5 Port Solenoid Valve

New

Same valve width. Flow increased by up to 80%!

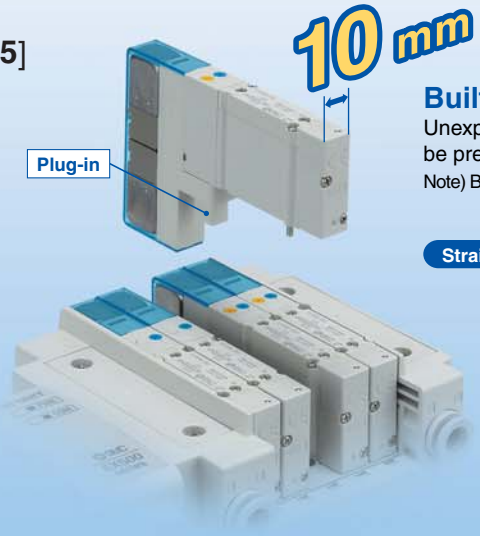
Sonic conductance C [dm³/(s·bar)]

1.6: SY3000 [Conventional 0.95]
[470 ℓ/min (ANR)]

3.6: SY5000 [Conventional 2.5]
[1060 ℓ/min (ANR)]

* Pressure condition of flow described in liters
Inlet side: 0.6 MPa, Outlet side: 0.5 MPa

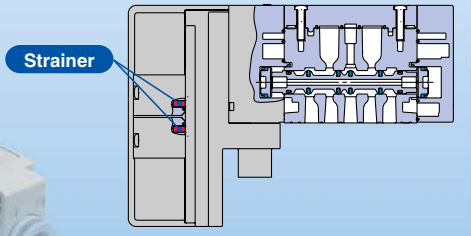
Thanks to the flow increase, valve size can be reduced. Saves energy and space.



Built-in strainer in the pilot valve

Unexpected troubles due to foreign matter can be prevented.

Note) Be sure to mount an air filter on the inlet side.



Rubber material: HNBR
Ozone-resistant specification
* The pilot valve poppet is made of FKM.

Sonic conductance C [dm³/(s•bar)]

SY3000 Valve width 10 mm

SY5000 Valve width 15 mm

* Single solenoid valve. Manifold base side ported
* Sonic conductance [C value] depends on the manifold type and piping direction. Refer to the catalog for details.

Power Consumption (With indicator light)

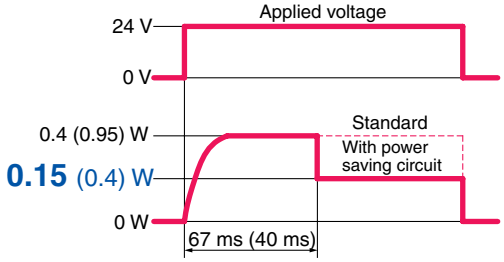
0.15 W With power saving circuit

0.4 W 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 ( ) indicates high pressure type.

Rubber seal
Metal seal

Life *

70 million cycles
(Rubber seal)

200 million cycles
(Metal seal)

* According to SMC life test conditions

Series SY3000/5000

SMC

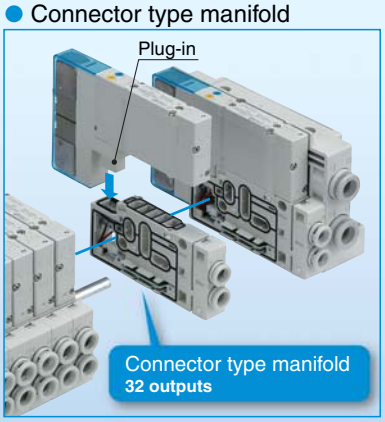
CAT.ES11-103A

5 Port Solenoid Valve Series SY3000/5000

Plug-in metal base [IP40]

Plug-in connector connecting base [IP67]

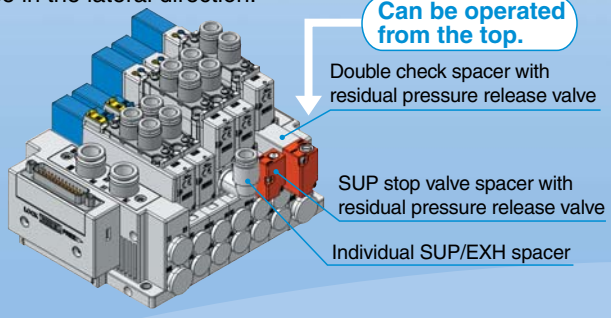
● Connector type manifold



Space saving / Improved operability

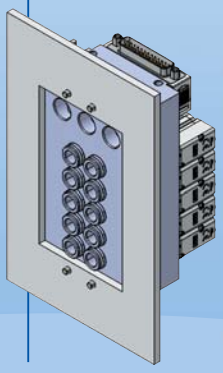
Wiring, piping and operation are integrated on one side.

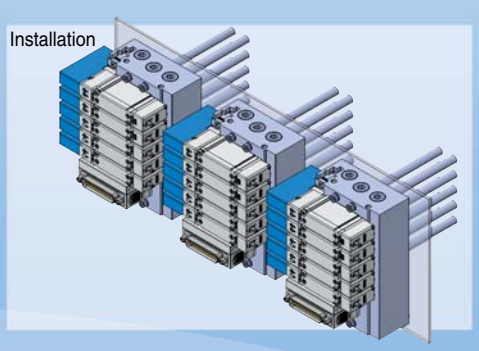
Multiple layer type is available as an option. This saves space in the lateral direction.



Bottom ported is prepared. Space saving

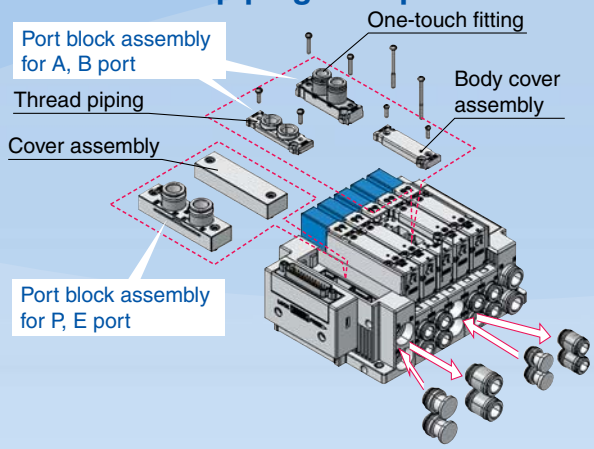
Bottom ported reduces the footprint.



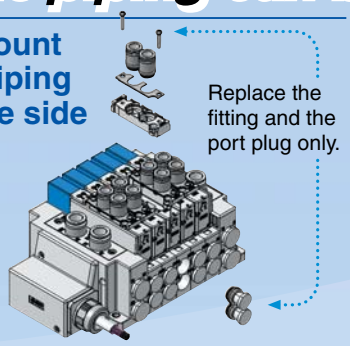


Direction, size and type of the piping can be changed.

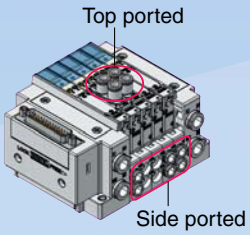
To mount the piping on top



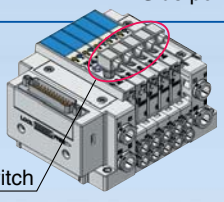
To mount the piping on the side



Mixed mounting of top ported and side ported is possible.



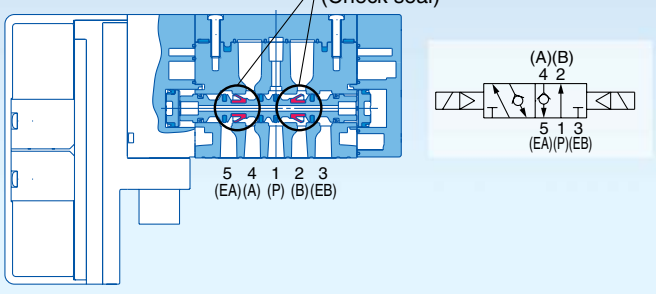
It is possible to detect the output of A and B port with a pressure switch by mounting the top ported valve onto the side ported or bottom ported manifold.



Back pressure check valve

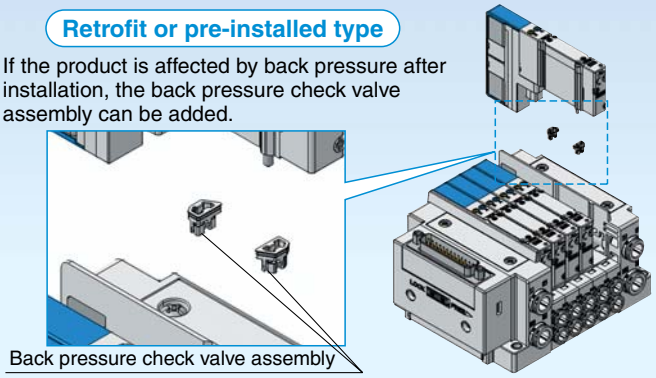
This prevents cylinder malfunction caused by the exhaust from other valves.

Valve built-in type



Retrofit or pre-installed type

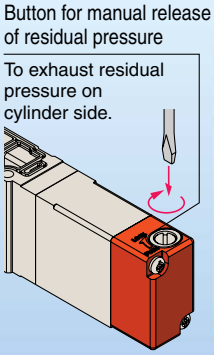
If the product is affected by back pressure after installation, the back pressure check valve assembly can be added.



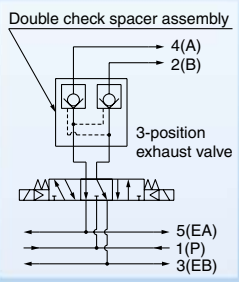
SMC

Double check spacer with residual pressure release valve

Long time of intermediate stop and position holding are possible.

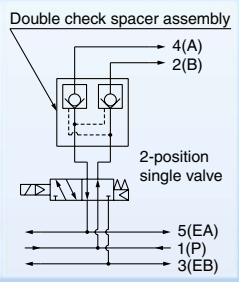


[Intermediate stop]



Exhaust center

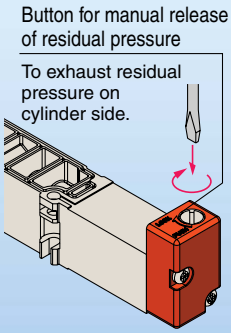
[Drop prevention]

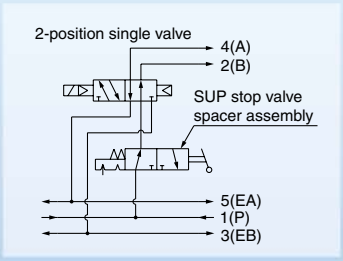


2-position single/double

SUP stop valve spacer with residual pressure release valve

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





2-position single valve example

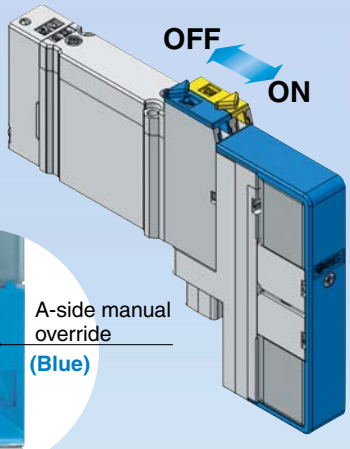
Applicable to various type of serial wiring

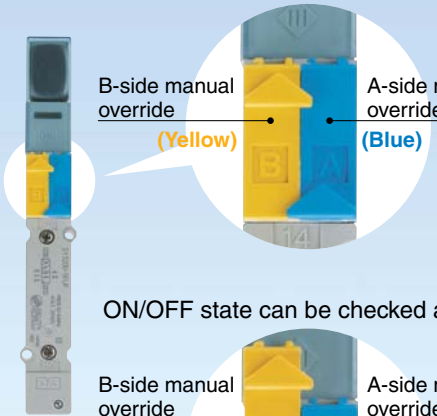
Series		Applicable protocols
EX600	Integrated-type (I/O) serial transmission system (Fieldbus System)	•DeviceNet™ •PROFIBUS DP •CC-Link
EX510	Gateway-type serial transmission system	•DeviceNet™ •PROFIBUS DP •CC-Link
EX500	Gateway-type serial transmission system	•DeviceNet™ •PROFIBUS DP •CC-Link •EtherNet/IP™

Series		Applicable protocols
EX250	Integrated-type (I/O) serial transmission system	•DeviceNet™ •PROFIBUS DP •CANopen •CC-Link •AS-Interface •ControlNet™ •EtherNet/IP™
EX126	Integrated-type (Output) serial transmission system	•CC-Link
EX120	Integrated-type (Output) serial transmission system	•DeviceNet™ •CC-Link •OMRON CompoBus/s •CompoNET™

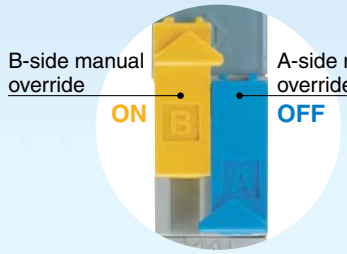
Slide manual override provides better visibility.

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





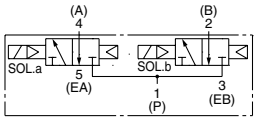
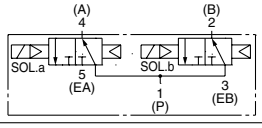
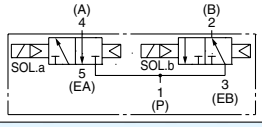
ON/OFF state can be checked at a glance.



4-position dual 3-port valve available

(Rubber seal type only)

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

A side	B side	JIS symbol
N.C. valve	N.C. valve	
N.O. valve	N.O. valve	
N.C. valve	N.O. valve	

Manifold Variations

Manifold Variations			Valve Series	Wiring													
				Connection											Common specifications	
										Serial transmission							
			5 port	D-sub connector	Flat ribbon cable connector	PC wiring	Terminal block box	Lead wire	Circular connector	EX600	EX510	EX500	EX250	EX126	EX120	Positive common	Negative common
Plug-in Metal Base	Side ported	Type 50□	SY3□0□ / SY5□0□	● P. 15	● P. 15	● P. 15	—	—	—	—	● P.35	—	—	—	—	●	●
	Bottom ported	Type 51□	SY3□0□ / SY5□0□	● P. 15	● P. 15	● P. 15	—	—	—	—	● P.35	—	—	—	—	●	●
	Top ported	Type 52□	SY3□3□ / SY5□3□	● P. 29	● P. 29	● P. 29	—	—	—	—	● P.43	—	—	—	—	●	●
Plug-in Connector Connecting Base	Side ported	Type 10□	SY3□0□ / SY5□0□	● P. 49	● P. 49	● P. 49	● P. 59	● P. 67	● P. 75	● P. 83	—	● P. 91	● P. 97	● P. 103	● P. 109	●	●
	Bottom ported	Type 11□	SY5□0□	● P. 49	● P. 49	● P. 49	● P. 59	● P. 67	● P. 75	● P. 83	—	● P. 91	● P. 97	● P. 103	● P. 109	●	●
	Top ported	Type 12□	SY3□3□ / SY5□3□	● P. 55	● P. 55	● P. 55	● P. 63	● P. 71	● P. 79	● P. 89	—	● P. 95	● P. 101	● P. 107	● P. 113	●	●

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

●Wiring

Plug-in Metal Base

D-sub connector

Flat ribbon cable connector PC wiring

Serial transmission: EX510

Plug-in Connector Connecting Base

D-sub connector

Flat ribbon cable connector PC wiring

Plug-in Connector Connecting Base

Circular connector

Serial transmission: EX600

Serial transmission: EX500

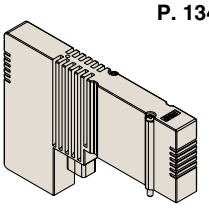
Serial transmission: EX250

Serial transmission: EX126

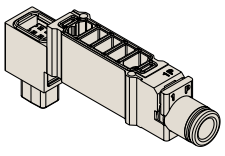
Manifold Options										A, B Port Size										Valve Options							
													One-touch fittings															
													C2	C3 (N1)	C4 (N3)		C6 (N7)		C8 (N9)									
Blanking plate	Individual SUP spacer	Individual EXH spacer	Double check spacer with residual pressure release valve	SUP stop valve spacer with residual pressure release valve	SUP/EXH blocking disk	Label for blocking disk	Back pressure check valve assembly	Silencer (One-touch fitting connection type)	Plug (White)	M5	1/8	1/4	Straight piping	Straight piping	Straight piping	Elbow piping	Straight piping	Elbow piping	Straight piping	Elbow piping	Oil resistant (Other than designated turbine oil)	Vacuum specifications	Low pressure specifications	Different pressures	Reverse pressure	Exhaust throttle	Mixed fitting sizes	Enclosure IP67
○	○	○	○	○	—	—	—	—	○	●	●	—	●	●	●	—	●	—	—	—	▲	● External P	● External P	○ Individual SUP	● External P	○ Individual EXH	●	—
										—	●	●	—	—	●	—	●	—	●	—								
○	○	○	○	○	—	—	—	—	○	●	●	—	●	●	●	—	●	—	—	—	▲	—	—	○ Individual SUP	—	○ Individual EXH	●	—
										—	●	●	—	—	●	—	●	—	●	—								
○	○	○	○	○	—	—	—	—	○	●	—	—	●	●	●	—	●	—	—	—	▲	● External P	● External P	○ Individual SUP	● External P	○ Individual EXH	●	—
										—	●	—	—	—	●	—	●	—	●	—								
○	○	○	○	○	○	○	○	○	○	—	—	—	●	●	●	●	●	●	—	—	▲	● External P	● External P	○ Individual SUP	● External P	○ Individual EXH	●	●
										—	—	—	—	—	●	●	●	●	●	●								
○	○	○	○	○	○	○	○	○	○	—	—	—	●	●	●	—	●	—	●	—	▲	● External P	● External P	○ Individual SUP	● External P	○ Individual EXH	●	●
○	○	○	○	○	○	○	○	○	○	●	—	—	●	●	●	—	●	—	—	—	▲	● External P	● External P	○ Individual SUP	● External P	○ Individual EXH	●	●
										—	●	—	—	—	●	—	●	—	●	—								

Manifold Options (Page 134 to 138)

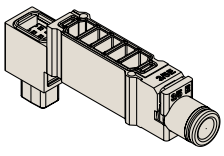
Blanking plate P. 134



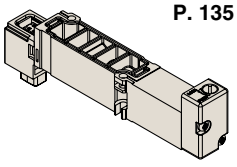
Individual SUP spacer P. 134



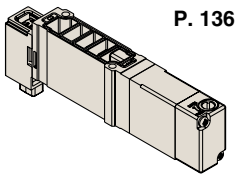
Individual EXH spacer P. 134



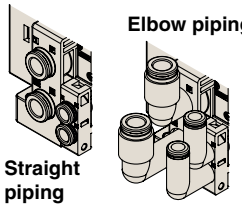
SUP stop valve spacer with residual pressure release valve P. 135



Double check spacer with residual pressure release valve P. 136



One-touch fittings



Terminal block box

Lead wire

Serial transmission: EX120

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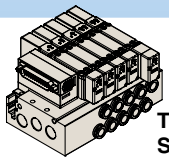
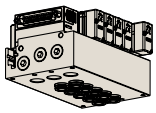
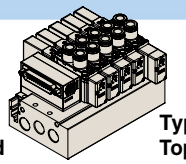
Valve Construction ..... P. 10
Valve Replacement Parts ..... P. 13
Made-to-Order for Valve ..... P. 14

Plug-in Metal Base


Type 50/ Side ported


Type 51/ Bottom ported


Type 52/ Top ported

D-sub connector

Flat ribbon cable

PC wiring

EX510

Type 50/Side Ported, Type 51/Bottom Ported, Type 52/Top Ported P. 15

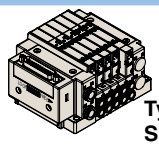
D-sub Connector, Flat Ribbon Cable, PC Wiring System [IP40]
- Type 50/Side Ported ..... P. 15
- Type 51/Bottom Ported ..... P. 15
- Type 52/Top Ported ..... P. 29

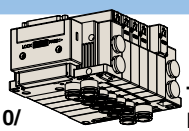
Wiring Specifications ..... P. 33

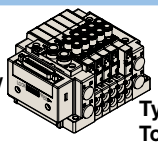
EX510 Gateway-type Serial Transmission System [IP20]
- Type 50/Side Ported ..... P. 35
- Type 51/Bottom Ported ..... P. 35
- Type 52/Top Ported ..... P. 43

Manifold Exploded View [Exploded View, Manifold Parts No.] ..... P. 47

Plug-in Connector Connecting Base


Type 10/ Side ported

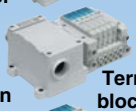

Type 11/ Bottom ported


Type 12/ Top ported

D-sub connector

PC wiring

Flat ribbon cable


Terminal block box

Lead wire

Circular connector

EX600

EX500

EX250

EX126

EX120

Mixed mounting

Type 10/Side Ported, Type 11/Bottom Ported, Type 12/Top Ported P. 49

D-sub Connector, Flat Ribbon Cable, PC Wiring System [IP40] ..... P. 49
Terminal Block Box [IP67] ..... P. 59
Lead Wire [IP67] ..... P. 67
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EX600 Integrated-type (I/O) Serial Transmission System (Fieldbus System) [IP67] ..... P. 83
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Specific Product Precautions ..... P. 139
Safety Instructions ..... Back cover

Optimum Actuation Size Chart of Air Cylinder

Applicable cylinder speed	Main valve seal type	Series	Applicable cylinder ø6 ø10 ø16 ø20 ø25 ø32 ø40 ø50 ø63 ø80 ø100 ø125
100 mm/s or less	Rubber seal	SY3000	
		SY5000	
	Metal seal	SY3000	
		SY5000	
300 mm/s or less	Rubber seal	SY3000	
		SY5000	
	Metal seal	SY3000	
		SY5000	
500 mm/s or less	Rubber seal	SY3000	
		SY5000	
	Metal seal	SY3000	
		SY5000	

[Common conditions]
- Pressure: 0.5 MPa
- Piping length: 1 m
- Load ratio: 50%
- Stroke: 200 mm
- Connector type manifold Side and bottom ported type

∗ Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

Series SY3000/5000 Type 50, 51, 52
Plug-in Metal Base

Manifold Specifications

Model			D-sub connector	Flat ribbon cable			Serial wiring
			F type	P type	PG type J type	PH type	S5 type (EX510)
Manifold type			Plug-in metal base				
SUP/EXH port type			Common SUP/EXH				
Valve stations	**All double wiring**		2 to 12 stations		2 to 9 stations (J type: 2 to 8 stations)	2 to 4 stations	2 to 8 stations
	All single wiring				2 to 12 stations	2 to 8 stations	2 to 12 stations
Applicable connector			D-sub connector Conforming to MIL-C-24308 JIS-X-5101	Flat ribbon cable connector with strain relief Conforming to MIL-C-83503			—
				Socket: 26 pins MIL type	Socket: 20 pins MIL type	Socket: 10 pins MIL type	
Internal wiring			Positive common, Negative common				
Port size	**1(P), 3/5(E) port**	**SY3000**	1/8				
		SY5000	1/4				
	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				
Enclosure (Based on IEC60529)			IP40				IP20

Manifold Flow-rate Characteristics Note 1)/Manifold Weight

Valve Seal Type: Rubber Seal

Model	Port size		Valve flow-rate characteristics				Weight: W [g] Note 2) (n: stations)	
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)		4/2→3/5 (A/B→E)			
			C [dm³/(s·bar)]	b	C [dm³/(s·bar)]	b	Fixed: C□	Replaceable: KC□
SS5Y3-50 (Side ported)	01	C6	1.1	0.19	1.1	0.15	39n + 247	43.5n + 247
SS5Y3-51 (Bottom ported)	01	C6	1.2	0.31	1.2	0.14	41.5n + 251	48.5n + 251
SS5Y3-52 (Top ported)	01	C6	1.1	0.29	1.2	0.20	44n + 247	
SS5Y5-50 (Side ported)	02	C8	2.6	0.28	2.6	0.14	93n + 379	110n + 379
SS5Y5-51 (Bottom ported)	02	C8	2.7	0.35	2.8	0.20	93n + 413	113n + 413
SS5Y5-52 (Top ported)	02	C8	2.6	0.26	3.1	0.13	103n + 379	

Valve Seal Type: Metal Seal

Model	Port size		Valve flow-rate characteristics				Weight: W [g] Note 2) (n: stations)	
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)		4/2→3/5 (A/B→E)			
			C [dm³/(s·bar)]	b	C [dm³/(s·bar)]	b	Fixed: C□	Replaceable: KC□
SS5Y3-50 (Side ported)	01	C6	0.9	0.14	1.0	0.12	39n + 247	43.5n + 247
SS5Y3-51 (Bottom ported)	01	C6	1.0	0.21	1.1	0.10	41.5n + 251	48.5n + 251
SS5Y3-52 (Top ported)	01	C6	1.1	0.15	1.1	0.14	44n + 247	
SS5Y5-50 (Side ported)	02	C8	2.2	0.20	2.3	0.13	93n + 379	110n + 379
SS5Y5-51 (Bottom ported)	02	C8	2.4	0.26	2.5	0.16	93n + 413	113n + 413
SS5Y5-52 (Top ported)	02	C8	2.4	0.18	2.6	0.12	103n + 379	

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

Note 1) The value is for manifold base with 5 stations and individually operated 2-position type.
Note 2) Weight: W is the value for the D-sub connector manifold.
To obtain the weight with valves attached, add the valve weights given on page 9 for the appropriate number of stations.

Plug-in Connector Connecting Base

Manifold Specifications

Model			D-sub connector	Flat ribbon cable			Terminal block box	Lead wire	Circular connector	Serial wiring			
			F type	P type	PG type J type	PH type	T type	L type	M type	S6□ type (EX600)	SA2 type (EX500) S4□ type (EX126)	S1□ type (EX250)	S3□ type (EX120)
Manifold type			Plug-in connector connecting base										
SUP/EXH port type			Common SUP/EXH (Common for 3/5 port)										
Valve stations			2 to 24 stations		2 to18 stations (J type: 2 to 16 stations)	2 to 8 stations	2 to 20 stations	2 to 24 stations		2 to 16 stations	2 to 24 stations	2 to 16 stations	
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**	ø8 One-touch fitting ø5/16" One-touch fitting										
		SY5000	ø10 One-touch fitting ø3/8" 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										
Enclosure (Based on IEC60529)			IP40				IP67			IP67 (EX500 gateway unit, input unit: IP65)		IP67 (IP40 partially)	IP20

Manifold Flow-rate Characteristics Note 1)/Manifold Weight

Valve Seal Type: Rubber Seal

Model	Port size		Valve flow-rate characteristics				Weight: W [g] Note 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 [dm³/(s·bar)]	b	C [dm³/(s·bar)]	b	
SS5Y3-10 (Side ported)	C8	C6	1.4	0.30	1.6	0.19	28.9n + 293
SS5Y3-12 (Top ported)	C8	C6	1.2	0.29	1.3	0.19	25.1n + 314
SS5Y5-10 (Side ported)	C10	C8	3.3	0.30	3.6	0.17	74.7n + 398
SS5Y5-11 (Bottom ported)	C10	C8	3.3	0.29	4.2	0.26	76.8n + 445
SS5Y5-12 (Top ported)	C10	C8	2.8	0.27	3.8	0.23	66.3n + 417

Valve Seal Type: Metal Seal

Model	Port size		Valve flow-rate characteristics				Weight: W [g] Note 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 [dm³/(s·bar)]	b	C [dm³/(s·bar)]	b	
SS5Y3-10 (Side ported)	C8	C6	1.2	0.19	1.3	0.18	28.9n + 293
SS5Y3-12 (Top ported)	C8	C6	1.2	0.16	1.3	0.18	25.1n + 314
SS5Y5-10 (Side ported)	C10	C8	2.7	0.24	3.1	0.17	74.7n + 398
SS5Y5-11 (Bottom ported)	C10	C8	2.8	0.25	3.5	0.15	76.8n + 445
SS5Y5-12 (Top ported)	C10	C8	2.6	0.18	3.0	0.16	66.3n + 417

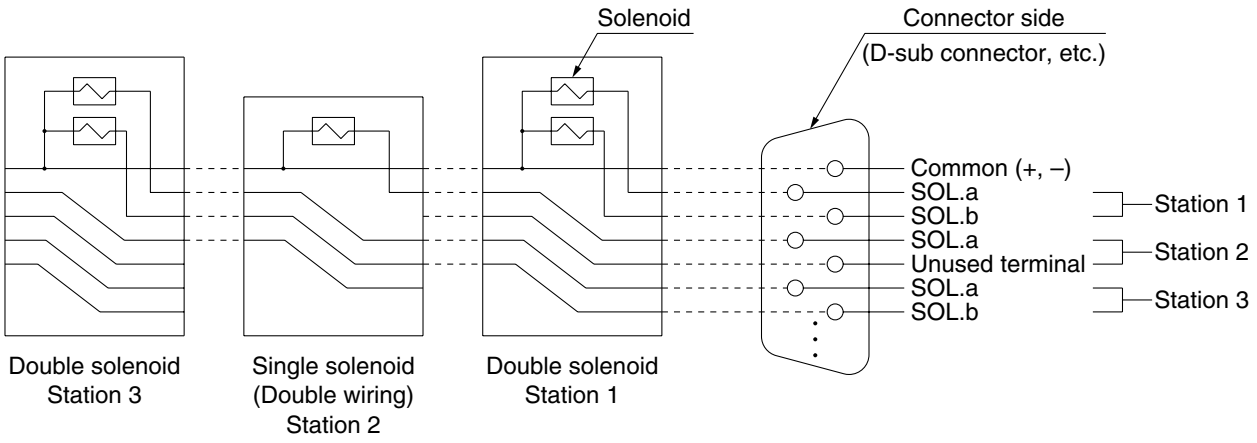
∗ Calculation of effective area S and sonic conductance C: S = 5.0 x C

Note 1) The value is for manifold base with 5 stations and individually operated 2-position type.
Note 2) Weight: W is the value of the internal pilot, and D-sub connector manifold with One-touch fitting straight piping type.
To obtain the weight with valves attached, add the valve weights given on page 9 for the appropriate number of stations.

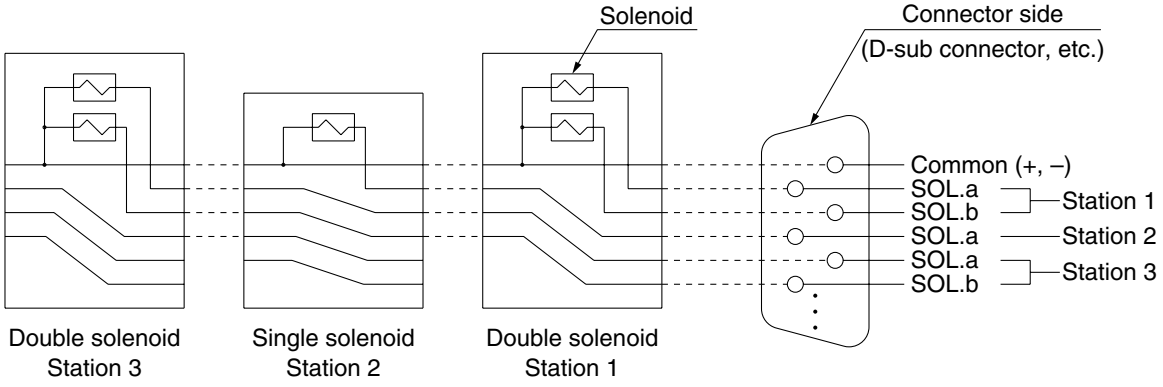
Connector Wiring Layout

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 case of all double wiring) (Manifold specification sheet is not necessary.)



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



Note) These diagrams are for the purpose of explanation, and differ from the connector wiring used for testing.

Series SY3000/5000
Valve Specifications 1

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	0.1 to 0.7 (High pressure type: 0.1 to 1)
		2-position double		
		3-position		
		4-position dual 3-port valve	Operating pressure + 0.1 (Min. 0.25)	—
Ambient and fluid temperature (°C)			–10 to 50 (No freezing)	
Max. operating frequency (Hz)	**2-position single/double 4-position dual 3-port valve**		5	20 Note 1)
	3-position		3	10 Note 1)
Manual override			Non-locking push type	
			Push-turn locking slotted type	
			Slide locking type	
Pilot exhaust type	**Internal pilot**		Main/Pilot valve common exhaust	
	External pilot		Pilot valve individual exhaust	
Lubrication			Not required	
Mounting orientation			Unrestricted	Single: Unrestricted Double/3-position: Main valve is horizontal.
Impact/Vibration resistance Note 2) **(m/s²)**			150/30	
Enclosure			IP67 (Based on IEC60529)	
Coil rated voltage (DC)			24, 12	
Allowable voltage fluctuation (V)			±10% of rated voltage Note 3)	
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: 0.15 (With indicator light only), High pressure type: 0.4 (With indicator light only)	
Surge voltage suppressor			Diode (Varistor for non-polar type)	
Indicator light			LED	

Note 1) 5 Hz or less for power saving circuit type

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

Note 3) Since voltage drops due to the internal circuit in S/Z type and T type (with power saving circuit), the allowable voltage fluctuation should be within the following

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% }

Response Time

Series	Seal type	Model	Type of actuation	Response time (ms)					
				Standard			Quick response type		
				Without light/surge voltage suppressor	With light/surge voltage suppressor		Without light/surge voltage suppressor	With light/surge voltage suppressor	
					S/Z type	R/U type		S/Z type	R/U type
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

Valve Specifications 2

Valve Weight

Series SY3000

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

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

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

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

Series SY5000

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

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

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

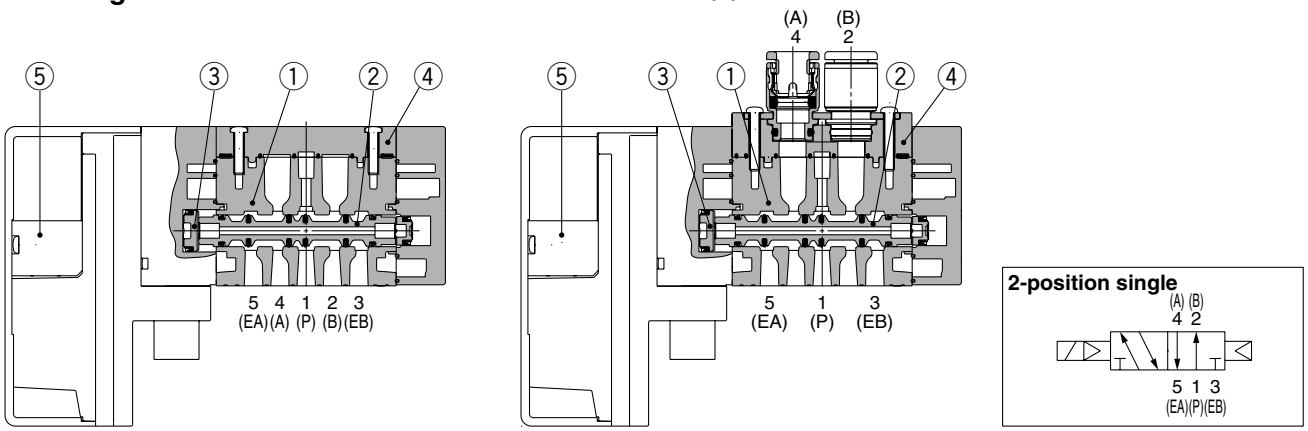
Valve model	Seal type	Type of actuation		Port size 4, 2 (A, B)	Weight g
SY5□31-01	Metal seal	2-position	Single	1/8	111
			Double		121
		3-position	Closed center		131
			Exhaust center		
			Pressure center		
SY5□31-C4		2-position	Single	C4 ø4 One-touch fitting	124
			Double		134
		3-position	Closed center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

Series SY3000/5000
Valve Construction 1

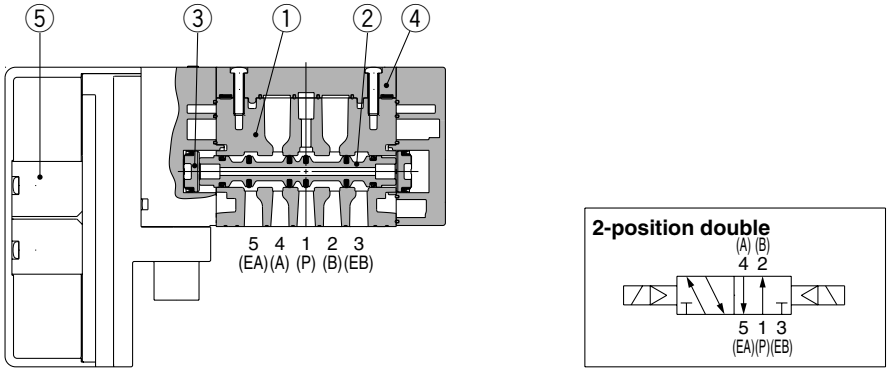
Rubber Seal

2-position single

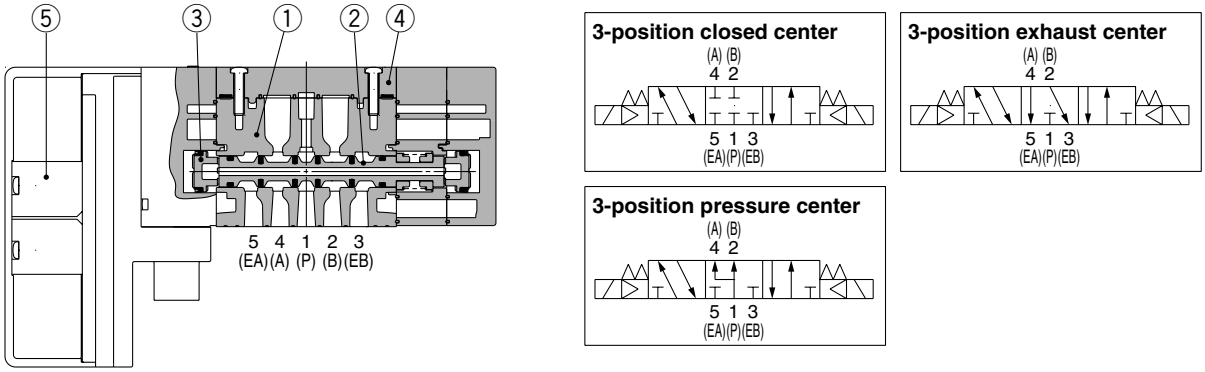
Top ported



2-position double



3-position closed center/exhaust center/pressure center



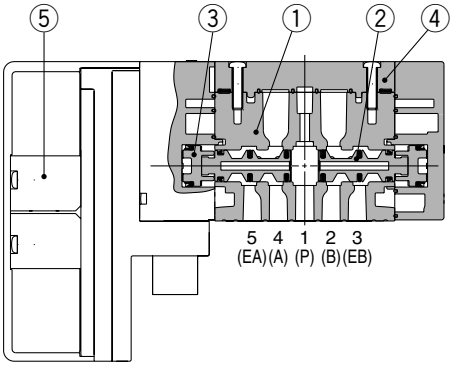
Component Parts

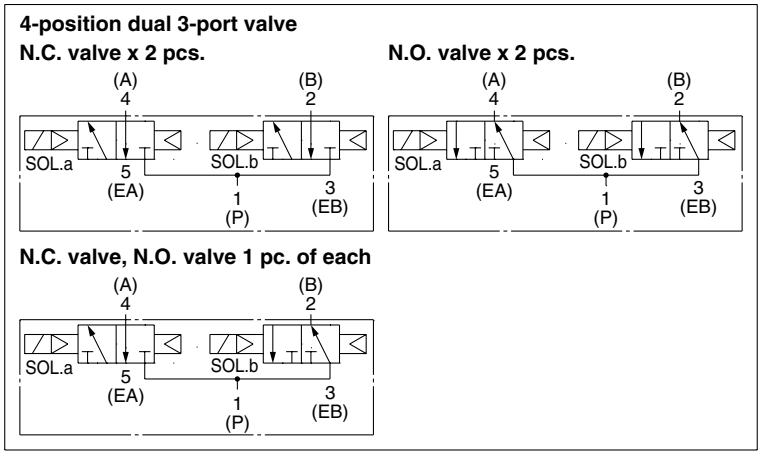
No.	Description	Material	Note
1	**Body**	SY3000: Zinc die-casted SY5000: Aluminum die-casted	
2	**Spool valve**	Special resin/HNBR (3-position valve: Aluminum/HNBR)	
3	**Piston**	Resin	
4	**Body cover assembly**	Resin	For side/bottom ported
	Port block assembly	Resin (SY5000 series screw type: Zinc die-casted)	For top ported
5	**Pilot valve assembly**	—	Refer to page 14.

Valve Construction 2

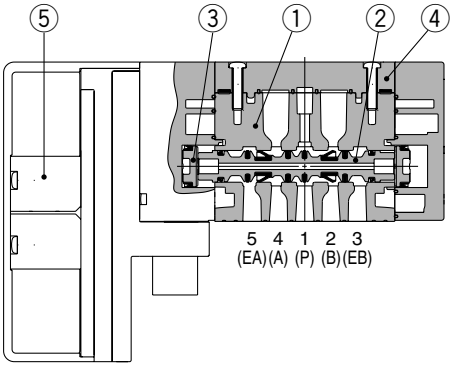
Rubber Seal

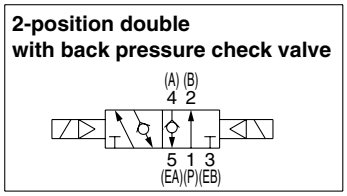
4-position dual 3-port valve



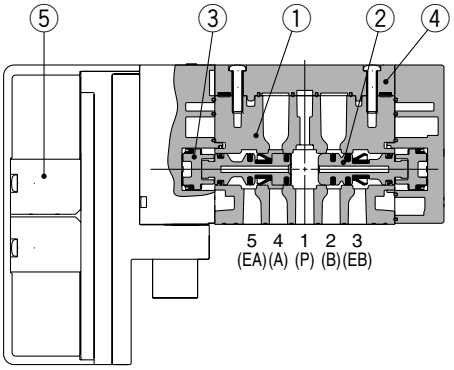


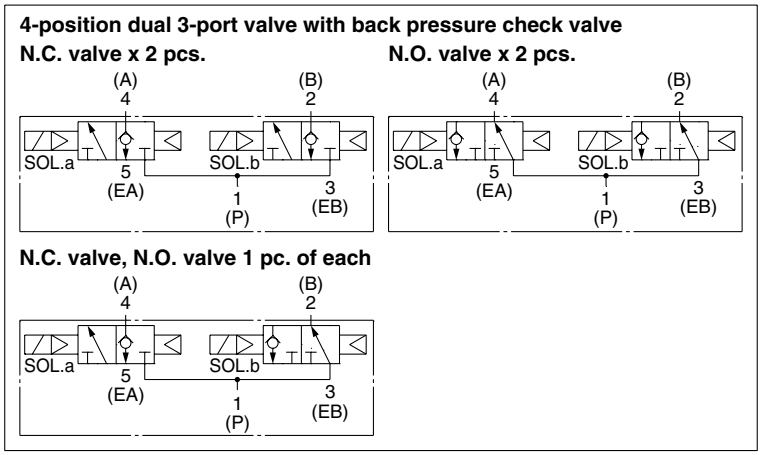
2-position double with back pressure check valve (Valve built-in type)





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

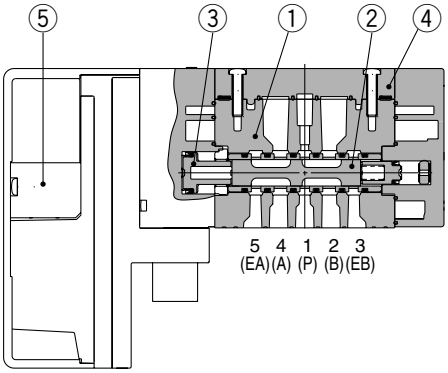




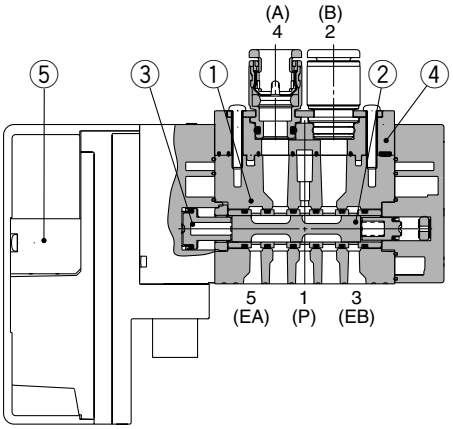
Series SY3000/5000
Valve Construction 3

Metal Seal

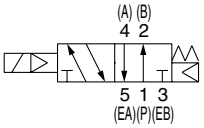
2-position single



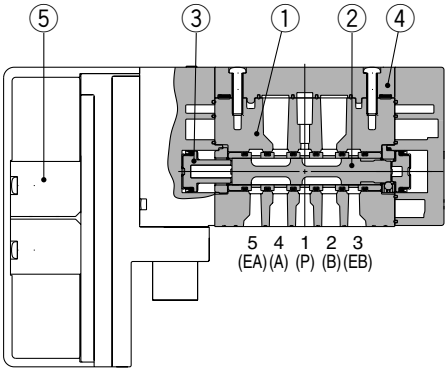
Top ported



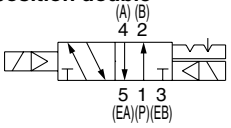
2-position single



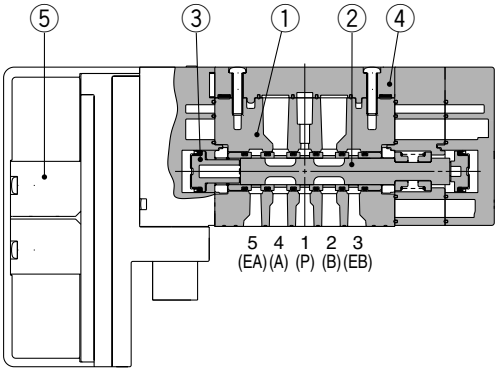
2-position double



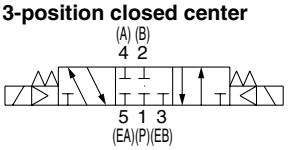
2-position double



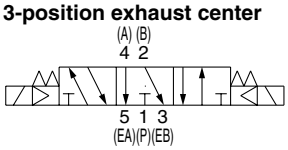
3-position closed center/exhaust center/pressure center



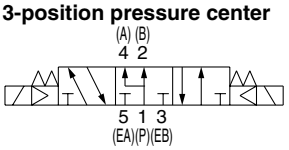
3-position closed center



3-position exhaust center



3-position pressure center



Component Parts

No.	Description	Material	Note
1	**Body**	SY3000: Zinc die-casted SY5000: Aluminum die-casted	
2	**Spool, Sleeve**	Stainless steel/HNBR	
3	**Piston**	Resin	
4	**Body cover assembly**	Resin	For side/bottom ported
	Port block assembly	Resin (SY5000 series screw type: Zinc die-casted)	For top ported
5	**Pilot valve assembly**	—	Refer to page 14.

Series SY3000/5000
Valve Replacement Parts 1

How to Order Port Block Assembly

SY □0V-6A□-□□

Series

3	3000
5	5000

Pilot specifications

Nil	Internal pilot
R	External pilot

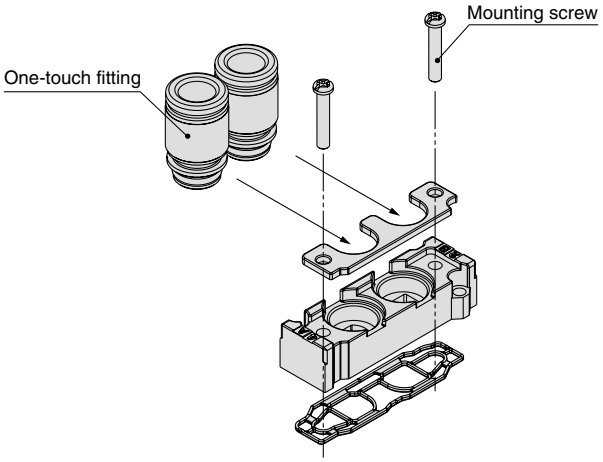
Thread type

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**



One-touch fittings (Metric size)

Symbol	Port size	Applicable series	
		SY3000	**SY5000**
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	—	●

One-touch fittings (Inch size)

Symbol	Port size	Applicable series	
		SY3000	**SY5000**
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

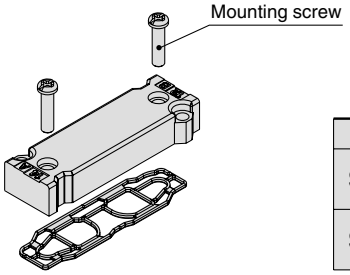
● Possible to replace only the One-touch fitting.

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

Refer to pages 142 and 143 for how to replace the port block assembly, One-touch fitting and body cover assembly.

Body Cover Assembly

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



Series		Part no.
SY3000	Internal pilot	SY30V-16A
	External pilot	SY30V-16AR
SY5000	Internal pilot	SY50V-16A
	External pilot	SY50V-16AR

Series SY3000/5000
Valve Replacement Parts 2

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)*

* Only metal seal type is available for high pressure type. (1.0 MPa)

Coil specification

Nil	Standard
T	With power saving circuit

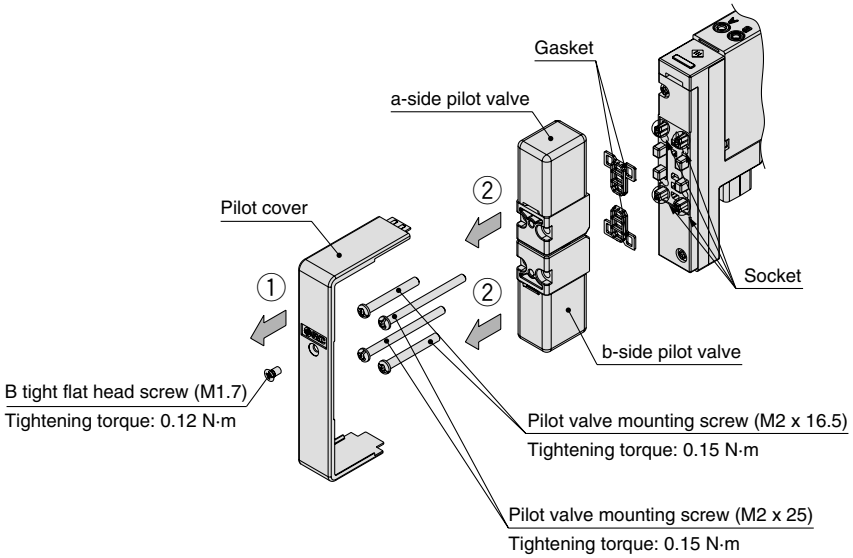
Rated voltage

5	24 VDC
6	12 VDC

⚠Caution

The coil specification and voltage (including light/surge voltage suppressor) cannot be changed by changing the pilot valve assembly.

How to replace pilot valves



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

* Assemble by following the removal procedure in reverse.

Note 1) Ensure the gasket is mounted, and take care not to bend the socket.
Note 2) Be noted for mounting that there are two types of lengths for the pilot valve mounting screws.

Made-to-Order for Valve

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

Main Valve Fluororubber Specification

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 valve series **SY3□$^{0}_{3}$0, SY5□$^{0}_{3}$0**

SY$^{3}_{5}$□$^{0}_{3}$0□□□□–□□□1–□□–□–X90

Entry is the same as standard products.
The specification and performance are the same as those of standard products.

Type 50
Side Ported

Type 51
Bottom Ported

Plug-in Metal Base: D-sub Connector/ Flat Ribbon Cable Connector/PC Wiring

Series SY3000/5000 CE

How to Order Manifold

SS5Y 3 – 50 F 1 – □ 05 D – C6 □ □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿

❶ Series

3	SY3000
5	SY5000

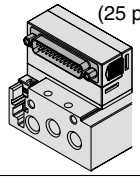
❷ Model

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

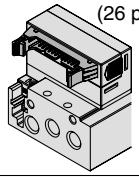
∗ External pilot is not available for the bottom ported type.

❸ Connector type

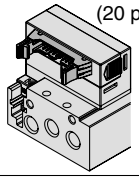
F: D-sub connector (25 pins)



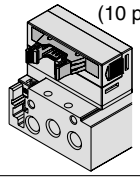
P: Flat ribbon cable (26 pins)



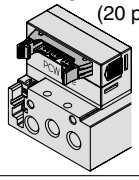
PG: Flat ribbon cable (20 pins)



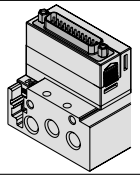
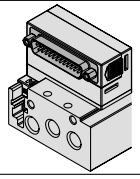
PH: Flat ribbon cable (10 pins)



J: PC wiring (20 pins)



❹ Connector entry direction

1: Upward	**2**: Lateral
	

❺ Wiring specification

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

Note 1) All double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.
Note 2) All single wiring: Available only for the manifold which has 2-position single for all stations.
Note that 2-position double, 3- or 4-position valves cannot be used.
Note 3) Please contact SMC if a mixture of single wiring and double wiring is required.

❻ Valve stations

F: D-sub connector (25 pins)

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

P: Flat ribbon cable (26 pins)

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

PG: Flat ribbon cable (20 pins)

Symbol	Stations	Note
02	2 stations	All double wiring
⋮	⋮	
09	9 stations	
02	2 stations	All single wiring
⋮	⋮	
12	12 stations	

PH: Flat ribbon cable (10 pins)

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

J: PC wiring (20 pins)

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

∗ This also includes the number of blanking plate assembly.

❼ P, E port location

U	U side Note 1)
D	D side Note 1) Note 2)
B	Both sides

Note 1) Plugs are mounted on the opposite side of the selected ports.
Note 2) Type 51 (Bottom ported) is available only on D side.

Refer to the page on the right for ❽.

❾ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

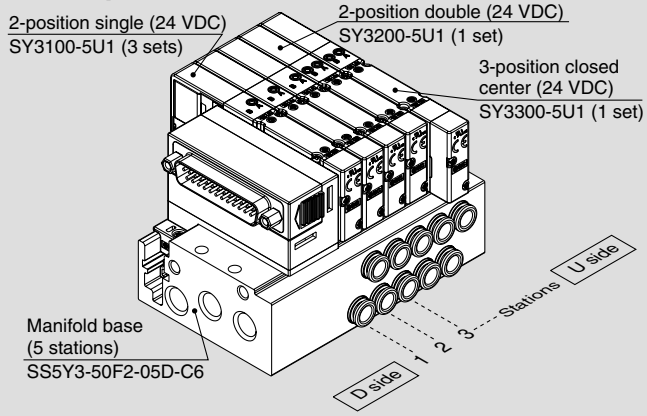
❿ Mounting

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

∗ Only direct mounting for Type 51 (Bottom ported)

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.

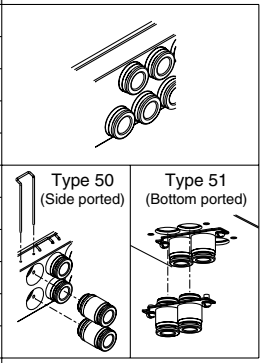
- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Refer to page 30 for mixed mounting with top ported valves. Specify on a manifold specification sheet if plugs are required on the A and B port on manifold side.

⑧ A, B port size (Thread piping)

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

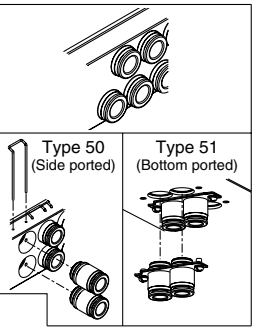
A, B port size (Metric size)

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



A, B port size (Inch size)

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



∗ When ports are mixed, indicate the piping specifications with the manifold specification sheet.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 0 0 □ □ □ □ – 5 □ □ 1 – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫

❸ Base mounted

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only
∗ 3-position type does not have a valve built-in type back pressure check valve.

❻ 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 high pressure type.

❼ Coil specification

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

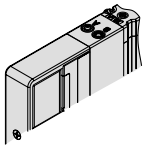
∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

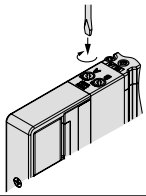
5	24 VDC
6	12 VDC

❿ Manual override

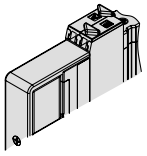
Nil: Non-locking push type



D: Push-turn locking slotted type



F: Slide locking type



❾ 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.

⓫ Option for mounting

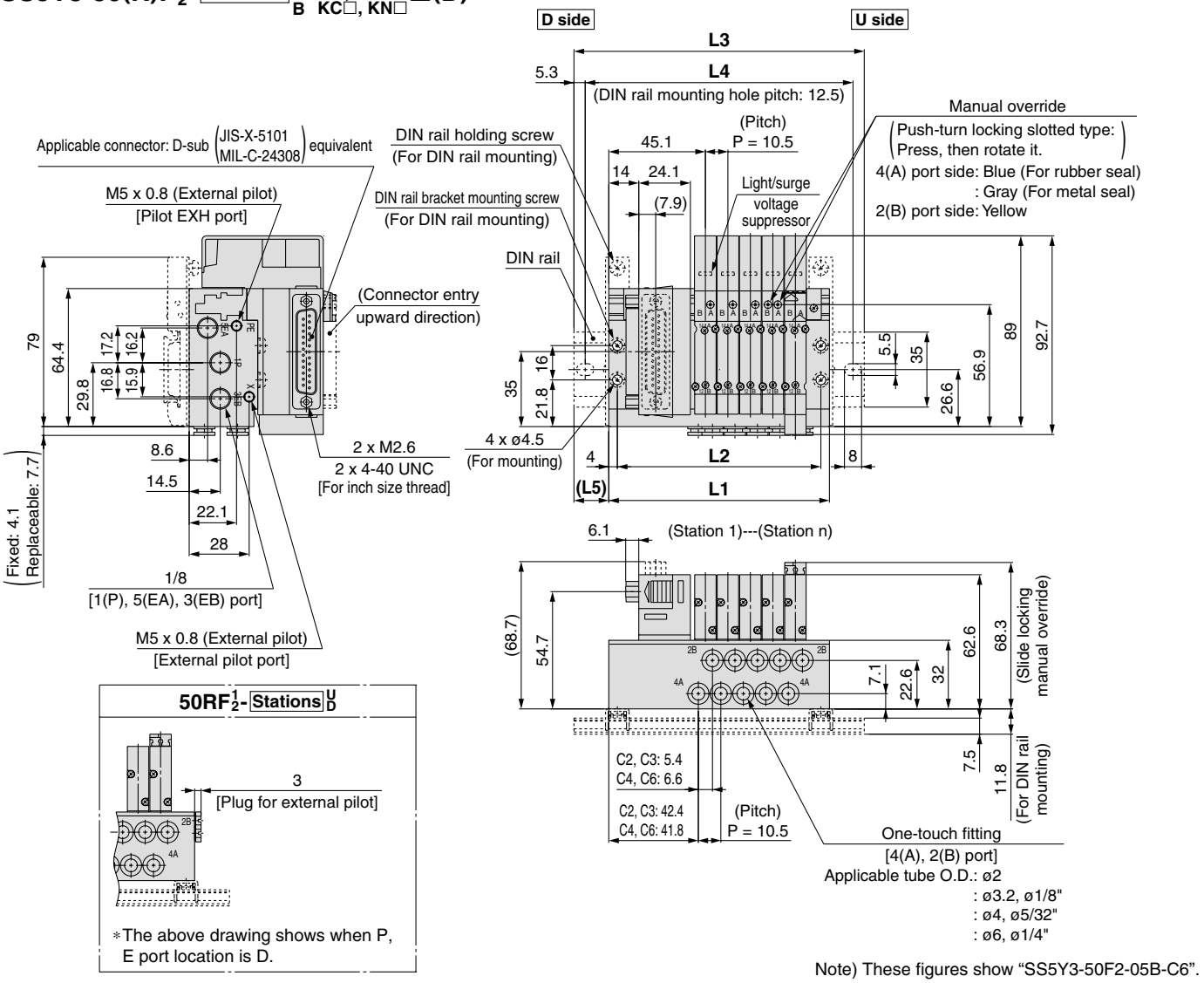
Nil	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 47 for part numbers of base gasket and mounting screw.

⚠ Protective class
class Ⅲ (Mark: ⧾)

Dimensions: Type 50/D-sub Connector/Series SY3000

SS5Y3-50(R)F$^{1}_{2}$- Stations $^{U}_{D}$ $^{M5}_{B}$-C□, N□ KC□, KN□ □(D)

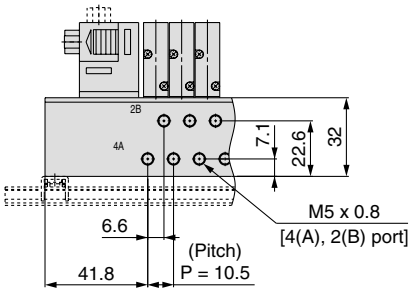


50RF$^{1}_{2}$- Stations $^{U}_{D}$

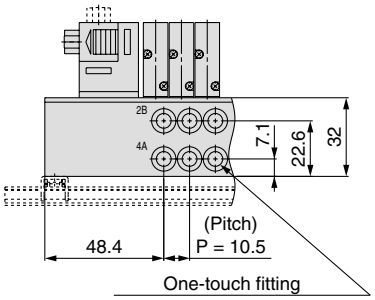
∗The above drawing shows when P, E port location is D.

Note) These figures show "SS5Y3-50F2-05B-C6".

Port size M5



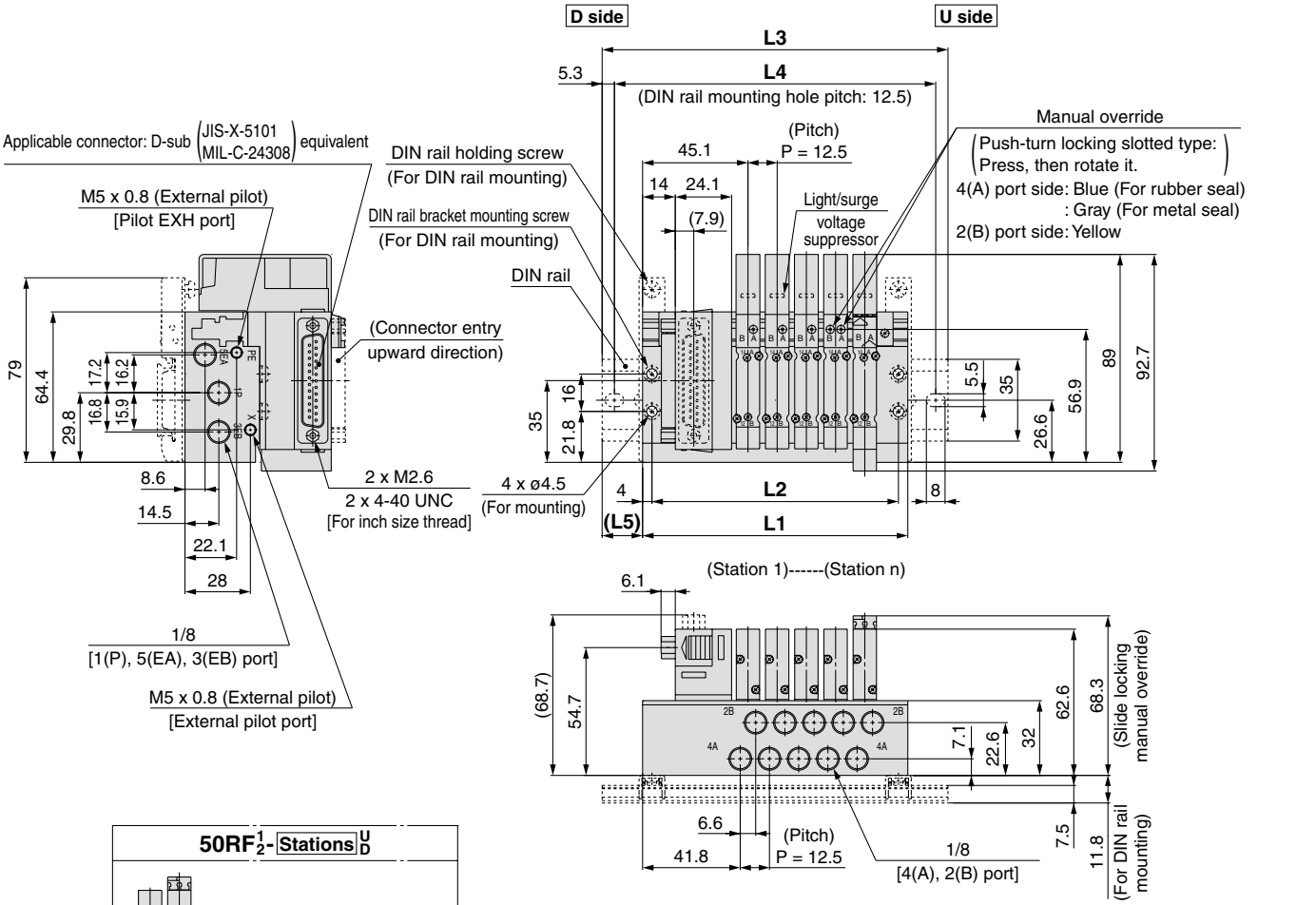
One-touch fitting (Replaceable)



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

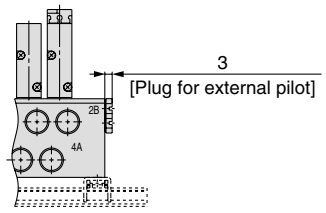
Dimensions: Type 50/D-sub Connector/Series SY3000

SS5Y3-50(R)F$^{1}_{2}$-[Stations]$^{U}_{D}$-01□(D)



Note) These figures show “SS5Y3-50F2-05B-01”.

