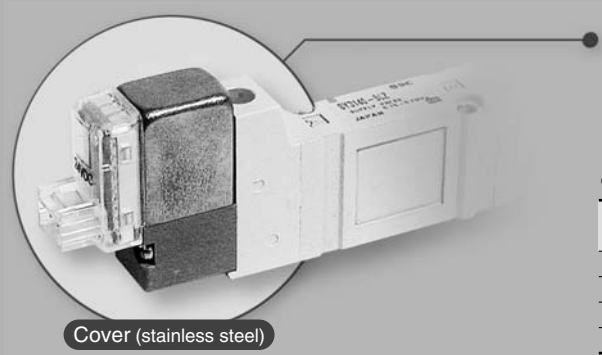
5 Port Solenoid Valve

Series SY3000/5000/7000/9000

Rubber Seal



• Improved pilot valve

Pilot valve cover is stronger using stainless steel.
Mounting thread is also reinforced from size M1.7 to M2.

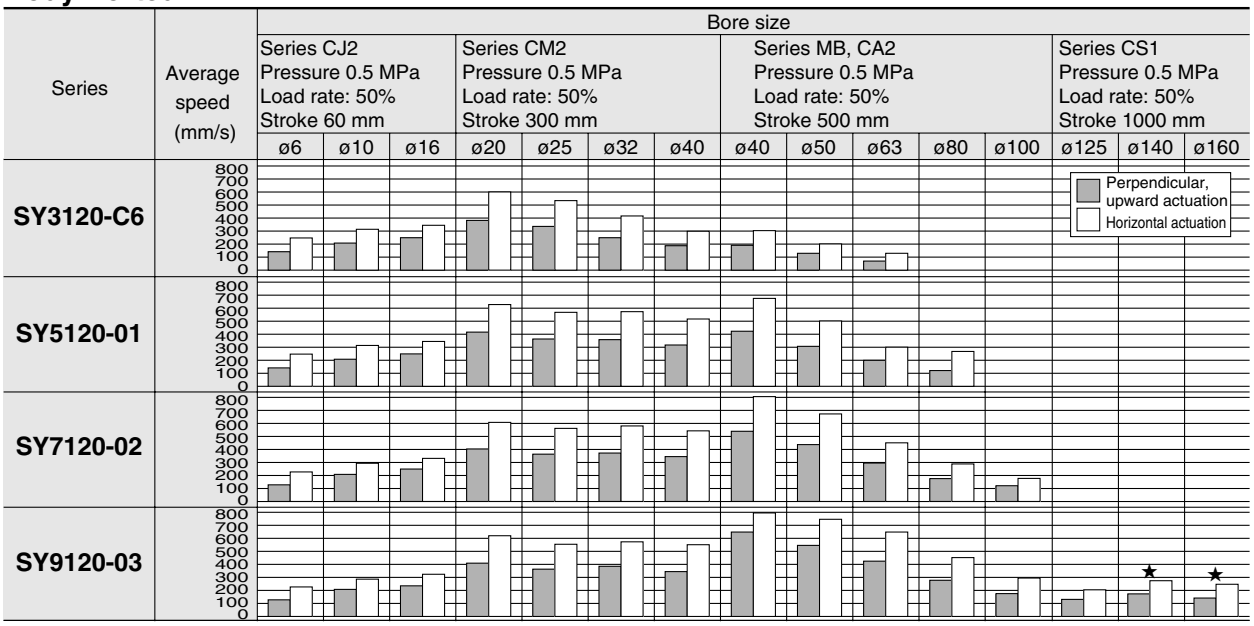
• Flow Characteristics

Series	Flow characteristics		
	C [dm³/(s·bar)]	b	Cv
SY3000	1.1	0.28	0.29
SY5000	2.8	0.37	0.90
SY7000	4.5	0.28	1.4
SY9000	10	0.29	2.5

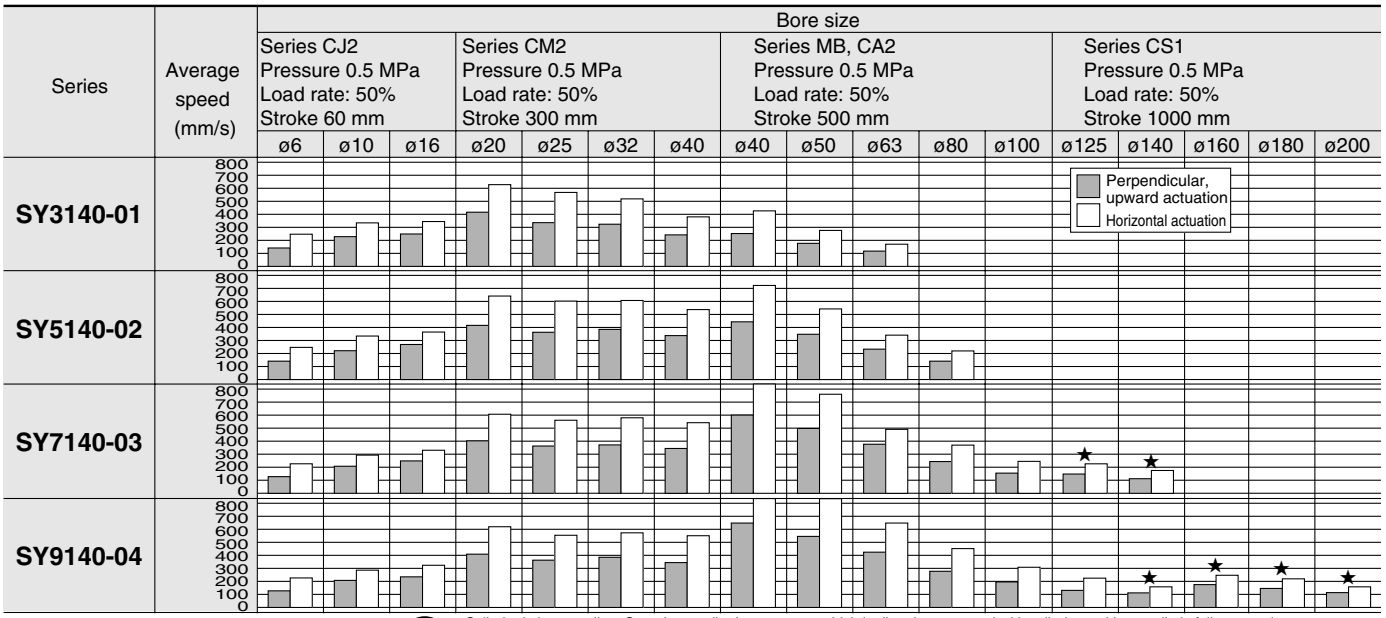
Cylinder Speed Chart

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

Body Ported



Base Mounted



* Cylinder is in extending. Speed controller is meter-out, which is directly connected with cylinder and its needle is fully opened.
* Average speed of cylinder is obtained by dividing the full stroke time by the stroke.
* Load factor: ((Load weight x 9.8) /Theoretical force) x 100%
* The histograms with ★ marked are the case when piping is done by using steel.

Conditions

Body ported		Series CJ2	Series CM2	Series MB, CA2	Series CS1
SY3120-C6	Tubing bore x Length	T0604 x 1 m			–
	Speed controller	AS2051F-06			–
	Silencer	AN120-M5			–
SY5120-01	Tubing bore x Length	T0604 x 1 m	T0806 x 1 m		–
	Speed controller	AS3001F-06	AS3001F-08		–
	Silencer	AN101-01			–
SY7120-02	Tubing bore x Length	T0604 x 1 m	T1075 x 1 m		–
	Speed controller	AS3001F-06	AS4001F-10		–
	Silencer	AN110-01			–
SY9120-03	Tubing bore x Length	T0604 x 1 m	T1075 x 1 m	T1209 x 1 m	
	Speed controller	AS3001F-06	AS4001F-10	AS4001F-12	
	Silencer	AN200-02			AN202-02

Conditions [When using SGP (steel pipe)]

Body ported		Series CS1
SY9120-03	Tubing bore x Length	SGP10A x 1 m
	Speed controller	AS420-03
	Silencer	AN200-02

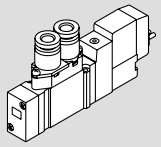
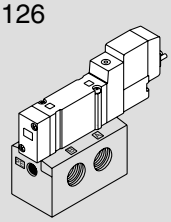
Conditions

Base mounted		Series CJ2	Series CM2	Series MB, CA2	Series CS1
SY3140-01	Tubing bore x Length	T0604 x 1 m			–
	Speed controller	AS3001F-06			–
	Silencer	AN110-01			–
SY5140-02	Tubing bore x Length	T0604 x 1 m	T0806 x 1 m		–
	Speed controller	AS3001F-06	AS3001F-08		–
	Silencer	AN101-01			–
SY7140-03	Tubing bore x Length	T0604 x 1 m	T1075 x 1 m	T1209 x 1 m	–
	Speed controller	AS3001F-06	AS4001F-10		–
	Silencer	AN200-02			–
SY9140-04	Tubing bore x Length	T0604 x 1 m	T1075 x 1 m	T1209 x 1 m	
	Speed controller	AS3001F-06	AS4001F-10	AS4001F-12	
	Silencer	AN200-02			

Conditions [When using SGP (steel pipe)]

Base mounted		Series CS1
SY7140-03	Tubing bore x Length	SGP10A x 1 m
	Speed controller	AS420-03
	Silencer	AN300-03
SY9140-04	Tubing bore x Length	SGP15A x 1 m
	Speed controller	AS420-04
	Silencer	AN400-04

Valve Variations

	Series		Sonic conductance C [dm³/(s·bar)] {4/2→5/3 (A/B→EA/EB)}	Actuation					Voltage		Electrical entry						Note 1)
				2 position		3 position			DC	AC							
				Single	Double	Closed center	Exhaust center	Pressure center	24 V 12 V 6 V 5 V 3 V	100 V 50/60 Hz 110 V 50/60 Hz 200 V 50/60 Hz 220 V 50/60 Hz	Grommet	L plug connector	M plug connector	Note 4) DIN terminal	M8 connector	Light/surge voltage suppressor
Body ported	P.108 	**SY3□20**	0.65	●	●	●	●	●	●	●	●	●	●	●	●	●
		SY5□20	2.4	●	●	●	●	●	●	●	●	●	●	●	●	●
		SY7□20	3.3	●	●	●	●	●	●	●	●	●	●	●	●	●
		SY9□20	8.6	●	●	●	●	●	●	●	●	●	●	●	●	●
Base mounted	P.126 	**SY3□40**	1.1	●	●	●	●	●	●	●	●	●	●	●	●	●
		SY5□40	2.8	●	●	●	●	●	●	●	●	●	●	●	●	●
		SY7□40	4.5	●	●	●	●	●	●	●	●	●	●	●	●	●
		SY9□40	10	●	●	●	●	●	●	●	●	●	●	●	●	●

	Series	Manual override			Bracket	P, EA, EB port size					A, B port size														Valve option						
		Non-locking push type	Push-turn locking slotted type	Push-turn locking lever type		M5	1/8	1/4	3/8	1/2	M5	1/8	1/4	3/8	1/2	One-touch fitting									Exhaust throttle	Oil resistant, Other than designated turbine oil	Vacuum specifications	Low pressure specifications	Dual pressure	Note 3) Enclosure IP65	Interface regulator
																C4	C6	C8	C10	C12	N3	N7	N9	N11							
Body ported	**SY3□20**	●	●	●	●	●	—	—	—	—	●	—	—	—	—	●	●	—	—	—	●	●	—	—	●	▲	▲ External Pilot (Note 2)	▲ External Pilot (Note 2)	▲ External Pilot (Note 2)	● DIN terminal M8 connector	—
	SY5□20	●	●	●	●	—	●	—	—	—	—	●	—	—	—	●	●	●	—	—	●	●	●	—							
	SY7□20	●	●	●	●	—	● (EA, EB)	● (P)	—	—	—	—	●	—	—	—	—	●	●	—	—	—	●	●							
	SY9□20	●	●	●	—	—	—	●	—	—	—	—	●	●	—	—	—	●	●	●	—	—	●	●							
Base mounted	**SY3□40**	●	●	●	—	—	●	—	—	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	● Sub-plate	▲	● External pilot	● External pilot	● External pilot	● DIN terminal M8 connector	●
	SY5□40	●	●	●	—	—	—	●	—	—	—	—	●	—	—	—	—	—	—	—	—	—	—	—							●
	SY7□40	●	●	●	—	—	—	●	●	—	—	—	●	●	—	—	—	—	—	—	—	—	—	—							●
	SY9□40	●	●	●	—	—	—	—	●	●	—	—	—	●	●	—	—	—	—	—	—	—	—	—							—

● Standard ● Option ▲ Made to order (Refer to page "Made to Order".)

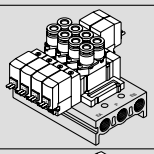
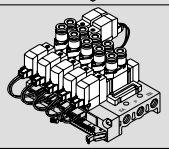
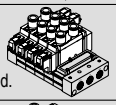
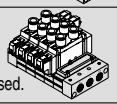
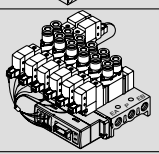
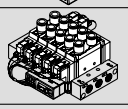
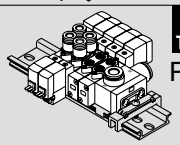
Note 1) All AC voltage models have built-in surge voltage suppressor.

Note 2) Body ported external pilot style (made to order) is not available for DIN terminal.

Note 3) Only available for DIN terminal and M8 connector.

Note 4) SY3000 does not have a DIN terminal which can be connected to a manifold.

Manifold Variations

	Manifold Variations		Valve Series	Wiring									
				Connection								Common specifications	
			5 port	Individual wiring	Flat ribbon cable (26 pins)	Flat ribbon cable (20 pins) connector box	Plug-in type D-sub connector (25 pins)	Plug-in type flat ribbon cable (26, 20, 10 pins)	Plug-in type terminal block (9, 18 pins)	PC wiring	Serial transmission unit	Positive common	Negative common
Body ported	**Bar stock type** **Individual wiring** ■ Direct piping to the main unit of a valve. Combination of different fittings is possible. 	Type 20 P. 144	SY3□20	●	—	—	—	—	—	—	—	—	—
			SY5□20										
			SY7□20										
	Bar stock type **Flat ribbon cable** ■ A 26 pins MIL connector permits One-touch wiring of external cables in a bundle. 	Type 20P P. 154	SY3□20	—	●	—	—	—	—	—	—	● In common	
			SY5□20										
			SY7□20										
	Stacking type **Individual wiring** ■ Manifold stations can be increased or decreased. 	Type 23 P. 150	SY9□20	●	—	—	—	—	—	—	—	—	—
	Stacking type **Flat ribbon cable** ■ Manifold stations can be increased or decreased. 	Type 23P P. 160	SY9□20	—	●	—	—	—	—	—	—	● In common	
	Bar stock type **EX510 gateway system** ■ Can be used with a serial transmission system. 	Type 20SA P. 164	SY3□20	—	—	—	—	—	—	—	●	—	—
			SY5□20										
			SY7□20										
	Stacking type **EX510 gateway system** ■ Can be used with a serial transmission system. 	Type 23SA P. 170	SY9□20	—	—	—	—	—	—	—	●	—	—
	Cassette type **Individual wiring** ■ Size and weight reduced by eliminating the manifold base 	Type 60 P. 178	SY3□60	●	—	—	—	—	—	—	—	—	—
			SY5□60	●	—	—	—	—	—	—	—	—	—
			SY7□60	●	—	—	—	—	—	—	—	—	—

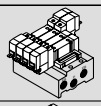
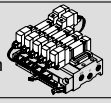
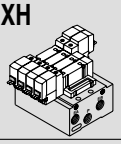
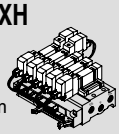
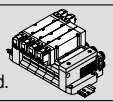
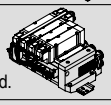
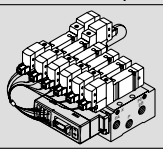
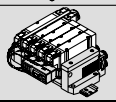
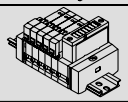
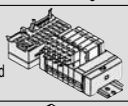
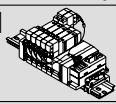
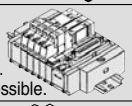
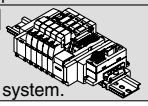
● Standard ● Option ▲ Made to order (Refer to page “Made to Order”.)

Manifold Variations

Manifold option									A, B port size											Valve option											
Blanking plate	Individual SUP spacer	Individual EXH spacer	SUP block disk	EXH block disk	Label for block disk	Silencer for One-touch fitting	Built-in silencer	Connector	M5	1/8	1/4	3/8	One-touch fitting									Mixed mounting	Oil resistant (Other than designated turbine oil)	Vacuum specifications	Low pressure specifications	Different pressure	Dual pressure	Exhaust throttle	Bundle wiring	Mixed fitting sizes	IP65 enclosure	Interface regulator
													C4	C6	C8	C10	C12	N3	N7	N9	N11	SY3000 SY5000										
○	○	○	—	—	—	—	—	—	●	—	—	—	●	●	—	—	—	●	●	—	—	—	▲	—	—	Individual SUP interface	—	Individual EXH interface	—	—	Note) ●	—
									—	●	—	—	●	●	●	—	—	●	●	●	—									Note) ●	
									—	—	●	—	—	—	●	●	—	—	—	●	●									Note) ●	
○	○	○	—	—	—	—	—	—	●	—	—	—	●	●	—	—	—	●	●	—	—	—	▲	—	—	Individual SUP interface	—	Individual EXH interface	●	—	—	—
									—	●	—	—	●	●	●	—	—	●	●	●	—										
									—	—	●	—	—	—	●	●	—	—	—	●	●										
○	○	○	○	○	○	—	—	—	—	—	●	●	—	—	●	●	●	—	—	●	●	—	▲	● External pilot	● External pilot	Individual SUP block disk	● External pilot	Individual EXH	—	—	Note) ●	
○	○	○	○	○	○	—	—	—	—	—	●	●	—	—	●	●	●	—	—	●	●	—	▲	● External pilot	● External pilot	Individual SUP block disk	● External pilot	Individual EXH	●	—	—	
○	○	○	—	—	—	—	—	○	●	—	—	—	●	●	—	—	—	●	●	—	—	—	▲	—	—	Individual SUP interface	—	Individual EXH interface	●	—	—	—
									—	●	—	—	●	●	●	—	—	●	●	●	—								●		
									—	—	●	—	—	—	●	●	—	—	—	●	●								●		
○	○	○	—	—	—	—	—	○	—	—	●	●	—	—	●	●	●	—	—	●	●	—	▲	● External pilot	● External pilot	Individual SUP block disk	● External pilot	Individual EXH	●	—	—	—
○	—	—	○	○	○	○	—	—	●	—	—	—	●	●	—	—	—	●	●	—	—	—	▲	● External pilot	● External pilot	Individual SUP block disk	Individual SUP block disk	—	—	—	Note) ●	—
○	—	—	○	○	○	○	—	—	—	●	—	—	●	●	●	—	—	●	●	●	—	—	▲	● External pilot	● External pilot	Individual SUP block disk	Individual SUP block disk	—	—	—	Note) ●	—
○	—	—	○	○	○	○	—	—	—	—	●	—	—	—	●	●	—	—	—	●	●	—	▲	● External pilot	● External pilot	Individual SUP block disk	Individual SUP block disk	—	—	—	Note) ●	—

Note) When using DIN terminal or M8 connector. SY3000 does not have a DIN terminal which can be connected to a manifold.

Manifold Variations

	Manifold Variations		Valve Series	Wiring: Connection: Individual wiring	Flat ribbon cable (26 pins)	Flat ribbon cable (20 pins) connector box	Plug-in type D-sub connector (25 pins)	Plug-in type flat ribbon cable (26, 20, 10 pins)	Plug-in type terminal block (9, 18 pins)	PC wiring	Serial transmission unit	Common specifications: Positive common	Negative common
			5 port										
Base mounted	**Compact bar stock type** **Individual wiring** ■ The base mounting facilitates maintenance after valves are changed.		Type 41 P. 198	SY3□40 SY5□40	●	—	—	—	—	—	—	—	—	—
	Compact bar stock type **Flat ribbon cable** ■ A 26 pins MIL connector permits one-touch wiring of external cables in a bundle.		Type 41P P. 214	SY3□40 SY5□40	—	●	—	—	—	—	—	—	● In common	
	Bar stock type/Common external EXH **Individual wiring** ■ The base mounting facilitates maintenance after valves are changed. ■ Vacuum/low pressure combination system is possible.		Type 42 P. 198	SY3□40 SY5□40 SY7□40	●	—	—	—	—	—	—	—	—	—
	Bar stock type/Common external EXH **Flat ribbon cable** ■ A 26 pins MIL connector permits one-touch wiring of external cables in a bundle. ■ Vacuum/low pressure combination system is possible.		Type 42P P. 214	SY3□40 SY5□40 SY7□40	—	●	—	—	—	—	—	—	● In common	
	Stacking type **Individual wiring** ■ Manifold stations can be increased or decreased.		Type 43 P. 208	SY9□40	●	—	—	—	—	—	—	—	—	—
	Stacking type **Flat ribbon cable** ■ Manifold stations can be increased or decreased.		Type 43P P. 222	SY9□40	—	●	—	—	—	—	—	—	● In common	
	Bar stock type **EX510 gateway system** ■ Can be used with a serial transmission system.		Type 42SA P. 228	SY3□40 SY5□40 SY7□40	—	—	—	—	—	—	—	●	—	—
	Stacking type **EX510 gateway system** ■ Can be used with a serial transmission system.		Type 43SA P. 233	SY9□40	—	—	—	—	—	—	—	●	—	—
	Stacking type/DIN rail mounted **Individual wiring** ■ Stations can be increased on the DIN rail. Integral mounting of other electric parts is possible, too.		Type 45 P. 244	SY3□40 SY5□40	●	—	—	—	—	—	—	—	—	—
	Stacking type/DIN rail mounted **Connector box** ■ Stations can be increased or decreased on the DIN rail. The provided connector box permits one-touch connection of electric cables.		Type 45-A/NA P. 256	SY3□40 SY5□40	—	—	●	—	—	—	●	—	●	●
	Stacking type/DIN rail mounted **EX510 gateway system** ■ Can be used with a serial transmission system.		Type 45S6A P. 264	SY3□40 SY5□40	—	—	—	—	—	—	—	●	—	—
	Stacking type/DIN rail mounted **Plug-in** ■ Stations can be increased or decreased on the DIN rail. ■ A variety of centralized wiring methods are possible.		Type 45□ P. 272	SY3□40 SY5□40	—	—	—	●	●	●	●	●	●	●
	Stacking type/DIN rail mounted **Plug-in** **EX510 gateway system** ■ Can be used with a serial transmission system.		Type 45S6B P. 312	SY3□40 SY5□40	—	—	—	—	—	—	—	●	—	—

● Standard ● Option ▲ Made to order (Refer to page "Made to Order".)

Manifold Variations

Manifold option									A, B port size											Valve option										
Blanking plate	Individual SUP spacer	Individual EXH spacer	SUP block disk	EXH block disk	Label for block disk	Silencer for One-touch fitting	Built-in silencer	Connector	M5	1/8	1/4	3/8	One-touch fitting									Mixed mounting	Oil resistant (Other than designated turbine oil)	Vacuum specifications	Low pressure specifications	Different pressure	Dual pressure	Exhaust throttle	Bundle wiring	Mixed fitting sizes	IP65 enclosure	Interface regulator
													C4	C6	C8	C10	C12	N3	N7	N9	N11	SY3000 SY5000										
●	●	●	—	—	—	—	—	—	●	—	—	—	●	●	—	—	—	●	●	—	—	—	▲	—	—	Individual SUP interface	—	—	—	—	Note) ● Note) ●	●
									—	●	—	—	—	●	●	—	—	—	●	●	—										
●	●	●	—	—	—	—	—	—	●	—	—	—	●	●	—	—	—	●	●	—	—	—	▲	—	—	Individual SUP interface	—	—	●	—	—	●
									—	●	—	—	●	●	—	—	—	●	●	—	—										
●	●	●	—	—	—	—	—	—	—	—	●	—	—	●	●	—	—	—	●	●	—	—	▲	● External pilot	● External pilot	Individual SUP interface	● External pilot	—	—	—	Note) ● Note) ● Note) ●	●
									—	—	●	—	—	—	—	●	—	—	—	—	●										
●	●	●	—	—	—	—	—	—	—	●	—	—	●	●	—	—	—	●	●	—	—	—	▲	● External pilot	● External pilot	Individual SUP interface	● External pilot	—	●	—	—	●
									—	—	●	—	—	●	●	—	—	—	●	●	—										
●	●	●	●	●	●	●	●	—	—	—	●	●	—	—	●	●	●	—	—	●	●	—	▲	● External pilot	● External pilot	Individual SUP block disk	● External pilot	● Individual EXH	—	●	Note) ●	—
●	●	●	●	●	●	●	●	—	—	—	●	●	—	—	●	●	●	—	—	●	●	—	▲	● External pilot	● External pilot	Individual SUP block disk	● External pilot	● Individual EXH	●	●	—	
●	●	●	—	—	—	—	—	●	—	●	—	—	●	●	—	—	—	●	●	—	—	—	▲	● External pilot	● External pilot	Individual SUP	● External pilot	—	—	—	—	●
									—	—	●	—	—	●	●	—	—	—	●	●	—										
●	●	●	●	●	●	●	—	●	—	—	●	●	—	—	●	●	●	—	—	●	●	—	▲	● External pilot	● External pilot	Individual SUP	● External pilot	● Individual EXH	—	●	—	●
●	●	●	●	●	●	●	▲	—	—	—	—	—	●	●	—	—	—	●	●	—	—	▲	▲	▲ External pilot	▲ External pilot	Individual SUP spacer or block disk	—	—	—	●	Note) ● Note) ●	●
									—	—	—	—	●	●	●	—	—	●	●	●	—										
●	●	●	●	●	●	●	▲	—	—	—	—	—	●	●	—	—	—	●	●	—	—	▲	▲	▲ External pilot	▲ External pilot	Individual SUP spacer or block disk	—	—	●	●	—	●
									—	—	—	—	●	●	●	—	—	●	●	●	—										
●	—	—	—	—	—	—	●	●	—	—	—	—	●	●	—	—	—	●	●	—	—	—	▲	● External pilot	● External pilot	Individual SUP spacer or block disk	—	—	●	●	—	●
									—	—	—	—	●	●	●	—	—	●	●	●	—										
●	●	●	●	●	●	●	▲	—	—	—	—	—	●	●	—	—	—	●	●	—	—	▲	▲	▲ External pilot	▲ External pilot	Individual SUP spacer or block disk	—	—	●	●	—	—
									—	—	—	—	●	●	●	—	—	●	●	●	—										
—	—	—	—	—	—	—	●	—	—	—	—	—	●	●	—	—	—	●	●	—	—	—	▲	● External pilot	● External pilot	Individual SUP spacer or block disk	—	—	●	●	—	—
									—	—	—	—	●	●	●	—	—	●	●	●	—										

Note) When using DIN terminal or M8 connector. SY3000 does not have a DIN terminal which can be connected to a manifold.

5 Port Solenoid Valve
Body Ported/Single Unit
Series SY3000/5000/7000/9000

CE

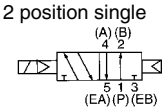
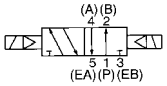
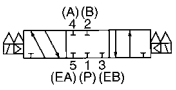
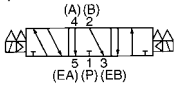
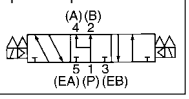
How to Order

SY [5] [1] **20** [ ] – [5] [L] [ ] [ ] – [01] [ ] – [ ] – [ ] – [ ]

Series

3	SY3000
5	SY5000
7	SY7000
9	SY9000

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 

Coil specifications

Nil	Standard
T	With power saving circuit (24, 12 VDC only)

∗ Power saving circuit is not available in the case of D, DO or W□ type.

Rated voltage

For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

For AC (50/60 Hz)

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

∗DC specifications of type D, Y, DO and YO is only available with 12 and 24 VDC.
∗For type W□, DC voltage is only available.

Electrical entry

24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC			24, 12 VDC/100, 110, 200, 220 VAC
Grommet	L plug connector	M plug connector	DIN terminal
G: Lead wire length 300 mm	**L:** With lead wire (Length 300 mm)	**M:** With lead wire (Length 300 mm) **MN:** Without lead wire	**D, Y:** With connector
H: Lead wire length 600 mm	**LN:** Without lead wire **LO:** Without connector	**MO:** Without connector	**DO, YO:** Without connector

24, 12, 6, 5, 3 VDC
M8 connector
WO: Without connector cable
W□: With connector cable Note)

∗ LN, MN type: with 2 sockets.
∗ For DIN terminal of SY3000 series, refer to page 337.
∗ "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 336.
∗ For connector cable of M8 connector, refer to page 339.
∗ M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.
∗ Refer to page 336 for the lead wire length of L and M plug connectors.
∗ Refer to page 337 for the connector assembly with cover for L and M plug connectors.
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

A, B port size

Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
01	1/8	SY5000
02	1/4	SY7000
02	1/4	SY9000
03	3/8	

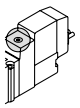
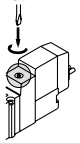
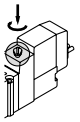
One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	
C8	One-touch fitting for ø8	SY9000
C10	One-touch fitting for ø10	
C12	One-touch fitting for ø12	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø 5/32"	SY3000
N7	One-touch fitting for ø 1/4"	
N3	One-touch fitting for ø 5/32"	SY5000
N7	One-touch fitting for ø 1/4"	
N9	One-touch fitting for ø 5/16"	
N9	One-touch fitting for ø 5/16"	SY7000
N11	One-touch fitting for ø 3/8"	
N9	One-touch fitting for ø 5/16"	SY9000
N11	One-touch fitting for ø 3/8"	

Manual override

Nil: Non-locking push type	D: Push-turn locking slotted type	E: Push-turn locking lever type
		

Light/surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

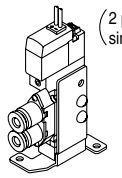
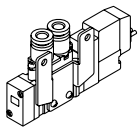
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
∗ For "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor

∗ DOZ and YOZ are not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Bracket

Nil: Without bracket
F1: With foot bracket (2 position single only)

F2: With side bracket


∗ SY9000 has no bracket.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ Except for M5

Made to Order

Nil	—
X20	Body ported external pilot (Refer to page 332.)
X90	Main valve fluoro rubber (Refer to page 332.)

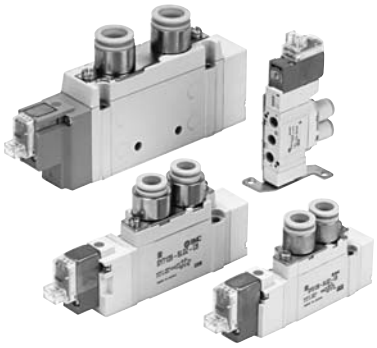
CE-compliant

Nil	—
Q	CE-compliant

∗ For DC only except DIN terminal.

Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 173.)

SMC



Made to Order **Made to Order**
(For details, refer to pages 324 to 332.)

Specifications

Series		SY3000	SY5000	SY7000	SY9000
Fluid		Air			
Internal pilot Operating pressure range (MPa)	**2 position single**	0.15 to 0.7			
	2 position double	0.1 to 0.7			
	3 position	0.2 to 0.7			
Ambient and fluid temperature (°C)		–10 to 50 (No freezing.)			
Max. operating frequency (Hz)	**2 position single, double**	10	5	5	5
	3 position	3	3	3	3
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type			
Pilot exhaust method		Common exhaust type for main and pilot valve			
Lubrication		Not required			
Mounting orientation		Unrestricted			
Impact/Vibration resistance (m/s²) Note)		150/30			
Enclosure		Dust proof (∗ DIN terminal and M8 connector: IP65)			

∗ Based on IEC60529
Note) 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)

Solenoid Specifications

Electrical entry			Grommet (G), (H) L plug connector (L) M plug connector (M)	DIN terminal (D), (Y) M8 connector (W)
			G, H, L, M, W	D, Y
Coil rated voltage (V)	**DC**		24, 12, 6, 5, 3	24, 12
	AC 50/60 Hz		100, 110, 200, 220	
Allowable voltage fluctuation			±10% of rated voltage ∗	
Power consumption (W)	**DC**	**Standard**	0.35 (With indicator light: 0.4 DIN terminal with indicator light: 0.45)	
		With power saving circuit	0.1 (With indicator light only)	
Apparent power (VA) ∗	**AC**	**100 V**	0.78 (With indicator light: 0.81)	0.78 (With indicator light: 0.87)
		110 V [115 V]	0.86 (With indicator light: 0.89) [0.94 (With indicator light: 0.97)]	0.86 (With indicator light: 0.97) [0.94 (With indicator light: 1.07)]
		200 V	1.18 (With indicator light: 1.22)	1.15 (With indicator light: 1.30)
		220 V [230 V]	1.30 (With indicator light: 1.34) [1.42 (With indicator light: 1.46)]	1.27 (With indicator light: 1.46) [1.39 (With indicator light: 1.60)]
Surge voltage suppressor			Diode (Varistor is for DIN terminal and Non-polar type.)	
Indicator light			LED (AC of DIN connector is neon light.)	

∗ In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.
∗ For 115 VAC and 230 VAC, the allowable voltage is –15% to +5% of rated voltage.
∗ S, Z and T type (with power saving circuit) should be used within the following allowable voltage fluctuation range due to a voltage drop caused by the internal circuit.
S and 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

Note) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage)

SY3000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	12 or less	15 or less	12 or less
2 position double	10 or less	13 or less	10 or less
3 position	15 or less	20 or less	16 or less

SY5000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	19 or less	26 or less	19 or less
2 position double	18 or less	22 or less	18 or less
3 position	32 or less	38 or less	32 or less

SY7000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	31 or less	38 or less	33 or less
2 position double	27 or less	30 or less	28 or less
3 position	50 or less	56 or less	50 or less

SY9000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	35 or less	41 or less	35 or less
2 position double	35 or less	41 or less	35 or less
3 position	62 or less	64 or less	62 or less

Flow Characteristics/Mass

Series SY3000

Valve model	Type of actuation		Port size 1, 5, 3 (P, EA, EB)	Port size 4, 2 (A, B)	Flow characteristics 1→4/2 (P→A/B) C (kdm³/(s·bar))	b	Cv	Flow characteristics 4/2→5/3 (A/B→EA/EB) C (kdm³/(s·bar))	b	Cv	Mass (g) Grommet	L/M plug connector	W M8 connector
SY3□20-□-M5	2 position	Single	M5 x 0.8	M5 x 0.8	0.61	0.44	0.16	0.64	0.45	0.18	51	53	57
		Double									68	74	82
	3 position	Closed center			0.48	0.46	0.13	0.47	0.43	0.13	71	76	84
		Exhaust center			0.47	0.42	0.13	0.47 (0.44)	0.41 (0.37)	0.13 (0.12)			
		Pressure center			0.50 (0.41)	0.48 (0.35)	0.15 (0.11)	0.47	0.43	0.13			
SY3□20-□-C4	2 position	Single	M5 x 0.8	C4 One-touch fitting for ø4	0.72	0.29	0.18	0.64	0.34	0.17	60	63	67
		Double									78	83	91
	3 position	Closed center			0.59	0.28	0.15	0.59	0.30	0.15	81	86	94
		Exhaust center			0.63	0.35	0.16	0.42 (0.41)	0.34 (0.37)	0.11 (0.11)			
		Pressure center			0.76 (0.46)	0.42 (0.34)	0.21 (0.12)	0.59	0.29	0.15			
SY3□20-□-C6	2 position	Single		C6 One-touch fitting for ø6	0.76	0.30	0.19	0.65	0.39	0.17	56	59	63
		Double									74	79	87
	3 position	Closed center			0.76	0.55	0.24	0.60	0.33	0.16	77	82	90
		Exhaust center			0.65	0.32	0.16	0.64 (0.42)	0.31 (0.36)	0.17 (0.11)			
		Pressure center			0.77 (0.49)	0.34 (0.43)	0.21 (0.15)	0.61	0.34	0.16			

Note) [ ]: denotes normal position.

Series SY7000

Valve model	Type of actuation		Port size 1, 5, 3 (P, EA, EB)	Port size 4, 2 (A, B)	Flow characteristics 1→4/2 (P→A/B) C (dm³/(s·bar))	b	Cv	Flow characteristics 4/2→5/3 (A/B→EA/EB) C (dm³/(s·bar))	b	Cv	Mass (g) Grommet	L/M plug connector	DIN terminal	W M8 connector
SY7□20-□-02	2 position	Single	1 (P) Port 1/4 5, 3 (EA, EB) port 1/8	1/4	4.1	0.23	0.93	3.3	0.33	0.81	101	104	125	108
		Double									120	125	167	133
	3 position	Closed center			2.9	0.31	0.70	2.4	0.38	0.63	128	133	175	141
		Exhaust center			2.5	0.39	0.65	3.4 (2.1)	0.35 (0.38)	0.82 (0.54)				
		Pressure center			4.3 (2.4)	0.23 (0.32)	0.97 (0.61)	2.2	0.39	0.58				
SY7□20-□-C8	2 position	Single		C8 One-touch fitting for ø8	3.2	0.26	0.77	3.2	0.37	0.82	107	110	131	114
		Double									126	132	174	140
	3 position	Closed center			2.6	0.24	0.63	2.4	0.31	0.62	134	140	182	148
		Exhaust center			2.4	0.25	0.57	2.6 (1.9)	0.42 (0.46)	0.70 (0.56)				
		Pressure center			3.3 (2.4)	0.28 (0.22)	0.78 (0.57)	2.2	0.34	0.60				
SY7□20-□-C10	2 position	Single		C10 One-touch fitting for ø10	3.8	0.26	0.86	3.2	0.34	0.82	103	105	126	109
		Double									122	127	169	135
	3 position	Closed center			2.8	0.27	0.67	2.4	0.21	0.59	130	135	177	143
		Exhaust center			2.5	0.25	0.59	2.7 (2.0)	0.38 (0.38)	0.70 (0.56)				
		Pressure center			3.8 (2.4)	0.25 (0.31)	0.89 (0.61)	2.3	0.38	0.61				

Note) [ ]: denotes normal position.

Series SY5000

Valve model	Type of actuation		Port size 1, 5, 3 (P, EA, EB)	Port size 4, 2 (A, B)	Flow characteristics 1→4/2 (P→A/B) C (dm³/(s·bar))	b	Cv	Flow characteristics 4/2→5/3 (A/B→EA/EB) C (dm³/(s·bar))	b	Cv	Mass (g) Grommet	L/M plug connector	DIN terminal	W M8 connector
SY5□20-□-01	2 position	Single	1/8	1/8	1.9	0.35	0.49	2.4	0.39	0.61	70	72	93	76
		Double									88	93	135	101
	3 position	Closed center			1.7	0.43	0.45	1.8	0.35	0.46	93	98	140	106
		Exhaust center			1.5	0.44	0.41	2.5 (1.5)	0.32 (0.43)	0.59 (0.40)				
		Pressure center			2.2 (0.91)	0.46 (0.58)	0.61 (0.28)	1.8	0.38	0.46				
SY5□20-□-C4	2 position	Single		C4 One-touch fitting for ø4	0.75	0.43	0.20	0.85	0.64	0.30	94	96	117	100
		Double									111	117	159	125
	3 position	Closed center			0.74	0.40	0.19	0.84	0.57	0.28	117	122	164	130
		Exhaust center			0.75	0.36	0.19	0.84 (0.84)	0.64 (0.53)	0.30 (0.27)				
		Pressure center			0.78 (0.71)	0.44 (0.37)	0.21 (0.18)	0.84	0.57	0.27				
SY5□20-□-C6	2 position	Single		C6 One-touch fitting for ø6	1.5	0.33	0.33	2.0	0.37	0.52	88	91	112	95
		Double									106	111	153	119
	3 position	Closed center			1.3	0.31	0.33	1.6	0.32	0.39	111	116	158	124
		Exhaust center			1.3	0.33	0.33	1.8 (1.4)	0.35 (0.37)	0.44 (0.35)				
		Pressure center			1.7 (0.80)	0.31 (0.47)	0.42 (0.23)	1.7	0.33	0.44				
SY5□20-□-C8	2 position	Single		C8 One-touch fitting for ø8	1.9	0.21	0.45	2.3	0.29	0.57	80	82	103	86
		Double									98	103	145	111
	3 position	Closed center			1.6	0.29	0.39	1.7	0.38	0.46	103	108	150	116
		Exhaust center			1.4	0.38	0.39	2.0 (1.5)	0.37 (0.41)	0.52 (0.43)				
		Pressure center			2.2 (1.6)	0.32 (0.44)	0.56 (0.44)	1.8	0.41	0.50				

Note) [ ]: denotes normal position.

Series SY9000

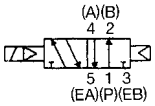
Valve model	Type of actuation		Port size 1, 5, 3 (P, EA, EB)	Port size 4, 2 (A, B)	Flow characteristics 1→4/2 (P→A/B) C (dm³/(s·bar))	b	Cv	Flow characteristics 4/2→5/3 (A/B→EA/EB) C (dm³/(s·bar))	b	Cv	Mass (g) Grommet	L/M plug connector	DIN terminal	W M8 connector
SY9□20-□-02	2 position	Single	1/4	1/4	7.0	0.33	1.7	7.6	0.35	2.0	241	244	265	248
		Double									260	266	308	274
	3 position	Closed center			6.7	0.37	1.7	6.4	0.34	1.6	284	290	332	298
		Exhaust center			6.4	0.36	1.6	8.3 (4.1)	0.41 (0.27)	2.2 (0.91)				
		Pressure center			8.0 (3.2)	0.27 (0.34)	1.8 (0.76)	6.5	0.22	1.4				
SY9□20-□-03	2 position	Single		3/8	8.0	0.29	1.9	8.0	0.33	2.0	236	239	260	243
		Double									255	261	303	269
	3 position	Closed center			7.9	0.33	1.9	6.6	0.27	1.6	279	285	327	293
		Exhaust center			8.0	0.33	1.9	8.7 (8.3)	0.34 (0.40)	2.2 (2.3)				
		Pressure center			8.9 (3.3)	0.34 (0.40)	2.2 (0.82)	6.5	0.25	1.5				
SY9□20-□-C8	2 position	Single		C8 One-touch fitting for ø8	4.3	0.28	0.96	7.1	0.32	1.7	293	296	317	300
		Double									312	318	360	326
	3 position	Closed center			4.3	0.31	0.99	6.1	0.28	1.4	336	342	384	350
		Exhaust center			4.3	0.3	0.99	7.4 (3.8)	0.36 (0.29)	1.9 (0.86)				
		Pressure center			4.4 (3.2)	0.35 (0.26)	1.0 (0.71)	2.1	0.41	0.53				
SY9□20-□-C10	2 position	Single		C10 One-touch fitting for ø10	6.1	0.28	1.4	7.9	0.33	1.9	279	282	303	286
		Double									298	304	346	312
	3 position	Closed center			5.9	0.30	1.4	6.5	0.26	1.5	322	328	370	336
		Exhaust center			5.8	0.25	1.3	8.4 (4.1)	0.33 (0.27)	2.0 (0.93)				
		Pressure center			6.3 (3.2)	0.29 (0.29)	1.5 (0.72)	6.4	0.25	1.5				
SY9□20-□-C12	2 position	Single		C12 One-touch fitting for ø12	7.0	0.25	1.6	8.6	0.41	2.2	265	268	289	272
		Double									284	290	332	298
	3 position	Closed center			6.9	0.24	1.6	7.0	0.33	1.7	308	314	356	322
		Exhaust center			6.6	0.23	1.4	9.4 (4.5)	0.48 (0.32)	2.6 (1.0)				
		Pressure center			7.4 (3.2)	0.25 (0.34)	1.7 (0.74)	6.6	0.23	1.5				

Note) [ ]: denotes normal position.

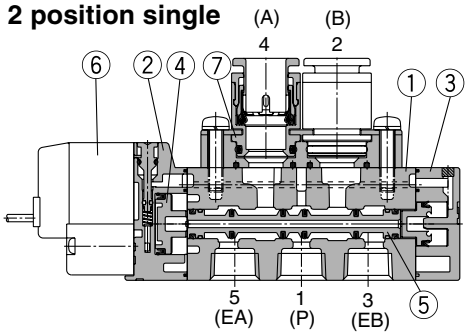
Construction

Series SY

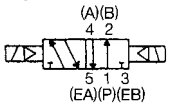
JIS Symbol
2 position single



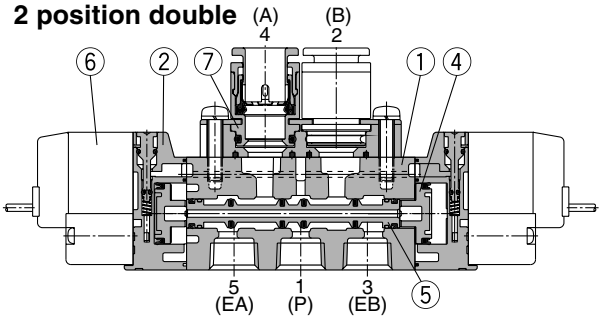
2 position single



JIS Symbol
2 position double

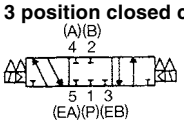


2 position double

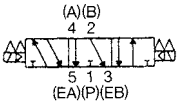


3 position closed center / exhaust center / pressure center

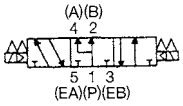
JIS Symbol
3 position closed center

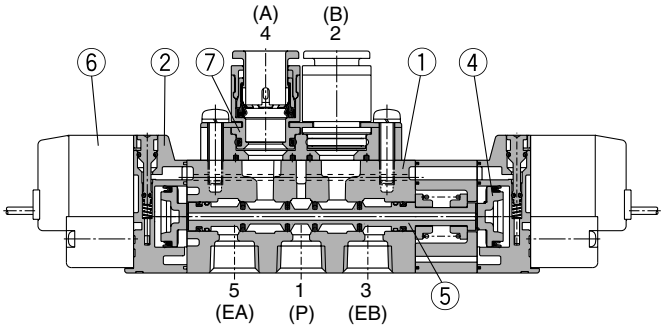


3 position exhaust center



3 position pressure center





(This figure shows a closed center type.)

Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum die-casted (SY3000: Zinc die-casted)	White
2	**Adapter plate**	Resin	White (SY9000: Gray)
3	**End plate**	Resin	White
4	**Piston**	Resin	–
5	**Spool valve assembly**	Aluminum, H-NBR	–

Replacement Parts

No.	Description	Part no.
6	**Pilot valve assembly**	Refer to "How to Order Pilot Valve Assembly" on page 112.
7	**M5 port block assembly**	Refer to "How to Order Port Block Assembly" on page 113.

Bracket Assembly No.

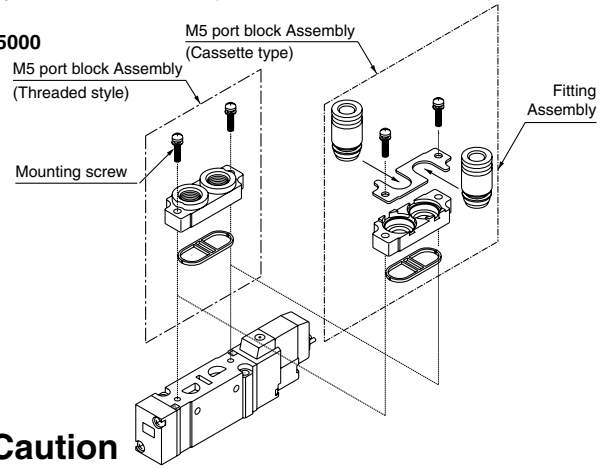
Description	Part no.
Bracket (For F1)	SX$^{3}_{5}_{7}$000-16-2A (with mounting screw)
Bracket (For F2)	SX$^{3}_{5}_{7}$000-16-1A (with mounting screw)

∗ SY9000 has no bracket.

How to Change Port Block Assembly

If using body port type, both A and B port sizes can be changed by replacing the port block assembly mounted on the body. When changing this block assembly, the correct screw torque must be achieved to avoid possible air leakage.

For SY5000



⚠ Caution

Mounting screw tightening torques

SY3000 (M2): 0.12 N·m
SY$^{5}_{7}$000 (M3): 0.6 N·m
SY9000 (M4): 1.4 N·m

∗ Refer to "How to Order Port Block Assembly" on page 113 for part no.

How to Order Pilot Valve Assembly

V111 □ – 5 G □

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

∗ Power saving circuit is not available in the case of D, DO or W□ type.

Light/surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
∗ For "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Rated voltage

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC
1	100 VAC 50/60Hz
2	200 VAC 50/60Hz
3	110 VAC 50/60Hz [115 VAC 50/60Hz]
4	220 VAC 50/60Hz [230 VAC 50/60Hz]

∗ For type W□, DC voltage is only available.
∗ CE-compliant: For DC only.

Electrical entry

G	Grommet, 300 mm lead wire	
H	Grommet, 600 mm lead wire	
L	L plug connector	With lead wire
LN		Without lead wire
LO		Without connector
M	M plug connector	With lead wire
MN		Without lead wire
MO		Without connector
WO	M8 connector	Without connector cable
W□		With connector cable Note 1)

∗ For connector cable of M8 connector, refer to page 339.
Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

■ DIN terminal type

V115 – 5 D □

Rated voltage

5	24 VDC
6	12 VDC
1	100 VAC 50/60 Hz
2	200 VAC 50/60 Hz
3	110 VAC 50/60 Hz [115 VAC 50/60 Hz]
4	220 VAC 50/60 Hz [230 VAC 50/60 Hz]

∗ DC specifications of type D and DO is only available with 12 and 24 VDC.

Light/surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

∗ DOZ and YOZ are not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

D	DIN terminal (Type D)	With connector
DO		Without connector
Y	DIN terminal (Type Y)	With connector
YO		Without connector

Note) Do not replace V111 (G, H, L, M) to V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

Note) Since V111 and V115 are CE-compliant as standard, the suffix "-Q" is not necessary.

How to Order Port Block Assembly

SY □ 000 − 6A − □ □

Series

3	SY3000
5	SY5000
7	SY7000
9	SY9000

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ Except for M5

A, B port size

Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
01	1/8	SY5000
02	1/4	SY7000
02	1/4	SY9000
03	3/8	

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	
C8	One-touch fitting for ø8	SY9000
C10	One-touch fitting for ø10	
C12	One-touch fitting for ø12	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø 5/32"	SY3000
N7	One-touch fitting for ø 1/4"	
N3	One-touch fitting for ø 5/32"	SY5000
N7	One-touch fitting for ø 1/4"	
N9	One-touch fitting for ø 5/16"	
N9	One-touch fitting for ø 5/16"	SY7000
N11	One-touch fitting for ø 3/8"	
N9	One-touch fitting for ø 5/16"	SY9000
N11	One-touch fitting for ø 3/8"	

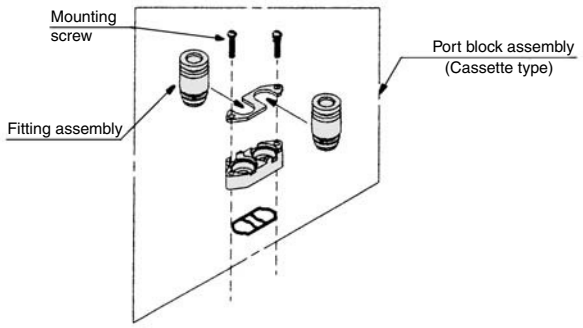
∗ Only replacement of the fittings assembly is possible.

Metric size

SY3000	One-touch fitting for ø4	VVQ1000-50A-C4
	One-touch fitting for ø6	VVQ1000-50A-C6
SY5000	One-touch fitting for ø4	VVQ1000-51A-C4
	One-touch fitting for ø6	VVQ1000-51A-C6
	One-touch fitting for ø8	VVQ1000-51A-C8
SY7000	One-touch fitting for ø8	VVQ2000-51A-C8
	One-touch fitting for ø10	VVQ2000-51A-C10
SY9000	One-touch fitting for ø8	VVQ4000-50B-C8
	One-touch fitting for ø10	VVQ4000-50B-C10
	One-touch fitting for ø12	VVQ4000-50B-C12

Inch size

SY3000	One-touch fitting for ø 5/32"	VVQ1000-50A-N3
	One-touch fitting for ø 1/4"	VVQ1000-50A-N7
SY5000	One-touch fitting for ø 5/32"	VVQ1000-51A-N3
	One-touch fitting for ø 1/4"	VVQ1000-51A-N7
	One-touch fitting for ø 5/16"	VVQ1000-51A-N9
SY7000	One-touch fitting for ø 5/16"	VVQ2000-51A-N9
	One-touch fitting for ø 3/8"	VVQ2000-51A-N11
SY9000	One-touch fitting for ø 5/16"	VVQ4000-50B-N9
	One-touch fitting for ø 3/8"	VVQ4000-50B-N11

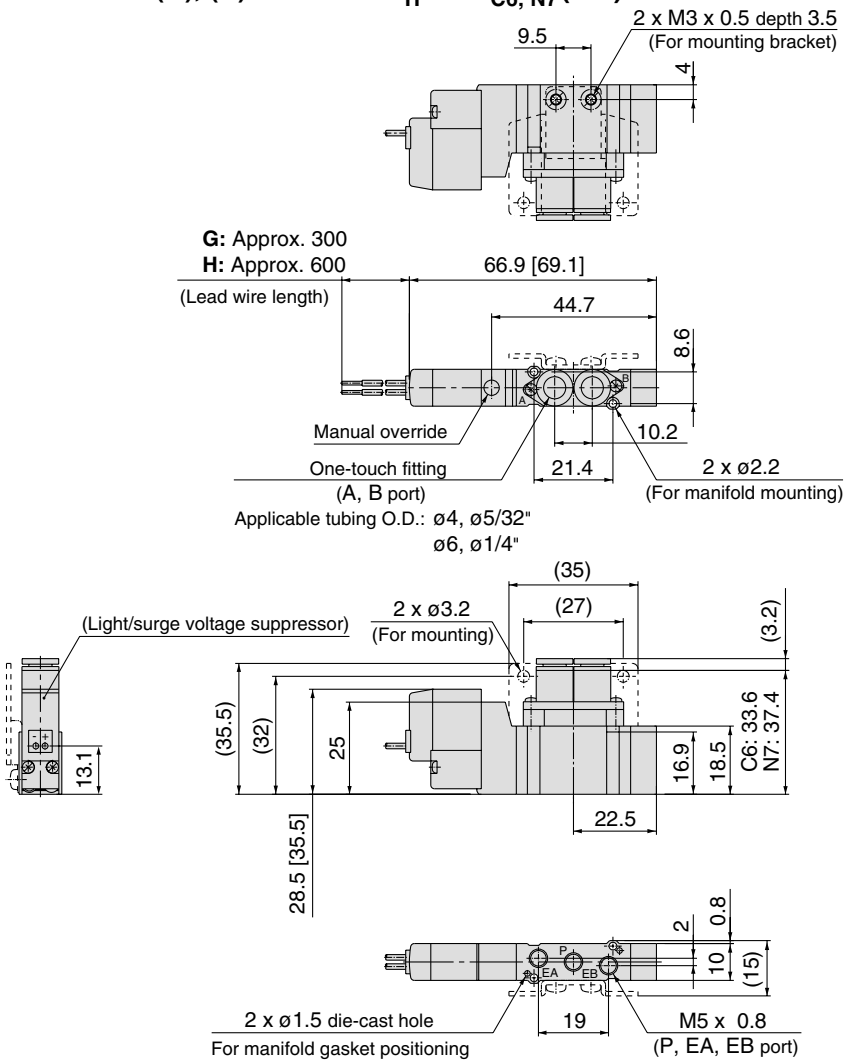


Dimensions: Series SY3000

[ ]: AC

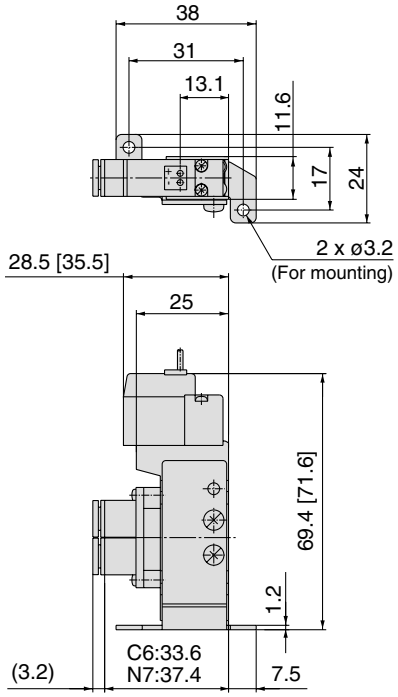
2 position single

Grommet (G), (H): SY3120-□$^{G}_{H}$□□-$^{C4, N3}_{C6, N7}$(-F2)

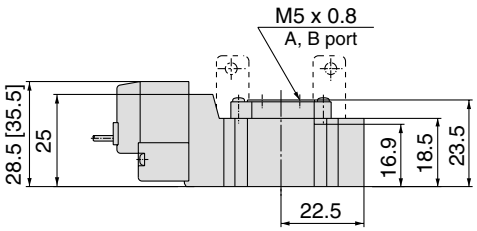


Foot bracket

SY3120-□$^{G}_{H}$□□-$^{C4, N3}_{C6, N7}$-F1

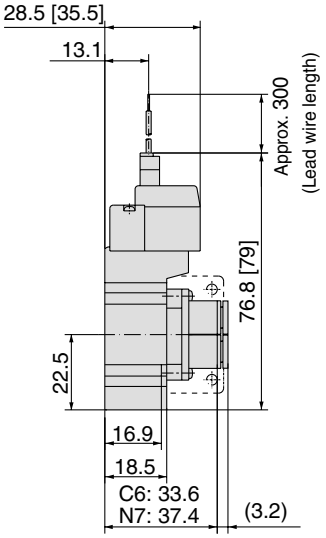


SY3120-□$^{G}_{H}$□□-M5(-F2)



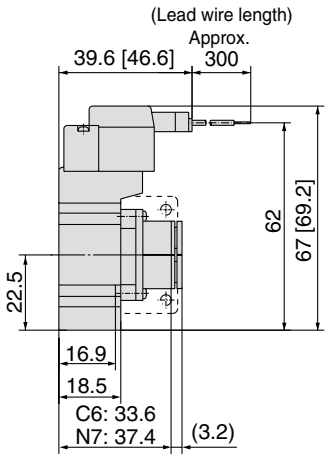
L plug connector (L):

SY3120-□L□□-$^{C4, N3}_{C6, N7}$(-F$^{1}_{2}$)



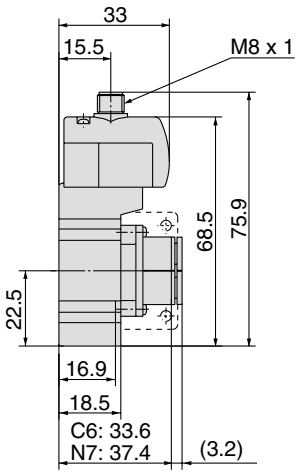
M plug connector (M):

SY3120-□M□□-$^{C4, N3}_{C6, N7}$(-F$^{1}_{2}$)



M8 connector (WO):

SY3120-□WO□□-$^{C4, N3}_{C6, N7}$(-F$^{1}_{2}$)

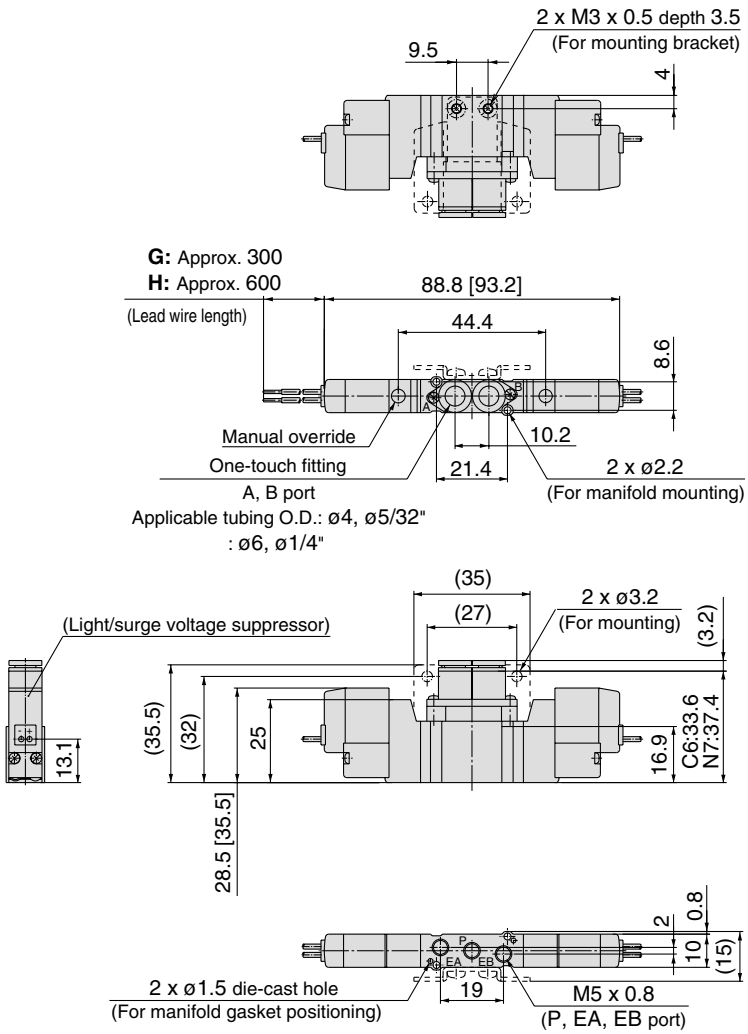


Note) Refer to page 340 for dimensions of connector types.

