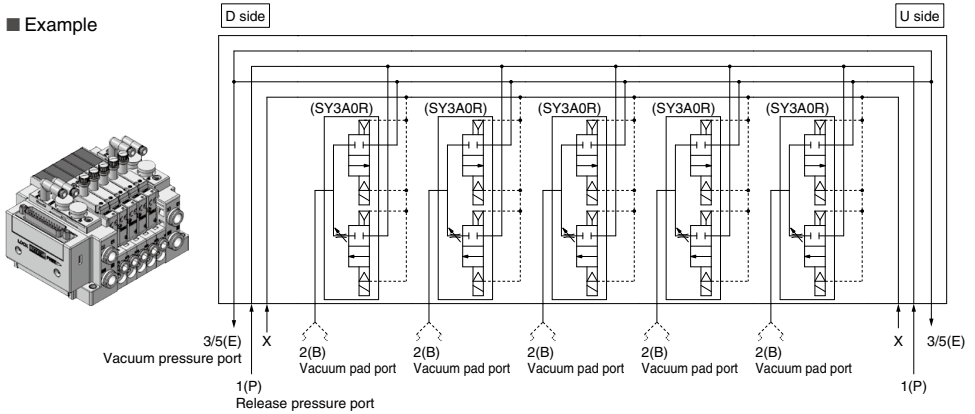
Only for External Pilot Vacuum Release Valve with Restrictor SY $\frac{3}{5}$ A□R Series p. 415

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

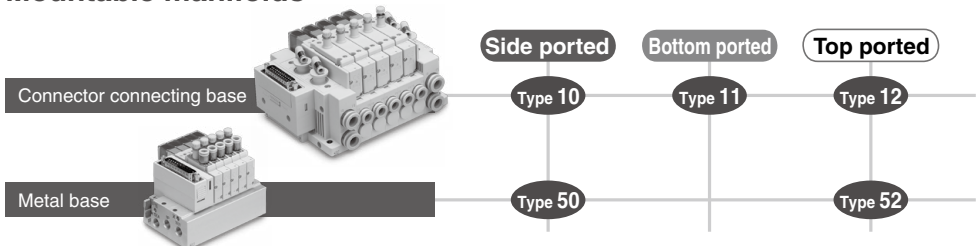


- Can be mounted on the same manifold as standard valves
 - * When an individual EXH spacer is used

■ Example



Mountable manifolds



* External pilot specification

5-Port Solenoid Valve

Applicable to EX600-W Series Wireless Systems [p. 502](#) [p. 512](#) [p. 574](#) [p. 578](#) [p. 586](#)

■ Noise resistance

- Uses the 2.4 GHz ISM frequency band
- Frequency hopping: Every 5 ms

■ Communication cables not required

- Reduced wiring work, space, and cost
- Minimized disconnection risk

■ High-speed connection

- From the remote power supply ON to start of communication:
Min. 250 ms

■ Number of I/O points

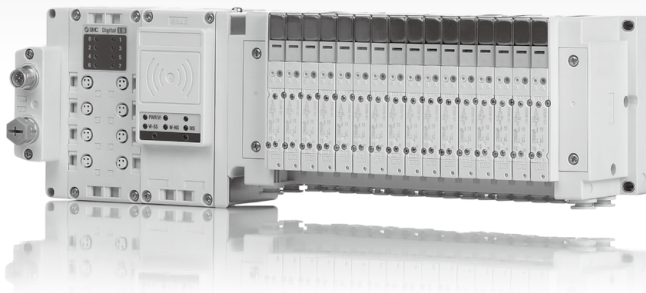
- Max. 1280 inputs/1280 outputs
(Max. 128 inputs/128 outputs per module)

■ Communication response

- Wireless communication signal
Response time: **5 ms**

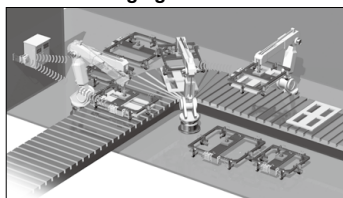
■ Compatible protocol

EtherNet/IP[®]



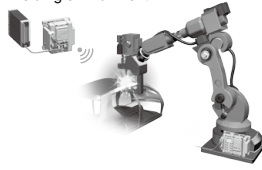
Application Examples

For tool changing

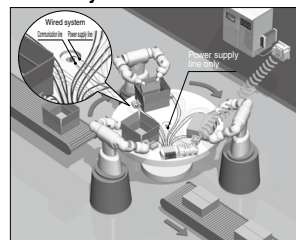


For spot welding

Welding environment



For rotary tables



The EX260 series supports safety communication (PROFIsafe). [p. 534](#)

■ This is a Fieldbus unit which supports safety standard ISO 13849-compliant safety circuit constructions.



PROFIsafe is established as an international standard (IEC 61784-3-3). It is a communication protocol that transmits safety-related data by PROFINET communication and can be used up until safety standards ISO 13849-1 PL e and IEC 61508/IEC 62061 SIL 3.

■ Using the safety communication protocol

Refer to the EX260 **Web Catalog** for details on units that support the safety communication protocol.

When using a manifold valve within an ISO 13849-compliant safety system, the device needs to be considered from both the pneumatic circuit and the electric side.

Devices (including valves) need to be selected based on whether their functions are in line with the safety level of the equipment as a whole.



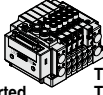
The use of valves that have been validated as being compliant with ISO 13849-2 may be required.

For details on valves that have been validated, please contact SMC.
















In addition, refer to "Safety Instructions" for precautions on model selection.

CONTENTS

Optimum Actuation Size Chart of Air Cylinder	p. 402
Valve Specifications (Specifications, Response Time, Weight)	p. 404
Valve Construction	p. 408

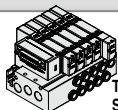
Manifold	Connector Connecting Base	p. 425			
Plug-in					

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

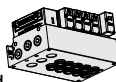
		Plug-in Connector Connecting Base	p. 426
		D-sub Connector, Flat Ribbon Cable [IP40/67]	p. 430
	Flat ribbon cable	Terminal Block Box (Spring Type) [IP67]	p. 448
		Terminal Block Box [IP67]	p. 453
	Lead wire	Lead Wire [IP67]	p. 466
		Circular Connector [IP67]	p. 476
		EX500 Gateway Decentralized System 2 (128 Points) [IP67]	pp. 486, 498
		EX600 Integrated Type (For Input/Output) Serial Transmission System (Fieldbus System) [IP67]	p. 502
		EX245 Integrated Type (For Input/Output) Serial Transmission System [IP65]	p. 514
		EX250 Integrated Type (For Input/Output) Serial Transmission System [IP67]	p. 522
		EX260 Integrated Type (For Output) Serial Transmission System [IP67]	p. 530
		EX126 Integrated Type (For Output) Serial Transmission System [IP67]	p. 542
		EX120 Integrated Type (For Output) Serial Transmission System [IP20]	p. 550
		EX180 Integrated Type (For Output) Serial Transmission System [IP20]	p. 558
		Type 10/Side Ported: Common Dimensions (External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override)	p. 566
		Type 11/Bottom Ported: Common Dimensions	p. 569
		Type 12/Top Ported: Common Dimensions	p. 571
		Plug-in Mixed Mounting Type Manifold	p. 574
	Mixed mounting	Manifold Exploded View [Exploded View, Manifold Parts Nos.]	p. 590
		How to Increase Connector Type Manifolds	p. 610
		One-touch Fitting, Plug Assembly Part Nos.	p. 615
		Manifold Options	p. 616

Manifold

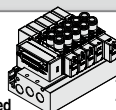
Plug-in Metal Base p. 633



Type 50/
Side ported

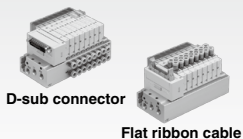


Type 51/
Bottom ported



Type 52/
Top ported

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



D-sub connector

Flat ribbon cable

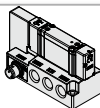


EX510

Plug-in Metal Base	p. 634
D-sub Connector, Flat Ribbon Cable [IP40]	
Type 50/Side Ported	p. 636
Type 51/Bottom Ported	p. 636
Type 52/Top Ported	p. 656
Wiring Specifications	p. 661
EX510 Gateway Type Serial Transmission System [IP20]	
Type 50/Side Ported	p. 664
Type 51/Bottom Ported	p. 664
Type 52/Top Ported	p. 674
Manifold Exploded View [Exploded View, Manifold Parts Nos.]	p. 679
One-touch Fitting, Plug Assembly Part Nos.	p. 680
Manifold Options	p. 681

Sub-plate

Plug-in Sub-plate p. 693



M12 connector



Plug-in Sub-plate Specifications (M12 Connector)	p. 694
Sub-plate Parts Nos.	p. 696

Valve Replacement Parts	p. 411
With Residual Pressure Release Valve	p. 413
Vacuum Release Valve with Restrictor	p. 415
Valve with Pressure Sensor	p. 421
Made to Order for Valves	p. 423
Specific Product Precautions	p. 703

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 the side and bottom-ported types)

* Use as a guide for selection.

Please check the actual conditions with SMC Model Selection Software.

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	0.25 to 0.7	
		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 temperatures [°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/s²]		150/30		
Enclosure		IP67 (Based on IEC60529) ^{*3}		
Coil rated voltage [DC]		24, 12 V		
Allowable voltage fluctuation [V]		±10% of rated voltage ^{*4}		
Power consumption [W]	Standard		0.35 (With indicator light: 0.4)	
	High pressure type, Quick response type		0.9 (With indicator light: 0.95)	
	With power saving circuit		Standard: 0.1 ^{*5} (With indicator light only) [Inrush 0.4, 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. The 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 708 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" on page 703.

*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 705.

Response Time

Series	Seal type	Model	Type of actuation	Response time [ms] (at 0.5 MPa)*1					
				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	

*1 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.

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	74
			Double	83
		3-position	Closed center	M5 x 0.8
			Exhaust center	
			Pressure center	
4-position	Dual 3-port valve	83		
SY3□30-C2		2-position	Single	82
			Double	91
		3-position	Closed center	ø2 One-touch fitting
			Exhaust center	
			Pressure center	
4-position	Dual 3-port valve	91		
SY3□30-C3	Rubber seal	2-position	Single	85
			Double	94
		3-position	Closed center	ø3.2 One-touch fitting
			Exhaust center	
			Pressure center	
4-position	Dual 3-port valve	94		
SY3□30-C4		2-position	Single	77
			Double	86
		3-position	Closed center	ø4 One-touch fitting
			Exhaust center	
			Pressure center	
4-position	Dual 3-port valve	86		
SY3□30-C6		2-position	Single	80
			Double	89
		3-position	Closed center	ø6 One-touch fitting
			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	76
			Double	86
		3-position	Closed center	M5 x 0.8
			Exhaust center	
			Pressure center	
SY3□31-C2	Metal seal	2-position	Single	84
			Double	94
		3-position	Closed center	ø2 One-touch fitting
			Exhaust center	
			Pressure center	
SY3□31-C3		2-position	Single	87
			Double	97
		3-position	Closed center	ø3.2 One-touch fitting
			Exhaust center	
			Pressure center	
SY3□31-C4		2-position	Single	79
			Double	89
		3-position	Closed center	ø4 One-touch fitting
			Exhaust center	
			Pressure center	
SY3□31-C6		2-position	Single	82
			Double	92
		3-position	Closed center	ø6 One-touch fitting
			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	102
			Double	110
		3-position	Closed center	1/8
			Exhaust center	
			Pressure center	
4-position	Dual 3-port valve	110		
SY5□30-C4	Rubber seal	2-position	Single	115
			Double	123
		3-position	Closed center	ø4 One-touch fitting
			Exhaust center	
			Pressure center	
4-position	Dual 3-port valve	123		
SY5□30-C6		2-position	Single	110
			Double	118
		3-position	Closed center	ø6 One-touch fitting
			Exhaust center	
			Pressure center	
4-position	Dual 3-port valve	118		
SY5□30-C8		2-position	Single	99
			Double	107
		3-position	Closed center	ø8 One-touch fitting
			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	111
			Double	121
		3-position	Closed center	1/8
			Exhaust center	
			Pressure center	
SY5□31-C4	Metal seal	2-position	Single	124
			Double	134
		3-position	Closed center	ø4 One-touch fitting
			Exhaust center	
			Pressure center	
SY5□31-C6		2-position	Single	120
			Double	130
		3-position	Closed center	ø6 One-touch fitting
			Exhaust center	
			Pressure center	
SY5□31-C8		2-position	Single	108
			Double	118
		3-position	Closed center	ø8 One-touch fitting
			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	

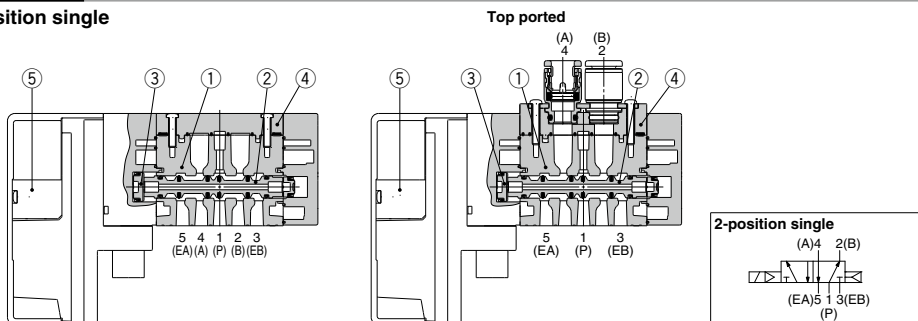
Valve model	Seal type	Type of actuation	Port size 4, 2 (A, B)	Weight [g]
SY7□30-02		2-position	Single	125
			Double	133
		3-position	Closed center	1/4
			Exhaust center	
			Pressure center	
4-position	Dual 3-port valve	129		
SY7□30-C6		2-position	Single	163
			Double	171
		3-position	Closed center	ø6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

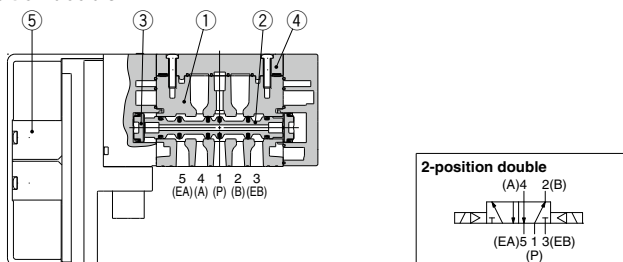
SY3000/5000/7000 Series Valve Construction

Rubber Seal

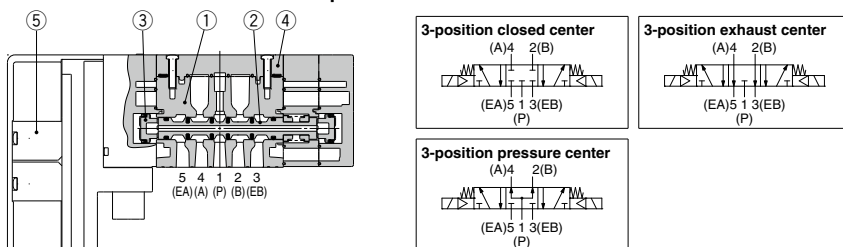
2-position single



2-position double



3-position closed center/exhaust center/pressure center

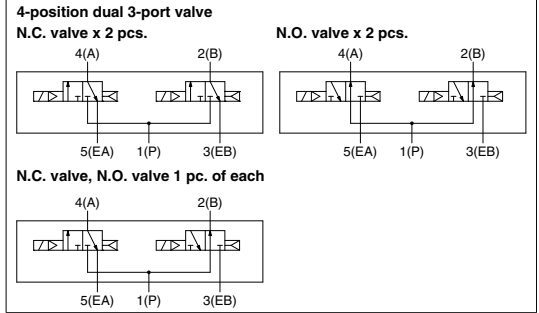
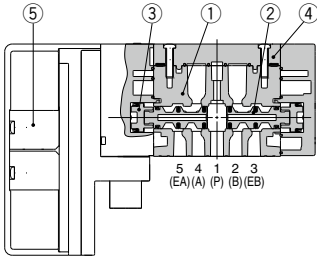


Component Parts

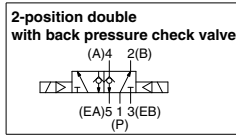
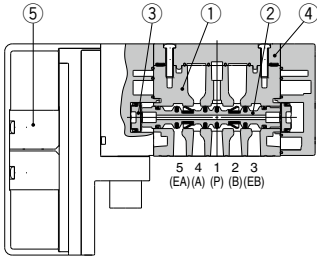
No.	Description	Material	Note
1	Body	SY3000: Zinc die-casted SY5000/SY7000: Aluminum die-casted	
2	Spool valve	Special resin/HNBR (3-position valve: Aluminum/HNBR)	
3	Piston	Resin	
	Body cover assembly	Resin	For the side/bottom-ported type
4	Port block assembly	SY3000: Resin SY5000: Zinc die-casted (Thread piping) SY5000: Resin (Fitting) SY7000: Aluminum die-casted	For the top-ported type
5	Pilot valve assembly	—	Refer to page 412.

Rubber Seal

4-position dual 3-port valve

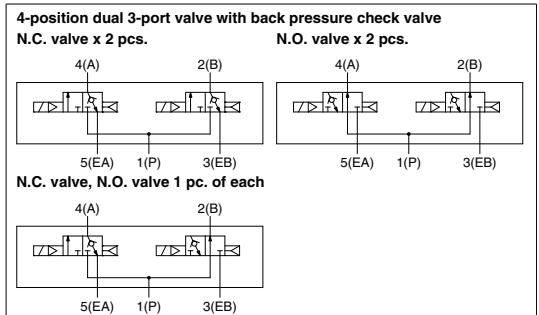
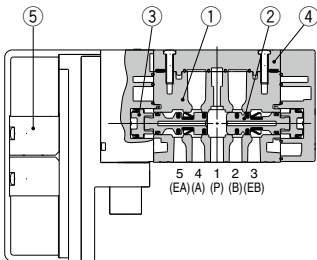


2-position double with back pressure check valve (Built-in valve type)



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

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

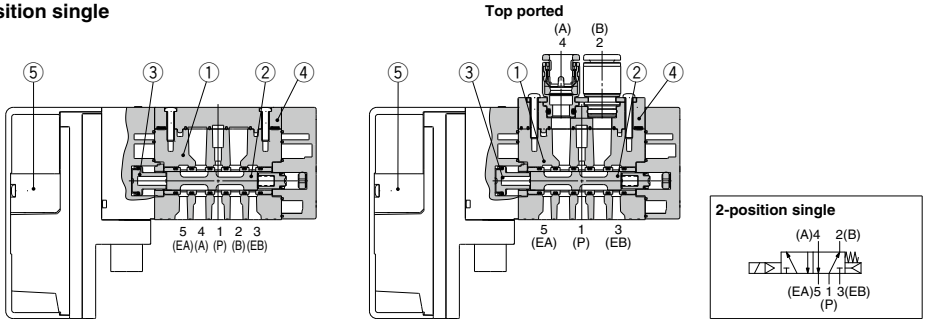


* The built-in valve type back pressure check valve is not available for the SY7000.

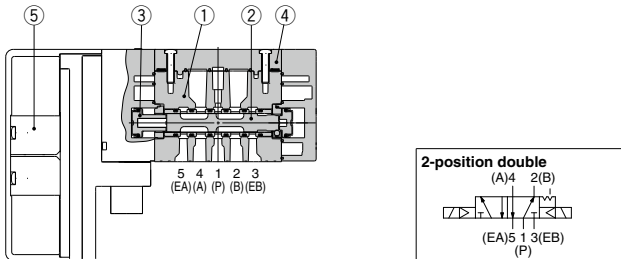
SY3000/5000/7000 Series

Metal Seal

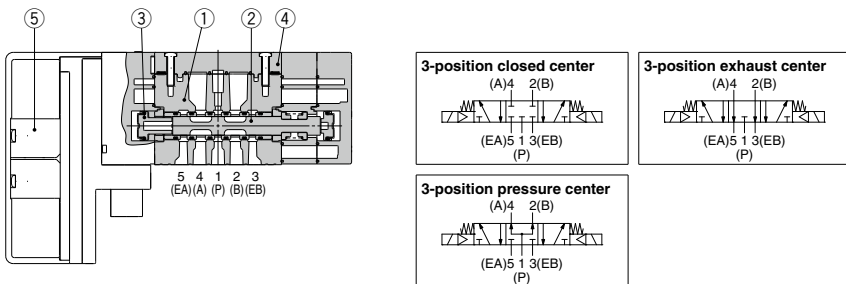
2-position single



2-position double



3-position closed center/exhaust center/pressure center



Component Parts

No.	Description	Material	Note
1	Body	SY3000: Zinc die-casted SY5000/7000: Aluminum die-casted	
2	Spool, Sleeve	Stainless steel/HNBR	
3	Piston	Resin	
	Body cover assembly	Resin	For the side/bottom-ported type
4	Port block assembly	SY3000: Resin SY5000: Zinc die-casted (Thread piping) SY5000: Resin (Fitting) SY7000: Aluminum die-casted	For the top-ported type
5	Pilot valve assembly	—	Refer to page 412.

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 without drop prevention)
1	Drop prevention type valve mounting screw

● **Thread type**

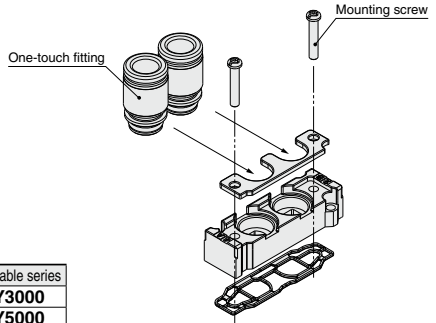
Nil	Rc
F	G
N	NPT
T	NPTF

* Except M5

● **A, B port size**

Thread piping

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



● **Metric size (One-touch fitting)**

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

● **Inch size (One-touch fitting)**

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

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

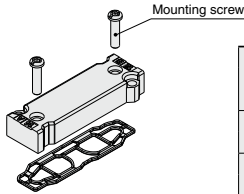
Port size		SY3000	SY5000	SY7000
Metric size	ø2	VVQ1000-50A-C2	—	—
	ø3.2	VVQ1000-50A-C3	—	—
	ø4	VVQ1000-50A-C4	VVQ1000-51A-C4	—
	ø6	VVQ1000-50A-C6	VVQ1000-51A-C6	VVQ2000-51A-C6
	ø8	—	VVQ1000-51A-C8	VVQ2000-51A-C8
	ø10	—	—	VVQ2000-51A-C10
Inch size	ø12	—	—	KQ2H12-17-X224
	ø1/8"	VVQ1000-50A-N1	—	—
	ø5/32"	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 707 and 708 for how to replace the port block assembly, One-touch fitting, and body cover assembly.

SY3000/5000/7000 Series

Body Cover Assembly

* Used when the top-ported type is changed to the side or bottom-ported type



Series		Part no.	
		Standard (Valve mounting screw without drop prevention)	Drop prevention type valve mounting screw
SY3000	Internal pilot	SY30V-16A	SY30V-16A-1
	External pilot	SY30V-16AR	SY30V-16AR-1
SY5000	Internal pilot	SY50V-16A	SY50V-16A-1
	External pilot	SY50V-16AR	SY50V-16AR-1
SY7000	Internal pilot	SY70V-16A	SY70V-16A-1
	External pilot	SY70V-16AR	SY70V-16AR-1

* The part number is not indicated on the product.

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

V112 - A

Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K	High pressure type (1.0 MPa) ^{*1}

*1 Only the 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

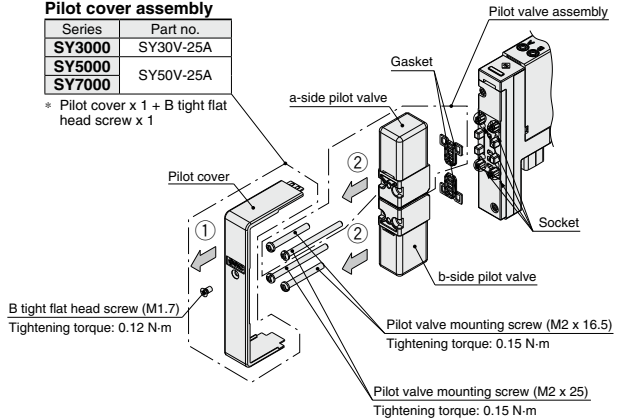
1. The coil specification and voltage (including light/surge voltage suppressor) cannot be changed by changing the pilot valve assembly.
2. When selecting the coil type with power saving circuit, it is not possible to change to high pressure/power saving circuit type.

How to replace pilot valves

Pilot cover assembly

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

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



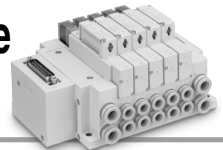
- Loosen B tight flat head screw to remove the pilot cover in the direction indicated by the arrow ①.
- Remove the pilot valve mounting screws.
- Remove the pilot valve in the direction indicated by the arrow ②.

* 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 - 5 1 - E

Series

5	SY5000
7	SY7000

Base mounted

(The top-ported type is not available.)

Type of actuation

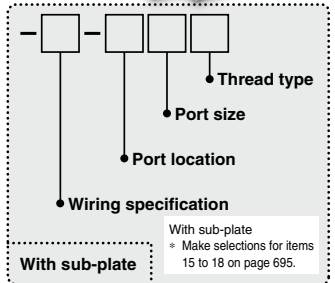
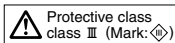
3	3-position closed center ^{*1}
---	--

*1 Only the closed center type is available.

With residual pressure release valve

E With residual pressure release valve^{*1}

*1 Mounting screw types, hexagon socket head cap screw B and drop prevention type K, H are not available.



With sub-plate
 * Make selections for items 15 to 18 on page 695.

With sub-plate

1 Seal type

0	Rubber seal
1	Metal seal

2 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.

3 Coil type

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

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

* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

4 Rated voltage

5	24 VDC
6	12 VDC

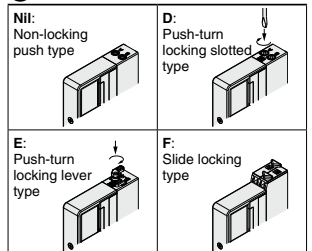
* The applicable rated voltage varies depending on the manifold wiring type. Refer to the "How to Order Manifolds" pages.

5 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	●	—	Negative common

* For the non-polar type, be careful of surge voltage intrusion. Refer to page 706 for details. (Excludes when an SI unit manifold is used)
 * Only "Z" and "NZ" types are available with a power saving circuit.

6 Manual override



* Refer to page 423 for the safety slide locking manual override.

* **When ordering a valve individually, the base gasket is not included.**
 Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance. Refer to page 611 or 679 for base gasket part numbers. Refer to Table 1 for mounting screw part numbers.

Table 1. Valve mounting screw

SY5000	SY7000
SY5000-221-2A (2 pcs.)	SY7000-221-10A (3 pcs.)

Valve Specifications

Valve construction	Rubber seal	Metal seal
	3-position closed center valve with residual pressure release valve ^{*1}		Air
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	128
	SY7000	177

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

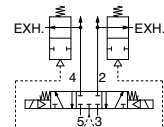
*2 Internal pilot type only

* Other specifications are common to the valve specifications on page 404.

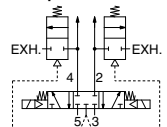
* When using in combination with an individual SUP/EXH spacer or an interface regulator, the length of the required mounting screws will differ. Please contact SMC for details.

Symbol

<When the 1(P) port is exhausted>



<When the 1(P) port is pressurized>

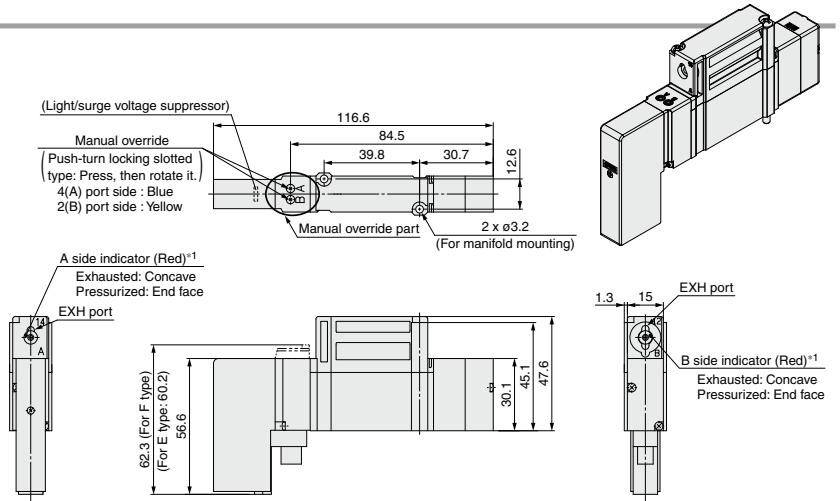


A mechanism is used that exhausts the pressure of the cylinder port when the P port supply pressure of the 3-position closed center valve is exhausted.

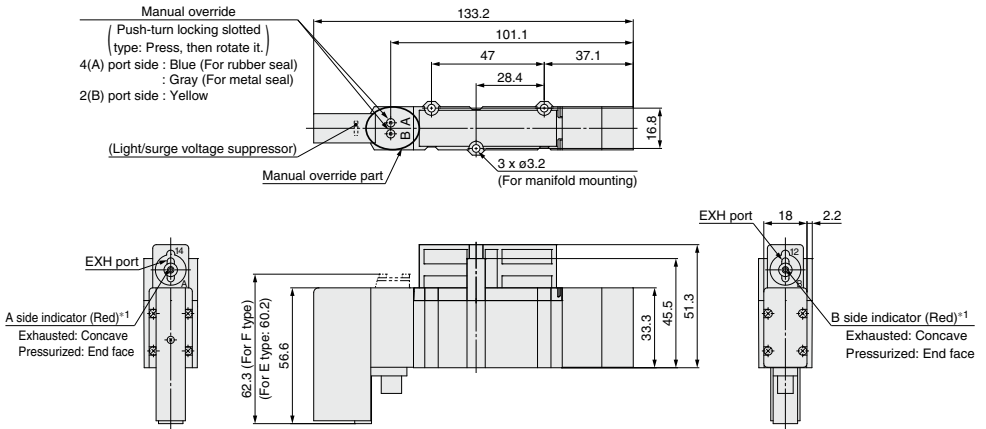
SY5000/7000 Series

Dimensions

SY5000



SY7000

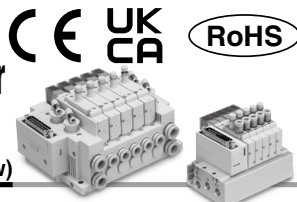


*1 The indicator shows the pressurization status.
Do not push it.

SY3000/5000 Series

Only for
External Pilot

Vacuum Release Valve with Restrictor



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

SY **3** A 0 R □ - 5 □ □ 1

Top ported

SY **3** A 3 R □ - 5 □ □ 1 - C6

1

2

3

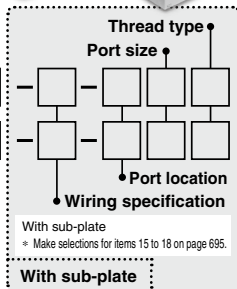
4

5

6

7

8



1 Series

3	SY3000
5	SY5000

2 Pilot type

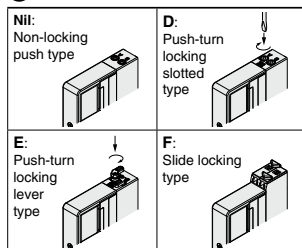
R	External pilot
---	----------------

* Pay attention to the pilot pressure. Refer to the valve specifications on page 416 for further details.

4 Rated voltage

5	24 VDC
6	12 VDC

6 Manual override



* Refer to page 423 for the safety slide locking manual override.

3 Coil type

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

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

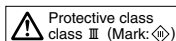
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

5 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	●	—	

* For the non-polar type, be careful of surge voltage intrusion. Refer to page 706 for details. (Excludes when an SI unit manifold is used)

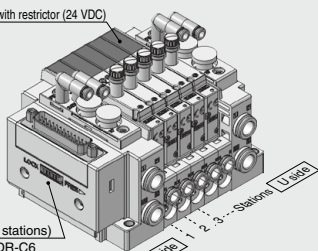
* Only "Z" and "NZ" types are available with a power saving circuit.



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 the assembly. Prefix it to the part numbers of the valve, etc.

- * For the valve arrangement, the valve closest to the D side is considered the 1st station.
- * Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details 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

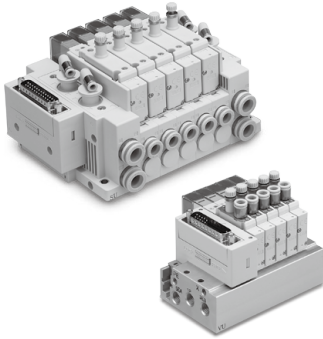
NII	Round head combination screw
B	Hexagon socket head cap screw

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

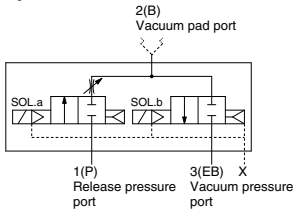
Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance. Refer to page 611 or 679 for base gasket and mounting screw part numbers.

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

SY3000/5000 Series



Symbol



Valve Specifications

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

- *1 Can be used with positive pressure to suit the application
- * Other specifications are common to the valve specifications on page 404.
- * Quick response type is not available.

Weight

Valve model	Weight [g]	
SY3A0R	90	
Valve model	Port size	
	2(B) port	
	C4	91
SY3A3R	C6	93
Valve model	Weight [g]	
SY5A0R	94	
Valve model	Port size	
	2(B) port	
	C4	118
SY5A3R	C6	115
	C8	121

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

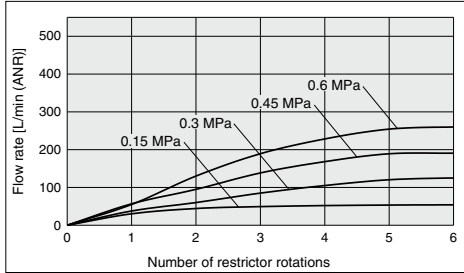
② Plug-in Connector Connecting Base

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

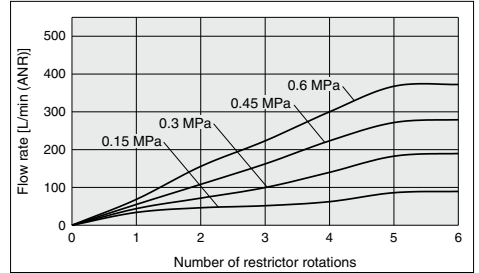
- *1 The value is for manifold base with 5 stations.
- * Calculation of effective area S and sonic conductance C: S = 5.0 × C

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

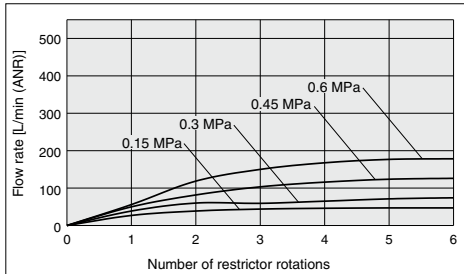
SY3A0R



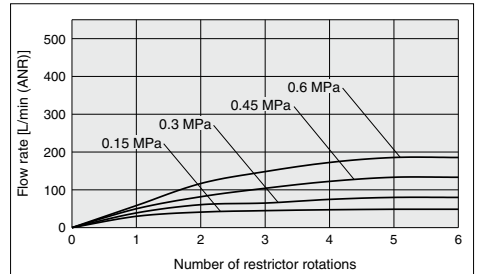
SY5A0R



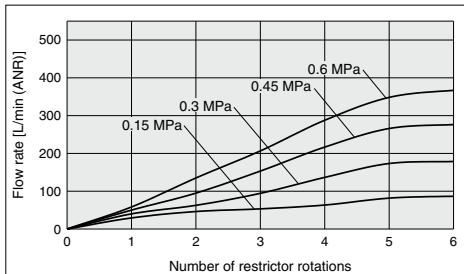
SY3A3R-C4



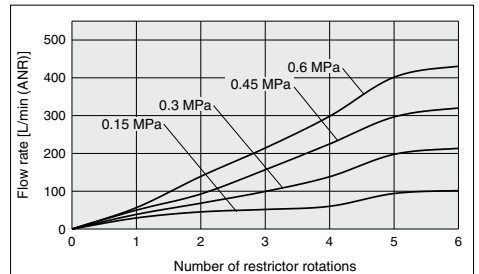
SY5A3R-C4



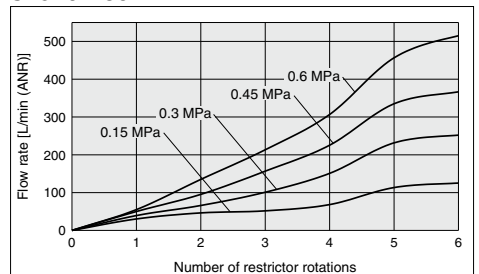
SY3A3R-C6



SY5A3R-C6



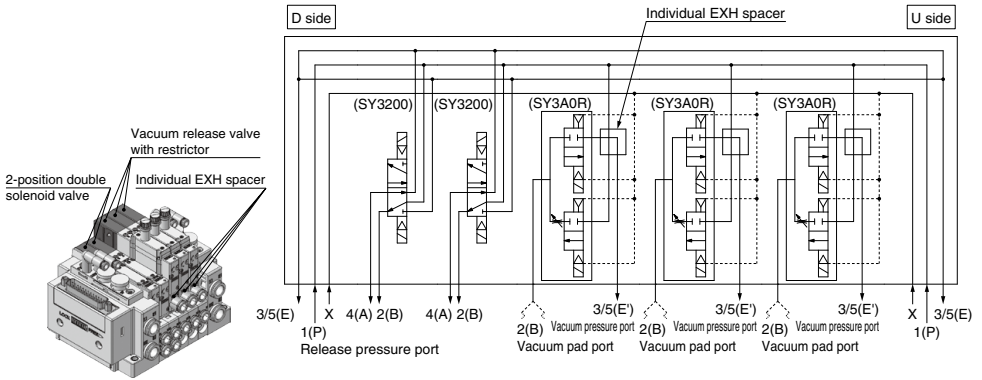
SY5A3R-C8



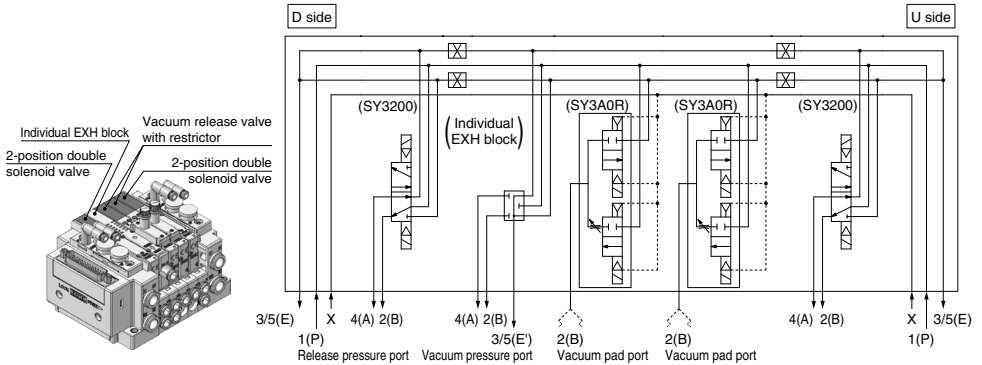
SY3000/5000 Series

Circuit Example

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



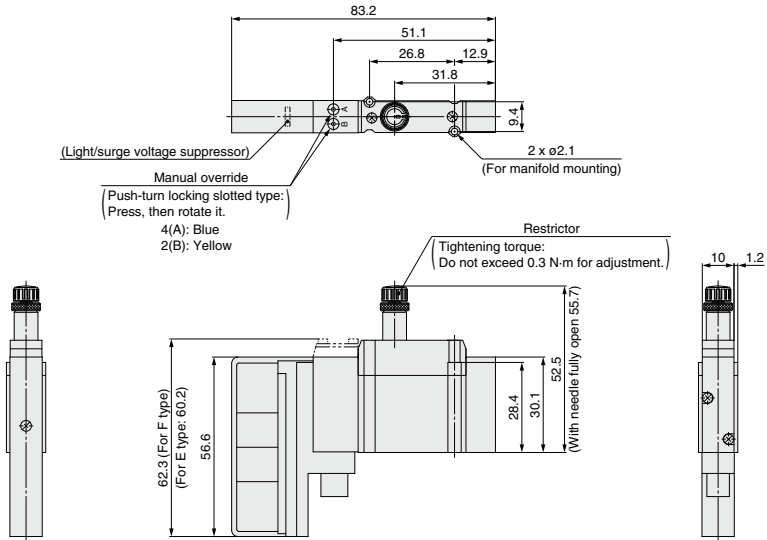
<Example 2: When the 2-position double solenoid valve is combined with the individual EXH block and blocking disk>



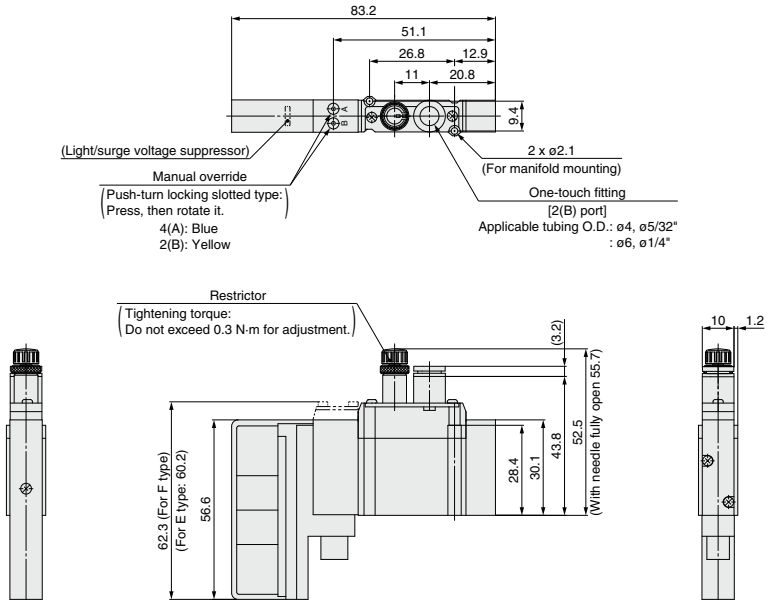
* For standard valve to be combined, both the internal pilot and external pilot can be selected. If the pressure drop may occur when the 1(P) port releases the vacuum, use the external pilot type.

Dimensions: SY3000

Side ported SY3A0R



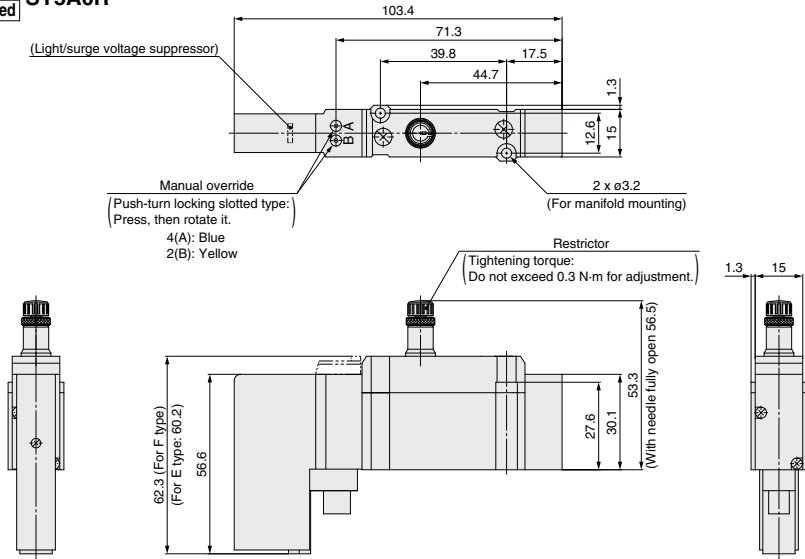
Top ported SY3A3R



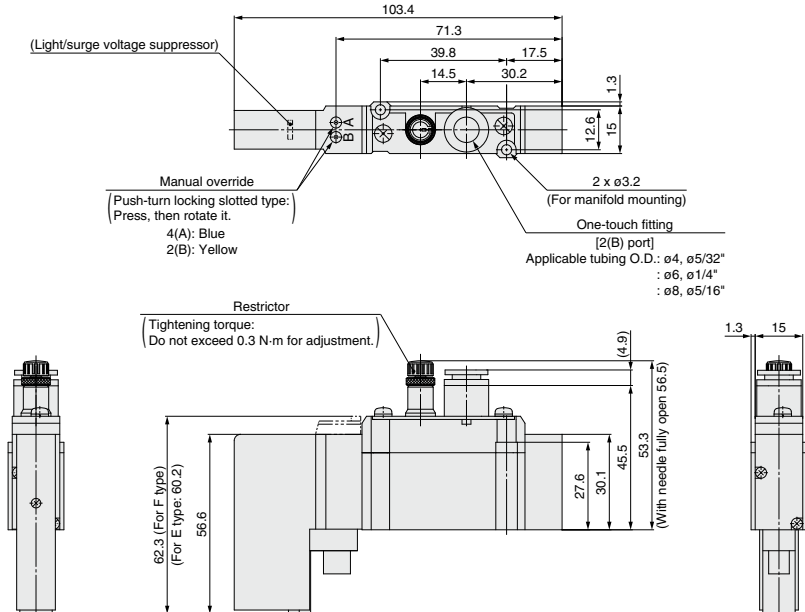
SY3000/5000 Series

Dimensions: SY5000

Side ported Bottom ported SY5A0R



Top ported SY5A3R



SY5000/7000 Series

Pressure Sensor Specifications

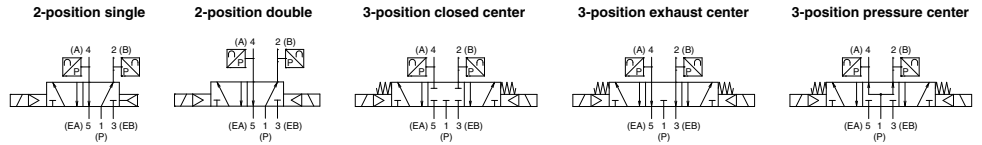
Model		PSE540
Rated pressure range		0 to 1 MPa*1
Power supply voltage		12 to 24 VDC $\pm 10\%$, Ripple (p-p) 10% or less (with reverse connection protection)
Current consumption		15 mA or less
Output specifications		Analog output 1 to 5 V (within rated pressure range), 0.6 to 1 V (within extension analog output range), Output impedance: Approx. 1 k Ω
Linearity		$\pm 0.7\%$ F.S. or less
Environment	Enclosure*2	IP40
Temperature characteristics		$\pm 2\%$ F.S. (25°C reference)
Sensor cable		Oilproof heavy-duty vinyl cable (ellipse), 3 cores, 2.7 x 3.2, 3 m, Conductor area: 0.15 mm ² , Insulator O.D.: 0.9 mm

*1 Set the pressure within the operating pressure range of the valve.

*2 Please note that even if the manifold is IP67, the product will remain IP40.

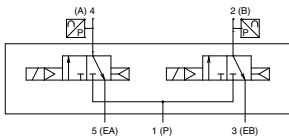
Symbol

Internal pilot

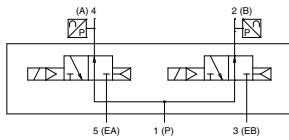


4-Position Dual 3-Port Valve

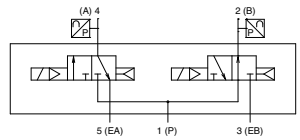
N.C. valve x 2 pcs.



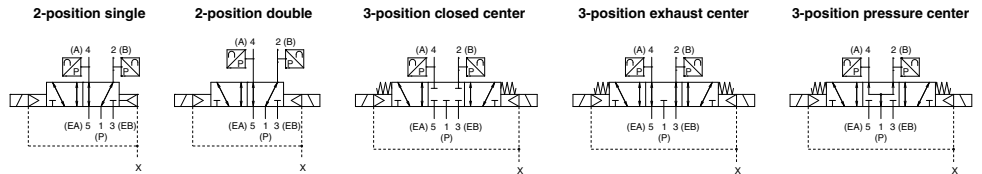
N.O. valve x 2 pcs.



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

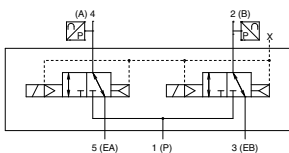


External pilot

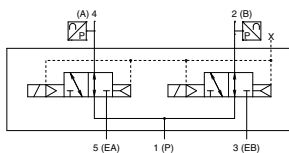


4-Position Dual 3-Port Valve

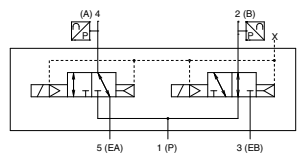
N.C. valve x 2 pcs.



N.O. valve x 2 pcs.



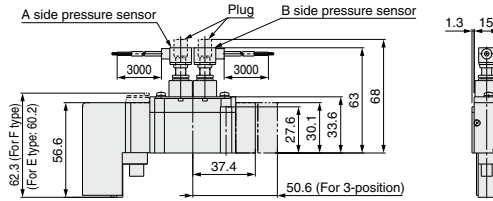
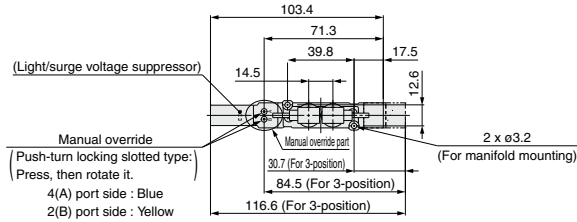
N.C. valve, N.O. valve 1 pc. of each



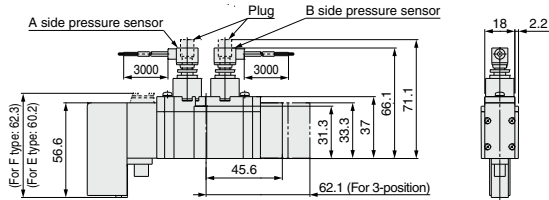
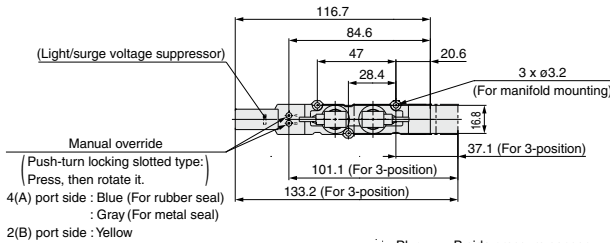
Valve with Pressure Sensor **SY5000/7000 Series**

Dimensions

SY5000-P2



SY7000-P2



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.

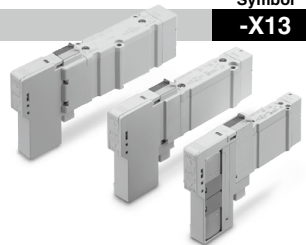
2 With Safety Slide Locking Manual Override

Symbol
-X13

A safety lock is added to the slide locking manual override. (Refer to page 391.)

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

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



3 2-Position Single Solenoid Valve with Built-in Return Spring (Only rubber seal type)

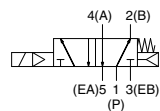
Symbol
-X350

A 2-position single solenoid valve with a spring built into the main valve. The main valve returns to origin (the OFF position) via the spring when it is not pressurized.

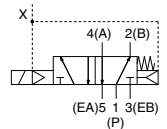
SY³₅ 1□□₇ 0□□□□□□ - □□□□ 1 - □□□□ - □□□ - X350

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

Internal pilot type



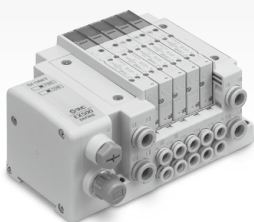
External pilot type



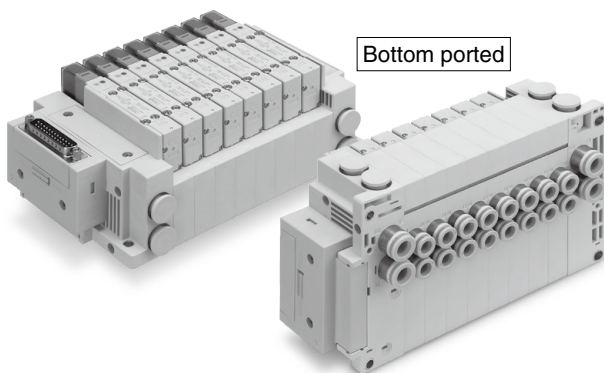
* For the external pilot type, exhaust the external pilot (X) port and the main pressure simultaneously. If the main pressure cannot be exhausted due to the system specifications, please contact SMC separately.

* The manual option is only applicable to the non-locking push type.

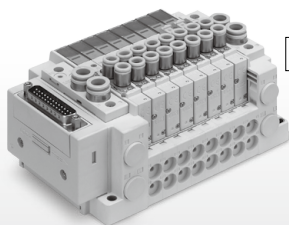
Plug-in Connector Connecting Base



Side ported



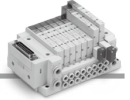
Bottom ported



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	PH type	TC type	T type	L type	M type	S6□ type (EX600)	SA□ type (EX245)	S4□ type (EX126)	SA3 type (EX500) S□ type (EX250) (EX260)	S3□ type (EX120) S8□ type (EX180)
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	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 (EX120) 2 to 24 stations (EX180)		
Applicable connector	D-sub connector Conforming to MIL-C-24308 JIS-X-5101 (Refer to page 444.)	Dedicated connector (Refer to page 444.)	Flat ribbon cable connector with strain relief Conforming to MIL-C-83503 (Refer to page 446.)			—			—					
			Socket: 26 pins MIL type	Socket: 20 pins MIL type	Socket: 10 pins MIL type									
Internal wiring	Positive common, Negative common									Negative common	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	IP65	IP67*1	IP67*1 (EX200 D-sub communication connector: P40) (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" on page 703.

Manifold Flow Rate Characteristics*1/Manifold Weight

Valve Seal Type: Rubber Seal Side Ported (Type 10)

Manifold model	Valve model	Port size		Flow rate characteristics				Weight: W [g] ^{*2} (n: stations)
		1, 3/5 (P, E)	4, 2 (A, B)	1 → 4/2 (P → A/B)		4/2 → 3/5 (A/B → E)		
				C [dm ³ /(s·bar)]	b	C [dm ³ /(s·bar)]	b	
SS5Y3	SY3100 SY3200	C8	C6	1.4	0.30	1.6	0.19	28.9 n + 293
	SY3300			1.3	0.28	1.2	0.40	
	SY3400			1.2	0.27	1.6	0.29	
	SY3500			1.4	0.31	1.1	0.36	
	SY3A00			1.3	0.26	1.5	0.27	
	SY3B00			1.3	0.26	1.5	0.27	
	SY3C00			1.3	0.26	1.5	0.27	
SS5Y5	SY5100 SY5200	C10	C8	3.3	0.30	3.6	0.17	74.7 n + 398
	SY5300			3.1	0.32	2.9	0.31	
	SY5400			3.1	0.32	3.7	0.23	
	SY5500			3.4	0.32	2.9	0.31	
	SY5A00			2.9	0.32	3.2	0.25	
	SY5B00			2.8	0.31	2.9	0.26	
	SY5C00			2.9	0.32	3.1	0.25	
SS5Y7	SY7100 SY7200	C12	C12	6.2	0.23	5.9	0.20	106.6 n + 496
	SY7300			4.8	0.25	4.4	0.36	
	SY7400			4.8	0.25	6.6	0.27	
	SY7500			7.1	0.25	4.4	0.36	
	SY7A00			5.4	0.25	5.1	0.29	
	SY7B00			5.4	0.24	5.1	0.31	
	SY7C00			5.4	0.25	5.1	0.29	

Valve Seal Type: Rubber Seal Bottom Ported (Type 11)

Manifold model	Valve model	Port size		Flow rate characteristics				Weight: W [g] ^{*2} (n: stations)
		1, 3/5 (P, E)	4, 2 (A, B)	1 → 4/2 (P → A/B)		4/2 → 3/5 (A/B → E)		
				C [dm ³ /(s·bar)]	b	C [dm ³ /(s·bar)]	b	
SS5Y5	SY5100 SY5200	C10	C8	3.3	0.29	4.2	0.26	76.8 n + 445
SS5Y7	SY7100 SY7200	C12	C12	6.2	0.25	6.6	0.21	117.9 n + 532

Valve Seal Type: Rubber Seal Top Ported (Type 12)

Manifold model	Valve model	Port size		Flow rate characteristics				Weight: W [g] ^{*2} (n: stations)
		1, 3/5 (P, E)	4, 2 (A, B)	1 → 4/2 (P → A/B)		4/2 → 3/5 (A/B → E)		
				C [dm ³ /(s·bar)]	b	C [dm ³ /(s·bar)]	b	
SS5Y3	SY3130 SY3230	C8	C6	1.2	0.29	1.3	0.19	25.1 n + 314
SS5Y5	SY5130 SY5230	C10	C8	2.8	0.27	3.8	0.23	66.3 n + 417
SS5Y7	SY7130 SY7230	C12	C12	5.6	0.31	5.7	0.24	84.1 n + 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 406 for the appropriate number of stations.

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

SY3000/5000/7000 Series

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

Valve Seal Type: Metal Seal Side Ported (Type 10)

Manifold model	Valve model	Port size		Flow rate characteristics				Weight: W [g] ^{*2} (n: stations)
		1, 3/5 (P, E)	4, 2 (A, B)	1 → 4/2 (P → A/B)		4/2 → 3/5 (A/B → E)		
				C [dm ³ /(s·bar)]	b	C [dm ³ /(s·bar)]	b	
SS5Y3	SY3101 SY3201	C8	C6	1.2	0.19	1.3	0.18	28.9 n + 293
	SY3301			0.8	0.19	0.8	0.35	
	SY3401			0.8	0.19	1.1	0.26	
	SY3501			0.9	0.21	0.7	0.32	
SS5Y5	SY5101 SY5201	C10	C8	2.7	0.24	3.1	0.17	74.7 n + 398
	SY5301			2.3	0.21	2.0	0.24	
	SY5401			2.3	0.21	2.7	0.18	
	SY5501			2.5	0.21	2.0	0.24	
SS5Y7	SY7101 SY7201	C12	C12	4.4	0.14	4.4	0.17	106.6 n + 496
	SY7301			3.4	0.12	3.3	0.24	
	SY7401			3.4	0.12	4.9	0.18	
	SY7501			5.0	0.12	3.3	0.24	

Valve Seal Type: Metal Seal Bottom Ported (Type 11)

Manifold model	Valve model	Port size		Flow rate characteristics				Weight: W [g] ^{*2} (n: stations)
		1, 3/5 (P, E)	4, 2 (A, B)	1 → 4/2 (P1 → A/B)		4/2 → 3/5 (A/B1 → E)		
				C [dm ³ /(s·bar)]	b	C [dm ³ /(s·bar)]	b	
SS5Y5	SY5101 SY5201	C10	C8	2.8	0.25	3.5	0.15	76.8 n + 445
SS5Y7	SY7101 SY7201	C12	C12	4.6	0.16	4.7	0.18	117.9 n + 532

Valve Seal Type: Metal Seal Top Ported (Type 12)

Manifold model	Valve model	Port size		Flow rate characteristics				Weight: W [g] ^{*2} (n: stations)
		1, 3/5 (P, E)	4, 2 (A, B)	1 → 4/2 (P1 → A/B)		4/21 → 3/5 (A/B1 → E)		
				C [dm ³ /(s·bar)]	b	C [dm ³ /(s·bar)]	b	
SS5Y3	SY3131 SY3231	C8	C6	1.2	0.16	1.3	0.18	25.1 n + 314
SS5Y5	SY5131 SY5231	C10	C8	2.6	0.18	3.0	0.16	66.3 n + 417
SS5Y7	SY7131 SY7231	C12	C12	3.9	0.21	4.1	0.14	84.1 n + 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.

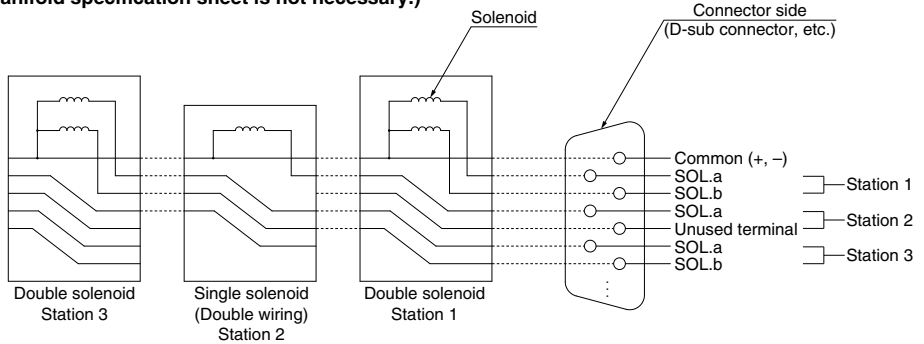
To obtain the weight with valves attached, add the valve weights given on page 406 for the appropriate number of stations.

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

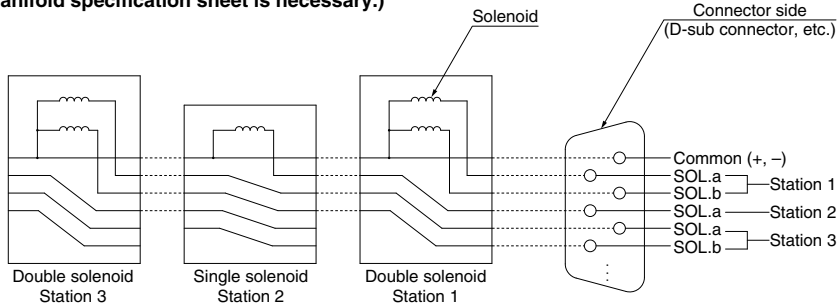
Connector Wiring Layout

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

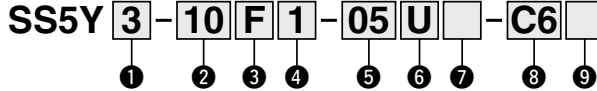
D-sub Connector Flat Ribbon Cable

SY3000/5000/7000 Series



How to Order Manifolds

Refer to pages 569 (SY5000) and 570 (SY7000) for the dimensions of Type 11/Bottom-ported type.



1 Series

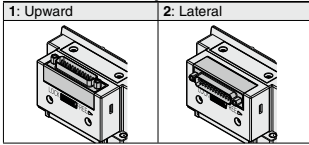
3	SY3000
5	SY5000
7	SY7000

2 Type

10	Side ported
11	Bottom ported*1

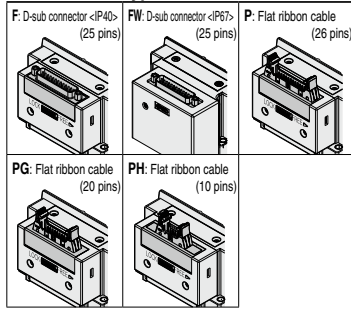
*1 The SY5000 manifold base is used for the bottom-ported SY3000. When ordering, refer to the "Plug-in Mixed Mounting Type Manifold" (from page 574).

4 Connector entry direction



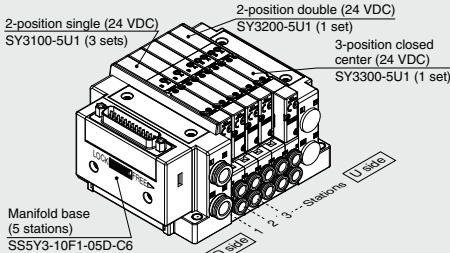
* The connector entry direction for connector type "FW" D-sub connector <IP67> cannot be rotated. If it is necessary to change, order the connector block assembly (page 592) separately.

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 the assembly. Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

* When mixing top-ported configurations, select from those listed on page 443. In such cases, use caution as there is also output on the A and B ports on the base side. Specify on the manifold specification sheet if plugs are required for the A and B ports on the base side.

5 Valve stations

F/FW: D-sub connector (25 pins)		P: Flat ribbon cable (26 pins)			
Symbol	Stations	Note	Symbol	Stations	Note
02	2 stations	Double wiring*1	02	2 stations	Double wiring*1
:	:		:	:	
12	12 stations		12	12 stations	
02	2 stations	Specified layout*2 (Up to 24 solenoids available)	02	2 stations	Specified layout*2 (Up to 24 solenoids available)
:	:		:	:	
24	24 stations		24	24 stations	
PG: Flat ribbon cable (20 pins)		PH: Flat ribbon cable (10 pins)			
Symbol	Stations	Note	Symbol	Stations	Note
02	2 stations	Double wiring*1	02	2 stations	Double wiring*1
:	:		:	:	
09	9 stations		04	4 stations	
02	2 stations	Specified layout*2 (Up to 18 solenoids available)	02	2 stations	Specified layout*2 (Up to 8 solenoids available)
:	:		:	:	
18	18 stations		08	8 stations	

- *1 Double wiring: 2-position single, double, 3-position, and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
- *2 Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position, and 4-position valves cannot be used where single wiring has been specified.)
- * This also includes the number of the 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 <input type="checkbox"/>	DIN rail mounting	—	—
A <input type="checkbox"/>		●	●
B <input type="checkbox"/>		●	—

DIN Rail Option

Nil	Direct mounting
0	Without DIN rail (with bracket)
3	For 3 stations Specify a longer rail than the total length
⋮	⋮
24	For 24 stations 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 the type 11 bottom-ported type.

* Refer to page 708 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	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

*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 (pages 617 to 619).

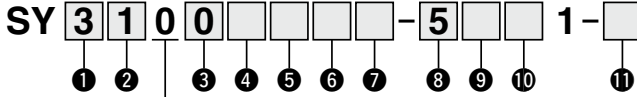
A, B port size (Inch/One-touch fitting)

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"

SY3000/5000/7000 Series

How to Order Valves (With mounting screw)

Refer to page 404 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 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

Nil	Internal pilot
R	External pilot

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

Nil	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 the 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 if the valve is to be continuously energized for long periods of time.
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

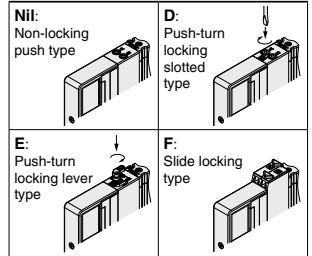
5	24 VDC
6	12 VDC

9 Light/surge voltage suppressor and common specification

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

* For the non-polar type, be careful of surge voltage intrusion. Refer to page 706 for details.
* Only "Z" and "NZ" types are available with a power saving circuit.

10 Manual override



* Refer to page 423 for the safety slide locking manual override.

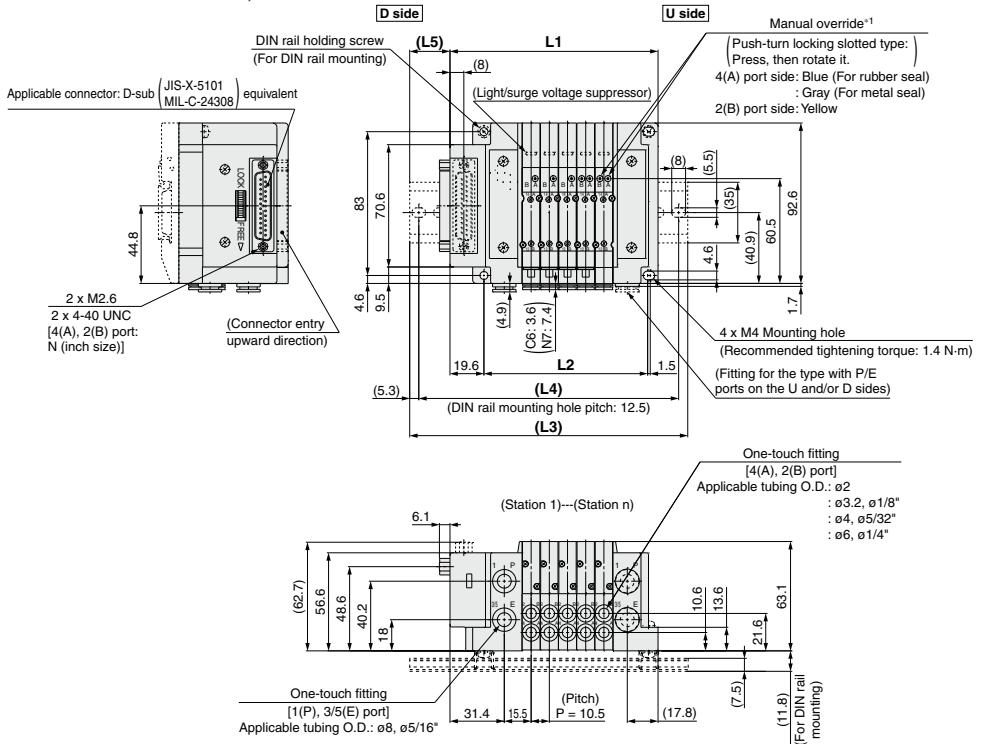
11 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 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.

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)



*1 Refer to page 566 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
* These figures show the "SS5Y3-10F2-05D-C6."
* Refer to page 571 for dimensions of A or B port top-ported type.

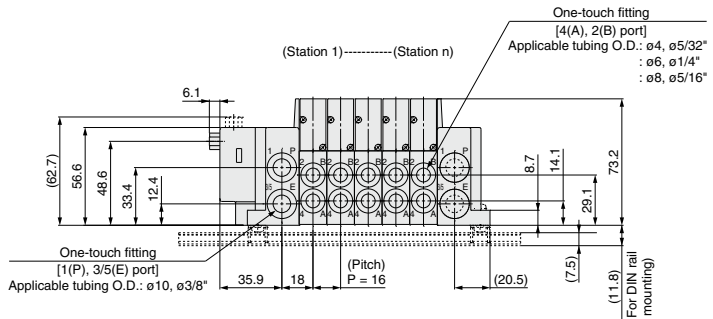
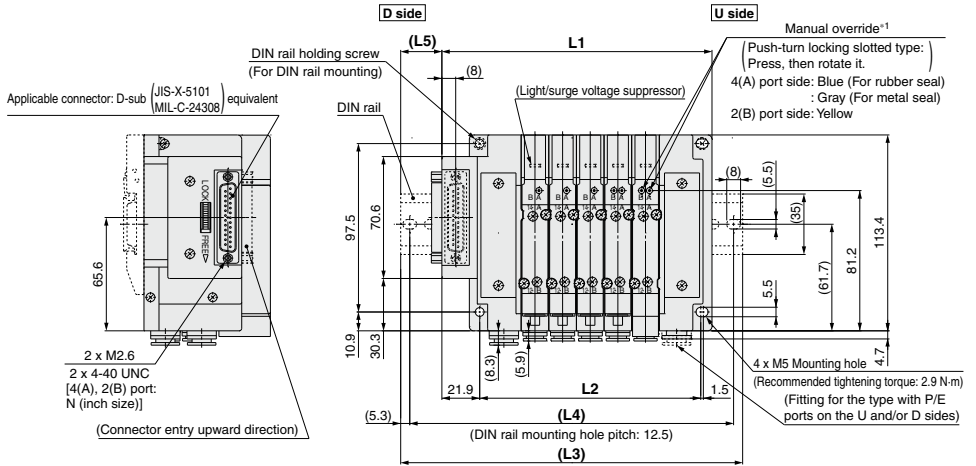
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	88.6	99.1	109.6	120.1	130.6	141.1	151.6	162.1	172.6	183.1	193.6	204.1	214.6	225.1	235.6	246.1	256.6	267.1	277.6	288.1	298.6	309.1	319.6
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	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 $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7 (D)} \\ \text{B} & \text{C8, N9} \end{matrix}$



*1 Refer to page 567 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
 * These figures show the "SS5Y5-10F2-05D-CB."
 * Refer to page 572 for dimensions of A or B port top-ported type.

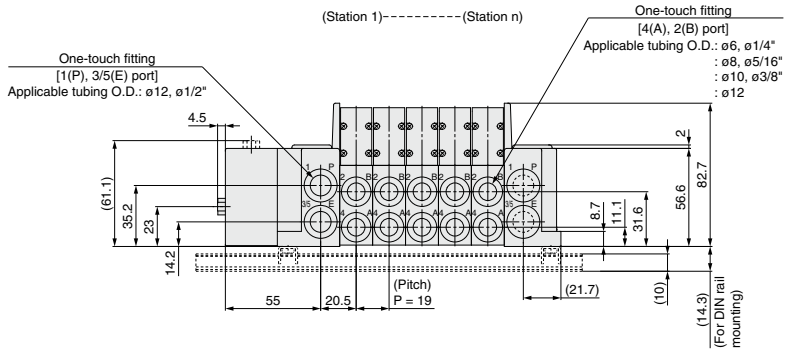
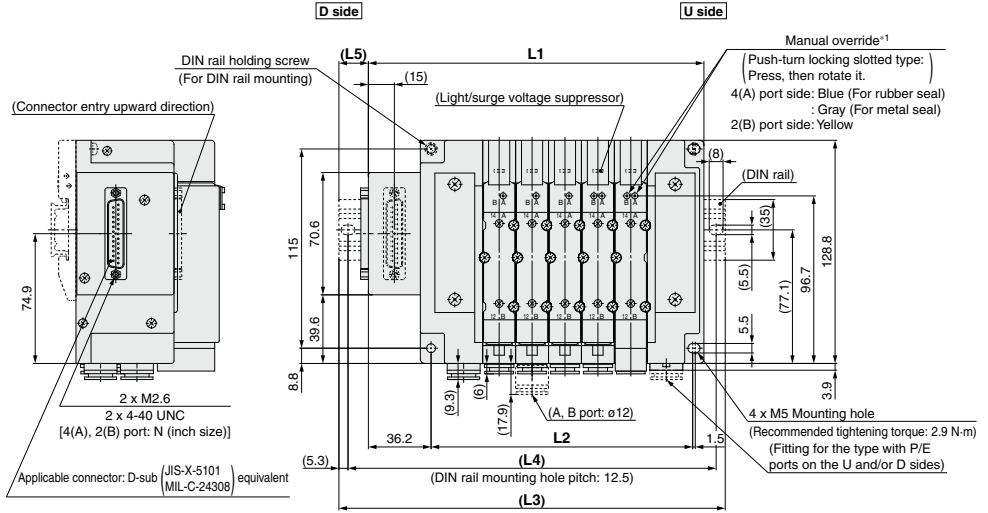
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	108.4	124.4	140.4	156.4	172.4	188.4	204.4	220.4	236.4	252.4	268.4	284.4	300.4	316.4	332.4	348.4	364.4	380.4	396.4	412.4	428.4	444.4	460.4
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416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

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 568 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
* These figures show the "SS5Y7-10FW2-05D-C10."
* Refer to page 573 for dimensions of A or B port top-ported type.

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

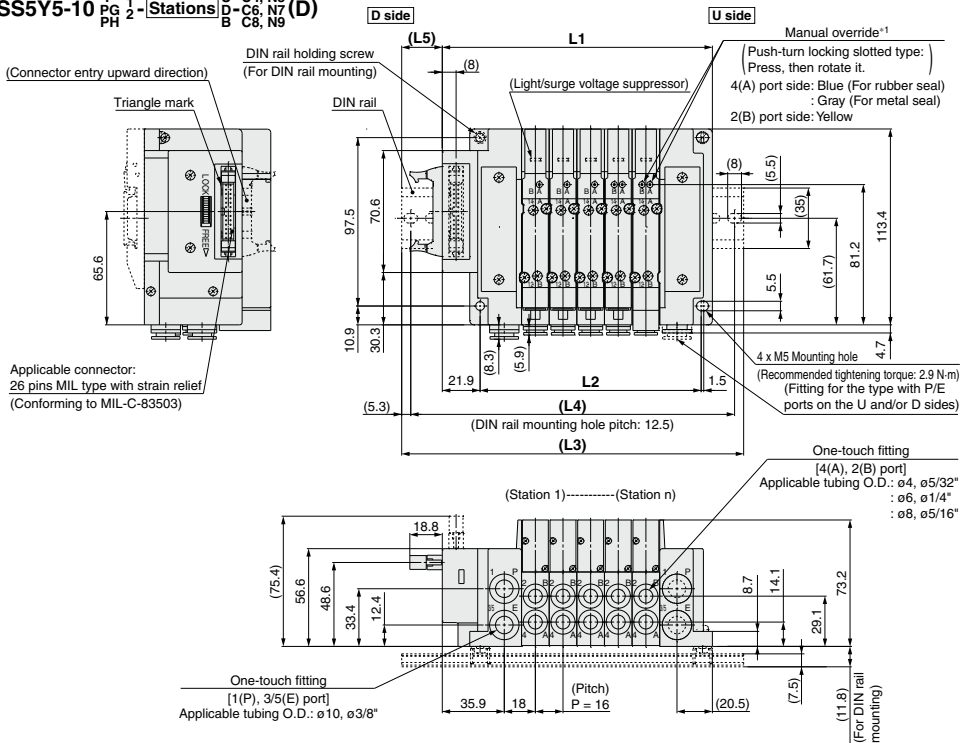
SY3000/5000/7000 Series

Plug-in Connector Connecting Base

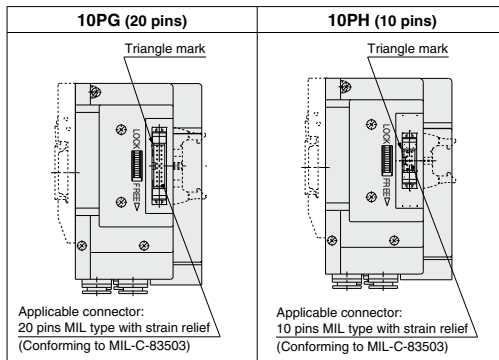
Type 10/Side Ported
Flat Ribbon Cable

Dimensions: SY5000 Series

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



- *1 Refer to page 567 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
- * These figures show the "SS5Y5-10P2-05D-C8."
- * Refer to page 572 for dimensions of A or B port top-ported type.
- * Only connectors are different for 10PG and 10PH. L1 to L5 dimensions are the same as 10P type.