50RF$^{1}_{2}$-[Stations]$^{U}_{D}$

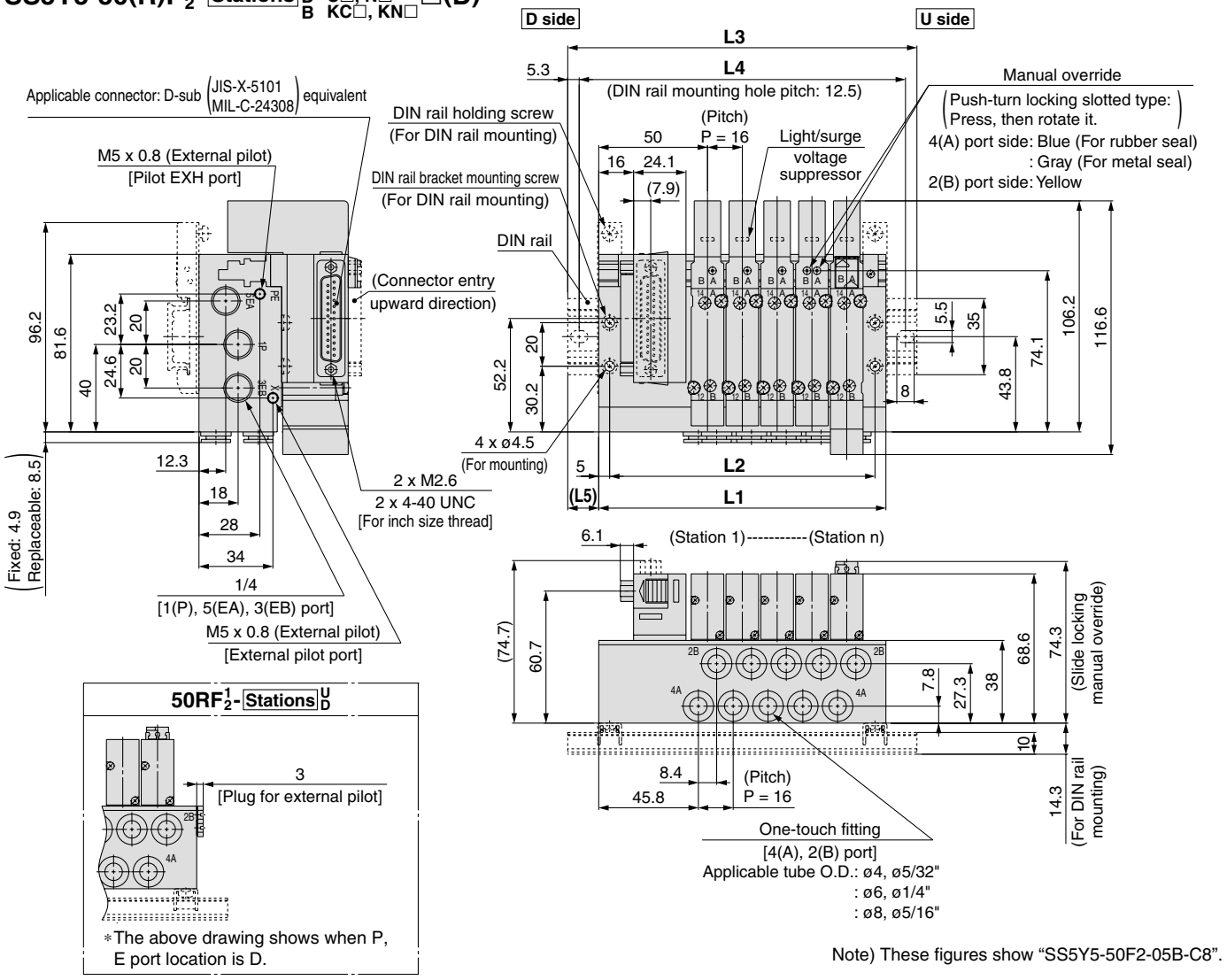


∗The above drawing shows when P, E port location is D.

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

Dimensions: Type 50/D-sub Connector/Series SY5000

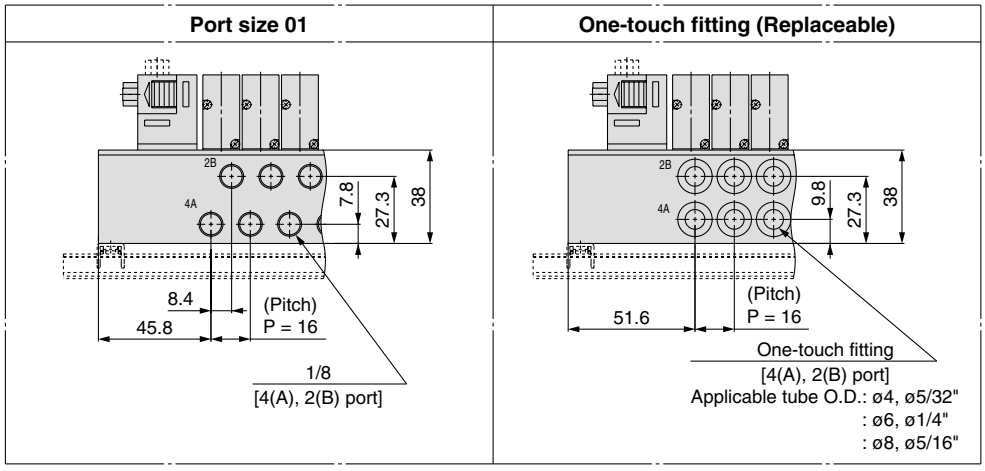
SS5Y5-50(R)F$^{1}_{2}$-Stations $^{U}_{D}$-$^{01}_{C\square, N\square}$ $^{}_{B\ KC\square, KN\square}$ □(D)



50RF$^{1}_{2}$-Stations $^{U}_{D}$

∗The above drawing shows when P, E port location is D.

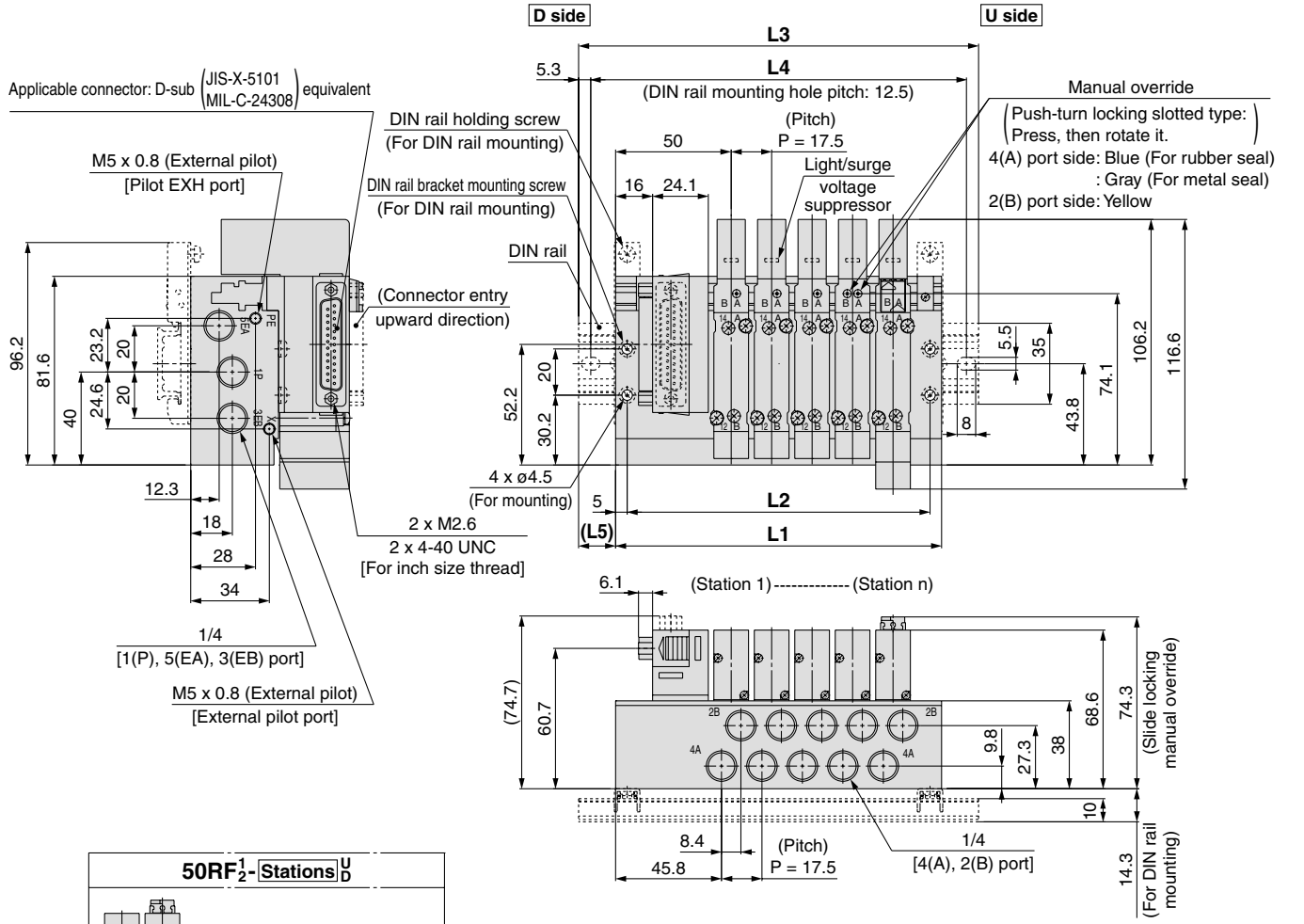
Note) These figures show "SS5Y5-50F2-05B-C8".



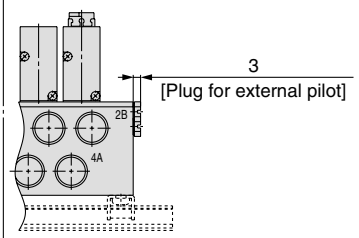
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	110.5	135.5	148	160.5	173	198	210.5	223	248	260.5	273
L4	100	125	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5
L5	13.5	18	16	14.5	12.5	17	15.5	13.5	18	16.5	14.5

Dimensions: Type 50/D-sub Connector/Series SY5000

SS5Y5-50(R)F$^{1}_{2}$-Stations$^{U}_{D}_{B}$-02□(D)



50RF$^{1}_{2}$-Stations$^{U}_{D}$



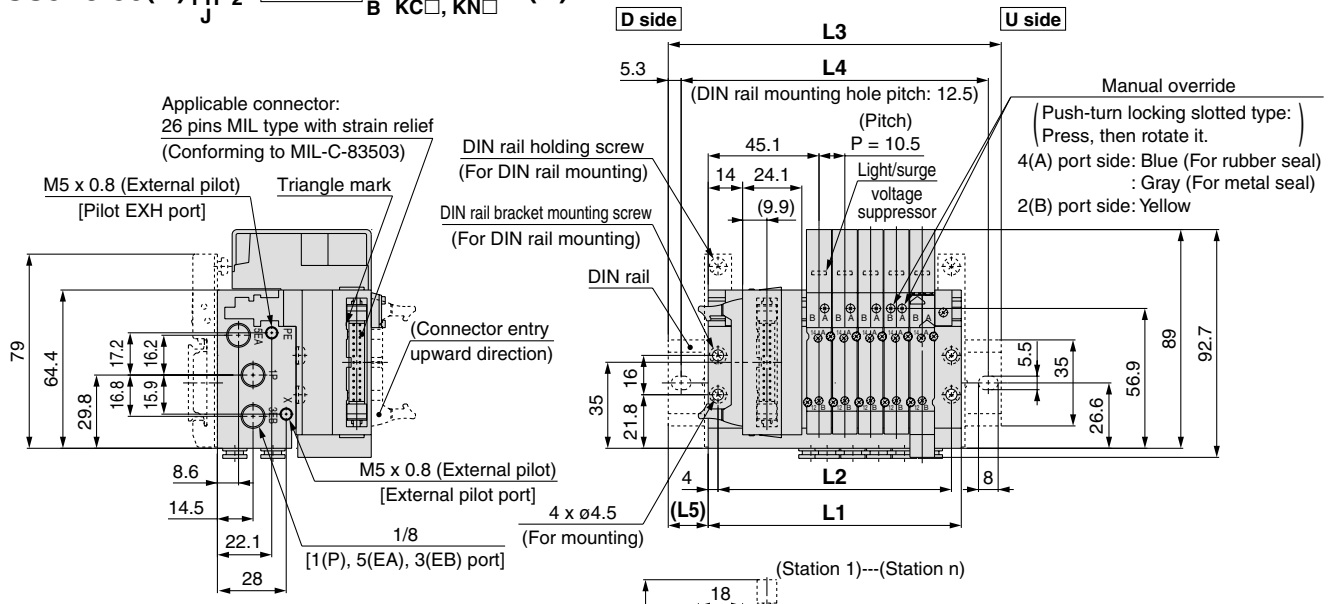
∗The above drawing shows when P, E port location is D.

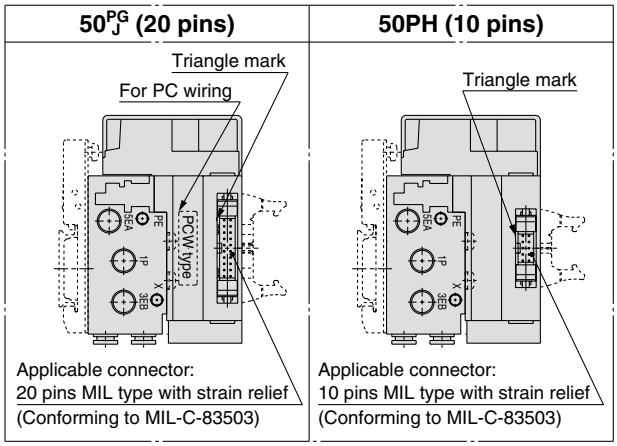
Note) These figures show “SS5Y5-50F2-05B-02”.

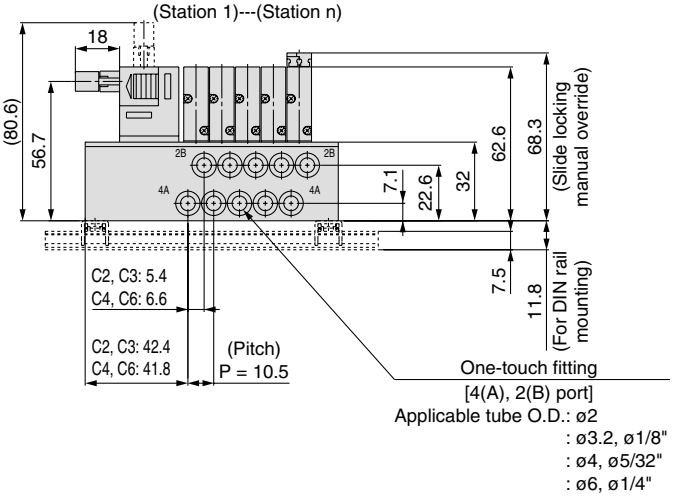
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	123	135.5	148	173	185.5	210.5	223	235.5	260.5	273	298
L4	112.5	125	137.5	162.5	175	200	212.5	225	250	262.5	287.5
L5	17.5	15	12.5	16	13.5	17.5	15	12.5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

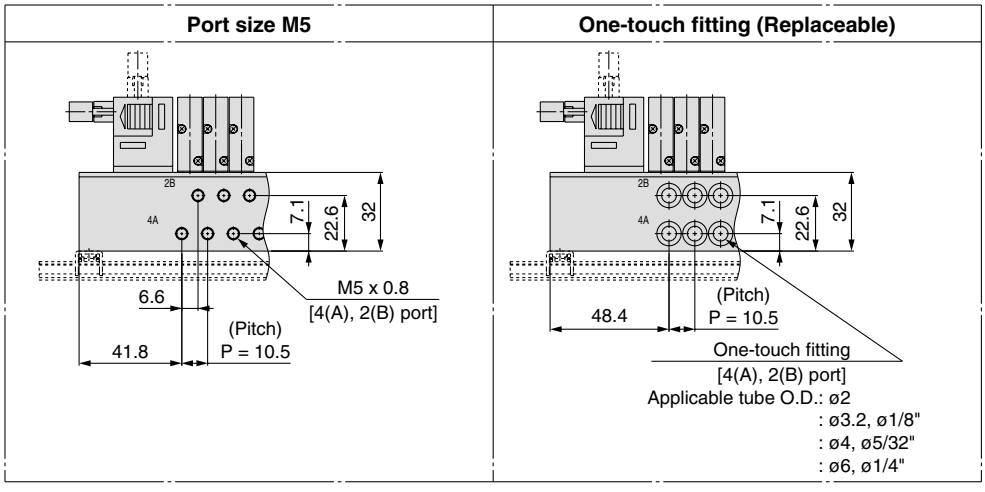
Dimensions: Type 50/Flat Ribbon Cable Connector/Series SY3000

SS5Y3-50(R) P / PG / PH / J **1** / **2** - **Stations** U / D / B - M5 / C□, N□ / KC□, KN□ □(D)



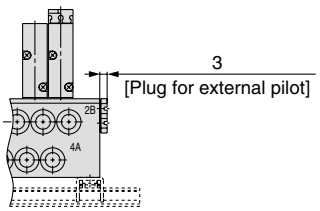






Note 1) These figures show "SS5Y3-50P2-05B-C6".
Note 2) Only connectors are different for 50PG, 50PH and 50J. L1 to L5 dimensions are the same as 50P type.

50R P□ / J **1** / **2** - **Stations** U / D

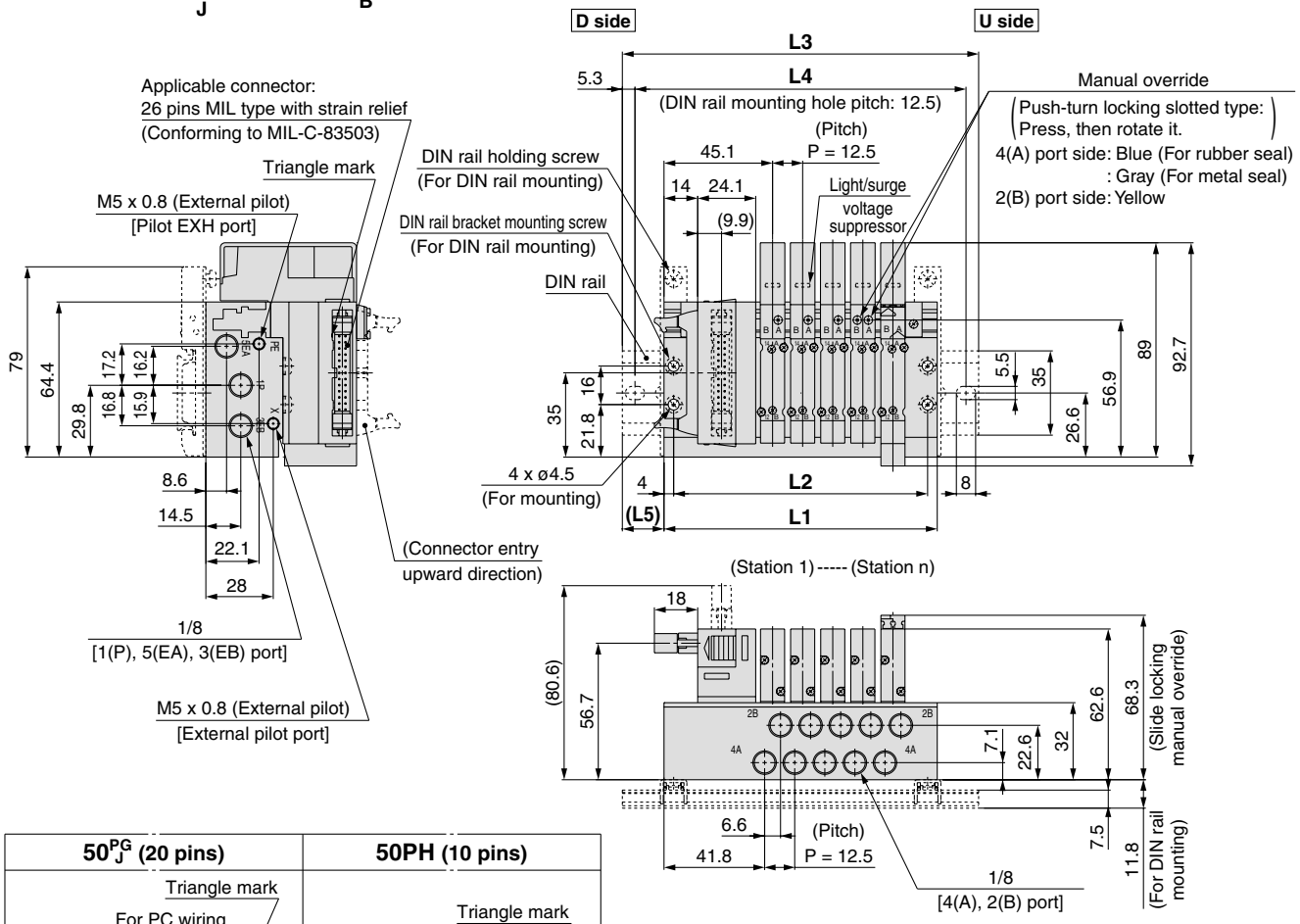


∗The above drawing shows when P, E port location is D.

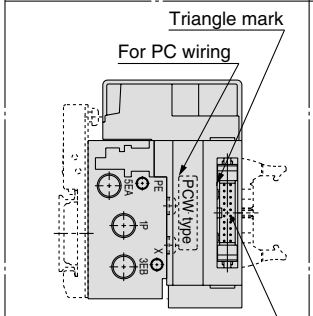
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5
L4	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200
L5	13.5	14.5	15.5	16.5	17.5	18.5	13	14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

Dimensions: Type 50/Flat Ribbon Cable Connector/Series SY3000

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

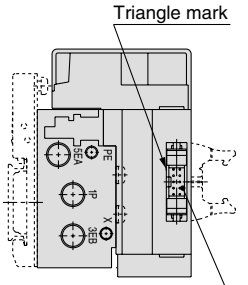


50$^{PG}_{J}$ (20 pins)



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

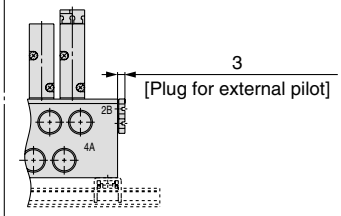
50PH (10 pins)



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

Note 1) These figures show "SS5Y3-50P2-05B-01".
Note 2) Only connectors are different for 50PG, 50PH and 50J.
L1 to L5 dimensions are the same as 50P type.

50R$^{P\square}_{J}$ $^{1}_{2}$-Stations$^{U}_{D}$

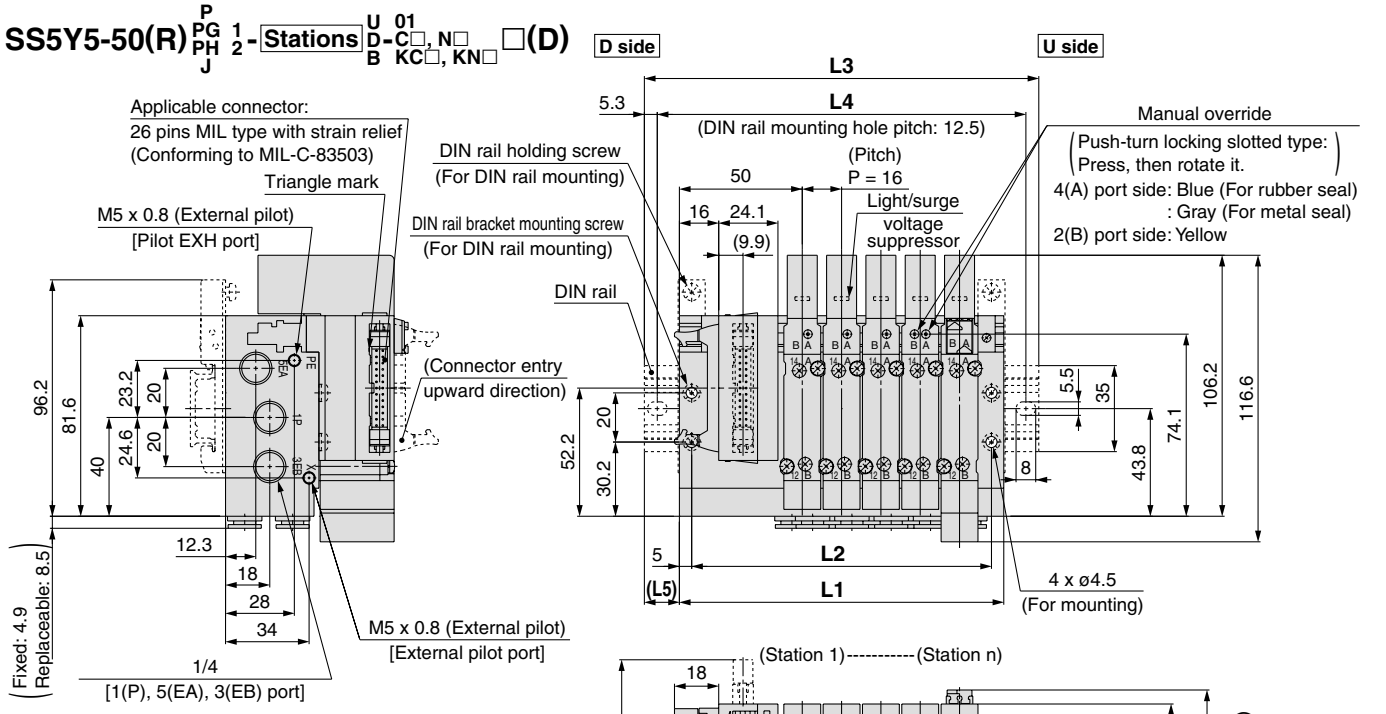


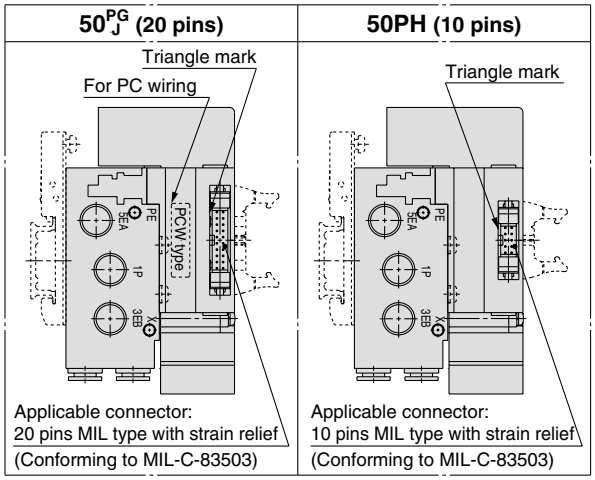
∗The above drawing shows when P, E port location is D.

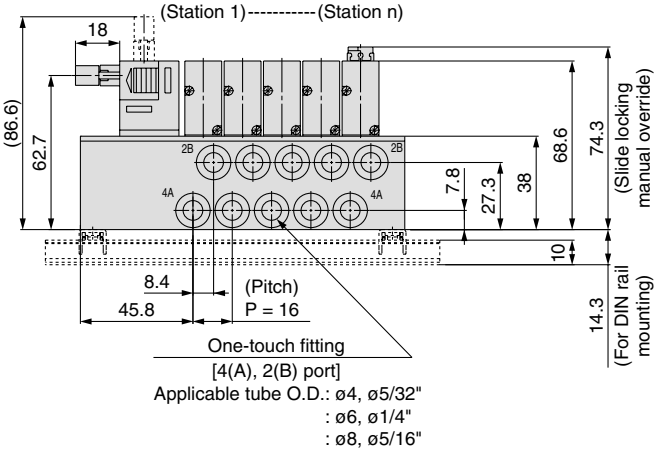
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	76	88.5	101	113.5	126	138.5	151	163.5	176	188.5	201
L2	68	80.5	93	105.5	118	130.5	143	155.5	168	180.5	193
L3	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5
L4	100	112.5	125	137.5	150	162.5	175	187.5	200	212.5	225
L5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5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

Dimensions: Type 50/Flat Ribbon Cable Connector/Series SY5000

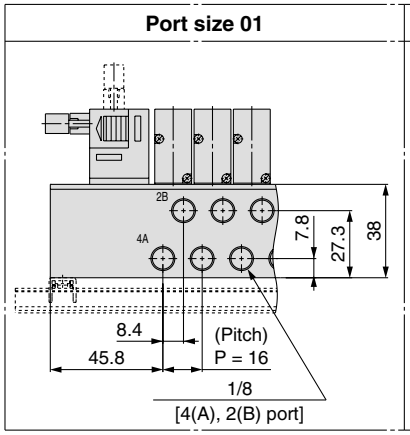
SS5Y5-50(R) P / PG / PH / J 1 / 2 - Stations U / D / B 01 - C□, N□ / KC□, KN□ □(D)

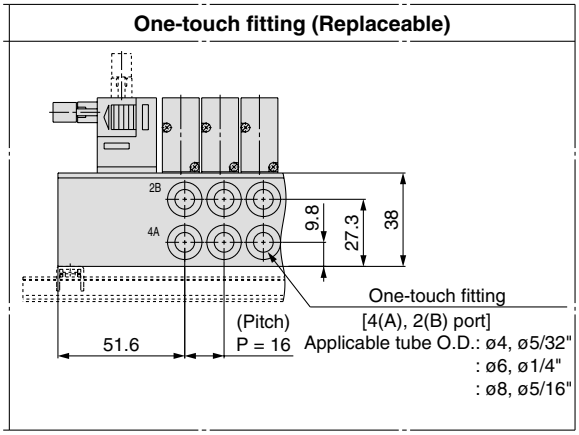


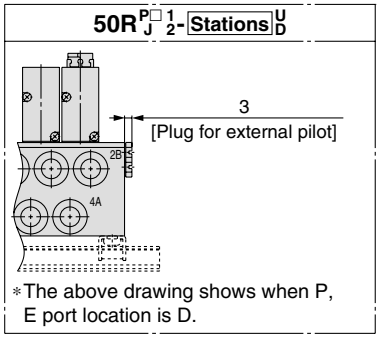




Note 1) These figures show "SS5Y5-50P2-05B-C8".
Note 2) Only connectors are different for 50PG, 50PH and 50J.
L1 to L5 dimensions are the same as 50P type.



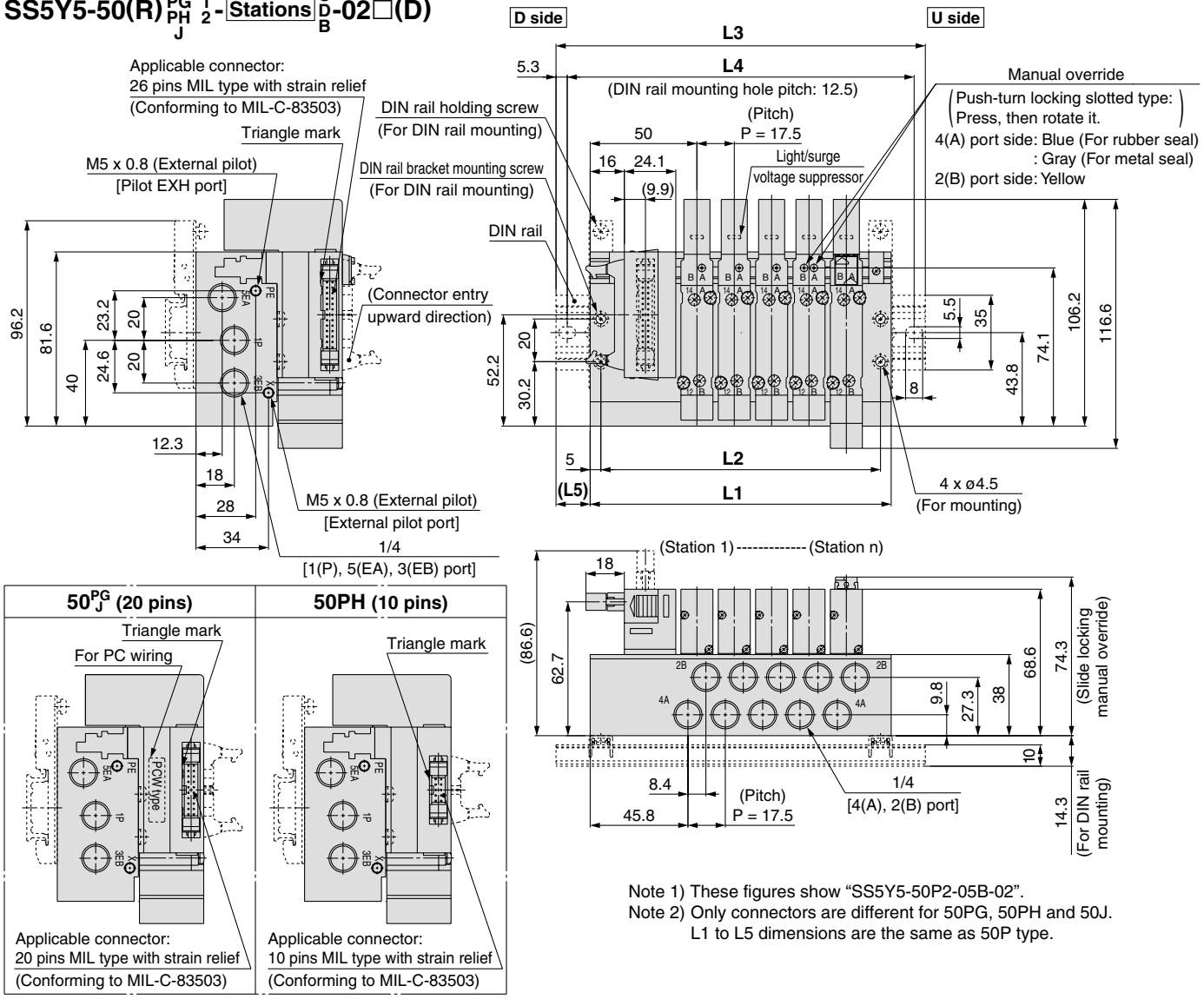




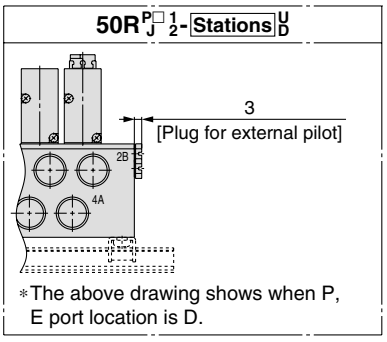
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	110.5	135.5	148	160.5	173	198	210.5	223	248	260.5	273
L4	100	125	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5
L5	13.5	18	16	14.5	12.5	17	15.5	13.5	18	16.5	14.5

Dimensions: Type 50/Flat Ribbon Cable Connector/Series SY5000

SS5Y5-50(R)$^{P}_{PH}{}^{PG}_{J}$ $^{1}_{2}$-Stations$^{U}_{D}$-02□(D)



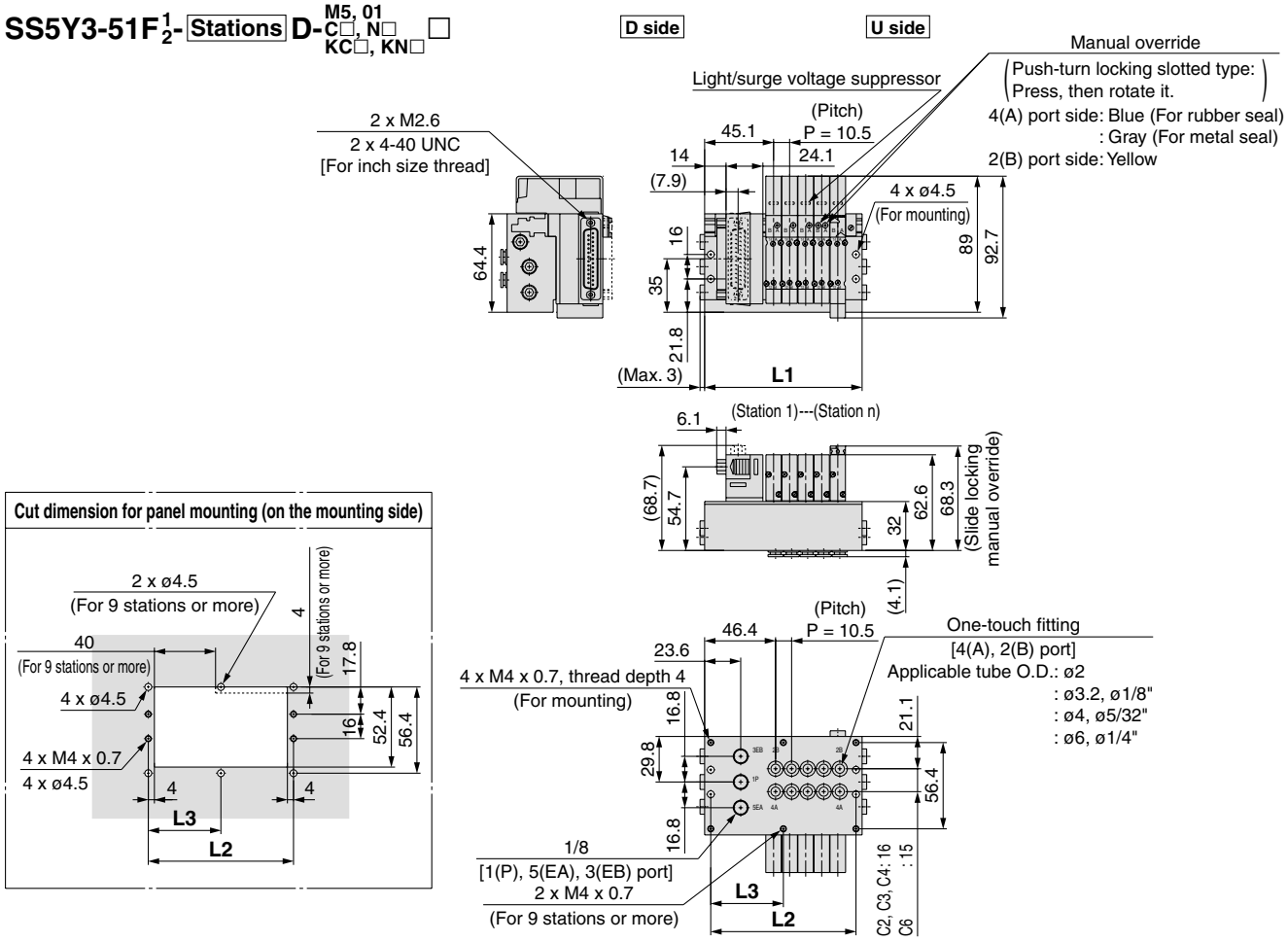
Note 1) These figures show “SS5Y5-50P2-05B-02”.
Note 2) Only connectors are different for 50PG, 50PH and 50J.
L1 to L5 dimensions are the same as 50P type.

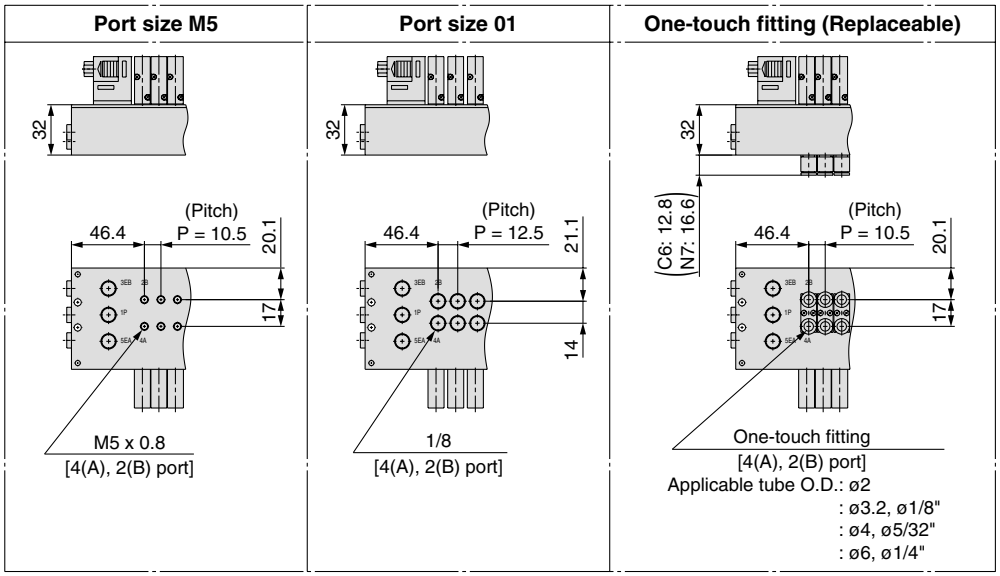


n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	123	135.5	148	173	185.5	210.5	223	235.5	260.5	273	298
L4	112.5	125	137.5	162.5	175	200	212.5	225	250	262.5	287.5
L5	17.5	15	12.5	16	13.5	17.5	15	12.5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

Dimensions: Type 51/D-sub Connector/Series SY3000

SS5Y3-51F$\frac{1}{2}$- Stations D- M5, 01 C□, N□ KC□, KN□ □





Note) These figures show "SS5Y3-51F2-05D-C6".

Port Size M5, C□, N□, KC□, KN□

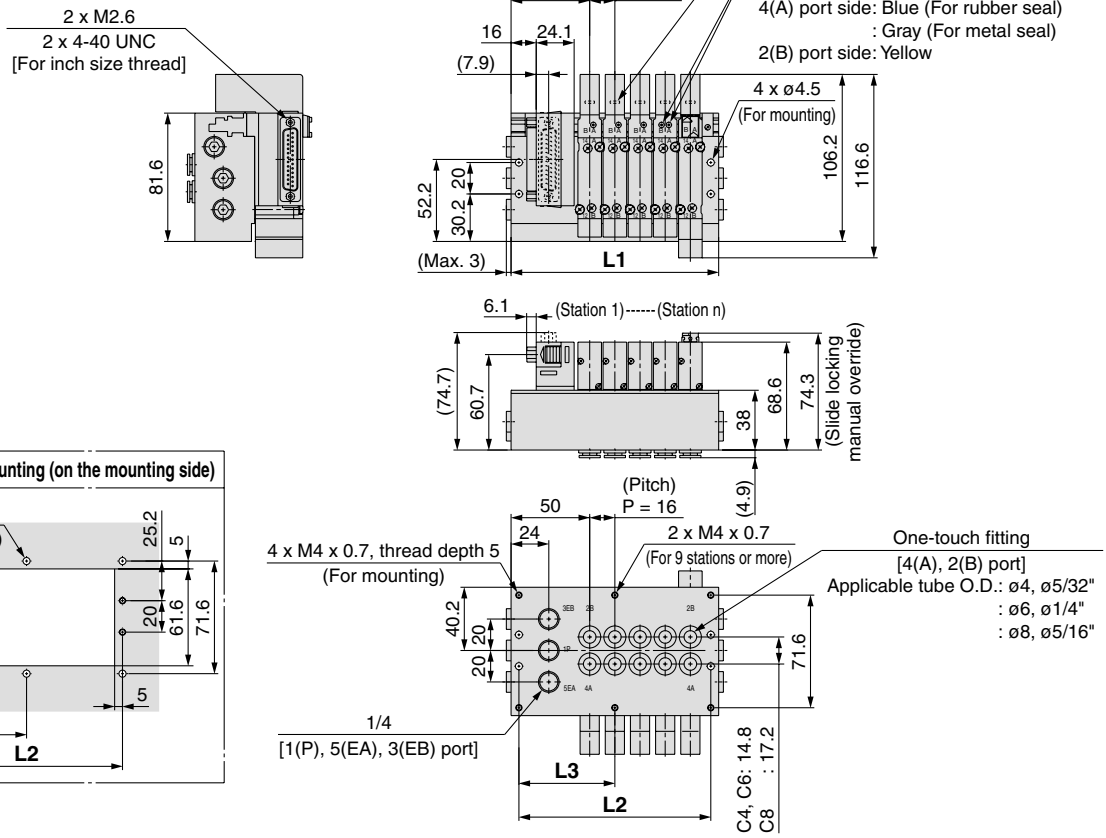
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	—	—	—	—	—	—	—	68.5	73.8	79	84.3

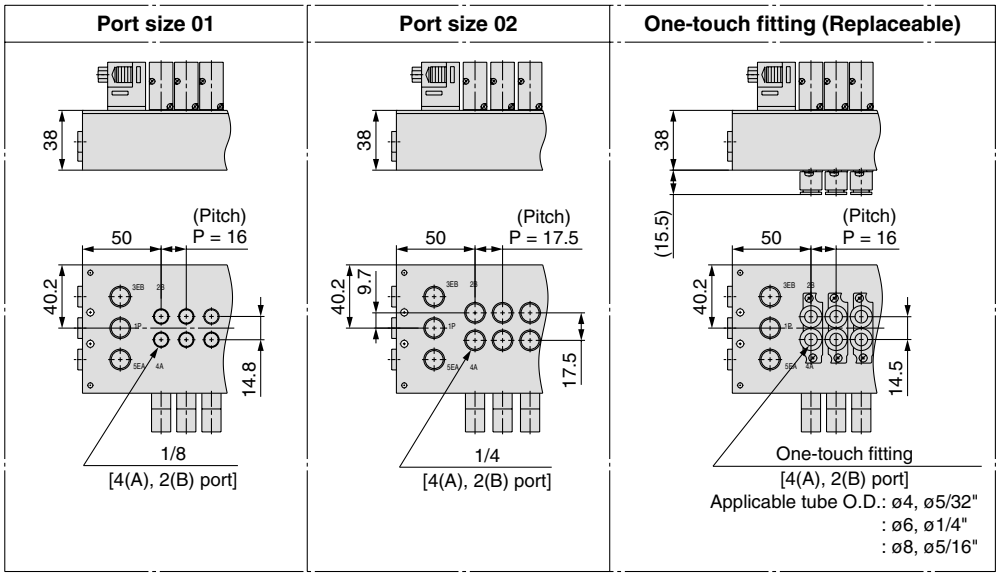
Port Size 01

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

Dimensions: Type 51/D-sub Connector/Series SY5000

SS5Y5-51F$^{1}_{2}$- Stations D-$^{01, 02}_{C□, N□ KC□, KN□}$ □





Note) These figures show "SS5Y5-51F2-05D-C8".

Port Size 01, C□, N□, KC□, KN□

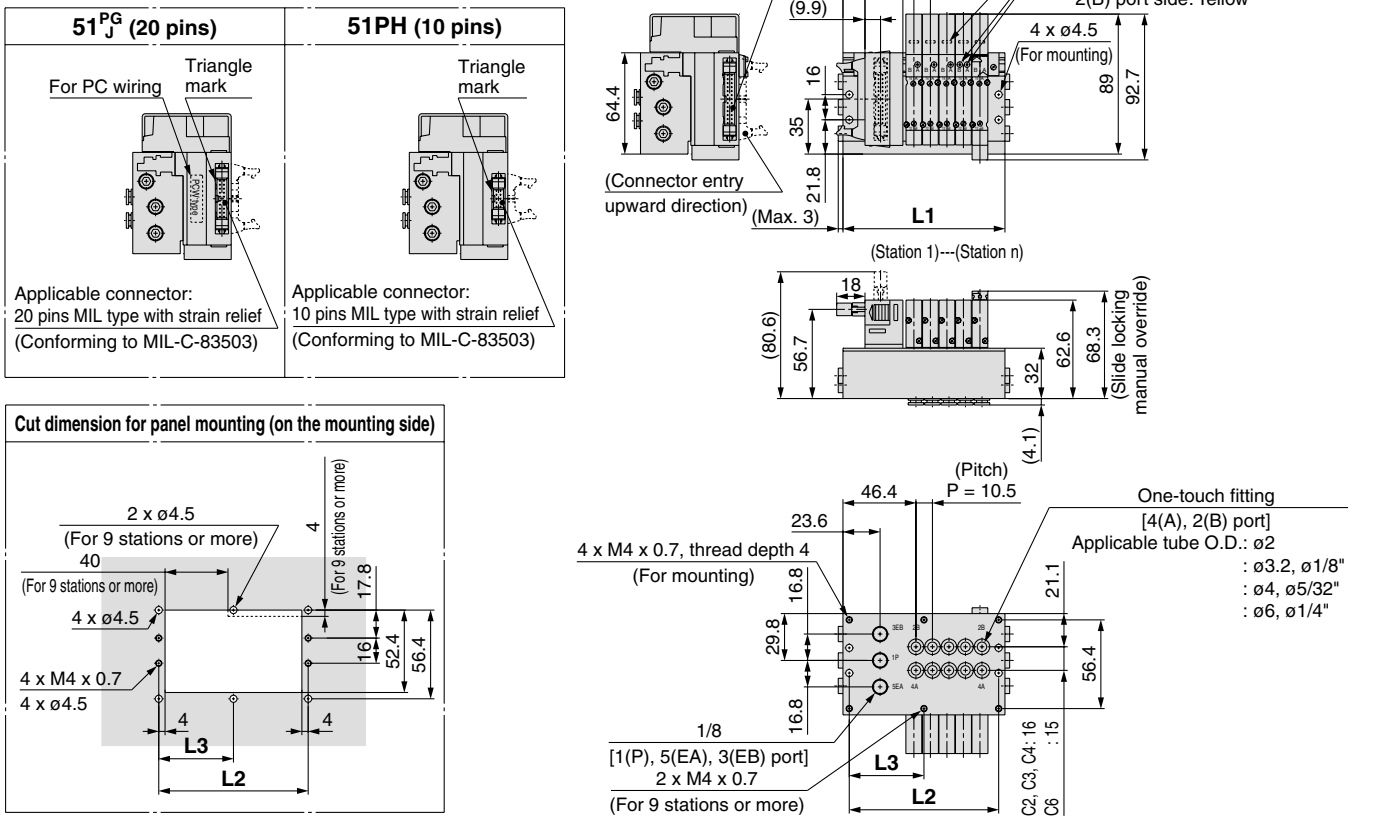
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	—	—	—	—	—	—	—	93	101	109	117

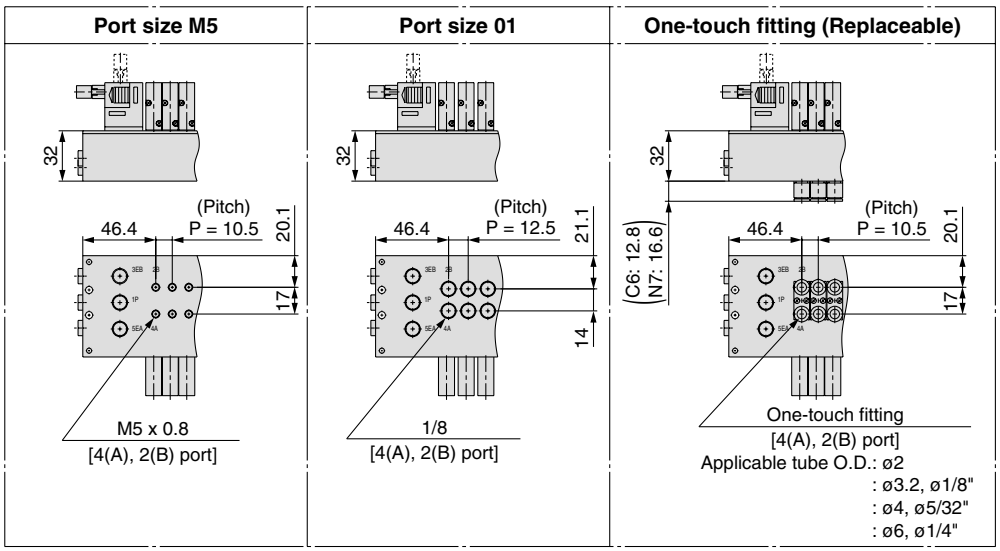
Port Size 02

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

Dimensions: Type 51/Flat Ribbon Cable Connector/Series SY3000

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





Note) These figures show "SS5Y3-51P2-05D-C6".

Port Size M5, C□, N□, KC□, KN□

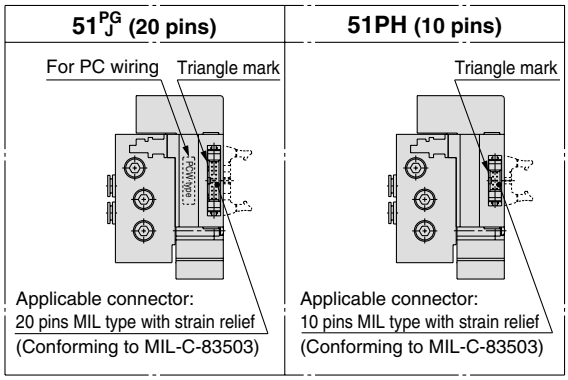
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	—	—	—	—	—	—	—	68.5	73.8	79	84.3

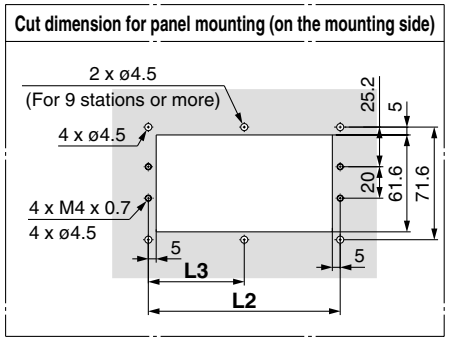
Port Size 01

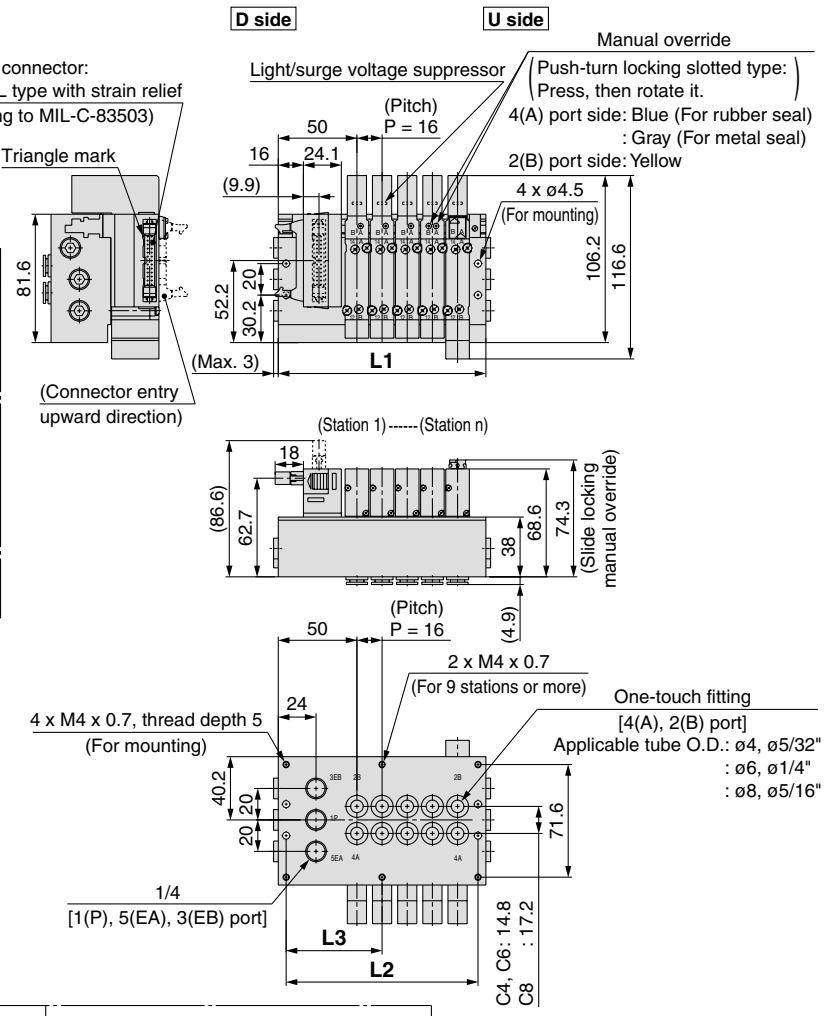
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	76	88.5	101	113.5	126	138.5	151	163.5	176	188.5	201
L2	68	80.5	93	105.5	118	130.5	143	155.5	168	180.5	193
L3	—	—	—	—	—	—	—	77.8	84	90.3	96.5

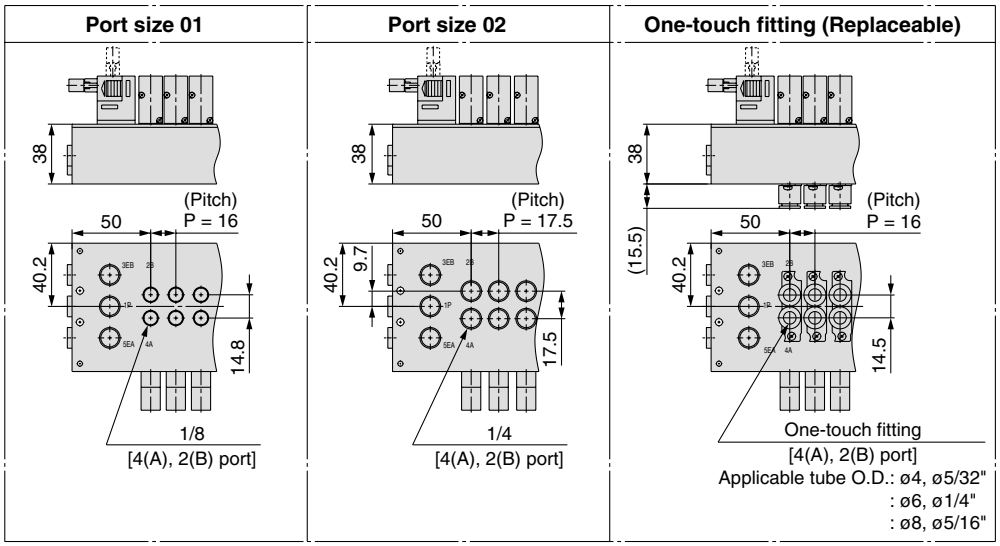
Dimensions: Type 51/Flat Ribbon Cable Connector/Series SY5000

SS5Y5-51 P / PG / PH / J **1** / **2** **- Stations D-** 01, 02 / C□, N□ / KC□, KN□ **□**









Note) These figures show "SS5Y5-51P2-05D-C8".

Port Size 01, C□, N□, KC□, KN□

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

Port Size 02

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

Type 52
Top Ported

Plug-in Metal Base: D-sub Connector/ Flat Ribbon Cable Connector/PC Wiring

Series SY3000/5000 CE

How to Order Manifold

SS5Y 3 – 52 F 1 – □ 05 D – □ □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

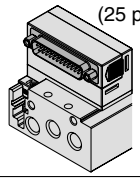
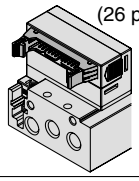
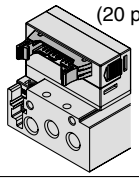
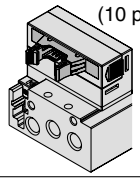
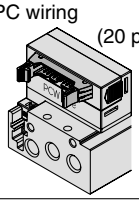
❶ Series

3	SY3000
5	SY5000

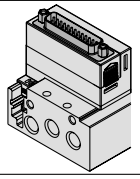
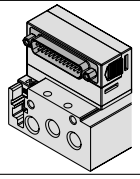
❷ Model

52	Top ported
52R	Top ported/External pilot

❸ 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) 	

❹ Connector entry direction

1: Upward	**2**: Lateral
	

❺ Wiring specification

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

Note 1) All double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.
Note 2) All single wiring: Available only for the manifold which has 2-position single for all stations.
Note that 2-position double, 3- or 4-position valves cannot be used.
Note 3) Please contact SMC if a mixture of single wiring and double wiring is required.

❻ Valve stations

F: D-sub connector (25 pins)

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

P: Flat ribbon cable (26 pins)

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

PG: Flat ribbon cable (20 pins)

Symbol	Stations	Note
02	2 stations	All double wiring
⋮	⋮	
09	9 stations	
02	2 stations	All single wiring
⋮	⋮	
12	12 stations	

PH: Flat ribbon cable (10 pins)

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

J: PC wiring (20 pins)

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

∗ This also includes the number of blanking plate assembly.

❼ P, E port location

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

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

❽ Thread type

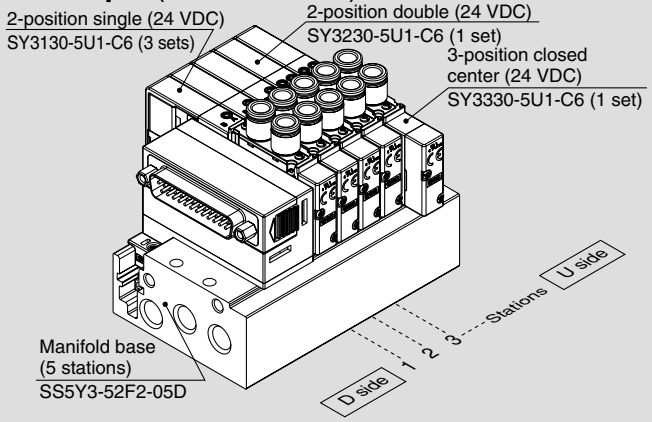
Nil	Rc
00F	G
00N	NPT
00T	NPTF

❾ Mounting

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

How to Order Manifold Assembly

Example (SS5Y3-52F2-□)



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

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 3 0 □ □ □ □ – 5 □ □ 1 – C6 □ – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬ ⓭

❸ Top ported

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only
∗ 3-position type does not have a valve built-in type back pressure check valve.

❻ 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 high pressure type.

❼ Coil specification

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

∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

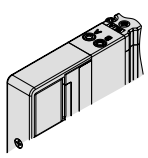
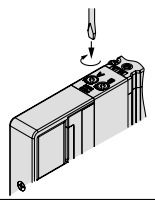
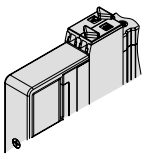
5	24 VDC
6	12 VDC

❾ 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.

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

⓫ A, B port size

Thread piping

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

One-touch fittings (Metric size)

Symbol	A, B port	SY3000	SY5000
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	—	●

One-touch fittings (Inch size)

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

⓬ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ M5 is available with Nil only.

⓭ Option for mounting

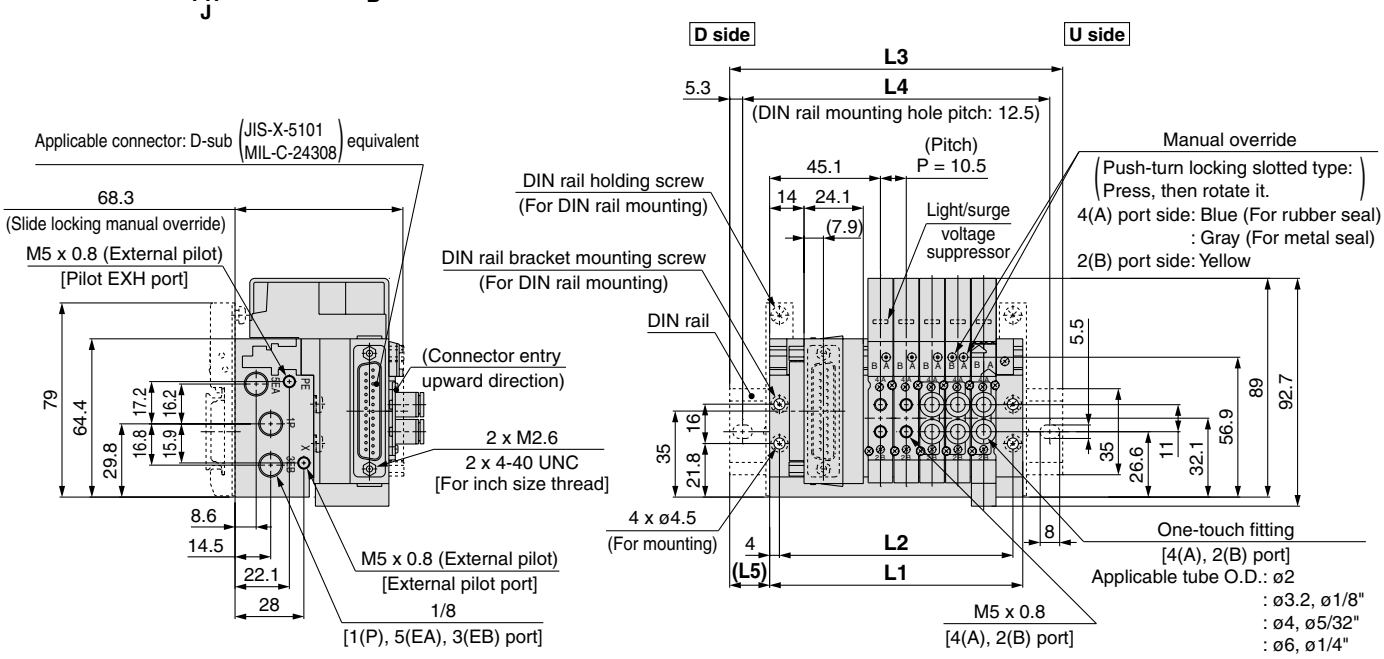
Nil	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)

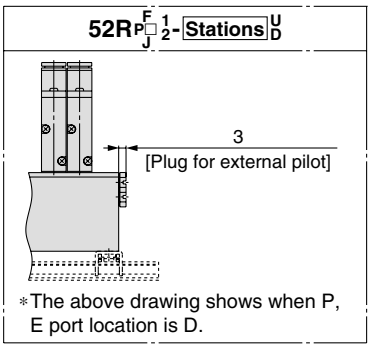
∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 47 for part numbers of base gasket and mounting screw.

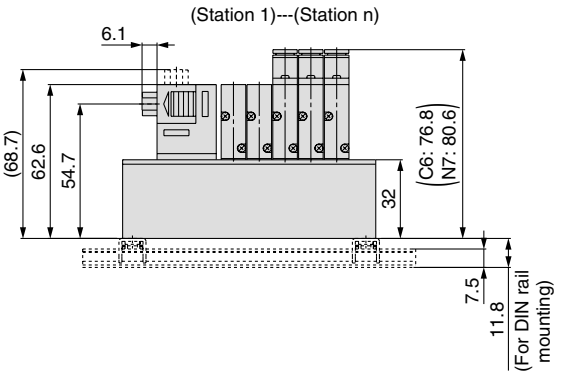
⚠ Protective class class Ⅲ (Mark: ⧾)

Dimensions: Type 52/D-sub Connector, Flat Ribbon Cable Connector/Series SY3000

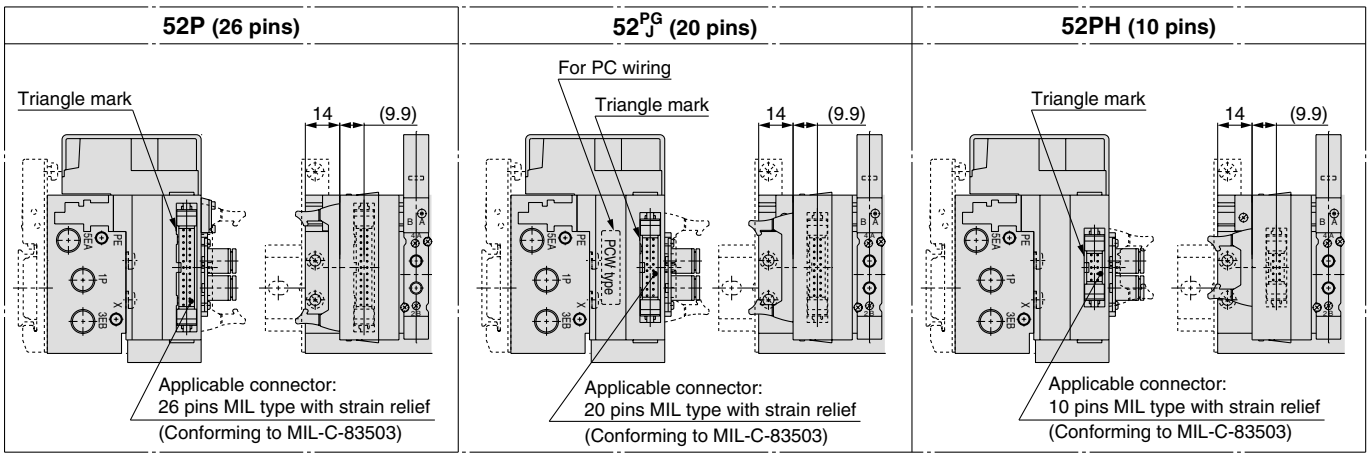
SS5Y3-52(R) F/P/PG/PH/J **1/2-Stations** U/D/B **-□(D)**







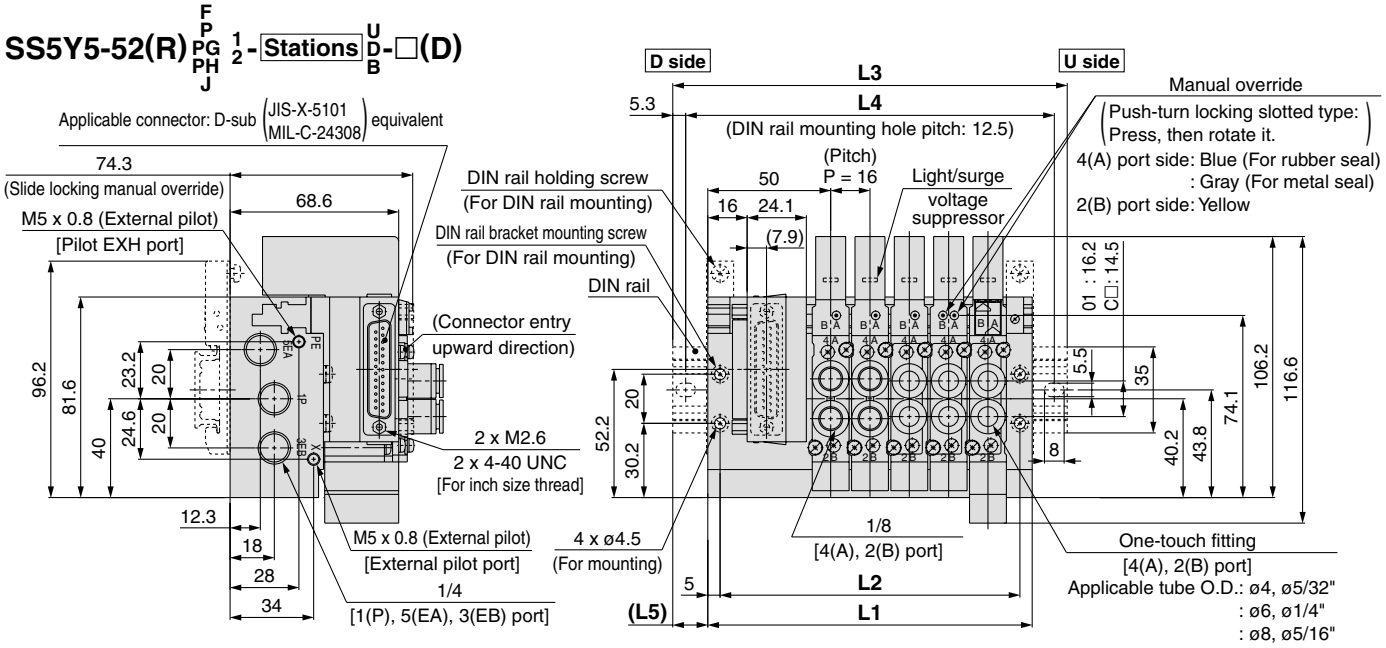
Note) These figures show "SS5Y3-52F2-05B".