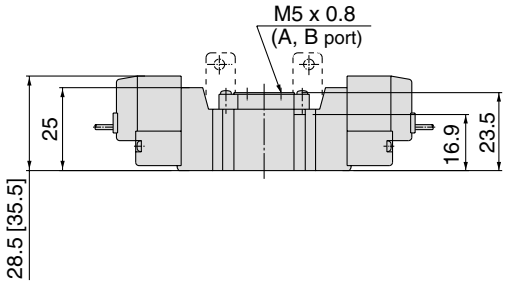
Dimensions: Series SY3000

[ ]: AC

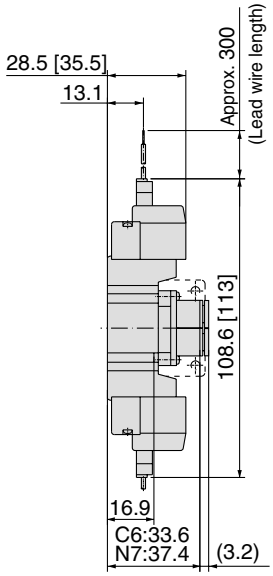
2 position double
Grommet (G), (H): SY3220-□ G/H □□-C4, N3 / C6, N7 (-F2)



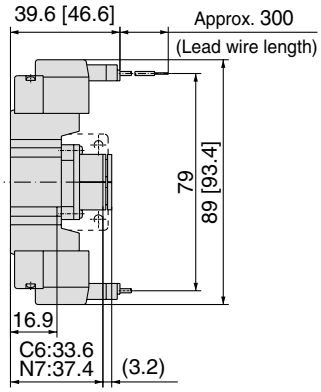
SY3220-□ G/H □□-M5(-F2)



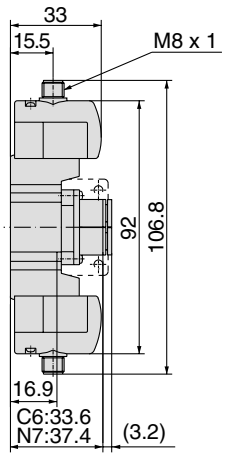
L plug connector (L):
SY3220-□L□□- C4, N3 / C6, N7 (-F2)



M plug connector (M):
SY3220-□M□□- C4, N3 / C6, N7 (-F2)



M8 connector (WO):
SY3220-WO□□- C4, N3 / C6, N7 (-F 1 2)

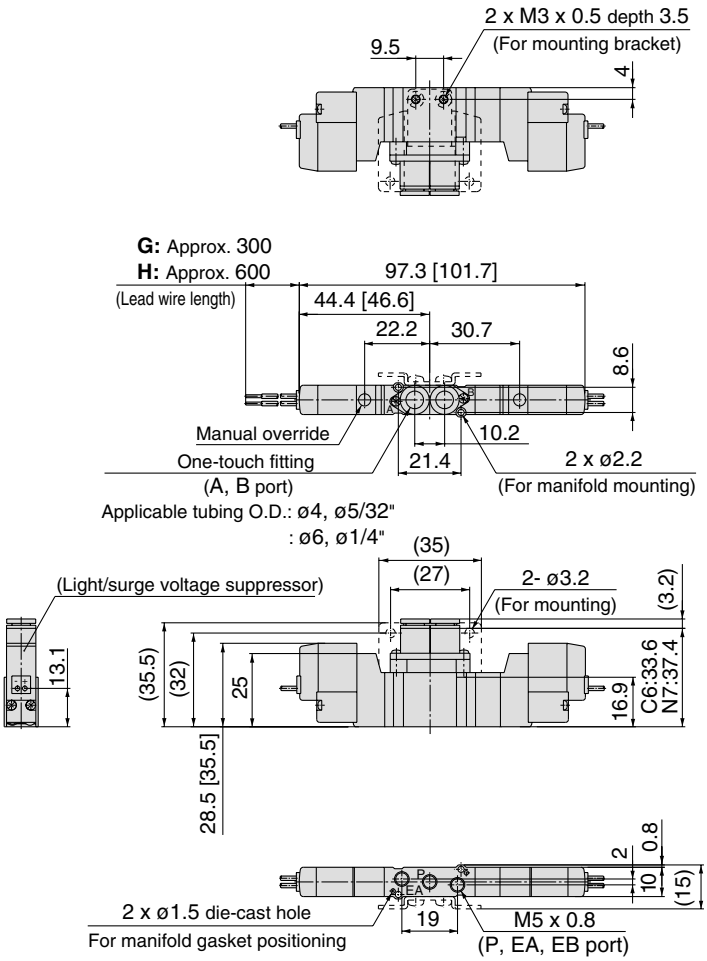


Note) Refer to page 340 for dimensions of connector types.

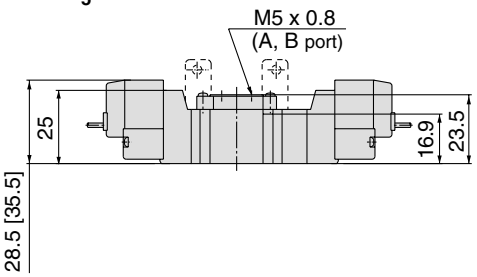
Dimensions: Series SY3000

[ ]: AC

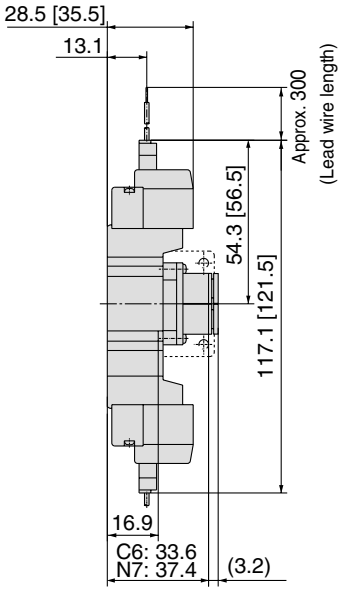
3 position closed center / exhaust center / pressure center
Grommet (G), (H): SY3$^{3}_{5}$20-□$^{G}_{H}$□□-$^{C4, N3}_{C6, N7}$(-F2)



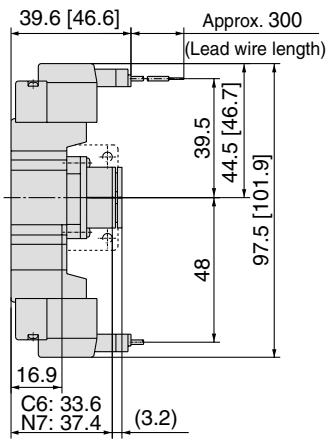
SY3$^{3}_{5}$20-□$^{G}_{H}$□□-M5(-F2)



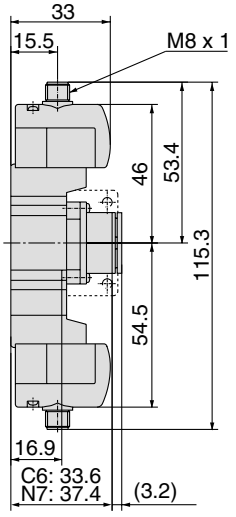
L plug connector (L): SY3$^{3}_{5}$20-□L□□-$^{C4, N3}_{C6, N7}$(-F2)



M plug connector (M): SY3$^{3}_{5}$20-□M□□-$^{C4, N3}_{C6, N7}$(-F2)



M8 connector (WO): SY3$^{3}_{5}$20-□WO□□-$^{C4, N3}_{C6, N7}$(-F2)



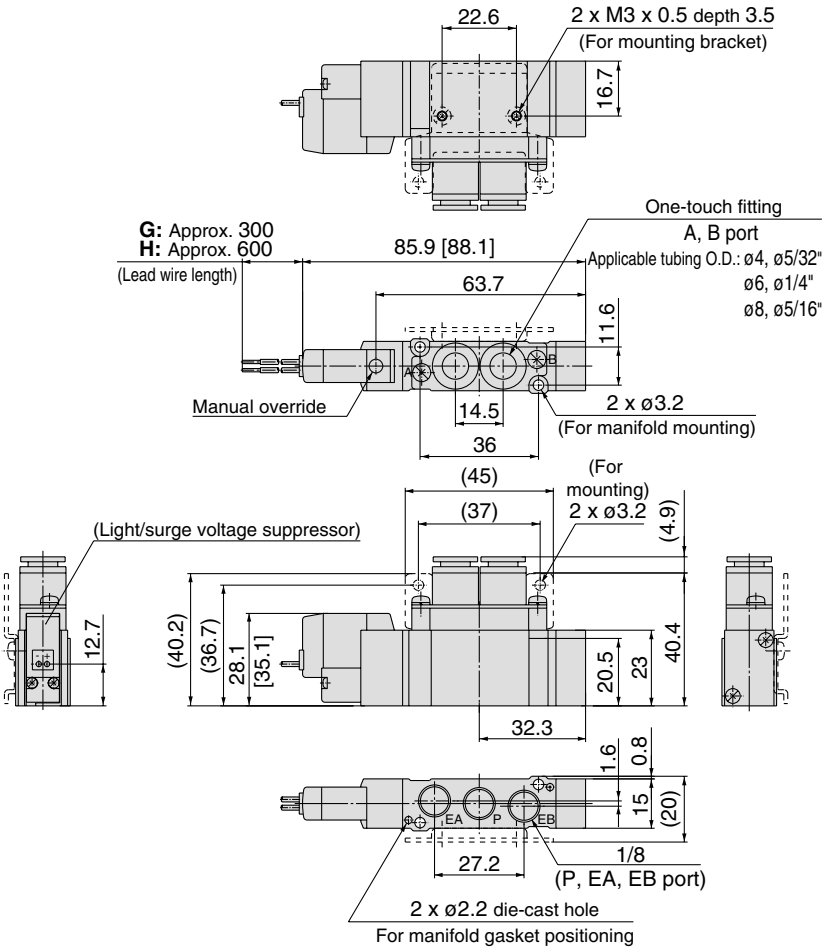
Note) Refer to page 340 for dimensions of connector types.

Dimensions: Series SY5000

[ ]: AC

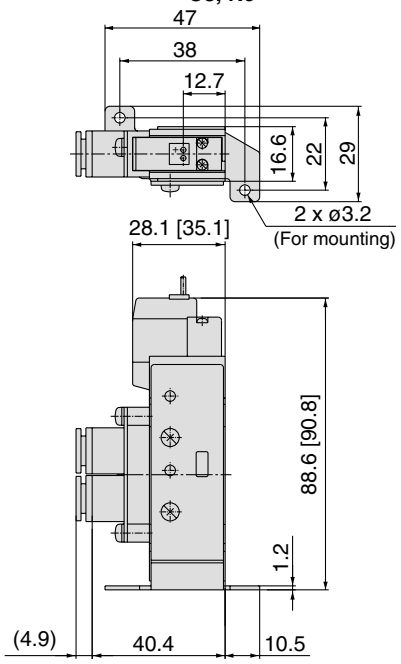
2 position single

Grommet (G), (H): SY5120-□$^{G}_{H}$□□-$^{C4, N3}_{C6, N7, C8, N9}$□(-F2)

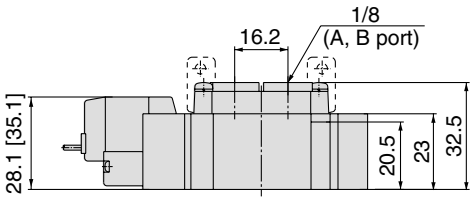


Foot bracket

SY5120-□$^{G}_{H}$□□-$^{C4, N3}_{C6, N7, C8, N9}$□-F1

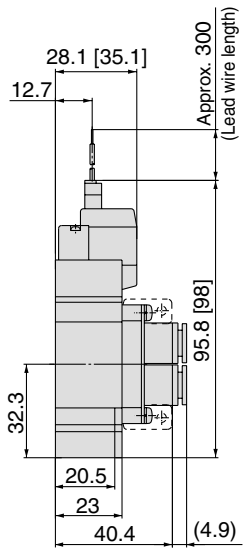


SY5120-□$^{G}_{H}$□□-01□(-F$^{1}_{2}$)



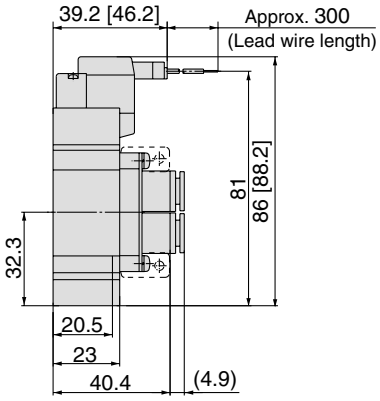
L plug connector (L):

SY5120-□L□□-$^{C4, N3}_{C6, N7, C8, N9}$□(-F$^{1}_{2}$)



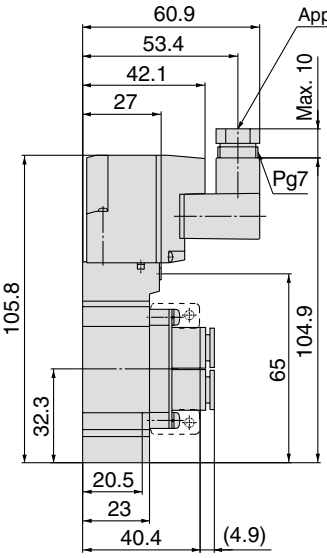
M plug connector (M):

SY5120-□M□□-$^{C4, N3}_{C6, N7, C8, N9}$□(-F$^{1}_{2}$)



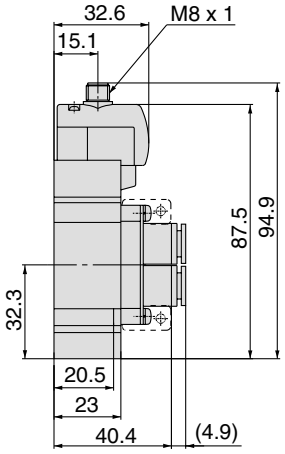
DIN terminal (D, Y):

SY5120-□$^{D}_{Y}$□□-$^{C4, N3}_{C6, N7, C8, N9}$□(-F$^{1}_{2}$)



M8 connector (WO):

SY5120-□WO□□-$^{C4, N3}_{C6, N7, C8, N9}$□(-F$^{1}_{2}$)



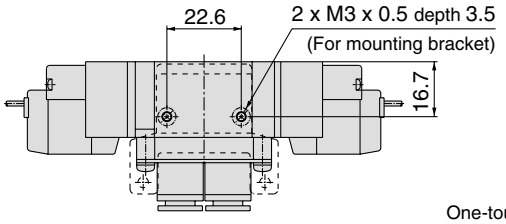
Note) Refer to page 340 for dimensions of connector types.

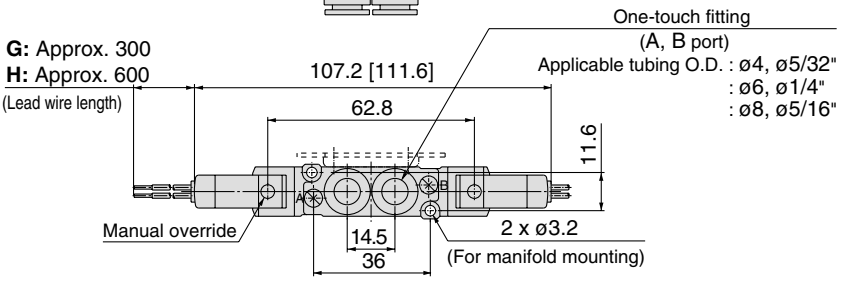
Dimensions: Series SY5000

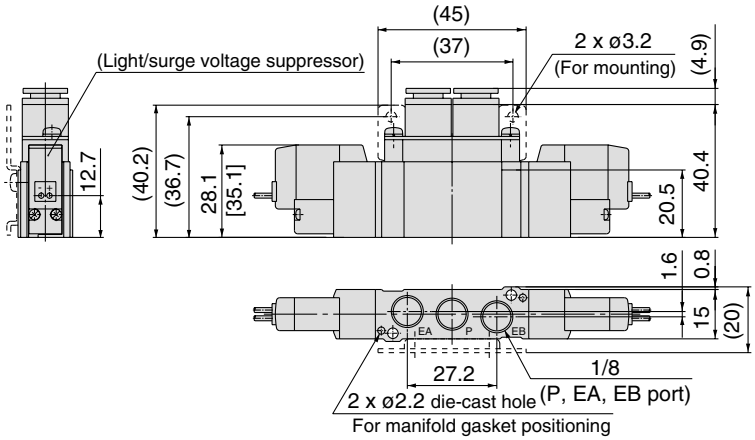
[ ]: AC

2 position double

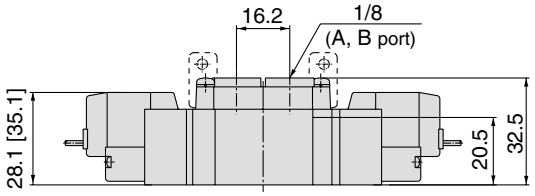
Grommet (G), (H): SY5220-□$^{G}_{H}$□□-$^{C4, N3}_{C6, N7}$□(-F2)
$^{C8, N9}$



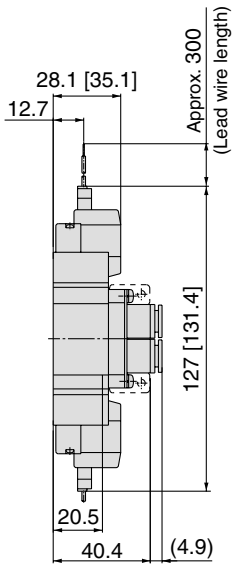




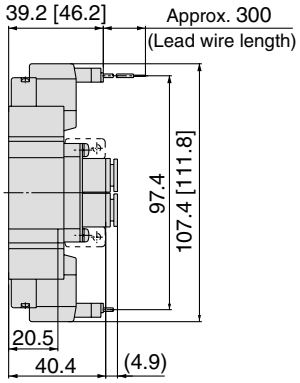
SY5220-□$^{G}_{H}$□□-01□(-F2)



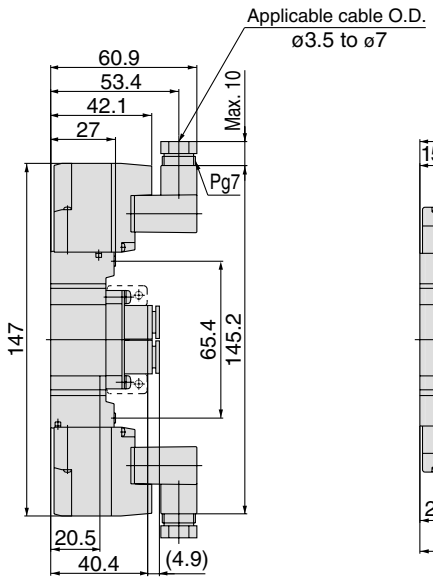
L plug connector (L):
SY5220-□L□□-$^{C4, N3}_{C6, N7}$□(-F2)
$^{C8, N9}$



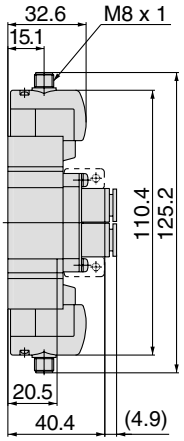
M plug connector (M):
SY5220-□M□□-$^{C4, N3}_{C6, N7}$□(-F2)
$^{C8, N9}$



DIN terminal (D, Y):
SY5220-□$^{D}_{Y}$□□-$^{C4, N3}_{C6, N7}$□(-F2)
$^{C8, N9}$



M8 connector (WO):
SY5220-□WO□□-$^{C4, N3}_{C6, N7}$□(-F2)
$^{C8, N9}$



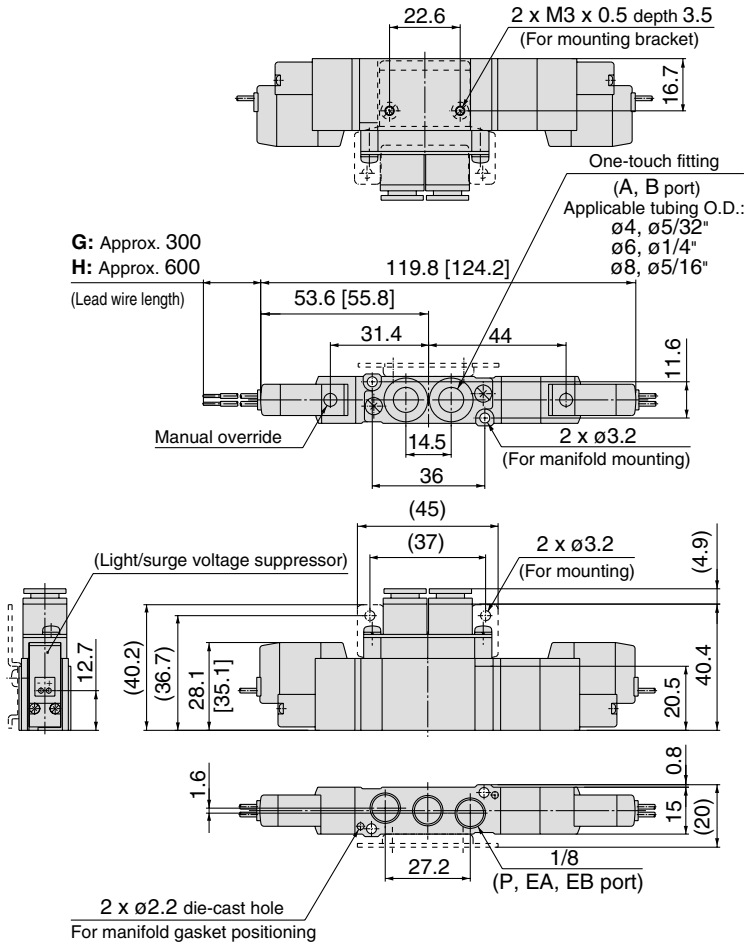
Note) Refer to page 340 for dimensions of connector types.

Dimensions: Series SY5000

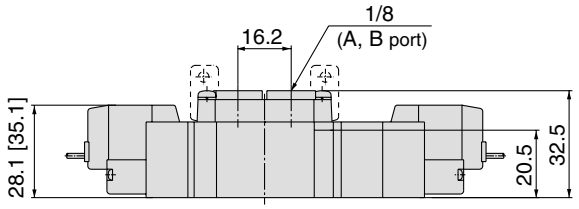
[ ]: AC

3 position closed center / exhaust center / pressure center

Grommet (G), (H): SY5$^{3}_{5}$20-□$^{G}_{H}$□□-$^{C4, N3}_{C6, N7 C8, N9}$□(-F2)



SY5$^{3}_{5}$20-□$^{3}_{4}$□□-01□(-F2)

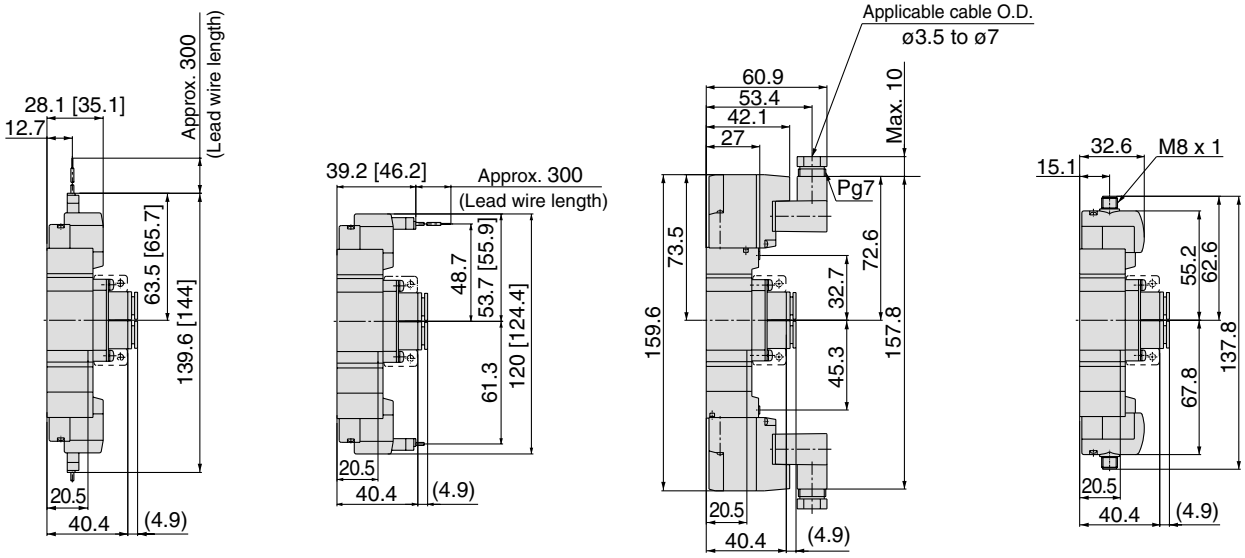


L plug connector (L): SY5$^{3}_{5}$20-□L□□-$^{C4, N3}_{C6, N7 C8, N9}$□(-F2)

M plug connector (M): SY5$^{3}_{5}$20-□M□□-$^{C4, N3}_{C6, N7 C8, N9}$□(-F2)

DIN terminal (D, Y): SY5$^{3}_{5}$20-□$^{D}_{Y}$□□-$^{C4, N3}_{C6, N7 C8, N9}$□(-F2)

M8 connector (WO): SY5$^{3}_{5}$20-□WO□□-$^{C4, N3}_{C6, N7 C8, N9}$□(-F2)



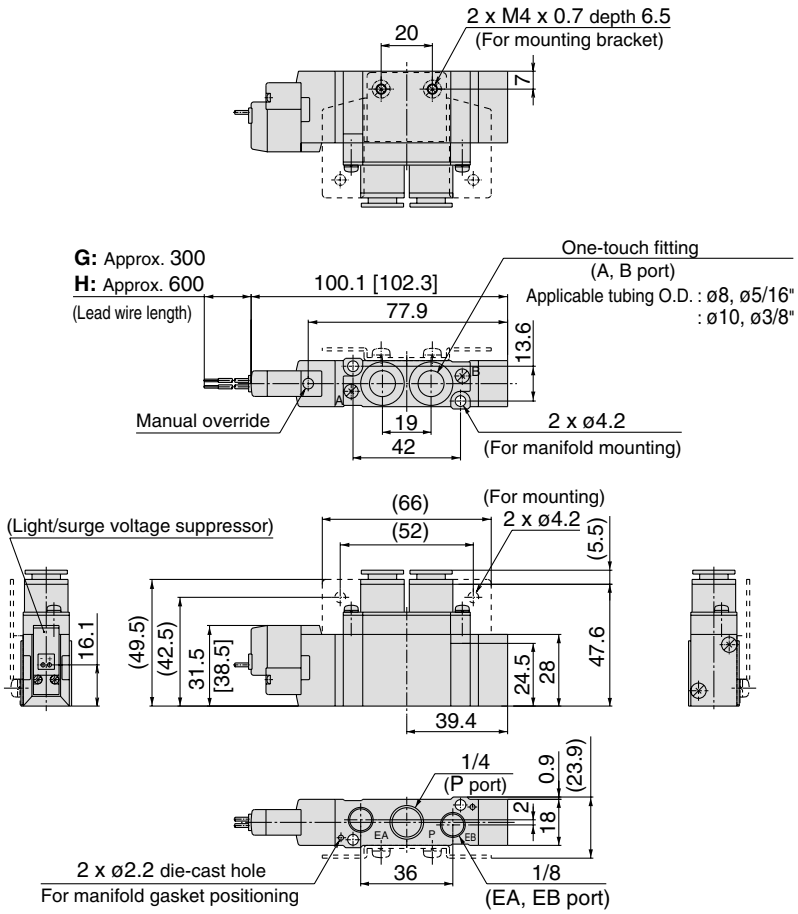
Note) Refer to page 340 for dimensions of connector types.

Dimensions: Series SY7000

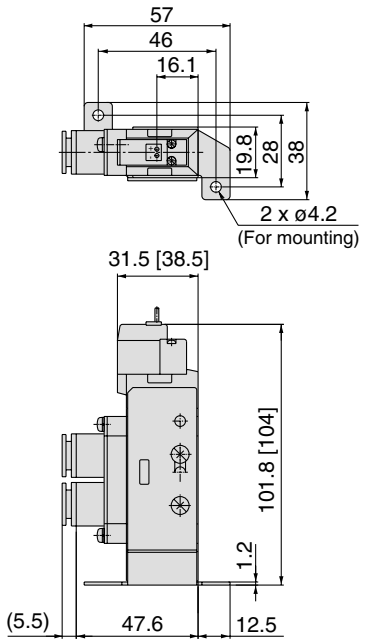
[ ]: AC

2 position single

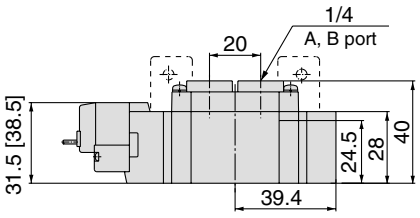
Grommet (G), (H): SY7120-□$^{G}_{H}$□□-$^{C8, N9}_{C10, N11}$□(-F2)



SY7120-□$^{G}_{H}$□-$^{C8, N9}_{C10, N11}$□-F1



SY7120-□$^{G}_{H}$□□-02□(-F2)

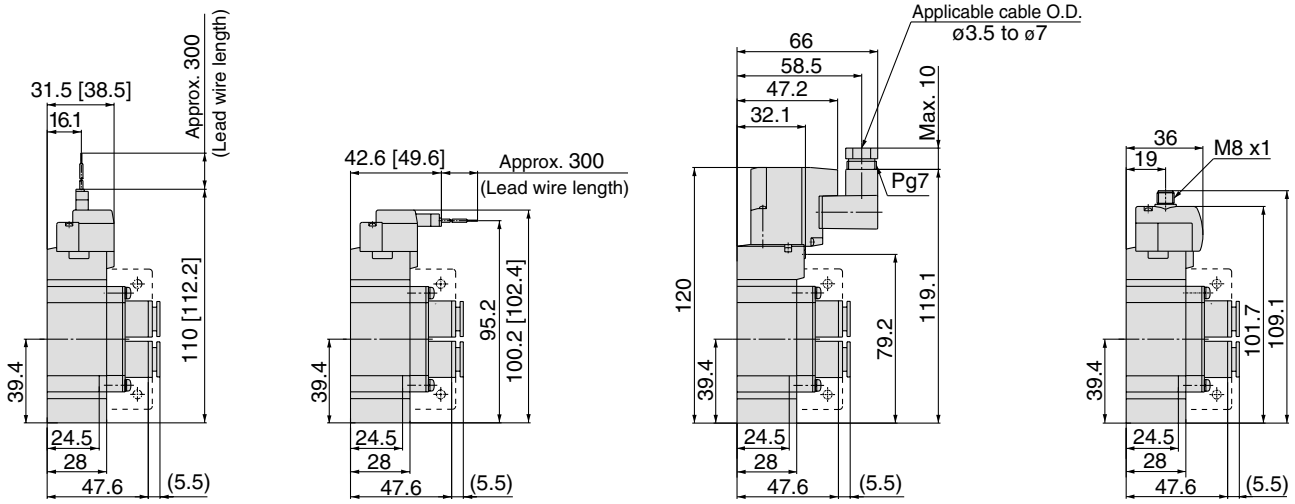


L plug connector (L): SY7120-□L□□-$^{C8, N9}_{C10, N11}$□(-F$^{1}_{2}$)

M plug connector (M): SY7120-□M□□-$^{C8, N9}_{C10, N11}$□(-F$^{1}_{2}$)

DIN terminal (D, Y): SY7120-□$^{D}_{Y}$□□-$^{C8, N9}_{C10, N11}$□(-F$^{1}_{2}$)

M8 connector (WO): SY7120-□WO□□-$^{C8, N9}_{C10, N11}$□(-F$^{1}_{2}$)



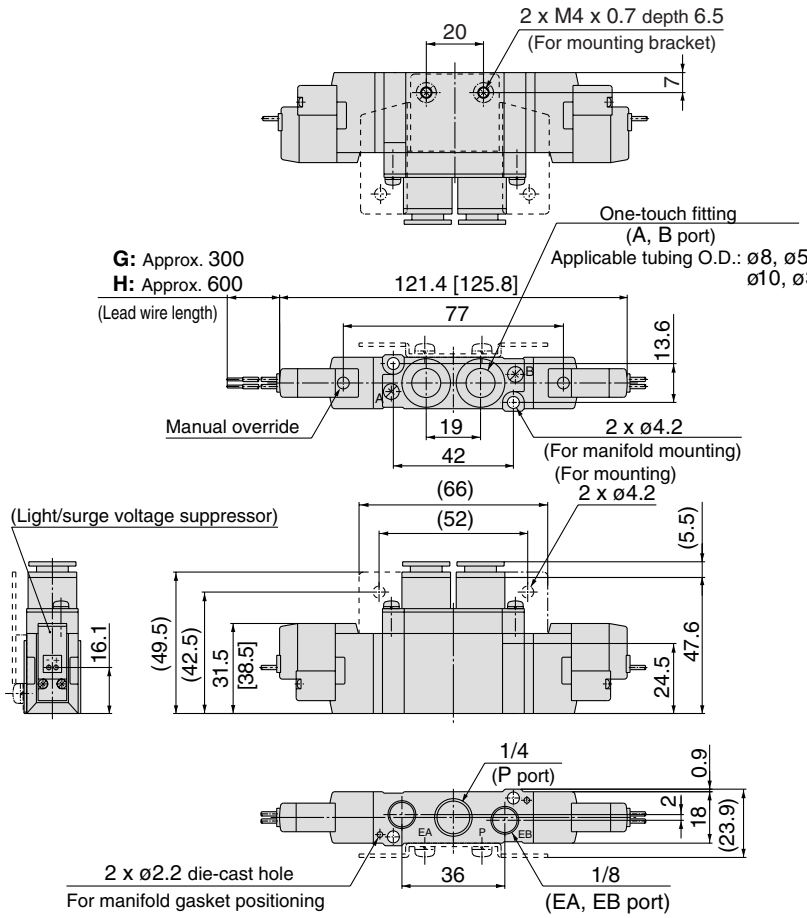
Note) Refer to page 340 for dimensions of connector types.

Dimensions: Series SY7000

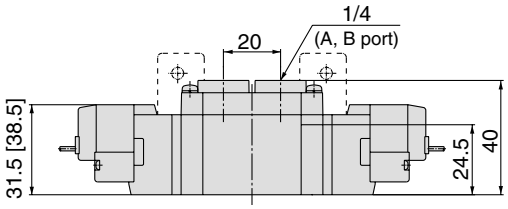
[ ]: AC

2 position double

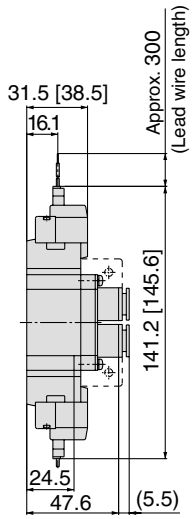
Grommet (G), (H): SY7220-□$^{G}_{H}$□□-$^{C8,\ N9}_{C10,\ N11}$□(-F2)



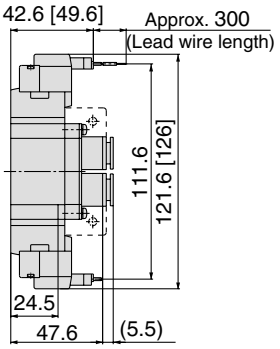
SY7220-□$^{G}_{H}$□□-02□(-F2)



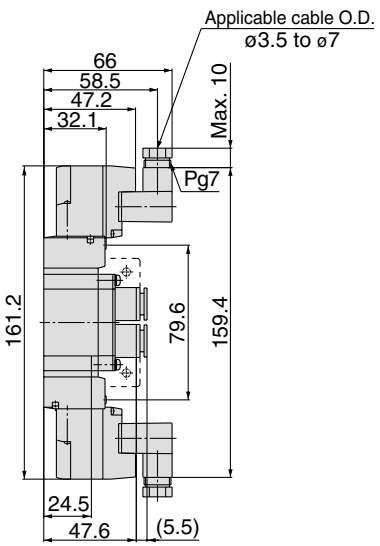
L plug connector (L): SY7220-□L□□-$^{C8,\ N9}_{C10,\ N11}$□(-F2)



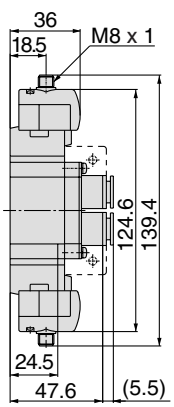
M plug connector (M): SY7220-□M□□-$^{C8,\ N9}_{C10,\ N11}$□(-F2)



DIN terminal (D, Y): SY7220-□$^{D}_{Y}$□□-$^{C8,\ N9}_{C10,\ N11}$□(-F2)



M8 connector (WO): SY7220-□WO□□-$^{C8,\ N9}_{C10,\ N11}$□(-F2)



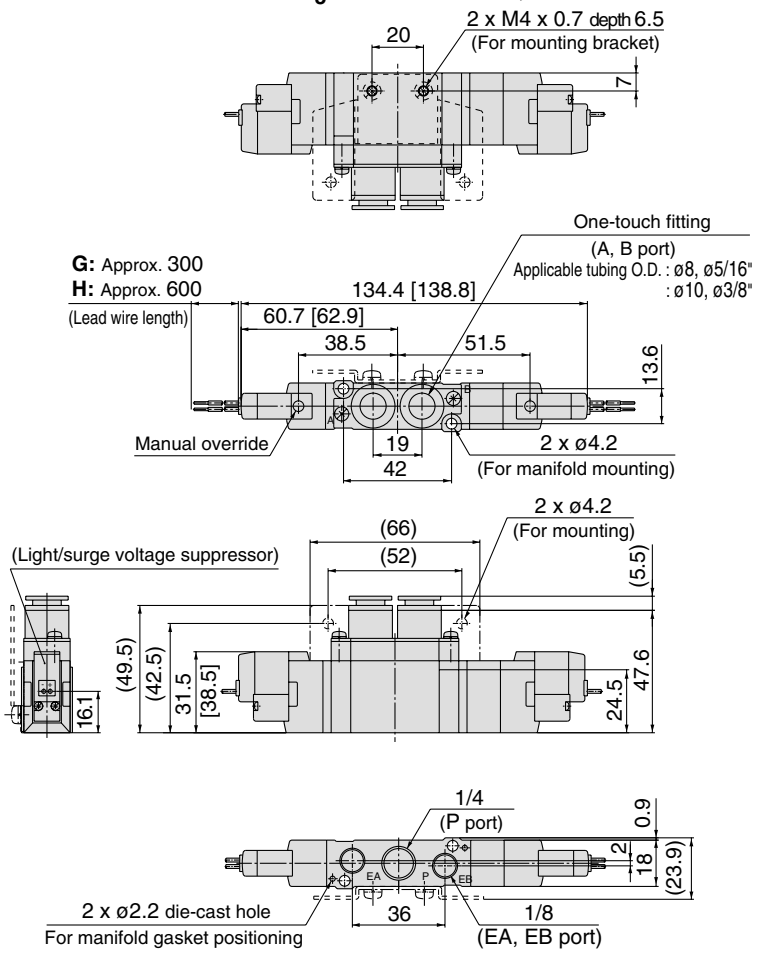
Note) Refer to page 340 for dimensions of connector types.

Dimensions: Series SY7000

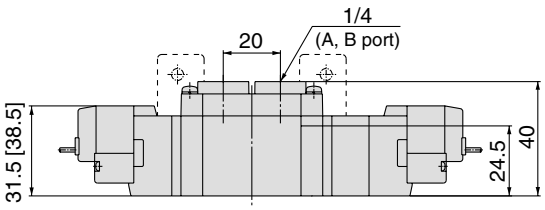
[ ]: AC

3 position closed center / exhaust center / pressure center

Grommet (G), (H): SY7$^{3}_{5}$20-□$^{G}_{H}$□□-$^{C8, N9}_{C10, N11}$□(-F2)



SY7$^{3}_{5}$20-□$^{G}_{H}$□□-02□(-F2)

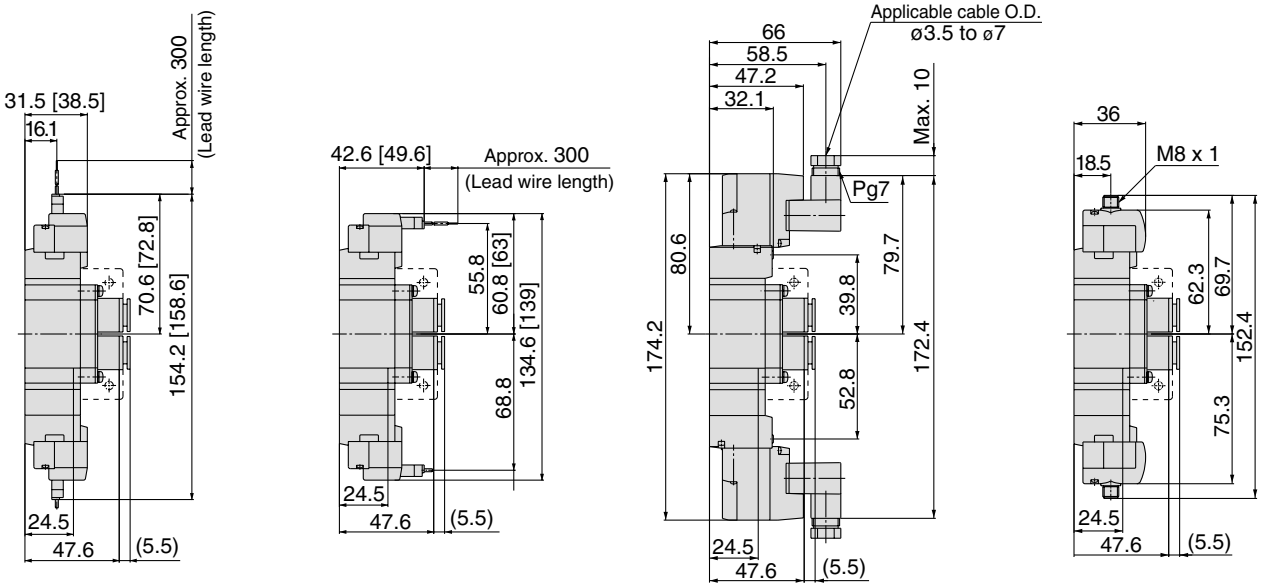


L plug connector (L): SY7$^{3}_{5}$20-□L□□-$^{C8, N9}_{C10, N11}$□(-F2)

M plug connector (M): SY7$^{3}_{5}$20-□M□□-$^{C8, N9}_{C10, N11}$□(-F2)

DIN terminal (D, Y): SY7$^{3}_{5}$20-□$^{D}_{Y}$□□-$^{C8, N9}_{C10, N11}$□(-F2)

M8 connector (WO): SY7$^{3}_{5}$20-□WO□□-$^{C8, N9}_{C10, N11}$□(-F2)

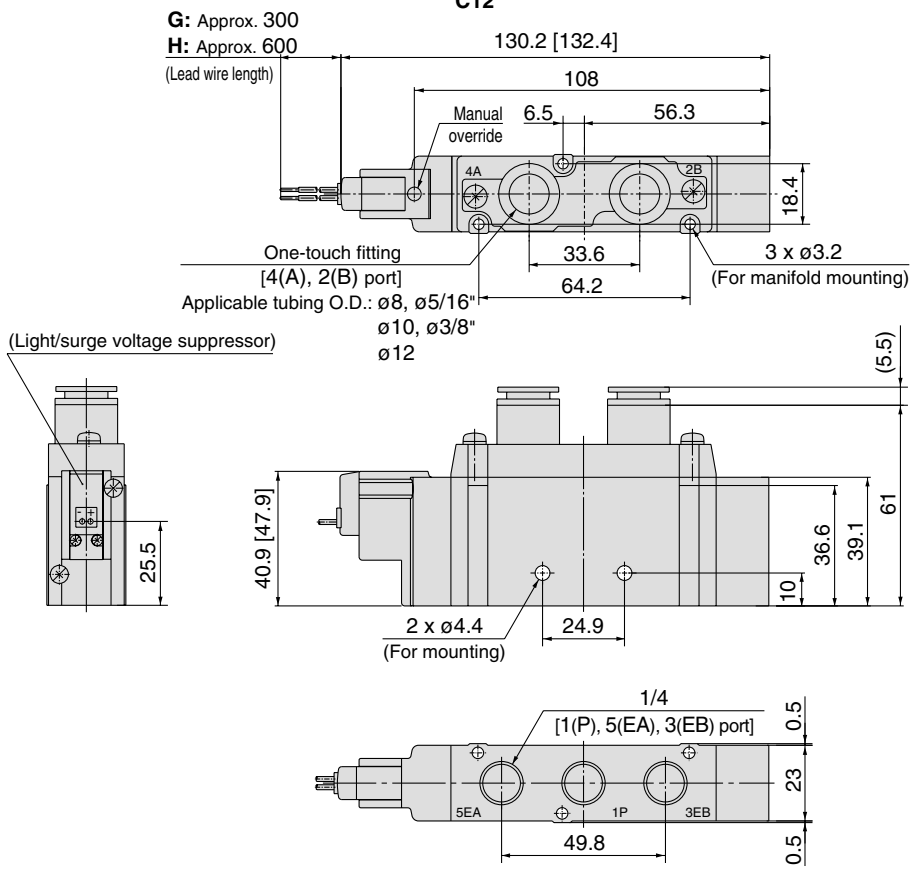


Note) Refer to page 340 for dimensions of connector types.

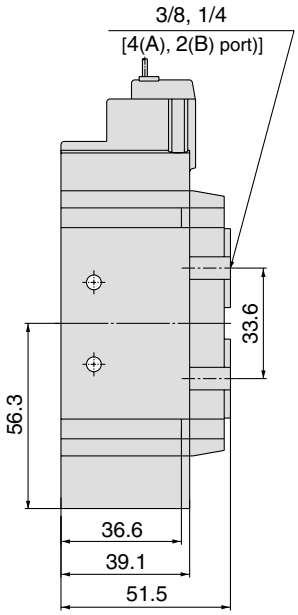
Dimensions: Series SY9000

[ ] AC

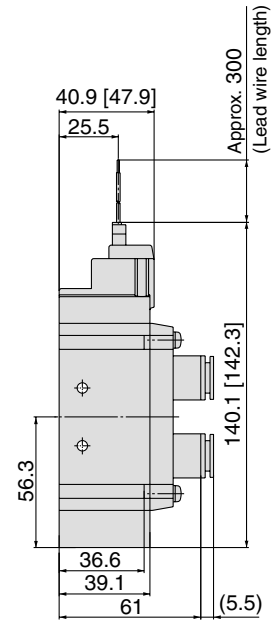
2 position single
Grommet (G), (H): SY9120-□$^{G}_{H}$□□-$^{C8, N9}_{C10, N11}$□
C12



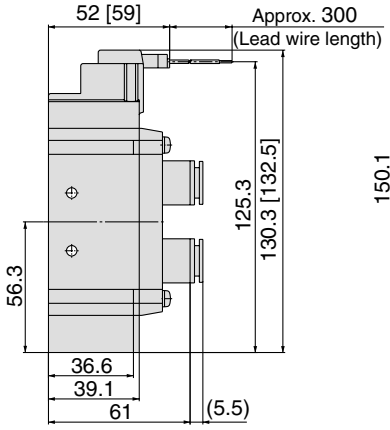
SY9120-□$^{G}_{H}$□□-$^{02}_{03}$□



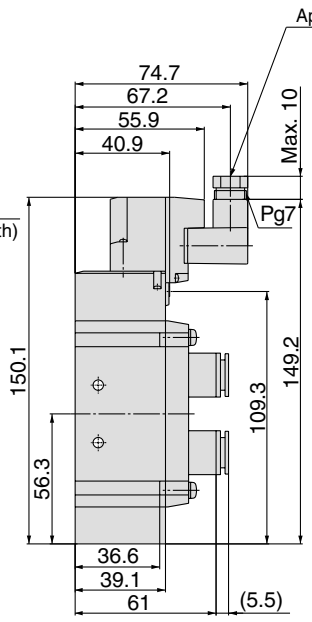
L plug connector (L):
SY9120-□L□□-$^{C8, N9}_{C10, N11}$□
C12



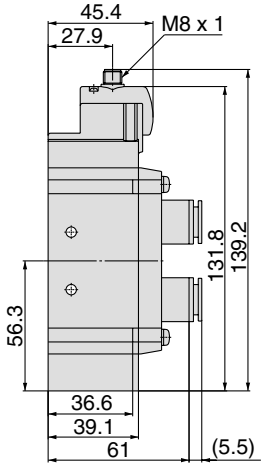
M plug connector (M):
SY9120-□M□□-$^{C8, N9}_{C10, N11}$□
C12



DIN terminal (D, Y):
SY9120-□$^{D}_{Y}$□□-$^{C8, N9}_{C10, N11}$□
C12



M8 connector (WO):
SY9120-□WO□□-$^{C8, N9}_{C10, N11}$□
C12

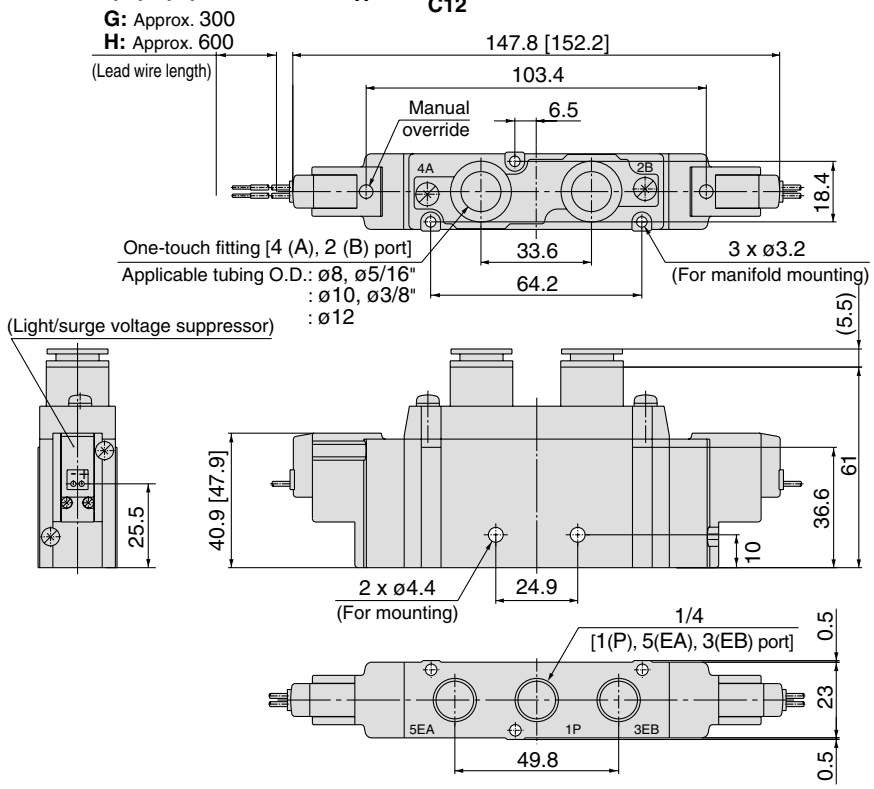


Note) Refer to page 340 for dimensions of connector types.

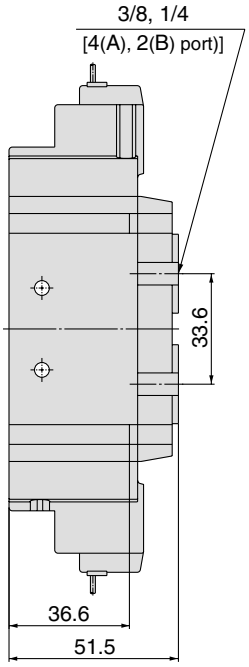
Dimensions: Series SY9000

[ ] : AC

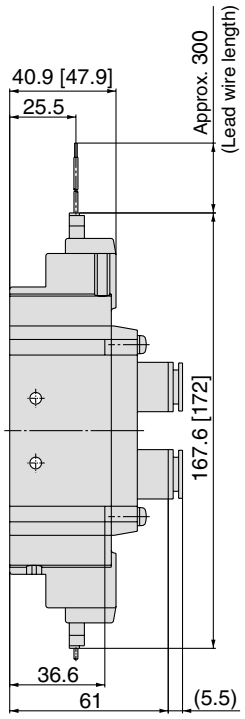
2 position double
Grommet (G), (H): SY9220-□$^{G}_{H}$□□-$^{C8, N9}_{C10, N11}$□



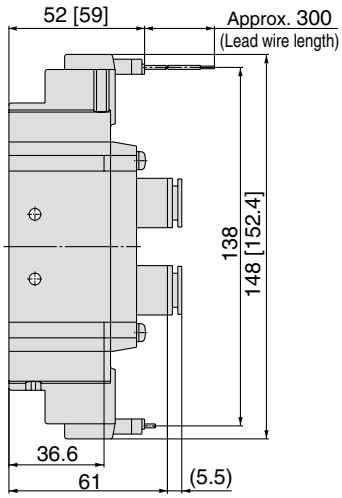
SY9220-□$^{G}_{H}$□□-$^{02}_{03}$□



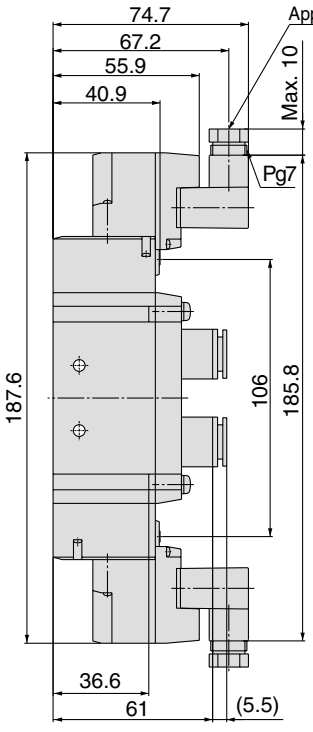
L plug connector (L): SY9220-□L□□-$^{C8, N9}_{C10, N11}$□



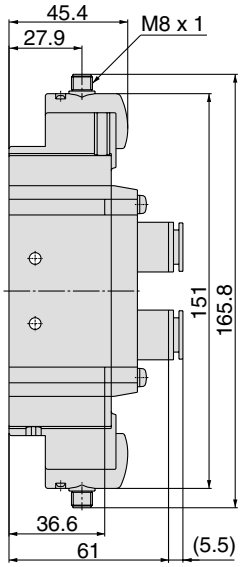
M plug connector (M): SY9220-□M□□-$^{C8, N9}_{C10, N11}$□



DIN terminal (D, Y): SY9220-□$^{D}_{Y}$□□-$^{C8, N9}_{C10, N11}$□



M8 connector (WO): SY9220-□WO□□-$^{C8, N9}_{C10, N11}$□



Note) Refer to page 340 for dimensions of connector types.

