

5 Port Solenoid Valve

New

Increased Flow For The SY Series



SY3000

ø32 [Conventional]



Increased up to **ø50** (300 mm/s)*

10 mm width can drive a ø50 cylinder.

SY5000

ø50 [Conventional]



Increased up to **ø63** (300 mm/s)*

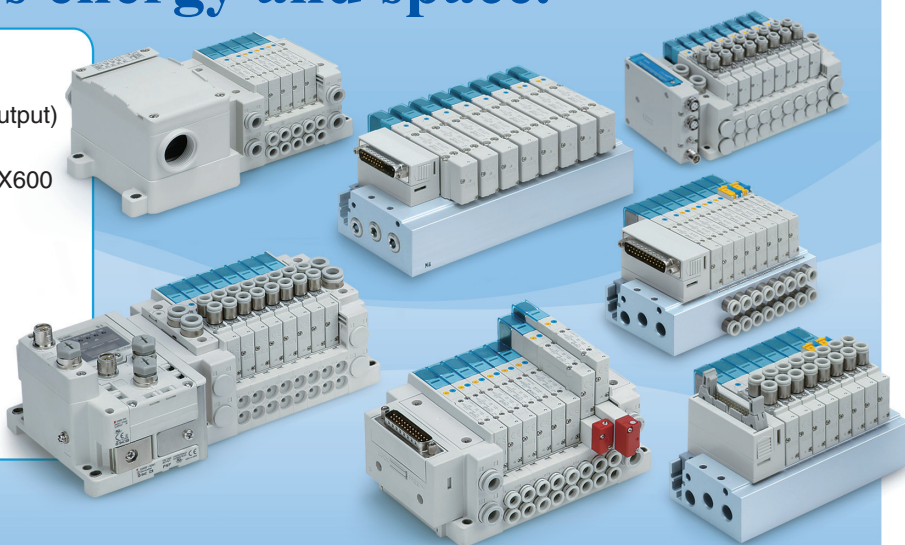
15 mm width can drive a ø63 cylinder.

*Values based on comparison with the conventional SMC model. Refer to page 4 for common conditions.

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

New

- Added the EX260 Integrated-type (For Output) Serial Transmission System.
- Added EtherNet/IP™, EtherCAT to the EX600 Integrated-type (For Input/Output) Serial Transmission System (Fieldbus System).
- Additional Options:
Interface regulator assembly
Individual SUP block assembly
Individual EXH block assembly
Dual flow fitting
Name plate for manifolds



Power Consumption

0.1w **0.35w**

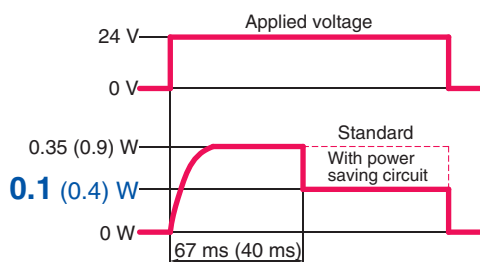
With power saving circuit

Standard

Power consumption is reduced by power saving circuit.

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

[Electrical power waveform with power saving circuit]



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

Rubber seal
Metal seal

Life*

70 million cycles
(Rubber seal)

200 million cycles
(Metal seal)