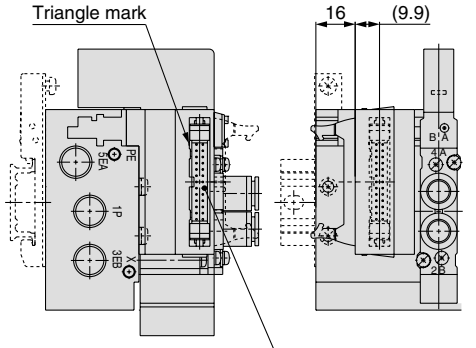
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5
L4	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200
L5	13.5	14.5	15.5	16.5	17.5	18.5	13	14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

Dimensions: Type 52/D-sub Connector, Flat Ribbon Cable Connector/Series SY5000

SS5Y5-52(R) F/P/PG/PH/J **1/2-** Stations **U/D/B-□(D)**

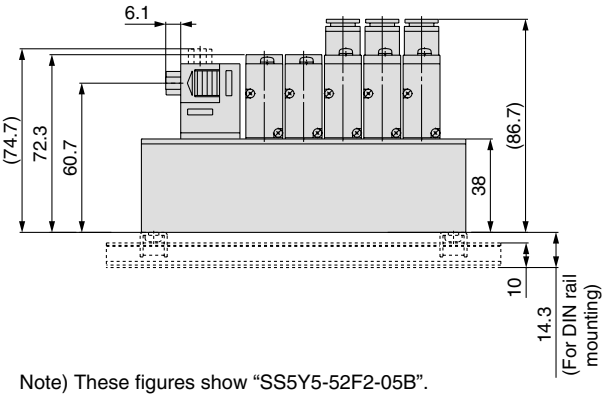


52P (26 pins)



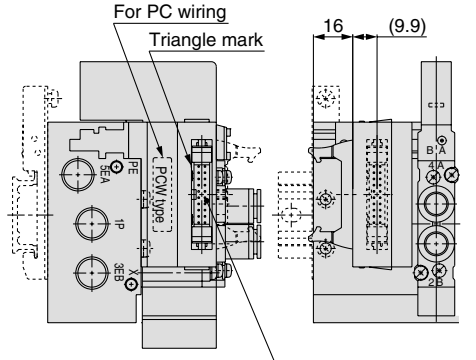
Applicable connector:
26 pins MIL type with strain relief
(Conforming to MIL-C-83503)

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



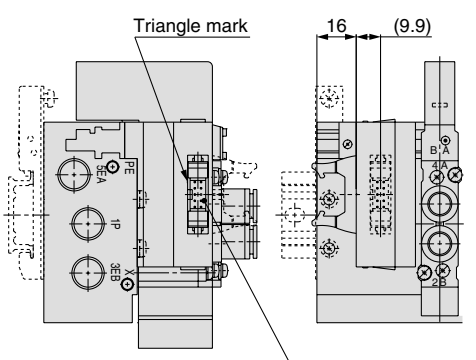
Note) These figures show "SS5Y5-52F2-05B".

52PG J (20 pins)



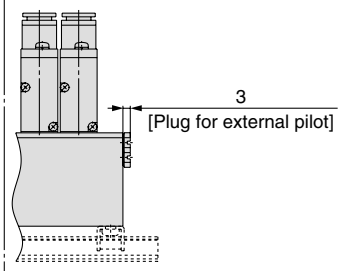
Applicable connector:
20 pins MIL type with strain relief
(Conforming to MIL-C-83503)

52PH (10 pins)



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

52R P/J □ 1/2- Stations U/D

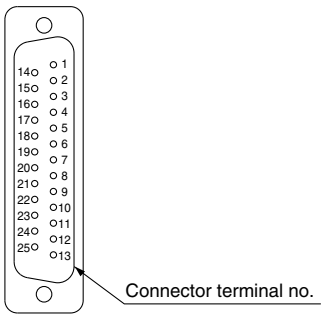


∗The above drawing shows when P, E port location is D.

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

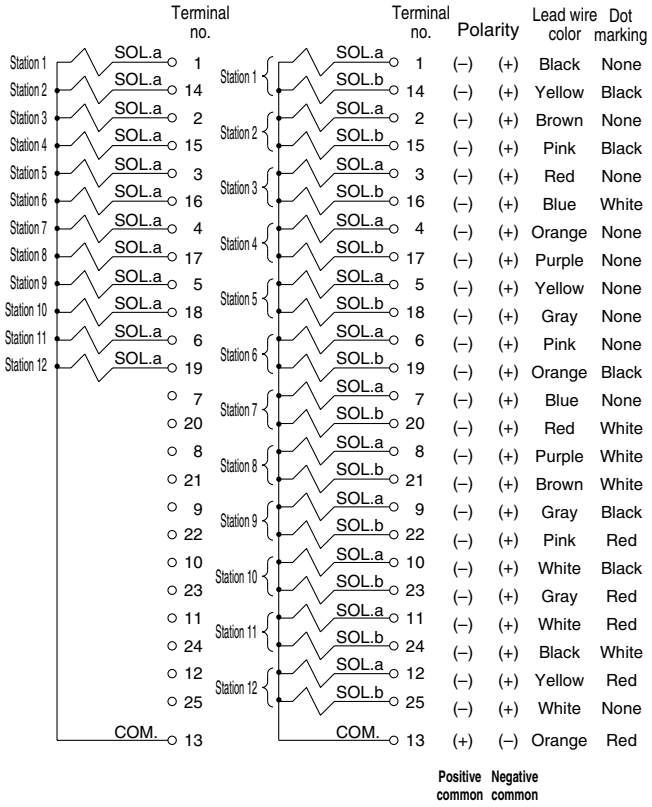
Electrical Wiring Specifications

D-sub connector



Lead wire color for D-sub connector assembly (AXT100-DS25-$^{015}_{030}_{050}$)

<All single wiring> **<All double wiring>**

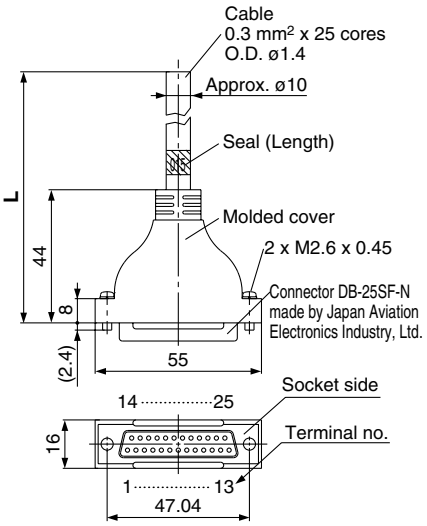


Terminal no.	Polarity		Lead wire color	Dot marking
1	(–)	(+)	Black	None
14	(–)	(+)	Yellow	Black
2	(–)	(+)	Brown	None
15	(–)	(+)	Pink	Black
3	(–)	(+)	Red	None
16	(–)	(+)	Blue	White
4	(–)	(+)	Orange	None
17	(–)	(+)	Purple	None
5	(–)	(+)	Yellow	None
18	(–)	(+)	Gray	None
6	(–)	(+)	Pink	None
19	(–)	(+)	Orange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

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

Cable Assembly

AXT100-DS25-$^{015}_{030}_{050}$



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

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

D-sub connector cable assembly

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

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

Electrical characteristics

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

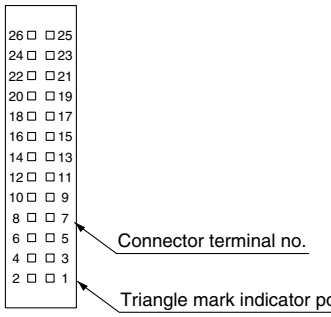
Connector Manufacturers' Example

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

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

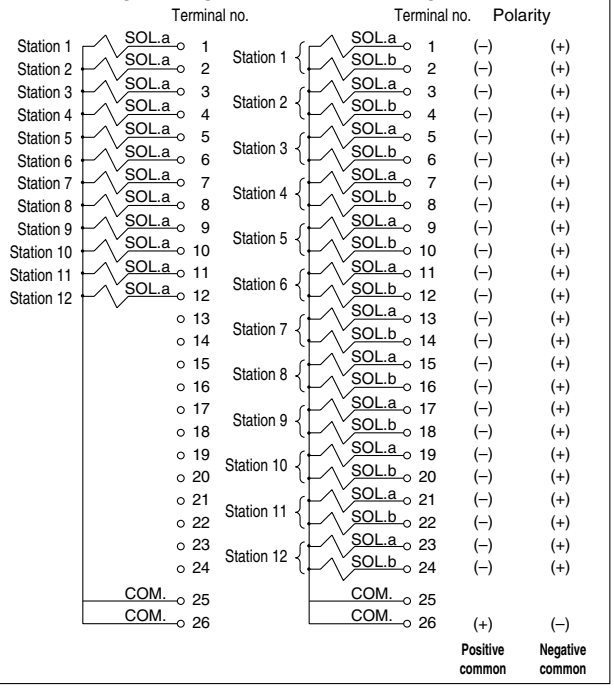
Electrical Wiring Specifications

Flat ribbon cable connector



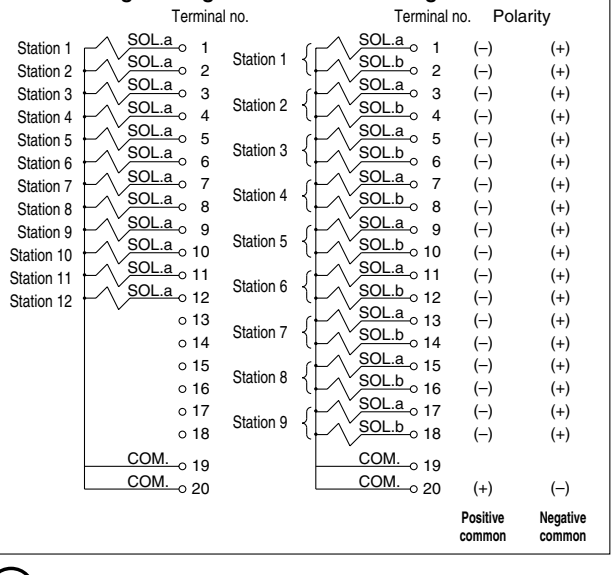
P: Flat ribbon cable (26 pins)

<All single wiring> **<All double wiring>**



PG: Flat ribbon cable (20 pins)

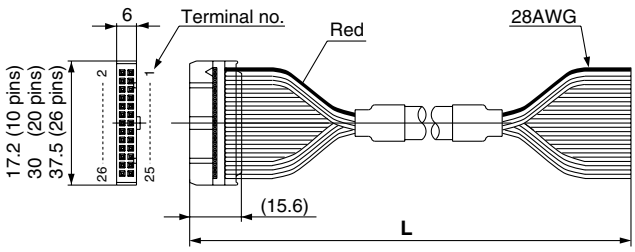
<All single wiring> **<All double wiring>**



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

Cable Assembly

AXT100-FC 10 1 / 20 2 / 26 3



Flat ribbon cable connector assembly

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

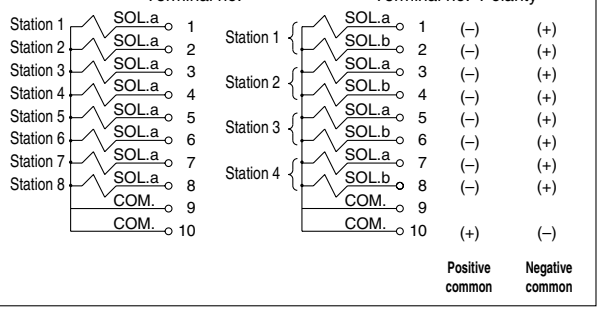
∗ When using a standard commercial connector, use a 26-pin, 20-pin or 10-pin type connector conforming to MIL-C-83503 with strain relief.
∗ Cannot be used for movable wiring.
∗ Lengths other than the above is also available. Please contact SMC for details.

Connector Manufacturers' Example

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

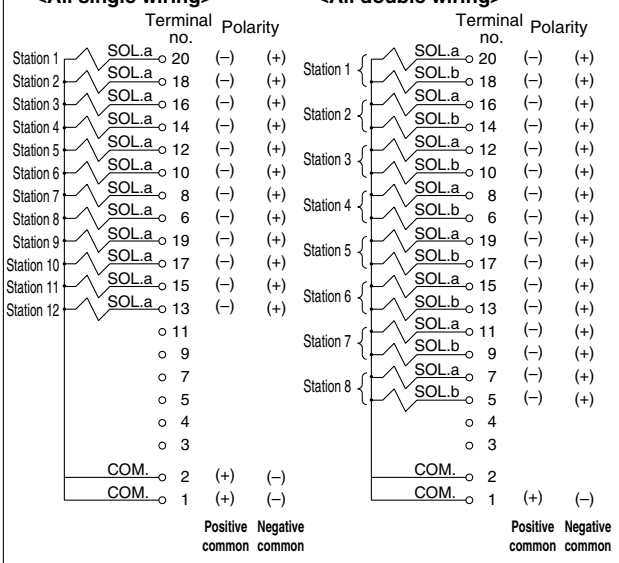
PH: Flat ribbon cable (10 pins)

<All single wiring> **<All double wiring>**



J: Flat ribbon cable (20 pins) PC wiring

<All single wiring> **<All double wiring>**



Type 50
Side Ported

Type 51
Bottom Ported

Plug-in Metal Base: For Series EX510

Series SY3000/5000 CE

How to Order Manifold

SS5Y 3 – 50 S5 ❸ – ❹ 05 D – C6 ❼ ❽ ❾

❶ ❷

❶ Series

3	SY3000
5	SY5000

❷ Model

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

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

❸ SI unit common specification

Nil	Positive common
N	Negative common

❹ Wiring specification

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

Note 1) All double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.
Note 2) All single wiring: Available only for the manifold which has 2-position single for all stations.
Note that 2-position double, 3- or 4-position valves cannot be used.
Note 3) Please contact SMC if a mixture of single wiring and double wiring is required.

❺ Valve stations

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

Symbol	Stations	Note
02	2 stations	All single wiring
⋮	⋮	
12	12 stations	

∗ This also includes the number of blanking plate assembly.

❻ P, E port location

U	U side Note 1)
D	D side Note 1) Note 2)
B	Both sides

Note 1) Plugs are mounted on the opposite side of the selected ports.
Note 2) Type 51 (Bottom ported) is available only on D side.

❽ Thread type

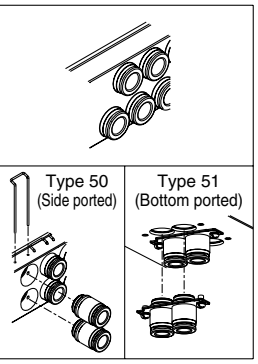
Nil	Rc
F	G
N	NPT
T	NPTF

❼ A, B port size (Thread piping)

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

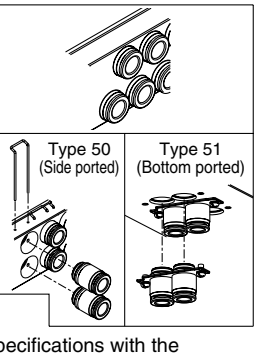
A, B port size (Metric size)

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



A, B port size (Inch size)

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



∗ When ports are mixed, indicate the piping specifications with the manifold specification sheet.

❾ Mounting

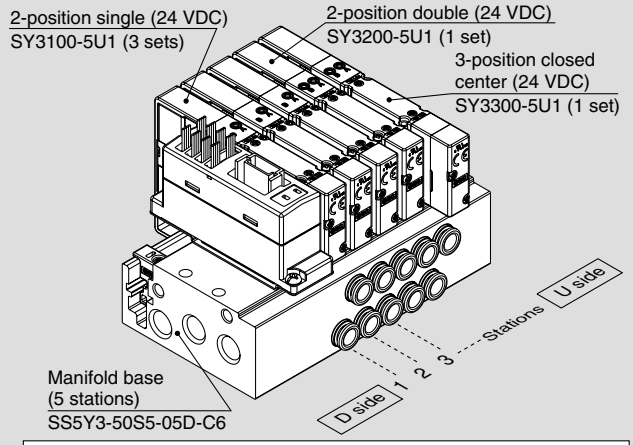
Nil	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	Specify a longer rail than the standard length.
⋮	⋮	
D12	For 12 stations	

∗ Only direct mounting for Type 51 (Bottom ported)

Refer to the EX series in the Best Pneumatics No. 1 for details on EX510 gateway-type serial transmission system.

How to Order Manifold Assembly

Example (SS5Y3-50S5-□)



SS5Y3-50S5-05D-C6 ··· 1 set (Type 50 5-station manifold base part no.)
∗SY3100-5U1 ····· 3 sets (2-position single part no.)
∗SY3200-5U1 ····· 1 set (2-position double part no.)
∗SY3300-5U1 ····· 1 set (3-position closed center part no.)
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Refer to page 44 for mixed mounting with top ported valves. Specify on a manifold specification sheet if plugs are required on the A and B port on manifold side.

SMC

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 0 0 ❸ ❹ ❺ ❻ ❼ – 5 ❽ ❾ ❿ 1 – ⓫

❶ ❷

● Base mounted

❶ Series

3	SY3000
5	SY5000

❷ 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.)

* 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

* Rubber seal type only
* 3-position type does not have a valve built-in type back pressure check valve.

❻ 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 high pressure type.

❼ Coil specification

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

* Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
* Quick response type does not have a power saving circuit.

❽ Rated voltage

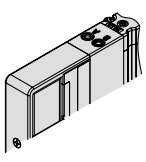
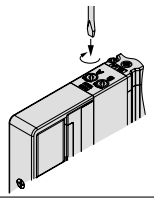
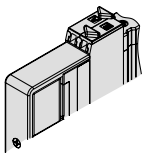
5	24 VDC

❾ Light/surge voltage suppressor and common specification

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	Without light/surge voltage suppressor (Negative common)

* Only "Z" and "NZ" types are available for the product with power saving circuit. Select a valve from R, U, S and Z if the SI unit common is positive common (no symbol). Select a valve from R, U, NS and NZ if the SI unit common is negative common (N).

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

⓫ Option for mounting

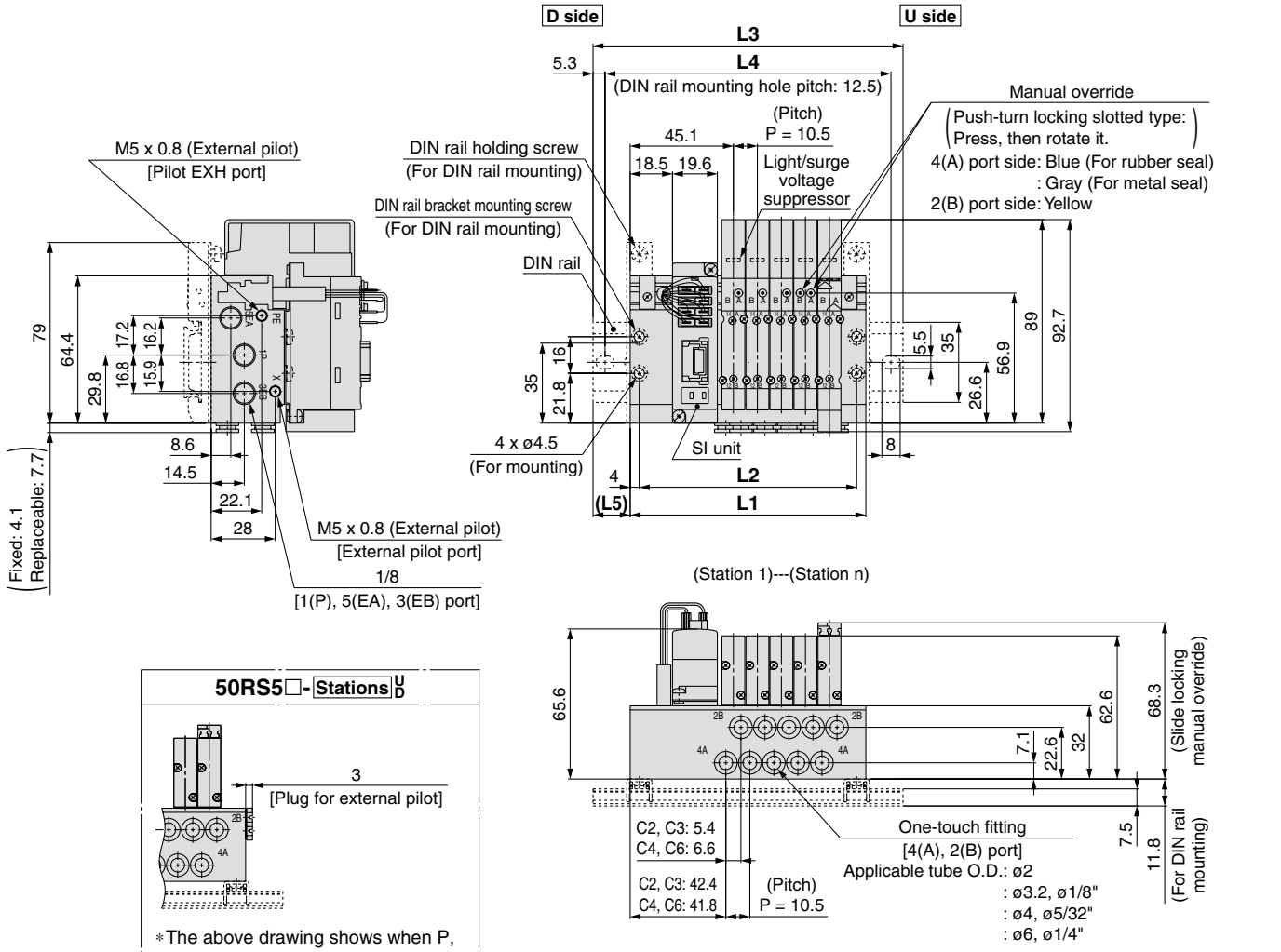
Nil	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)

* Base gasket is not attached to manifold when a valve is ordered as a single unit.
  Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
  Refer to page 47 for part numbers of base gasket and mounting screw.

⚠ Protective class class Ⅲ (Mark: ⧐)

Dimensions: Type 50/For EX510/Series SY3000

SS5Y3-50(R)S5□-Stations U/D/B M5/C□, N□/KC□, KN□ □(D)

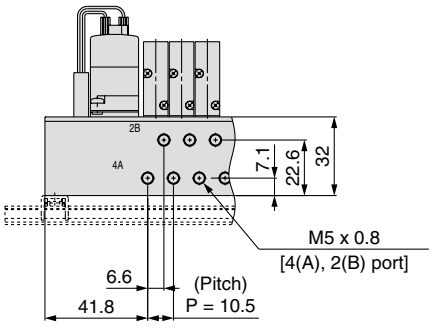


50RS5□-Stations U/D

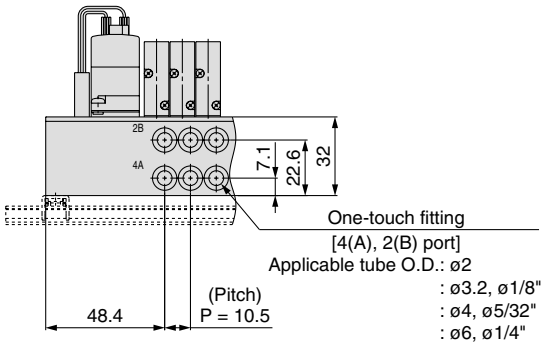
∗The above drawing shows when P, E port location is D.

Note) These figures show "SS5Y3-50S5-05B-C6".

Port size M5



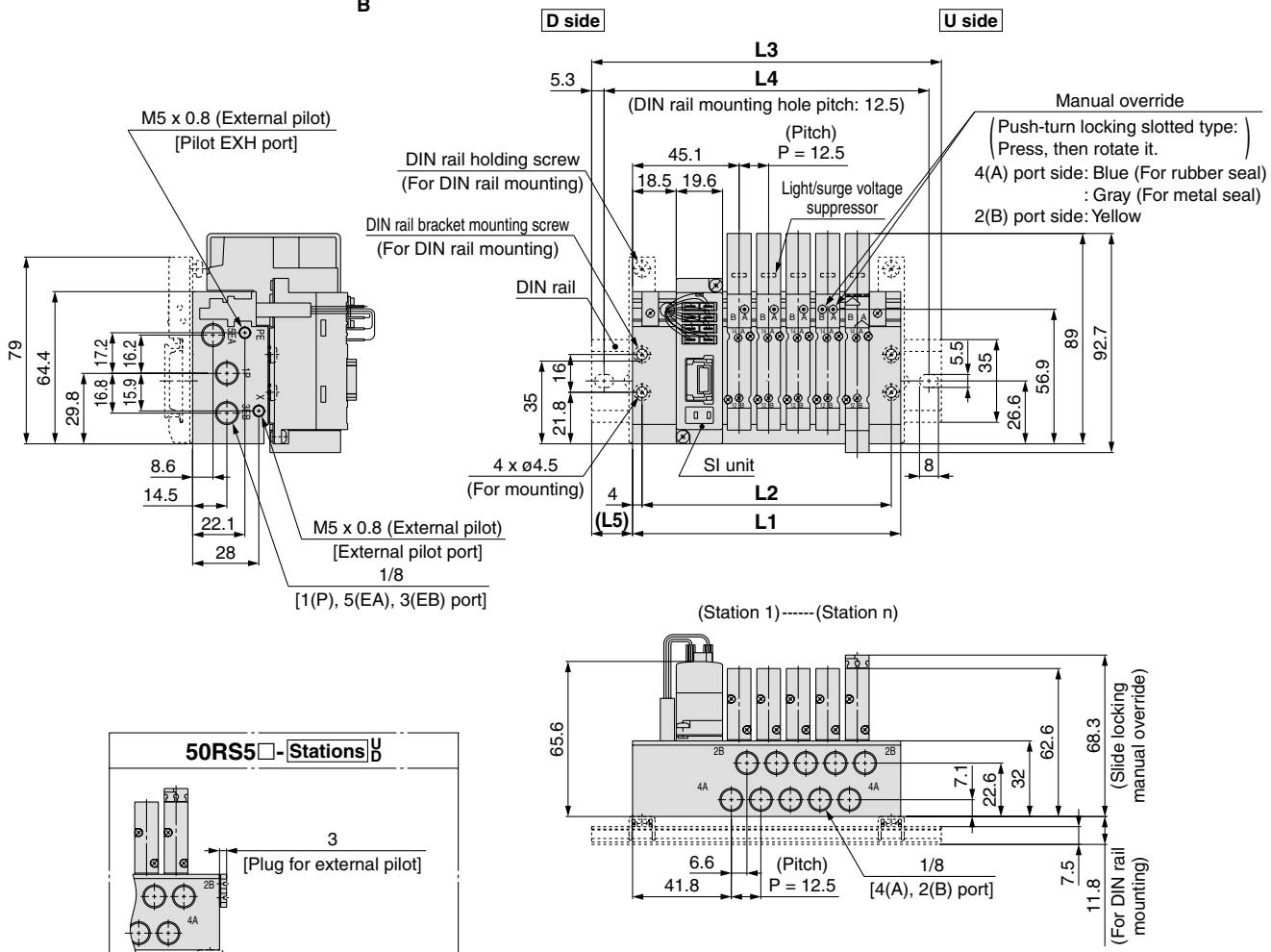
One-touch fitting (Replaceable)



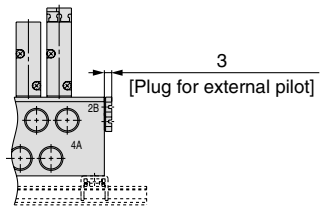
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5
L4	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200
L5	13.5	14.5	15.5	16.5	17.5	18.5	13	14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

Dimensions: Type 50/For EX510/Series SY3000

SS5Y3-50(R)S5□-Stations U/D/B-01□(D)



50RS5□-Stations U/D



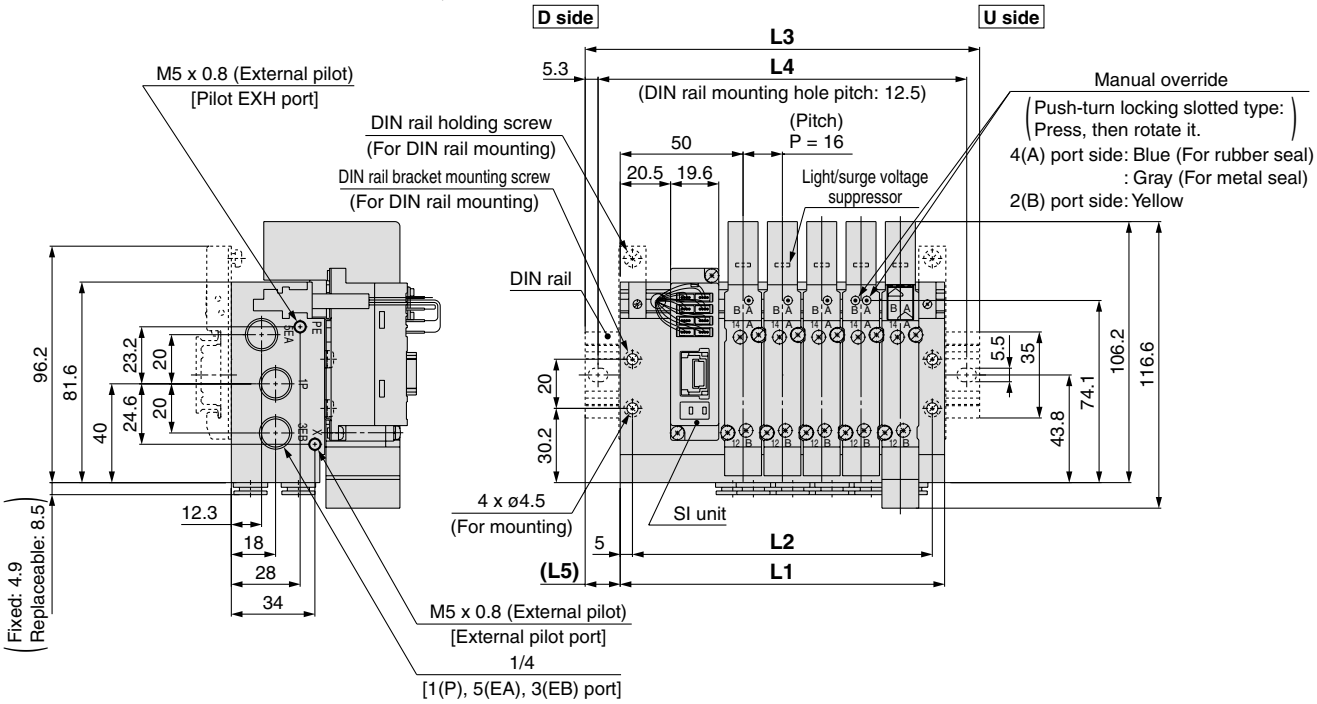
∗The above drawing shows when P, E port location is D.

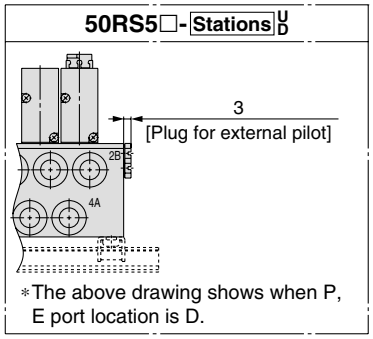
Note) These figures show “SS5Y3-50S5-05B-01”.

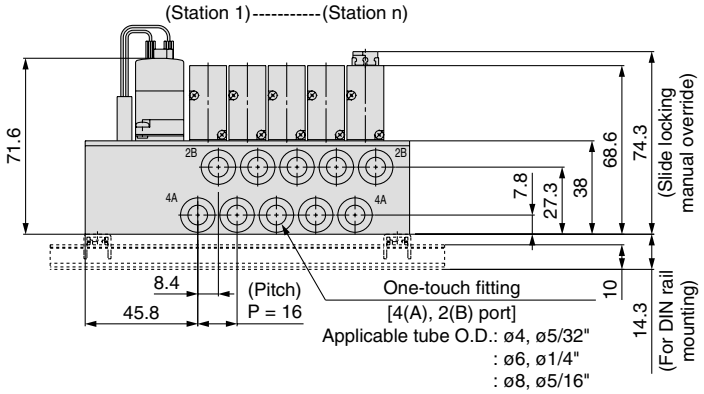
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	76	88.5	101	113.5	126	138.5	151	163.5	176	188.5	201
L2	68	80.5	93	105.5	118	130.5	143	155.5	168	180.5	193
L3	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5
L4	100	112.5	125	137.5	150	162.5	175	187.5	200	212.5	225
L5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5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

Dimensions: Type 50/For EX510/Series SY5000

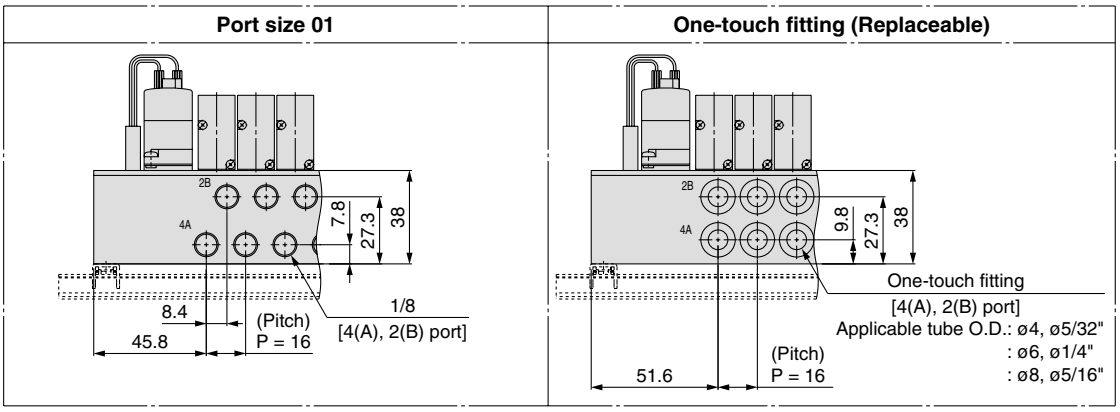
SS5Y5-50(R)S5□-Stations U D B 01 -C□, N□ KC□, KN□ □(D)







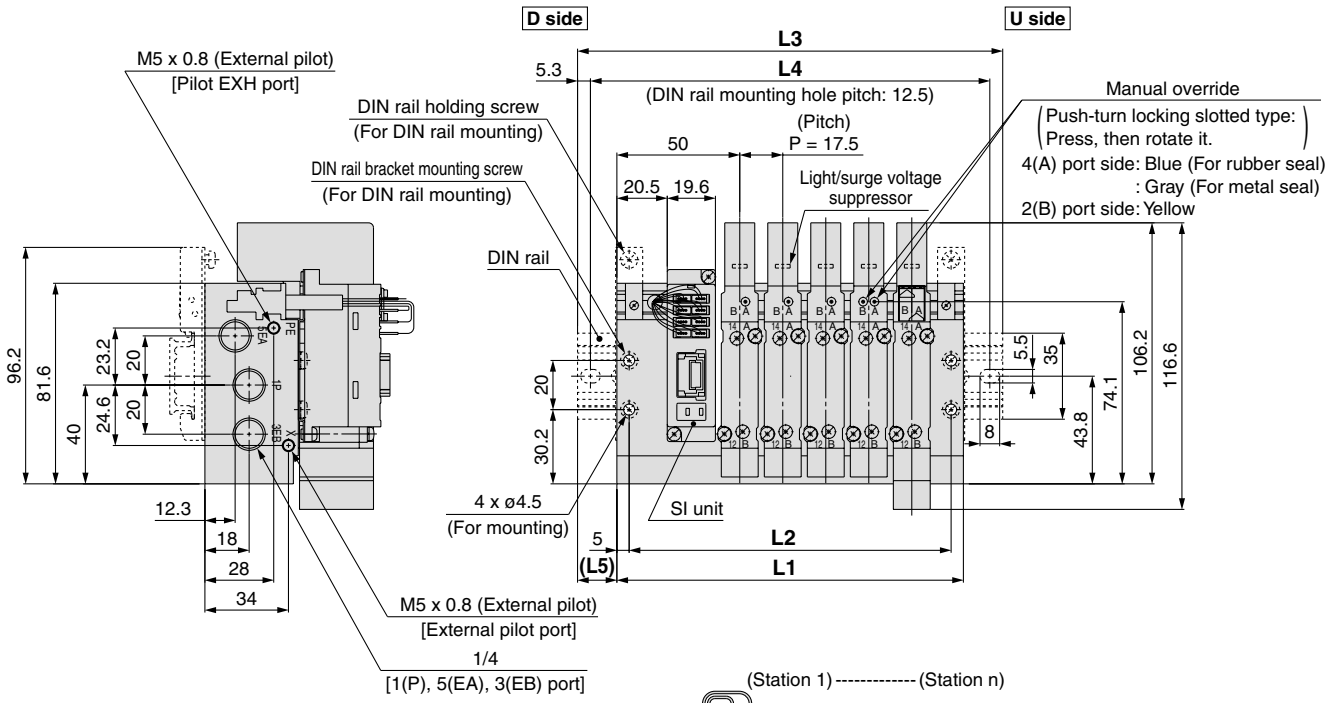
Note) These figures show “SS5Y5-50S5-05B-C8”.

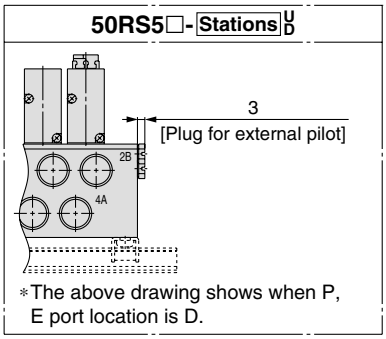


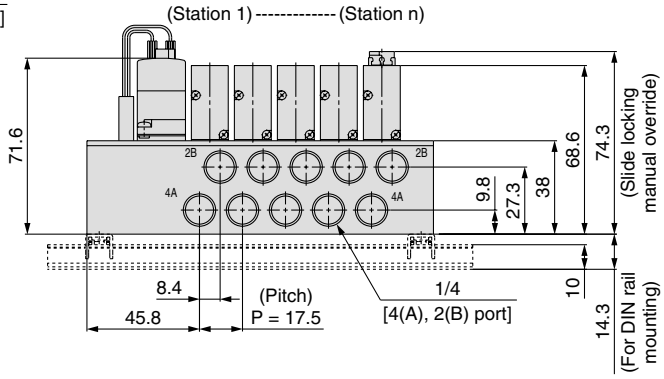
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	110.5	135.5	148	160.5	173	198	210.5	223	248	260.5	273
L4	100	125	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5
L5	13.5	18	16	14.5	12.5	17	15.5	13.5	18	16.5	14.5

Dimensions: Type 50/For EX510/Series SY5000

SS5Y5-50(R)S5□-[Stations][U/D/B]-02□(D)





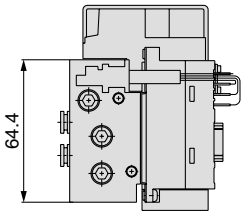


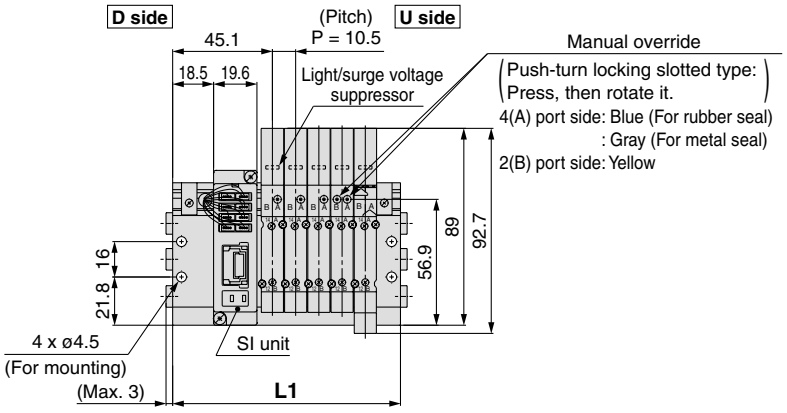
Note) These figures show “SS5Y5-50S5-05B-02”.

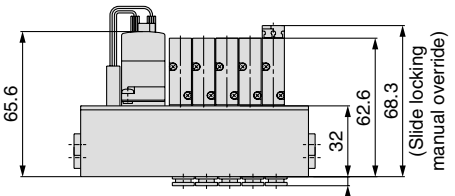
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	123	135.5	148	173	185.5	210.5	223	235.5	260.5	273	298
L4	112.5	125	137.5	162.5	175	200	212.5	225	250	262.5	287.5
L5	17.5	15	12.5	16	13.5	17.5	15	12.5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

Dimensions: Type 51/For EX510/Series SY3000

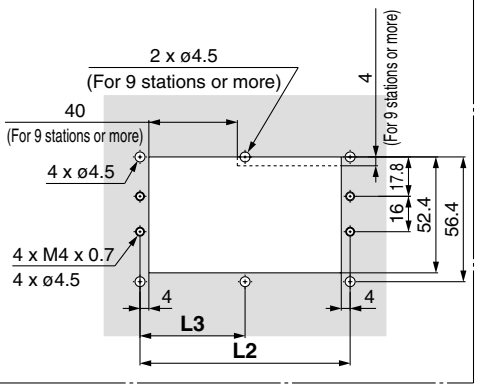
SS5Y3-51S5□-Stations U M5, 01 / D -C□, N□ / B KC□, KN□ □

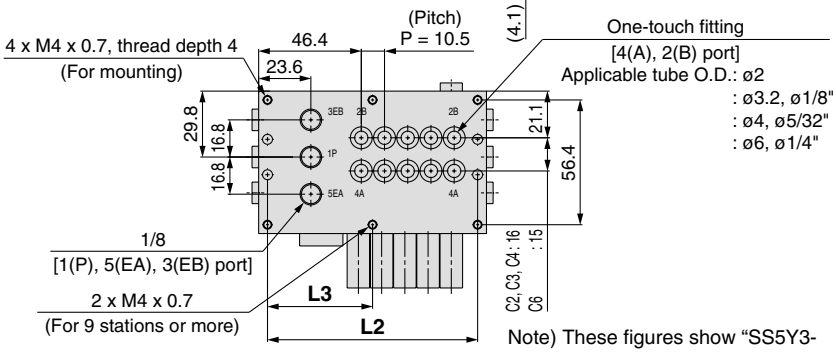






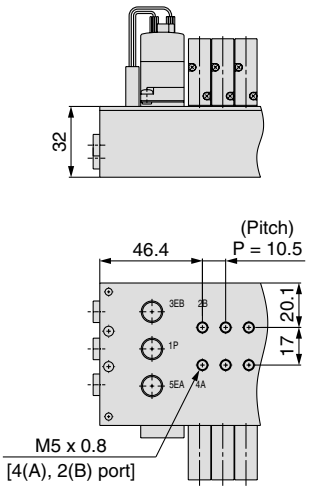
Cut dimension for panel mounting (on the mounting side)



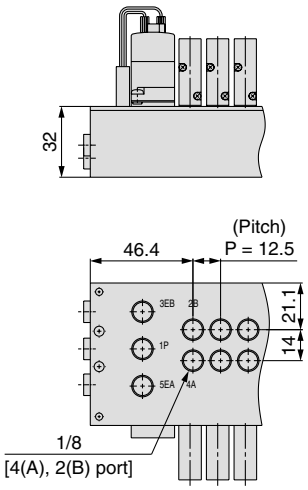


Note) These figures show "SS5Y3-51S5-05D-C6".

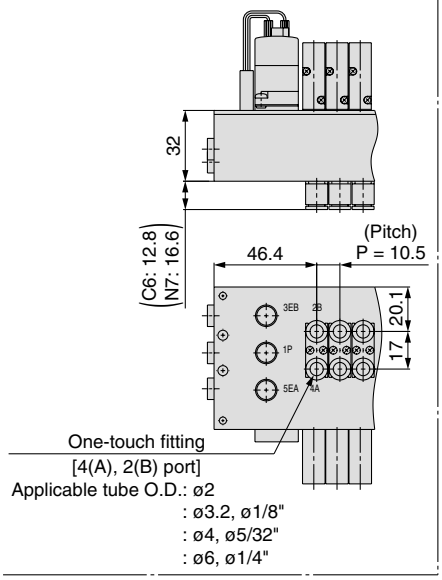
Port size M5



Port size 01



One-touch fitting (Replaceable)



Port Size M5, C□, N□, KC□, KN□

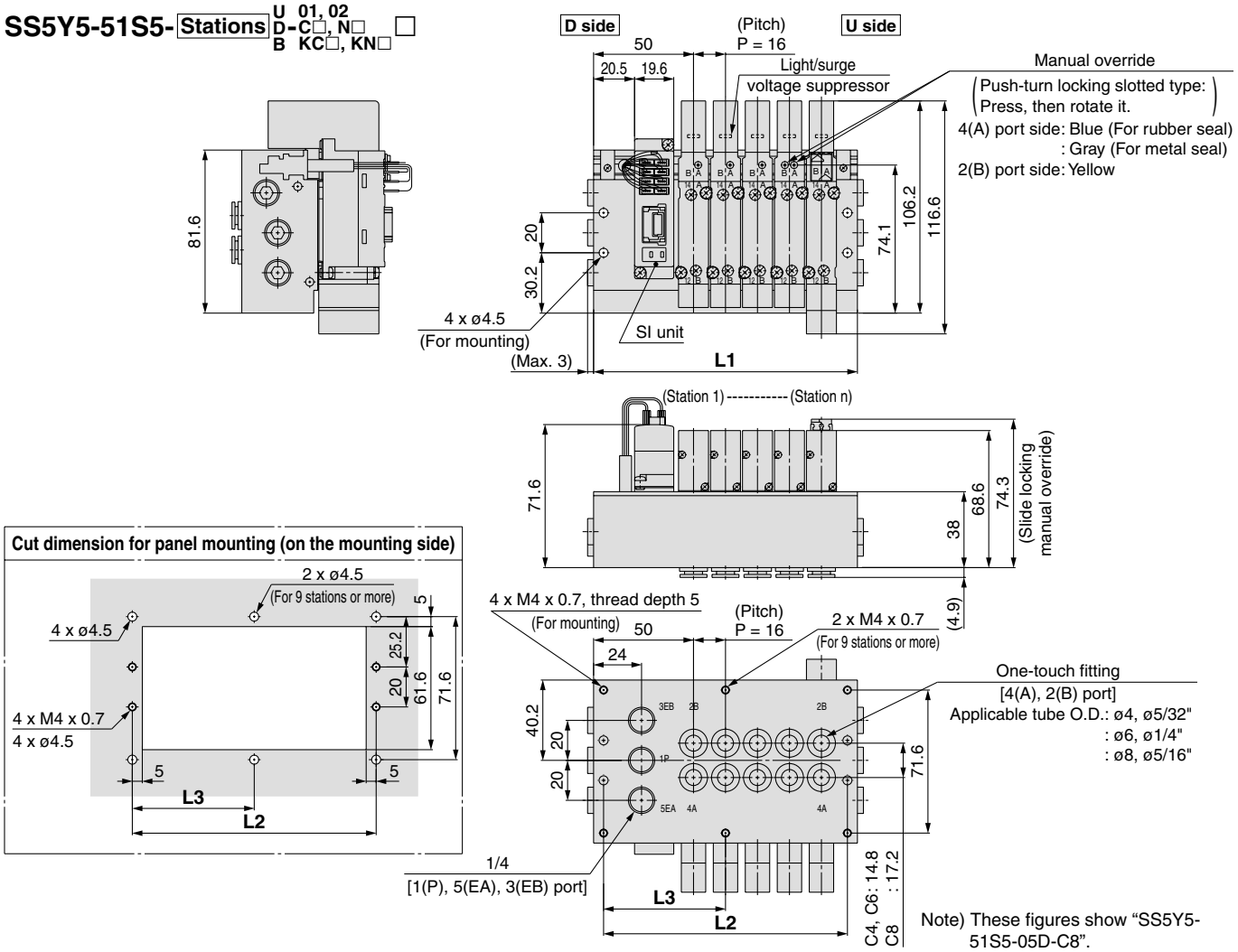
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	—	—	—	—	—	—	—	68.5	73.8	79	84.3

Port Size 01

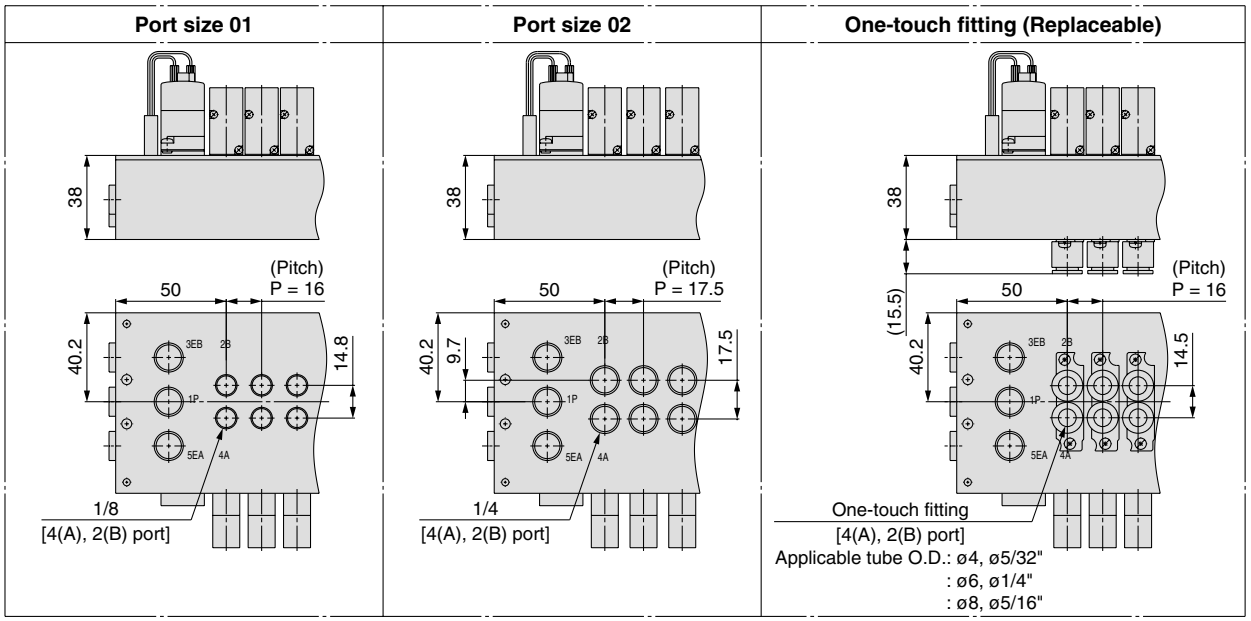
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	76	88.5	101	113.5	126	138.5	151	163.5	176	188.5	201
L2	68	80.5	93	105.5	118	130.5	143	155.5	168	180.5	193
L3	—	—	—	—	—	—	—	77.8	84	90.3	96.5

Dimensions: Type 51/For EX510/Series SY5000

SS5Y5-51S5- Stations **U** 01, 02 **D**-C□, N□ **B** KC□, KN□ □



Note) These figures show "SS5Y5-51S5-05D-C8".



Port Size 01, C□, N□, KC□, KN□

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

Port Size 02

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

Type 52
Top Ported

Plug-in Metal Base: For Series EX510

Series SY3000/5000

How to Order Manifold

SS5Y 3 – 52 S5 ❑ – ❑ 05 D – ❑ ❑

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽

❶ Series

3	SY3000
5	SY5000

❷ Model

52	Top ported
52R	Top ported/External pilot

❸ SI unit common specification

Nil	Positive common
N	Negative common

❹ Wiring specification

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

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

Note 2) All single wiring: Available only for the manifold which has 2-position single for all stations.
Note that 2-position double, 3- or 4-position valves cannot be used.

❺ Valve stations

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

∗ This also includes the number of blanking plate assembly.

❻ P, E port location

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

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

❼ Thread type

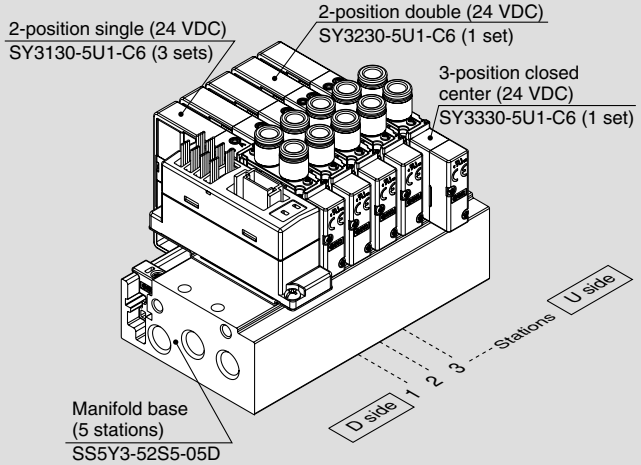
Nil	Rc
00F	G
00N	NPT
00T	NPTF

❽ Mounting

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

How to Order Manifold Assembly

Example (SS5Y3-52S5-❑)



SS5Y3-52S5-05D ····· 1 set (Type 52 5-station manifold base part no.)
∗SY3130-5U1-C6 ····· 3 sets (2-position single part no.)
∗SY3230-5U1-C6 ····· 1 set (2-position double part no.)
∗SY3330-5U1-C6 ····· 1 set (3-position closed center part no.)
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.

Refer to the EX series in the Best Pneumatics No. 1 for details on EX510 gateway-type serial transmission system.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 3 0 □ □ □ □ – 5 □ □ 1 – C6 □ – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬ ⓭

❸: Top ported

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only
∗ 3-position type does not have a valve built-in type back pressure check valve.

❻ 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 high pressure type.

❼ Coil specification

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

∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

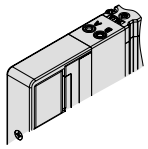
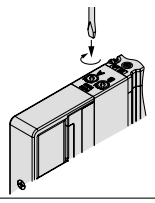
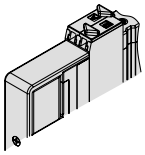
5	24 VDC

❾ Light/surge voltage suppressor and common specification

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. Select a valve from R, U, S and Z if the SI unit common is positive common (no symbol). Select a valve from R, U, NS and NZ if the SI unit common is negative common (N).

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

⓫ A, B port size

Thread piping

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

One-touch fittings (Metric size)

Symbol	A, B port	SY3000	SY5000
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	—	●

One-touch fittings (Inch size)

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

⓬ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ M5 is available with Nil only.

⓭ Option for mounting

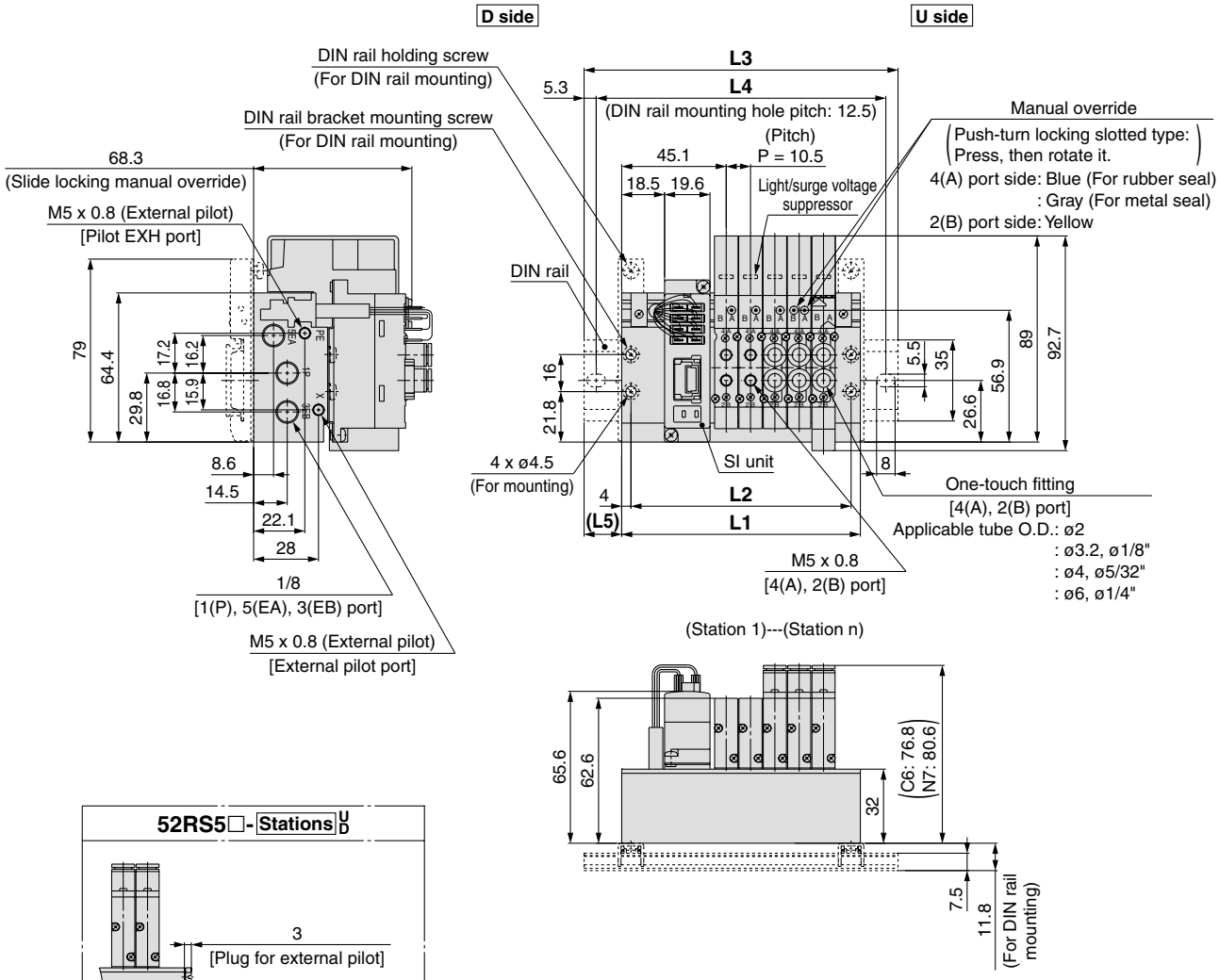
Nil	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)

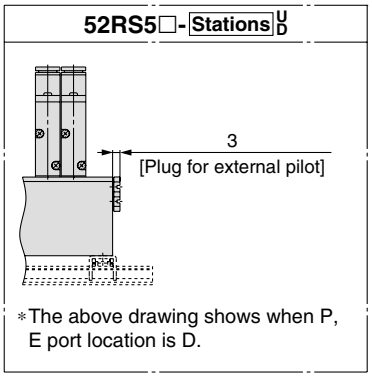
∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 47 for part numbers of base gasket and mounting screw.

⚠ Protective class class Ⅲ (Mark: ⧾)

Dimensions: Type 52/For EX510/Series SY3000

SS5Y3-52(R)S5□-Stations U/D/B-□(D)



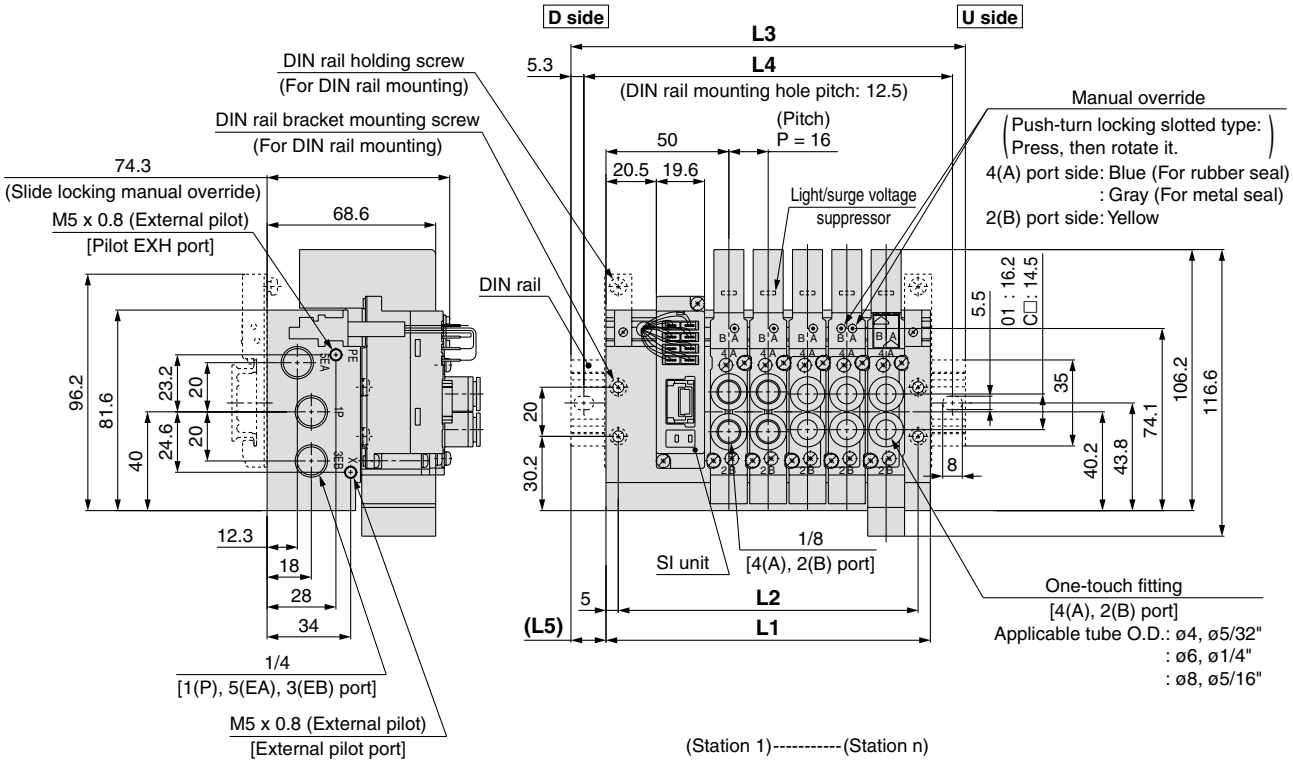


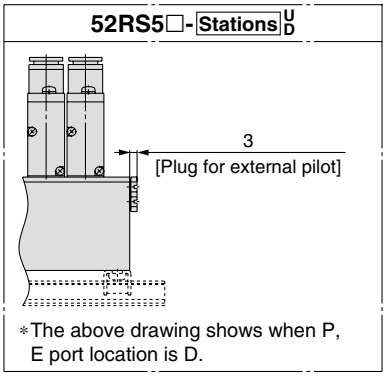
Note) These figures show “SS5Y3-52S5-05B”.