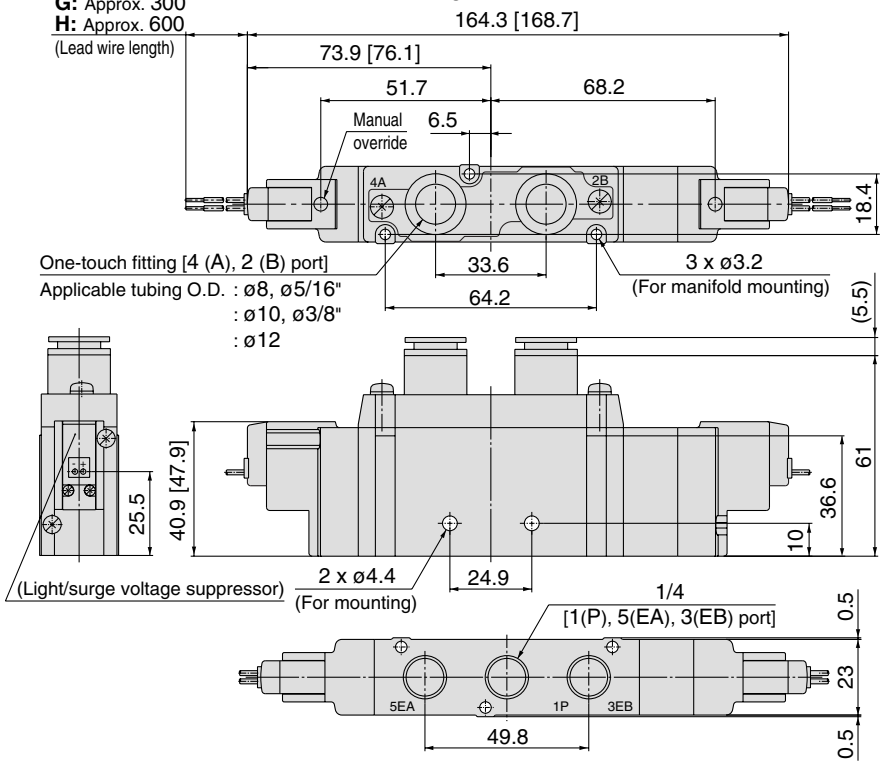
Dimensions: Series SY9000

[ ]: AC

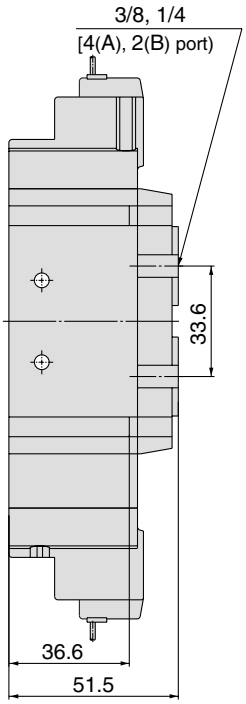
3 position closed center / exhaust center / pressure center

Grommet (G), (H): SY9$^{3}_{5}$4$^{G}_{H}$20-□□□-$^{C8, N9}_{C10, N11}$□

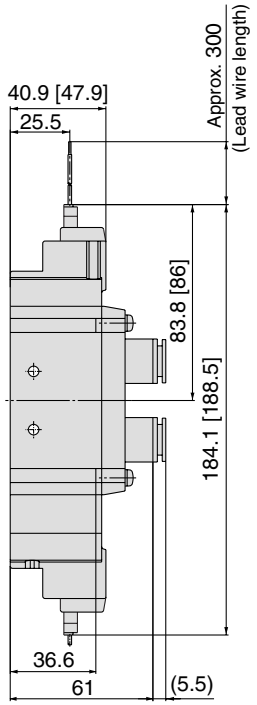
G: Approx. 300
H: Approx. 600
(Lead wire length)



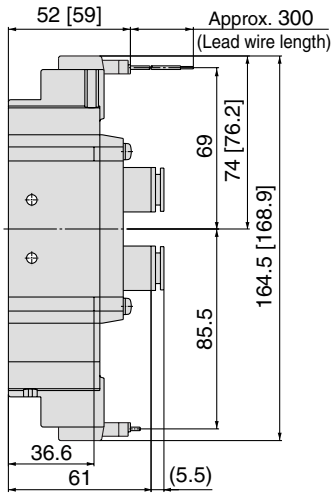
SY9$^{3}_{5}$4$^{G}_{H}$20-□□□-$^{02}_{03}$□



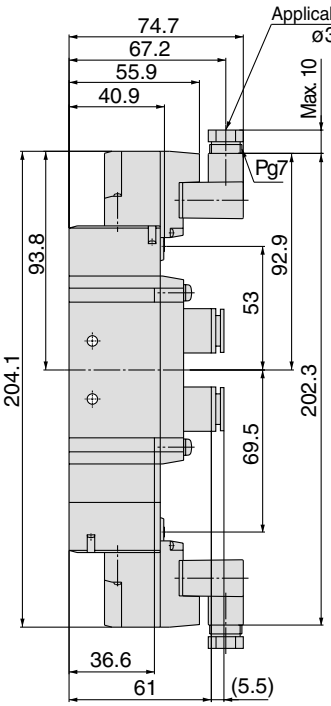
L plug connector (L): SY9$^{3}_{5}$4$^{G}_{H}$20-□L□□-$^{C8, N9}_{C10, N11}$□



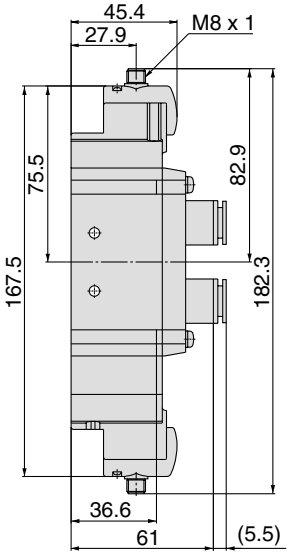
M plug connector (M): SY9$^{3}_{5}$4$^{G}_{H}$20-□M□□-$^{C8, N9}_{C10, N11}$□



DIN terminal (D, Y): SY9$^{3}_{5}$4$^{G}_{H}$20-□$^{D}_{Y}$□□-$^{C8, N9}_{C10, N11}$□



M8 connector (WO): SY9$^{3}_{5}$4$^{G}_{H}$20-□WO□□-$^{C8, N9}_{C10, N11}$□



Note) Refer to page 340 for dimensions of connector types.

5 Port Solenoid Valve
Base Mounted/Single Unit
Series SY3000/5000/7000/9000

CE

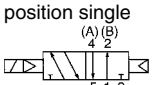
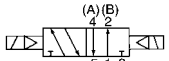
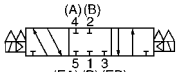
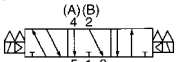
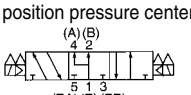
How to Order

SY 5 2 40 □ □ – 5 L □ □ – □ □ – □ – □

Series

3	SY3000
5	SY5000
7	SY7000
9	SY9000

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 

Pilot type

Nil	Internal pilot
R	External pilot

Coil specifications

Nil	Standard
T	With power saving circuit (24, 12 VDC only)

∗ Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

Rated voltage

For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

For AC (50/60 Hz)

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

∗ DC specifications of type D, Y, DO and YO is only available with 12 and 24 VDC.
∗ For type W□, DC voltage is only available.

Port size

Symbol	Port size	Applicable series
Nil	Without sub-plate	
01	1/8 With sub-plate	SY3000
02	1/4 With sub-plate	SY5000 SY7000
03	3/8 With sub-plate	SY7000 SY9000
04	1/2 With sub-plate	SY9000

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Made to Order

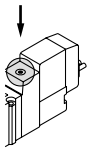
Nil	—
X90	Main valve fluoro rubber (Refer to page 332.)

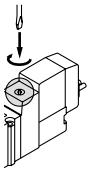
CE-compliant

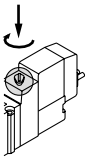
Nil	—
Q	CE-compliant

∗ For DC only except DIN terminal.

Manual override

Nil: Non-locking push type 

D: Push-turn locking slotted type 

E: Push-turn locking lever type 

Light/surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

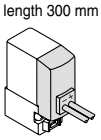
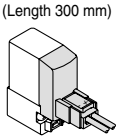
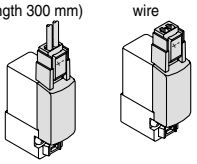
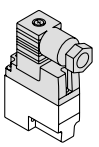
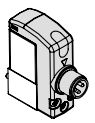
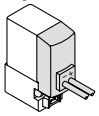
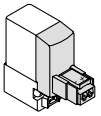
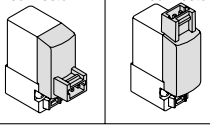
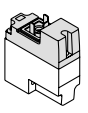
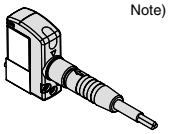
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
∗ For "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

∗ DOZ and YOZ are not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

24, 12, 6, 5, 3 VDC / 100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm 	**L:** With lead wire (Length 300 mm) 	**M:** With lead wire (Length 300 mm) **MN:** Without lead wire 	**(Except SY3000)** **D, Y:** With connector 	**WO:** Without connector cable 
H: Lead wire length 600 mm 	**LN:** Without lead wire 	**LO:** Without connector **MO:** Without connector 	**DO, YO:** Without connector 	**W□:** With connector cable Note) 

∗ LN, MN type: with 2 sockets.
∗ For DIN terminal of SY3000 series, refer to page 337.
∗ "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 336.
∗ For connector cable of M8 connector, refer to page 339.
∗ M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.
∗ Refer to page 336 for the lead wire length of L and M plug connectors.
∗ Refer to page 337 for the connector assembly with cover for L and M plug connectors.
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

Made to Order **Made to Order**
(For details, refer to pages 324 to 332.)

Specifications

Series			SY3000	SY5000	SY7000	SY9000
Fluid			Air			
Internal pilot Operating pressure range (MPa)	**2 position single**		0.15 to 0.7			
	2 position double		0.1 to 0.7			
	3 position		0.2 to 0.7			
External pilot Operating pressure range (MPa)	**Operating pressure range**		–100 kPa to 0.7			
	Pilot pressure range	**2 position single**	0.25 to 0.7			
		2 position double	0.25 to 0.7			
		3 position	0.25 to 0.7			
Ambient and fluid temperature (°C)			–10 to 50 (No freezing.)			
Max. operating frequency (Hz)	**2 position single, double**		10	5	5	5
	3 position		3	3	3	3
Manual override (Manual operation)			Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type			
Pilot exhaust method	**Internal pilot**		Common exhaust type for main and pilot valve			
	External pilot		Pilot valve individual exhaust			
Lubrication			Not required			
Mounting orientation			Unrestricted			
Impact/Vibration resistance (m/s²) Note)			150/30			
Enclosure			Dust proof (∗ DIN terminal and M8 connector: IP65)			

∗ Based on IEC60529

Note) 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)

Response Time

Note) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage)

SY3000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	12 or less	15 or less	12 or less
2 position double	10 or less	13 or less	10 or less
3 position	15 or less	20 or less	16 or less

SY5000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	19 or less	26 or less	19 or less
2 position double	18 or less	22 or less	18 or less
3 position	32 or less	38 or less	32 or less

SY7000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	31 or less	38 or less	33 or less
2 position double	27 or less	30 or less	28 or less
3 position	50 or less	56 or less	50 or less

SY9000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	35 or less	41 or less	35 or less
2 position double	35 or less	41 or less	35 or less
3 position	62 or less	64 or less	62 or less

Solenoid Specifications

Electrical entry			Grommet (G), (H) L plug connector (L) M plug connector (M)	DIN terminal (D), (Y) M8 connector (W)
			G, H, L, M, W	D, Y
Coil rated voltage (V)	**DC**		24, 12, 6, 5, 3	24, 12
	AC 50/60 Hz		100, 110, 200, 220	
Allowable voltage fluctuation			±10% of rated voltage ∗	
Power consumption (W)	**DC**	**Standard**	0.35 (With indicator light: 0.4 DIN terminal with indicator light: 0.45)	
		With power saving circuit	0.1 (With indicator light only)	
Apparent power (VA) ∗	**AC**	**100 V**	0.78 (With indicator light: 0.81)	0.78 (With indicator light: 0.87)
		110 V [115 V]	0.86 (With indicator light: 0.89) [0.94 (With indicator light: 0.97)]	0.86 (With indicator light: 0.97) [0.94 (With indicator light: 1.07)]
		200 V	1.18 (With indicator light: 1.22)	1.15 (With indicator light: 1.30)
		220 V [230 V]	1.30 (With indicator light: 1.34) [1.42 (With indicator light: 1.46)]	1.27 (With indicator light: 1.46) [1.39 (With indicator light: 1.60)]
Surge voltage suppressor			Diode (Varistor is for DIN terminal and Non-polar type.)	
Indicator light			LED (AC of DIN connector is neon light.)	

∗ In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.

∗ For 115 VAC and 230 VAC, the allowable voltage is –15% to +5% of rated voltage.

∗ S, Z and T type (with power saving circuit) should be used within the following allowable voltage fluctuation range due to a voltage drop caused by the internal circuit.

S and Z type: 24 VDC: –7% to +10%
12 VDC: –4% to +10%
T type: 24 VDC: –8% to +10%
12 VDC: –6% to +10%

Flow Characteristics/Mass

Series SY3000

Valve model	Type of actuation		Port size	Flow characteristics Note 1)						Mass (g) Note 2)		
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	L plug connector, M plug connector	W M8 connector
				C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv			
SY3□40-□-01	2 position	Single	1/8	1.0	0.30	0.24	1.1	0.30	0.26	84 (50)	85 (53)	89 (57)
		Double								102 (68)	107 (73)	115 (81)
	3 position	Closed center		0.77	0.28	0.18	0.85	0.30	0.19	104 (69)	109 (74)	117 (82)
		Exhaust center		0.73	0.31	0.18	1.1 [0.55]	0.26 [0.52]	0.24 [0.16]			
		Pressure center		1.2 [0.51]	0.24 [0.45]	0.29 [0.14]	0.89	0.47	0.24			

Note 1) [ ]: denotes the normal position. Note 2) ( ): denotes without sub-plate.

Series SY5000

Valve model	Type of actuation		Port size	Flow characteristics Note 1)						Mass (g) Note 2)			
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	L plug connector, M plug connector	DIN terminal	W M8 connector
				C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv				
SY5□40-□-02	2 position	Single	1/4	2.4	0.41	0.64	2.8	0.29	0.66	121 (58)	123 (61)	154 (92)	127 (65)
		Double								139 (76)	144 (81)	186 (123)	152 (89)
	3 position	Closed center		1.8	0.47	0.50	1.8	0.40	0.47	144 (82)	150 (87)	192 (129)	158 (95)
		Exhaust center		1.4	0.55	0.44	3.0 [1.2]	0.33 [0.48]	0.72 [0.37]				
		Pressure center		3.3 [0.84]	0.36 [0.60]	0.85 [0.28]	1.8	0.40	0.48				

Note 1) [ ]: denotes the normal position. Note 2) ( ): denotes without sub-plate.

Series SY7000

Valve model	Type of actuation		Port size	Flow characteristics Note 1)						Mass (g) Note 2)			
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	L plug connector, M plug connector	DIN terminal	W M8 connector
				C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv				
SY7□40-□-02	2 position	Single	1/4	4.1	0.41	1.1	4.1	0.29	1.0	218 (89)	221 (92)	242 (113)	225 (96)
		Double								237 (108)	242 (113)	284 (155)	250 (121)
	3 position	Closed center		3.0	0.43	0.80	2.6	0.41	0.72	239 (110)	245 (116)	287 (158)	253 (124)
		Exhaust center		2.6	0.42	0.71	4.7 [1.7]	0.35 [0.48]	1.1 [0.49]				
		Pressure center		5.3 [2.3]	0.39 [0.49]	1.3 [0.65]	2.2	0.49	0.63				
SY7□40-□-03	2 position	Single	3/8	4.9	0.29	1.2	4.5	0.27	1.1	218 (89)	221 (92)	242 (113)	225 (96)
		Double								237 (108)	242 (113)	284 (155)	250 (121)
	3 position	Closed center		3.0	0.40	0.80	2.6	0.45	0.73	239 (110)	245 (116)	287 (158)	253 (124)
		Exhaust center		2.6	0.42	0.71	4.8 [1.7]	0.35 [0.48]	1.1 [0.49]				
		Pressure center		5.3 [2.3]	0.31 [0.51]	1.3 [0.64]	2.3	0.45	0.66				

Note 1) [ ]: denotes the normal position. Note 2) ( ): denotes without sub-plate.

Series SY9000

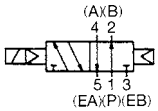
Valve model	Type of actuation		Port size	Flow characteristics Note1)						Mass (g) Note 2)			
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	L plug connector, M plug connector	DIN terminal	W M8 connector
				C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv				
SY9□40-□-03	2 position	Single	3/8	7.9	0.34	2.0	9.6	0.43	2.6	469(172)	472(175)	493(196)	476(179)
		Double								488(191)	494(197)	535(239)	502(205)
	3 position	Closed center		7.5	0.33	1.8	7.3	0.30	1.7	512(215)	518(221)	560(263)	526(229)
		Exhaust center		7.2	0.34	1.7	13 [4.0]	0.23 [0.41]	2.8 [0.95]				
		Pressure center		12 [3.3]	0.26 [0.41]	2.8 [0.84]	6.7	0.40	1.9				
SY9□40-□-04	2 position	Single	1/2	8.0	0.48	2.2	10	0.29	2.5	448 (172)	453 (175)	472	457(179)
		Double								467 (191)	473 (197)	515	481(205)
	3 position	Closed center		7.6	0.32	1.8	7.3	0.32	1.8	491 (215)	497 (221)	539	505(229)
		Exhaust center		7.3	0.42	2.0	13 [4.7]	0.32 [0.54]	3.6 [1.5]				
		Pressure center		12 [3.3]	0.33 [0.51]	3.3 [0.94]	7.4	0.33	1.9				

Note 1) [ ]: denotes the normal position. Note 2) ( ): denotes without sub-plate.

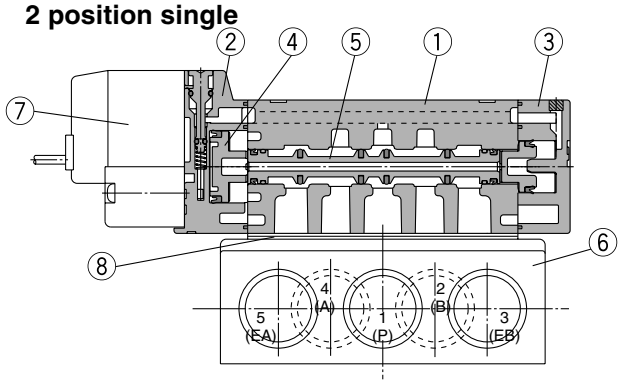
Construction

Series SY

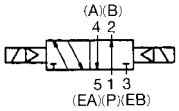
JIS Symbol
2 position single



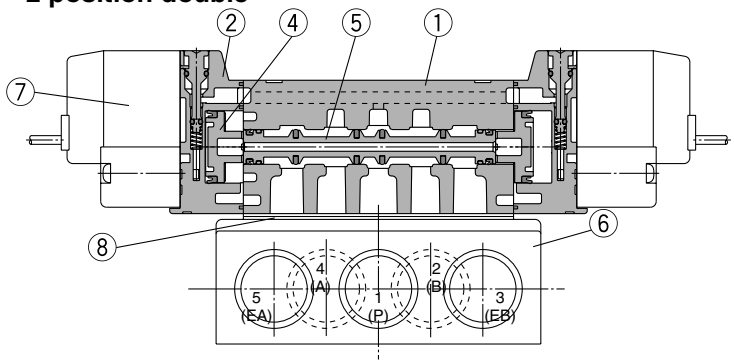
2 position single



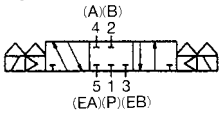
JIS Symbol
2 position double



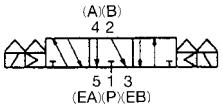
2 position double



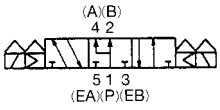
JIS Symbol
3 position closed center



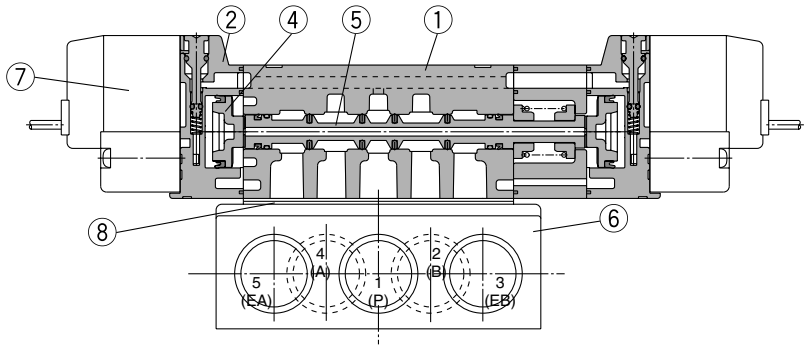
3 position exhaust center



3 position pressure center



3 position closed center / exhaust center / pressure center



(This figure shows a closed center type.)

Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum die-casted (SY3000: Zinc die-casted)	White
2	**Adapter plate**	Resin	White (SY9000: Gray)
3	**End plate**	Resin	White
4	**Piston**	Resin	–
5	**Spool valve assembly**	Aluminum, H-NBR	–

Replacement Parts

No.	Description	Part No.				Note
		SY3□40	**SY5□40**	**SY7□40**	**SY9□40**	
6	**Sub-plate** Note)	SY3000-27-1✳(-Q)	SY5000-27-1✳(-Q)	1/4: SY7000-27-1✳(-Q) 3/8: SY7000-27-2✳(-Q)	3/8: SY9000-27-1✳(-Q) 1/2: SY9000-27-2✳(-Q)	Aluminum die-casted
7	**Pilot valve assembly**	Refer to "How to Order Pilot Valve Assembly" on page 130.				
8	**Gasket**	SY3000-11-25	SY5000-11-15	SY7000-11-11	SY9000-11-2	H-NBR
–	**Round head combination screw**	SY3000-23-4 (M2 x 21)	M3 x 26	M4 x 31	SY9000-18-2 (M3 x 42)	For valve mounting (Matt nickel plated)

✳ Thread type
Note) For CE-compliant, suffix "Q" at the end of part no.

⚠ Caution

Mounting screw tightening torques

M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

How to Order Pilot Valve Assembly

V111 □ – 5 G □

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

∗ Power saving circuit is not available in the case of D, DO or W□ type.

Rated voltage

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC
1	100 VAC 50/60 Hz
2	200 VAC 50/60 Hz
3	110 VAC 50/60 Hz [115 VAC 50/60 Hz]
4	220 VAC 50/60 Hz [230 VAC 50/60 Hz]

∗ For type W□, DC voltage is only available.
∗ CE-compliant: For DC only.

Light/surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

∗ For AC voltage valves there is no “S” option. It is already built-in to the rectifier circuit.
∗ For “R” and “U”, DC voltage is only available.
∗ Power saving circuit is only available in the “Z” type.

Electrical entry

G	Grommet, 300 mm lead wire	
H	Grommet, 600 mm lead wire	
L	L plug connector	With lead wire
LN		Without lead wire
LO		Without connector
M	M plug connector	With lead wire
MN		Without lead wire
MO		Without connector
WO	M8 connector	Without connector cable
W□		With connector cable Note 1)

∗ For connector cable of M8 connector, refer to page 339.
Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

■ DIN terminal type

V115 – 5 D □

Rated voltage

5	24 VDC
6	12 VDC
1	100 VAC 50/60 Hz
2	200 VAC 50/60 Hz
3	110 VAC 50/60 Hz [115 VAC 50/60 Hz]
4	220 VAC 50/60 Hz [230 VAC 50/60 Hz]

∗ DC specifications of type D, Y, DO and YO is only available with 12 and 24 VDC.

Light/surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

∗ DOZ and YOZ are not available.
∗ For AC voltage valves there is no “S” option. It is already built-in to the rectifier circuit.

Electrical entry

D	DIN terminal (Type D)	With connector
DO		Without connector
Y	DIN terminal (Type Y)	With connector
YO		Without connector

Note) Do not replace V111 (G, H, L, M) to V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

Note) Since V111 and V115 are CE-compliant as standard, the suffix “-Q” is not necessary.

How to Order Interface Regulator

Series SY3000

ARBY3000 – 05 – P – 2

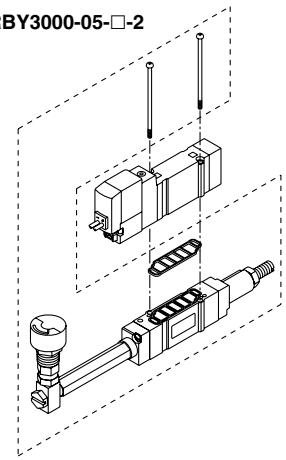
Pressure gauge connection port

05	Pressure gauge (G15-10-01)
M1	Plug (M-5P)

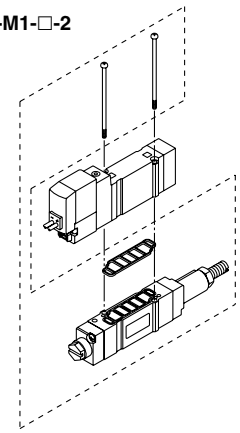
Regulating port

P	P port
A1	A port (P controlled type, A port regulation)
B1	B port (P controlled type, B port regulation)

ARBY3000-05-□-2



ARBY3000-M1-□-2



Series SY5000

ARBY5000 – 00 – P – 2

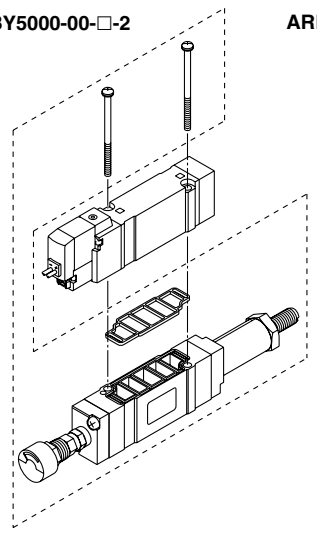
Pressure gauge connection port

00	Pressure gauge (G15-10-01)
M1	Plug (M-5P)

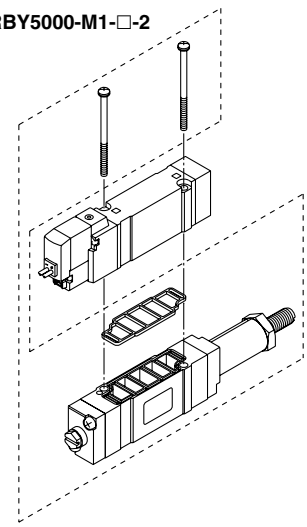
Regulating port

P	P port
A1	A port (P controlled type, A port regulation)
B1	B port (P controlled type, B port regulation)

ARBY5000-00-□-2



ARBY5000-M1-□-2



Series SY7000

ARBY7000 – 00 – P – 2

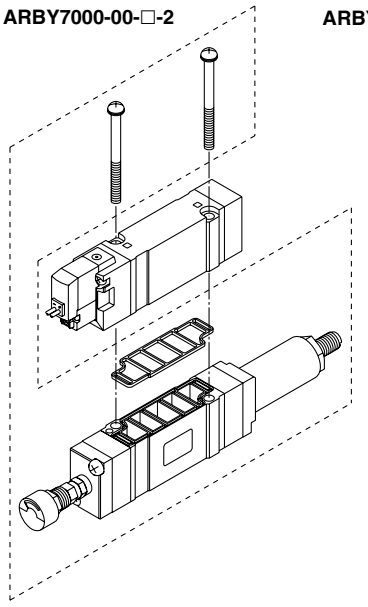
Pressure gauge connection port

00	Pressure gauge (G15-10-01)
M1	Plug (M-5P)

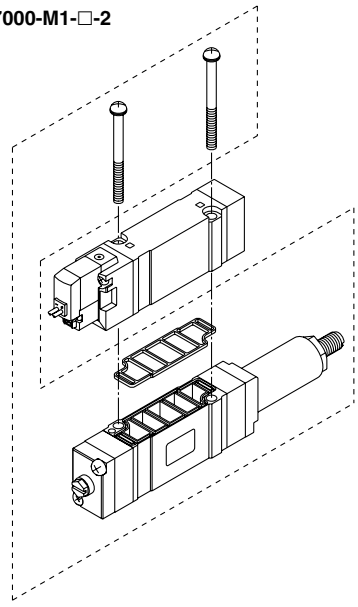
Regulating port

P	P port
A1	A port (P controlled type, A port regulation)
B1	B port (P controlled type, B port regulation)

ARBY7000-00-□-2



ARBY7000-M1-□-2



Note) ARBY is not CE-compliant.

Accessory

Series	Round head combination screw	Gasket
ARBY3000	SY3000-23-10 (M2 x 36)	SX3000-57-4
ARBY5000	M3 x 48.5, Matt nickel plated	SX5000-57-6
ARBY7000	M4 x 57, Matt nickel plated	SX7000-57-4

⚠ Caution

Mounting screw tightening torques

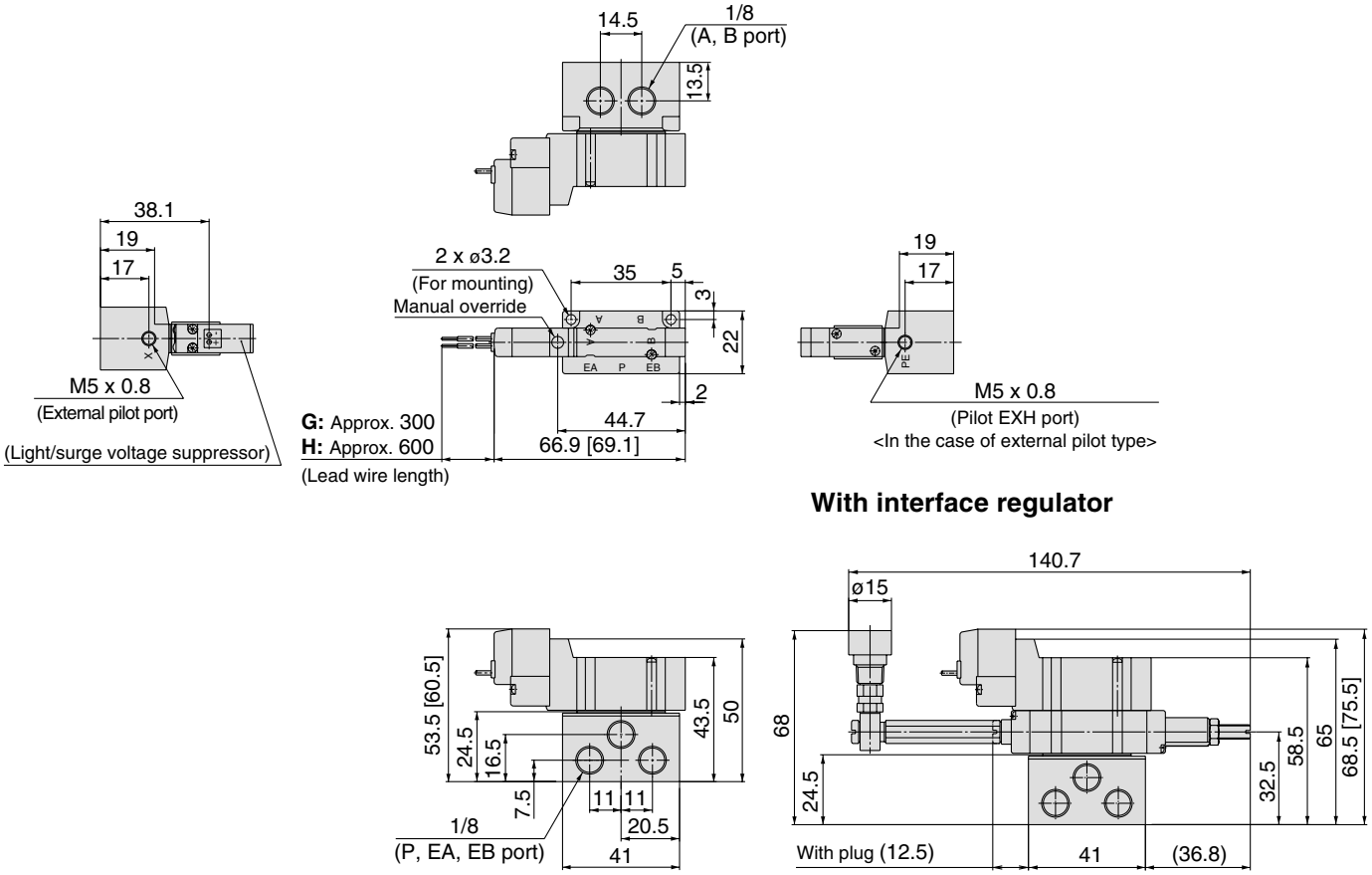
M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

Dimensions: Series SY3000

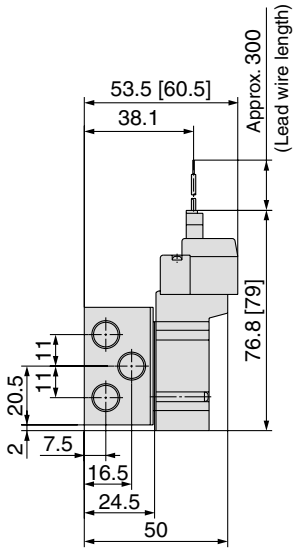
[ ]: AC

2 position single

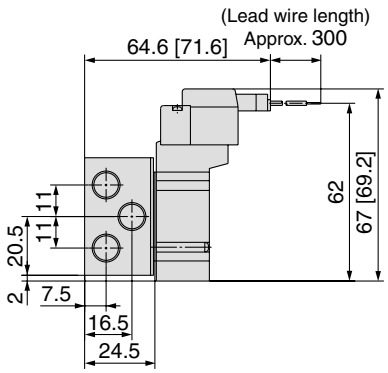
Grommet (G), (H): SY3140(R)-□$^{G}_{H}$□□-01□



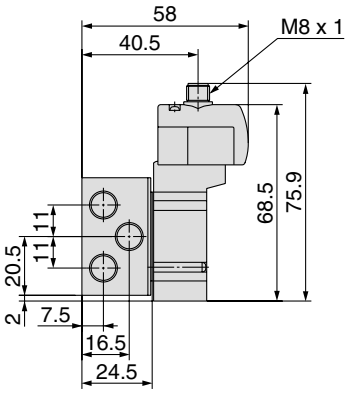
L plug connector (L): SY3140(R)-□L□□-01□



M plug connector (M): SY3140(R)-□M□□-01□



M8 connector (WO): SY3140(R)-□WO□□-01□



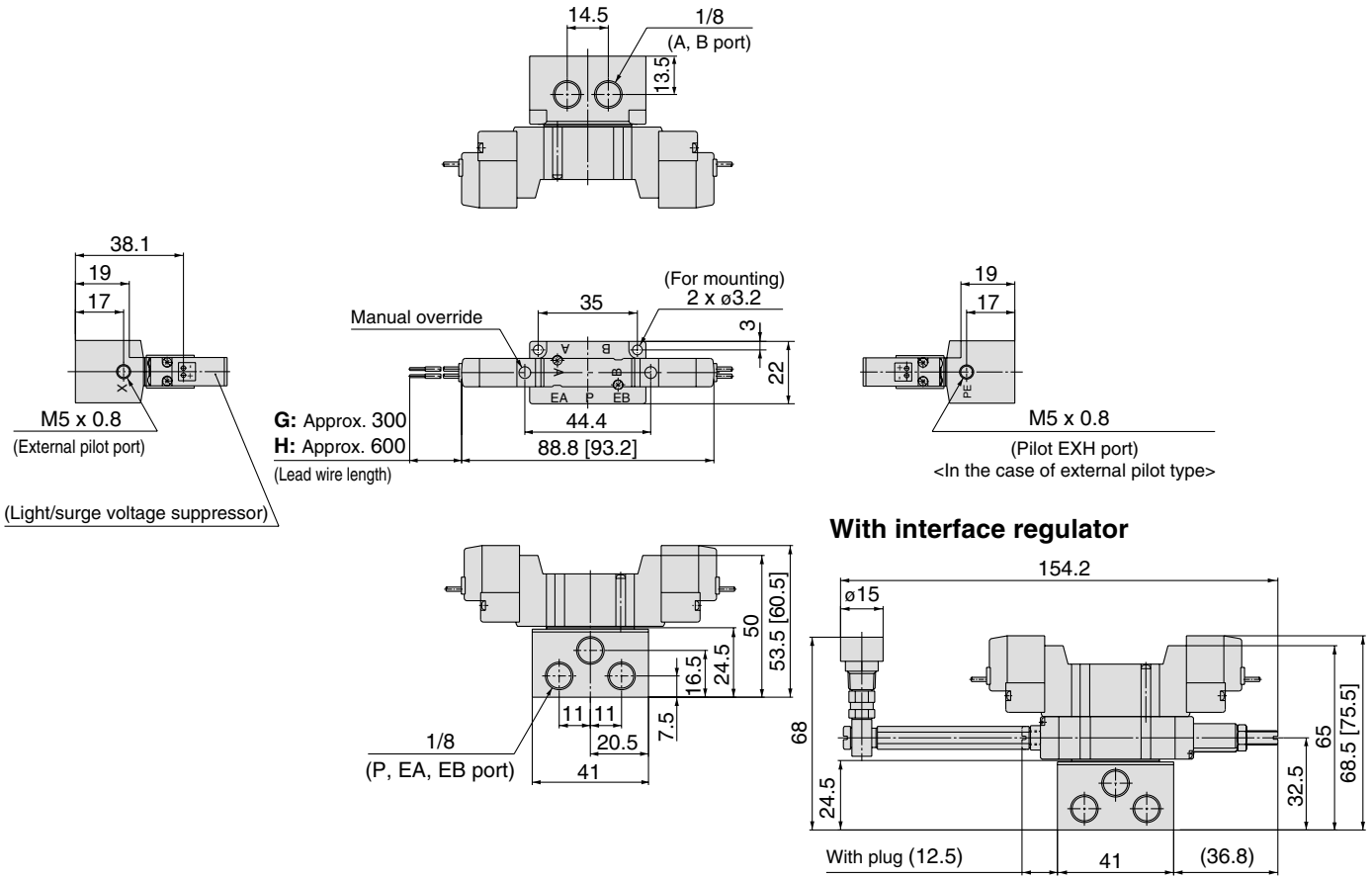
Note) Refer to page 340 for dimensions of connector types.

Dimensions: Series SY3000

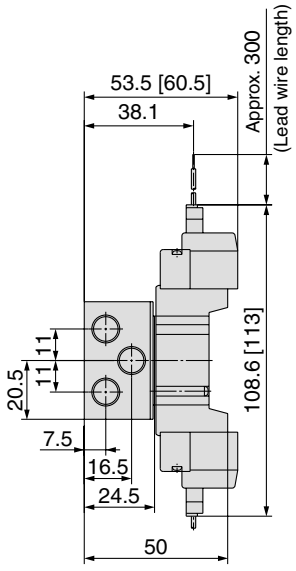
[ ]: AC

2 position double

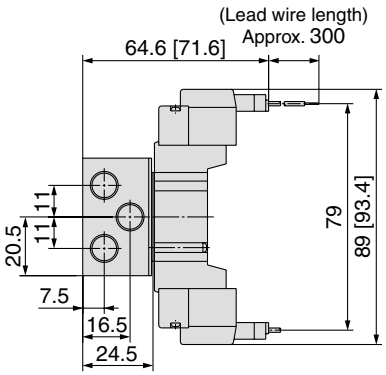
Grommet (G), (H): SY3240(R)-□$^{G}_{H}$□□-01□



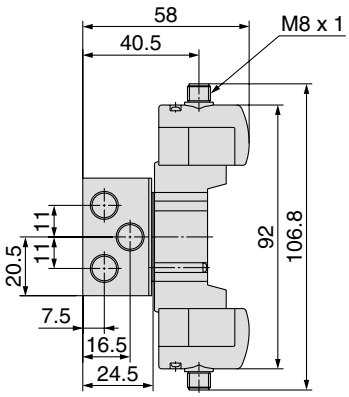
L plug connector (L): SY3240(R)-□L□□-01□



M plug connector (M): SY3240(R)-□M□□-01□



M8 connector (WO): SY3240(R)-□WO□□-01□

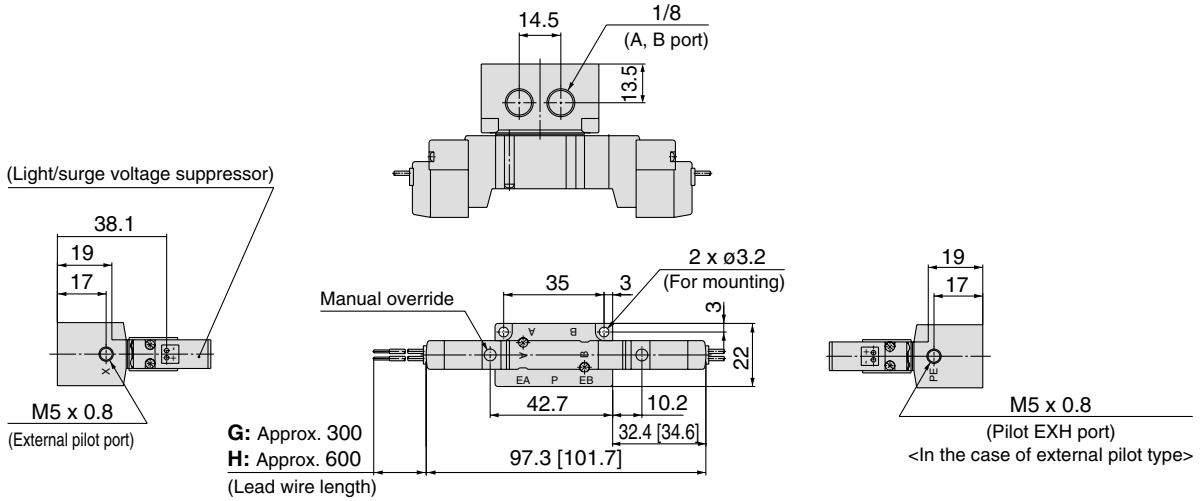


Note) Refer to page 340 for dimensions of connector types.

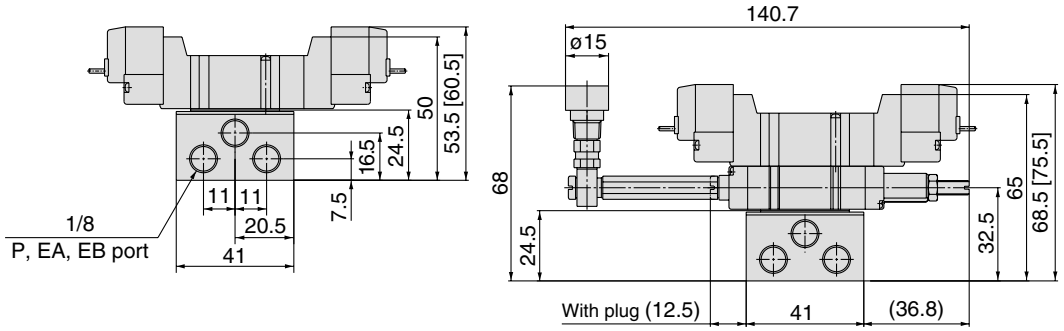
Dimensions: Series SY3000

[ ]: AC

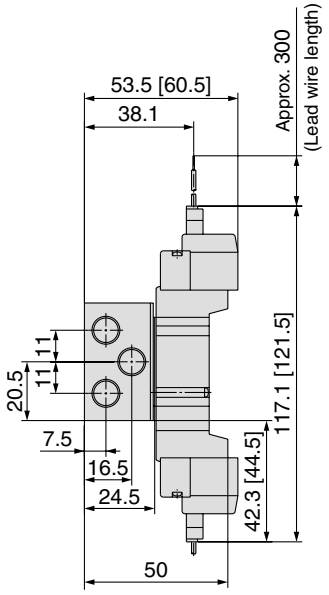
3 position closed center / exhaust center / pressure center
Grommet (G), (H): SY3$^{3}_{5}$40(R)-□$^{G}_{H}$□□-01□



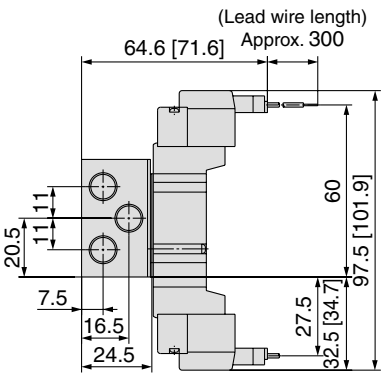
With interface regulator



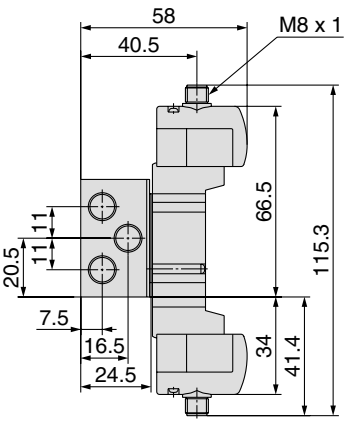
L plug connector (L):
SY3$^{3}_{5}$40(R)-□L□□-01□



M plug connector (M):
SY3$^{3}_{5}$40(R)-□M□□-01□



M8 connector (WO):
SY3$^{3}_{5}$40(R)-□WO□□-01□



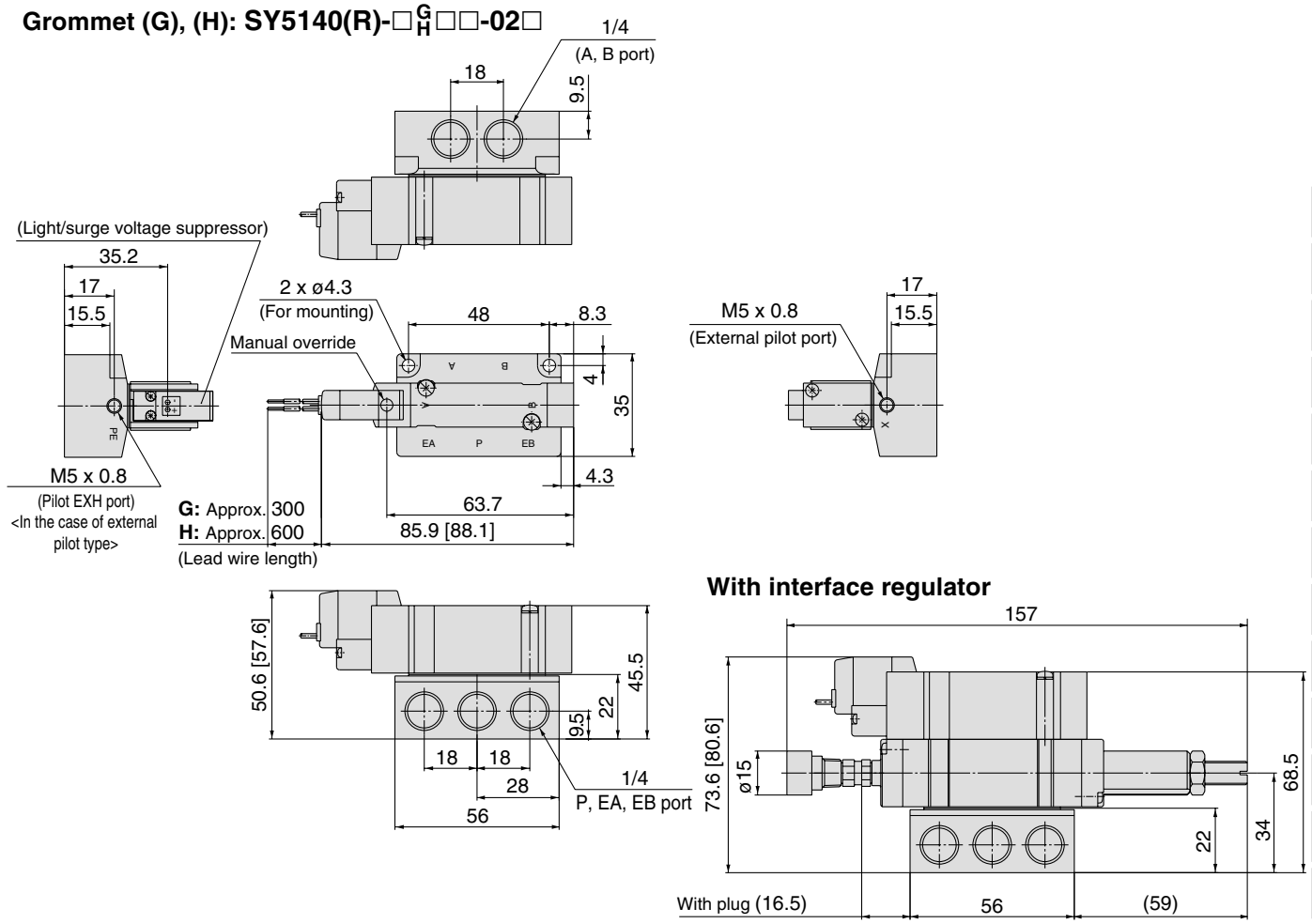
Note) Refer to page 340 for dimensions of connector types.

Dimensions: Series SY5000

[ ]: AC

2 position single

Grommet (G), (H): SY5140(R)-□$^{G}_{H}$□□-02□

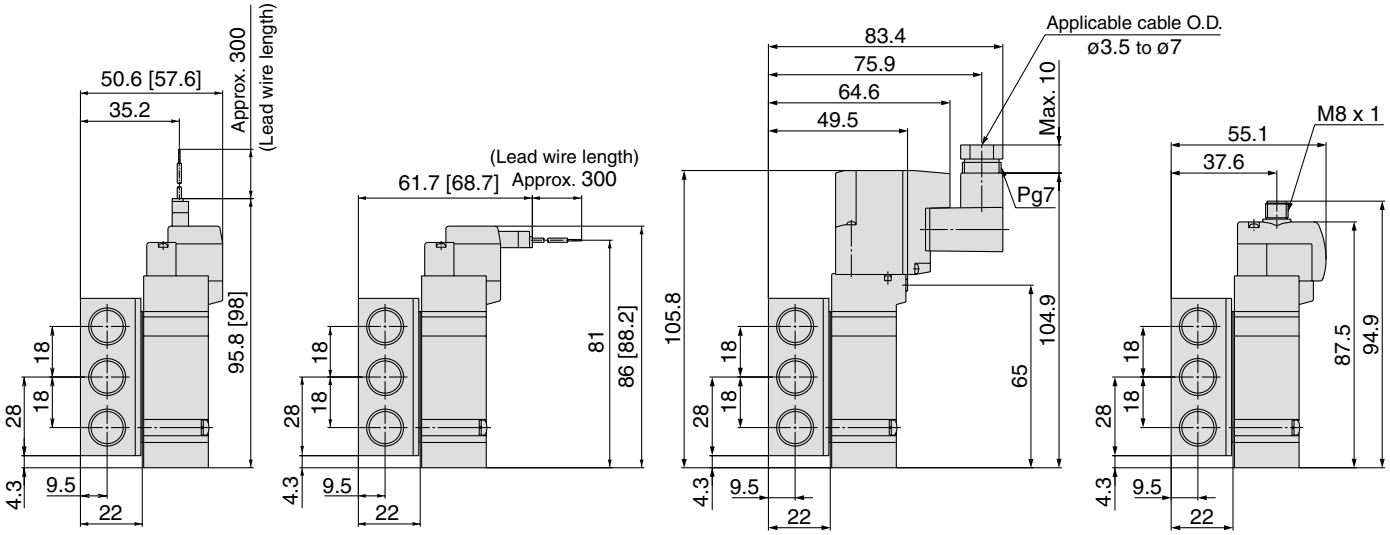


L plug connector (L): SY5140(R)-□L□□-02□

M plug connector (M): SY5140(R)-□M□□-02□

DIN terminal (D, Y): SY5140(R)-□$^{D}_{Y}$□□-02□

M8 connector (WO): SY5140(R)-□WO□□-02□



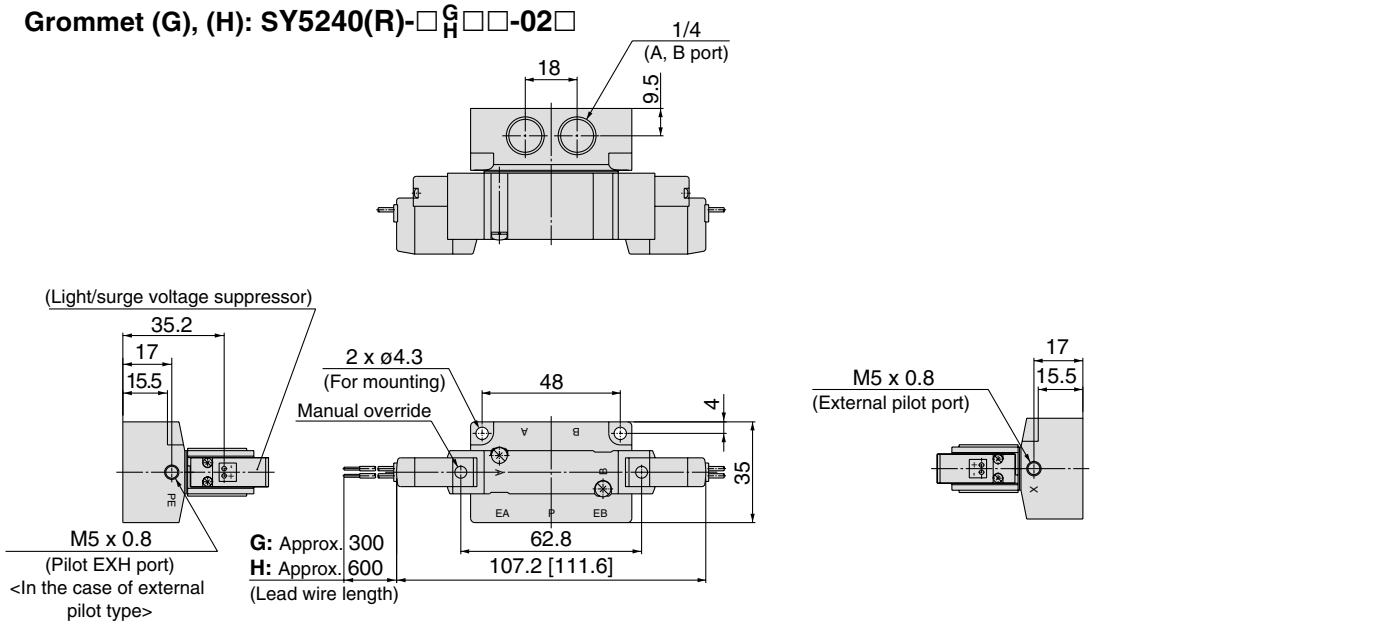
Note) Refer to page 340 for dimensions of connector types.

Dimensions: Series SY5000

[ ]: AC

2 position double

Grommet (G), (H): SY5240(R)-□G/H□□-02□

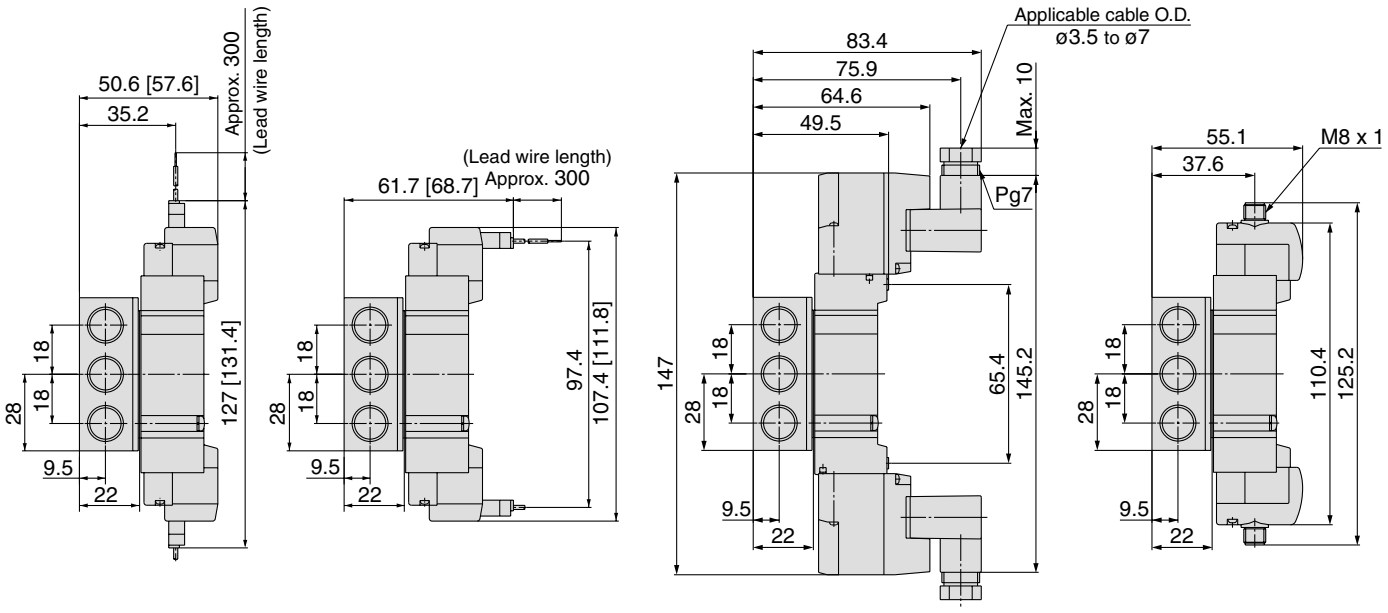


L plug connector (L): SY5240(R)-□L□□-02□

M plug connector (M): SY5240(R)-□M□□-02□

DIN terminal (D, Y): SY5240(R)-□D/Y□□-02□

M8 connector (WO): SY5240(R)-□WO□□-02□



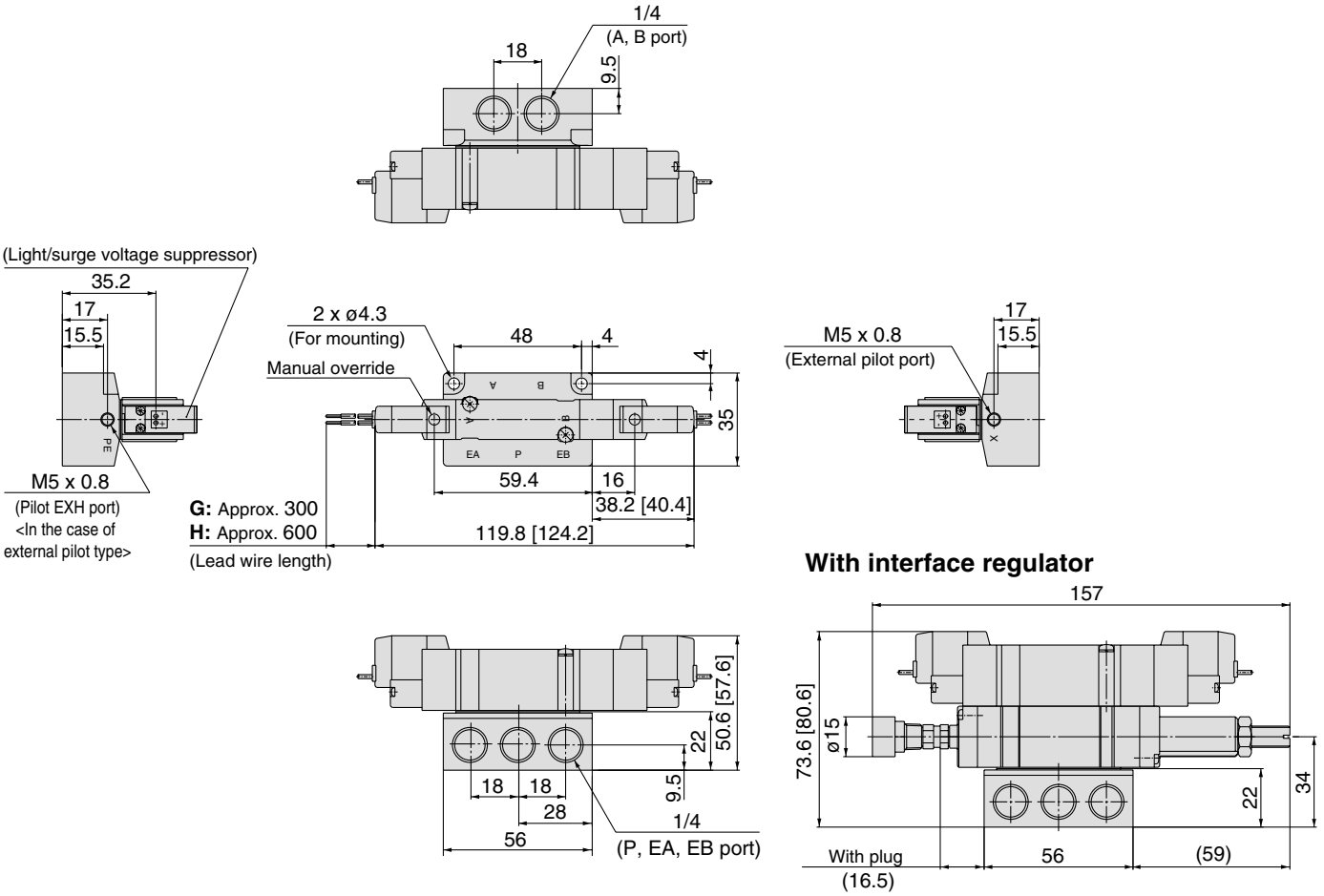
Note) Refer to page 340 for dimensions of connector types.