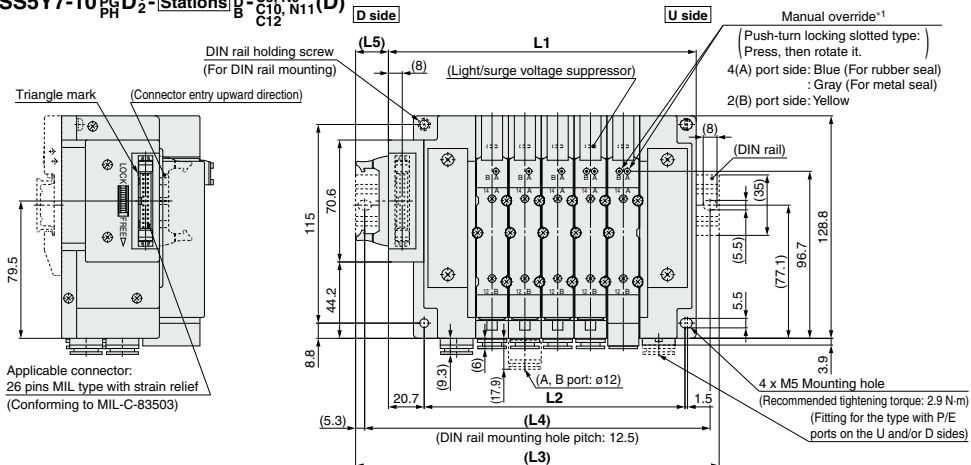
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	108.4	124.4	140.4	156.4	172.4	188.4	204.4	220.4	236.4	252.4	268.4	284.4	300.4	316.4	332.4	348.4	364.4	380.4	396.4	412.4	428.4	444.4	460.4
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416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

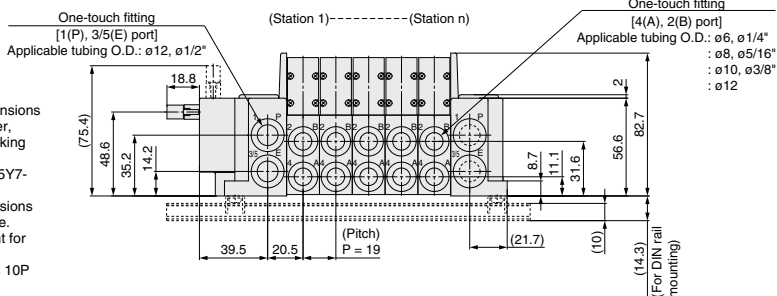
Plug-in
Connector Connecting Base

Type 10/Side Ported
Flat Ribbon Cable

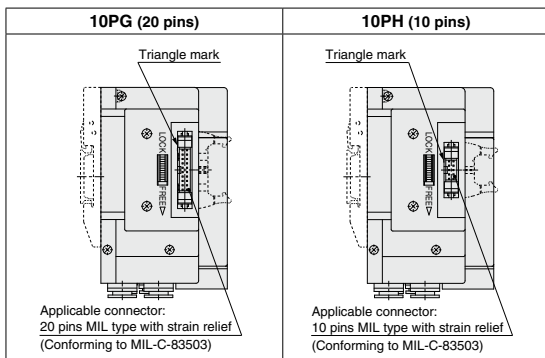
SS5Y7-10PG D₂ Stations U/D C₆, N₇, C₈, N₉, C₁₀, N₁₁ (D)



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



- *1 Refer to page 568 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
- * These figures show the "SS5Y7-10P2-05D-C8."
- * Refer to page 573 for dimensions of A or B port top-ported type.
- * Only connectors are different for 10PG and 10PH. L1 to L5 dimensions are the same as 10P type.



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

Plug-in Connector Connecting Base

D-sub Connector Flat Ribbon Cable

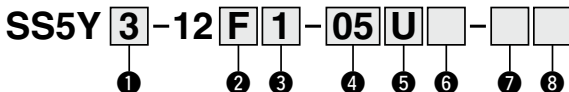


Type 12
Top Ported

SY3000/5000/7000 Series

How to Order Manifolds

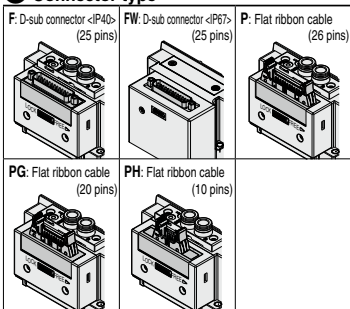
Refer to pages 571 to 573 for the dimensions of Type 12/Top ported type.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Connector type

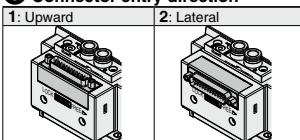


5 P, E port entry

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

*1 6 For type "S", SUP/EXH block assembly with a built-in silencer, choose U or D for P, E port entry.

3 Connector entry direction



* The connector entry direction for connector type "FW" D-sub connector <IP67> cannot be rotated. If it is necessary to change, order the connector block assembly (page 592) 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 (Up to 24 solenoids available)
02	2 stations	
:	:	
24	24 stations	

P: Flat ribbon cable (26 pins)

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
12	12 stations	Specified layout*2 (Up to 24 solenoids available)
02	2 stations	
:	:	
24	24 stations	

PG: Flat ribbon cable (20 pins)

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
09	9 stations	Specified layout*2 (Up to 18 solenoids available)
02	2 stations	
:	:	
18	18 stations	

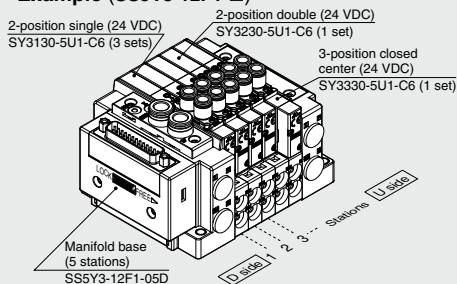
PH: Flat ribbon cable (10 pins)

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
04	4 stations	Specified layout*2 (Up to 8 solenoids available)
02	2 stations	
:	:	
08	8 stations	

- *1 Double wiring: 2-position single, double, 3-position, and 4-position manifolds 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 the blanking plate assembly.

How to Order Manifold Assembly

Example (SS5Y3-12F1-□)



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

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

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

6 SUP/EXH block assembly

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

* The P and E ports are only available on the U and D sides for the built-in silencer type. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of the P and E port entry. (Example: When the P and E port entry is on the D side, the silencer exhaust port is on the 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 length longer than that of the standard rail.
:	:	
D24	For 24 stations	

* Refer to page 708 for the fixation of DIN rail mounting type manifold.

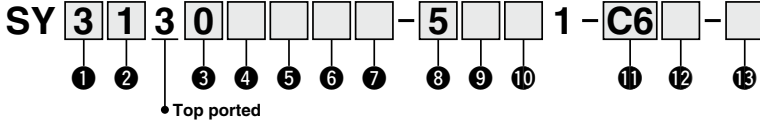
7 P, E port size (One-touch fittings)

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 404 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 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

Nil	Internal pilot
R	External pilot

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

Nil	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 the 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 if the valve is to be continuously energized for long periods of time.
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

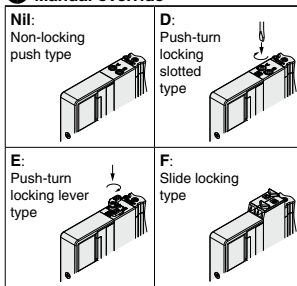
5	24 VDC
6	12 VDC

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	●	—	

* For the non-polar type, be careful of surge voltage intrusion. Refer to page 706 for details.
* Only "Z" and "NZ" types are available with a power saving circuit.

10 Manual override



* Refer to page 423 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
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.

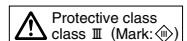
13 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 for base gasket and mounting screw part numbers.

* "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 will be double wiring (connected to SOL. a and SOL. b) regardless of number of stations, valve types, and option types.

Connector terminal no.

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

Terminal no. Polarity

Station 1 SOL.a 1 (-) (+)
 SOL.b 14 (+) (-)
 Station 2 SOL.a 2 (-) (+)
 SOL.b 15 (+) (-)
 Station 3 SOL.a 3 (-) (+)
 SOL.b 16 (+) (-)
 Station 4 SOL.a 4 (-) (+)
 SOL.b 17 (+) (-)
 Station 5 SOL.a 5 (-) (+)
 SOL.b 18 (+) (-)
 Station 6 SOL.a 6 (-) (+)
 SOL.b 19 (+) (-)
 Station 7 SOL.a 7 (-) (+)
 SOL.b 20 (+) (-)
 Station 8 SOL.a 8 (-) (+)
 SOL.b 21 (+) (-)
 Station 9 SOL.a 9 (-) (+)
 SOL.b 22 (+) (-)
 Station 10 SOL.a 10 (-) (+)
 SOL.b 23 (+) (-)
 Station 11 SOL.a 11 (-) (+)
 SOL.b 24 (+) (-)
 Station 12 SOL.a 12 (-) (+)
 SOL.b 25 (+) (-)
 COM. 13 (+) (-)

Positive common Negative common

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

Specified Layout

(25 pins)

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

COM.

Cable Assembly

AXT100-DS25-030 (N) [IP40]

015
050

Nit: Metric
N: Inch

SY30M-DS25-030 (N) [IP67]

015
030
050

Nit: 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.

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 Manufacturer's Example

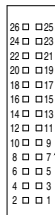
- Fujitsu Limited
- Japan Aviation Electronics Industry, Limited
- J.S.T. Mfg. Co., Ltd.
- HIROSE ELECTRIC CO., LTD.

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

Electrical Wiring Specifications

Flat ribbon cable connector



Connector terminal no.

Triangle mark indicator position

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.

P: Flat ribbon cable (26 pins)

<Double wiring>

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

Positive Negative
common common

PG: Flat ribbon cable (20 pins)

<Double wiring>

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

Positive Negative
common common

PH: Flat ribbon cable (10 pins)

<Double wiring>

	Terminal no.	Polarity
Station 1	SOL.a _o	1 (-) (+)
	SOL.b _o	2 (-) (+)
Station 2	SOL.a _o	3 (-) (+)
	SOL.b _o	4 (-) (+)
Station 3	SOL.a _o	5 (-) (+)
	SOL.b _o	6 (-) (+)
Station 4	SOL.a _o	7 (-) (+)
	SOL.b _o	8 (-) (+)
	COM. _o	9 (+) (-)
	COM. _o	10 (+) (-)

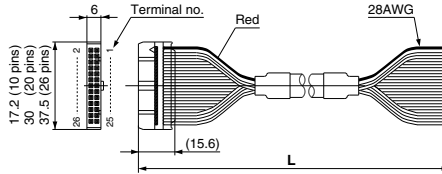
Positive Negative
common common

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

SY3000/5000/7000 Series

Flat Ribbon Cable Assembly

AXT100-FC20-2
 10 1
 26 3



Flat ribbon cable connector assembly

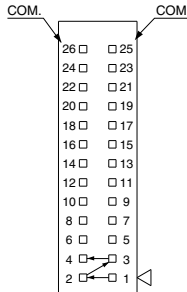
Cable length (L)	Assembly part no.		
	26 pins	20 pins	10 pins
1.5 m	AXT100-FC26-1	AXT100-FC20-1	AXT100-FC10-1
3 m	AXT100-FC26-2	AXT100-FC20-2	AXT100-FC10-2
5 m	AXT100-FC26-3	AXT100-FC20-3	AXT100-FC10-3

Connector Manufacturer's Example

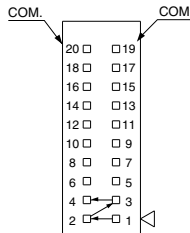
- HIROSE ELECTRIC CO., LTD.
- 3M Japan Limited
- Fujitsu Limited
- Japan Aviation Electronics Industry, Limited
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.

- * 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.

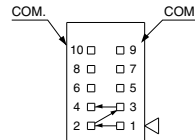
Specified Layout



(P: 26 pins)



(PG: 20 pins)



(PH: 10 pins)

A mixture 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, and 8 or less for PH. 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 (Spring Type)

SY3000/5000/7000 Series



How to Order Manifolds

Refer to pages 569 (SY5000) and 570 (SY7000) for the 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 574).

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 into 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 the blanking plate assembly.

7 Mounting and Option

Symbol	Mounting	Option
Nil	Direct	None
AA	Direct mounting	Name plate (with station number)
BA		Name plate (without station number)
D		Without name plate
D	DIN rail mounting	Without name plate
A		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 length longer than that of the standard rail.
24	For 24 stations

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

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	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	Elbow 90°	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						

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

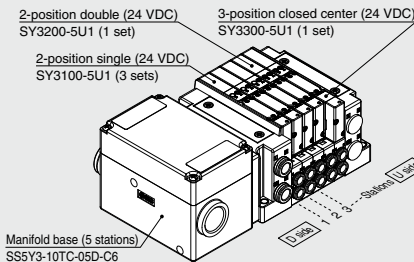
Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported			
		SY3000	SY5000	SY7000	SY5000	SY7000	SY7000	
N1 N3 N7 N9 N11	Straight	ø1/8"	●	—	—	—	—	
		ø5/32"	●	—	—	—	—	
		ø1/4"	●	●	—	—	—	
		ø5/16"	—	—	—	●	●	—
		ø3/8"	—	—	—	—	—	●
		ø3/8"	—	—	—	—	—	—
CM*1	Straight port, mixed sizes	●	●	●	●	●		
LN3 LN7 LN9 LN11	Elbow 90°	ø5/32"	●	—	—	—	—	
		ø1/4"	●	—	—	—	—	
		ø5/16"	—	—	—	●	●	—
		ø3/8"	—	—	—	—	—	●
		ø5/32"	●	—	—	—	—	—
		ø5/16"	—	—	—	—	—	—
LN3 BN7 BN9 BN11	Elbow 90°	ø1/4"	●	—	—	—		
ø5/16"		—	—	—	●	●		
ø3/8"		—	—	—	—	—	●	
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-□)

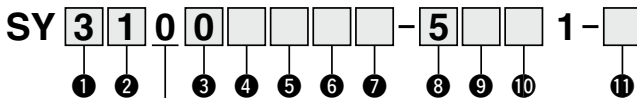


SS5Y3-10TC-05D-C6.....1 set (Type 10 5-station manifold base part no.)
* SY3100-5U1 3 sets (2-position single part no.)
* SY3200-5U1 1 set (2-position double part no.)
* SY3300-5U1 1 set (3-position closed center part no.)

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

* For the valve arrangement, the valve closest to the D side is considered the 1st station.
* Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

How to Order Valves (With mounting screw) Refer to page 404 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 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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

NII	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 if the valve is to be continuously energized for long periods of time.

* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

5	24 VDC
6	12 VDC

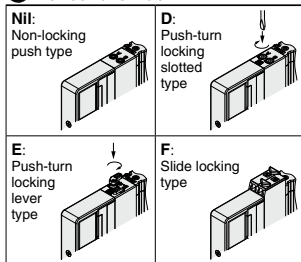
9 Light/surge voltage suppressor and common specification

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

* For the non-polar type, be careful of surge voltage intrusion. Refer to page 706 for details.

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

10 Manual override



* Refer to page 423 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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 for base gasket and mounting screw part numbers.

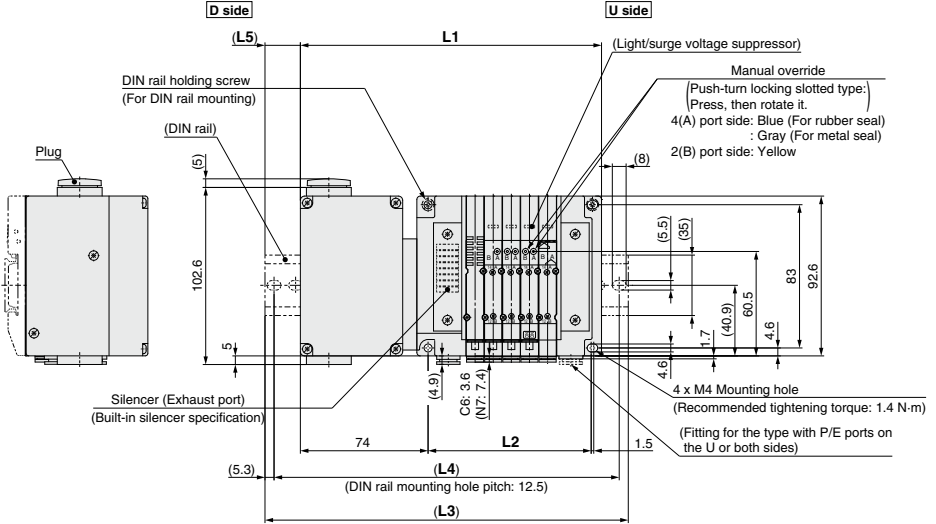
* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator, or double check spacer assembly with residual pressure release valve.

SY3000/5000/7000 Series

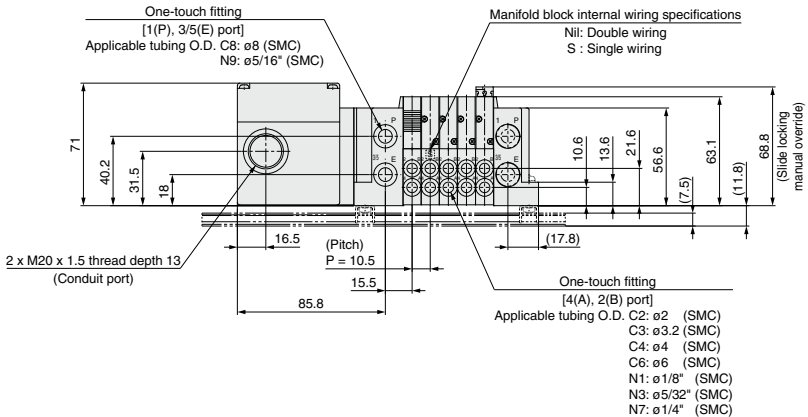
Dimensions: **SY3000 Series**

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

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



(Station 1) (Station n)

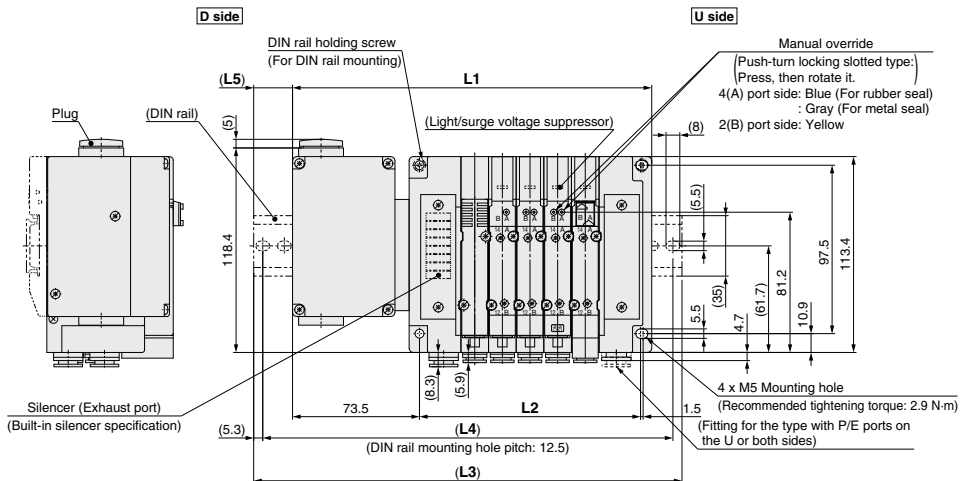


n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
L1	143	153.5	164	174.5	185	195.5	206	216.5	227	237.5	248	258.5	269	279.5	290	300.5	311	321.5	332	342.5	353	363.5	374	
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252	262.5	273	283.5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

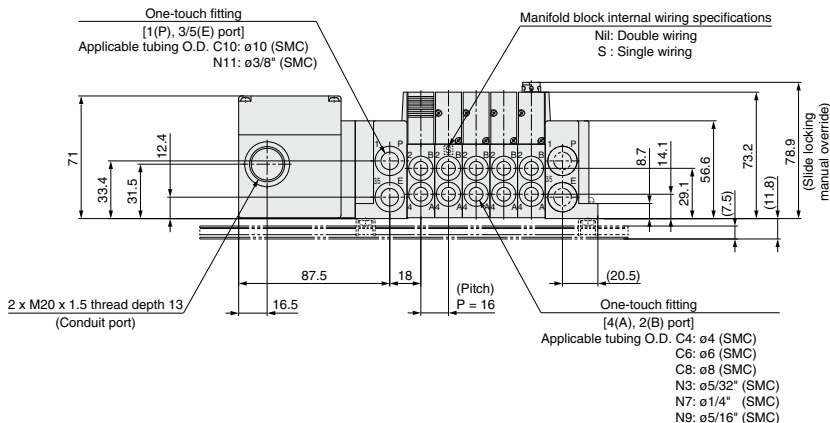
Dimensions: SY5000 Series

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

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)

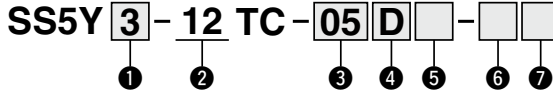
Type 12
Top Ported

SY3000/5000/7000 Series



How to Order Manifolds

Refer to pages 571 to 573 for the 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 the 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

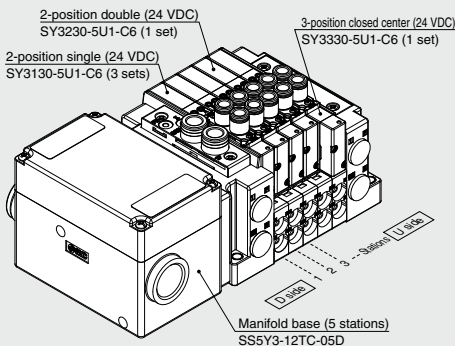
Nii	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

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

* When the built-in silencer type is used, keep the exhaust port from coming into 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 the assembly.
Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details 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.

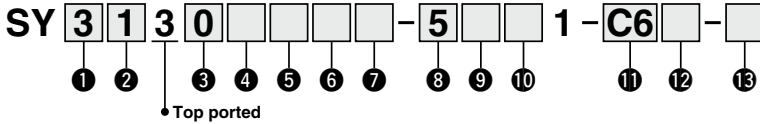
7 Mounting

Nii	Direct mounting
D	DIN rail mounting (with DIN rail)
D0	DIN rail mounting (without DIN rail)
D3	For 3 stations Specify a length longer than that of the standard rail.
:	:
D24	For 24 stations rail.

* Refer to page 708 (SY3000/5000/7000 series: Specific product precautions 6) for instructions on fastening the DIN rail mounting type manifold.

SY3000/5000/7000 Series

How to Order Valves (With mounting screw) Refer to page 404 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 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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

NII	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 if the valve is to be continuously energized for long periods of time.

* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

⑧ Rated voltage

5	24 VDC
6	12 VDC

⑨ Light/surge voltage suppressor and common specification

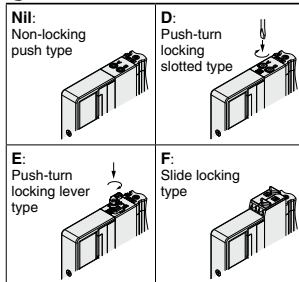
Symbol	With light	Surge voltage suppressor	Common specification
NII	—	—	Non-polar
R	—	—	
U	●	—	
S	—	●	Positive common
Z	●	—	Negative common
NS	—	—	
NZ	●	—	

* For the non-polar type, be careful of surge voltage intrusion.

Refer to page 706 for details.

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

⑩ Manual override



* Refer to page 423 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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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.**

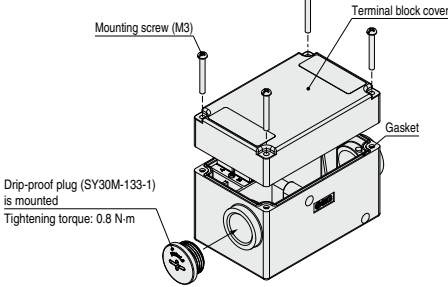
Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance. Refer to page 611 for base gasket and mounting screw part numbers.

* "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.



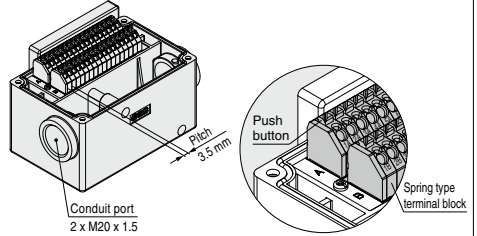
Step 3. Mount the terminal block cover

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

Step 2. The diagram below shows the terminal block wiring. All stations are provided with double wiring regardless of the mounted valves.

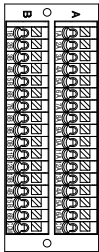
Connect each wire to the power supply side, according to the markings provided inside the terminal block. Be sure to connect the wire with the push button pressed down.



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

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.

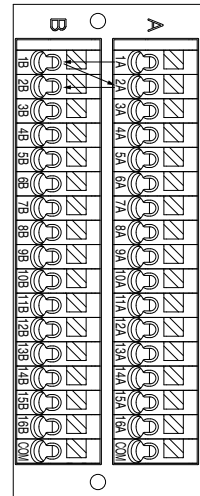
* When using a valve with no polarity, either positive common or negative common can be used.

	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

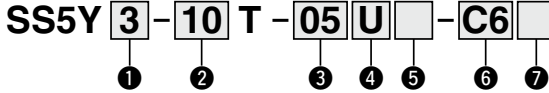
Terminal Block Box

SY3000/5000/7000 Series



How to Order Manifolds

Refer to pages 569 (SY5000) and 570 (SY7000) for the 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 574).

3 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring ¹
⋮	⋮	
10	10 stations	
02	2 stations	Specified layout ² (Up to 20 solenoids available)
⋮	⋮	
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 the 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

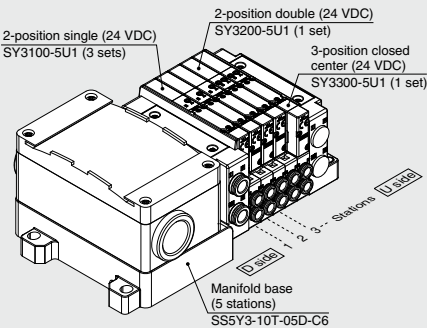
Nii	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

* 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 into 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 the assembly. Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

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 the type 11 bottom-ported type.
- * Refer to page 708 for the fixation of DIN rail mounting type manifold.

DIN Rail Option

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

* When mixing top-ported configurations, select from those listed on page 463. In such cases, use caution as there is also output on the A and B ports on the base side. Specify on the manifold specification sheet if plugs are required for the A and B ports on the base side.

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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported				
		SY3000	SY5000	SY7000	SY5000	SY7000			
Straight	C2	ø2	●	—	—	—			
	C3	ø3.2	●	—	—	—			
	C4	ø4	●	●	—	●			
	C6	ø6	●	●	●	●			
	C8	ø8	—	●	●	●			
	C10	ø10	—	—	●	●			
	C12	ø12	—	—	●	●			
	CM ^{*1}	Straight port, mixed sizes	●	●	●	●		●	
	Upward	L4	ø4	●	●	—		—	
		L6	ø6	●	●	●		—	
L8		ø8	—	●	●	—			
L10		ø10	—	—	●	—			
L12		ø12	—	—	●	—			
B4		ø4	●	●	—	—			
Downward	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			
Straight	N1	ø1/8"	●	—	—	—			
	N3	ø5/32"	●	●	—	●			
	N7	ø1/4"	●	●	●	●			
	N9	ø5/16"	—	●	●	●			
	N11	ø3/8"	—	—	●	●			
	CM ^{*1}	Straight port, mixed sizes	●	●	●	●		●	
Upward	LN3	ø5/32"	●	—	—	—			
	LN7	ø1/4"	●	●	—	—			
	LN9	ø5/16"	—	●	—	—			
	LN11	ø3/8"	—	—	●	—			
	BN3	ø5/32"	●	—	—	—			
	BN7	ø1/4"	●	●	—	—			
	BN9	ø5/16"	—	●	—	—			
	BN11	ø3/8"	—	—	●	—			
	Downward	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"	

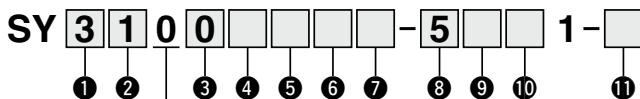
*1 Indicate the sizes on the manifold specification sheet in the case of "CM" or "LM."

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 (pages 617 to 619).

SY3000/5000/7000 Series

How to Order Valves (With mounting screw) Refer to page 404 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 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

Nil	Internal pilot
R	External pilot

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

Nil	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 the 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 if the valve is to be continuously energized for long periods of time.
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

⑧ Rated voltage

5	24 VDC
6	12 VDC

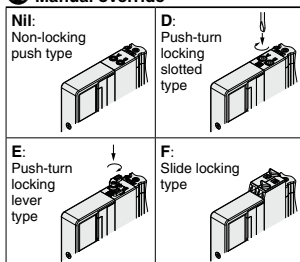
⑨ Light/surge voltage suppressor and common specification

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

* For the non-polar type, be careful of surge voltage intrusion. Refer to page 706 for details.

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

⑩ Manual override



* Refer to page 423 for 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. Refer to page 611 for base gasket and mounting screw part numbers.

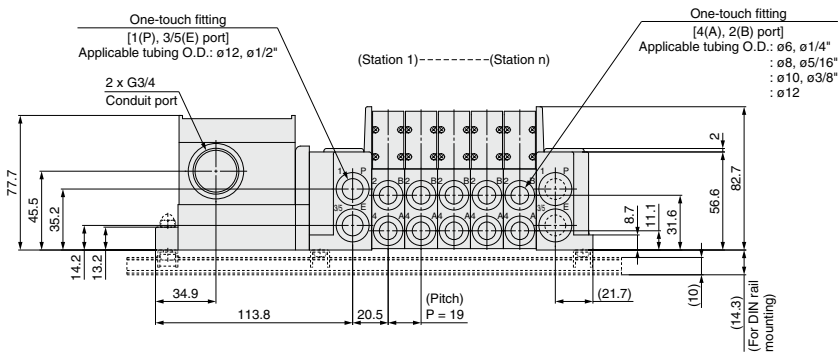
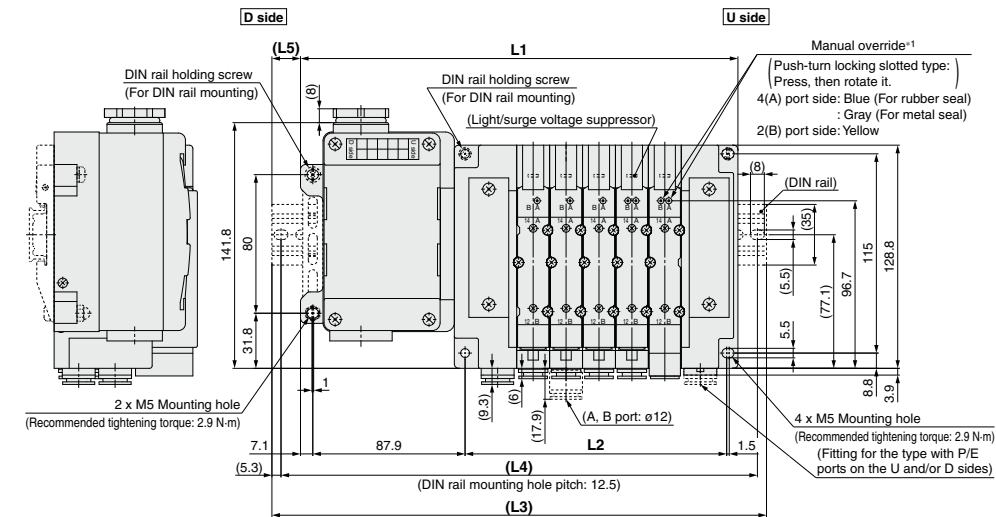
* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator, or double check spacer assembly with residual pressure release valve.

Dimensions: **SY7000 Series**

Plug-in
Connector Connecting Base

Type 10/Side Ported
Terminal Block Box

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



*1 Refer to page 568 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
 * These figures show the "SS5Y7-10T-05D-C10."
 * Refer to page 573 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

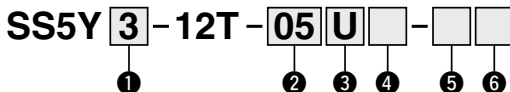
Type 12
Top Ported

SY3000/5000/7000 Series



How to Order Manifolds

Refer to pages 571 to 573 for the dimensions of Type 12/Top ported type.



1 Series

3	SY3000
5	SY5000
7	SY7000

3 P, E port entry

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

*1 For type "S", SUP/EXH block assembly with a built-in silencer, choose U or D for P, E port entry.

2 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
10	10 stations	
02	2 stations	Specified layout*2 (Up to 20 solenoids available)
⋮	⋮	
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 the blanking plate assembly.

4 SUP/EXH block assembly

N II	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

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

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

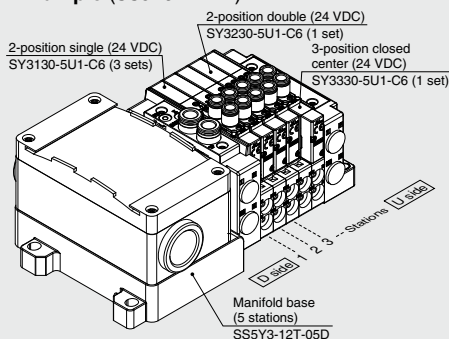
5 P, E port size (One-touch fittings)

Symbol	SY3000	SY5000	SY7000
N II	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 the assembly. Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

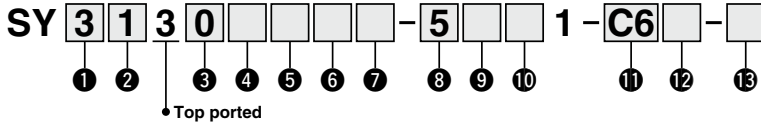
6 Mounting

N II	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	Specify a length longer than that of the standard rail.
⋮	⋮	
D20	For 20 stations	

* Refer to page 708 for the fixation of DIN rail mounting type manifold.

How to Order Valves (With mounting screw)

Refer to page 404 for valve specifications.



1 Series

3	SY3000
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.O.
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

Nil	Internal pilot
R	External pilot

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

Nil	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 the 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 if the valve is to be continuously energized for long periods of time.
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

5	24 VDC
6	12 VDC

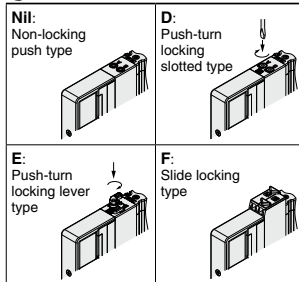
9 Light/surge voltage suppressor and common specification

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

* For the non-polar type, be careful of surge voltage intrusion. Refer to page 706 for details.

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

10 Manual override



* Refer to page 423 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

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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 for base gasket and mounting screw part numbers.

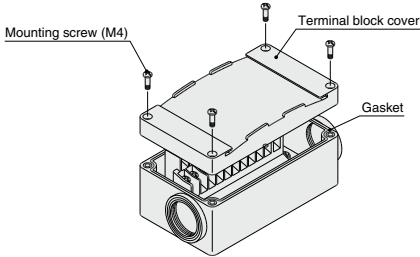
* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.

SY3000/5000/7000 Series

Terminal Block Connection

Step 1. Remove the terminal block cover

Loosen the 4 mounting screws (M4) to remove the terminal block cover.



Step 3. Mount the terminal block cover

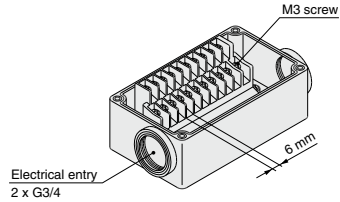
Securely tighten the screws to the torque shown in the table below only after confirming that the gasket is installed correctly.

Proper tightening torque [N·m]
0.7 to 1.2

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

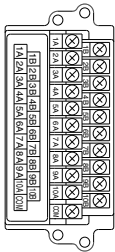
All stations are provided with double wiring regardless of the mounted valves.

Connect each wire to the power supply side, according to the markings provided inside the terminal block.



- 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 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.

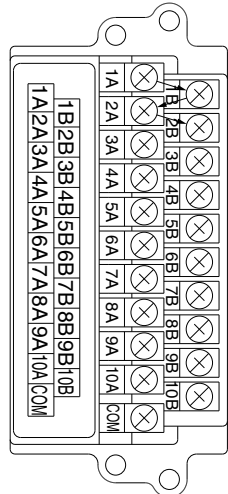
Standard wiring

Station no.	Terminal no.		Polarity	
	SOL_a	SOL_b	(-)	(+)
Station 1	1A	1B	(-)	(+)
	2A	2B	(-)	(+)
Station 2	3A	3B	(-)	(+)
	4A	4B	(-)	(+)
Station 3	5A	5B	(-)	(+)
	6A	6B	(-)	(+)
Station 4	7A	7B	(-)	(+)
	8A	8B	(-)	(+)
Station 5	9A	9B	(-)	(+)
	10A	10B	(-)	(+)
	COM	(+)	(-)	

Positive common Negative 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 20 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

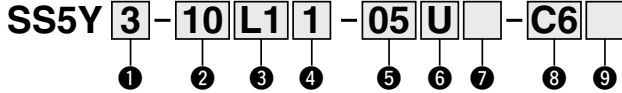
Lead Wire

SY3000/5000/7000 Series



How to Order Manifolds

Refer to pages 569 (SY5000) and 570 (SY7000) for the 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 574).

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 (Up to 32 solenoids available)
24	24 stations	

(L3□)

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

(L2□)

Symbol	Stations	Note
02	2 stations	Double wiring*1
08	8 stations	
02	2 stations	Specified layout*2 (Up to 16 solenoids available)
16	16 stations	

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

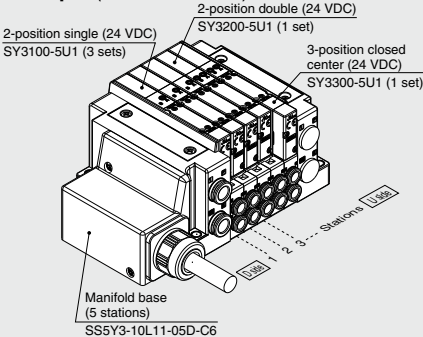
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

*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 the 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 the assembly.
Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

* When mixing top-ported configurations, select from those listed on page 473. In such cases, use caution as there is also output on the A and B ports on the base side. Specify on the manifold specification sheet if plugs are required for the A and B ports on the 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 into direct contact with water or other liquids.

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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
C2 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	—	—	—	—
		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" 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 (pages 617 to 619).

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

Standard length	
0	Without DIN rail (with bracket)
3	For 3 stations
:	:
24	For 24 stations

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

* 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 the type 11 bottom ported type.

* Refer to page 708 for the fixation of DIN rail mounting type manifold.

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"	—	—	●	●
		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"

SY3000/5000/7000 Series

How to Order Valves (With mounting screw) Refer to page 404 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		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 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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

NII	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 if the valve is to be continuously energized for long periods of time.

* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

5	24 VDC
6	12 VDC

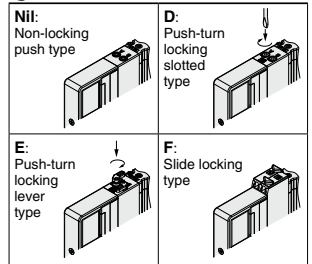
9 Light/surge voltage suppressor and common specification

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

* For the non-polar type, be careful of surge voltage intrusion. Refer to page 706 for details.

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

10 Manual override



* Refer to page 423 for the safety slide locking manual override.

11 Type of mounting screw

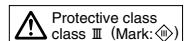
NII	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Drop prevention type)
H	Hexagon socket head cap screw (Drop prevention type)

* 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. Refer to page 611 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.

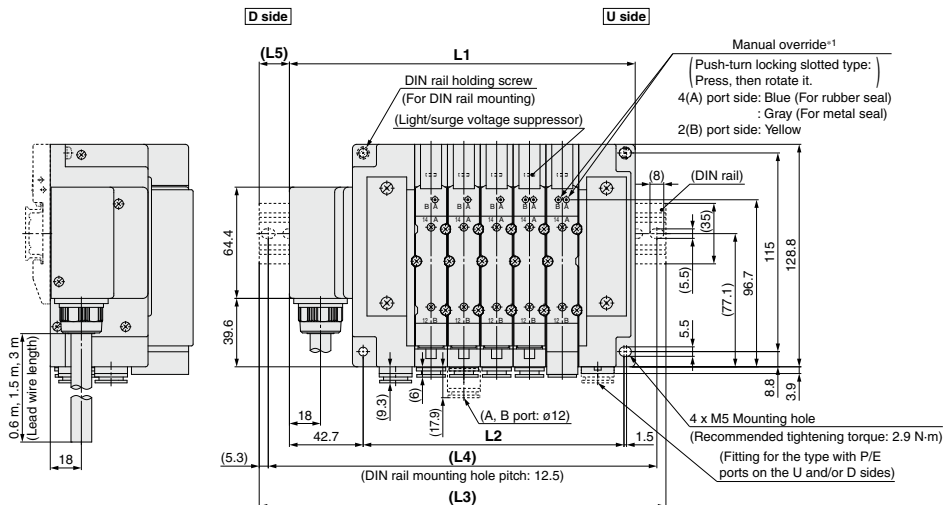


Dimensions: **SY7000 Series**

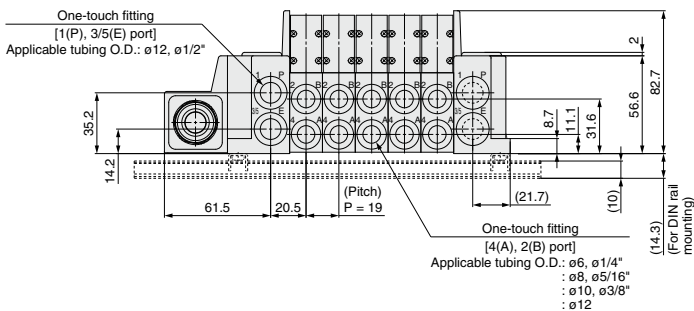
Plug-in
Connector Connecting Base

Type 10/Side Ported
Lead Wire

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



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



*1 Refer to page 568 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
* These figures show the "SS5Y7-10L1□-05D-C10."
* Refer to page 573 for dimensions of A or B port top-ported type.

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

Plug-in Connector Connecting Base

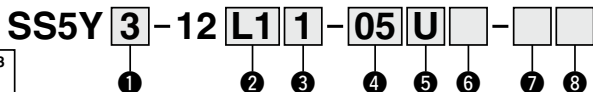
Lead Wire

Type 12
Top Ported

SY3000/5000/7000 Series



How to Order Manifolds



Refer to pages 571 to 573 for the 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", SUP/EXH block assembly with a built-in silencer, choose U or D for P, E port entry.

4 Valve stations

(L1□)

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

(L3□)

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

(L2□)

Symbol	Stations	Note
02	2 stations	Double wiring*1
08	8 stations	
02	2 stations	
02	2 stations	Specified layout*2 (Up to 16 solenoids available)
16	16 stations	
16	16 stations	

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

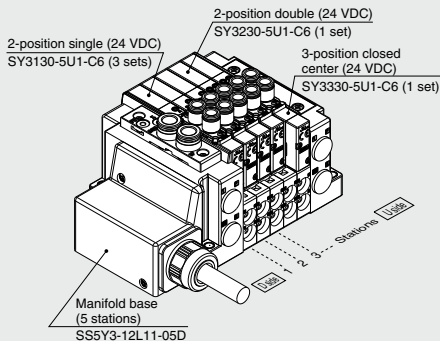
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

*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 the 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 the assembly. Prefix it to the part numbers of the valve, etc.

* For the valve arrangement, the valve closest to the D side is considered the 1st station.

* Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

6 SUP/EXH block assembly

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

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

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

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

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

* For N, sizes are in inches.

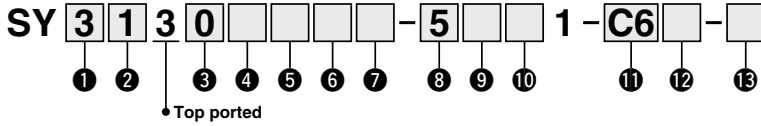
8 Mounting

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

* Refer to page 708 for the fixation of DIN rail mounting type manifold.

How to Order Valves (With mounting screw)

Refer to page 404 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 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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

NII	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 if the valve is to be continuously energized for long periods of time.
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

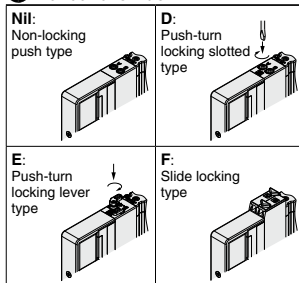
5	24 VDC
6	12 VDC

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	●	—	

* For the non-polar type, be careful of surge voltage intrusion.
Refer to page 706 for details.
* Only "Z" and "NZ" types are available with a power saving circuit.

10 Manual override



* Refer to page 423 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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 for base gasket and mounting screw part numbers.

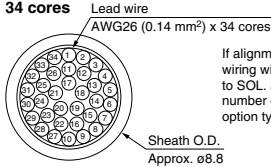
* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.

SY3000/5000/7000 Series

Electrical Wiring Specifications

Lead wire

34 cores



If alignment is not specified, the internal wiring will be double wiring (connected to SOL. a and SOL. b) regardless of number of stations, valve types, 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 $\text{M}\Omega/\text{km}, 20^\circ\text{C}$	10 or more

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

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

Positive common Negative common

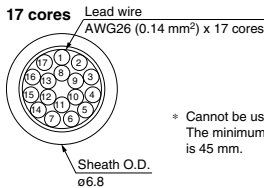
* For negative common specification, a valve for negative common or a valve without polarity should be used.

Specified Layout

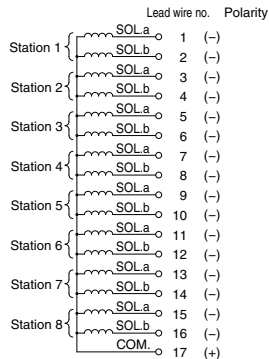
A mixture of single and double wiring can be specified on the manifold specification. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 32 or less. 1 solenoid is required for the 2-position single, and 2 solenoids for the 2-position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



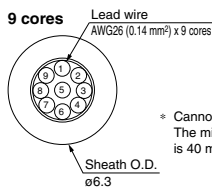
Positive common **Negative common**

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

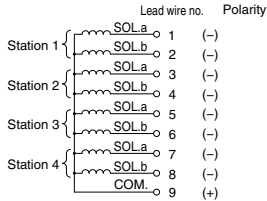
Lead wire color	Printed mark (Both sides)	
	Type	Color
Orange	—	Red Black
Light gray	—	Red Black
White	—	Red Black
Yellow	—	Red Black
Pink	—	Red Black
Orange	--	Red Black
Light gray	--	Red Black
White	--	Red Black
Yellow	--	Red

Electrical characteristics

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

Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base

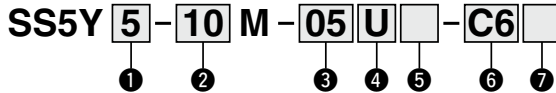
Circular Connector

SY3000/5000/7000 Series



How to Order Manifolds

Refer to pages 569 (SY5000) and 570 (SY7000) for the 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 574).

3 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring ^{*1}
⋮	⋮	
12	12 stations	
02	2 stations	Specified layout ^{*2} (Up to 24 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 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 the 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

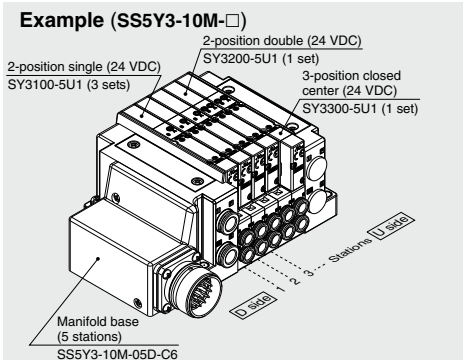
Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

* 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 into direct contact with water or other liquids.

Refer to the page on the right for 6.

How to Order Manifold Assembly



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 the assembly. Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

* When mixing top-ported configurations, select from those listed on page 483. In such cases, use caution as there is also output on the A and B ports on the base side. Specify on the manifold specification sheet if plugs are required for the A and B ports on the 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 the type 11 bottom-ported type.

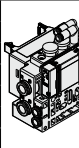
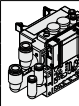
* Refer to page 708 for the fixation of DIN rail mounting type manifold.

DIN Rail Option


Nil	Standard length
0	Without DIN rail (with bracket)
3	For 3 stations
⋮	⋮
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 LM ^{*1}	Elbow ^{*2}	Straight port, mixed sizes	●	●	●	●			
			Upward	ø4	●	●		—	—
				ø6	●	●		●	—
		ø8		—	●	—		—	
		ø10		—	—	●		—	
		Downward	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"			

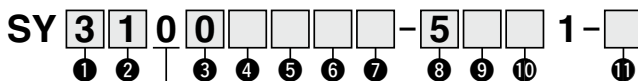
*1 Indicate the sizes on the manifold specification sheet in the case of "CM" or "LM."

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 (pages 617 to 619).

SY3000/5000/7000 Series

How to Order Valves (With mounting screw) Refer to page 404 for valve specifications.



• Base mounted

1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

		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 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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

NII	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 if the valve is to be continuously energized for long periods of time.

* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

5	24 VDC
6	12 VDC

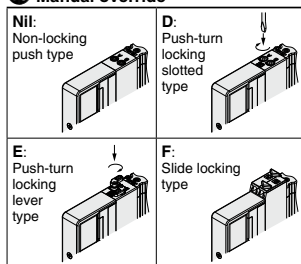
9 Light/surge voltage suppressor and common specification

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

* For the non-polar type, be careful of surge voltage intrusion. Refer to page 706 for details.

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

10 Manual override



* Refer to page 423 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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 for base gasket and mounting screw part numbers.

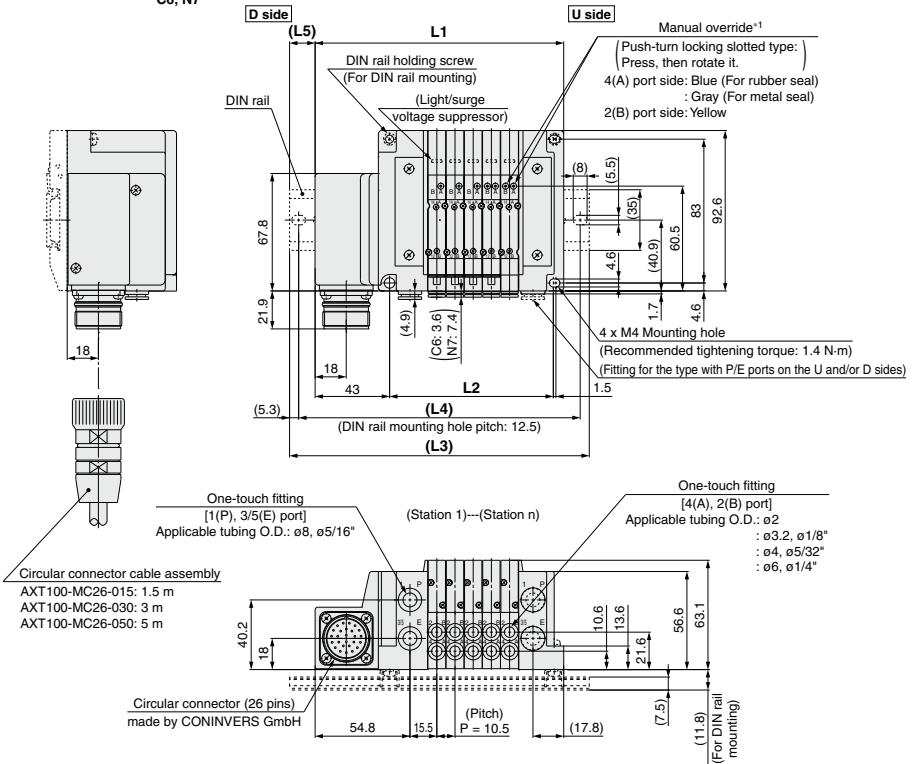
* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator, or double check spacer assembly with residual pressure release valve.

Dimensions: **SY3000 Series**

Plug-in
Connector Connecting Base

Type 10/Side Ported
Circular Connector

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



*1 Refer to page 566 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
 * These figures show the "SS5Y3-10M-05D-C6."
 * Refer to page 571 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	112	122.5	133	143.5	154	164.5	175	185.5	196	206.5	217	227.5	238	248.5	259	269.5	280	290.5	301	311.5	322	332.5	343
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252	262.5	273	283.5	294
L3	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	323	335.5	348	360.5	373			
L4	125	137.5	150	162.5	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	312.5	325	337.5	350	362.5			
L5	12	13	14	15	16	17	18	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12	13	14	15

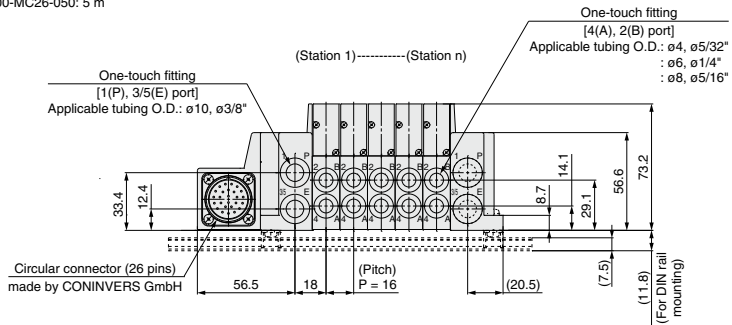
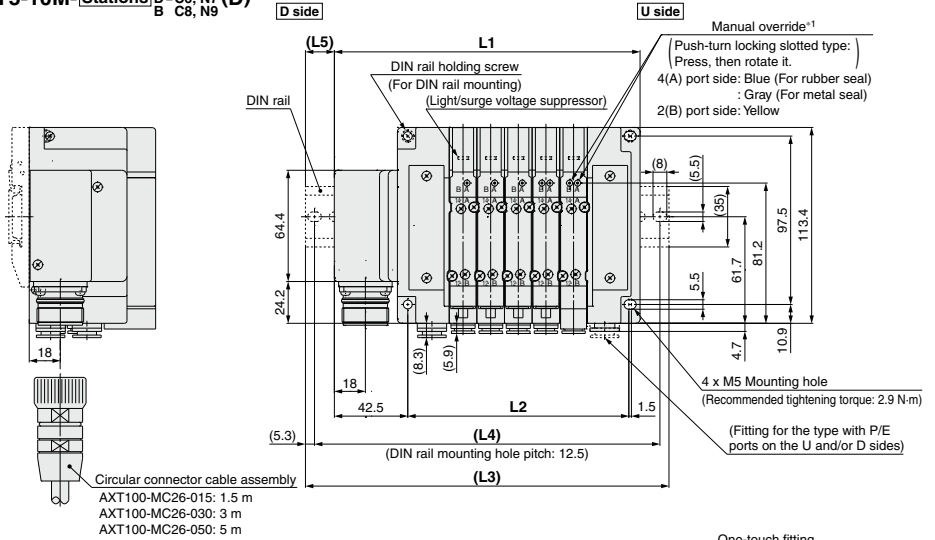
SY3000/5000/7000 Series

Dimensions: SY5000 Series

Plug-in Connector Connecting Base

Type 10/Side Ported Circular Connector

SS5Y5-10M-**Stations** U C4, N3
D C6, NT (D)
B C8, N9



- *1 Refer to page 567 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
- * These figures show the "SS5Y5-10M-05D-C8."
- * Refer to page 572 for dimensions of A or B port top-ported type.

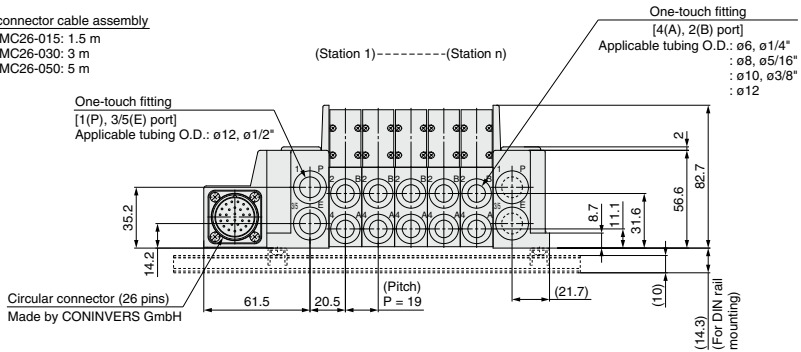
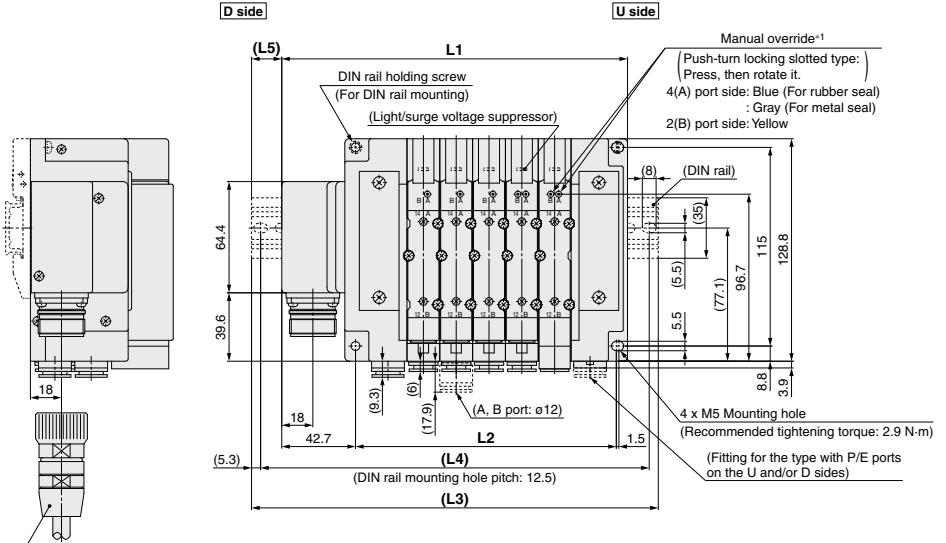
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	129	145	161	177	193	209	225	241	257	273	289	305	321	337	353	369	385	401	417	433	449	465	481
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
L3	160.5	173	185.5	210.5	223	235.5	260.5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

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



*1 Refer to page 568 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
* These figures show the "SS5Y7-10M-05D-C10."
* Refer to page 573 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 Manifolds

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

① ② ③ ④ ⑤ ⑥

Refer to pages 571 to 573 for the 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 (Up to 24 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 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 the 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", SUP/EXH block assembly with a built-in silencer, choose U or D for P, E port entry.

④ SUP/EXH block assembly

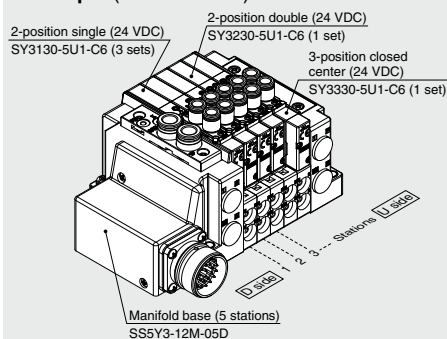
NII	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

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

* When the built-in silencer type is used, keep the exhaust port from coming into 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 the assembly. Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details 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.

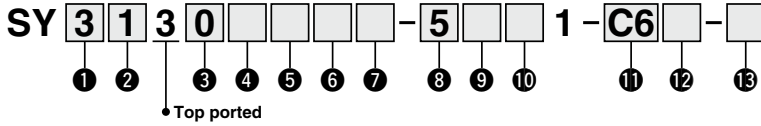
⑥ Mounting

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 708 for the fixation of DIN rail mounting type manifold.

How to Order Valves (With mounting screw)

Refer to page 404 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 the 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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

NII	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 if the valve is to be continuously energized for long periods of time.
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

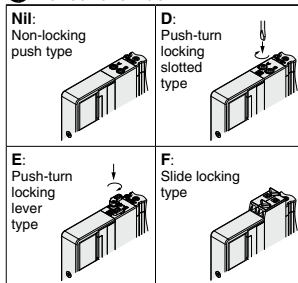
5	24 VDC
6	12 VDC

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	●	—	Negative common

* For the non-polar type, be careful of surge voltage intrusion.
Refer to page 706 for details.
* Only "Z" and "NZ" types are available with a power saving circuit.

10 Manual override



* Refer to page 423 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 (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.**

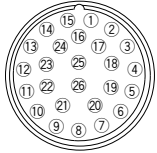
Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance. Refer to page 611 for base gasket and mounting screw part numbers.

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

SY3000/5000/7000 Series

Electrical Wiring Specifications

Circular connector



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.

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

Positive common Negative common

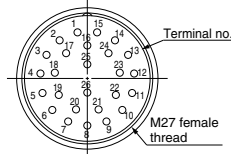
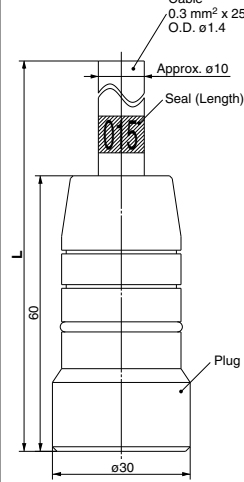
* When using a valve with no polarity, either positive common or negative common can be used.

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

Cable Assembly

015
AXT100-MC26-030
050



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

* Terminal no. 25 is connected to 25 inside the connector.

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.
	26 pins
1.5 m	AXT100-MC26-015
3 m	AXT100-MC26-030
5 m	AXT100-MC26-050

* Cannot be used for movable wiring
* Lengths other than the above is also available.

Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base

EX500 Gateway Decentralized System 2 (128 Points)

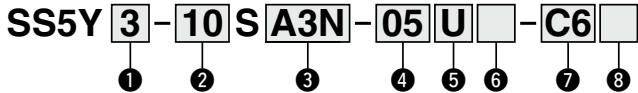
SY3000/5000/7000 Series

The EX500 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.



How to Order Manifolds

Refer to pages 569 (SY5000) and 570 (SY7000) for the dimensions of Type 11/Bottom-ported type.



1 Series

3	SY3000
5	SY5000
7	SY7000

* For mixed mounting, refer to page 574 and later.

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 574).

* When mixing top-ported configurations, select from those listed on page 499. In such cases, use caution as there is also output on the A and B ports on the base side. Specify on the manifold specification sheet if plugs are required for the A and B ports on the base side.

3 SI unit (Number of outputs, Output polarity, Max. number of valve stations)

0	Without SI unit
A3N	32 outputs*1*4, 2 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).

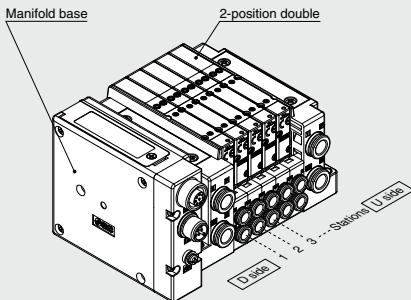
4 Valve stations

	Stations	Note
02	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 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 the 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 the assembly.
 Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold base part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details 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 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 into direct contact with water or other liquids.

* A separate GW unit and communication cable are required.

For details on the EX500 Gateway Type Serial Transmission System, refer to the **Web Catalog** and the **Operation Manual**. For the part numbers of the SI units to be mounted, refer to page 597. Please download the Operation Manual via the SMC website, <https://www.smccworld.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	C12	ø12	—	●	●	
		CM ^{*1}	Mixed sizes	●	●	●	
		L4	ø4	●	●	—	—
		L6	ø6	●	●	—	—
		L8	ø8	—	●	●	—
		L10	ø10	—	—	●	—
	Downward	L12	ø12	—	●	—	
		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"	●	—	—	
	Downward	BN7	ø1/4"	●	●	—	
		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 a downward elbow port when mounting the optional spacer assembly (pages 617 to 619).

*3 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.

8 Mounting and Option

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

*1 Refer to "DIN Rail Option" below.

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

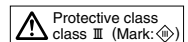
DIN Rail Option

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
⋮	⋮
24 ^{*1}	With DIN bracket, DIN rail for 24 stations

*1 Specify a longer rail than the length of valve stations.

* If the DIN rail must be mounted without an SI unit, select "D0" and order the DIN rail separately. Refer to L3 of the dimensions for the DIN rail length. Refer to page 616 for the DIN rail part number.

* Refer to page 708 for the fixation of DIN rail mounting type manifold.



SY3000/5000/7000 Series

How to Order Valves (With mounting screw) Refer to page 404 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

Nii	Internal pilot
R	External pilot

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

5 Back pressure check valve

Nii	None
H ^{*1}	Built-in

*1 Select the rubber seal type when the back pressure check valve is built-in. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 "Nii" for the 3-position type or 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 the 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 if the valve is to be 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 705.

8 Rated voltage

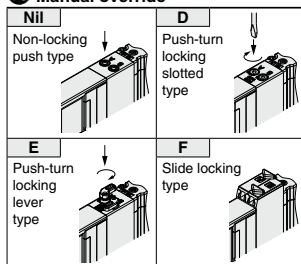
5	24 VDC
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9 Light/surge voltage suppressor and common specification

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

* Select "NZ" for models with a power saving circuit.

10 Manual override



* Refer to page 423 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 (Drop prevention type) ^{*1}
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 for base gasket and mounting screw part numbers.

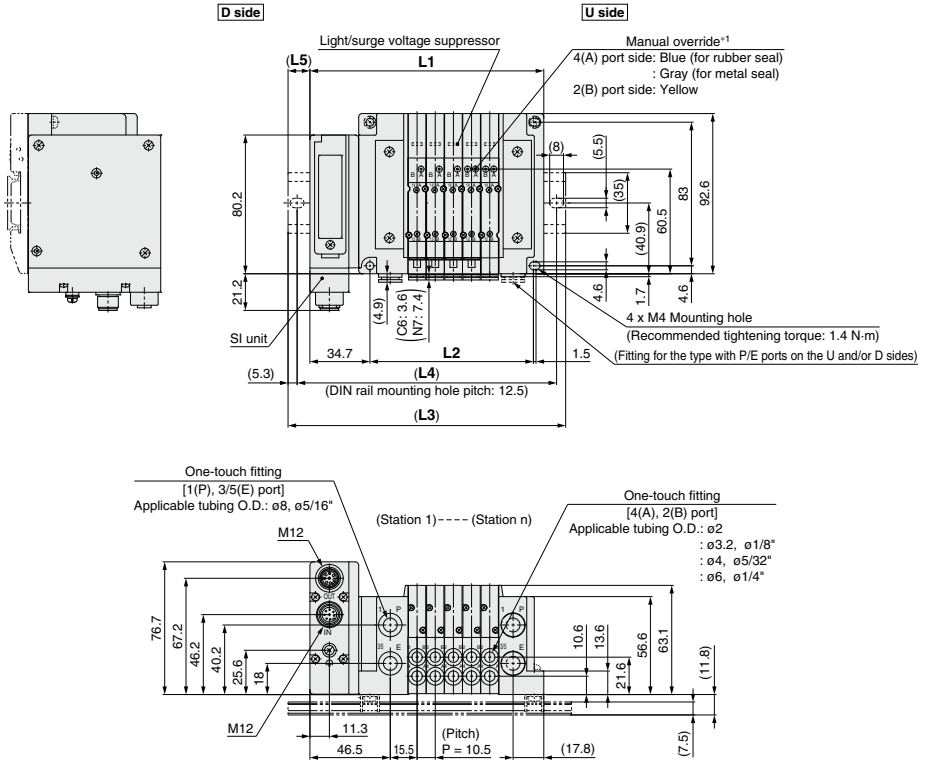
* Select "Nii" or "K" for the optional individual SUP/EXH spacer assembly, interface regulator, or double check spacer assembly with residual pressure release valve.

Dimensions: SY3000 Series

Plug-in Connector Connecting Base

Type 10/Side Ported
EX500 (128 Points)

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



*1 Refer to page 566 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
 * These figures show the "SS5Y3-10SA3N-05D-C6."
 * Refer to page 571 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

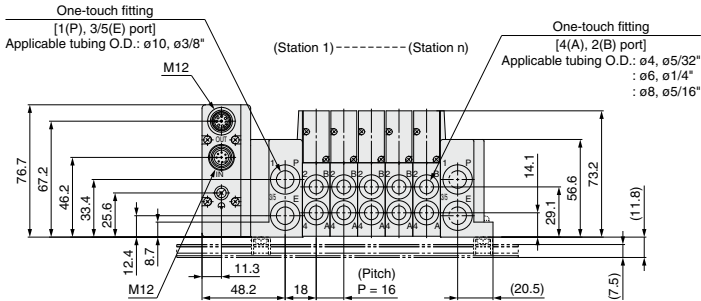
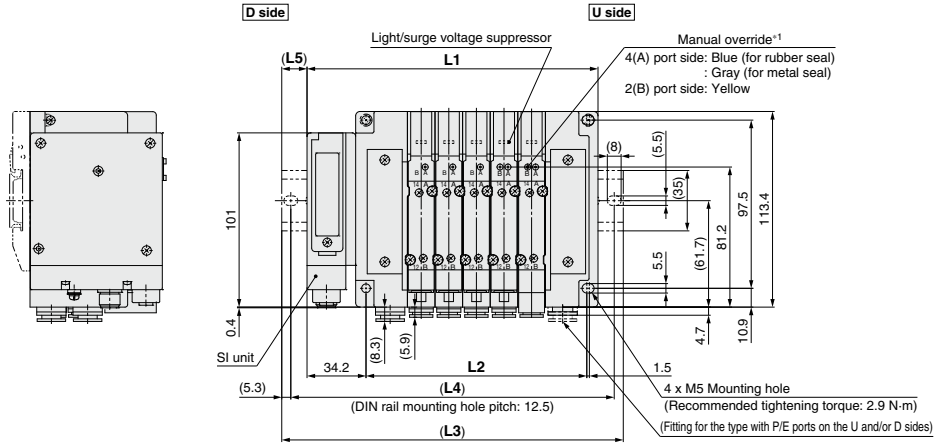
SY3000/5000/7000 Series

Dimensions: **SY5000 Series**

Plug-in
Connector Connecting Base

Type 10/Side Ported
EX500 (128 Points)

SS5Y5-10SA3N- Stations $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D-C6} & \text{N7 (D)} \\ \text{B} & \text{C8, N9} \end{matrix}$



*1 Refer to page 567 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
 * These figures show the "SS5Y5-10SA3N-05D-C8."
 * Refer to page 572 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

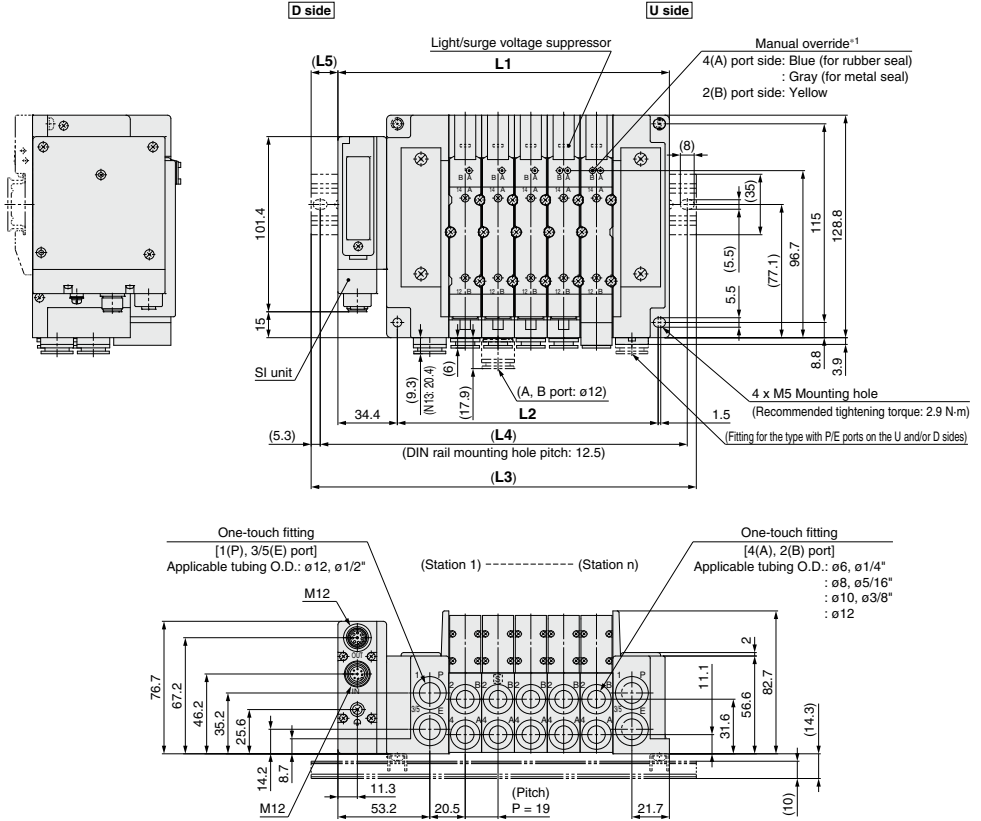
L \ n	17	18	19	20	21	22	23	24
L1	360.7	376.7	392.7	408.7	424.7	440.7	456.7	472.7
L2	320	336	352	368	384	400	416	432
L3	385.5	410.5	423	435.5	448	473	485.5	498
L4	375	400	412.5	425	437.5	462.5	475	487.5
L5	12.5	17	15	13.5	11.5	16	14.5	12.5

Dimensions: SY7000 Series

Plug-in Connector Connecting Base

Type 10/Side Ported
EX500 (128 Points)

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



*1 Refer to page 568 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
* These figures show the "SS5Y7-10SA3N-05D-C10."
* Refer to page 573 for dimensions of A or B port top-ported type.

L: Dimensions

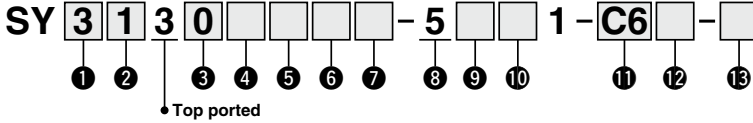
n: Stations

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

How to Order Valves (With mounting screw)

Refer to page 404 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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 "NII" for the 3-position type or 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 the 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 if the valve is to be continuously energized for long periods of time.

*2 Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

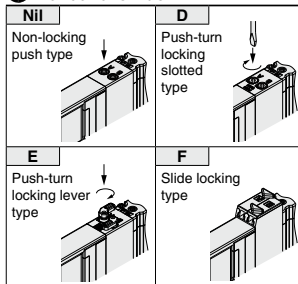
5	24 VDC
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9 Light/surge voltage suppressor and common specification

	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		
NS	—		
NZ	●		

* Select "NZ" for models with a power saving circuit.

10 Manual override



* Refer to page 423 for 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

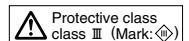
NII	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Drop prevention type ¹)
H	Hexagon socket head cap screw (Drop prevention type ¹)

*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. Refer to page 611 for base gasket and mounting screw part numbers.

* Select "NII" or "K" for the optional individual SUP/EXH spacer assembly or interface regulator.



Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base

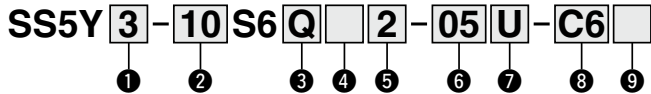


EX600

RoHS

SY3000/5000/7000 Series

How to Order Manifolds



Refer to pages 569 (SY5000) and 570 (SY7000) for the 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 574).

3 SI unit

0	Without SI unit
Q	DeviceNet®
N	PROFIBUS DP
V	CC-Link
EB	EtherNet/IP™ (IO-Link unit)
DA	EtherCAT (IO-Link unit)
FA	PROFINET (IO-Link unit)
FB	PROFINET (OPC UA, IO-Link unit) Only negative common
WE	EtherNet/IP™ compatible wireless base* ¹
WF	PROFINET compatible wireless base* ¹
WS	Wireless remote* ¹

*1 The wireless system is suitable for use only in a country where it is in accordance with the Radio Act and regulations of that country.
* I/O unit cannot be mounted without SI unit.
* Valve plate which connects manifold and SI unit is included, but it is not mounted to a valve without SI unit. For mounting, refer to the EX600 series in the **Web Catalog**.

4 SI unit output polarity, end plate type

SI unit output polarity	M12 power supply connector B-coded (EX600-ED2)	7/8 inch power supply connector (EX600-ED3)	M12 power supply connector IN/OUT, A-coded	
			Pin arrangement 1 (EX600-ED4)	Pin arrangement 2 (EX600-ED5)
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.
* When not selecting an SI unit, the symbol will be "nil."

5 I/O unit stations

Nil	None
1	1 station
⋮	⋮
9	9 stations

* When not selecting an SI unit, the symbol will be "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 (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 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 the 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 the type 11 bottom-ported type.
* Refer to page 708 for the fixation of DIN rail mounting type manifold.

DIN Rail Option

Nil	Standard length	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations.
⋮	⋮	
24	For 24 stations	

* 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 616 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)	D	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 into direct contact with water or other liquids.

Refer to the page on the right for 8.

For details on the EX600 Integrated Type (For Input/Output) Serial Transmission System, refer to the **Web Catalog** and the Operation Manual. For the part numbers of the SI units to be mounted, refer to page 600. (IP40 specifications may be required according to the I/O unit to be selected.) Please download the Operation Manual via the SMC website, <https://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	ø12	—	—	●	●	
CM ^{*1}	Straight port, mixed sizes	●	●	●	●	
L4 L6 L8 L10 L12	Upward	ø4	●	●	—	—
		ø6	●	●	—	—
		ø8	—	—	—	—
		ø10	—	—	●	—
		ø12	—	—	●	—
		ø12	—	—	●	—
B4 B6 B8 B10 B12	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" 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.

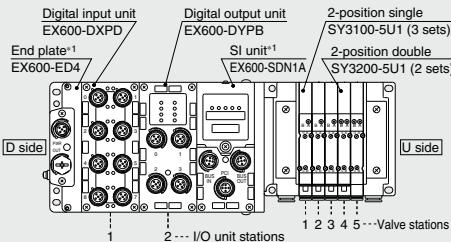
*2 To avoid interference with the body or piping, select a downward elbow port when mounting the optional spacer assembly (pages 617 to 619).

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	Upward	ø5/32"	●	—	—	—
		ø1/4"	●	●	—	—
		ø5/16"	—	—	—	—
		ø3/8"	—	—	●	—
		ø5/32"	●	—	—	—
		ø3/8"	—	—	—	—
BN3 BN7 BN9 BN11	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"

How to Order Manifold Assembly

Example (SS5Y3-10S6□-□)

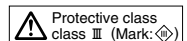


SS5Y3-10S6Q72-05B-C6... 1 set (Type 10 5-station manifold base part no.)
 *SY3100-5U1 3 sets (2-position single part no.)
 *SY3200-5U1 2 sets (2-position double part no.)
 *EX600-DXPD 1 set I/O unit part number (Station 1)
 *EX600-DYPB 1 set I/O unit part number (Station 2)

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

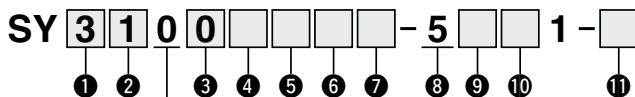
- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted, then the I/O units in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the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

- *1 Do not enter the SI unit part number and the end plate part number together.
- * When mixing top-porting configurations, select from those listed on page 513. In such cases, use caution as there is also output on the A and B ports on the base side. Specify on the manifold specification sheet if plugs are required for the A and B ports on the base side.



SY3000/5000/7000 Series

How to Order Valves (With mounting screw) Refer to page 404 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 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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

NII	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 if the valve is to be continuously energized for long periods of time.

* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

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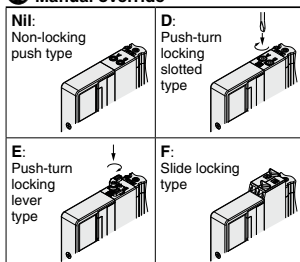
9 Light/surge voltage suppressor and common specification

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

* Select "R," "U," "S," or "Z" for the valve when the SI unit output polarity is positive common. Select "R," "U," "NS," or "NZ" for the valve when the SI unit output polarity is negative common.

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

10 Manual override



* Refer to page 423 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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 for base gasket and mounting screw part numbers.

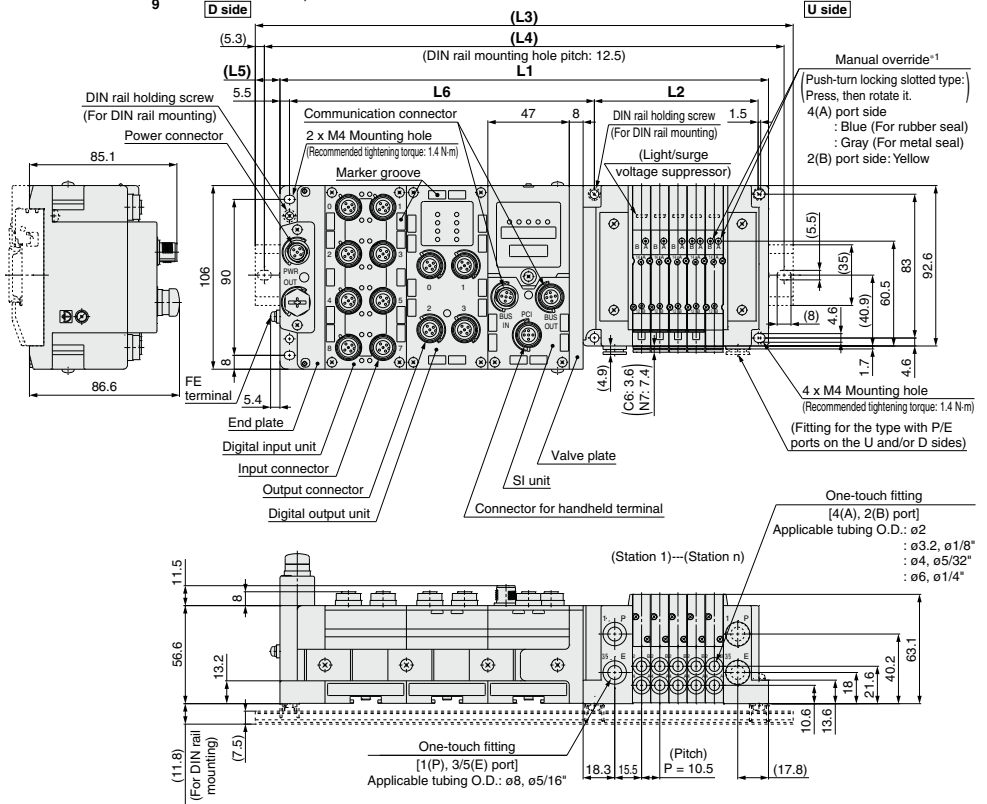
* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator, or double check spacer assembly with residual pressure release valve.

Dimensions: SY3000 Series

Plug-in Connector Connecting Base

Type 10/Side Ported
EX600 (M12 Connector)

SS5Y3-10S6 □ □ □ □ Stations U C2
B C3, N1 (D)
C4, N3
C6, N7



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

n1: Valve stations
n2: I/O unit stations

- *1 Refer to page 566 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
- * These figures show the "SS5Y3-10S6Q22-05D-C6."
- * Refer to page 571 for dimensions of A or B port top-ported type.

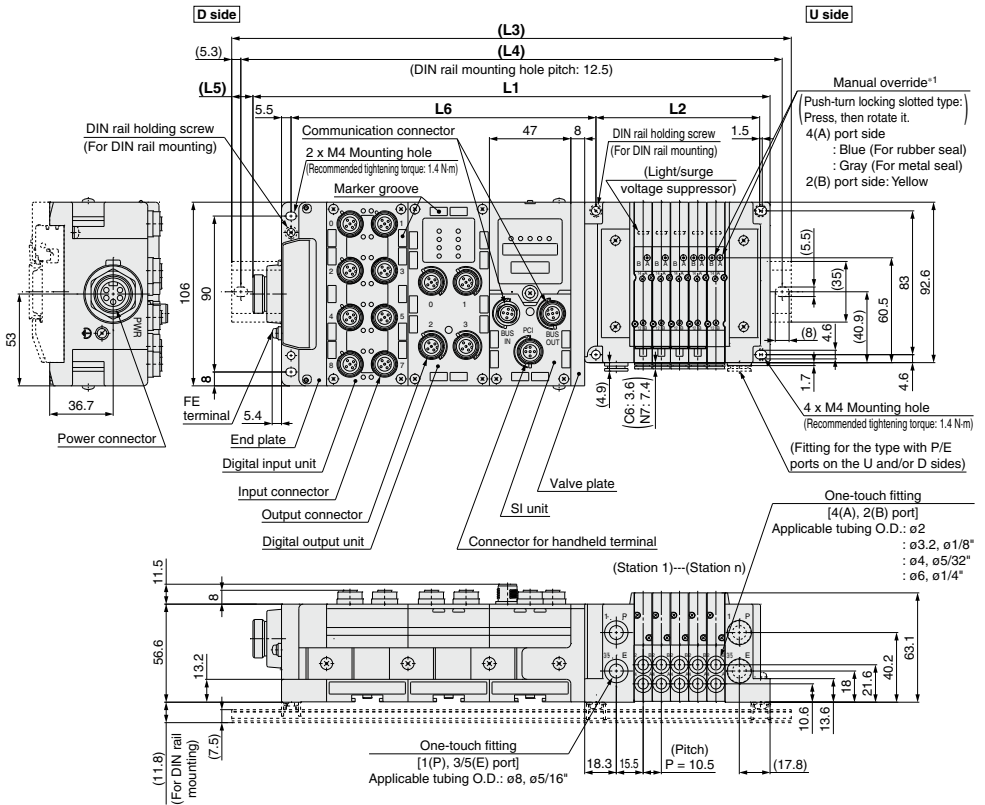
L3: DIN Rail Overall Length

I/O unit stations (n2) \ Valve stations (n1)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423
1	235.5	248	248	260.5	273	285.5	298	310.5	323	323	335.5	348	360.5	373	385.5	385.5	398	410.5	423	435.5	448	448	460.5
2	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	410.5	423	435.5	448	460.5	473	485.5	498	498	510.5
3	323	335.5	348	360.5	373	385.5	398	398	410.5	423	435.5	448	448	460.5	473	485.5	498	510.5	510.5	523	535.5	548	560.5
4	373	385.5	398	410.5	410.5	423	435.5	448	460.5	473	473	485.5	498	510.5	523	535.5	548	548	560.5	573	585.5	598	610.5
5	423	435.5	448	448	460.5	473	485.5	498	510.5	510.5	523	535.5	548	560.5	573	573	585.5	598	610.5	623	635.5	648	648
6	473	473	485.5	498	510.5	523	535.5	548	560.5	573	585.5	598	610.5	610.5	623	635.5	648	660.5	673	673	685.5	698	698
7	510.5	523	535.5	548	560.5	573	573	585.5	598	610.5	623	635.5	648	660.5	673	685.5	698	698	710.5	723	735.5	748	748
8	560.5	573	585.5	598	598	610.5	623	635.5	648	660.5	673	673	685.5	698	710.5	723	735.5	748	760.5	773	785.5	798	798
9	610.5	623	635.5	635.5	648	660.5	673	685.5	698	698	710.5	723	735.5	748	760.5	760.5	773	785.5	798	810.5	823	835.5	835.5

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 □ $\frac{3}{8}$ □ - Stations $\begin{matrix} U \\ D \end{matrix} \begin{matrix} C2 \\ C3, N1 \\ C4, N3 \\ C6, N7 \end{matrix} (D)$



$$L1 = 10.5 \times n1 + 152 + 47 \times n2$$

$$L2 = 10.5 \times n1 + 42$$

$$L4 = L3 - 10.5$$

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

$$L6 = 47 \times n2 + 82$$

n1: Valve stations
n2: I/O unit stations

L3: DIN Rail Overall Length

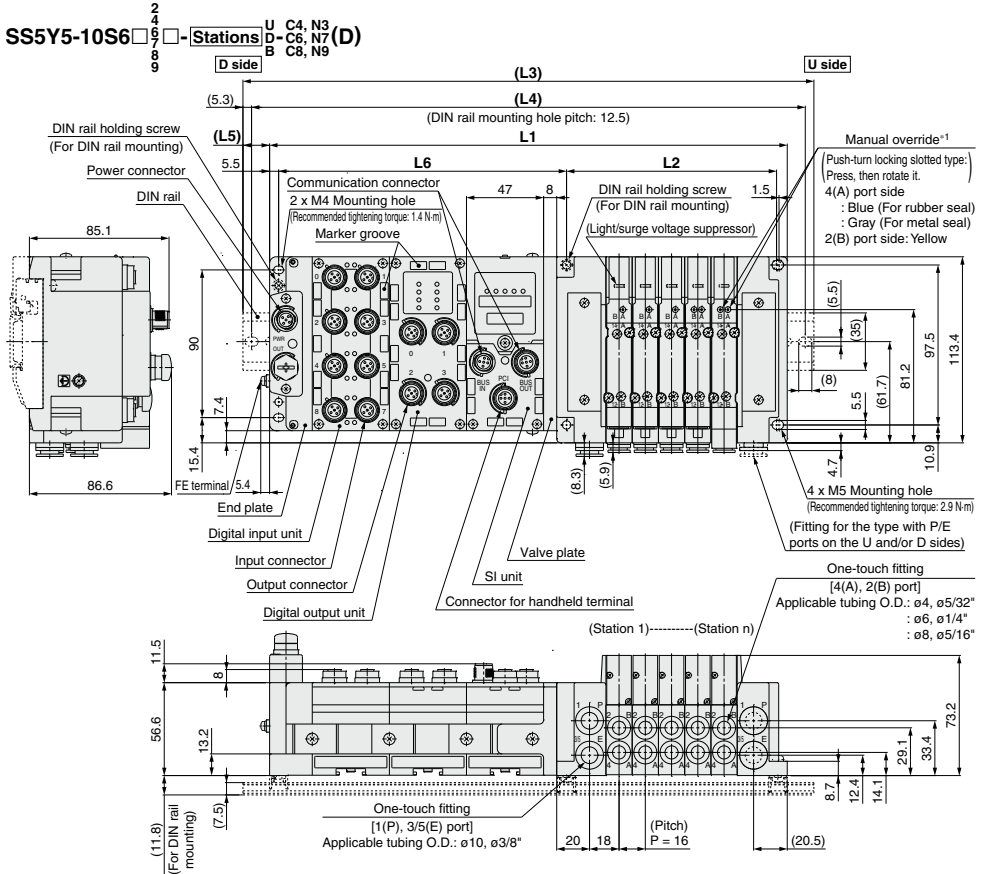
I/O unit stations (n2)	Valve stations (n1)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0		198	210.5	223	235.5	248	260.5	260.5	273	285.5	298	310.5	323	323	335.5	348	360.5	373	385.5	385.5	398	410.5	423	435.5
1		248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	360.5	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5
2		298	310.5	323	323	335.5	348	360.5	373	385.5	385.5	398	410.5	423	435.5	448	448	460.5	473	485.5	498	510.5	523	523
3		348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523	535.5	548	560.5	573	573
4		385.5	398	410.5	423	435.5	448	448	460.5	473	485.5	498	510.5	510.5	523	535.5	548	560.5	573	585.5	585.5	598	610.5	623
5		435.5	448	460.5	473	485.5	485.5	498	510.5	523	535.5	548	548	560.5	573	585.5	598	610.5	610.5	623	635.5	648	660.5	673
6		485.5	498	510.5	510.5	523	535.5	548	560.5	573	573	585.5	598	610.5	623	635.5	648	648	660.5	673	685.5	698	710.5	710.5
7		535.5	548	548	560.5	573	585.5	598	610.5	610.5	623	635.5	648	660.5	673	673	685.5	698	710.5	723	735.5	748	760.5	760.5
8		573	585.5	598	610.5	623	635.5	648	660.5	673	685.5	698	710.5	710.5	723	735.5	748	760.5	773	773	785.5	798	810.5	810.5
9		623	635.5	648	660.5	673	673	685.5	698	710.5	723	735.5	735.5	748	760.5	773	785.5	798	798	810.5	823	835.5	848	860.5

*1 Refer to page 566 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
* These figures show the "SS5Y3-10S6Q32-05D-C6".
* Refer to page 571 for dimensions of A or B port top-ported type.

Dimensions: SY5000 Series

Plug-in Connector Connecting Base

Type 10/Side Ported
EX600 (M12 Connector)



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

n1: Valve stations
 n2: I/O unit stations

*1 Refer to page 567 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
 * These figures show the "SS5Y5-10S6Q22-05D-C8".
 * Refer to page 572 for dimensions of A or B port top-ported type.

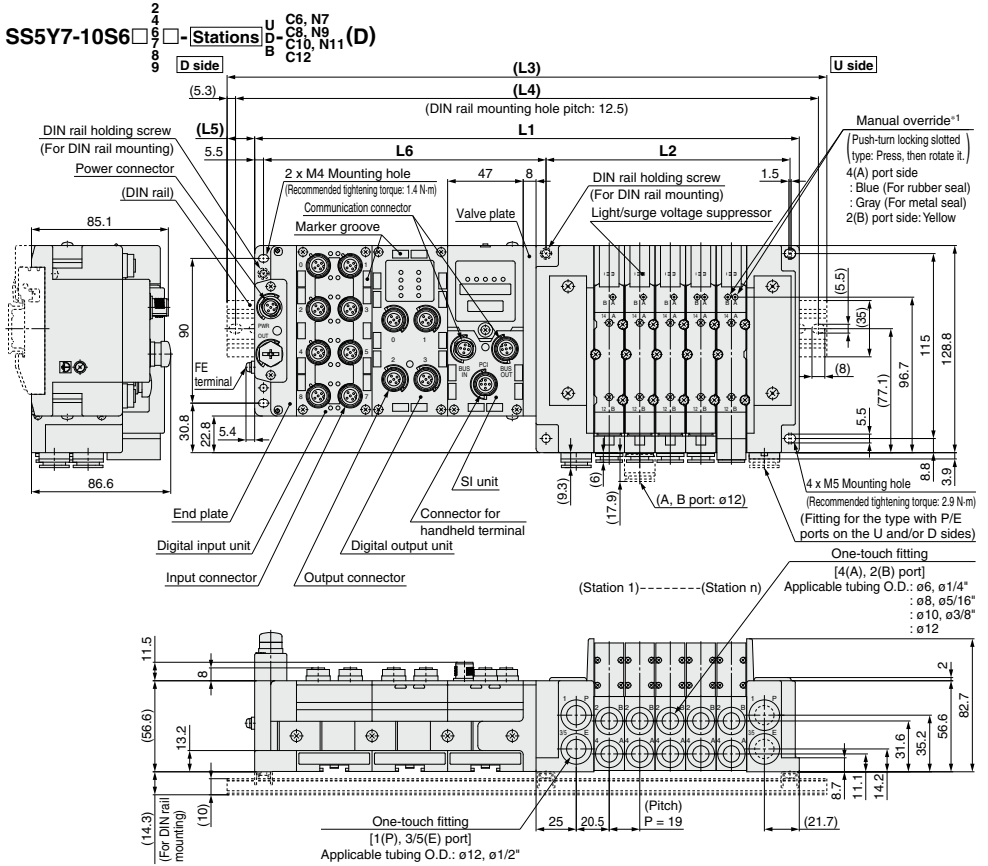
L3: DIN Rail Overall Length

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	223	235.5	248	273	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	560.5
1		248	260.5	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598
2		298	310.5	323	348	360.5	373	398	410.5	423	435.5	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	623	635.5	648
3		348	360.5	373	398	410.5	423	435.5	460.5	473	485.5	498	523	535.5	548	573	585.5	598	610.5	635.5	648	660.5	685.5	698
4		385.5	410.5	423	435.5	460.5	473	485.5	498	523	535.5	548	573	585.5	598	610.5	635.5	648	660.5	673	698	710.5	723	748
5		435.5	448	473	485.5	498	523	535.5	548	560.5	585.5	598	610.5	635.5	648	660.5	673	698	710.5	723	748	760.5	773	785.5
6		485.5	498	523	535.5	548	560.5	585.5	598	610.5	623	648	660.5	673	698	710.5	723	735.5	760.5	773	785.5	810.5	823	835.5
7		535.5	548	560.5	585.5	598	610.5	623	648	660.5	673	698	710.5	723	735.5	760.5	773	785.5	798	823	835.5	848	873	885.5
8		573	598	610.5	623	648	660.5	673	685.5	710.5	723	735.5	760.5	773	785.5	798	823	835.5	848	873	885.5	898	910.5	935.5
9		623	648	660.5	673	685.5	710.5	723	735.5	748	773	785.5	798	823	835.5	848	860.5	885.5	898	910.5	935.5	948	960.5	973

Dimensions: SY7000 Series

Plug-in Connector Connecting Base

Type 10/Side Ported EX600 (M12 Connector)



*1 Refer to page 568 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
* These figures show the "SS5Y7-10S6Q22-05D-C10."
* Refer to page 573 for dimensions of A or B port top-ported type.

L3: DIN Rail Overall Length

I/O unit stations (n2)	Valve stations (n1)																							
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
0	223	235.5	260.5	273	298	310.5	335.5	348	373	385.5	410.5	423	448	460.5	485.5	498	523	535.5	560.5	573	598	610.5	635.5	
1	260.5	285.5	298	323	335.5	360.5	373	398	410.5	435.5	448	473	498	510.5	535.5	548	573	585.5	610.5	623	648	660.5	685.5	
2	310.5	335.5	348	373	385.5	410.5	423	448	460.5	485.5	498	523	535.5	560.5	573	598	610.5	635.5	648	673	685.5	710.5	723	
3	360.5	373	398	410.5	435.5	448	473	485.5	510.5	523	548	573	585.5	610.5	623	648	660.5	685.5	698	723	735.5	760.5	773	
4	410.5	423	448	460.5	485.5	498	523	535.5	560.5	573	598	610.5	635.5	648	673	685.5	710.5	723	748	760.5	785.5	798	823	
5	448	473	485.5	510.5	523	548	560.5	585.5	598	623	648	660.5	685.5	698	723	735.5	760.5	773	798	810.5	835.5	848	873	
6	498	523	535.5	560.5	573	598	610.5	635.5	648	673	685.5	710.5	723	748	760.5	785.5	798	823	835.5	860.5	873	898	923	
7	548	560.5	585.5	598	623	635.5	660.5	673	698	723	735.5	760.5	773	798	810.5	835.5	848	873	885.5	910.5	923	948	960.5	
8	598	610.5	635.5	648	673	685.5	710.5	723	748	760.5	785.5	798	823	835.5	860.5	873	898	910.5	935.5	948	973	—	—	
9	635.5	660.5	673	698	710.5	735.5	748	773	798	810.5	835.5	848	873	885.5	910.5	923	948	960.5	985.5	—	—	—	—	

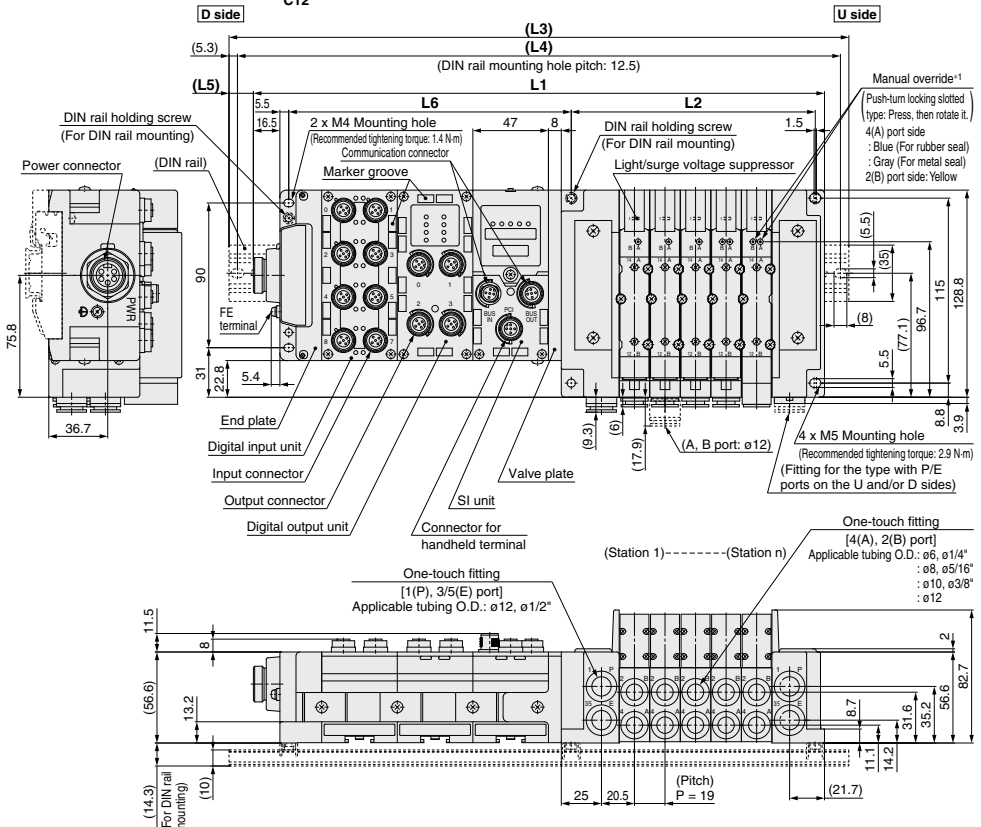
SY3000/5000/7000 Series

Dimensions: **SY7000 Series**

Plug-in Connector Connecting Base

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

SS5Y7-10S6 □ $\frac{3}{5}$ □ - Stations $\frac{U}{D}$ C6, N7
C8, N9
C10, N11 (D)
C12



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 568 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
* These figures show the "SS5Y7-10S6Q32-05D-C10".
* Refer to page 573 for dimensions of A or B port top-ported type.

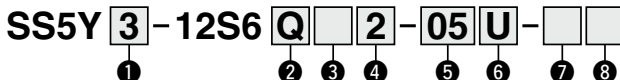
L3: DIN Rail Overall Length

I/O 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	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	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	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	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	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	4	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	5	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	6	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	6	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	6	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	—	—	—	—	—	

SY3000/5000/7000 Series

How to Order Manifolds

Refer to pages 571 to 573 for the dimensions of Type 12/Top ported type.



1 Series

3	SY3000
5	SY5000
7	SY7000

3 SI unit output polarity, end plate type

SI unit output polarity	M12 power supply connector B-coded (EX600-ED2)		7/8 inch power supply connector (EX600-ED3)		M12 power supply connector IN/OUT, A-coded	
	Pin arrangement 1 (EX600-ED4)		Pin arrangement 2 (EX600-ED5)			
Without SI unit	Nil					
SI unit positive common	2	3	6	8		
SI unit negative common	4	5	7	9		

- * When not selecting an SI unit, the symbol will be "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
EB	EtherNet/IP™ (IO-Link unit)
DA	EtherCAT (IO-Link unit)
FA	PROFINET (IO-Link unit)
FB	PROFINET (OPC UA, IO-Link unit) Only negative common
WE	EtherNet/IP™ compatible wireless base*1
WF	PROFINET compatible wireless base*1
WS	Wireless remote*1

- *1 The wireless system is suitable for use only in a country where it is in accordance with the Radio Act and regulations of that country.
- * I/O unit cannot be mounted without SI unit.
- * Valve plate which connects manifold and SI unit is included, but it is not mounted to a valve without SI unit. For mounting, refer to the EX600 series in the **Web Catalog**.

4 I/O unit stations

Nil	None
1	1 station
:	:
:	:
9	9 stations

- * When not selecting an SI unit, the symbol will be "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.

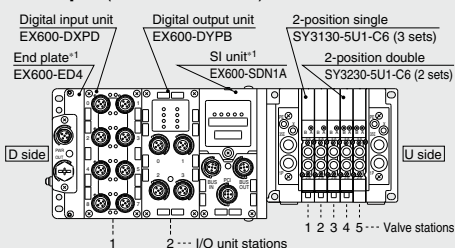
5 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
16	16 stations	Specified layout*2 (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 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 the blanking plate assembly.

How to Order Manifold Assembly

Example (SS5Y3-12S6□-□)



SS5Y3-12S6Q72-05B	.....	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 the assembly. Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted, then the I/O units in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details 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.
- * The P and E ports are only available on the U and D sides for the built-in silencer type. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of the P and E port entry. (Example: When the P and E port entry is on the D side, the silencer exhaust port is on the U side.)
- * When the built-in silencer type is used, keep the exhaust port from coming into direct contact with water or other liquids.

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

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

- * For N, sizes are in inches.

8 Mounting

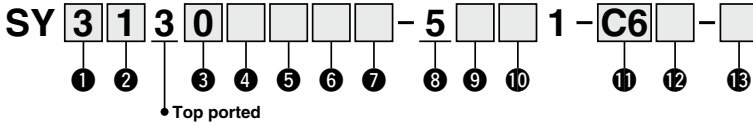
Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations Specify a length longer
:	than that of the standard
D24	For 24 stations rail.

- * 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 616 for the DIN rail part number.)
- * Refer to page 708 for the fixation of DIN rail mounting type manifold.

For details on the EX600 Integrated Type (For Input/Output) Serial Transmission System, refer to the **Web Catalog** and the Operation Manual. For the part numbers of the SI units to be mounted, refer to page 600. (IP40 specifications may be required according to the I/O unit to be selected.) Please download the Operation Manual via the SMC website, <https://www.smcworld.com>

How to Order Valves (With mounting screw)

Refer to page 404 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 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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

5 Back pressure check valve

Nii	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 if the valve is to be continuously energized for long periods of time.
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

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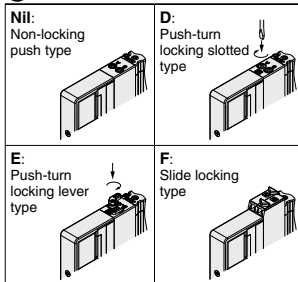
9 Light/surge voltage suppressor and common specification

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

* Select "R," "U," "S," or "Z" for the valve when the SI unit output polarity is positive common. Select "R," "U," "NS," or "NZ" for the valve when the SI unit output polarity is negative common.

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

10 Manual override



* Refer to page 423 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

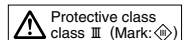
Nii	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Drop prevention type)
H	Hexagon socket head cap screw (Drop prevention type)

* 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. Refer to page 611 for base gasket and mounting screw part numbers.

* "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

EX245



SY3000/5000/7000 Series



How to Order Manifold

Side Ported/Bottom Ported

SS5Y 3 - 10 S AAN - 05 D - C6



Refer to pages 569 (SY5000) and 570 (SY7000) for the dimensions of Type 11/Bottom-ported type.

Only direct mounting is selectable for the manifold.

1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type

10	Side ported
11 ^{*1}	Bottom ported

*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 574).

5 Number of I/O modules

Nil	Without I/O module (Without SI Unit)
1	1 station
⋮	⋮
8	8 stations

6 Valve stations (In the case of the 32-output SI Unit)

Symbol	Stations	Note
02	2 stations	Double wiring ^{*1}
⋮	⋮	
16	16 stations	
02	2 stations	Specified layout ^{*2} (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.)

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

7 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)

8 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.

*4: 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 EX245 Integrated-type (For Input/Output) Serial Transmission System, refer to the **Web Catalog** and the **Operation Manual**. For details about part numbers of SI Units to be mounted, refer to pages 602 and 603. Please download the **Operation Manual** via SMC website, <https://www.smcworld.com>

3 SI Unit specifications

Symbol (output polarity) (Negative common (PNP))	Protocol	Communication connector	Power supply connector
0		Without SI Unit	
AAN	PROFINET	Push/Pull (SCRJ): 2 pcs.	Push/Pull (24 V): 2 pcs.
ABN		Push/Pull (RJ45): 2 pcs.	Push/Pull (24 V): 2 pcs.
ACN		M12: 2 pcs.	7/8 inch: 2 pcs.

*: The valve output polarity for the SI unit is negative common (PNP).

4 With or without I/O modules

Nil	Without I/O module
Y	With I/O module

9 A, B port size (Metric)

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

A, B port size (Inch)

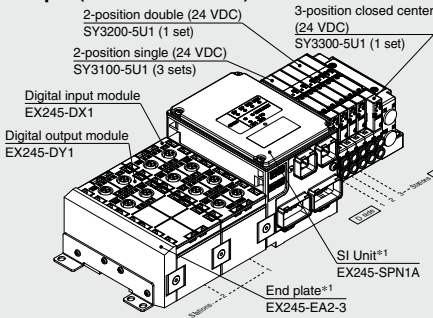
Symbol	A, B port	10 (Side ported) series			11 (Bottom ported) series	
		SY3000	SY5000	SY7000	SY5000	SY7000
N1	ø1/8"	●	—	—	—	—
N3	ø5/32"	●	●	—	●	—
N7	ø1/4"	●	●	●	●	●
N9	ø5/16"	—	●	—	●	—
N11	ø3/8"	—	—	●	—	●
CM ^{*2}	Straight port, mixed sizes	●	●	●	●	●
LN3	Upward	ø5/32"	●	—	—	—
LN7		ø1/4"	●	●	—	—
LN9	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

*1: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 617 to 620).

*2: When using mixed sizes for the A and B ports, please indicate so on the separate manifold specification sheet.

How to Order Manifold Assembly

Example (SS5Y3-10SAAN-□)



SS5Y3-10SAANY2-05D-C6 ...1 set (Type 10 5-station manifold base part no.)

- *SY3100-5U13 sets (2-position single part no.)
- *SY3200-5U11 set (2-position double part no.)
- *SY3300-5U11 set (2-position closed center part no.)
- *EX245-DX11set I/O module part no.
- *EX245-DY11set I/O module part no.

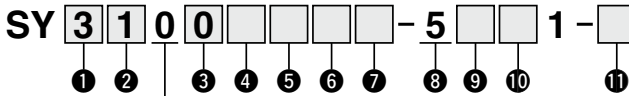
—The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

- * The valve arrangement is numbered as the 1st station from the D side.
- * The I/O module station arrangement is numbered starting from the SI unit side.
- * Under the manifold part number, state the valves to be mounted, then the I/O module 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 521. 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 404 for valve specifications.



• Base mounted

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	N.C./N.C.
B*1	dual 3-port	N.O./N.O.
C*1	dual 3-port	N.C./N.O.

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

3 Seal type

0	Rubber seal
1	Metal seal

4 Pilot type

NII	Internal pilot
R	External pilot

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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 625 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 or 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 705 for details.

8 Rated voltage

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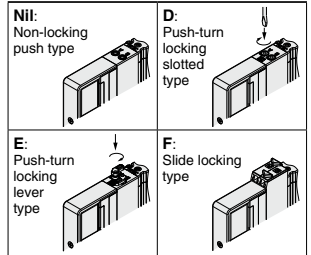
9 Light/surge voltage suppressor and common specification

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

*: "R" and "U" are applicable for every SI Unit.

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

10 Manual override



*: Refer to page 423 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)

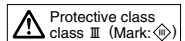
*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

*: **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 611 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.

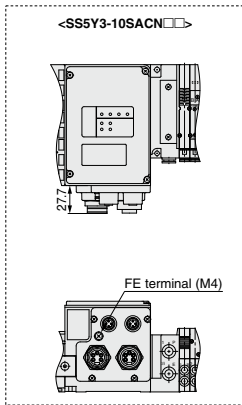
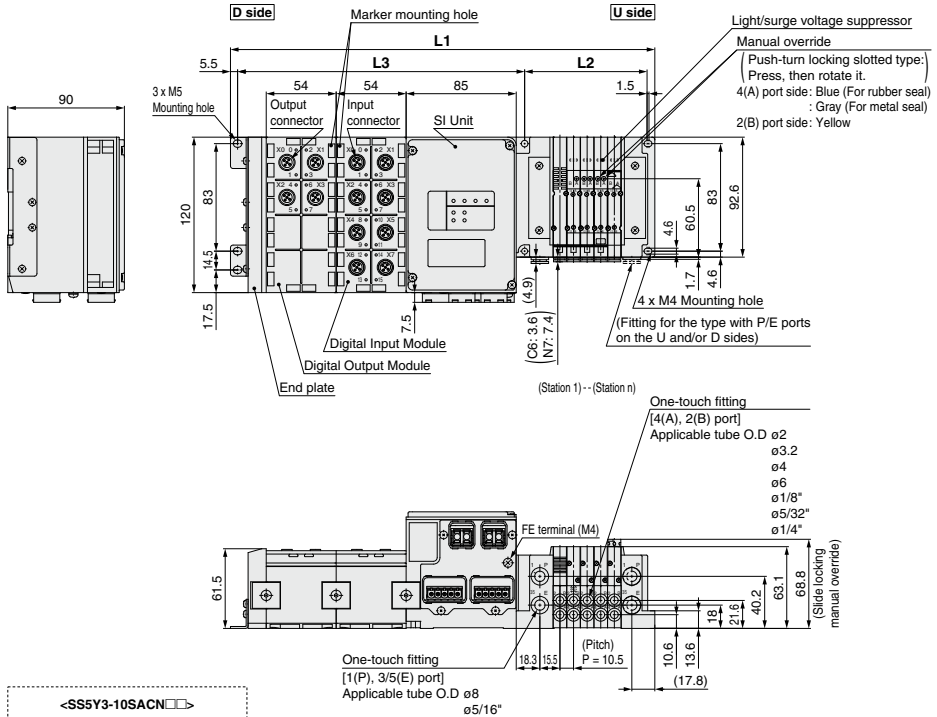


SY3000/5000/7000 Series

Plug-in
Connector Connecting Base Type 10/Side Ported
EX245

Dimensions: SY3000 Series

SS5Y3-10SA □ - Stations $\begin{matrix} \text{U} \\ \text{D} \end{matrix}$ C2,N1
C3,N3
C4,N7
C6,CM



*: These figures show the "SS5Y3-10SAANY2-05D-C6".
*: Refer to page 566 for dimensions of external pilot, silencer and elbow fittings.
*: Refer to page 571 for dimensions of A or B port top-ported type.

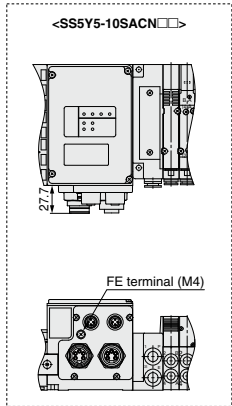
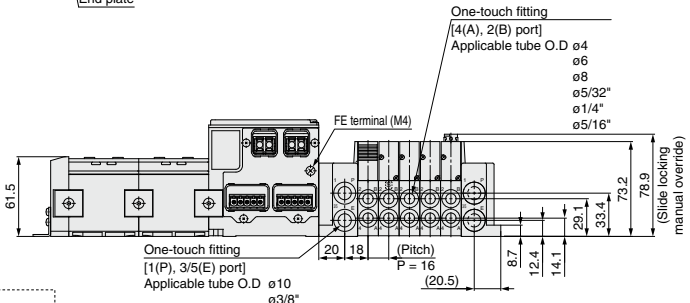
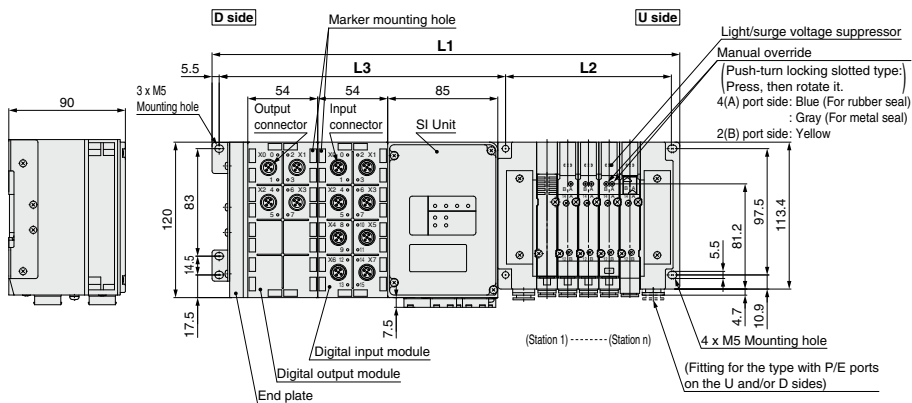
$$L3 = 54 \times n2 + 113.6$$

Formula: $L1 = 10.5 \times n1 + 167.1$ $L2 = 10.5 \times n1 + 42$ * The L1 dimension is the dimension without an I/O module. Add 54 mm to this dimension for each I/O module. n2 is the number of I/O module stations. * n1 is the valve stations.

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
L1	188.1	198.6	209.1	219.6	230.1	240.6	251.1	261.6	272.1	282.6	293.1	303.6	314.1	324.6	335.1	345.6	356.1	366.6	377.1	387.6	398.1	408.6	419.1
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

Dimensions: **SY5000 Series**

SS5Y5-10SA □ - Stations $\begin{matrix} \text{U} & \text{C4} & \text{N3} \\ \text{D} & \text{C6} & \text{N7} \\ \text{B} & \text{C8} & \text{N9} \\ & \text{CM} & \end{matrix}$



- * These figures show the "SS5Y5-10SAANY2-05D-C8".
- * Refer to page 567 for dimensions of external pilot, silencer and elbow fittings.
- * Refer to page 572 for dimensions of A or B port top-ported type.

$L3 = 54 \times n2 + 113.1$

Dimensions Formula: $L1 = 16 \times n1 + 173.1$ $L2 = 16 \times n1 + 48$ * The L1 dimension is the dimension without an I/O module. Add 54 mm to this dimension for each I/O module. $n2$ is the number of I/O module stations. $n1$ is the valve stations.

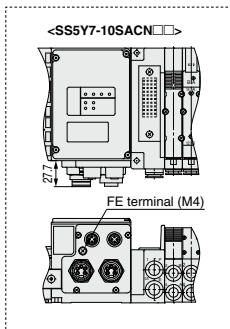
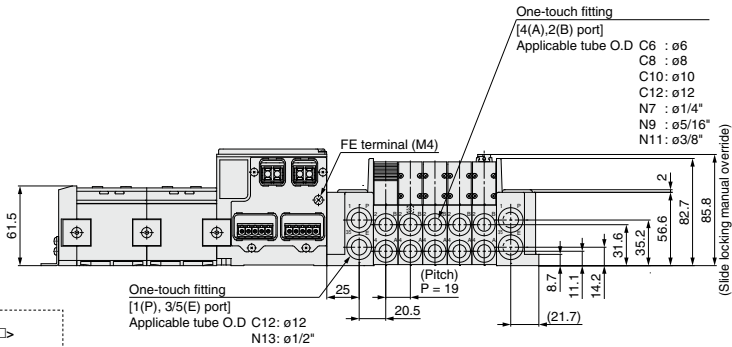
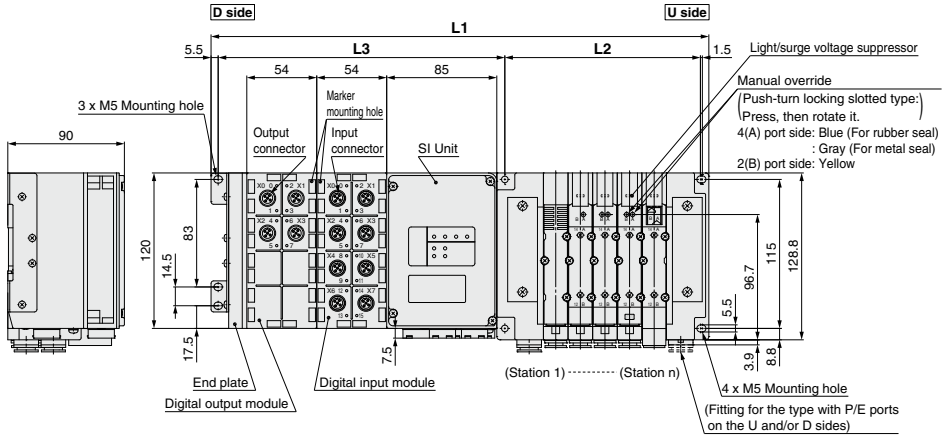
Stations n1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	205.1	221.1	237.1	253.1	269.1	285.1	301.1	317.1	333.1	349.1	365.1	381.1	397.1	413.1	429.1	445.1	461.1	477.1	493.1	509.1	525.1	541.1	557.1
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432

SY3000/5000/7000 Series

Type 10/Side Ported
EX245

Dimensions: SY7000 Series

SS5Y7-10SA □ - Stations $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$ $\begin{matrix} \text{C6, N7} \\ \text{C8, N9} \\ \text{C10, N11} \\ \text{C12, CM} \end{matrix}$



$L3 = 54 \times n2 + 113.3$

- * These figures show the "SS5Y7-10SAANY2-05D-C10".
- * Refer to page 568 for dimensions of external pilot, silencer and elbow fittings.
- * Refer to page 573 for dimensions of A or B port top-ported type.

Dimensions

Formula: $L1 = 19 \times n1 + 181.3$, $L2 = 19 \times n1 + 56$ * The L1 dimension is the dimension without an I/O module. Add 54 mm to this dimension for each I/O module.

* n1 is the valve stations.

n2 is the number of I/O module stations.

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
L1	219.3	238.3	257.3	276.3	295.3	314.3	333.3	352.3	371.3	390.3	409.3	428.3	447.3	466.3	485.3	504.3	523.3	542.3	561.3	580.3	599.3	618.3	637.3
L2	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360	379	398	417	436	455	474	493	512

Plug-in Connector Connecting Base

EX245

Type 12
Top ported

SY3000/5000/7000 Series



How to Order Manifold

Top ported **SS5Y 3-12S AAN** - **05DS-N** Only direct mounting is selectable for the manifold.

Refer to pages 571 to 573 for the dimensions of Type 12/Top ported type.

1 Series

3	SY3000
5	SY5000
7	SY7000

3 With or without I/O modules

Nil	Without I/O module
Y	With I/O module

4 Number of I/O modules

Nil	Without I/O module (Without SI Unit)
1	1 station
:	:
8	8 stations

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)

For details about the EX245 Integrated-type (For Input/Output) Serial Transmission System, refer to the **Web Catalog** and the **Operation Manual**. For details about part numbers of SI Units to be mounted, refer to pages 602 and 603. Please download the Operation Manual via SMC website, <https://www.smcworld.com>

2 SI Unit specifications

Symbol (output polarity)	Protocol	Communication connector	Power supply connector
Negative common (PNP)			
0		Without SI Unit	
AAN	PROFINET	Push/Pull (SCRJ): 2 pcs.	Push/Pull (24 V): 2 pcs.
ABN		Push/Pull (RJ45): 2 pcs.	Push/Pull (24 V): 2 pcs.
ACN		M12: 2 pcs.	7/8 inch: 2 pcs.

*: The valve output polarity for the SI unit is negative common (PNP).

5 Valve stations

(In the case of the 32-output SI Unit)

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

*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.

7 SUP/EXH block assembly

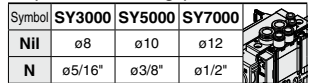
Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

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

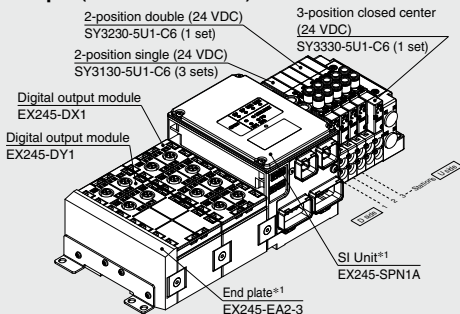
8 P, E port size (One-touch fittings)

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



How to Order Manifold Assembly

Example (SS5Y3-12SAAN-□)



SS5Y3-12SAANY2-05DS-N-.....1 set (Type 12 5-station manifold base part no.)
 *SY3130-SU1-C6.....3 sets (2-position single part no.)
 *SY3220-SU1-C6.....1 set (2-position double part no.)
 *SY3330-SU1-C6.....1 set (3-position closed center part no.)
 *EX245-DX1.....1set I/O module part no.
 *EX245-DY1.....1set I/O module part no.

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

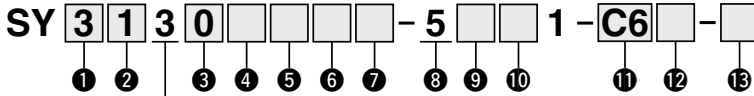
- The valve arrangement is numbered as the 1st station from the D side.
- The I/O module station arrangement is numbered starting from the SI unit side.
- Under the manifold part number, state the valves to be mounted, then the I/O module in order from the 1st station as shown in the figure above. If 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.

*: When mounting top ported configurations, select from page 521. 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 404 for valve specifications.



• Top 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

Nii	Internal pilot
R	External pilot

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

5 Back pressure check valve

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 625. 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 or 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 705.

8 Rated voltage

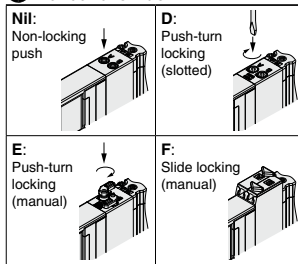
5	24 VDC
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9 Light/surge voltage suppressor and common specification

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

*: Select "NZ" for with the power saving circuit.

10 Manual override



*: Refer to page 423 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) ^{*1}
H	Hexagon socket head cap screw (Falling-out-prevention type) ^{*1}

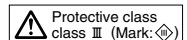
*1: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

*: **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 611 for part numbers of the base gasket and mounting screw.

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



Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base

EX250

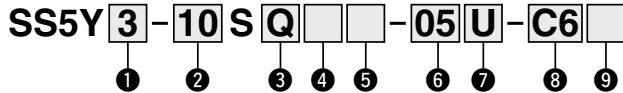
SY3000/5000/7000 Series

The EX250 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.



How to Order Manifolds

Refer to pages 569 (SY5000) and 570 (SY7000) for the 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 574).

4 Input block stations

Nil	None
1	1 station
⋮	⋮
8	8 stations

* When not selecting an SI unit, the symbol will be "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)	
TA	AS-Interface (Negative common)	2 power supply systems
TB		8 in/8 out
TC		4 in/4 out
TD		1 power supply system
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

* When not selecting an SI unit, the symbol will be "nil."

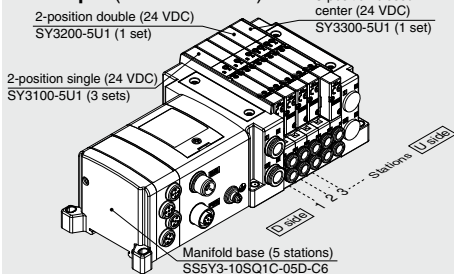
6 Valve stations

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 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 the 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 the assembly. Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

* When mixing top-ported configurations, select from those listed on page 529. In such cases, use caution as there is also output on the A and B ports on the base side. Specify on the manifold specification sheet if plugs are required for the A and B ports on the 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, ignore the exhaust port from coming into direct contact with water or other liquids.

For details on the EX250 Integrated Type (For Input/Output) Serial Transmission System, refer to the **Web Catalog** and the Operation Manual. For the part numbers of the SI units to be mounted, refer to page 604. Please download the Operation Manual via the SMC website, <https://www.smcworld.com>

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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported		
		SY3000	SY5000	SY7000	SY5000	SY7000	
C2 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	—	—	—	●	—
		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	ø10	ø12	

*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 (pages 617 to 619).

9 Mounting and Option

Symbol	Mounting	Option		DIN Rail Option	
		Name plate	Station number	Nil	Standard length
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		For 24 stations
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 the type 11 bottom-ported type.

* Refer to page 708 for the fixation of DIN rail mounting type manifold.

* 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 616 for the DIN rail part number.)

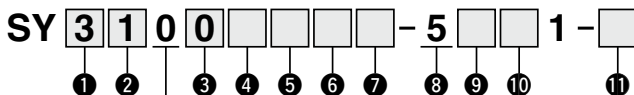
A, B port size (Inch/One-touch fitting)

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"	—	—	●	●	
		Straight port, mixed sizes	●	●	●	●	●
LN3 LN7 LN9 LN11 BN3 BN7 BN9 BN11 LM ^{*1}	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"	

SY3000/5000/7000 Series

How to Order Valves (With mounting screw)

Refer to page 404 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 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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

Nii	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 if the valve is to be continuously energized for long periods of time.

* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

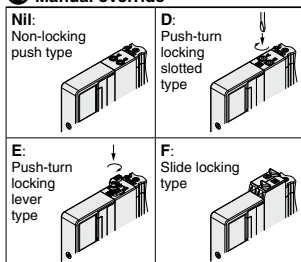
5	24 VDC
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9 Light/surge voltage suppressor and common specification

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

* Only "NZ" type is available with a power saving circuit.

10 Manual override



* Refer to page 423 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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 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.

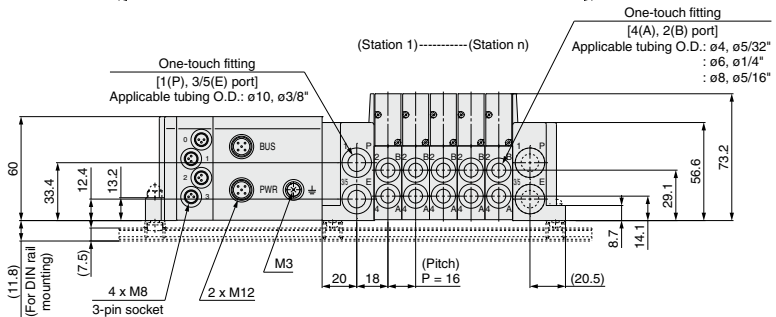
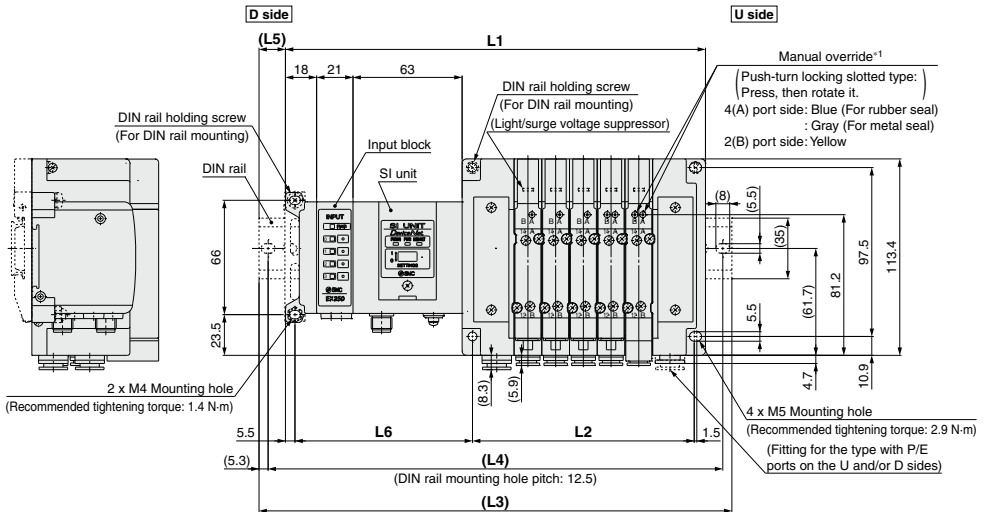
SY3000/5000/7000 Series

Dimensions: **SY5000 Series**

Plug-in Connector Connecting Base

Type 10/Side Ported
EX250

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



L1 = 16 x n1 + 141.5 + 21 x n2
L2 = 16 x n1 + 48
L4 = L3 - 10.5
L5 = (L3 - L1)/2
L6 = 21 x n2 + 81.5

n1: Valve stations
n2: Input block stations

*1 Refer to page 567 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
* These figures show the "SS5Y5-10SQ1A-05D-C8".
* Refer to page 572 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	510.5	523	548	560.5	573	
2	248	260.5	273	298	310.5	323	335.5	360.5	373	385.5	410.5	423	435.5	448	473	485.5	498	523	535.5	548	560.5	585.5	598	
3	260.5	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	623	
4	285.5	298	323	335.5	348	373	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	548	560.5	573	585.5	610.5	623	635.5	
5	310.5	323	335.5	360.5	373	385.5	398	423	435.5	448	473	485.5	498	510.5	535.5	548	560.5	585.5	598	610.5	623	648	660.5	
6	323	348	360.5	373	398	410.5	423	435.5	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	623	635.5	648	660.5	685.5	
7	348	360.5	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	548	560.5	573	585.5	610.5	623	635.5	648	673	685.5	698	
8	373	385.5	398	423	435.5	448	473	485.5	498	510.5	535.5	548	560.5	573	598	610.5	623	648	660.5	673	685.5	710.5	723	

Plug-in Connector Connecting Base

EX250

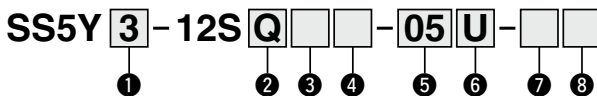


Type 12
Top Ported

SY3000/5000/7000 Series

The EX250 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.

How to Order Manifolds



Refer to pages 571 to 573 for the 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

* When not selecting an SI unit, the symbol will be "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

* When not selecting an SI unit, the symbol will be "nil."

2 SI unit

0	Without SI unit	
Q	DeviceNet [®] (Negative common)	
TA	AS-Interface (Negative common)	2 power supply systems 8 in/8 out
TB		4 in/4 out
TC		1 power supply system 8 in/8 out
TD		4 in/4 out
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.

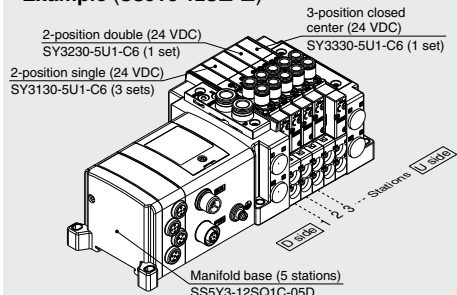
5 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring ^{*1}
⋮	⋮	
16	16 stations	
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 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 the 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 the assembly. Prefix it to the part numbers of the valve, etc.

- * For the valve arrangement, the valve closest to the D side is considered the 1st station.
- * Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details 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.
- * The P and E ports are only available on the U and D sides for the built-in silencer type. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of the P and E port entry. (Example: When the P and E port entry is on the D side, the silencer exhaust port is on the U side.)
- * When the built-in silencer type is used, keep the exhaust port from coming into direct contact with water or other liquids.

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

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

* For N, sizes are in inches.

8 Mounting

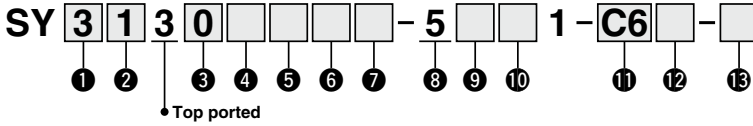
Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations Specify a length longer than that of the standard rail.
⋮	⋮
D24	For 24 stations

- * If the DIN rail must be mounted without an SI unit, select D0. Then, refer to L3 of the dimensions for the DIN rail length and order separately. (Refer to page 616 for the DIN rail part number.)
- * Refer to page 708 for the fixation of DIN rail mounting type manifold.

For details on the EX250 Integrated Type (For Input/Output) Serial Transmission System, refer to the **Web Catalog** and the Operation Manual. For the part numbers of the SI units to be mounted, refer to page 604. Please download the Operation Manual via the SMC website, <https://www.smccworld.com>

How to Order Valves (With mounting screw)

Refer to page 404 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 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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

Nii	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 if the valve is to be continuously energized for long periods of time.

* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

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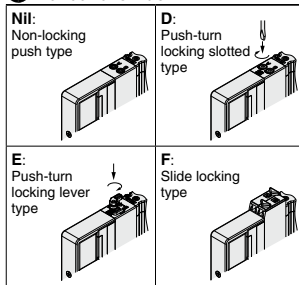
9 Light/surge voltage suppressor and common specification

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

* "R" and "U" are applicable for every SI unit.

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

10 Manual override



* Refer to page 423 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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 for base gasket and mounting screw part numbers.

* "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

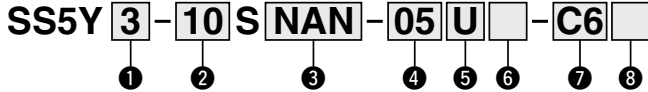
SY3000/5000/7000 Series



Refer to page 534 for details on manifolds that support safety communication (PROFIsafe).

How to Order Manifolds

Refer to pages 569 (SY5000) and 570 (SY7000) for the 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 Type Manifold" (from page 574).

3 SI unit specifications

(Output polarity, Protocol, Number of outputs, Communication connector)

Symbol (Output polarity)	Protocol	Number of outputs	Communication connector
Positive common (NPN)	Negative common (PNP)		
0 ^{*1} Without SI unit			
QA	QAN	32	M12
QB	QBN	16	
NA	NAN	32	M12
NB	NBN	16	
NC	NCN	32	D-sub ^{*4}
ND	NDN	16	
VA	VAN	32	M12
VB	VBN	16	
DA	DAN	32	M12
DB	DBN	16	
FA	FAN	32	M12
FB	FBN	16	
EA	EAN	32	M12
EB	EBN	16	
— ^{*3}	GAN	32	M12
— ^{*3}	GBN	16	
— ^{*3}	KAN	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}
(Up to 32 solenoids available)

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}
(Up to 16 solenoids available)

- *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 the blanking plate assembly.
- * For the model without the SI unit (S0), note the maximum number of solenoids of the SI unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

5 P, E port entry

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

6 SUP/EXH block assembly

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 into 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
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 the type 11 bottom-ported type.
- * Refer to page 708 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	

- * 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 616 for the DIN rail part number.)

For details on the EX260 Integrated Type (For Output) Serial Transmission System, refer to the **Web Catalog** and the Operation Manual. For the part numbers of the SI units to be mounted, refer to page 605. Please download the Operation Manual via the SMC website, <https://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	Downward	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	

*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.

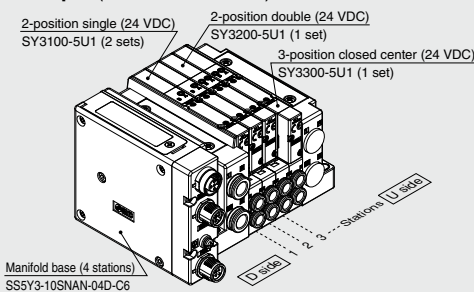
*2 To avoid interference with the body or piping, select a downward elbow port when mounting the optional spacer assembly (pages 617 to 619).

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"	●	●	—	—
BN7 BN9 BN11	Downward	ø5/16"	—	●	—	—
		ø3/8"	—	—	●	—
		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

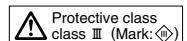
Example (SS5Y3-10SNAN-□)



SS5Y3-10SNAN-04D-C6--1 set (Type 10 4-station manifold base part no.)
 *SY3100-5U1 2 sets (2-position single part no.)
 *SY3200-5U1 1 set (2-position double part no.)
 *SY3300-5U1 1 set (3-position closed center part no.)
 ↳ The asterisk denotes the symbol for the assembly.
 ↳ Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

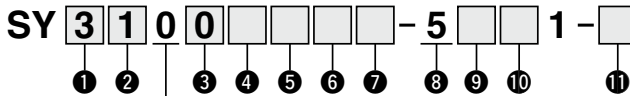
* When mixing top ported configurations, select from those listed on page 541. Specify on the manifold specification sheet if plugs are required for the A and B ports on the manifold.



SY3000/5000/7000 Series

How to Order Valves (With mounting screw)

Refer to page 404 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 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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

NII	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 if the valve is to be continuously energized for long periods of time.
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

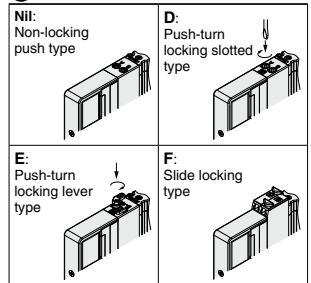
5	24 VDC
----------	--------

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 "R," "U," "S," or "Z" for the valve when the SI unit output polarity is positive common. Select "R," "U," "NS," or "NZ" for the valve when the SI unit output polarity is negative common.
* Only "Z" and "NZ" types are available with a power saving circuit.

10 Manual override

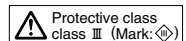


* Refer to page 423 for the safety slide locking manual override.

11 Type of mounting screw

NII	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 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.



Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base

EX260 Safety Communication Protocol (PROFIsafe)

SY3000/5000/7000 Series



RoHS

Using the safety communication protocol

Refer to the EX260 Web Catalog for details on units that support the safety communication protocol. When using a manifold valve within an ISO 13849-compliant safety system, the device needs to be considered from both the pneumatic circuit and the electric side.

Devices (including valves) need to be selected based on whether their functions are in line with the safety level of the equipment as a whole.

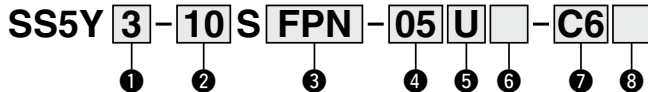
The use of valves that have been validated as being compliant with ISO 13849-2 may be required. For details on valves that have been validated, please contact SMC.

In addition, refer to "Safety Instructions" for precautions on model selection.

Refer to page 530 for details on manifolds that support Fieldbus and Industrial Ethernet.

How to Order Manifolds

Refer to pages 569 (SY5000) and 570 (SY7000) for the 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 Type Manifold" (from page 574).

3 SI unit specifications

(Output polarity, Protocol, Number of outputs, Communication connector)

Symbol (Output polarity)		Protocol	Number of outputs	Communication connector
Positive common (NPN)	Negative common (PNP)			
0 ^{*1}		Without SI unit		
— ^{*3}	FPN	PROFIsafe	32 ^{*4}	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 Only the 32 outputs type is available.

4 Valve stations

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 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 the blanking plate assembly.

5 P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 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 into 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□		●	—

* 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 the type 11 bottom-ported type.

* Refer to page 708 for the fixation of DIN rail mounting type manifold.

DIN Rail Option

Nil	Standard length	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations.
⋮	⋮	
24	For 24 stations	

* 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 616 for the DIN rail part number.)

For details on the EX260 Integrated Type (For Output) Serial Transmission System, refer to the Web Catalog and the Operation Manual. For the part numbers of the SI units to be mounted, refer to page 605. Please download the Operation Manual via the SMC website, <https://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	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 (pages 617 to 619).

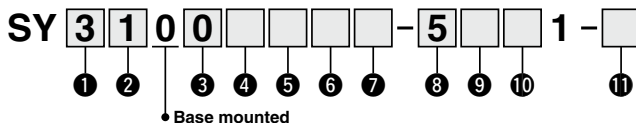
SY3000/5000/7000 Series

[Validated product examples]

Please contact SMC for further details as supported variations are continually being added.

* 2-position double of rubber seal and manual override with locking function (D, E, F type) are excluded, because they don't comply with safety standard.

How to Order Valves (With mounting screw) Refer to page 404 for valve specifications.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

1	2-position	Single
2		Double*2
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.

*2 Except the rubber seal

3 Seal type

0	Rubber seal
1	Metal seal

4 Pilot type

Nil	Internal pilot
R	External pilot

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

Nil	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 back pressure check valve is not available for the 3-position type or 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 the 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 if the valve is to be continuously energized for long periods of time.

* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

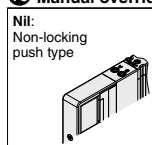
5	24 VDC
---	--------

9 Light/surge voltage suppressor and common specification

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

* Only "NZ" type is available with a power saving circuit.

10 Manual override



11 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 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.

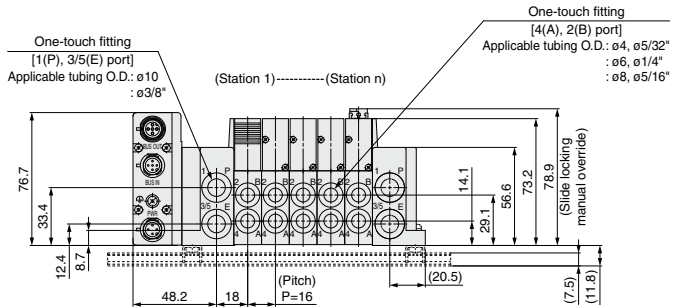
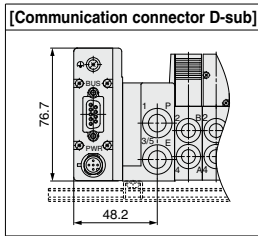
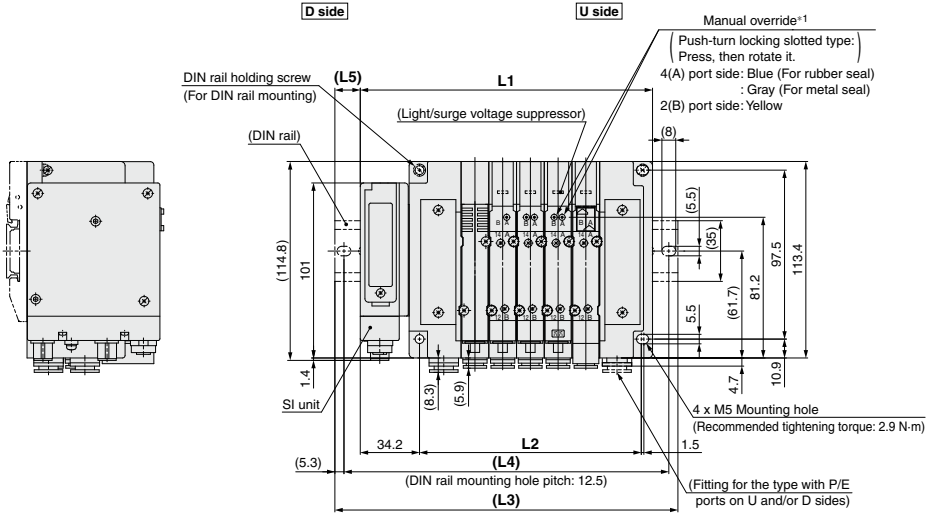
SY3000/5000/7000 Series

Dimensions: **SY5000 Series**

Plug-in
Connector Connecting Base

Type 10/Side Ported
EX260

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



*1 Refer to page 567 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.

* These figures show the "SS5Y5-10SQA-05D-C8."

* Refer to page 572 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	15	12	16.5	15	13	17.5	16	14	12.5

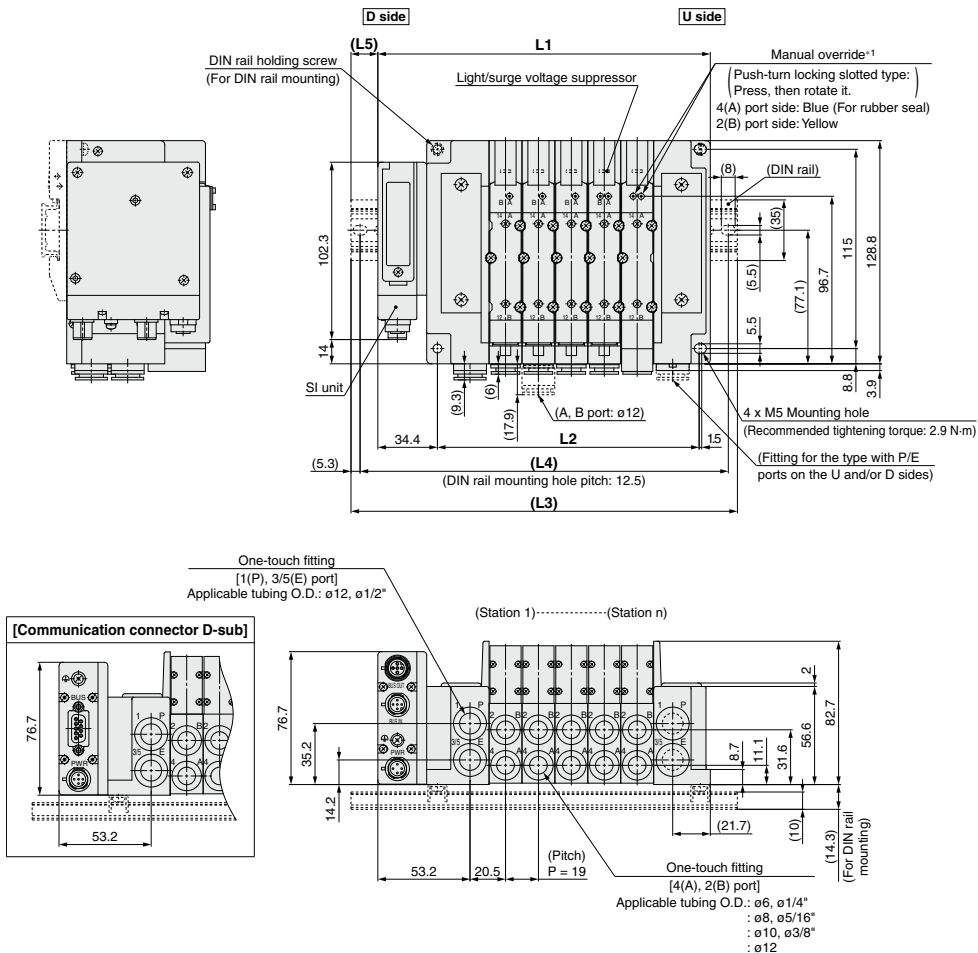
n: Stations	18	19	20	21	22	23	24
L1	376.7	392.7	408.7	424.7	440.7	456.7	472.7
L2	336	352	368	384	400	416	432
L3	410.5	423	435.5	448	473	485.5	498
L4	400	412.5	425	437.5	462.5	475	487.5
L5	17	15	13.5	11.5	16	14.5	12.5

Dimensions: **SY7000 Series**

Plug-in
Connector Connecting Base

Type 10/Side Ported
EX260

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



*1 Refer to page 568 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
* These figures show the "SS5Y7-10SQA-05D-C10."
* Refer to page 573 for dimensions of A or B port top-ported type.

n Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	134.9	153.9	172.9	191.9	210.9	229.9	248.9	267.9	286.9	305.9	324.9	343.9	362.9	381.9	400.9	419.9	438.9	457.9	476.9	495.9	514.9	533.9	552.9
L2	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360	379	398	417	436	455	474	493	512
L3	160.5	185.5	198	223	235.5	260.5	273	298	310.5	335.5	348	373	398	410.5	435.5	448	473	485.5	510.5	523	548	560.5	585.5
L4	150	175	187.5	212.5	225	250	262.5	287.5	300	325	337.5	362.5	387.5	400	425	437.5	462.5	475	500	512.5	537.5	550	575
L5	13	16	12.5	15.5	12.5	15.5	12	15	12	15	11.5	14.5	17.5	14.5	17.5	14	17	14	17	13.5	16.5	13.5	16.5

Plug-in Connector Connecting Base

EX260



Type 12
Top Ported

SY3000/5000/7000 Series

How to Order Manifolds

Refer to pages 571 to 573 for the dimensions of Type 12/Top-port type.

SS5Y **3** - 12S **NAN** - **05** **U** - - -

1 Series

3	SY3000
5	SY5000
7	SY7000

2 SI unit specifications

(Output polarity, Protocol, Number of outputs, Communication connector)

Symbol (Output polarity)		Protocol	Number of outputs	Communication connector
Positive common (NPN)	Negative common (PNP)			
Without SI unit				
QA	QAN	DeviceNet®	32	M12
QB	QBN		16	
NA	NAN	PROFIBUS DP	32	M12
NB	NBN		16	
NC	NCN	CC-Link	32	D-sub*4
ND	NDN		16	
VA	VAN	EtherCAT	32	M12
VB	VBN		16	
DA	DAN	PROFINET	32	M12
DB	DBN		16	
FA	FAN	EtherNet/IP™	32	M12
FB	FBN		16	
EA	EAN	Ethernet POWERLINK	32	M12
EB	EBN		16	
—*3	GAN	IO-Link	32	M12
—*3	GBN		16	
—*3	KAN		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.