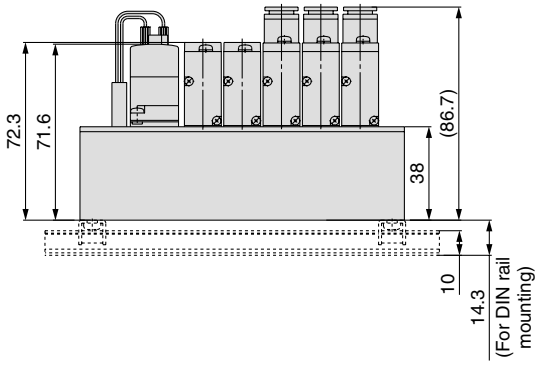
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5
L4	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200
L5	13.5	14.5	15.5	16.5	17.5	18.5	13	14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

Dimensions: Type 52/For EX510/Series SY5000

SS5Y5-52(R)S5□-Stations U/D/B-□(D)





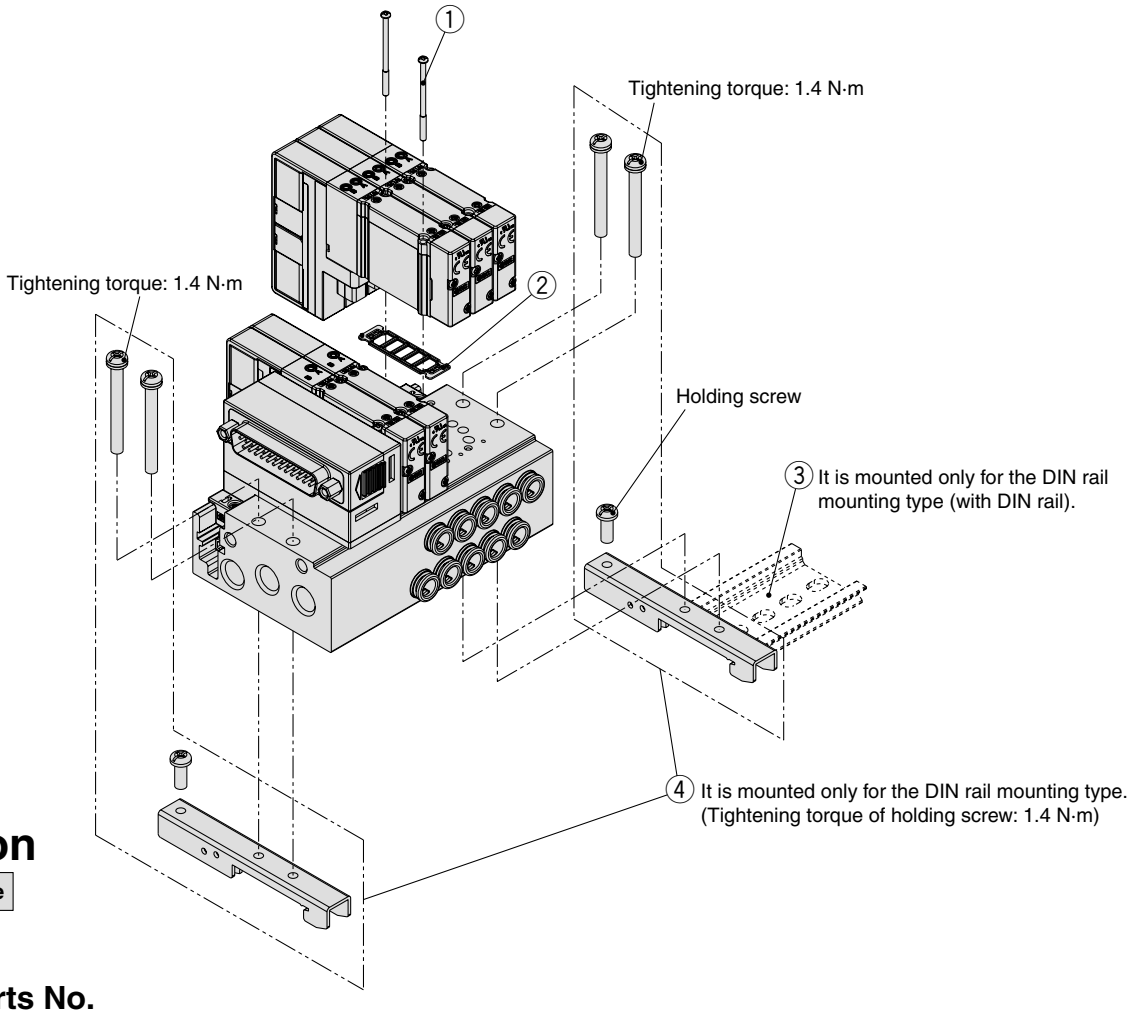


Note) These figures show “SS5Y5-52S5-05B”.

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

Type 50, 51, 52

Plug-in Metal Base Manifold Exploded View



⚠ Caution

Tightening torque

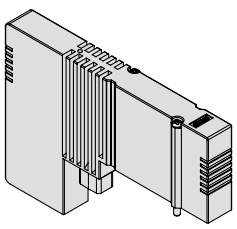
M2: 0.16 N·m
M3: 0.8 N·m

Manifold Parts No.

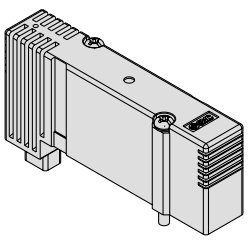
No.	Description		Part no. SY3000	Part no. SY5000	Note
①	**Valve mounting screw**	**Round head combination screw**	**SY3000-23-24A** (M2 x 32)	**SY5000-221-1A** (M3 x 32.5)	Part numbers shown on the left are for 10 valves (20 pcs.).
		Hexagon socket head cap screw	**SY3000-222-1A** (M2 x 32)	**SY5000-222-1A** (M3 x 32.5)	Part numbers shown on the left are for 10 valves (20 pcs.).
②	**Base gasket (for plug-in metal base)**		**SY30M-11-1A**	**SY50M-11-1A**	Part numbers shown on the left are for 10 valves (10 pcs.).
③	**DIN rail**		**VZ1000-11-1-□**	**VZ1000-11-4-□**	Refer to page 133.
④	**Clamp bracket assembly (for plug-in metal base)**		**SY30M-15-2A**	**SY50M-15-2A**	Part numbers shown on the left are for the clamp bracket assembly for one manifold (two sets of clamp brackets).

■Blanking plate assembly (With two mounting screws)

Used in situations where valves will be added in the future.



SY30M-26-2A(-B)



SY50M-26-2A(-B)

Refer to pages 137 and 138 for dimensions.

Refer to page 134 for individual SUP/EXH and other options.

How to Order Blanking Plate Assembly

SY□0M−26−2A−□

Series

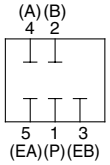
3	SY3000
5	SY5000

Option for mounting

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

Base specification

2	Plug-in metal base



Circuit diagram

Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base: D-sub Connector/ Flat Ribbon Cable Connector/PC Wiring

Series SY3000/5000 CE

How to Order Manifold

SS5Y 3 – 10 F 1 – 05 U □ – C6 □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

Refer to page 117 for dimensions of Type 11/Bottom ported type.

❶ Series

3	SY3000
5	SY5000

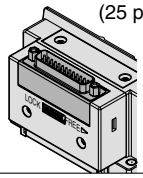
❷ Model

10	Side ported
11	Bottom ported

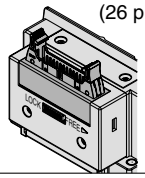
∗ Type 11 (Bottom ported) is available only for the SY5000.

❸ Connector type

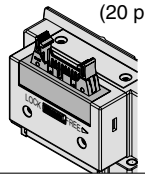
F: D-sub connector (25 pins)



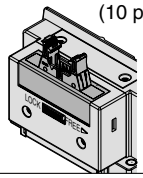
P: Flat ribbon cable (26 pins)



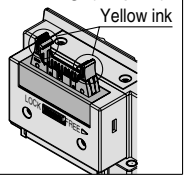
PG: Flat ribbon cable (20 pins)



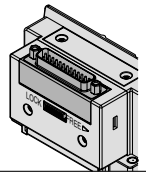
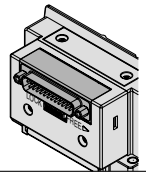
PH: Flat ribbon cable (10 pins)



J: PC wiring (20 pins)



❹ Connector entry direction

1: Upward	2: Lateral
	

❺ Valve stations

F: D-sub connector (25 pins)

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

P: Flat ribbon cable (26 pins)

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

PG: Flat ribbon cable (20 pins)

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

PH: Flat ribbon cable (10 pins)

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

J: PC wiring (20 pins)

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

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

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

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

❻ P, E port location

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

❼ SUP/EXH block assembly specification

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

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

Refer to the page on the right for ❽.

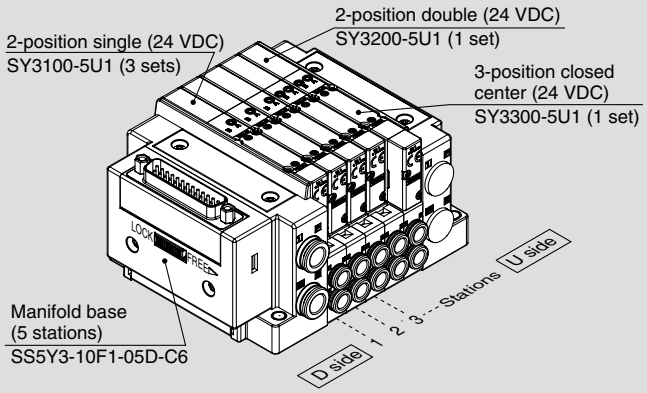
❾ Mounting

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

∗ Only direct mounting for Type 11 (Bottom ported)

How to Order Manifold Assembly

Example (SS5Y3-10F1-□)

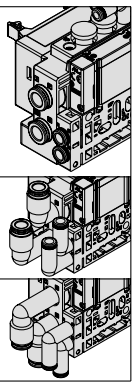


SS5Y3-10F1-05D-C6 ··· 1 set (Type 10 5-station manifold base part no.)
∗SY3100-5U1 ··· 3 sets (2-position single part no.)
∗SY3200-5U1 ··· 1 set (2-position double part no.)
∗SY3300-5U1 ··· 1 set (3-position closed center part no.)
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with top ported valve. Refer to page 56 for the valves.

❽ A, B port size (Metric size)

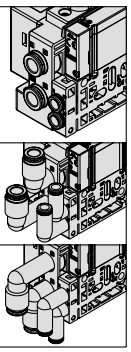
Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
C2		ø2 One-touch fitting	●	—	—
C3		ø3.2 One-touch fitting	●	—	—
C4		ø4 One-touch fitting	●	●	●
C6		ø6 One-touch fitting	●	●	●
C8		ø8 One-touch fitting	—	●	●
L4	Upward elbow	ø4 One-touch fitting	●	●	—
L6	Upward elbow	ø6 One-touch fitting	●	●	—
L8	Upward elbow	ø8 One-touch fitting	—	●	—
B4	Downward elbow	ø4 One-touch fitting	●	●	—
B6	Downward elbow	ø6 One-touch fitting	●	●	—
B8	Downward elbow	ø8 One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø8	ø10	ø10



• Elbows are also mounted to P and E ports if elbow is selected.

A, B port size (Inch size)

Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
N1		ø1/8" One-touch fitting	●	—	—
N3		ø5/32" One-touch fitting	●	●	●
N7		ø1/4" One-touch fitting	●	●	●
N9		ø5/16" One-touch fitting	—	●	●
LN3	Upward elbow	ø5/32" One-touch fitting	●	●	—
LN7	Upward elbow	ø1/4" One-touch fitting	●	●	—
LN9	Upward elbow	ø5/16" One-touch fitting	—	●	—
BN3	Downward elbow	ø5/32" One-touch fitting	●	●	—
BN7	Downward elbow	ø1/4" One-touch fitting	●	●	—
BN9	Downward elbow	ø5/16" One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø5/16"	ø3/8"	ø3/8"



∗ When ports are mixed, indicate the piping specifications with the manifold specification sheet.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 0 0 □ □ □ □ – 5 □ □ 1 – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.

∗ 3-position type does not have a valve built-in type back pressure check valve.

• Base mounted

❻ 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 high pressure type.

❼ Coil specification

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

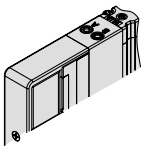
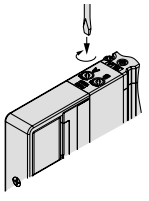
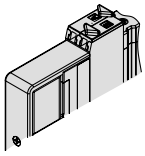
∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.

∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

5	24 VDC
6	12 VDC

❿ Manual override

Nil: Non-locking push type	D: Push-turn locking slotted type	F: Slide locking type
		

❾ 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.

⓫ Option for mounting

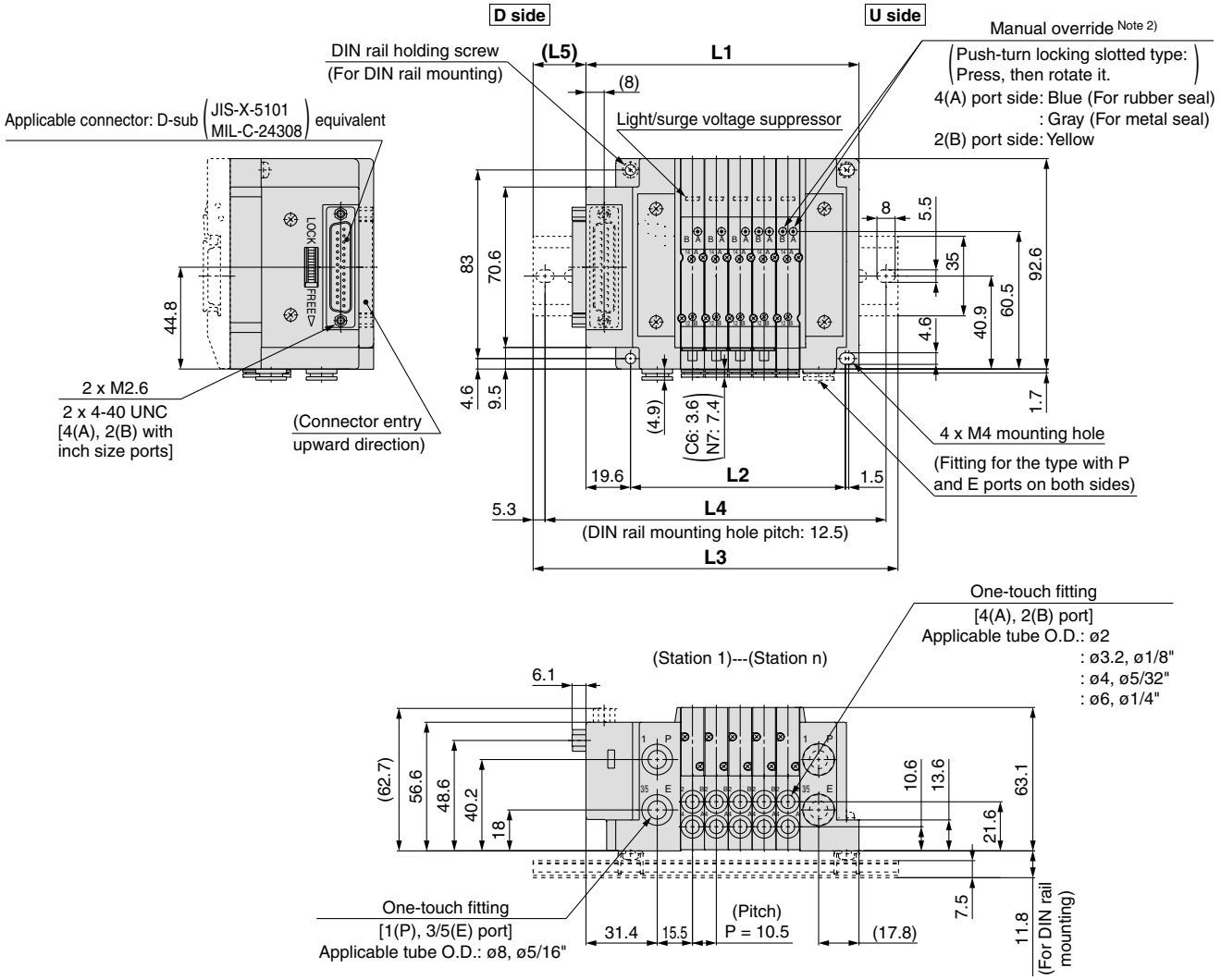
Nil	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

⚠ Protective class class Ⅲ (Mark: ⧫)

Dimensions: Type 10/D-sub Connector/Series SY3000

SS5Y3-10F$^{1}_{2}$-[Stations]$^{U}_{D}$-$^{C2}_{C3, N1}$$^{C4, N3}_{C6, N7}$(D)

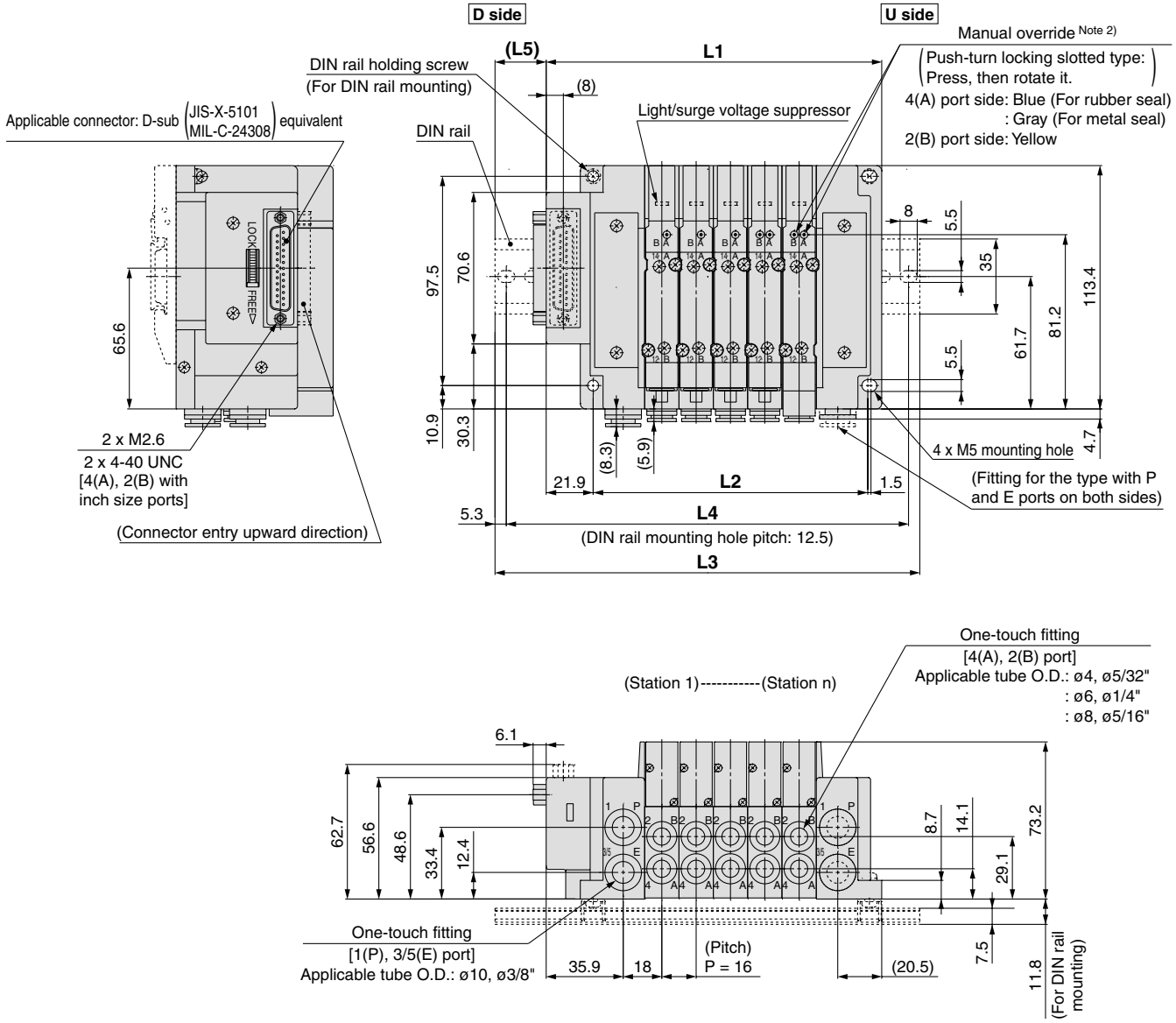


Note 1) These figures show “SS5Y3-10F2-05D-C6”.
Note 2) Refer to page 115 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 118 for dimensions of A or B port top-ported type.

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

Dimensions: Type 10/D-sub Connector/Series SY5000

SS5Y5-10F$^{1}_{2}$- Stations (U C4, N3 / D C6, N7 / B C8, N9) (D)

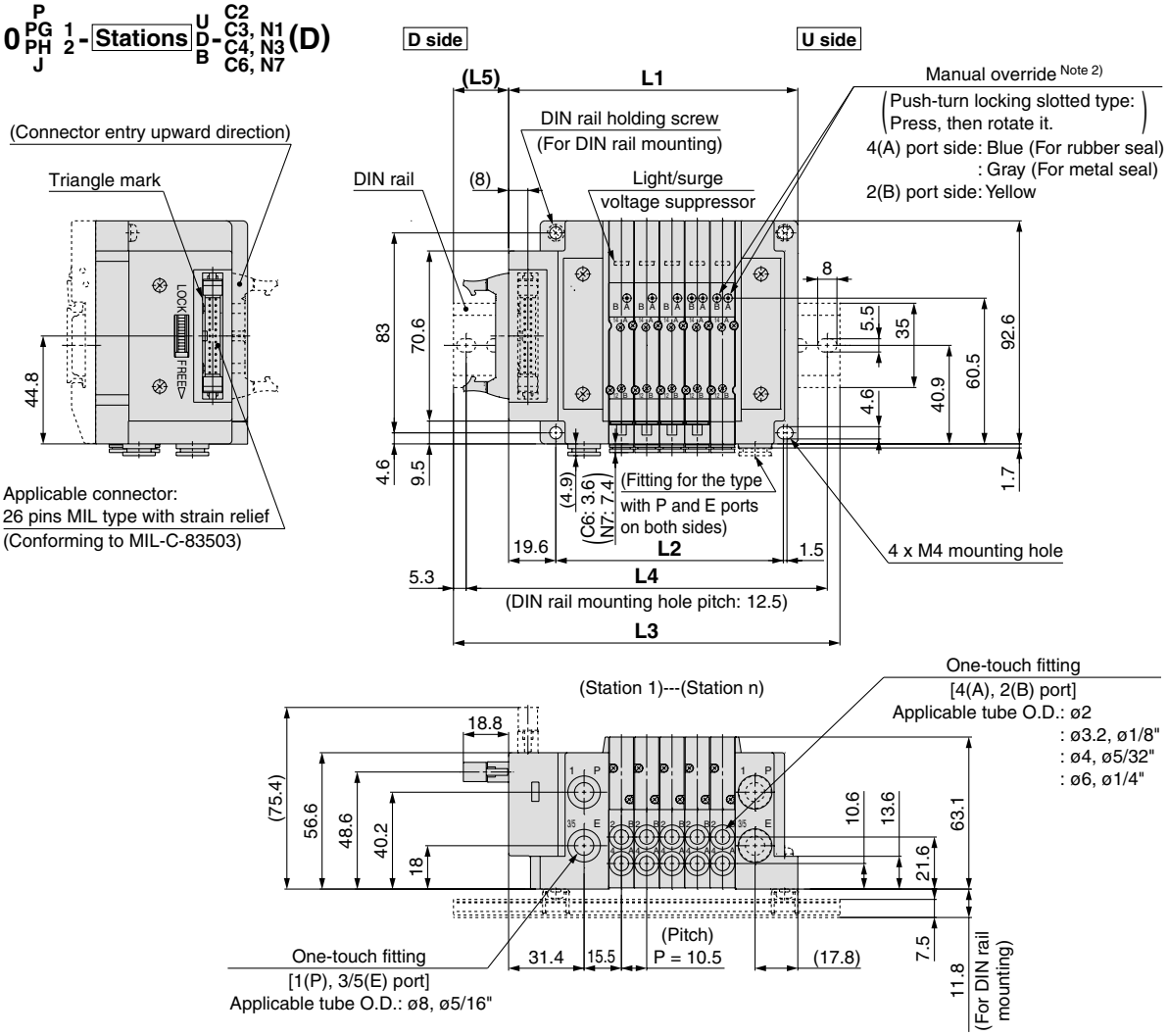


Note 1) These figures show "SS5Y5-10F2-05D-C8".
Note 2) Refer to page 116 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 119 for dimensions of A or B port top-ported type.

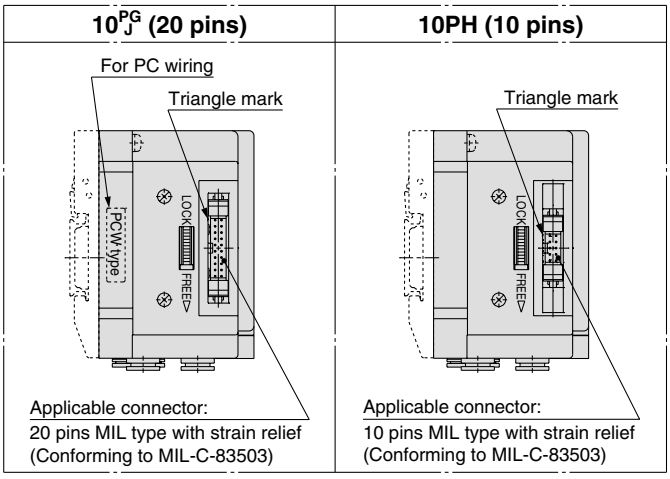
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	108.4	124.4	140.4	156.4	172.4	188.4	204.4	220.4	236.4	252.4	268.4	284.4	300.4	316.4	332.4	348.4	364.4	380.4	396.4	412.4	428.4	444.4	460.4
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416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

Dimensions: Type 10/Flat Ribbon Cable Connector/Series SY3000

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



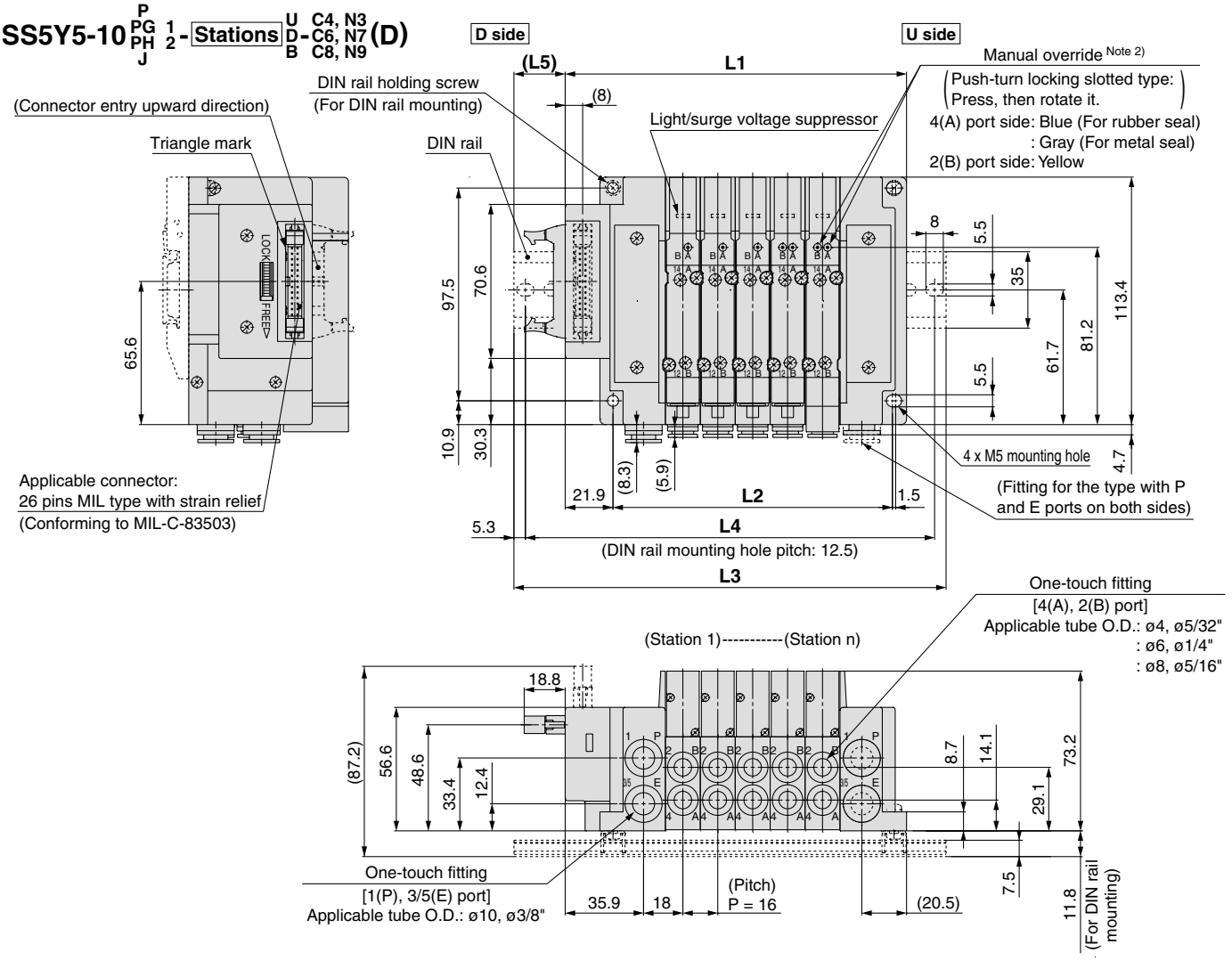
Note 1) These figures show “SS5Y3-10P2-05D-C6”.
Note 2) Refer to page 115 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 118 for dimensions of A or B port top-ported type.
Note 4) Only connectors are different for 10PG, 10PH and 10J. L1 to L5 dimensions are the same as 10P type.



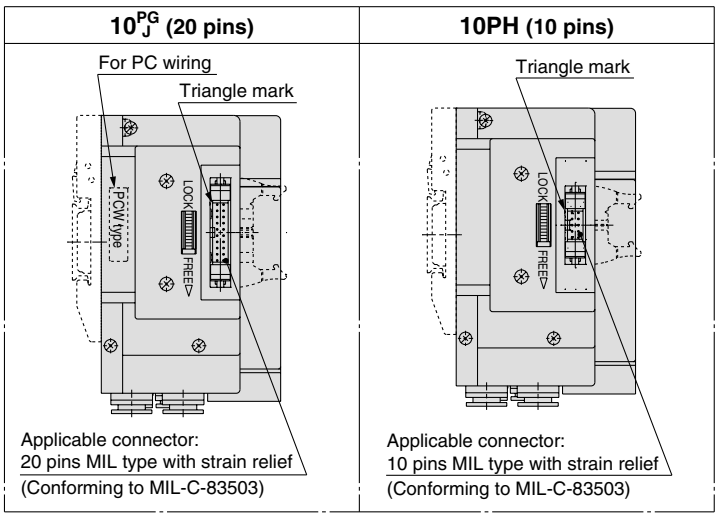
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	88.6	99.1	109.6	120.1	130.6	141.1	151.6	162.1	172.6	183.1	193.6	204.1	214.6	225.1	235.6	246.1	256.6	267.1	277.6	288.1	298.6	309.1	319.6
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5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

Dimensions: Type 10/Flat Ribbon Cable Connector/Series SY5000

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



Note 1) These figures show "SS5Y5-10P2-05D-C8".
Note 2) Refer to page 116 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 119 for dimensions of A or B port top-ported type.
Note 4) Only connectors are different for 10PG, 10PH and 10J. L1 to L5 dimensions are the same as 10P type.



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

Type 12
Top Ported

Plug-in Connector Connecting Base: D-sub Connector/ Flat Ribbon Cable Connector/PC Wiring

Series SY3000/5000 CE

How to Order Manifold

SS5Y 3 – 12 F 1 – 05 U □ – □ □ □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

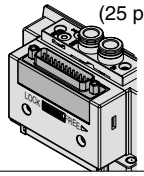
Refer to pages 118 and 119 for dimensions of Type 12/Top ported type.

❶ Series

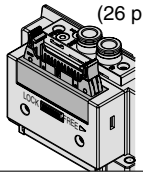
3	SY3000
5	SY5000

❷ Connector type

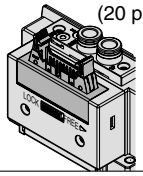
F: D-sub connector (25 pins)



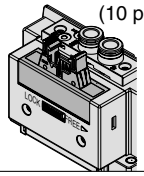
P: Flat ribbon cable (26 pins)



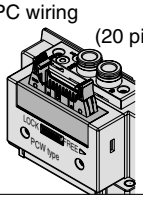
PG: Flat ribbon cable (20 pins)



PH: Flat ribbon cable (10 pins)

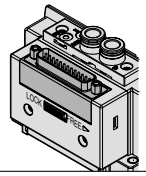


J: PC wiring (20 pins)

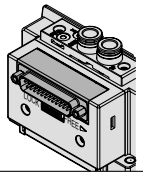


❸ Connector entry direction

1: Upward



2: Lateral



❹ Valve stations

F: D-sub connector (25 pins)

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

P: Flat ribbon cable (26 pins)

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

PG: Flat ribbon cable (20 pins)

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

PH: Flat ribbon cable (10 pins)

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

J: PC wiring (20 pins)

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

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

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

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

❺ P, E port location

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

Note) SUP/EXH block assembly specification built-in silencer type has the P port on this side.

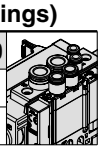
❻ SUP/EXH block assembly specification

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

∗ For a built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged.

❼ P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"



∗ For N, sizes are in inches.

❽ A, B porting specification

Nil	Top ported only
M	Mixed

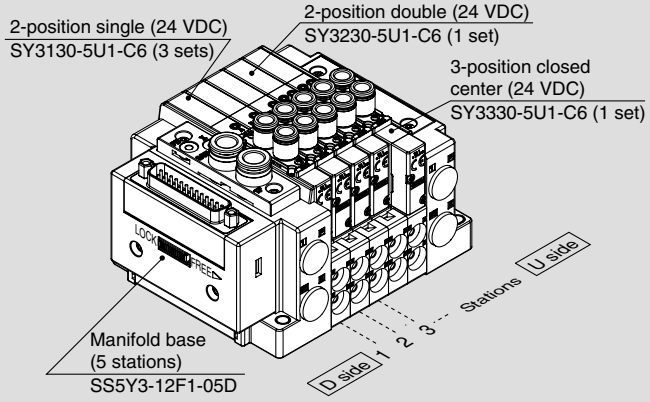
∗ Specify on a manifold specification sheet for M.

❾ Mounting

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

How to Order Manifold Assembly

Example (SS5Y3-12F1-□)



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

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with side ported valve. Refer to page 50 for the valves.

SMC

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 3 0 □ □ □ □ – 5 □ □ 1 – C6 □ – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬ ⓭

● Top ported

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.
∗ 3-position type does not have a valve built-in type back pressure check valve.

❻ 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 high pressure type.

❼ Coil specification

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

∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

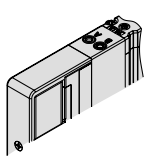
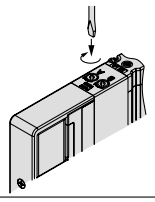
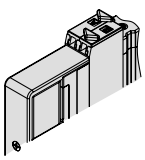
5	24 VDC
6	12 VDC

❾ 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.

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

⓫ A, B port size

Thread piping

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

One-touch fittings (Metric size)

Symbol	A, B port	SY3000	SY5000
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	—	●

One-touch fittings (Inch size)

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

⓬ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ M5 is available with Nil only.

⓭ Option for mounting

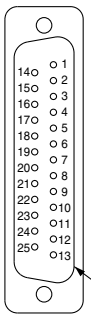
Nil	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

⚠ Protective class class Ⅲ (Mark: Ⅲ)

Electrical Wiring Specifications

D-sub connector



Connector terminal no.

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

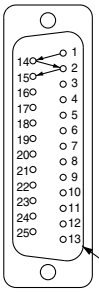
Lead wire color for D-sub connector assembly (AXT100-DS25-$^{015}_{030}_{050}$)

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

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

Specified Layout

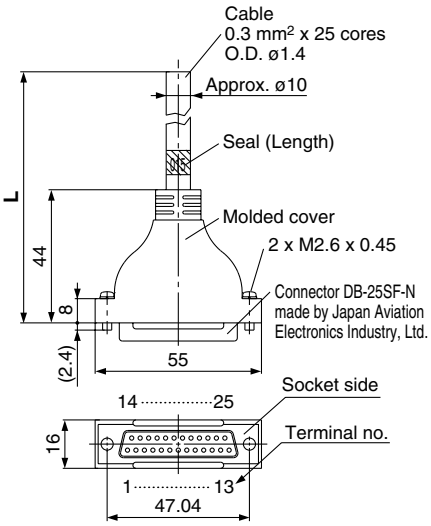
(25 pins)



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

Cable Assembly

AXT100-DS25-$^{015}_{030}_{050}$



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

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

D-sub connector cable assembly

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

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

Electrical characteristics

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

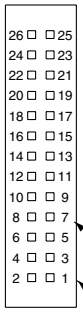
Connector Manufacturers' Example

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

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

Electrical Wiring Specifications

Flat ribbon cable connector



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

Connector terminal no.

Triangle mark indicator position

P: Flat ribbon cable (26 pins)

<Double wiring>

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

PG: Flat ribbon cable (20 pins)

<Double wiring>

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

PH: Flat ribbon cable (10 pins)

<Double wiring>

		Terminal no.	Polarity	
Station 1	SOL.a	1	(–)	(+)
	SOL.b	2	(–)	(+)
Station 2	SOL.a	3	(–)	(+)
	SOL.b	4	(–)	(+)
Station 3	SOL.a	5	(–)	(+)
	SOL.b	6	(–)	(+)
Station 4	SOL.a	7	(–)	(+)
	SOL.b	8	(–)	(+)
	COM.	9	(+)	(–)
	COM.	10	(+)	(–)
			Positive common	Negative common

J: Flat ribbon cable (20 pins) PC wiring

<Double wiring>

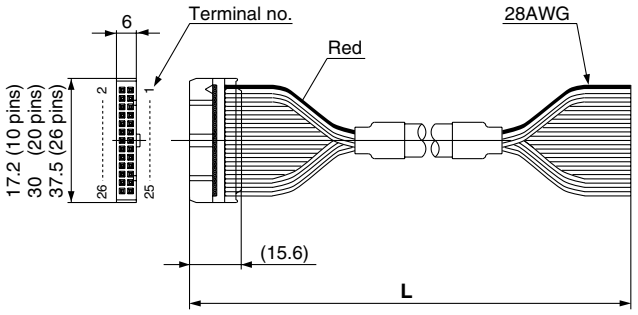
		Terminal no.	Polarity	
Station 1	SOL.a	20	(–)	(+)
	SOL.b	18	(–)	(+)
Station 2	SOL.a	16	(–)	(+)
	SOL.b	14	(–)	(+)
Station 3	SOL.a	12	(–)	(+)
	SOL.b	10	(–)	(+)
Station 4	SOL.a	8	(–)	(+)
	SOL.b	6	(–)	(+)
Station 5	SOL.a	19	(–)	(+)
	SOL.b	17	(–)	(+)
Station 6	SOL.a	15	(–)	(+)
	SOL.b	13	(–)	(+)
Station 7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

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

Cable Assembly

AXT100-FC 10 1 / 20 2 / 26 3

(Flat ribbon cable connector assemblies can be ordered with manifolds. Refer to How to Order Manifold.)



Flat ribbon cable connector assembly

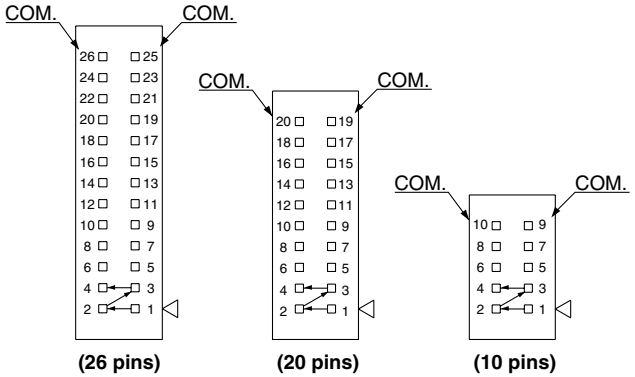
Cable length (**L**)	Assembly part no.		
	26 pins	20 pins	10 pins
1.5 m	AXT100-FC26-1	AXT100-FC20-1	AXT100-FC10-1
3 m	AXT100-FC26-2	AXT100-FC20-2	AXT100-FC10-2
5 m	AXT100-FC26-3	AXT100-FC20-3	AXT100-FC10-3

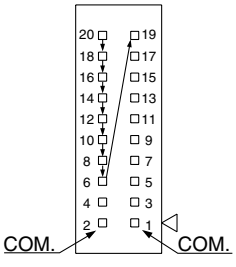
* When using a standard commercial connector, use a 26-pin, 20-pin or 10-pin type connector conforming to MIL-C-83503 with strain relief.
* Cannot be used for movable wiring.
* Lengths other than the above is also available. Please contact SMC for details.

Connector Manufacturers' Example

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

Specified Layout





Mixed wiring of single and double wiring can be specified for 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. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.

Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base: Terminal Block Box

Series SY3000/5000 CE

How to Order Manifold

SS5Y 3 – 10 T – 05 U □ – C6 □

❶ ❷ ❸ ❹ ❺ ❻ ❼

Refer to page 117 for dimensions of Type 11/Bottom ported type.

❶ Series

3	SY3000
5	SY5000

❷ Model

10	Side ported
11	Bottom ported

∗ Type 11 (Bottom ported) is available only for the SY5000.

❸ Valve stations

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

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

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

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

❹ P, E port location

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

❺ SUP/EXH block assembly specification

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

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

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

Refer to the page on the right for ❻.

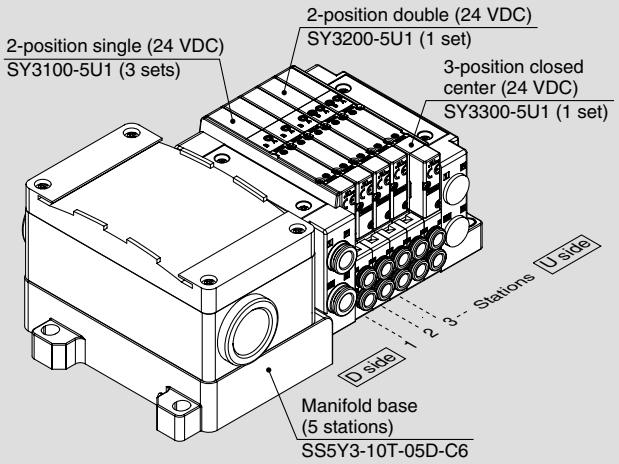
❼ Mounting

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

∗ Only direct mounting for Type 11 (Bottom ported)

How to Order Manifold Assembly

Example (SS5Y3-10T-□)

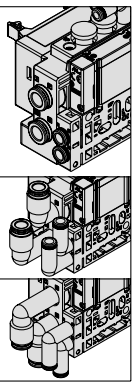


SS5Y3-10T-05D-C6 ··· 1 set (Type 10 5-station manifold base part no.)
∗SY3100-5U1 ····· 3 sets (2-position single part no.)
∗SY3200-5U1 ····· 1 set (2-position double part no.)
∗SY3300-5U1 ····· 1 set (3-position closed center part no.)
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with top ported valve. Refer to page 64 for the valves.

❻ A, B port size (Metric size)

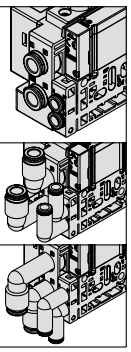
Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
C2		ø2 One-touch fitting	●	—	—
C3		ø3.2 One-touch fitting	●	—	—
C4		ø4 One-touch fitting	●	●	●
C6		ø6 One-touch fitting	●	●	●
C8		ø8 One-touch fitting	—	●	●
L4	Upward elbow	ø4 One-touch fitting	●	●	—
L6	Upward elbow	ø6 One-touch fitting	●	●	—
L8	Upward elbow	ø8 One-touch fitting	—	●	—
B4	Downward elbow	ø4 One-touch fitting	●	●	—
B6	Downward elbow	ø6 One-touch fitting	●	●	—
B8	Downward elbow	ø8 One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø8	ø10	ø10



• Elbows are also mounted to P and E ports if elbow is selected.

A, B port size (Inch size)

Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
N1		ø1/8" One-touch fitting	●	—	—
N3		ø5/32" One-touch fitting	●	●	●
N7		ø1/4" One-touch fitting	●	●	●
N9		ø5/16" One-touch fitting	—	●	●
LN3	Upward elbow	ø5/32" One-touch fitting	●	●	—
LN7	Upward elbow	ø1/4" One-touch fitting	●	●	—
LN9	Upward elbow	ø5/16" One-touch fitting	—	●	—
BN3	Downward elbow	ø5/32" One-touch fitting	●	●	—
BN7	Downward elbow	ø1/4" One-touch fitting	●	●	—
BN9	Downward elbow	ø5/16" One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø5/16"	ø3/8"	ø3/8"



∗ When ports are mixed, indicate the piping specifications with the manifold specification sheet.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 0 0 □ □ □ □ – 5 □ □ 1 – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.

∗ 3-position type does not have a valve built-in type back pressure check valve.

• Base mounted

❻ 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 high pressure type.

❼ Coil specification

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

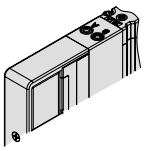
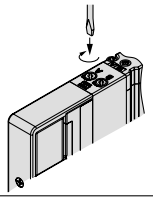
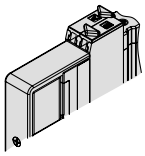
∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.

∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

5	24 VDC
6	12 VDC

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

❾ 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.

⓫ Option for mounting

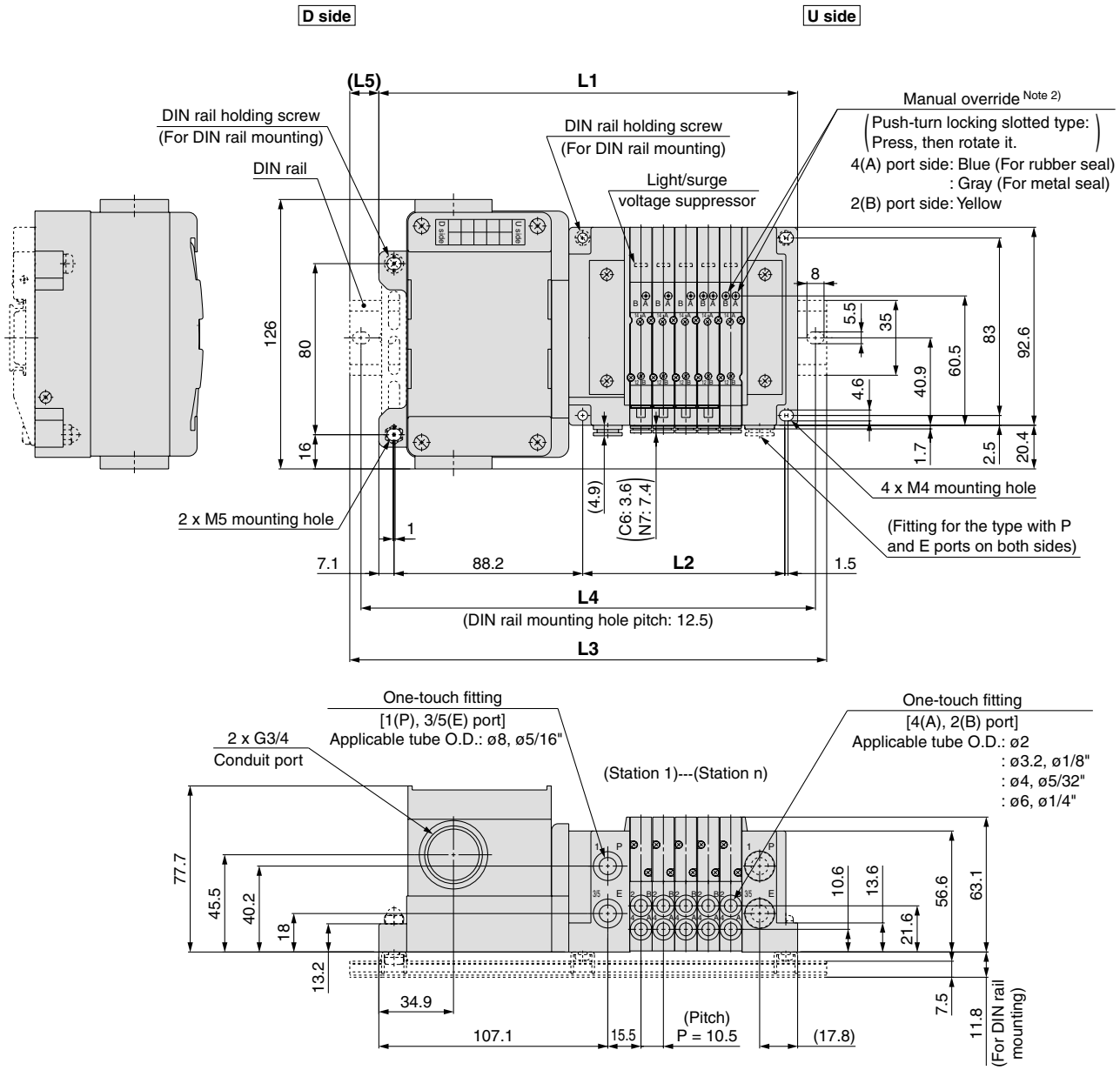
Nil	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

⚠ Protective class class Ⅲ (Mark: ⧫)

Dimensions: Type 10/Terminal Block Box/Series SY3000

SS5Y3-10T- Stations U/D/B - C2 / C3, N1 / C4, N3 / C6, N7 **(D)**

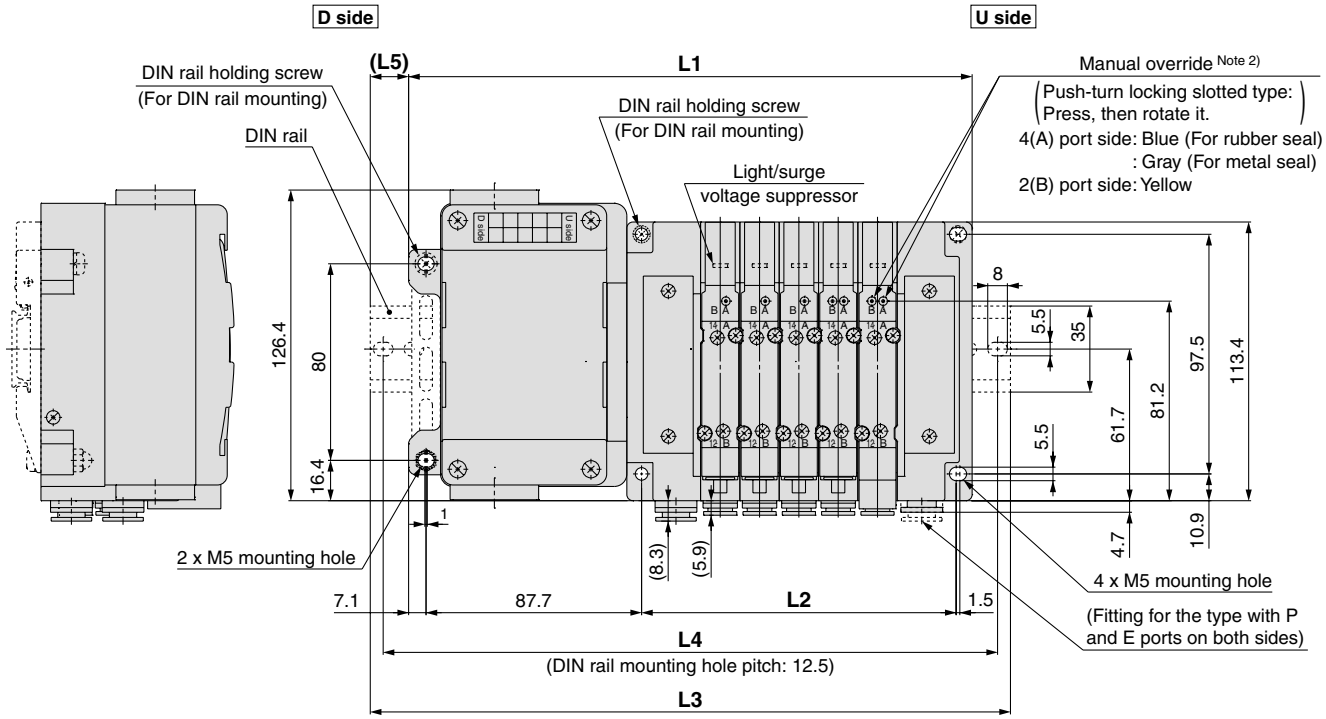


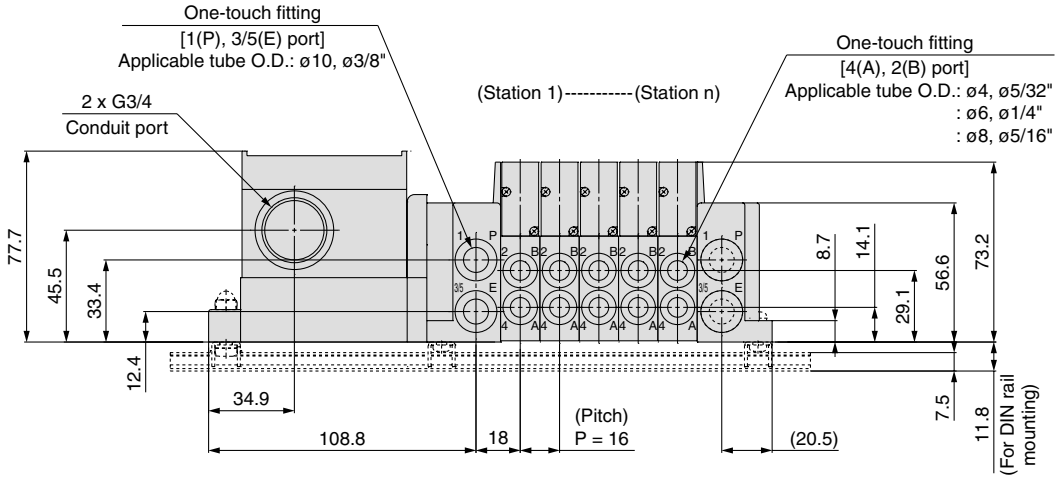
Note 1) These figures show “SS5Y3-10T-05D-C6”.
Note 2) Refer to page 115 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 118 for dimensions of A or B port top-ported type.

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

Dimensions: Type 10/Terminal Block Box/Series SY5000

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





Note 1) These figures show "SS5Y5-10T-05D-C8".
Note 2) Refer to page 116 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 119 for dimensions of A or B port top-ported type.

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

Type 12
Top Ported

Plug-in Connector Connecting Base: Terminal Block Box

Series SY3000/5000

How to Order Manifold

SS5Y 3 – 12T – 05 U ☐ – ☐ ☐ ☐
❶ ❷ ❸ ❹ ❺ ❻ ❼

Refer to pages 118 and 119 for dimensions of Type 12/Top ported type.

❶ Series

3	SY3000
5	SY5000

❷ Valve stations

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

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

❸ P, E port location

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

Note) SUP/EXH block assembly specification built-in silencer type has the P port on this side.

❹ SUP/EXH block assembly specification

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

∗ For a built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged.
∗ When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

❺ P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"

∗ For N, sizes are in inches.

❻ A, B porting specification

Nil	Top ported only
M	Mixed

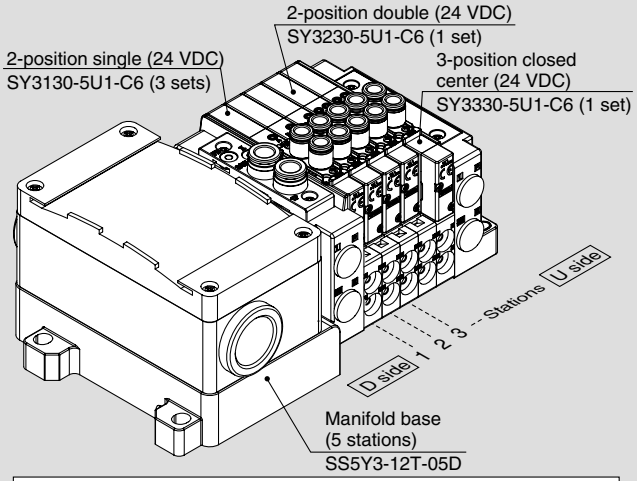
∗ Specify on a manifold specification sheet for M.

❼ Mounting

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

How to Order Manifold Assembly

Example (SS5Y3-12T-☐)



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

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with side ported valve. Refer to page 60 for the valves.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 3 0 □ □ □ □ – 5 □ □ 1 – C6 □ – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬ ⓭

❸ Top ported

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.
∗ 3-position type does not have a valve built-in type back pressure check valve.

❻ 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 high pressure type.

❼ Coil specification

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

∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

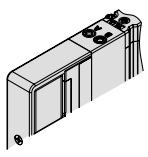
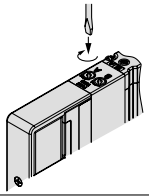
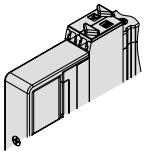
5	24 VDC
6	12 VDC

❾ 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.

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

⓫ A, B port size

Thread piping

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

One-touch fittings (Metric size)

Symbol	A, B port	SY3000	SY5000
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	—	●

One-touch fittings (Inch size)

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

⓬ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗M5 is available with Nil only.

⓭ Option for mounting

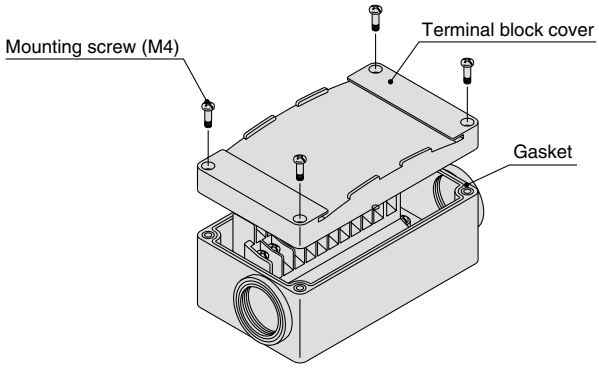
Nil	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

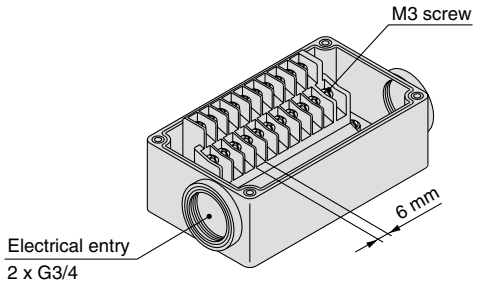
⚠ Protective class class Ⅲ (Mark: ⧾)

Terminal Block Connection

Step 1. Removing the terminal block cover
Loosen the 4 mounting screws (M4) to remove the terminal block cover.



Step 2. The below diagram shows the terminal block wiring. All stations are provided with double wiring regardless of the mounted valves.
Connect each wire to the power supply side, according to the markings provided inside the terminal block.



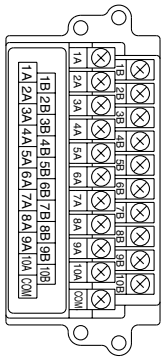
Step 3. Mounting the terminal block cover
Securely tighten the screws to the torque shown in the below table only after confirming that the gasket is installed correctly.

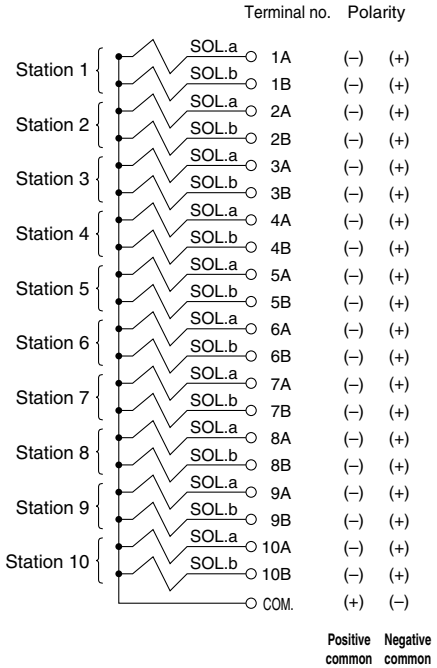
Proper tightening torque N·m
0.7 to 1.2

- Applicable crimped terminal: 1.25-3S, 1.25Y-3, 1.25Y-3N, 1.25Y-3.5
- Name plate: VVQ5000-N-T
- Drip-proof plug assembly (for G 3/4): AXT100-B06A

Electrical Wiring Specifications (IP67 compatible)

Standard wiring



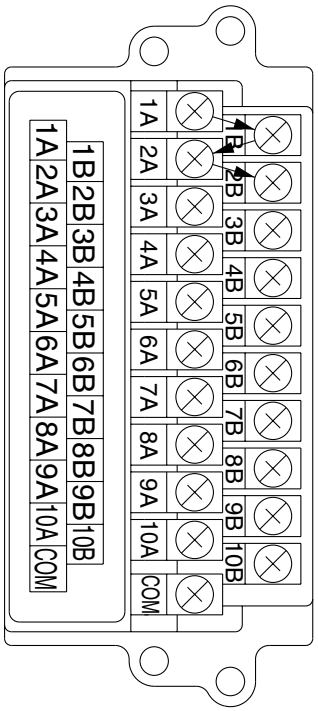


If alignment is not specified, the internal wiring is double wiring (connected to SOL. a and SOL. b) regardless of number of stations, valve and option types.

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

Specified Layout

Mixed wiring of single and double wiring can be specified with the manifold specification sheet. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 20 or less. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.



Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base: Lead Wire

Series SY3000/5000

How to Order Manifold

SS5Y 3 – 10 L1 1 – 05 U □ – C6 □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

Refer to page 117 for dimensions of Type 11/Bottom ported type.

❶ Series

3	SY3000
5	SY5000

❷ Model

10	Side ported
11	Bottom ported

∗ Type 11 (Bottom ported) is available only for the SY5000.

❸ Number of cores (Lead wire)

L1	34 cores
L2	17 cores
L3	9 cores

❹ Lead wire length

1	0.6 m
2	1.5 m
3	3 m

❺ Valve stations

(L1□)

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

(L3□)

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

(L2□)

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

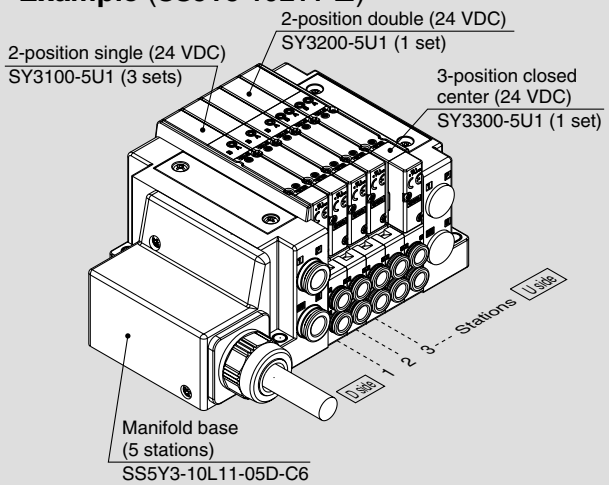
Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

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

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

How to Order Manifold Assembly

Example (SS5Y3-10L11-□)



SS5Y3-10L11-05D-C6 ··· 1 set (Type 10 5-station manifold base part no.)
∗SY3100-5U1 ····· 3 sets (2-position single part no.)
∗SY3200-5U1 ····· 1 set (2-position double part no.)
∗SY3300-5U1 ····· 1 set (3-position closed center part no.)
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with top ported valve. Refer to page 72 for the valves.

❻ P, E port location

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

❼ SUP/EXH block assembly specification

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

∗ 3/5(E) port is plugged for the built-in silencer type.
∗ When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for ❽.

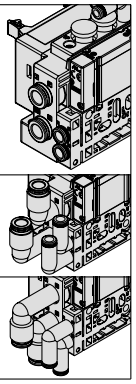
❾ Mounting

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

∗ Only direct mounting for Type 11 (Bottom ported)

❽ A, B port size (Metric size)

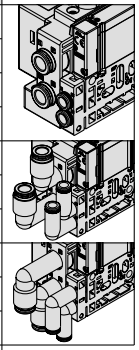
Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
C2		ø2 One-touch fitting	●	—	—
C3		ø3.2 One-touch fitting	●	—	—
C4		ø4 One-touch fitting	●	●	●
C6		ø6 One-touch fitting	●	●	●
C8		ø8 One-touch fitting	—	●	●
L4	Upward elbow	ø4 One-touch fitting	●	●	—
L6	Upward elbow	ø6 One-touch fitting	●	●	—
L8	Upward elbow	ø8 One-touch fitting	—	●	—
B4	Downward elbow	ø4 One-touch fitting	●	●	—
B6	Downward elbow	ø6 One-touch fitting	●	●	—
B8	Downward elbow	ø8 One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø8	ø10	ø10



• Elbows are also mounted to P and E ports if elbow is selected.

A, B port size (Inch size)

Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
N1		ø1/8" One-touch fitting	●	—	—
N3		ø5/32" One-touch fitting	●	●	●
N7		ø1/4" One-touch fitting	●	●	●
N9		ø5/16" One-touch fitting	—	●	●
LN3	Upward elbow	ø5/32" One-touch fitting	●	●	—
LN7	Upward elbow	ø1/4" One-touch fitting	●	●	—
LN9	Upward elbow	ø5/16" One-touch fitting	—	●	—
BN3	Downward elbow	ø5/32" One-touch fitting	●	●	—
BN7	Downward elbow	ø1/4" One-touch fitting	●	●	—
BN9	Downward elbow	ø5/16" One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø5/16"	ø3/8"	ø3/8"



∗ When ports are mixed, indicate the piping specifications with the manifold specification sheet.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 0 0 □ □ □ □ – 5 □ □ 1 – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.

∗ 3-position type does not have a valve built-in type back pressure check valve.

• **Base mounted**

❻ 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 high pressure type.

❼ Coil specification

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

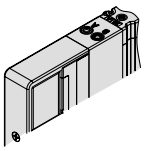
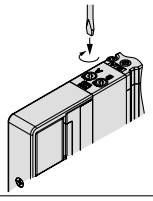
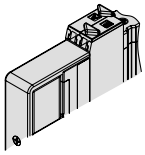
∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.

∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

5	24 VDC
6	12 VDC

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

❾ 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.