Dimensions: Series SY5000

[ ]: AC

3 position closed center / exhaust center / pressure center

Grommet (G), (H): SY5$^{3}_{5}$40(R)-□$^{G}_{H}$□□-02□



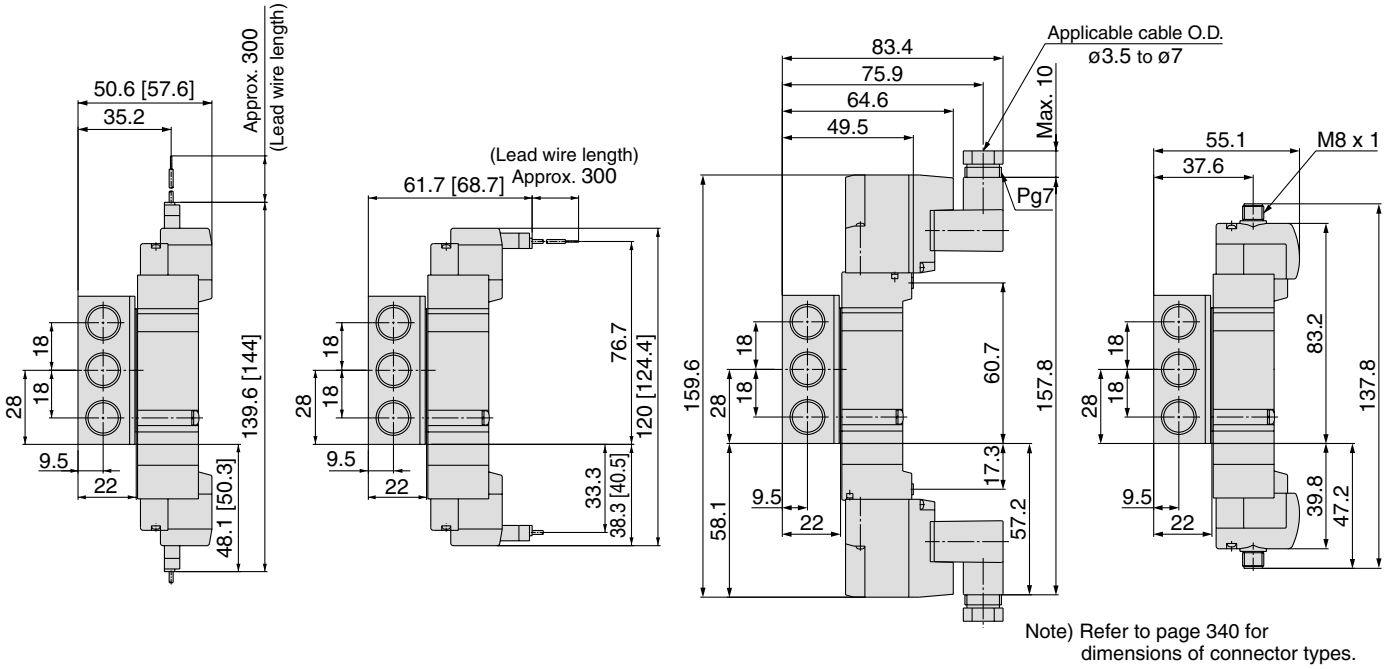
With interface regulator

L plug connector (L): SY5$^{3}_{5}$40(R)-□L□□-02□

M plug connector (M): SY5$^{3}_{5}$40(R)-□M□□-02□

DIN terminal (D, Y): SY5$^{3}_{5}$40(R)-□$^{D}_{Y}$□□-02□

M8 connector (WO): SY5$^{3}_{5}$40(R)-□WO□□-02□



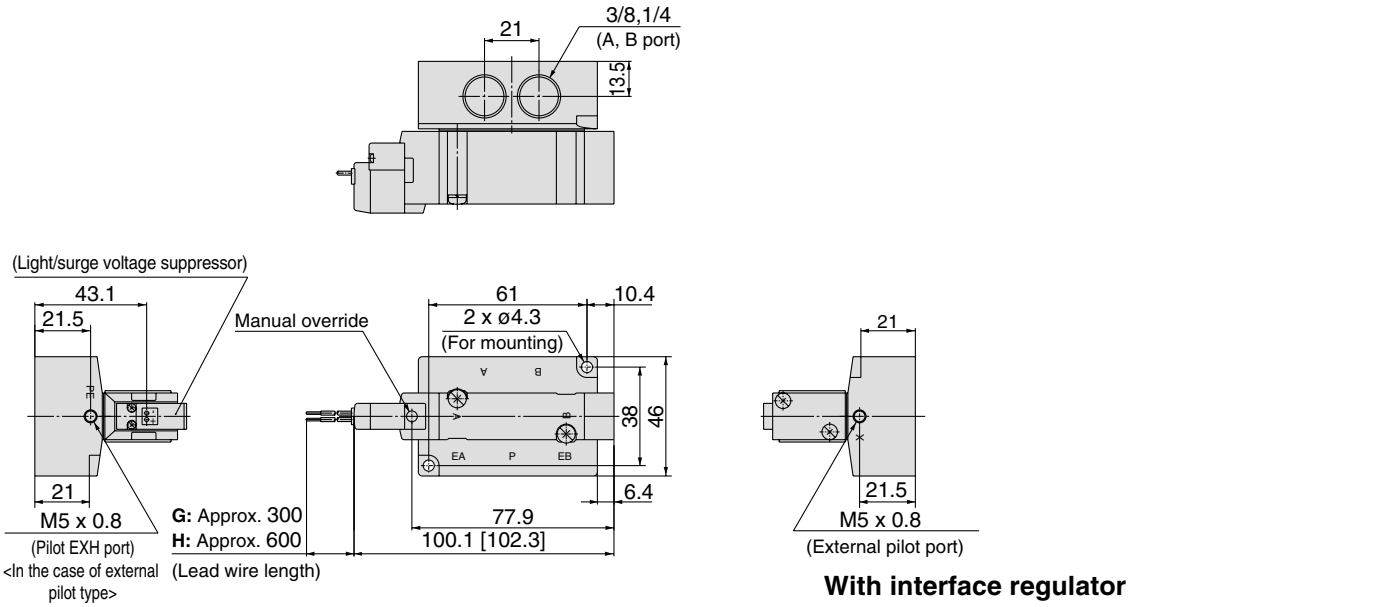
Note) Refer to page 340 for dimensions of connector types.

Dimensions: Series SY7000

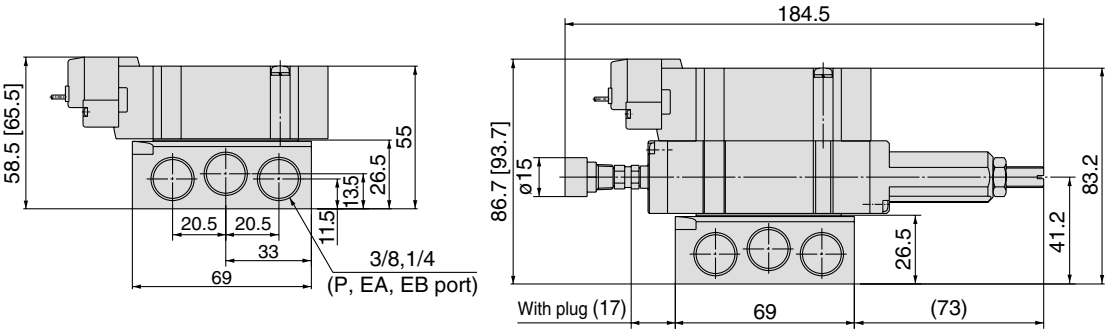
[ ]: AC

2 position single

Grommet (G), (H): SY7140(R)-□G/H□□-02/03□



With interface regulator

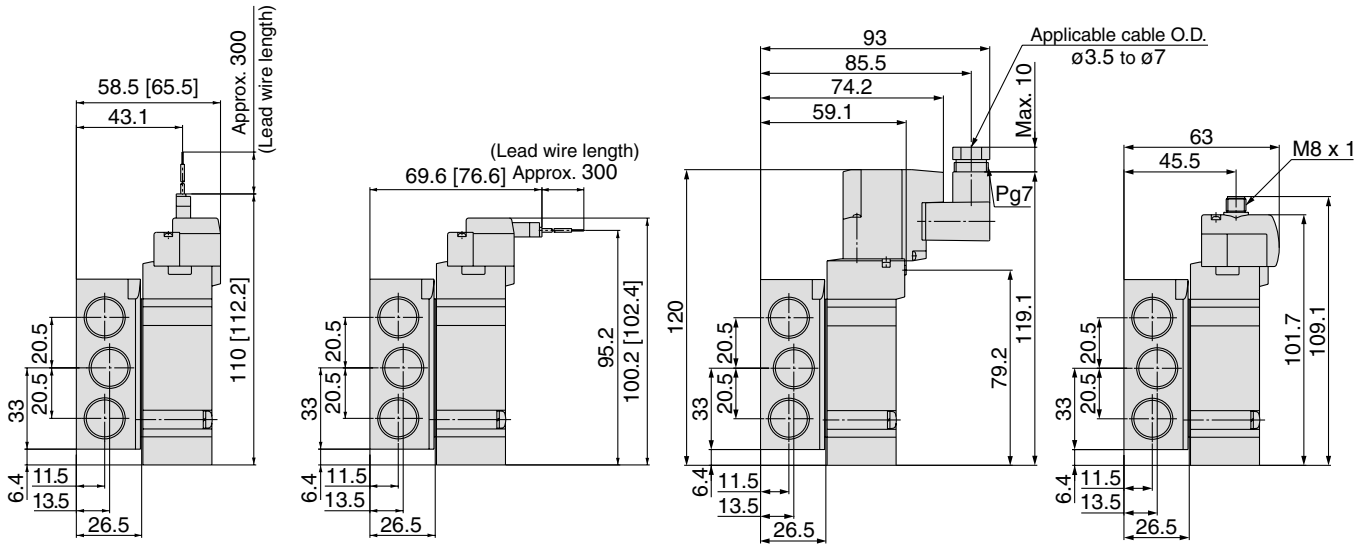


L plug connector (L): SY7140(R)-□L□□-02/03□

M plug connector (M): SY7140(R)-□M□□-02/03□

DIN terminal (D, Y): SY7140(R)-□D/Y□□-02/03□

M8 connector (WO): SY7140(R)-□WO□□-02/03□



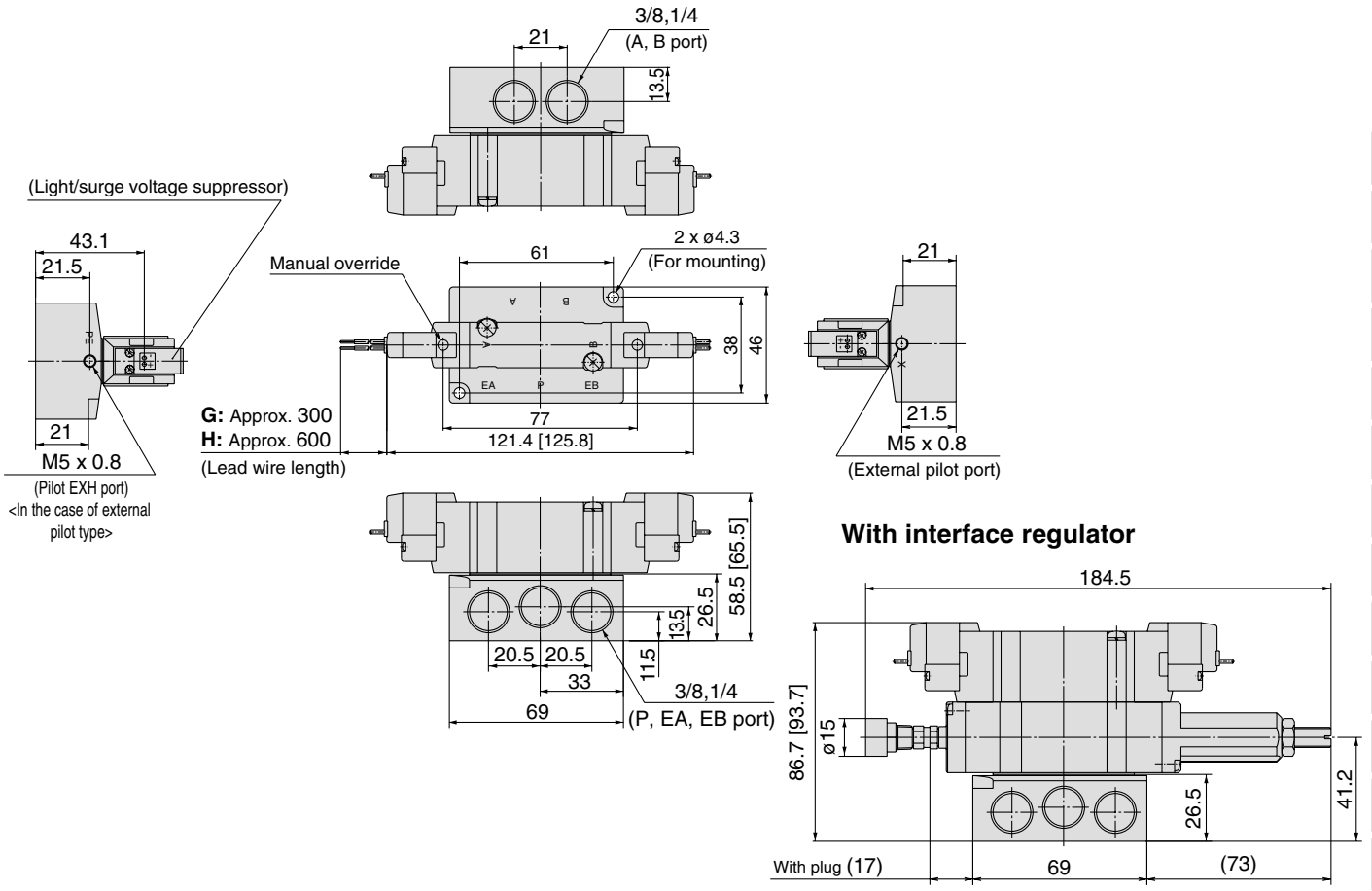
Note) Refer to page 340 for dimensions of connector types.

Dimensions: Series SY7000

[ ]: AC

2 position double

Grommet (G), (H): SY7240(R)-□$^{G}_{H}$□□-$^{02}_{03}$□



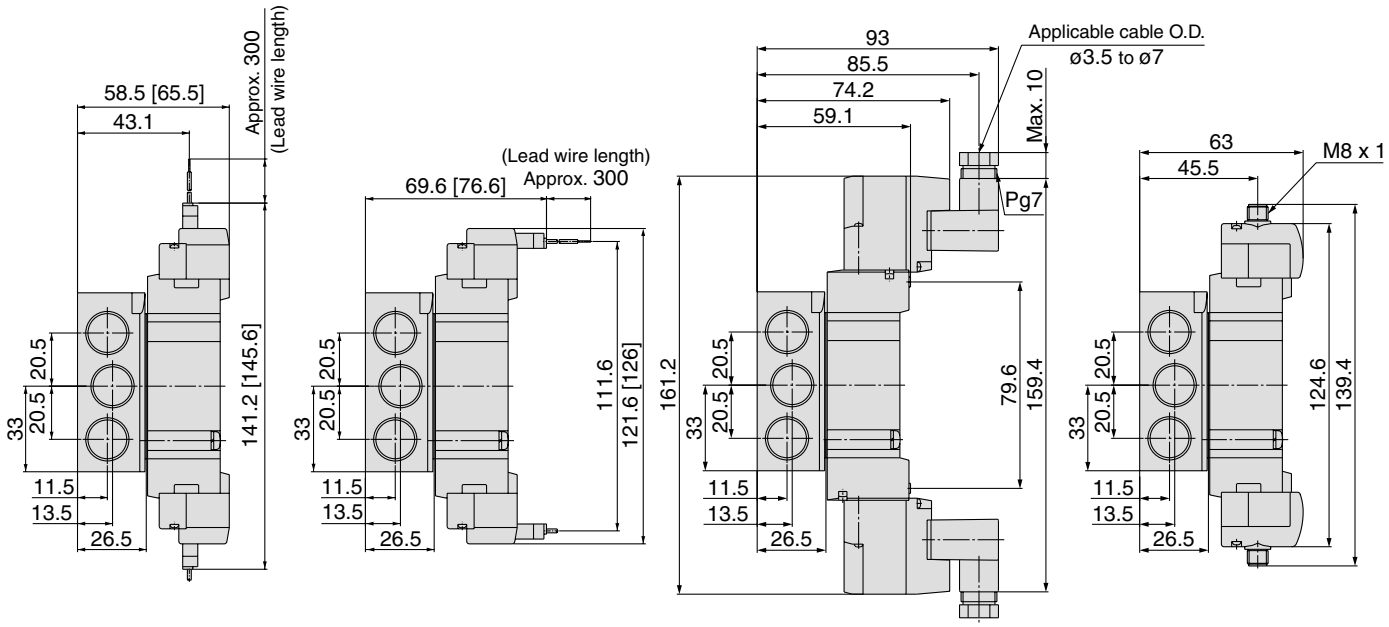
With interface regulator

L plug connector (L): SY7240(R)-□L□□-$^{02}_{03}$□

M plug connector (M): SY7240(R)-□M□□-$^{02}_{03}$□

DIN terminal (D, Y): SY7240(R)-□$^{D}_{Y}$□□-$^{02}_{03}$□

M8 connector (WO): SY7240(R)-□WO□□-$^{02}_{03}$□



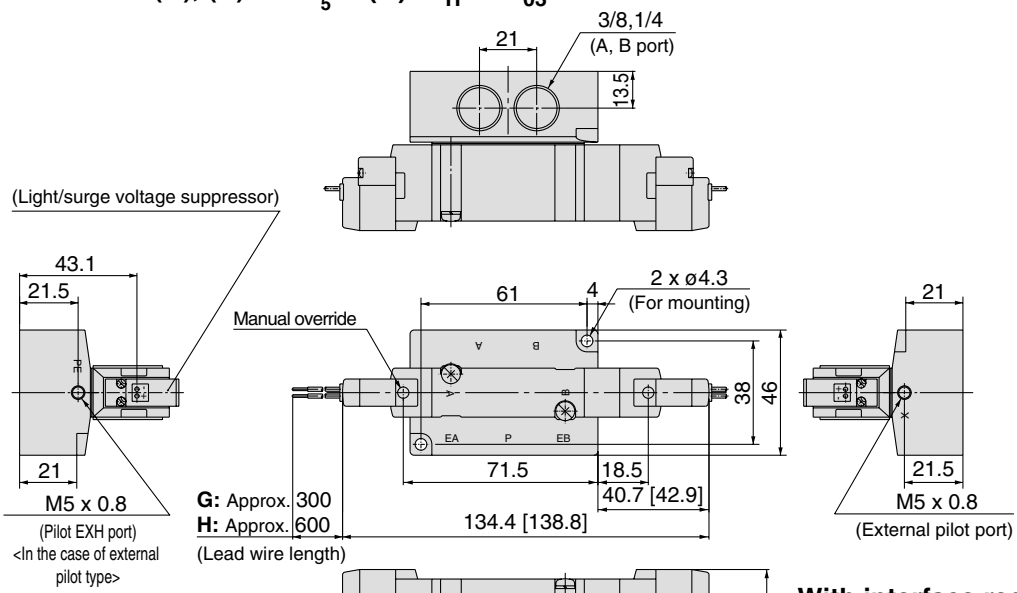
Note) Refer to page 340 for dimensions of connector types.

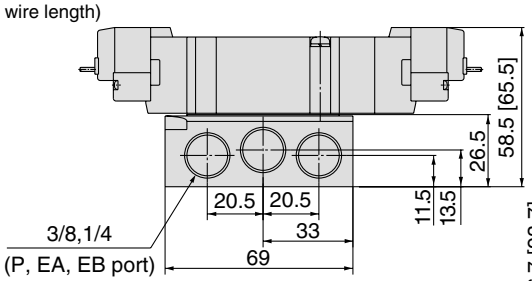
Dimensions: Series SY7000

[ ]: AC

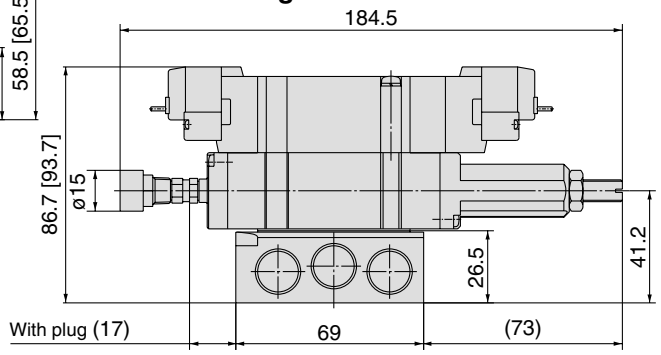
3 position closed center / exhaust center / pressure center

Grommet (G), (H): SY7$^{3}_{5}$40(R)-□$^{G}_{H}$□□-$^{02}_{03}$□





With interface regulator

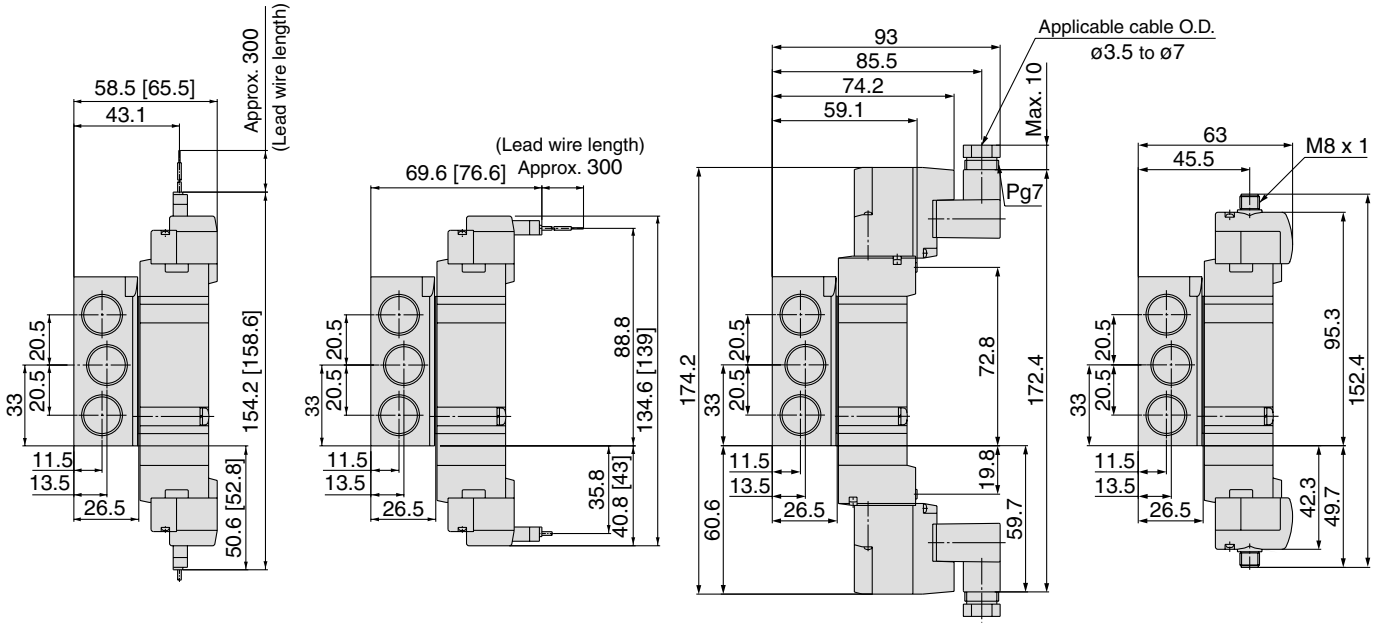


L plug connector (L):
SY7$^{3}_{5}$40(R)-□L□□-$^{02}_{03}$□

M plug connector (M):
SY7$^{3}_{5}$40(R)-□M□□-$^{02}_{03}$□

DIN terminal (D, Y):
SY7$^{3}_{5}$40(R)-□$^{D}_{Y}$□□-$^{02}_{03}$□

M8 connector (WO):
SY7$^{3}_{5}$40(R)-□WO□□-$^{02}_{03}$□

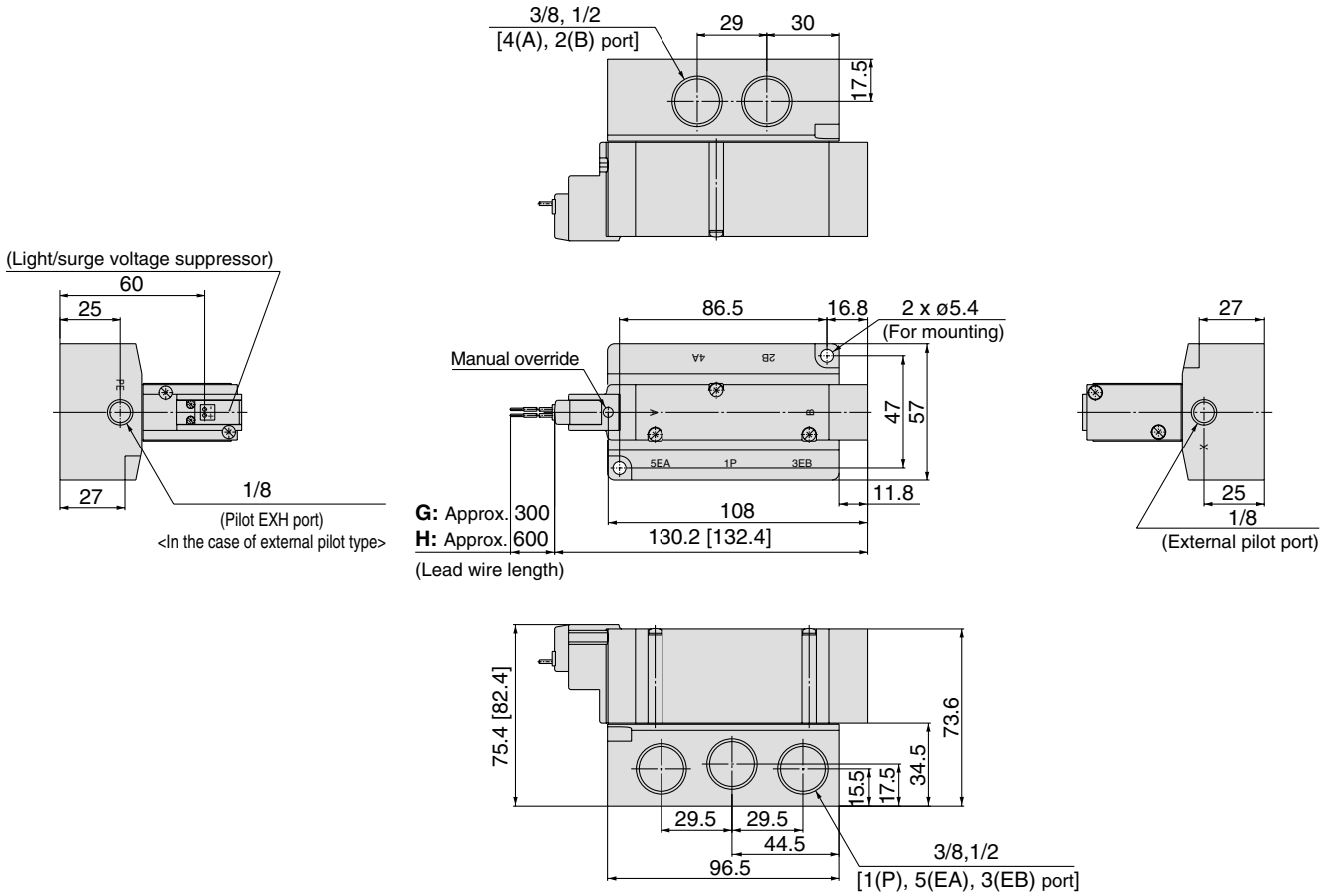


Note) Refer to page 340 for dimensions of connector types.

Dimensions: Series SY9000

[ ]: AC

2 position single
Grommet (G), (H): SYJ9140-□$^{G}_{H}$□□-$^{03}_{04}$□

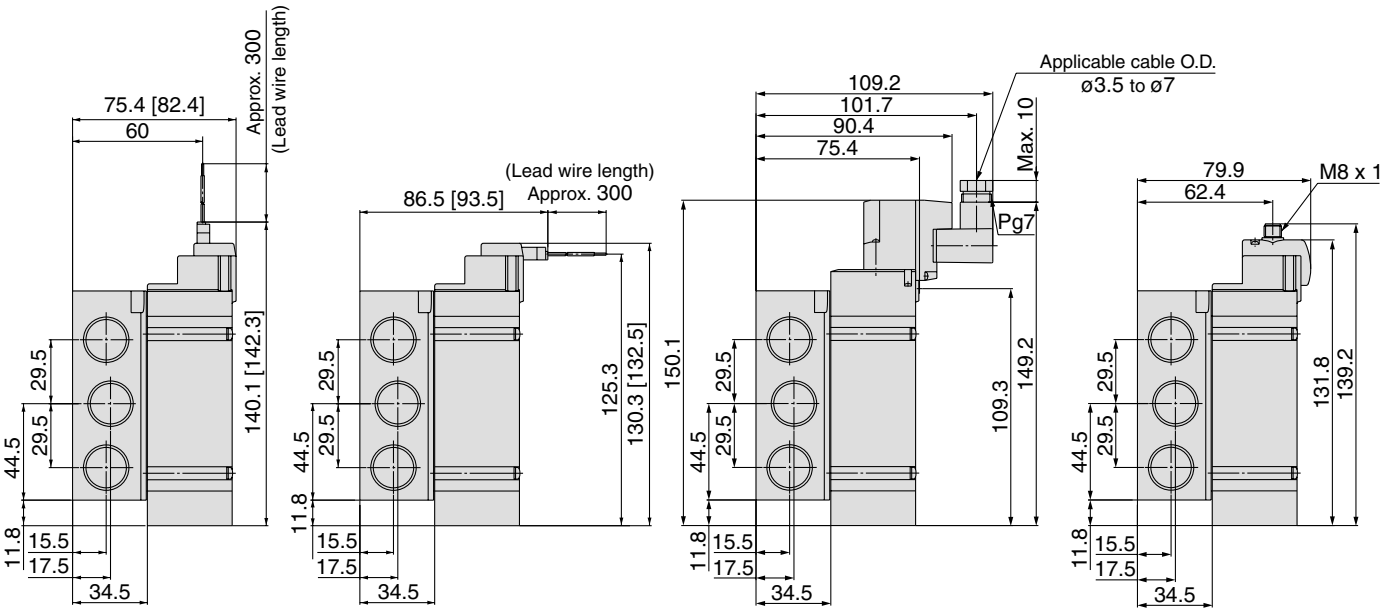


L plug connector (L):
SY9140(R)-□L□□-$^{03}_{04}$□

M plug connector (M):
SY9140(R)-□M□□-$^{03}_{04}$□

DIN terminal (D, Y):
SY9140(R)-□$^{D}_{Y}$□□-$^{03}_{04}$□

M8 connector (WO):
SY9140(R)-□WO□□-$^{03}_{04}$□

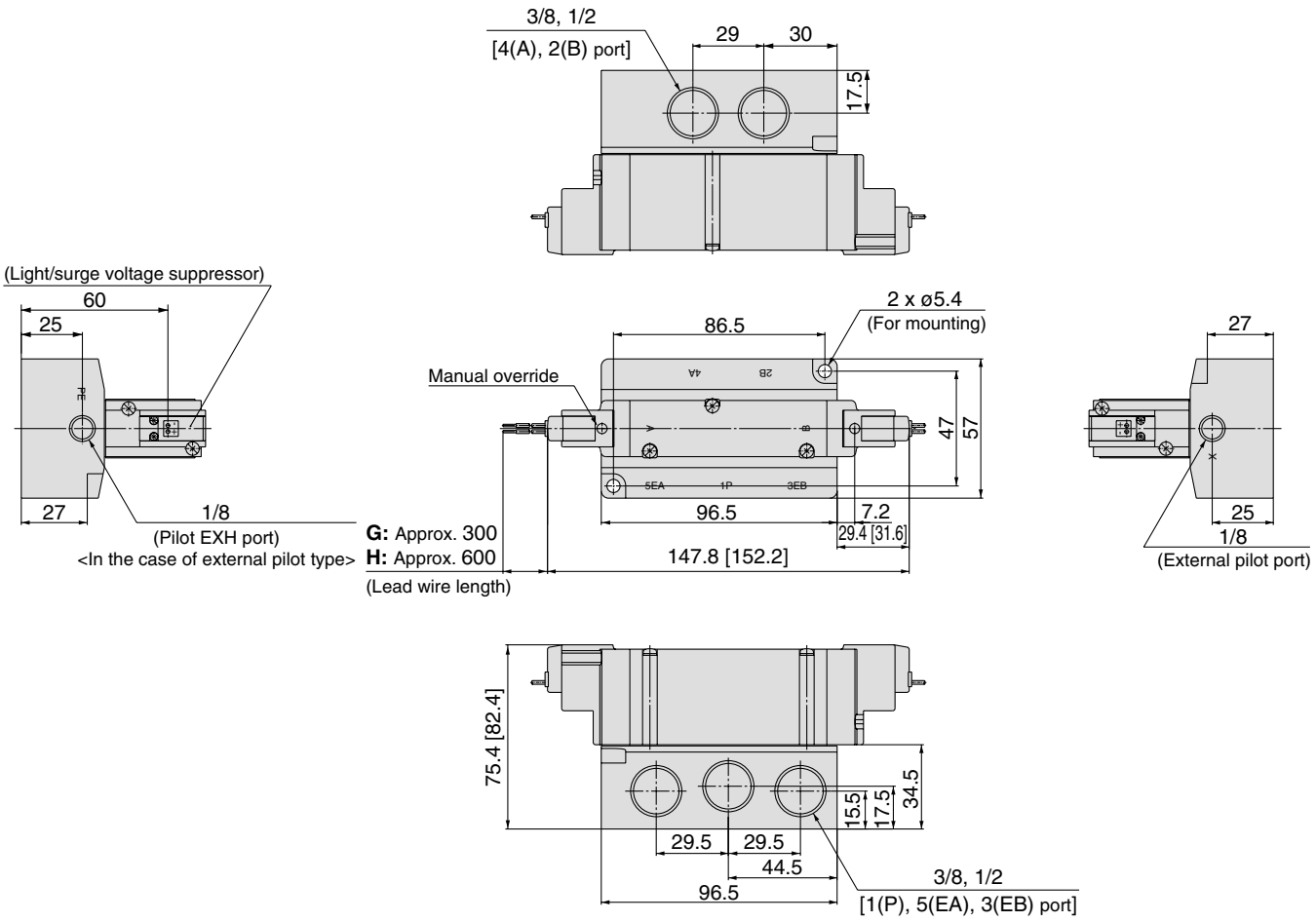


Note) Refer to page 340 for dimensions of connector types.

Dimensions: Series SY9000

[ ]: AC

2 position double
Grommet (G), (H): SY9240(R)-□$^{G}_{H}$□□-$^{03}_{04}$□

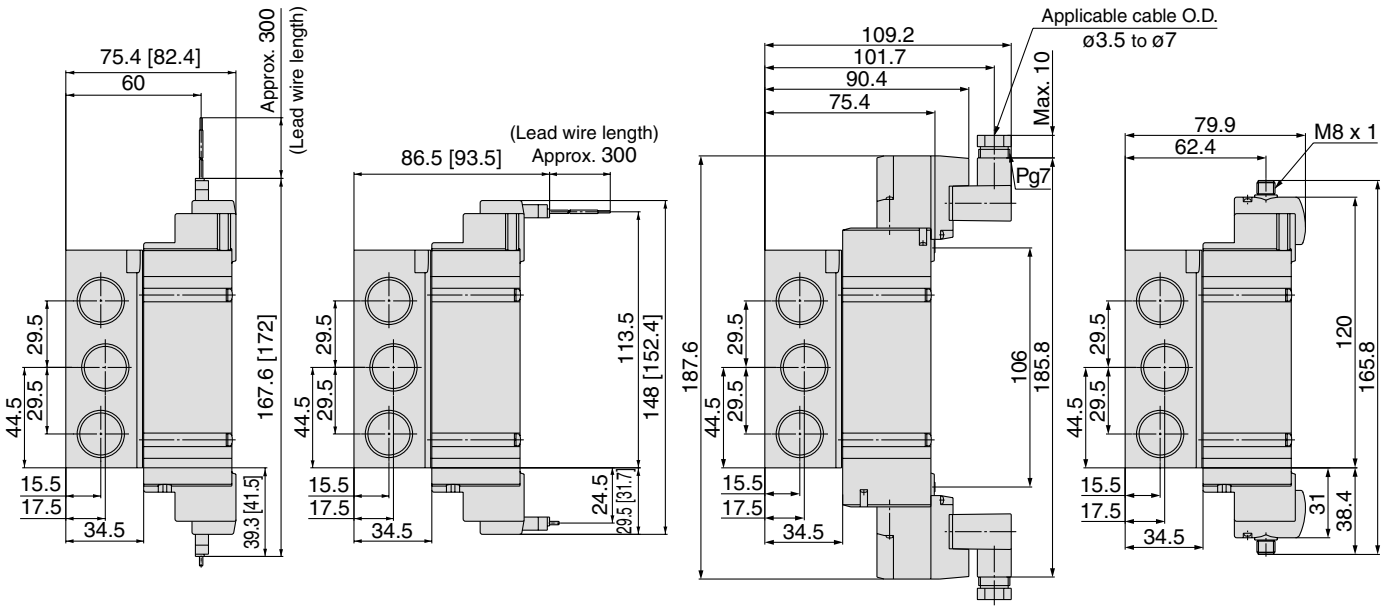


L plug connector (L): SY9240(R)-□L□□-$^{03}_{04}$□

M plug connector (M): SY9240(R)-□M□□-$^{03}_{04}$□

DIN terminal (D, Y): SY9240(R)-□$^{D}_{Y}$□□-$^{03}_{04}$□

M8 connector (WO): SY9240(R)-□WO□□-$^{03}_{04}$□



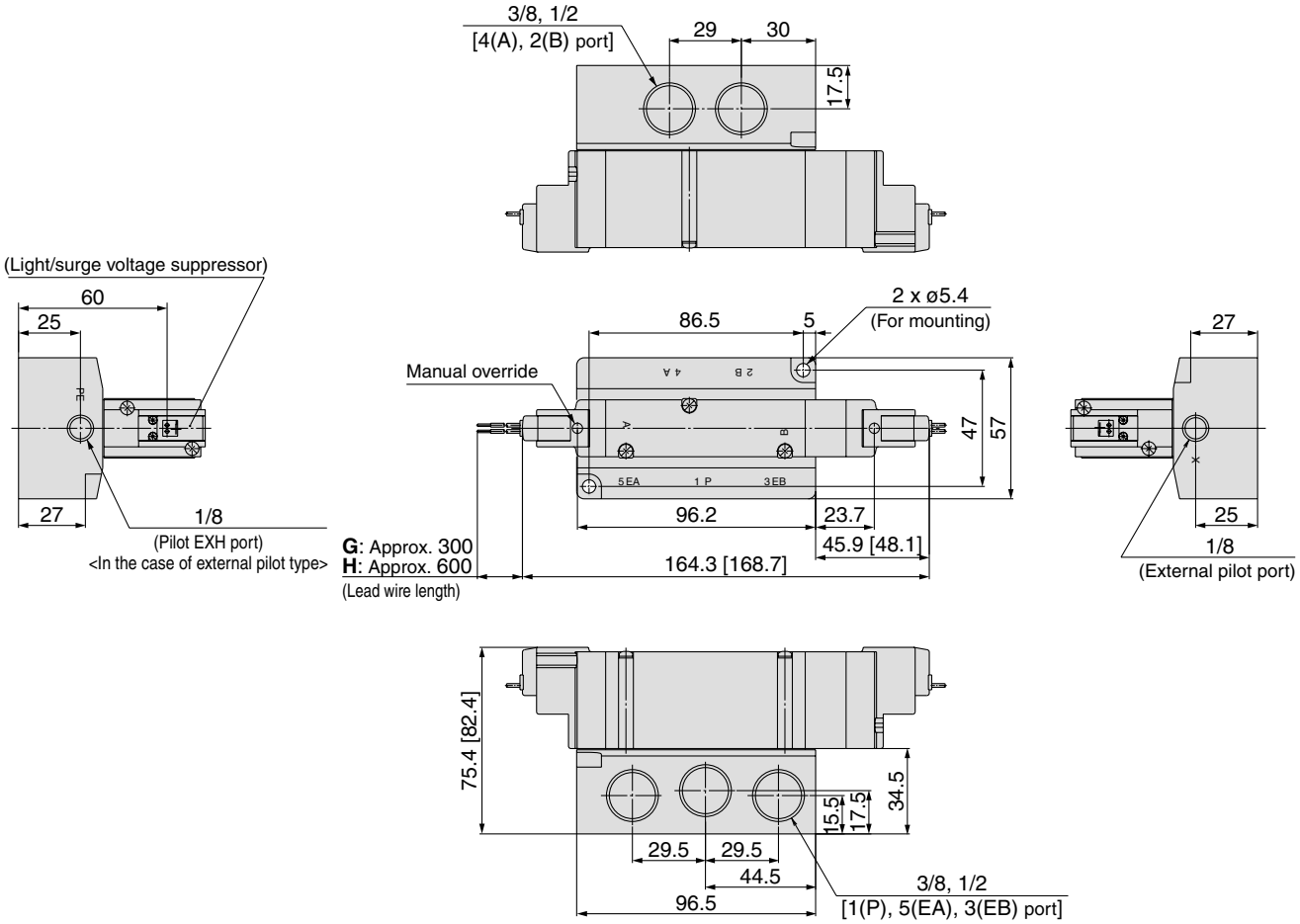
Note) Refer to page 340 for dimensions of connector types.

Dimensions: Series SY9000

[ ]: AC

3 position closed center / exhaust center / pressure center

Grommet (G), (H): SY9$^{3}_{5}$40-□$^{G}_{H}$□□-$^{03}_{04}$□

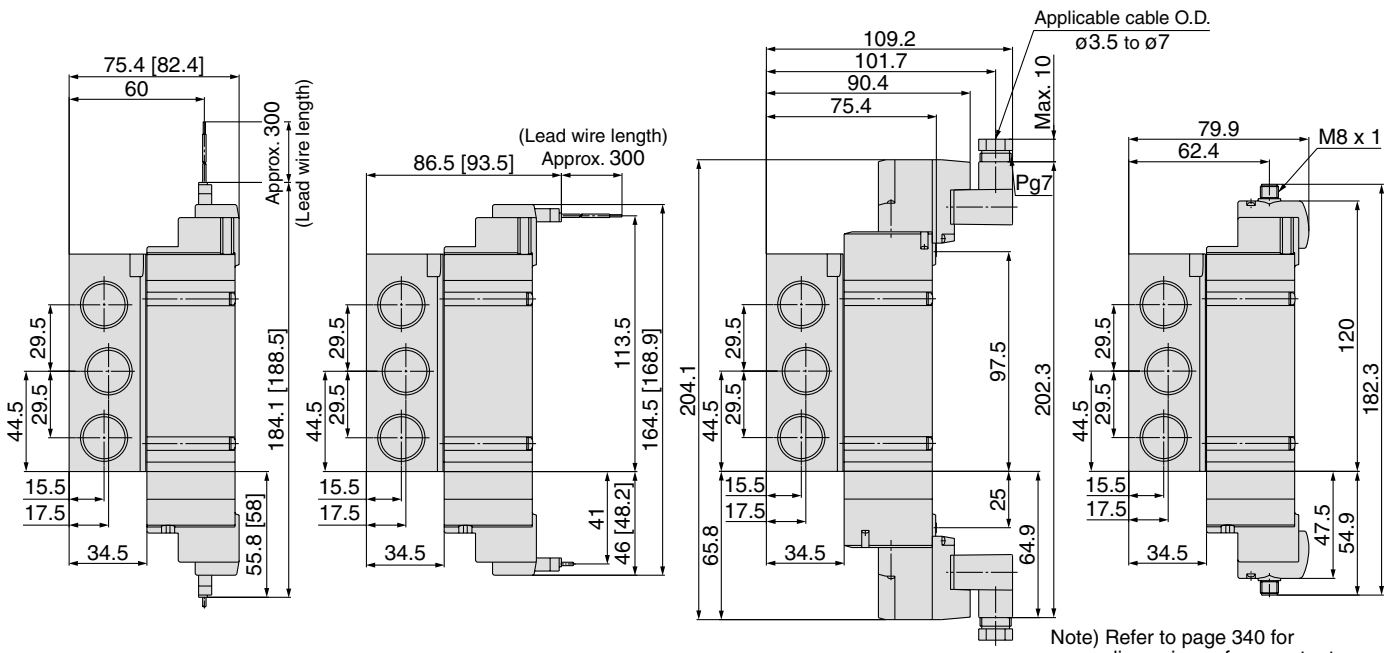


L plug connector (L): SY9$^{3}_{5}$40(R)-□L□□-$^{03}_{04}$□

M plug connector (M): SY9$^{3}_{5}$40(R)-□M□□-$^{03}_{04}$□

DIN terminal (D, Y): SY9$^{3}_{5}$40(R)-□$^{D}_{Y}$□□-$^{03}_{04}$□

M8 connector (WO): SY9$^{3}_{5}$40(R)-□WO□□-$^{03}_{04}$□



Note) Refer to page 340 for dimensions of connector types.

5 Port Solenoid Valve
Body Ported Manifold
Bar Stock Type/Individual Wiring

Type 20

Series SY3000/5000/7000

How to Order Manifold

SS5Y 5 – 20 – 05 – □ – □

Manifold series

3	SY3000
5	SY5000
7	SY7000

Stations

02	2 stations
⋮	⋮
20	20 stations

∗ This also includes the number of blanking plate assemblies.

Thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

CE-compliant

Nil	—
Q	CE-compliant

How to Order Manifold Assembly (Example)

Example

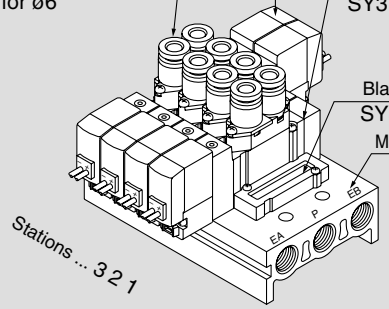
Cylinder port size
C6: With one-touch fitting for ø6

Double solenoid (24 VDC)
SY3220-5G-C6 (2 sets)

Single solenoid (24 VDC)
SY3120-5G-C6 (2 sets)

Blanking plate assembly
SY3000-26-9A (1 set)

Manifold base (5 stations)
SS5Y3-20-05



SS5Y3-20-05 ····· 1 set (Type 20, 5-station manifold base part no.)
∗ SY3000-26-9A ···· 1 set (Blanking plate assembly part no.)
∗ SY3120-5G-C6 ··· 2 sets (Single solenoid part no.)
∗ SY3220-5G-C6 ··· 2 sets (Double solenoid part no.)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

How to Order Valve

SY [5] [1] **20** [ ] – [5] [L] [ ] [ ] – [01] [ ] – [ ] – [ ]

Series

3	SY3000
5	SY5000
7	SY7000

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

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

∗ Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

Rated voltage

For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

For AC (50/60 Hz)

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

∗ DC specifications of type D, Y, DO and YO is only available with 12 and 24 VDC.
∗ For type W□, DC voltage is only available.

Electrical entry

24, 12, 6, 5, 3 VDC/ 100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	**L plug connector**	**M plug connector**	**DIN terminal**	**M8 connector**
G: Lead wire length 300 mm **H**: Lead wire length 600 mm	**L**: With lead wire (Length 300 mm) **LN**: Without lead wire **LO**: Without connector	**M**: With lead wire (Length 300 mm) **MN**: Without lead wire **MO**: Without connector	**D**: With connector **DO**: Without connector **Y**: With connector **YO**: Without connector	**WO**: Without connector cable **W□**: With connector cable Note)

∗ LN, MN type: with 2 sockets.
∗ For DIN terminal of SY3000 series, refer to page 337.
∗ "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 336.
∗ For connector cable of M8 connector, refer to page 339.
∗ M8 thread conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.
∗ Refer to page 336 for the lead wire length of L and M plug connectors.
∗ Refer to page 337 for the connector assembly with cover for L and M plug connectors.

Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

Light/surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
∗ For "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

∗ DOZ and YOZ are not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ Except for M5

Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 332.)

CE-compliant

Nil	—
Q	CE-compliant

∗ For DC only except DIN terminal.

A, B port size

Thread piping

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

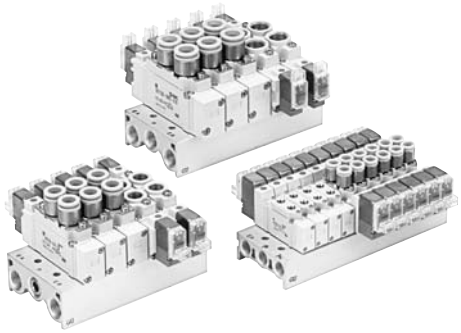
One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
N9	One-touch fitting for ø5/16"	SY7000
N11	One-touch fitting for ø3/8"	

Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 173.)



Manifold Specifications

Model		SS5Y3-20(-Q)	SS5Y5-20(-Q)	SS5Y7-20(-Q)
Applicable valve		SY3□20	SY5□20	SY7□20
Manifold type		Single base/B mount		
P (SUP)/R (EXH)		Common SUP, Common EXH		
Valve stations		2 to 20 stations Note1)		
A, B port location		Valve		
Port size	**P, EA, EB port**	1/8	1/4	1/4
	A, B port	M5 x 0.8 C4(One-touch fitting for ø4) C6 (One-touch fitting for ø6)	1/8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	1/4 C8 (One-touch fitting for ø8) C10 (One-touch fitting for ø10)
Manifold base mass W (g) **n: Stations**		W = 13n + 35	W = 36n + 64	W = 43n + 64

Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.

Note 2) Refer to "Manifold Option" on page 173.

Flow Characteristics

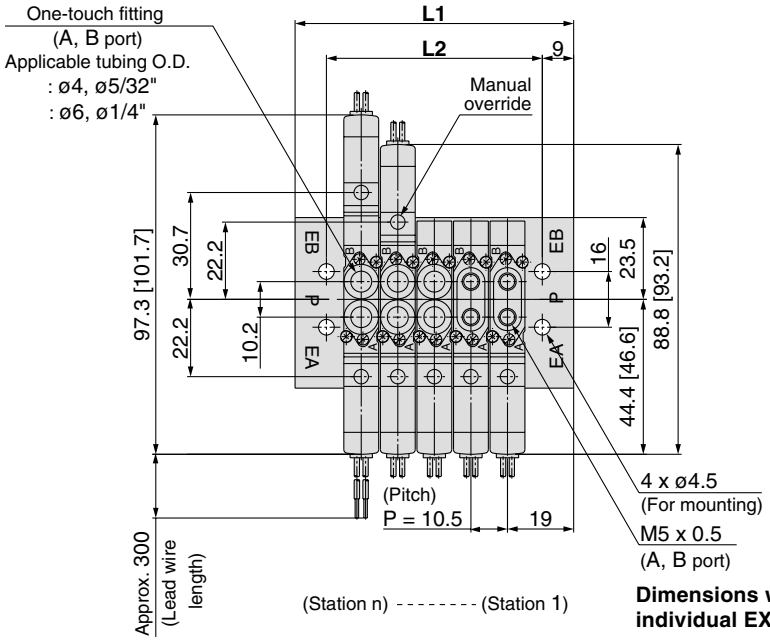
Model	Port size		Flow characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv
SS5Y3-20(-Q)	1/8	C6	0.72	0.29	0.18	0.80	0.36	0.21
SS5Y5-20(-Q)	1/4	C8	1.9	0.28	0.48	2.2	0.20	0.53
SS5Y7-20(-Q)	1/4	C10	3.6	0.31	0.93	3.6	0.27	0.88

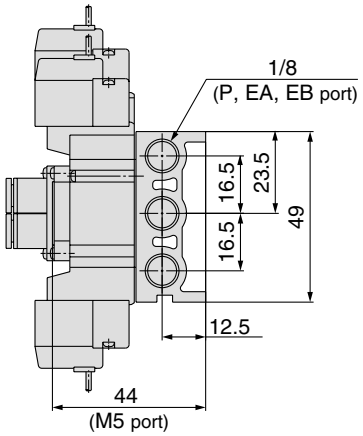
Note) The value is for manifold base with 5 stations and individually operated 2 position type.

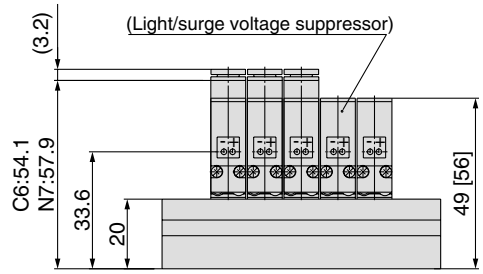
SY3000: SS5Y3-20-Stations -

[ ]: AC

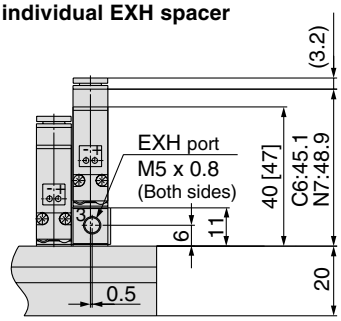
Grommet (G)





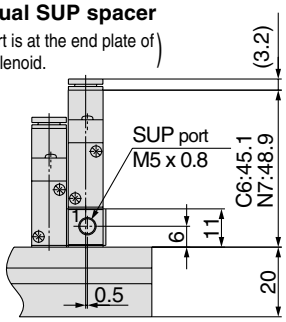


Dimensions when mounting individual EXH spacer

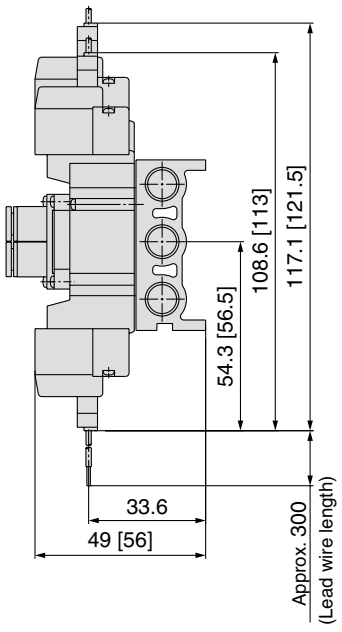


Dimensions when mounting individual SUP spacer

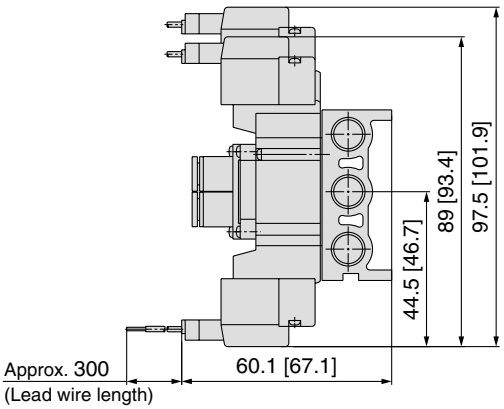
(SUP port is at the end plate of single solenoid.)