* According to SMC life test conditions

Series SY3000/5000

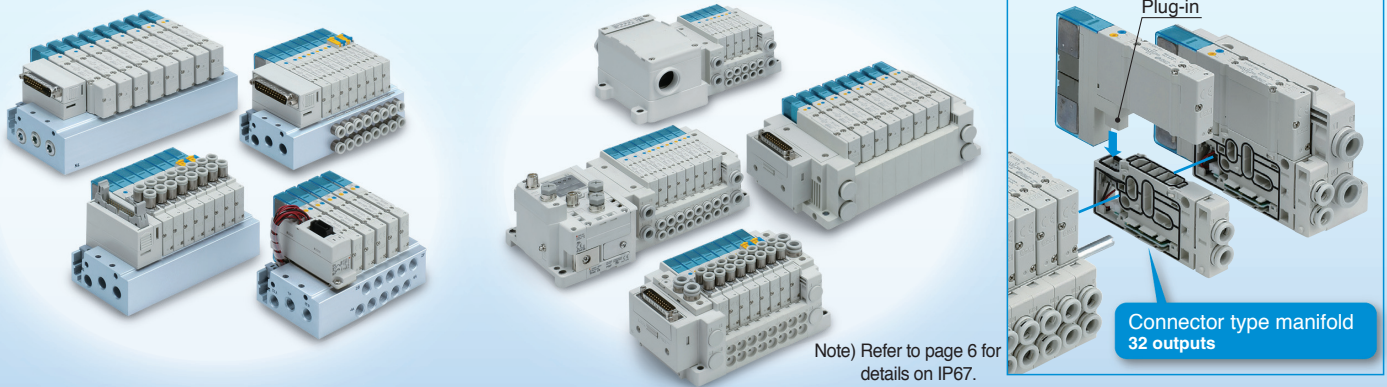


CAT.ES11-103B

5 Port Solenoid Valve

Series SY3000/5000

Plug-in metal base [IP40] Plug-in connector connecting base [IP67^{Note)}] Connector type manifold

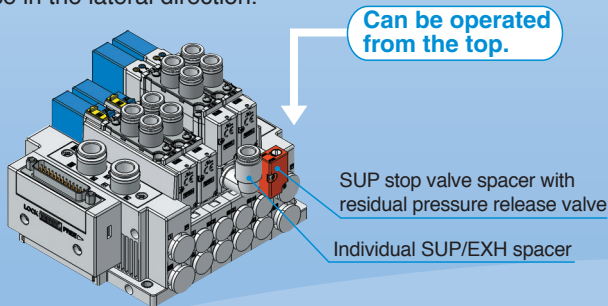


Note) Refer to page 6 for details on IP67.

Space saving / Improved operability

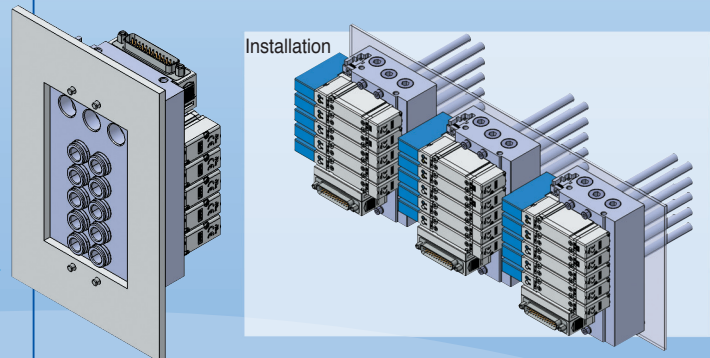
Wiring, piping and operation are integrated on one side.

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



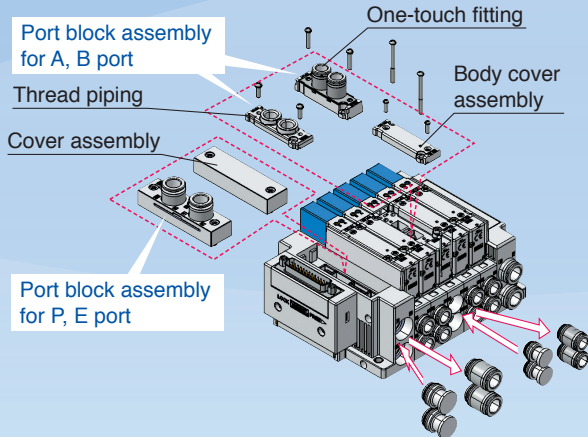
Bottom ported is prepared. Space saving

Bottom ported reduces the footprint.