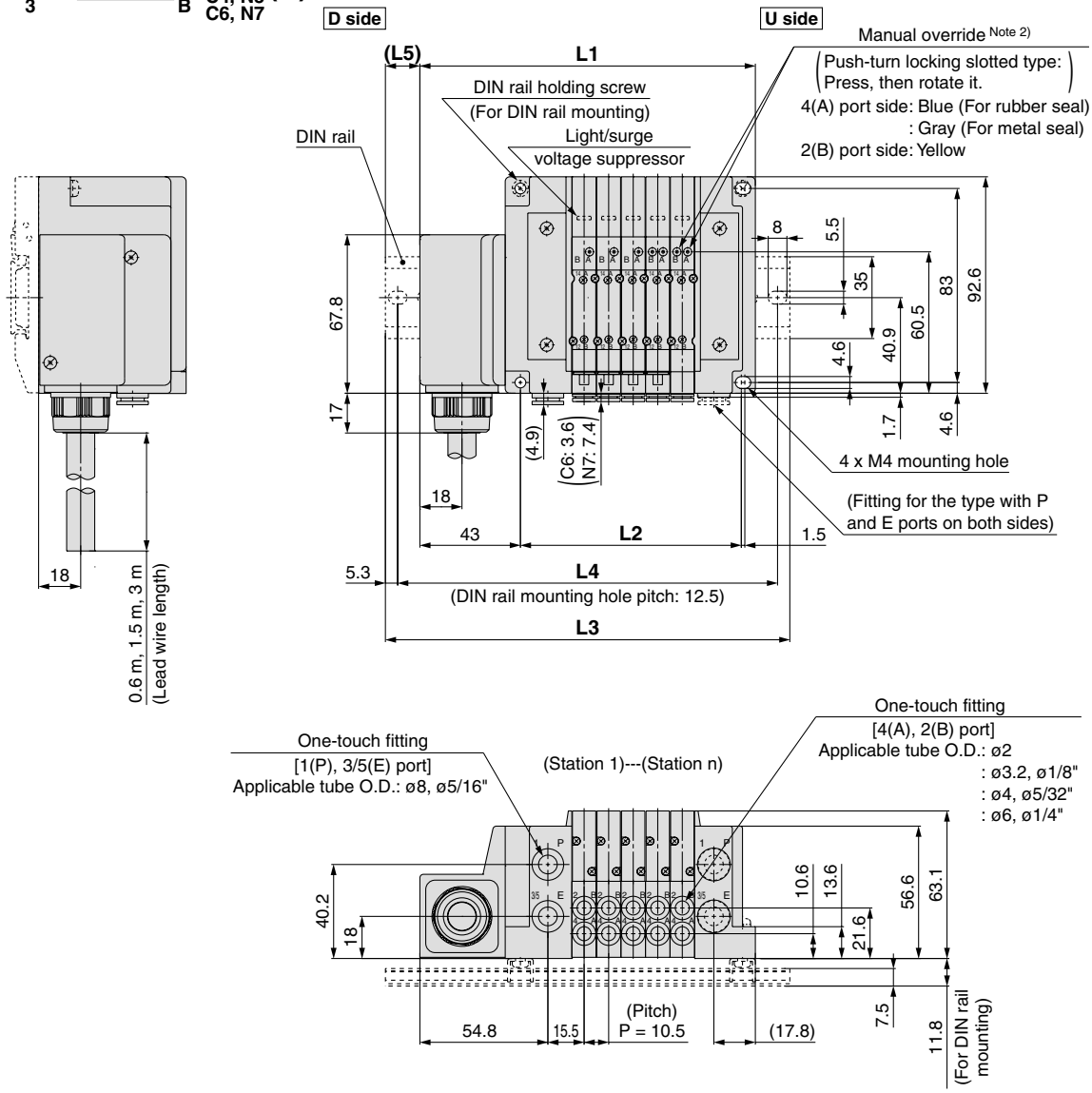
⓫ Option for mounting

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

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

Dimensions: Type 10/Lead Wire/Series SY3000

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

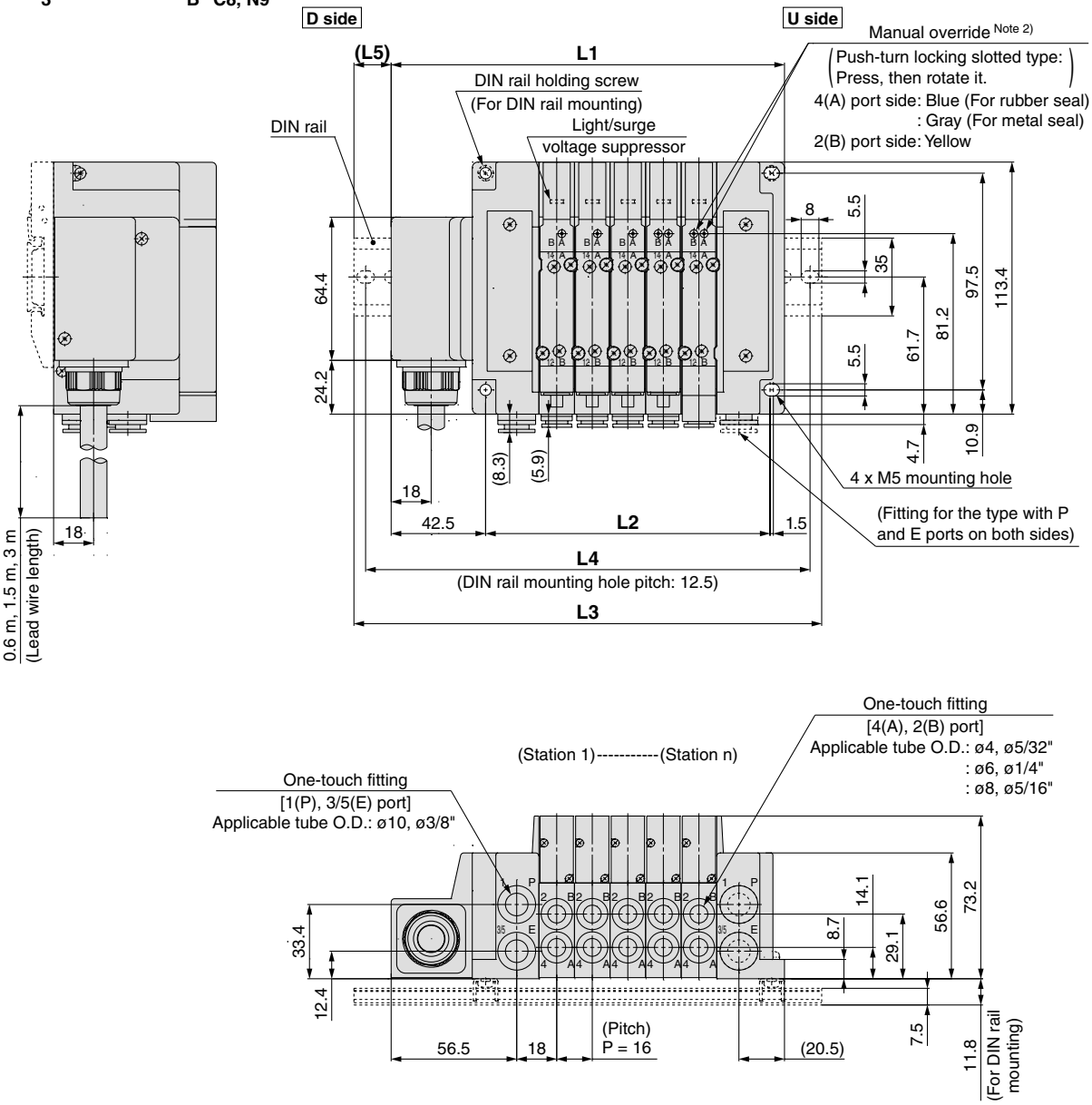


Note 1) These figures show "SS5Y3-10L1□-05D-C6".
Note 2) Refer to page 115 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 118 for dimensions of A or B port top-ported type.

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

Dimensions: Type 10/Lead Wire/Series SY5000

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



Note 1) These figures show "SS5Y5-10L1□-05D-C8".
Note 2) Refer to page 116 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 119 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

Type 12
Top Ported

Plug-in Connector Connecting Base: Lead Wire

Series SY3000/5000

How to Order Manifold

SS5Y 3 – 12 L1 1 – 05 U □ – □ □ □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

Refer to pages 118 and 119 for dimensions of Type 12/Top ported type.

❶ Series

3	SY3000
5	SY5000

❷ Number of cores (Lead wire)

L1	34 cores
L2	17 cores
L3	9 cores

❸ Lead wire length

1	0.6 m
2	1.5 m
3	3 m

❺ P, E port location

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

Note) SUP/EXH block assembly specification built-in silencer type has the P port on this side.

❹ Valve stations

(L1□)

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

(L3□)

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

(L2□)

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

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

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

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

❻ SUP/EXH block assembly specification

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

∗ For a built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged.
∗ When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

❼ P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"

∗ For N, sizes are in inches.

❽ A, B porting specification

Nil	Top ported only
M	Mixed

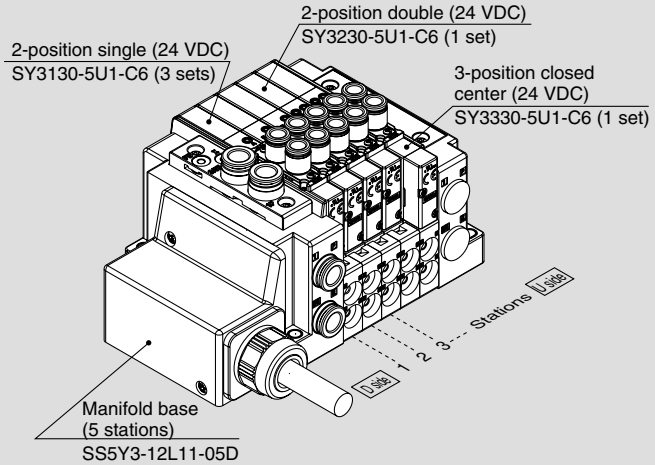
∗ Specify on a manifold specification sheet for M.

❾ Mounting

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

How to Order Manifold Assembly

Example (SS5Y3-12L11-□)



SS5Y3-12L11-05D··· 1 set (Type 12 5-station manifold base part no.)
∗SY3130-5U1-C6····· 3 sets (2-position single part no.)
∗SY3230-5U1-C6····· 1 set (2-position double part no.)
∗SY3330-5U1-C6····· 1 set (3-position closed center part no.)
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with side ported valve. Refer to page 68 for the valves.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY **3** **1** **3** **0** □ □ □ □ – **5** □ □ **1** – **C6** □ – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬ ⓭

❸ Top ported

❶ Series

3	SY3000
5	SY5000

❷ 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.)

* 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

* Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.
* 3-position type does not have a valve built-in type back pressure check valve.

❻ 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 high pressure type.

❼ Coil specification

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

* Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
* Quick response type does not have a power saving circuit.

❽ Rated voltage

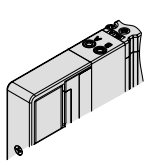
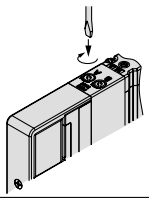
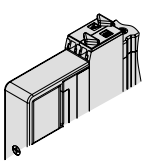
5	24 VDC
6	12 VDC

❾ 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.

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

⓫ A, B port size

Thread piping

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

One-touch fittings (Metric size)

Symbol	A, B port	SY3000	SY5000
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	—	●

One-touch fittings (Inch size)

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

⓬ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

*M5 is available with Nil only.

⓭ Option for mounting

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

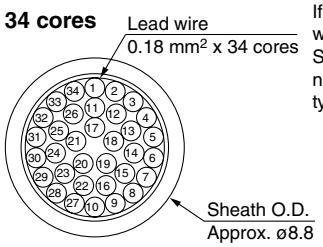
* Base gasket is not attached to manifold when a valve is ordered as a single unit.
  Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
  Refer to page 129 for part numbers of base gasket and mounting screw.

⚠ Protective class class Ⅲ (Mark: ⧐)

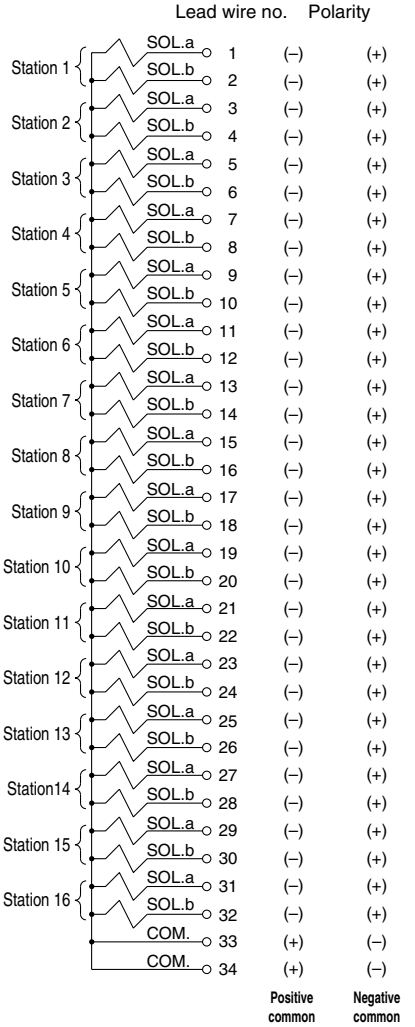
Electrical Wiring Specifications

Lead wire

34 cores



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



Lead wire color	Prined 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
		Black
Pink	— —	Red
		Black
Orange	— — —	Red
		Black
Light gray	— — —	Red
		Black
White	— — —	Red
		Black
Yellow	— — —	Red
		Black
Pink	— — —	Red
		Black
Orange	— — — —	Red
		Black
Light gray	— — — —	Red
		Black

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

Electrical characteristics

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

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

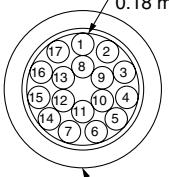
Specified Layout

Mixed wiring of single and double wiring can be specified for the manifold specification. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 32 or less. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.

Electrical Wiring Specifications

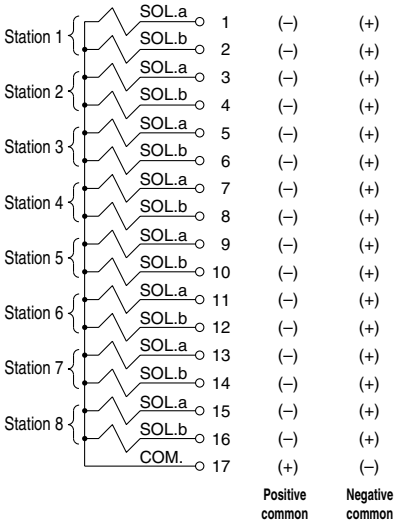
Lead wire

17 cores Lead wire 0.18 mm² x 17 cores



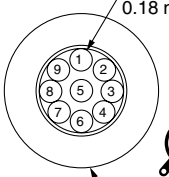
Note) Cannot be used for transfer wiring. The minimum bending radius of the cable is 45 mm.

Sheath O.D. ø6.8



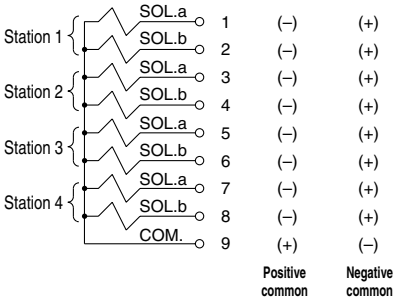
Lead wire color	Prined mark (Both sides)	
	Type	Color
Orange	—	Red / Black
Light gray	—	Red / Black
White	—	Red / Black
Yellow	—	Red / Black
Pink	—	Red / Black
Orange	— —	Red / Black
Light gray	— —	Red / Black
White	— —	Red / Black
Yellow	— —	Red

9 cores Lead wire 0.18 mm² x 9 cores



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

Sheath O.D. ø6.3



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

Electrical characteristics

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

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

Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base: Circular Connector

Series SY3000/5000

How to Order Manifold

SS5Y 5 – 10 M – 05 U □ – C6 □

❶ ❷ ❸ ❹ ❺ ❻ ❼

Refer to page 117 for dimensions of Type 11/Bottom ported type.

❶ Series

3	SY3000
5	SY5000

❷ Model

10	Side ported
11	Bottom ported

∗ Type 11 (Bottom ported) is available only for the SY5000.

❸ Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	
02	2 stations	Specified layout Note 2) (Available up to 24 solenoids)
⋮	⋮	
24	24 stations	

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

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

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

❹ P, E port location

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

❺ SUP/EXH block assembly specification

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

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

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

Refer to the page on the right for ❻.

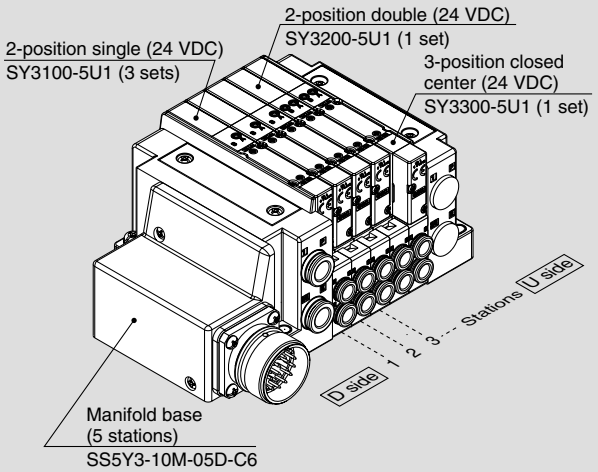
❼ Mounting

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

∗ Only direct mounting for Type 11 (Bottom ported)

How to Order Manifold Assembly

Example (SS5Y3-10M-□)



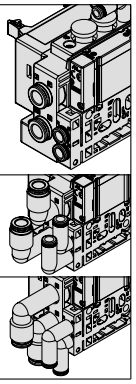
SS5Y3-10M-05D-C6 ··· 1 set (Type 10 5-station manifold base part no.)
∗SY3100-5U1 ····· 3 sets (2-position single part no.)
∗SY3200-5U1 ····· 1 set (2-position double part no.)
∗SY3300-5U1 ····· 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with top ported valve. Refer to page 80 for the valves.

❻ A, B port size (Metric size)

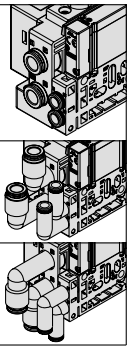
Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
C2		ø2 One-touch fitting	●	—	—
C3		ø3.2 One-touch fitting	●	—	—
C4		ø4 One-touch fitting	●	●	●
C6		ø6 One-touch fitting	●	●	●
C8		ø8 One-touch fitting	—	●	●
L4	Upward elbow	ø4 One-touch fitting	●	●	—
L6	Upward elbow	ø6 One-touch fitting	●	●	—
L8	Upward elbow	ø8 One-touch fitting	—	●	—
B4	Downward elbow	ø4 One-touch fitting	●	●	—
B6	Downward elbow	ø6 One-touch fitting	●	●	—
B8	Downward elbow	ø8 One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø8	ø10	ø10



• Elbows are also mounted to P and E ports if elbow is selected.

A, B port size (Inch size)

Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
N1		ø1/8" One-touch fitting	●	—	—
N3		ø5/32" One-touch fitting	●	●	●
N7		ø1/4" One-touch fitting	●	●	●
N9		ø5/16" One-touch fitting	—	●	●
LN3	Upward elbow	ø5/32" One-touch fitting	●	●	—
LN7	Upward elbow	ø1/4" One-touch fitting	●	●	—
LN9	Upward elbow	ø5/16" One-touch fitting	—	●	—
BN3	Downward elbow	ø5/32" One-touch fitting	●	●	—
BN7	Downward elbow	ø1/4" One-touch fitting	●	●	—
BN9	Downward elbow	ø5/16" One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø5/16"	ø3/8"	ø3/8"



∗ When ports are mixed, indicate the piping specifications with the manifold specification sheet.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 0 0 □ □ □ □ – 5 □ □ 1 – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.

∗ 3-position type does not have a valve built-in type back pressure check valve.

• **Base mounted**

❻ 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 high pressure type.

❼ Coil specification

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

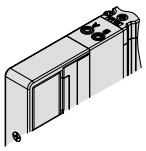
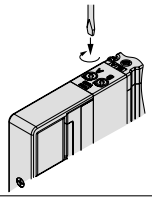
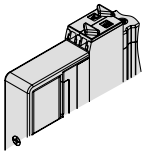
∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.

∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

5	24 VDC
6	12 VDC

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

❾ 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.

⓫ Option for mounting

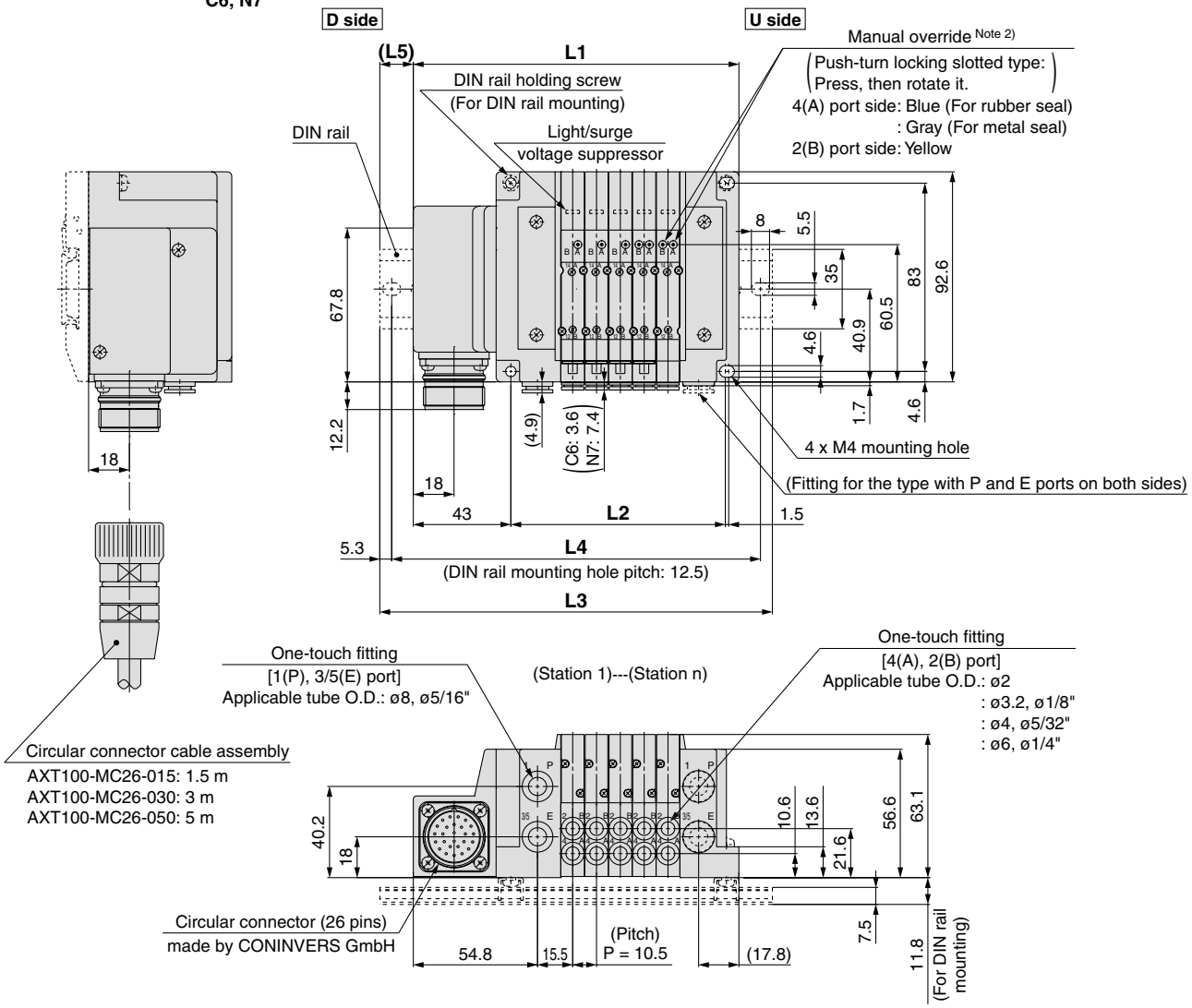
Nil	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

⚠ Protective class class Ⅲ (Mark: ⧫)

Dimensions: Type 10/Circular Connector/Series SY3000

SS5Y3-10M-[Stations][U/D/B]-[C2 / C3, N1 / C4, N3 / C6, N7](D)

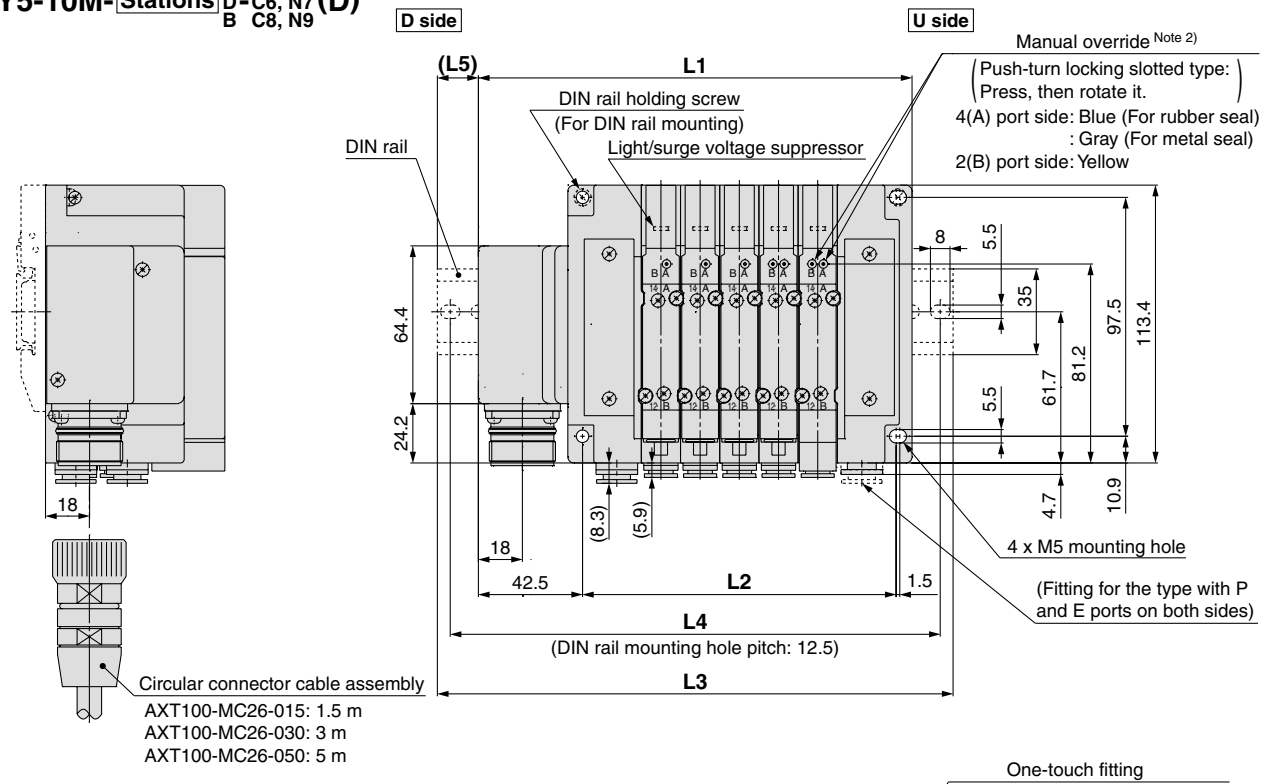


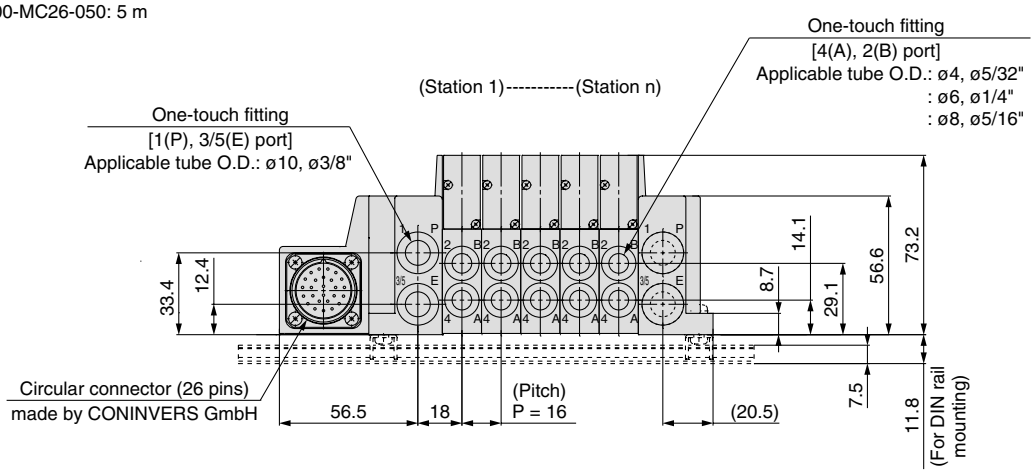
Note 1) These figures show “SS5Y3-10M-05D-C6”.
Note 2) Refer to page 115 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 118 for dimensions of A or B port top-ported type.

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

Dimensions: Type 10/Circular Connector/Series SY5000

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





Note 1) These figures show “SS5Y5-10M-05D-C8”.
Note 2) Refer to page 116 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 119 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

Type 12
Top Ported

Plug-in Connector Connecting Base: Circular Connector

Series SY3000/5000

How to Order Manifold

SS5Y 3 – 12M – 05 U □ – □ □ □

❶ ❷ ❸ ❹ ❺ ❻ ❼

Refer to pages 118 and 119 for dimensions of Type 12/Top ported type.

❶ Series

3	SY3000
5	SY5000

❷ Valve stations

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

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

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

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

❸ P, E port location

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

Note) SUP/EXH block assembly specification built-in silencer type has the P port on this side.

❹ SUP/EXH block assembly specification

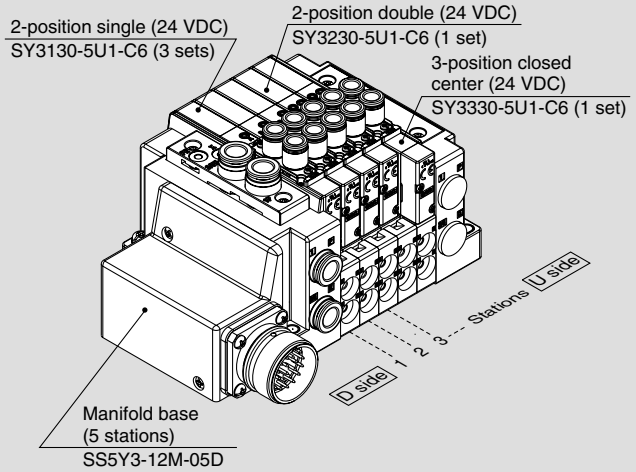
Nil	Internal pilot
S	Internal pilot/Built-in silencer
R	External pilot

∗ For a built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged.

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

How to Order Manifold Assembly

Example (SS5Y3-12M-□)



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

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with side ported valve. Refer to page 76 for the valves.

❺ P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"

∗ For N, sizes are in inches.

❻ A, B porting specification

Nil	Top ported only
M	Mixed

∗ Specify on a manifold specification sheet for M.

❼ Mounting

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

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 3 0 □ □ □ □ – 5 □ □ 1 – C6 □ – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬ ⓭

● Top ported

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.
∗ 3-position type does not have a valve built-in type back pressure check valve.

❻ 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 high pressure type.

❼ Coil specification

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

∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

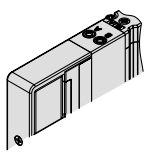
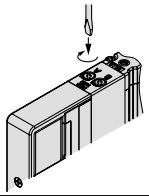
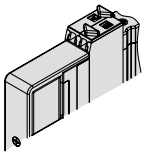
5	24 VDC
6	12 VDC

❾ 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.

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

⓫ A, B port size

Thread piping

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

One-touch fittings (Metric size)

Symbol	A, B port	SY3000	SY5000
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	—	●

One-touch fittings (Inch size)

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

⓬ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗M5 is available with Nil only.

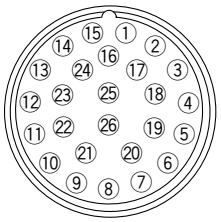
⓭ Option for mounting

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

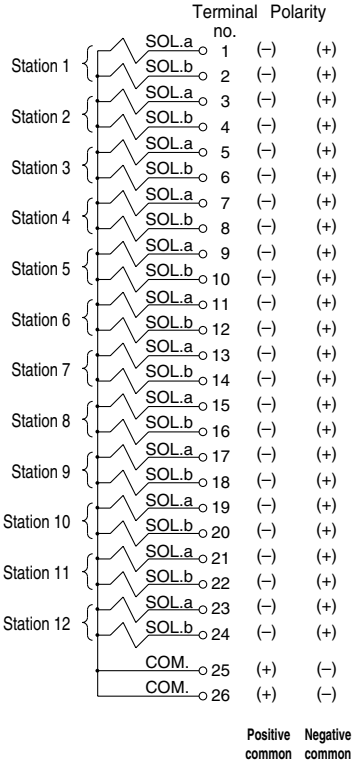
∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

Electrical Wiring Specifications

Circular connector



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



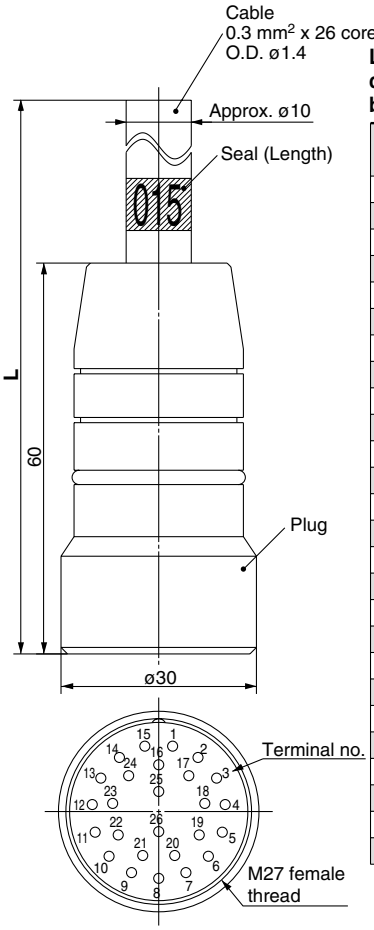
Note) When using a valve with no polarity, either positive common or negative common can be used.

Specified Layout

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

Cable Assembly

AXT100-MC26- 015 / 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

Circular connector cable assembly

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

∗ Cannot be used for movable wiring.
∗ Lengths other than the above is also available. Please contact SMC for details.

Electrical characteristics

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

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

Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base: For Series EX600

Series SY3000/5000

How to Order Manifold

SS5Y 3 – 10 S6 Q □ 2 – 05 U – C6 □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

Refer to page 117 for dimensions of Type 11/Bottom ported type.

❶ Series

3	SY3000
5	SY5000

❷ Model

10	Side ported
11	Bottom ported

∗ Type 11 (Bottom ported) is available only for the SY5000.

❸ SI unit specification

0	Without SI unit
Q	DeviceNet™
N	PROFIBUS DP
V	CC-Link

Note 1) I/O unit cannot be mounted without SI unit.
Note 2) Valve plate which connects manifold and SI unit is not mounted to a valve without SI unit. Refer to the EX600 catalog (CAT.E02-24) for mounting.

❹ SI unit common, end plate specification

SI unit common	Power supply with M12 connector	Power supply with 7/8 inch connector
Without SI unit	**Nil**	
SI unit Positive common	**2**	**3**
SI unit Negative common	**4**	**5**

Note) Without SI unit, the symbol is nil.

❺ I/O unit stations

Nil	None
1	1 station
⋮	⋮
9	9 stations

Note 1) Without SI unit, the symbol is nil.
Note 2) SI unit is not included in I/O unit stations.
Note 3) When I/O unit is selected, it is shipped separately, and assembled by customer. Refer to the attached operation manual for mounting.

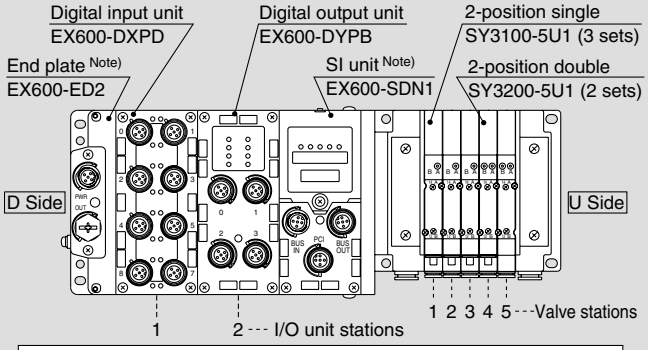
❻ Valve stations

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

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

How to Order Manifold Assembly

Example (SS5Y3-10S6□-□)



SS5Y3-10S6Q22-05B-C6 ··· 1 set (Type 10 5-station manifold base part no.)
∗SY3100-5U1 ····· 3 sets (2-position single part no.)
∗SY3200-5U1 ····· 2 sets (2-position double part no.)
∗EX600-DXPD ····· 1 set I/O unit part number (Station 1)
∗EX600-DYPB ····· 1 set I/O unit part number (Station 2)
The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Under the manifold part number, state the valves to be mounted, then the I/O units in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with top ported valve. Refer to page 90 for the valves.

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

❼ P, E port location, SUP/EXH block assembly specification

	Internal pilot	Internal pilot/ Built-in silencer	External pilot
P, E port location U side	**U**	**C**	**G**
P, E port location D side	**D**	**E**	**H**
P, E port location both sides	**B**	**F**	**J**

∗ 3/5(E) port is plugged for the built-in silencer type.
∗ When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for ❽.

❾ Mounting

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

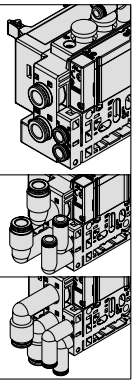
∗ Only direct mounting for Type 11 (Bottom ported) DIN rail (D) cannot be selected for the product without SI unit (10S60 type).

Refer to the catalog CAT.E02-24, Fieldbus System (I/O), for details on the EX600 integrated-type (I/O) serial transmission system.

SMC

⑧ A, B port size (Metric size)

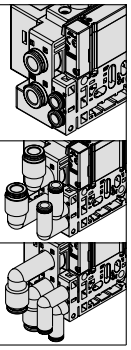
Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
C2		ø2 One-touch fitting	●	—	—
C3		ø3.2 One-touch fitting	●	—	—
C4		ø4 One-touch fitting	●	●	●
C6		ø6 One-touch fitting	●	●	●
C8		ø8 One-touch fitting	—	●	●
L4	Upward elbow	ø4 One-touch fitting	●	●	—
L6	Upward elbow	ø6 One-touch fitting	●	●	—
L8	Upward elbow	ø8 One-touch fitting	—	●	—
B4	Downward elbow	ø4 One-touch fitting	●	●	—
B6	Downward elbow	ø6 One-touch fitting	●	●	—
B8	Downward elbow	ø8 One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø8	ø10	ø10



• Elbows are also mounted to P and E ports if elbow is selected.

A, B port size (Inch size)

Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
N1		ø1/8" One-touch fitting	●	—	—
N3		ø5/32" One-touch fitting	●	●	●
N7		ø1/4" One-touch fitting	●	●	●
N9		ø5/16" One-touch fitting	—	●	●
LN3	Upward elbow	ø5/32" One-touch fitting	●	●	—
LN7	Upward elbow	ø1/4" One-touch fitting	●	●	—
LN9	Upward elbow	ø5/16" One-touch fitting	—	●	—
BN3	Downward elbow	ø5/32" One-touch fitting	●	●	—
BN7	Downward elbow	ø1/4" One-touch fitting	●	●	—
BN9	Downward elbow	ø5/16" One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø5/16"	ø3/8"	ø3/8"



∗ When ports are mixed, indicate the piping specifications with the manifold specification sheet.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 0 0 □ □ □ □ – 5 □ □ 1 – □

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

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.)

∗ 4-position dual 3-port valve has rubber seal type only.

③ Seal type

0	Rubber seal
1	Metal seal

④ Pilot specification

Nil	Internal pilot
R	External pilot

⑤ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.

∗ 3-position type does not have a valve built-in type back pressure check valve.

• **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)

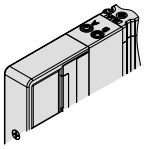
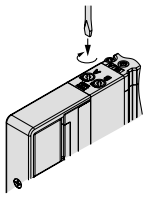
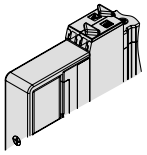
∗ Only metal seal type is available for high pressure type.

⑨ Light/surge voltage suppressor and common specification

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. Select a valve from R, U, S and Z if the SI unit common is positive common. Select a valve from R, U, NS and NZ if the SI unit common is negative common.

⑩ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

⑦ Coil specification

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

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

∗ Quick response type does not have a power saving circuit.

⑧ Rated voltage

5	24 VDC

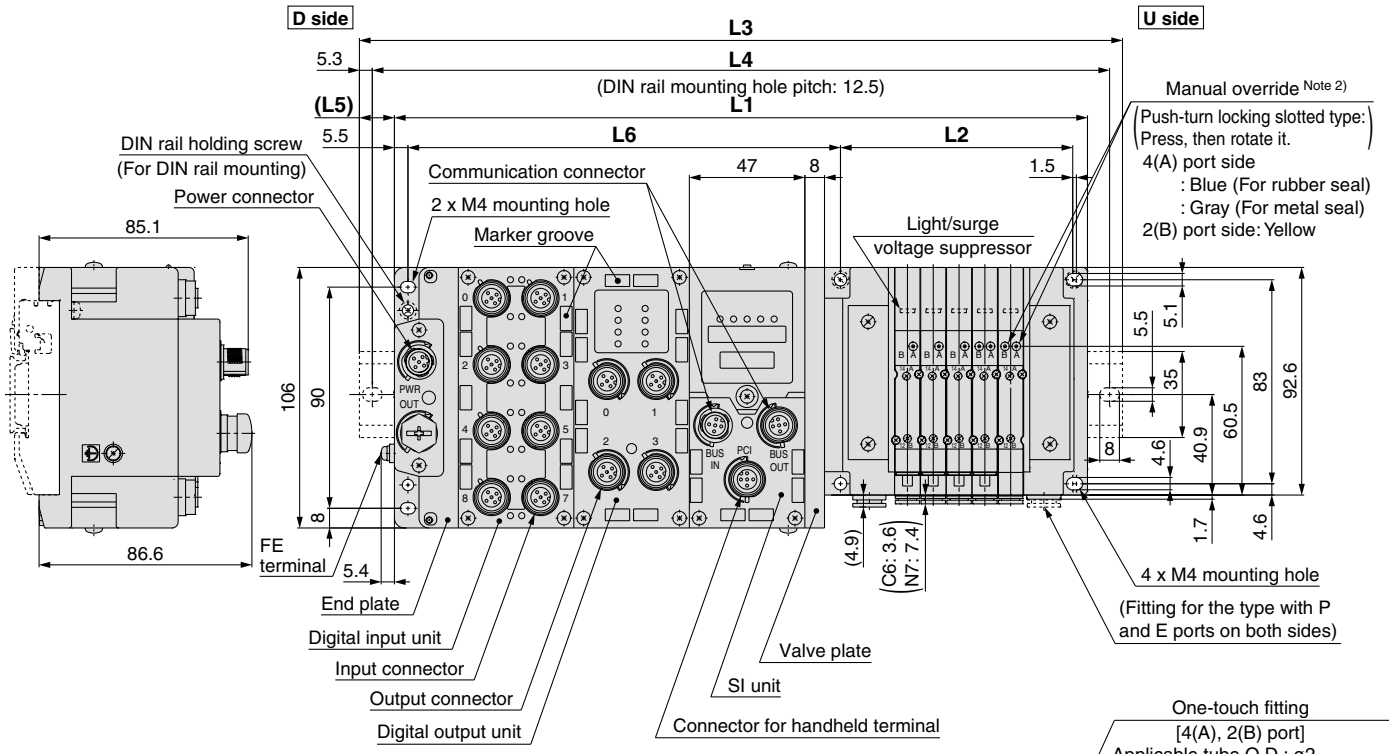
⑪ Option for mounting

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

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

Dimensions: Type 10/For EX600 (M12 Connector)/Series SY3000

SS5Y3-10S6□ 2/4 □- Stations U/D/B - C2/C3, N1/C4, N3/C6, N7 (D)



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

Note 1) These figures show "SS5Y3-10S6Q22-05D-C6".
Note 2) Refer to page 115 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 118 for dimensions of A or B port top-ported type.

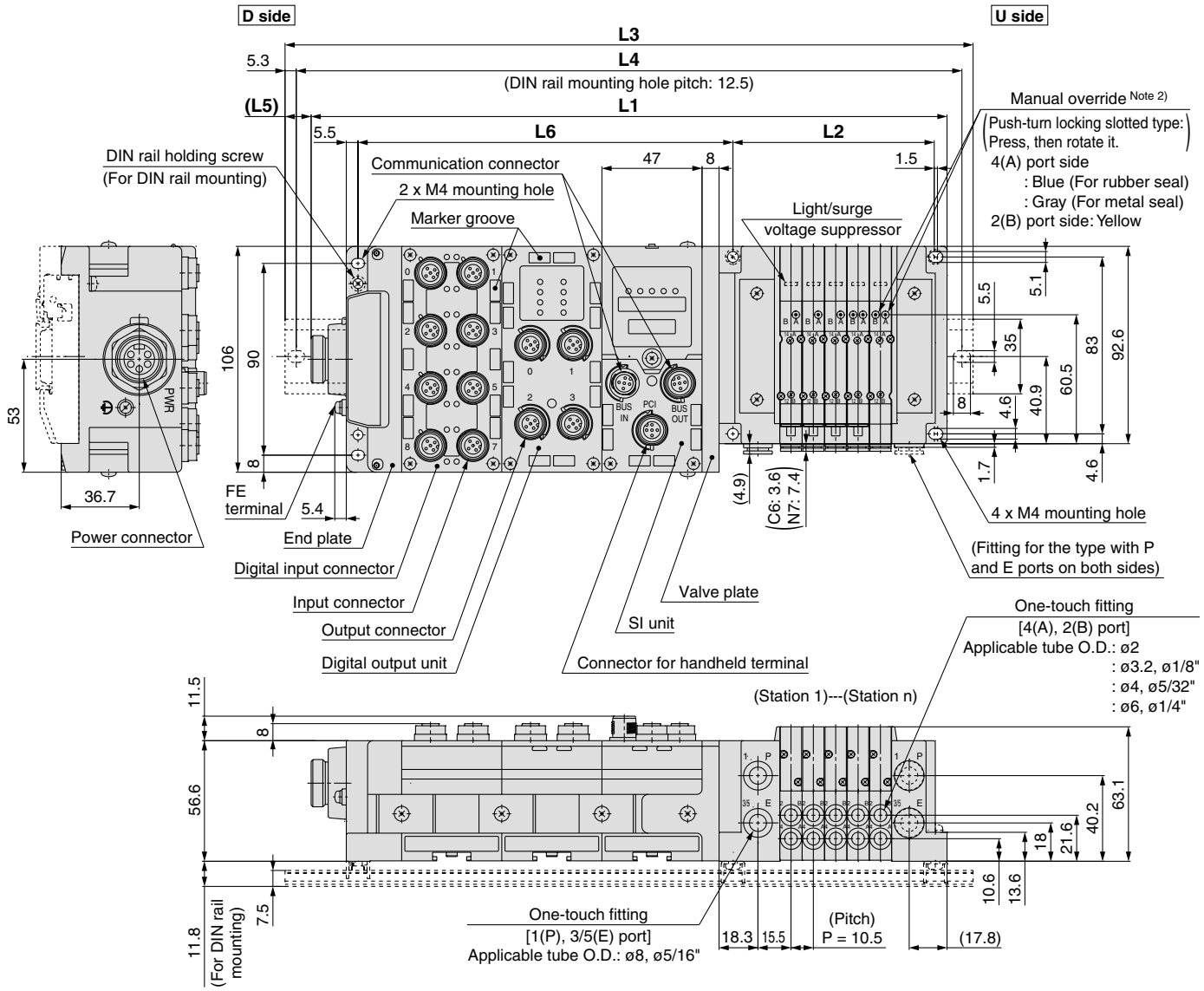
L3: DIN Rail Full Length

n1: Valve stations
n2: I/O unit stations

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	485.5	498	510.5
3	323	335.5	348	360.5	373	385.5	385.5	398	410.5	423	435.5	448	448	460.5	473	485.5	498	510.5	510.5	523	535.5	548	560.5
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	635.5	648
6	473	473	485.5	498	510.5	523	535.5	535.5	548	560.5	573	585.5	598	610.5	610.5	623	635.5	648	660.5	673	673	685.5	698
7	510.5	523	535.5	548	560.5	573	573	585.5	598	610.5	623	635.5	635.5	648	660.5	673	685.5	698	698	710.5	723	735.5	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	735.5	748	760.5	773	785.5	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

Dimensions: Type 10/For EX600 (7/8 Inch Connector)/Series SY3000

SS5Y3-10S6□ 3/5 □- Stations U/D/B- C2/C3, N1/C4, N3/C6, N7 (D)



L1 = 10.5 x n1 + 152 + 47 x n2
L2 = 10.5 x n1 + 42
L4 = L3 – 10.5
L5 = (L3 – L1)/2
L6 = 47 x n2 + 82

Note 1) These figures show "SS5Y3-10S6Q32-05D-C6".
Note 2) Refer to page 115 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 118 for dimensions of A or B port top-ported type.

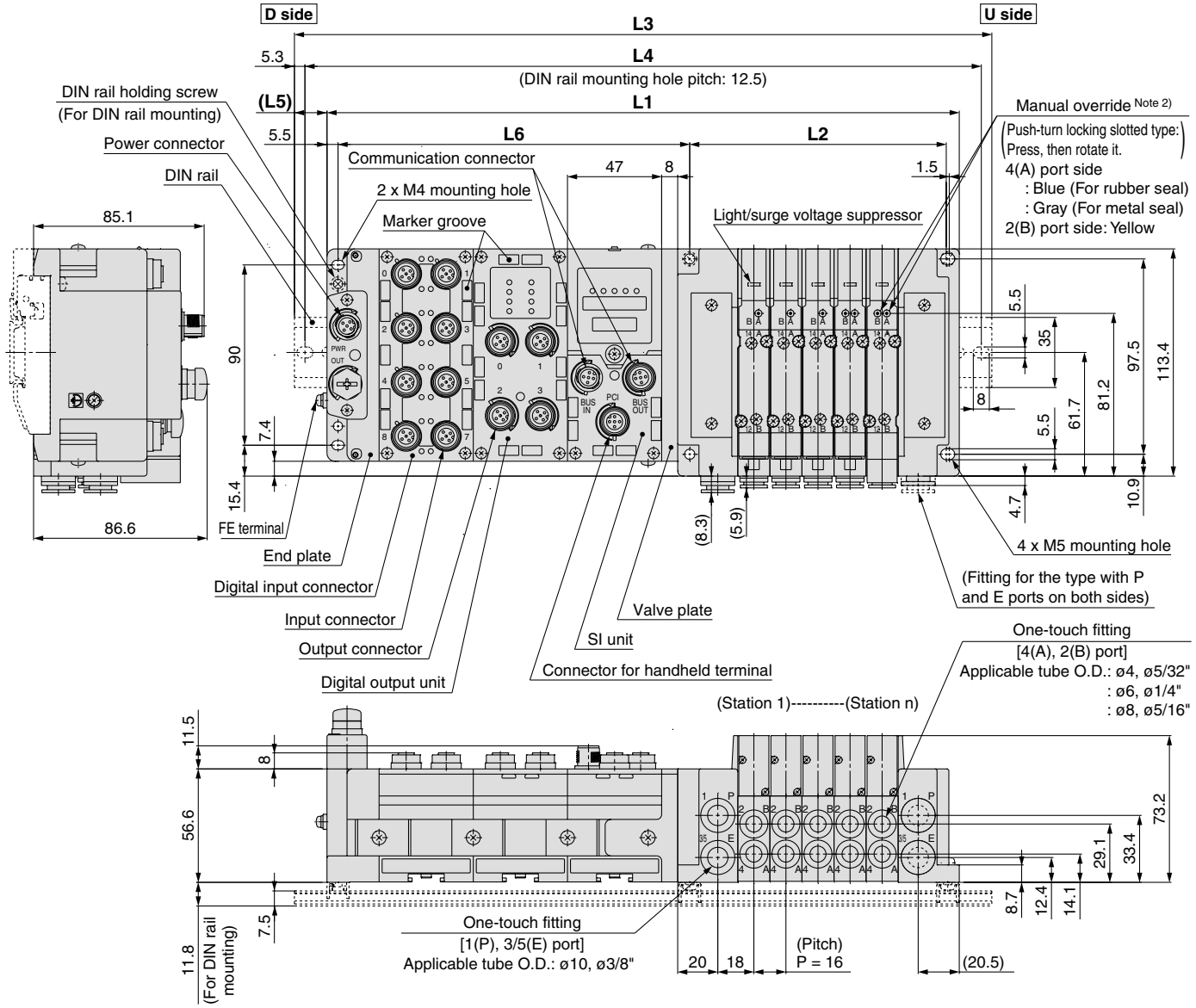
L3: DIN Rail Full Length

n1: Valve stations
n2: I/O unit stations

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

Dimensions: Type 10/For EX600 (M12 Connector)/Series SY5000

SS5Y5-10S6□ 2/4 □- Stations U C4, N3 / D- C6, N7 / B C8, N9 (D)



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

Note 1) These figures show "SS5Y5-10S6Q22-05D-C8".
Note 2) Refer to page 116 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 119 for dimensions of A or B port top-ported type.

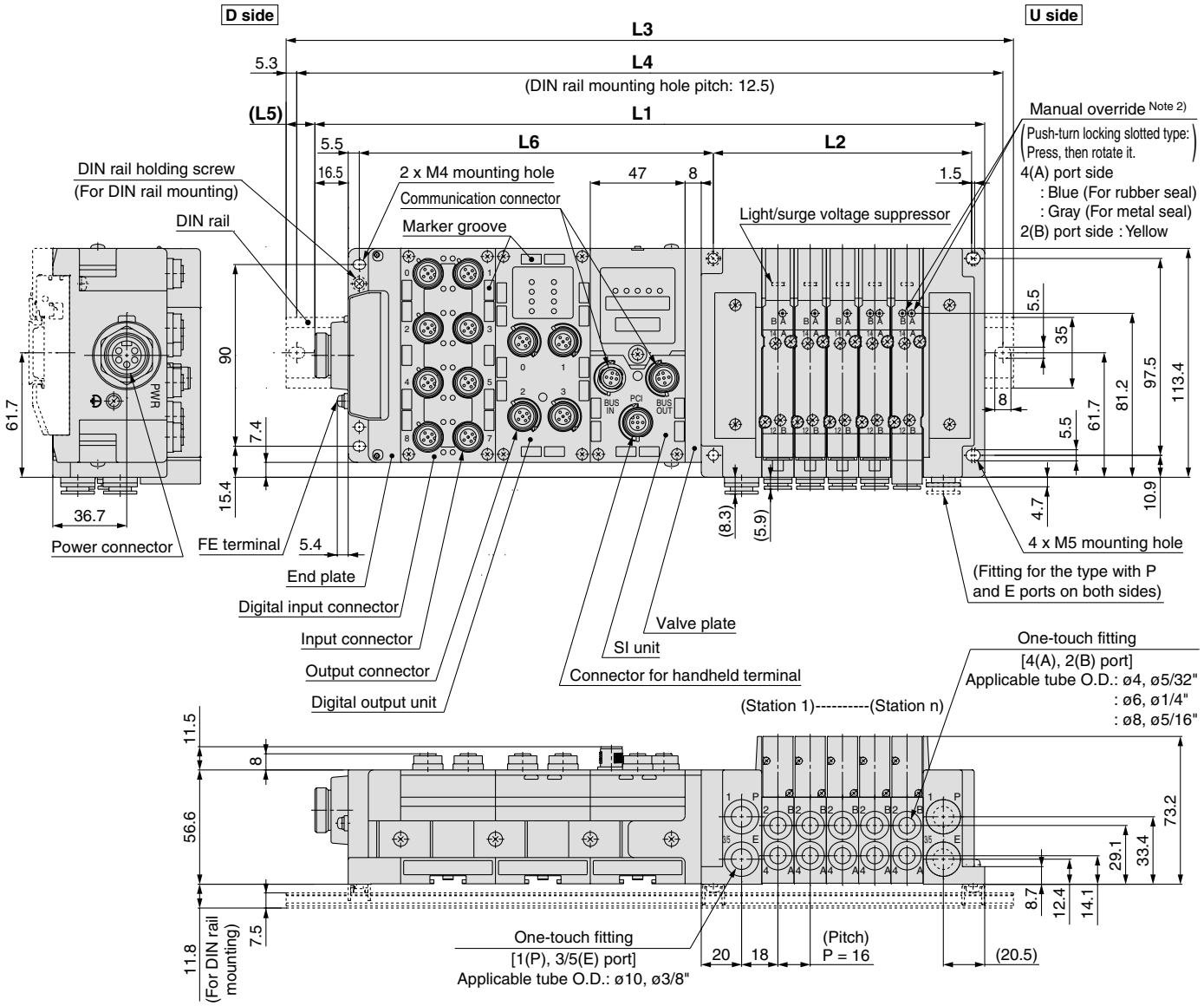
L3: DIN Rail Full Length

n1: Valve stations
n2: I/O unit stations

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: Type 10/For EX600 (7/8 Inch Connector)/Series SY5000

SS5Y5-10S6□$^{3}_{5}$□-Stations $^{U\ C4, N3}_{D-\ C6, N7}_{B\ \ C8, N9}$(D)



L1 = 16 x n1 + 158 + 47 x n2
L2 = 16 x n1 + 48
L4 = L3 – 10.5
L5 = (L3 – L1)/2
L6 = 47 x n2 + 81.5

Note 1) These figures show "SS5Y5-10S6Q32-05D-C8".
Note 2) Refer to page 116 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 119 for dimensions of A or B port top-ported type.

n1: Valve stations
n2: I/O unit stations

L3: DIN Rail Full Length

I/O unit stations (n2) \ Valve stations (n1)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0	223	235.5	248	273	285.5	298	310.5	335.5	348	360.5	385.5	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	560.5	573
1	260.5	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	560.5	573	585.5	598	623
2	310.5	335.5	348	360.5	373	398	410.5	423	435.5	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	623	635.5	648	660.5
3	360.5	373	398	410.5	423	435.5	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	610.5	635.5	648	660.5	685.5	698	710.5
4	410.5	423	435.5	460.5	473	485.5	498	523	535.5	548	573	585.5	598	610.5	635.5	648	660.5	685.5	698	710.5	723	748	760.5
5	460.5	473	485.5	498	523	535.5	548	560.5	585.5	598	610.5	635.5	648	660.5	673	698	710.5	723	748	760.5	773	785.5	810.5
6	498	523	535.5	548	560.5	585.5	598	610.5	635.5	648	660.5	673	698	710.5	723	735.5	760.5	773	785.5	810.5	823	835.5	848
7	548	560.5	585.5	598	610.5	623	648	660.5	673	698	710.5	723	735.5	760.5	773	785.5	810.5	823	835.5	848	873	885.5	898
8	598	610.5	623	648	660.5	673	685.5	710.5	723	735.5	760.5	773	785.5	798	823	835.5	848	873	885.5	898	910.5	935.5	948
9	648	660.5	673	685.5	710.5	723	735.5	760.5	773	785.5	798	823	835.5	848	860.5	885.5	898	910.5	935.5	948	960.5	973	998

Type 12
Top Ported

Plug-in Connector Connecting Base: For Series EX600

Series SY3000/5000

How to Order Manifold

SS5Y 3 – 12S6 Q □ 2 – 05 U – □ □ □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

Refer to pages 118 and 119 for dimensions of Type 12/Top ported type.

❶ Series

3	SY3000
5	SY5000

❷ SI unit specification

0	Without SI unit
Q	DeviceNet™
N	PROFIBUS DP
V	CC-Link

Note 1) I/O unit cannot be mounted without SI unit.
Note 2) Valve plate which connects manifold and SI unit is not mounted to a valve without SI unit. Refer to the EX600 catalog (CAT.E02-24) for mounting.

❸ SI unit common, end plate specification

SI unit common	Power supply with M12 connector	Power supply with 7/8 inch connector
Without SI unit	Nil	
SI unit Positive common	2	3
SI unit Negative common	4	5

Note) Without SI unit, the symbol is nil.

❹ I/O unit stations

Nil	None
1	1 stations
⋮	⋮
9	9 stations

Note 1) Without SI unit, the symbol is nil.
Note 2) SI unit is not included in I/O unit stations.
Note 3) When I/O unit is selected, it is shipped separately, and assembled by customer. Refer to the attached operation manual for mounting.

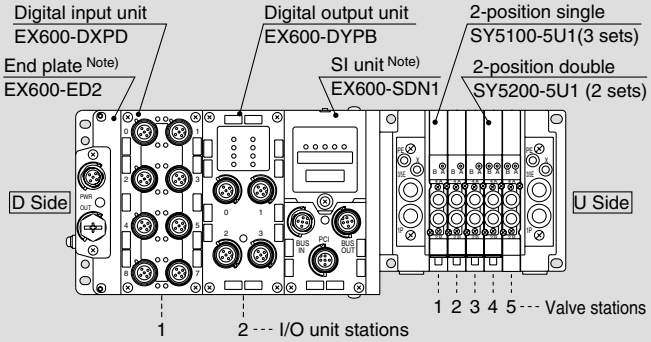
❺ Valve stations

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

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

How to Order Manifold Assembly

Example (SS5Y5-12S6□-□)



SS5Y5-12S6Q22-05B-C6 ··· 1 set (Type 12 5-station manifold base part no.)
∗SY5100-5U1 ····· 3 sets (2-position single part no.)
∗SY5200-5U1 ····· 2 sets (2-position double part no.)
∗EX600-DXPD ····· 1 set I/O unit part number (Station 1)
∗EX600-DYPB ····· 1 set I/O unit part number (Station 2)
The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Under the manifold part number, state the valves to be mounted, then the I/O units in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with side ported valve. Refer to page 84 for the valves.

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

❻ P, E port location, SUP/EXH block assembly specification

	Internal pilot	Internal pilot/ Built-in silencer	External pilot
P, E port location U side	U	C Note)	G
P, E port location D side	D	E Note)	H
P, E port location both sides	B	F	J

∗ For a built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged.
∗ When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.
Note) SUP/EXH block assembly specification built-in silencer type has the P port on this side.

❼ P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"

∗ For N, sizes are in inches.

❽ A, B porting specification

Nil	Top ported only
M	Mixed

∗ Specify on a manifold specification sheet for M.

❾ Mounting

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

∗ DIN rail (D) cannot be selected for the product without SI unit (12S60 type).

Refer to the catalog CAT.E02-24, Fieldbus System (I/O), for details on the EX600 integrated-type (I/O) serial transmission system.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 3 0 ❶ ❷ ❸ ❹ ❺ ❻ ❼ – 5 ❽ ❾ ❿ 1 – C6 ⓫ ⓬ – ⓭

❸ Top ported

❶ Series

3	SY3000
5	SY5000

❷ 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.)

* 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve

Nil	None
H	Built-in

* Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-n type and the manifold installed type at the same time because it will reduce the flow.
* 3-position type does not have a valve built-in type back pressure check valve.

❻ 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 high pressure type.

❼ Coil specification

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

* Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
* Quick response type does not have a power saving circuit.

❽ Rated voltage

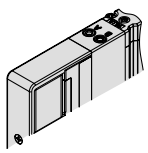
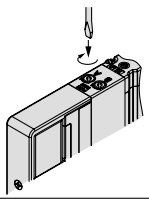
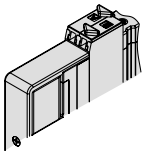
5	24 VDC

❾ Light/surge voltage suppressor and common specification

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. Select a valve from R, U, S and Z if the SI unit common is positive common. Select a valve from R, U, NS and NZ if the SI unit common is negative common.

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

⓫ A, B port size

Thread piping

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

One-touch fittings (Metric size)

Symbol	A, B port	SY3000	SY5000
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	—	●

One-touch fittings (Inch size)

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

⓬ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

* M5 is available with Nil only.

⓭ Option for mounting

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

* Base gasket is not attached to manifold when a valve is ordered as a single unit.
  Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
  Refer to page 129 for part numbers of base gasket and mounting screw.

Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base: For Series EX500

Series SY3000/5000 CE

How to Order Manifold

SS5Y 3 – 10 S A2 – 05 U ☐ – C6 ☐

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽

Refer to page 117 for dimensions of Type 11/Bottom ported type.

❶ Series

3	SY3000
5	SY5000

❷ Model

10	Side ported
11	Bottom ported

∗ Type 11 (Bottom ported) is available only for the SY5000.

❸ SI unit specification

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

❹ Valve stations

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

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

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

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

❺ P, E port location

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

❻ SUP/EXH block assembly specification

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

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

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

Refer to the page on the right for ❼.

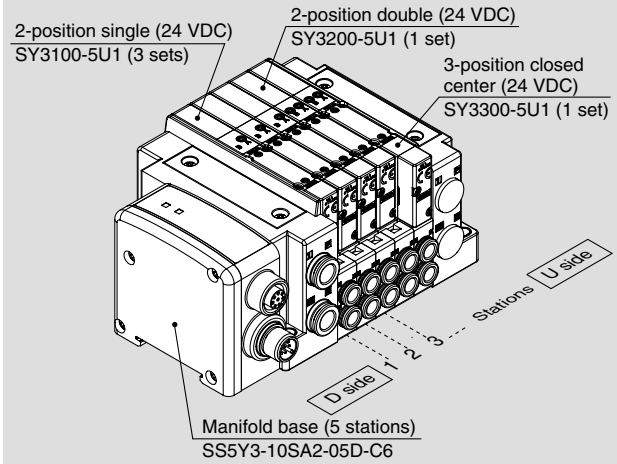
❽ Mounting

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

∗ Only direct mounting for Type 11 (Bottom ported)
DIN rail (D) cannot be selected for the product without SI unit (10S0 type).

How to Order Manifold Assembly

Example (SS5Y3-10SA2-☐)



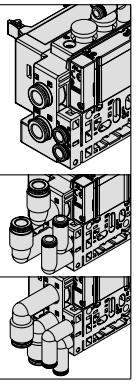
SS5Y3-10SA2-05D-C6 ··· 1 set (Type 10 5-station manifold base part no.)
∗SY3100-5U1····· 3 sets (2-position single part no.)
∗SY3200-5U1····· 1 set (2-position double part no.)
∗SY3300-5U1····· 1 set (3-position closed center part no.)
The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with top ported valve. Refer to page 96 for the valves.

Refer to the EX series in the Best Pneumatics No. 1 for details on the EX500 gateway-type serial transmission system.

❼ A, B port size (Metric size)

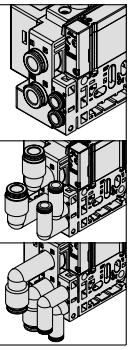
Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
C2		ø2 One-touch fitting	●	—	—
C3		ø3.2 One-touch fitting	●	—	—
C4		ø4 One-touch fitting	●	●	●
C6		ø6 One-touch fitting	●	●	●
C8		ø8 One-touch fitting	—	●	●
L4	Upward elbow	ø4 One-touch fitting	●	●	—
L6	Upward elbow	ø6 One-touch fitting	●	●	—
L8	Upward elbow	ø8 One-touch fitting	—	●	—
B4	Downward elbow	ø4 One-touch fitting	●	●	—
B6	Downward elbow	ø6 One-touch fitting	●	●	—
B8	Downward elbow	ø8 One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø8	ø10	ø10



• Elbows are also mounted to P and E ports if elbow is selected.

A, B port size (Inch size)

Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
N1		ø1/8" One-touch fitting	●	—	—
N3		ø5/32" One-touch fitting	●	●	●
N7		ø1/4" One-touch fitting	●	●	●
N9		ø5/16" One-touch fitting	—	●	●
LN3	Upward elbow	ø5/32" One-touch fitting	●	●	—
LN7	Upward elbow	ø1/4" One-touch fitting	●	●	—
LN9	Upward elbow	ø5/16" One-touch fitting	—	●	—
BN3	Downward elbow	ø5/32" One-touch fitting	●	●	—
BN7	Downward elbow	ø1/4" One-touch fitting	●	●	—
BN9	Downward elbow	ø5/16" One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø5/16"	ø3/8"	ø3/8"



∗ When ports are mixed, indicate the piping specifications with the manifold specification sheet.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 0 0 □ □ □ □ – 5 □ □ 1 – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.

∗ 3-position type does not have a valve built-in type back pressure check valve.

Base mounted

❻ Pilot valve option

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

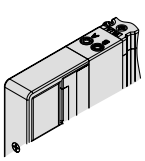
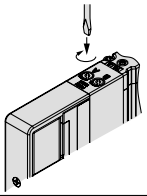
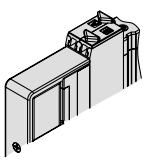
∗ Only metal seal type is available for high pressure type.

❾ Light/surge voltage suppressor and common specification

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. Select a valve from R, U, S and Z if the SI unit is positive common (A2). Select a valve from R, U, NS and NZ if the SI unit is negative common (A2N).