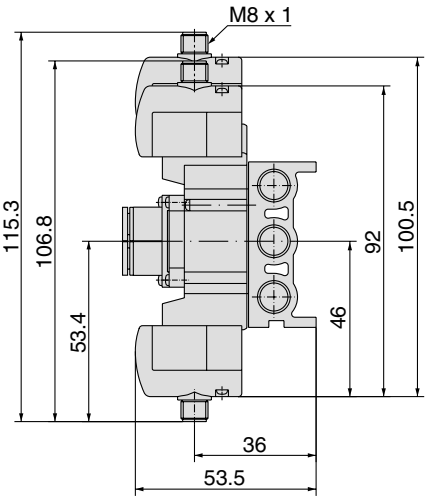
L plug connector (L)



M plug connector (M)



M8 connector (WO)



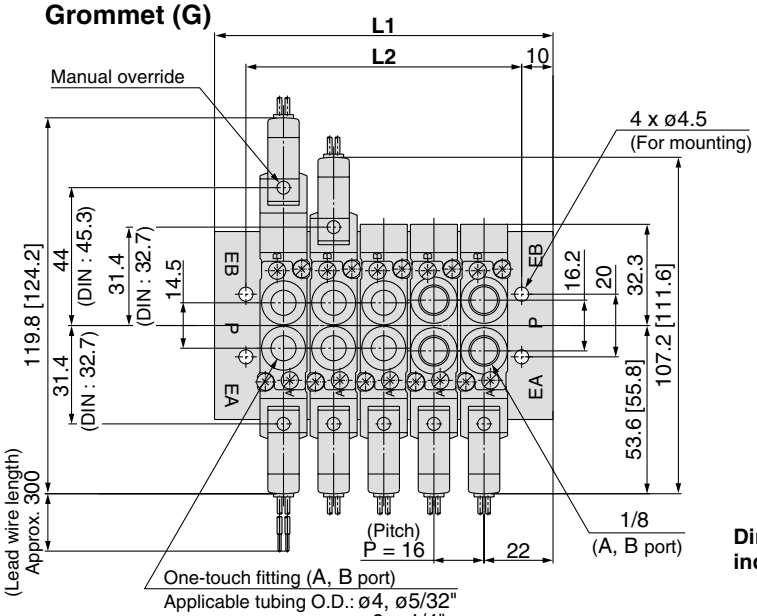
Note) Refer to page 340 for dimensions of connector types.

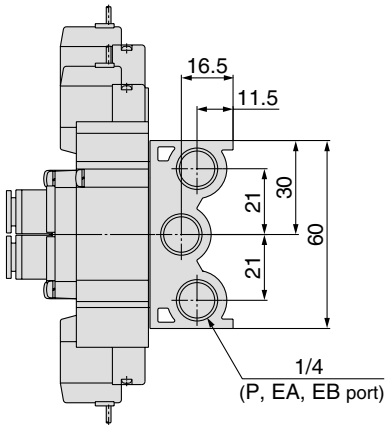
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	48.5	59	69.5	80	90.5	101	111.5	122	132.5	143	153.5	164	174.5	185	195.5	206	216.5	227	237.5
L2	30.5	41	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5

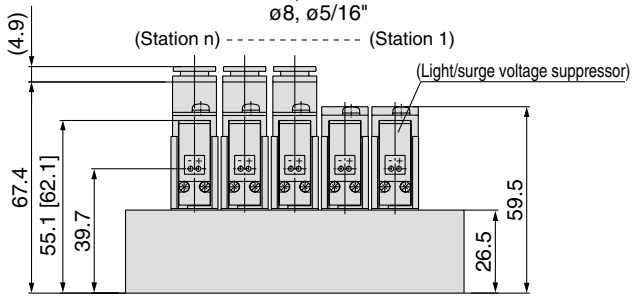
SY5000: SS5Y5-20-Stations-□

[ ]: AC

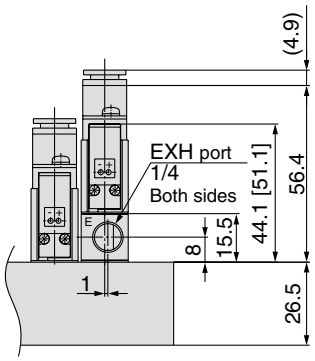
Grommet (G)





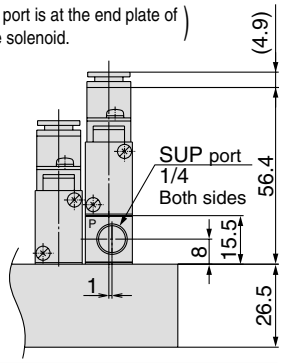


Dimensions when mounting individual EXH spacer

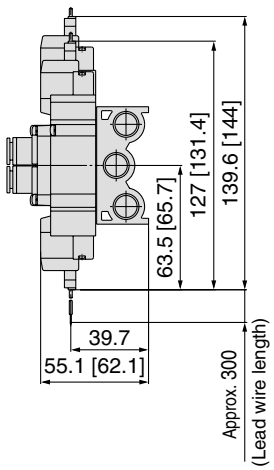


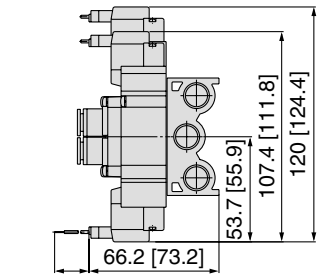
Dimensions when mounting individual SUP spacer

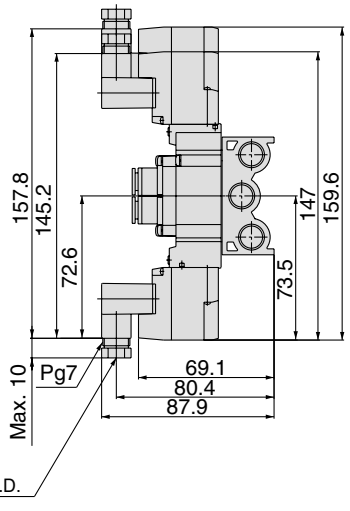
(SUP port is at the end plate of single solenoid.)

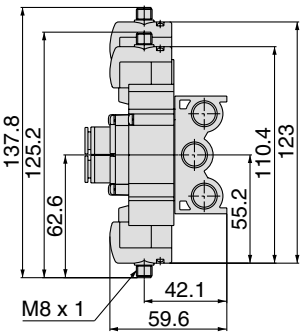


L plug connector (L) **M plug connector (M)** **DIN terminal (D, Y)** **M8 connector (WO)**









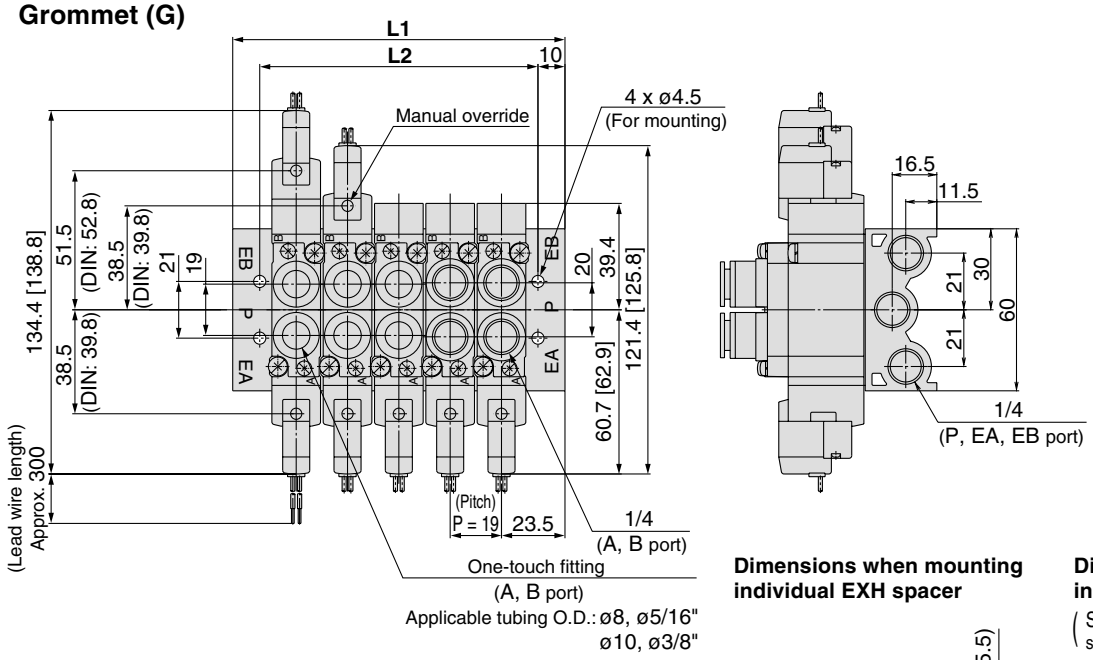
Note) Refer to page 340 for dimensions of connector types.

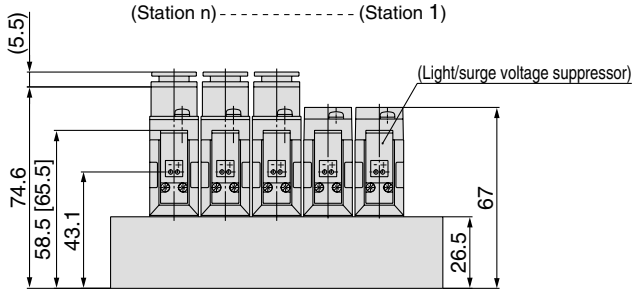
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	60	76	92	108	124	140	156	172	188	204	220	236	252	268	284	300	316	332	348
L2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328

SY7000: SS5Y7-20-Stations -

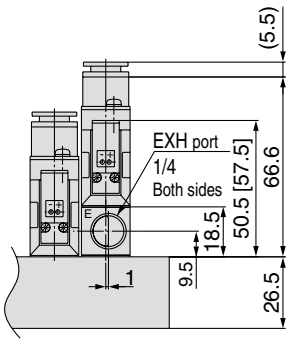
[ ]: AC

Grommet (G)



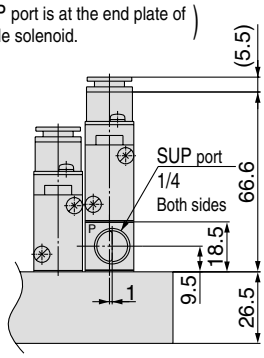


Dimensions when mounting individual EXH spacer

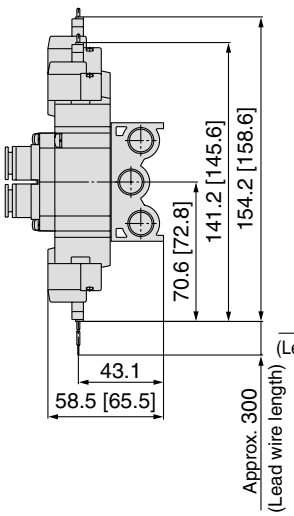


Dimensions when mounting individual SUP spacer

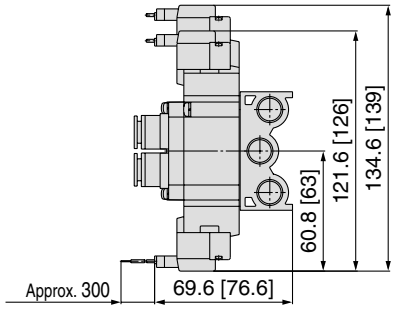
(SUP port is at the end plate of single solenoid.)



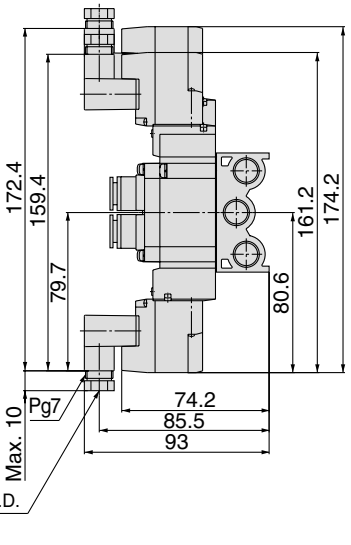
L plug connector (L)



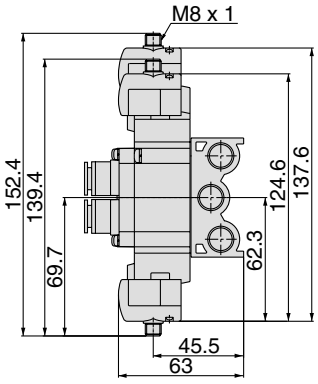
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)



Note) Refer to page 340 for dimensions of connector types.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	66	85	104	123	142	161	180	199	218	237	256	275	294	313	332	351	370	389	408
L2	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388

5 Port Solenoid Valve
Body Ported Manifold
Stacking Type/Individual Wiring

Type 23

Series SY9000

How to Order Manifold

SS5Y 9 − 23 − 05 − □ − □ − □

Manifold series

9	SY9000

Valve stations

Symbol	Stations
02	2 stations
⋮	⋮
20	20 stations

∗ This also includes the number of blanking plate assemblies.

Thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Option

Symbol	Mounting
Nil	Direct mounting
D	DIN rail mounting (with DIN rail)
D0	DIN rail mounting (without DIN rail)
D∗	When a longer DIN rail is desired than the specified stations, specify the station number to be required into ∗ mark.

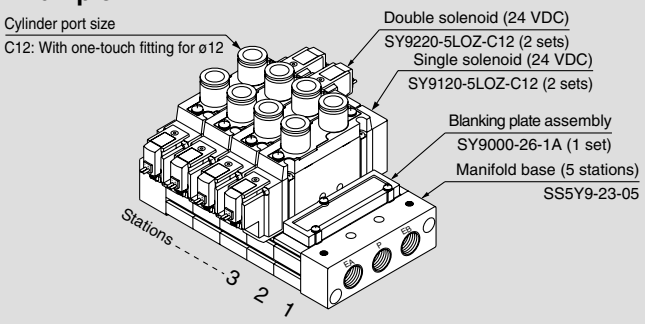
∗ Type 23 manifold of Series SY9000 is concurrently used for the internal and external pilot.

CE-compliant

Nil	—
Q	CE-compliant

How to Order Manifold Assembly (Example)

Example



SS5Y9-23-05 ····· 1 set (Type 23, 5-station manifold base part no.)
∗ SY9000-26-1A ····· 1 set (Blanking plate assembly part no.)
∗ SY9120-5LOZ-C12 ··· 2 sets (Single solenoid part no.)
∗ SY9220-5LOZ-C12 ··· 2 sets (Double solenoid part no.)
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

How to Order Valve

SY 9 1 20 □ □ – 5 L □ □ – 02 □ – □ – □

Series

9	SY9000

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

Pilot specifications

Nil	Internal pilot
R	External pilot

∗ In the case of external pilot specifications, it cannot be used as a single unit.

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

∗ Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

Rated voltage

For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

For AC (50/60 Hz)

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

∗ DC specifications of type D, Y, DO and YO is only available with 12 and 24 VDC.
∗ For type W□, DC voltage is only available.

Electrical entry

24, 12, 6, 5, 3 VDC/ 100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm **H**: Lead wire length 600 mm	**L**: With lead wire (Length 300 mm) **LN**: Without lead wire **LO**: Without connector	**M**: With lead wire (Length 300 mm) **MN**: Without lead wire **MO**: Without connector	**D**: With connector **DO**: Without connector **Y**: With connector **YO**: Without connector	**WO**: Without connector cable **W□**: With connector cable Note)

∗ LN, MN type: with 2 sockets.
∗ "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 336.
∗ For connector cable of M8 connector, refer to page 339.
∗ M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.
∗ Refer to page 336 for the lead wire length of L and M plug connectors.
∗ Refer to page 337 for the connector assembly with cover for L and M plug connectors.
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

Light/surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
∗ For "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor

∗ DOZ and YOZ are not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 332.)

CE-compliant

Nil	—
Q	CE-compliant

∗ For DC only except DIN terminal.

A, B port size

Thread piping

Symbol	Port size
02	1/4
03	3/8

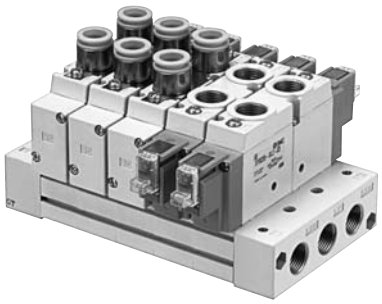
One-touch fitting (Metric size)

Symbol	Port size
C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12

One-touch fitting (Inch size)

Symbol	Port size
N9	One-touch fitting for ø5/16"
N11	One-touch fitting for ø3/8"

Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary.
For details, refer to page 173.



Manifold Specifications

Model		SS5Y9-23(-Q)
Applicable valve		SY9□20
Manifold type		Stacking type
P (SUP)/R (EXH)		Common SUP, Common EXH
Valve stations		2 to 20 stations Note1)
A, B port location		Valve
Port size	**P, EA, EB port**	3/8
	A, B port	1/4 3/8 C8 (One-touch fitting for ø8) C10 (One-touch fitting for ø10) C12 (One-touch fitting for ø12)
Manifold base mass W (g) **n: Stations**		W = 66n + 246

Note 1) For more than 10 stations, supply pressure to P port on both sides and exhaust from EA/EB port on both sides.
Note 2) Refer to “Manifold Option” on page 173.

Flow Characteristics

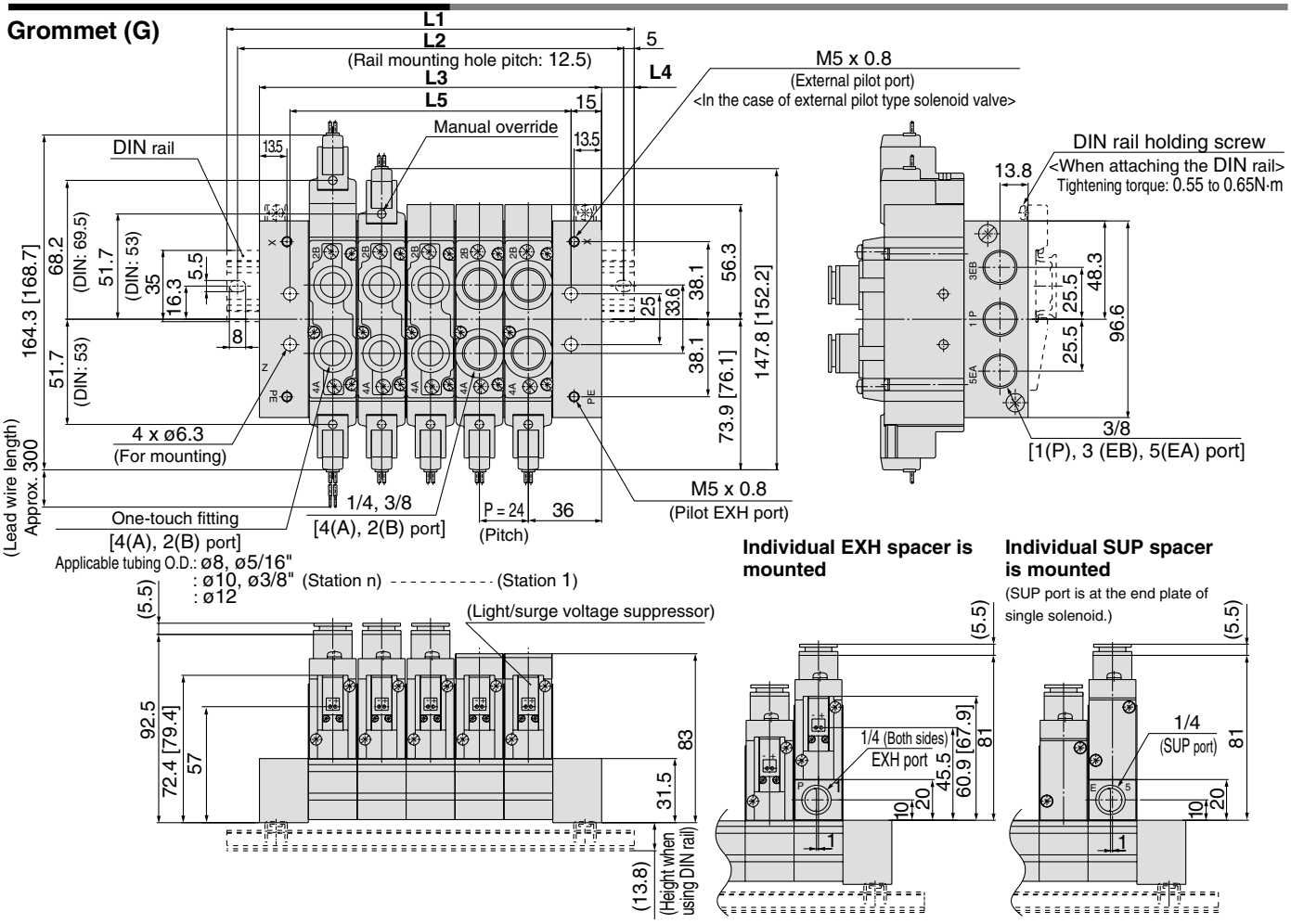
Model	Port size		Flow characteristics					
	1, 5, 3	4, 2	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
	(P, EA, EB)	(A, B)	C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv
SS5Y9-23(-Q)	3/8	C12	6.3	0.20	1.5	8.2	0.28	1.9

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

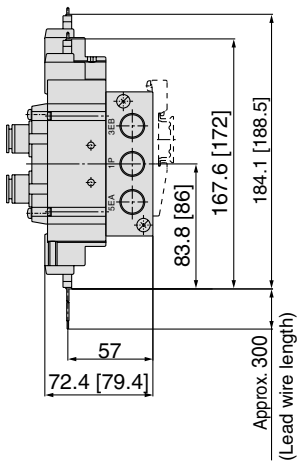
SY9000: SS5Y9-23-Stations-(D)

[ ]: AC

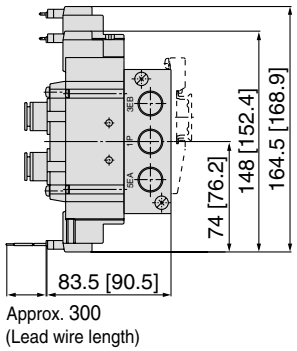
Grommet (G)



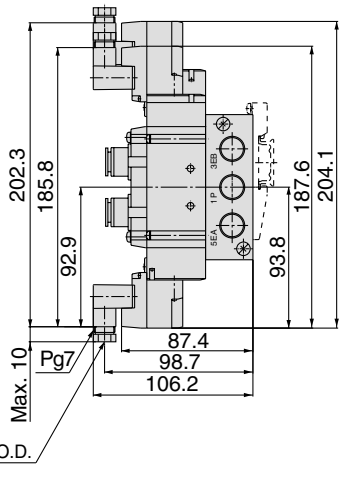
L plug connector (L)



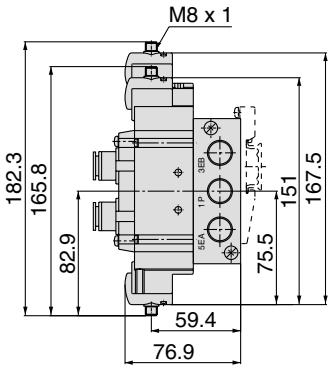
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)



Note) Refer to page 340 for dimensions of connector types.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	123	148	173	198	223	248	273	298	323	335.5	360.5	385.5	410.5	435.5	460.5	485.5	510.5	535.5	560.5
L2	112.5	137.5	162.5	187.5	212.5	237.5	262.5	287.5	312.5	325	350	375	400	425	450	475	500	525	550
L3	96	120	144	168	192	216	240	264	288	312	336	360	384	408	432	456	480	504	528
L4	13.5	14	14.5	15	15.5	16	16.5	17	17.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5
L5	66	90	114	138	162	186	210	234	258	282	306	330	354	378	402	426	450	474	498

Note) In the case of direct mounting without DIN rail, total width of manifold is L3.

5 Port Solenoid Valve
Body Ported Manifold
Bar Stock Type/Flat Ribbon Cable

Type 20P

Series SY3000/5000/7000

How to Order Manifold

SS5Y 5 – 20P – 05 – [ ] – [ ]

Manifold series

3	SY3000
5	SY5000
7	SY7000

Stations

03	3 stations
⋮	⋮
12	12 stations

Note) SS5Y3 has 4 to 12 stations.

Thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

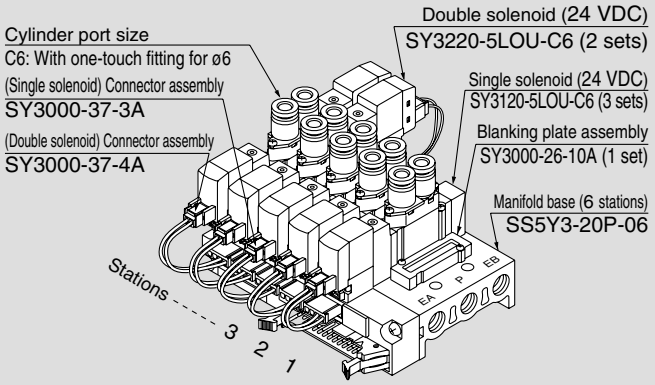
CE-compliant

Nil	—
Q	CE-compliant

∗ For DC only.

How to Order Manifold Assembly (Example)

Example

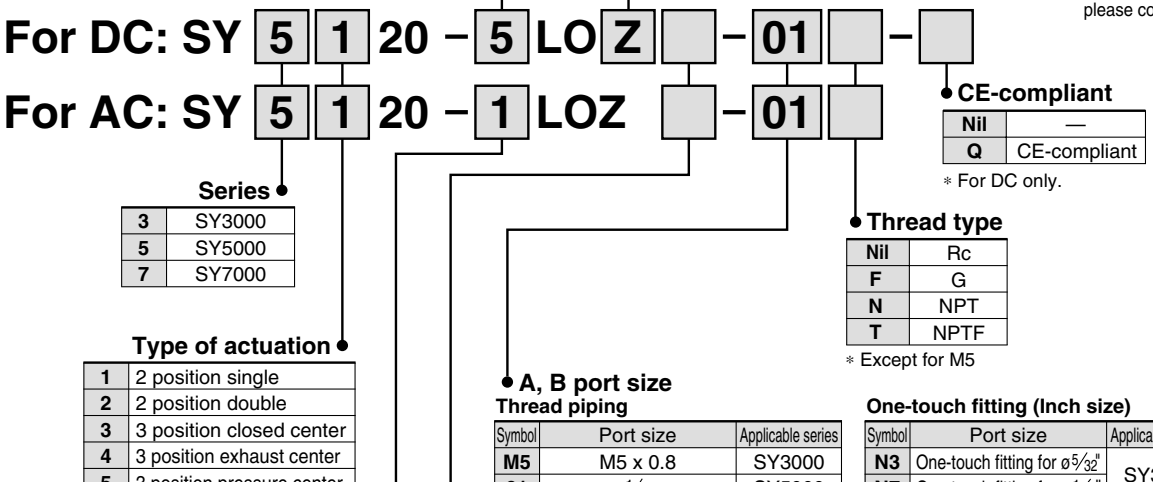


SS5Y3-20P-06 ····· 1 set (Type 20P, 6-station manifold part no.)
∗ SX3000-26-10A ····· 1 set (Blanking plate assembly part no)
∗ SY3120-5LOU-C6 ··· 3 sets (Single solenoid part no.)
∗ SY3220-5LOU-C6 ··· 2 sets (Double solenoid part no.)
∗ SY3000-37-3A ····· 3 sets (Connector assembly part no.)
∗ SY3000-37-4A ····· 2 sets (Connector assembly part no.)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

How to Order Valve



Rated voltage

5	24 VDC
6	12 VDC

Light/surge voltage suppressor

Z	With light/surge voltage suppressor
U	With light/surge voltage suppressor (Non-polar type)

Note) Z: Positive common specifications only.

Note) In the case of flat cable type, "U" and "Z" types are for DC specifications and "Z" type is for AC specifications. "Z" for DC is positive common specifications only. For the other combination, please contact SMC.

CE-compliant

Nil	—
Q	CE-compliant

∗ For DC only.

Series

3	SY3000
5	SY5000
7	SY7000

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

Rated voltage

1	100 VAC
3	110 VAC (115 VAC)

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ Except for M5

A, B port size

Thread piping

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

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	

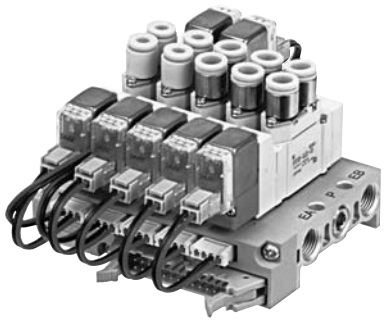
One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
N9	One-touch fitting for ø5/16"	SY7000
N11	One-touch fitting for ø3/8"	

Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary.
(For details, refer to page 173.)

- **Multiple valve wiring is simplified through the use of the flat cable connector**
- **Clean appearance**

In the case of a flat ribbon cable type, each valve is wired on the print board of manifold base to allow the external wiring to be piped all together with 26 pins MIL connector.



Manifold Specifications

Model		SS5Y3-20P(-Q)	SS5Y5-20P(-Q)	SS5Y7-20P(-Q)
Applicable valve		SY3□20	SY5□20	SY7□20
Manifold type		Single base/B mount		
P (SUP)/R (EXH)		Common SUP, Common EXH		
Valve stations		4 to 12 stations(1)	3 to 12 stations Note 1)	
A, B port location		Valve		
Port size	P, EA, EB port	1/8	1/4	1/4
	A, B port	M5 x 0.8, C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	1/8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	1/4 C8 (One-touch fitting for ø8) C10 (One-touch fitting for ø10)
Manifold base mass W (g) n: Stations		W = 19n + 45	W = 43n + 77	W = 51n + 81
Applicable flat ribbon cable connector		Flat ribbon cable connector, Socket: 26 pins MIL type with strain relief, Conforming to MIL-C-83503		
Internal wiring		In common between +COM and –COM (Z type: +COM only).		
Rated voltage Note 4)		12, 24 VDC 100, 110 VAC		

Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.
Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.
Note 3) Refer to "Manifold Option" on page 173.
Note 4) CE-compliant: For DC only.

Flow Characteristics

Model	Port size		Flow characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
SS5Y3-20P	1/8	C6	0.72	0.29	0.18	0.80	0.36	0.21
SS5Y5-20P	1/4	C8	1.9	0.28	0.48	2.2	0.20	0.53
SS5Y7-20P	1/4	C10	3.6	0.31	0.93	3.6	0.27	0.88

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

How to Order Connector Assembly

For 12, 24 VDC

Specifications	For SY3000	For SY5000/7000
For single solenoid:	SY3000-37-3A	SY5000-37-3A
Double solenoid, 3 position type	SY3000-37-4A	SY5000-37-4A
Single with spacer assembly	SY5000-37-3A	SY5000-37-5A
Double, 3 position with spacer assembly	SY3000-37-6A	SY5000-37-6A

For 100 VAC

Specifications	For SY3000	For SY5000/7000
For single solenoid:	SY3000-37-32A	SY5000-37-15A
Double solenoid, 3 position type	SY3000-37-33A	SY5000-37-16A
Single with spacer assembly	SY5000-37-15A	SY5000-37-17A
Double, 3 position with spacer assembly	SY3000-37-34A	SY5000-37-18A

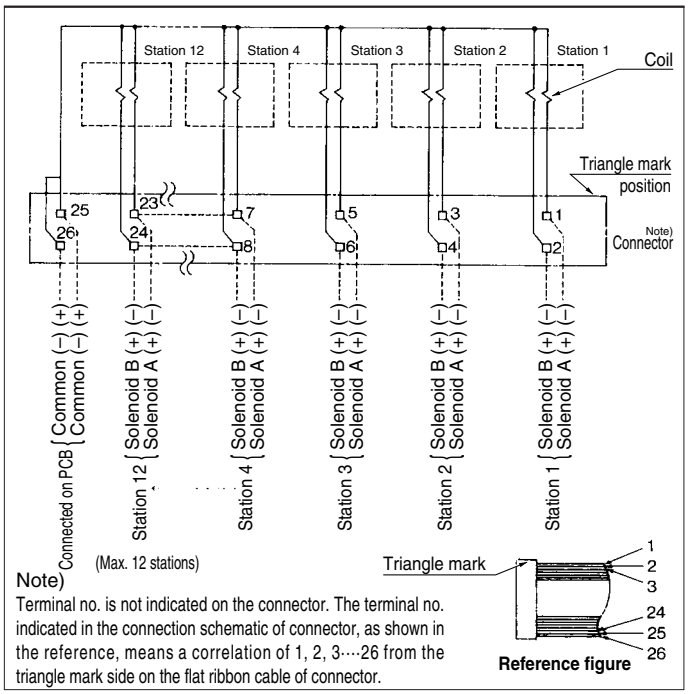
For 100 VAC (115 VAC)

Specifications	For SY3000	For SY5000/7000
For single solenoid:	SY3000-37-35A	SY5000-37-19A
Double solenoid, 3 position type	SY3000-37-36A	SY5000-37-20A
Single with spacer assembly	SY5000-37-19A	SY5000-37-21A
Double, 3 position with spacer assembly	SY3000-37-37A	SY5000-37-22A

⚠Caution

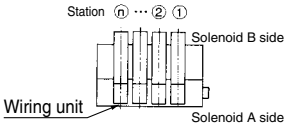
- For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.

Internal Wiring of Manifold (Non-polar type)



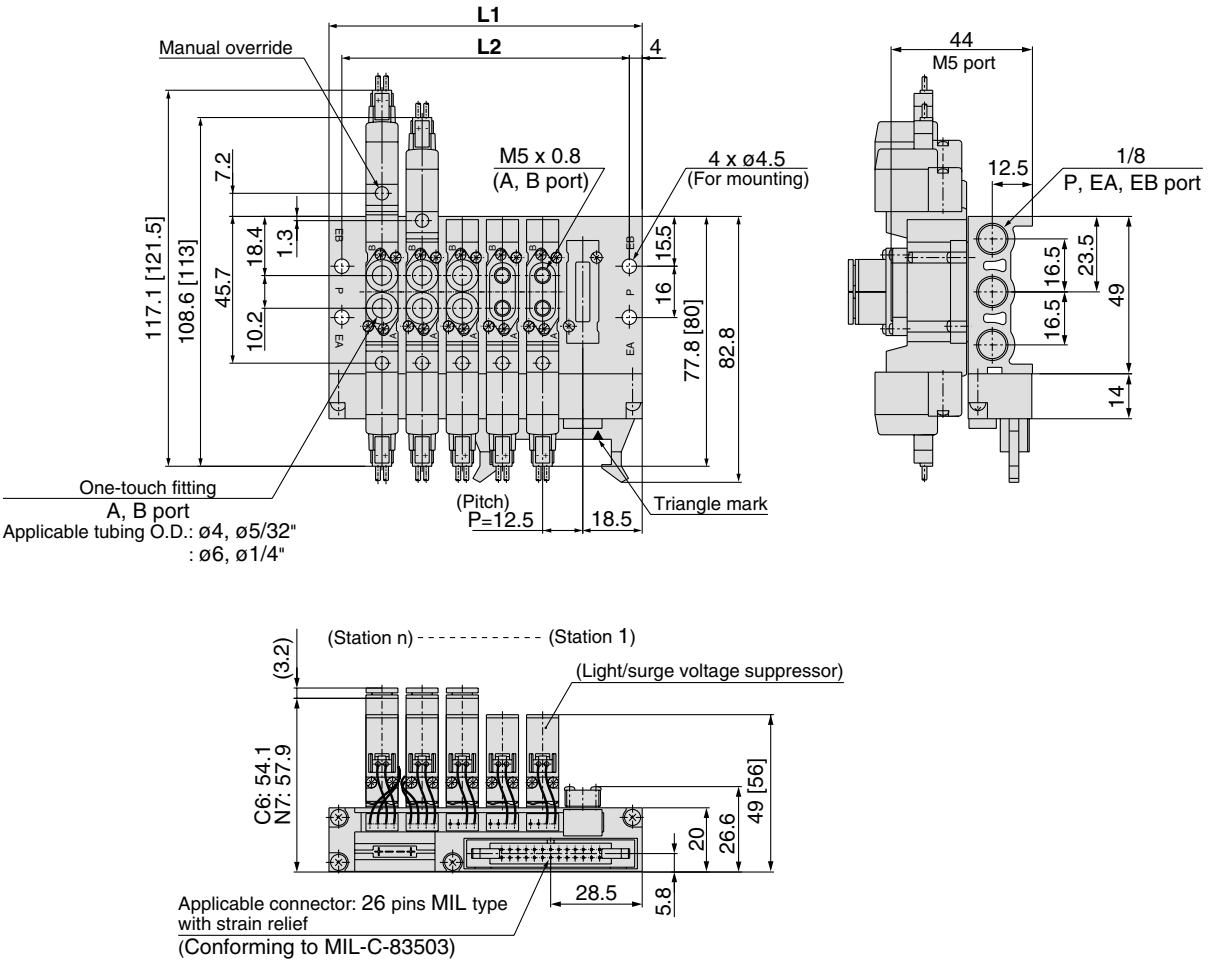
Note)
Terminal no. is not indicated on the connector. The terminal no. indicated in the connection schematic of connector, as shown in the reference, means a correlation of 1, 2, 3····26 from the triangle mark side on the flat ribbon cable of connector.

- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid A side.
- The maximum number of stations that can be accommodated is 12. For more stations, please contact SMC.



SY3000: SS5Y3-20P-Stations

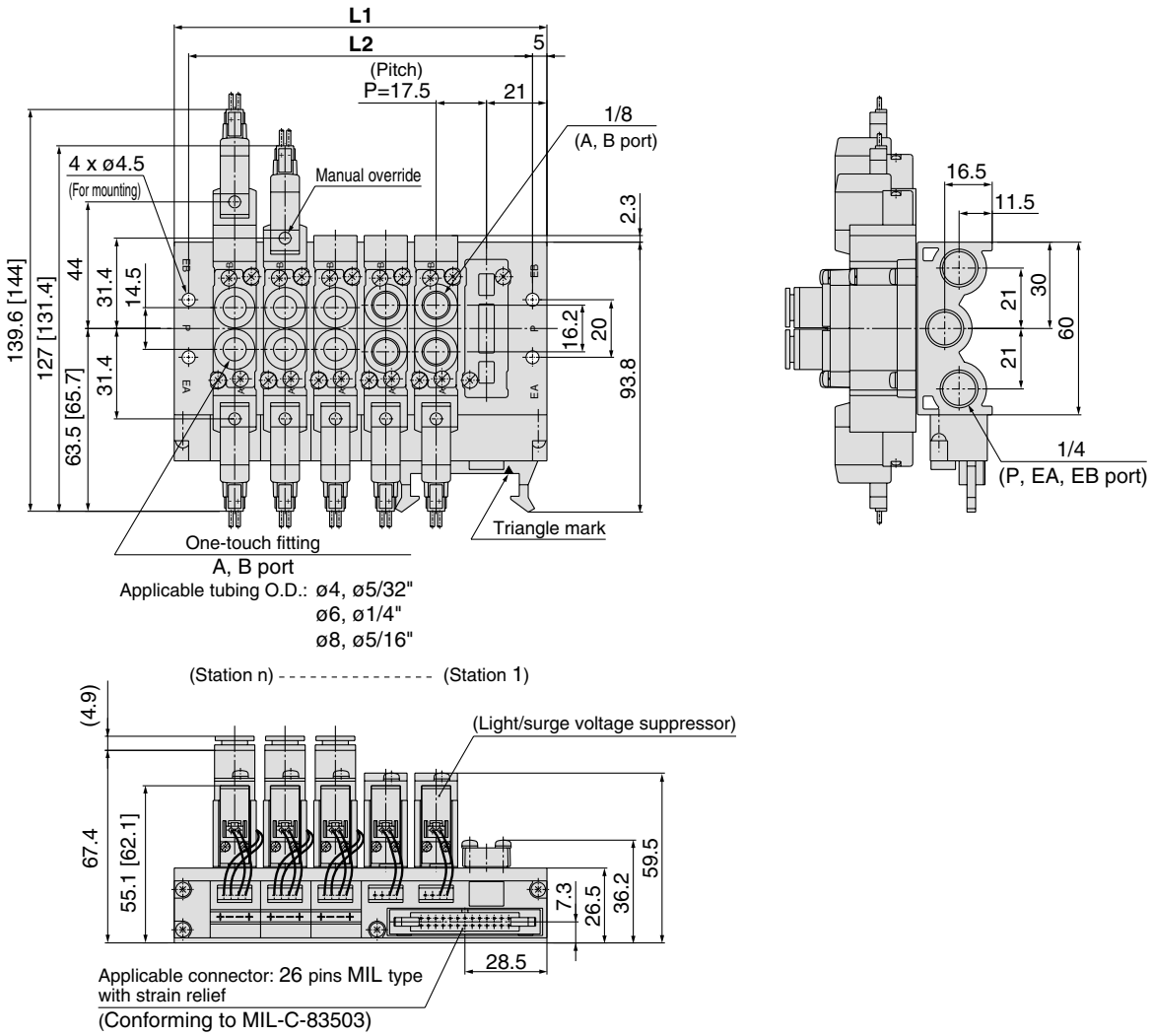
[ ]: AC



Stations n	4	5	6	7	8	9	10	11	12
L1	72.5	85	97.5	110	122.5	135	147.5	160	172.5
L2	64.5	77	89.5	102	114.5	127	139.5	152	164.5

SY5000: SS5Y5-20P-Stations

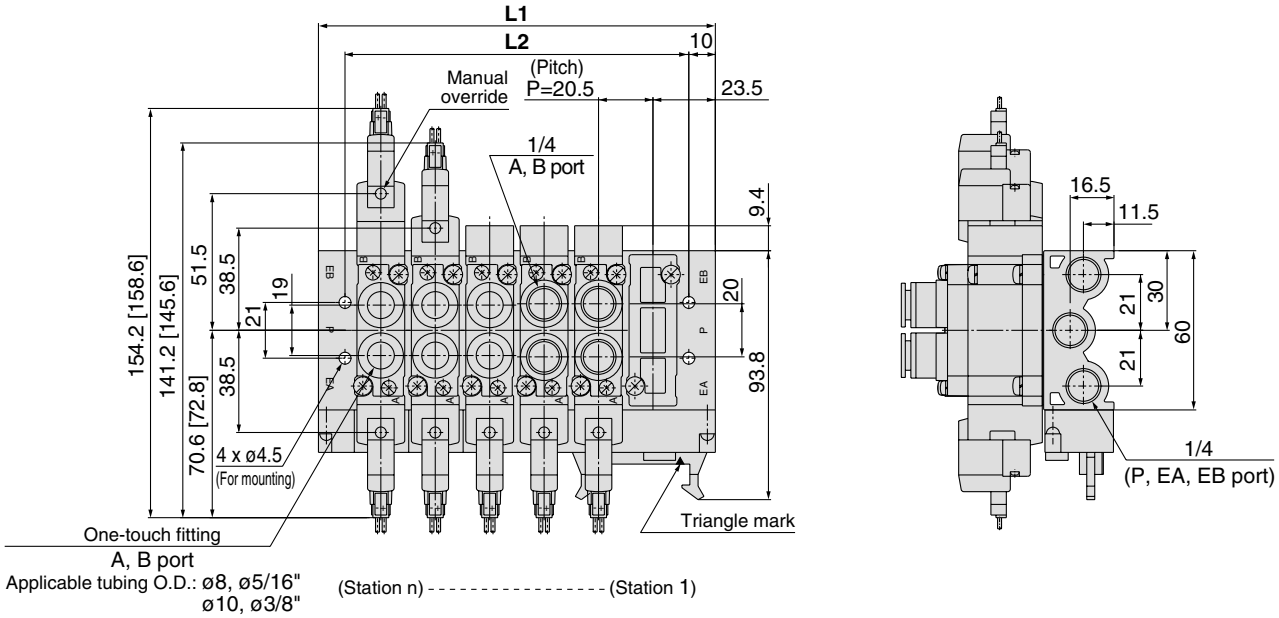
[ ]: AC



Stations n	3	4	5	6	7	8	9	10	11	12
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L2	67	84.5	102	119.5	137	154.5	172	189.5	207	224.5

SY7000: SS5Y7-20P-Stations

[ ]: AC



Stations n	3	4	5	6	7	8	9	10	11	12
L1	88	108.5	129	149.5	170	190.5	211	231.5	252	272.5
L2	68	88.5	109	129.5	150	170.5	191	211.5	232	252.5

5 Port Solenoid Valve
Body Ported Manifold
Stacking Type/Flat Ribbon Cable

Type 23P

Series SY9000

How to Order Manifold

SS5Y 9 – 23P – 05 – □ – □ – □

Manifold series

9	SY9000

Thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Valve stations

Symbol	Stations
04	4 stations
⋮	⋮
12	12 stations

∗ This also includes the number of blanking plate assemblies.

∗ Type 23P manifold of Series SY9000 is concurrently used for the internal and external pilot.

Option

Symbol	Mounting
Nil	Direct mounting
D	DIN rail mounting (with DIN rail)
D0	DIN rail mounting (without DIN rail)
D ∗	When a longer DIN rail is desired than the specified stations, specify the station number to be required into ∗ mark.

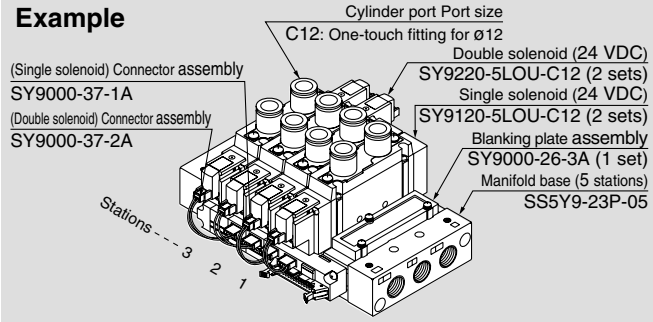
CE-compliant

Nil	—
Q	CE-compliant

∗ For DC only.

How to Order Manifold Assembly (Example)

Example



SS5Y9-23P-05 ····· **1 set (Type 23, 5-station manifold base part no.)**
∗**SY9000-26-3A** ····· **1 set (Blanking plate assembly part no.)**
∗**SY9120-5LOU-C12** ··· **2 sets (Single solenoid part no.)**
∗**SY9220-5LOU-C12** ··· **2 sets (Double solenoid part no.)**
∗**SY9000-37-1A** ····· **2 sets (Connector assembly part no.)**
∗**SY9000-37-2A** ····· **2 sets (Connector assembly part no.)**

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

How to Order Valve

For DC: SY 9 1 20 □ – 5 LO Z □ – 02 □ – □

For AC: SY 9 1 20 □ – 1 LOZ □ – 02 □

Light/surge voltage suppressor

Z	With light/surge voltage suppressor
U	With light/surge voltage suppressor (Non-polar type)

Note) Z: Positive common specifications only.

Rated voltage

5	24 VDC
6	12 VDC

CE-compliant

Nil	—
Q	CE-compliant

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Series

9	SY9000

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

Pilot specifications

Nil	Internal pilot
R	External pilot

∗ Type 23P manifolds can be used for both internal and external pilots.

Rated voltage

1	100 VAC
3	110 VAC (115 VAC)

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

A, B port size

Thread piping

Symbol	Port size
02	1/4
03	3/8

One-touch fitting (Metric size)

Symbol	Port size
C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12

One-touch fitting (Inch size)

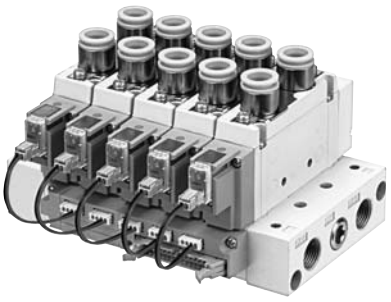
Symbol	Port size
N9	One-touch fitting for ø5/16"
N11	One-touch fitting for ø3/8"

Note) In the case of flat cable type, "U" and "Z" types are for DC specifications and "Z" type is for AC specifications. "Z" type for DC is positive common specification onlly. For the ohter combination, please contact SMC.

Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 173.)

- **Multiple valve wiring is simplified through the use of the flat cable connector.**
- **Clean appearance**

In the case of a flat ribbon cable type, each valve is wired on the print board of manifold base to allow the external wiring to be piped all together with 26 pins MIL connector.



How to Order Connector Assembly

For 12, 24 VDC

Specifications	For SY9000
For single solenoid	SY9000-37-1A
Double solenoid 3 position	SY9000-37-2A
Single with spacer assembly	SY9000-37-3A
Double, 3 position with spacer assembly	SY9000-37-4A

For 100 VAC

Specifications	For SY9000
For single solenoid	SY9000-37-1B
Double solenoid 3 position	SY9000-37-2B
Single with spacer assembly	SY9000-37-3B
Double, 3 position with spacer assembly	SY9000-37-4B

For 110 VAC (115 VAC)

Specifications	For SY9000
For single solenoid	SY9000-37-1C
Double solenoid 3 position	SY9000-37-2C
Single with spacer assembly	SY9000-37-3C
Double, 3 position with spacer assembly	SY9000-37-4C

⚠Caution

- For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.

Manifold Specifications

Model		SS5Y9-23P(-Q)
Applicable valve		SY9□20
Manifold type		Stacking type
P (SUP)/R (EXH)		Common SUP, Common EXH
Valve stations		4 to 12 stations Note1)
A, B port location		Valve
Port size	P, EA, EB port	3/8
	A, B port	1/4 3/8 C8 (One-touch fitting for ø8) C10 (One-touch fitting for ø10) C12 (One-touch fitting for ø12)
Manifold base mass W (g) n: Stations		W = 73n + 259
Applicable flat ribbon cable connector		Flat ribbon cable connector, Socket: 26 pins MIL with strain relief, Conforming to MIL-C-83503
Internal wiring		In common between +COM and –COM (Z type: +COM only)
Rated voltage Note4)		12, 24 VDC, 100, 110 VAC

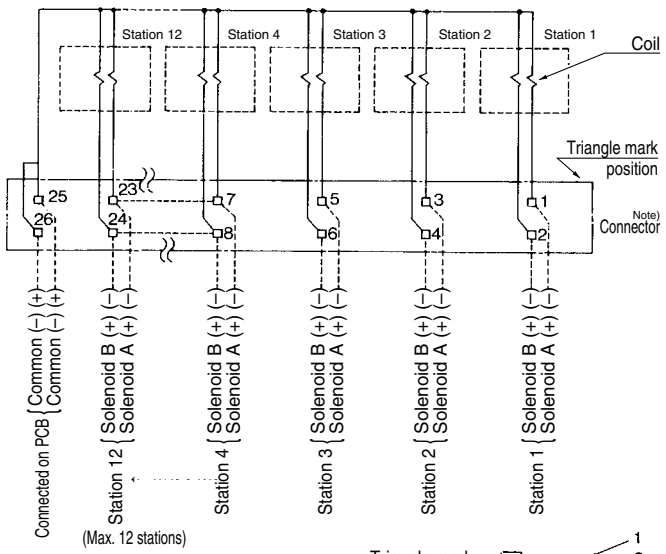
Note 1) For more than 10 stations, supply pressure to P port on both sides and exhaust from EA/EB port on both sides.
Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.
Note 3) Refer to "Manifold Option" on page 173.
Note 4) CE-compliant: For DC only.

Flow Characteristics

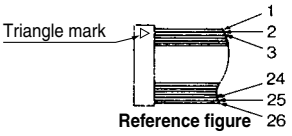
Model	Port size		Flow characteristics					
	1, 5, 3	4, 2	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
	(P, EA, EB)	(A, B)	C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv
SS5Y9-23P(-Q)	3/8	C12	6.3	0.20	1.5	8.2	0.28	1.9

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

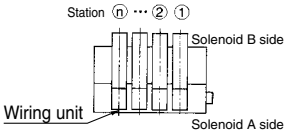
Internal Wiring of Manifold (Non-polar type)



Note)
Terminal no. is not indicated on the connector. The terminal no. indicated in the connection schematic of connector, as shown in the reference, means a correlation of 1, 2, 3····26 from the triangle mark side on the flat ribbon cable of connector.



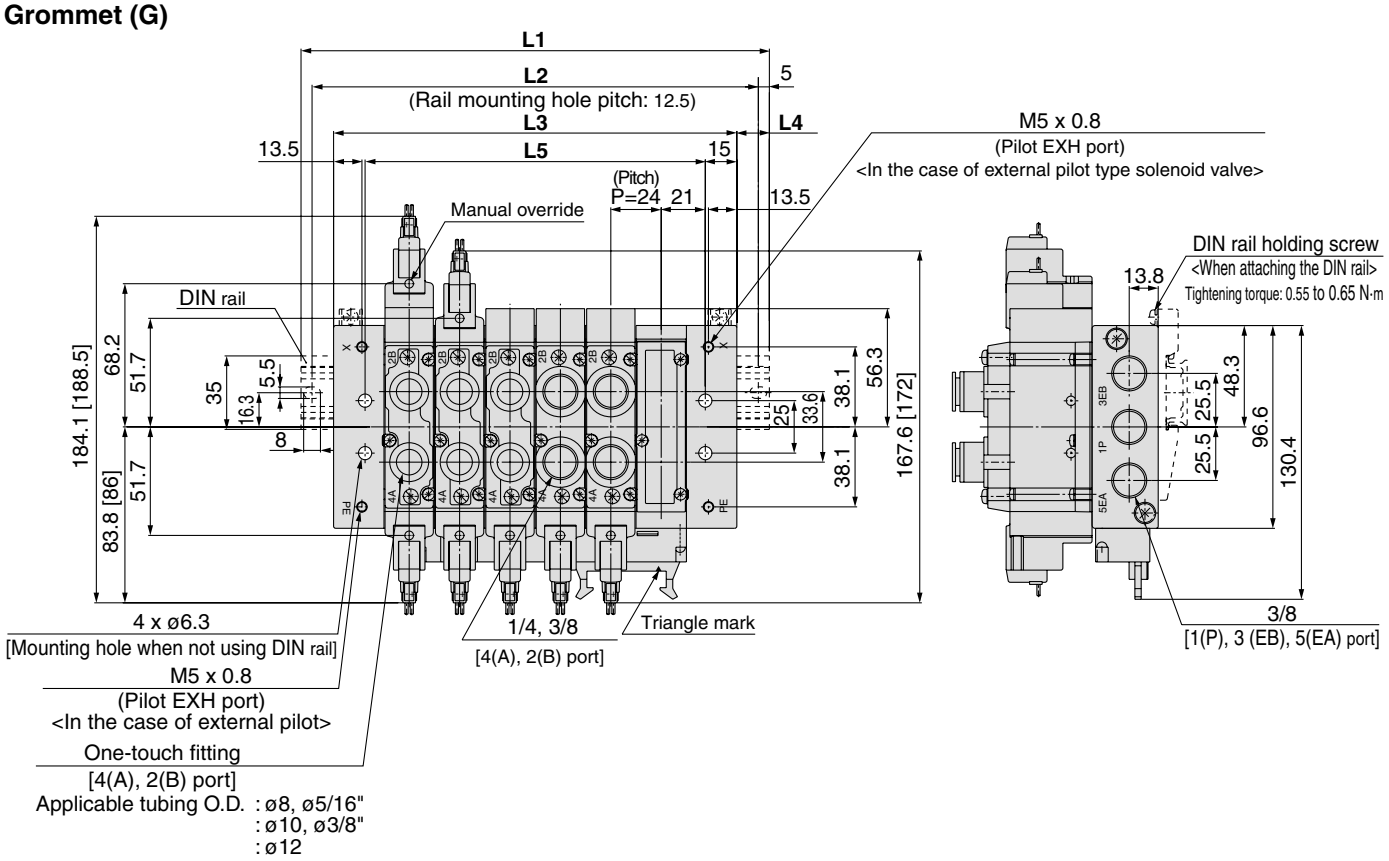
- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid A side.
- The maximum number of stations that can be accommodated is 12. For more stations, please contact SMC.

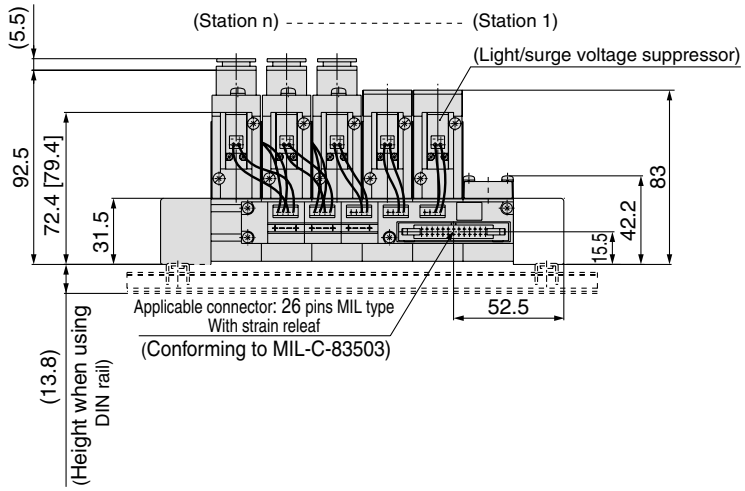


SY9000: SS5Y9-23P- Stations -(D)

[ ]: AC

Grommet (G)





Stations n	4 stations	5	6	7	8	9	10	11	12 stations
L1	173	198	223	248	273	298	323	335.5	360.5
L2	162.5	187.5	212.5	237.5	262.5	287.5	312.5	325	350
L3	144	168	192	216	240	264	288	312	336
L4	14.5	15	15.5	16	16.5	17	17.5	12	12.5
L5	114	138	162	186	210	234	258	282	306

Note) In the case of direct mounting without DIN rail, total width of manifold is L3.

EX510 Gateway System
Serial Transmission System
Body Ported Manifold/Integrated Base

Type 20SA

Series SY3000/5000/7000

CE

How to Order Manifold

SS5Y 3 – 20SA □ – 04 – □ – □

Manifold series

3	SY3000
5	SY5000
7	SY7000

SI unit

Nil	NPN output (+COM.)
N	PNP output (–COM.)

SI unit part no.

Symbol	SI unit specifications	SI unit part no.	Page
Nil	NPN output (+COM.)	EX510-S001	P.1715 to 1717
N	PNP output (–COM.)	EX510-S101	

For details of "Gateway System Serial Transmission System, Series EX510", refer to pages 1696 through to 1724.