For details on the EX260 Integrated Type (For Output) Serial Transmission System, refer to the **Web Catalog** and the Operation Manual. For the part numbers of the SI units to be mounted, refer to page 605. Please download the Operation Manual via the SMC website, <https://www.smcworld.com>

3 Valve stations

In the case of the 32-output SI unit

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

In the case of the 16-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
08	8 stations	
02	2 stations	Specified layout*2 (Up to 16 solenoids available)
⋮	⋮	
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 the blanking plate assembly.
- *4 For the model without the SI unit (S0), note the maximum number of solenoids of the SI unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

4 P, E port entry

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

- *1 For type "S", SUP/EXH block assembly with a built-in silencer, choose U or D for P, E port entry.

5 SUP/EXH block assembly

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

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

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.

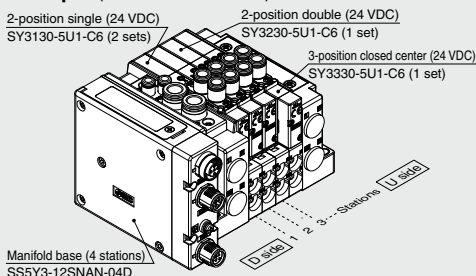
7 Mounting

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

- * 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 616 for the DIN rail part number.)
- * Refer to page 708 for the fixation of DIN rail mounting type manifold.

How to Order Manifold Assembly

Example (SS5Y3-12SNAN-□)



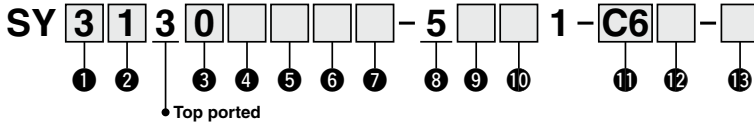
SS5Y3-12SNAN-04D 1 set (Type 12 4-station manifold base part no.)
 SY3130-5U1-C6 2 sets (2-position single part no.)
 SY3230-5U1-C6 1 set (2-position double part no.)
 SY3330-5U1-C6 1 set (3-position closed center part no.)

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

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

How to Order Valves (With mounting screw)

Refer to page 404 for valve specifications.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

NII	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 if the valve is to be continuously energized for long periods of time.

* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

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

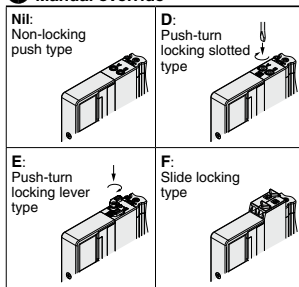
9 Light/surge voltage suppressor and common specification

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

* Select "R," "U," "S," or "Z" for the valve when the SI unit output polarity is positive common. Select "R," "U," "NS," or "NZ" for the valve when the SI unit output polarity is negative common.

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

10 Manual override



* Refer to page 423 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

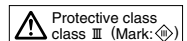
NII	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Drop prevention type)
H	Hexagon socket head cap screw (Drop prevention type)

* 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. Refer to page 611 for base gasket and mounting screw part numbers.

* "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

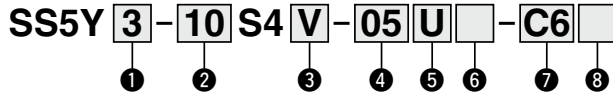
EX126

SY3000/5000/7000 Series



How to Order Manifolds

Refer to pages 569 (SY5000) and 570 (SY7000) for the 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 574).

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 (Up to 16 solenoids available)
⋮	⋮	
⋮	⋮	
16	16 stations	

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

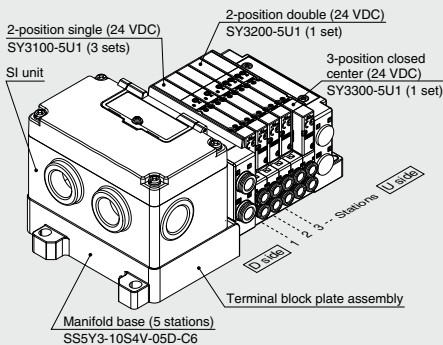
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

*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 the 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 the assembly.
 Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

* When mixing top-ported configurations, select from those listed on page 549. In such cases, use caution as there is also output on the A and B ports on the base side.
 Specify on the manifold specification sheet if plugs are required for the A and B ports on the 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 into direct contact with water or other liquids.

For details on the EX126 Integrated Type (For Output) Serial Transmission System, refer to the **Web Catalog** and the Operation Manual. For the part numbers of the SI units to be mounted, refer to page 606. Please download the Operation Manual via the SMC website, <https://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	—	—	●	—
		LM ^{*1}	●	●	●	—
	Downward	ø4	●	●	—	—
		ø6	●	●	●	—
		ø8	—	●	—	—
		ø10	—	—	●	—
		ø12	—	—	●	—
		LM ^{*1}	●	●	●	—
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" 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 (pages 617 to 619).

8 Mounting and Option

Symbol	Mounting	Option	
		Name plate	Station number
Nll	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 the type 11 bottom-ported type.

* Refer to page 708 for the fixation of DIN rail mounting type manifold.

DIN Rail Option

Nll	Standard length	
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"	—	●	—	—
	Downward	ø3/8"	—	—	●	—
		ø5/32"	●	—	—	—
		ø1/4"	●	●	—	—
BN9	Elbow port, mixed sizes (Including upward and downward piping)	ø5/16"	—	●	—	
BN11		—	—	●	—	
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 404 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	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

Nil	Internal pilot
R	External pilot

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

Nil	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 the 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 if the valve is to be continuously energized for long periods of time.

* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

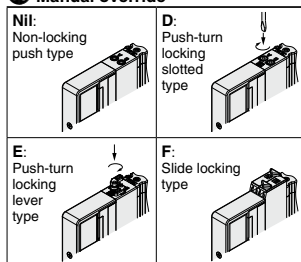
5	24 VDC
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9 Light/surge voltage suppressor and common specification

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

* Only "Z" type is available with a power saving circuit.

10 Manual override



* Refer to page 423 for 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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 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.

SY3000/5000/7000 Series

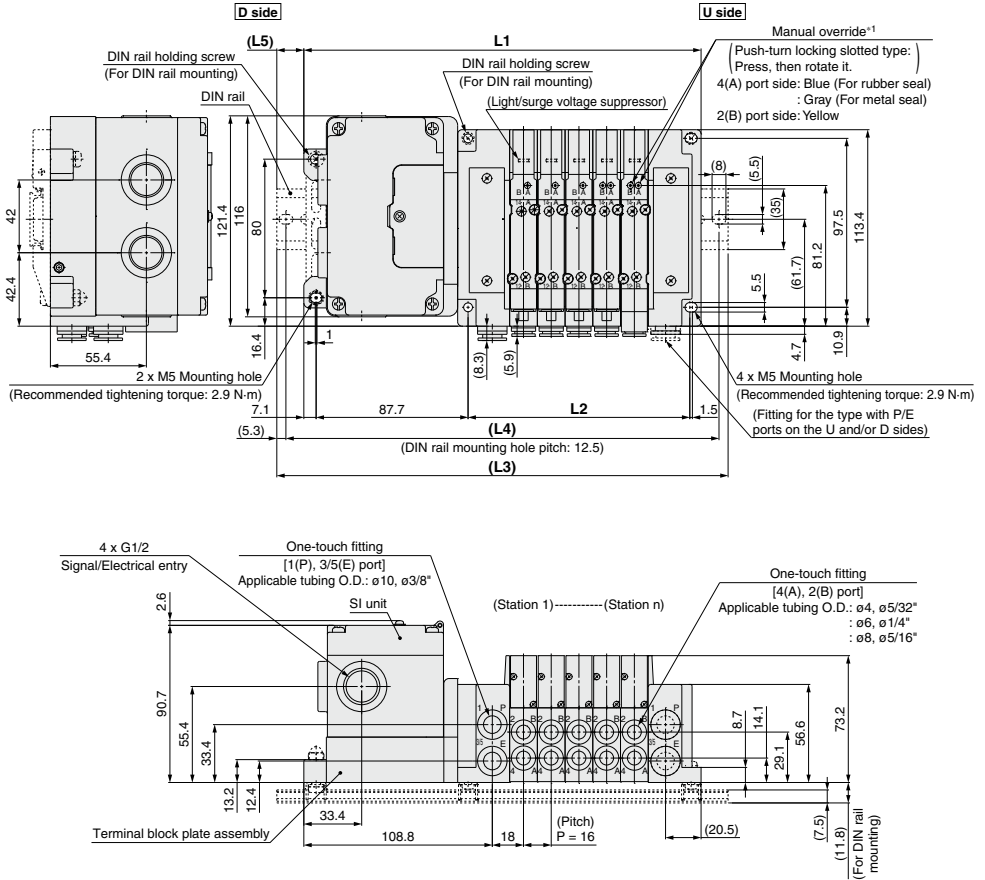
Dimensions: **SY5000 Series**

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 567 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
* These figures show the "SS5Y5-10S4V-05D-C8."
* Refer to page 572 for dimensions of A or B port top-ported type.

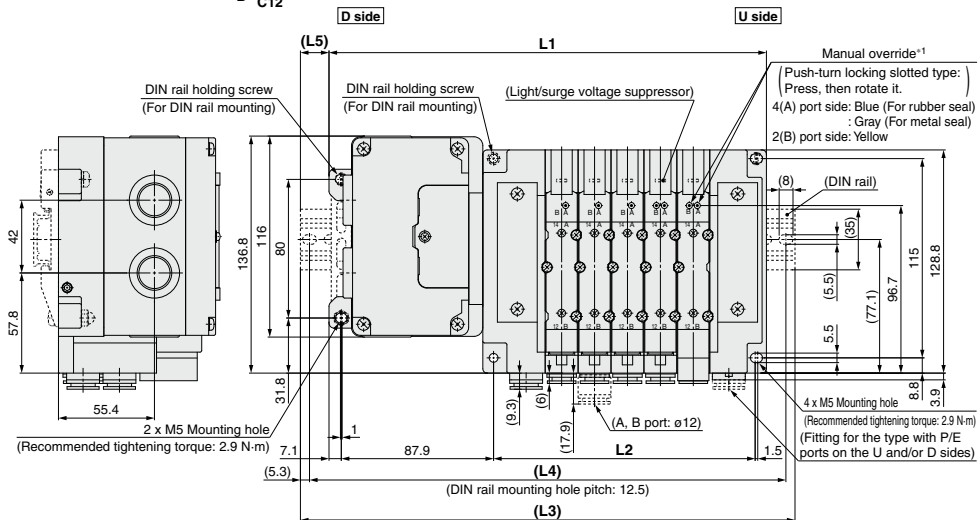
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	181.3	197.3	213.3	229.3	245.3	261.3	277.3	293.3	309.3	325.3	341.3	357.3	373.3	389.3	405.3
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
L3	210.5	223	248	260.5	273	285.5	310.5	323	335.5	360.5	373	385.5	398	423	435.5
L4	200	212.5	237.5	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 $\begin{matrix} \text{U} & \text{C6, N7} \\ \text{D} & \text{C8, N9} \\ \text{B} & \text{C10, N11} \end{matrix}$ (D)



*1 Refer to page 568 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
 * These figures show the "SS5Y7-10S4V-05D-C10."
 * Refer to page 573 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

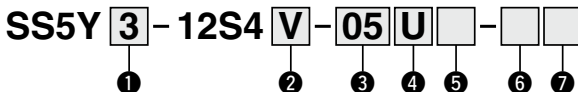
Type 12
Top Ported

SY3000/5000/7000 Series



How to Order Manifolds

Refer to pages 571 to 573 for the dimensions of Type 12/Top-ported type.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 SI unit

0	Without SI unit
V	CC-Link (Positive common NPN)

* Only a terminal block plate is mounted for the valve without SI unit.

3 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
08	8 stations	
02	2 stations	Specified layout*2 (Up to 16 solenoids available)
⋮	⋮	
⋮	⋮	
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 the 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", SUP/EXH block assembly with a built-in silencer, choose U or D for P, E port entry.

5 SUP/EXH block assembly

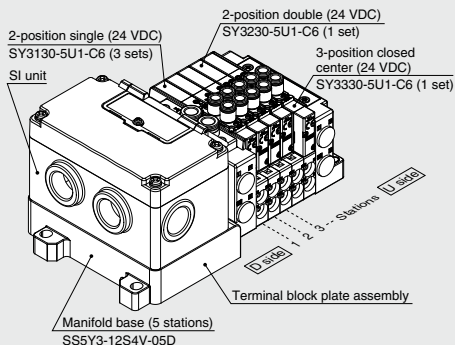
NII	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

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

* When the built-in silencer type is used, keep the exhaust port from coming into 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 the assembly. Prefix it to the part numbers of the valve, etc.

• For the valve arrangement, the valve closest to the D side is considered the 1st station.
 • Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details 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

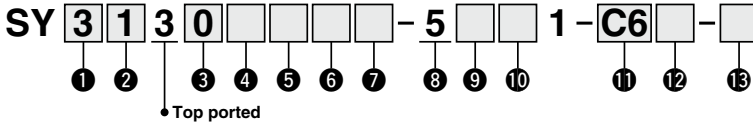
NII	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
⋮	⋮
⋮	Specify a length longer than that of the standard rail.
D16	For 16 stations

* Refer to page 708 for the fixation of DIN rail mounting type manifold.

For details on the EX126 Integrated Type (For Output) Serial Transmission System, refer to the **Web Catalog** and the Operation Manual. For the part numbers of the SI units to be mounted, refer to page 606. Please download the Operation Manual via the SMC website, <https://www.smcworld.com>

How to Order Valves (With mounting screw)

Refer to page 404 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 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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

NII	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 if the valve is to be continuously energized for long periods of time.

* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

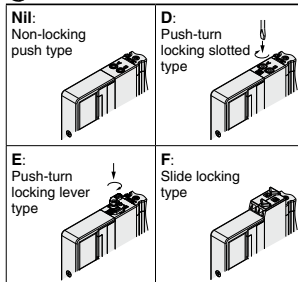
5	24 VDC
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9 Light/surge voltage suppressor and common specification

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

* Only "Z" type is available with a power saving circuit.

10 Manual override



* Refer to page 423 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

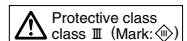
NII	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Drop prevention type)
H	Hexagon socket head cap screw (Drop prevention type)

* 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. Refer to page 611 for base gasket and mounting screw part numbers.

* "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

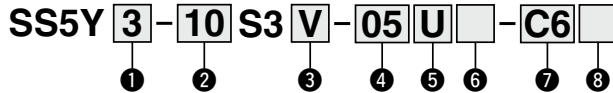
EX120

SY3000/5000/7000 Series



How to Order Manifolds

Refer to pages 569 (SY5000) and 570 (SY7000) for the 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 574).

3 SI unit

0	Without SI unit	
Q	DeviceNet® (Positive common NPN)	
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 (Up to 16 solenoids available)
:	:	
16	16 stations	

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

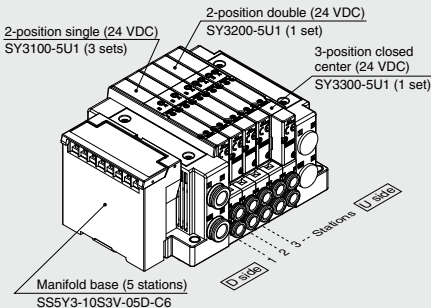
Use of a 2-position single solenoid will result in a unused control signal. If this is not desired, order with a specified layout.

*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 the blanking plate assembly.

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 the assembly. Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

* When mixing top-ported configurations, select from those listed on page 557. In such cases, use caution as there is also output on the A and B ports on the base side.

Specify on the manifold specification sheet if plugs are required for the A and B ports on the 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.

For details on the EX120 Integrated Type (For Output) Serial Transmission System, refer to the **Web Catalog** and the Operation Manual. For the part numbers of the SI units to be mounted, refer to page 607. Please download the Operation Manual via the SMC website, <https://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" 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 (pages 617 to 619).

8 Mounting and Option

Symbol	Mounting	Option	
		Name plate	Station number
N11	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 the type 11 bottom-ported type.

* Refer to page 708 for the fixation of DIN rail mounting type manifold.

DIN Rail Option

N11	Standard length	
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	

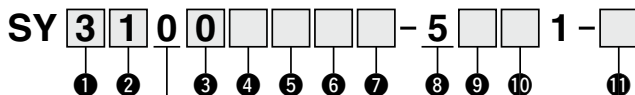
* If the DIN rail must be mounted without an SI unit, select D0. Then, refer to L3 of the dimensions for the DIN rail length and order separately. (Refer to page 616 for the DIN rail part number.)

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"	—	●	—	—		—
	Downward	ø3/8"	—	—	●	—		—
		ø5/32"	●	—	—	—		—
		ø1/4"	●	●	—	—		—
LM ^{*1}	Elbow port, mixed sizes (including upward and downward piping)	ø5/16"	—	●	—	—		
		ø3/8"	—	—	●	—		—
		ø1/2"	—	—	—	●		—
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 404 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	N.C./N.C.
B ^{*1}	dual 3-port	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

Nil	Internal pilot
R	External pilot

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

Nil	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 the 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 if the valve is to be continuously energized for long periods of time.

* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

⑧ Rated voltage

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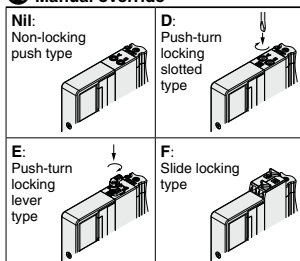
⑨ Light/surge voltage suppressor and common specification

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

* Select "R," "U," "S," or "Z" for the valve when the SI unit specification is positive common. Select "R," "U," "NS," or "NZ" for the valve when the SI unit specification is ZBN (negative common).

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

⑩ Manual override



* Refer to page 423 for 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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 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.

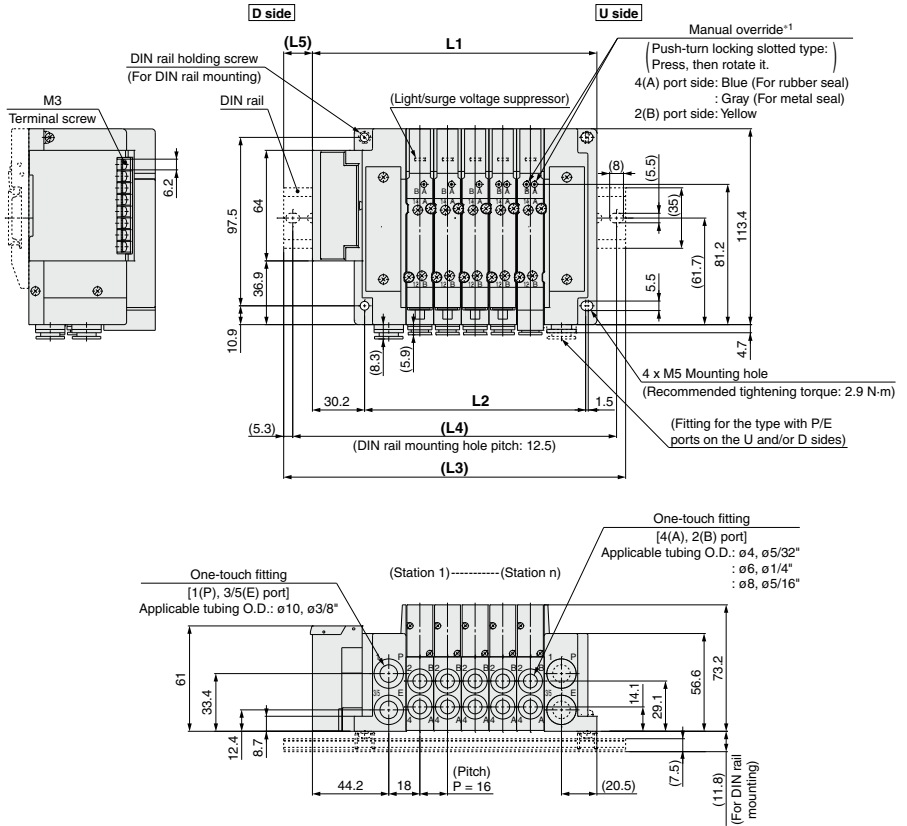
SY3000/5000/7000 Series

Dimensions: **SY5000 Series**

Plug-in
Connector Connecting Base

Type 10/Side Ported
EX120

SS5Y5-10S3□- [Stations] U C4, N3
D C6, N7 (D)
B C8, N9



- *1 Refer to page 567 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
- * These figures show the "SS5Y5-10S3V-05D-C8."
- * Refer to page 572 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 Manifolds

Refer to pages 571 to 573 for the dimensions of Type 12/Top ported type.

SS5Y **3** - 12S3 **V** - **05** **U** - **□** - **□** - **□**

① ② ③ ④ ⑤ ⑥ ⑦

① Series

3	SY3000
5	SY5000
7	SY7000

② SI unit

0	Without SI unit	
Q	DeviceNet® (Positive common NPN)	
V	CC-Link (Positive common NPN)	
ZB ^{*1}	CompoNet®	Positive common NPN
ZBN ^{*1}		Negative common PNP

*1 The communication connector (for the opposite side) is not provided. Please order it separately.

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

③ Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring ^{*1}
⋮	⋮	
08	8 stations	
02	2 stations	Specified layout ^{*2} (Up to 16 solenoids available)
⋮	⋮	
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 the 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", SUP/EXH block assembly with a built-in silencer, choose U or D for P, E port entry.

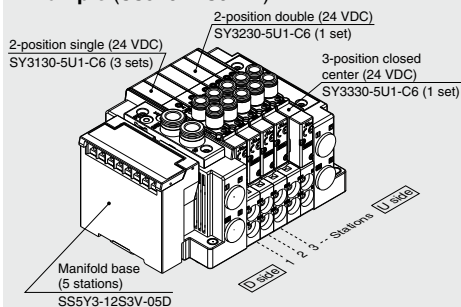
⑤ SUP/EXH block assembly

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

* The P and E ports are only available on the U and D sides for the built-in silencer type. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of the P and E port entry. (Example: When the P and E port entry is on the D side, the silencer exhaust port is on the 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 the assembly. Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details 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 length longer than that of the standard rail.
⋮	⋮	
D16	For 16 stations	

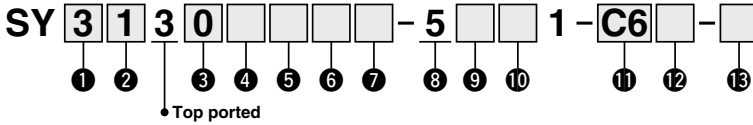
* If the DIN rail must be mounted without an SI unit, select D0. Then, refer to L3 of the dimensions for the DIN rail length and order separately. (Refer to page 616 for the DIN rail part number.)

* Refer to page 708 for the fixation of DIN rail mounting type manifold.

For details on the EX120 Integrated Type (For Output) Serial Transmission System, refer to the **Web Catalog** and the Operation Manual. For the part numbers of the SI units to be mounted, refer to page 607. Please download the Operation Manual via the SMC website, <https://www.smccworld.com>

How to Order Valves (With mounting screw)

Refer to page 404 for valve specifications.



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type of actuation

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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

NII	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 if the valve is to be continuously energized for long periods of time.
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

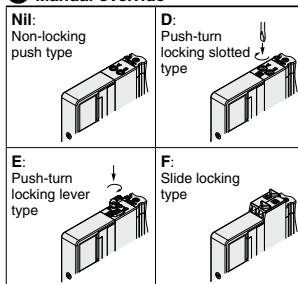
5	24 VDC
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9 Light/surge voltage suppressor and common specification

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

* Select "R," "U," "S," or "Z" for the valve when the SI unit specification is positive common. Select "R," "U," "NS," or "NZ" for the valve when the SI unit specification is ZBN (negative common).
* Only "Z" and "NZ" types are available with a power saving circuit.

10 Manual override



* Refer to page 423 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

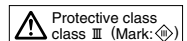
NII	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Drop prevention type)
H	Hexagon socket head cap screw (Drop prevention type)

* 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. Refer to page 611 for base gasket and mounting screw part numbers.

* "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

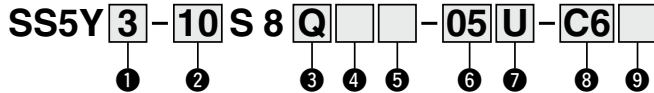
EX180

SY3000/5000/7000 Series



How to Order Manifolds

Refer to pages 569 (SY5000) and 570 (SY7000) for the 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" (Refer to page 574).

3 SI unit

0	Without SI unit
Q	DeviceNet®
V	CC-Link

* Only the connector block assembly is mounted for models without an SI unit.

4 SI unit output polarity, Number of outputs

	32 outputs	16 outputs
	Nil	
Without SI unit		
Positive common (NPN)	2	3
Negative common (PNP)	4	5

* When "V" (CC-Link) is selected for the SI unit, only symbol "2" or "4" (32 outputs) can be selected.

* Ensure a match with the common specification of the valves to be used.

5 Communication connector

Nil	T-branch type
A	Straight type

* The communication connector and power connector are shipped together with the manifold. The power connector is only available for the straight type.

* When not selecting an SI unit, the symbol will be "nil."

6 Valve stations

In the case of the 32-output SI unit

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

In the case of the 16-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
08	8 stations	
02	2 stations	Specified layout*2 (Up to 16 solenoids available)
:	:	
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.

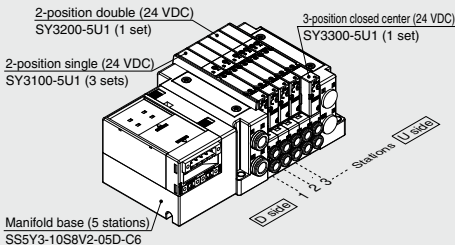
*2 Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position, and 4-position valves cannot be used where single wiring has been specified.)

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

* For the product without the SI unit (S80), 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 (SS5Y3-10S8□□□)



SS5Y3-10S8V2-05D-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 the assembly. Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

* When mixing top-ported configurations, select from those listed on page 565. In such cases, use caution as there is also output on the A and B ports on the base side. Specify on the manifold specification sheet if plugs are required for the A and B ports on the 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

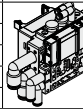
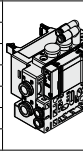
* 3/5(E) port is plugged for the built-in silencer type.

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

For details on the EX180 Integrated Type (For Output) Serial Transmission System, refer to the **Web Catalog** and the Operation Manual. For the part numbers of the SI units to be mounted, refer to page 608. Please download the Operation Manual via the SMC website:
<https://www.smcworld.com>

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

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported		
		SY3000	SY5000	SY7000	SY5000	SY7000	
C2 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	ø12



*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 (pages 617 to 620).

9 Mounting and Option

Symbol	Mounting	Option		DIN Rail Option	
		Name plate	Station number	Nil	Standard length
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		For 24 stations
A□	DIN rail mounting	●	●		
B□		●	—		

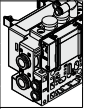
* Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" above.)

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

* Refer to page 708 for the fixation of DIN rail mounting type manifold.

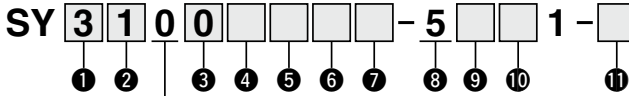
A, B port size (Inch/One-touch fitting)

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"	—	—	●	●
		Straight port, mixed sizes	●	●	●	●
LN3 LN7 LN9 LN11 BN3 BN7 BN9 BN11 LM ^{*1}	Upward	ø5/32"	●	—	—	—
		ø1/4"	●	●	—	—
		ø5/16"	—	●	—	—
		ø3/8"	—	—	●	—
		ø5/32"	●	—	—	—
		ø1/4"	●	—	—	—
	Downward	ø5/32"	—	—	—	—
		ø1/4"	●	—	—	—
		ø5/16"	—	●	—	—
		ø3/8"	—	—	●	—
		ø5/32"	—	—	—	—
		ø1/4"	—	—	—	—
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 Valves (With mounting screw)

Refer to page 404 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 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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

Nii	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 to be continuously energized for long periods of time.

* Be careful of the energizing time when the power-saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

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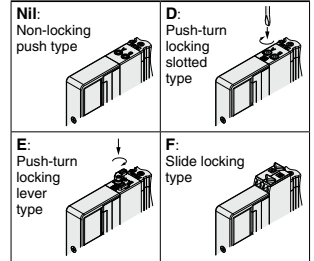
9 Light/surge voltage suppressor and common specification

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

* Select "R," "U," "S," or "Z" for the valve when the SI unit output polarity is positive common. Select "R," "U," "NS," or "NZ" for the valve when the SI unit output polarity is negative common.

* Only "Z" and "NZ" are available with a power-saving circuit.

10 Manual override



* Refer to page 423 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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 for base gasket and mounting screw part numbers.

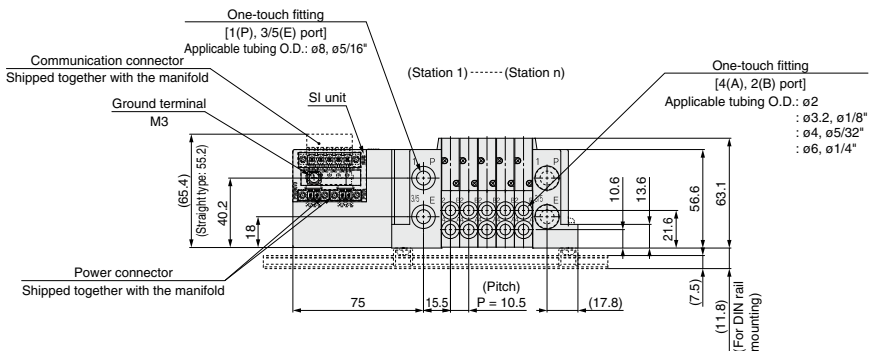
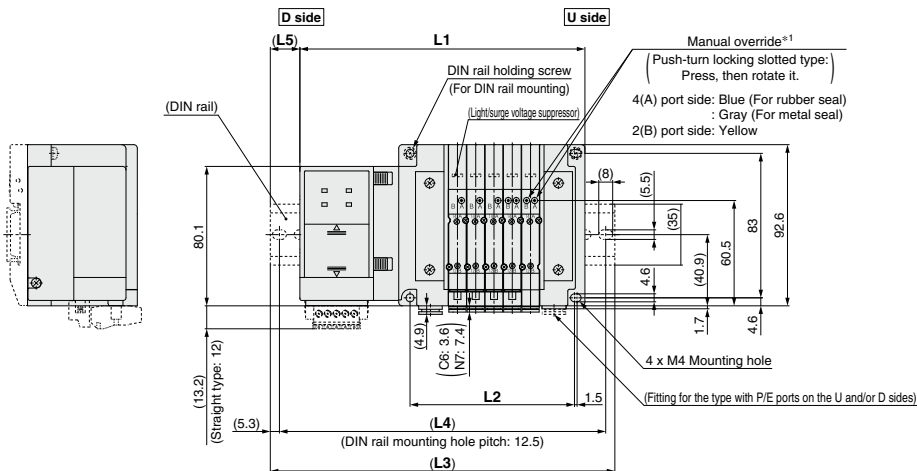
* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator, or double check spacer assembly with residual pressure release valve.

Dimensions: **SY3000 Series**

Plug-in
Connector Connecting Base

Type 10/Side Ported
EX180

SS5Y3-10S8□□□□-Stations $\begin{matrix} U \\ D \\ B \end{matrix}$ $\begin{matrix} C2 \\ C3, N1 \\ C4, N3 \\ C6, N7 \end{matrix}$ (D)



*1. Refer to page 566 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
 * These figures show the "SS5Y3-10S8V2-05D-C6."
 * Refer to page 571 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13
L1	132.3	142.8	153.3	163.8	174.3	184.8	195.3	205.8	216.3	226.8	237.3	247.8
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5
L3	160.5	173	185.5	198	198	210.5	223	235.5	248	260.5	260.5	273
L4	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	250	262.5
L5	14	15	16	17	12	13	14	15	16	17	11.5	12.5

n: Stations	14	15	16	17	18	19	20	21	22	23	24
L1	258.3	268.8	279.3	289.8	300.3	310.8	321.3	331.8	342.3	352.8	363.3
L2	189	199.5	210	220.5	231	241.5	252	262.5	273	283.5	294
L3	285.5	298	310.5	323	335.5	335.5	348	360.5	373	385.5	398
L4	275	287.5	300	312.5	325	325	337.5	350	362.5	375	387.5
L5	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5

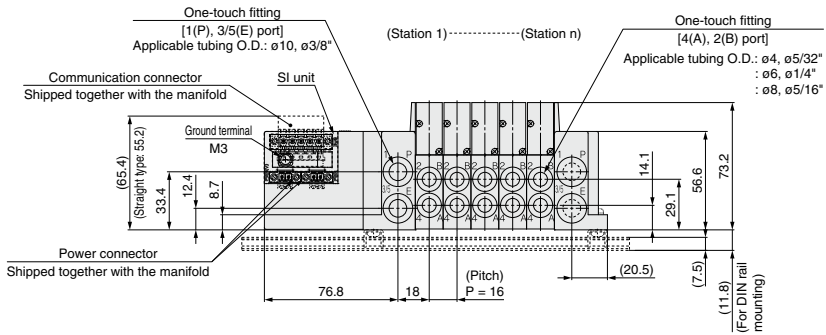
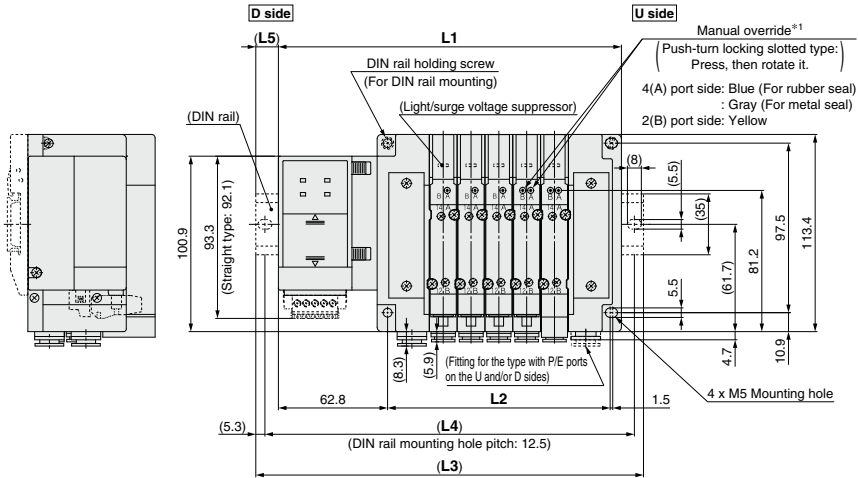
SY3000/5000/7000 Series

Dimensions: **SY5000 Series**

**Plug-in
Connector Connecting Base**

**Type 10/Side Ported
EX180**

SS5Y5-10S8□□□□-Stations $\begin{matrix} U & C4, N3 \\ D & C6, N7 \\ B & C8, N9 \end{matrix}$ (D)



*1. Refer to page 567 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
 * These figures show the "SS5Y5-10S8V2-05D-C8."
 * Refer to page 572 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13
L1	149.3	165.3	181.3	197.3	213.3	229.3	245.3	261.3	277.3	293.3	309.3	325.3
L2	80	96	112	128	144	160	176	192	208	224	240	256
L3	173	198	210.5	223	248	260.5	273	285.5	310.5	323	335.5	360.5
L4	162.5	187.5	200	212.5	237.5	250	262.5	275	300	312.5	325	350
L5	12	16.5	14.5	13	17.5	15.5	14	12	16.5	15	13	17.5

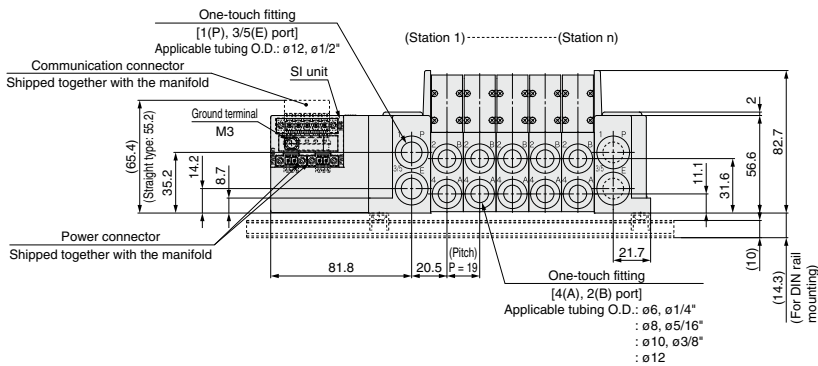
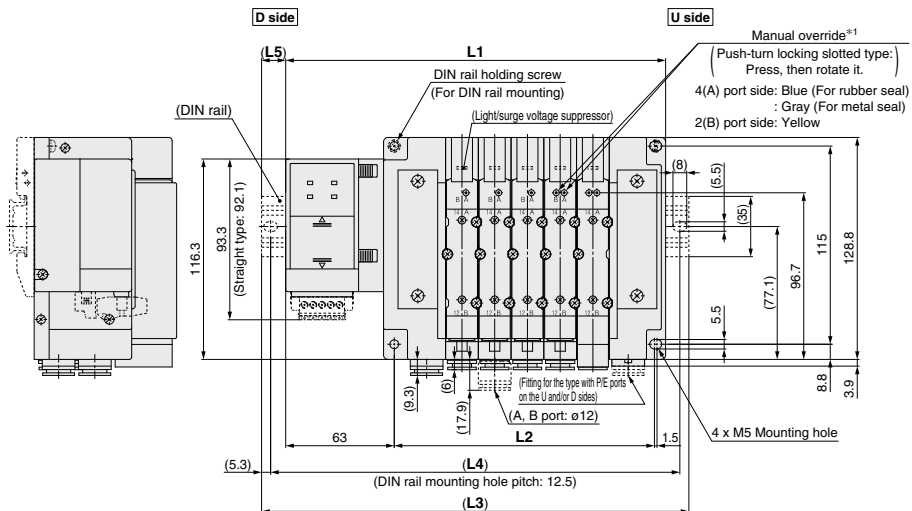
n: Stations	14	15	16	17	18	19	20	21	22	23	24
L1	341.3	357.3	373.3	389.3	405.3	421.3	437.3	453.3	469.3	485.3	501.3
L2	272	288	304	320	336	352	368	384	400	416	432
L3	373	385.5	398	423	435.5	448	460.5	485.5	498	510.5	535.5
L4	362.5	375	387.5	412.5	425	437.5	450	475	487.5	500	525
L5	16	14	12.5	17	15	13.5	11.5	16	14.5	12.5	17

Dimensions: **SY7000 Series**

Plug-in
Connector Connecting Base

Type 10/Side Ported
EX180

SS5Y7-10S8□□□□-Stations $\begin{matrix} \text{C6, N7} \\ \text{C8, N9} \\ \text{C10, N11 (D)} \\ \text{C12} \end{matrix}$



*1 Refer to page 568 for dimensions of the external pilot, silencer, elbow fittings, and slide locking manual override.
* These figures show the "SS5Y7-10S8V2-05D-C10."
* Refer to page 573 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13
L1	163.5	182.5	201.5	220.5	239.5	258.5	277.5	296.5	315.5	334.5	353.5	372.5
L2	94	113	132	151	170	189	208	227	246	265	284	303
L3	198	210.5	235.5	248	273	285.5	310.5	323	348	360.5	385.5	398
L4	187.5	200	225	237.5	262.5	275	300	312.5	337.5	350	375	387.5
L5	17.5	14	17	14	17	13.5	16.5	13.5	16.5	13	16	13

n: Stations	14	15	16	17	18	19	20	21	22	23	24
L1	391.5	410.5	429.5	448.5	467.5	486.5	505.5	524.5	543.5	562.5	581.5
L2	322	341	360	379	398	417	436	455	474	493	512
L3	423	435.5	460.5	473	498	510.5	535.5	548	573	598	610.5
L4	412.5	425	450	462.5	487.5	500	525	537.5	562.5	587.5	600
L5	16	12.5	15.5	12.5	15.5	12	15	12	15	18	14.5

Plug-in Connector Connecting Base

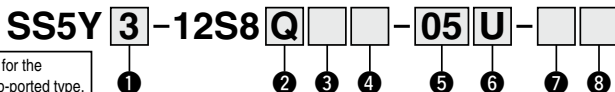
EX180

Type 12
Top Ported

SY3000/5000/7000 Series



How to Order Manifolds



Refer to pages 571 to 573 for the dimensions of Type 12/Top ported type.

① Series

3	SY3000
5	SY5000
7	SY7000

③ SI unit output polarity, Number of outputs

	32 outputs	16 outputs
Without SI unit	Nil	
Positive common (NPN)	2	3
Negative common (PNP)	4	5

- * When "V" (CC-Link) is selected for the SI unit, only symbol "2" or "4" (32 outputs) can be selected.
- * Ensure a match with the common specification of the valves to be used.

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.

② SI unit

0	Without SI unit
Q	DeviceNet [®]
V	CC-Link

- * Only the connector block assembly is mounted for models without an SI unit.

④ Communication connector

Nil	T-branch type
A	Straight type

- * The communication connector and power connector are shipped together with the manifold. The power connector is only available for the straight type.
- * When not selecting an SI unit, the symbol will be "nil."

⑤ Valve stations

In the case of the 32-output SI unit

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

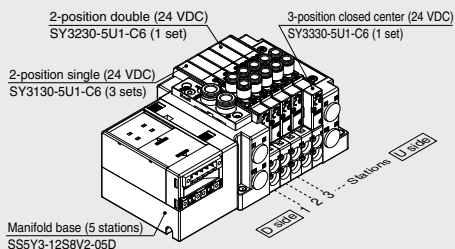
In the case of the 16-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring ^{*1}
:	:	
08	8 stations	
02	2 stations	Specified layout ^{*2} (Up to 16 solenoids available)
:	:	
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 the blanking plate assembly.
- * For the product without the SI unit (S80), 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 (SS5Y3-12S8□-□)



SS5Y3-12S8V2-05D 1 set (Type 10 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 the assembly.
 Prefix it to the part numbers of the valve, etc.

- * For the valve arrangement, the valve closest to the D side is considered the 1st station.
- * Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

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

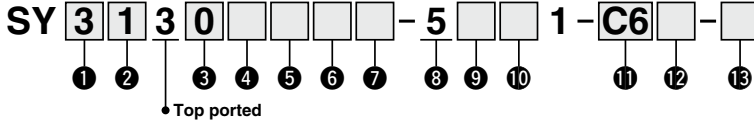
Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	Specify a longer rail than the standard length.
:	
D24	For 24 stations

- * Refer to page 708 for the fixation of DIN rail mounting type manifold.

For details on the EX180 Integrated Type (For Output) Serial Transmission System, refer to the **Web Catalog** and the Operation Manual. For the part numbers of the SI units to be mounted, refer to page 608. Please download the Operation Manual via the SMC website: <https://www.smccworld.com>

How to Order Valves (With mounting screw)

Refer to page 404 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 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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

NII	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 to be continuously energized for long periods of time.

* Be careful of the energizing time when the power-saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

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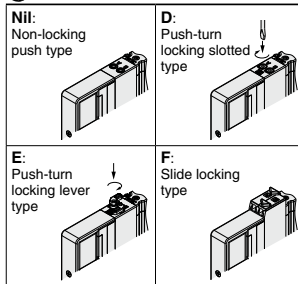
9 Light/surge voltage suppressor and common specification

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

* Select "R," "U," "S," or "Z" for the valve when the SI unit output polarity is positive common. Select "R," "U," "NS," or "NZ" for the valve when the SI unit output polarity is negative common.

* Only "Z" and "NZ" are available with a power-saving circuit.

10 Manual override



* Refer to page 423 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

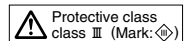
NII	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Drop prevention type)
H	Hexagon socket head cap screw (Drop prevention type)

* 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. Refer to page 611 for base gasket and mounting screw part numbers.

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



SY3000/5000/7000 Series Common Dimensions

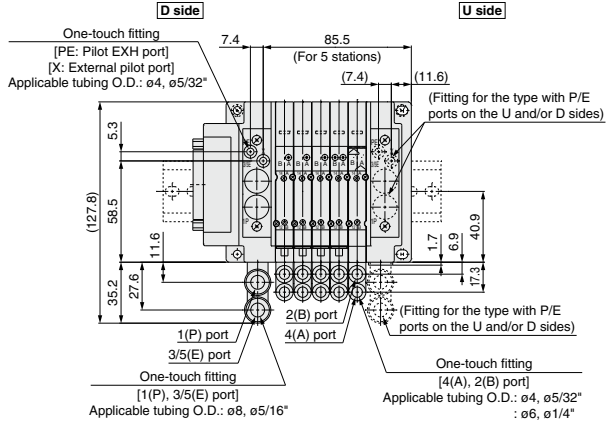
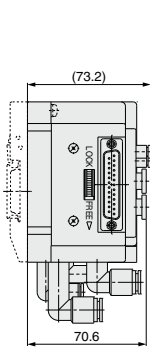
SY3000 Series

**Plug-in
Connector Connecting Base**

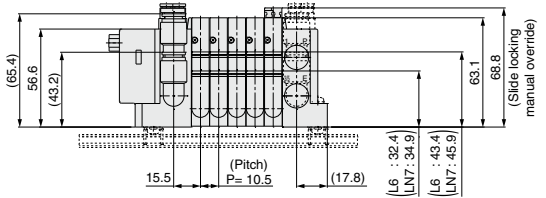
Type 10/Side Ported

External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override

SS5Y3-10□-Stations_U_D(S, R)-□□

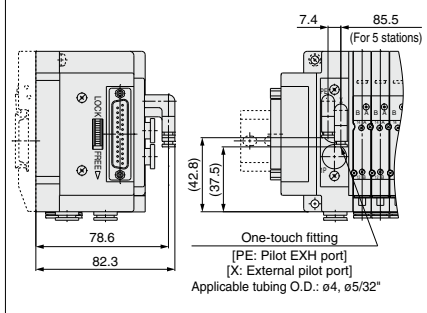


(Station 1)---(Station n)

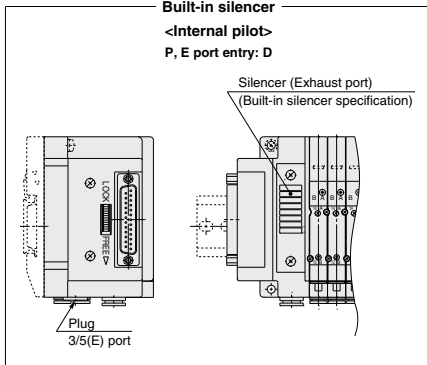


* These figures show the "SS5Y3-10F2-05DR-L6."

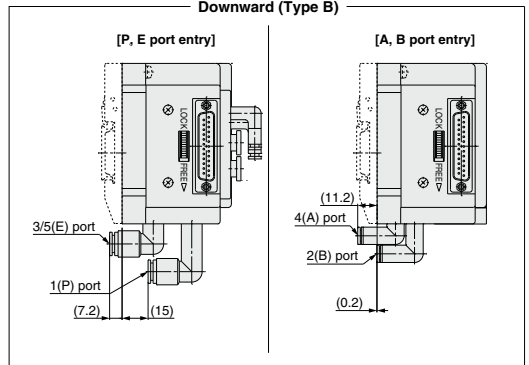
**External pilot for straight piping
P, E port entry: D**



**Built-in silencer
<Internal pilot>
P, E port entry: D**

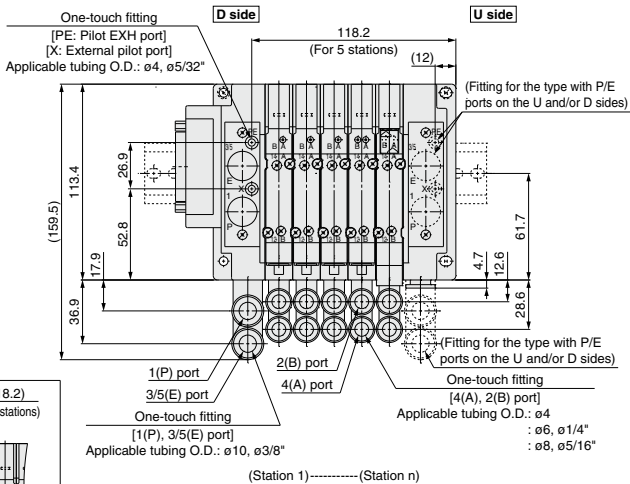
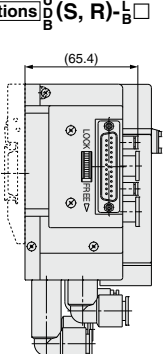


Downward (Type B)

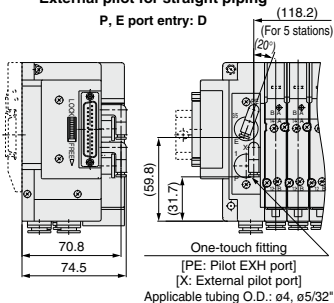


SY5000 Series **Plug-in Connector Connecting Base** **Type 10/Side Ported**
 External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override

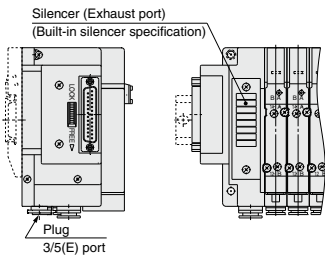
SS5Y5-10□-Stations $\frac{U}{D}$ (S, R) $\frac{L}{B}$ □



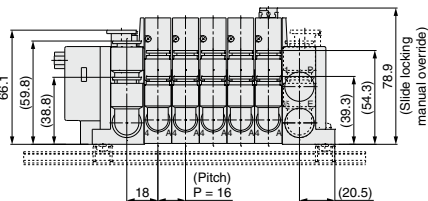
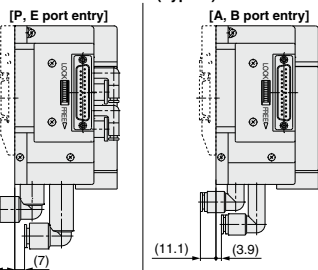
External pilot for straight piping
 P, E port entry: D



Built-in silencer
 P, E port entry: D



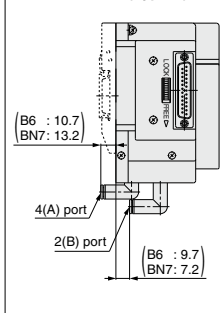
Downward (Type B)



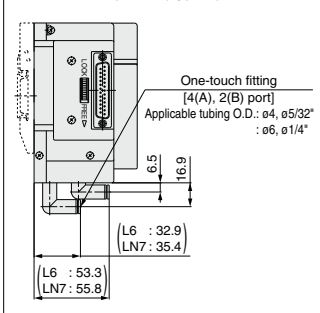
* These figures show the "SS5Y5-10F2-05DR-L8."

Valve/SY3000 Series (Mixed Mounting)

Downward (Type B)



Upward (Type L)

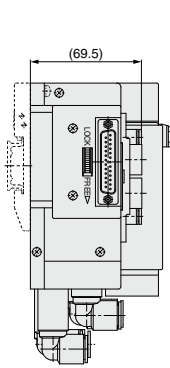


SY3000/5000/7000 Series

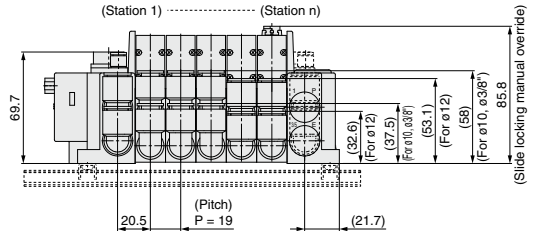
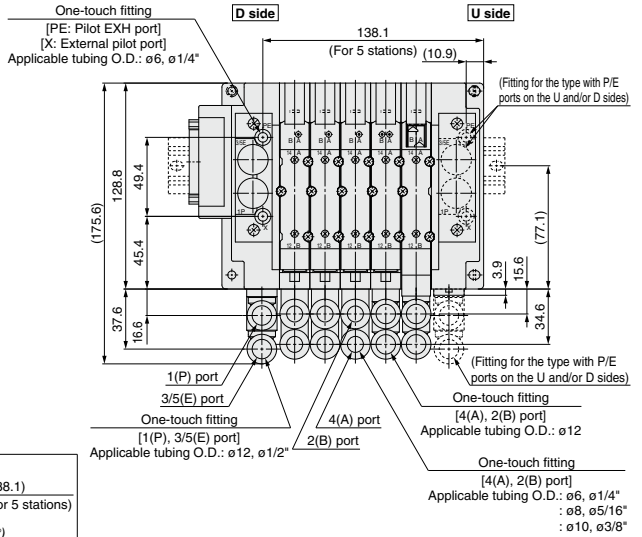
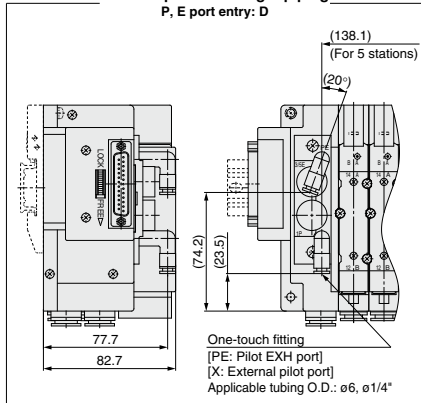
SY7000 Series **Plug-in Connector Connecting Base**

Type 10/Side Ported
External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override

SS5Y7-10□-Stations $\frac{U}{D}$ (S, R)- $\frac{D}{L}$ □

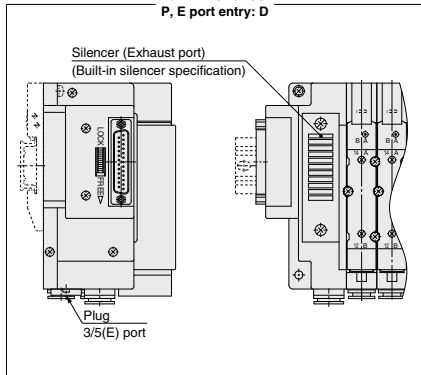


External pilot for straight piping
P, E port entry: D

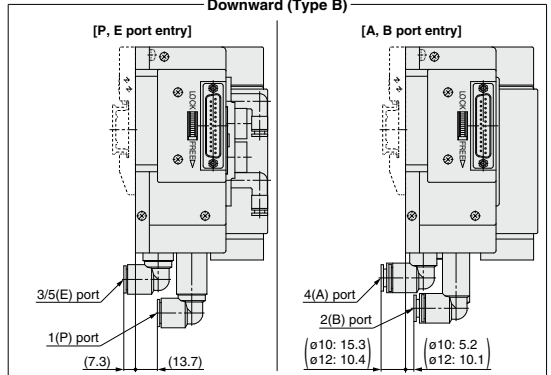


* These figures show the "SS5Y7-10F2-05DR-LM."

Built-in silencer
P, E port entry: D



Downward (Type B)



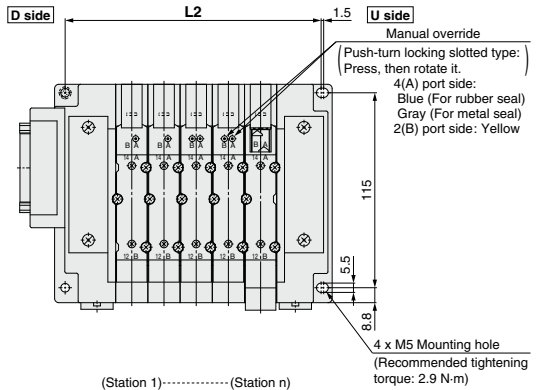
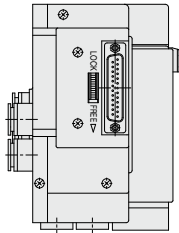
SY3000/5000/7000 Series

SY7000 Series

SS5Y7-11□- Stations $\frac{U}{D}$

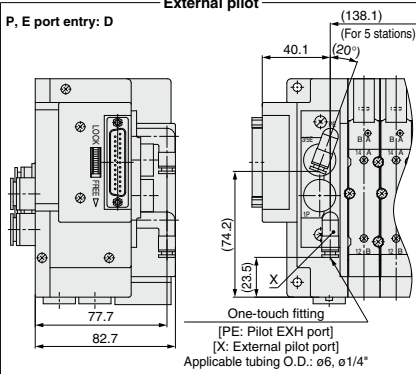
Plug-in Connector Connecting Base

Type 11/Bottom Ported
All Wirings



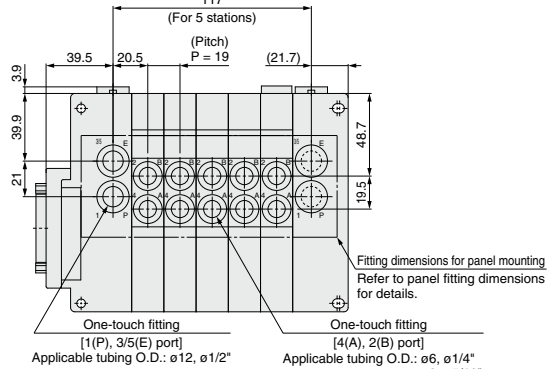
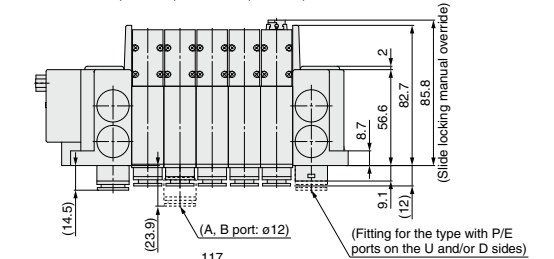
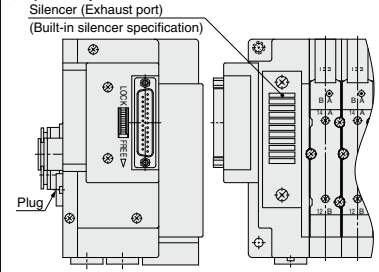
External pilot

P, E port entry: D

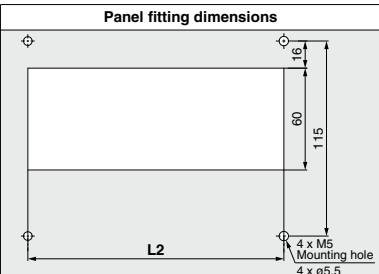


Built-in silencer

P, E port entry: D



Panel fitting dimensions



* These figures show the "SS5Y7-11F2-05D-C10."

* Refer to the pages below for L2 dimensions and other dimensions that are not specified in each wiring specification.

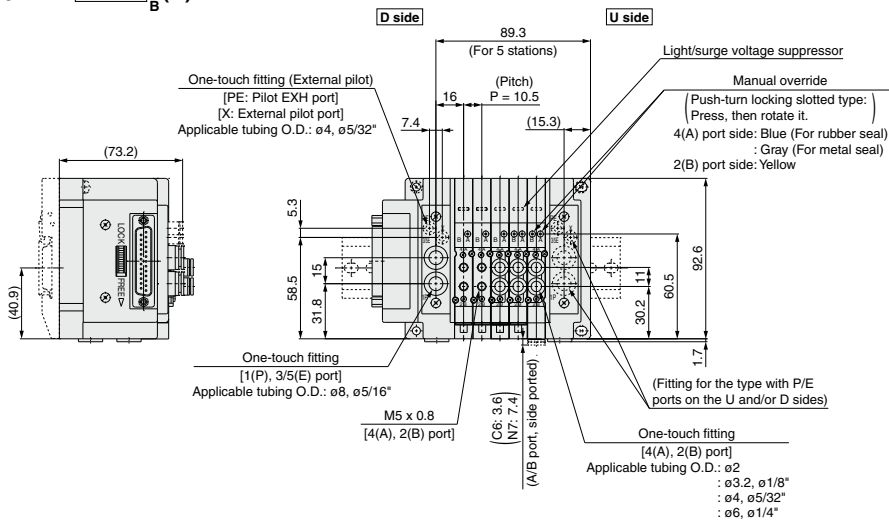
D-sub connector <IP40>	: p. 435
D-sub connector <IP67>	: p. 438
Flat ribbon cable	: p. 441
Terminal block box (Spring type)	: p. 452
Terminal block box	: p. 461
Lead wire	: p. 471
Circular connector	: p. 481
EX500 (128 points)	: p. 491
EX600	: pp. 509, 510
EX250	: p. 527
EX260	: p. 539
EX126	: p. 547
EX120	: p. 555

SY3000 Series

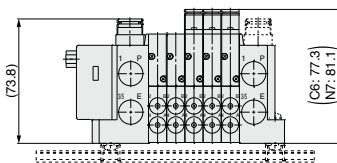
Plug-in Connector Connecting Base

Type 12/Top Ported
All Wirings

SS5Y3-12□- Stations $\frac{U}{D}$ (R)



(Station 1)---(Station n)



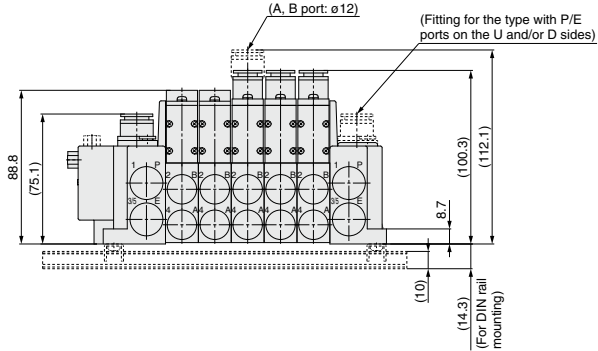
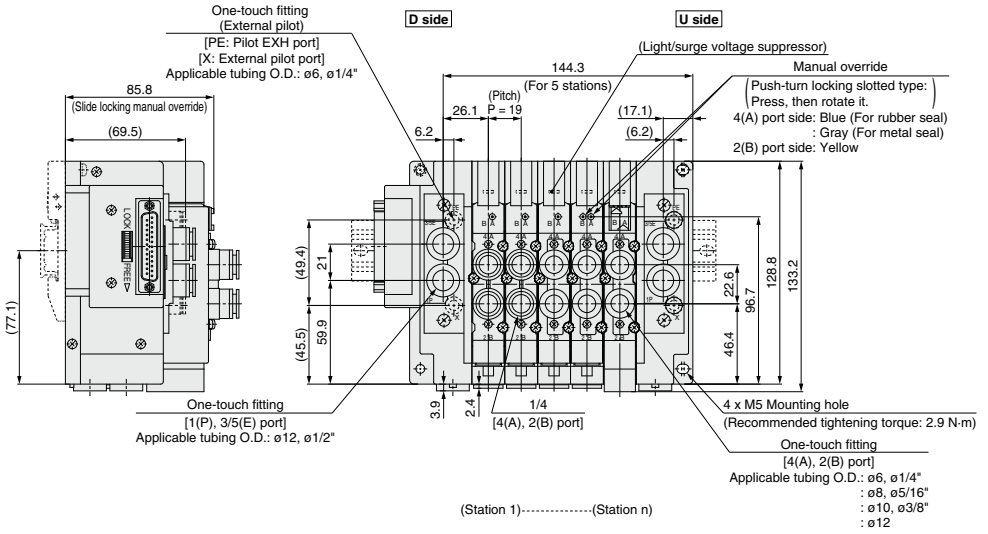
- * These figures show the "SS5Y3-12F2-05D."
- * For the built-in silencer type, a silencer is mounted on the opposite side of U or D side with P or E port. Refer to page 566 for dimensions of the silencer.
- * Refer to the pages below for dimensions that are not specified in each wiring specification.
- D-sub connector <IP40> : p. 433
- D-sub connector <IP67> : p. 436
- Flat ribbon cable : p. 439
- Terminal block box (Spring type) : p. 450
- Terminal block box : p. 459
- Lead wire : p. 469
- Circular connector : p. 479
- EX500 (128 points) : p. 489
- EX600 : pp. 505, 506
- EX250 : p. 525
- EX260 : p. 537
- EX126 : p. 545
- EX120 : p. 553

SY7000 Series

**Plug-in
Connector Connecting Base**

**Type 12/Top Ported
All Wirings**

SS5Y7-12□-Stations $\frac{U}{D}$ (R)



* These figures show the "SS5Y7-12F2-05D."

* For the 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 568 for dimensions of the silencer.

* Refer to the pages below for dimensions that are not specified in each wiring specification.

- D-sub connector <IP40> : p. 435
- D-sub connector <IP67> : p. 438
- Flat ribbon cable : p. 441
- Terminal block box (Spring type) : p. 452
- Terminal block box : p. 461
- Lead wire : p. 471
- Circular connector : p. 481
- EX500 (128 points) : p. 491
- EX600 : pp. 509, 510
- EX250 : p. 527
- EX260 : p. 539
- EX126 : p. 547
- EX120 : p. 555

Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold

D-sub Connector (IP40/67) Flat Ribbon Cable Terminal Block Box/Spring Type (IP67)

Terminal Block Box (IP67) Lead Wire (IP67) Circular Connector (IP67) EX500 (IP67)

EX600 (IP67) EX245 (IP65) EX250 (IP67) EX260 (IP67) EX126 (IP67) EX120 EX180

Type 10
Side Ported

Type 11
Bottom Ported

SY3000/5000 Series

The EX250/500 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.

The SY3000 can be mounted onto the SY5000 size manifold.



* Refer to the connector type.

How to Order Manifolds

Refer to page 583 for the 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)	IP40 IP67
P		26 pins
PG	Flat ribbon cable	20 pins
PH		10 pins
TC	Terminal block box (Spring type)	448
T	Terminal block box	456
L1	Lead wire	34 cores
L2		17 cores
L3		9 cores
M	Circular connector	476
S□	Serial transmission	EX500 Gateway Decentralized System 2 (128 points)
S6□		EX600
SA□		EX245
S□		EX250
S□		EX260
S4□ ¹		EX126
S3□ ¹		EX120
S8□		EX180

*1 EX126, EX120 are not yet UL-compliant.
* 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) and Flat ribbon cable

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 ⑦ on page 502 for the EX600, page 522 for the EX250, and page 558 for the EX180.

⑦ Fitting type: One-touch fitting

Symbol	A, B port	
C	Straight	
L	Metric size	Upward ²
B		Downward ²
N	Inch size	Straight
LN		Upward ²
BN		Downward ²
CM ¹	Mixed sizes	Straight
LM ¹		Elbow (Including upward and downward piping) ²

*1 Select CM or LM if mixed port sizes are to be used for each series. (For example, if mixed sizes, such as C6 and C8, are to be used for the SY5000 series) In such cases, indicate the sizes on the manifold specification sheet.
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 (pages 617 to 619). Elbow fittings are not available for Type 11 (Bottom ported).
* Elbow fittings: $\phi 2$, $\phi 3.2$, and $\phi 1.8"$ are not available for the SY3000 series. $\phi 2$, $\phi 3.2$, $\phi 1.8"$, and $\phi 5/32"$ are not available for the SY5000 series.

8 SY5000: A, B port size

(Metric/One-touch fitting)

Symbol	Port size
4	ø4
6	ø6
8	ø8
Nil	For all stations of SY3000

(Inch/One-touch fitting)

Symbol	Port size
3	ø5/32"
7	ø1/4"
9	ø5/16"
Nil	For all stations of SY3000

* No symbol needs to be specified when fitting type "CM" or "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 that of the SY5000.
 * No symbol needs to be specified when fitting type "CM" or "LM" is selected.

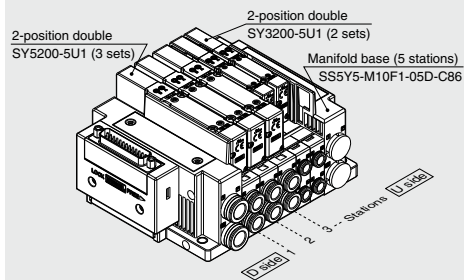
10 Mounting

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 length longer than that of the standard rail. [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 the type 11 bottom-ported type.
 * Refer to page 581 to determine the L3 using "Calculation formula" for the DIN rail length.
 * Refer to page 708 for the fixation of DIN rail mounting type manifold.

How to Order Manifold Assembly

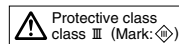
Example (SS5Y5-M10F1-□)



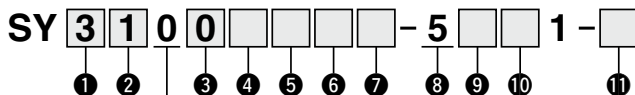
SS5Y5-M10F1-05D-C86 ... 1 set (Type M10 5-station manifold base part no.)
 *SY5200-5U1 3 sets (2-position double part no.)
 *SY3200-5U1 2 sets (2-position double part no.)
 * The asterisk denotes the symbol for the assembly.
 Prefix it to the part numbers of the valve, etc.

* For the valve arrangement, the valve closest to the D side is considered the 1st station.
 * Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

* When mixing top-ported configurations, select from those listed on page 587. In such cases, use caution as there is also output on the A and B ports on the base side.
 Specify on the manifold specification sheet if plugs are required for the A and B ports on the base side.



How to Order Valves (With mounting screw) Refer to page 404 for valve specifications.



• 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	N.C./N.C.
B ^{*1}	dual 3-port	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

Nil	Internal pilot
R	External pilot

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

Nil	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

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

⑥ Pilot valve option

Nil	Standard (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

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

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

* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 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	—	●	Positive common
Z	●		Negative common
NS	—		
NZ	●		

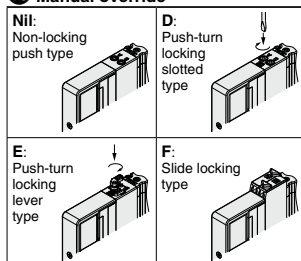
* "Nil" is not available for the SI unit manifold.

* For the non-polar type, be careful of surge voltage intrusion. Refer to page 706 for details. (Excludes when an SI unit manifold is used)

* Only "Z" and "NZ" types are available with a 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. 488	EX600: p. 504
EX24S: p. 514	EX250: p. 524
EX260: p. 532	EX126: p. 544
EX120: p. 552	EX180: p. 558

⑩ Manual override



* Refer to page 423 for 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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 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.

Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold

D-sub Connector (IP40/67) Flat Ribbon Cable Terminal Block Box/Spring Type (IP67)

Terminal Block Box (IP67) Lead Wire (IP67) Circular Connector (IP67) EX500 (IP67)

EX600 (IP67) EX245 (IP65) EX250 (IP67) EX260 (IP67) EX126 (IP67) EX120 EX180

Type 10
Side Ported

Type 11
Bottom Ported

SY5000/7000 Series

The EX250/500 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.

The SY5000 can be mounted onto the SY7000 size manifold.



* Refer to the connector type.

How to Order Manifolds

Refer to page 584 for the 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 ⑥ 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 IP67
P		26 pins
PG	Flat ribbon cable	20 pins
PH		10 pins
TC	Terminal block box (Spring type)	448
T	Terminal block box	456
L1	Lead wire	34 cores
L2		17 cores
L3		9 cores
M	Circular connector	476
S□	Serial transmission	EX500 Gateway Decentralized System 2 (128 points)
S6□		EX600
SA□		EX245
S□		EX250
S□		EX260
S4□ ¹		EX126
S3□ ¹		EX120
S8□		EX180

*1 EX126, EX120 are not yet UL-compliant.
* 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) and Flat ribbon cable

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 ⑦ on page 502 for the EX600, page 522 for the EX250, and page 558 for the EX180.

⑦ Fitting type: One-touch fitting

Symbol	A, B port	
C	Straight	
L	Metric size	Upward ²
B		Downward ²
N	Straight	
LN	Inch size	Upward ²
BN		Downward ²
CM ¹	Mixed sizes	Straight
LM ¹		Elbow (Including upward and downward piping) ²

*1 Select CM or LM if mixed port sizes are to be used for each series. (For example, if mixed sizes, such as C6 and C8, are to be used for the SY5000 series) In such cases, indicate the sizes on the manifold specification sheet.

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 (pages 617 to 619). Elbow fittings are not available for Type 11 (Bottom ported).
* Elbow fittings: $\phi 1/4"$ and $\phi 5/16"$ are not available.

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" or "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 that of the SY7000.
 * No symbol needs to be specified when fitting type "CM" or "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		●	—

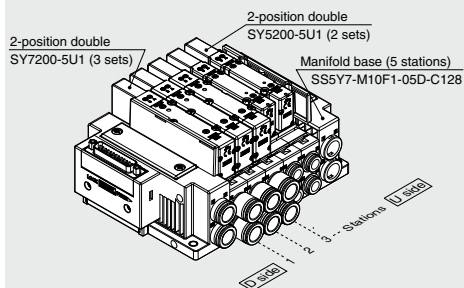
DIN Rail Option

Symbol	Standard length
Nil	Without DIN rail (with bracket)
0	For 3 stations
3	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 the type 11 bottom-ported type.
- * Refer to page 581 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 708 for the fixation of DIN rail mounting type manifold.

How to Order Manifold Assembly

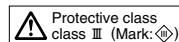
Example (SS5Y7-M10F1-□)



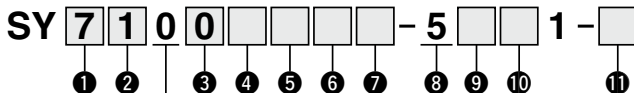
SS5Y7-M10F1-05D-C128-- 1 set (Type M10 5-station manifold base part no.)
 *SY7200-5U1 3 sets (2-position double part no.)
 *SY5200-5U1 2 sets (2-position double part no.)
 * The asterisk denotes the symbol for the assembly.
 Prefix it to the part numbers of the valve, etc.

- * For the valve arrangement, the valve closest to the D side is considered the 1st station.
- * Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

* When mixing top-ported configurations, select from those listed on page 587. In such cases, use caution as there is also output on the A and B ports on the base side.
 Specify on the manifold specification sheet if plugs are required for the A and B ports on the base side.



How to Order Valves (With mounting screw) Refer to page 404 for valve specifications.



• Base mounted

1 Series

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 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

Nil	Internal pilot
R	External pilot

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

Nil	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 the 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 if the valve is to be continuously energized for long periods of time.

* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 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

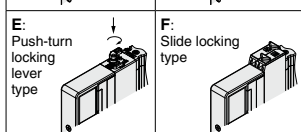
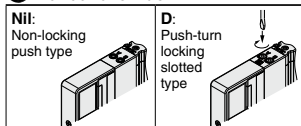
Symbol	With light	Surge voltage suppressor	Common specification
Nil	—	—	Non-polar
R	—	—	
U	●	—	
S	—	●	Positive common
Z	●		
NS	—		Negative common
NZ	●	—	

* "Nil" is not available for the SI unit manifold.
 * For the non-polar type, be careful of surge voltage intrusion. Refer to page 706 for details. (Excludes when an SI unit manifold is used)

* Only "Z" and "NZ" types are available with a 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. 488 EX600: p. 504
 EX250: p. 524 EX260: p. 532
 EX126: p. 544 EX120: p. 552

10 Manual override



* Refer to page 423 for 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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 for base gasket and mounting screw part numbers.

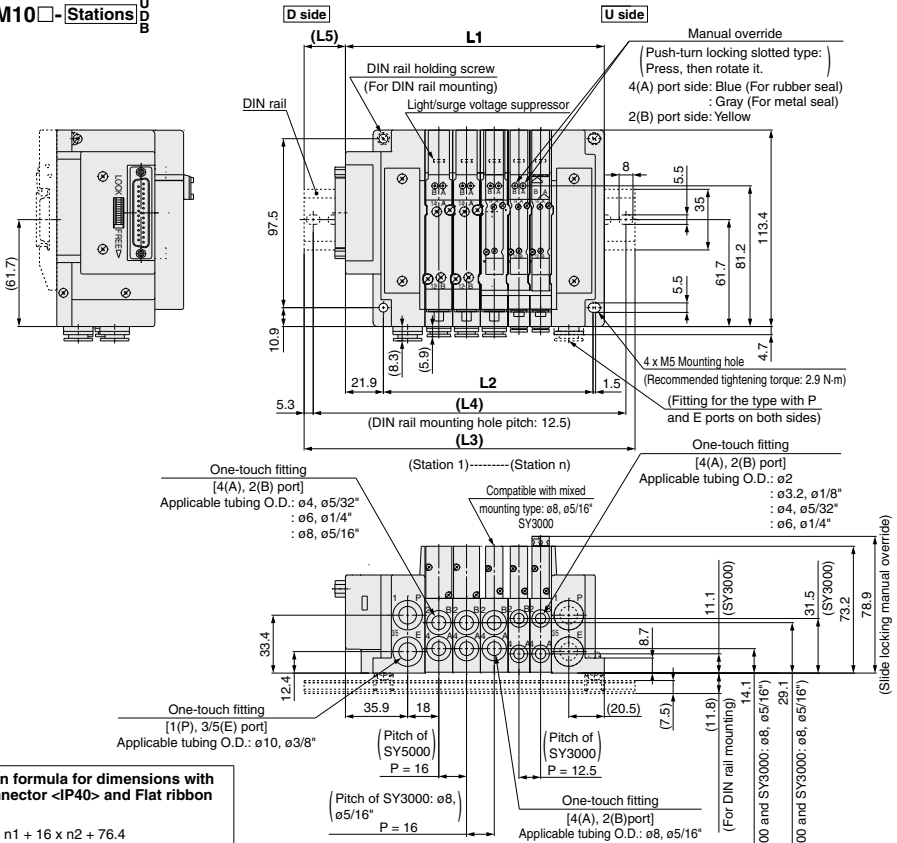
* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator, or double check spacer assembly with residual pressure release valve.