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

❼ Coil specification

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

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

∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

5	24 VDC

⓫ Option for mounting

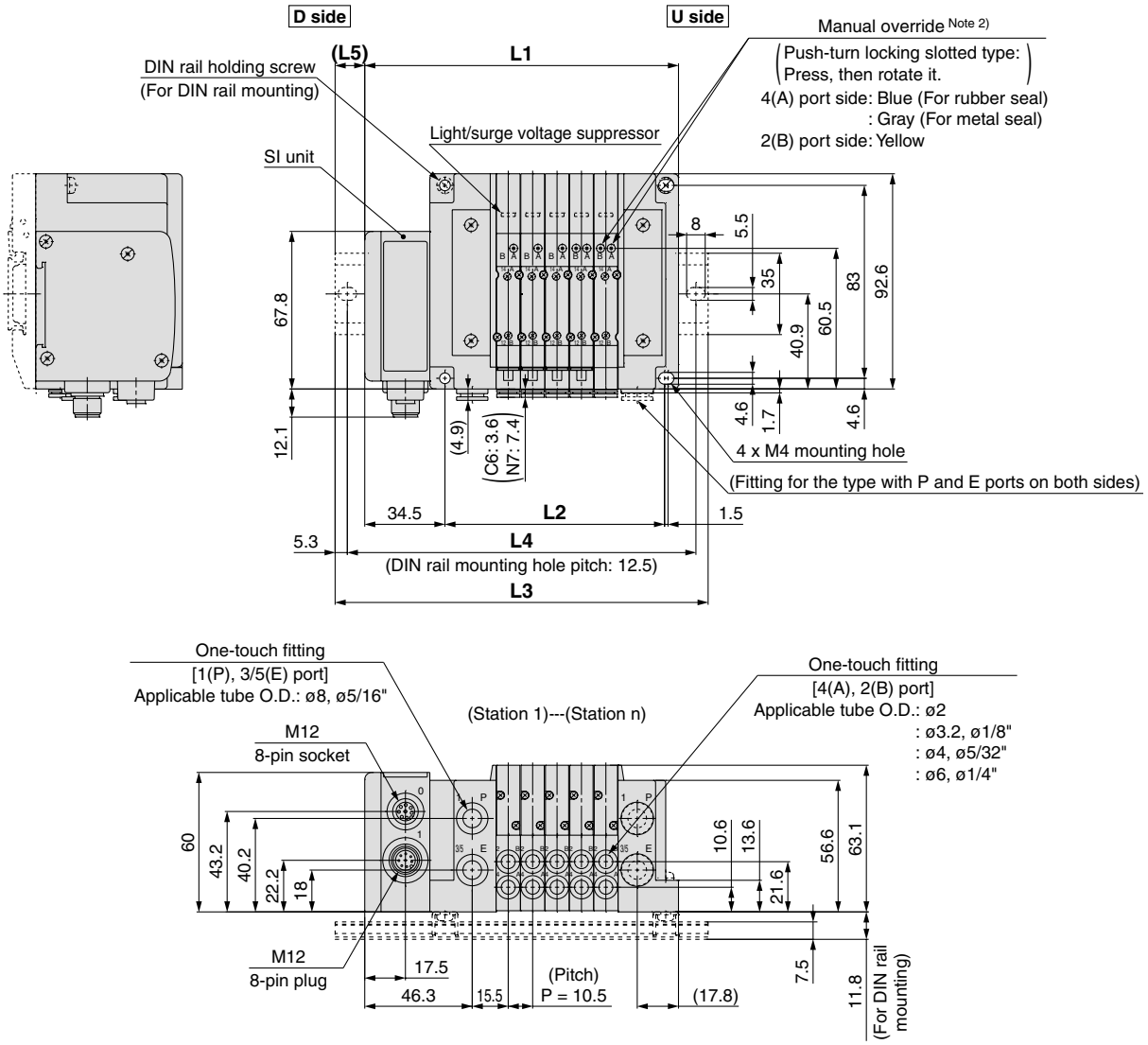
Nil	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit. Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service. Refer to page 129 for part numbers of base gasket and mounting screw.

⚠ Protective class class Ⅲ (Mark: Ⅲ)

Dimensions: Type 10/For EX500/Series SY3000

SS5Y3-10SA2-[Stations][U/D/B]-[C2/C3, N1/C4, N3/C6, N7](D)

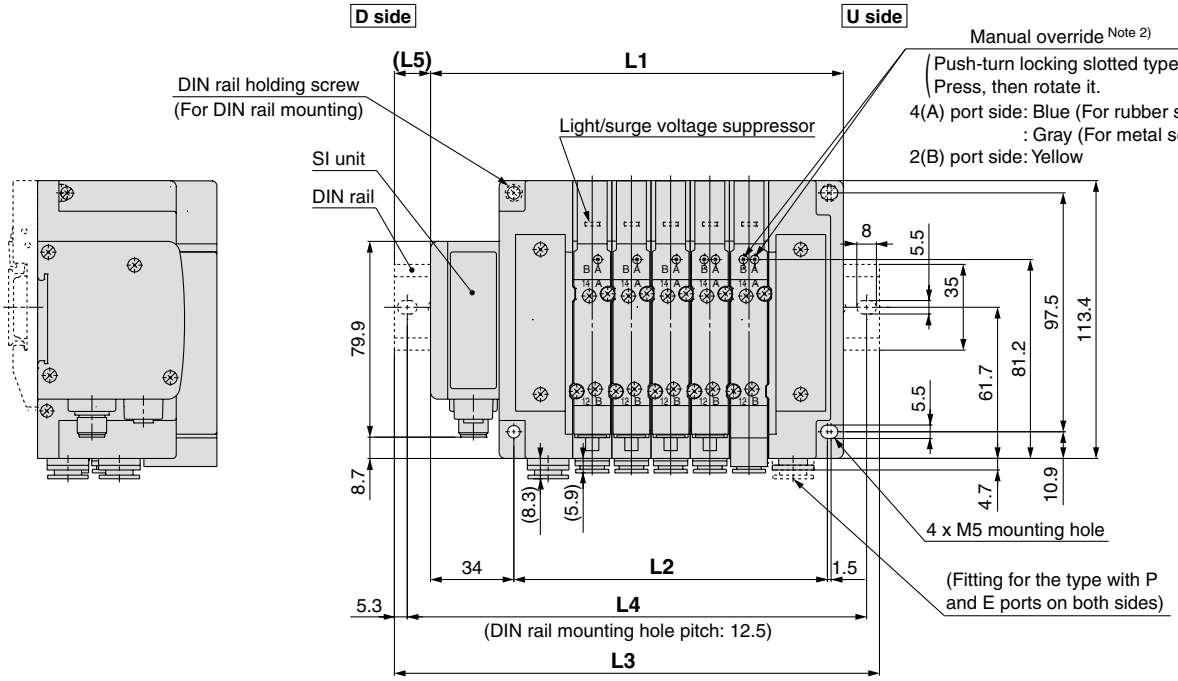


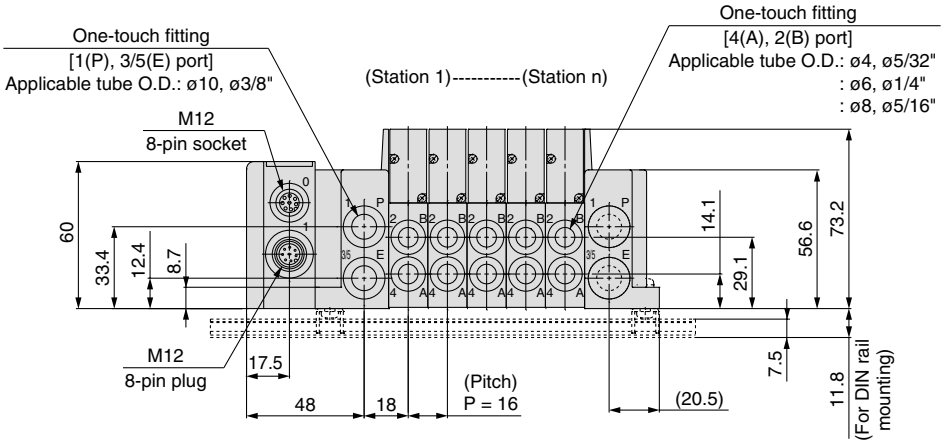
Note 1) These figures show “SS5Y3-10SA2-05D-C6”.
Note 2) Refer to page 115 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 118 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	103.5	114	124.5	135	145.5	156	166.5	177	187.5	198	208.5	219	229.5	240	250.5
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210
L3	135.5	148	148	160.5	173	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5
L4	125	137.5	137.5	150	162.5	175	187.5	200	212.5	212.5	225	237.5	250	262.5	275
L5	16	17	12	13	14	15	16	17	18	12.5	13.5	14.5	15.5	16.5	17.5

Dimensions: Type 10/For EX500/Series SY5000

SS5Y5-10SA2-[Stations U C4, N3 / D C6, N7 / B C8, N9](D)





Note 1) These figures show “SS5Y5-10SA2-05D-C8”.
Note 2) Refer to page 116 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 119 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	120.5	136.5	152.5	168.5	184.5	200.5	216.5	232.5	248.5	264.5	280.5	296.5	312.5	328.5	344.5
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
L3	148	160.5	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5	373
L4	137.5	150	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5
L5	13.8	12	16.5	14.8	13	17.5	15.8	14	12.3	16.8	15	13.3	17.8	16	14.3

Type 12
Top Ported

Plug-in Connector Connecting Base: For Series EX500

Series SY3000/5000

How to Order Manifold

SS5Y 3 – 12S A2 – 05 U □ – □ □ □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽

Refer to pages 118 and 119 for dimensions of Type 12/Top ported type.

❶ Series

3	SY3000
5	SY5000

❷ SI unit specification

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

❸ Valve stations

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

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

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

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

❹ P, E port location

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

Note) SUP/EXH block assembly specification built-in silencer type has the P port on this side.

❺ SUP/EXH block assembly specification

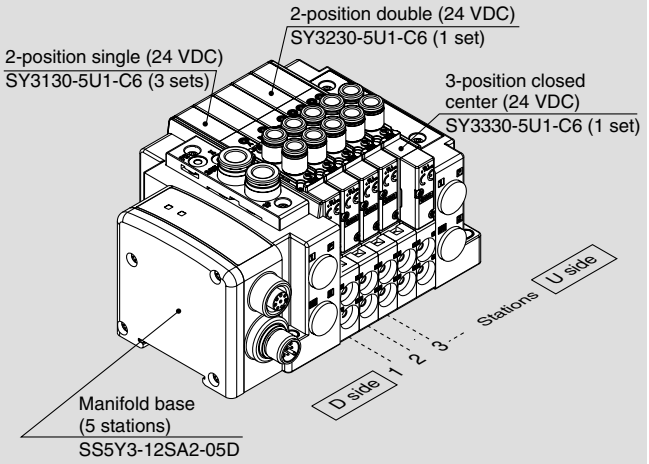
Nil	Internal pilot
S	Internal pilot/Built-in silencer
R	External pilot

∗ For a built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged.

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

How to Order Manifold Assembly

Example (SS5Y3-12SA2-□)



SS5Y3-12SA2-05D ··· 1 set (Type 12 5-station manifold base part no.)
∗SY3130-5U1-C6 ····· 3 sets (2-position single part no.)
∗SY3230-5U1-C6 ····· 1 set (2-position double part no.)
∗SY3330-5U1-C6 ····· 1 set (3-position closed center part no.)
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with side ported valve. Refer to page 92 for the valves.

❻ P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"

∗ For N, sizes are in inches.

❼ A, B porting specification

Nil	Top ported only
M	Mixed

∗ Specify on a manifold specification sheet for M.

❽ Mounting

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

∗ DIN rail (D) cannot be selected for the product without SI unit (12S0 type).

Refer to the EX series in the Best Pneumatics No. 1 for details on the EX500 gateway-type serial transmission system.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 3 0 □ □ □ □ – 5 □ □ 1 – C6 □ – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬ ⓭

❸ Top ported

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.
∗ 3-position type does not have a valve built-in type back pressure check valve.

❻ 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 high pressure type.

❼ Coil specification

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

∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

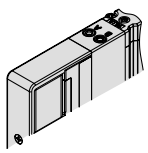
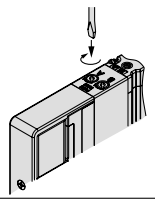
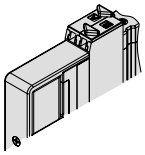
5	24 VDC

❾ Light/surge voltage suppressor and common specification

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	Without light/surge voltage suppressor (Negative common)

∗ Only "Z" and "NZ" types are available for the product with power saving circuit. Select a valve from R, U, S and Z if the SI unit is positive common (A2). Select a valve from R, U, NS and NZ if the SI unit is negative common (A2N).

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

⓫ A, B port size

Thread piping

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

One-touch fittings (Metric size)

Symbol	A, B port	SY3000	SY5000
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	—	●

One-touch fittings (Inch size)

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

⓬ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ M5 is available with Nil only.

⓭ Option for mounting

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

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

⚠ Protective class class Ⅲ (Mark: ⧐)

Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base: For Series EX250

Series SY3000/5000 CE

How to Order Manifold

SS5Y 3 – 10 S Q □ □ – 05 U – C6 □
❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

Refer to page 117 for dimensions of Type 11/Bottom ported type.

❶ Series

3	SY3000
5	SY5000

❷ Model

10	Side ported
11	Bottom ported

∗ Type 11 (Bottom ported) is available only for the SY5000.

❹ Input block stations

Nil	None
1	1 station
⋮	⋮
8	8 stations

Note) Without SI unit, the symbol is nil. The maximum number of stations is limited for the AS-Interface applicable SI unit.

❸ SI unit specification

0	Without SI unit
Q	DeviceNet™
N	PROFIBUS DP
V	CC-Link
TA	AS-Interface, 8 in/8 out, 31 slave modes, 2 power supply systems
TB	AS-Interface, 4 in/4 out, 31 slave modes, 2 power supply systems
TC	AS-Interface, 8 in/8 out, 31 slave modes, 1 power supply system
TD	AS-Interface, 4 in/4 out, 31 slave modes, 1 power supply system
Y	CANopen
ZC	ControlNet™
ZE	EtherNet/IP™

Note 1) Input block cannot be mounted without SI unit.
Note 2) The supply current from the SI unit of AS-Interface applicable 1 power supply system specification to the input block and valve is limited.
Note 3) IP40 for the ControlNet™ applicable SI unit specification.

❺ Input block type, common specification

	Positive common	Negative common
Without input block	**Nil**	
M12, 2 inputs	**A**	**D**
M12, 4 inputs	**B**	**E**
M8, 4 inputs	**C**	**F**

Note) Without SI unit, the symbol is nil.

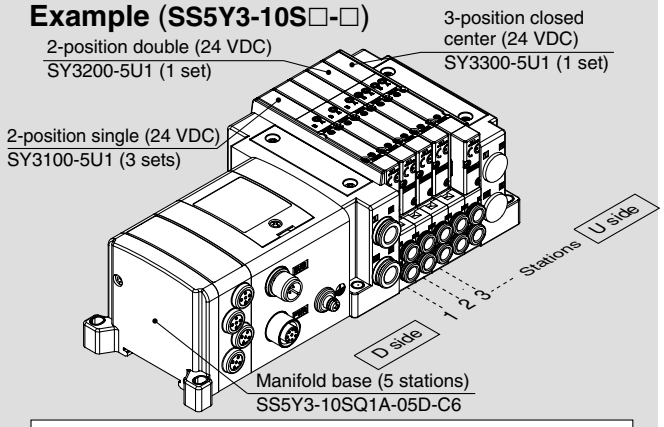
❻ Valve stations

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

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

How to Order Manifold Assembly

Example (SS5Y3-10S□-□)



SS5Y3-10SQ1A-05D-C6 ··· 1 set (Type 10 5-station manifold base part no.)
∗SY3100-5U1 ····· 3 sets (2-position single part no.)
∗SY3200-5U1 ····· 1 set (2-position double part no.)
∗SY3300-5U1 ····· 1 set (3-position closed center part no.)
The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with top ported valve. Refer to page 102 for the valves.

❼ P, E port location, SUP/EXH block assembly specification

	Internal pilot	Internal pilot/ Built-in silencer	External pilot
P, E port location U side	**U**	**C**	**G**
P, E port location D side	**D**	**E**	**H**
P, E port location both sides	**B**	**F**	**J**

∗ 3/5(E) port is plugged for the built-in silencer type.
∗ When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for ❽.

❾ Mounting

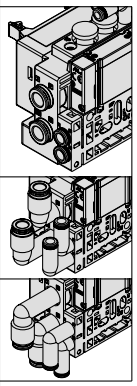
Nil	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	Specify a longer rail than the standard length.
⋮	⋮	
D24	For 24 stations	

∗ Only direct mounting for Type 11 (Bottom ported) DIN rail (D) cannot be selected for the product without SI unit (10S0 type).

Refer to the EX series in the Best Pneumatics No. 1 for details on the EX250 integrated-type (I/O) serial transmission system.

❼ A, B port size (Metric size)

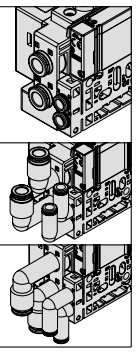
Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
C2		ø2 One-touch fitting	●	—	—
C3		ø3.2 One-touch fitting	●	—	—
C4		ø4 One-touch fitting	●	●	●
C6		ø6 One-touch fitting	●	●	●
C8		ø8 One-touch fitting	—	●	●
L4	Upward elbow	ø4 One-touch fitting	●	●	—
L6	Upward elbow	ø6 One-touch fitting	●	●	—
L8	Upward elbow	ø8 One-touch fitting	—	●	—
B4	Downward elbow	ø4 One-touch fitting	●	●	—
B6	Downward elbow	ø6 One-touch fitting	●	●	—
B8	Downward elbow	ø8 One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø8	ø10	ø10



• Elbows are also mounted to P and E ports if elbow is selected.

A, B port size (Inch size)

Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
N1		ø1/8" One-touch fitting	●	—	—
N3		ø5/32" One-touch fitting	●	●	●
N7		ø1/4" One-touch fitting	●	●	●
N9		ø5/16" One-touch fitting	—	●	●
LN3	Upward elbow	ø5/32" One-touch fitting	●	●	—
LN7	Upward elbow	ø1/4" One-touch fitting	●	●	—
LN9	Upward elbow	ø5/16" One-touch fitting	—	●	—
BN3	Downward elbow	ø5/32" One-touch fitting	●	●	—
BN7	Downward elbow	ø1/4" One-touch fitting	●	●	—
BN9	Downward elbow	ø5/16" One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø5/16"	ø3/8"	ø3/8"



∗ When ports are mixed, indicate the piping specifications with the manifold specification sheet.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 0 0 □ □ □ □ – 5 □ □ 1 – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫

❸ 0: Base mounted

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.
∗ 3-position type does not have a valve built-in type back pressure check valve.

❻ Pilot valve option

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

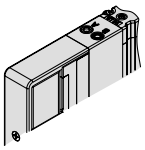
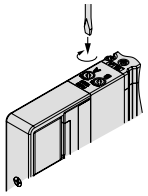
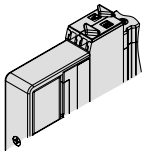
∗ Only metal seal type is available for high pressure type.

❾ Light/surge voltage suppressor and common specification

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.
∗ "R" and "U" are applicable for every SI unit. However, "S" and "Z" can be used only for CC-Link applicable unit and "NS" and "NZ" are for units which are not CC-Link applicable.

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

❼ Coil specification

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

∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

5	24 VDC

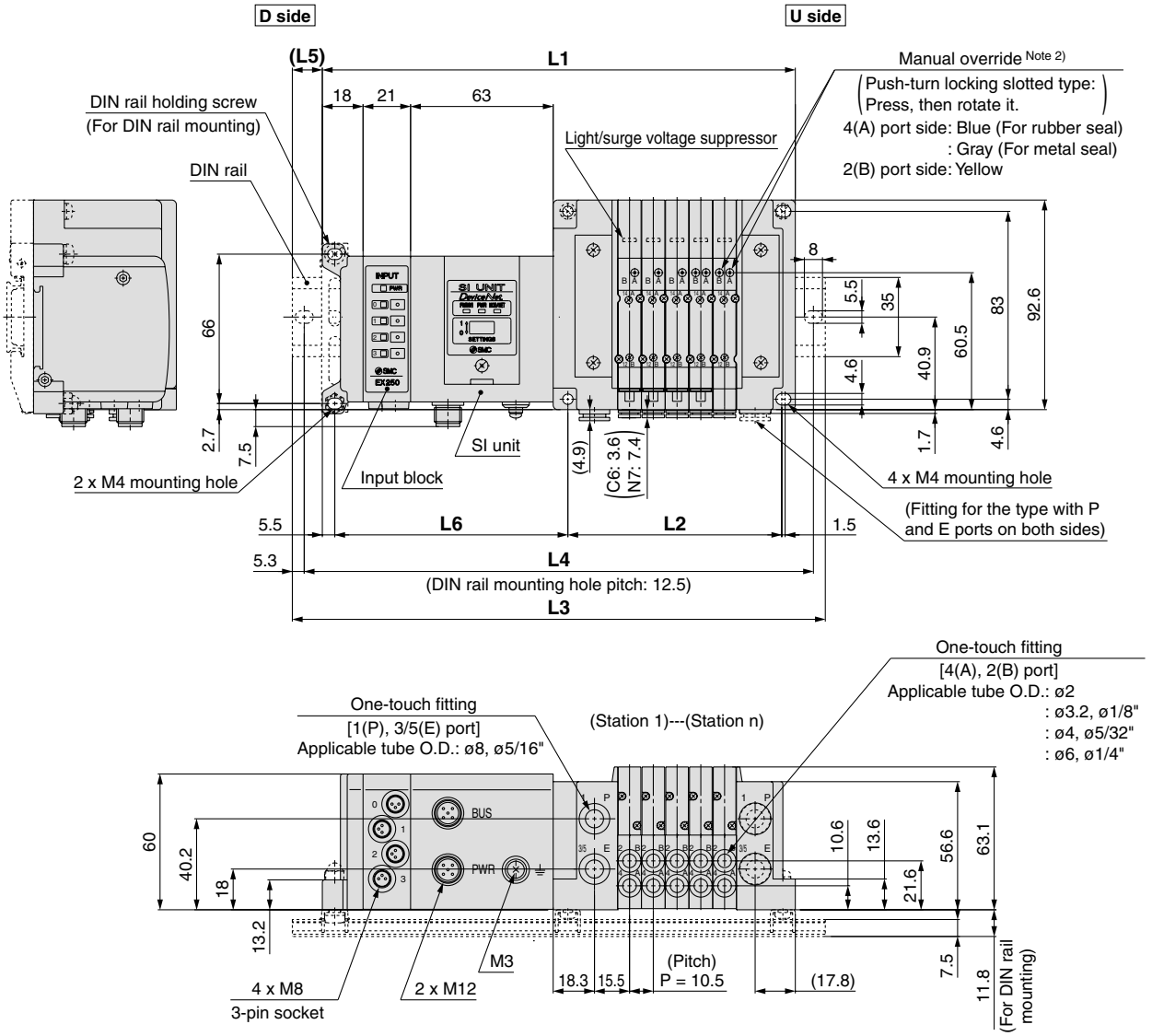
⓫ Option for mounting

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

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

Dimensions: Type 10/For EX250/Series SY3000

SS5Y3-10S□-Stations U/D/B - C2/C3, N1/C4, N7/C6, N9 (D)



L1 = 10.5 x n1 + 135.5 + 21 x n2
L2 = 10.5 x n1 + 42
L4 = L3 – 10.5
L5 = (L3 – L1)/2
L6 = 21 x n2 + 82

Note 1) These figures show "SS5Y3-10SQ1A-05D-C6".
Note 2) Refer to page 115 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 118 for dimensions of A or B port top-ported type.

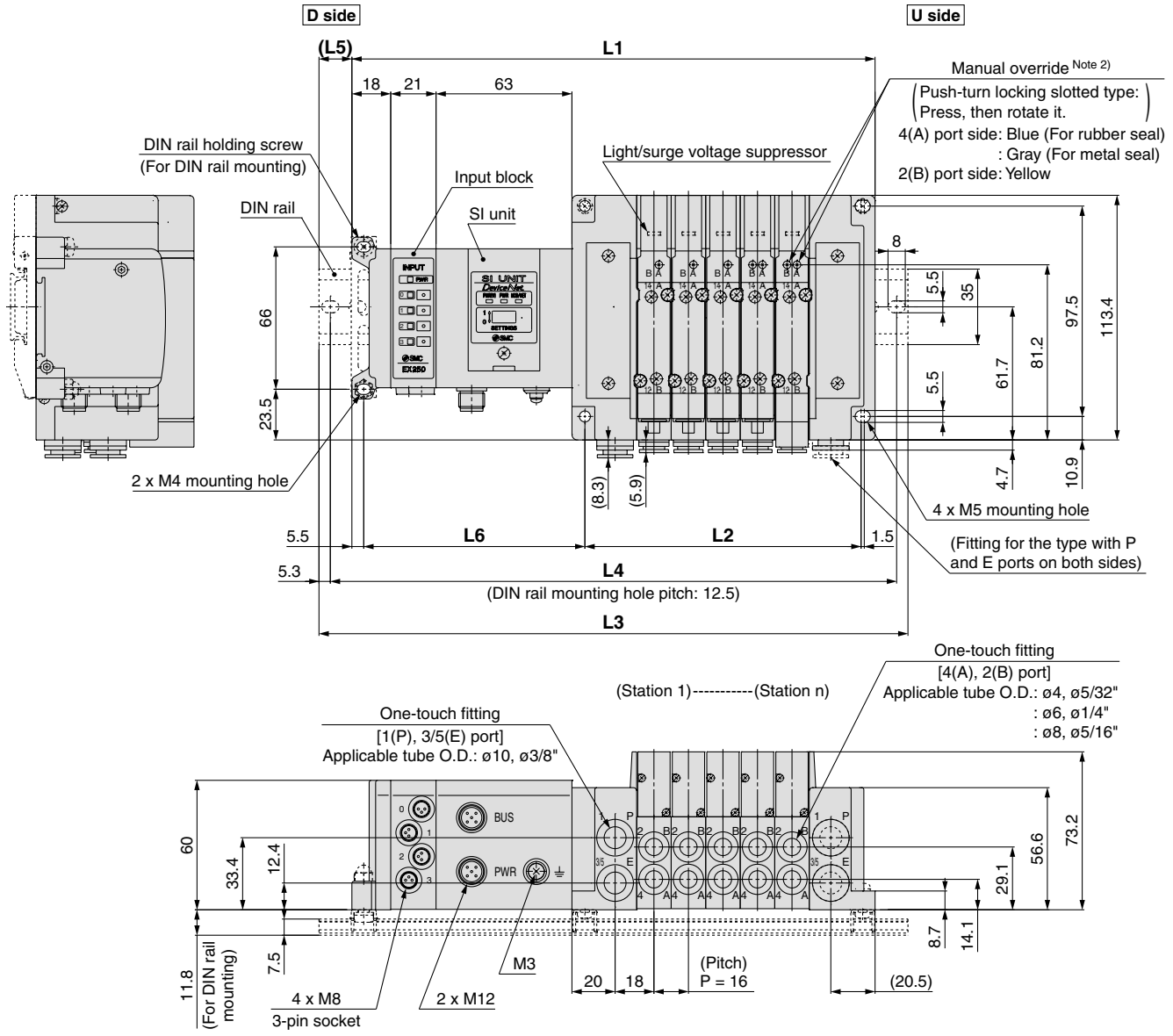
L3: DIN Rail Full Length

n1: Valve stations
n2: Input block stations

Input block stations (n2) \ Valve stations (n1)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423
1	210.5	223	223	235.5	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5
2	223	235.5	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5
3	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5
4	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498
5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523
6	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523	535.5	548
7	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523	535.5	548	548	560.5
8	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523	535.5	548	548	560.5	573	585.5

Dimensions: Type 10/For EX250/Series SY5000

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



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

Note 1) These figures show "SS5Y5-10SQ1A-05D-C8".
Note 2) Refer to page 116 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 119 for dimensions of A or B port top-ported type.

L3: DIN Rail Full Length

n1: Valve stations
n2: Input block stations

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

Type 12
Top Ported

Plug-in Connector Connecting Base: For Series EX250

Series SY3000/5000

How to Order Manifold

SS5Y 3 – 12S Q □ □ – 05 U – □ □ □
❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

Refer to pages 118 and 119 for dimensions of Type 12/Top ported type.

❶ Series

3	SY3000
5	SY5000

❸ Input block stations

Nil	None
1	1 station
⋮	⋮
8	8 stations

Note) Without SI unit, the symbol is nil. The maximum number of stations is limited for the AS-Interface applicable SI unit.

❹ Input block type, common specification

	Positive common	Negative common
Without input block	Nil	
M12, 2 inputs	A	D
M12, 4 inputs	B	E
M8, 4 inputs	C	F

Note) Without SI unit, the symbol is nil.

❷ SI unit specification

0	Without SI unit
Q	DeviceNet™
N	PROFIBUS DP
V	CC-Link
TA	AS-Interface, 8 in/8 out, 31 slave modes, 2 power supply systems
TB	AS-Interface, 4 in/4 out, 31 slave modes, 2 power supply systems
TC	AS-Interface, 8 in/8 out, 31 slave modes, 1 power supply system
TD	AS-Interface, 4 in/4 out, 31 slave modes, 1 power supply system
Y	CANopen
ZC	ControlNet™
ZE	EtherNet/IP™

Note 1) Input block cannot be mounted without SI unit.
Note 2) The supply current from the SI unit of AS-Interface applicable 1 power supply system specification to the input block and valve is limited.
Note 3) IP40 for the ControlNet™ applicable SI unit specification.

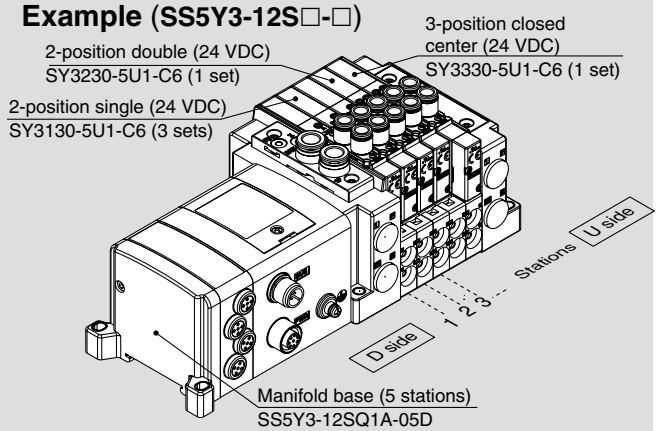
❺ Valve stations

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

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

How to Order Manifold Assembly

Example (SS5Y3-12S□-□)



SS5Y3-12SQ1A-05D ··· 1 set (Type 12 5-station manifold base part no.)
∗SY3130-5U1-C6 ····· 3 sets (2-position single part no.)
∗SY3230-5U1-C6 ····· 1 set (2-position double part no.)
∗SY3330-5U1-C6 ····· 1 set (3-position closed center part no.)
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with side ported valve. Refer to page 98 for the valves.

❻ P, E port location, SUP/EXH block assembly specification

	Internal pilot	Internal pilot/ Built-in silencer	External pilot
P, E port location U side	U	C Note)	G
P, E port location D side	D	E Note)	H
P, E port location both sides	B	F	J

∗ For a built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged.
∗ When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.
Note) SUP/EXH block assembly specification built-in silencer type has the P port on this side.

❼ P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"

∗ For N, sizes are in inches.

❽ A, B porting specification

Nil	Top ported only
M	Mixed

∗ Specify on a manifold specification sheet for M.

❾ Mounting

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

∗ DIN rail (D) cannot be selected for the product without SI unit (12S0 type).

Refer to the EX series in the Best Pneumatics No. 1 for details on the EX250 integrated type (I/O) serial transmission system.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 3 0 ❶ ❷ ❸ ❹ ❺ ❻ ❼ – 5 ❽ ❾ ❿ 1 – C6 ⓫ ⓬ – ⓭

Top ported

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Metal seal
1	Rubber seal

❹ Pilot specification

Nil	Rubber seal
R	Metal seal

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.
∗ 3-position type does not have a valve built-in type back pressure check valve.

❻ 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 high pressure type.

❼ Coil specification

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

∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

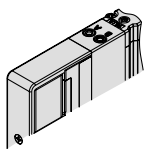
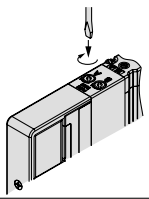
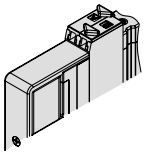
5	24 VDC

❾ Light/surge voltage suppressor and common specification

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.
∗ "R" and "U" are applicable for every SI unit. However, "S" and "Z" can be used only for CC-Link applicable unit and "NS" and "NZ" are for units which are not CC-Link applicable.

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

⓫ A, B port size

Thread piping

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

One-touch fittings (Metric size)

Symbol	A, B port	SY3000	SY5000
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	—	●

One-touch fittings (Inch size)

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

⓬ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ M5 is available with Nil only.

⓭ Option for mounting

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

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

Type 10 Side Ported

Type 11 Bottom Ported

Plug-in Connector Connecting Base: For Series EX126

Series SY3000/5000 CE

How to Order Manifold

SS5Y 3 – 10 S4 V – 05 U □ – C6 □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽

Refer to page 117 for dimensions of Type 11/Bottom ported type.

❶ Series

3	SY3000
5	SY5000

❷ Model

10	Side ported
11	Bottom ported

∗ Type 11 (Bottom ported) is available only for the SY5000.

❸ SI unit specification

0	Without SI unit
V	CC-Link

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

❹ Valve stations

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

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.
Note 2) Specified layout: Indicate the wiring specifications with the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
Note 3) This also includes the number of blanking plate assembly.

❺ P, E port location

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

❻ SUP/EXH block assembly specification

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

∗ 3/5(E) port is plugged for the built-in silencer type.
∗ When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for ❼.

❽ Mounting

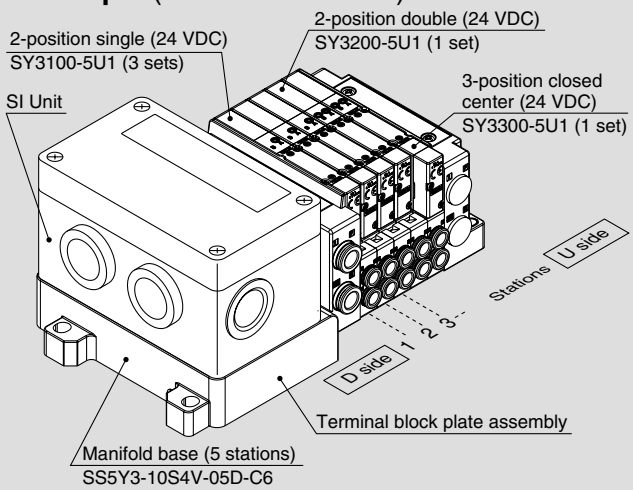
Nil	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	Specify a longer rail than the standard length.
⋮	⋮	
D16	For 16 stations	

∗ Only direct mounting for Type 11 (Bottom ported)

Refer to the EX series in the Best Pneumatics No. 1 for details on the EX126 integrated-type (Output) serial transmission system.

How to Order Manifold Assembly

Example (SS5Y3-10S4V-□-□)

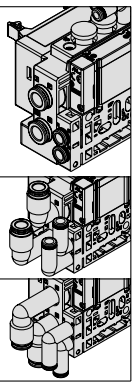


SS5Y3-10S4V-05D-C6 ··· 1 set (Type 10 5-station manifold base part no.)
∗SY3100-5U1 ····· 3 sets (2-position single part no.)
∗SY3200-5U1 ····· 1 set (2-position double part no.)
∗SY3300-5U1 ····· 1 set (3-position closed center part no.)
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with top ported valve. Refer to page 108 for the valves.

❼ A, B port size (Metric size)

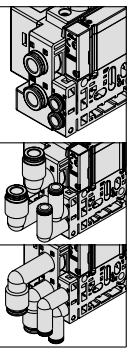
Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
C2		ø2 One-touch fitting	●	—	—
C3		ø3.2 One-touch fitting	●	—	—
C4		ø4 One-touch fitting	●	●	●
C6		ø6 One-touch fitting	●	●	●
C8		ø8 One-touch fitting	—	●	●
L4	Upward elbow	ø4 One-touch fitting	●	●	—
L6	Upward elbow	ø6 One-touch fitting	●	●	—
L8	Upward elbow	ø8 One-touch fitting	—	●	—
B4	Downward elbow	ø4 One-touch fitting	●	●	—
B6	Downward elbow	ø6 One-touch fitting	●	●	—
B8	Downward elbow	ø8 One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø8	ø10	ø10



• Elbows are also mounted to P and E ports if elbow is selected.

A, B port size (Inch size)

Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
N1		ø1/8" One-touch fitting	●	—	—
N3		ø5/32" One-touch fitting	●	●	●
N7		ø1/4" One-touch fitting	●	●	●
N9		ø5/16" One-touch fitting	—	●	●
LN3	Upward elbow	ø5/32" One-touch fitting	●	●	—
LN7	Upward elbow	ø1/4" One-touch fitting	●	●	—
LN9	Upward elbow	ø5/16" One-touch fitting	—	●	—
BN3	Downward elbow	ø5/32" One-touch fitting	●	●	—
BN7	Downward elbow	ø1/4" One-touch fitting	●	●	—
BN9	Downward elbow	ø5/16" One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø5/16"	ø3/8"	ø3/8"



∗ When ports are mixed, indicate the piping specifications with the manifold specification sheet.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 0 0 □ □ □ □ – 5 □ □ 1 – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.

∗ 3-position type does not have a valve built-in type back pressure check valve.

•Base mounted

❻ Pilot valve option

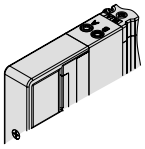
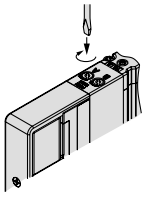
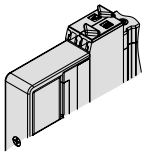
Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

∗ Only metal seal type is available for high pressure type.

❾ Light/surge voltage suppressor and common specification

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)

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

❼ Coil specification

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

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

∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

5	24 VDC

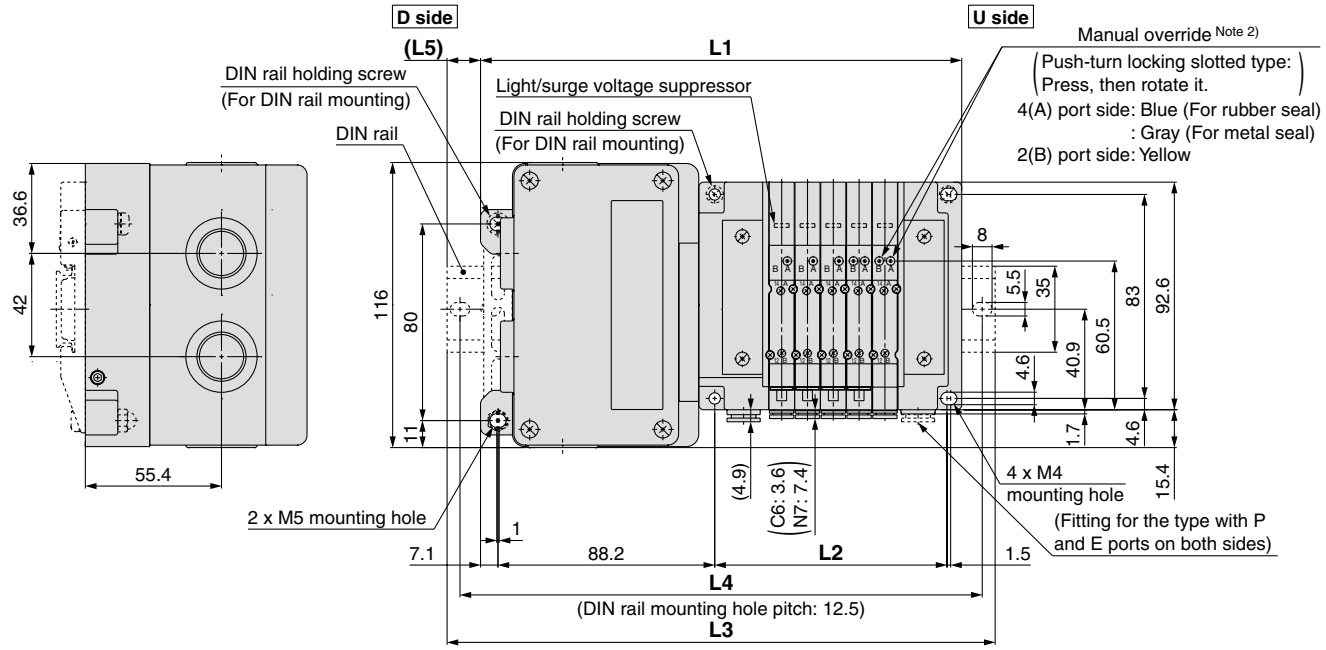
⓫ Option for mounting

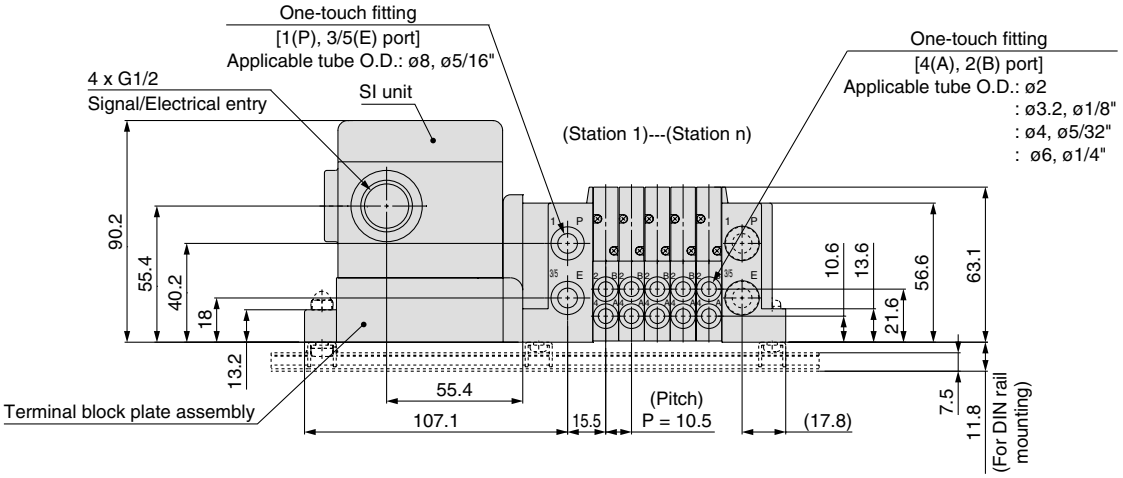
Nil	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

Dimensions: Type 10/For EX126/Series SY3000

SS5Y3-10S4□-Stations U/D/B-C4, N3/C6, N7(D)



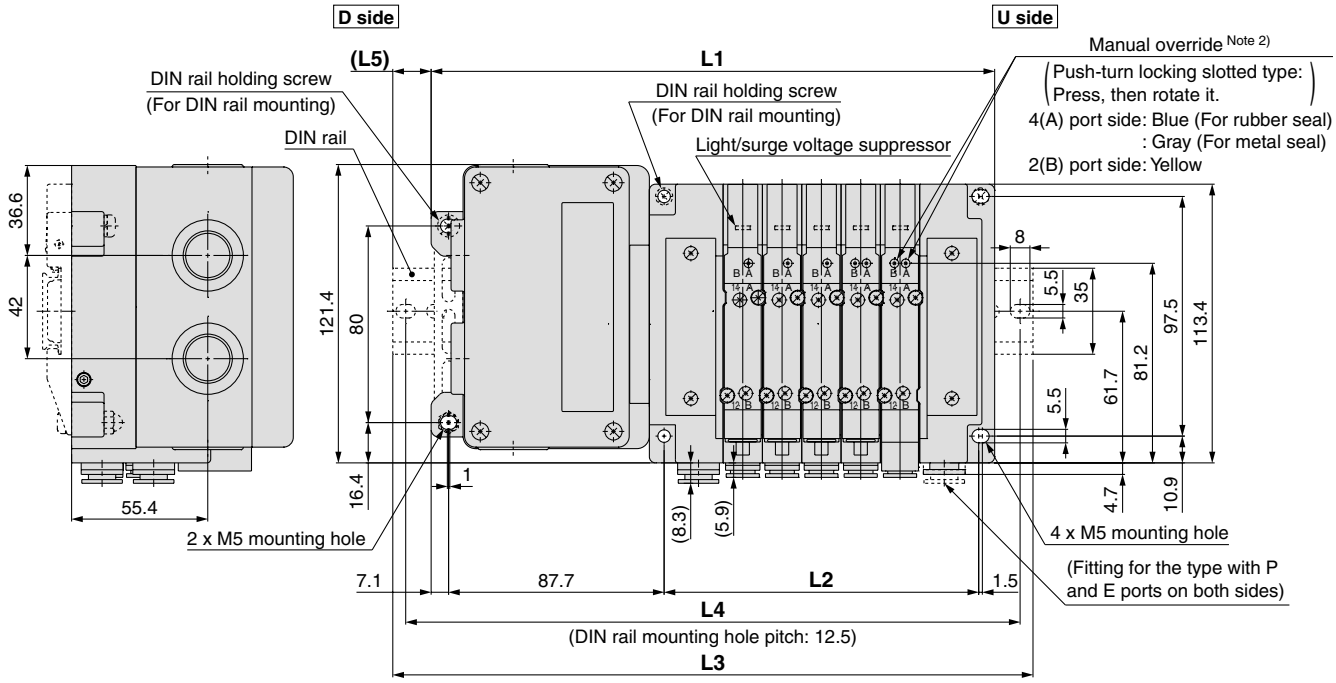


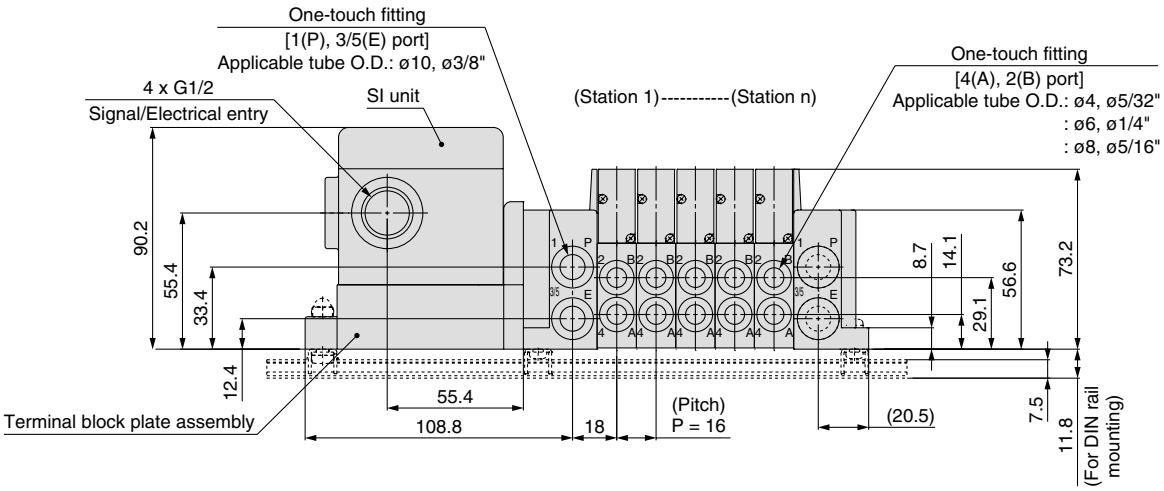
Note 1) These figures show "SS5Y3-10S4□-05D-C6".
Note 2) Refer to page 115 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 118 for dimensions of A or B port top-ported type.

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

Dimensions: Type 10/For EX126/Series SY5000

SS5Y5-10S4□-[Stations] [U C4, N3 / D C6, N7 / B C8, N9] (D)





Note 1) These figures show "SS5Y5-10S4□-05D-C8".
Note 2) Refer to page 116 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 119 for dimensions of A or B port top-ported type.

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

Type 12
Top Ported

Plug-in Connector Connecting Base: For Series EX126

Series SY3000/5000

How to Order Manifold

SS5Y 3 – 12S4 V – 05 U ☐ – ☐ ☐ ☐

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽

Refer to pages 118 and 119 for dimensions of Type 12/Top ported type.

❶ Series

3	SY3000
5	SY5000

❷ SI unit specification

0	Without SI unit
V	CC-Link

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

❸ Valve stations

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

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.
Note 2) Specified layout: Indicate the wiring specifications with the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
Note 3) This also includes the number of blanking plate assembly.

❹ P, E port location

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

Note) SUP/EXH block assembly specification built-in silencer type has the P port on this side.

❺ SUP/EXH block assembly specification

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

∗ For a built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged.
∗ When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

❻ P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"

∗ For N, sizes are in inches.

❼ A, B porting specification

Nil	Top ported only
M	Mixed

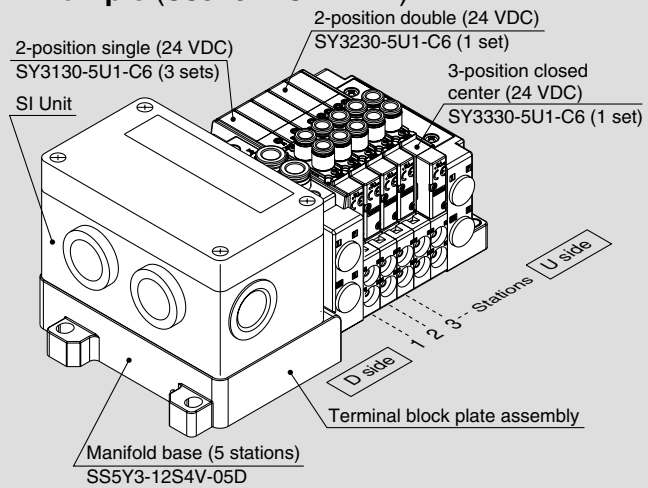
∗ Specify on a manifold specification sheet for M.

❽ Mounting

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

How to Order Manifold Assembly

Example (SS5Y3-12S4V-☐-☐)



SS5Y3-12S4V-05D ··· 1 set (Type 12 5-station manifold base part no.)
∗SY3130-5U1-C6 ····· 3 sets (2-position single part no.)
∗SY3230-5U1-C6 ····· 1 set (2-position double part no.)
∗SY3330-5U1-C6 ····· 1 set (3-position closed center part no.)
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with side ported valve. Refer to page 104 for the valves.

Refer to the EX series in the Best Pneumatics No. 1 for details on the EX126 integrated type (Output) serial transmission system.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 3 0 □ □ □ □ – 5 □ □ 1 – C6 □ – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬ ⓭

❸ Top ported

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.
∗ 3-position type does not have a valve built-in type back pressure check valve.

❻ 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 high pressure type.

❼ Coil specification

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

∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
∗ Quick response type does not have a power saving circuit.

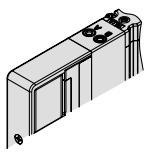
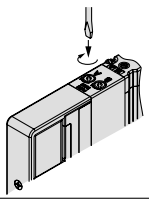
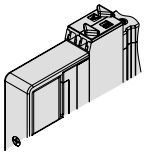
❽ Rated voltage

5	24 VDC

❾ Light/surge voltage suppressor and common specification

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)

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

⓫ A, B port size

Thread piping

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

One-touch fittings (Metric size)

Symbol	A, B port	SY3000	SY5000
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	—	●

One-touch fittings (Inch size)

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

⓬ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ M5 is available with Nil only.

⓭ Option for mounting

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

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base: For Series EX120

Series SY3000/5000 CE

How to Order Manifold

SS5Y 3 – 10 S3 R1 – 05 U □ – C6 □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽

Refer to page 117 for dimensions of Type 11/Bottom ported type.

❶ Series

3	SY3000
5	SY5000

❷ Model

10	Side ported
11	Bottom ported

∗ Type 11 (Bottom ported) is available only for the SY5000.

❸ SI unit specification

0	Without SI unit
Q	DeviceNet™
R1	OMRON Corp.: CompoBus/S (16 outputs)
R2	OMRON Corp.: CompoBus/S (8 outputs)
V	CC-Link
ZB	CompoNet™ (Positive common)
ZBN	CompoNet™ (Negative common)

❹ Valve stations

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

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

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

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

Note 4) Since R2 type SI unit has 8 outputs, note that up to 8 solenoids can be accommodated.

❺ P, E port location

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

❻ SUP/EXH block assembly specification

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

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

Refer to the page on the right for ❼.

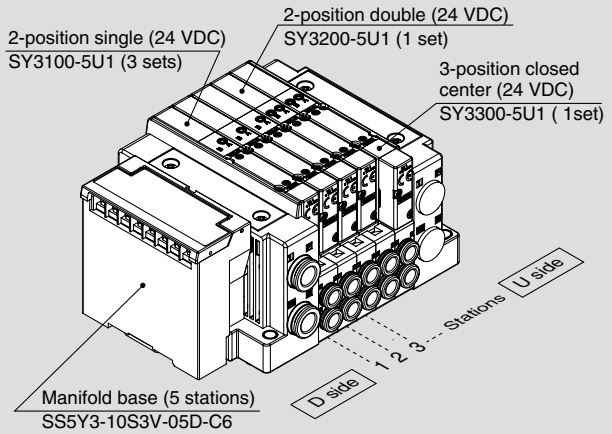
❽ Mounting

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

∗ Only direct mounting for Type 11 (Bottom ported) DIN rail (D) cannot be selected for the product without SI unit (10S3□ type).

How to Order Manifold Assembly

Example (SS5Y3-10S3□-□)



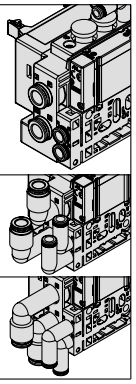
SS5Y3-10S3V-05D-C6 ··· 1 set (Type 10 5-station manifold base part no.)
∗SY3100-5U1 ····· 3 sets (2-position single part no.)
∗SY3200-5U1 ····· 1 set (2-position double part no.)
∗SY3300-5U1 ····· 1 set (3-position closed center part no.)
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with top ported valve. Refer to page 114 for the valves.

Refer to the EX series in the Best Pneumatics No. 1 for details on the EX120 integrated-type (Output) serial transmission system.

❼ A, B port size (Metric size)

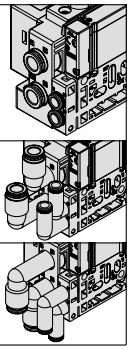
Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
C2		ø2 One-touch fitting	●	—	—
C3		ø3.2 One-touch fitting	●	—	—
C4		ø4 One-touch fitting	●	●	●
C6		ø6 One-touch fitting	●	●	●
C8		ø8 One-touch fitting	—	●	●
L4	Upward elbow	ø4 One-touch fitting	●	●	—
L6	Upward elbow	ø6 One-touch fitting	●	●	—
L8	Upward elbow	ø8 One-touch fitting	—	●	—
B4	Downward elbow	ø4 One-touch fitting	●	●	—
B6	Downward elbow	ø6 One-touch fitting	●	●	—
B8	Downward elbow	ø8 One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø8	ø10	ø10



• Elbows are also mounted to P and E ports if elbow is selected.

A, B port size (Inch size)

Symbol	A, B port		Type 10 Side ported		Type 11 Bottom ported
			SY3000	SY5000	SY5000
N1		ø1/8" One-touch fitting	●	—	—
N3		ø5/32" One-touch fitting	●	●	●
N7		ø1/4" One-touch fitting	●	●	●
N9		ø5/16" One-touch fitting	—	●	●
LN3	Upward elbow	ø5/32" One-touch fitting	●	●	—
LN7	Upward elbow	ø1/4" One-touch fitting	●	●	—
LN9	Upward elbow	ø5/16" One-touch fitting	—	●	—
BN3	Downward elbow	ø5/32" One-touch fitting	●	●	—
BN7	Downward elbow	ø1/4" One-touch fitting	●	●	—
BN9	Downward elbow	ø5/16" One-touch fitting	—	●	—
M*		Mixed	●	●	●
P, E port size (One-touch fittings)			ø5/16"	ø3/8"	ø3/8"



∗ When ports are mixed, indicate the piping specifications with the manifold specification sheet.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 0 0 □ □ □ □ – 5 □ □ 1 – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.

∗ 3-position type does not have a valve built-in type back pressure check valve.

• Base mounted

❻ Pilot valve option

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

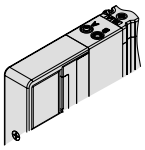
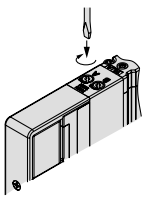
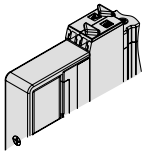
∗ Only metal seal type is available for high pressure type.

❾ Light/surge voltage suppressor and common specification

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. Select a valve from R, U, S and Z unless the SI unit is negative common (ZBN). Select a valve from R, U, NS and NZ if the SI unit is negative common (ZBN).

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

❼ Coil specification

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

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

∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

5	24 VDC

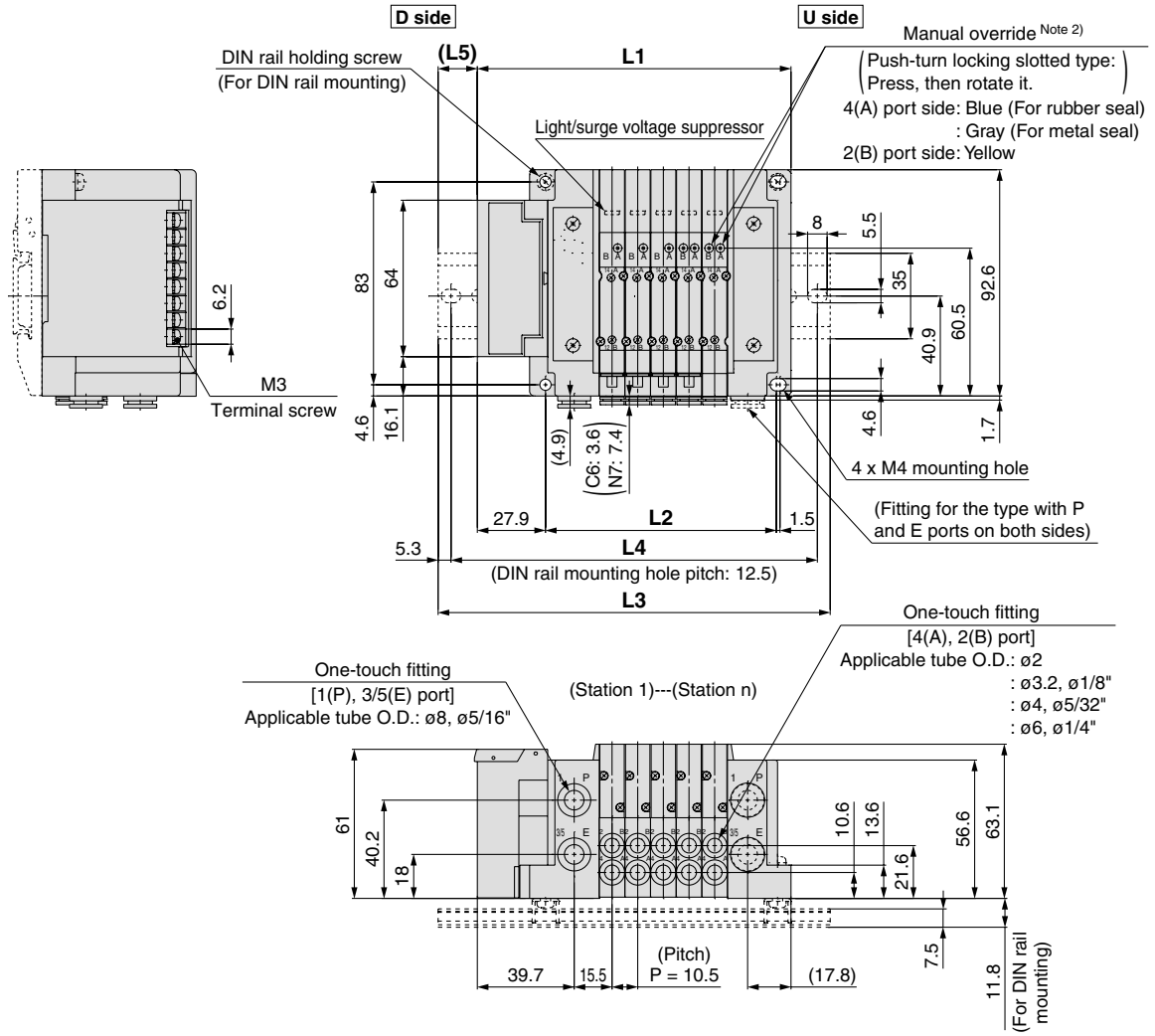
⓫ Option for mounting

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

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

Dimensions: Type 10/For EX120/Series SY3000

SS5Y3-10S3□-Stations U/D/B - C2/C3, N1/C4, N3/C6, N7 (D)

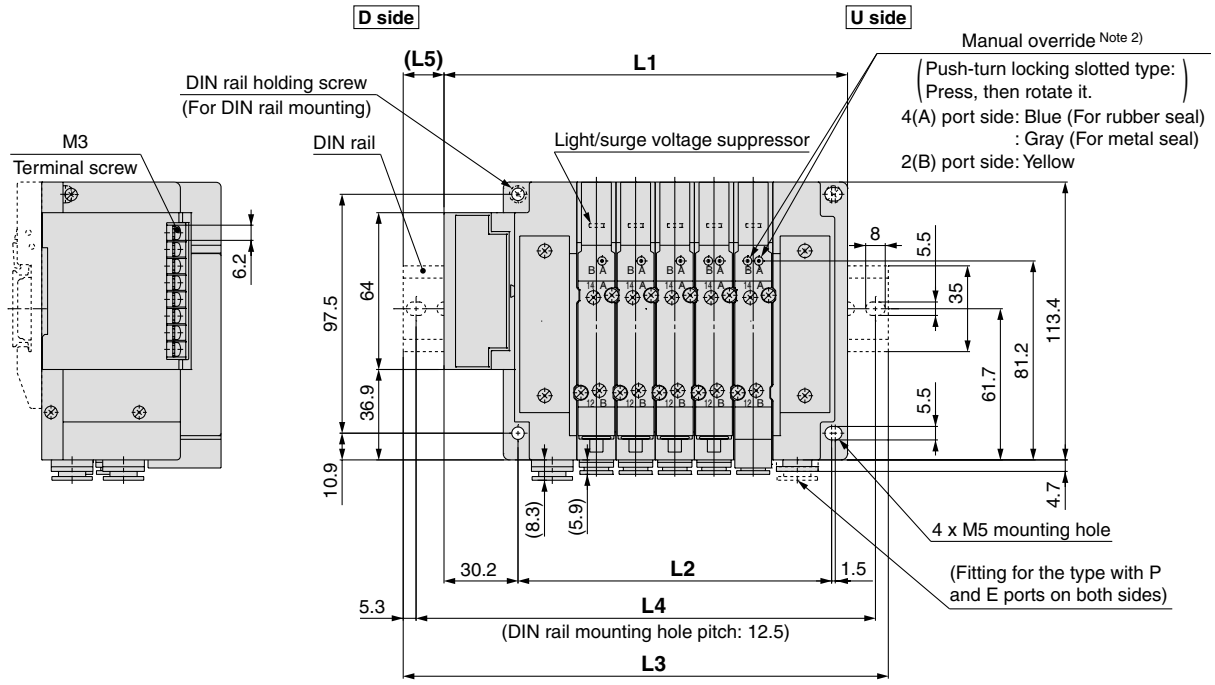


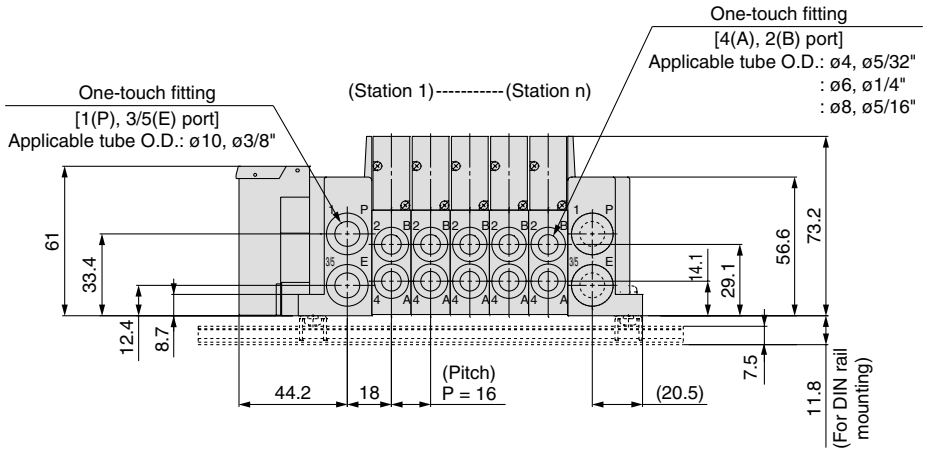
Note 1) These figures show "SS5Y3-10S3□-05D-C6".
Note 2) Refer to page 115 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 118 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	96.9	107.4	117.9	128.4	138.9	149.4	159.9	170.4	180.9	191.4	201.9	212.4	222.9	233.4	243.9
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210
L3	123	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	235.5	248	260.5	273
L4	112.5	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	225	237.5	250	262.5
L5	13	14	15	16	17	12	13	14	15	16	17	11.5	12.5	13.5	14.5

Dimensions: Type 10/For EX120/Series SY5000

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





Note 1) These figures show "SS5Y5-10S3□-05D-C8".
Note 2) Refer to page 116 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
Note 3) Refer to page 119 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

Type 12
Top Ported

Plug-in Connector Connecting Base: For Series EX120

Series SY3000/5000

How to Order Manifold

SS5Y ❶3 – 12S3 ❷R1 – ❸05 ❹U ❺ – ❻ ❼ ❽

Refer to pages 118 and 119 for dimensions of Type 12/Top ported type.

❶ Series

3	SY3000
5	SY5000

❷ SI unit specification

0	Without SI unit
Q	DeviceNet™
R1	OMRON Corp.: CompoBus/S (16 outputs)
R2	OMRON Corp.: CompoBus/S (8 outputs)
V	CC-Link
ZB	CompoNet™ (Positive common)
ZBN	CompoNet™ (Negative common)

❸ Valve stations

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

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

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

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

Note 4) Since R2 type SI unit has 8 outputs, note that up to 8 solenoids can be accommodated.

❹ P, E port location

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

Note) SUP/EXH block assembly specification built-in silencer type has the P port on this side.

❺ SUP/EXH block assembly specification

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

∗ For a built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged.

❻ P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"

∗ For N, sizes are in inches.

❼ A, B porting specification

Nil	Top ported only
M	Mixed

∗ Specify on a manifold specification sheet for M.

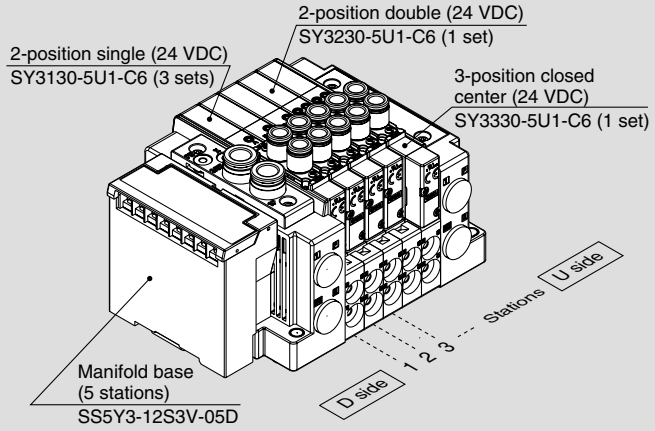
❽ Mounting

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

∗ DIN rail (D) cannot be selected for the product without SI unit (12S3□ type).