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Valve stations

Symbol	Stations	Note
03	3 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	
03	3 stations	Specified layout Note 2) (Compatible with 16 solenoid valves)
⋮	⋮	
16	16 stations	

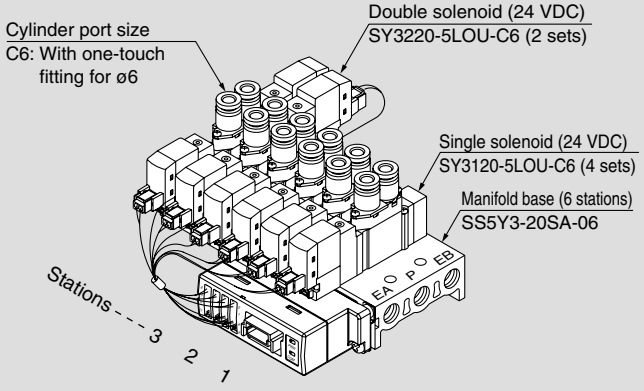
CE-compliant

Nil	—
Q	CE-compliant

• SS5Y3 can be set from 4 stations.
• The number of the blanking plate assembly is also included.
Note 1) Double wiring: Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
Note 2) Specified layout: Indicate wiring specifications on the manifold specification sheet. (Note that double and 3 position valves cannot be used where single solenoid wiring has been specified.)

How to Order Manifold Assembly (Example)

Example



SS5Y3-20SA-06 ·····1 set (20SA type 6-station manifold part no.)
*** SY3120-5LOU-C6···4 sets (Single solenoid part no.)**
*** SY3220-5LOU-C6···2 sets (Double solenoid part no.)**

└→The asterisk denotes the symbol for assembly. Prefix to the part no. of the solenoid valve, etc.

Add the valve and option part number under the manifold base part number.
When entry of part numbers becomes complicated, indicate by the manifold specification sheet. For a manifold for an EX510, the length of the lead wire for a connector assembly depends on the number of stations. Therefore, the manifold assembly is shipped with the valves (including blanking plates) and connector assembly mounted on it, as the standard specification. Be sure to specify the part nos. of the solenoid valves to be mounted.

How to Order Valves

SY 3 1 20 – 5 LO Z □ – M5 □ – □

Series

3	SY3000
5	SY5000
7	SY7000

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

Rated voltage: 24 VDC

Light/surge voltage suppressor

Z	With light/surge voltage suppressor
U	Without light/surge voltage suppressor (non-polar type)

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

A, B port size
Thread piping

M5	M5 x 0.8	SY3000
01	1/8	SY5000
02	1/4	SY7000

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

CE-compliant

Nil	—
Q	CE-compliant

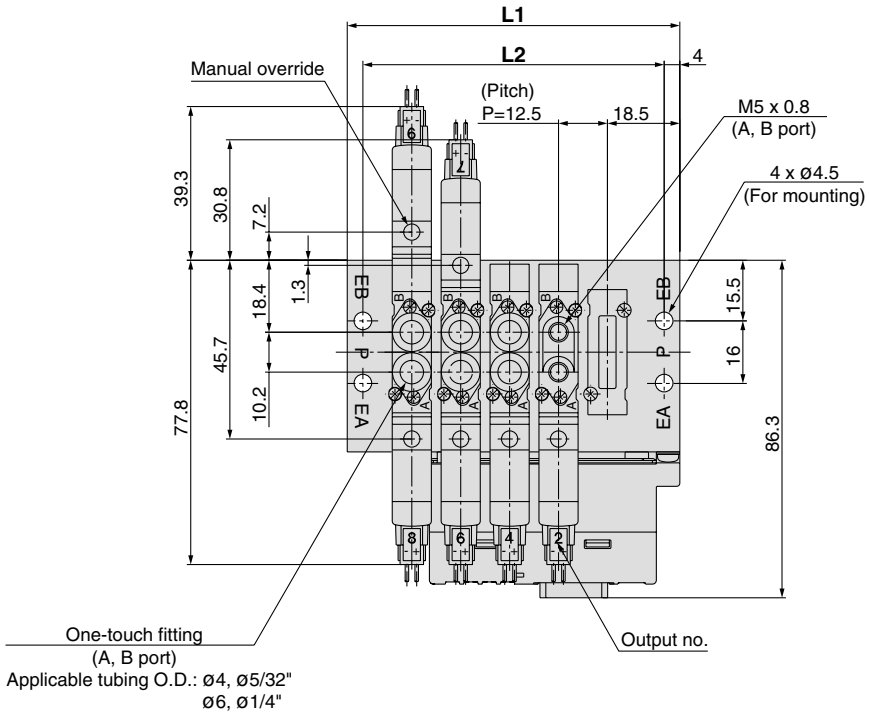
One-touch fitting (Metric size)

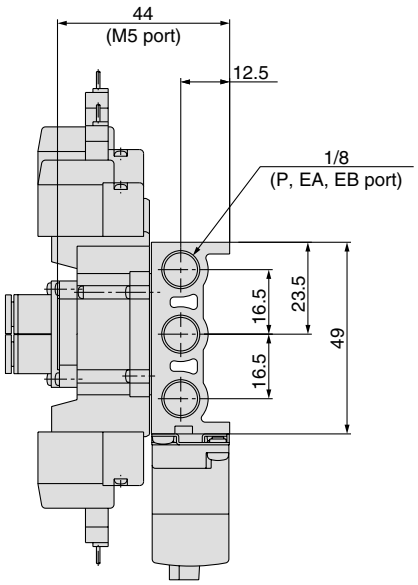
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	

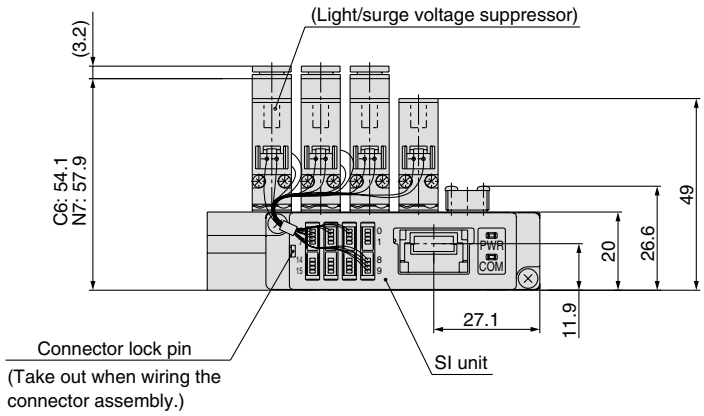
One-touch fitting (Inch size)

N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
N9	One-touch fitting for ø5/16"	SY7000
N11	One-touch fitting for ø3/8"	

SY3000: SS5Y3-20SA □ - Stations - □

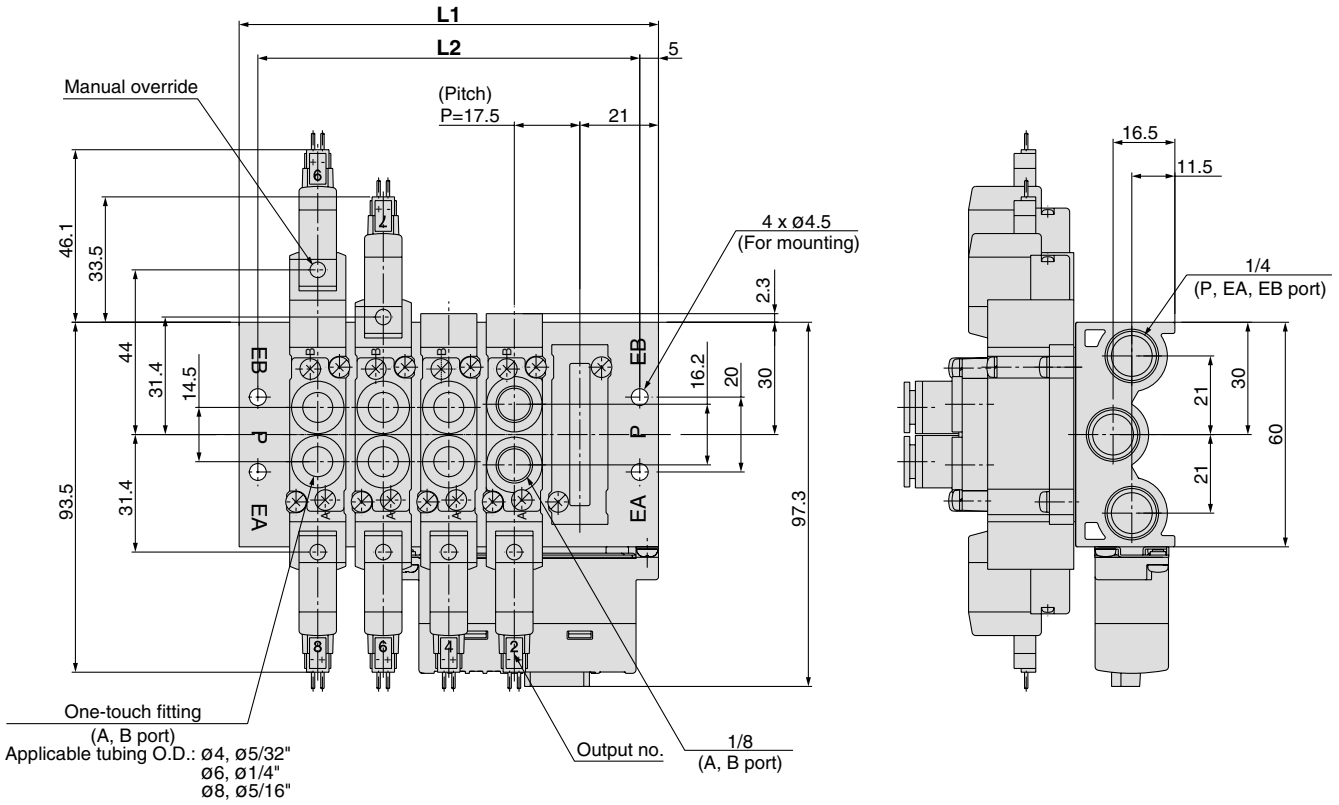


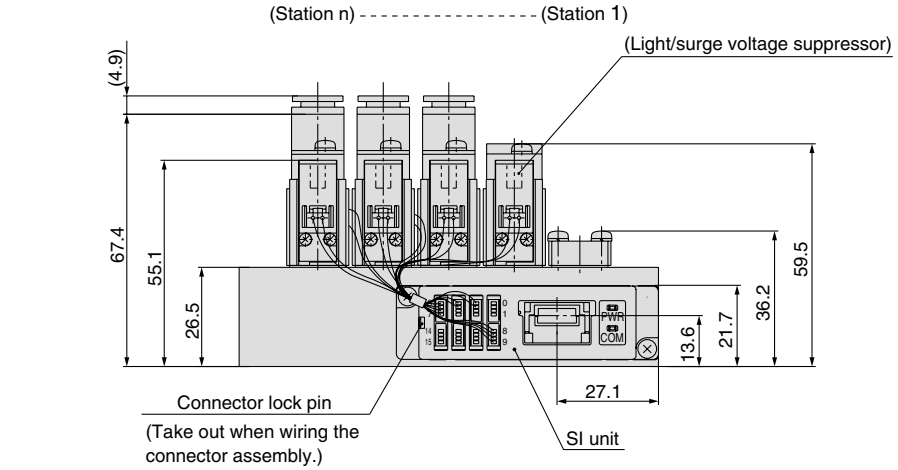




Stations n	4 stations	5	6	7	8	9	10	11	12	13	14	15	16 stations
L1	72.5	85	97.5	110	122.5	135	147.5	160	172.5	185	197.5	210	222.5
L2	64.5	77	89.5	102	114.5	127	139.5	152	164.5	177	189.5	202	214.5

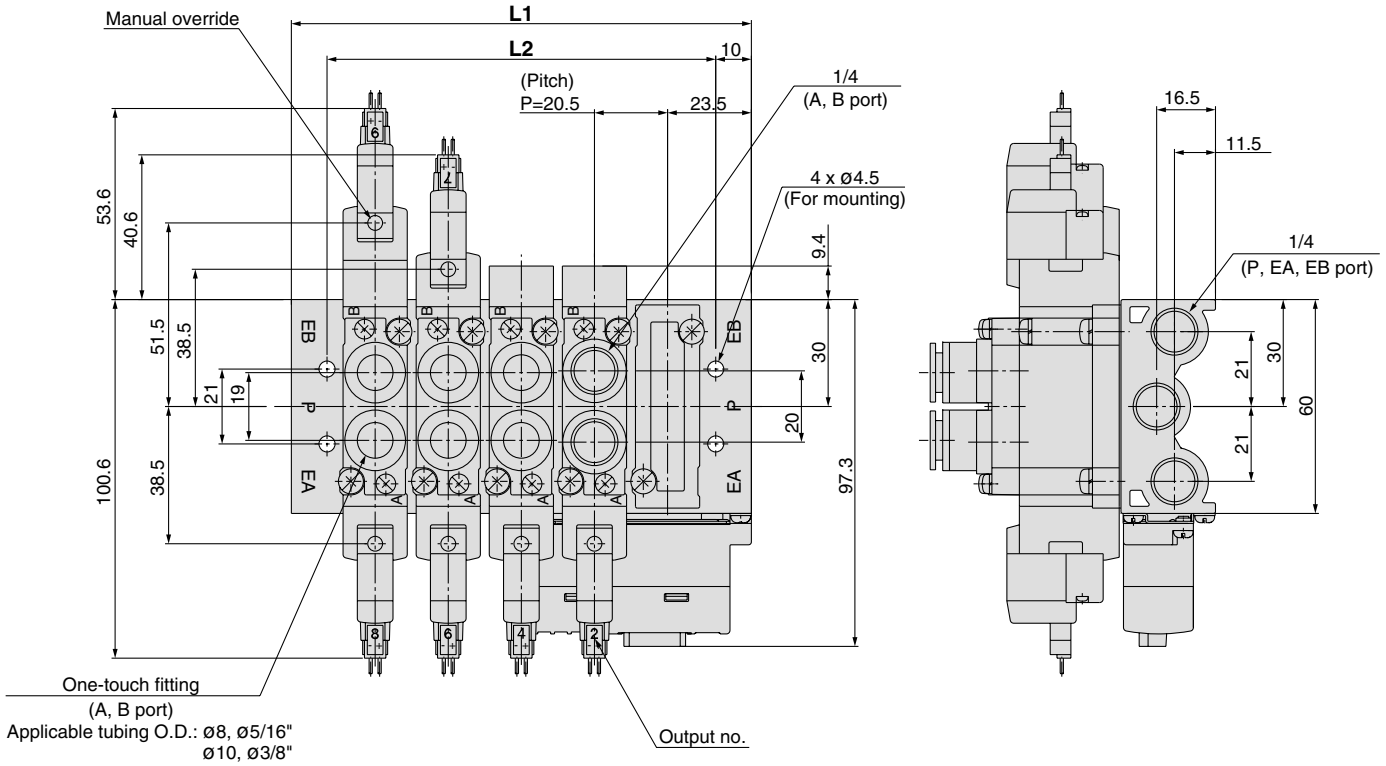
SY5000: SS5Y5-20SA □ - Stations - □

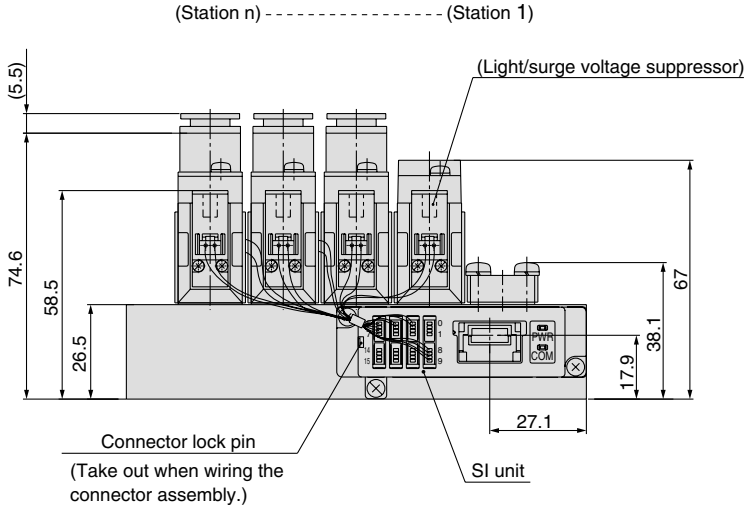




Stations n	**3** stations	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16** stations
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5	252	269.5	287	304.5
L2	67	84.5	102	119.5	137	154.5	172	189.5	207	224.5	242	259.5	277	294.5

SY7000: SS5Y7-20SA □ - Stations - □





Stations n	3 stations	4	5	6	7	8	9	10	11	12	13	14	15	16 stations
L1	88	108.5	129	149.5	170	190.5	211	231.5	252	272.5	293	313.5	334	354.5
L2	68	88.5	109	129.5	150	170.5	191	211.5	232	252.5	273	293.5	314	334.5

EX510 Gateway System
Serial Transmission System
Body Ported Manifold/Stacking Type

Type 23SA

Series SY9000

How to Order Manifold

SS5Y9-23SA □-03-□-□-□

SI unit

Nil	NPN output (+COM.)
N	PNP output (–COM.)

Valve stations

Symbol	Stations	Note
03	3 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	
03	3 stations	Specified layout Note 2) (Compatible with 16 solenoid valves)
⋮	⋮	
16	16 stations	

• The number of the blanking plate assembly is also included.

Note 1) Double wiring: Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

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

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Option

Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
DO	DIN rail mounting (Without DIN rail)
D*	When a longer DIN rail is desired than the specified stations, specify the station number to be required into * mark.

CE-compliant

Nil	—
Q	CE-compliant

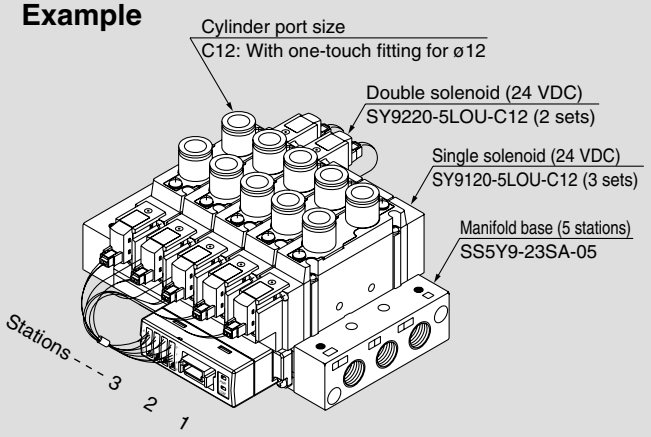
SI unit part no.

Symbol	SI unit specifications	SI unit part no.	Page
Nil	NPN output (+COM.)	EX510-S001	P.1715 to 1717
N	PNP output (–COM.)	EX510-S101	

For details of "Gateway System Serial Transmission System, Series EX510", refer to pages 1696 through to 1724.

How to Order Manifold Assembly (Example)

Example



SS5Y9-23SA-05 ·····1 set (23SA type 5-station manifold part no.)
*** SY9120-5LOU-C12···3 sets (Single solenoid part no.)**
*** SY9220-5LOU-C12···2 sets (Double solenoid part no.)**

→The asterisk denotes the symbol for assembly. Prefix to the part no. of the solenoid valve, etc.

Add the valve and option part number under the manifold base part number.
When entry of part numbers becomes complicated, indicate by the manifold specification sheet. For a manifold for an EX510, the length of the lead wire for a connector assembly depends on the number of stations. Therefore, the manifold assembly is shipped with the valves (including blanking plates) and connector assembly mounted on it, as the standard specification. Be sure to specify the part nos. of the solenoid valves to be mounted.

How to Order Valves

SY9 1 20 ☐ – 5 LO Z ☐ – 02 ☐ – ☐

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

Pilot specifications

Nil	Internal pilot
R	External pilot

Rated voltage: 24 VDC

Light/surge voltage suppressor

Z	With light/surge voltage suppressor
U	Without light/surge voltage suppressor (non-polar type)

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

A, B port size
Thread piping

02	1/4
03	3/8

One-touch fitting (Metric size)

C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12

One-touch fitting (Inch size)

N9	One-touch fitting for ø5/16"
N11	One-touch fitting for ø3/8"

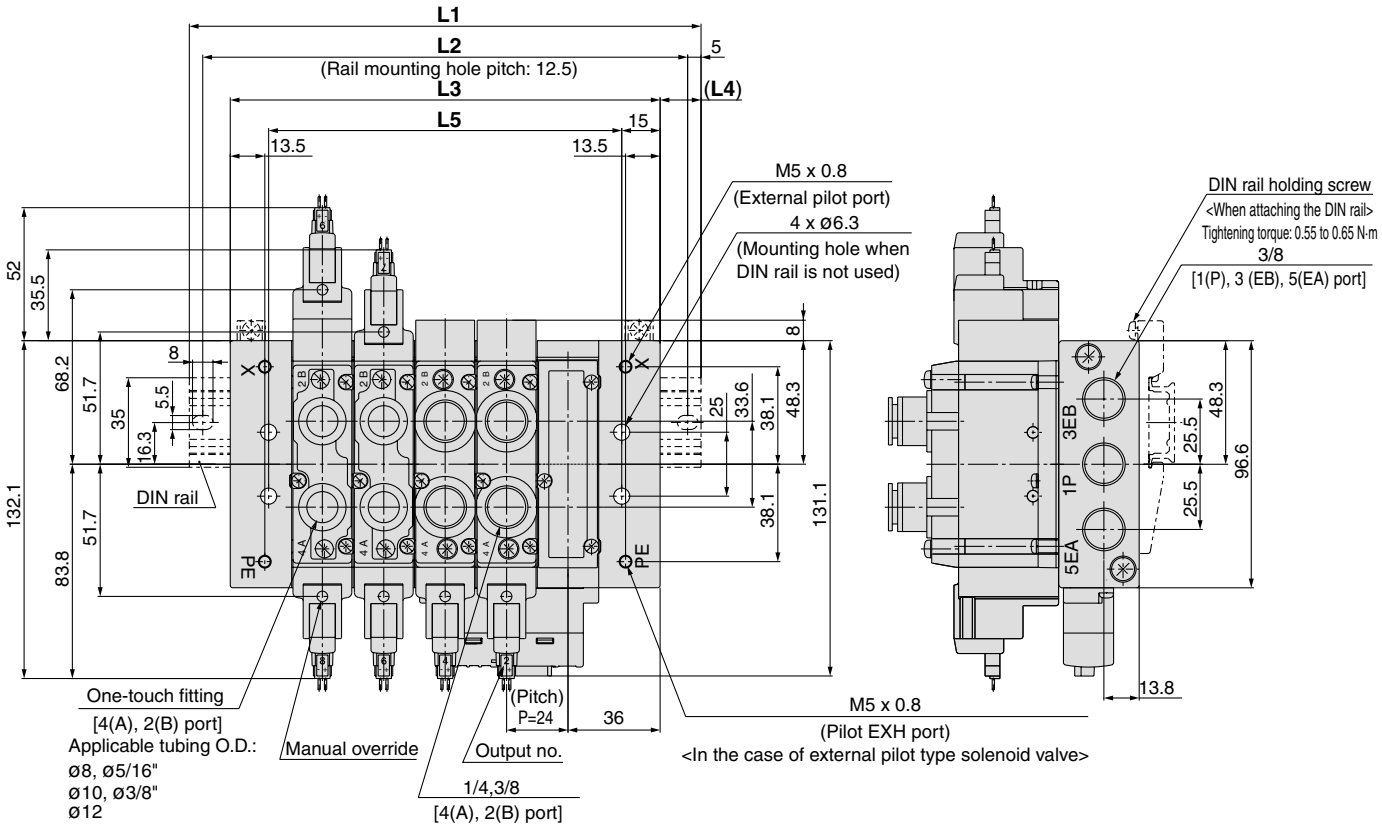
Thread type

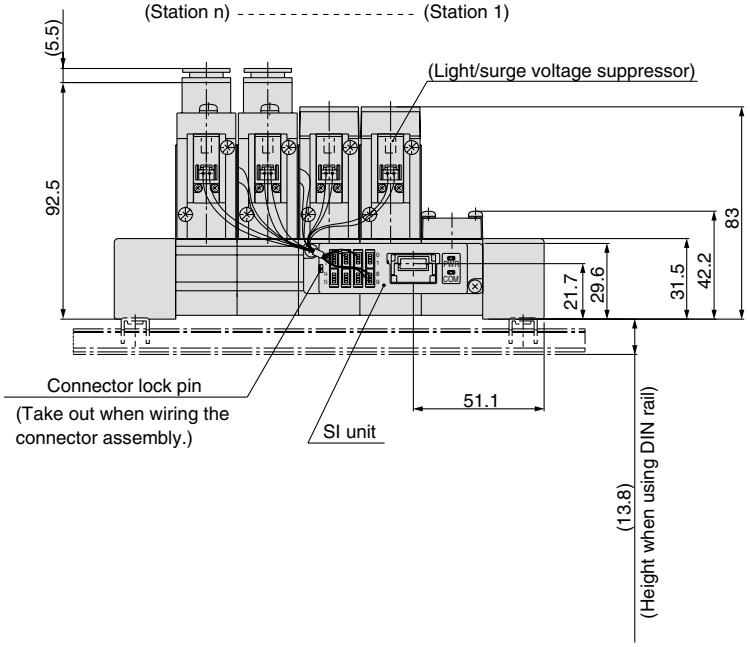
Nil	Rc
F	G
N	NPT
T	NPTF

CE-compliant

Nil	—
Q	CE-compliant

SY9000: SS5Y9-23SA □ - Stations - □ (-D)



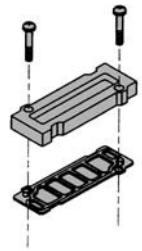


Stations n	3 stations	4	5	6	7	8	9	10	11	12	13	14	15	16 stations
L1	148	173	198	223	248	273	298	323	335.5	360.5	385.5	410.5	435.5	460.5
L2	137.5	162.5	187.5	212.5	237.5	262.5	287.5	312.5	325	350	375	400	425	450
L3	120	144	168	192	216	240	264	288	312	336	360	384	408	432
L4	14	14.5	15	15.5	16	16.5	17	17.5	12	12.5	13	13.5	14	14.5
L5	90	114	138	162	186	210	234	258	282	306	330	354	378	402

Note) In the case of direct mounting without DIN rail, total width of manifold is L3.

Manifold Option

■ Type 20, 23, 20SA, 23SA Blanking plate assembly



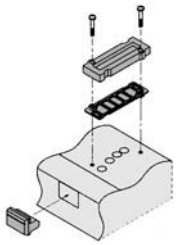
<Standard>

Series	Assembly part no.
SY3000	SY3000-26-9A
SY5000	SY5000-26-20A
SY7000	SY7000-26-22A
SY9000	SY9000-26-1A

<CE-compliant>

Series	Assembly part no.
SY3000	SY3000-26-19A-Q
SY5000	SY5000-26-1A-Q
SY7000	SY7000-26-1A-Q
SY9000	SY9000-26-1A-Q

■ Type 20P, 23P Blanking plate assembly



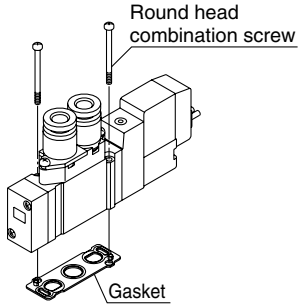
<Standard>

Series	Assembly part no.
SY3000	SY3000-26-10A
SY5000	SY5000-26-21A
SY7000	SY7000-26-23A
SY9000	SY9000-26-3A

<CE-compliant>

Series	Assembly part no.
SY3000	SY3000-26-20A-Q
SY5000	SY5000-26-3A-Q
SY7000	SY7000-26-3A-Q
SY9000	SY9000-26-3A-Q

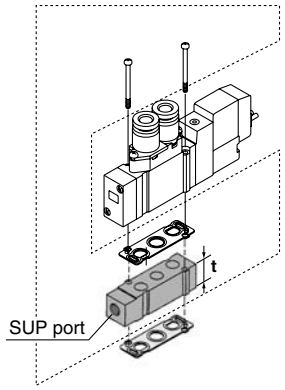
■ Gasket assembly part no.



Series	Gasket assembly part no.
SY3000	SY3000-GS-1
SY5000	SY5000-GS-1
SY7000	SY7000-GS-1
SY9000	SY9000-GS-1

Note) The gasket assembly includes 10 sets of mounting screws and a gasket.

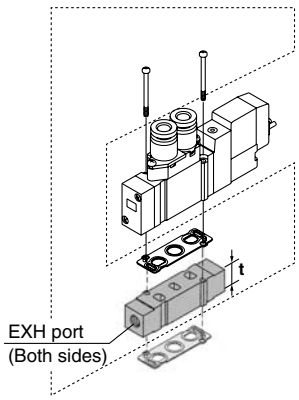
■ Individual SUP spacer assembly



Series	Assembly part no.	Port size	t
SY3000	SY3000-38-20A(-Q)	M5 x 0.8	10.5
SY5000	SY5000-38-1∗A(-Q)	1/8	15
SY7000	SY7000-38-1∗A(-Q)	1/4	18
SY9000	SY9000-38-1∗A(-Q)	1/4	20

Note) • The SUP port of SY3000/5000/7000 may be either on the lead wire side or on the end plate side. (An assembly is shipped under the conditions shown in the figure.)
• The end plate side is only available to SY9000.

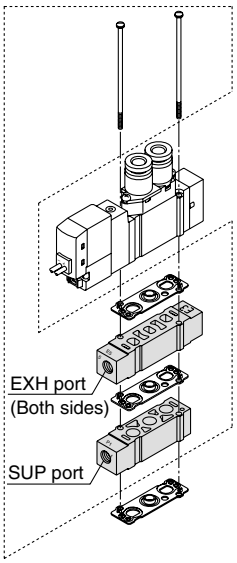
■ Individual EXH spacer assembly



Series	Assembly part no.	Port size	t
SY3000	SY3000-39-20A(-Q)	M5 x 0.8	10.5
SY5000	SY5000-39-1∗A(-Q)	1/8	15
SY7000	SY7000-39-1∗A(-Q)	1/4	18
SY9000	SY9000-39-1∗A(-Q)	1/4	20

Note) In case of 20P and 23P, for protection of the wiring unit section from drainage, piping at the EA port should be arranged so that it will not be directly exposed to exhaust from the valve.

■ Individual SUP spacer assembly + Individual EXH spacer assembly (Double spacer)



[●: Available ×: Not available]

Series	Individual SUP + Individual EXH Assemble part no.	Port size	Applicable manifold types	
			20	20P
SY3000	SY3000-120-1A(-Q)	M5 x 0.8	●	×
SY5000	SY5000-75-2∗A(-Q)	1/8	●	×
SY7000	SY7000-73-3∗A(-Q)	1/4	●	×

Note) The SUP spacer's port does not have an orientation. As for the EXH ports, adjust the symbol "5" to the pilot valve side. Also, please make sure to connect the individual ports to protect the wiring section of the pilot valve from drainage, etc. The individual SUP spacer and EXH spacer can be mounted either on the upper side or lower side. (The above illustration shows the condition when the product is shipped out from a factory.)

⚠ Caution

Mounting screw tightening torques

M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

∗ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

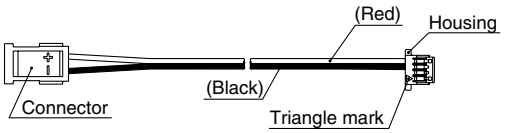
⚠ Warning

When mounting a valve or spacer on the manifold base or sub-plate, etc., those mounting directions are determined. If mounted in the wrong direction, the equipment to be connected may cause malfunction. Refer to external dimensions, and then mount it.

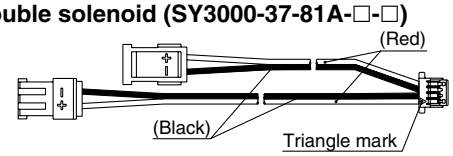
Manifold Option

■ **Connector assembly**

For single solenoid (SY3000-37-81A-□-N)



For double solenoid (SY3000-37-81A-□-□)

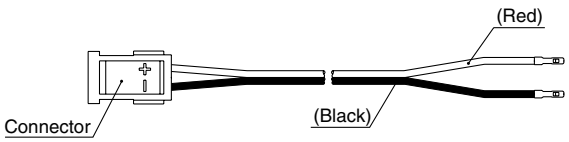


Connector assembly order no. (Can be used for the manifold without a specified layout (8 stations or less))
Integrated type

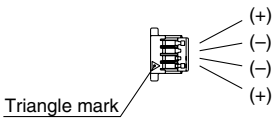
Model	Part no.	Connector mounting position
SS5Y3-20SA	SY3000-37-81A-3-N	Single : For 1 to 4 stations
	SY3000-37-81A-3-6	Double/3 position: For 1 to 4 stations
	SY3000-37-81A-2-N	Single : For 5 to 8 stations
	SY3000-37-81A-2-4	Double/3 position: For 5 to 8 stations
SS5Y5-20SA	SY3000-37-81A-3-N	Single : For 1 to 8 stations
	SY3000-37-81A-3-6	Double/3 position: For 1 to 8 stations
SS5Y7-20SA	SY3000-37-81A-3-N	Single : For 1 to 4 stations
	SY3000-37-81A-3-6	Double/3 position: For 1 to 4 stations
	SY3000-37-81A-4-N	Single : For 5 to 8 stations
	SY3000-37-81A-4-7	Double/3 position: For 5 to 8 stations

Note) The above is for the station addition or maintenance. When ordering a connector assembly separately, a number would not be printed on the connector.

■ **Connector assembly**
SY3000-37-80A-□



■ **Housing (8 pcs./set)**
SY3000-44-3A



Connector assembly order no. (Can be used for the manifold with a specified layout)

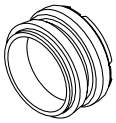
Model	Part no.	Connector mounting position	
SS5Y3-20SA	SY3000-37-80A-3	For A side	For 1 to 8 stations
	SY3000-37-80A-6	For B side	
	SY3000-37-80A-4	For A side	For 9 to 16 stations
	SY3000-37-80A-7	For B side	
SS5Y5-20SA	SY3000-37-80A-3	For A side	For 1 to 8 stations
	SY3000-37-80A-6	For B side	
	SY3000-37-80A-7	For A side	For 9 to 16 stations
	SY3000-37-80A-9	For B side	
SS5Y7-20SA	SY3000-37-80A-4	For A side	For 1 to 8 stations
	SY3000-37-80A-7	For B side	
	SY3000-37-80A-8	For A side	For 9 to 16 stations
	SY3000-37-80A-11	For B side	
SS5Y9-23SA	SY3000-37-80A-6	For A side	For 1 to 8 stations
	SY3000-37-80A-11	For B side	
	SY3000-37-80A-9	For A side	For 9 to 12 stations
	SY3000-37-80A-14	For B side	
	SY3000-37-80A-13	For A side	For 13 to 16 stations
	SY3000-37-80A-18	For B side	

Note 1) The above is for station addition or maintenance. When ordering a connector assembly separately, a number will not be printed on the connector.
Note 2) After inserting the connector assembly into the housing, be sure to confirm that the lead wire will not come off by lightly pulling the wire. Furthermore, do not reuse the lead wire after it has been inserted and removed.
Note 3) Wiring is set longer than the actual wiring distance.

Manifold Option

▪ SUP blocking disk (For SY9000)

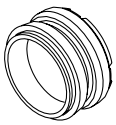
By installing a SUP blocking disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold.



Series	Part no.
SY9000	SY9000-61-2A

▪ EXH blocking disk (For SY9000)

By installing an EXH blocking disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to divide both exhausts.)



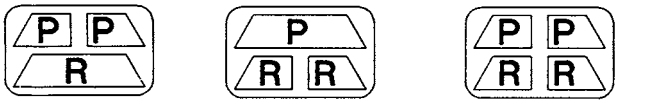
Series	Part no.
SY9000	SY9000-61-2A

▪ Label for blocking disk (For SY9000)

The labels shown below are used on manifold stations containing SUP/EXH blocking disk(s) to show their location. (3 pcs. each)

VZ3000-123-1A

Label for SUP block disk **Label for EXH block disk** **Label for SUP/EXH block disk**



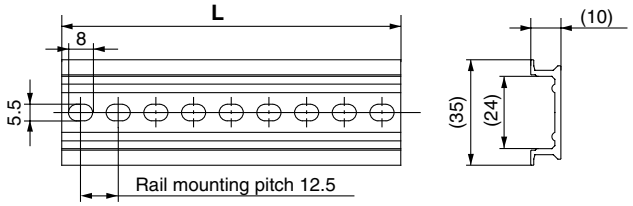
∗ When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.

▪ DIN Rail Dimensions/Mass for SY9000

VZ1000 – 11 – 4 – □

● Refer to L dimensions

∗ Fill in □ with an appropriate no. listed on the table of DIN rail dimensions shown below.

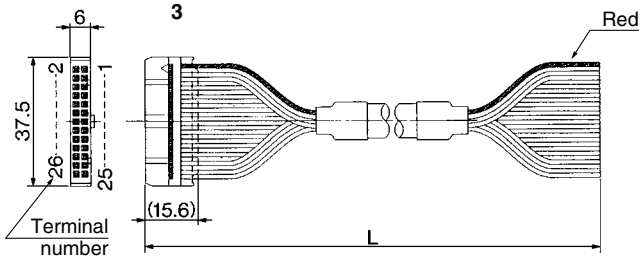


No.	0	1	2	3	4	5	6	7	8	9
L Dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5
Mass (g)	24.8	28	31.1	34.3	37.4	40.6	43.8	46.9	50.1	53.3
No.	10	11	12	13	14	15	16	17	18	19
L Dimension	223	235.5	248	260.5	273	285.5	298	310.5	323	335.5
Mass (g)	56.4	59.6	62.7	65.9	69.1	72.2	75.4	78.6	81.7	84.9
No.	20	21	22	23	24	25	26	27	28	29
L Dimension	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5
Mass (g)	88	91.2	94.4	97.5	100.7	103.9	107	110.2	113.3	116.5

Note) · For DIN rail, refer to page 338.
· Refer to L1 dimension on pages 153, 162 and 172 for lengths that correspond to the number of manifold stations.

▪ Cable assembly (For 20P, 23P)

AXT100-FC26- 1 to 3



Connector Assembly for Flat Ribbon Cables

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-FC26-1	Cable 26 core x 28 AWG
3 m	AXT100-FC26-2	
5 m	AXT100-FC26-3	

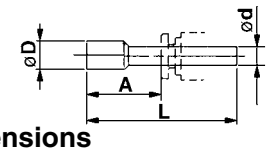
∗ For other commercial connectors, use a 26 pins with strain relief conforming to MIL-C-83503.

Connector manufacturers' example

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

■ Plug (white)

These are inserted in unused cylinder ports and SUP, EXH ports.
Purchasing order is available in units of 10 pieces.



Dimensions

Applicable fittings size **ød**	Model	**A**	**L**	**D**
4	**KQ2P-04**	16	32	6
6	**KQ2P-06**	18	35	8
8	**KQ2P-08**	20.5	39	10
10	**KQ2P-10**	22	43	12
12	**KQ2P-12**	24	44.5	14
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

How to Increase Manifold Bases (Series SY9000 only) Manifold case can be added at any location.

When a type 23 manifold base is added, tension bolts as well as manifold block assembly will be required. Order the tension bolt suitable for the stations after a station was increased (decreased), since the length of a tension bolt differs by the number of stations. (For changing the number of stations for a type 23P manifold, wiring unit for the stations and lead assembly will be required.)

1. Loosen the tension bolts ⑤ connecting the manifold base, and pull out both of 2 tension bolts.
   (When equipped with a DIN rail, loosen one DIN rail holding screw on either U side or D side.)
2. Separate the blocks at the location where station expansion is desired.
3. Mount additional manifold block assembly.
4. Press block-to-block so that there's no gap. After connection, insert a tension bold for desired stations and then tighten it.

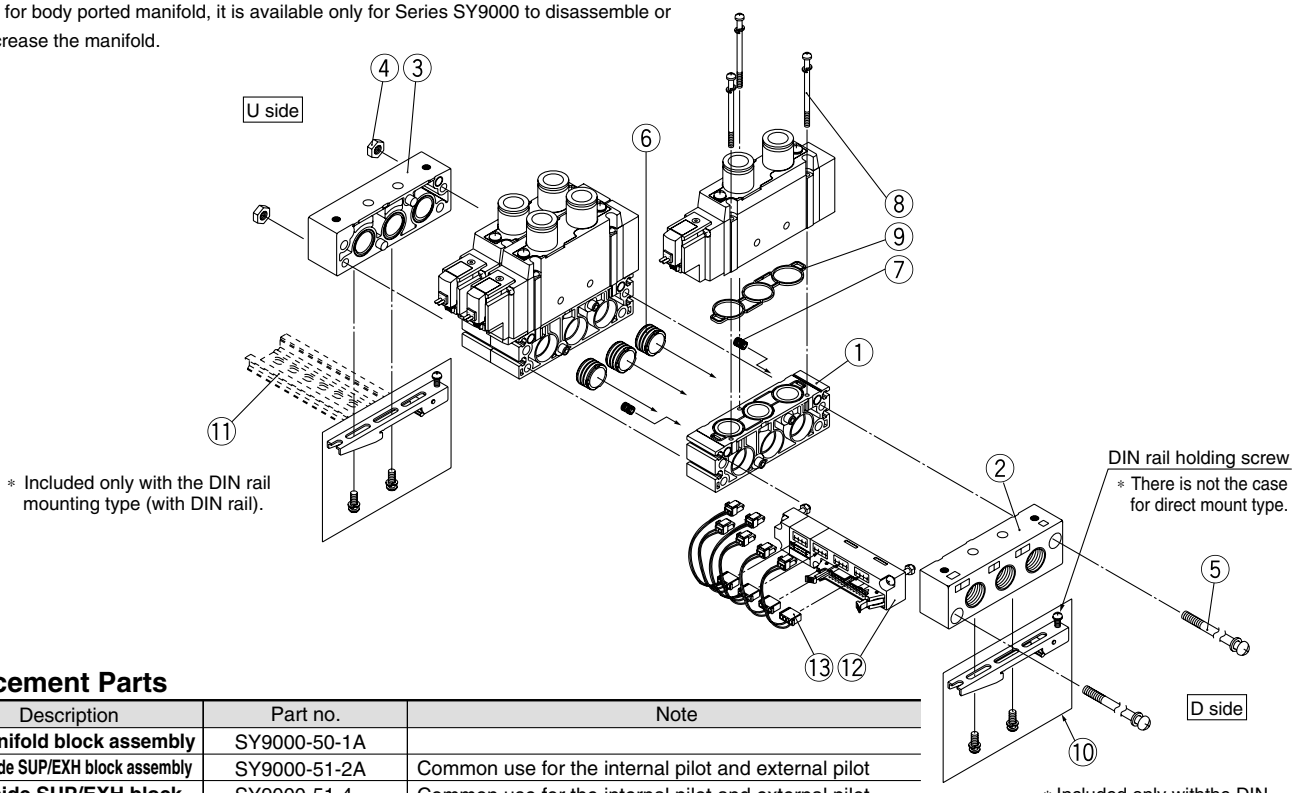
⚠ **Caution** (Tightening torque: 2.9 N·m)
(When equipped with a DIN rail, be sure to tighten the DIN rail holding screws after tightening the tension bolts. Tightening torque: 1.4 N·m)

⚠ Caution

1. Be sure to shut off the power and air supplies before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
2. When disassembly and assembly are performed, air leakage may result if connections between blocks and tightening of the end block's holding screw, is inadequate.
3. By adding wiring unit assembly to type 23 manifold, it can be changed to type 23P manifold, too.

Body Ported Manifold Exploded View, 23/23P Common

As for body ported manifold, it is available only for Series SY9000 to disassemble or increase the manifold.



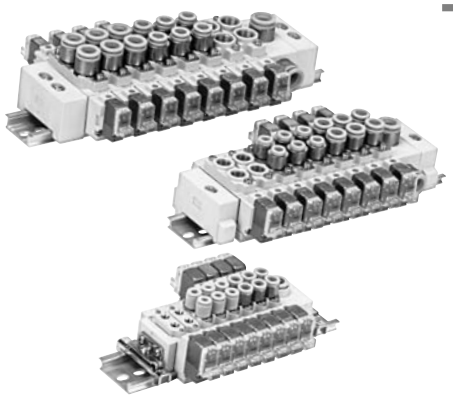
Replacement Parts

No.	Description	Part no.	Note
1	**Manifold block assembly**	SY9000-50-1A	
2	**D side SUP/EXH block assembly**	SY9000-51-2A	Common use for the internal pilot and external pilot
3	**U side SUP/EXH block**	SY9000-51-4	Common use for the internal pilot and external pilot
4	**Hexagon nut**	SY9000-25-1	M5 x 0.8
5	**Tension bolt**	SY9000-23-□	Since □ at the end of part number corresponds with the number of stations, fill in the same number as the number of stations.
6	**Bush assembly**	SY9000-61-1A	Included in the Manifold block assembly and the D side SUP/EXH block assembly.
7	**Bush assembly**	SY9000-61-3A	Included in the Manifold block assembly and the D side SUP/EXH block assembly.
8	**Round head combination screw**	SY9000-18-2	Included in the Manifold block assembly.
9	**Manifold gasket**	SY9000-11-1	Included in the Manifold block assembly.
10	**Clamp sub assembly**	SY9000-29-1A	
11	**DIN rail**	VZ1000-11-4-□	Refer to page 175.
12	**Wiring unit assembly**	SY9000-36-□A	Since □ in part number corresponds with the number of stations, fill in the number of stations (4 to 12).
13	**Connector assembly**	SY9000-37-□□	Refer to page 161.

5 Port Solenoid Valve
Body Ported Manifold
Cassette Type

Type 60

Series SY3000/5000/7000



How to Order

SS5Y 3 – 60 – 05 D – □ – □

Series

3	SY3000
5	SY5000
7	SY7000

Valve stations

02	2 stations
⋮	⋮
20	20 stations

CE-compliant

Nil	—
Q	CE-compliant

∗ For DC only.

Option

When a DIN rail longer than standard is required, enter the number of manifold stations that corresponds with the length of DIN rail needed. Max. 20 stations

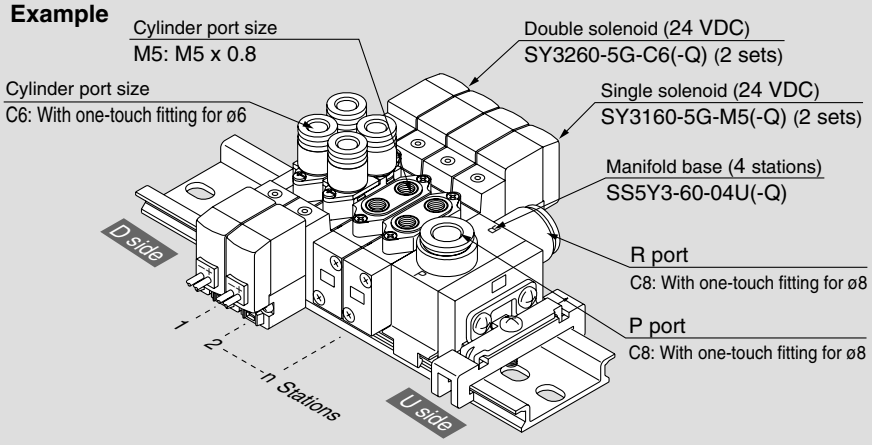
SUP/EXH block assembly mounting position

Symbol	Mounting position	Applicable stations
U	U side	2 to 10 stations
D	D side	
B	Both sides	2 to 20 stations
M∗	Special location	

∗ For special specifications, indicate separately by the manifold specification sheet.

How to Order Manifold Assembly (Example)

Example



SS5Y3-60-04U ····· 1 set (Type 60, 4-station manifold base part no.)
∗ SY3260-5G-C6 ····· 2 sets (Double solenoid part no.)
∗ SY3160-5G-M5 ····· 2 sets (Single solenoid part no.)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

Manifold Specifications

Model		SS5Y3-60(-Q)	SS5Y5-60(-Q)	SS5Y7-60(-Q)
Applicable valve		SY3□60	SY5□60	SY7□60
Manifold type		Stacking type/DIN rail mounted		
P (SUP)/R (EXH)		Common SUP/Common EXH		
Valve stations		2 to 20 stations Note 1)		
A, B port location		Valve		
Port size	P, R port	C8 (One-touch fitting for ø8)	C10 (One-touch fitting for ø10)	C12 (One-touch fitting for ø12)
	A, B port	M5 x 0.8 C4(One-touch fitting for ø4) C6 (One-touch fitting for ø6)	1/8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	1/4 C8 (One-touch fitting for ø8) C10 (One-touch fitting for ø10)
Manifold base mass W (g) Note 2) (n: Number of SUP/EXH blocks, m: Mass of DIN rail)		W = 13n + m + 36	W = 41.2n + m + 77.6	W = 65.4n + m + 128.2

Note 1) In cases such as those where many valves are operated simultaneously, use "-station B (SUP/EXH block on both sides)", applying pressure to the P ports on both sides and exhausting from the R ports on both sides.

Note 2) For DIN rail mass, refer to page 186.

Flow Characteristics

Model	Port size		Flow characteristics					
	1,5/3 (P,R)	4,2 (A,B)	1 → 4/2(P → A/B)			4/2 → 5/3(A/B → R)		
			C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv
SS5Y3-60(-Q)	C8	M5	0.55	0.29	0.14	0.72	0.24	0.18
		C4	0.57	0.24	0.14	0.71	0.20	0.17
		C6	0.68	0.28	0.17	0.77	0.24	0.19
SS5Y5-60(-Q)	C10	1/8	1.8	0.24	0.44	2.1	0.17	0.47
		C6	1.5	0.30	0.37	2.0	0.16	0.46
		C8	1.8	0.20	0.45	2.2	0.17	0.50
SS5Y7-60(-Q)	C12	1/4	3.7	0.25	0.96	3.8	0.19	0.94
		C8	3.2	0.26	0.81	4.0	0.18	0.96
		C10	3.7	0.28	0.98	4.1	0.19	1.0

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

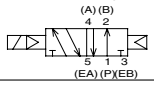
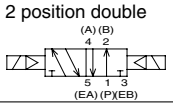
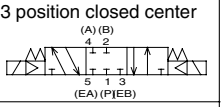
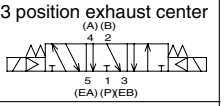
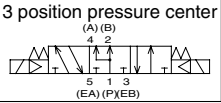
How to Order Valve

SY [3] [1] **60** [ ] – [5] [L] [ ] [ ] – [C6] [ ] – [ ] – [ ]

Series

3	SY3000
5	SY5000
7	SY7000

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 

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

∗ Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

Rated voltage

For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

For AC (50/60Hz)

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

∗ DC specifications of type D, Y, DO and YO is only available with 12 and 24 VDC.
∗ D, Y, DO and YO only available for SY5000, SY7000.
∗ For type W□, DC voltage is only available.

Made to Order

Nil	—
X20	Body ported external pilot (Refer to page 332.)
X90	Main valve fluoro rubber (Refer to page 332.)

A, B port size

Thread piping

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

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ Except for M5

CE-compliant

Nil	—
Q	CE-compliant

∗ For DC only except DIN terminal.

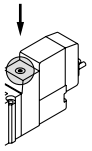
One-touch fitting (Metric size)

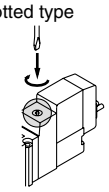
Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	

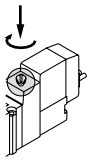
One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
N9	One-touch fitting for ø5/16"	SY7000
N11	One-touch fitting for ø3/8"	

Manual override

Nil: Non-locking push type 

D: Push-turn locking slotted type 

E: Push-turn locking lever type 

Light/surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With light/surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

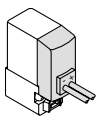
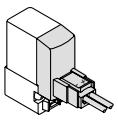
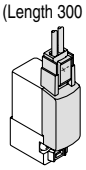
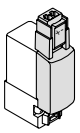
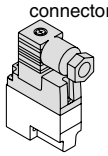
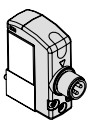
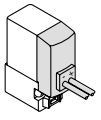
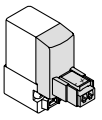
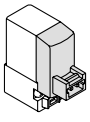
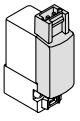
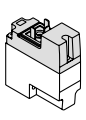
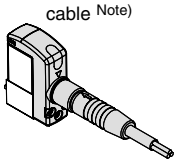
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
∗ Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y (SY500/7000 only)

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

∗ DOZ and YOZ are not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC				24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector		DIN terminal	M8 connector
G: Lead wire length 300 mm 	**L:** With lead wire (Length 300 mm) 	**M:** With lead wire (Length 300 mm) 	**MN:** Without lead wire 	(**SY5000, 7000**) **D, Y:** With connector 	**WO:** Without connector cable 
H: Lead wire length 600 mm 	**LN:** Without lead wire 	**LO:** Without connector 	**MO:** Without connector 	**DO, YO:** Connector 	**W□:** With connector cable Note) 

∗ LN, MN type: with 2 sockets.
∗ "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 336.
∗ For connector cable of M8 connector, refer to page 339.
∗ M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.
∗ Refer to page 336 for the lead wire length of L and M plug connectors.
∗ Refer to page 337 for the connector assembly with cover for L and M plug connectors.
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

Specifications

Series		SY3000	SY5000	SY7000
Fluid		Air		
Internal pilot Operating pressure range (MPa)	**2 position single**	0.15 to 0.7		
	2 position double	0.1 to 0.7		
	3 position	0.2 to 0.7		
Ambient and fluid temperature (°C)		Max. 50		
Max. operating frequency (Hz)	**2 position double**	10	5	5
	3 position	3	3	3
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type		
Pilot exhaust method		Common exhaust type for main and pilot valve		
Lubrication		Not required		
Mounting position		Unrestricted		
Impact/Vibration resistance Note)		150/30		
Enclosure		Dust proof (∗ DIN terminal, M8 connector: IP65)		

Note) 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.

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 in the initial stage)

∗ Based on IEC60529

Solenoid Specifications

Electrical entry			Grommet (G), (H) L plug connector (L) M plug connector (M) DIN terminal (D), (Y) M8 connector (W)	
			G, H, L, M, W	D, Y
Coil rated voltage (V)	**DC**		24, 12, 6, 5, 3	24, 12
	AC 50/60 Hz		100, 110, 200, 220	
Allowable voltage fluctuation			±10% of rated voltage ∗	
Power consumption (W)	**DC**	**Standard**	0.35 [With indicator light: 0.4 (DIN terminal with indicator light: 0.45)]	
		With power saving circuit	0.1 (With indicator light only)	
Apparent power (VA) ∗	**AC**	**100 V**	0.78 (With indicator light: 0.81)	0.78 (With indicator light: 0.87)
		110 V [115 V]	0.86 (With indicator light: 0.89) [0.94 (With indicator light: 0.97)]	0.86 (With indicator light: 0.97) [0.94 (With indicator light: 1.07)]
		200 V	1.18 (With indicator light: 1.22)	1.15 (With indicator light: 1.30)
		220 V [230 V]	1.30 (With indicator light: 1.34) [1.42 (With indicator light: 1.46)]	1.27 (With indicator light: 1.46) [1.39 (With indicator light: 1.60)]
Surge voltage suppressor			Diode (Varistor is for DIN terminal and non-polar)	
Indicator light			LED (AC of DIN connector is neon light.)	

∗ In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.

∗ For 115 VAC and 230 VAC, the allowable voltage is –15% to +5% of rated voltage.

∗ S, Z and T type (with power saving circuit) should be used within the following allowable voltage fluctuation range due to a voltage drop caused by the internal circuit.

S and 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

Note) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage)

SY3000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without surge voltage suppressor	With surge voltage suppressor	
		S, Z type	R, U type
2 position single	12 or less	15 or less	12 or less
2 position double	10 or less	13 or less	10 or less
3 position	15 or less	20 or less	16 or less

SY5000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without surge voltage suppressor	With surge voltage suppressor	
		S, Z type	R, U type
2 position single	19 or less	26 or less	19 or less
2 position double	18 or less	22 or less	18 or less
3 position	32 or less	38 or less	32 or less

SY7000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		S, Z type	R, U type
2 position single	31 or less	38 or less	33 or less
2 position double	27 or less	30 or less	28 or less
3 position	50 or less	56 or less	50 or less

Mass

Series SY3000

Valve model	Type of actuation		Port size	Mass (g)		
			A, B	Grommet	L/M plug connector	M8 Connector
SY3□60-□-M5	2 position	Single	M5 x 0.8	49	51	55
		Double		70	73	81
	3 position	Closed center		73	76	84
		Exhaust center				
		Pressure center				
SY3□60-□-C4	2 position	Single	C4 (One-touch fitting for ø4)	62	61	65
		Double		80	83	91
	3 position	Closed center		82	86	94
		Exhaust center				
		Pressure center				
SY3□60-□-C6	2 position	Single	C6 (One-touch fitting for ø6)	55	57	61
		Double		76	79	87
	3 position	Closed center		78	82	90
		Exhaust center				
		Pressure center				

Note) [ ]: denotes normal position.

Series SY5000

Valve model	Type of actuation		Port size	Mass (g)			
			A, B	Grommet	L/M plug connector	DIN terminal	M8 Connector
SY5□60-□-01	2 position	Single	1/8	67	69	90	71
		Double		91	94	136	102
	3 position	Closed center		97	100	142	108
		Exhaust center					
		Pressure center					
SY5□60-□-C4	2 position	Single	C4 (One-touch fitting for ø4)	91	93	114	97
		Double		113	116	158	124
	3 position	Closed center		119	122	164	130
		Exhaust center					
		Pressure center					
SY5□60-□-C6	2 position	Single	C6 (One-touch fitting for ø6)	86	88	109	92
		Double		108	111	153	119
	3 position	Closed center		114	117	159	125
		Exhaust center					
		Pressure center					
SY5□60-□-C8	2 position	Single	C8 (One-touch fitting for ø8)	78	80	101	84
		Double		100	103	145	111
	3 position	Closed center		106	109	151	117
		Exhaust center					
		Pressure center					

Series SY7000

Valve model	Type of actuation		Port size	Mass (g)			
			A, B	Grommet	L/M plug connector	DIN terminal	M8 Connector
SY7□60-□-02	2 position	Single	1/4	103	105	126	109
		Double		125	128	170	136
	3 position	Closed center		133	136	178	144
		Exhaust center					
		Pressure center					
SY7□60-□-C8	2 position	Single	C8 (One-touch fitting for ø8)	138	139	160	143
		Double		160	163	205	171
	3 position	Closed center		168	171	213	179
		Exhaust center					
		Pressure center					
SY7□60-□-C10	2 position	Single	C10 (One-touch fitting for ø10)	123	125	146	129
		Double		145	149	191	157
	3 position	Closed center		153	157	199	165
		Exhaust center					
		Pressure center					

How to Order Pilot Valve Assembly

V111 □ – 5 G □

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

∗ Power saving circuit is not available in the case of D, DO or W□ type.