Plug-in Connector Connecting Base

Type 10/Side Ported
Mixed Mounting Type

Dimensions: SY3000/5000 Series

SS5Y5-M10 □ - Stations $\frac{U}{D}$



Calculation formula for dimensions with D-sub connector <IP40> and Flat ribbon cable

$L1 = 12.5 \times n1 + 16 \times n2 + 76.4$
 $L2 = 12.5 \times n1 + 16 \times n2 + 48$
 $M = (L1 + 6.1)/12.5 + 1$ Decimal fractions are truncated.
 $L3 = 12.5 \times M + 23$
 $L4 = L3 - 10.5$
 $L5 = (L3 - L1) / 2$

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

$L1 = 12.5 \times n1 + 16 \times n2 + a + b \times n3$
 $L2 = 12.5 \times n1 + 16 \times n2 \times 48$
 $M = L1 / 12.5 + 1$ Decimal fractions are truncated.
 $L3 = 12.5 \times M + 23$
 $L4 = L3 - 10.5$
 $L5 = (L3 - L1) / 2$
 $L6 = b \times n3 + c$

n1: Number of valve stations of the SY3000
 n2: Number of valve stations of the SY5000
 (Including the stations of the SY3000: ø8, ø5/16")
 n3: Number of I/O units or input block stations

* Refer to pages 507 and 508 for dimensions of the EX600 serial transmission with I/O unit and page 526 for the EX250 serial transmission with input block when L6, b, and c are used for the calculation formula.

* Refer to pages 566 and 567 for dimensions of the external pilot, built-in silencer, and elbow fittings.

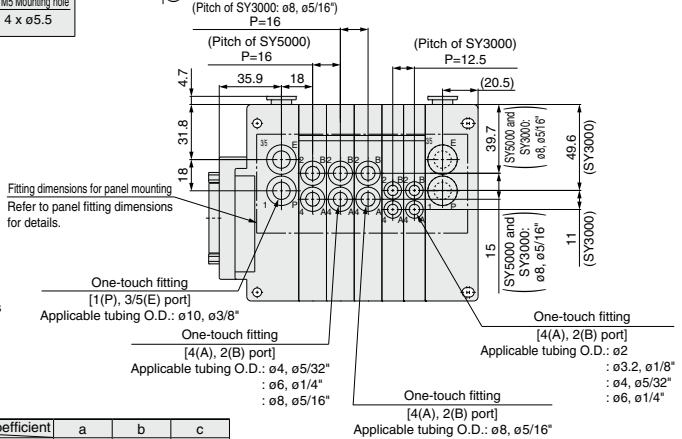
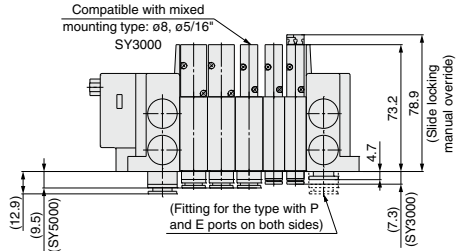
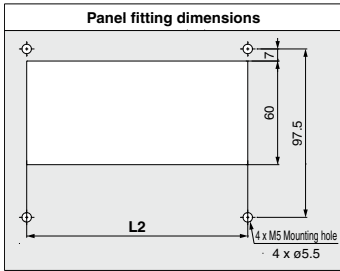
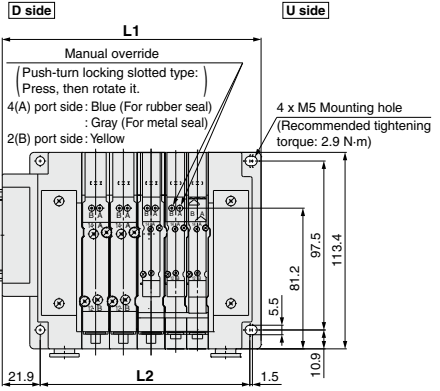
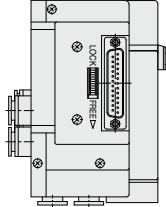
	Coefficient		
	a	b	c
D-sub connector <IP67>	90.5	—	—
Terminal block box (Spring type)	128	—	—
Terminal block box or Serial transmission: EX126	149.3	—	—
Lead wire or Circular connector	97	—	—
EX500 Gateway Decentralized System 2 (128 points)	88.7	—	—
Serial transmission: EX600 (M12 connector)	141.5	47	81.5
Serial transmission: EX600 (7/8 inch connector)	158	47	81.5
Serial transmission: EX250	141.5	21	81.5
Serial transmission: EX260	88.7	—	—
Serial transmission: EX120	84.7	—	—

Dimensions: SY3000/5000 Series

Plug-in Connector Connecting Base

Type 11/Bottom Ported Mixed Mounting Type

SS5Y5-M11 □ - [Stations] $\frac{U}{D}$



Calculation formula for dimensions

L1 = 12.5 x n1 + 16 x n2 + a + b x n3
L2 = 12.5 x n1 + 16 x n2 + 48
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: $\phi 8, \phi 5/16"$)
n3: Number of I/O units or input block stations

* Refer to pages 507 and 508 for dimensions of the EX600 serial transmission with I/O unit and page 526 for the EX250 serial transmission with input block when L, b, and c are used for the calculation formula.

Coefficient	a	b	c
D-sub connector <IP40> or Flat ribbon cable	76.4	—	—
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	—	—
Serial transmission: EX600 (M12 connector)	141.5	47	81.5
Serial transmission: EX600 (7/8 inch connector)	158	47	81.5
Serial transmission: EX250	141.5	21	81.5
Serial transmission: EX260	88.7	—	—
Serial transmission: EX120	84.7	—	—

* Refer to page 569 for dimensions of the external pilot and built-in silencer.

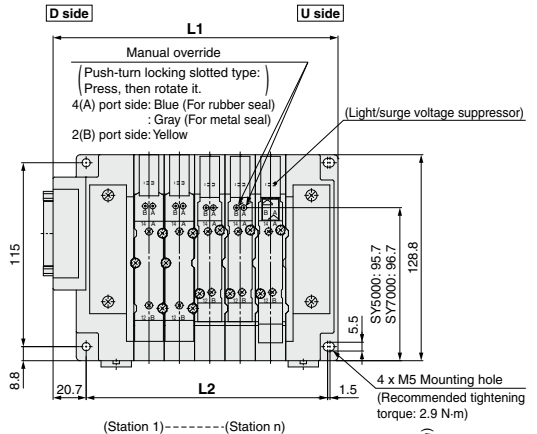
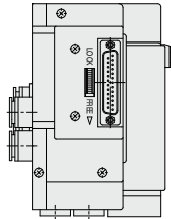
SY3000/5000/7000 Series

Dimensions: **SY5000/7000 Series**

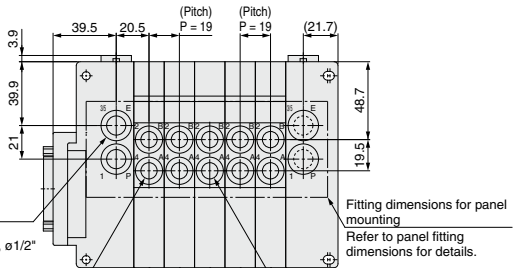
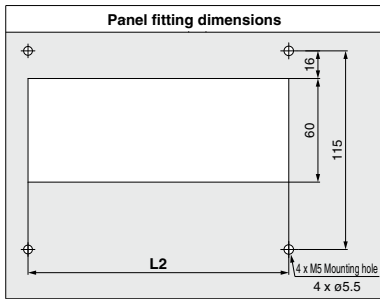
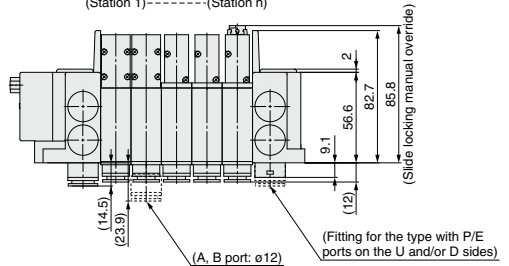
**Plug-in
Connector Connecting Base**

**Type 11/Bottom Ported
Mixed Mounting Type**

SS5Y7-M11 □ - [Stations] $\frac{U}{D}$



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



One-touch fitting
[1(P), 3/5(E) port]
Applicable tubing O.D.: ø12, ø1/2"

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

One-touch fitting (For SY7000)
[4(A), 2(B) port]
Applicable tubing O.D.: ø6, ø1/4"
ø8, ø5/16"
ø10, ø3/8"
ø12

One-touch fitting (For SY5000)
[4(A), 2(B) port]
Applicable tubing O.D.: ø6, ø1/4"
ø8, ø5/16"
ø10, ø3/8"
ø12

* Refer to page 570 for dimensions of the external pilot and built-in silencer.

* Refer to the pages below for L1, L2 dimensions and other dimensions that are not specified in each wiring specification.

Dimensions of Type 11/Bottom ported: p. 570

D-sub connector <IP40> : p. 435

D-sub connector <IP67> : p. 438

Flat ribbon cable : p. 441

Terminal block box (Spring type) : pp. 451, 452

Terminal block box : p. 461

Lead wire : p. 471

Circular connector : p. 481

EX500 (128 points) : p. 491

EX600 : pp. 509, 510

EX250 : p. 527

EX260 : p. 539

EX126 : p. 547

EX120 : p. 555

Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold

D-sub Connector (IP40/67) Flat Ribbon Cable Terminal Block Box/Spring Type (IP67)
 Terminal Block Box (IP67) Lead Wire (IP67) Circular Connector (IP67) EX500 (IP67)
 EX600 (IP67) EX245 (IP65) EX250 (IP67) EX260 (IP67) EX126 (IP67) EX120 EX180

Type 12
Top Ported

SY3000/5000/7000 Series

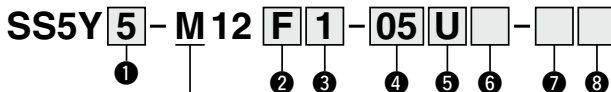


* Refer to the connector type.

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 Manifolds

Refer to pages 572 and 573 for the 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 $\phi 8$ or $\phi 5/16"$ One-touch fitting)

Also, for the SY7000 series, it is possible to mount the SY5000 size valves on all stations. However, the SY3000 cannot be mounted onto the SY7000 series.

The EX250/500 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.

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) and Flat ribbon cable

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	$\phi 10$	$\phi 12$	Metric size
N	$\phi 3/8"$	$\phi 1/2"$	Inch size

2 Connector type

Symbol	Type	Page	
F	D-sub connector (25 pins)	442	
FW	IP40		
P	IP67		
PG	26 pins		
PH	20 pins	453	
TC	10 pins		
T	Terminal block box (Spring type)	462	
T	Terminal block box		
L1	Lead wire	34 cores	472
L2		17 cores	
L3		9 cores	
M	Circular connector	482	
S□	Serial transmission	EX500 Gateway Decentralized System 2 (128 points)	498
S6□		EX600	514
SA□		EX245	512
S□		EX250	528
S□		EX260	540
S4□*1		EX126	548
S3□*1		EX120	556
S8□		EX180	558

*1 EX126, EX120 are not yet UL-compliant.
 * 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", SUP/EXH block assembly with a built-in silencer, choose U or D for P, E port entry.

* Refer to page 512 for the EX600 and 6 on page 528 for the EX250.

6 SUP/EXH block assembly

N11	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

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

(Example: When the P and E port entry is on the D side, the silencer exhaust port is on the U side.)

* Refer to page 512 for the EX600 and 6 on page 528 for the EX250.

8 Mounting

Symbol	Mounting
N11	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
⋮	⋮
D24	For 24 stations

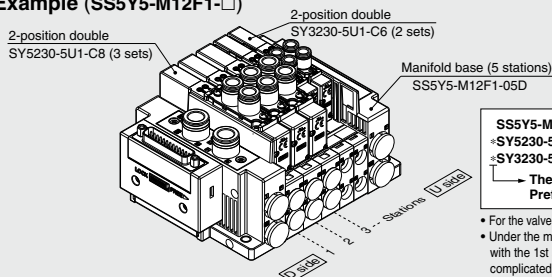
* Specify a length longer than that of the standard rail. [For the SS5Y5-M12, the SY5000 valve is now at a mountable length (manifold block length of 16 mm).]

* Refer to page 588 to determine the L3 using "Calculation formula" for the DIN rail length. (For the SY3000 and SY5000 mixed mounting type)

* Refer to page 708 for the fixation of DIN rail mounting type manifold.

How to Order Manifold Assembly

Example (SS5Y5-M12F1-□)

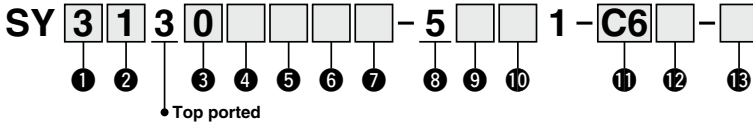


SS5Y5-M12F1-05D ... 1 set (Type M12 5-station manifold base part no.)
 SY5230-5U1-C8 3 sets (2-position double part no.)
 SY3230-5U1-C6 2 sets (2-position double part no.)
 The asterisk denotes the symbol for the assembly.
 Prefix it to the part numbers of the valve, etc.

• For the valve arrangement, the valve closest to the D side is considered the 1st station.
 • Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

How to Order Valves (With mounting screw)

Refer to page 404 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	4-position
B ⁻¹	dual 3-port
C ⁻¹	
	N.C./N.C.
	N.O./N.O.
	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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

NII	None
H	Built-in

* Only the rubber seal type is available. A manifold installed type is available if a back pressure check valve with a metal seal is required. Refer to page 625 for ordering examples. 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 or 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 if the valve is to be continuously energized for long periods of time.
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

5	24 VDC
6	12 VDC

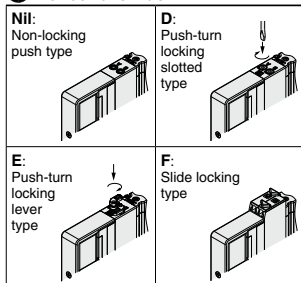
* Only 24 VDC is available for the serial transmission type.

9 Light/surge voltage suppressor and common specification

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

* "NII" is not available for the SI unit manifold.
* For the non-polar type, be careful of surge voltage intrusion.
Refer to page 706 for details. (Excludes when an SI unit manifold is used)
* Only "Z" and "NZ" types are available with a 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. 499 EX600: p. 513
EX245: p. 514 EX250: p. 529
EX260: p. 541 EX126: p. 549
EX120: p. 557 EX180: p. 558

10 Manual override



* Refer to page 423 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

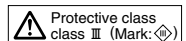
NII	Rc
F	G
N	NPT
T	NPTF

* 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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 611 for base gasket and mounting screw part numbers.
* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.



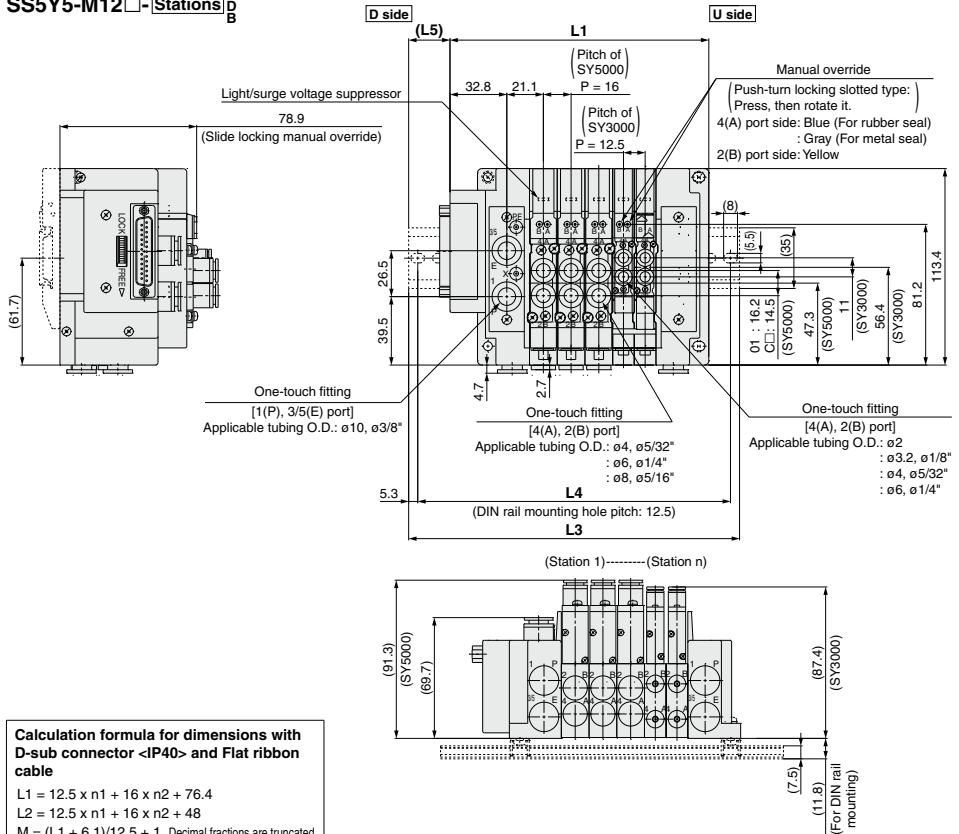
SY3000/5000/7000 Series

Dimensions: **SY5000 Series**

Plug-in
Connector Connecting Base

Type 12/Top Ported
Mixed Mounting Type

SS5Y5-M12□- [Stations] $\frac{U}{D}$



Calculation formula for dimensions with D-sub connector <IP40> and Flat ribbon cable

$L1 = 12.5 \times n1 + 16 \times n2 + 76.4$
 $L2 = 12.5 \times n1 + 16 \times n2 + 48$
 $M = (L1 + 6.1) / 12.5 + 1$ Decimal fractions are truncated.
 $L3 = 12.5 \times M + 23$
 $L4 = L3 - 10.5$
 $L5 = (L3 - L1 + 6.1) / 2$

n1: Number of valve stations of the SY3000
n2: Number of valve stations of the SY5000

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

$L1 = 12.5 \times n1 + 16 \times n2 + a + b \times n3$
 $L2 = 12.5 \times n1 + 16 \times n2 \times 48$
 $M = L1 / 12.5 + 1$ Decimal fractions are truncated.
 $L3 = 12.5 \times M + 23$
 $L4 = L3 - 10.5$
 $L5 = (L3 - L1) / 2$
 $L6 = b \times n3 + c$

n1: Number of valve stations of the SY3000
n2: Number of valve stations of the SY5000
n3: Number of I/O units or input block stations
* Refer to pages 507 and 508 for dimensions of the EX600 serial transmission with I/O unit and page 526 for the EX250 serial transmission with input block when L6, b, and c are used for the calculation formula.

* Refer to page 567 for dimensions of the external pilot and elbow fittings.

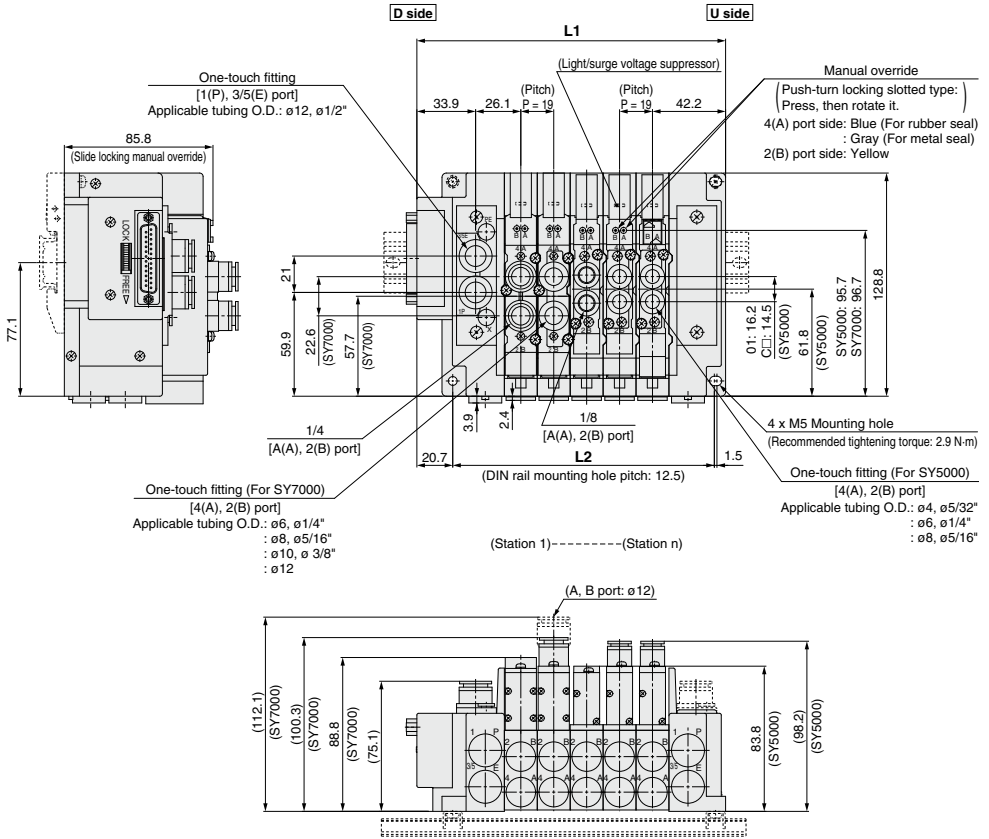
	Coefficient	a	b	c
D-sub connector <IP67>		90.5	—	—
Terminal block box (Spring type)		128	—	—
Terminal block box or Serial transmission: EX126		149.3	—	—
Lead wire or Circular connector		97	—	—
EX500 Gateway Decentralized System 2 (128 points)		88.7	—	—
Serial transmission: EX600 (M12 connector)		141.5	47	81.5
Serial transmission: EX600 (7/8 inch connector)		158	47	81.5
Serial transmission: EX250		141.5	21	81.5
Serial transmission: EX260		88.7	—	—
Serial transmission: EX120		84.7	—	—

Dimensions: **SY7000 Series**

Plug-in
Connector Connecting Base

Type 12/Top Ported
Mixed Mounting Type

SS5Y7-M12□-[Stations] $\frac{U}{D}$

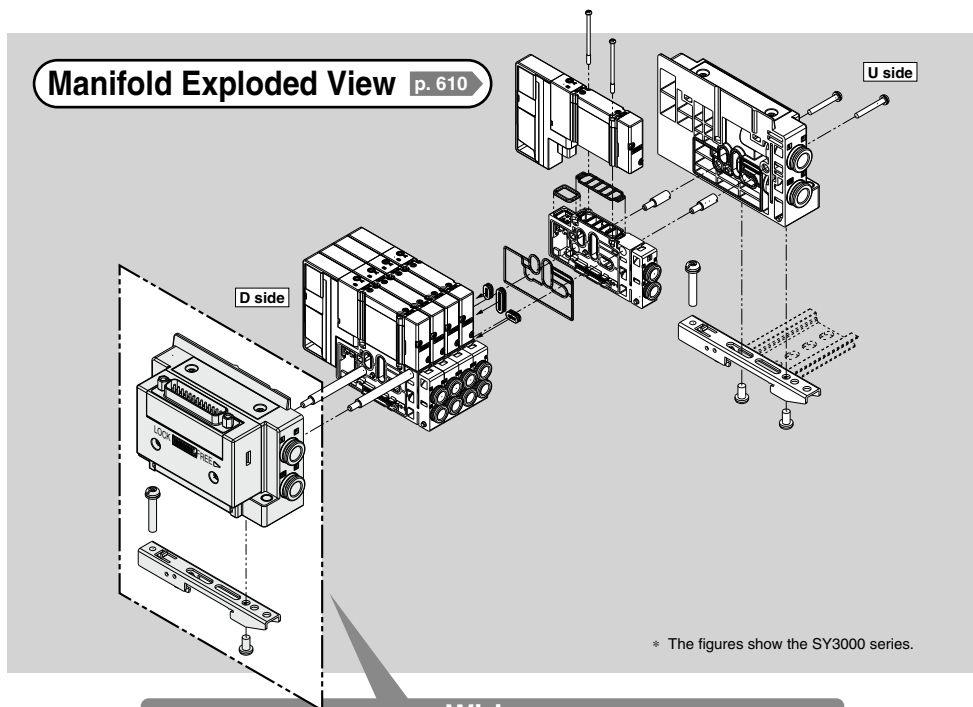


* Refer to page 568 for dimensions of the external pilot and elbow fittings.

* Refer to the pages below for L1, L2, L3, L4 dimensions and other dimensions that are not specified in each wiring specification.

Dimensions of Type 12/Top ported:	p. 573
D-sub connector <IP40>	: p. 435
D-sub connector <IP67>	: p. 438
Flat ribbon cable	: p. 441
Terminal block box (Spring type)	: p. 452
Terminal block box	: p. 461
Lead wire	: p. 471
Circular connector	: p. 481
EX500 (128 points)	: p. 491
EX600	: pp. 509, 510
EX250	: p. 527
EX260	: p. 539
EX126	: p. 547
EX120	: p. 555

SY3000/5000/7000 Series Type 10, 11, 12 Connector Connecting Base Manifold Exploded View

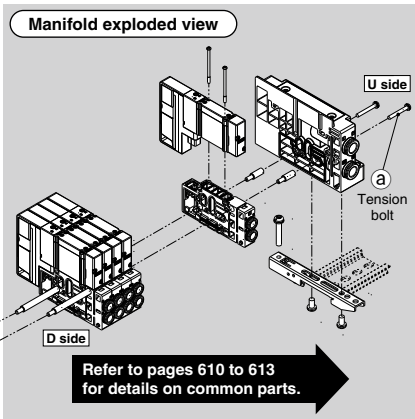
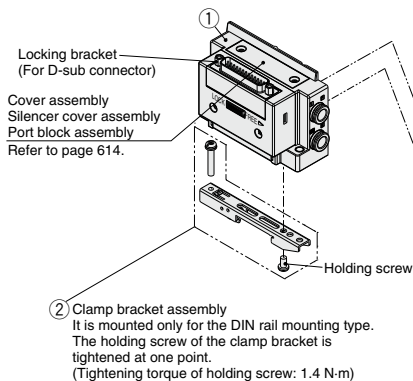


Wiring

<p>D-sub Connector <IP40>/Flat Ribbon Cable p. 591</p>	<p>D-sub Connector <IP67> p. 592</p>	<p>Terminal Block Box (Spring Type) p. 593</p>	<p>Terminal Block Box p. 594</p>	<p>Lead Wire p. 595</p>
<p>Circular Connector p. 596</p>	<p>EX500 Gateway Decentralized System 2 (128 Points) p. 597</p>	<p>EX600 p. 599</p>	<p>EX245 p. 602</p>	<p>EX250 p. 604</p>
<p>EX260 p. 605</p>	<p>EX126 p. 606</p>	<p>EX120 p. 607</p>	<p>EX180 p. 608</p>	

Wiring

D-sub Connector <IP40>/Flat Ribbon Cable



Manifold Parts Nos.

① SUP/EXH block assembly

SY 3 0M-1-11 A 1-C8 • Mounting

Series

3	SY3000
5	SY5000
7	SY7000

Nil	Direct mounting
D0	DIN rail mounting (Without DIN rail)

* For the bottom-ported type, the symbol is nil.

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)

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	●	—	—	—	Top
RV	—	●	—	—	
VP	●	—	● ^{*1}	—	
B	●	—	—	—	Bottom
BS	●	—	●	—	
BR	—	●	—	—	

*1 For silencer (supply side) E port is plugged.

* "B" for the bottom-ported type 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"	—	●	—	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
① Tension bolt	None ^{*1}	3 pcs.

*1 Since the nuts are embedded in the SUP/EXH block

② Clamp bracket assembly

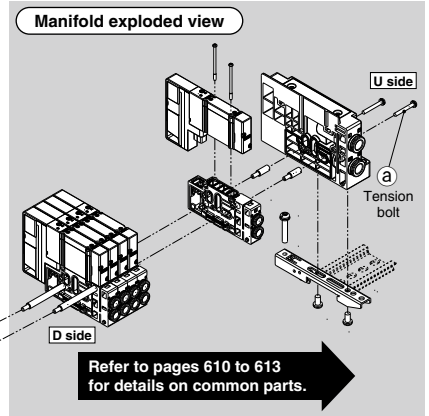
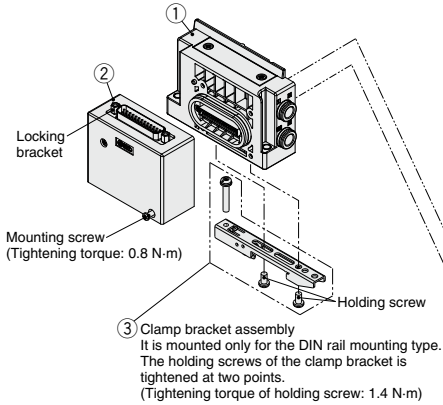
Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

* Part number is for one assembly.

SY3000/5000/7000 Series

Wiring

D-sub Connector <IP67>



Manifold Parts Nos.

① SUP/EXH block assembly

SY **3** OM-1-1A - **C8** - • Mounting

• Series

3	SY3000
5	SY5000
7	SY7000

Nil	Direct mounting
DO	DIN rail mounting (Without DIN rail)

* For the bottom-ported type, 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 the bottom-ported type can be selected for the SY5000/7000 series.

• P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	ø8	●	—	—	Side/Bottom/Top ported Metric size
C10	ø10	—	●	—	
C12	ø12	—	—	●	
N9	ø5/16"	●	—	—	Side/Bottom/Top ported Inch size
N11	ø3/8"	—	●	—	
N13	ø1/2"	—	—	●	
L8	ø8	●	—	—	Side ported Metric size
L10	ø10	—	●	—	
L12	ø12	—	—	●	
LN9	ø5/16"	●	—	—	Side ported Inch size
LN11	ø3/8"	—	●	—	
LN13	ø1/2"	—	—	●	
B8	ø8	●	—	—	Side ported Metric size
B10	ø10	—	●	—	
B12	ø12	—	—	●	
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
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" 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 D-sub connector block assembly <IP67>

Part no.	Connector direction	Locking bracket
SY30M-14-9A1	Top	Metric size
SY30M-14-9A2	Side	
SY30M-14-9A1U	Top	Inch size
SY30M-14-9A2U	Side	

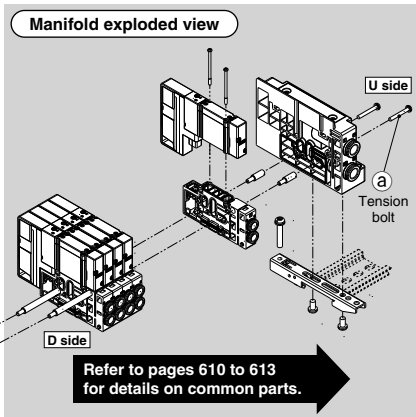
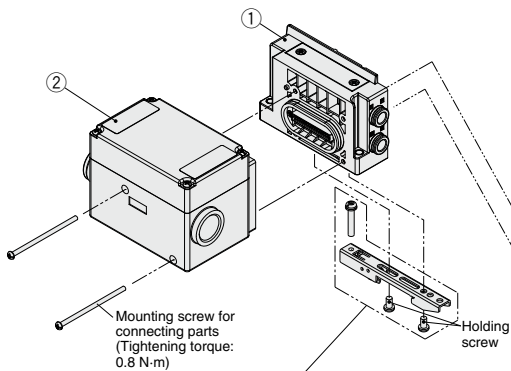
③ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

* Part number is for one assembly.

Wiring

Terminal Block Box (Spring Type)



③ Clamp bracket assembly
It is mounted only for the DIN rail mounting type.
The holding screws of the clamp bracket is tightened at two points.
(Tightening torque of holding screw: 1.4 N·m)

Manifold Parts Nos.

① SUP/EXH block assembly

SY 3 0M-1-1A

Series

3	SY3000
5	SY5000
7	SY7000

Mounting

Nil	Direct mounting
DO	DIN rail mounting (Without DIN rail)

* For the bottom-mounted type, 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	—	●	—	
VP	●	—	● ^{*1}	Top
B	●	—	—	
BS	●	—	—	
BR	—	●	—	Bottom

*1 For silencer (supply side)
E port is plugged.
* "B" for the bottom-ported type can be selected for the SY5000/7000 series.

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	ø8	●	—	—	Side/Bottom/ Top ported Metric size
C10	ø10	—	●	—	
C12	ø12	—	—	●	
N9	ø5/16"	●	—	—	Side/Bottom/ Top ported Inch size
N11	ø3/8"	—	●	—	
N13	ø1/2"	—	—	●	
L8	ø8	●	—	—	Side ported Metric size
L10	ø10	—	●	—	
L12	ø12	—	—	●	
LN9	ø5/16"	●	—	—	Side ported Inch size
LN11	ø3/8"	—	●	—	
LN13	ø1/2"	—	—	●	
B8	ø8	●	—	—	Side ported Metric size
B10	ø10	—	●	—	
B12	ø12	—	—	●	
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

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

*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

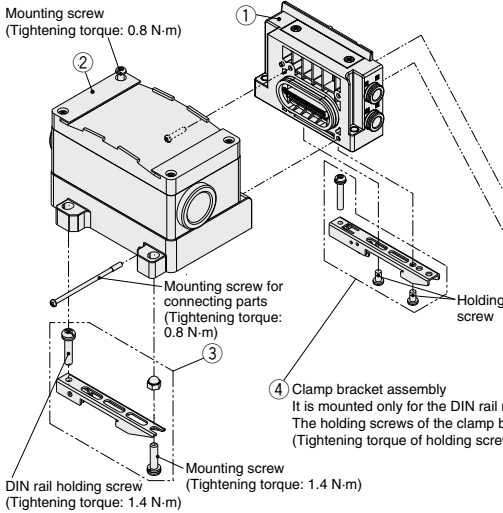
* Part number is for one assembly.

SY3000/5000/7000 Series

Wiring

Terminal Block Box

Mounting screw
(Tightening torque: 0.8 N·m)



Mounting screw for connecting parts
(Tightening torque: 0.8 N·m)

Holding screw

④ Clamp bracket assembly

It is mounted only for the DIN rail mounting type.

The holding screws of the clamp bracket is tightened at two points.

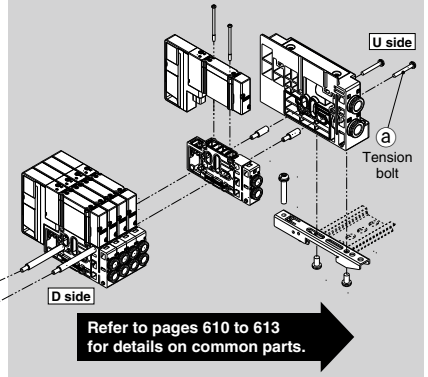
(Tightening torque of holding screw: 1.4 N·m)

Mounting screw

(Tightening torque: 1.4 N·m)

DIN rail holding screw
(Tightening torque: 1.4 N·m)

Manifold exploded view



Refer to pages 610 to 613
for details on common parts.

Manifold Parts Nos.

① SUP/EXH block assembly

SY 3 0M-1-1A

Mounting

Nil	Direct mounting
DO	DIN rail mounting (Without DIN rail)

* For the bottom-ported type, the symbol is nil.

Series

3	SY3000
5	SY5000
7	SY7000

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 the bottom-ported type 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 Metric size
C10	ø10	—	—	—	
C12	ø12	—	—	●	
N9	ø5/16"	●	—	—	Side/Bottom/ Top ported Inch size
N11	ø3/8"	—	●	—	
N13	ø1/2"	—	—	●	
L8	ø8	●	—	—	Side ported Metric size
L10	ø10	—	●	—	
L12	ø12	—	—	●	
LN9	ø5/16"	●	—	—	Side ported Inch size
LN11	ø3/8"	—	●	—	
LN13	ø1/2"	—	—	●	
B8	ø8	●	—	—	Side ported Metric size
B10	ø10	—	●	—	
B12	ø12	—	—	●	
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.

② Terminal block box housing assembly

VVQC1000-T0-1

③ Clamp bracket assembly for terminal block box

SY30M-15-4A

* Part number is for one assembly.

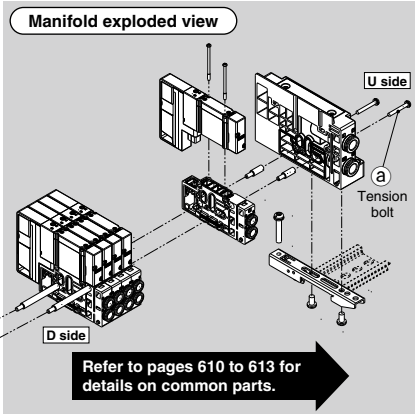
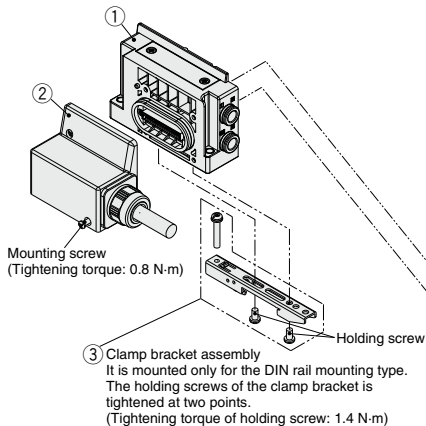
④ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

* Part number is for one assembly.

Wiring

Lead Wire



Manifold Parts Nos.

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 the bottom-ported type, the symbol is nil.

• Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	
RV	—	●	—	
VP	●	—	●*1	Top
B	●	—	—	
BS	●	—	●	
BR	—	●	—	Bottom

*1 For silencer (supply side) E port is plugged.

* "B" for the bottom-ported type 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 Upward elbow	●	—	—	Side ported Metric size
L10		ø10	—	●	
L12		ø12	—	—	
LN9	ø5/16" Downward elbow	●	—	—	Side ported Inch size
LN11		ø3/8"	—	●	
LN13		ø1/2"	—	—	
B8	ø8	●	—	—	Side ported Metric size
B10		ø10	—	—	
B12		ø12	—	—	
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 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 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

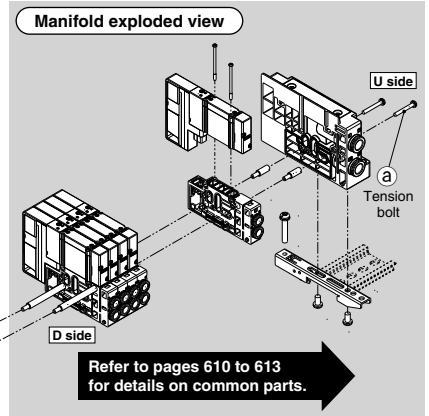
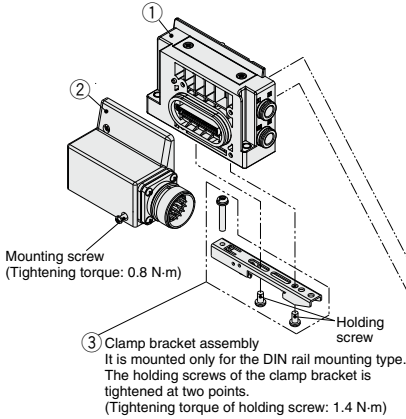
Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

* Part number is for one assembly.

SY3000/5000/7000 Series

Wiring

Circular Connector



Manifold Parts Nos.

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 the bottom-ported type, the symbol is nil.

• Pilot, Silencer/Piping type

Symbol	Pilot type Internal External	Built-in silencer	Piping direction
Nil	●	—	Side
S	●	●	
R	—	—	
V	●	—	
RV	—	●	
VP	●	—	Top
B	—	—	
BS	—	●	Bottom
BR	—	●	

*1 For silencer (supply side)

E port is plugged.

* "B" for the bottom-ported type can be selected for the SY5000/7000 series.

• P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	ø8	●	—	—	Side/Bottom/ Top ported Metric size
C10	ø10	—	●	—	
C12	ø12	—	—	●	
N9	ø5/16"	●	—	—	Side/Bottom/ Top ported Inch size
N11	ø3/8"	—	●	—	
N13	ø1/2"	—	—	●	
L8	ø8	●	—	—	Side ported Metric size
L10	ø10	—	●	—	
L12	ø12	—	—	●	
LN9	ø5/16"	●	—	—	Side ported Inch size
LN11	ø3/8"	—	●	—	
LN13	ø1/2"	—	—	●	
B8	ø8	●	—	—	Side ported Metric size
B10	ø10	—	●	—	
B12	ø12	—	—	●	
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

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

*1 It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

② Circular connector block assembly

SY30M-14-5A

* 26 pins

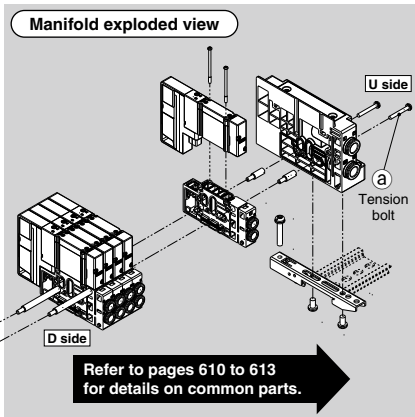
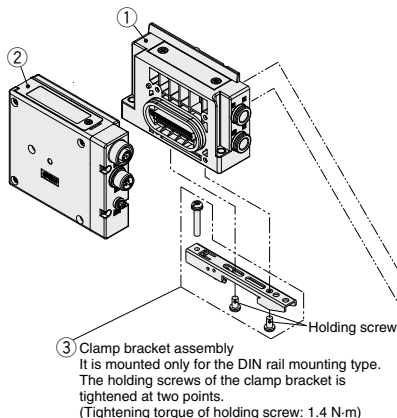
③ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

* Part number is for one assembly.

Wiring

EX500 Gateway Decentralized System 2 (128 Points)



Manifold Parts Nos.

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 the bottom-ported type, 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 the bottom-ported type can be selected for the SY5000/7000 series.

• P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	ø8	●	—	—	Side/Bottom/ Top ported Metric size
C10	ø10	—	●	—	
C12	ø12	—	—	●	
N9	ø5/16"	●	—	—	Side/Bottom/ Top ported Inch size
N11	ø3/8"	—	●	—	
N13	ø1/2"	—	—	●	
L8	ø8	●	—	—	Side ported Metric size
L10	ø10	—	●	—	
L12	ø12	—	—	●	
LN9	ø5/16"	●	—	—	Side ported Inch size
LN11	ø3/8"	—	●	—	
LN13	ø1/2"	—	—	●	
B8	ø8	●	—	—	Side ported Metric size
B10	ø10	—	—	—	
B12	ø12	—	—	●	
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

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

*1 It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

② EX500 SI unit

EX500-S103

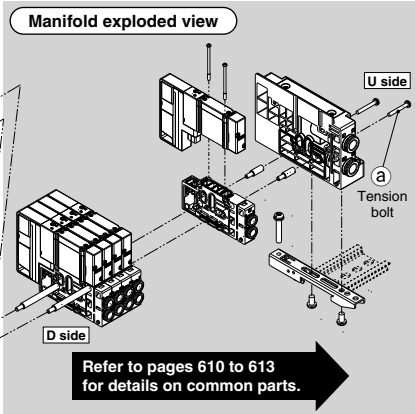
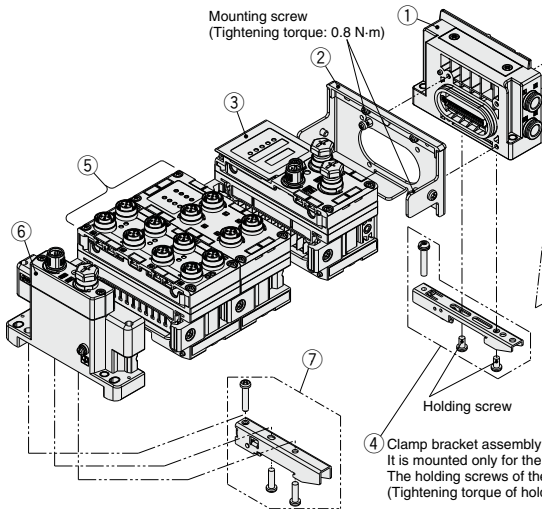
③ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

* Part number is for one assembly.

Wiring

EX600



Manifold Parts Nos.

① SUP/EXH block assembly

SY 3 0M-1-1A

●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 the bottom-ported type can be selected for the SY5000/7000 series.

●Mounting

Nil	Direct mounting
DO	DIN rail mounting (Without DIN rail)

* For the bottom-ported type, 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 Metric size	
C10	ø10	—	●	—		
C12	ø12	—	—	●		
N9	ø5/16"	●	—	—	Side/Bottom/ Top ported Inch size	
N11	ø3/8"	—	●	—		
N13	ø1/2"	—	—	●		
L8	Upward elbow ø8	●	—	—	Side ported Metric size	
		L10	ø10	—		●
		L12	ø12	—		●
LN9	Upward elbow ø5/16"	●	—	—	Side ported Inch size	
		LN11	ø3/8"	—		●
		LN13	ø1/2"	—		●
B8	Downward elbow ø8	—	—	—	Side ported Metric size	
		B10	ø10	—		●
		B12	ø12	—		●
BN9	Downward elbow ø5/16"	●	—	—	Side ported Inch size	
		BN11	ø3/8"	—		●
		BN13	ø1/2"	—		●
00-1	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

SY3000/5000/7000 Series

Manifold Parts Nos.

② Valve plate

EX600 – ZMV2

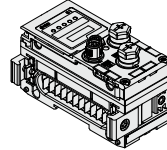
* With mounting screws
(2 pcs. of M4 x 6 and 2 pcs. of M3 x 8)

③ EX600 SI unit

EX600 – S

● Communication protocol

Symbol	Protocol	Output polarity
PR1A	PROFIBUS DP	PNP (Negative common)
PR2A		NPN (Positive common)
DN1A	DeviceNet®	PNP (Negative common)
DN2A		NPN (Positive common)
MJ1	CC-Link	PNP (Negative common)
MJ2		NPN (Positive common)
EN7	EtherNet/IP™ (IO-Link unit)	PNP (Negative common)
EN8		NPN (Positive common)
EC3	EtherCAT (IO-Link unit)	PNP (Negative common)
EC4		NPN (Positive common)
PN3	PROFINET	PNP (Negative common)
PN4	IO-Link unit	NPN (Positive common)
PN31	PROFINET (OPC UA, IO-Link unit)	PNP (Negative common)



③ EX600 SI unit (Wireless compatible)

EX600 – W EN 1

● Output type

Symbol	Description
1	PNP (Negative common)
2	NPN (Positive common)

● Protocol

Symbol	SI unit type	Description
EN	Wireless base module	EtherNet/IP™*1
PN	Wireless base module	PROFINET*1
SV	Wireless remote module	—*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.

④ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

* Part number is for one assembly.

Manifold Parts Nos.

⑤ EX600 digital input unit

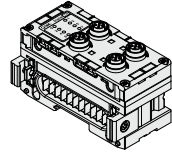
EX600-DX **P** **B**

Input type

Symbol	Description
P	PNP
N	NPN

Number of inputs, open circuit detection, and connector

Symbol	Number of inputs	Open circuit detection	Connector
B	8	No	M12 connector (5 pins) 4 pcs.
C	8	No	M8 connector (3 pins) 8 pcs.
C1	8	Yes	M8 connector (3 pins) 8 pcs.
D	16	No	M12 connector (5 pins) 8 pcs.
E	16	No	D-sub connector (25 pins)
F	16	No	Spring type terminal block (32 pins)



⑤ EX600 digital output unit

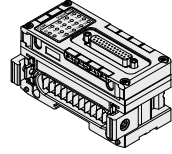
EX600-DY **P** **B**

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)
F	16	Spring type terminal block (32 pins)



⑤ EX600 digital input/output unit

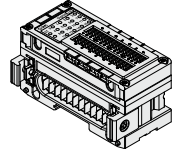
EX600-DM **P** **E**

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)
F	8	8	Spring type terminal block (32 pins)



⑤ EX600 analog input/output unit

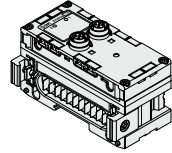
EX600-AX **A**

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.



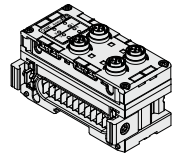
⑤ EX600 analog input/output unit

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.



⑤ EX600 IO-Link unit

EX600-L **A** **B** **1**

Port specification

Symbol	Description
A	Port class A
B	Port class B

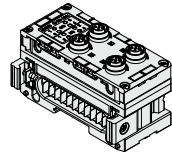
Number of ports and connector

Symbol	Number of ports	Connector
B	4 ports	M12 connector (5 pins) 4 pcs.

⚠ Caution

The compatible SI unit models are as shown below.

- PROFINET compatible: EX600-SPN3/EX600-SPN4/EX600-SPN31
- EtherNet/IP™ compatible: EX600-SEN7/EX600-SEN8
- EtherCAT compatible: EX600-SEC3/EX600-SEC4



⑥ EX600 end plate

EX600-ED **2** - □

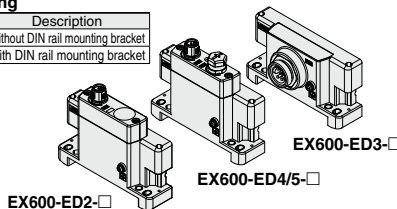
Power connector

Symbol	Connector
2	M12 power supply connector, B-coded
3	7/8 inch power supply connector
4	M12 power supply connector IN/OUT, A-coded, Pin arrangement 1
5	M12 power supply connector IN/OUT, A-coded, Pin arrangement 2


Mounting

Symbol	Description
Nil	Without DIN rail mounting bracket
3	With DIN rail mounting bracket

* The pin layout for the "4" and "5" pin connectors is different.



⑦ Clamp bracket for EX600

EX600-ZMA3 

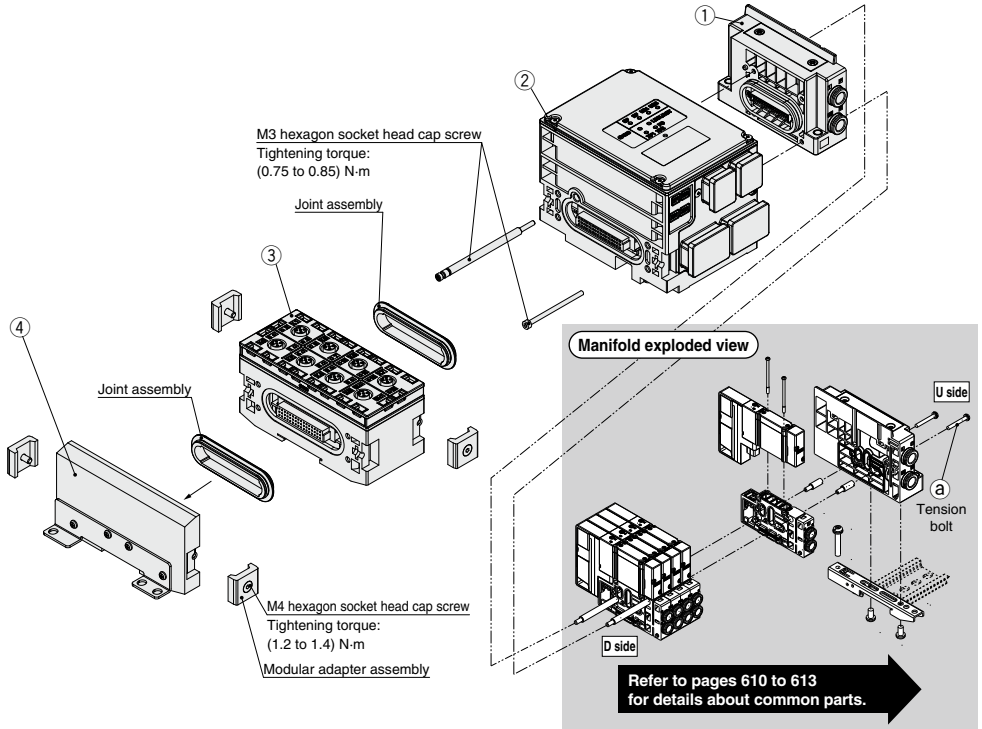
Enclosed parts

Round head screw with washer (M4 x 20) 1 pc.
P-tight screw (4 x 14) 2 pcs.

SY3000/5000/7000 Series

Wiring

EX245



Manifold Parts No.

① SUP/EXH block assembly

SY **3** 0M-1-1A **C8**

● Series

3	SY3000
5	SY5000
7	SY7000

● 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	●	●	●	Side/Bottom/ Top ported Inch size
C12	ø12	●	●	●	Side/Bottom/ Top ported Inch size
N9	ø5/16"	●	●	●	Side/Bottom/ Top ported Inch size
N11	ø3/8"	●	●	●	Side/Bottom/ Top ported Inch size
N13	ø1/2"	●	●	●	Side/Bottom/ Top ported Inch size
L8	ø8	●	●	●	Side ported Metric size
L10	ø10	●	●	●	Side ported Metric size
L12	ø12	●	●	●	Side ported Metric size
LN9	ø5/16"	●	●	●	Side ported Inch size
LN11	ø3/8"	●	●	●	Side ported Inch size
LN13	ø1/2"	●	●	●	Side ported Inch size
B8	ø8	●	●	●	Side ported Metric size
B10	ø10	●	●	●	Side ported Metric size
B12	ø12	●	●	●	Side ported Metric size
BN9	ø5/16"	●	●	●	Side ported Inch size
BN11	ø3/8"	●	●	●	Side ported Inch size
BN13	ø1/2"	●	●	●	Side ported Inch size
00*1	Plug	●	●	●	P/E port entry on one side or Top ported

● Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
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	SY5000/7000
① Tension bolt	None*1	3 pcs.

*1: Since the nuts are embedded in the SUP/EXH block.

602

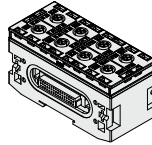
Manifold Parts No.**② EX245 SI Unit****EX245 – S PN 1A**SI unit
PROFINET

Connector type

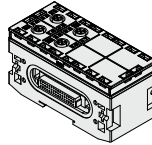
Symbol	Communication connector	Power supply connector
1A	Push Pull connector (SCRJ): 2 pcs.	Push Pull connector (24 V): 2 pcs.
2A	Push Pull connector (RJ45): 2 pcs.	Push Pull connector (24 V): 2 pcs.
3A	M12 connector (4-pin, Socket, D-coded): 2 pcs.	7/8 inch connector (5-pin, Plug): 1 pc. 7/8 inch connector (5-pin, Socket): 1 pc.

③ EX245 Digital Input Module**EX245 – DX1**Digital input module
specification

DX1	Digital input (16 inputs)
------------	---------------------------

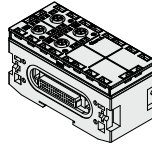
**③ EX245 Digital Output Module****EX245 – DY1**Digital output module
specification

DY1	Digital output (8 outputs)
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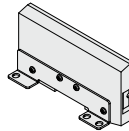
**③ EX245 IO-Link module****EX245 – LA 1**

Port specification

Symbol	Description
A	Port class A
B	Port class B

**⚠ Caution**

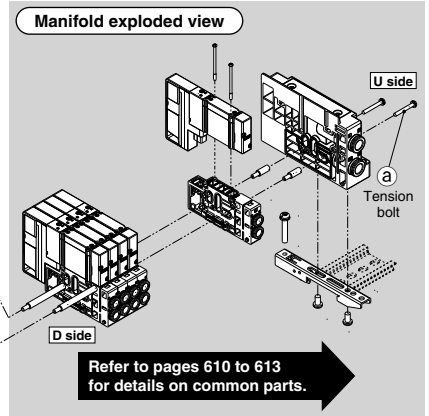
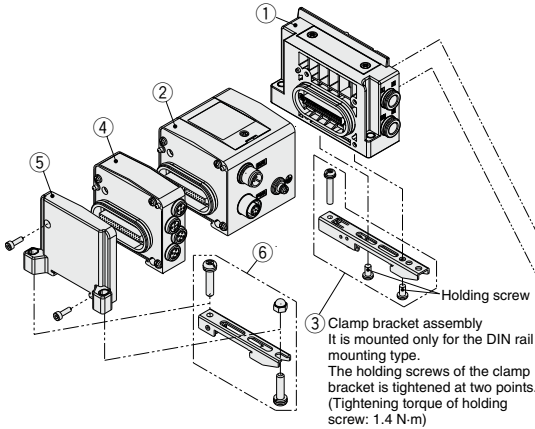
The only available SI unit part number is "EX245-SPN□A" (PROFINET compatible).

④ EX245 End Plate**EX245 – EA2 – 3**

SY3000/5000/7000 Series

Wiring

EX250



Manifold Parts Nos.

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 the bottom-ported type, 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 the bottom-ported type can be selected for the SY5000/7000 series.

SUP/EXH block assembly (D side)

accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000
	a Tension bolt	None ^{*1}	3 pcs.

*1 Since the nuts are embedded in the SUP/EXH block

● P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	ø8	●	—	—	Side/Bottom/ Top ported Metric size
C10	ø10	—	●	—	
C12	ø12	—	—	●	
N9	ø5/16"	●	—	—	Side/Bottom/ Top ported Inch size
N11	ø3/8"	—	●	—	
N13	ø1/2"	—	—	●	
L8	ø8	●	—	—	Side ported Metric size
L10	ø10	—	●	—	
L12	ø12	—	—	●	
LN9	ø5/16"	●	—	—	Side ported Inch size
LN11	ø3/8"	—	●	—	
LN13	ø1/2"	—	—	●	
B8	ø8	●	—	—	Side ported Metric size
B10	ø10	—	●	—	
B12	ø12	—	—	●	
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.

② EX250 SI unit

EX250-S **DN1**

● Communication protocol

DN1	DeviceNet® (Negative common)
AS3	AS-Interface (8 in/8 out, 2 isolated common type) (Negative common)
AS5	AS-Interface (4 in/4 out, 2 isolated common type) (Negative common)
AS7	AS-Interface (8 in/8 out, 1 common type) (Negative common)
AS9	AS-Interface (4 in/4 out, 1 common type) (Negative common)
EN1	EtherNet/IP™ (Negative common)

③ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

* Part number is for one assembly.

④ Input block

EX250-IE **1**

● Block type

1	M12 connector, 2 inputs
2	M12 connector, 4 inputs
3	M8 connector, 4 inputs

⑤ EX250 end plate assembly

EX250-EA1

* With mounting screws (2 pcs. of M3 x 10)

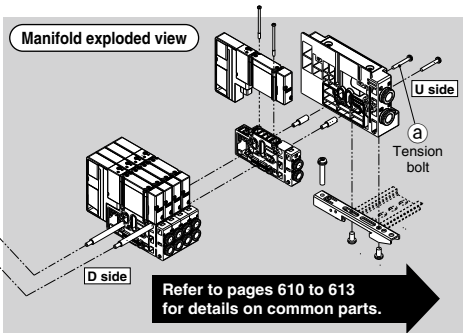
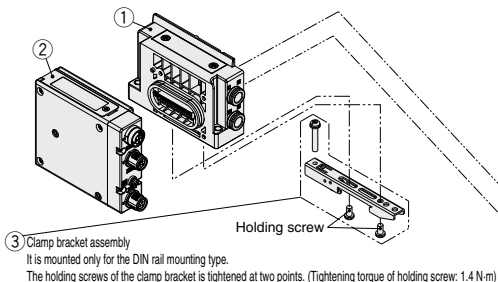
⑥ Clamp bracket assembly for EX250 SI unit

SY30M-15-3A

* Part number is for one assembly.

Wiring

EX260



Manifold Parts Nos.

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 the bottom-ported type, 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 the bottom-ported type can be selected for the SY5000/7000 series.

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

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	—	●	—		Metric size
L12	ø12	—	—	●		
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	

*1 It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

② EX260 SI unit (Fieldbus and Industrial Ethernet)

EX260-S PR1

Communication protocol

Symbol	Protocol	Number of outputs	SI unit output polarity	Communication connector	Manifold symbol	Symbol	Protocol	Number of outputs	SI unit output polarity	Communication connector	Manifold symbol			
DN1	DeviceNet®	32	Source/PNP (Negative common)	M12	QAN	EC1	EtherCAT	32	Source/PNP (Negative common)	M12	DAN			
DN2			Sink/NPN (Positive common)		QA	EC2			DA					
DN3			Source/PNP (Negative common)		QBN	EC3			DBN					
DN4			Sink/NPN (Positive common)		QB	EC4			DB					
PR1	PROFIBUS DP	32	Source/PNP (Negative common)	M12	NAN	PN1	PROFINET	32	Source/PNP (Negative common)	M12	FAN			
PR2			Sink/NPN (Positive common)		NA	PN2			FA					
PR3			Source/PNP (Negative common)		NBN	PN3			FBN					
PR4			Sink/NPN (Positive common)		NB	PN4			FB					
PR5		32	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			EA					
PR7			Source/PNP (Negative common)		NDN	EN3			EBN					
PR8			Sink/NPN (Positive common)		ND	EN4			EB					
MJ1	CC-Link	32	Source/PNP (Negative common)	M12	VAN	PL1	Ethernet POWERLINK	32	Source/PNP (Negative common)	M12	GAN			
MJ2			Sink/NPN (Positive common)		VA	PL3			GBN					
MJ3			Source/PNP (Negative common)		VBN	IL1			IO-Link		32	Source/PNP (Negative common)	M12	KAN
MJ4			Sink/NPN (Positive common)		VB									

*1 Enclosure is IP40 when the communication connector is D-sub.

EX260 SI Unit (Safety Communication)

EX260-F PS1

Communication protocol

Symbol	Protocol	Number of outputs	SI unit output polarity	Communication connector	Manifold symbol
PS1	PROFISafe	32	Source/PNP (Negative common)	M12	FPN

③ Clamp bracket assembly

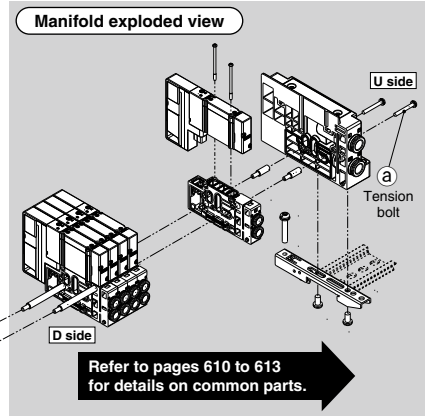
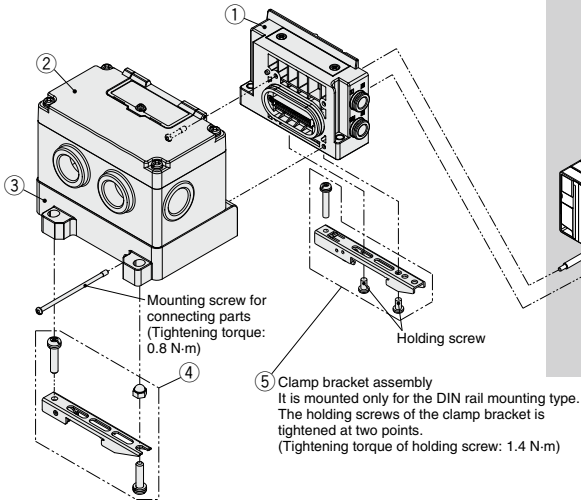
Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

* Part number is for one assembly.

SY3000/5000/7000 Series

Wiring

EX126



Manifold Parts Nos.

① SUP/EXH block assembly

SY 3 0M-1-1A

Series

3	SY3000
5	SY5000
7	SY7000

Mounting

Nil	Direct mounting
DO	DIN rail mounting (Without DIN rail)

* For the bottom-ported type, 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 the bottom-ported type can be selected for the SY5000/7000 series.

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	ø8	●	—	—	Side/Bottom/Top ported Metric size
C10	ø10	—	●	—	
C12	ø12	—	—	●	
N9	ø5/16"	●	—	—	Side/Bottom/Top ported Inch size
N11	ø3/8"	—	●	—	
N13	ø1/2"	—	—	●	
L8	ø8	●	—	—	Side ported Metric size
L10	ø10	—	●	—	
L12	ø12	—	—	●	
LN9	ø5/16"	●	—	—	Side ported Inch size
LN11	ø3/8"	—	●	—	
LN13	ø1/2"	—	—	●	
B8	ø8	●	—	—	Side ported Metric size
B10	ø10	—	●	—	
B12	ø12	—	—	●	
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 block assembly (D side)

accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000
③ Tension bolt	None ^{*1}	3 pcs.

*1 Since the nuts are embedded in the SUP/EXH block

② EX126 SI unit

EX126D-SMJ1

* CC-Link (Positive common)

③ Terminal block plate assembly

VVQC1000-74A-2

④ Clamp bracket assembly for EX126 SI unit

SY30M-15-4A

* Part number is for one assembly.

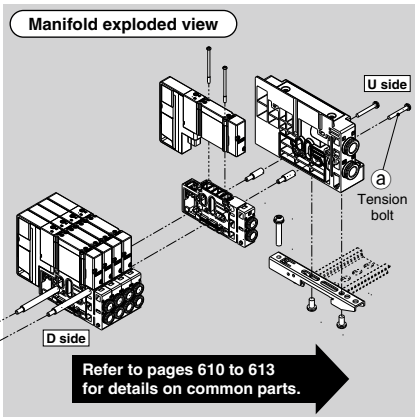
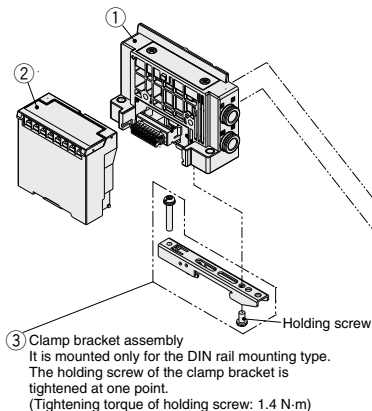
⑤ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

* Part number is for one assembly.

Wiring

EX120



Manifold Parts Nos.

① SUP/EXH block assembly

SY **3** OM-1-16A **C8** - **Mounting**

• Series

3	SY3000
5	SY5000
7	SY7000

Nil	Direct mounting
D0	DIN rail mounting (Without DIN rail)

* For the bottom-ported type, 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 the bottom-ported type can be selected for the SY5000/7000 series.

• P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	ø8	●	—	—	Side/Bottom/ Top ported Metric size
C10	ø10	—	—	—	
C12	ø12	—	—	●	
N9	ø5/16"	●	—	—	Side/Bottom/ Top ported Inch size
N11	ø3/8"	—	●	—	
N13	ø1/2"	—	—	●	
L8	Upward elbow ø8	●	—	—	Side ported Metric size
L10		ø10	—	—	
L12		ø12	—	●	
LN9	Upward elbow ø5/16"	●	—	—	Side ported Inch size
LN11		ø3/8"	—	●	
LN13		ø1/2"	—	●	
B8	Downward elbow ø8	●	—	—	Side ported Metric size
B10		ø10	—	—	
B12		ø12	—	●	
BN9	Downward elbow ø5/16"	●	—	—	Side ported Inch size
BN11		ø3/8"	—	●	
BN13		ø1/2"	—	●	
00 ^{*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)
MJ1	CC-Link (Positive common)
CM1	CompoNet® NPN (Positive common)
CM3	CompoNet® PNP (Negative common)

③ Clamp bracket assembly

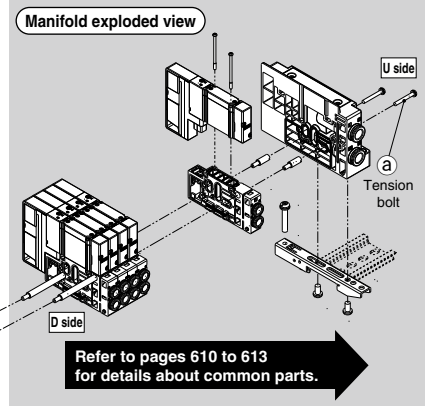
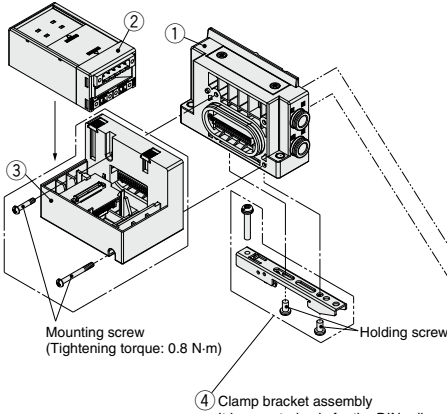
Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

* Part number is for one assembly.

SY3000/5000/7000 Series

Wiring

EX180



④ 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.

Pilot, Silencer/Piping type

Symbol	Pilot type Internal External	Built-in silencer	Piping direction
Nil	●	—	Side
S	—	—	
R	—	●	
V	—	—	
RV	—	●	Top
VP	—	●*1	
B	—	—	
BS	—	●	Bottom
BR	—	●	

*1: For silencer (supply side). E port is plugged.

*: "B" for bottom ported can be selected for the SY5000/7000 series.

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.

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	—	—	—		
N9	ø5/16"	●	—	—	Side/Bottom/Top ported	
N11	ø3/8"	—	●	—	Inch size	
N13	ø1/2"	—	—	●		
L8	ø8	●	—	—	Side ported	
L10	ø10	—	●	—		Metric size
L12	ø12	—	—	●		
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	

*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

② EX180 Series SI Unit

EX180-S DN3

Protocol

DN3	DeviceNet® (32 points Sink/NPN (Positive common))
DN4	DeviceNet® (16 points Sink/NPN (Positive common))
DN5	DeviceNet® (32 points Source/PNP (Negative common))
DN6	DeviceNet® (16 points Source/PNP (Negative common))
MJ3	CC-Link (32 points Sink/NPN (Positive common))
MJ5	CC-Link (32 points Source/PNP (Negative common))

Made to Order

(Click [here](#) for details.)

Protocol
AnyWireASLINK

Communication connector type

Nil	T-branch type
A	Straight type

*: Communication and power supply connectors are included.

③ Connector block assembly

SY30M-14-17A

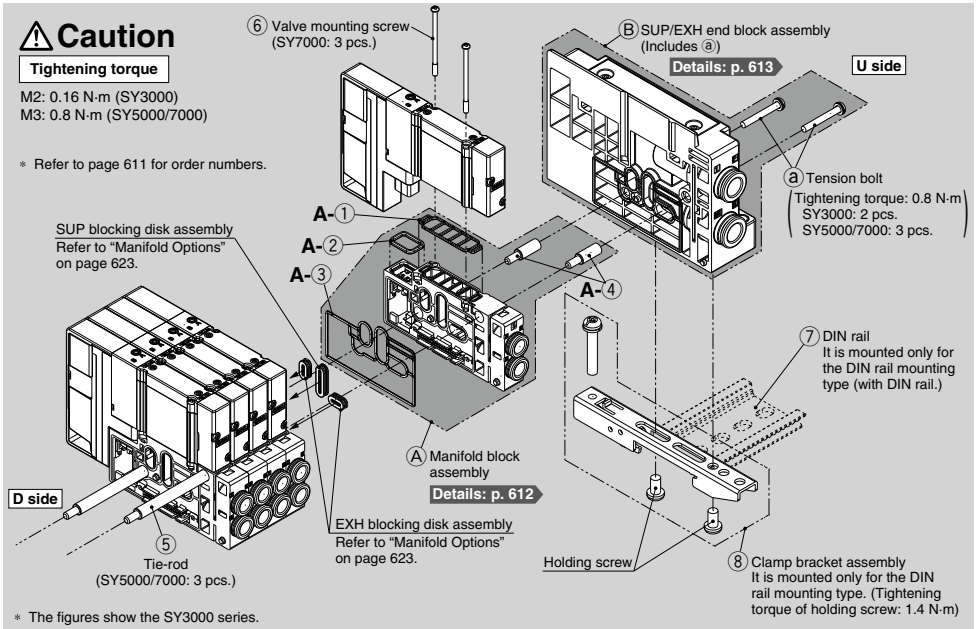
④ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

*: Part number is for one assembly.

SY3000/5000/7000 Series

Manifold Exploded View (Common Parts)



Type 10, 11, 12: How to Increase Connector Type Manifolds

1 Loosen the U-side tension bolt ③, and remove the ② SUP/EXH end block assembly.

2 Screw in ④ tie-rods for additional stations to the ⑤ tie-rod of the manifold.

(Screw them in until there is no gap) between the tie-rods.

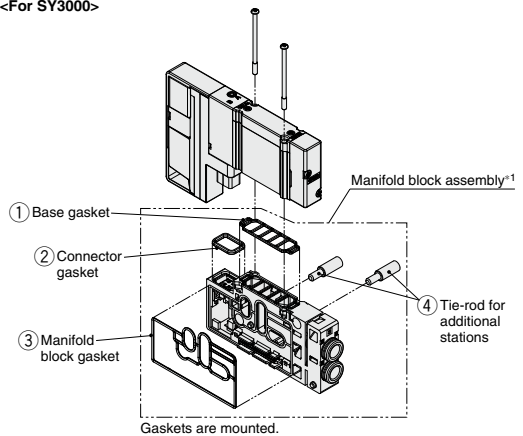
3 Connect the ① manifold block assembly and ② SUP/EXH end block assembly to be added, and tighten the tension bolt ③.

Tightening torque for tension bolt ③ (M3): 0.8 N·m

Caution

1. Be sure to shut off the power and air supplies before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
2. When disassembly and assembly are performed, air leakage may result if the tightening of the tension bolt is inadequate.

<For SY3000>



*1 Manifold block assembly

No.	Description	Quantity	Note
①②③	Gasket	3	For base, connector, and manifold block
④	Tie-rod for additional stations	SY3000: 2 pcs. SY5000: 3 pcs. SY7000: 3 pcs.	

Refer to page 611 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 (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 (19 mm pitch)	□: Manifold stations (2 to 24 stations) 2 pcs. supplied (SY3000), 3 pcs. supplied (SY5000/7000)	
		Mixed mounting type manifold	SS5Y5-M ^{**}	SY50M-49-1-□-A ^{*3,4} (12.5 mm pitch)		—	□: Manifold stations (2 to 24 stations) 3 pcs. supplied
			SS5Y7-M ^{**}	—	SY70M-49-1-□-A (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 616.	
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 Includes the case 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 (there are no tension bolts for the SY3000 SUP/EXH block) or the SY5000 and SY7000 SUP/EXH (end) block

SY3000/5000/7000 Series

Manifold Parts Nos.