How to Order Manifold Assembly

Example (SS5Y3-12S-□-□)



SS5Y3-12S3V-05D ··· 1 set (Type 12 5-station manifold base part no.)
∗SY3130-5U1-C6 ····· 3 sets (2-position single part no.)
∗SY3230-5U1-C6 ····· 1 set (2-position double part no.)
∗SY3330-5U1-C6 ····· 1 set (3-position closed center part no.)
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with side ported valve. Refer to page 110 for the valves.

Refer to the EX series in the Best Pneumatics No. 1 for details on the EX120 integrated-type (Output) serial transmission system.

SMC

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 3 0 ❶ ❷ ❸ ❹ ❺ ❻ ❼ – 5 ❽ ❾ ❿ 1 – C6 ⓫ ⓬ – ⓭

❸ Top ported

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.
∗ 3-position type does not have a valve built-in type back pressure check valve.

❻ 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 high pressure type.

❼ Coil specification

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

∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

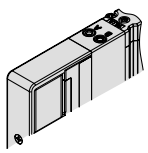
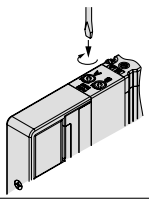
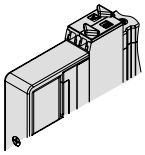
5	24 VDC

❾ Light/surge voltage suppressor and common specification

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. Select a valve from R, U, S and Z if the SI unit common is positive common (no symbol). Select a valve from R, U, NS and NZ if the SI unit common is negative common (N).

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

⓫ A, B port size

Thread piping

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

One-touch fittings (Metric size)

Symbol	A, B port	SY3000	SY5000
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	—	●

One-touch fittings (Inch size)

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

⓬ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ M5 is available with Nil only.

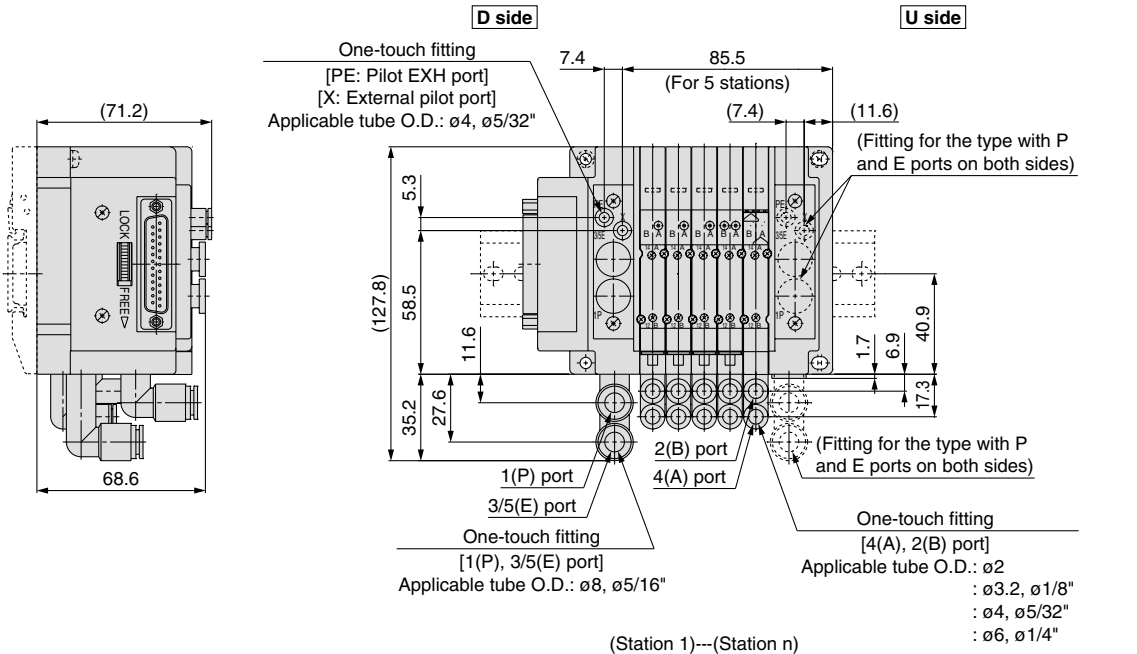
⓭ Option for mounting

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

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

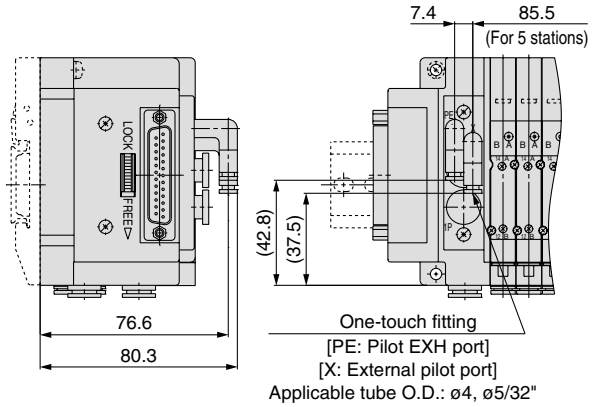
Dimensions: Type 10/External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override/Series SY3000

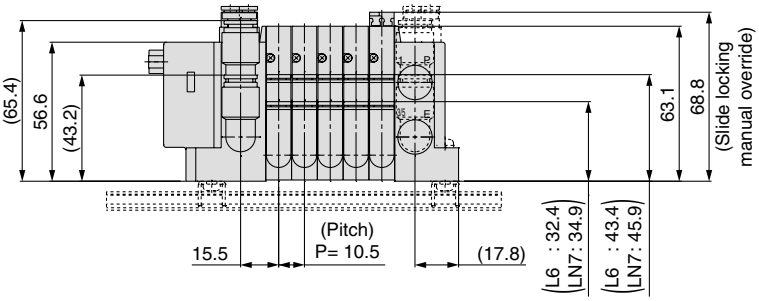
SS5Y3-10□-Stations U/D/B (S, R)-L/B□



External pilot for straight piping

P, E port location: D



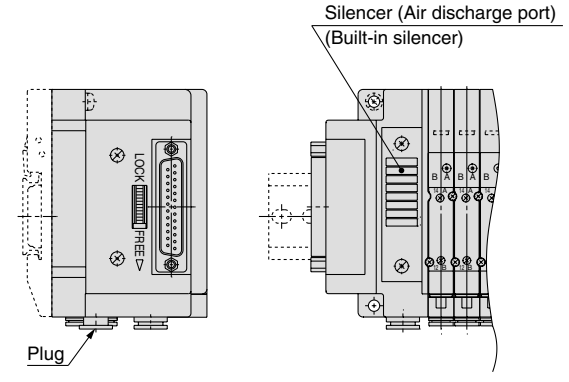


Note) These figures show “SS5Y3-10F2-05DR-L6”.

Built-in silencer

<Internal pilot>

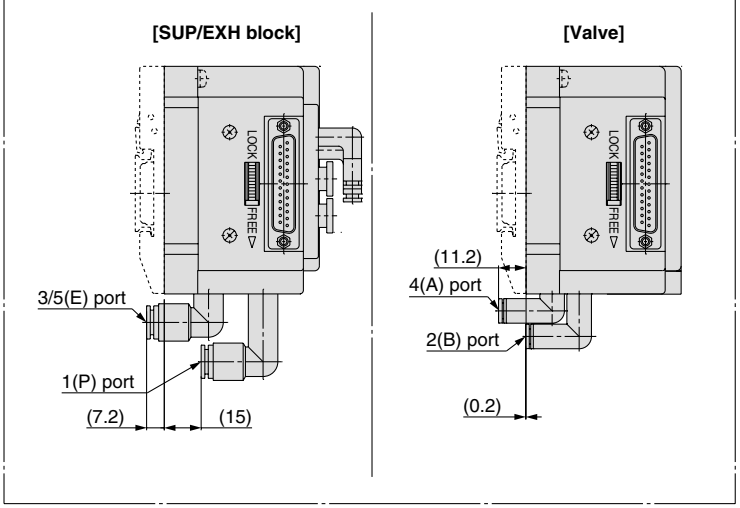
P, E port location: D



Downward (Type B)

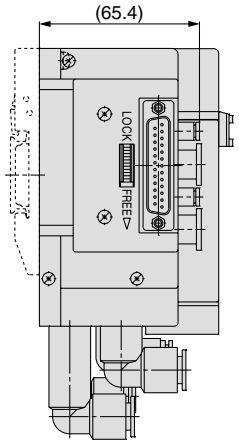
[SUP/EXH block]

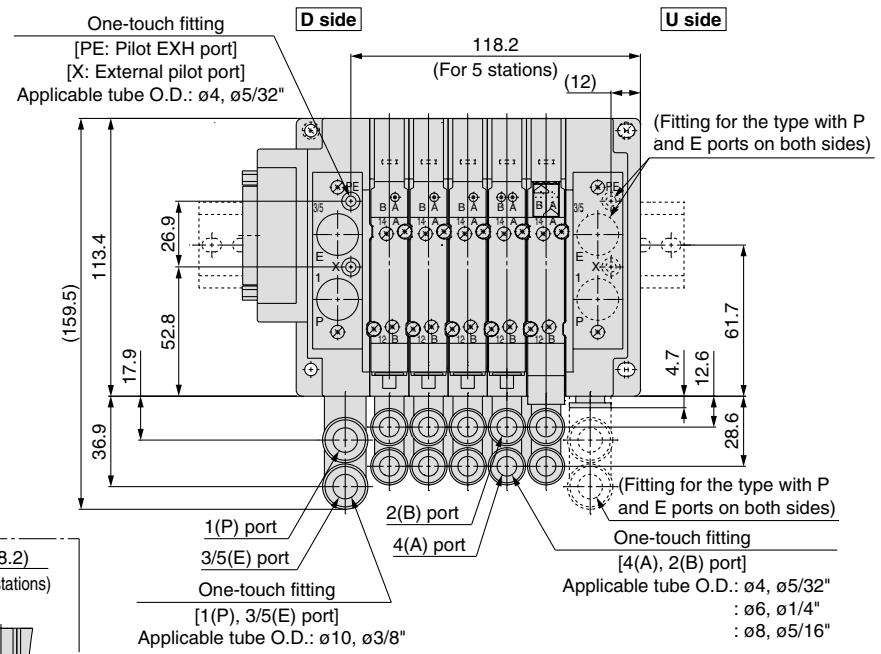
[Valve]



Dimensions: Type 10/External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override/Series SY5000

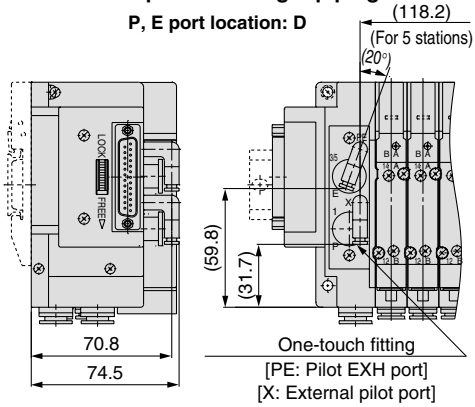
SS5Y5-10□-Stations $\frac{U}{D}_{B}$(S, R)-$\frac{L}{B}$□



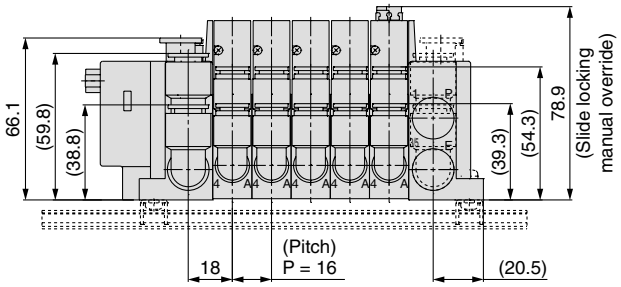


External pilot for straight piping

P, E port location: D



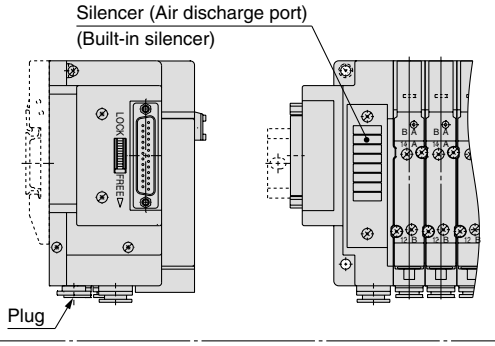
(Station 1)----------(Station n)



Note) These figures show “SS5Y5-10F2-05DR-L8”.

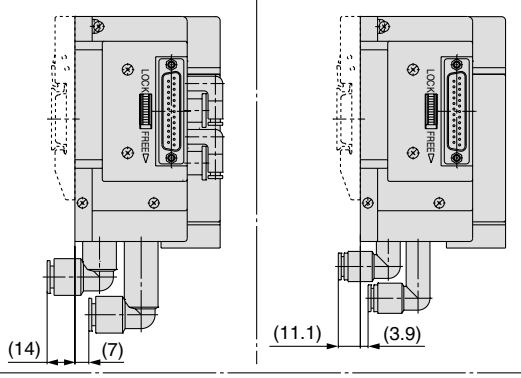
Built-in silencer

P, E port location: D



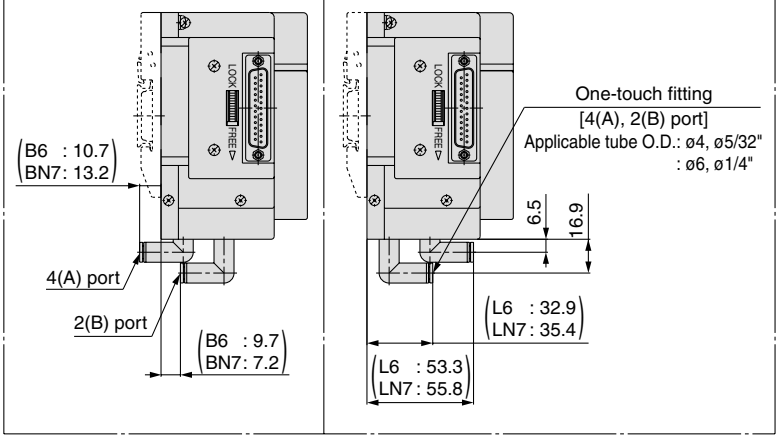
Downward (Type B)

[SUP/EXH block] **[Valve]**



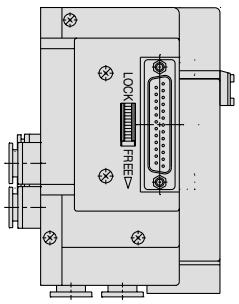
Valve/Series SY3000 (Mixed Mounting)

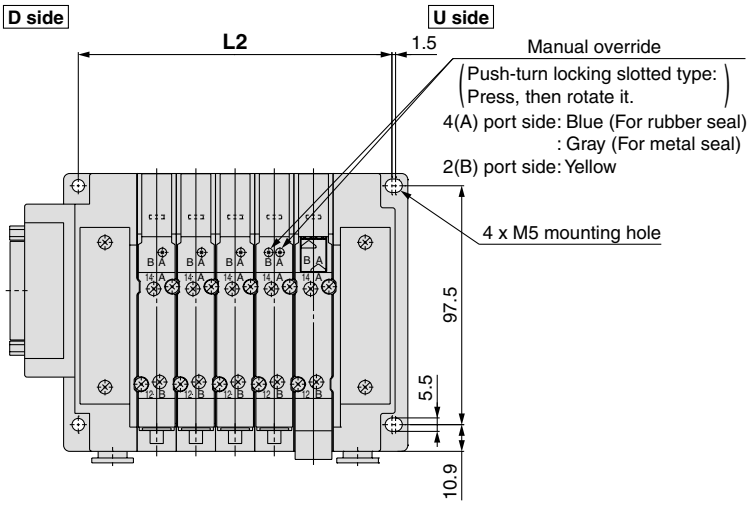
Downward (Type B) **Upward (Type U)**



Dimensions: Type 11/All Wirings/Series SY5000

SS5Y5-11□-Stations U D B

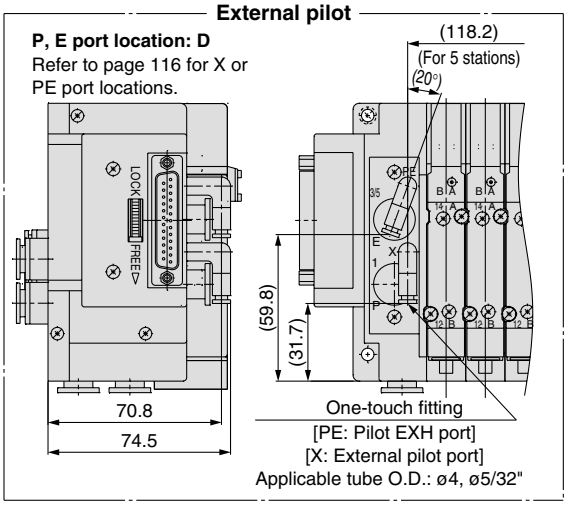


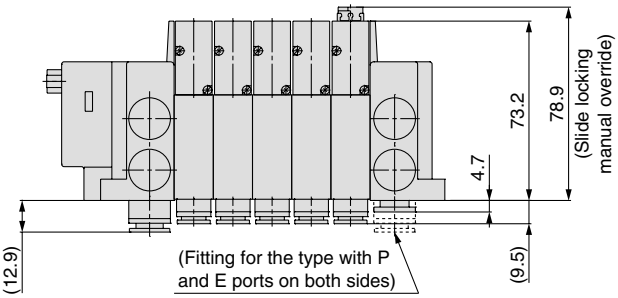


External pilot

P, E port location: D

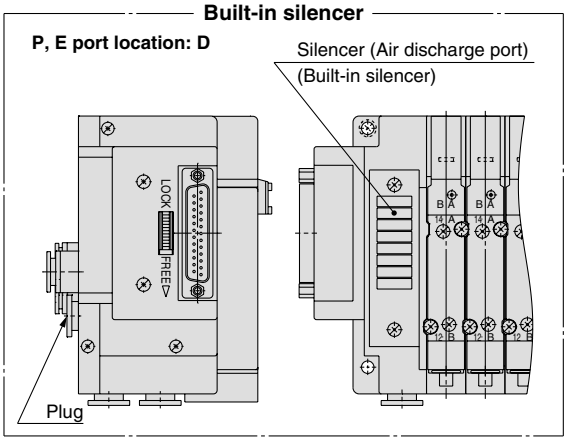
Refer to page 116 for X or PE port locations.

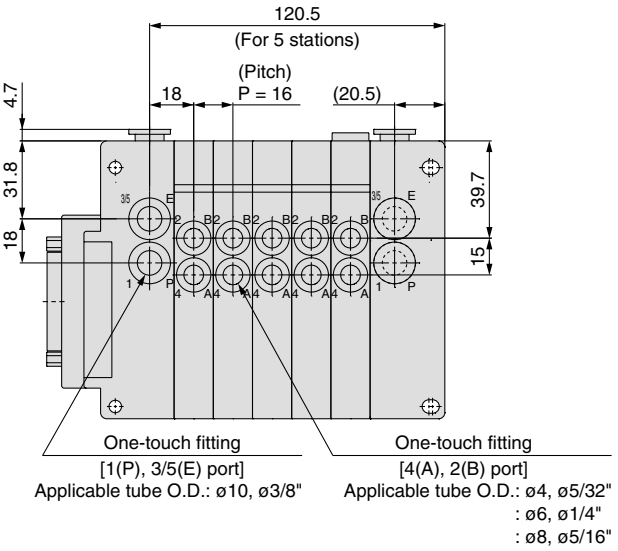




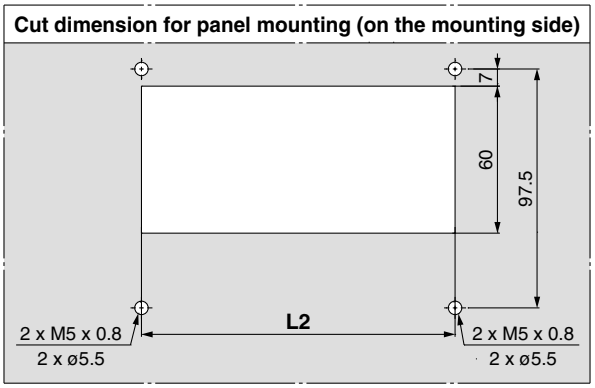
Built-in silencer

P, E port location: D





Cut dimension for panel mounting (on the mounting side)



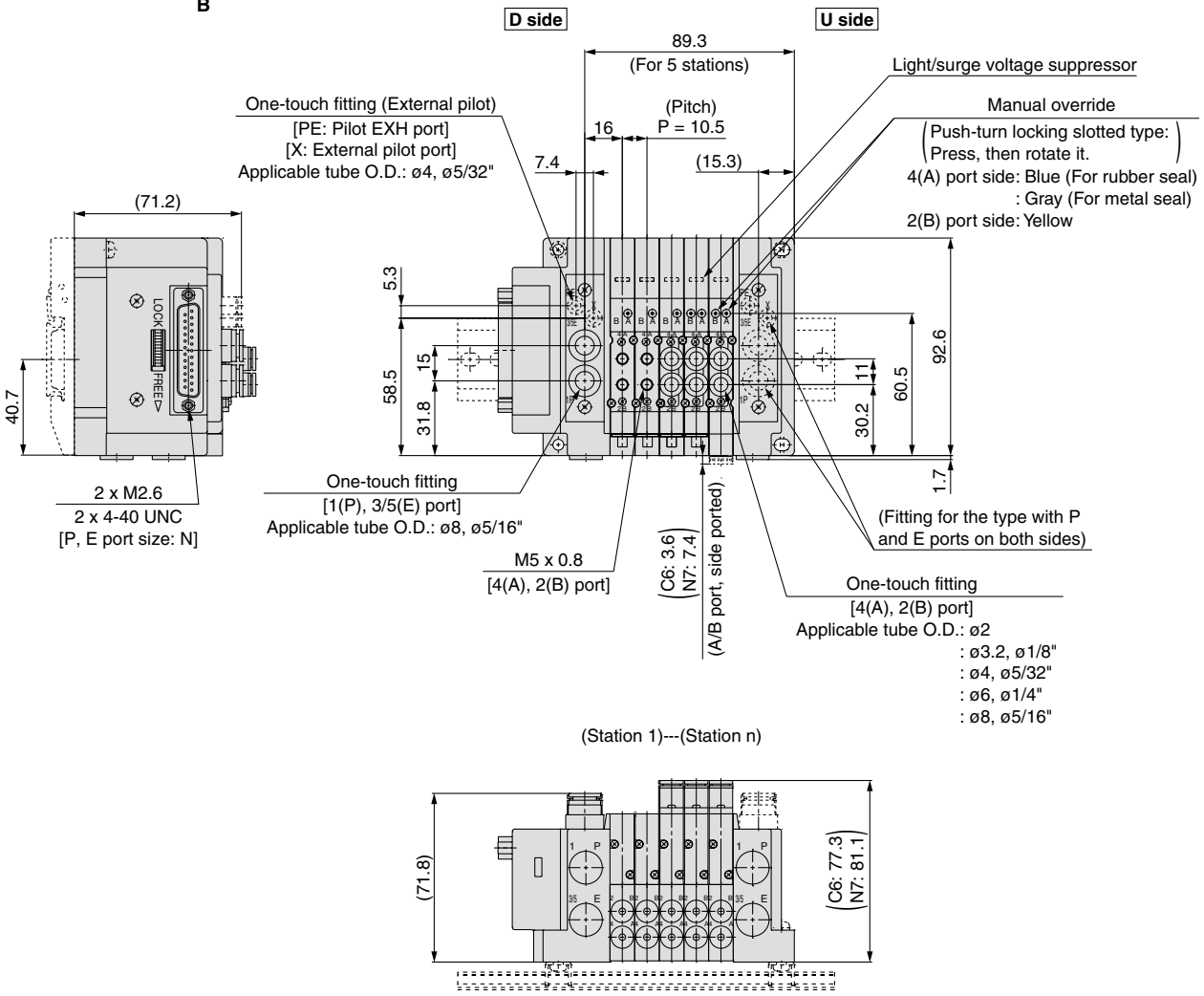
Note 1) These figures show "SS5Y5-11F2-05D-C8".

Note 2) Refer to the below pages for L2 dimensions and other dimensions that are not specified in each wiring specification.

D-sub connector	: P. 52
Flat ribbon cable	: P. 54
Terminal block box:	P. 62
Lead wire	: P. 70
Circular connector :	P. 78
EX600	: P. 87, 88
EX500	: P. 94
EX250	: P. 100
EX126	: P. 106
EX120	: P. 112

Dimensions: Type 12/All Wirings/Series SY3000

SS5Y3-12□-Stations U/D/B (R)

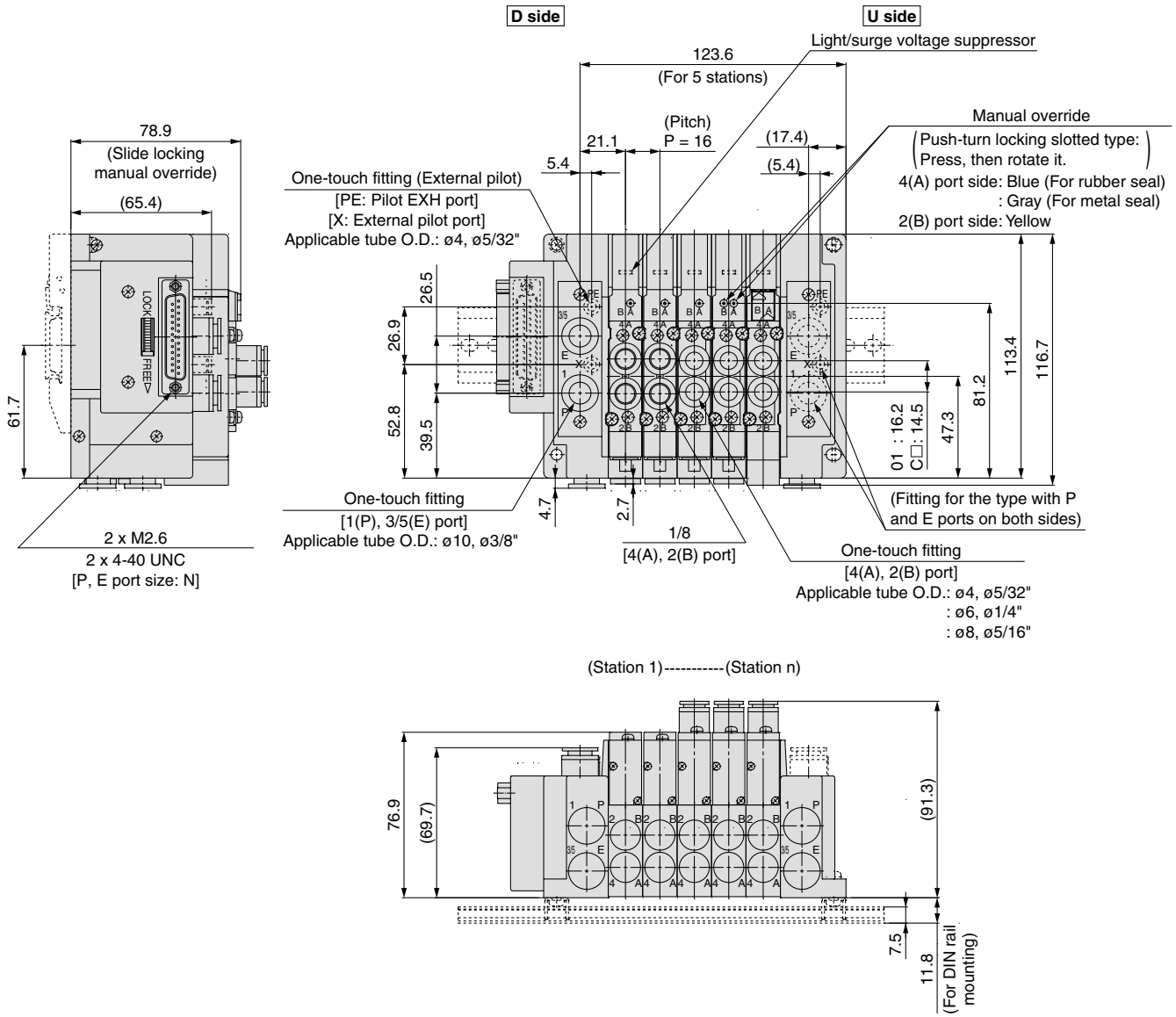


Note 1) These figures show “SS5Y3-12F2-05D”.
Note 2) For a built-in silencer type, a silencer is mounted on the opposite side of U or D side with P or E port. Refer to page 115 for dimensions of silencer.
Note 3) Refer to the below pages for dimensions that are not specified in each wiring specification.

D-sub connector	: P. 51
Flat ribbon cable	: P. 53
Terminal block box	: P. 61
Lead wire	: P. 69
Circular connector	: P. 77
EX600	: P. 85, 86
EX500	: P. 93
EX250	: P. 99
EX126	: P. 105
EX120	: P. 111

Dimensions: Type 12/All Wirings/Series SY5000

SS5Y5-12□-Stations U D B



Note 1) These figures show “SS5Y5-12F2-05D”.

Note 2) For a 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 116 for dimensions of silencer.

Note 3) Refer to the below pages for dimensions that are not specified in each wiring specification.

D-sub connector	: P. 52
Flat ribbon cable	: P. 54
Terminal block box	: P. 62
Lead wire	: P. 70
Circular connector	: P. 78
EX600	: P. 87, 88
EX500	: P. 94
EX250	: P. 100
EX126	: P. 106
EX120	: P. 112

Type 10 Side Ported

Type 11 Bottom Ported

Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold

D-sub Connector/Flat Ribbon Cable/PC Wiring
Terminal Block Box (IP67)/Lead Wire (IP67)/Circular Connector (IP67)
For EX600 (IP67)/EX500 (IP67)/EX250 (IP67)/EX126 (IP67)/EX120

Series SY3000/5000 CE

SY3000 can be mounted onto SY5000 size manifold.

How to Order Manifold

SS5Y5 – M 10 F 1 – 05 U □ – C 8 6 □

Mixed mounting type

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿

Refer to page 124 for dimensions of Type 11/Bottom ported type.

❶ Model

10	Side ported
11	Bottom ported

❷ Connector type

Symbol	Type	Page
F	D-sub connector (25 pins)	P. 49
P	Flat ribbon cable (26 pins)	
PG	Flat ribbon cable (20 pins)	
PH	Flat ribbon cable (10 pins)	
J	PC wiring (20 pins)	
T	Terminal block box	P. 59
L1	Lead wire 34 cores	P. 67
L2	Lead wire 17 cores	
L3	Lead wire 9 cores	
M	Circular connector	P. 75
S6□	EX600 Serial transmission	P. 83
S□	EX500 Serial transmission	P. 91
S□	EX250 Serial transmission	P. 97
S4□	EX126 Serial transmission	P. 103
S3□	EX120 Serial transmission	P. 109

∗ Refer to the pages shown in the above table for details.

❸

• With Lead wire

Lead wire length

1	0.6 m
2	1.5 m
3	3 m

• With D-sub connector, Flat ribbon cable and PC wiring

Connector entry direction

1	Upward
2	Lateral

∗ It is not necessary to select the items above for the valve with terminal block box or with circular connector or the serial transmission type.

❹ 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	

❺ P, E port location

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

∗ Refer to page 83 for the EX600 and page 97 for the EX250.

❻ SUP/EXH block assembly specification

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

∗ 3/5(E) port is plugged for the built-in silencer type.
∗ Refer to page 83 for the EX600 and page 97 for the EX250.

Refer to the page on the right for ❼, ❽ and ❾.

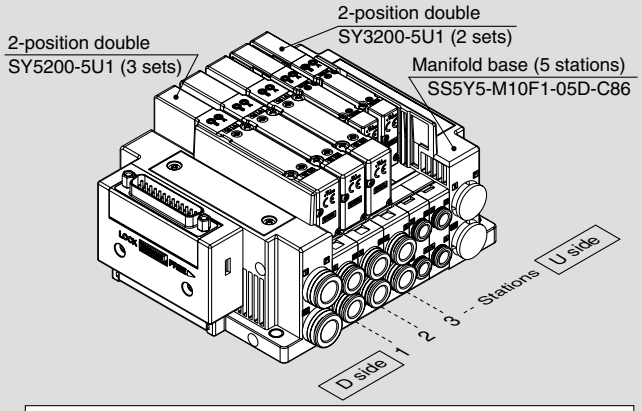
❿ Mounting

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

∗ Only direct mounting for Type 11 (Bottom ported)
∗ Refer to the pages shown in the table "Connector type" for the length of the DIN rail.

How to Order Manifold Assembly

Example (SS5Y5-M10F1-□)



SS5Y5-M10F1-05D-C86 ··· 1 set (Type M10 5-station manifold base part no.)
∗SY5200-5U1 ····· 3 sets (2-position double part no.)
∗SY3200-5U1 ····· 2 sets (2-position double part no.)
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select the fitting type M for the manifold and specify on a manifold specification sheet for mixed mounting with top ported valve. Refer to page 126 for the valves.

❼ Fitting type

Symbol	Fitting type
C	Metric size: One-touch fitting
L	Metric size: One-touch fitting with upward elbow
B	Metric size: One-touch fitting with downward elbow
N	Inch size: One-touch fitting
LN	Inch size: One-touch fitting with upward elbow
BN	Inch size: One-touch fitting with downward elbow
M	Mixed mounting

∗ When ports are mixed, indicate the piping specifications with the manifold specification sheet.
∗ ø2, ø3.2 and ø1/8" are not available for the elbow fitting.

❽ SY5000: A, B port size

(Metric size)

Symbol	Port size
4	ø4 One-touch fitting
6	ø6 One-touch fitting
8	ø8 One-touch fitting
Nil	Bottom ported for all stations of SY3000

(Inch size)

Symbol	Port size
3	ø5/32" One-touch fitting
7	ø1/4" One-touch fitting
9	ø5/16" One-touch fitting
Nil	Bottom ported for all stations of SY3000

∗ No symbol needs to be specified when fitting type "M" is selected.

❾ SY3000: A, B port size

(Metric size)

Symbol	Port size
2	ø2 One-touch fitting
3	ø3.2 One-touch fitting
4	ø4 One-touch fitting
6	ø6 One-touch fitting

(Inch size)

Symbol	Port size
1	ø1/8" One-touch fitting
3	ø5/32" One-touch fitting
7	ø1/4" One-touch fitting

∗ No symbol needs to be specified when fitting type "M" is selected.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 0 0 □ □ □ □ – 5 □ □ 1 – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫

❸ Base mounted

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.
∗ 3-position type does not have a valve built-in type back pressure check valve.

❻ Pilot valve option

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

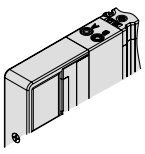
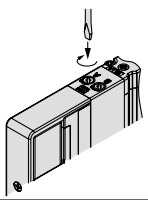
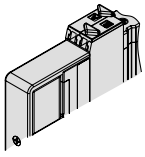
∗ Only metal seal type is available for high pressure type.

❾ Light/surge voltage suppressor and common specification

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. For SI unit, select a valve which is suitable for the SI unit common specifications.
Refer to the pages shown below for details.
EX600: P. 84 EX500: P. 92
EX250: P. 98 EX126: P. 104
EX120: P. 110

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

❼ Coil specification

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

∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

5	24 VDC
6	12 VDC

∗ Only 24 VDC is available for the PC wiring system type and the serial transmission type.

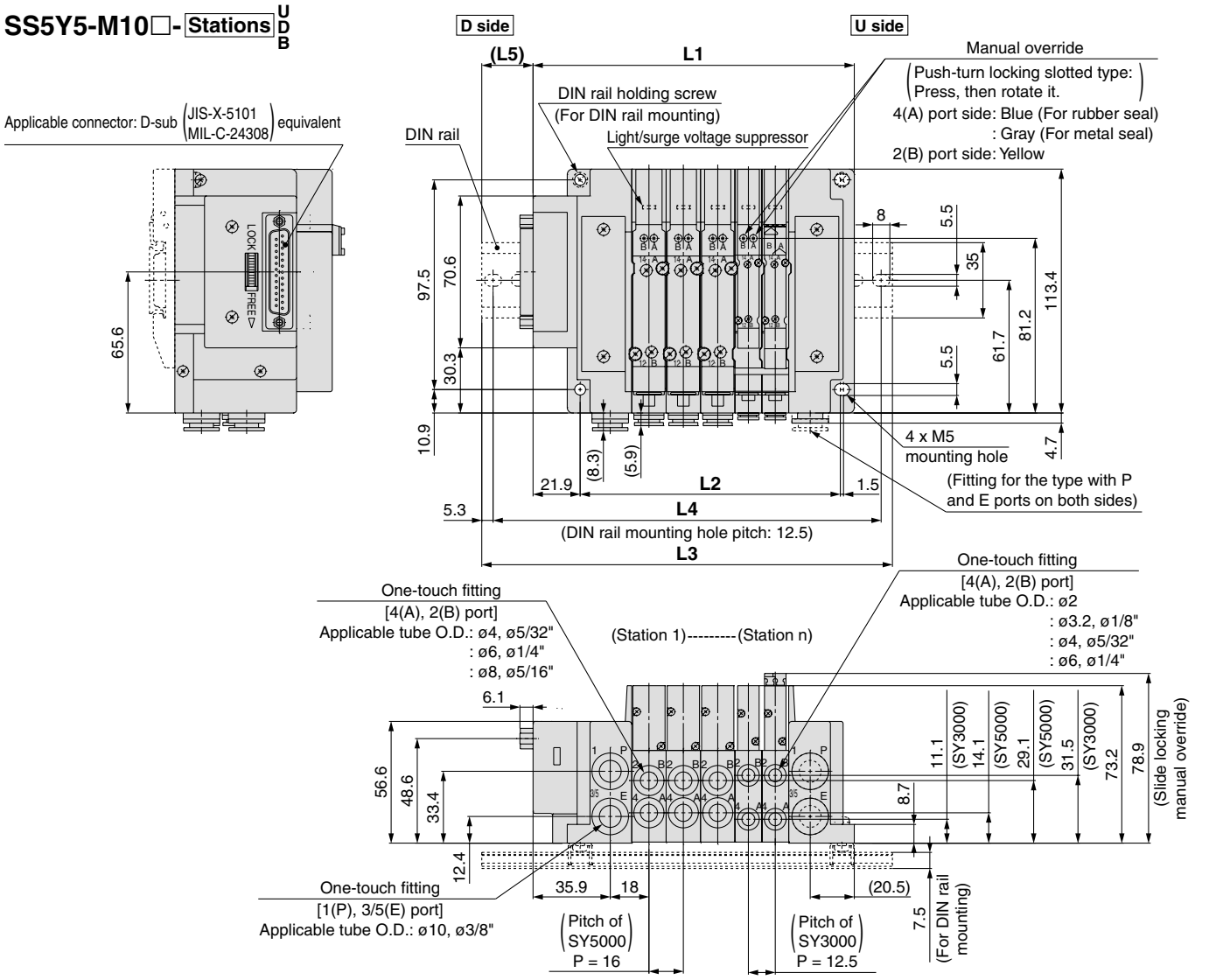
⓫ Option for mounting

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

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

Dimensions: Type 10/Mixed Mounting

SS5Y5-M10□-Stations U D B



With D-sub connector, Flat ribbon cable and PC wiring
Calculation of dimensions

L1 = 12.5 x n1 + 16 x n2 + 74.6
L2 = 12.5 x n1 + 16 x n2 + 48
M = (L1 + 6.1)/12.5 + 1 Decimal fractions are truncated.
L3 = 12.5 x M + 23
L4 = L3 – 10.5
L5 = (L3 – L1 + 6.1)/2

n1: Number of valve stations of SY3000
n2: Number of valve stations of SY5000

With Terminal block box, Lead wire, Circular connector, EX600/EX500/EX250/ EX126/EX120 Serial transmission
Calculation of dimensions

L1 = 12.5 x n1 + 16 x n2 + a + b x n3
L2 = 12.5 x n1 + 16 x n2 x 48
M = L1/12.5 + 1 Decimal fractions are truncated.
L3 = 12.5 x M + 23
L4 = L3 – 10.5
L5 = (L3 – L1)/2
L6 = b x n3 + c

n1: Number of valve stations of SY3000
n2: Number of valve stations of SY5000
n3: Number of I/O unit or input block stations

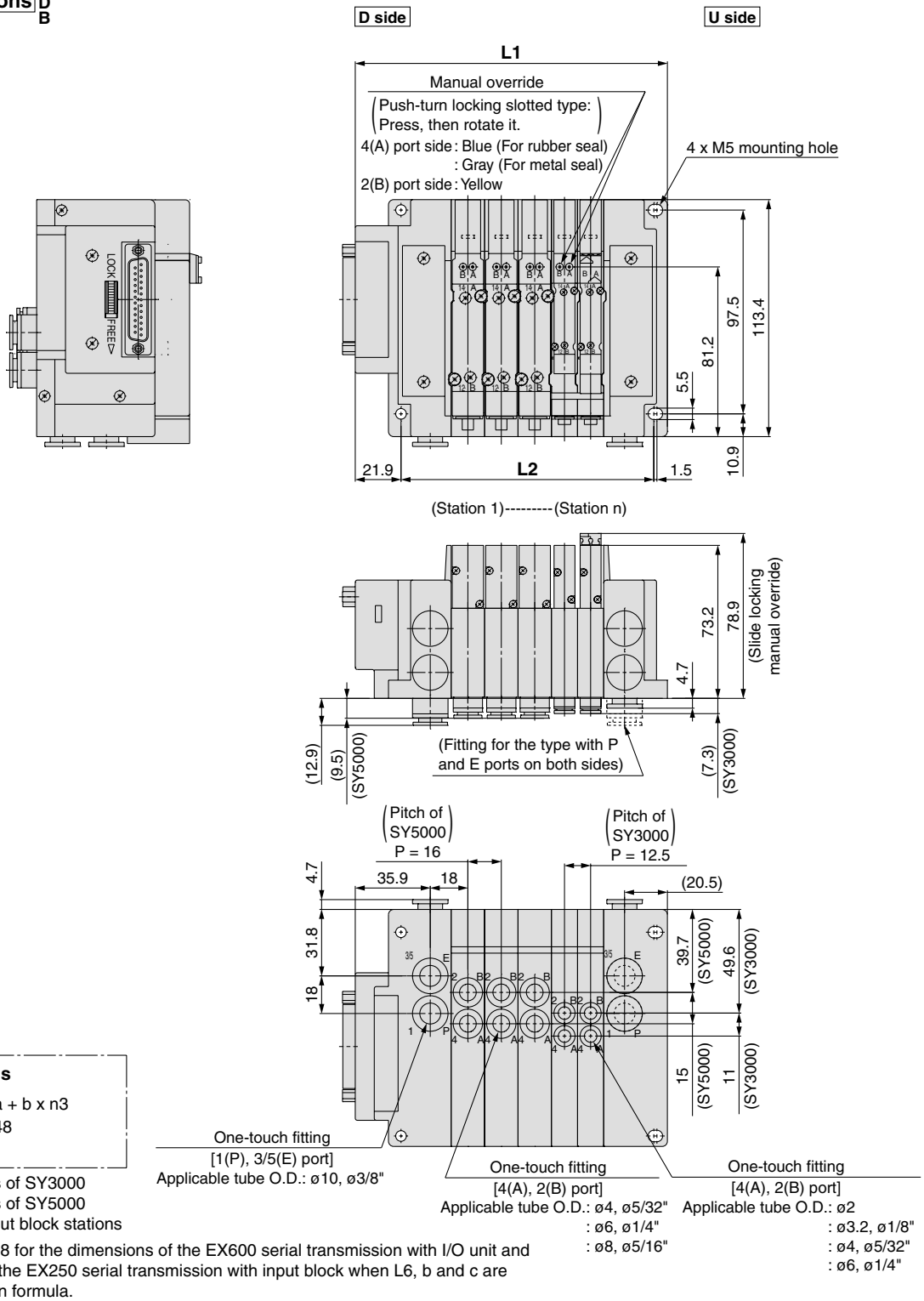
Note) Refer to pages 116 and 117 for dimensions of external pilot, built-in silencer and elbow fittings.

Note) Refer to pages 85 to 88 for the dimensions of the EX600 serial transmission with I/O unit and pages 99 and 100 for the EX250 serial transmission with input block when L6, b and c are used for the calculation formula.

Coefficient	a	b	c
For Terminal block box or EX126 Serial transmission	149.3	—	—
For Lead wire or Circular connector	97	—	—
For EX500 Serial transmission	88.5	—	—
For EX120 Serial transmission	84.7	—	—
For EX600 (M12 connector) Serial transmission	141.5	47	81.5
For EX600 (7/8 inch connector) Serial transmission	158	47	81.5
For EX250 Serial transmission	141.5	24	81.5

Dimensions: Type 11/Mixed Mounting

SS5Y5-M11□-Stations U D B



Calculation of 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 SY3000
n2: Number of valve stations of SY5000
n3: Number of I/O unit or input block stations

Note) Refer to pages 85 to 88 for the dimensions of the EX600 serial transmission with I/O unit and pages 99 and 100 for the EX250 serial transmission with input block when L6, b and c are used for the calculation formula.

Coefficient	a	b	c
For D-sub connector, Flat ribbon cable or PC wiring	74.6	—	—
For Terminal block box or EX126 Serial transmission	149.3	—	—
For Lead wire or Circular connector	97	—	—
For EX500 Serial transmission	88.5	—	—
For EX120 Serial transmission	84.7	—	—
For EX600 (M12 connector) Serial transmission	141.5	47	81.5
For EX600 (7/8 inch connector) Serial transmission	158	47	81.5
For EX250 Serial transmission	141.5	24	81.5

Note) Refer to page 117 for dimensions of external pilot and built-in silencer.

Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold

D-sub Connector/Flat Ribbon Cable/PC Wiring
Terminal Block Box (IP67)/Lead Wire (IP67)/Circular Connector (IP67)
For EX600 (IP67)/EX500 (IP67)/EX250 (IP67)/EX126 (IP67)/EX120

Type 12
Top Ported

Series SY3000/5000 CE

SY3000 can be mounted onto SY5000 size manifold.

How to Order Manifold

SS5Y5 – M 12 F 1 – 05 U □ – □ □ □

Mixed mounting type

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽

Refer to pages 118 and 119 for dimensions of Type 12/Top ported type.

❶ Connector type

Symbol	Type	Page
F	D-sub connector (25 pins)	P. 55
P	Flat ribbon cable (26 pins)	
PG	Flat ribbon cable (20 pins)	
PH	Flat ribbon cable (10 pins)	
J	PC wiring (20 pins)	
T	Terminal block box	P. 63
L1	Lead wire 34 cores	P. 71
L2	Lead wire 17 cores	
L3	Lead wire 9 cores	
M	Circular connector	P. 79
S6□	EX600 Serial transmission	P. 89
S□	EX500 Serial transmission	P. 95
S□	EX250 Serial transmission	P. 101
S4□	EX126 Serial transmission	P. 107
S3□	EX120 Serial transmission	P. 113

∗ Refer to the pages shown in the above table for details.

❷

• With Lead wire

Lead wire length

1	0.6 m
2	1.5 m
3	3 m

• With D-sub connector, Flat ribbon cable and PC wiring

Connector entry direction

1	Upward
2	Lateral

∗ It is not necessary to select the items above for the valve with terminal block box or with circular connector or the serial transmission type.

❸ 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	

❹ P, E port location

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

∗ Refer to page 89 for the EX600 and page 101 for the EX250.

Note) SUP/EXH block assembly specification built-in silencer type has the P port on this side.

❺ SUP/EXH block assembly specification

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

∗ For a built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged.

∗ Refer to page 89 for the EX600 and page 101 for the EX250.

❻ P, E port size (One-touch fittings)

Nil	ø10
N	ø3/8"

❼ A, B porting specification

Nil	Top ported only
M	Mixed

∗ Specify on a manifold specification sheet for M.

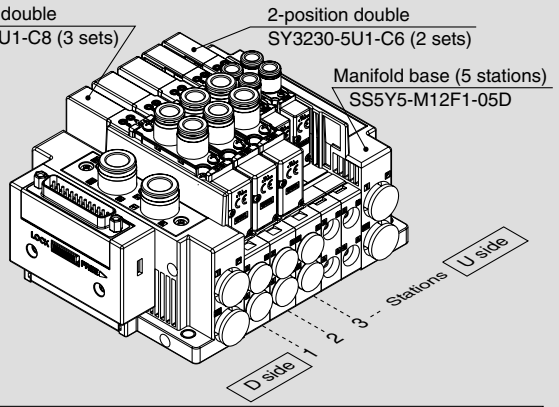
❽ Mounting

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

∗ Refer to the pages shown in the table "Connector type" for the length of the DIN rail.

How to Order Manifold Assembly

Example (SS5Y5-M12F1-□)



SS5Y5-M12F1-05D ··· 1 set (Type M12 5-station manifold base part no.)
∗SY5230-5U1-C8 ····· 3 sets (2-position double part no.)
∗SY3230-5U1-C6 ····· 2 sets (2-position double part no.)
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. If the arrangement becomes complicated, then indicate on a manifold specification sheet.
- Select M for A, B porting specification and specify on a manifold specification sheet for mixed mounting with side ported valve. Refer to page 122 for the valves.

How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.

SY 3 1 3 0 □ □ □ □ – 5 □ □ 1 – C6 □ – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬ ⓭

❸ Top ported

❶ Series

3	SY3000
5	SY5000

❷ 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.)

∗ 4-position dual 3-port valve has rubber seal type only.

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot specification

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Valve built-in type)

Nil	None
H	Built-in

∗ Rubber seal type only. Manifold installed type is available if back pressure check valve is required for a valve with metal seal. Refer to page 135 for Ordering Example. However, it is not recommended to use the valve built-in type and the manifold installed type at the same time because it will reduce the flow.
∗ 3-position type does not have a valve built-in type back pressure check valve.

❻ 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 high pressure type.

❼ Coil specification

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

∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
∗ Quick response type does not have a power saving circuit.

❽ Rated voltage

5	24 VDC
6	12 VDC

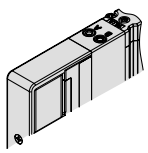
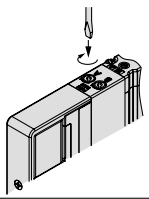
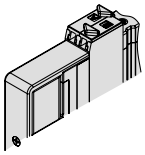
∗ Only 24 VDC is available for the PC wiring system type and the serial transmission type.

❾ Light/surge voltage suppressor and common specification

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. For SI unit, select a valve which is suitable for the SI unit common specifications.
Refer to the pages shown below for details.
EX600: P. 90
EX500: P. 96
EX250: P. 102
EX126: P. 108
EX120: P. 114

❿ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type	**F**: Slide locking type
		

⓫ A, B port size

Thread piping

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

One-touch fittings (Metric size)

Symbol	A, B port	SY3000	SY5000
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	—	●

One-touch fittings (Inch size)

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

⓬ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ M5 is available with Nil only.

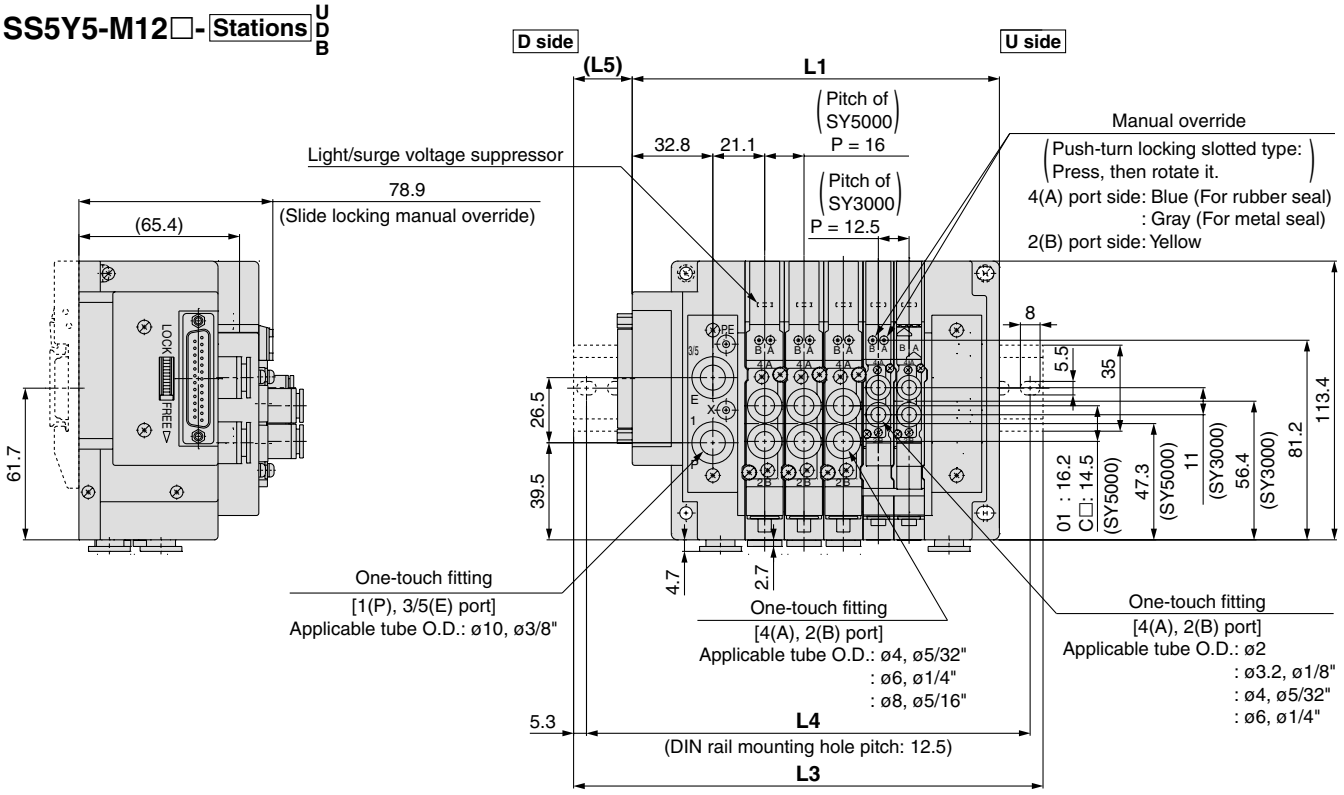
⓭ Option for mounting

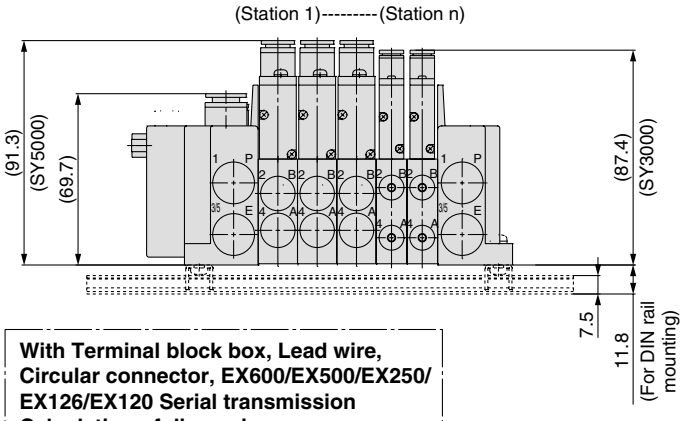
Nil	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)

∗ Base gasket is not attached to manifold when a valve is ordered as a single unit.
Base gasket is attached to the manifold. It needs to be ordered separately if it is needed for maintenance service.
Refer to page 129 for part numbers of base gasket and mounting screw.

Dimensions: Type 12/Mixed Mounting

SS5Y5-M12□- Stations U D B





With D-sub connector, Flat ribbon cable and PC wiring
Calculation of dimensions

L1 = 12.5 x n1 + 16 x n2 + 74.6
L2 = 12.5 x n1 + 16 x n2 + 48
M = (L1 + 6.1)/12.5 + 1 Decimal fractions are truncated.
L3 = 12.5 x M + 23
L4 = L3 – 10.5
L5 = (L3 – L1 + 6.1)/2

n1: Number of valve stations of SY3000
n2: Number of valve stations of SY5000

With Terminal block box, Lead wire, Circular connector, EX600/EX500/EX250/ EX126/EX120 Serial transmission
Calculation of dimensions

L1 = 12.5 x n1 + 16 x n2 + a + b x n3
L2 = 12.5 x n1 + 16 x n2 x 48
M = L1/12.5 + 1 Decimal fractions are truncated.
L3 = 12.5 x M + 23
L4 = L3 – 10.5
L5 = (L3 – L1)/2
L6 = b x n3 + c

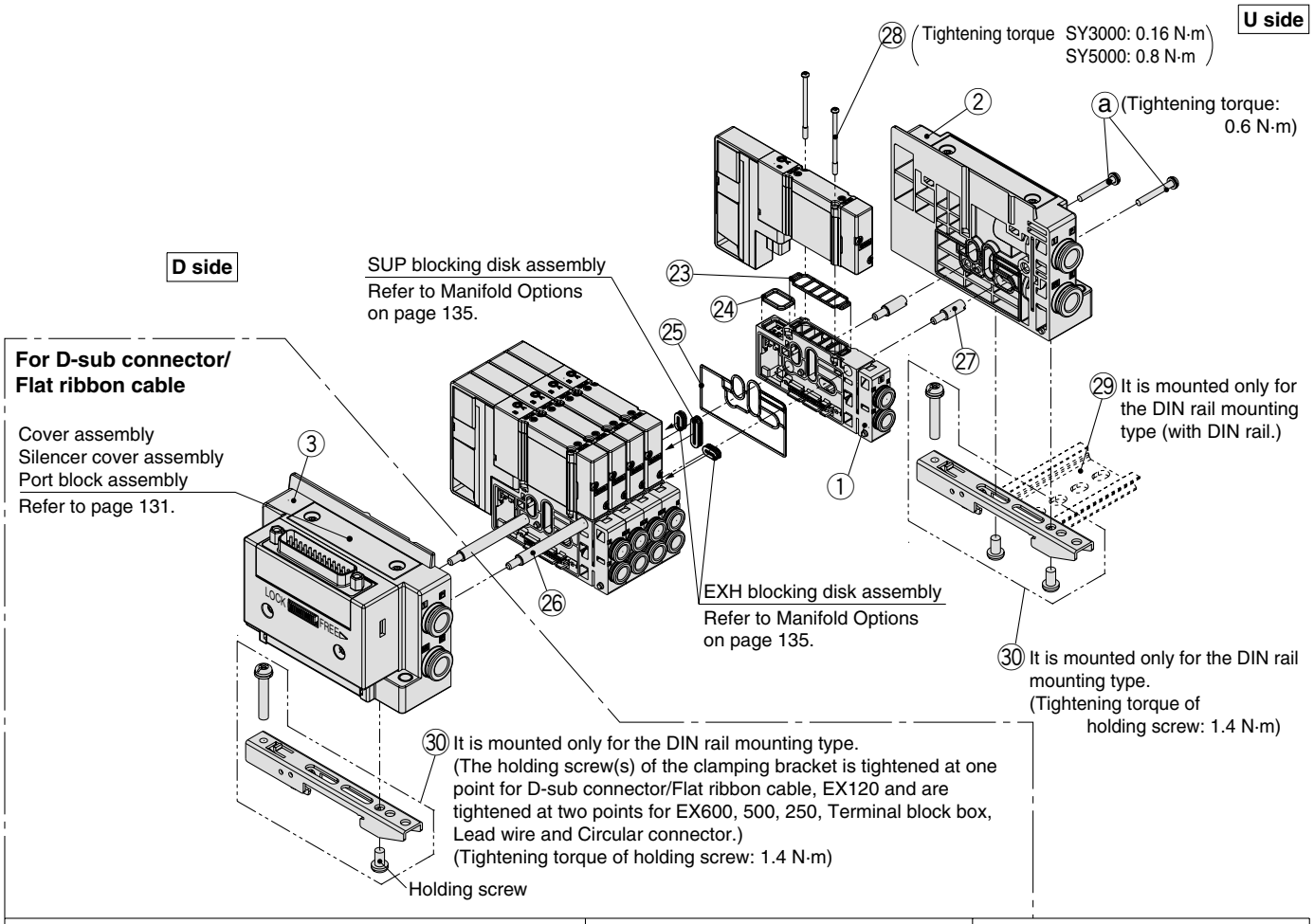
n1: Number of valve stations of SY3000
n2: Number of valve stations of SY5000
n3: Number of I/O unit or input block stations

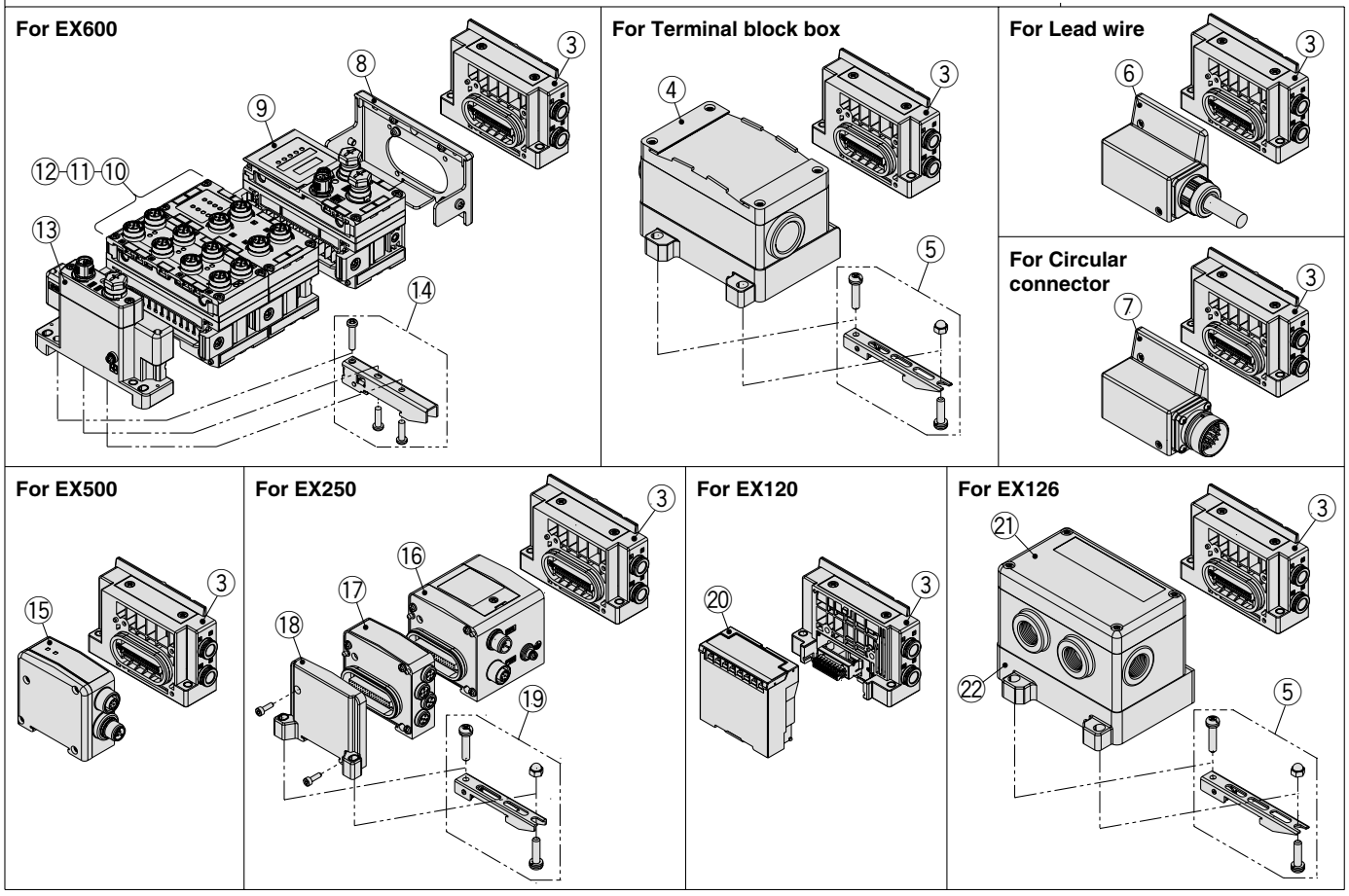
Note) Refer to pages 115 and 116 for dimensions of external pilot and elbow fittings.

Note) Refer to pages 85 to 88 for the dimensions of the EX600 serial transmission with I/O unit and pages 99 and 100 for the EX250 serial transmission with input block when L6, b and c are used for the calculation formula.

Coefficient	a	b	c
For Terminal block box or EX126 Serial transmission	149.3	—	—
For Lead wire or Circular connector	97	—	—
For EX500 Serial transmission	88.5	—	—
For EX120 Serial transmission	84.7	—	—
For EX600 (M12 connector) Serial transmission	141.5	47	81.5
For EX600 (7/8 inch connector) Serial transmission	158	47	81.5
For EX250 Serial transmission	141.5	24	81.5

Plug-in Connector Connecting Base Manifold Exploded View





Manifold Parts No.