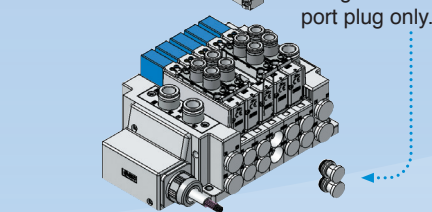


Direction, size and type of the piping can be changed.

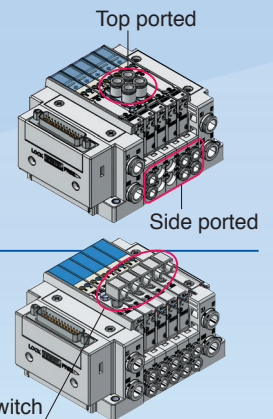
To mount the piping on top



To mount the piping on the side



Mixed mounting of top ported and side ported is possible.

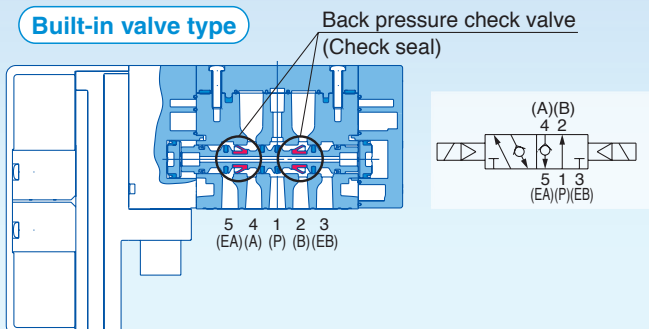


It is possible to detect the output of A and B port with a pressure switch by mounting the top ported valve onto the side ported or bottom ported manifold.

Back pressure check valve

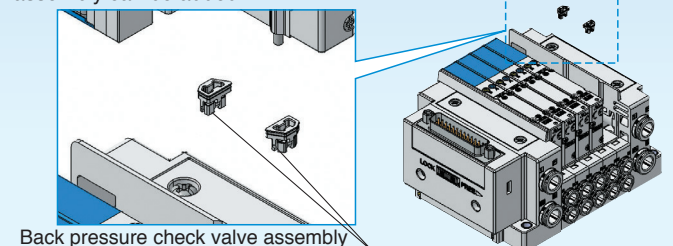
This prevents cylinder malfunction caused by the exhaust from other valves.

Built-in valve type



Retrofit or pre-installed type

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



Type 50
Side Ported

Type 51
Bottom Ported

Plug-in Metal Base

D-sub Connector

Flat Ribbon Cable

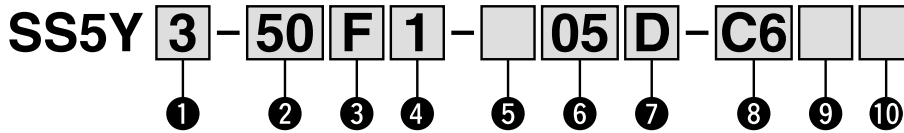
PC Wiring

Series SY3000/5000



RoHS

How to Order Manifold



1 Series

3	SY3000
5	SY5000

2 Type

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

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

3 Connector type

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

4 Connector entry direction

1: Upward 	2: Lateral
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5 Wiring type

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

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

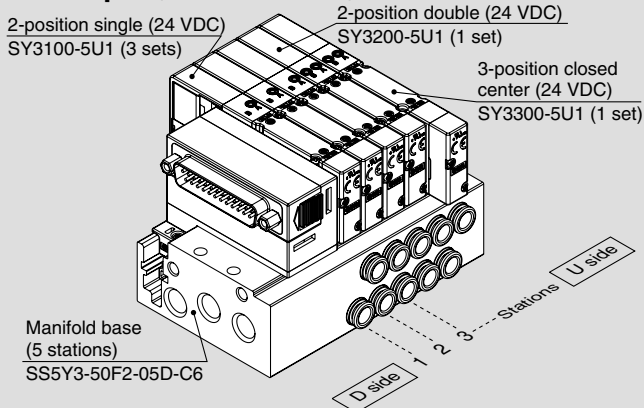
Note 2) All single wiring: Available only for the manifold which has 2-position single for all stations.