(A) Manifold block assembly

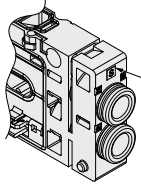
SY 3 0M-2-1 D A-C6

Series	
3	SY3000
5	SY5000
7	SY7000

Piping direction

1	Side/Top ported
2	Bottom ported

* "2" (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	ø3.2	●	—	—	Side/Bottom ported Metric size
C3	ø3.2	●	—	—	
C4	ø4	●	●	—	
C6	ø6	●	●	●	
C8	ø8	—*1	●	●	Side/Bottom ported Metric size
C10	ø10	—	●	●	
C12	ø12	—	—	●	Side/Bottom ported Inch size
N1	ø1/8"	●	—	—	
N3	ø5/32"	●	●	—	Side/Bottom ported Inch size
N7	ø1/4"	●	●	●	
N9	ø5/16"	—*1	●	●	Side/Bottom ported Inch size
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"	—	—	—	Side ported Metric size
B4	ø4	●	●	—	
B6	ø6	●	●	●	
B8	ø8	—*1	●	●	
B10	ø10	—	—	●	Side ported Inch size
B12	ø12	—	—	—	
BN3	ø5/32"	●	—	—	
BN7	ø1/4"	●	—	—	
BN9	ø5/16"	—*1	●	—	Side ported Inch size
BN11	ø3/8"	—	—	—	
00	Plug	●	●	●	Top ported

(A) Mixed mounting of the SY3000/5000 Manifold block assembly for mounting the SY3000

SY50M-2-3 D A-C6

Piping direction	
3	Side/Top ported
4	Bottom ported

Wiring type

S	Single wiring
D	Double wiring

A, B port size (One-touch fittings)

Symbol	A, B port	Note	Symbol	A, B port	Note
C2	ø2	Side/Bottom ported Metric size	L4	ø4	Side ported Metric size
C3	ø3.2		L6	ø6	Side ported Metric size
C4	ø4		LN3	ø5/32"	Side ported Inch size
C6	ø6		LN7	ø1/4"	Side ported Inch size
N1	ø1/8"	Side/Bottom ported Inch size	B4	ø4	Side ported Metric size
N3	ø5/32"		B6	ø6	Side ported Metric size
N7	ø1/4"	Side ported Inch size	BN3	ø5/32"	Side ported Inch size
			BN7	ø1/4"	Side ported Inch size
			00	Plug	Top ported

(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")

SY50M-2-5 D A-C8

Piping direction	
5	Side ported
6	Bottom ported

Wiring type

S	Single wiring
D	Double wiring

A, B port size (One-touch fittings)

Symbol	A, B port	Note
C8	ø8	Side/Bottom ported Metric size
N9	ø5/16"	Side/Bottom ported Inch size
L8	ø8	Side ported Metric size
LN9	ø5/32"	Side ported Inch size
B8	ø8	Side ported Metric size
BN9	ø5/16"	Side ported Inch size

(A) Mixed mounting of the SY5000/7000 Manifold block assembly for mounting the SY5000

SY70M-2-3 D A-C10

Piping direction	
3	Side/Top ported
4	Bottom ported

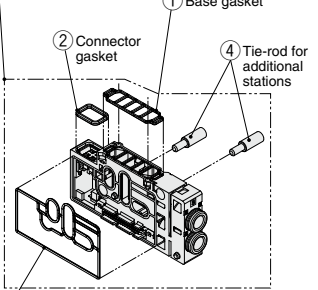
Wiring type

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 Metric size	L6	ø6	Side ported Metric size	B6	ø6	Side ported Metric size
C8	ø8		L8	ø8		B8	ø8	
C10	ø10	Side/Bottom ported Metric size	L10	ø10	Side ported Metric size	B10	ø10	Side ported Metric size
C12	ø12		L12	ø12		B12	ø12	
N7	ø1/4"	Side/Bottom ported Inch size	LN11	ø3/8"	Side ported Inch size	BN11	ø3/8"	Side ported Inch size
N9	ø5/16"							
N11	ø3/8"				00	Plug	Top ported	

(A) Manifold (All parts inside ----- are included.) block assembly



(3) Manifold block gasket

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

Manifold Parts Nos.

② SUP/EXH end block assembly

SY 3 OM-3-1A - **C8** -

● **Series**

3	SY3000
5	SY5000
7	SY7000

● **Mounting**

Nil	Direct mounting
DO	DIN rail mounting (Without DIN rail)

* For the bottom-ported type, 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	—	●	—	

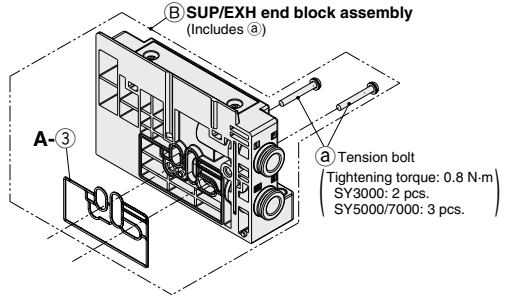
*1 For silencer (supply side)
E port is plugged.

* "B" for the bottom-ported type can be selected for the SY5000/7000 series.

● **P, E port size (One-touch fittings)**

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	ø8	●	—	—	Side/Bottom/Top ported Metric size
C10	ø10	—	●	—	
C12	ø12	—	—	●	
N9	ø5/16"	●	—	—	Side/Bottom/Top ported Inch size
N11	ø3/8"	—	●	—	
N13	ø1/2"	—	—	●	
L8	ø8	●	—	—	Side ported Metric size
L10	ø10	—	●	—	
L12	ø12	—	—	●	
LN9	ø5/16"	●	—	—	Side ported Inch size
LN11	ø3/8"	—	●	—	
LN13	ø1/2"	—	—	●	
B8	ø8	●	—	—	Side ported Metric size
B10	ø10	—	●	—	
B12	ø12	—	—	●	
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
② Tension bolt	2 pcs.	3 pcs.
A-3 Manifold block gasket	1 pc.	

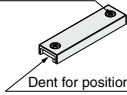
Gasket is mounted.

SY3000/5000/7000 Series

Manifold Parts Nos.

■ Cover assembly/Silencer cover assembly/Port block assembly for SUP/EXH (end) block assembly

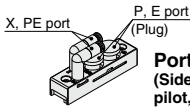
Mounting screw (M3)



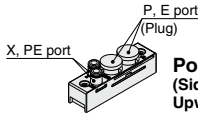
Cover assembly
(Internal pilot)



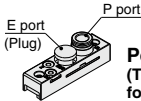
Silencer cover assembly
(Internal pilot, Built-in silencer)



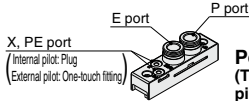
Port block assembly
(Side/Bottom ported, External pilot, Straight, Downward elbow)



Port block assembly
(Side ported, External pilot, Upward elbow)



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 □

A, B port
One-touch fittings
piping direction

Nil	Straight, Downward elbow (Side ported)
V	Upward elbow (Side ported)

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"	—	—	●

SY3000/5000/7000 Series One-touch Fitting, Plug Assembly Part Nos.

Refer to "How to Replace One-touch Fittings" on page 709 for the 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
		ø12	—	—	KQ2H12-17-X224	
		Elbow type	ø4	SZ3000-73-1A-L4	SZ3000-74-1A-L4	—
			ø6	SZ3000-73-1A-L6	SZ3000-74-1A-L6	SZ3000-83-1A-L6
			ø8	—	SZ3000-74-1A-L8	SZ3000-83-1A-L8
			ø10	—	—	SZ3000-83-1A-L10
			ø12	—	—	KQ2L12-17N-X224
	ø12		—	—	—	
	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	
		ø12	—	—	—	
	Inch size	Straight type	ø1/8"	VVQ1000-50A-N1	—	—
			ø5/32"	VVQ1000-50A-N3	VVQ1000-51A-N3	—
			ø1/4"	VVQ1000-50A-N7	VVQ1000-51A-N7	VVQ2000-51A-N7
			ø5/16"	—	VVQ1000-51A-N9	VVQ2000-51A-N9
			ø3/8"	—	—	VVQ2000-51A-N11
ø5/32"			KJL03-95-X224	—	—	
Elbow type		ø1/4"	KJL07-95-X224	KQ2L07-14-X224	—	
		ø5/16"	—	KQ2L09-14-X224	—	
		ø3/8"	—	—	KQ2L11-14-X224	
		ø5/32"	KJL03-95-X225	—	—	
		ø1/4"	KJL07-95-X225	KQ2L07-14-X225	—	
		ø5/16"	—	KQ2L09-14-X225	—	
Long elbow type	ø3/8"	—	—	KQ2L11-14-X225		
	ø5/32"	KJL03-95-X225	—	—		
	ø1/4"	KJL07-95-X225	KQ2L07-14-X225	—		
	ø5/16"	—	KQ2L09-14-X225	—		
	ø3/8"	—	—	KQ2L11-14-X225		
	ø5/32"	—	—	—		
P, E port	Metric size	Straight type	ø8	VVQ1000-51A-C8	—	
			ø10	—	VVQ2000-51A-C10	
			ø12	—	—	VVQ4000-50B-C12
			ø12	—	—	—
		Elbow type	ø8	SZ3000-74-1A-L8	—	—
			ø10	—	SZ3000-83-1A-L10	—
			ø12	—	—	KQ2L12-19N-X224
			ø12	—	—	—
		Long elbow type	ø8	SZ3000-74-2A-L8	—	—
			ø10	—	SZ3000-83-2A-L10	—
			ø12	—	—	KQ2W12-19N-X224
			ø12	—	—	—
	Inch size	Straight type	ø5/16"	VVQ1000-51A-N9	—	
			ø3/8"	—	VVQ2000-51A-N11	
			ø1/2"	—	—	VVQ4000-50B-N13
			ø5/16"	KQ2L09-14-X224	—	—
		Elbow type	ø3/8"	—	KQ2L11-14-X224	—
			ø1/2"	—	—	KQ2L13-19N-X224
			ø5/16"	KQ2L09-14-X225	—	—
			ø3/8"	—	KQ2L11-14-X225	—
		Long elbow type	ø1/2"	—	—	KQ2W13-19N-X224
			ø1/2"	—	—	—
			ø1/2"	—	—	—
			ø1/2"	—	—	—

*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.

* Select the same port size for both the A and B ports.

■ Plug assembly

	SY3000	SY5000	SY7000
A, B port	VVQ0000-58A	VVQ1000-58A	VVQ2000-58A
P, E port	VVQ1000-58A	VVQ2000-58A	SY9000-62-1A

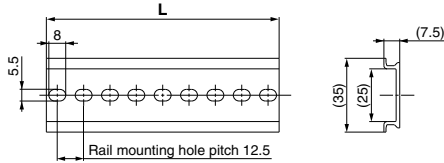
* Purchasing order is available in units of 10 pieces.

SY3000/5000/7000 Series Manifold Options

■ DIN rail dimensions/weight for the SY3000/5000 **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 □.

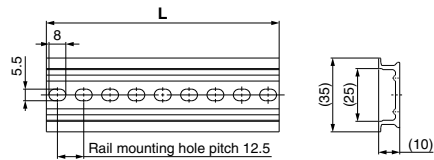


No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	323
Weight [g]	17.6	19.9	22.1	24.4	26.6	28.9	31.1	33.4	35.6	37.9	40.1	42.4	44.6	46.9	49.1	51.4	53.6	55.9	58.1
No.	19	20	21	22	23	24	25	26	27	28	29	30	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 SY7000 **Plug-in** connector connecting base

VZ1000-11-4-□

* After confirming the L3 dimension in the dimensions table of each series, refer to the DIN rail dimensions table below and specify the number in the box □.



No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	323
Weight [g]	24.8	28	31.1	34.3	37.4	40.6	43.8	46.9	50.1	53.3	56.4	59.6	62.7	65.9	69.1	72.2	75.4	78.6	81.7
No.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
L dimension	335.5	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5	523	535.5	548	560.5
Weight [g]	84.9	88	91.2	94.4	97.5	100.7	103.9	107	110.2	113.3	116.5	119.7	122.8	126	129.2	132.3	135.5	138.6	141.8
No.	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
L dimension	573	585.5	598	610.5	623	635.5	648	660.5	673	685.5	698	710.5	723	735.5	748	760.5	773	785.5	798
Weight [g]	145	148.1	151.3	154.5	157.6	160.8	163.9	167.1	170.3	173.4	176.6	179.8	182.9	186.1	189.2	192.4	195.6	198.7	201.9
No.	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71				
L dimension	810.5	823	835.5	848	860.5	873	885.5	898	910.5	923	935.5	948	960.5	973	985.5				
Weight [g]	205.1	208.2	211.4	214.5	217.7	220.9	224	227.2	230.4	233.5	236.7	239.8	243	246.2	249.3				

⚠ Caution

Tightening torque for mounting screw
M2: 0.16 N·m (SY3000)
M3: 0.8 N·m (SY5000/7000)

Manifold Options

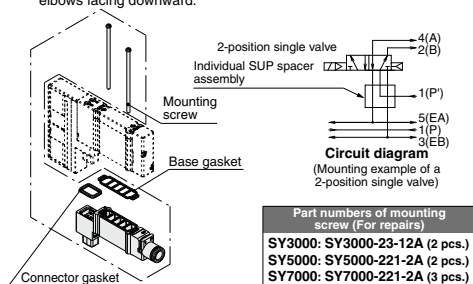
* Refer to pages 628 to 630 for dimensions.

■ Individual SUP spacer assembly

[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

When the same manifold is used for different pressures, an individual SUP spacer assembly is used as a supply port for different pressures.

- * When selecting a One-touch fitting elbow type for a spacer assembly, use it faced upward, since it interferes with A and B port piping of Type 10 manifolds.
- * 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.

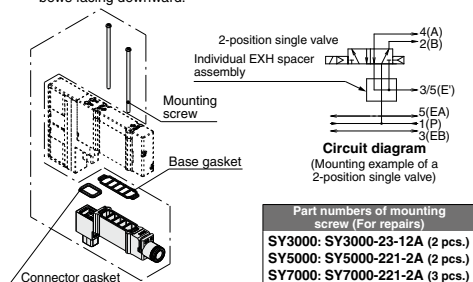


■ Individual EXH spacer assembly

[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

When valve exhaust affects other stations due to the circuit configuration, this spacer assembly is used for individual valve exhaust.

- * When selecting a One-touch fitting elbow type for a spacer assembly, use it faced upward, since it interferes with A and B port piping of Type 10 manifolds.
- * 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.



How to Order Individual SUP/EXH Spacer Assembly

One-touch fitting Straight type **SY 3 OM - 38 - 1 A - C6**

One-touch fitting Elbow type **SY 3 OM - 38 - 2 A - L6**

Series	
3	SY3000
5	SY5000
7	SY7000

Spacer type	
38	Individual SUP spacer
39	Individual EXH spacer

Individual SUP/EXH spacer assembly

Port size	
2	Short elbow type
3	Long elbow type

- * Select the long elbow type for a 3-position valve when using Type 11 and Type 12 downward. However, Type 11 of the SY3000 series for the mixed mounting of connector connecting bases cannot be used downward.

Port size (Metric/One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
L4	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	ø3.2	●	—	—
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"	—	—	●

- * When using in combination with the SY²30□□□□-E (With residual pressure release valve), the length of the required mounting screws will differ. Please contact SMC for details.

Model	Port size		Flow rate characteristics			
	1, 3/5 (P, E)	4, 2 (A, B)	1 → 4/2 (P → A/B)		4/2 → 3/5 (A/B → E)	
			C (dm ³ /(s·bar))	b	C (dm ³ /(s·bar))	b
SY30M-38-1A-C6	C8	C6	1.2	0.32	1.4	0.24
SY30M-39-1A-C6			1.2	0.27	1.1	0.27
SY50M-38-1A-C8	C10	C8	2.7	0.36	3.3	0.22
SY50M-39-1A-C8			2.2	0.37	2.2	0.36
SY70M-38-1A-C12	C12	C12	4.8	0.26	4.7	0.25
SY70M-39-1A-C12			4.9	0.28	4.7	0.23

- * Calculation of effective area S and sonic conductance C: S = 5.0 x C
- * The value is for manifold base with 5 stations, rubber seal, and individually operated 2-position type.
- * For connector connecting base (type 10) manifolds

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 628 to 630 for dimensions.

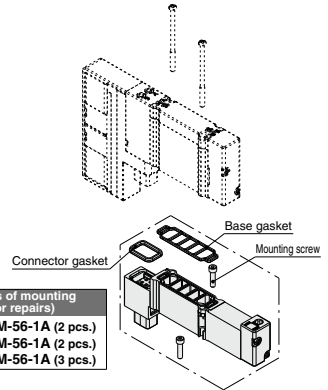
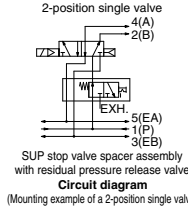
■ SUP stop valve spacer assembly with residual pressure release valve

[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

It is used to shut off the supply air to valves individually.

- * Cannot be selected when the elbows are facing upward in A and B ports in Type 10 manifolds, since they will interfere with the piping for the spacer assembly

Series		Manual override	
3	SY3000	Nil	Push-turn locking slotted type
5	SY5000	E	Push-turn locking lever type
7	SY7000		



- * For lever type:

When locking the lever type manual override, push the lever down in the PUSH position with your fingers until it stops, then turn the lever 90° clockwise. (PUSH → LOCK)

Turning the lever without pushing it down until it stops can cause damage to the manual override and other problems such as air leakages.

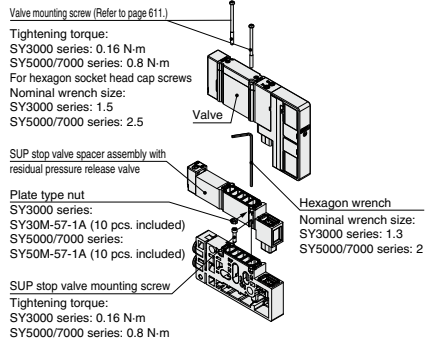
To unlock the manual override, turn the lever counterclockwise. (LOCK → PUSH)

[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 release 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.



Model	Port size		Flow rate characteristics			
	1, 3/5 (P, E)	4, 2 (A, B)	1 → 4/2 (P → A/B)		4/2 → 3/5 (A/B → E)	
			C [dm ³ /(s·bar)]	b	C [dm ³ /(s·bar)]	b
SY30M-50-1A(E)	C8	C6	0.6	0.18	1.4	0.29
SY50M-50-1A(E)	C10	C8	1.6	0.20	3.1	0.23
SY70M-50-1A(E)	C12	C12	3.1	0.18	4.3	0.32

- * Calculation of effective area S and sonic conductance C: S = 5.0 x C
- * The value is for manifold base with 5 stations, rubber seal, and individually operated 2-position type.
- * For connector connecting base (type 10) manifolds

⚠ Caution

Tightening torque for mounting screw
M2: 0.16 N·m (SY3000)
M3: 0.8 N·m (SY5000/7000)

Manifold Options

* Refer to pages 628 to 630 for dimensions.

■ 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)]

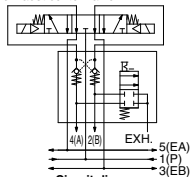
It is used to hold the intermediate position of the cylinder for a long period of time. Use a 3-position exhaust center valve when the double check spacer assembly with residual exhaust valve is used. It can also be used for drop prevention at the cylinder stroke end when supply residual pressure is released by using a 2-position single/double valve.

* 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 $\frac{3}{2}$ 40 ⁰ ₁	SY $\frac{3}{2}$ 2 0 ⁰ ₁
SY5000	SY50M-60-1A			
SY7000	SY70M-60-1A			

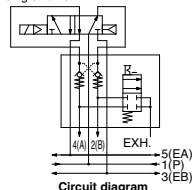
<Example>

Double check spacer assembly with residual pressure release valve
3-position exhaust center valve

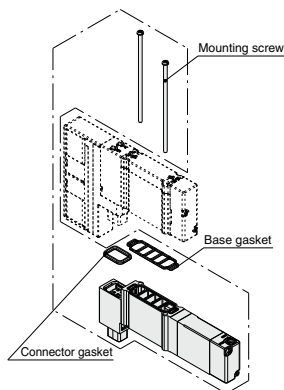


(Intermediate stop: When 3-position exhaust center valve is mounted)

Double check spacer assembly with residual pressure release valve
2-position single valve



(Drop prevention: When 2-position single valve is mounted)



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 seal, and rod seal 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.
- If using a double check spacer that is built in to the sub-plate, refer to page 696.

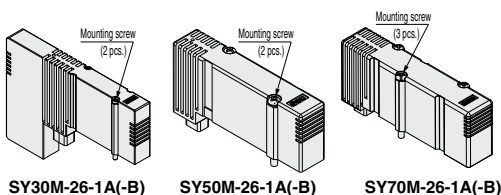
Specifications

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

■ Blanking plate assembly

[With two mounting screws (3 pcs. for the SY7000)]

Used when valve additions are expected or for maintenance. A structure is in place on the blanking plate to prevent the mounting screws from sliding.



How to Order Blanking Plate Assembly

SY 3 0M-26-1A - □

● Series

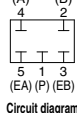
3	SY3000
5	SY5000
7	SY7000

● Option for mounting

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

Part numbers of mounting screw (Hexagon bolt) (For repairs)

SY3000: SY3000-23-24A [SY3000-222-1A]
SY5000: SY5000-221-1A [SY5000-222-1A]
SY7000: SY7000-221-2A [SY7000-222-1A]



Circuit diagram

⚠ Caution

Tightening torque for mounting screw
M2: 0.16 N·m (SY3000)
M3: 0.8 N·m (SY5000/7000)

* Refer to pages 628 to 630 for dimensions.

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

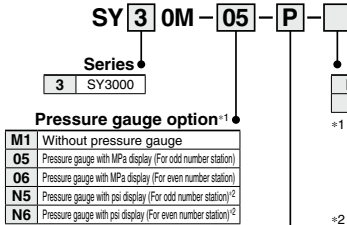
* Refer to pages 628 to 631 for dimensions.

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



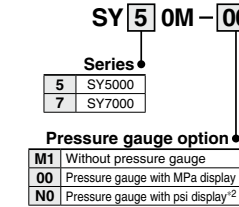
Applicable valve³

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.

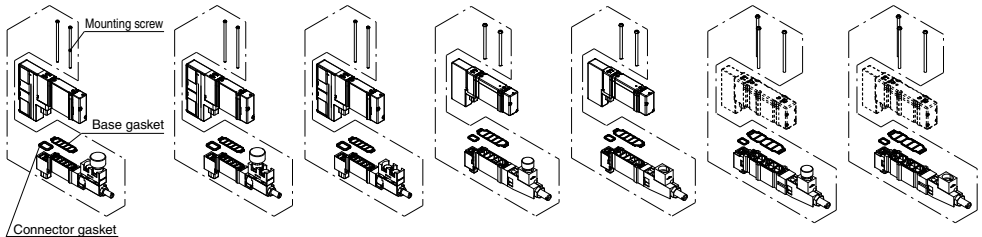


Regulating port

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)	1(P), 4(A), 2(B)	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 temperatures	-10 to 50°C (No freezing)		
Weight [g] ²	With pressure gauge	33 (35) ³	75
	Without pressure gauge	27 (29) ³	69
			93
			87

¹ 3-position closed center and pressure center, and 4-position dual 3-port valves are only available for 1(P) port pressure regulation.

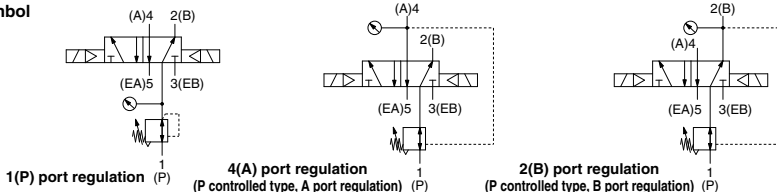
² Gasket and mounting screws are included in the weight.

³ (): Denotes the values of SY30M-□-□-3

* Always apply pressure from 1(P) port in the base for interface regulator.

* When using in combination with the SY⁵30□□□-1-E (With residual pressure release valve), the length of the required mounting screws will differ. Please contact SMC for details.

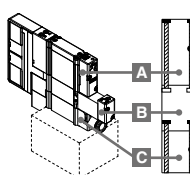
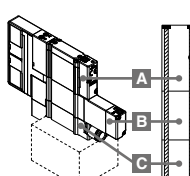
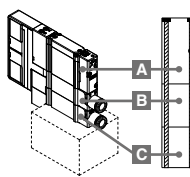
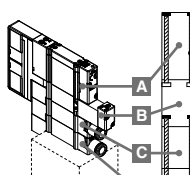
Symbol



⚠ Caution

Tightening torque for mounting screw
M2: 0.16 N·m (SY3000)
M3: 0.8 N·m (SY5000/7000)

Manifold Options: 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 style="font-size: 8px;"> <Round head combination screw> ①: SY3000-23-24A ②: SY5000-221-1A ③: SY7000-221-1A </p> <p style="font-size: 8px;"> <Hexagon socket head cap screw> ①: SY3000-222-1A ②: SY5000-222-1A ③: SY7000-221-1A </p> <p style="font-size: 8px;"> ①: SY30M-56-2A ②: SY50M-56-2A ③: SY70M-56-2A </p>	A	Valve	SY3000-23-24A [for 10 valves (20 pcs.)]	SY3000-222-1A [for 10 valves (20 pcs.)]	SY5000-221-1A [for 10 valves (20 pcs.)]	SY5000-222-1A [for 10 valves (20 pcs.)]	SY7000-221-1A [for 10 valves (30 pcs.)]	SY7000-222-1A [for 10 valves (30 pcs.)]	
	B	SUP stop valve spacer assembly with residual pressure release valve	SY30M-56-2A (2 pcs.)	SY50M-56-2A (2 pcs.)	SY70M-56-2A (3 pcs.)				
	C	Individual SUP (EXH) spacer assembly							
 <p style="font-size: 8px;"> <Round head combination 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 style="font-size: 8px;"> <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 style="font-size: 8px;"> <Round head combination screw> ①: SY3000-23-24A ②: SY5000-221-1A ③: SY7000-221-1A </p> <p style="font-size: 8px;"> <Hexagon socket head cap screw> ①: SY3000-222-1A ②: SY5000-222-1A ③: SY7000-222-1A </p> <p style="font-size: 8px;"> ①: SY30M-56-4A ②: SY50M-56-4A ③: SY70M-56-4A </p>	A	Valve	SY3000-23-24A [for 10 valves (20 pcs.)]	SY3000-222-1A [for 10 valves (20 pcs.)]	SY5000-221-1A [for 10 valves (20 pcs.)]	SY5000-222-1A [for 10 valves (20 pcs.)]	SY7000-221-1A [for 10 valves (30 pcs.)]	SY7000-222-1A [for 10 valves (30 pcs.)]	
	B	SUP stop valve spacer assembly with residual pressure release valve	SY30M-56-4A (2 pcs.)		SY50M-56-4A (2 pcs.)		SY70M-56-4A (3 pcs.)		
	C	Individual SUP (EXH) spacer assembly							
	D	Individual EXH (SUP) spacer assembly							

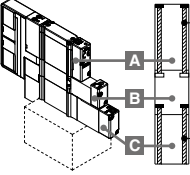
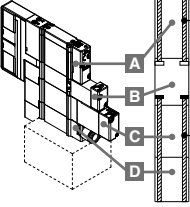
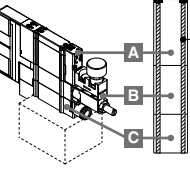
* Mounting onto a manifold follows the order explained above.
 * The fitting for individual SUP/EXH spacers comes in a straight type only, since an elbow type would interfere with each spacer assembly when laminated.

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: 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</p> <p><Hexagon socket head cap screw> ①: SY3000-222-1A ②: SY5000-222-1A ③: SY7000-222-1A</p> <p>①: SY30M-56-3A ②: SY50M-56-3A ③: SY70M-56-3A</p>	A Valve	SY3000-23-24A [for 10 valves (20 pcs.)]	SY3000-222-1A [for 10 valves (20 pcs.)]	SY5000-221-1A [for 10 valves (20 pcs.)]	SY5000-222-1A [for 10 valves (20 pcs.)]	SY7000-221-1A [for 10 valves (30 pcs.)]	SY7000-222-1A [for 10 valves (30 pcs.)]
	B SUP stop valve spacer assembly with residual pressure release valve	SY30M-56-3A (2 pcs.)		SY50M-56-3A (2 pcs.)		SY70M-56-3A (3 pcs.)	
	C Double check spacer assembly with residual pressure release valve						
 <p><Round head combination screw> ①: SY3000-23-24A ②: SY5000-221-1A ③: SY7000-221-1A</p> <p><Hexagon socket head cap screw> ①: SY3000-222-1A ②: SY5000-222-1A ③: SY7000-222-1A</p> <p>①: SY30M-56-5A ②: SY50M-56-5A ③: SY70M-56-5A</p>	A Valve	SY3000-23-24A [for 10 valves (20 pcs.)]	SY3000-222-1A [for 10 valves (20 pcs.)]	SY5000-221-1A [for 10 valves (20 pcs.)]	SY5000-222-1A [for 10 valves (20 pcs.)]	SY7000-221-1A [for 10 valves (30 pcs.)]	SY7000-222-1A [for 10 valves (30 pcs.)]
	B SUP stop valve spacer assembly with residual pressure release valve	SY30M-56-5A (2 pcs.)		SY50M-56-5A (2 pcs.)		SY70M-56-5A (3 pcs.)	
	C Double check spacer assembly with residual pressure release valve						
	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.

⚠ Caution

Tightening torque for mounting screw
M2: 0.16 N·m (SY3000)
M3: 0.8 N·m (SY5000/7000)

Manifold Options

* Refer to pages 628 to 631 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.

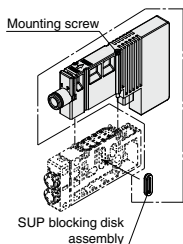
Blocking disks also supplied (2 pieces). Can be used to block both sides of the number of stations being isolated for individual air supply (as shown in example).

* 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.)

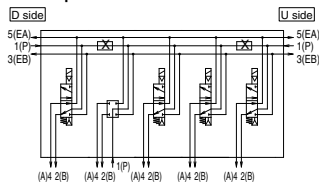
* Electrical wiring is connected to a number of stations in the individual SUP block manifold.

* 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	ø3.2	●	—	—
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.

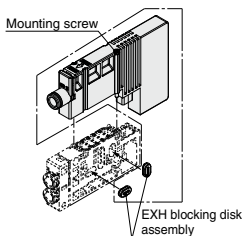
Blocking disks also supplied (4 pieces). Can be used to block both sides of the number of stations being isolated for individual exhaust. (as shown in example).

* 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.)

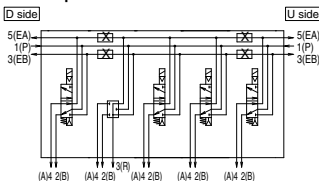
* Electrical wiring is connected to a number of stations in the individual EXH block manifold.

* 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>



SY3000/5000/7000 Series

Manifold Options

■ Blanking Plate with Output [With two mounting screws]

The blanking plate extracts the individual signal of the manifold valve.

Specifications

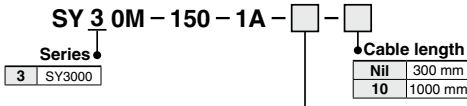
Number of outputs	2 outputs
Load voltage	12 VDC, 24 VDC (Dependent on the rated voltage of the built-in manifold)
Load current	42 mA/point (Max.)
Enclosure	Dust proof (M12 connector: IP67)

- * For serial transmission-capable manifolds, only the 24 VDC is applicable.
- * When non-polar type valves are mounted on the same manifold (excludes SI unit manifolds), be careful of surge voltage intrusion. Refer to page 706 for details.

⚠ Caution

Tightening torque for mounting screw
M2: 0.16 N-m

How to Order Blanking Plate with Output



● Connector type

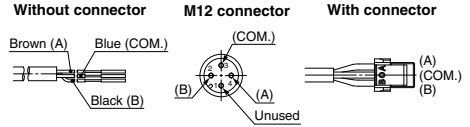
Nil	1	2
Without connector	With M12 connector	With connector (For ZK2 vacuum unit)
		Made to Order

* Refer to the specifications for output polarity.

Output Polarity

Manifold common specifications	A	B	COM.
Positive common	-	-	+
Negative common	+	+	-

* Specifications are the same as the manifold common specifications.



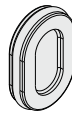
■ SUP/EXH blocking disk assembly (for connector type manifold, Type 10, 11, 12)

[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]

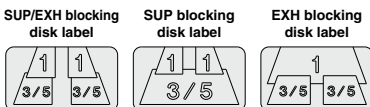
By inserting the EXH blocking disk in the exhaust passage of the manifold valve, can separate the exhaust from the valve so it does not affect the other valves. It can also be used for the manifold for the positive pressure and vacuum mixed manifold. (2 pcs. are required to block FA/EB both sides of the EXH.)



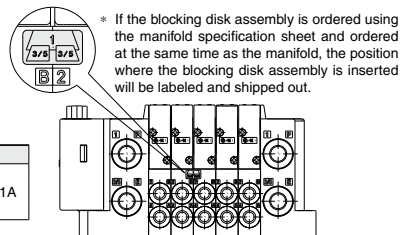
Series	SUP blocking disk assembly	EXH blocking disk assembly
SY3000	SY30M-40-1A	SY30M-40-2A
SY5000	SY50M-40-1A	SY50M-40-1A
SY7000	SY70M-40-1A	SY70M-40-1A

■ Label for blocking disk

Label to indicate and confirm on the manifold where the SUP/EXH blocking disk assemblies were inserted. (3 sheets each)



Series	Part no.
SY3000	SJ3000-155-1A
SY5000	
SY7000	



Manifold Options

■ Back pressure check valve assembly (Retrofit or pre-installed type)

It prevents cylinder malfunction caused by other valve exhaust entry. Insert it into EA/EB port (valve mounting side) on the manifold side of a valve which is affected. It is effective when a single-acting cylinder is used.

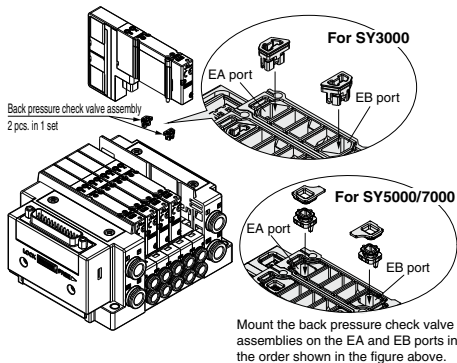
- * When ordering assemblies incorporated with a manifold, refer to the Ordering Example below (when installed in all stations.)
- * When a check valve for back pressure prevention is desired and is to be installed only in certain manifold stations, clearly indicate the part number and specify the mounting position on the manifold specification sheet.

<Precautions>

1. The manifold installed type back pressure check valve assembly is assembly parts with a check valve structure. However, since slight air leakage against the back pressure is allowed due to its structure, adverse effects of the back pressure due to increase in exhaust resistance cannot be prevented if the manifold exhaust port and other exhaust ports are put together for piping or if the piping diameter is narrowed. As a result, this may cause the actuator and air operated equipment to malfunction. So, be careful not to restrict the exhaust air. If the exhaust resistance becomes large, select a built-in valve type with rubber seal.
2. When the back pressure check valve assembly is mounted, please contact SMC for valve flow rate characteristics.

Ordering Example

SS5Y3-10F1-05B-C6.....1 set (Type 10 5-station manifold base part no.)
 *SY3201-5U1.....5 sets (2-position double part no.)
 *SY30M-24-1A.....5 sets (Back pressure check valve assembly part no.)
 └ The asterisk denotes the symbol for the assembly.



Series	Part no.
SY3000	SY30M-24-1A
SY5000	SY50M-24-1A
SY7000	SY70M-24-1A

■ Dual flow fitting (for connector connecting base, Type 10, side ported)

This is a fitting for cylinder ports which enables simultaneous actuation and increase in flow rate of valves for 2 stations.

- * When ordering assemblies incorporated into a manifold, refer to the Ordering Example below and specify on the manifold specification sheet.

How to Order Dual Flow Fitting

SY 3 OM - 120 - 1A - C8

Series	
3	SY3000
5	SY5000

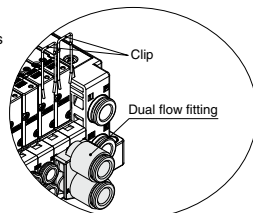
● A, B port size (One-touch fittings)

Symbol	A, B port	SY3000	SY5000
C8	Metric size	ø8	—
C10		ø10	—
N9	Inch size	ø5/16"	●
N11		ø3/8"	●

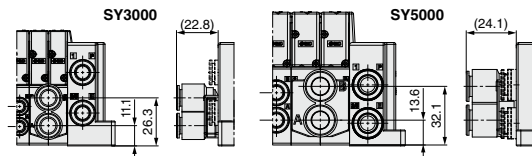
Ordering Example

SS5Y3-10F1-08B-CM
 *SY3100-5U1
 *SY30M-120-1A-C8

└ The asterisk denotes the symbol for the 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
- * Refer to the table below to see which spacers are applicable.



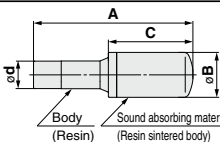
Each type of spacer	Series	
	SY3000	SY5000
Individual SUP (EXH) spacer assembly	×	○
SUP stop valve spacer assembly with residual pressure release valve	×	○
Double check spacer assembly with residual pressure release valve	×	○
Interface regulator	×	×

○: Can be built in ×: Cannot be built in

■ Silencer

(One-touch fitting connection type)

This silencer can be mounted to the 3/5 (E: EXH) port of the manifold in one step.

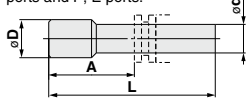


- * Shipped together with the product

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

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

SY3000/5000/7000 Series

Manifold Options

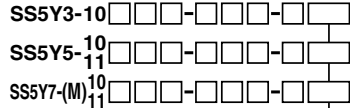
A transparent plastic plate to put a label with the name of the function of the solenoid valve

■ 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	—

Ordering Example

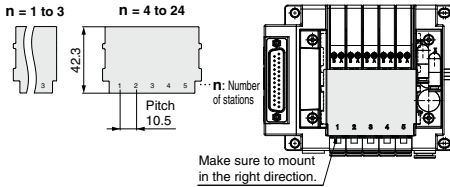
SS5Y3-10F1-05UR-C6AA 1 set

*SY3200R-SU1 5 sets

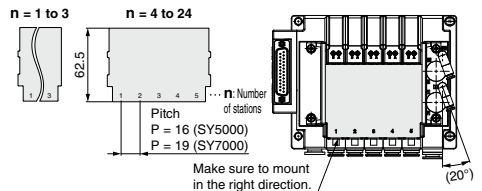
The asterisk denotes the symbol for the assembly.

* 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.

<SY3000>



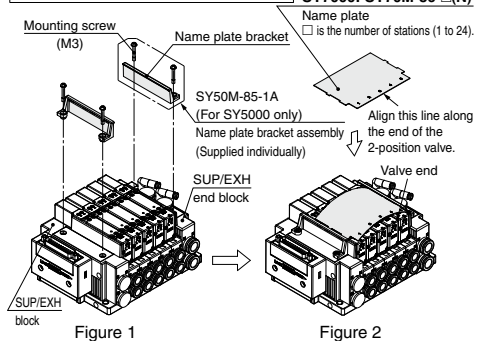
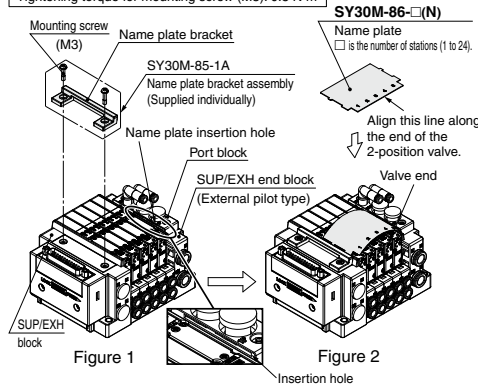
<SY5000/7000>



Tightening torque for mounting screw (M3): 0.8 N·m

Tightening torque for mounting screw (M3): 0.8 N·m

SY5000: SY50M-86-□(N)
 SY7000: SY70M-86-□(N)



Manifold Options

* A transparent plastic plate to put a label with the name of the function of the solenoid valve

■ If adding a name plate

If adding a name plate to a manifold in use, order a name plate bracket assembly, in addition to ordering a name plate. Refer to the table below for the part number and the amount.

Name plate part number

Model		SS5Y3-10	SS5Y5-10/11	SS5Y7-(M)10/11	Note
Name plate	Printed	SY30M-86-□N	SY50M-86-□N	SY70M-86-□N	□: Number of stations
	No printing	SY30M-86-□	SY50M-86-□	SY70M-86-□	(1 to 24)

Name plate bracket assembly part number and number of items ordered

Model		SS5Y3-10	SS5Y5-10/11
Name plate assembly part number		SY30M-85-1A	SY50M-85-1A
Manifold SUP/EXH block assembly 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.

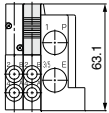
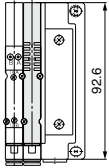
*1 If the manifold is an external pilot, an insertion slot for name plates is on the port block of the SUP/EXH block assembly. Thus, a bracket assembly is no longer required on the port piping side.

* Name plate bracket assembly is not required for the SY7000.

SY3000/5000/7000 Series

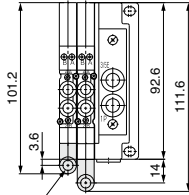
Dimensions: Manifold Options/SY3000 Series

■ Blanking plate assembly

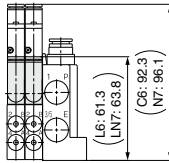


<Type 10, 12>

■ Individual SUP/EXH spacer assembly (Top ported)

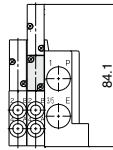
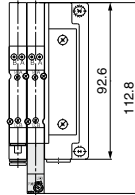


One-touch fitting
(SUP port, EXH port)
Applicable tubing O.D.: $\phi 4$, $\phi 5/32^*$
: $\phi 6$, $\phi 1/4^*$



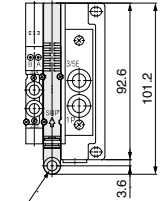
<Type 12>

■ Double check spacer assembly with residual pressure release valve

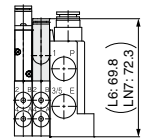


<Type 10>

■ Individual SUP/EXH block assembly (Top ported)

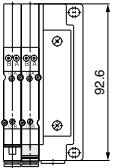


One-touch fitting
(SUP port, EXH port)
Applicable tubing O.D.: $\phi 4$, $\phi 5/32^*$
: $\phi 6$, $\phi 1/4^*$

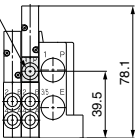


<Type 12>

■ Individual SUP/EXH spacer assembly (Side ported)

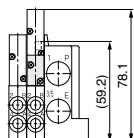
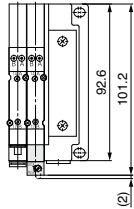


One-touch fitting
(SUP port, EXH port)
Applicable tubing O.D.: $\phi 2$
: $\phi 3.2$, $\phi 1/8^*$
: $\phi 4$, $\phi 5/32^*$
: $\phi 6$, $\phi 1/4^*$



<Type 10>

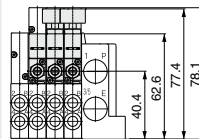
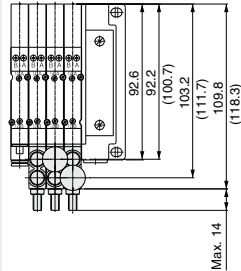
■ SUP stop valve spacer assembly with residual pressure release valve



<Type 10, 12>

* The dimensions within () apply to the SY30M-50-1AE.

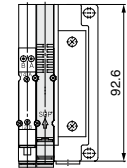
■ Interface regulator



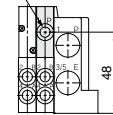
<Type 10, 12>

* The dimensions within () apply to the SY30M-□□-3.

■ Individual SUP/EXH block assembly (Side ported)



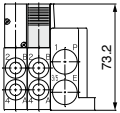
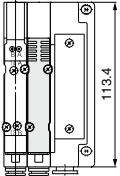
One-touch fitting
(SUP port, EXH port)
Applicable tubing O.D.: $\phi 2$
: $\phi 3.2$, $\phi 1/8^*$
: $\phi 4$, $\phi 5/32^*$
: $\phi 6$, $\phi 1/4^*$



<Type 10>

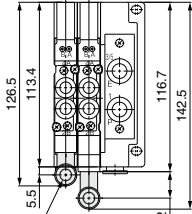
Dimensions: Manifold Options/SY5000 Series

■ Blanking plate assembly

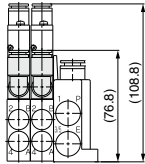


<Type 10, 11, 12>

■ Individual SUP/EXH spacer assembly (Top/Bottom ported)

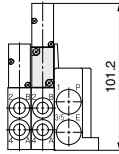
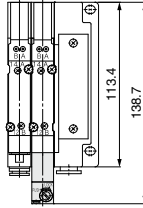


One-touch fitting
(SUP port, EXH port)
Applicable tubing O.D.: ø4
: ø6, ø1/4"
: ø8, ø5/16"



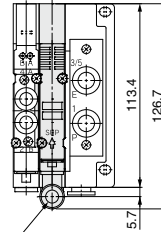
<Type 11, 12>

■ Double check spacer assembly with residual pressure release valve

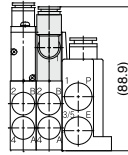


<Type 10, 11>

■ Individual SUP/EXH block assembly (Top ported)

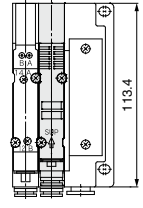


One-touch fitting
(SUP port, EXH port)
Applicable tubing O.D.: ø4
: ø6, ø1/4"
: ø8, ø5/16"

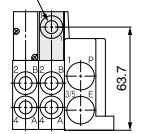


<Type 12>

■ Individual SUP/EXH block assembly (Side ported)

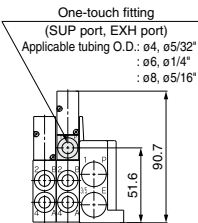
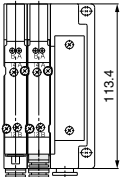


One-touch fitting
(SUP port, EXH port)
Applicable tubing O.D.: ø4, ø5/32"
: ø6, ø1/4"
: ø8, ø5/16"



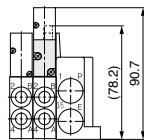
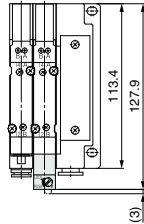
<Type 10>

■ Individual SUP/EXH spacer assembly (Side ported)



<Type 10>

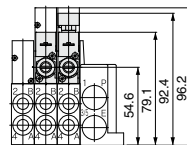
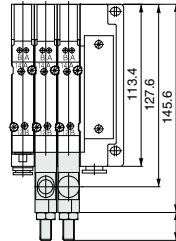
■ SUP stop valve spacer assembly with residual pressure release valve



<Type 10, 11, 12>

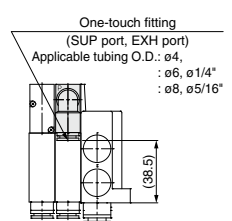
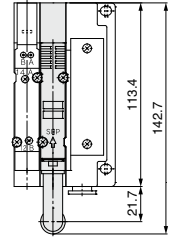
* The dimensions within () apply to the SY50M-50-1AE.

■ Interface regulator



<Type 10, 11, 12>

■ Individual SUP/EXH block assembly (Side ported)

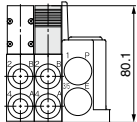
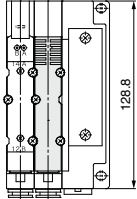


<Type 11>

SY3000/5000/7000 Series

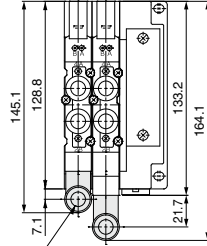
Dimensions: Manifold Options/SY7000 Series

Blanking plate assembly



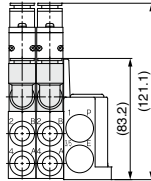
<Type 10, 11, 12>

Individual SUP/EXH spacer assembly (Top/Bottom ported)



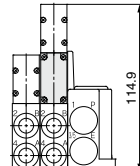
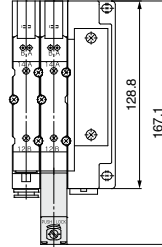
One-touch fitting
(SUP port, EXH port)
Applicable tubing O.D.: $\phi 6$, $\phi 3/8$ "

- : $\phi 8$
- : $\phi 10$
- : $\phi 12$



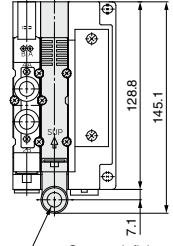
<Type 11, 12>

Double check spacer assembly with residual pressure release valve



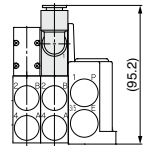
<Type 10, 11>

Individual SUP/EXH block assembly (Top ported)



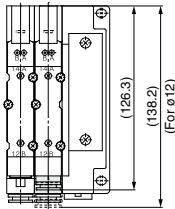
One-touch fitting
(SUP port, EXH port)
Applicable tubing O.D.: $\phi 6$, $\phi 3/8$ "

- : $\phi 8$
- : $\phi 10$
- : $\phi 12$

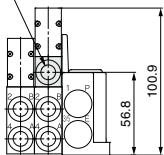


<Type 12>

Individual SUP/EXH spacer assembly (Side ported)

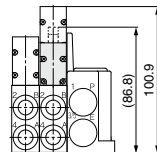
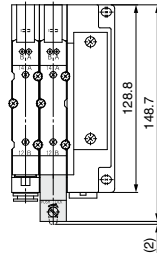


One-touch fitting
(SUP port, EXH port)
Applicable tubing O.D.: $\phi 6$, $\phi 1/4$ "
: $\phi 8$, $\phi 5/16$ "
: $\phi 10$, $\phi 3/8$ "
: $\phi 12$



<Type 10>

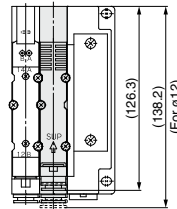
SUP stop valve spacer assembly with residual pressure release valve



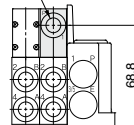
<Type 10, 11, 12>

* The dimensions within () apply to the SY70M-50-1AE.

Individual SUP/EXH block assembly (Side ported)



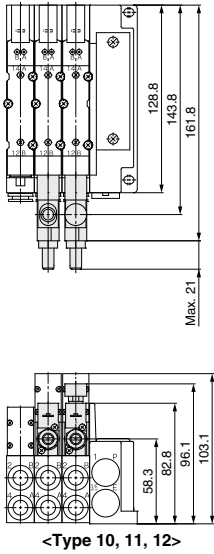
One-touch fitting
(SUP port, EXH port)
Applicable tubing O.D.: $\phi 6$, $\phi 3/8$ "
: $\phi 8$
: $\phi 10$
: $\phi 12$



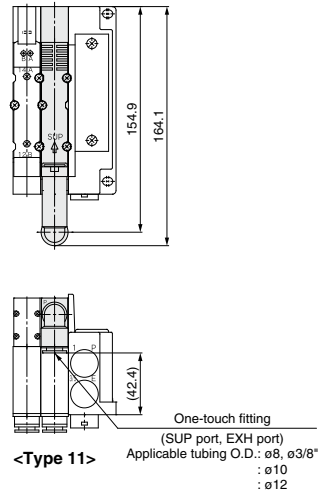
<Type 10>

Dimensions: Manifold Options/SY7000 Series

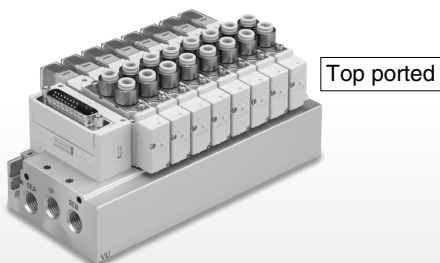
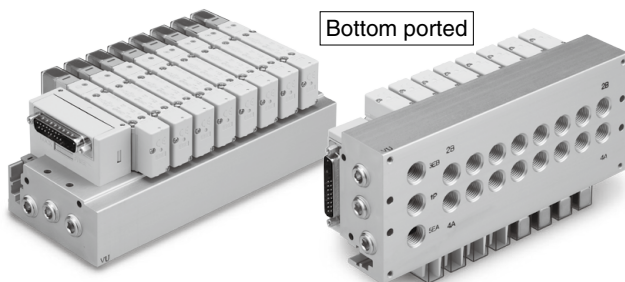
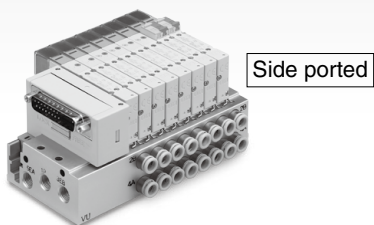
■ Interface regulator



■ Individual SUP/EXH block assembly (Bottom ported)

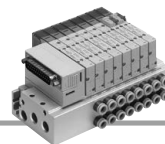


Plug-in Metal Base



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	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	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 Characteristics¹/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	

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 406 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

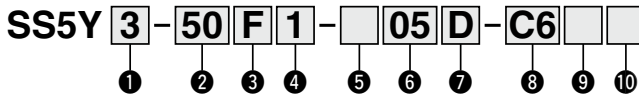
Plug-in Metal Base

D-sub Connector Flat Ribbon Cable

SY3000/5000/7000 Series



How to Order Manifolds



1 Series

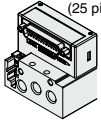
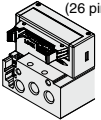
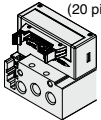
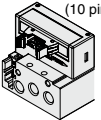
3	SY3000
5	SY5000
7	SY7000

2 Type

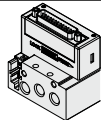
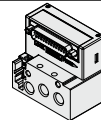
50	Side ported
51	Bottom ported
50R	Side ported, External pilot

* 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) 

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.

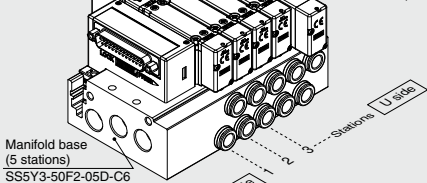
*2 All single wiring: Available only for the manifold which has 2-position single for all stations

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 the assembly.
 Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

* When mixing top ported configurations, select from those listed on page 657. In such cases, use caution as there is also output on the A and B ports on the base side. Specify on the manifold specification sheet if plugs are required for the A and B ports on the base side.

6 Valve stations

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

* This also includes the number of the 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 the type 51 bottom-ported type.

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
⋮	⋮
D12	For 12 stations

Specify a length longer than that of the standard rail.



- * Only direct mounting is available for the type 51 bottom-ported type.
- * Refer to page 708 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	●	—		Type 50 (Side ported)	
	KC4	ø4	●	●		—	Type 51 (Bottom ported)
	KC6	ø6	●	●		●	
	KC8	ø8	—	●		●	
	KC10	ø10	—	—		●	
	KC12	ø12	—	—		●	
M*1	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"	●	—		Type 50 (Side ported)	
	KN7	ø1/4"	●	●		—	Type 51 (Bottom ported)
	KN9	ø5/16"	—	●		●	
	KN11	ø3/8"	—	—		●	
	M*1	Mixed sizes	●	●		●	

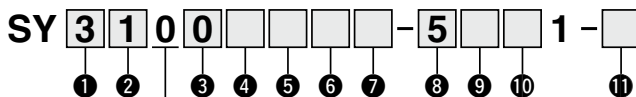
P, E port size (Thread piping)	1/8	1/4	3/8
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- *1 When ports are of mixed sizes, indicate the piping specifications on the manifold specification sheet.

SY3000/5000/7000 Series

How to Order Valves (With mounting screw)

Refer to page 404 for valve specifications.



• 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 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

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

NII	None
H	Built-in

* Only the rubber seal type is available.
* The back pressure check valve is not available for the 3-position type or 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 if the valve is to be continuously energized for long periods of time.
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

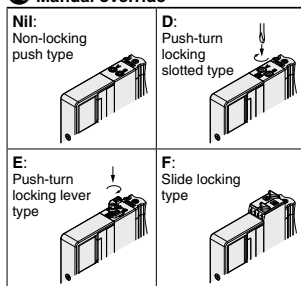
5	24 VDC
6	12 VDC

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	●	—	

* For the non-polar type, be careful of surge voltage intrusion. Refer to page 706 for details.
* Only "Z" and "NZ" types are available with a power saving circuit.

10 Manual override



* Refer to page 423 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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 679 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.

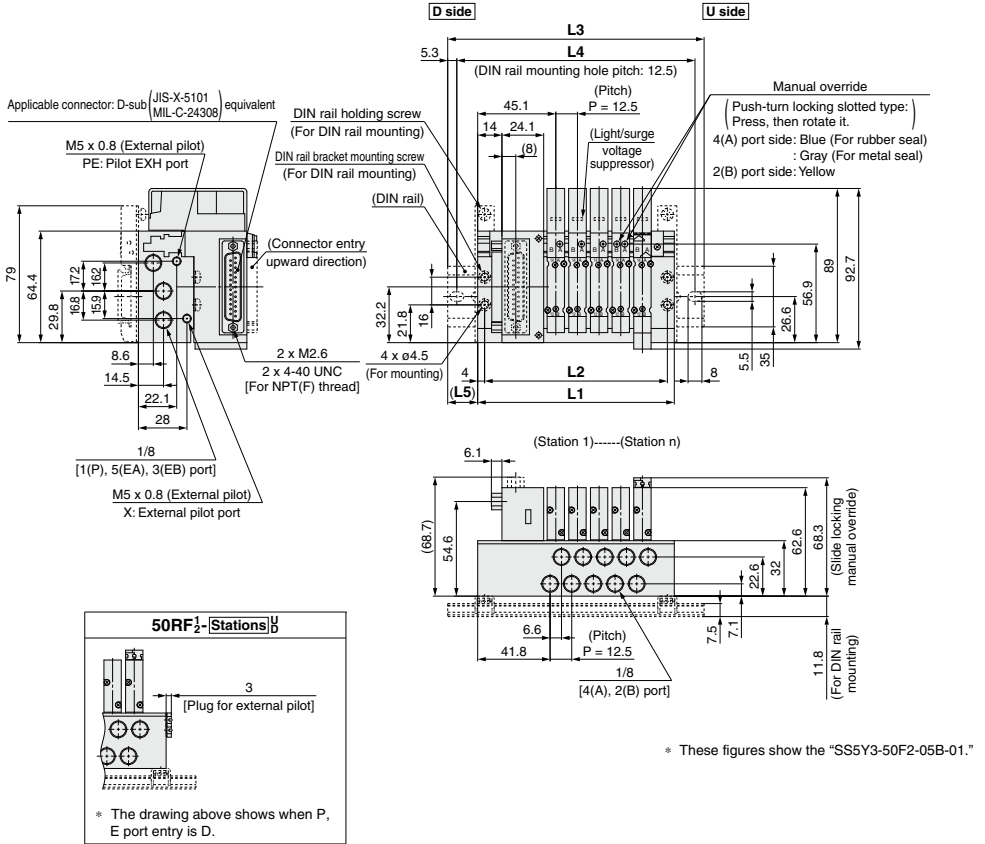
SY3000/5000/7000 Series

**Plug-in
Metal Base**

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

Dimensions: **SY3000 Series**

**SS5Y3-50(R)F₂-Stations_U
D_B-01□(D)**



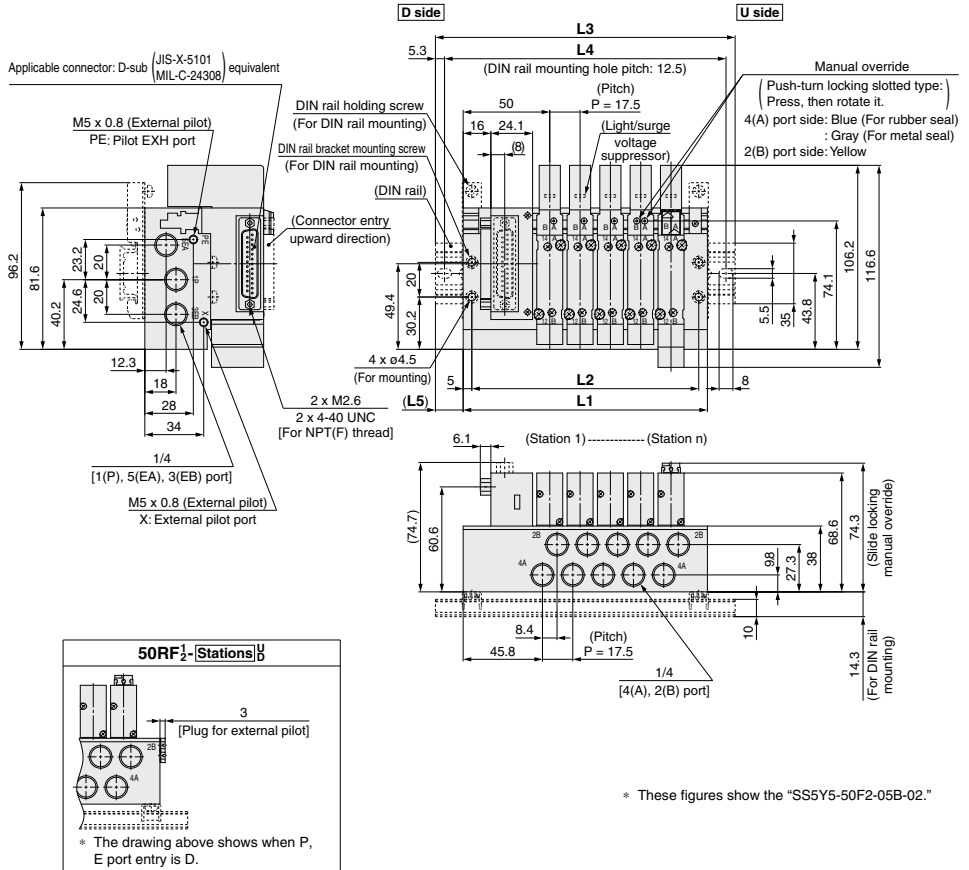
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L1	76	88.5	101	113.5	126	138.5	151	163.5	176	188.5	201
L2	68	80.5	93	105.5	118	130.5	143	155.5	168	180.5	193
L3	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5
L4	100	112.5	125	137.5	150	162.5	175	187.5	200	212.5	225
L5	17.5	17.5	17.5	17.5	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 D-sub Connector

Dimensions: SY5000 Series

SS5Y5-50(R)F₂-[Stations]_BU-02□(D)



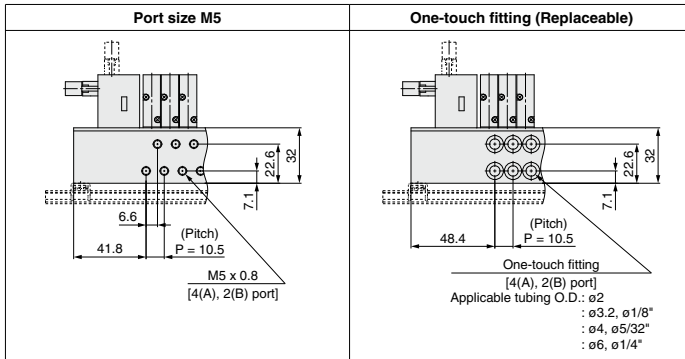
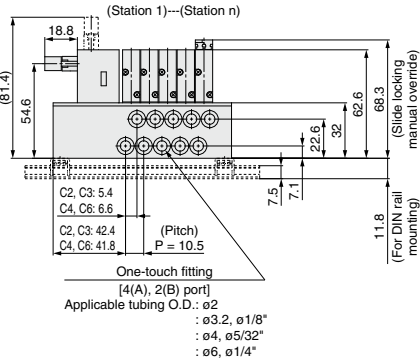
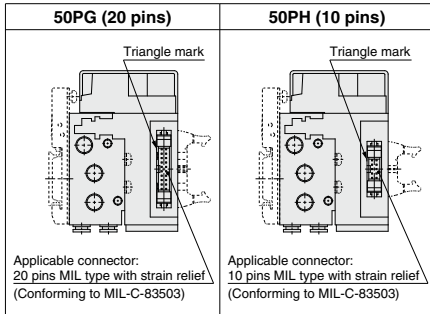
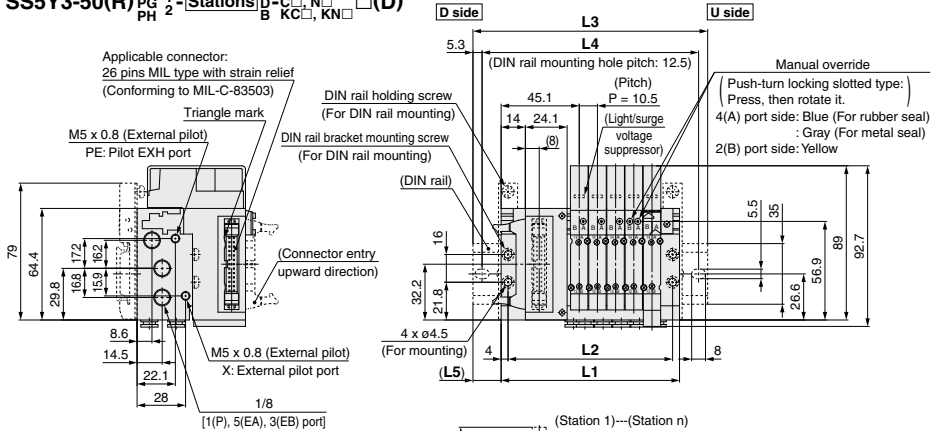
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	123	135.5	148	173	185.5	210.5	223	235.5	260.5	273	298
L4	112.5	125	137.5	162.5	175	200	212.5	225	250	262.5	287.5
L5	17.5	15	12.5	16	13.5	17.5	15	12.5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

SY3000/5000/7000 Series

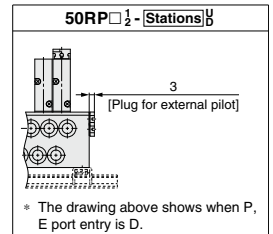
Plug-in Metal Base Type 50/Side Ported Flat Ribbon Cable

Dimensions: SY3000 Series

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



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

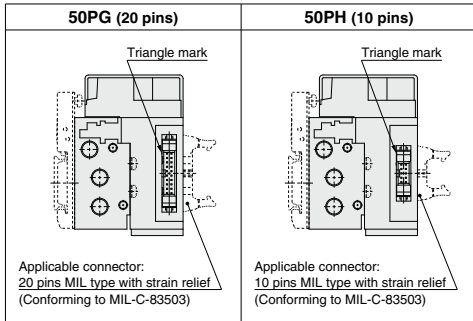
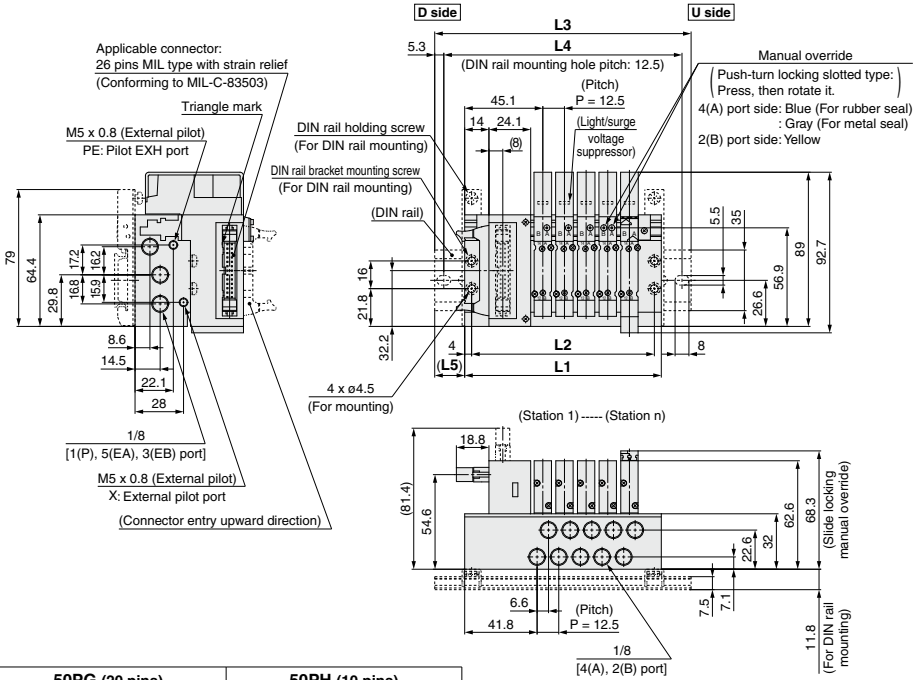


n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5
L4	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200
L5	13.5	14.5	15.5	16.5	17.5	18.5	13	14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

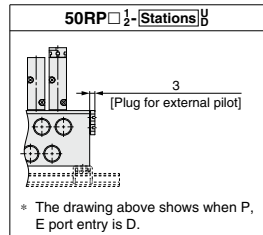
Dimensions: **SY3000 Series**

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

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 and 50PH.
- * L1 to L5 dimensions are the same as 50P type.