No.	Description		Part no. SY3000	Part no. SY5000	Note
①	Manifold block assembly		Refer to page 130.		
②	SUP/EXH end block assembly		Refer to page 130.		
③	SUP/EXH block assembly		Refer to page 130.		
④	Terminal block box housing assembly		VVQC1000-T0-1		
⑤	Clamp bracket assembly for terminal block box Clamp bracket assembly for EX126 SI unit		SY30M-15-4A		Supplied individually.
⑥	Lead wire connector block assembly		SY30M-14-4A-1-1		34 cores, With 0.6 m lead wire
			SY30M-14-4A-1-2		34 cores, With 1.5 m lead wire
			SY30M-14-4A-1-3		34 cores, With 3 m lead wire
			SY30M-14-4A-2-1		17 cores, With 0.6 m lead wire
			SY30M-14-4A-2-2		17 cores, With 1.5 m lead wire
			SY30M-14-4A-2-3		17 cores, With 3 m lead wire
			SY30M-14-4A-3-1		9 cores, With 0.6 m lead wire
			SY30M-14-4A-3-2		9 cores, With 1.5 m lead wire
			SY30M-14-4A-3-3		9 cores, With 3 m lead wire
⑦	Circular connector block assembly		SY30M-14-5A		26 pins
⑧	Valve plate		EX600-ZMV2		With mounting screws (2 pcs. of M4 x 6 and 2 pcs. of M3 x 8)
⑨	EX600 SI unit		EX600-SDN1		DeviceNet™ PNP (–COM.)
			EX600-SDN2		DeviceNet™ NPN (+COM.)
			EX600-SMJ1		CC-Link PNP (–COM.)
			EX600-SMJ2		CC-Link NPN (+COM.)
			EX600-SPR1		PROFIBUS DP PNP (–COM.)
			EX600-SPR2		PROFIBUS DP NPN (+COM.)
⑩	EX600 digital input unit		EX600-DXNB		NPN input, M12 connector, 5 pins (4 pcs.), 8 inputs
			EX600-DXPB		PNP input, M12 connector, 5 pins (4 pcs.), 8 inputs
			EX600-DXNC		NPN input, M8 connector, 3 pins (8 pcs.), 8 inputs
			EX600-DXNC1		NPN input, M8 connector, 3 pins (8 pcs.), 8 inputs, with broken wire detection function
			EX600-DXPC		PNP input, M8 connector, 3 pins (8 pcs.), 8 inputs
			EX600-DXPC1		PNP input, M8 connector, 3 pins (8 pcs.), 8 inputs, with broken wire detection function
			EX600-DXND		NPN input, M12 connector, 5 pins (8 pcs.), 16 inputs
			EX600-DXPD		PNP input, M12 connector, 5 pins (8 pcs.), 16 inputs
⑪	EX600 digital output unit		EX600-DYNB		NPN output, M12 connector, 5 pins (4 pcs.), 8 inputs
			EX600-DYPB		PNP output, M12 connector, 5 pins (4 pcs.), 8 inputs
⑫	EX600 analog input unit		EX600-AXA		M12 connector, 5 pins (2 pcs.), 2-channel input
⑬	EX600 end plate		EX600-ED2		M12 connector, 5 pins, Max. supply current 2 A
			EX600-ED2-3		M12 connector, 5 pins, Max. supply current 2 A, with DIN rail mounting bracket
			EX600-ED3		7/8 inch connector, 5 pins, Max. supply current 8 A
			EX600-ED3-3		7/8 inch connector, 5 pins, Max. supply current 8 A, with DIN rail mounting bracket
⑭	Clamp bracket for EX600		EX600-ZMA2		With mounting screws (1 pc. of M4 x 20 and 2 pcs. of M4 x 14)
⑮	EX500 SI unit		EX500-Q001		DeviceNet™, PROFIBUS DP, CC-Link, EtherNet/IP™ (+COM.)
			EX500-Q101		DeviceNet™, PROFIBUS DP, CC-Link, EtherNet/IP™ (–COM.)
⑯	EX250 SI unit		EX250-SDN1		DeviceNet™ (–COM.)
			EX250-SPR1		PROFIBUS DP (–COM.)
			EX250-SMJ2		CC-Link (+COM.)
			EX250-SAS3		AS-Interface, 8 in/8 out, 31 slave modes, 2 power supply systems (–COM.)
			EX250-SAS5		AS-Interface, 4 in/4 out, 31 slave modes, 2 power supply systems (–COM.)
			EX250-SAS7		AS-Interface, 8 in/8 out, 31 slave modes, 1 power supply system (–COM.)
			EX250-SAS9		AS-Interface, 4 in/4 out, 31 slave modes, 1 power supply system (–COM.)
			EX250-SCA1A		CANopen (–COM.)
			EX250-SCN1		ControlNet™ (–COM.), IP40
			EX250-SEN1		EtherNet/IP™ (–COM.)
⑰	EX250 input block		EX250-IE1		M12, 2 inputs
			EX250-IE2		M12, 4 inputs
			EX250-IE3		M8, 4 inputs
⑱	EX250 end plate assembly		EX250-EA1		With mounting screws (2 pcs. of M3 x 10)
⑲	Clamp bracket assembly for EX250		SY30M-15-3A		Supplied individually.
⑳	EX120 SI unit		EX120-SDN1		DeviceNet™ (+COM.)
			EX120-SCS1		OMRON Corp.: CompoBus/S (16 outputs) (+COM.)
			EX120-SCS2		OMRON Corp.: CompoBus/S (8 outputs) (+COM.)
			EX120-SMJ1		CC-LINK (+COM.)
			EX120-SCM1		CompoNet™ (+COM.)
			EX120-SCM3		CompoNet™ (–COM.)
㉑	EX126 SI unit		EX126D-SMJ1		CC-LINK (+COM.)
㉒	Terminal block plate assembly		VVQC1000-74A-2		For EX126 SI unit mounting
㉓	Base gasket (for connector connecting base)		SY30M-9-1A	SY50M-9-1A	Part numbers shown on the left are for 10 valves (10 pcs.).
㉔	Connector gasket		SX3000-146-2		Supplied individually.
㉕	Manifold block gasket		SY30M-9-2	SY50M-9-2	Supplied individually.
㉖	Tie-rod		VVQ1000W-27-□	SV2000-55-1-□	□: Manifold stations Place order for 2 pcs. for SY3000 and 3 pcs. for SY5000.
㉗	Tie-rods for additional stations		VVQ1000W-27-1	SV2000-55-2A	Place order for 2 pcs. for each station of SY3000 and 3 pcs. for each station of SY5000.
	Tie-rods for additional stations (for mixed mounting)		—	SY50M-49-2	Place order for 3 pcs. for each station.
㉘	Valve mounting screw	Round head combination screw	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.).
		Hexagon socket head cap screw	SY3000-222-1A (M2 x 32)	SY5000-222-1A (M3 x 32.5)	Part numbers shown on the left are for 10 valves (20 pcs.).
㉙	DIN rail		VZ1000-11-1-□		Refer to page 133.
㉚	Clamp bracket assembly (for connector connecting base)		SY30M-15-1A	SY50M-15-1A	Supplied individually.

Manifold Parts No.

① Manifold block assembly

SY ☐ 0M−2−☐☐A−☐

Series

3	SY3000
5	SY5000

Piping direction

1	Side ported/Top ported
2	Bottom ported

Wiring specification

S	Single wiring
D	Double wiring

A, B port size

Symbol	A, B port		SY3000	SY5000	Note
C2	ø2 One-touch fitting		●	—	Side/Bottom ported Metric size
C3	ø3.2 One-touch fitting		●	—	
C4	ø4 One-touch fitting		●	●	
C6	ø6 One-touch fitting		●	●	
C8	ø8 One-touch fitting		—	●	
N1	ø1/8" One-touch fitting		●	—	Side/Bottom ported Inch size
N3	ø5/32" One-touch fitting		●	●	
N7	ø1/4" One-touch fitting		●	●	
N9	ø5/16" One-touch fitting		—	●	
L4	Upward elbow	ø4 One-touch fitting	●	●	Side ported Metric size
L6		ø6 One-touch fitting	●	●	
L8		ø8 One-touch fitting	—	●	
LN3		ø5/32" One-touch fitting	●	●	Side ported Inch size
LN7		ø1/4" One-touch fitting	●	●	
LN9		ø5/16" One-touch fitting	—	●	
B4	Downward elbow	ø4 One-touch fitting	●	●	Side ported Metric size
B6		ø6 One-touch fitting	●	●	
B8		ø8 One-touch fitting	—	●	
BN3		ø5/32" One-touch fitting	●	●	Side ported Inch size
BN7		ø1/4" One-touch fitting	●	●	
BN9		ø5/16" One-touch fitting	—	●	
00	Port plug		●	●	Top ported

① Mixed mounting of SY3000 and SY5000, Manifold block assembly for mounting SY3000

SY50M−2−☐☐A−☐

Piping direction

3	Side ported/Top ported
4	Bottom ported

Wiring specification

S	Single wiring
D	Double wiring

A, B port size

Symbol	A, B port		Note
C2	ø2 One-touch fitting		Side/Bottom ported Metric size
C3	ø3.2 One-touch fitting		
C4	ø4 One-touch fitting		
C6	ø6 One-touch fitting		
N1	ø1/8" One-touch fitting		Side/Bottom ported Inch size
N3	ø5/32" One-touch fitting		
N7	ø1/4" One-touch fitting		
L4	Upward elbow	ø4 One-touch fitting	Side ported Metric size
L6		ø6 One-touch fitting	
LN3		ø5/32" One-touch fitting	Side ported Inch size
LN7		ø1/4" One-touch fitting	
B4	Downward elbow	ø4 One-touch fitting	Side ported Metric size
B6		ø6 One-touch fitting	
BN3		ø5/32" One-touch fitting	Side ported Inch size
BN7		ø1/4" One-touch fitting	
00	Port plug		Top ported

② SUP/EXH end block assembly

SY ☐ 0M−3− 1 A ☐ −☐−☐

③ SUP/EXH block assembly

SY ☐ 0M−1−☐A☐☐−☐−☐

Series

3	SY3000
5	SY5000

SUP/EXH block assembly specification

1	For EX600/500/250/126, Terminal block box, Lead wire, Circular connector
11	For D-sub connector
12	For Flat ribbon cable connector (26 pins)
13	For Flat ribbon cable connector (20 pins)
14	For Flat ribbon cable connector (10 pins)
15	For PC wiring (20 pins)
16	For EX120

Pilot/Piping specification

Symbol	Specifications	Note
Nil	Internal pilot	Side ported
S	Internal pilot/Built-in silencer	
R	External pilot	
V	Internal pilot	Top ported
RV	External pilot	
B	Internal pilot	Bottom ported
BS	Internal pilot/Built-in silencer	
BR	External pilot	

Connector entry direction (for D-sub, Flat ribbon cable, PC wiring only)

1	Upward
2	Lateral

Mounting

Nil	Direct mounting
D0	DIN rail mounting (Without DIN rail)

P, E port size

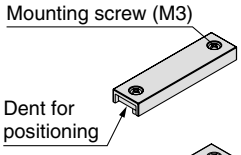
Symbol	P, E port		SY3000	SY5000	Note
C8	ø8 One-touch fitting		●	—	Side/Bottom/Top ported Metric size
C10	ø10 One-touch fitting		—	●	
N9	ø5/16" One-touch fitting		●	—	Side/Bottom/Top ported Inch size
N11	ø3/8" One-touch fitting		—	●	
L8	Upward elbow	ø8 One-touch fitting	●	—	Side ported Metric size
L10		ø10 One-touch fitting	—	●	
LN9		ø5/16" One-touch fitting	●	—	Side ported Inch size
LN11		ø3/8" One-touch fitting	—	●	
B8	Downward elbow	ø8 One-touch fitting	●	—	Side ported Metric size
B10		ø10 One-touch fitting	—	●	
BN9		ø5/16" One-touch fitting	●	—	Side ported Inch size
BN11		ø3/8" One-touch fitting	—	●	
00 Note 1)	Port plug		●	●	P and E ports on one side or Top ported
00U Note 2)	Port plug		●	●	

Note 1) It can be selected only if no symbol or "V" or "B" is selected for the pilot port and the piping.

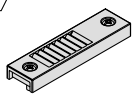
Note 2) "00U" is available only for the D-sub connector type and it has an inch size locking bracket.

Manifold Parts No.

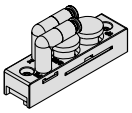
■ Cover assembly/Silencer cover assembly/Port block assembly for SUP/EXH (end) block assembly



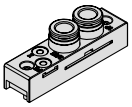
Cover assembly
(Internal pilot)



Silencer cover assembly
(Internal pilot/Built-in silencer)



Port block assembly
(Side/Bottom ported, External pilot)



Port block assembly
(Top ported, Internal/External pilot)

SY 3 0M − 4 − 1A

SY 3 0M − 5 − 1A

SY 3 0M − 6 − 1AR − 00 ☐

X, PE port One-touch fitting type

Nil	Metric size (ø4)
U	Inch size (ø5/32")

SY 3 0M − 6 − 1A ☐ V − C8

Series

3	SY3000
5	SY5000

Pilot specification

Nil	Internal pilot
R	External pilot

P, E port size

Symbol	P, E port	SY3000	SY5000
C8	ø8 One-touch fitting	●	—
C10	ø10 One-touch fitting	—	●
N9	ø5/16" One-touch fitting	●	—
N11	ø3/8" One-touch fitting	—	●

∗ 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 (M3): 0.6 N·m

Type 10, 11, 12: How to Increase Connector Type Manifold

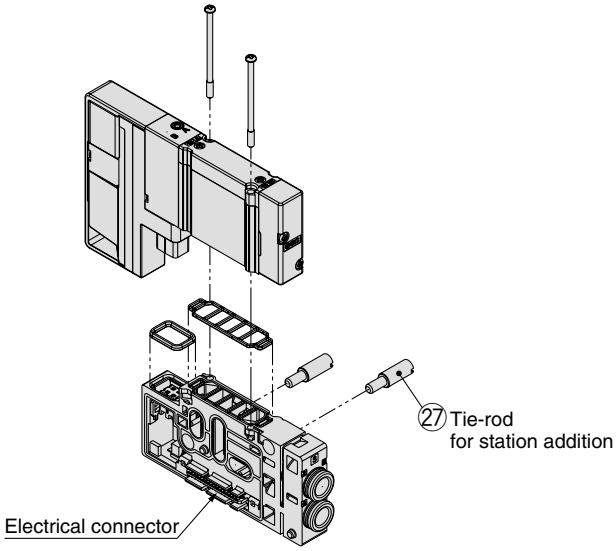
1 **Loosen the U-side tension bolt ⓐ, and remove the SUP/EXH end block assembly ②.**

2 **Screw in the tie-rods ㉗ for station addition.**
(Screw them in until there is no gap between the tie-rods.)

3 **Connect the manifold block assembly ① and SUP/EXH end block assembly ② to be added, and tighten the tension bolt ⓐ.**

Tightening torque for tension bolt ⓐ (M3): 0.6 N·m

(Refer to page 128 for ①, ② and ⓐ).



One-touch Fittings and Plug Assembly/Part No.

Refer to Changing One-touch Fittings on page 143 for replacement method.

■ One-touch fittings

Port size			SY3000	SY5000
A, B port	Metric size	ø2 One-touch fitting (Straight type)	VVQ1000-50A-C2	—
		ø3.2 One-touch fitting (Straight type)	VVQ1000-50A-C3	—
		ø4 One-touch fitting (Straight type)	VVQ1000-50A-C4	VVQ1000-51A-C4
		ø6 One-touch fitting (Straight type)	VVQ1000-50A-C6	VVQ1000-51A-C6
		ø8 One-touch fitting (Straight type)	—	VVQ1000-51A-C8
		ø4 One-touch fitting (Elbow type)	SZ3000-73-1A-L4	SZ3000-74-1A-L4
		ø6 One-touch fitting (Elbow type)	SZ3000-73-1A-L6	SZ3000-74-1A-L6
		ø8 One-touch fitting (Elbow type)	—	SZ3000-74-1A-L8
		ø4 One-touch fitting (Long elbow type)	SZ3000-73-2A-L4	SZ3000-74-2A-L4
		ø6 One-touch fitting (Long elbow type)	SZ3000-73-2A-L6	SZ3000-74-2A-L6
		ø8 One-touch fitting (Long elbow type)	—	SZ3000-74-2A-L8
	Inch size	ø1/8" One-touch fitting (Straight type)	VVQ1000-50A-N1	—
		ø5/32" One-touch fitting (Straight type)	VVQ1000-50A-N3	VVQ1000-51A-N3
		ø1/4" One-touch fitting (Straight type)	VVQ1000-50A-N7	VVQ1000-51A-N7
		ø5/16" One-touch fitting (Straight type)	—	VVQ1000-51A-N9
		ø5/32" One-touch fitting (Elbow type)	KJL03-95-X224	—
		ø1/4" One-touch fitting (Elbow type)	KJL07-95-X224	KQ2L07-14-X224
		ø5/16" One-touch fitting (Elbow type)	—	KQ2L09-14-X224
		ø5/32" One-touch fitting (Long elbow type)	KJL03-95-X225	—
		ø1/4" One-touch fitting (Long elbow type)	KJL07-95-X225	KQ2L07-14-X225
		ø5/16" One-touch fitting (Long elbow type)	—	KQ2L09-14-X225
P, E port	Metric size	ø8 One-touch fitting (Straight type)	VVQ1000-51A-C8	—
		ø10 One-touch fitting (Straight type)	—	VVQ2000-51A-C10
		ø8 One-touch fitting (Elbow type)	SZ3000-74-1A-L8	—
		ø10 One-touch fitting (Elbow type)	—	SZ3000-83-1A-L10
		ø8 One-touch fitting (Long elbow type)	SZ3000-74-2A-L8	—
		ø10 One-touch fitting (Long elbow type)	—	SZ3000-83-2A-L10
	Inch size	ø5/16" One-touch fitting (Straight type)	VVQ1000-51A-N9	—
		ø3/8" One-touch fitting (Straight type)	—	VVQ2000-51A-N11
		ø5/16" One-touch fitting (Elbow type)	KQ2L09-14-X224	—
		ø3/8" One-touch fitting (Elbow type)	—	KQ2L11-14-X224
		ø5/16" One-touch fitting (Long elbow type)	KQ2L09-14-X225	—
		ø3/8" One-touch fitting (Long elbow type)	—	KQ2L11-14-X225

■ Plug assembly

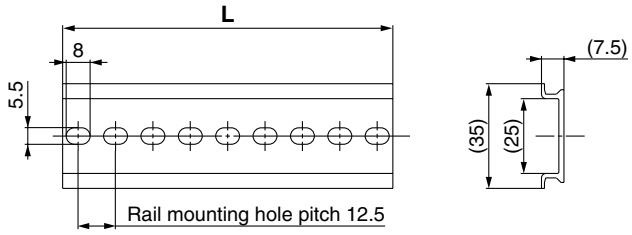
	SY3000	SY5000
A, B port	VVQ0000-58A	VVQ1000-58A
P, E port	VVQ1000-58A	VVQ2000-58A

Manifold Options

■DIN rail dimension/weight for SY3000 plug-in metal base and SY3000/5000 plug-in connector connecting base

VZ1000-11-1-□

∗ Refer to the DIN rail dimension 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

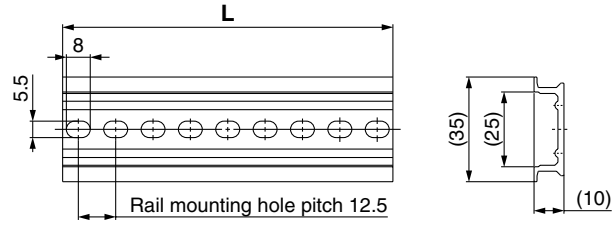
No.	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
L dimension	573	585.5	598	610.5	623	635.5	648	660.5	673	685.5	698	710.5	723	735.5	748	760.5	773	785.5	798
Weight (g)	103.1	105.4	107.6	109.9	112.1	114.4	116.6	118.9	121.1	123.4	125.6	127.9	130.1	132.4	134.6	136.9	139.1	141.4	143.6

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 dimension/weight for SY5000 plug-in metal base

VZ1000-11-4-□

∗ Refer to the DIN rail dimension 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	233.5	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
M3: 0.8 N·m

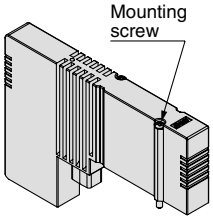
Manifold Options

Refer to pages 137 and 138 for dimensions.

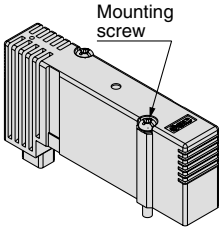
■Blanking plate assembly

(With two mounting screws)

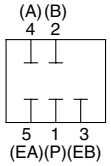
Used in situations when valves will be added in the future.



SY30M-26-□A(-B)



SY50M-26-□A(-B)



Circuit diagram

How to Order Blanking Plate Assembly

SY□0M−26−□A−□

Series

3	SY3000
5	SY5000

Option for mounting

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

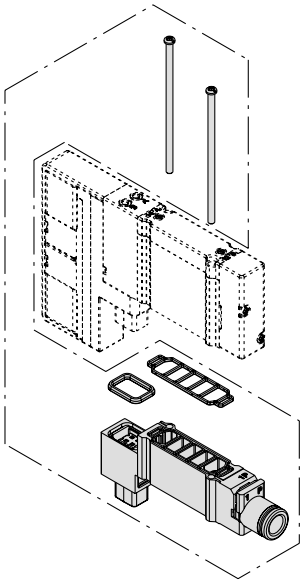
Base specification

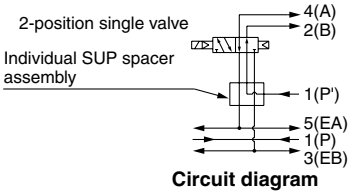
1	For plug-in connector connecting base
2	For plug-in metal base

■Individual SUP spacer assembly

(With a connector gasket, a base gasket, and two mounting screws)

When the same manifold is used for different pressures, an individual SUP spacer assembly is used as a supply port for different pressures.





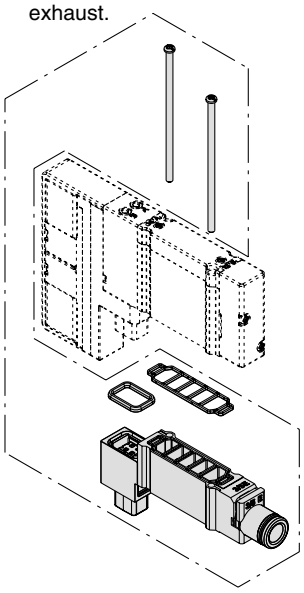
Circuit diagram

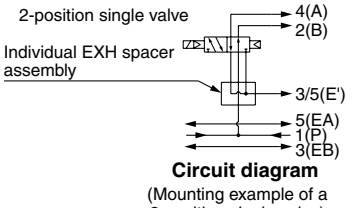
(Mounting example of a 2-position single valve)

■Individual EXH spacer assembly

(With a connector gasket, a base gasket, and two mounting screws)

When valve exhaust affects other stations due to the circuit configuration, this spacer assembly is used for individual valve exhaust.





Circuit diagram

(Mounting example of a 2-position single valve)

How to Order Individual SUP/EXH Spacer Assembly

One-touch fitting Straight type **SY□0M−□−1A−□**

One-touch fitting Elbow type **SY□0M−□−□A−□**

Series

3	SY3000
5	SY5000

Spacer type

38	Individual SUP spacer
39	Individual EXH spacer

Individual SUP/EXH spacer assembly specification

2	Short elbow type
3	Long elbow type

Note) Select the long elbow type for a 3-position valve.

Port size (Metric size)

Symbol	P, E port	SY3000	SY5000
L4	ø4 One-touch fitting	●	●
L6	ø6 One-touch fitting	●	●
L8	ø8 One-touch fitting	—	●

Port size (Inch size)

Symbol	P, E port	SY3000	SY5000
LN3	ø5/32" One-touch fitting	●	●
LN7	ø1/4" One-touch fitting	●	●
LN9	ø5/16" One-touch fitting	—	●

Port size (Metric size)

Symbol	P, E port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

Port size (Inch size)

Symbol	P, E port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

⚠Caution

Tightening torque for mounting screw
M2: 0.16 N·m
M3: 0.8 N·m

Manifold Options

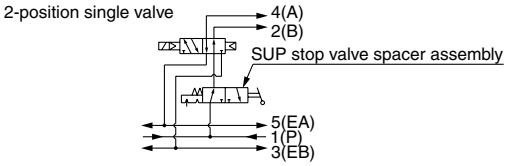
Refer to pages 137 and 138 for dimensions.

■ SUP stop valve spacer assembly with residual pressure release valve

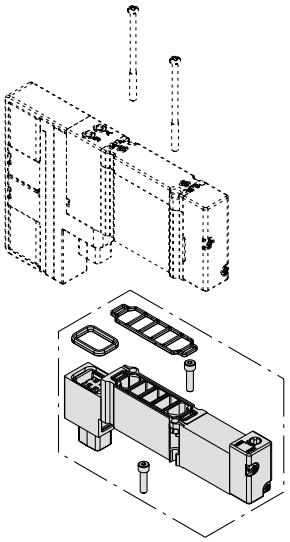
(With a connector gasket, a base gasket and two mounting screws.)

It is used to shut off the supply air to valves individually.

Series	Part no.
SY3000	SY30M-50-1A
SY5000	SY50M-50-1A



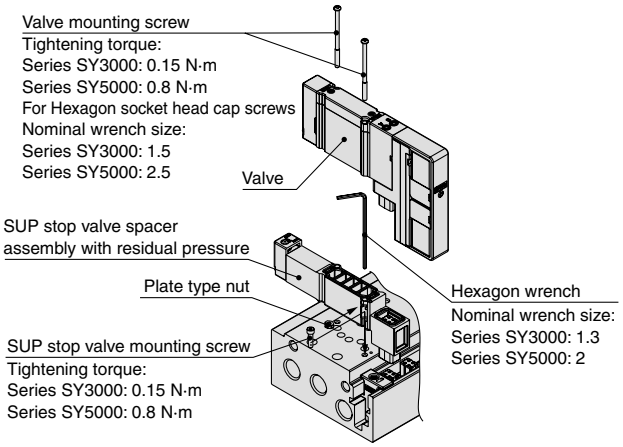
Circuit diagram
(Mounting example of a 2-position single valve)



[Mounting of SUP stop valve spacer assembly with residual pressure release valve]

Insert the SUP stop valve mounting screw from the side of the spacer assembly, and mount it to the manifold.
Tighten the SUP stop valve mounting screw to the specified tightening torque.
Mount the valve and tighten the valve mounting screws to the specified tightening torque after mounting the SUP stop valve spacer assembly with residual pressure exhaust valve.

Note) 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.

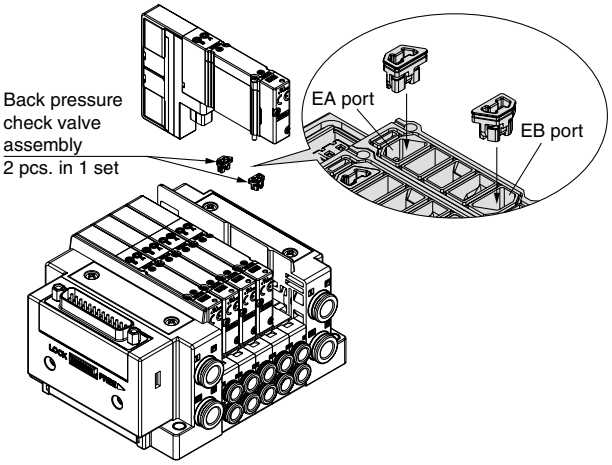


■Back pressure check valve assembly (Retrofit or pre-installed type)

It prevents cylinder malfunction caused by other valve exhaust entry. Insert it into EA/EB port (valve mounting side) on the manifold side of a valve which is affected. It is effective when a single-acting cylinder is used.

∗ When ordering assemblies incorporated with a manifold, refer to the Ordering Example below (when installed in all stations.)

Note) When a check valve for back pressure prevention is desired and is to be installed only in certain manifold stations, clearly indicate the part number and specify the mounting position with the manifold specification sheet.



(Precautions)

1. The back pressure check valve assembly is assembly parts with a check valve structure. However, since the valve has slight air leakage, take precautions for the exhaust air not to be restricted at the exhaust port.
2. When a back pressure check valve assembly is mounted, please contact SMC for valve flow-rate characteristics.

Series	Part no.
SY3000	SY30M-24-1A
SY5000	SY50M-24-1A

<Ordering Example>

SS5Y3-10F1-05B-C6 ··· 1 set (Type 10 5-station manifold base part no.)
∗SY3201-5U1 ····· 5 sets (2-position double part no.)
∗SY30M-24-1A ····· 5 sets (Back pressure check valve assembly part no.)
∗ The asterisk denotes the symbol for assembly.

⚠Caution

Tightening torque for mounting screw
M2: 0.16 N·m
M3: 0.8 N·m

Manifold Options

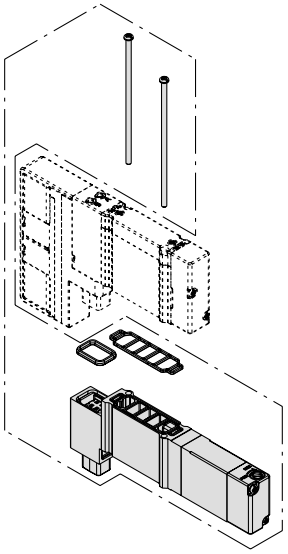
Refer to pages 137 and 138 for dimensions.

■ Double check spacer assembly with residual pressure release valve

(With a connector gasket, a base gasket and two mounting screws.)

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.
SY3000	SY30M-60-1A
SY5000	SY50M-60-1A

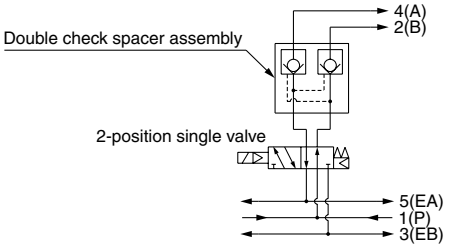
	Intermediate stop	Drop prevention
Applicable valve	SY$^{3}_{5}$40□	SY$^{3}_{5}{}^{1}_{2}$0□

⚠Caution

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long period of time. Check the leakage using neutral household detergent, such as dish washing soap. Also, check the cylinder's tube gasket, piston packing and rod packing for air leakage.
- Combining with 3-position closed center or pressure center valve will not work.
- If the exhaust of the double check spacer is restricted too much, the cylinder may not operate properly and may not stop intermediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

<Example>

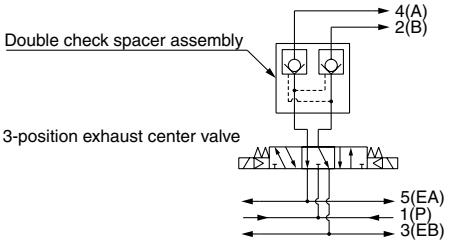
Double check spacer assembly with residual pressure release valve



Circuit diagram

(Drop prevention: When 2-position single valve is mounted)

Double check spacer assembly with residual pressure release valve



Circuit diagram

(Intermediate stop: When 3-position exhaust center valve is mounted)

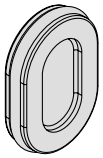
■ SUP/EXH blocking disk assembly (for Connector type manifold, type 10, 11, 12)

[SUP blocking disk]

Two different high and low pressures can be supplied to one manifold by installing a supply blocking disk assembly in the pressure supply passage of the manifold.

[EXH blocking disk]

The exhaust passage of the manifold valve can be separated by installing an exhaust blocking disk assembly in the exhaust passage in order to prevent the exhaust air from the valve from affecting other valves. It can be used for a manifold which is operated with the mixed pressure of positive and vacuum. (It requires 2 pieces because they are used to block the exhaust air on both sides.)

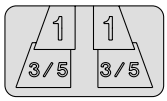


Series	SUP blocking disk assembly	EXH blocking disk assembly
SY3000	SY30M-40-1A	SY30M-40-2A
SY5000	SV2000-59-2A	SV2000-59-2A

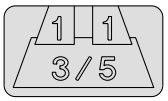
■ Label for blocking disk

This label is affixed to the manifold where the supply or exhaust blocking disk assembly has been installed, to confirm its position. (3 labels contained in one kit)

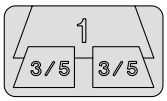
Label for SUP/EXH blocking disk



Label for SUP blocking disk

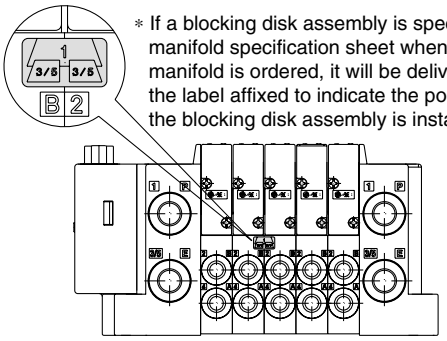


Label for EXH blocking disk



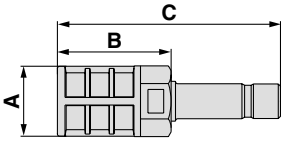
Series	Part no.
SY3000	SJ3000-155-1A
SY5000	

∗ If a blocking disk assembly is specified on the manifold specification sheet when the manifold is ordered, it will be delivered with the label affixed to indicate the position where the blocking disk assembly is installed.



■ Silencer (One-touch fitting connection type)

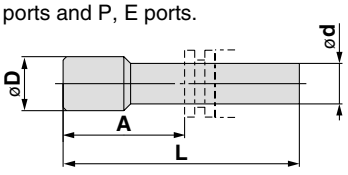
This silencer can be mounted to the 3/5 (E: EXH) port of the manifold in one step.



Series	Model	Effective area	A	B	C
For SY3000 (ø8)	**AN203-KM8**	14 mm^2	ø16	26	51
For SY5000 (ø10)	**AN200-KM10**	26 mm^2	ø22	53.8	80.8
	AN300-KM10	30 mm^2	ø25	70	97

■ Plug (White)

These are inserted in unused cylinder ports and P, E ports.



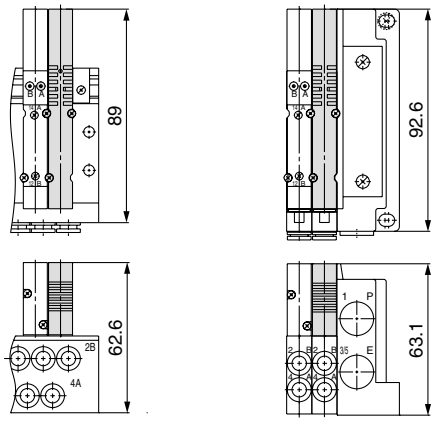
Dimensions

Applicable fitting size ø**d** (Metric size)	Model	A	L	D
2	**KQP-02**	8.2	17	3
3.2	**KQ2P-23**	5	31.5	16
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

Applicable fitting size ø**d** (Inch size)	Model	A	L	D
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

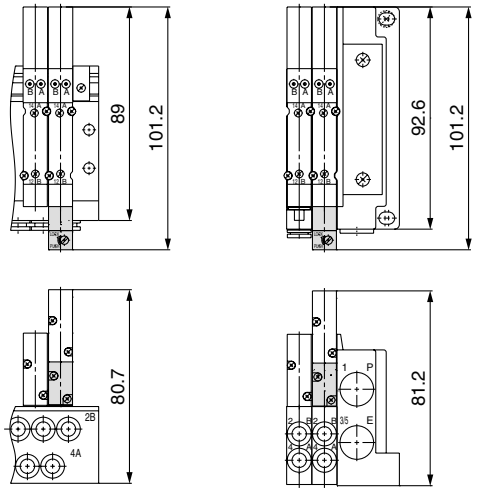
Dimensions: Manifold Options/Series SY3000

■ Blanking plate assembly



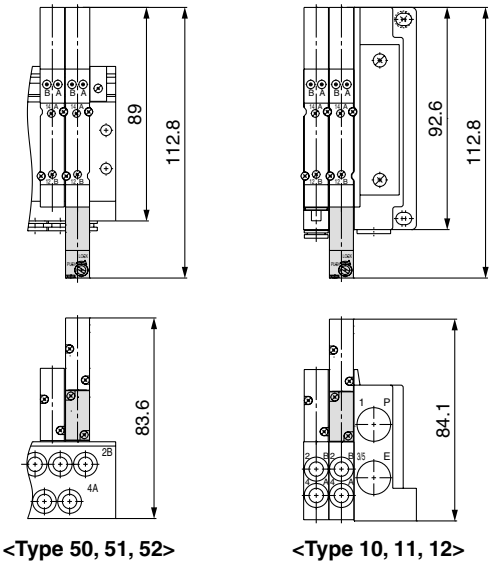
<Type 50, 51, 52> <Type 10, 11, 12>

■ SUP stop valve spacer assembly with residual pressure release valve



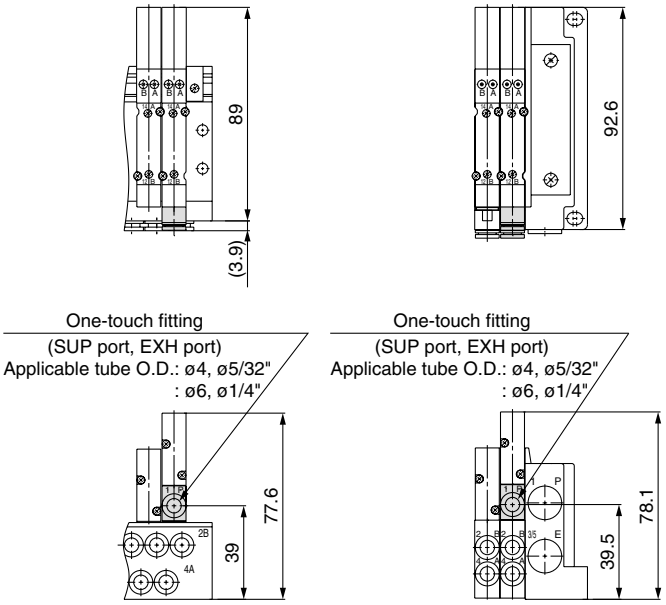
<Type 50, 51, 52> <Type 10, 11, 12>

■ Double check spacer assembly with residual pressure release valve



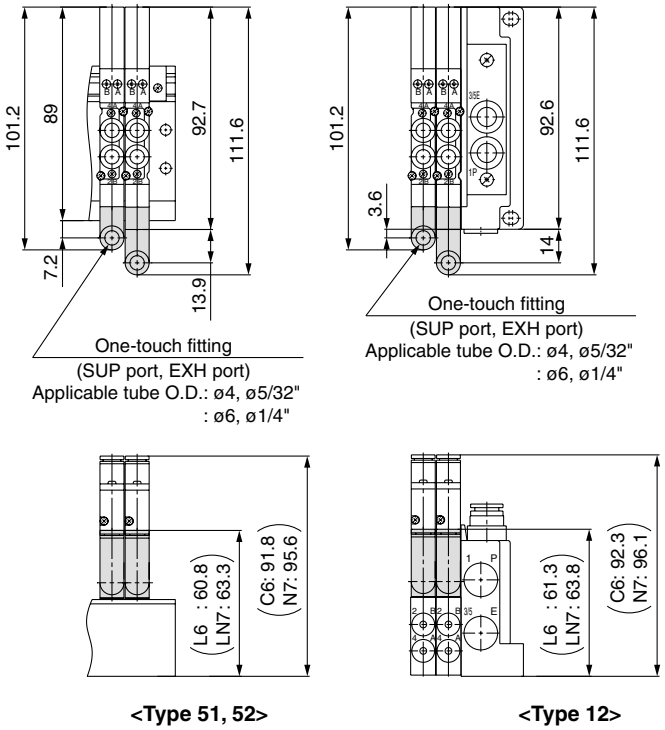
<Type 50, 51, 52> <Type 10, 11, 12>

■ Individual SUP/EXH spacer assembly (Side ported)



<Type 50> <Type 10>

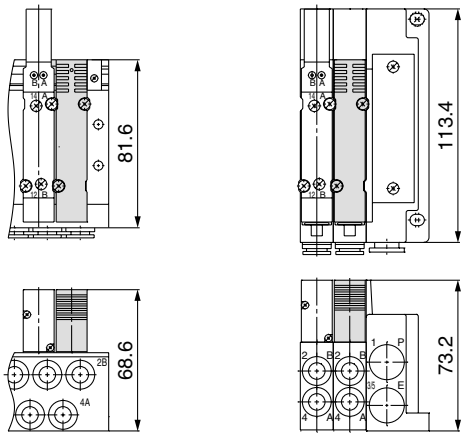
■ Individual SUP/EXH spacer assembly (Top/Bottom ported)



<Type 51, 52> <Type 12>

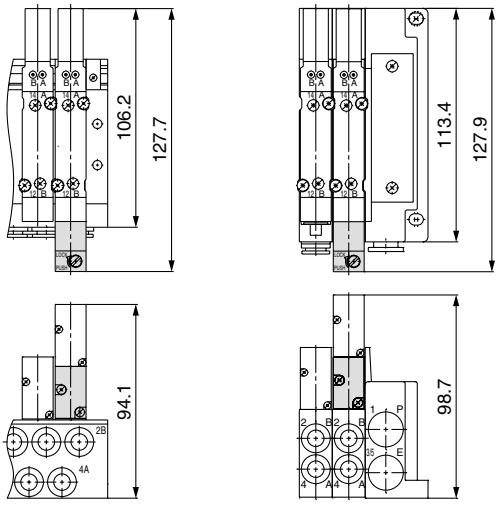
Dimensions: Manifold Options/Series SY5000

■ Blanking plate assembly



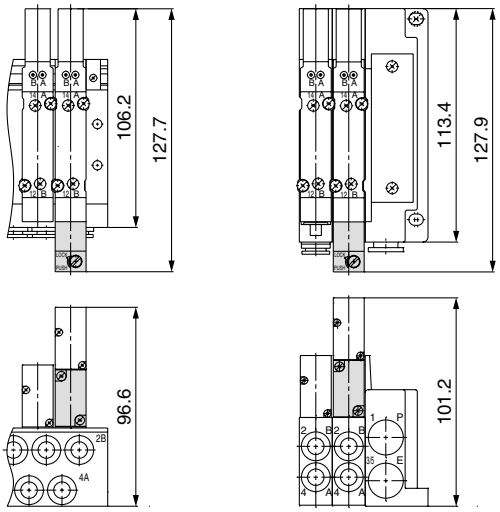
<Type 50, 51, 52> <Type 10, 11, 12>

■ SUP stop valve spacer assembly with residual pressure release valve



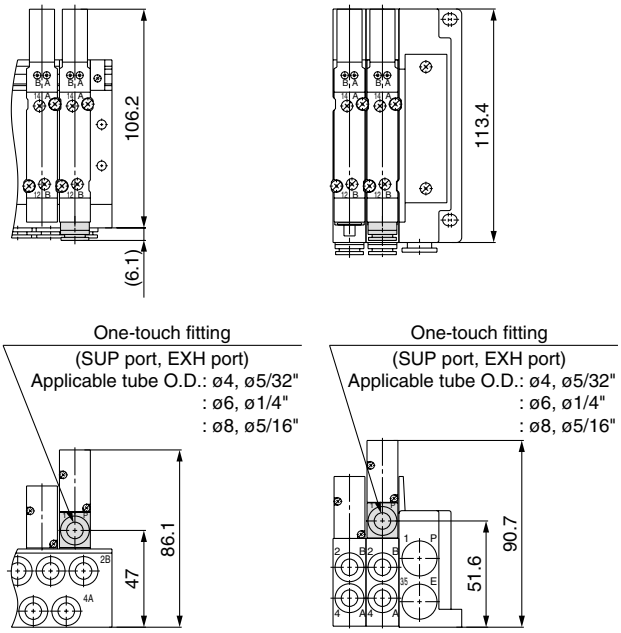
<Type 50, 51, 52> <Type 10, 11, 12>

■ Double check spacer assembly with residual pressure release valve



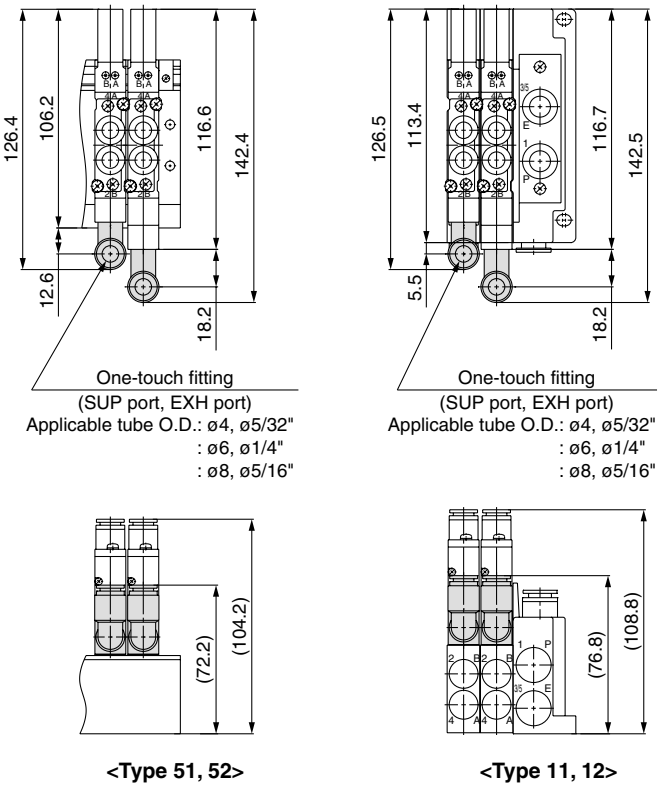
<Type 50, 51, 52> <Type 10, 11, 12>

■ Individual SUP/EXH spacer assembly (Side ported)



<Type 50> <Type 10>

■ Individual SUP/EXH spacer assembly (Top/Bottom ported)



<Type 51, 52> <Type 11, 12>

Series SY3000/5000
Specific Product Precautions 1

Be sure to read before handling.
Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.

Valve Mounting

⚠Caution

Mount it so that there is no slippage or deformation in gaskets, and tighten with the tightening torque as shown below.

Model	Thread size	Tightening torque
SY3000	M2	0.16 N·m
SY5000	M3	0.8 N·m

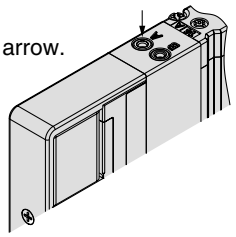
Manual Override

⚠Warning

Regardless of an electric signal for the valve, the manual override is used for switching the main valve. Connected actuator is started by manual operation. Use the manual override after confirming that there is no danger.

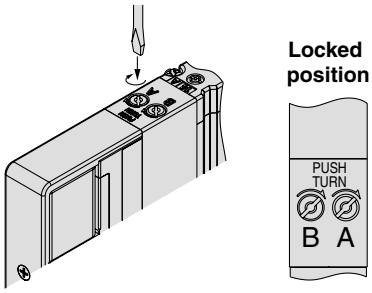
■Non-locking push type

Press in the direction of the arrow.



■Push-turn locking slotted type [Type D]

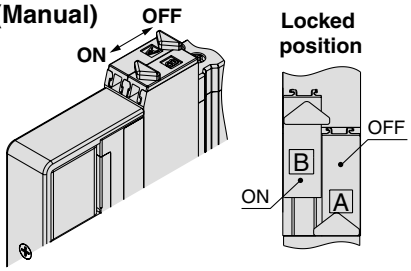
Push down on the manual override with a small flat head screwdriver until it stops. Turn it clockwise by 90° to lock it. Turn it counterclockwise to release it.
If it is not turned, it can be operated the same way as the non-locking type.



⚠Caution

Do not apply excessive torque when turning the manual override. [0.1 N·m]
When locking the manual override, be sure to push it down before turning. Turning without first pushing it down can cause damage to the manual override and other trouble such as air leakage, etc.

■Slide locking type (Manual)



It is locked by sliding the manual override all the way in the direction indicated by the arrow (ON side) with a small flat head screwdriver or with your fingers. Slide it in the direction indicated by the arrow (OFF side) to release it.

Back Pressure Check Valve

⚠Caution

There are two types of back pressure check valves; the one which is built into a valve (with rubber seal type only) and the one which is built in on the manifold side with connector connection. Both of them have a check valve built-in to prevent back pressure. For this reason, use caution that the valves with external pilot specification cannot be pressurized from exhaust port [3/5(E)]. As compared with the types which do not integrate the back pressure check valve, C value of the flow-rate characteristics goes down. Please contact SMC for details.

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 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	Plug (A) 4 (B) 2 — 5 1 3 (EA) (P) (EB)	Plug (A) 4 (B) 2 — 5 1 3 (EA) (P) (EB)
	Double	Plug (A) 4 (B) 2 — 5 1 3 (EA) (P) (EB)	Plug (A) 4 (B) 2 — 5 1 3 (EA)(P)(EB)

Valve and Manifold Combination

The SY series plug-in valve has the common configuration of the valve mounting surface between base mounted type (SY$^{3}_{5}$□0□) and top ported type (SY$^{3}_{5}$□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.

Series SY3000/5000
Specific Product Precautions 2

Be sure to read before handling.
Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.

Light/Surge Voltage Suppressor

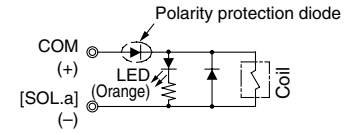
⚠Caution

■Polar type

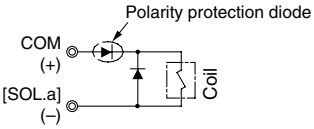
Positive common

Single solenoid

Light/surge voltage suppressor (□Z)



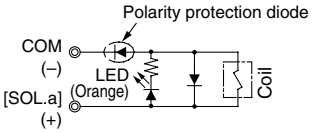
Surge voltage suppressor (□S)



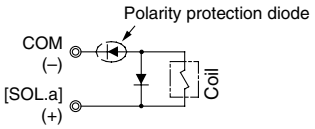
Negative common

Single solenoid

Light/surge voltage suppressor (□NZ)



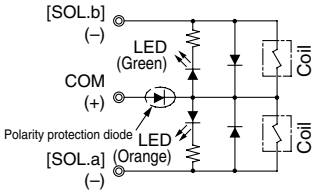
Surge voltage suppressor (□NS)



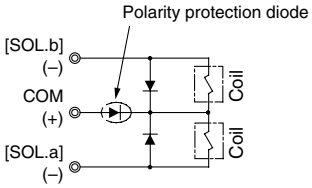
Positive common

Double solenoid, 3-position, 4-position

Light/surge voltage suppressor (□Z)



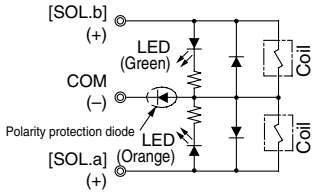
Surge voltage suppressor (□S)



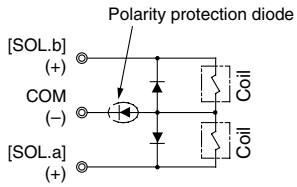
Negative common

Double solenoid, 3-position, 4-position

Light/surge voltage suppressor (□NZ)



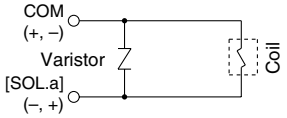
Surge voltage suppressor (□NS)



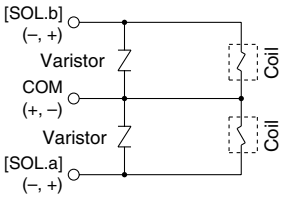
■Non-polar type

With surge voltage suppressor (□R)

Single solenoid

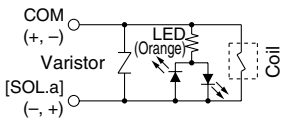


Double solenoid

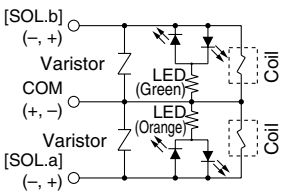


With light/surge voltage suppressor (□U)

Single solenoid

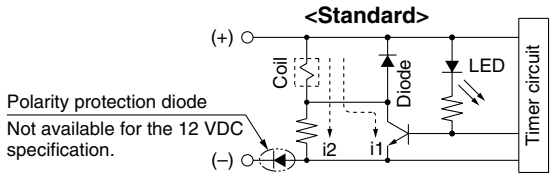


Double solenoid

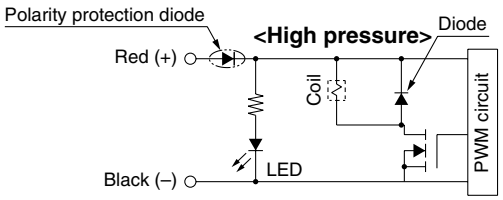


■With power saving circuit

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

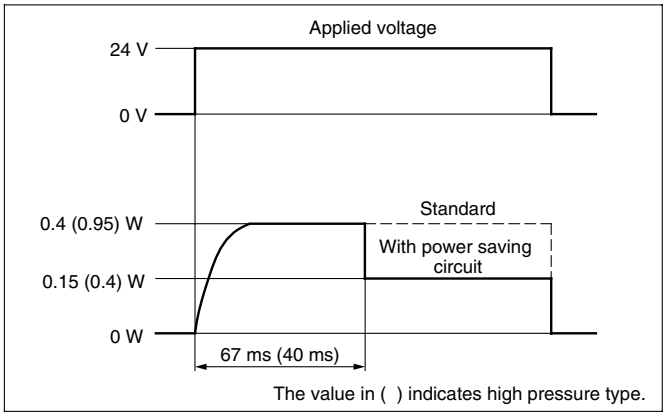


i1: Starting current, i2: Holding current



The above circuit reduces the current consumption when holding in order to save energy. Refer to the electrical power waveform as shown below.

<Electrical power waveform with power saving circuit>



- The 12 VDC specification with power saving circuit (standard specification) does not have the polarity protection diode. Do not make a mistake with the polarity.
- Since the voltage will drop by approx. 0.5 V due to the transistor, pay attention to the allowable voltage fluctuation. (For details, refer to the solenoid specifications of each type of valve.)

Residual voltage of the surge voltage suppressor

Note) If a varistor or diode surge voltage suppressor is used, there is some residual voltage to the protection element and rated voltage. Therefore, refer to the below table and pay attention to the surge voltage protection on the controller side. Also, since the response time does change, refer to the valve specifications on page 8.

Residual Voltage

Surge voltage suppressor	DC	
	24 V	12 V
S, Z	Approx. 1 V	
R, U	Approx. 47 V	Approx. 32 V

Series SY3000/5000
Specific Product Precautions 3

Be sure to read before handling.
Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.

Continuous Duty

⚠Caution

If a valve is energized continuously for a long period of time, the rise in temperature due to heat-up of the coil assembly may cause a decline in solenoid valve performance, reduce service life, or have adverse effects on peripheral equipment. If the valve is energized continuously for a long period of time, be sure to use a valve with power saving circuit. In particular, if three or more adjacent stations on the manifold are energized simultaneously for extended periods of time or if the valves on A side and B side are energized simultaneously for a long period of time, take special care as the temperature rise will be greater.

Countermeasure for Surge Voltage Intrusion

■Sneak-in of surge voltage

With non-polar type valves, at times of sudden interruption of the loading power supply, such as emergency shutdown, surge voltage intrusion may be generated from loading equipment with a large capacity (power consumption), and the valve in a de-energized state may switch over (see Figure 1). When installing a breaker circuit for the loading power supply, consider using a valve with polarity (with polarity protection diode), or install a surge absorption diode between the loading equipment COM line and the output equipment COM line (see Figure 2).

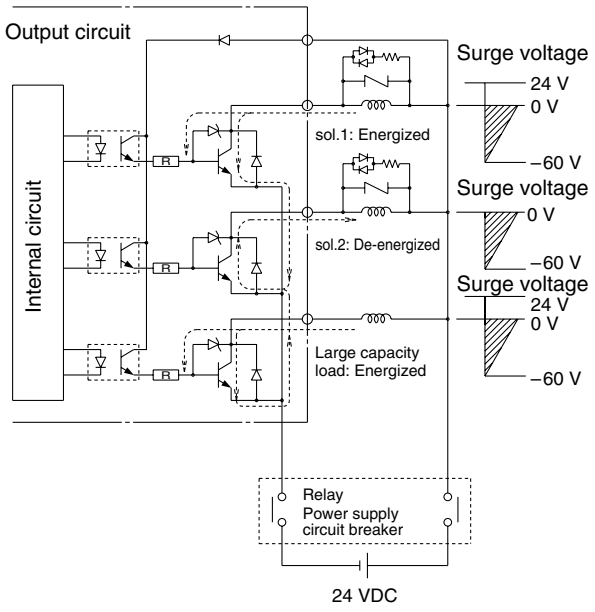


Figure 1. Surge intrusion circuit example (NPN outlet example) (24 VDC)

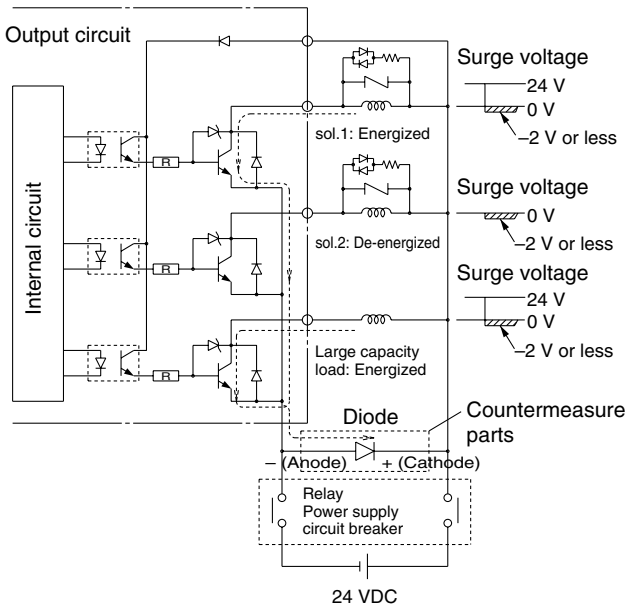


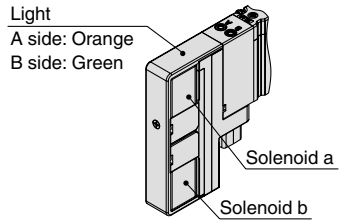
Figure 2. Surge intrusion circuit example (NPN outlet example) (24 VDC)

Series SY3000/5000
Specific Product Precautions 4

Be sure to read before handling.
Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.

Light Indication

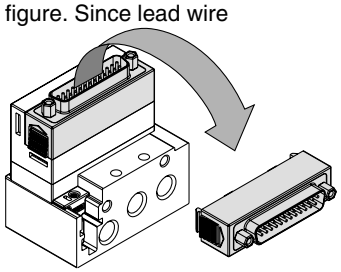
When equipped with indicator light and surge voltage suppressor, the light window turns orange when solenoid a is energized, and it turns green when solenoid b is energized.



Type 5□ (Metal Base) Changing Connector Entry Direction

⚠Caution

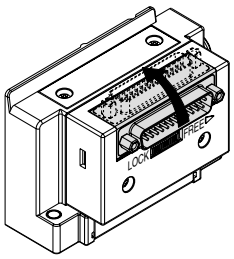
Connector direction for electrical entry of D-sub connector, flat ribbon cable and PC wiring can be changed.
If the directional change is required, push the lever on both sides to remove the connector and change the connector direction for electrical entry as shown in the figure. Since lead wire assemblies are attached to the connector, excessive pulling or twisting can cause broken wires or other trouble. Also, take precautions so that lead wires are not caught and pinched when installing the connector.



Type 1□ (Connector Connecting Base) Changing Connector Entry Direction

⚠Caution

Connector direction for electrical entry of D-sub connector, flat ribbon cable and PC wiring can be changed. If the directional change is required, slide the lever on the side of the connector block to the FREE position, and then change the direction as shown in the figure. Also, before connecting the connector, be sure to return the lever to the LOCK position. (If the lever is difficult to slide, move the connector a little bit to make it easier to slide the lever.) If an excessive force is applied on the connector in the LOCK position, the connector block may be damaged. Also, using in such a way that the connector floats in the FREE position, it may cause the lead wire, etc. to break. Thus, refrain from using in these ways.



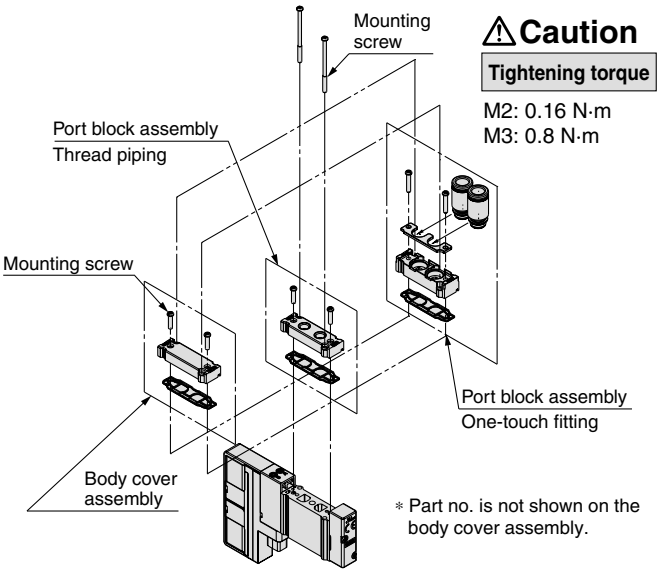
Fixation of DIN Rail Mounting Type Manifold

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 positions for 2-5 stations, 3 positions for 6-10 stations, 4 positions for 11-15 stations, 5 positions for 16-20 stations and 6 positions for 21-24 stations.
Take the same measures for horizontal mounting if the mounting surface vibrates.
If fixed at lesser points than specified and use it, there could be a warp or torsion in the DIN rail and the manifold and lead to bring some troubles such as air leakage.

Port Block Assembly and How to Change Piping Types between Top and Side

⚠Caution

For top ported type, the port size of A and B ports can be changed by switching the port block assemblies which are mounted on the body. The piping method can also be changed by switching the top ported type port block assembly with the side ported type cover assembly. Also, it may cause air leakage if the mounting screws are not tightened securely enough when they are switched. Take care to tighten to the correct tightening torque. Refer to page 13 for part numbers of port block assembly and body cover assembly.
When switching them while valves are mounted on a manifold, remove the clip with a flat head screwdriver before switching the port plugs and the One-touch fittings. It may cause air leakage if the mounting screws are not tightened or the clip is not inserted securely enough when they are switched. Take care to tighten to the correct tightening torque.



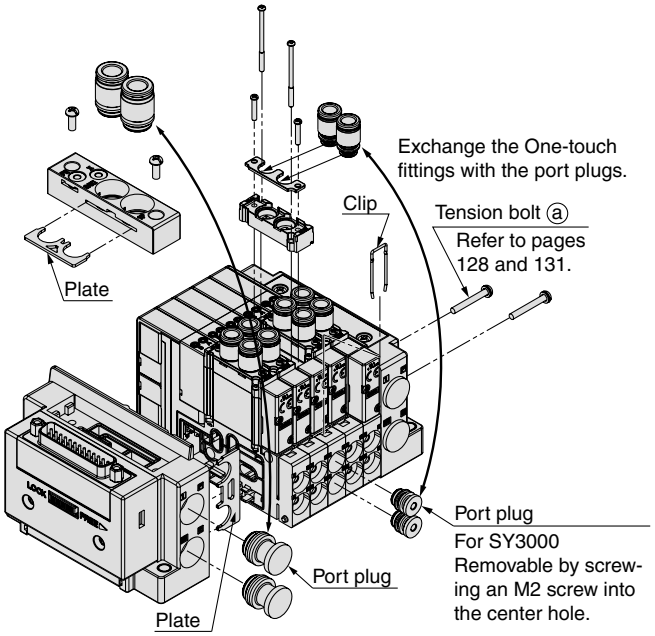
⚠Caution

Tightening torque

M2: 0.16 N·m
M3: 0.8 N·m

∗ Part no. is not shown on the body cover assembly.

■How to change while mounted on a manifold



Series SY3000/5000
Specific Product Precautions 5

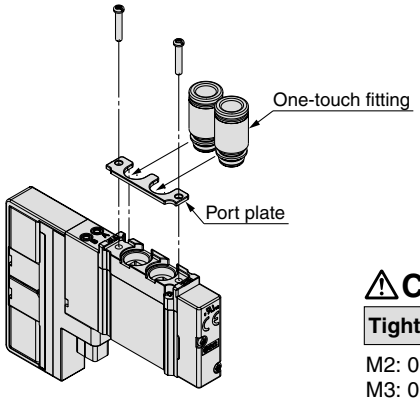
Be sure to read before handling.
Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.

Changing One-touch Fittings

⚠Caution

By replacing One-touch fittings of valve or manifold base, it is possible to change the connection diameter of the 4(A), 2(B), 1(P), 3/5(E) ports.
When replacing the One-touch fittings, remove the clip or the plate and the plate mounting screws with a screwdriver before pulling the One-touch fittings off. Mount the One-touch fittings by following the removal procedure in reverse.
It may cause air leakage if the mounting screws are not tightened or the clip and the clip plate are not inserted securely enough when they are switched. Take care to tighten to the correct tightening torque. Refer to page 132 for part numbers of One-touch fittings for valve or manifold.

■Valve



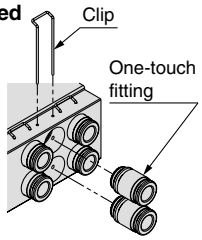
⚠Caution

Tightening torque

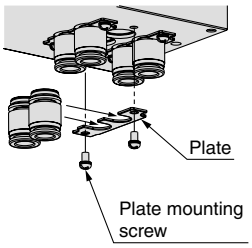
M2: 0.16 N·m
M3: 0.8 N·m

■Plug-in metal base

●Side ported

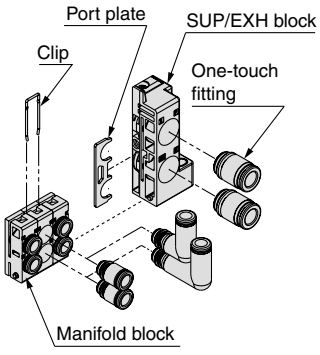


●Bottom ported

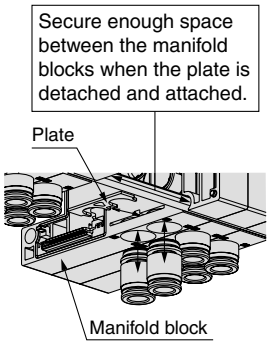


■Plug-in connector connecting base

●Side ported



●Bottom ported



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 pinchers, nippers or scissors, etc. If cutting is done with tools other than tube cutters, the tube may be cut diagonally or become flattened, etc., making a secure installation impossible. 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.

Series SY3000/5000
Specific Product Precautions 6

Be sure to read before handling.
Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.

One-touch Fittings

⚠Caution

When fittings are used, they may interfere with one another depending on their types and sizes. Therefore, the dimensions of the fittings to be used should first be confirmed in their respective catalogs.
Fittings whose compliance with the SY series is already confirmed are stated below. If the fitting within the applicable range is selected, there will not be any interference.

Applicable Fittings: Series KQ2H, KQ2S
Series KJH, KJS

Series	Model	Piping port	Port size	Fittings	Applicable tube O.D. ø2	ø3.2	ø4	ø6	ø8	ø10	ø12
SY3000	SY3□3$^{0}_{1}$-□□-M5	4A, 2B	M5	KQ2H KJH	●	●	●				
				KQ2S KJS	●	●	●	●			
	SS5Y3-50/51/52 (R) Manifold base	1P, 5EA, 3EB	1/8	KQ2H KJH		●	●	●	●		
				KQ2S KJS			●	●	●		
		X, PE	M5	KQ2H KJH	●	●	●				
				KQ2S KJS	●	●	●	●			
		4A, 2B	1/8	KQ2H KJH		●	●				
				KQ2S KJS			●	●			
			M5	KQ2H KJH	●	●	●				
				KQ2S KJS	●	●	●	●			

Series	Model	Piping port	Port size	Fittings	Applicable tube O.D. ø2	ø3.2	ø4	ø6	ø8	ø10	ø12
SY5000	SY5□3$^{0}_{1}$-□□-01	4A, 2B	1/8	KQ2H KJH		●	●	●	●		
				KQ2S KJS			●	●	●		
	SS5Y5-50/51/52 (R) Manifold base	1P, 5EA, 3EB	1/4	KQ2H		●	●	●	●	●	
				KQ2S				●	●	●	●
		X, PE	M5	KQ2H KJH	●	●	●	●			
				KQ2S KJS	●	●	●	●			
		4A, 2B	1/4	KQ2H		●	●	●	●		
				KQ2S				●	●	●	
			1/8	KQ2H KJH		●	●	●			
				KQ2S KJS			●	●	●		

⚠ Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of **"Caution," "Warning"** or **"Danger."** They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)*1), and other safety regulations.

⚠ Caution: **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

⚠ Warning: **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

⚠ Danger : **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines.
(Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots - Safety.
etc.

⚠ Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.
Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.
The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.
1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.
1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

⚠ Caution

1. The product is provided for use in manufacturing industries.
The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".
Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered.*2)
Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

*2) **Vacuum pads are excluded from this 1 year warranty.**
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.
Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

⚠ Safety Instructions	Be sure to read "Handling Precautions for SMC Products" (M-E03-3) before using.

SMC Corporation
Akihabara UDX 15F,
4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN
Phone: 03-5207-8249 Fax: 03-5298-5362
URL http://www.smcworld.com
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