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

Note 3) Please contact SMC if a mixture of single wiring and double wiring is required.

How to Order Manifold Assembly

Example (SS5Y3-50F2-□)



SS5Y3-50F2-05D-C6 ... 1 set (Type 50 5-station manifold base part no.)
 *SY3100-5U1 3 sets (2-position single part no.)
 *SY3200-5U1 1 set (2-position double part no.)
 *SY3300-5U1 1 set (3-position closed center part no.)
 → The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

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

Note) When mixing top ported configurations, select from page 30. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

6 Valve stations

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

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

* This also includes the number of blanking plate assembly.

7 P, E port entry

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

Refer to the page on the right for 8

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

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

9 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

10 Mounting

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

Specify a longer rail than the standard length.

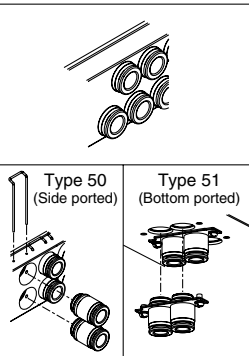
* Only direct mounting is available for Type 51 (Bottom ported).

8 A, B port size (Thread piping)

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

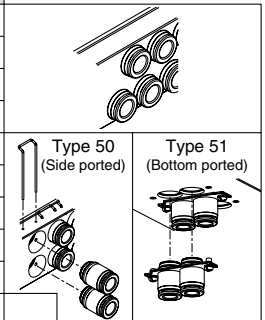
A, B port size (Metric)

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



A, B port size (Inch)

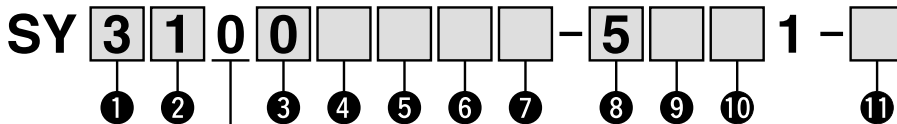
Symbol	A, B port	SY3000	SY5000	
Fixed	N1	ø1/8" One-touch fitting	●	—
	N3	ø5/32" One-touch fitting	●	●
	N7	ø1/4" One-touch fitting	●	●
	N9	ø5/16" One-touch fitting	—	●
Replaceable	KN1	ø1/8" One-touch fitting	●	—
	KN3	ø5/32" One-touch fitting	●	●
	KN7	ø1/4" One-touch fitting	●	●
	KN9	ø5/16" One-touch fitting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



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

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



1 Series

3	SY3000
5	SY5000

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*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

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

3 Seal type

0	Rubber seal
1	Metal seal

4 Pilot type

Nil	Internal pilot
R	External pilot

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

Nil	None
H	Built-in

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

Base mounted

6 Pilot valve option

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

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

7 Coil type

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

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

* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

8 Rated voltage

5	24 VDC
6	12 VDC

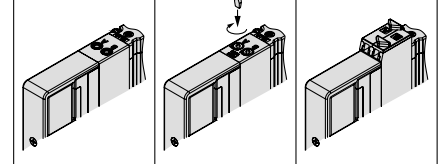
9 Light/surge voltage suppressor and common specification

Nil	Without light/surge voltage suppressor (Non-polar)
R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

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

10 Manual override

Nil:	Non-locking push type	D:	Push-turn locking slotted type	F:	Slide locking type
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11 Type of mounting screw

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

* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.
 * When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.
 Refer to page 47 for part numbers of the base gasket and mounting screw.
 * "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.

⚠ Protective class class III (Mark: ⚡)