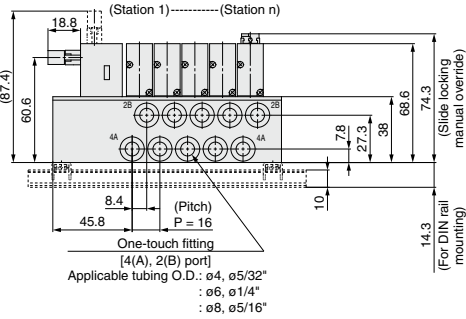
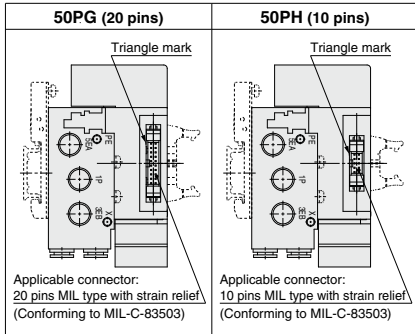
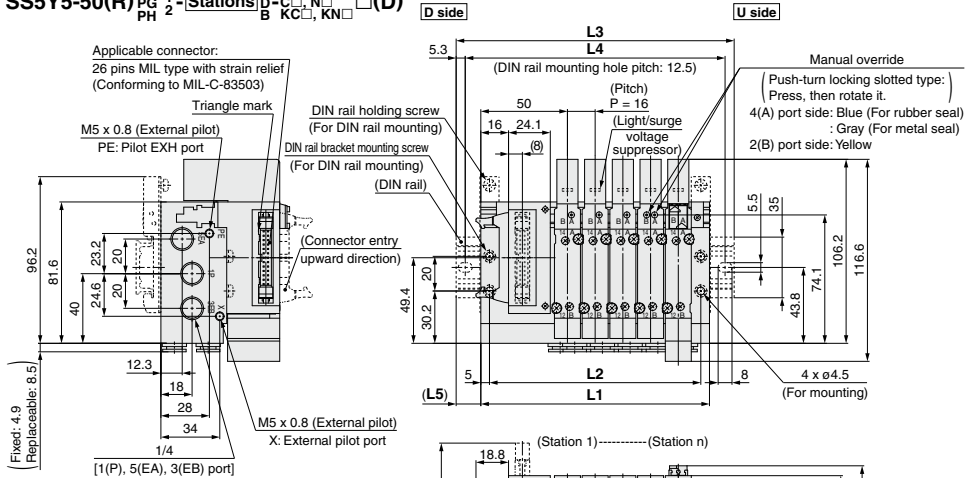
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	76	88.5	101	113.5	126	138.5	151	163.5	176	188.5	201
L2	68	80.5	93	105.5	118	130.5	143	155.5	168	180.5	193
L3	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5
L4	100	112.5	125	137.5	150	162.5	175	187.5	200	212.5	225
L5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5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

SY3000/5000/7000 Series

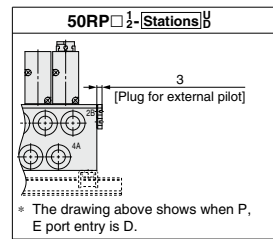
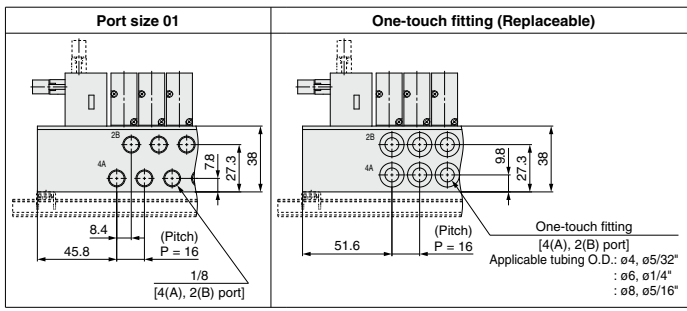
Plug-in Metal Base **Type 50/Side Ported**
Flat Ribbon Cable

Dimensions: SY5000 Series

SS5Y5-50(R) ^P PG 1/2 - (Stations) ^U □ ^D ⁰¹ ^B C □ N □ □ (D)
^{PH} KC □, KN □



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

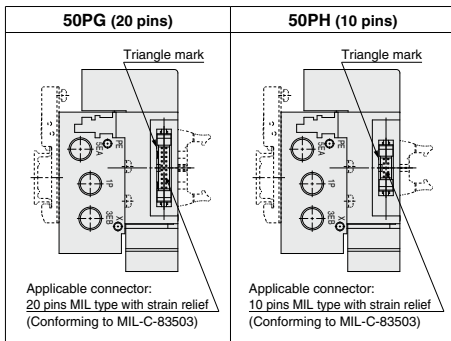
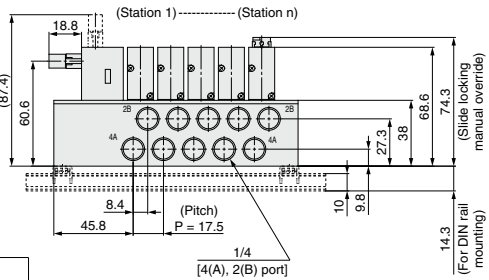
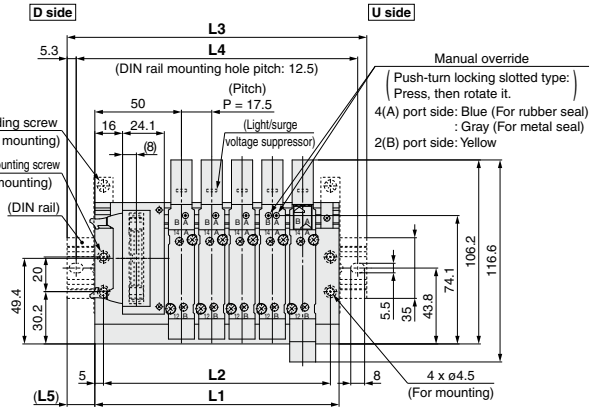
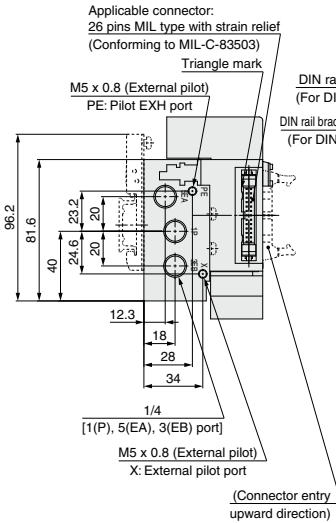


n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	110.5	135.5	148	160.5	173	198	210.5	223	248	260.5	273
L4	100	125	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5
L5	13.5	18	16	14.5	12.5	17	15.5	13.5	18	16.5	14.5

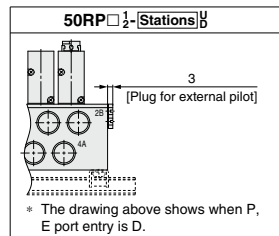
Dimensions: **SY5000 Series**

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

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



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



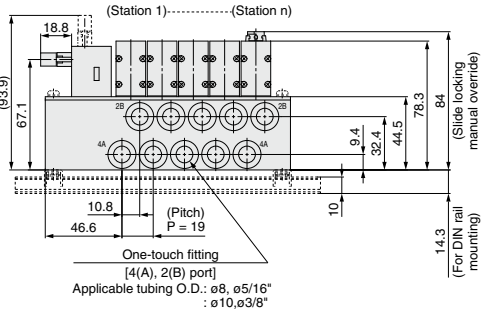
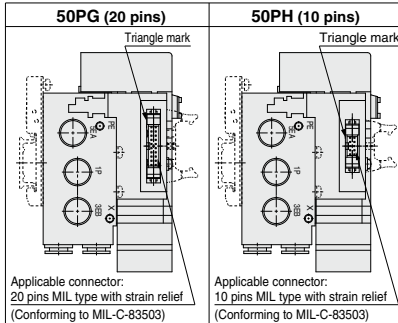
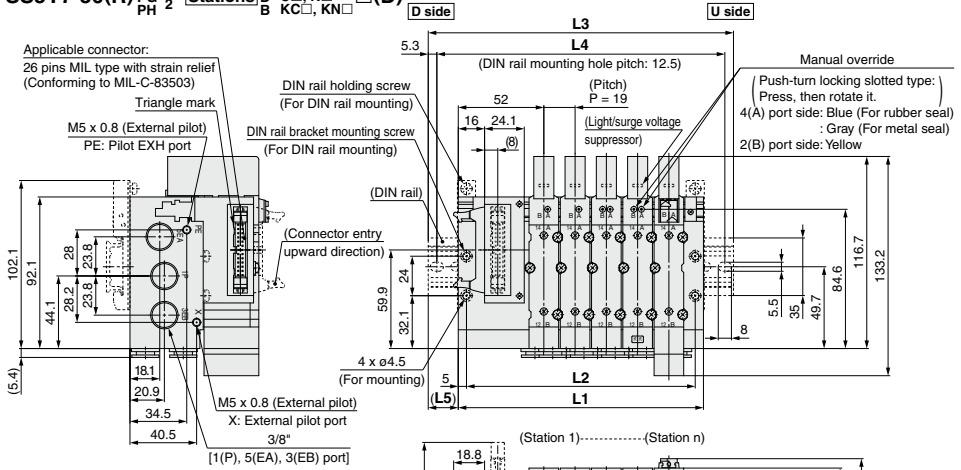
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	123	135.5	148	173	185.5	210.5	223	235.5	260.5	273	298
L4	112.5	125	137.5	162.5	175	200	212.5	225	250	262.5	287.5
L5	17.5	15	12.5	16	13.5	17.5	15	12.5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

SY3000/5000/7000 Series

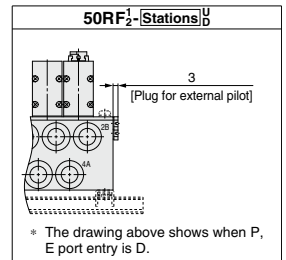
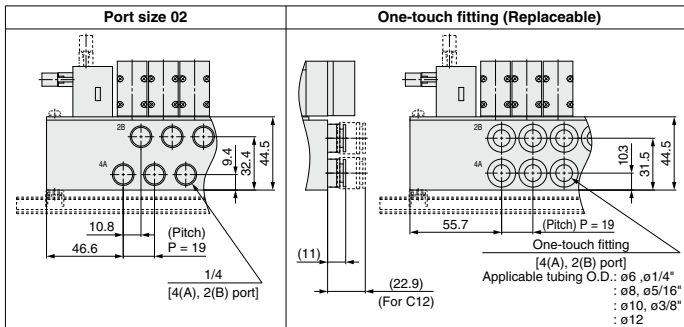
Plug-in Metal Base **Type 50/Side Ported**
Flat Ribbon Cable

Dimensions: SY7000 Series

SS5Y7-50(R) ^P _{PH} 1/2 - Stations ^U _B ⁰² _C □, ^N _B □ □ (D)



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



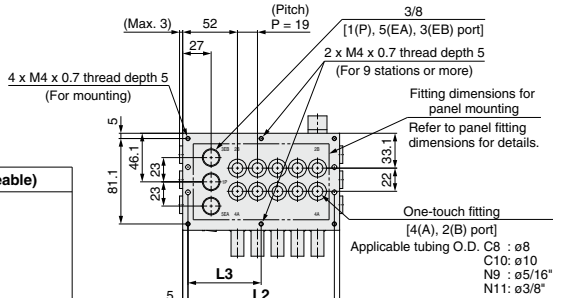
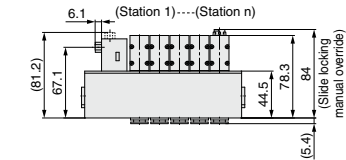
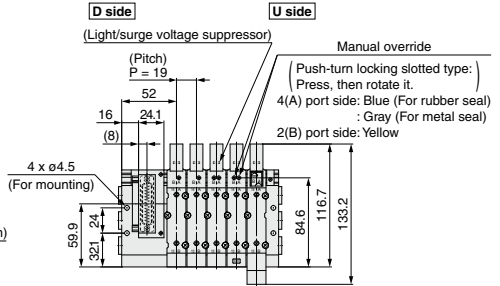
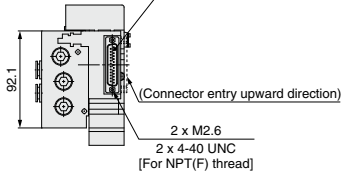
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	92	111	130	149	168	187	206	225	244	263	282
L2	82	101	120	139	158	177	196	215	234	253	272
L3	123	148	160.5	185.5	198	223	235.5	260.5	273	298	310.5
L4	112.5	137.5	150	175	187.5	212.5	225	250	262.5	287.5	300
L5	15.5	18.5	15.5	18.5	15	18	15	18	14.5	17.5	14.5

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

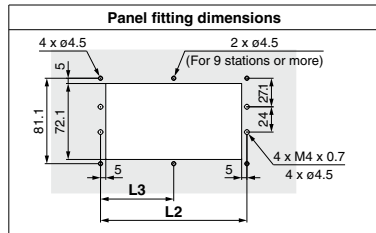
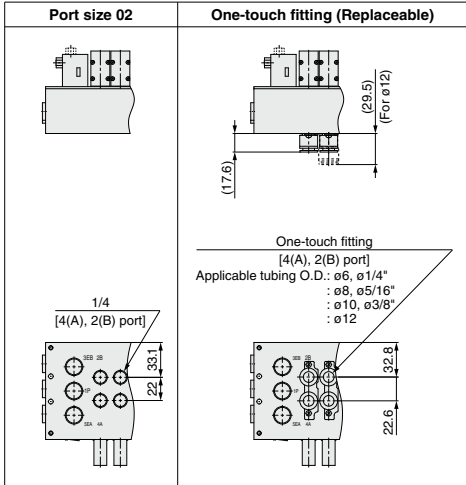
Dimensions: SY7000 Series

SS5Y7-51F₂ - Stations **D** - C N (D)
KC KN

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



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



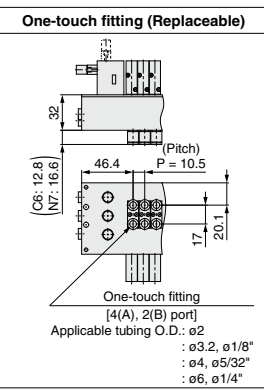
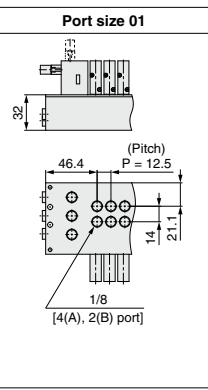
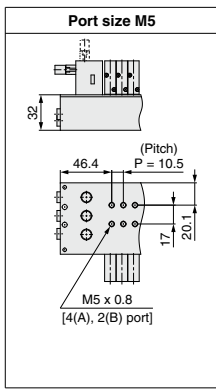
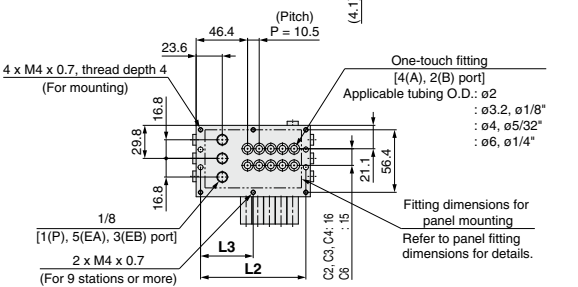
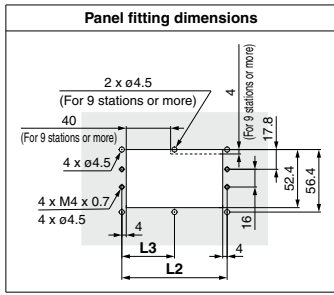
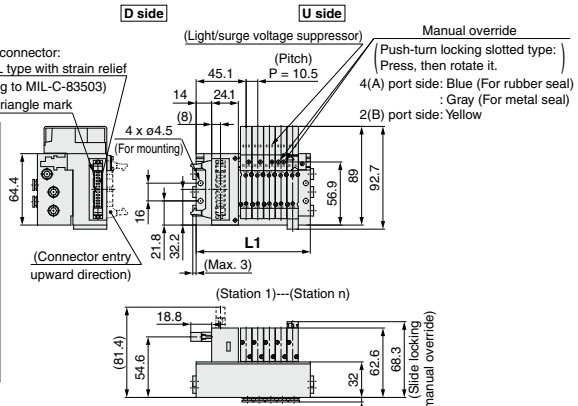
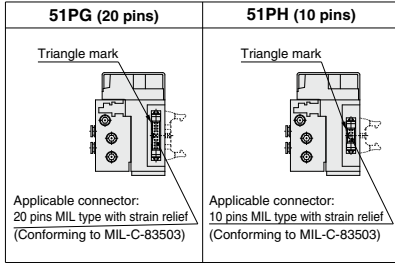
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	92	111	130	149	168	187	206	225	244	263	282
L2	82	101	120	139	158	177	196	215	234	253	272
L3	—	—	—	—	—	—	—	107.5	117	126.5	136

SY3000/5000/7000 Series

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

Dimensions: SY3000 Series

SS5Y3-51 P M5, 01
 PH 2 - Stations D-C, N, KC, KN



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

Port Sizes M5, C, N, KC, KN

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

Port Size 01

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



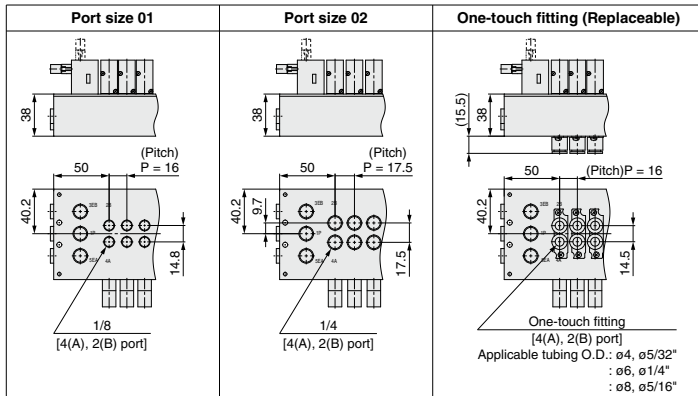
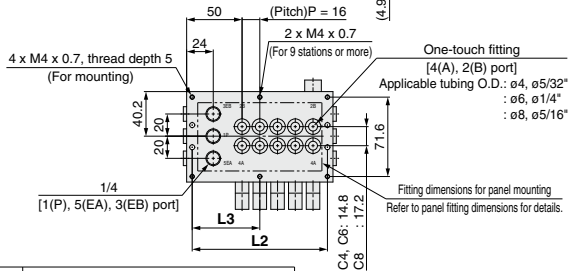
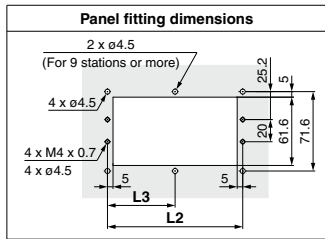
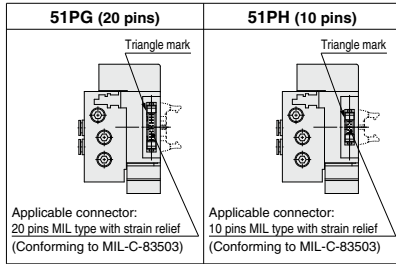
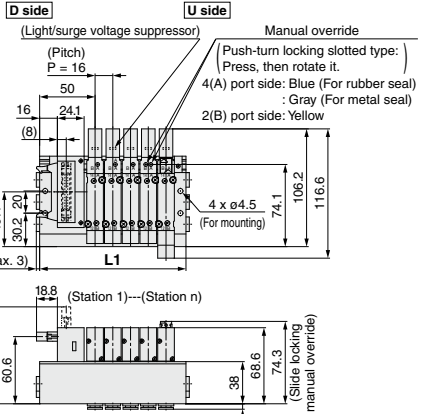
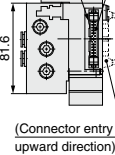
Dimensions: **SY5000 Series**

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

SS5Y5-51 P PG 1/2 - Stations D-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 Sizes 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

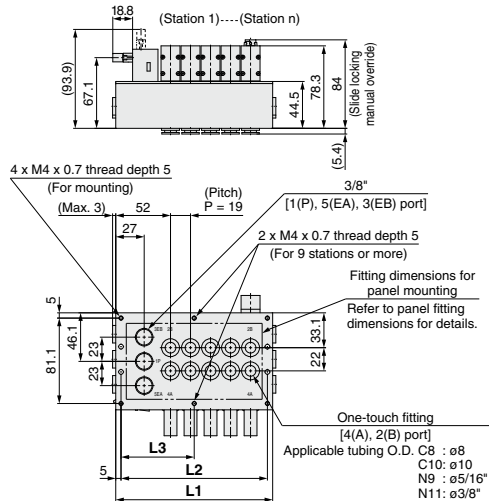
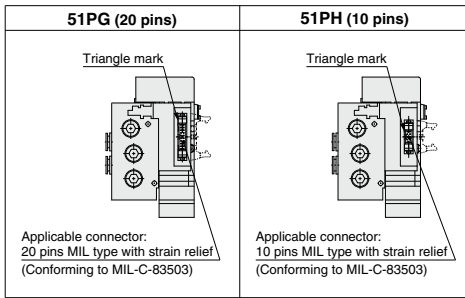
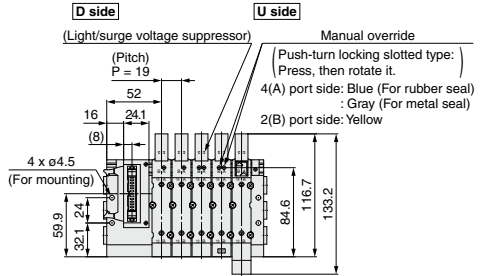
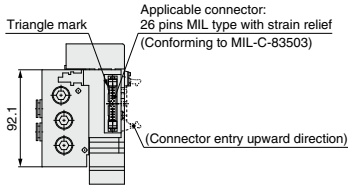
SY3000/5000/7000 Series

**Plug-in
Metal Base**

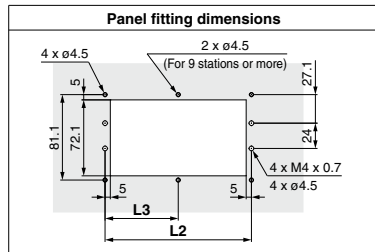
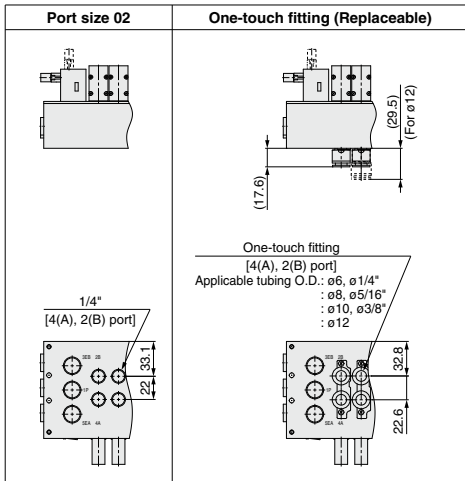
**Type 51/Bottom Ported
Flat Ribbon Cable**

Dimensions: SY7000 Series

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



* 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

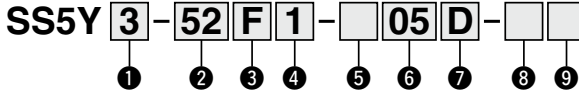
D-sub Connector Flat Ribbon Cable

Type 52
Top Ported

SY3000/5000/7000 Series



How to Order Manifolds



1 Series

3	SY3000
5	SY5000
7	SY7000

2 Type

52	Top ported
52R	Top ported, External pilot

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)

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.

6 Valve stations

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

PG: Flat ribbon cable (20 pins)			PH: Flat ribbon cable (10 pins)		
Symbol	Stations	Note	Symbol	Stations	Note
02	2 stations	All	02	2 stations	All
:	:	double wiring	:	:	double wiring
09	9 stations	All	04	4 stations	All
:	:	double wiring	:	:	double wiring
02	2 stations	All	02	2 stations	All
:	:	single wiring	:	:	single wiring
12	12 stations	All	08	8 stations	All
:	:	single wiring	:	:	single wiring

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

How to Order Manifold Assembly

Example (SS5Y3-52F2-□)

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

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

3-position closed center (24 VDC)
SY3330-5U1-C6 (1 set)

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

U side
D side

1 Stations
2 Stations

- 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 the assembly.
Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

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

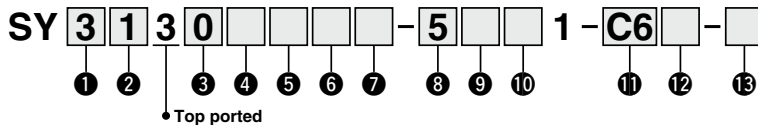
Nil	Rc
00F	G
00N	NPT
00T	NPTF

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 length longer than that of the standard rail.
:	:
D12	For 12 stations rail.

* Refer to page 708 for the fixation of DIN rail mounting type manifold.

How to Order Valves (With mounting screw) Refer to page 404 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}	3-port	N.O./N.O.
C ^{*1}	3-port	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

Nil	Internal pilot
R	External pilot

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

Nil	None
H	Built-in

* Only the rubber seal type is available.
* The back pressure check valve is not available for the 3-position type or 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 the 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 if the valve is to be continuously energized for long periods of time.
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

5	24 VDC
6	12 VDC

9 Light/surge voltage suppressor and common specification

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

* For the non-polar type, be careful of surge voltage intrusion. Refer to page 706 for details.
* Only "Z" and "NZ" types are available with a 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 423 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

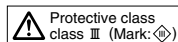
Nil	Rc
F	G
N	NPT
T	NPTF

* 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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 679 for base gasket and mounting screw part numbers.
* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.



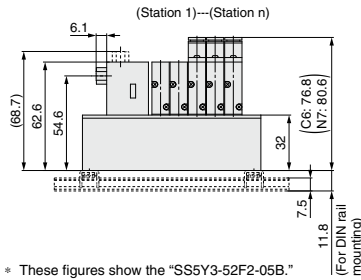
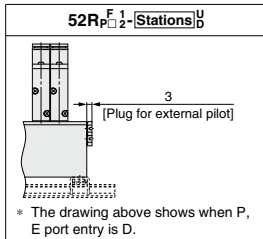
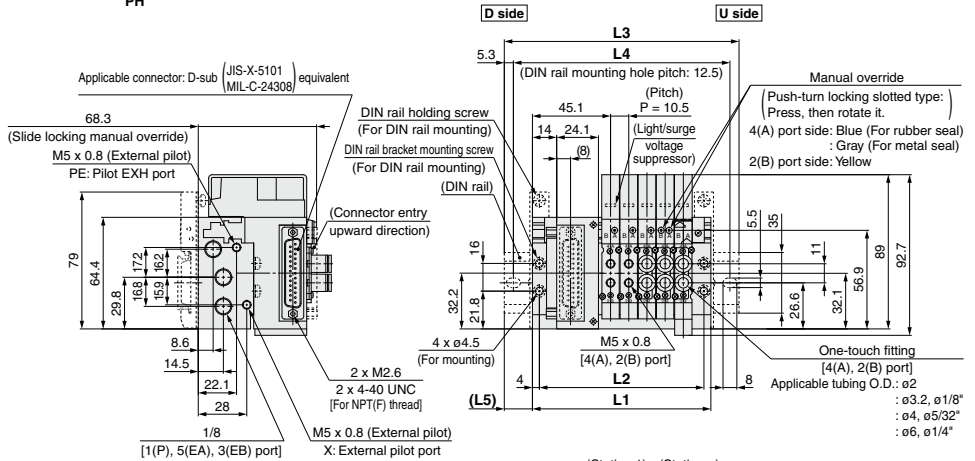
SY3000/5000/7000 Series

Dimensions: **SY3000 Series**

**Plug-in
Metal Base**

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

SS5Y3-52(R) $\frac{F}{P}$ $\frac{1}{PG}$ - [Stations] $\frac{U}{B}$ - □ (D)



	52P (26 pins)	52PG (20 pins)	52PH (10 pins)
Triangle mark			
Applicable connector:	26 pins MIL type with strain relief (Conforming to MIL-C-83503)	20 pins MIL type with strain relief (Conforming to MIL-C-83503)	10 pins MIL type with strain relief (Conforming to MIL-C-83503)

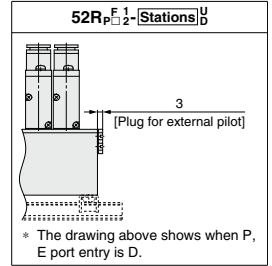
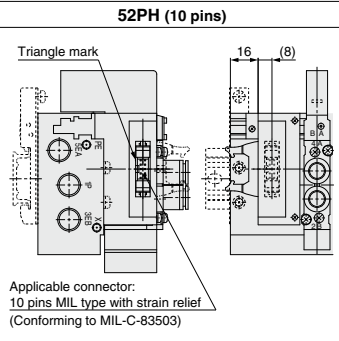
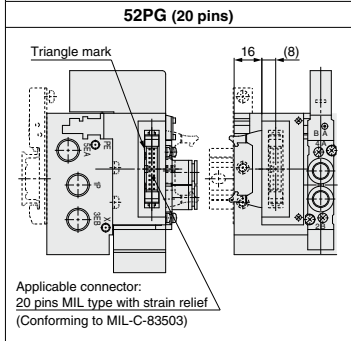
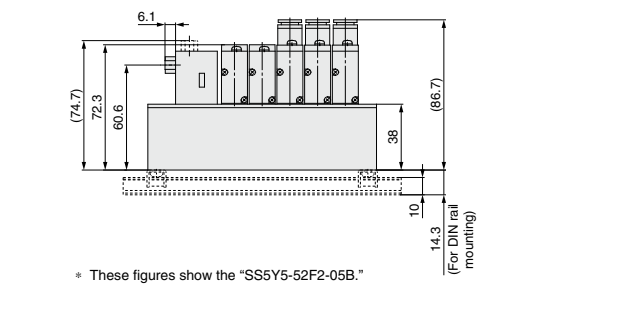
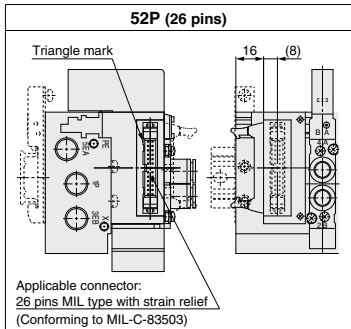
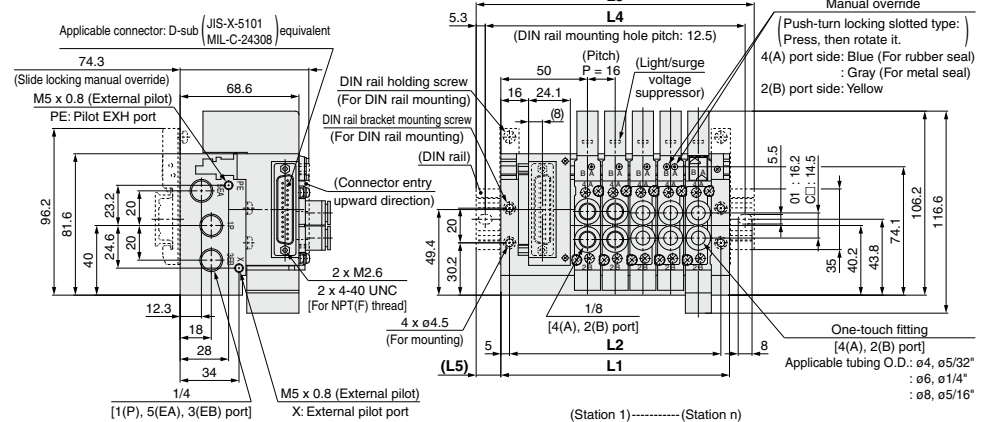
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5
L4	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200
L5	13.5	14.5	15.5	16.5	17.5	18.5	13	14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

Dimensions: **SY5000 Series**

Plug-in
Metal Base

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

SS5Y5-52(R) $\frac{F}{P} \frac{1}{2}$ - Stations $\frac{U}{D}$ □ (D)



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

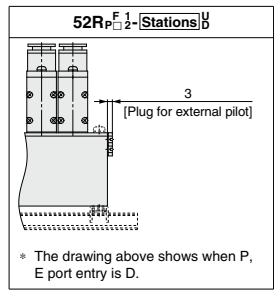
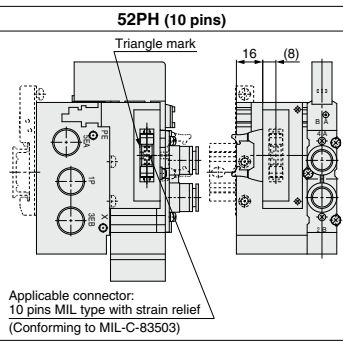
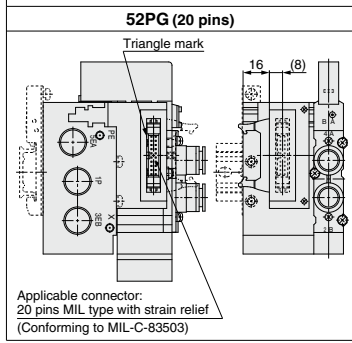
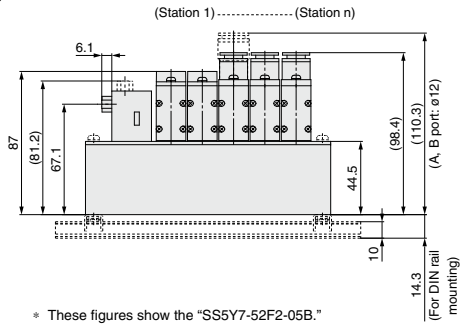
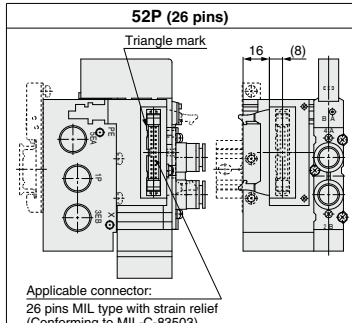
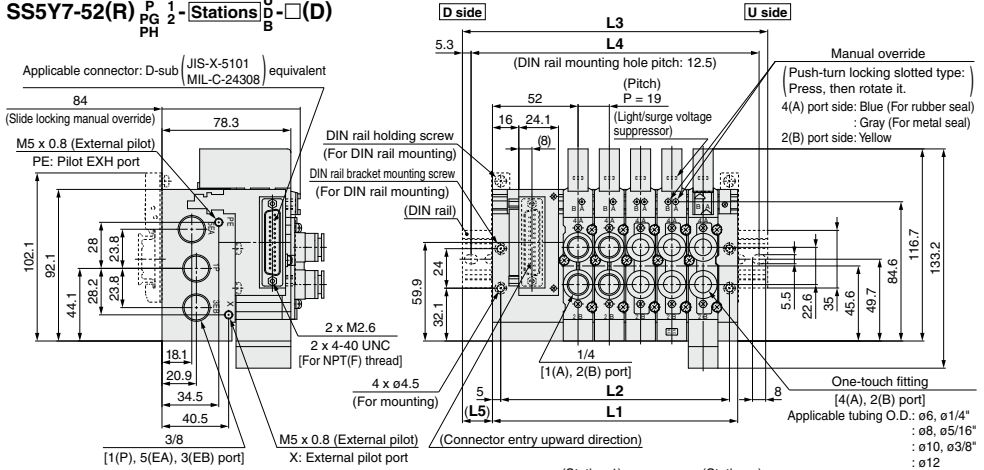
SY3000/5000/7000 Series

Dimensions: **SY7000 Series**

**Plug-in
Metal Base**

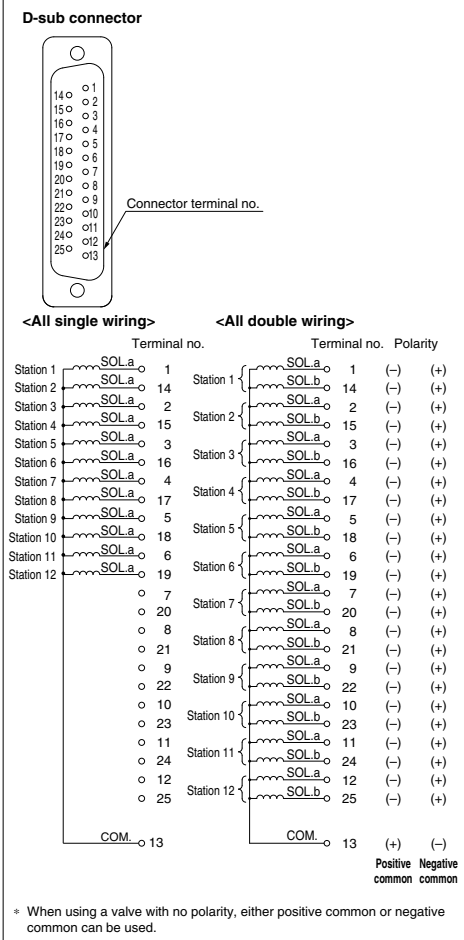
Type 52/Top Ported
D-sub Connector, Flat Ribbon Cable

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

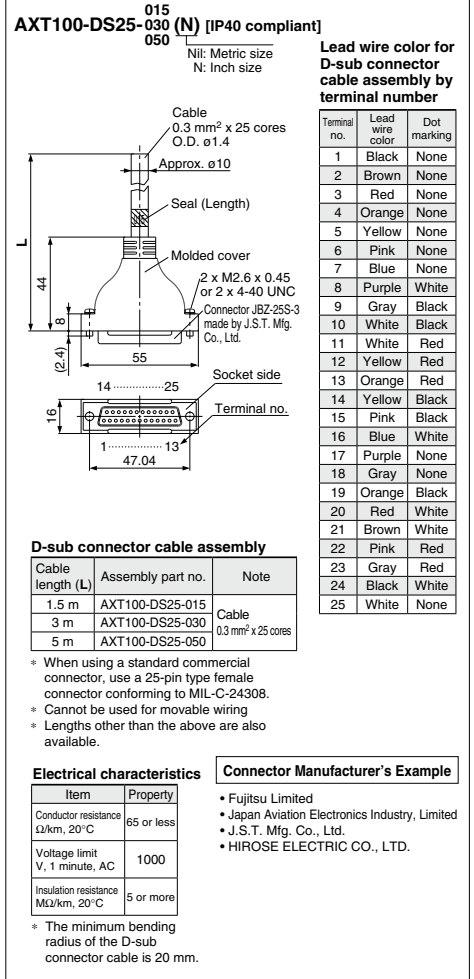


n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	92	111	130	149	168	187	206	225	244	263	282
L2	82	101	120	139	158	177	196	215	234	253	272
L3	123	148	160.5	185.5	198	223	235.5	260.5	273	298	310.5
L4	112.5	137.5	150	175	187.5	212.5	225	250	262.5	287.5	300
L5	15.5	18.5	15.5	18.5	15	18	15	18	14.5	17.5	14.5

Electrical Wiring Specifications



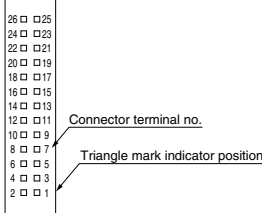
Cable Assembly



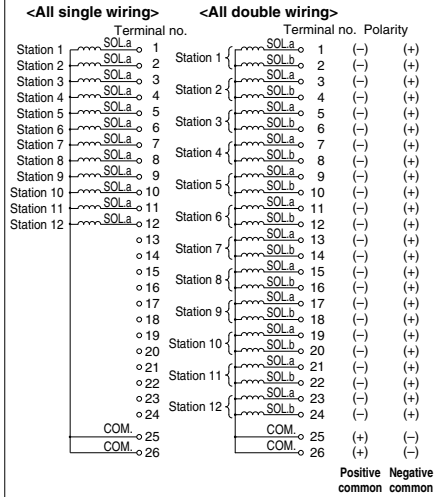
SY3000/5000/7000 Series

Electrical Wiring Specifications

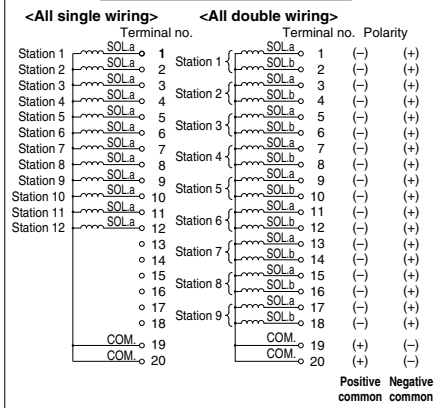
Flat ribbon cable connector



P: Flat ribbon cable (26 pins)

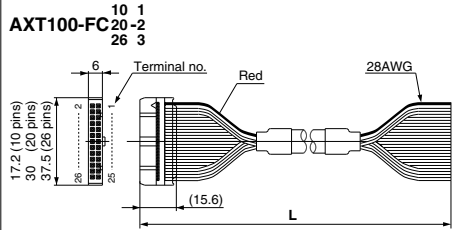


PG: Flat ribbon cable (20 pins)



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

Cable Assembly



Flat ribbon cable connector assembly

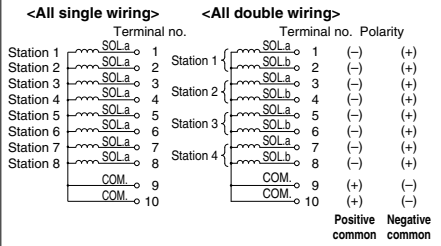
Cable length (L)	Assembly part no.		
	26 pins	20 pins	10 pins
1.5 m	AXT100-FC26-1	AXT100-FC20-1	AXT100-FC10-1
3 m	AXT100-FC26-2	AXT100-FC20-2	AXT100-FC10-2
5 m	AXT100-FC26-3	AXT100-FC20-3	AXT100-FC10-3

- * 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.

Connector Manufacturer's 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)



Type 50
Side Ported

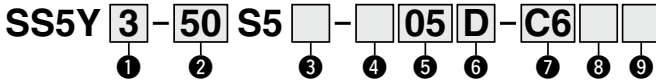
Type 51
Bottom Ported

Plug-in Metal Base EX510

SY3000/5000/7000 Series



How to Order Manifolds



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

Nll	Positive common
N	Negative common

4 Wiring type

Nll	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 the 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 the type 51 bottom-ported type.

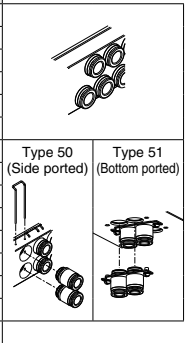
7 A, B port size

Thread piping

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

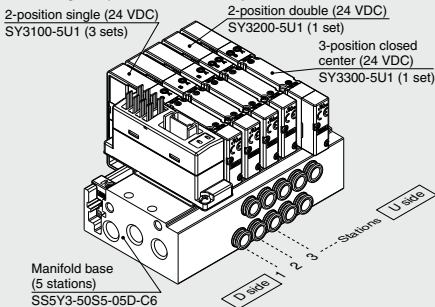
One-touch fitting (Metric)

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



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.)

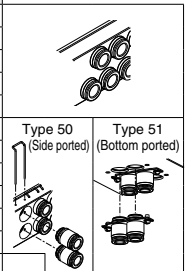
→ The asterisk denotes the symbol for the assembly. Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

* When mixing top-ported configurations, select from those listed on page 674. In such cases, use caution as there is also output on the A and B ports on the base side. Specify on the manifold specification sheet if plugs are required for the A and B ports on the base side.

One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000	SY7000
Fixed	N1	ø1/8"	●	—
	N3	ø5/32"	●	—
	N7	ø1/4"	●	●
	N9	ø5/16"	—	●
	N11	ø3/8"	—	●
	KN1	ø1/8"	●	—
Replaceable	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 of mixed sizes, indicate the piping specifications on the manifold specification sheet.

8 Thread type

N il	Rc
F	G
N	NPT
T	NPTF

9 Mounting

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

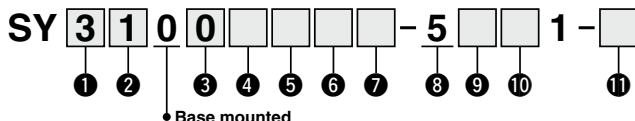
Specify a length longer than that of the standard rail.

- * Only direct mounting is available for the type 51 bottom-ported type.
- * Refer to page 708 for the fixation of DIN rail mounting type manifold.

For details on the EX510 Gateway Type Serial Transmission System, refer to the **Web Catalog** and the Operation Manual. Please download the Operation Manual via the SMC website, <https://www.smcworld.com>

How to Order Valves (With mounting screw)

Refer to page 404 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	4-position dual 3-port	Pressure center
A⁻¹		N.C./N.C.
B⁻¹	4-position dual 3-port	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

N il	Internal pilot
R	External pilot

- * When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

N il	None
H	Built-in

- * Only the rubber seal type is available.
- * The back pressure check valve is not available for the 3-position type or the SY7000.

6 Pilot valve option

N il	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

N il	Standard
T	With power saving circuit (Continuous duty type)

- * Be sure to select the power saving circuit type if the valve is to be continuously energized for long periods of time.
- * Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

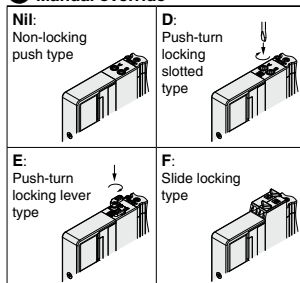
5	24 VDC
----------	--------

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	●		

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

10 Manual override



- * Refer to page 423 for the safety slide locking manual override.

11 Type of mounting screw

N il	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Drop prevention type)
H	Hexagon socket head cap screw (Drop prevention type)

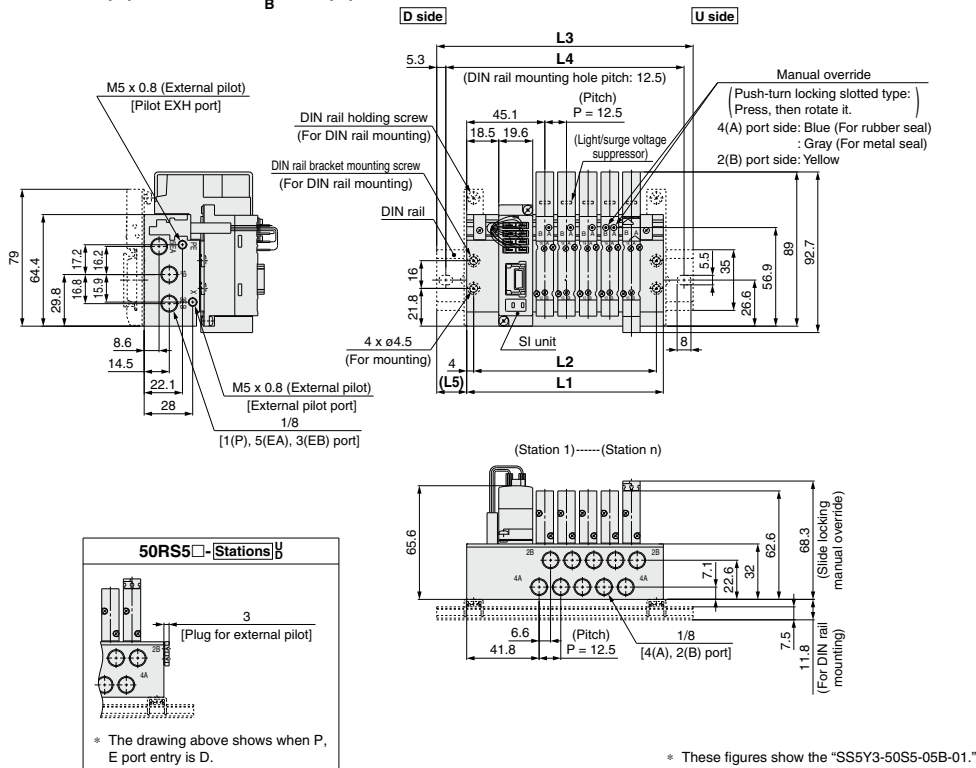
- * For "K" and "H," the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance, etc.
- * **When ordering a valve individually, the base gasket is not included.** Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance. Refer to page 679 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.

Protective class class III (Mark: ◊)

Dimensions: **SY3000 Series**

Plug-in Metal Base	Type 50/Side Ported
	EX510

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

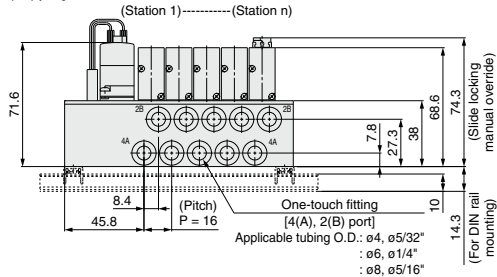
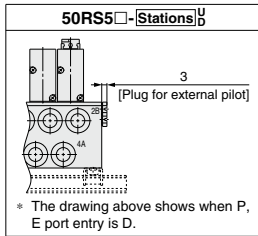
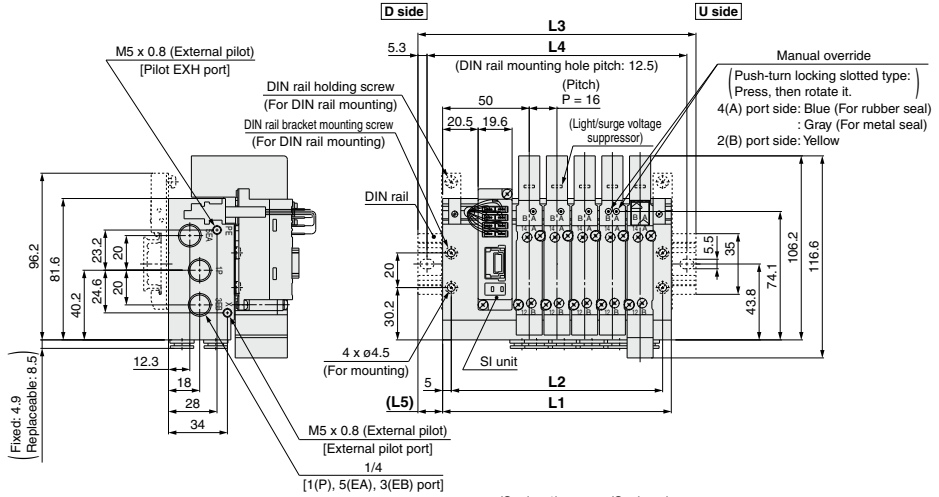
SY3000/5000/7000 Series

Plug-in
Metal Base

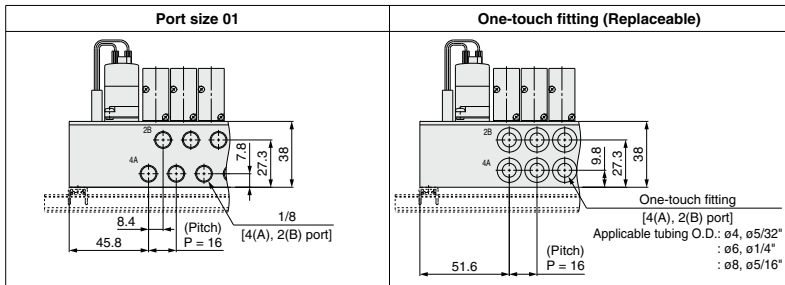
Type 50/Side Ported
EX510

Dimensions: SY5000 Series

SS5Y5-50(R)S5□-Stations $\frac{U}{B}$ 01
□-C□, N□ □(D)
□-KC□, KN□



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



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

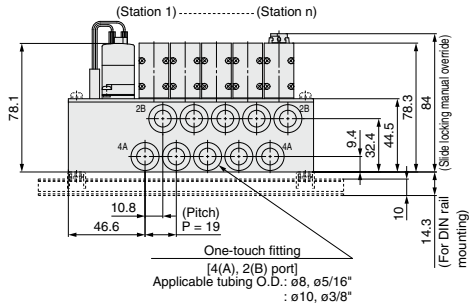
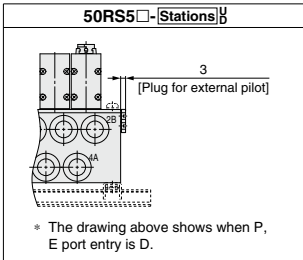
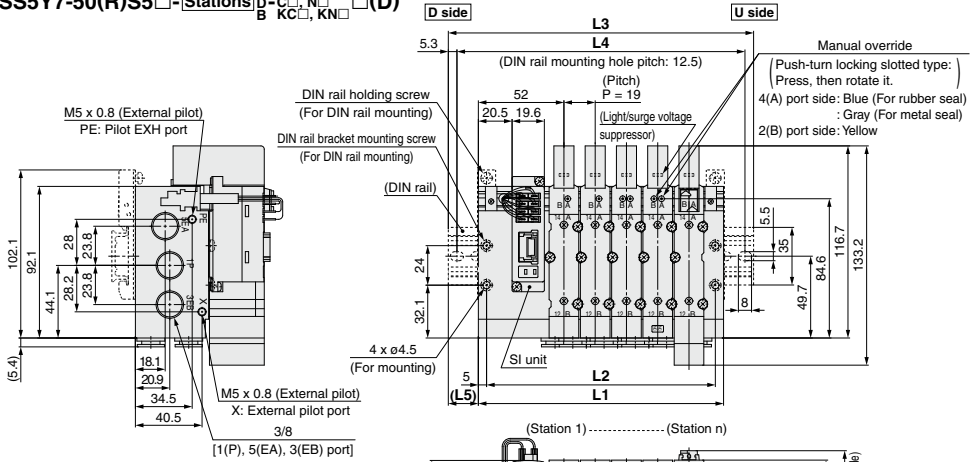
SY3000/5000/7000 Series

**Plug-in
Metal Base**

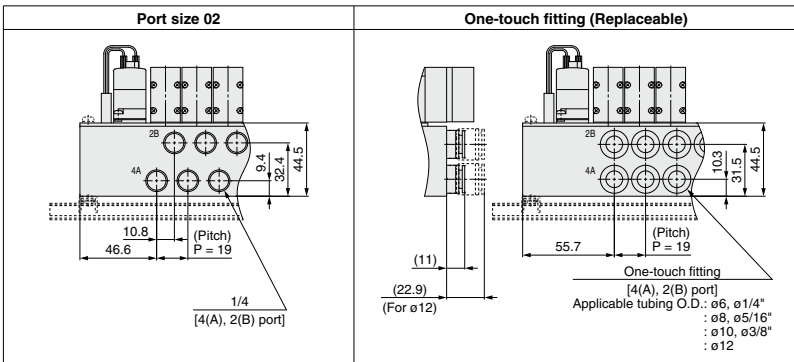
**Type 50/Side Ported
EX510**

Dimensions: SY7000 Series

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



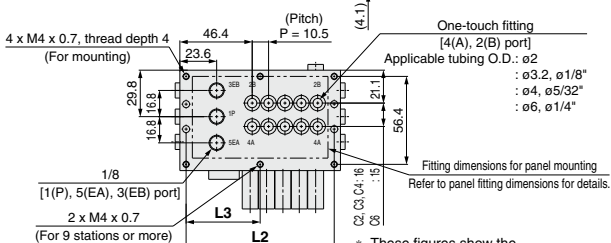
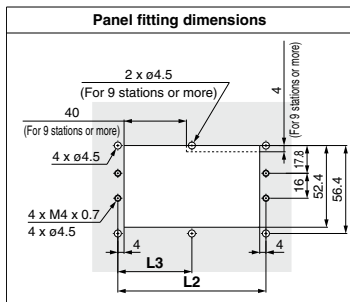
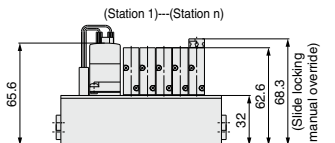
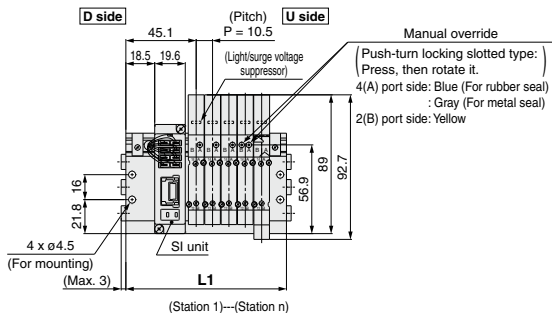
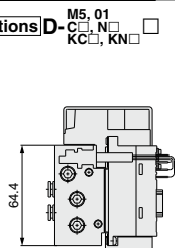
* These figures show the "SS5Y7-50S5-05B-C10."



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

Dimensions: **SY3000 Series**

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



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

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

Port Sizes 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	—

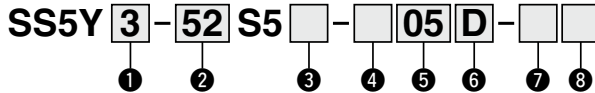
Type 52
Top Ported

Plug-in Metal Base EX510

SY3000/5000/7000 Series



How to Order Manifolds



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 the blanking plate assembly.

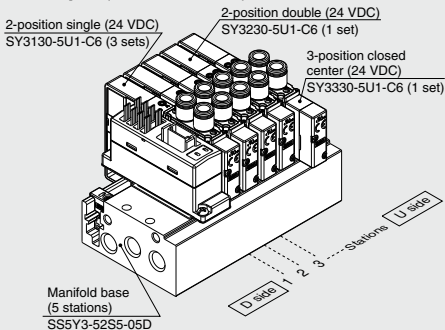
6 P, E port entry

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 the assembly. Prefix it to the part numbers of the valve, etc.

- For the valve arrangement, the valve closest to the D side is considered the 1st station.
- Under the manifold part number, state the valves to be mounted in order starting with the 1st station as shown in the figure above. If the arrangement becomes too complicated, specify the details on a manifold specification sheet.

7 Thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

8 Mounting

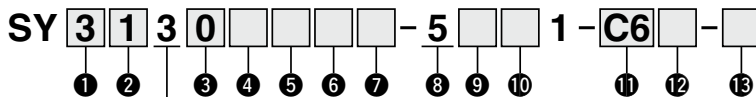
Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
⋮	⋮
D12	For 12 stations

* Refer to page 708 for the fixation of DIN rail mounting type manifold.

For details on the EX510 Gateway Type Serial Transmission System, refer to the **Web Catalog** and the Operation Manual. Please download the Operation Manual via the SMC website, <https://www.smworld.com>

How to Order Valves (With mounting screw)

Refer to page 404 for valve specifications.



• Top ported

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 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

Nil	Internal pilot
R	External pilot

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

Nil	None
H	Built-in

* Only the rubber seal type is available.
* The back pressure check valve is not available for the 3-position type or 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 the 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 if the valve is to be continuously energized for long periods of time.
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

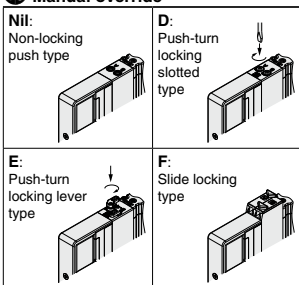
5	24 VDC
---	--------

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	●		

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

10 Manual override



* Refer to page 423 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

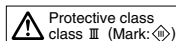
Nil	Rc
F	G
N	NPT
T	NPTF

* 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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop 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. Refer to page 679 for base gasket and mounting screw part numbers.
* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.



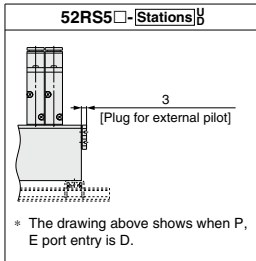
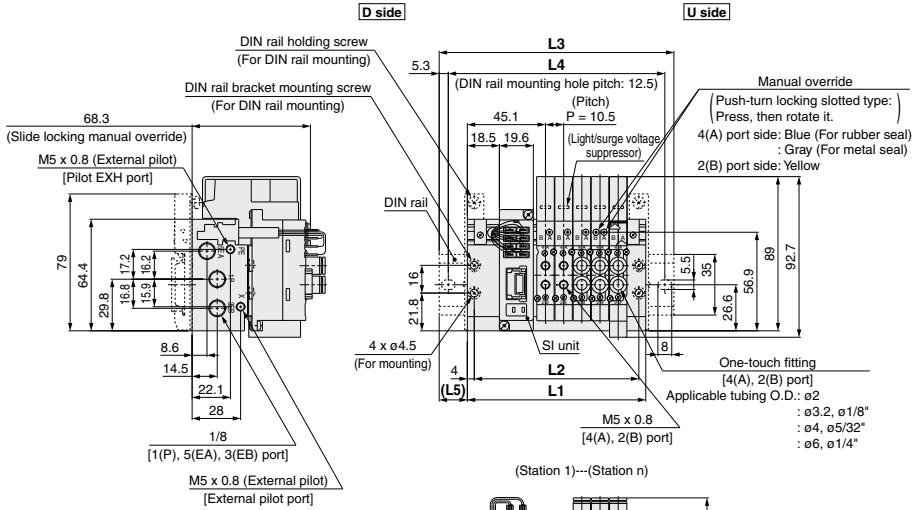
SY3000/5000/7000 Series

Plug-in
Metal Base

Type 52/Top Ported
EX510

Dimensions: **SY3000 Series**

SS5Y3-52(R)S5□-(Stations)^U_B-□(D)



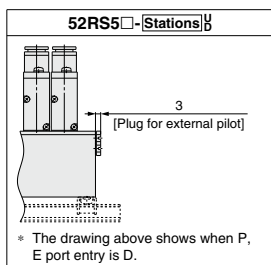
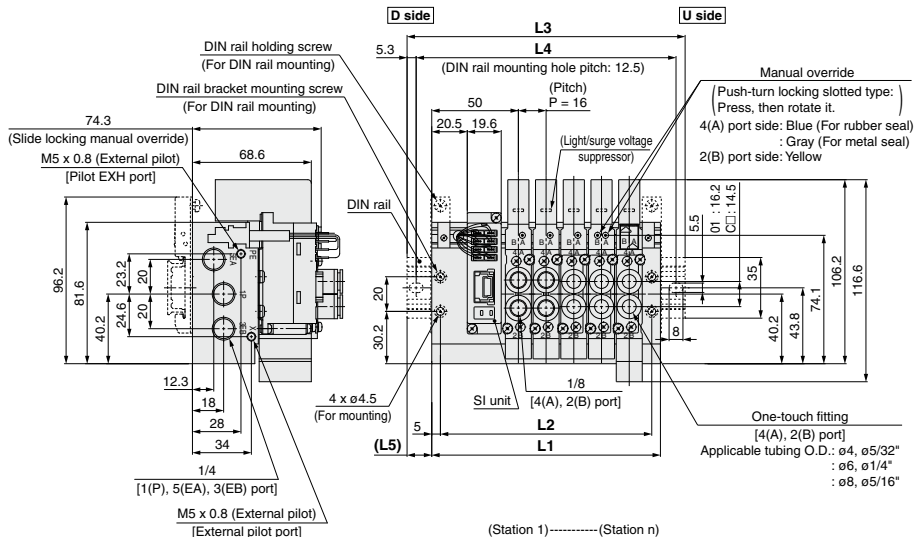
* These figures show the "SS5Y3-52S5-05B."

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

Dimensions: **SY5000 Series**

Plug-in Metal Base Type 52/Top Ported EX10

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



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

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

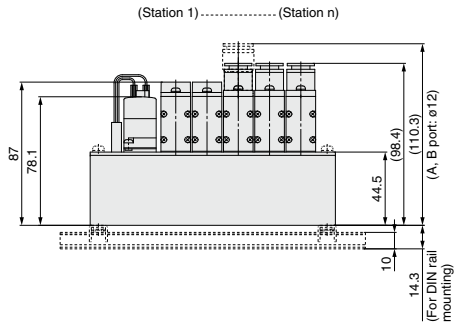
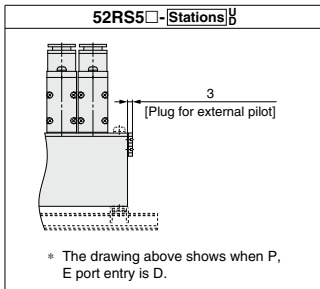
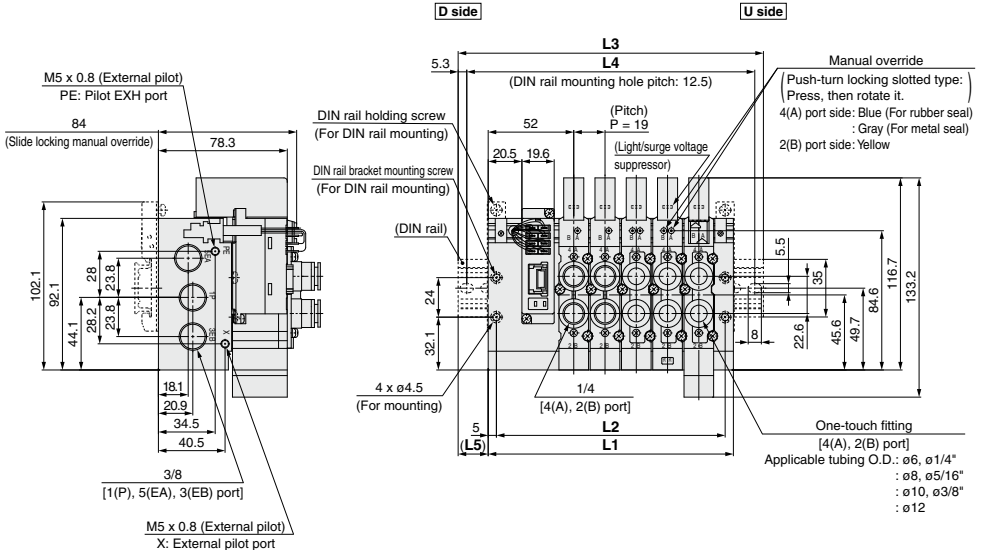
SY3000/5000/7000 Series

Dimensions: SY7000 Series

Plug-in
Metal Base

Type 52/Top Ported
EX510

SS5Y7-52(R)S5□-Stations_U□(D)

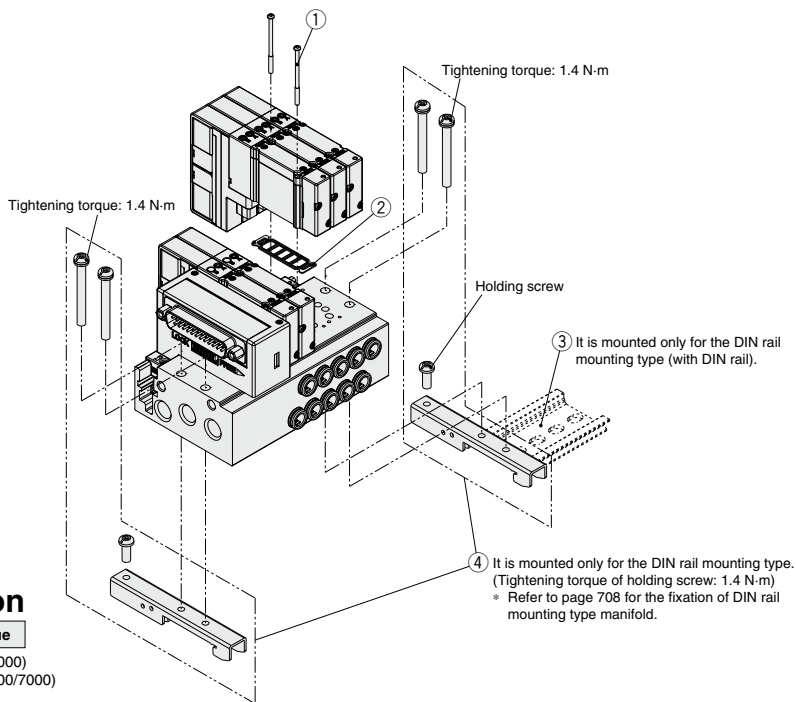


* These figures show the "SS5Y7-52S5-05B."

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

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 Nos.

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 681.
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).

SY3000/5000/7000 Series One-touch Fitting, Plug Assembly Part Nos.

Refer to "How to Replace One-touch Fittings" on page 709 for the replacement method.

■ One-touch fittings

		Port size	SY3000	SY5000	SY7000
A, B port	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-X224
	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

* Purchasing order is available in units of 10 pieces.

■ Plug assembly

	SY3000	SY5000	SY7000
A, B port	VVQ0000-58A	VVQ1000-58A	VVQ2000-58A

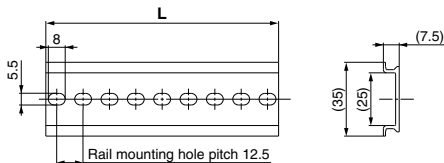
* Purchasing order is available in units of 10 pieces.

SY3000/5000/7000 Series Manifold Options

■ For the SY3000 **Plug-in** metal 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 □.

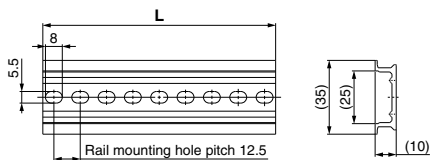


No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	323
Weight [g]	17.6	19.9	22.1	24.4	26.6	28.9	31.1	33.4	35.6	37.9	40.1	42.4	44.6	46.9	49.1	51.4	53.6	55.9	58.1
No.	19	20	21	22	23	24	25	26	27	28	29	30	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				

■ For the SY5000/7000 **Plug-in** metal 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				

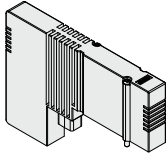
SY3000/5000/7000 Series

Manifold Options

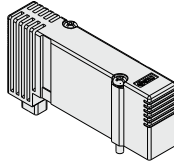
■ Blanking plate assembly (With mounting screw)

Used when valve additions are expected or for maintenance

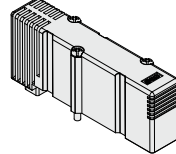
A structure is in place on the blanking plate to prevent the mounting screws from sliding.



SY30M-26-2A (-B)



SY50M-26-2A (-B)



SY70M-26-2A (-B)

Refer to pages 689 to 691 for dimensions.

Refer to pages 683 to 688 for individual SUP/EXH and other options.

Part numbers of mounting screw [Hexagon bolt]
(For repairs)

SY3000: SY3000-23-24A [SY3000-222-1A]
SY5000: SY5000-221-1A [SY5000-222-1A]
SY7000: SY7000-221-2A [SY7000-222-1A]

How to Order Blanking Plate Assembly

SY OM-26-2A-

Series

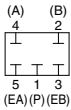
3	SY3000
5	SY5000
7	SY7000

Option for mounting

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

Base type

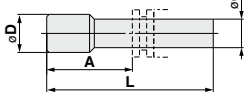
2	For plug-in metal base
---	------------------------



Circuit diagram

■ Plug

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

⚠ Caution

Tightening torque for mounting screw
M2: 0.16 N·m (SY3000)
M3: 0.8 N·m (SY5000/7000)

Manifold Options

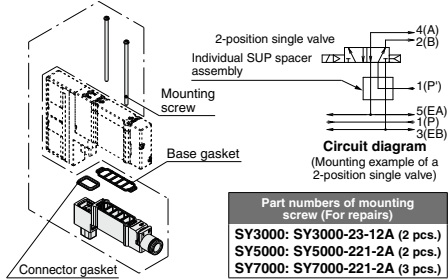
* Refer to pages 689 to 691 for dimensions.

■ Individual SUP spacer assembly

[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

When the same manifold is used for different pressures, an individual SUP spacer assembly is used as a supply port for different pressures.

* When selecting a One-touch fitting elbow type for a spacer assembly, use it faced upward, since it interferes with A and B port piping of Type 50 manifolds.

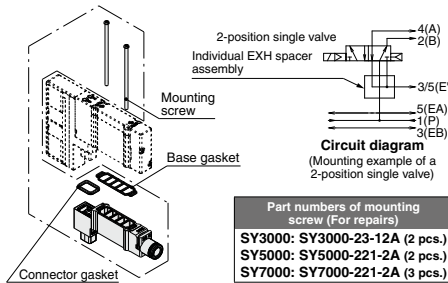


■ Individual EXH spacer assembly

[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

When valve exhaust affects other stations due to the circuit configuration, this spacer assembly is used for individual valve exhaust.

* When selecting a One-touch fitting elbow type for a spacer assembly, use it faced upward, since it interferes with A and B port piping of Type 50 manifolds.



How to Order Individual SUP/EXH Spacer Assembly

One-touch fitting Straight type **SY 3 OM - 38 - 1 A - C6**

One-touch fitting Elbow type **SY 3 OM - 38 - 2 A - L6**

Series ●

3	SY3000
5	SY5000
7	SY7000

Spacer type ●

38	Individual SUP spacer
39	Individual EXH spacer

Individual SUP/EXH spacer assembly ●

2	Short elbow type
3	Long elbow type

* Select the long elbow type for a 3-position valve.

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	ø3.2	●	—	—
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"	—	—	●

* When using in combination with the SY²30²□□-E (With residual pressure release valve), the length of the required mounting screws will differ. Please contact SMC for details.

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 689 to 691 for dimensions.

■ SUP stop valve spacer assembly with residual pressure release valve

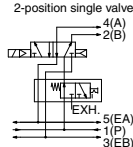
[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

It is used to shut off the supply air to valves individually.

SY **3** 0M - 50 - 1A **E**

Series	
3	SY3000
5	SY5000
7	SY7000

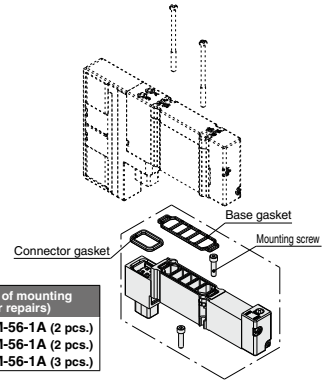
Manual override	
Nil	Push-turn locking slotted type
E	Push-turn locking lever type



SUP stop valve spacer assembly with residual pressure release valve

Circuit diagram

(Mounting example of a 2-position single valve)



* 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)

[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.
- * 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.

Valve mounting screw (See page 611.)

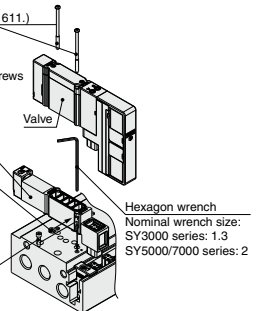
Tightening torque:
 SY3000 series: 0.16 N·m
 SY5000/7000 series: 0.8 N·m
 For Hexagon socket head cap screws
 Nominal wrench size:
 SY3000 series: 1.5
 SY5000/7000 series: 2.5

SUP stop valve spacer assembly with residual pressure release valve

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



⚠ Caution

Tightening torque for mounting screw
M2: 0.16 N·m (SY3000)
M3: 0.8 N·m (SY5000/7000)

Manifold Options

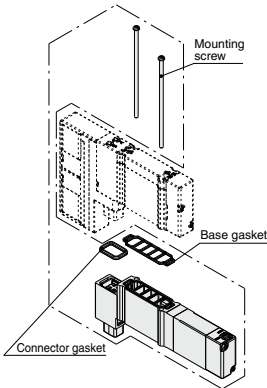
* Refer to pages 689 to 691 for dimensions.

■ 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.

Series	Part no.	Intermediate stop	Drop prevention
SY3000	SY30M-60-1A	SY $\frac{3}{5}$ 40 $\frac{0}{1}$	SY $\frac{3}{7}$ $\frac{3}{2}$ 0 $\frac{0}{1}$
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

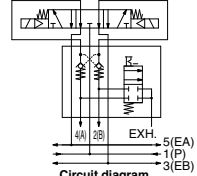
- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long period of time. Check the leakage using neutral household detergent, such as dish washing soap. Also, check the cylinder's tube gasket, piston seal, and rod seal for air 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.
- If using a double check spacer that is built in to the sub-plate, refer to page 696.

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	<table style="width: 100%; border: none;"> <tr> <td style="padding: 2px; width: 100px;">SY3000</td> <td style="padding: 2px;">0.3 dm³/(s·bar)</td> </tr> <tr> <td style="padding: 2px;">SY5000</td> <td style="padding: 2px;">0.7 dm³/(s·bar)</td> </tr> <tr> <td style="padding: 2px;">SY7000</td> <td style="padding: 2px;">1.1 dm³/(s·bar)</td> </tr> </table>	SY3000	0.3 dm ³ /(s·bar)	SY5000	0.7 dm ³ /(s·bar)	SY7000	1.1 dm ³ /(s·bar)
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						

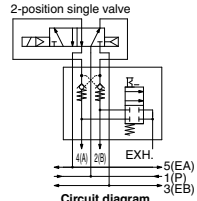
<Example>

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)

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

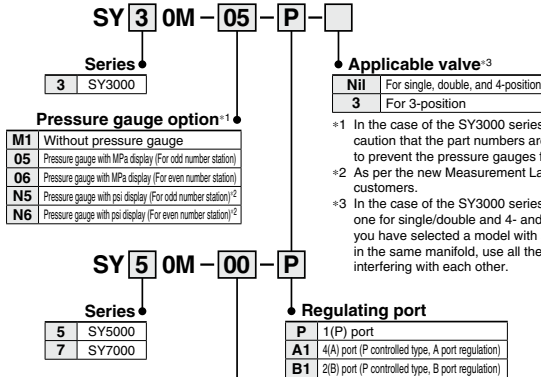
* Refer to pages 689 to 691 for dimensions.

■ Interface regulator

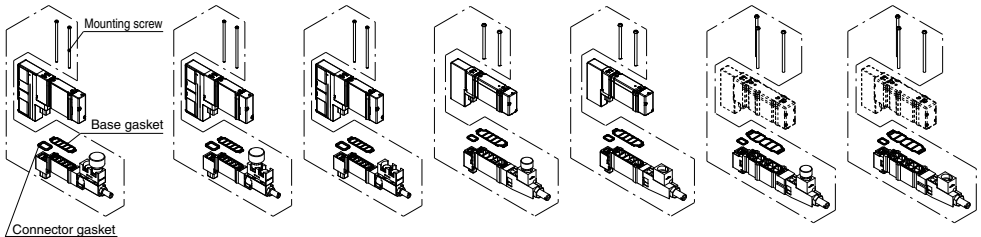
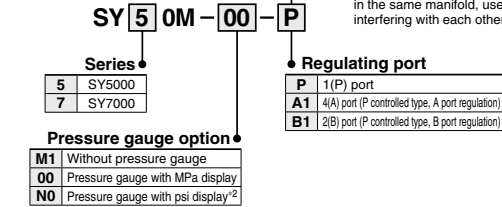
[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

Used when the supply pressure for each valve on the same manifold must be individually set (reduced pressure)

How to Order



- *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.
- *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.



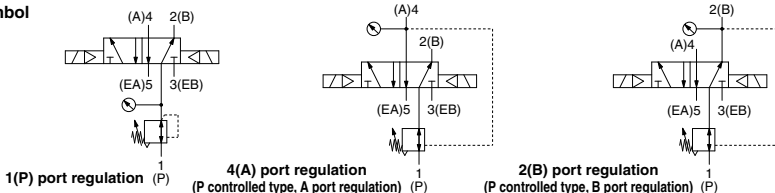
SY30M-05/N5-□ SY30M-06/N6-□ SY30M-M1-□ SY50M-00/N0-□ SY50M-M1-□ SY70M-00/N0-□ SY70M-M1-□
 (With pressure gauge/ (With pressure gauge/ (Without pressure gauge) (With pressure gauge) (Without pressure gauge) (With pressure gauge) (Without pressure gauge)
 For odd number station) For even number station)

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)	1(P), 4(A), 2(B)	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 temperatures	-10 to 50°C (No freezing)		
Weight [g] ^{*2}	With pressure gauge	33 (35) ^{*3}	75
	Without pressure gauge	27 (29) ^{*3}	69

- *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-□-□-3
- * 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.

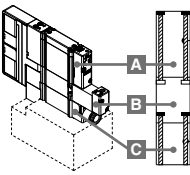
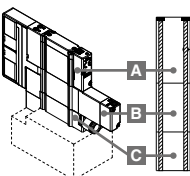
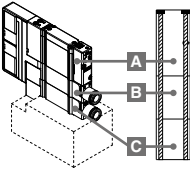
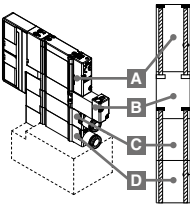
Symbol



⚠ Caution

Tightening torque for mounting screw
M2: 0.16 N·m (SY3000)
M3: 0.8 N·m (SY5000/7000)

Manifold Options: 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 style="font-size: 8px;"> <Round head combination screw> ①: SY3000-23-24A ②: SY5000-221-1A ③: SY7000-221-1A </p> <p style="font-size: 8px;"> <Hexagon socket head cap screw> ①: SY3000-222-1A ②: SY5000-222-1A ③: SY7000-221-1A </p> <p style="font-size: 8px;"> ①: SY30M-56-2A ②: SY50M-56-2A ③: SY70M-56-2A </p>	A	Valve	SY3000-23-24A [for 10 valves (20 pcs.)]	SY3000-222-1A [for 10 valves (20 pcs.)]	SY5000-221-1A [for 10 valves (20 pcs.)]	SY5000-222-1A [for 10 valves (20 pcs.)]	SY7000-221-1A [for 10 valves (30 pcs.)]	SY7000-222-1A [for 10 valves (30 pcs.)]
	B	SUP stop valve spacer assembly with residual pressure release valve	SY30M-56-2A (2 pcs.)	SY50M-56-2A (2 pcs.)	SY70M-56-2A (3 pcs.)			
	C	Individual SUP (EXH) spacer assembly						
 <p style="font-size: 8px;"> <Round head combination 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 style="font-size: 8px;"> <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 style="font-size: 8px;"> <Round head combination screw> ①: SY3000-23-24A ②: SY5000-221-1A ③: SY7000-221-1A </p> <p style="font-size: 8px;"> <Hexagon socket head cap screw> ①: SY3000-222-1A ②: SY5000-222-1A ③: SY7000-222-1A </p> <p style="font-size: 8px;"> ①: SY30M-56-4A ②: SY50M-56-4A ③: SY70M-56-4A </p>	A	Valve	SY3000-23-24A [for 10 valves (20 pcs.)]	SY3000-222-1A [for 10 valves (20 pcs.)]	SY5000-221-1A [for 10 valves (20 pcs.)]	SY5000-222-1A [for 10 valves (20 pcs.)]	SY7000-221-1A [for 10 valves (30 pcs.)]	SY7000-222-1A [for 10 valves (30 pcs.)]
	B	SUP stop valve spacer assembly with residual pressure release valve	SY30M-56-4A (2 pcs.)	SY50M-56-4A (2 pcs.)	SY70M-56-4A (3 pcs.)			
	C	Individual SUP (EXH) spacer assembly						
	D	Individual EXH (SUP) spacer assembly						

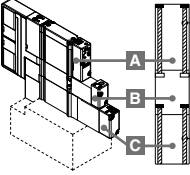
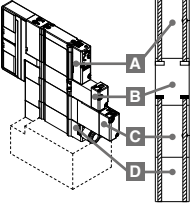
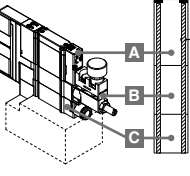
* Mounting onto a manifold follows the order explained above.
 * The fitting for individual SUP/EXH spacers comes in a straight type only, since an elbow type would interfere with each spacer assembly when laminated.

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: 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	SY30M-56-3A (2 pcs.)		SY50M-56-3A (2 pcs.)		SY70M-56-3A (3 pcs.)	
 <p> <Round head combination screw> ①: SY3000-221-1A 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	SY30M-56-5A (2 pcs.)		SY50M-56-5A (2 pcs.)		SY70M-56-5A (3 pcs.)	
	D Individual EXH (SUP) spacer assembly	SY30M-56-5A (2 pcs.)		SY50M-56-5A (2 pcs.)		SY70M-56-5A (3 pcs.)	
 <p> <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						

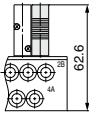
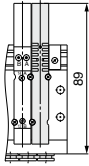
* Mounting onto a manifold follows the order explained above.

* 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.

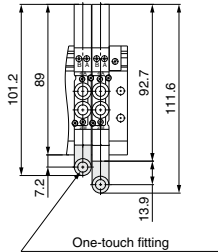
Dimensions: Manifold Options/SY3000 Series

■ **Blanking plate assembly**

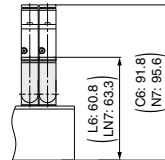


<Type 50, 51, 52>

■ **Individual SUP/EXH spacer assembly (Top/Bottom ported)**

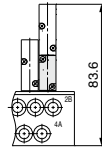
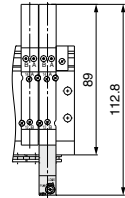


One-touch fitting
(SUP port, EXH port)
Applicable tubing O.D.: $\phi 4$, $\phi 5/32$ "
: $\phi 6$, $\phi 1/4$ "



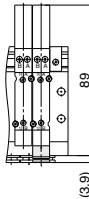
<Type 51, 52>

■ **Double check spacer assembly with residual pressure release valve**

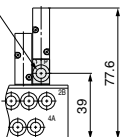


<Type 50, 51>

■ **Individual SUP/EXH spacer assembly (Side ported)**

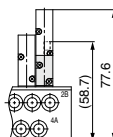
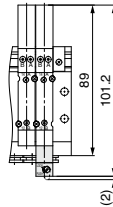


One-touch fitting
(SUP port, EXH port)
Applicable tubing O.D.: $\phi 2$
: $\phi 3.2$, $\phi 1/8$ "
: $\phi 4$, $\phi 5/32$ "
: $\phi 6$, $\phi 1/4$ "



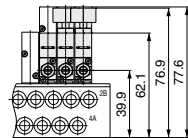
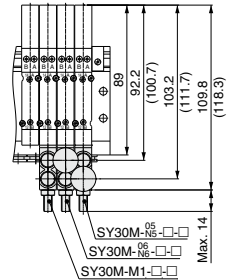
<Type 50>

■ **SUP stop valve spacer assembly with residual pressure release valve**



<Type 50, 51, 52>

■ **Interface regulator**



<Type 50, 51, 52>

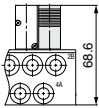
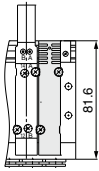
* The dimensions within () apply to the SY30M-50-1AE.