Rated voltage

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC
1	100 VAC 50/60 Hz
2	200 VAC 50/60 Hz
3	110 VAC 50/60 Hz [115 VAC 50/60 Hz]
4	220 VAC 50/60 Hz [230 VAC 50/60 Hz]

∗ For type W□, DC voltage is only available.
∗ CE-compliant: For DC only.

Light/surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
∗ For "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Electrical entry

G	Grommet, 300 mm lead wire	
H	Grommet, 600 mm lead wire	
L	L plug connector	With lead wire
LN		Without lead wire
LO		Without connector
M	M plug connector	With lead wire
MN		Without lead wire
MO		Without connector
WO	M8 connector	Without connector cable
W□		With connector cable Note 1)

∗ For connector cable of M8 connector, refer to page 339.
Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

■ DIN terminal type

V115 – 5 D □

Rated voltage

5	24 VDC
6	12 VDC
1	100 VAC 50/60 Hz
2	200 VAC 50/60 Hz
3	110 VAC 50/60 Hz [115 VAC 50/60 Hz]
4	220 VAC 50/60 Hz [230 VAC 50/60 Hz]

∗ DC specifications of Type D, Y, DO and YO is only available with 12 and 24 VDC.

Light/surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

∗ DOZ and YOZ are not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

D	DIN terminal (Type D)	With connector
DO		Without connector
Y	DIN terminal (Type Y)	With connector
YO		Without connector

Note) Do not replace V111 (G, H, L, M) to V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

Note) Since V111 and V115 are CE-compliant as standard, the suffix "-Q" is not necessary.

How to Order Port Block Assembly

SY 3 000 − 6A − C4 □

Series

3	SY3000
5	SY5000
7	SY7000

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ Except for M5

A, B port size

Thread piping

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

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
N9	One-touch fitting for ø5/16"	SY7000
N11	One-touch fitting for ø3/8"	

How to Change Port Block Assembly

Connecting port size of A and B can be changed by replacing port block assembly mounted on body. When changing block assembly, correct screw torque must be achieved to avoid trouble; e.g. air leakage.

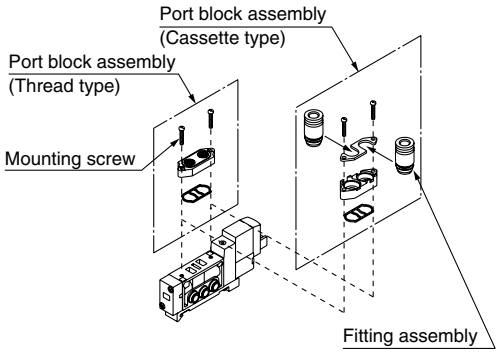
With the one-touch fitting port block assembly, it is only necessary to change the fitting and not the whole block. Refer to following part numbers.

One-touch fitting (Metric size)

Port size	Fitting assembly part no.	Applicable series
One-touch fitting for ø4	VVQ1000-50A-C4	SY3000
One-touch fitting for ø6	VVQ1000-50A-C6	
One-touch fitting for ø4	VVQ1000-51A-C4	SY5000
One-touch fitting for ø6	VVQ1000-51A-C6	
One-touch fitting for ø8	VVQ1000-51A-C8	
One-touch fitting for ø8	VVQ2000-51A-C8	SY7000
One-touch fitting for ø10	VVQ2000-51A-C10	

One-touch fitting (Inch size)

Port size	Fitting assembly part no.	Applicable series
One-touch fitting for ø5/32"	VVQ1000-50A-N3	SY3000
One-touch fitting for ø1/4"	VVQ1000-50A-N7	
One-touch fitting for ø5/32"	VVQ1000-51A-N3	SY5000
One-touch fitting for ø1/4"	VVQ1000-51A-N7	
One-touch fitting for ø5/16"	VVQ1000-51A-N9	
One-touch fitting for ø1/4"	VVQ2000-51A-N9	SY7000
One-touch fitting for ø3/8"	VVQ2000-51A-N11	



⚠ Caution

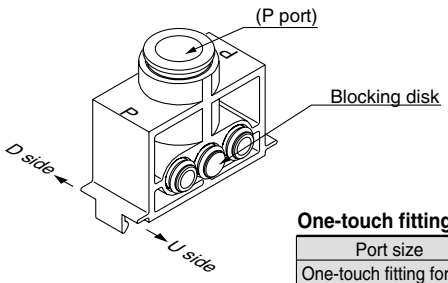
Torque for mounting screws

SY3000(M2): 0.12 N·m
SY5000, 7000 (M3): 0.6 N·m

∗ Refer to "How to Change Port Block Assembly" for part numbers.

Manifold Option

■ Individual SUP block assembly



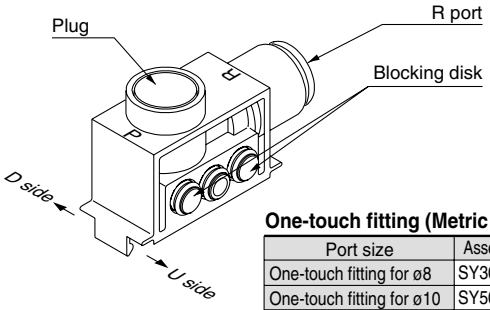
One-touch fitting (Metric size)

Port size	Assembly part no.	Applicable series
One-touch fitting for ø6	SY3000-54-2C(-Q)	SY3000
One-touch fitting for ø8	SY3000-54-1C(-Q)	
One-touch fitting for ø10	SY5000-54-1C(-Q)	SY5000
One-touch fitting for ø12	SY7000-54-1C(-Q)	SY7000

One-touch fitting (Inch size)

Port size	Assembly part no.	Applicable series
One-touch fitting for ø5/16"	SY3000-54-3C(-Q)	SY3000
One-touch fitting for ø3/8"	SY5000-54-2C(-Q)	SY5000
One-touch fitting for ø3/8"	SY7000-54-3C(-Q)	SY7000

■ Individual EXH block assembly



One-touch fitting (Metric size)

Port size	Assembly part no.	Applicable series
One-touch fitting for ø8	SY3000-55-1B(-Q)	SY3000
One-touch fitting for ø10	SY5000-55-1B(-Q)	SY5000
One-touch fitting for ø12	SY7000-55-1B(-Q)	SY7000

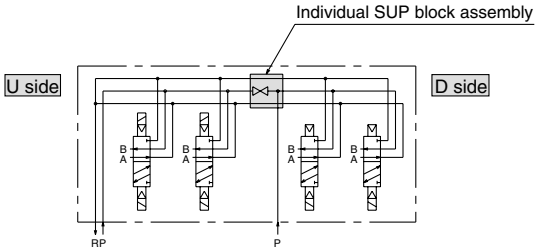
One-touch fitting (Inch size)

Port size	Assembly part no.	Applicable series
One-touch fitting for ø5/16"	SY3000-55-2B(-Q)	SY3000
One-touch fitting for ø3/8"	SY5000-55-2B(-Q)	SY5000
One-touch fitting for ø3/8"	SY7000-55-3B(-Q)	SY7000

[When supplying the manifold with 2 different supply pressures.]

Specify arrangement of individual SUP block assembly on the manifold specification sheet. (When using SS5Y□-60-□□D, blocking disk is assembled on

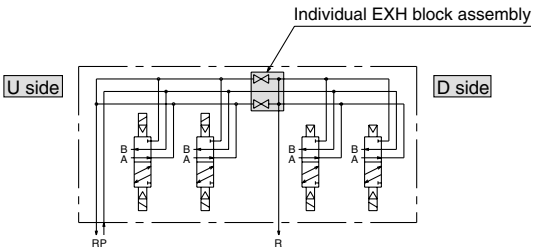
<Manifold model no.: SS5Y$^{3}_{5}$-60-□□$^{U}_{D}$>



[When 2 different EXH passages are required.]

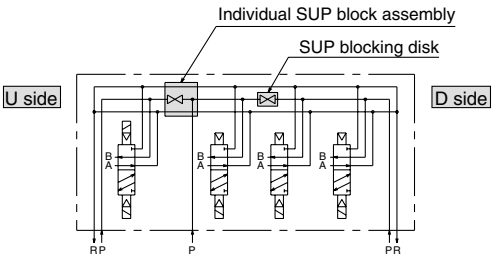
Specify arrangement of individual EXH block assembly on the manifold specification sheet. (When using SS5Y□-60-□□D, blocking disk is assembled on D side.)

<Manifold model no.: SS5Y$^{3}_{5}$-60-□□$^{U}_{D}$>



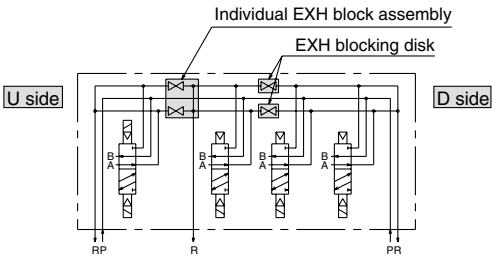
[When a different supply pressure is required for only a middle valve.]

Specify arrangement of individual SUP block assembly and SUP blocking disk on the manifold specification sheet.
(Applicable manifold model no.: SS5Y□-60-□□B)



[When a separate exhaust passage is needed on only a middle valve.]

Specify arrangement of individual EXH block assembly and EXH blocking disk on the manifold specification sheet.
(Applicable manifold model no.: SS5Y□-60-□□B)



Manifold Option

■ SUP blocking disk

By installing a SUP blocking disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold. (This is the same block disk used with the individual SUP block assembly.)

Series	Part no.
SY3000	SY3000-52-6A
SY5000	SY5000-52-4A
SY7000	SY7000-70-2A

■ EXH blocking disk

By installing an EXH blocking disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to separate both EXH passages. It is the same block disk that is used in the individual EXH block assembly.)

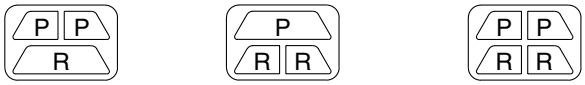
Series	Part no.
SY3000	SY3000-52-6A
SY5000	SY5000-52-4A
SY7000	SY7000-70-2A

■ Label for block disk

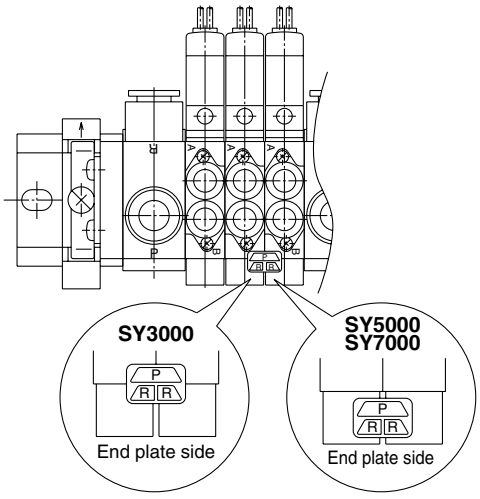
The labels shown below are used on manifold stations containing SUP/EXH blocking disk(s) to show their location. (3 pcs. each)

VZ3000-123-1A

Label for SUP block disk Label for EXH block disk Label for SUP/EXH block disk

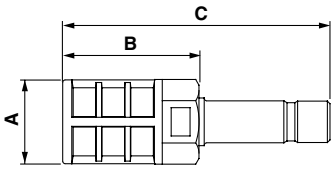


∗ When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.



■ Silencer with One-touch fitting

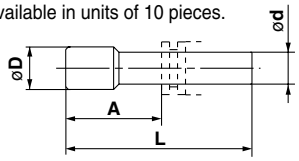
The silencer plugs directly into the One-touch fittings of the manifold.



Series	Model	Effective area	A	B	C
SY3000 (for ø8)	AN203-KM8	14 mm²	ø16	26	51
SY5000 (for ø10)	AN200-KM10	26 mm²	ø22	54	80.8
	AN300-KM10	30 mm²	ø25	70	97
SY7000 (for ø12)	AN300-KM12	41 mm²	ø25	70	98

■ Plug (white)

These are inserted in unused cylinder ports and SUP, EXH ports.
Purchasing order is available in units of 10 pieces.



Dimensions

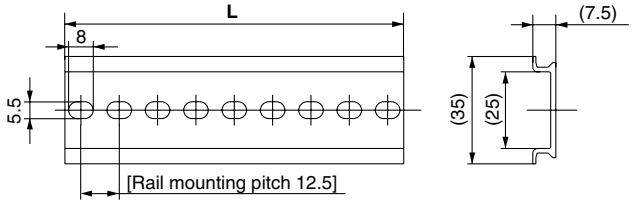
Applicable fittings size ød	Model	A	L	D
4	**KQ2P-04**	16	32	6
6	**KQ2P-06**	18	35	8
8	**KQ2P-08**	20.5	39	10
10	**KQ2P-10**	22	43	12
12	**KQ2P-12**	24	45.5	14
5/32"	**KQ2P-03**	16	32	6
1/4"	**KQ2P-07**	18	35	8.5
5/16"	**KQ2P-09**	20.5	39	10
3/8"	**KQ2P-11**	22	43	11.5

■ DIN Rail Dimensions/Mass for SY3000/5000

VZ1000-11-1-□

• Refer to the L dimension tables

∗ Enter a number from the DIN rail dimension table below in them.



No.	0	1	2	3	4	5	6	7	8	9
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5
Mass (g)	17.6	19.9	22.1	24.4	26.6	28.9	31.1	33.4	35.6	37.9

No.	10	11	12	13	14	15	16	17	18	19
L dimension	223	235.5	248	260.5	273	285.5	298	310.5	323	335.5
Mass (g)	40.1	42.4	44.6	46.9	49.1	51.4	53.6	55.9	58.1	60.4

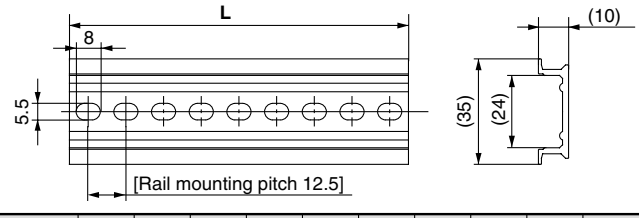
No.	20	21	22	23	24	25	26	27	28	29
L dimension	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5
Mass (g)	62.6	64.9	67.1	69.4	71.6	73.9	76.1	78.4	80.6	82.9

■ DIN Rail Dimensions/Mass for SY7000

VZ1000-11-4-□

• Refer to the L dimension tables

∗ Enter a number from the DIN rail dimension table below in them.



No.	0	1	2	3	4	5	6	7	8	9
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5
Mass (g)	24.8	28	31.1	34.3	37.4	40.6	43.8	46.9	50.1	53.3

No.	10	11	12	13	14	15	16	17	18	19
L dimension	223	235.5	248	260.5	273	285.5	298	310.5	323	335.5
Mass (g)	56.4	59.6	62.7	65.9	69.1	72.2	75.4	78.6	81.7	84.9

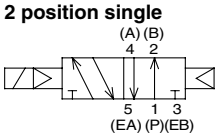
No.	20	21	22	23	24	25	26	27	28	29
L dimension	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5
Mass (g)	88	91.2	94.4	97.5	100.7	103.9	107	110.2	113.3	116.5

Note) For DIN rail mounting, refer to page 338.

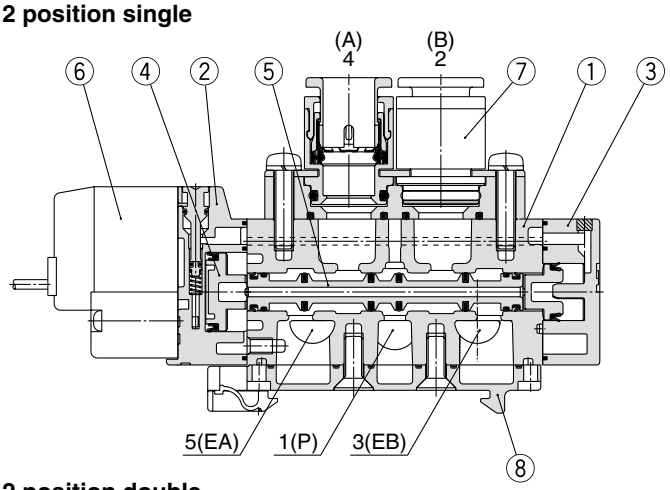
Construction

Series SY

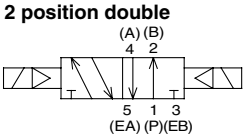
JIS Symbol
2 position single



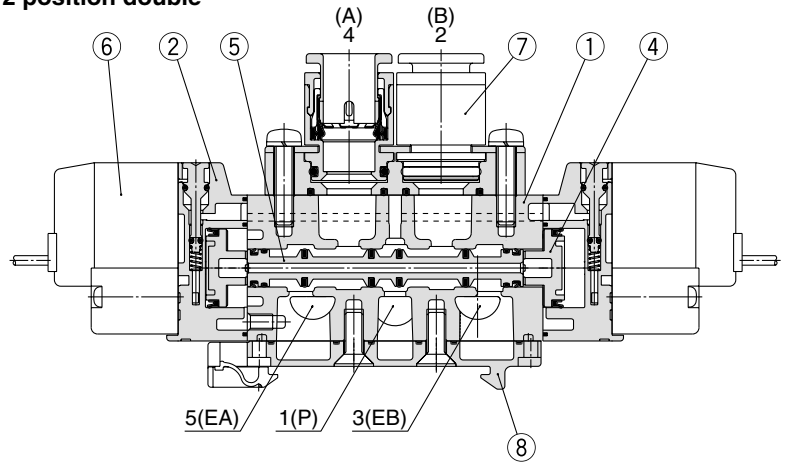
2 position single



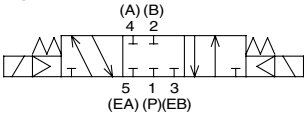
JIS Symbol
2 position double



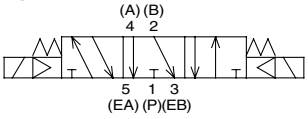
2 position double



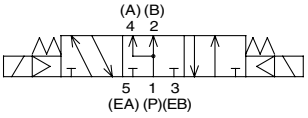
JIS Symbol
3 position closed center



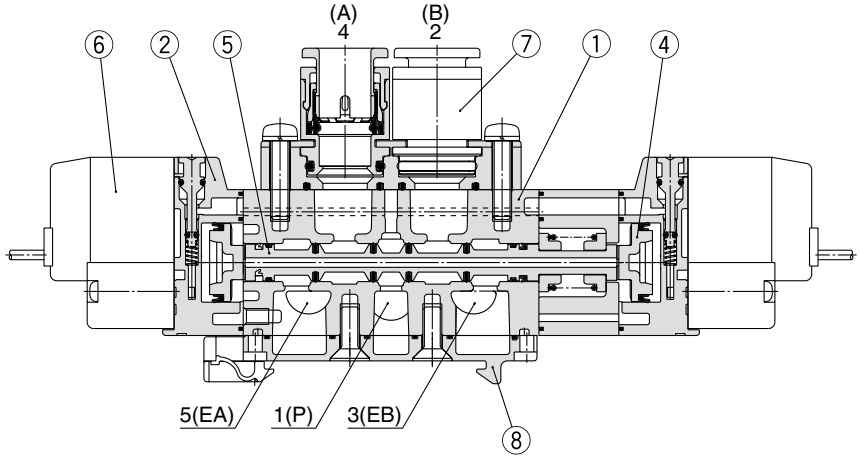
3 position exhaust center



3 position pressure center



3 position closed center / exhaust center / pressure center



(This figure shows a closed center type.)

Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum die-casted (SY3000: Zinc die-casted)	White
2	**Adapter plate**	Resin	White
3	**End plate**	Resin	White
4	**Piston**	Resin	—
5	**Spool valve assembly**	Aluminum/H-NBR	—

Replacement Parts

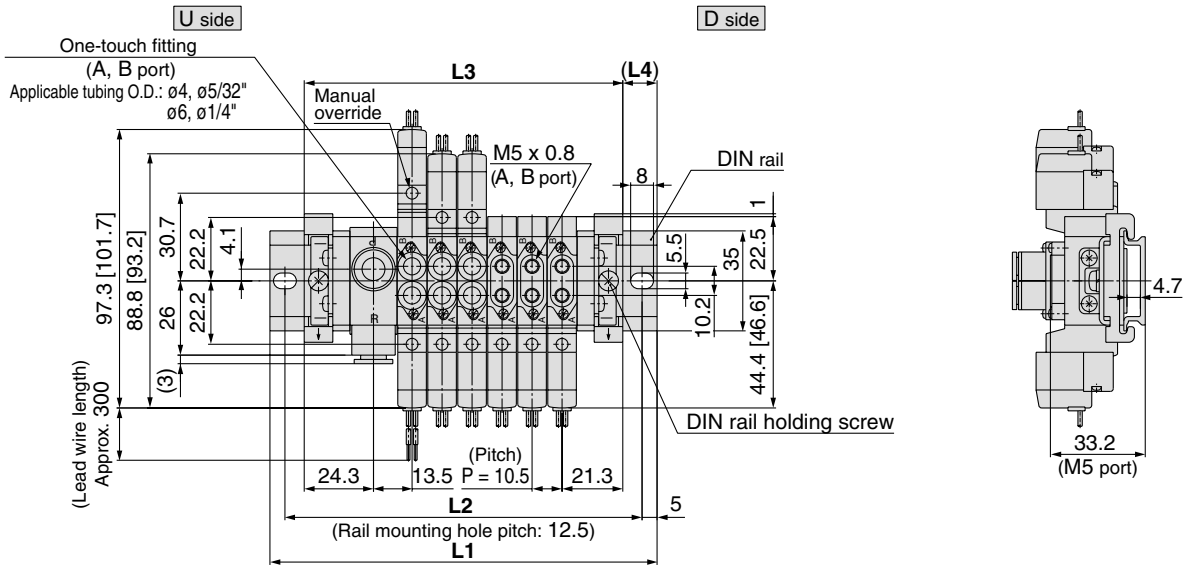
No.	Description	No.
6	**Pilot valve assembly**	Refer to “How to Order Pilot Valve Assembly” on page 183.
7	**Port block assembly**	Refer to “How to Order Port Block Assembly” on page 184.
8	**Bottom cover assembly** Note)	SY3000-41-2A (with screw, gasket)
		SY5000-41-2A (with screw, gasket)

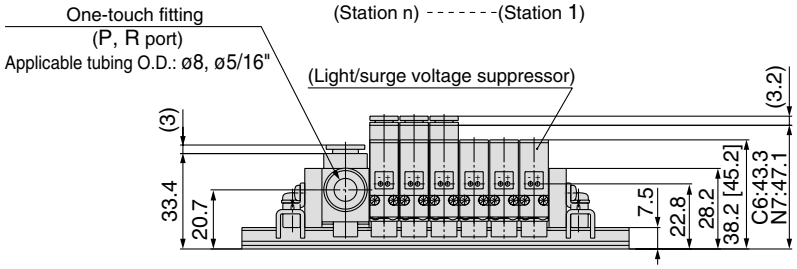
Note) There is no bottom cover assembly available for SY7000.

Dimensions

[ ]: AC

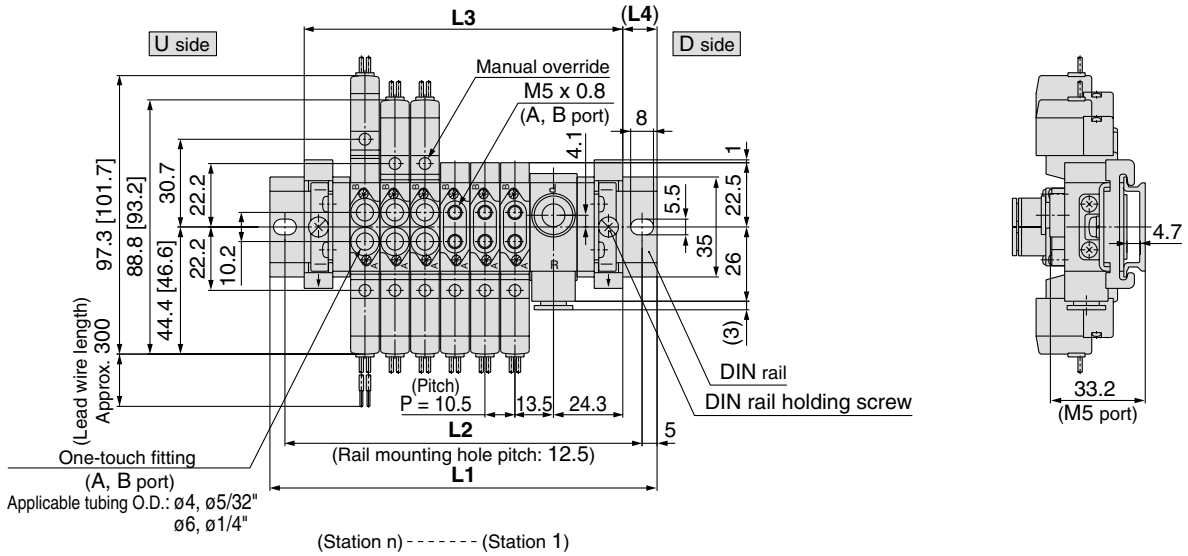
SS5Y3-60-Stations U

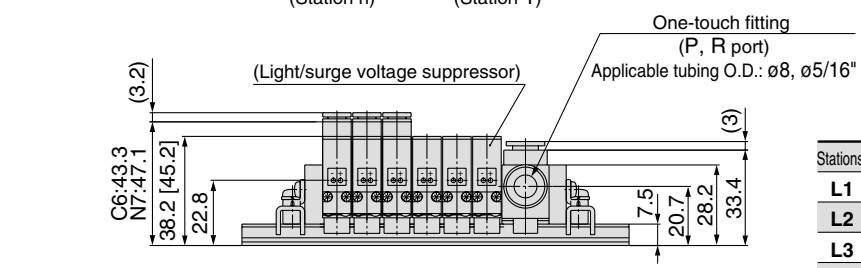




Stations	2 stations	3	4	5	6	7	8	9	10 stations
L1	98	110.5	123	135.5	135.5	148	160.5	173	185.5
L2	87.5	100	112.5	125	125	137.5	150	162.5	175
L3	69.5	80	90.5	101	111.5	122	132.5	143	153.5
L4	14	15	16	17	12	13	14	15	16

SS5Y3-60-Stations D

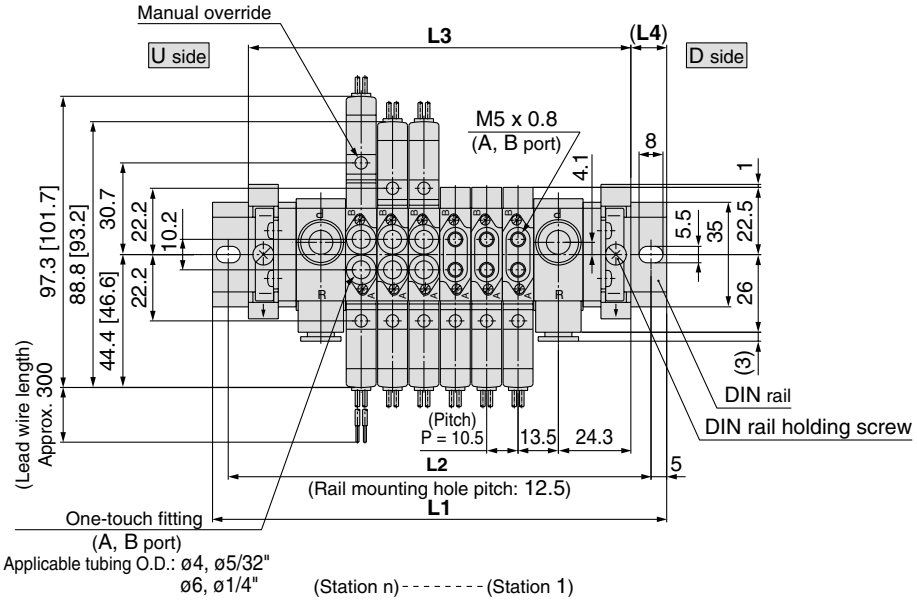


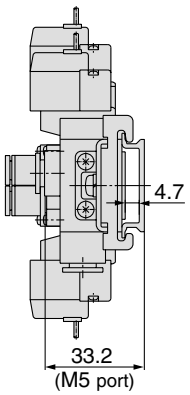


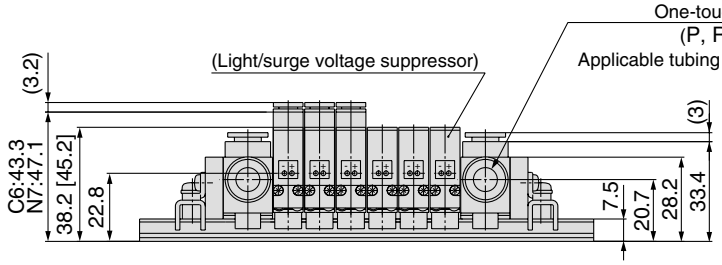
Stations	2 stations	3	4	5	6	7	8	9	10 stations
L1	98	110.5	123	135.5	135.5	148	160.5	173	185.5
L2	87.5	100	112.5	125	125	137.5	150	162.5	175
L3	69.5	80	90.5	101	111.5	122	132.5	143	153.5
L4	14	15	16	17	12	13	14	15	16

[ ]: AC

SS5Y3-60-Stations B



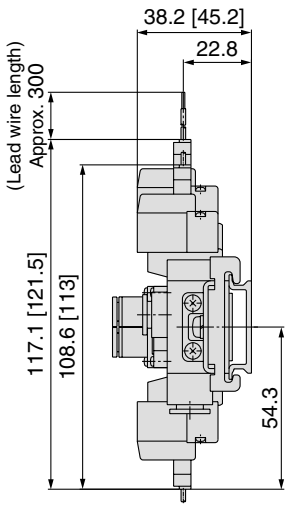




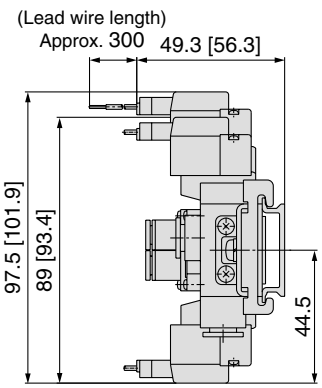
Stations	2 stations	3	4	5	6	7	8	9	10 stations
L1	110.5	123	135.5	148	160.5	173	173	185.5	198
L2	100	112.5	125	137.5	150	162.5	162.5	175	187.5
L3	86	96.5	107	117.5	128	138.5	149	159.5	170
L4	12	13	14	15	16	17	12	13	14

Stations	11 stations	12	13	14	15	16	17	18	19	20 stations
L1	210.5	223	235.5	235.5	248	260.5	273	285.5	298	310.5
L2	200	212.5	225	225	237.5	250	262.5	275	287.5	300
L3	180.5	191	201.5	212	222.5	233	243.5	254	264.5	275
L4	15	16	17	11.5	12.5	13.5	14.5	15.5	16.5	17.5

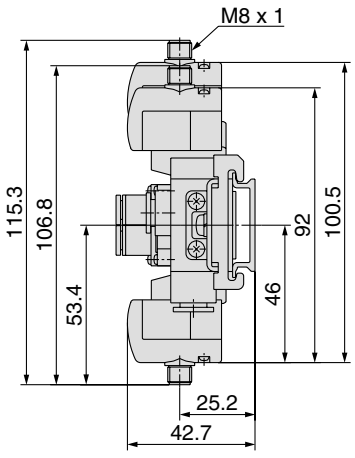
L plug connector (L)



M plug connector (M)



M8 connector (WO)

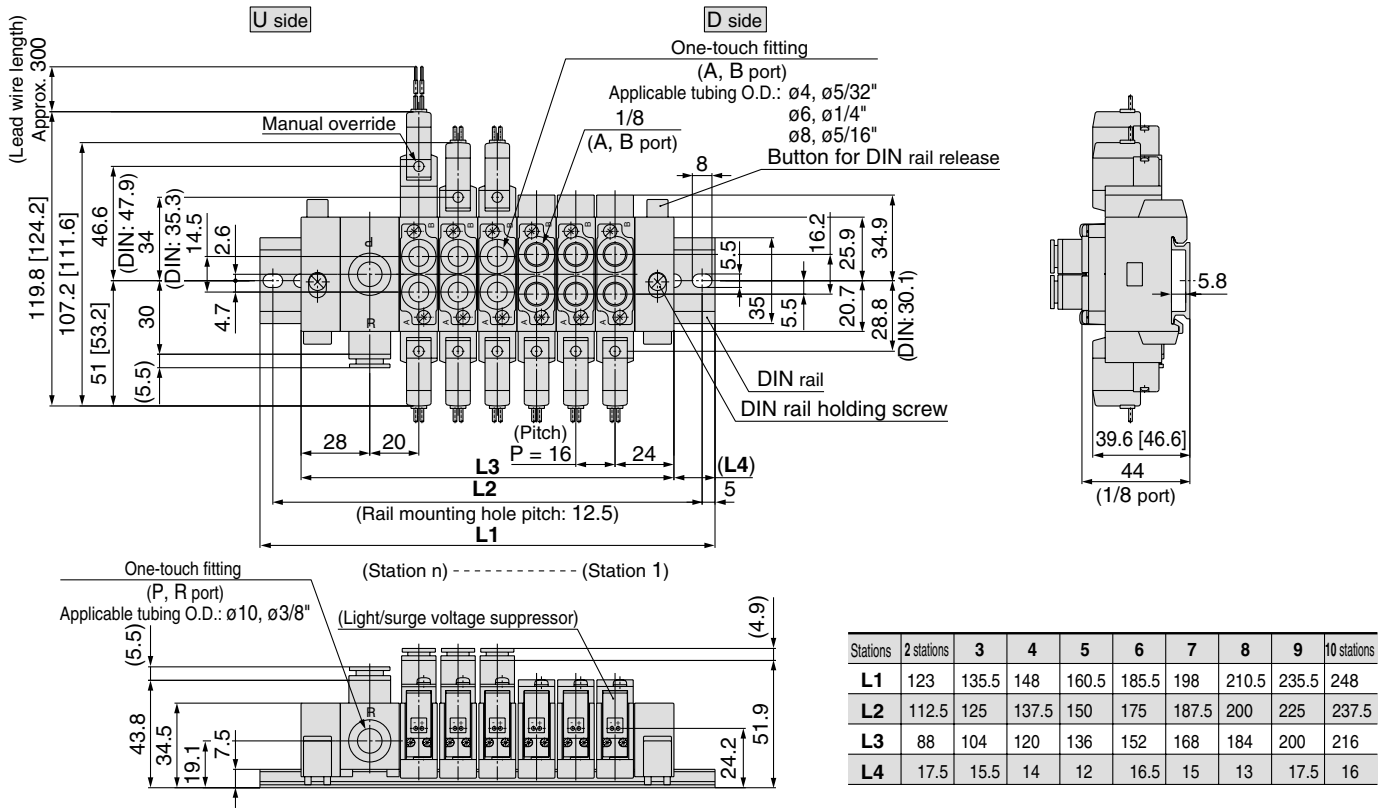


Note) Refer to page 340 for dimensions of connector types.

Dimensions

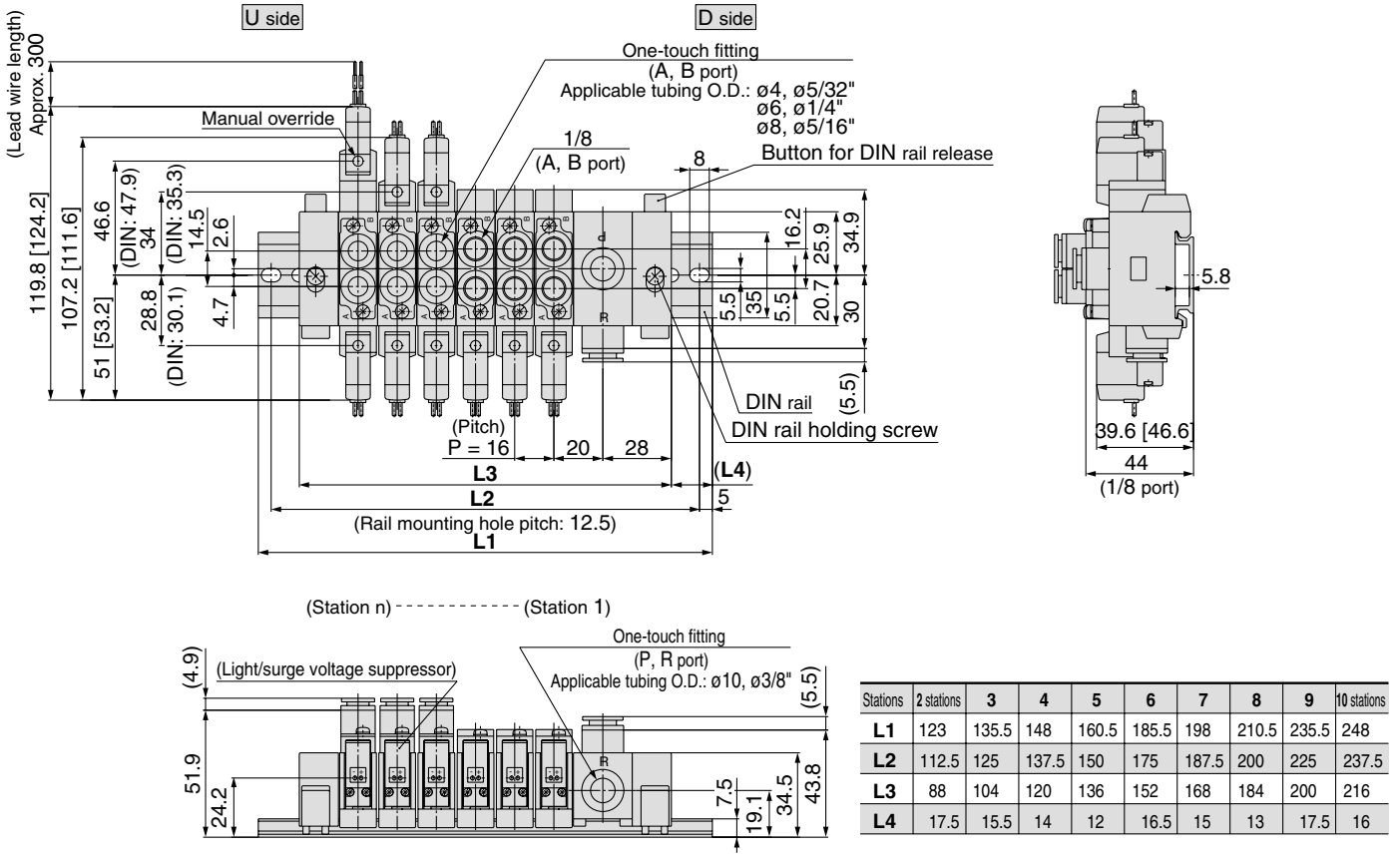
[ ]: AC

SS5Y5-60-Stations U



Stations	2 stations	3	4	5	6	7	8	9	10 stations
L1	123	135.5	148	160.5	185.5	198	210.5	235.5	248
L2	112.5	125	137.5	150	175	187.5	200	225	237.5
L3	88	104	120	136	152	168	184	200	216
L4	17.5	15.5	14	12	16.5	15	13	17.5	16

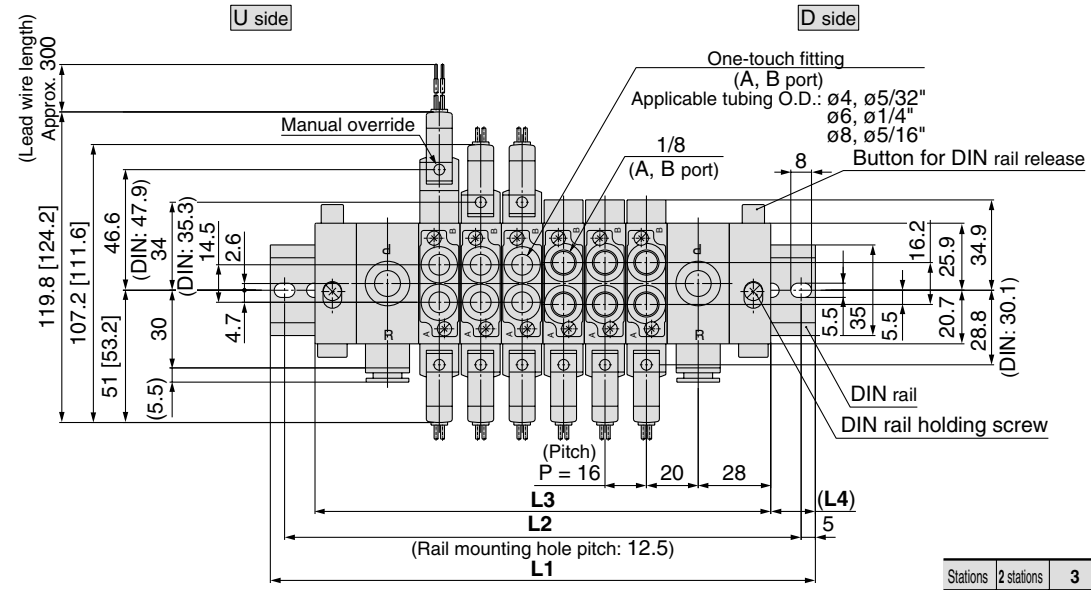
SS5Y5-60-Stations D

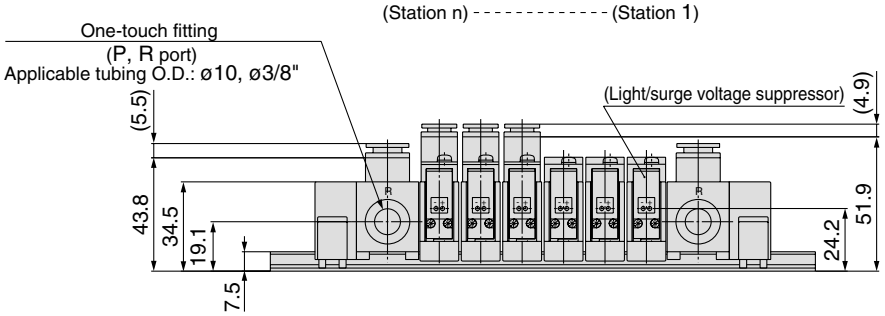


Stations	2 stations	3	4	5	6	7	8	9	10 stations
L1	123	135.5	148	160.5	185.5	198	210.5	235.5	248
L2	112.5	125	137.5	150	175	187.5	200	225	237.5
L3	88	104	120	136	152	168	184	200	216
L4	17.5	15.5	14	12	16.5	15	13	17.5	16

[ ]: AC

SS5Y5-60-Stations B



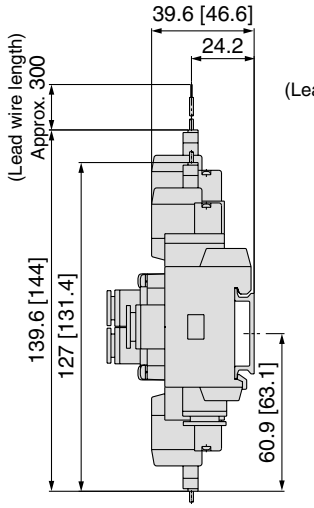


Stations	2 stations	3	4	5	6	7	8 stations
L1	135.5	160.5	173	185.5	210.5	223	235.5
L2	125	150	162.5	175	200	212.5	225
L3	112	128	144	160	176	192	208
L4	11.5	16	14.5	12.5	17.5	15.5	13.5

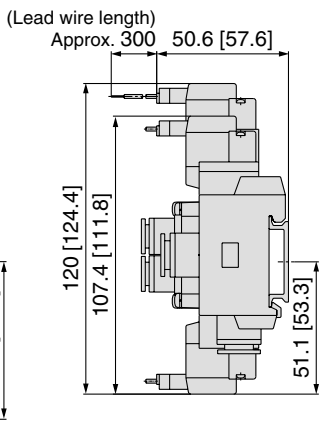
Stations	9 stations	10	11	12	13	14	15 stations
L1	248	273	285.5	298	323	335.5	348
L2	237.5	262.5	275	287.5	312.5	325	337.5
L3	224	240	256	272	288	304	320
L4	12	16.5	14.5	13	17.5	15.5	14

Stations	16 stations	17	18	19	20 stations
L1	360.5	385.5	398	410.5	435.5
L2	350	375	387.5	400	425
L3	336	352	368	384	400
L4	12	16.5	15	13	17.5

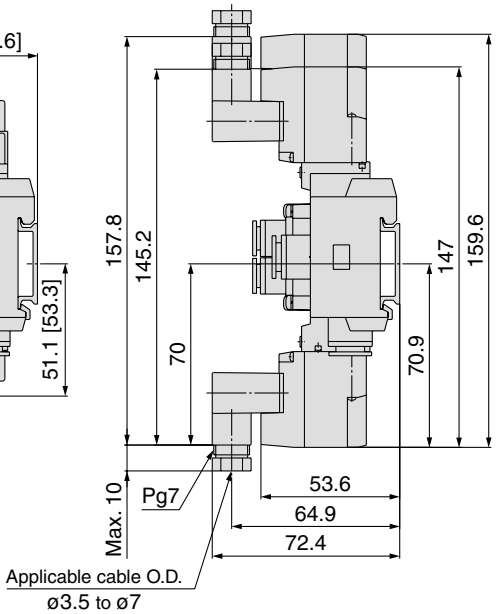
L plug connector (L)



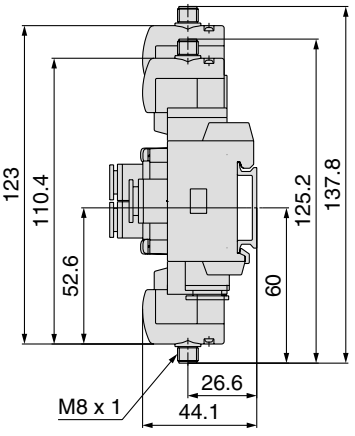
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)

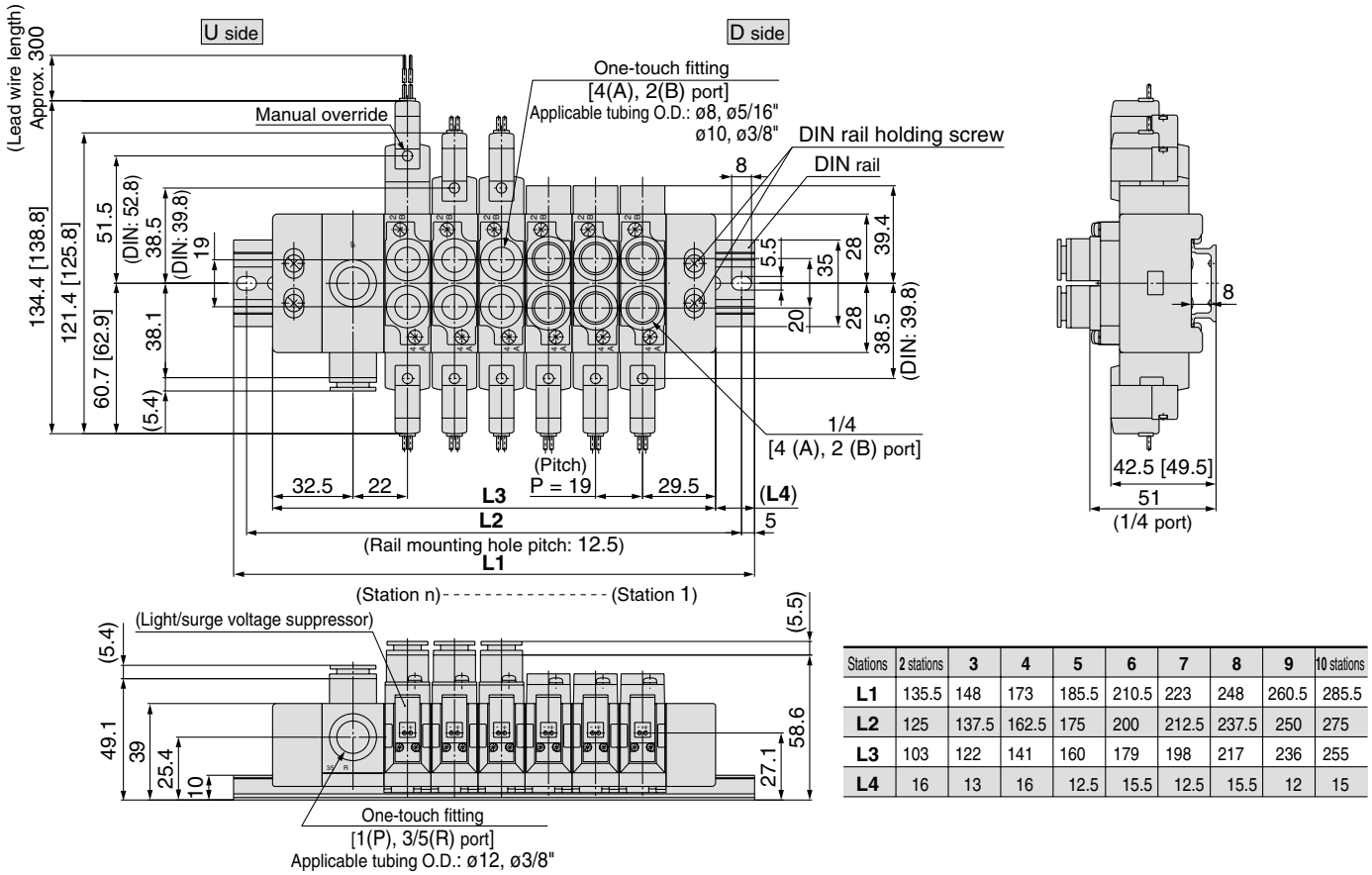


Note) Refer to page 340 for dimensions of connector types.

Dimensions

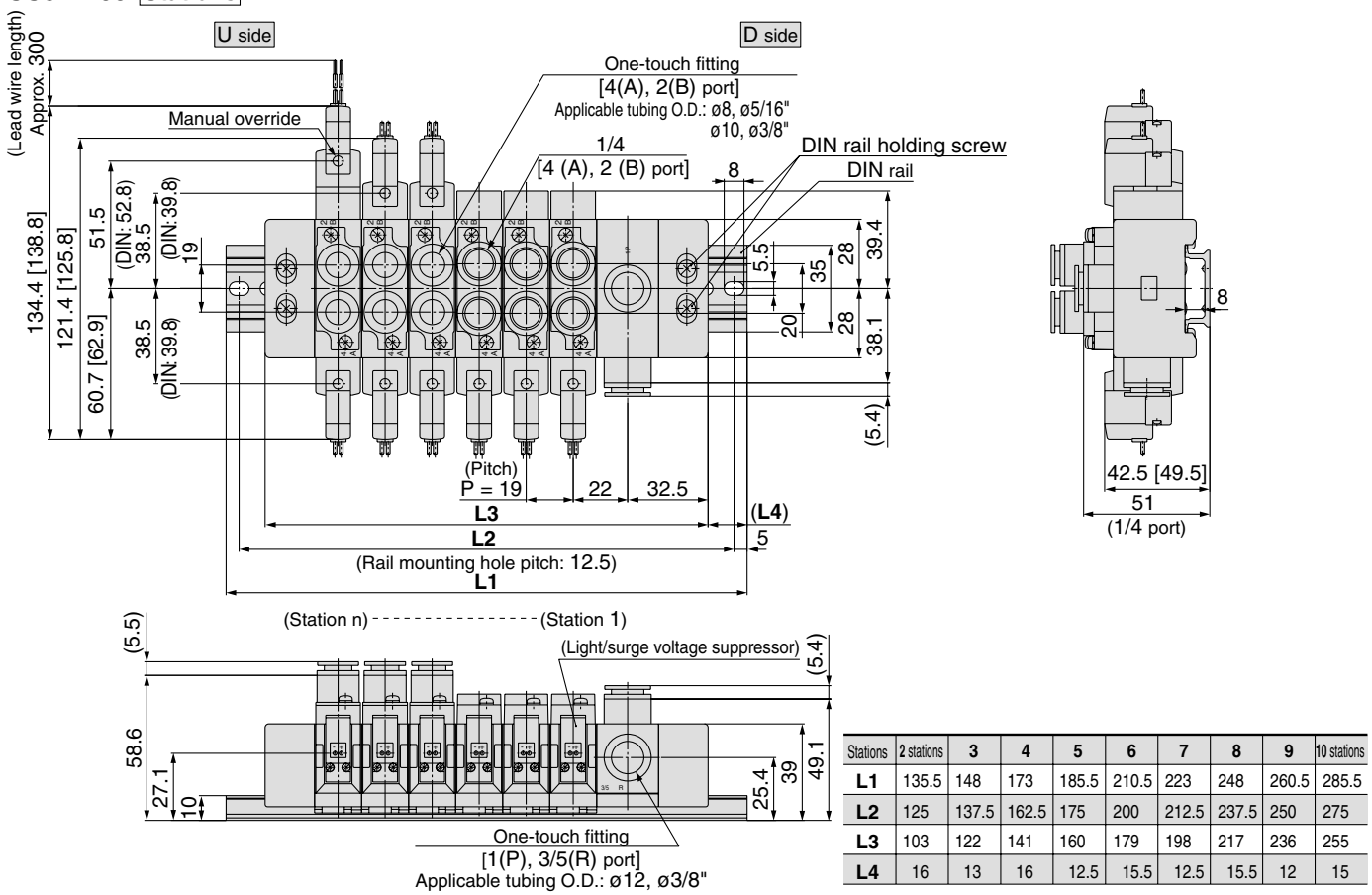
[ ]: AC

SS5Y7-60-Stations U



Stations	2 stations	3	4	5	6	7	8	9	10 stations
L1	135.5	148	173	185.5	210.5	223	248	260.5	285.5
L2	125	137.5	162.5	175	200	212.5	237.5	250	275
L3	103	122	141	160	179	198	217	236	255
L4	16	13	16	12.5	15.5	12.5	15.5	12	15

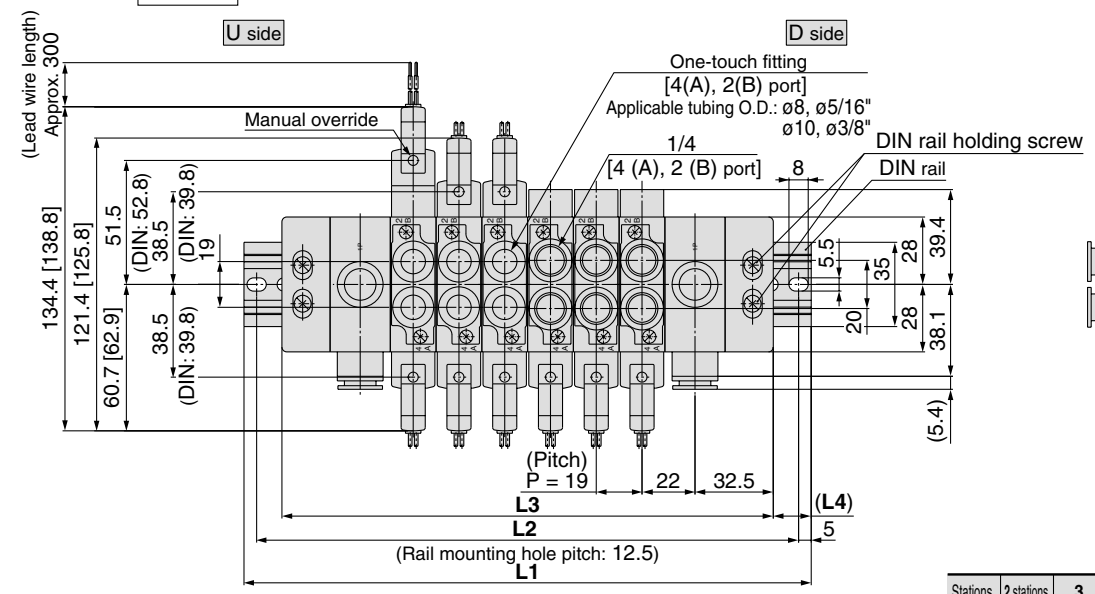
SS5Y7-60-Stations D



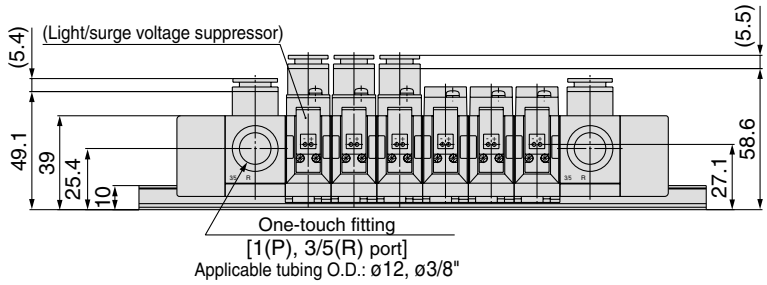
Stations	2 stations	3	4	5	6	7	8	9	10 stations
L1	135.5	148	173	185.5	210.5	223	248	260.5	285.5
L2	125	137.5	162.5	175	200	212.5	237.5	250	275
L3	103	122	141	160	179	198	217	236	255
L4	16	13	16	12.5	15.5	12.5	15.5	12	15

[ ]: AC

SS5Y7-60- Stations **B**



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

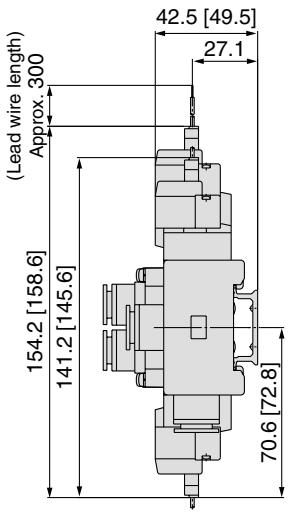


Stations	2 stations	3	4	5	6	7	8 stations
L1	160.5	173	198	210.5	235.5	248	273
L2	150	162.5	187.5	200	225	237.5	262.5
L3	128	147	166	185	204	223	242
L4	16	13	16	12.5	15.5	12.5	15.5

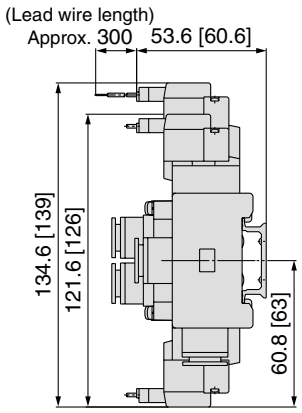
Stations	9 stations	10	11	12	13	14	15 stations
L1	285.5	310.5	323	348	360.5	385.5	410.5
L2	275	300	312.5	337.5	350	375	400
L3	261	280	299	318	337	356	375
L4	12	15	12	15	11.5	14.5	17.5

Stations	16 stations	17	18	19	20 stations
L1	423	448	460.5	485.5	498
L2	412.5	437.5	450	475	487.5
L3	394	413	432	451	470
L4	14.5	17.5	14	17	14

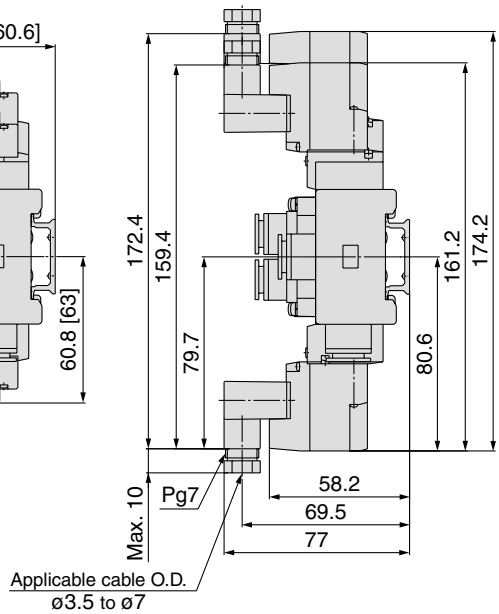
L plug connector (L)



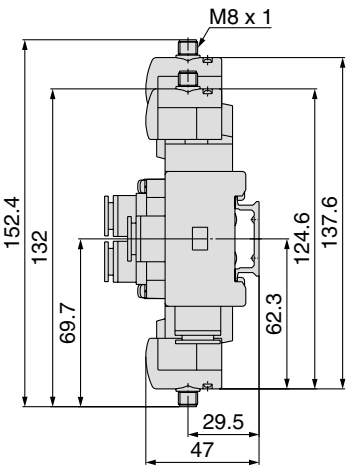
M plug connector (M)



DIN terminal (D, Y)



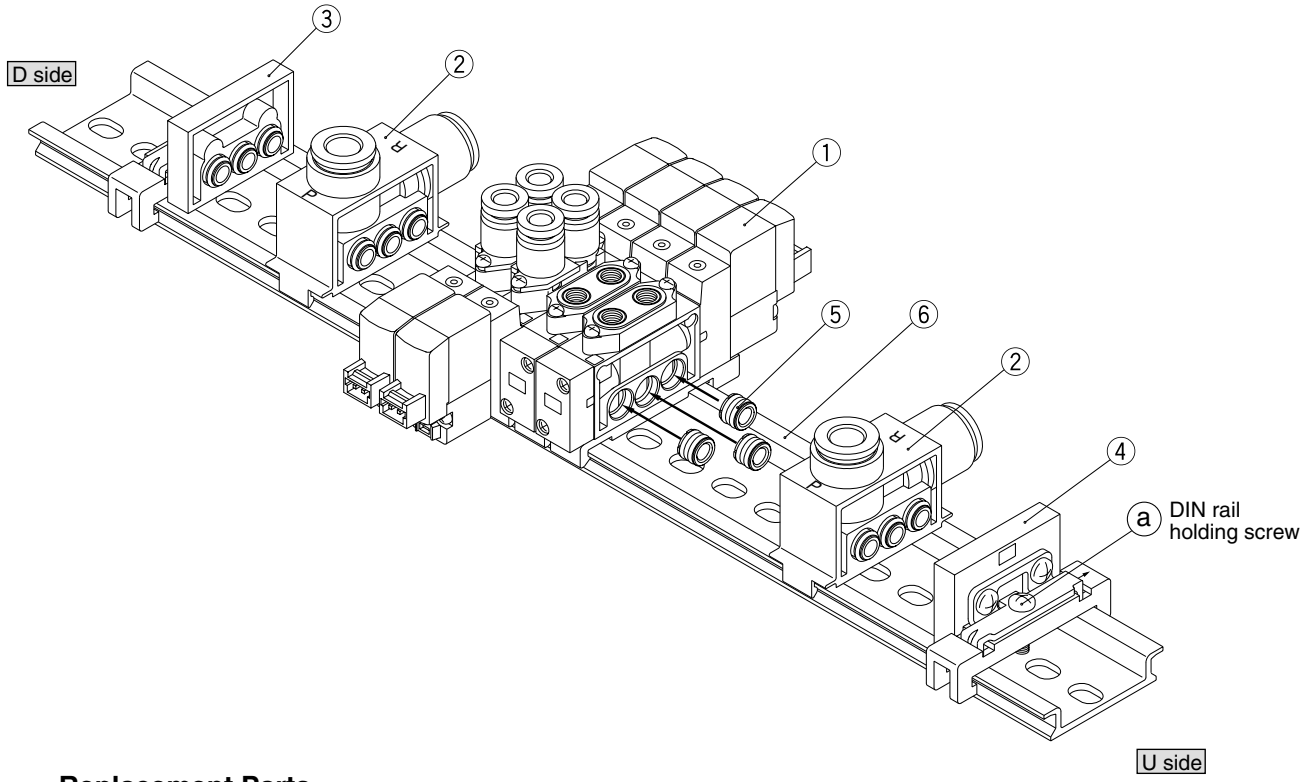
M8 connector (WO)



Note) Refer to page 340 for dimensions of connector types.