* The dimensions within () apply to the SY30M-□□-□□.

SY3000/5000/7000 Series

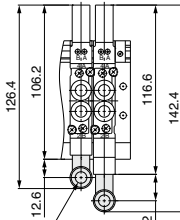
Dimensions: Manifold Options/SY5000 Series

■ Blanking plate assembly

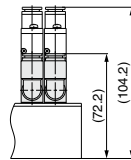


<Type 50, 51, 52>

■ Individual SUP/EXH spacer assembly (Top/Bottom ported)

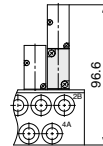
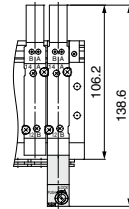


One-touch fitting
(SUP port, EXH port)
Applicable tubing O.D.: $\phi 4$
: $\phi 6$, $\phi 1/4$ "
: $\phi 8$, $\phi 5/16$ "



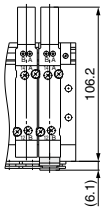
<Type 51, 52>

■ Double check spacer assembly with residual pressure release valve

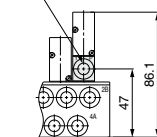


<Type 50, 51>

■ Individual SUP/EXH spacer assembly (Side ported)

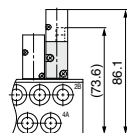
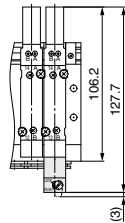


One-touch fitting
(SUP port, EXH port)
Applicable tubing O.D.: $\phi 4$, $\phi 5/32$ "
: $\phi 6$, $\phi 1/4$ "
: $\phi 8$, $\phi 5/16$ "



<Type 50>

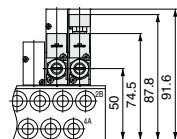
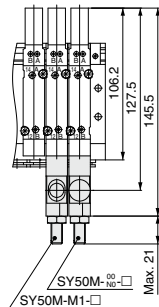
■ SUP stop valve spacer assembly with residual pressure release valve



<Type 50, 51, 52>

* The dimensions within () apply to the SY50M-50-1AE.

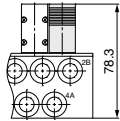
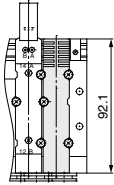
■ Interface regulator



<Type 50, 51, 52>

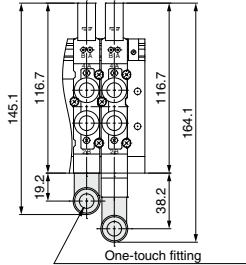
Dimensions: Manifold Options/SY7000 Series

■ **Blanking plate assembly**

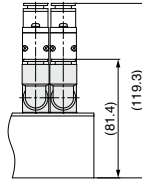


<Type 50, 51, 52>

■ **Individual SUP/EXH spacer assembly (Top/Bottom ported)**

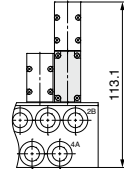
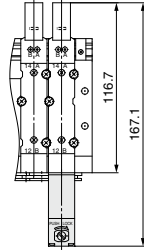


One-touch fitting
(SUP port, EXH port)
Applicable tubing O.D.: $\phi 6$, $\phi 3/8"$
: $\phi 8$
: $\phi 10$
: $\phi 12$



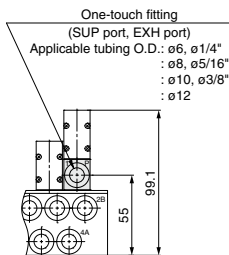
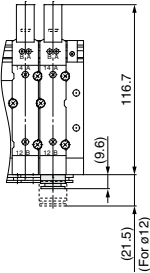
<Type 51, 52>

■ **Double check spacer assembly with residual pressure release valve**



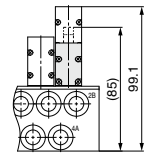
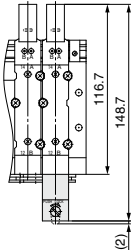
<Type 50, 51>

■ **Individual SUP/EXH spacer assembly (Side ported)**



<Type 50>

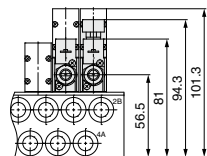
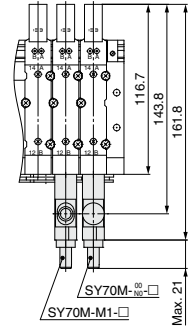
■ **SUP stop valve spacer assembly with residual pressure release valve**



<Type 50, 51, 52>

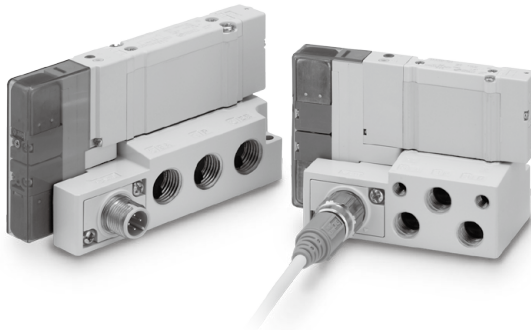
* The dimensions within () apply to the SY70M-50-1AE.

■ **Interface regulator**



<Type 50, 51, 52>

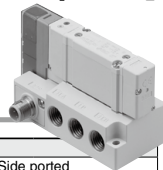
Plug-in Sub-plate Type [IP67 Compliant]



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]**	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 404 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 406, and to include the cable weight, add the connector cable weight on page 696.

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

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

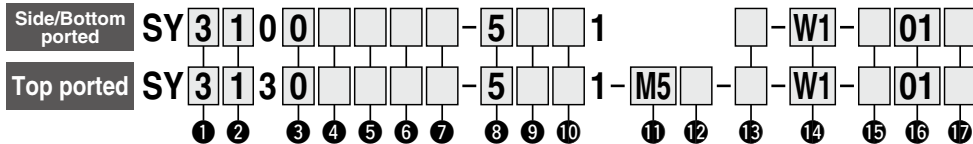
* The value is for individually operated 2-position type.

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

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	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 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

Nil	Internal pilot
R	External pilot

* When selecting the external pilot specification for the 4-position dual 3-port valve, pay attention to the pilot pressure. Refer to the valve specifications on page 404 for further details.

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

Nil	None
H	Built-in

* Only the rubber seal type is available.
* The built-in valve type back pressure check valve is not available for the 3-position type or 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 the 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 if the valve is to be continuously energized for long periods of time.
* Be careful of the energizing time when the power saving circuit is selected. Refer to page 705 for details.

8 Rated voltage

5	24 VDC
6	12 VDC

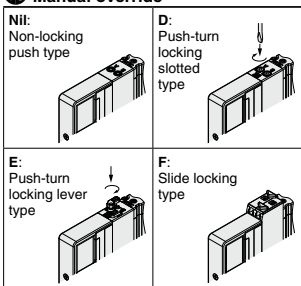
* When mounting a special order (including Made-to-Order specification) valve or manifold option (spacer, etc.) on the sub-plate, add the valve part number or spacer part number under the sub-plate part number to place an order. For details, refer to the ordering example on page 696.
* When selecting a product with residual pressure release valve or vacuum release valve with restrictor, after selecting a model from page 413 or 415, make selections for items 15 to 18 above.

9 Light/surge voltage suppressor and common specification

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

* For the non-polar type, be careful of surge voltage intrusion. Refer to page 706 for details.
* Only "Z" and "NZ" types are available with a power saving circuit.

10 Manual override



* Refer to page 423 for the safety slide locking manual override.

11 A, B port size (= Top ported valve only)

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

Metric size (One-touch fitting)

Symbol	A, B port	SY3000	SY5000	SY7000
C2	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"	—	—	●

12 A, B port thread type (Thread piping)

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 (Drop prevention type)
H	Hexagon socket head cap screw (Drop prevention type)

* For "K" and "H," the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance, etc.
* Refer to page 696 when the base gaskets and mounting screws are required for maintenance.
* When using an optional spacer assembly, "B" and "H" cannot be selected.

14 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)

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

15 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

16 Port size (Sub-plate)

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

17 Thread type (Sub-plate)

Nil	Rc
F	G
N	NPT
T	NPTF

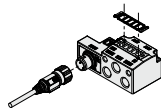
SY3000/5000/7000 Series

How to Order

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

* Without valve

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



* Base gasket is included.
* Valve mounting screws are not included.

1 Series

3	SY3000
5	SY5000
7	SY7000

2 Wiring specifications

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

* Refer to the table below for connector cable part numbers.

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

3 Port location (Sub-plate)

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

4 Port size

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

5 Sub-plate thread type

Nil	Rc
F	G
N	NPT
T	NPTF

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

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

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

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

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

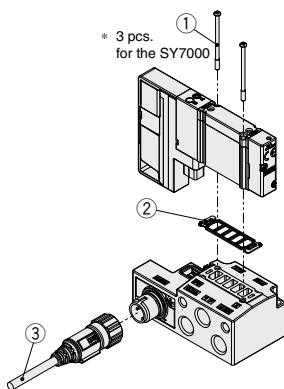
*SY3400-5U1 1 set (3-position exhaust center part no.)

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

⚠ Caution

Due to the properties of the double check spacer, assembly carried out by the customer is not recommended. If a double check spacer is to be used, be sure to order the type that is built in to the sub-plate as shown in the ordering example above.

Sub-plate Parts Nos.



* 3 pcs. for the SY7000

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

⚠ Caution

Tightening torque

M2: 0.16 N·m (SY3000)

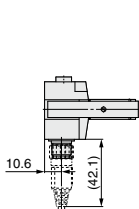
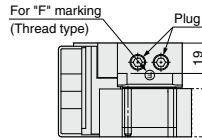
M3: 0.8 N·m (SY5000/7000)

SY3000/5000/7000 Series

Dimensions: **SY3000 Series**

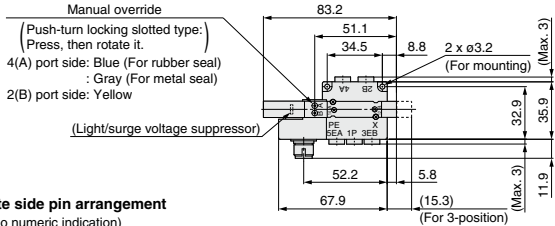
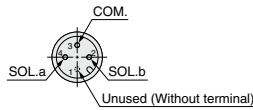
Plug-in
Single Unit/Sub-plate **Bottom Ported**

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

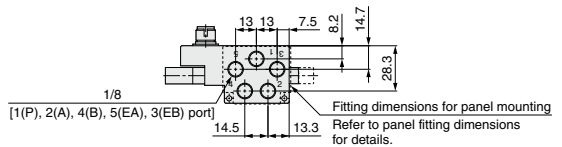
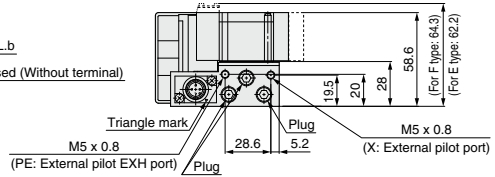
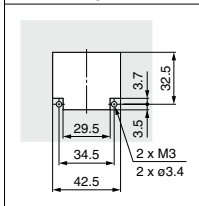


- 1: Brown (Unused)
- 2: White (SOL.b)
- 3: Blue (COM.)
- 4: Black (SOL.a)

Sub-plate side pin arrangement
(No numeric indication)



Panel fitting dimensions

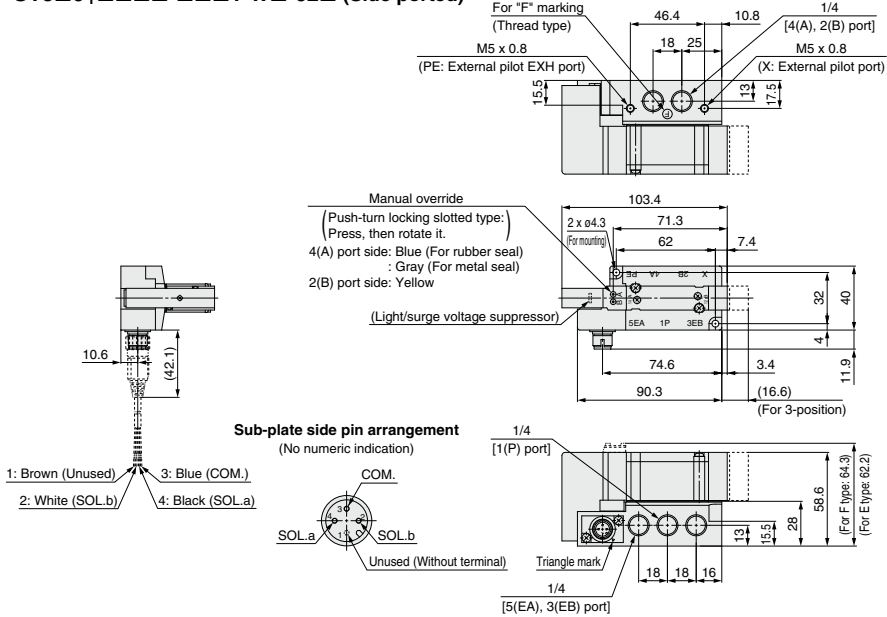


* These figures show the "SY3200-5Z1-WO-B01F."

Dimensions: SY5000 Series

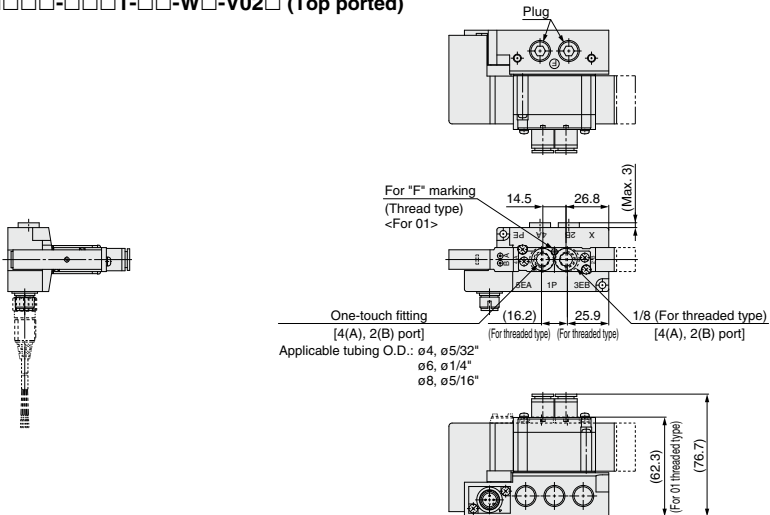
Plug-in
Single Unit/Sub-plate **Side Ported**
Top Ported

SY5□□□□□□□□□□□□1-W□-02□ (Side ported)



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

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



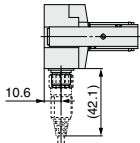
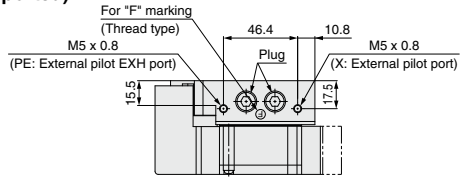
* These figures show the "SY5230-5Z1-C8-WO-V02F."
 * 1(P), 5(EA), 3(EB), X, and PE ports are side ported.

SY3000/5000/7000 Series

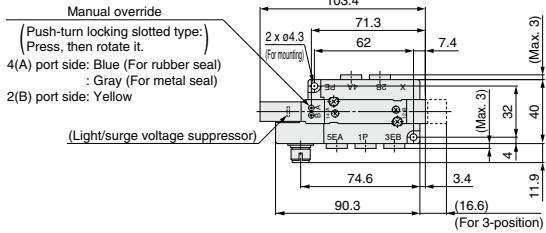
Dimensions: SY5000 Series

Plug-in Single Unit/Sub-plate Bottom Ported

SY5000□□□□□□□□□□1-W□-B02□ (Bottom ported)

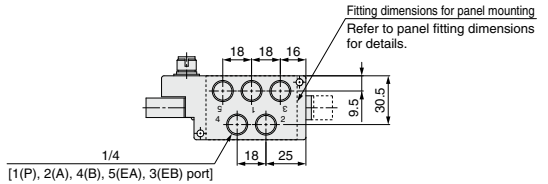
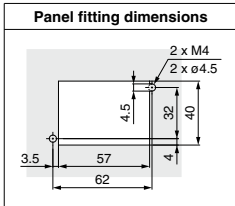
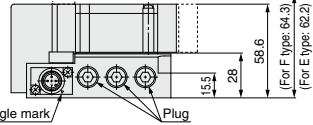
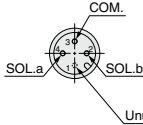


- 1: Brown (Unused)
- 2: White (SOL.b)
- 3: Blue (COM.)
- 4: Black (SOL.a)



Sub-plate side pin arrangement

(No numeric indication)

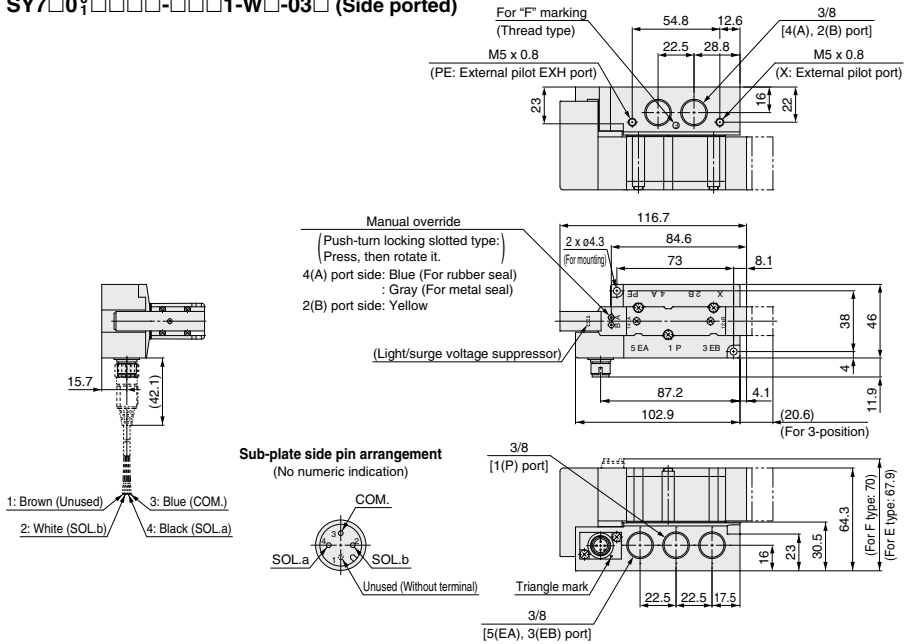


* These figures show the "SY5200-5Z1-WO-B02F."

Dimensions: SY7000 Series

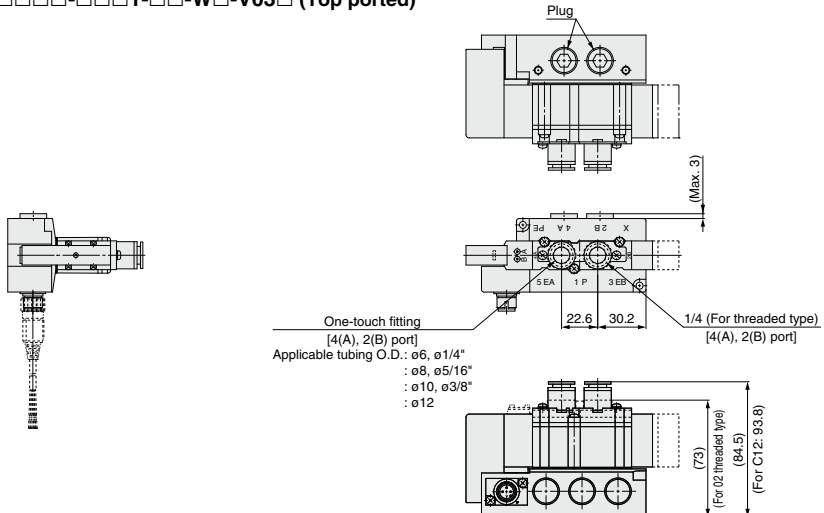
Plug-in Single Unit/Sub-plate Side Ported Top Ported

SY7000₀□□□□-□□□1-W□-03□ (Side ported)



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

SY7000₃□□□□-□□□1-□□-W□-V03□ (Top ported)



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

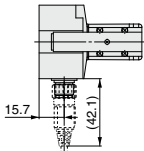
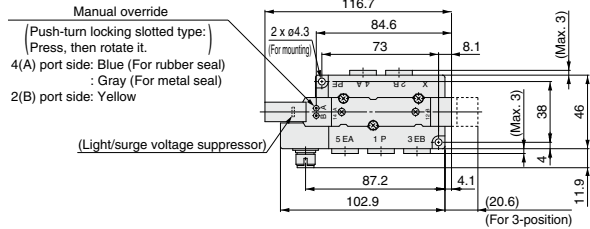
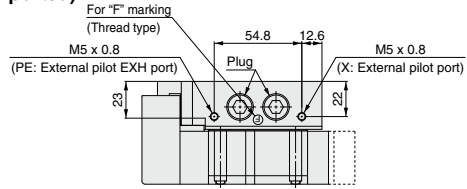
SY3000/5000/7000 Series

Dimensions: SY7000 Series

Plug-in
Single Unit/Sub-plate

Bottom Ported

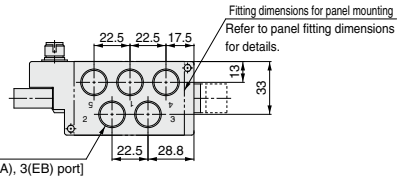
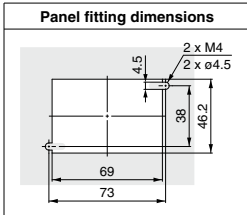
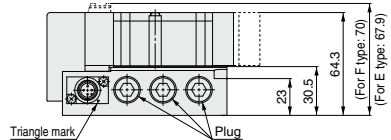
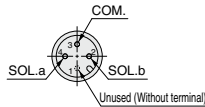
SY7000□□□□□□□□□□1-W□-B03□ (Bottom ported)



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."



SY3000/5000/7000 Series Specific Product Precautions 1

Be sure to read this before handling the products. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: <https://www.smcworld.com>

Environment

⚠ Warning

1. Do not use valves in atmospheres of corrosive gases, chemicals, sea water, water, water vapor, or where there is direct contact with any of these.
2. Products compliant with IP67 enclosures (based on IEC60529) are protected against dust and water, however, these products cannot be used in water. If using in an environment that is exposed to water and dust splashes, take measures such as using a protective cover.
3. When using built-in silencer type manifold with an IP67 enclosure, keep the exhaust port of the silencer from coming in direct contact with water or other liquids.
4. The metal seal valve is provided with a hole to discharge the pilot EXH. When using in atmospheres containing water and dust, mount it horizontally.

Valve Mounting

⚠ Caution

Mount it so that there is no slippage or deformation in gaskets, and tighten with the tightening torque as shown to the right.

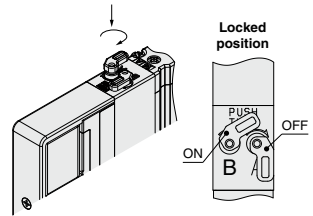
Series	Thread size	Tightening torque
SY3000	M2	0.16 N·m
SY5000/7000	M3	0.8 N·m

Manual Override

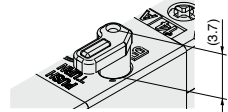
⚠ Warning

■ Push-turn locking lever type [E type]

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 push type.



Carefully check the manual override projection amount.
Max. (at OFF): 3.7 mm



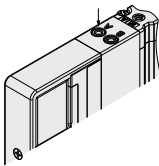
Manual Override

⚠ 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

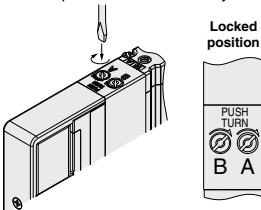
Push down on the manual override button until it stops.



■ Push-turn locking slotted type [D type]

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 push type.



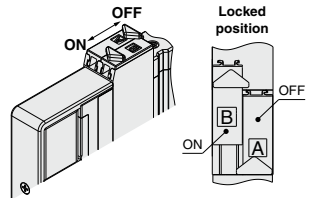
⚠ Caution

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.





SY3000/5000/7000 Series

Specific Product Precautions 2

Be sure to read this before handling the products. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the “Handling Precautions for SMC Products” and the “Operation Manual” on the SMC website: <https://www.smcworld.com>

Back Pressure Check Valve

⚠ Caution

- There are two types of back pressure check valves; the type which is built into a valve (rubber seal type only) and the type which is built in on the manifold side with a connector connection. Both types have a check valve built in to prevent back pressure.
Please note that for this reason, even if a valve with an external pilot specification is used, it 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.
- 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.

Exhaust Throttle

⚠ Caution

The SY series pilot valve and main valve share a common exhaust inside the valve. Therefore, do not block the exhaust port when arranging the piping.

Used as a 3-Port Valve

⚠ Caution

■ In case of using a 5-port valve as a 3-port valve

The SY3000/5000/7000 series can be used as normally closed (N.C.) or normally open (N.O.) 3-port port valves by closing one of the cylinder ports 4(A) or 2(B) with a plug. However, they should be used with the exhaust ports kept open. They are convenient at times when a double solenoid type 3-port valve is required.

Plug position		B port	A port
Type of actuation		N.C.	N.O.
Number of solenoids	Single	<p>(A)4 2(B) (EA)5 1 3(E) (P)</p>	<p>(A)4 2(B) (EA)5 1 3(E) (P)</p>
	Double	<p>(A)4 2(B) (EA)5 1 3(E) (P)</p>	<p>(A)4 2(B) (EA)5 1 3(E) (P)</p>

Valve and Manifold Combination

The SY series plug-in valve has the common configuration of the valve mounting surface between base-mounted type (SY $\frac{3}{4}$ □0□) and top-ported type (SY $\frac{3}{4}$ □3□), therefore, it can be mounted to all manifolds of the side-ported type (Type 50 and Type 10), the bottom-ported type (Type 51 and Type 11), and the top-ported type (Type 52 and Type 12). For example, air output can be obtained from both sides of the A and B ports of the manifold and the valve by mounting a top-ported valve to a side-ported or bottom-ported manifold, and a pressure switch can be connected to the output port on one side. However, when selecting valves and manifolds, note that when a base-mounted valve is mounted to a top-ported manifold, there will be no output from the A and B port.



SY3000/5000/7000 Series Specific Product Precautions 3

Be sure to read this before handling the products. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: <https://www.smcworld.com>

Light/Surge Voltage Suppressor

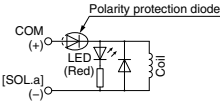
⚠ Caution

■ Polar type

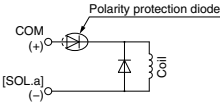
Positive common

Single solenoid

Light/surge voltage suppressor (□Z)



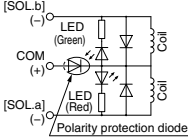
Surge voltage suppressor (□S)



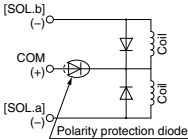
Positive common

Double solenoid, 3-position, 4-position

Light/surge voltage suppressor (□Z)



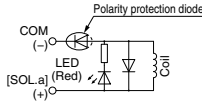
Surge voltage suppressor (□S)



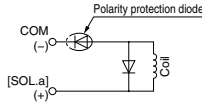
Negative common

Single solenoid

Light/surge voltage suppressor (□Z)



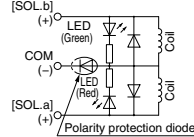
Surge voltage suppressor (□NS)



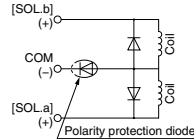
Negative common

Double solenoid, 3-position, 4-position

Light/surge voltage suppressor (□Z)



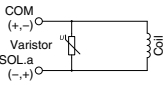
Surge voltage suppressor (□NS)



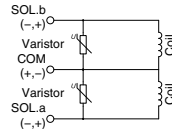
■ Non-polar type

With surge voltage suppressor (□R)

Single solenoid

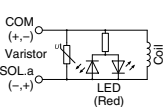


Double solenoid

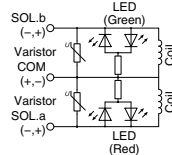


With light/surge voltage suppressor (□U)

Single solenoid



Double solenoid



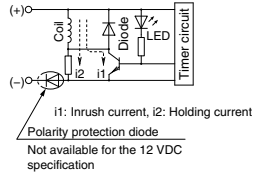
■ With power saving circuit

Power consumption is decreased to approx. 1/3 compared with the standard product by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 67 ms at 24 VDC.)

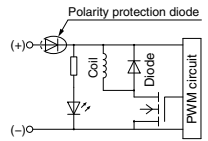
* Be careful of the energizing time, as quick response and high pressure types will become operational when the energizing time is over 40 ms.

<Standard>

Electric circuit diagram
(With power saving circuit)
In the case of single solenoid

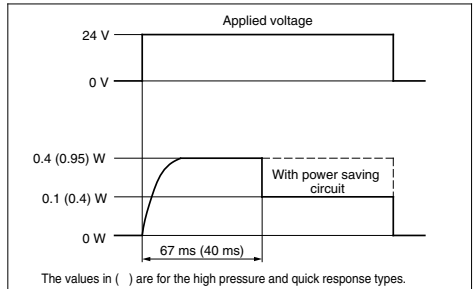


<High pressure>



The circuit shown above 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 values in () are for the high pressure and quick response types.

- 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 table below 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 405.

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. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the “Handling Precautions for SMC Products” and the “Operation Manual” on the SMC website: <https://www.smcworld.com>

Continuous Duty


⚠ Caution

If a valve is energized continuously for long periods 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. 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 long periods of time, take special care as the temperature rise will be greater. In such cases, if it is possible to select a valve with a power-saving circuit, be sure to do so.

UL Approved Product

⚠ Caution

When conformity to UL is required, the product should be used with a UL1310 Class 2 power supply.

The product is a UL approved product only if it has a  mark on the body.

Countermeasure for Surge Voltage Intrusion

■ Surge voltage intrusion

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 a 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).

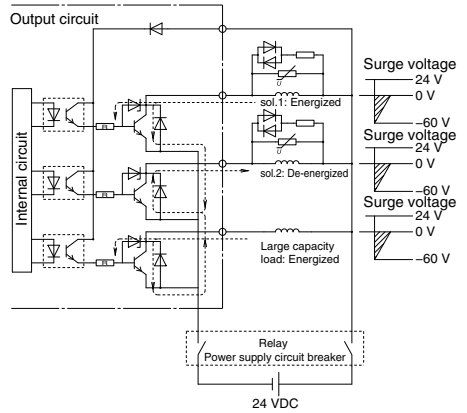


Figure 1. Surge intrusion circuit example (NPN outlet example) (24 VDC)

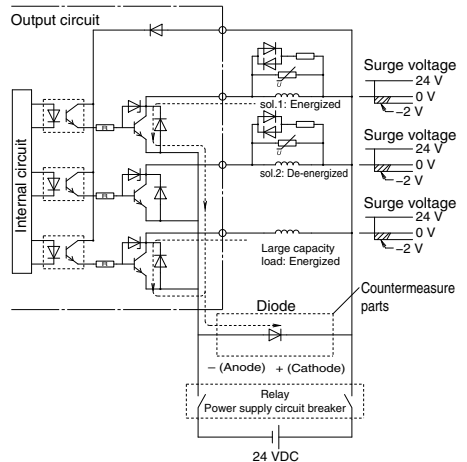


Figure 2. Surge intrusion countermeasure example (NPN outlet example) (24 VDC)



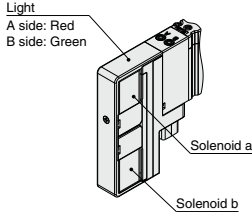
SY3000/5000/7000 Series

Specific Product Precautions 5

Be sure to read this before handling the products. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the “Handling Precautions for SMC Products” and the “Operation Manual” on the SMC website: <https://www.smcworld.com>

Light Indication

When equipped with indicator light and surge voltage suppressor, the light window turns red when solenoid a is energized, and it turns green when solenoid b is energized.

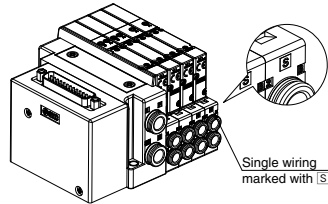


Manifold Indication Symbol

⚠ 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].)

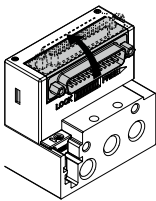


Type 5□ (Metal Base), Type 1□ (Connector Connecting Base) Changing Connector Entry Direction

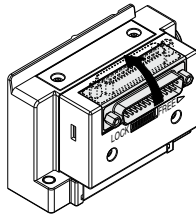
⚠ Caution

Connector direction for electrical entry of D-sub connector <IP40> and flat ribbon cable 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)



SY3000/5000/7000 Series

Specific Product Precautions 6

Be sure to read this before handling the products. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: <https://www.smcworld.com>

Substrate Assemblies inside Manifolds

⚠ Caution

Substrate assemblies inside of manifolds cannot be taken apart. Attempting to do so may damage parts.

Fixation of DIN Rail Mounting Type Manifolds

⚠ 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 the 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.

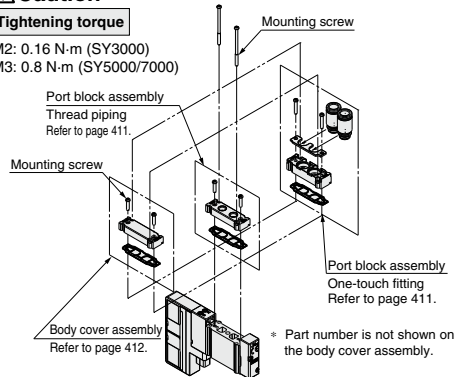
Refer to pages 411 and 412 for part numbers of port block assembly and body cover assembly for A, B port and page 614 for part numbers of port block assembly and body cover assembly for P, E port.

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.

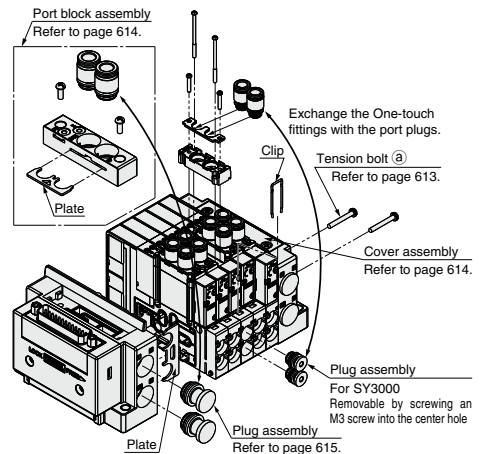
⚠ Caution

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. For safety instructions and 3/4/5-port solenoid valve precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: <https://www.smcworld.com>

How to Replace One-touch Fittings

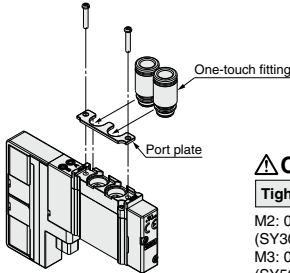
⚠ Caution

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 615 for part numbers of One-touch fittings for valve or manifold.

■ Valve



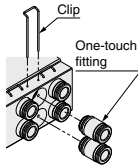
⚠ Caution

Tightening torque

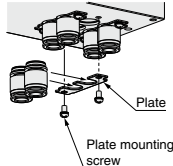
M2: 0.16 N·m
(SY3000)
M3: 0.8 N·m
(SY5000/7000)

■ Plug-in metal base

• Side ported (Type 50)



• Bottom ported (Type 51)



Clip part nos. (10 pcs. included)

Series	Part no.
SY3000	SY30M-19-2A
SY5000	SY50M-19-2A
SY7000	SY70M-19-2A

Plate assembly part nos. (10 pcs. included)

Series	Part no.
SY3000	SY30M-10-3A
SY5000	SY50M-10-6A
SY7000	SY70M-10-7A

* Including mounting screw

Clip part nos. (10 pcs. included)

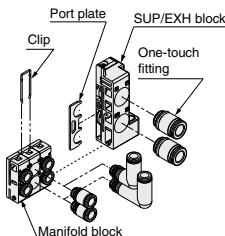
Series	A, B port size	Part no.
SY3000	—	SY30M-19-1A
SY5000	—	SY50M-19-6A
SY7000	—	SV3000-70-1A
SY3000/5000	ø2, ø3, ø4	SY50M-19-1A
Mixed mounting type (For mounting the SY3000)*1	ø6, ø1/8"	
	ø5/32", ø1/4"	
	ø8, ø5/16"	

*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.

■ Plug-in connector connecting base

• Side ported (Type 10)



How to Replace One-touch Fittings

⚠ Caution

• Bottom ported (Type 11)

Secure enough space between the manifold blocks when the plate is detached and attached.

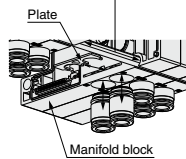


Plate part nos. (10 pcs. included)

Series	A, B port size	Part no.
SY5000	—	SY50M-10-4A
SY7000	—	SY70M-10-4A
SY3000/5000 Mixed mounting type (For mounting the SY3000)*1	ø2, ø3, ø4	SY50M-10-5A
	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

1. Take a tube having no flaws on its periphery and cut it off at a right angle. When cutting the tube, use tube cutters TK-1, 2, or 3. Do not use pliers, nippers, scissors, etc. If cutting is done with tools other than tube cutters, the tube may be cut diagonally or become flattened, etc., making a secure installation impossible, and causing problems such as the tube pulling out after installation or air leakage. Allow some extra length in the tube.
2. Grasp the tube and push it in slowly, inserting it securely all the way into the fitting.
3. After inserting the tube, pull on it lightly to confirm that it will not come out. If it is not installed securely all the way into the fitting, this can cause problems such as air leakage or the tube pulling out.

2) Tube detachment

1. Push in the release button sufficiently, pushing its collar equally around the circumference.
2. Pull out the tube while holding down the release button so that it does not come out. If the release button is not pressed down sufficiently, there will be increased bite on the tube and it will become more difficult to pull it out.
3. When the removed tube is to be used again, cut off the portion which has been chewed before reusing it. If the chewed portion of the tube is used as is, this can cause trouble such as air leakage or difficulty in removing the tube.



SY3000/5000/7000 Series

Specific Product Precautions 8

Be sure to read this before handling the products. For safety instructions and 3/4-5-port solenoid valve precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: <https://www.smcworld.com>

One-touch Fittings

⚠ Caution

When fittings are used, they may interfere with one another depending on their types and sizes. Therefore, the dimensions of the fittings to be used should first be confirmed in their respective catalogs. Fittings whose compliance with the SY series is already confirmed are stated below. If the fitting within the applicable range is selected, there will not be any interference.

Applicable Fittings: KQ2H, KQ2S Series

Series	Model	Piping port	Port size	Fittings	Applicable tubing O.D.						
					ø2	ø3.2	ø4	ø6	ø8	ø10	ø12
SY3000	SY3□30-□□-M5	4A, 2B	M5	KQ2H	[Bar chart showing applicable tubing O.D. for SY3000 SY3□30-□□-M5 4A, 2B M5 KQ2H]						
				KQ2S	[Bar chart showing applicable tubing O.D. for SY3000 SY3□30-□□-M5 4A, 2B M5 KQ2S]						
	SS5Y3-50/51/52 (R) Manifold base	1P, 5EA, 3EB	1/8	KQ2H	[Bar chart showing applicable tubing O.D. for SY3000 SS5Y3-50/51/52 (R) Manifold base 1P, 5EA, 3EB 1/8 KQ2H]						
				KQ2S	[Bar chart showing applicable tubing O.D. for SY3000 SS5Y3-50/51/52 (R) Manifold base 1P, 5EA, 3EB 1/8 KQ2S]						
		X, PE	M5	KQ2H	[Bar chart showing applicable tubing O.D. for SY3000 SS5Y3-50/51/52 (R) Manifold base X, PE M5 KQ2H]						
				KQ2S	[Bar chart showing applicable tubing O.D. for SY3000 SS5Y3-50/51/52 (R) Manifold base X, PE M5 KQ2S]						
		4A, 2B	1/8	KQ2H	[Bar chart showing applicable tubing O.D. for SY3000 SS5Y3-50/51/52 (R) Manifold base 4A, 2B 1/8 KQ2H]						
			M5	KQ2H	[Bar chart showing applicable tubing O.D. for SY3000 SS5Y3-50/51/52 (R) Manifold base 4A, 2B M5 KQ2H]						
				KQ2S	[Bar chart showing applicable tubing O.D. for SY3000 SS5Y3-50/51/52 (R) Manifold base 4A, 2B M5 KQ2S]						

Series	Model	Piping port	Port size	Fittings	Applicable tubing O.D.						
					ø2	ø3.2	ø4	ø6	ø8	ø10	ø12
SY5000	SY5□30-□□-01	4A, 2B	1/8	KQ2H	[Bar chart showing applicable tubing O.D. for SY5000 SY5□30-□□-01 4A, 2B 1/8 KQ2H]						
				KQ2S	[Bar chart showing applicable tubing O.D. for SY5000 SY5□30-□□-01 4A, 2B 1/8 KQ2S]						
	SS5Y5-50/51/52 (R) Manifold base	1P, 5EA, 3EB	1/4	KQ2H	[Bar chart showing applicable tubing O.D. for SY5000 SS5Y5-50/51/52 (R) Manifold base 1P, 5EA, 3EB 1/4 KQ2H]						
				KQ2S	[Bar chart showing applicable tubing O.D. for SY5000 SS5Y5-50/51/52 (R) Manifold base 1P, 5EA, 3EB 1/4 KQ2S]						
		X, PE	M5	KQ2H	[Bar chart showing applicable tubing O.D. for SY5000 SS5Y5-50/51/52 (R) Manifold base X, PE M5 KQ2H]						
				KQ2S	[Bar chart showing applicable tubing O.D. for SY5000 SS5Y5-50/51/52 (R) Manifold base X, PE M5 KQ2S]						
	4A, 2B	1/4	KQ2H	[Bar chart showing applicable tubing O.D. for SY5000 SS5Y5-50/51/52 (R) Manifold base 4A, 2B 1/4 KQ2H]							
		1/8	KQ2H	[Bar chart showing applicable tubing O.D. for SY5000 SS5Y5-50/51/52 (R) Manifold base 4A, 2B 1/8 KQ2H]							
				KQ2S	[Bar chart showing applicable tubing O.D. for SY5000 SS5Y5-50/51/52 (R) Manifold base 4A, 2B 1/8 KQ2S]						

Series	Model	Piping port	Port size	Fittings	Applicable tubing O.D.						
					ø2	ø3.2	ø4	ø6	ø8	ø10	ø12
SY7000	SY7□30-□□-02	4A, 2B	1/4	KQ2H	[Bar chart showing applicable tubing O.D. for SY7000 SY7□30-□□-02 4A, 2B 1/4 KQ2H]						
				KQ2S	[Bar chart showing applicable tubing O.D. for SY7000 SY7□30-□□-02 4A, 2B 1/4 KQ2S]						
	SS5Y7-50/51/52 (R) Manifold base	1P, 5EA, 3EB	3/8	KQ2H	[Bar chart showing applicable tubing O.D. for SY7000 SS5Y7-50/51/52 (R) Manifold base 1P, 5EA, 3EB 3/8 KQ2H]						
				KQ2S	[Bar chart showing applicable tubing O.D. for SY7000 SS5Y7-50/51/52 (R) Manifold base 1P, 5EA, 3EB 3/8 KQ2S]						
		X, PE	M5	KQ2H	[Bar chart showing applicable tubing O.D. for SY7000 SS5Y7-50/51/52 (R) Manifold base X, PE M5 KQ2H]						
				KQ2S	[Bar chart showing applicable tubing O.D. for SY7000 SS5Y7-50/51/52 (R) Manifold base X, PE M5 KQ2S]						
	4A, 2B	1/4	KQ2H	[Bar chart showing applicable tubing O.D. for SY7000 SS5Y7-50/51/52 (R) Manifold base 4A, 2B 1/4 KQ2H]							
			KQ2S	[Bar chart showing applicable tubing O.D. for SY7000 SS5Y7-50/51/52 (R) Manifold base 4A, 2B 1/4 KQ2S]							

■ Trademark

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 CompoNet® is a registered trademark of ODVA, Inc.
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Modular Connection Type 5-Port Solenoid Valve SY3000/5000-X990

Plug-in Type

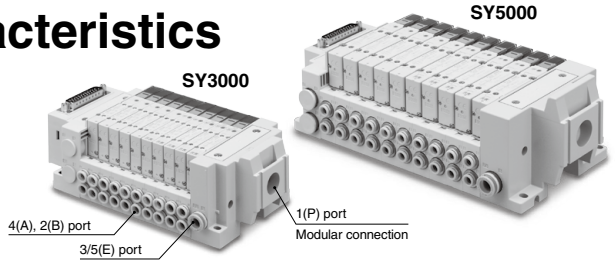


Can be connected to F.R.L. units

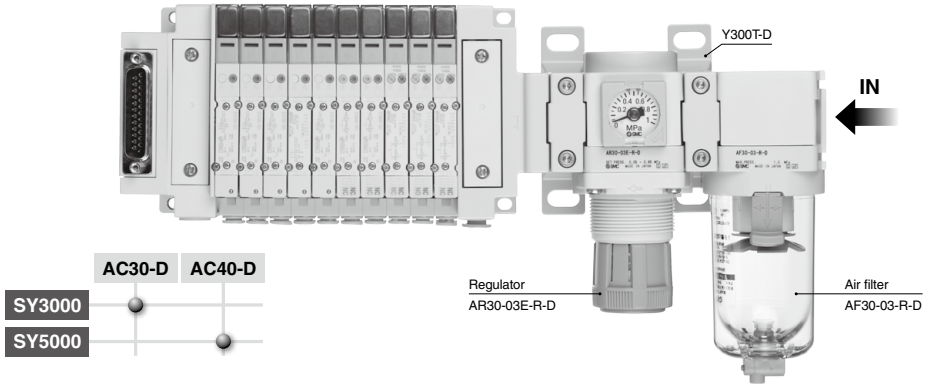
Flow rate characteristics

C [dm³/(s·bar)]
SY3000: 1.6^{*1}
SY5000: 3.6^{*1}

*1 4/2 ⇒ 3/5 (A/B ⇒ E)



Allows for space saving and reduced piping labor.



② Spacer with bracket

① Air combination

③ Modular connection type 5-port solenoid valve

Ordering Example

* Products do not come assembled. They should be ordered separately and assembled by the customer.

① Air combination AC30C-03E-D 1 pc.

② Spacer with bracket Y300T-D 1 pc.

③ Modular connection type/5-port solenoid valve SSY3-12F1-10U-X990 1 pc.

* SY3230-51-C4 10 pcs.

Modular Connection Type SY3000/5000-X990 Manifold Specifications/Weight

Manifold Specifications

Model	D-sub		Flat ribbon cable			Terminal block box (Spring type)	Terminal block box	Lead wire	Circular connector	Serial wiring			
	Type F	Type FW	Type P	Type PG	Type PH	Type TC	Type T	Type L	Type M	Type S6□ (EX600)	Type S4□ (EX126)	Type SA3 (EX500) Type S□ (EX250) (EX260)	Type S3□ (EX120)
Valve stations	2 to 10 stations			2 to 8 stations		2 to 10 stations							
Port size	1(P) port	SY3000	Modular size: 30										
		SY5000	Modular size: 40										
Mounted valve	Only the rubber seal type is available.												

Manifold Weight

Valve Seal Type: Rubber Seal Side Ported (Type 10)

Manifold model	Valve model	Weight: W [g] ^{*1} (n: stations)
SS5Y3	SY3100/SY3200	28.9n + 433
	SY3300	
	SY3400	
	SY3500	
	SY3A00	
	SY3B00	
	SY3C00	
SS5Y5	SY5100/SY5200	74.7n + 698
	SY5300	
	SY5400	
	SY5500	
	SY5A00	
	SY5B00	
	SY5C00	

Valve Seal Type: Rubber Seal Top Ported (Type 12)

Manifold model	Valve model	Weight: W [g] ^{*1} (n: stations)
SS5Y3	SY3130/SY3230	25.1n + 465
SS5Y5	SY5130/SY5230	66.3n + 717

*1 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 in the **Web Catalog** for the appropriate number of stations.

* The other specifications are the same as those of the standard model.
For details, refer to the **Web Catalog**.



Type 12 Top Ported **SS5Y 3 - 12 [] [] - 05 D S - N - X990**

Type 10 Side Ported **SS5Y 3 - 10 [] [] - 05 D S - C6 - X990**

* There is no bottom ported type.



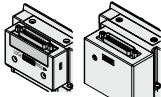
More information can be viewed here.

Enter the standard product number.
 * The A and B ports are only compatible with straight unions.
 * DIN rail mounting is not supported.

P-port modular connection type
 SY3000 is modular size 30.
 SY5000 is modular size 40.

1 Series

Series	Modular size
3	SY3000
5	SY5000



2 Valve stations

FW: D-sub connector (25 pins)

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
10	10 stations	Specified layout*2 (Up to 20 solenoids available)
02	2 stations	
:	:	
10	10 stations	

P: Flat ribbon cable (26 pins)

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
10	10 stations	Specified layout*2 (Up to 20 solenoids available)
02	2 stations	
:	:	
10	10 stations	

PG: Flat ribbon cable (20 pins)

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
09	9 stations	Specified layout*2 (Up to 18 solenoids available)
02	2 stations	
:	:	
10	10 stations	

PH: Flat ribbon cable (10 pins)

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
04	4 stations	Specified layout*2 (Up to 8 solenoids available)
02	2 stations	
:	:	
08	8 stations	



TC/T: Terminal block box

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
10	10 stations	Specified layout*2 (Up to 20 solenoids available)
02	2 stations	
:	:	
10	10 stations	



M: Circular connector

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
8	8 stations	Specified layout*2 (Up to 16 solenoids available)
02	2 stations	
:	:	
10	10 stations	



L1: Lead wire (34 cores)

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
10	10 stations	Specified layout*2 (Up to 20 solenoids available)
02	2 stations	
:	:	
10	10 stations	

L2: Lead wire (17 cores)

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
08	8 stations	Specified layout*2 (Up to 16 solenoids available)
02	2 stations	
:	:	
10	10 stations	

L3: Lead wire (9 cores)

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
04	4 stations	Specified layout*2 (Up to 8 solenoids available)
02	2 stations	
:	:	
08	8 stations	

*1 Double wiring: 2-position single, 2-position 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.)
 * The blanking plate assembly is included in this number.

SY3000/5000-X990

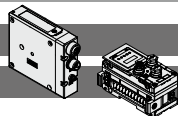
The EX250 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.



How to Order Manifolds

EX500 128 Points: S□

EX600: S6□□□



2 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
10	10 stations	
02	2 stations	Specified layout*2 (Up to 20 solenoids available)
:	:	
10	10 stations	

- *1 Double wiring: 2-position single, 2-position 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.)
- * The blanking plate assembly is included in this number.
- * 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. (Excludes the EX600)

EX250: S□□□

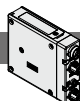


2 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
10	10 stations	
02	2 stations	Specified layout*2 (Up to 20 solenoids available)
:	:	
10	10 stations	

- *1 Double wiring: 2-position single, 2-position 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
- * The blanking plate assembly is included in this number.
- * 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.

EX260: S□



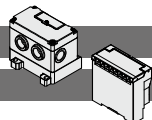
2 Valve stations

In the case of the 32-output SI unit		
Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
10	10 stations	
02	2 stations	Specified layout*2 (Up to 20 solenoids available)
:	:	
10	10 stations	

In the case of the 16-output SI unit		
Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
08	8 stations	
02	2 stations	Specified layout*2 (Up to 16 solenoids available)
:	:	
10	10 stations	

- *1 Double wiring: 2-position single, 2-position 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.)
- * The blanking plate assembly is included in this number.
- * 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.

EX126: S4□



EX120: S3□

2 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
08	8 stations	
02	2 stations	Specified layout*2 (Up to 16 solenoids available)
:	:	
10	10 stations	

- *1 Double wiring: 2-position single, 2-position 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.)
- * The blanking plate assembly is included in this number.

How to Order Equipped Valves (With mounting screw)

Base Mounted

Base mounted **SY 3 1 0 0** - **5** **1** -

* There are no metal seal types.



More information can be viewed here.

1 Series

3	SY3000
5	SY5000

2 Type of actuation

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

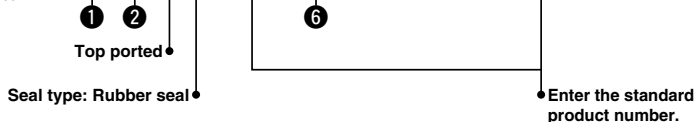
6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)

Top Ported

Top ported **SY 3 1 3 0** - **5** **1** - **C6** -

* There are no metal seal types.



More information can be viewed here.

1 Series

3	SY3000
5	SY5000

2 Type of actuation

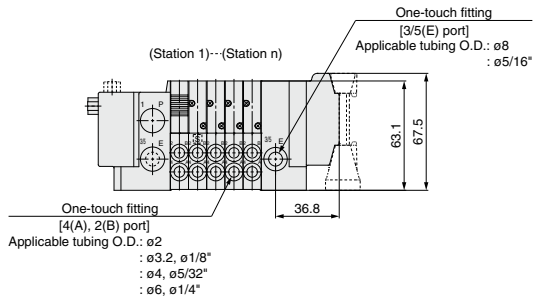
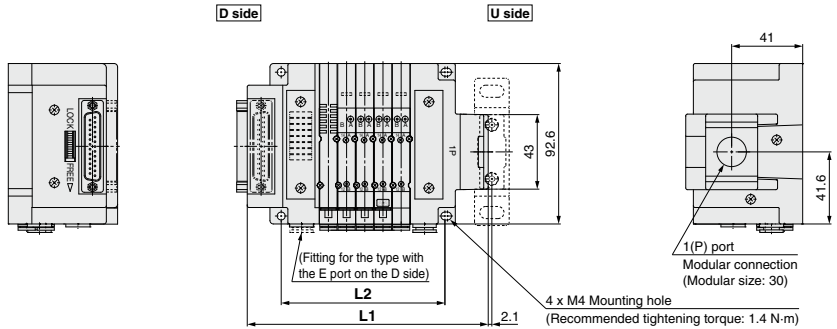
1	2-position	Single
		Double
3	3-position	Closed center
		Exhaust center
		Pressure center
		N.C./N.C.
A	4-position dual 3-port	N.O./N.O.
		N.C./N.O.

6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)

SY3000/5000-X990

Dimensions: SY3000 Series



* These figures show the "SS5Y3-10F2-05U-C6-X990."
* The other dimensions, as well as those of the top ported type, are the same as those of the standard model. For details, refer to the **Web Catalog**.

D-sub, Flat Ribbon (Type F)

Refer to the table below for the L1 and L2 dimensions of the D-sub and flat ribbon (Type F).

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	107.6	118.1	128.6	139.1	149.6	160.1	170.6	181.1	191.6
L2	63	73.5	84	94.5	105	115.5	126	136.5	147

IP67 D-sub (Type FW)

Refer to the table below for the L1 and L2 dimensions of the IP67 D-sub (Type FW).

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	124.5	135	145.5	156	166.5	177	187.5	198	208.5
L2	63	73.5	84	94.5	105	115.5	126	136.5	147

Dimensions: SY3000 Series

Terminal Block Box (Type T) Refer to the table below for the L1 and L2 dimensions of the terminal block box (Type T).

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	183.3	193.8	204.3	214.8	225.3	235.8	246.3	256.8	267.3
L2	63	73.5	84	94.5	105	115.5	126	136.5	147

Terminal Block Box/Spring Type (Type TC) Refer to the table below for the L1 and L2 dimensions of the terminal block box/spring type (Type TC).

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	162	172.5	183	193.5	204	214.5	225	235.5	246
L2	63	73.5	84	94.5	105	115.5	126	136.5	147

Lead Wire (L), Circular Connector (M) Refer to the table below for the L1 and L2 dimensions of the lead wire and circular connector.

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	131	141.5	152	162.5	173	183.5	194	204.5	215
L2	63	73.5	84	94.5	105	115.5	126	136.5	147

EX500 (Type SA3) Refer to the table below for the L1 and L2 dimensions of the EX500 (Type SA3).

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	122.7	133.2	143.7	154.2	164.7	175.2	185.7	196.2	206.7
L2	63	73.5	84	94.5	105	115.5	126	136.5	147

EX600 (M12 Connector) Calculate the L1 dimension of the EX600 (M12 connector) using the formula shown below.

$$L1 = 10.5 \times n1 + 154.5 + 47 \times n2$$

n1: Valve stations

n2: I/O unit stations

EX600 (7/8 Inch Connector) Calculate the L1 dimension of the EX600 (7/8 inch connector) using the formula shown below.

$$L1 = 10.5 \times n1 + 171 + 47 \times n2$$

n1: Valve stations

n2: I/O unit stations

SY3000/5000-X990

Dimensions: SY3000 Series

EX250

Calculate the L1 dimension of the EX250 using the formula shown below.

$$L1 = 10.5 \times n1 + 154.5 + 21 \times n2$$

n1: Valve stations

n2: I/O unit stations

EX260

Refer to the table below for the L1 and L2 dimensions of the EX260.

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	122.7	133.2	143.7	154.2	164.7	175.2	185.7	196.2	206.7
L2	63	73.5	84	94.5	105	115.5	126	136.5	147

EX126

Refer to the table below for the L1 and L2 dimensions of the EX126.

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	183.3	193.8	204.3	214.8	225.3	235.8	246.8	256.8	267.3
L2	63	73.5	84	94.5	105	115.5	126	136.5	147

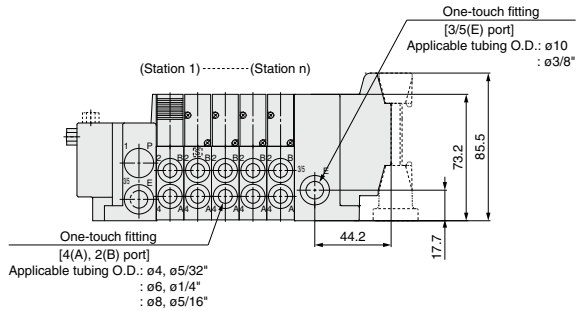
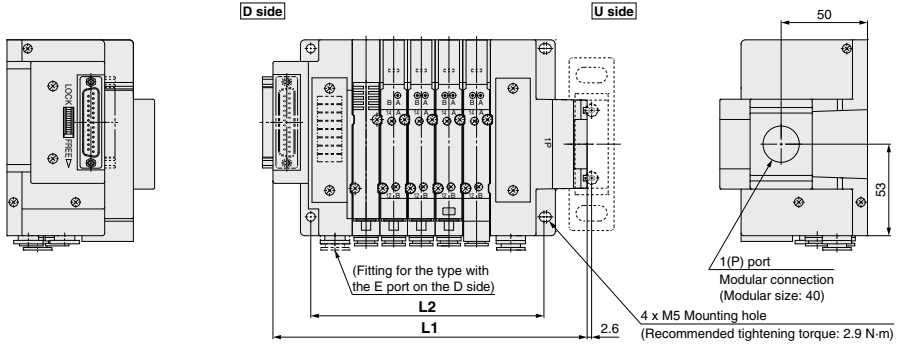
EX120

Refer to the table below for the L1 and L2 dimensions of the EX120.

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	115.9	126.4	136.9	147.4	157.9	168.4	178.9	189.4	199.9
L2	63	73.5	84	94.5	105	115.5	126	136.5	147

Dimensions: SY5000 Series



* These figures show the "SS5Y5-10F2-05U-C8-X990."
 * The other dimensions are the same as those of the standard model. For details, refer to the **Web Catalog**.

D-sub, Flat Ribbon (Type F)

Refer to the table below for the L1 and L2 dimensions of the D-sub and flat ribbon (Type F).

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	133.9	149.9	165.9	181.9	197.9	213.9	229.9	245.9	261.9
L2	87	103	119	135	151	167	183	199	215

IP67 D-sub (Type FW)

Refer to the table below for the L1 and L2 dimensions of the IP67 D-sub (Type FW).

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	148	164	180	196	212	228	244	260	276
L2	87	103	119	135	151	167	183	199	215

SY3000/5000-X990

Dimensions: SY5000 Series

Terminal Block Box (Type T) Refer to the table below for the L1 and L2 dimensions of the terminal block box (Type T).

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	206.8	222.8	238.8	254.8	270.8	286.8	302.8	318.8	334.8
L2	87	103	119	135	151	167	183	199	215

Terminal Block Box/Spring Type (Type TC) Refer to the table below for the L1 and L2 dimensions of the terminal block box/spring type (Type TC).

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	185.5	201.5	217.5	233.5	249.5	265.5	281.5	297.5	313.5
L2	87	103	119	135	151	167	183	199	215

Lead Wire (L), Circular Connector (M) Refer to the table below for the L1 and L2 dimensions of the lead wire and circular connector.

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	154.5	170.5	186.5	202.5	218.5	234.5	250.5	266.5	282.5
L2	87	103	119	135	151	167	183	199	215

EX500 (Type SA3) Refer to the table below for the L1 and L2 dimensions of the EX500 (Type SA3).

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	146.2	162.2	178.2	194.2	210.2	226.2	242.2	258.2	274.2
L2	87	103	119	135	151	167	183	199	215

EX600 (M12 Connector) Calculate the L1 and L2 dimensions for the EX600 (M12 connector) using the formula shown below.

$$L1 = 16 \times n1 + 167 + 47 \times n2$$

$$L2 = 16 \times n1 + 55$$

n1: Valve stations

n2: I/O unit stations

Dimensions: **SY5000 Series**

EX600 (7/8 Inch Connector)

Calculate the L1 and L2 dimensions for the EX600 (7/8 inch connector) using the formula shown below.

$$L1 = 16 \times n1 + 183.5 + 47 \times n2$$

$$L2 = 16 \times n1 + 55$$

n1: Valve stations

n2: I/O unit stations

EX250

Calculate the L1 and L2 dimensions for the EX250 using the formula shown below.

$$L1 = 16 \times n1 + 167 + 21 \times n2$$

$$L2 = 16 \times n1 + 55$$

n1: Valve stations

n2: I/O unit stations

EX260

Refer to the table below for the L1 and L2 dimensions of the EX260.

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	146.2	162.2	178.2	194.2	210.2	226.2	242.2	258.2	274.2
L2	87	103	119	135	151	167	183	199	215

EX126

Refer to the table below for the L1 and L2 dimensions of the EX126.

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	206.8	222.8	238.8	254.8	270.8	286.8	302.8	318.8	334.8
L2	87	103	119	135	151	167	183	199	215

EX120

Refer to the table below for the L1 and L2 dimensions of the EX120.

L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	142.2	158.2	174.2	190.2	206.2	222.2	238.2	254.2	270.2
L2	87	103	119	135	151	167	183	199	215

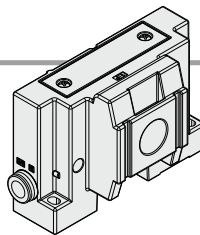
Manifold Parts Nos.

SUP/EXH end block assembly

SY 3 0M-3-7A [] -C8-W

● **Series**

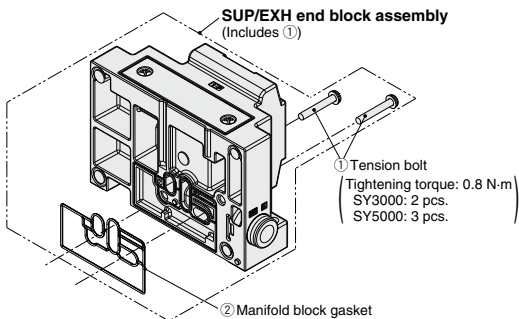
3	SY3000
5	SY5000



● **Pilot, Silencer/Piping type**

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
NII	●	—	—	Side
S ^{*1}	●	—	●	
R	—	●	—	
V	●	—	—	
RV	—	●	—	Top

*1 When "S" is selected for the pilot, silencer/piping type, only "00" (Plug) can be selected for the E port size.



● **E port size (One-touch fittings)**

Symbol	E port	SY3000	SY5000	Note
C8	ø8	●	—	Side/Top ported Metric size
C10	ø10	—	●	
N9	ø5/16"	●	—	Side/Top ported Inch size
N11	ø3/8"	—	●	
L8	ø8	●	—	Side ported Metric size
		—	●	
L10	ø10	—	●	Side ported Inch size
		●	—	
LN9	ø5/16"	●	—	Side ported Metric size
		—	●	
LN11	ø3/8"	—	●	Side ported Inch size
		●	—	
B8	ø8	●	—	Side ported Metric size
		—	●	
B10	ø10	—	●	Side ported Inch size
		●	—	
BN9	ø5/16"	●	—	Side ported Metric size
		—	●	
BN11	ø3/8"	—	●	Side ported Inch size
		●	—	
00 ^{*1}	Plug	●	●	E port entry on one side or Top ported

*1 It can be selected only if no symbol or "S" is selected for the pilot and the piping.

SUP/EXH end block assembly accessories and the number of accessories

Accessories	SY3000	SY5000	Note
① Tension bolt	AC00530 (2 pcs.)	SX3000-145-21 (3 pcs.)	Supplied individually
② Manifold block gasket	SY30M-9-2	SY50M-9-2	Supplied individually

Gasket is mounted.

SY3000/5000-X990 Accessories Sold Separately (Spacer with Bracket)

Spacer with Bracket

Y **300** T - D

① ②

For the spacer with bracket holding screw tightening torque, refer to the AC-D series catalog.

Spacer with bracket (Y□T-D)



	Symbol	Description	①	
			Body size [Applicable AC size]	
			300 [SY3000 + AC30]	400 [SY5000 + AC40]
②	Bracket	T	Spacer with bracket	

Standard Specifications

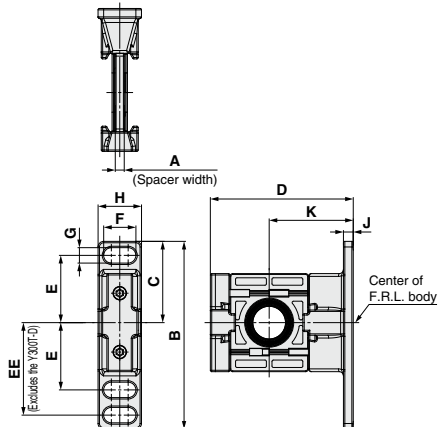
Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

Replacement Parts

Description	Material	Part number	
		Y300T-D	Y400T-D
Seal	HNBR	Y320P-050S	Y420P-050S

Dimensions

Spacer with bracket



Model	A	B	C	D	E	EE	Applicable size
Y300T-D	4.2	85	42.5	67.5	35	—	AC30-D
Y400T-D	5.2	115	50	85.5	40	55	AC40-D

Model	F	G	H	J	K	Applicable size
Y300T-D	14	7	20	6	41	AC30-D
Y400T-D	18	9	26	7	50	AC40-D

⚠ Specific Product Precautions

Be sure to read this before handling the products. Refer to page 7 for safety instructions, pages 8 to 14 for 3/4/5-port solenoid valve precautions, pages 703 to 710 for SY3000/5000 specific product precautions, and the **Web Catalog** for F.R.L. units precautions.

Mounting

⚠ Warning

- When connecting other products such as F.R.L. units, use a spacer with a bracket (Y300T/Y400T-D series) to connect the manifold connection part so that no moment is applied.
- Be sure to secure the spacer with a bracket used for connection.
- Avoid excessive torsional moment and bending moment other than those caused by the manifold's own weight, as failure to do so may result in damage.

- Support external piping separately.
- Piping materials without flexibility, such as steel tube piping, are prone to being affected by excess moment loads and vibrations from the piping side. Use flexible tubing in between to avoid such effects.

Model Index (Alphanumeric Order)

SS5Y□-10	SY Type 10/Side Ported Plug-in Connector Connecting Base: D-sub Connector, Flat Ribbon Cable	p. 430
SS5Y□-10L	SY Type 10/Side Ported Plug-in Connector Connecting Base: Lead Wire	p. 466
SS5Y□-10M	SY Type 10/Side Ported Plug-in Connector Connecting Base: Circular Connector	p. 476
SS5Y□-10S	SY Type 10/Side Ported Plug-in Connector Connecting Base: EX500 Gateway Decentralized System 2 (128 Points)	p. 486
SS5Y□-10S	SY Type 10/Side Ported Plug-in Connector Connecting Base: EX500 Gateway Decentralized System (64 Points)	p. 492
SS5Y□-10S□	SY Type 10/Side Ported Plug-in Connector Connecting Base: EX245	p. 514
SS5Y□-10S□	SY Type 10/Side Ported Plug-in Connector Connecting Base: EX250	p. 522
SS5Y□-10S□	SY Type 10/Side Ported Plug-in Connector Connecting Base: EX260	p. 530
SS5Y□-10S□	SY Type 10/Side Ported Plug-in Connector Connecting Base: EX260 Safety Communication Protocol (PROFIsafe)	p. 534
SS5Y□-10S3	SY Type 10/Side Ported Plug-in Connector Connecting Base: EX120	p. 550
SS5Y□-10S4	SY Type 10/Side Ported Plug-in Connector Connecting Base: EX126	p. 542
SS5Y□-10S6	SY Type 10/Side Ported Plug-in Connector Connecting Base: EX600	p. 502
SS5Y□-10S8	SY Type 10/Side Ported Plug-in Connector Connecting Base: EX180	p. 558
SS5Y□-10T	SY Type 10/Side Ported Plug-in Connector Connecting Base: Terminal Block Box	p. 456
SS5Y□-10TC	SY Type 10/Side Ported Plug-in Connector Connecting Base: Terminal Block Box (Spring Type)	p. 448
SS5Y□-11	SY Type 11/Bottom Ported Plug-in Connector Connecting Base: D-sub Connector, Flat Ribbon Cable	p. 430
SS5Y□-11L	SY Type 11/Bottom Ported Plug-in Connector Connecting Base: Lead Wire	p. 466
SS5Y□-11M	SY Type 11/Bottom Ported Plug-in Connector Connecting Base: Circular Connector	p. 476
SS5Y□-11S	SY Type 11/Bottom Ported Plug-in Connector Connecting Base: EX500 Gateway Decentralized System 2 (128 Points)	p. 486
SS5Y□-11S	SY Type 11/Bottom Ported Plug-in Connector Connecting Base: EX500 Gateway Decentralized System (64 Points)	p. 492
SS5Y□-11S□	SY Type 11/Bottom Ported Plug-in Connector Connecting Base: EX245	p. 514
SS5Y□-11S□	SY Type 11/Bottom Ported Plug-in Connector Connecting Base: EX250	p. 522
SS5Y□-11S□	SY Type 11/Bottom Ported Plug-in Connector Connecting Base: EX260	p. 530
SS5Y□-11S□	SY Type 11/Bottom Ported Plug-in Connector Connecting Base: EX260 Safety Communication Protocol (PROFIsafe)	p. 534
SS5Y□-11S3	SY Type 11/Bottom Ported Plug-in Connector Connecting Base: EX120	p. 550
SS5Y□-11S4	SY Type 11/Bottom Ported Plug-in Connector Connecting Base: EX126	p. 542
SS5Y□-11S6	SY Type 11/Bottom Ported Plug-in Connector Connecting Base: EX600	p. 502
SS5Y□-11S8	SY Type 11/Bottom Ported Plug-in Connector Connecting Base: EX180	p. 558
SS5Y□-11T	SY Type 11/Bottom Ported Plug-in Connector Connecting Base: Terminal Block Box	p. 456
SS5Y□-11TC	SY Type 11/Bottom Ported Plug-in Connector Connecting Base: Terminal Block Box (Spring Type)	p. 448
SS5Y□-12	SY Type 12/Top Ported Plug-in Connector Connecting Base: D-sub Connector, Flat Ribbon Cable	p. 442
SS5Y□-12L	SY Type 12/Top Ported Plug-in Connector Connecting Base: Lead Wire	p. 472
SS5Y□-12M	SY Type 12/Top Ported Plug-in Connector Connecting Base: Circular Connector	p. 482
SS5Y□-12S	SY Type 12/Top Ported Plug-in Connector Connecting Base: EX500 Gateway Decentralized System 2 (128 Points)	p. 498
SS5Y□-12S	SY Type 12/Top Ported Plug-in Connector Connecting Base: EX500 Gateway Decentralized System (64 Points)	p. 500
SS5Y□-12S□	SY Type 12/Top Ported Plug-in Connector Connecting Base: EX245	p. 520
SS5Y□-12S□	SY Type 12/Top Ported Plug-in Connector Connecting Base: EX250	p. 528
SS5Y□-12S□	SY Type 12/Top Ported Plug-in Connector Connecting Base: EX260	p. 540
SS5Y□-12S□	SY Type 12/Top Ported Plug-in Connector Connecting Base: EX260 Safety Communication Protocol (PROFIsafe)	p. 540
SS5Y□-12S3	SY Type 12/Top Ported Plug-in Connector Connecting Base: EX120	p. 556
SS5Y□-12S4	SY Type 12/Top Ported Plug-in Connector Connecting Base: EX126	p. 548
SS5Y□-12S6	SY Type 12/Top Ported Plug-in Connector Connecting Base: EX600	p. 512
SS5Y□-12S8	SY Type 12/Top Ported Plug-in Connector Connecting Base: EX180	p. 564
SS5Y□-12T	SY Type 12/Top Ported Plug-in Connector Connecting Base: Terminal Block Box	p. 462
SS5Y□-12TC	SY Type 12/Top Ported Plug-in Connector Connecting Base: Terminal Block Box (Spring Type)	p. 453
SS5Y□-50	SY Type 50/Side Ported Plug-in Metal Base: D-sub Connector, Flat Ribbon Cable	p. 636
SS5Y□-50S5	SY Type 50/Side Ported Plug-in Metal Base: EX510	p. 664
SS5Y□-51	SY Type 51/Bottom Ported Plug-in Metal Base: D-sub Connector, Flat Ribbon Cable	p. 636
SS5Y□-51S5	SY Type 51/Bottom Ported Plug-in Metal Base: EX510	p. 664
SS5Y□-52	SY Type 52/Top Ported Plug-in Metal Base: D-sub Connector, Flat Ribbon Cable	p. 656
SS5Y□-52S5	SY Type 52/Top Ported Plug-in Metal Base: EX510	p. 674
SS5Y5-M10	SY3000/5000 Type 10/Side Ported Plug-in Mixed Mounting Type Manifold	p. 574
SS5Y5-M11	SY3000/5000 Type 11/Bottom Ported Plug-in Mixed Mounting Type Manifold	p. 574
SS5Y5-M12	SY Type 12/Top Ported Plug-in Mixed Mounting Type Manifold	p. 586
SS5Y7-M10	SY5000/7000 Type 10/Side Ported Plug-in Mixed Mounting Type Manifold	p. 578
SS5Y7-M11	SY5000/7000 Type 11/Bottom Ported Plug-in Mixed Mounting Type Manifold	p. 578
SS5Y7-M12	SY Type 12/Top Ported Plug-in Mixed Mounting Type Manifold	p. 586

Model Index (Alphanumeric Order)

SY3000	Plug-in Single Unit/Sub-plate Type [IP67 Compliant]	p. 694
SY3A□R	SY3000 Vacuum Release Valve with Restrictor (Only for External Pilot)	p. 415
SY3000-X990	SY3000 Modular Connection Type	p. 711
SY5□3□-□1-C6	SY5000 Valve with Pressure Sensor	p. 421
SY5000	Plug-in Single Unit/Sub-plate Type [IP67 Compliant]	p. 694
SY530-□1-E	SY5000 With Residual Pressure Release Valve	p. 413
SY5A□R	SY5000 Vacuum Release Valve with Restrictor (Only for External Pilot)	p. 415
SY5000-X990	SY5000 Modular Connection Type	p. 711
SY7□3□-□1-C6	SY7000 Valve with Pressure Sensor	p. 421
SY7000	Plug-in Single Unit/Sub-plate Type [IP67 Compliant]	p. 694
SY730-□1-E	SY7000 With Residual Pressure Release Valve	p. 413