DIN Rail Manifold Exploded View

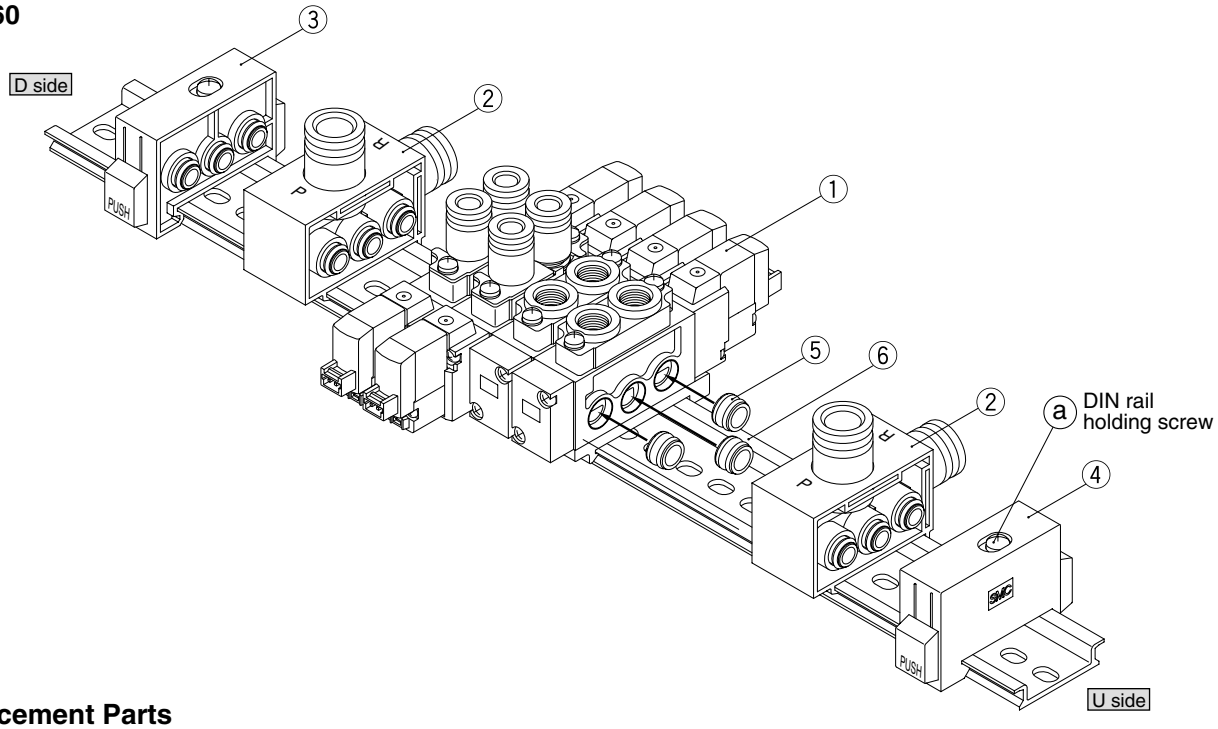
SY3000
Type 60



Replacement Parts

No.	Description	Part no.	Note
1	**Valve**	**SY3□60-□□-□(-Q)**	□ at the end of part number denotes A. B port size: M5, C4, C6, N3, N7. Includes bushing assembly (SY3000-52-5A) 3 pcs.
2	**SUP/EXH block assembly**	**SY3000-55-$\frac{1}{2}$A(-Q)**	P, R port (1: One-touch fitting for ø8, 2: One-touch fitting for ø5/16") Includes bushing assembly (SY3000-52-5A) 3 pcs.
3	**End block assembly**	**SY3000-56-1A(-Q)**	For D side (Bushing assembly: Not available for SY3000-52-5A)
4	**End block assembly**	**SY3000-56-1B(-Q)**	For U side (Bushing assembly: Not available for SY3000-52-5A)
5	**Bushing assembly**	**SY3000-52-5A**	CE-compliant: SY3000-52-1A
6	**DIN rail**	**VZ1000-11-1-□**	Refer to page 186.

SY5000
Type 60



Replacement Parts

No.	Description	Part no.	Note
1	**Valve**	**SY5□60-□□-□(-Q)**	□ at the end of part number denotes A. B port size: 01, C4, C6, C8, N3, N7, N9. Includes bushing assembly (SY5000-52-3A) 3 pcs.
2	**SUP/EXH block assembly**	**SY5000-55-$\frac{1}{2}$A(-Q)**	P, R port (1: One-touch fitting for ø10, 2: One-touch fitting for ø3/8") Includes bushing assembly (SY5000-52-3A) 3 pcs.
3	**End block assembly**	**SY5000-56-1A(-Q)**	For D side (Bushing assembly: Not available for SY5000-52-3A)
4	**End block assembly**	**SY5000-56-1B(-Q)**	For U side (Bushing assembly: Not available for SY5000-52-3A)
5	**Bushing assembly**	**SY5000-52-3A**	
6	**DIN rail**	**VZ1000-11-1-□**	Refer to page 186.

How to Add Additional Valves to the DIN Rail
Valves can be added at any station on the rail.

1. Loosen the manifold base clamping screw ⓐ.
2. Separate the valves at the point where more valves are to be added.
3. Mount the additional valves on the DIN rail as shown in Fig. 1
4. Connect them together while pressing the block assemblies toward each other, and tighten the holding screw ⓐ to fix them to the DIN rail.

⚠Caution
Tightening torque
SY3000: 1 N·m
SY5000: 1.4 N·m

(While lightly holding the blocks after fixing an end block on one side, tighten the other end block for better sealing after no gap between valves is confirmed.)

- **Bushing assembly must be seated properly to each valve block in order to prevent air leaks from occurring.**
- **Refer to the fig. 2 when dismounting the valve from the DIN rail.**

Fig. 1 Manifold mounting procedure

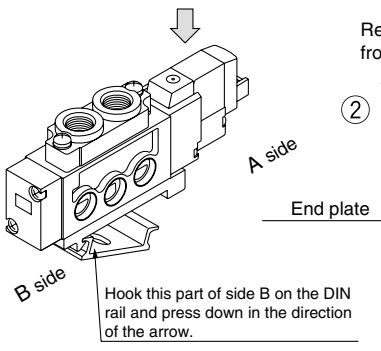
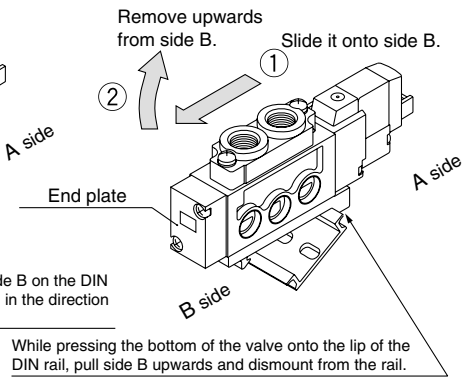


Fig. 2 Manifold dismounting procedure

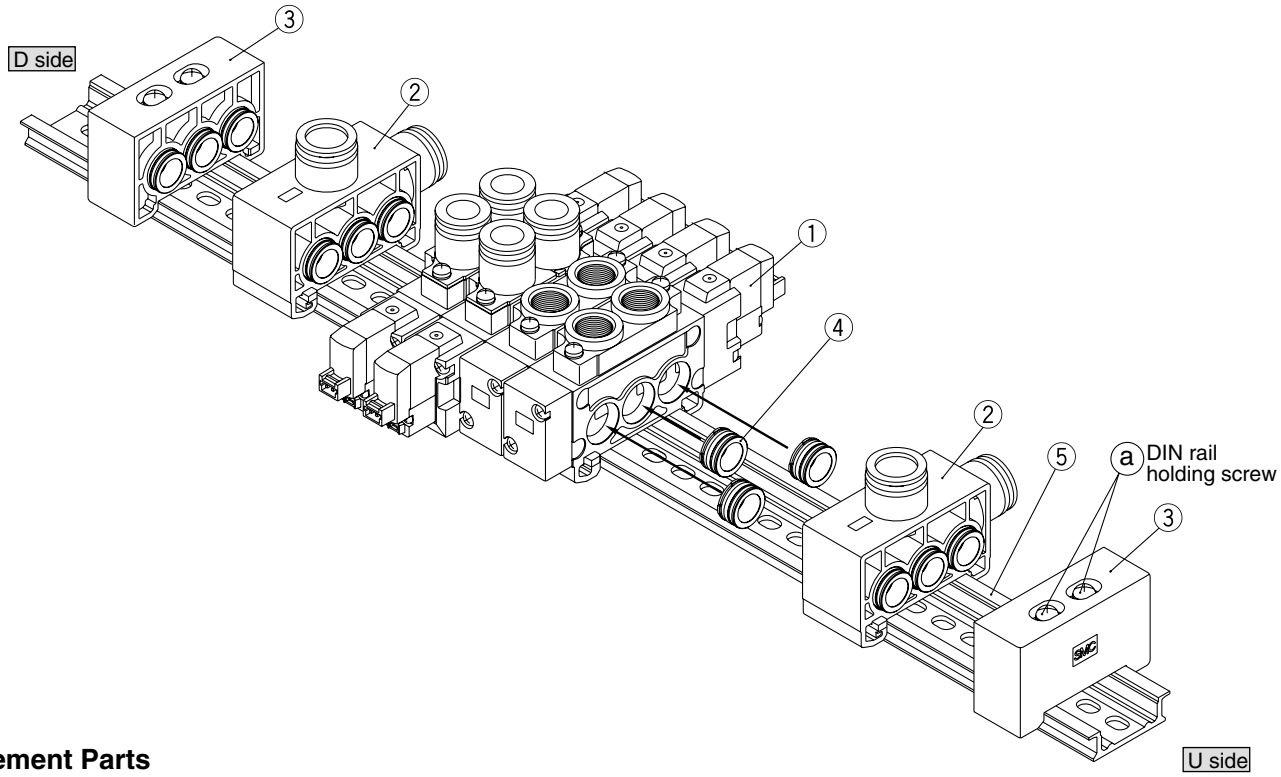


⚠Caution When clamping screw ⓐ of the end block is not sufficiently tightened during reassembly, air leakage may result. Before supplying air, check that there are no gaps between valves and that the end block is firmly secured to the DIN rain in order to ensure air supply without leakage.

DIN Rail Manifold Exploded View

SY7000

Type 60



Replacement Parts

No.	Description	Part no.	Note
1	**Valve**	**SY7□60-□□-□(-Q)**	□ at the end of part number denotes A. B port size: 02, C8, C10, N9, N11. Includes bushing assembly (SY7000-70-1A) 3 pcs.
2	**SUP/EXH block assembly**	**SY7000-75-$\frac{1}{3}$A(-Q)**	
3	**End block assembly**	**SY7000-56-1A(-Q)**	In common for D side and U side (Bushing assembly: Not available for SY7000-70-1A.)
4	**Bushing assembly**	**SY7000-70-1A**	
5	**DIN rail**	**VZ1000-11-4-□**	Refer to page 186.

How to Add Additional Valves to the DIN Rail Valves can be added at any station on the rail.

1 Loosen the rail holding screw ⓐ at both of 2 locations which holds the manifold base either in the U side or D side.

[When removing the end block assembly from the DIN rail, loosen the holding screws for DIN rail at first, then slide it to the edge of the rail.]

2 Separate the valves at the point where more valves are to be added.

3 Mount the additional valves on the DIN rail as shown in Fig. 1.

4 Connect them together while pressing the block assemblies toward each other, and tighten the 2 holding screws ⓐ for DIN rail alternately (2 to 3 times) with the prescribed torque (1.4 N·m) to fix them to the DIN rail.

⚠Caution

Tightening torque

SY7000: 1.4 N·m

(While lightly holding the blocks after fixing an end block on one side, tighten the other end block for better sealing after no gap between valves is confirmed.)

- **Bushing assembly must be seated properly to each valve block in order to prevent air leaks from occurring.**
- **Refer to the fig. 2 when dismounting the valve from the DIN rail.**

Fig. 1 Manifold mounting procedure

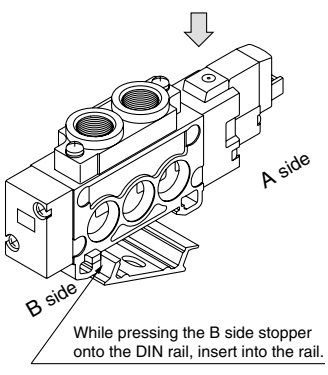
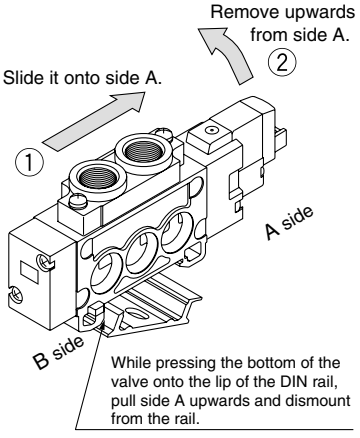


Fig. 2 Manifold dismounting procedure



⚠Caution When clamping screw ⓐ of the end block is not sufficiently tightened during reassembly, air leakage may result. Before supplying air, check that there are no gaps between valves and that the end block is firmly secured to the DIN rain in order to ensure air supply without leakage.

Type 41
Type 42

5 Port Solenoid Valve
Base Mounted Manifold
Bar Stock Type/Individual Wiring

CE

Series SY3000/5000/7000

How to Order Manifold

Type 41/Compact style

SS5Y 5 – 41 – 05 – C8 ☐ – ☐

Manifold series

3	SY3000
5	SY5000

Stations

02	2 stations
⋮	⋮
20	20 stations

∗ This also includes the number of blanking plate assemblies.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ Except for M5

A, B port size

Thread piping

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

CE-compliant

Nil	—
Q	CE-compliant

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	

Type 42/External pilot capable

SS5Y 5 – 42 – 05 – C8 ☐ – ☐

Manifold series

3	SY3000
5	SY5000
7	SY7000

Stations

02	2 stations
⋮	⋮
20	20 stations

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

A, B port size

Thread piping

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

CE-compliant

Nil	—
Q	CE-compliant

One-touch fitting (Metric size)

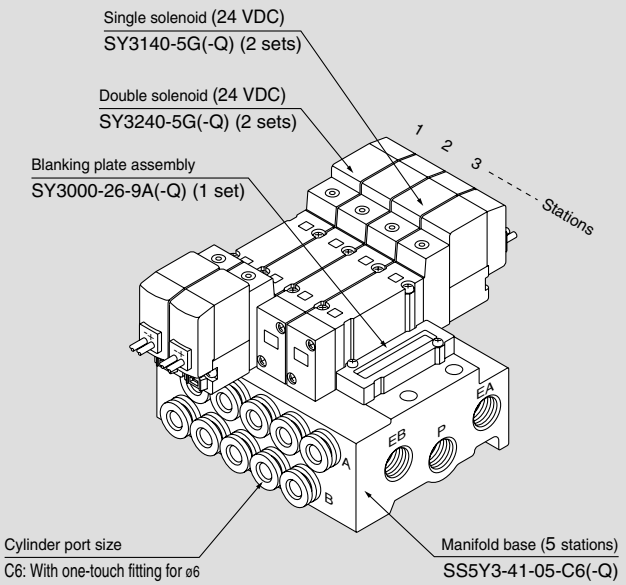
Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	
C10	One-touch fitting for ø10	SY7000

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	
N11	One-touch fitting for ø3/8"	SY7000

How to Order Manifold Assembly (Example)

Example



SS5Y3-41-05-C6 ····· 1 set (Type 41, 5-station manifold base part no.)
∗SY3240-5G ····· 2 sets (Double solenoid part no.)
∗SY3140-5G ····· 2 sets (Single solenoid part no.)
∗SY3000-26-9A ····· 1 set (Blanking plate assembly part no)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

SMC

How to Order Valve

SY [5] [2] **40** [ ] [ ] – [5] [L] [ ] [ ] – [ ] – [ ]

Series

3	SY3000
5	SY5000
7	SY7000

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

Pilot type

Nil	Internal pilot
R	External pilot

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

∗ Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

Rated voltage

For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

For AC (50/60 Hz)

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

∗ DC specifications of Type D, Y, DO and YO is only available with 12 and 24 VDC.
∗ For type W□, DC voltage is only available.

Light/surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
∗ For "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

∗ DOZ and YOZ are not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 332.)

CE-compliant

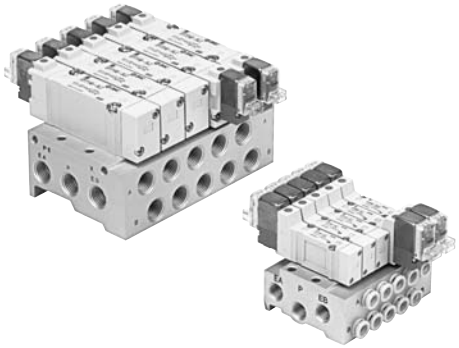
Nil	—
Q	CE-compliant

∗ For DC only except DIN terminal.

Electrical entry

24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm lead **H:** Lead wire length 600 mm	**L:** With lead wire (Length 300 mm) **LN:** Without lead wire **LO:** Without connector	**M:** With lead wire (Length 300 mm) **MN:** Without lead wire **MO:** Without connector	**D:** With connector **DO:** Without connector **Y:** With connector **YO:** Without connector	**WO:** Without connector cable **W□:** With connector cable Note)

∗ LN, MN type: with 2 sockets.
∗ "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 336.
∗ For connector cable of M8 connector, refer to page 339.
∗ M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.
∗ Refer to page 336 for the lead wire length of L and M plug connectors.
∗ Refer to page 337 for the connector assembly with cover for L and M plug connectors.
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.



Manifold Specifications

Model		SS5Y3-41(-Q)	SS5Y3-42(-Q)	SS5Y5-41(-Q)	SS5Y5-42(-Q)	SS5Y7-42(-Q)
Applicable valve		SY3□40		SY5□40		SY7□40
Manifold type		Single base/B mount				
P(SUP)/R(EXH)		Common SUP, Common EXH				
Valve stations		2 to 20 stations Note 1)				
A, B port Porting specifications	**Location**	Base				
	Direction	Side				
Port size	**P, EA, EB port**	1/8		1/4		1/4
	A, B port	M5 x 0.8, C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	1/8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	1/8 C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	1/4 C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	1/4 C10 (One-touch fitting for ø10)
Manifold base mass W (g) n: Stations		W = 30n + 50	W = 37n + 63	W = 61n + 101	W = 79n + 127	W = 100n + 151

Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.
Note 2) Refer to “Manifold Option” on page 238.

Flow Characteristics

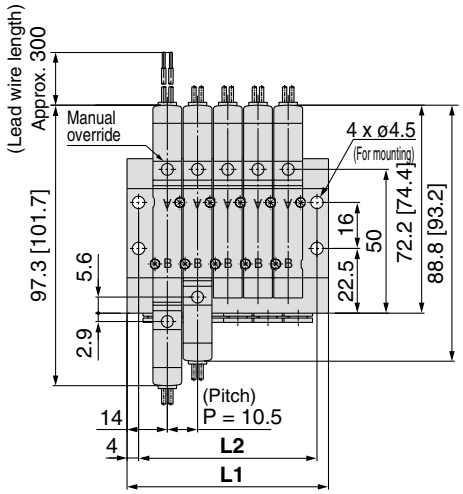
Model	Port size		Flow characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv
SS5Y3-41(-Q)	1/8	C6	0.75	0.19	0.18	0.81	0.23	0.20
SS5Y3-42(-Q)	1/8	C6	0.75	0.20	0.18	0.82	0.20	0.20
SS5Y5-41(-Q)	1/4	C8	1.8	0.23	0.44	1.9	0.16	0.45
SS5Y5-42(-Q)	1/4	C8	1.9	0.20	0.46	1.9	0.12	0.43
SS5Y7-42(-Q)	1/4	C10	3.0	0.25	0.75	3.0	0.12	0.66

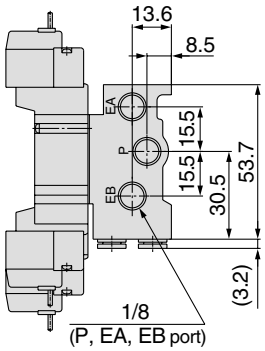
Note) The value is for manifold base with 5 stations and individually operated 2 position type.

SY3000: SS5Y3-41-[Stations]-M5, C4,N3 C6,N7 [ ]

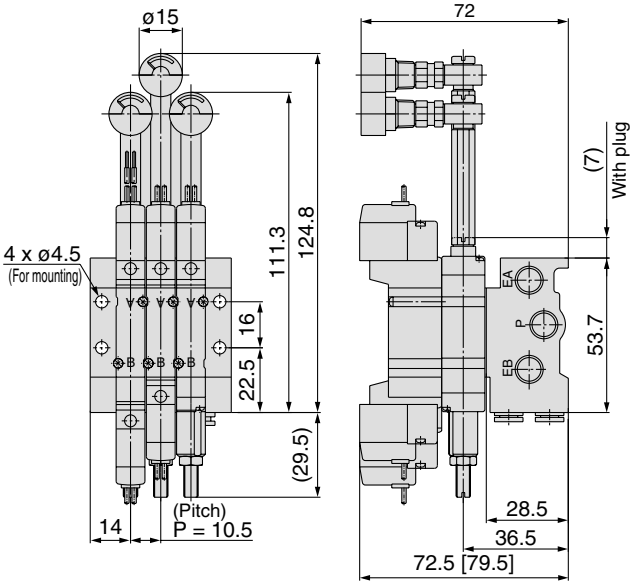
[ ]: AC

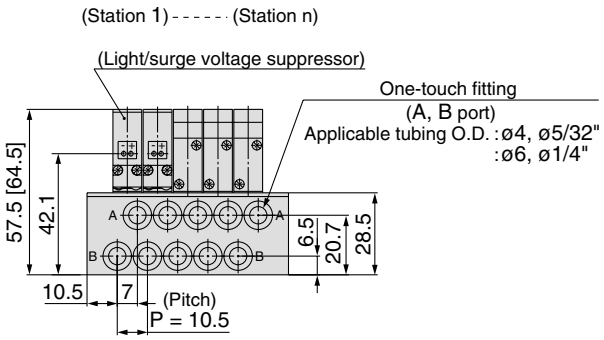
Grommet (G)



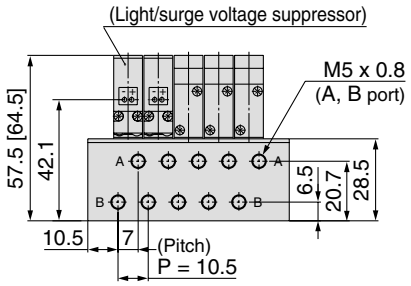


With interface regulator (with gauge)

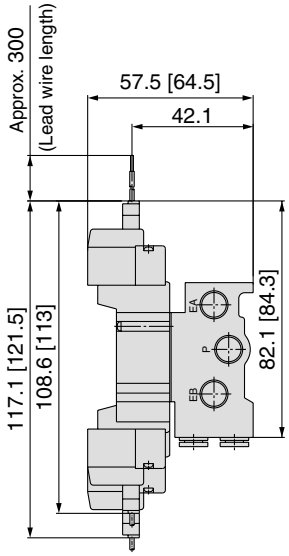




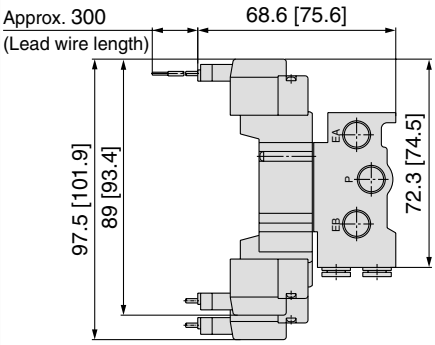
For M5



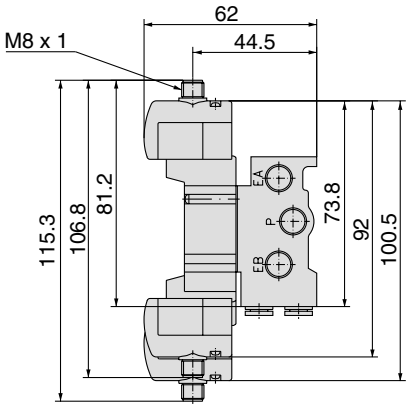
L plug connector (L)



M plug connector (M)



M8 connector (WO)



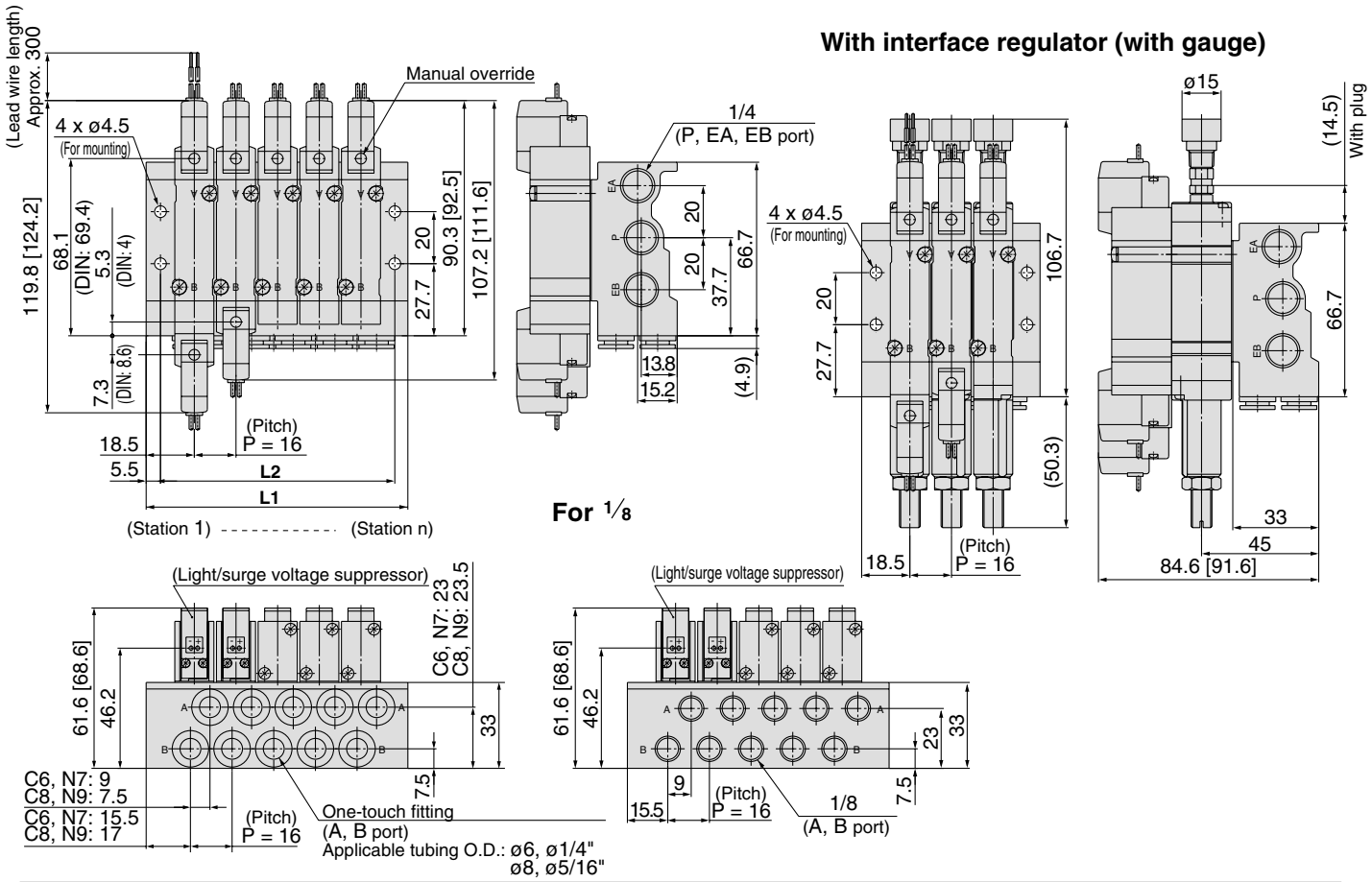
Note) Refer to page 340 for dimensions of connector types.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	38.5	49	59.5	70	80.5	91	101.5	112	122.5	133	143.5	154	164.5	175	185.5	196	206.5	217	227.5
L2	30.5	41	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5

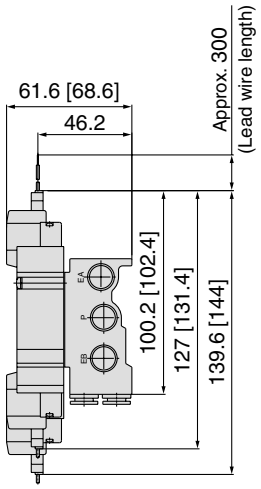
SY5000: SS5Y5-41-Stations-01, C6, N7 C8, N9 □

[ ]: AC

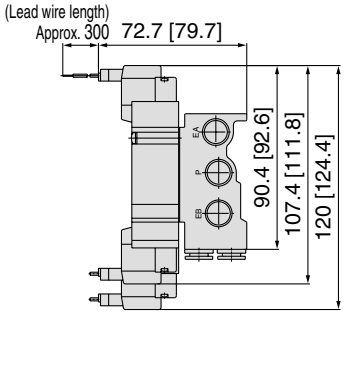
Grommet (G)



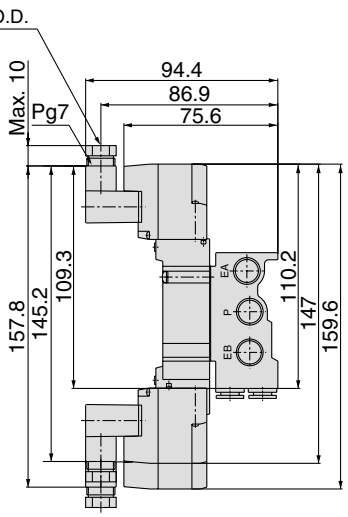
L plug connector (L)



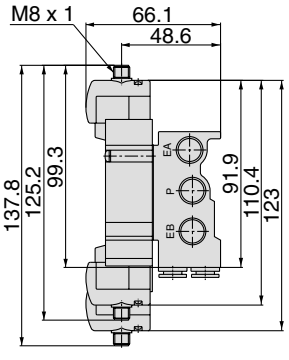
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)



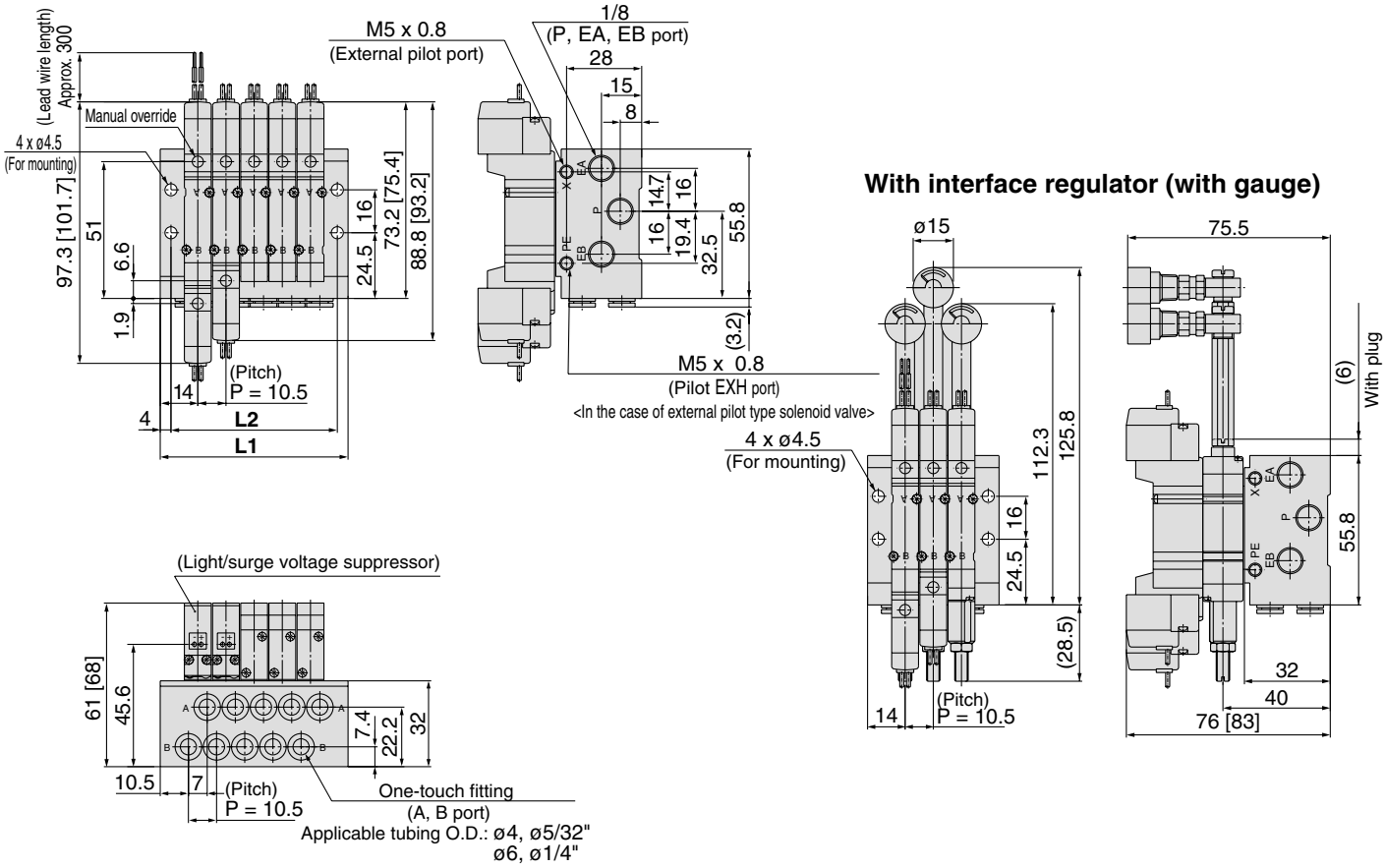
Note) Refer to page 340 for dimensions of connector types.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	52.5	68.5	84.5	100.5	116.5	132.5	148.5	164.5	180.5	196.5	212.5	228.5	244.5	260.5	276.5	292.5	308.5	324.5	340.5
L2	42	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330

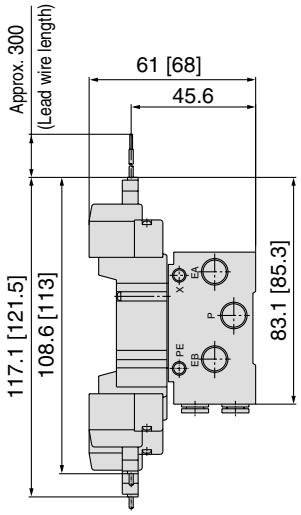
SY3000: SS5Y3-42- Stations - C4, N3 C6, N7 □

[ ]: AC

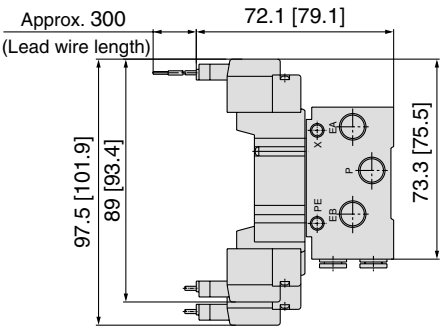
Grommet (G)



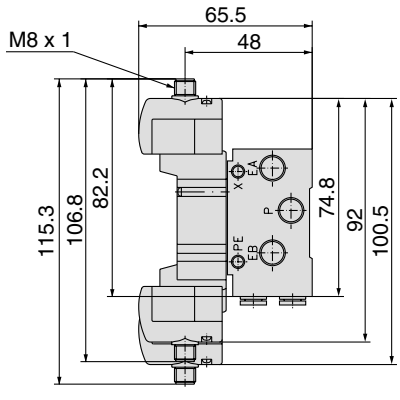
L plug connector (L)



M plug connector (M)



M8 connector (WO)



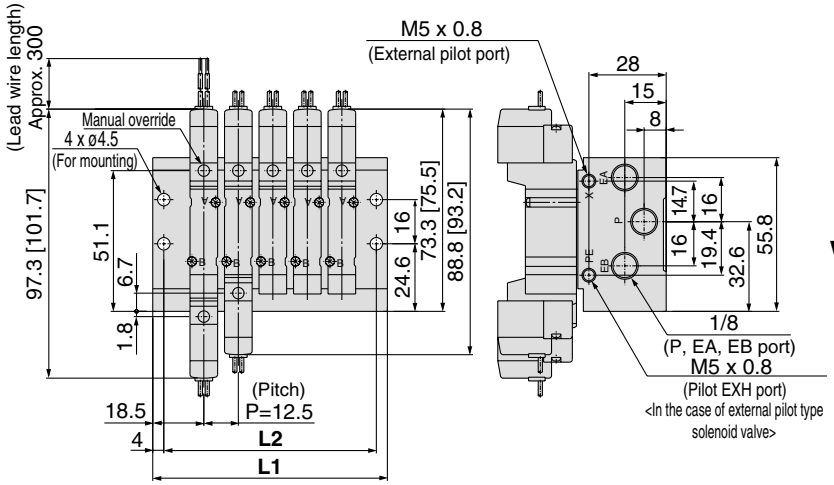
Note) Refer to page 340 for dimensions of connector types.

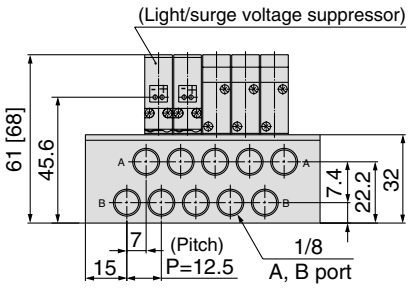
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	38.5	49	59.5	70	80.5	91	101.5	112	122.5	133	143.5	154	164.5	175	185.5	196	206.5	217	227.5
L2	30.5	41	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5

SY3000: SS5Y3-42-Stations-01□

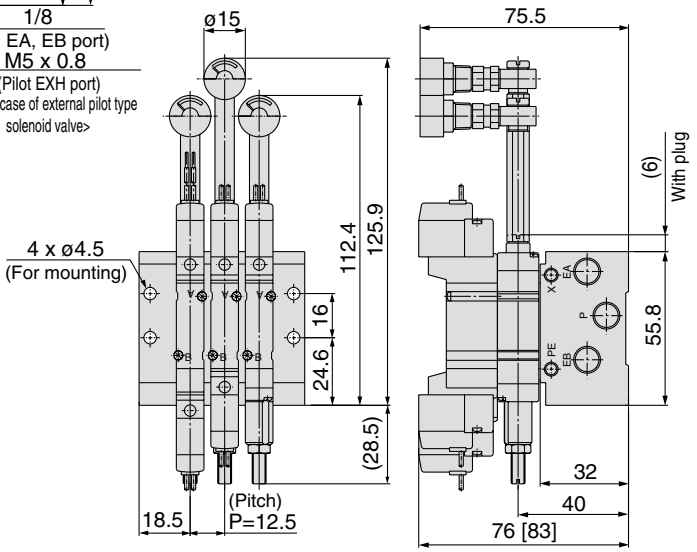
[ ]: AC

Grommet (G)

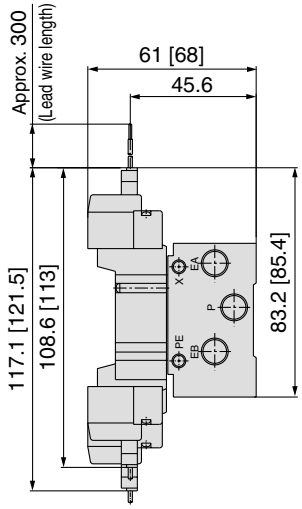




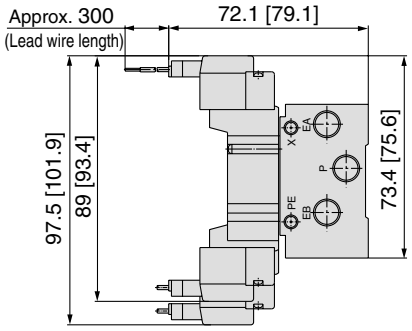
With interface regulator (with gauge)



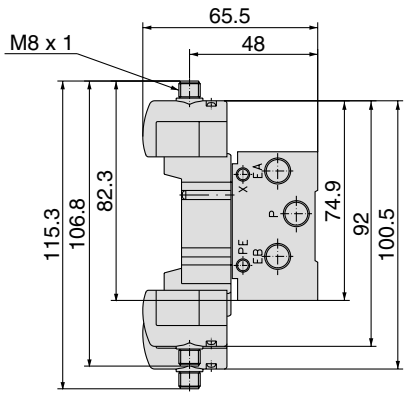
L plug connector (L)



M plug connector (M)



M8 connector (WO)



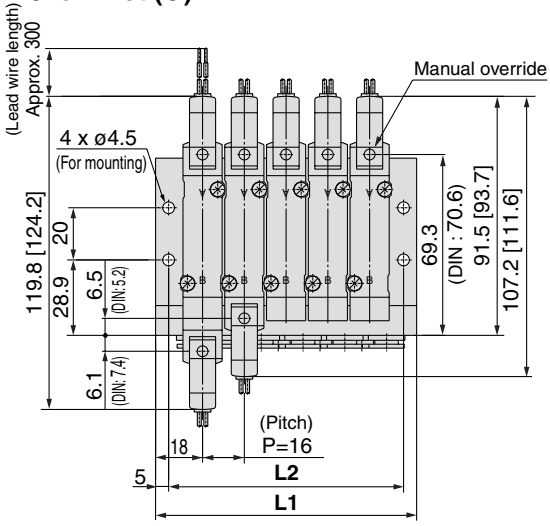
Note) Refer to page 340 for dimensions of connector types.

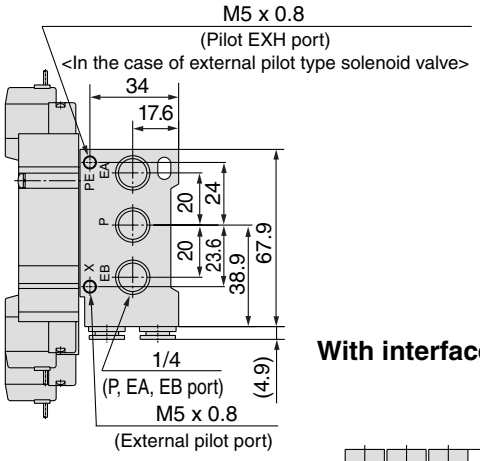
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	47.5	60	72.5	85	97.5	110	122.5	135	147.5	160	172.5	185	197.5	210	222.5	235	247.5	260	272.5
L2	39.5	52	64.5	77	89.5	102	114.5	127	139.5	152	164.5	177	189.5	202	214.5	227	239.5	252	264.5

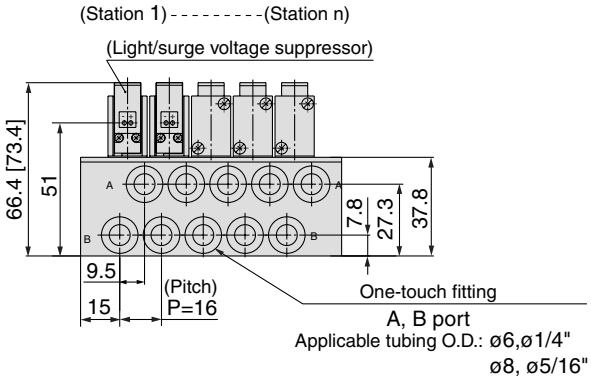
SY5000: SS5Y5-42-Stations-C4, N3 C6, N7

[ ]: AC

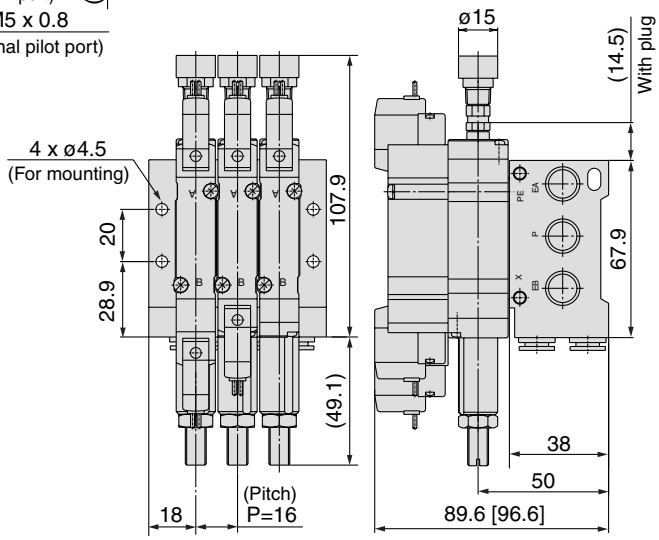
Grommet (G)



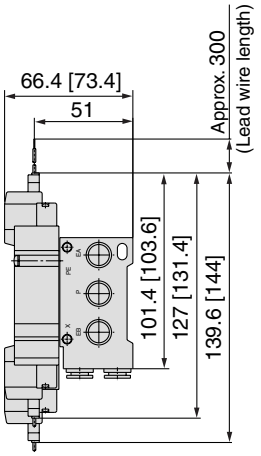




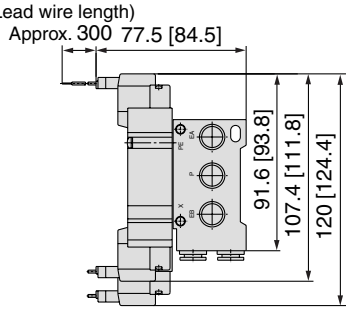
With interface regulator (with gauge)



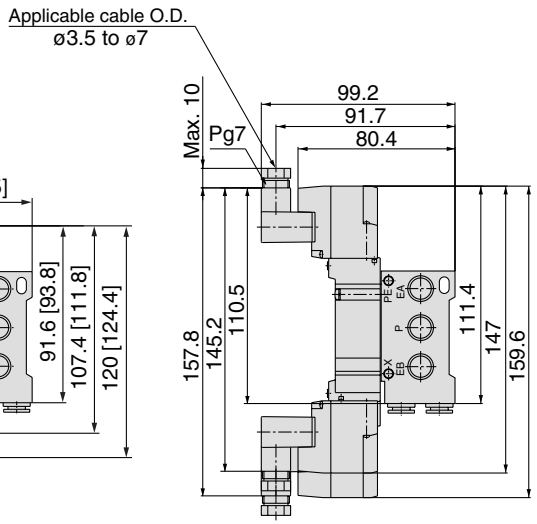
L plug connector (L)



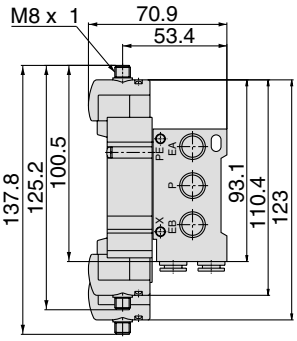
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)



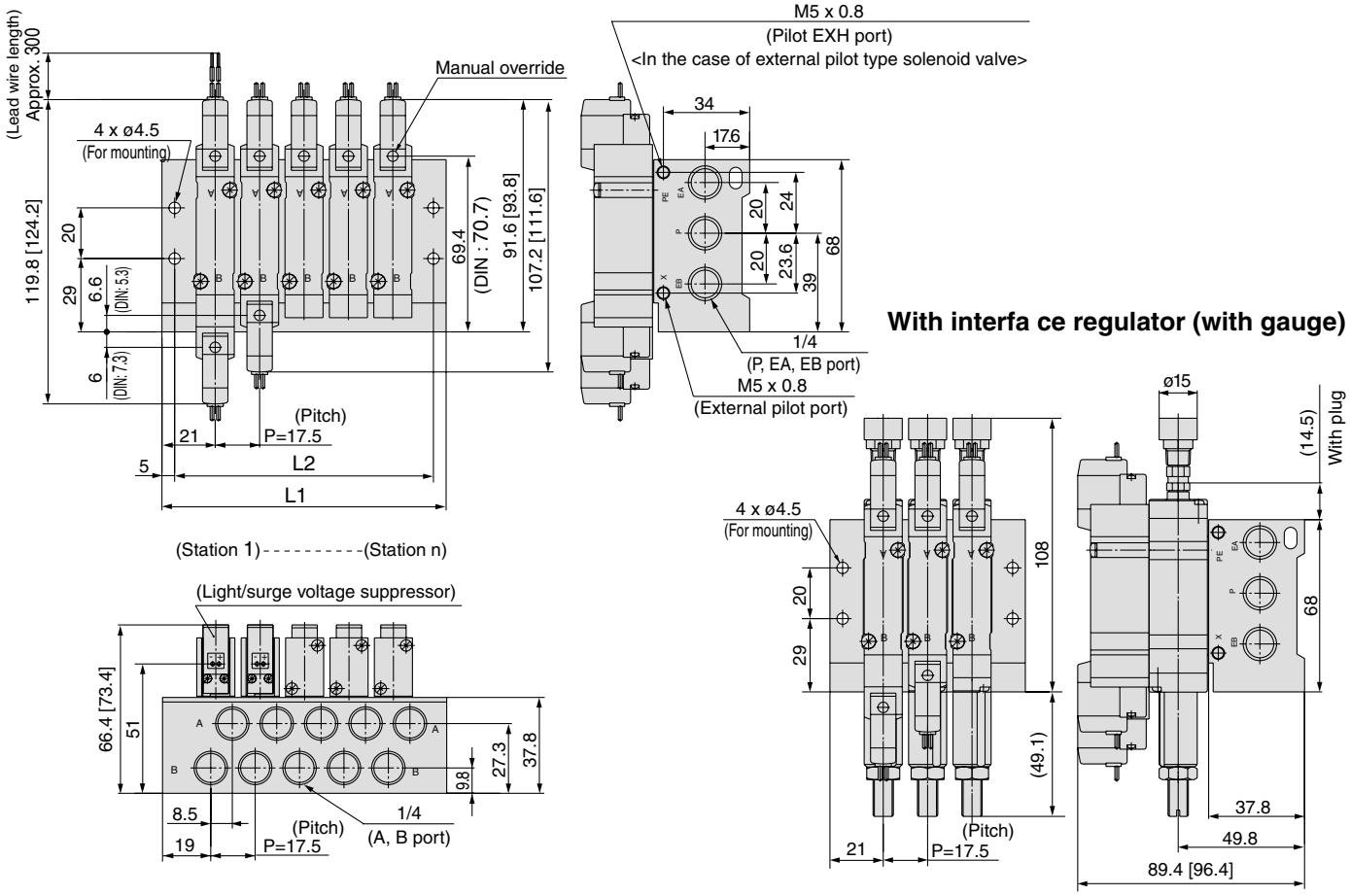
Note) Refer to page 340 for dimensions of connector types.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
L2	42	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330

SY5000: SS5Y5-42-Stations-02

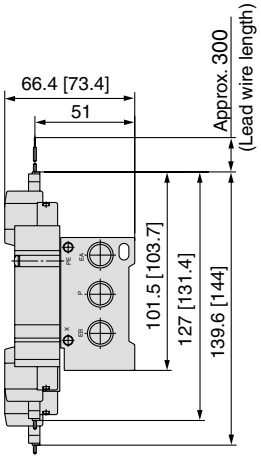
[ ]: AC

Grommet (G)

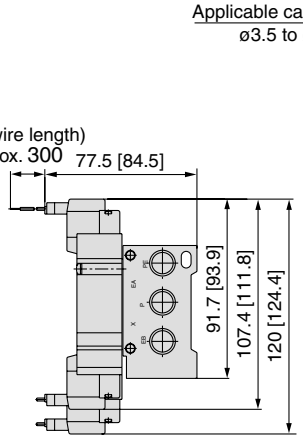


With interfa ce regulator (with gauge)

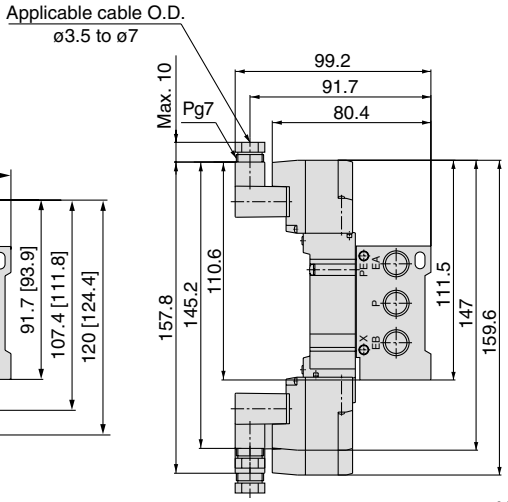
L plug connector (L)



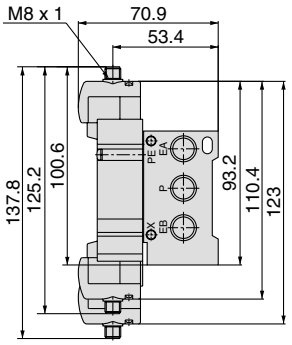
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)



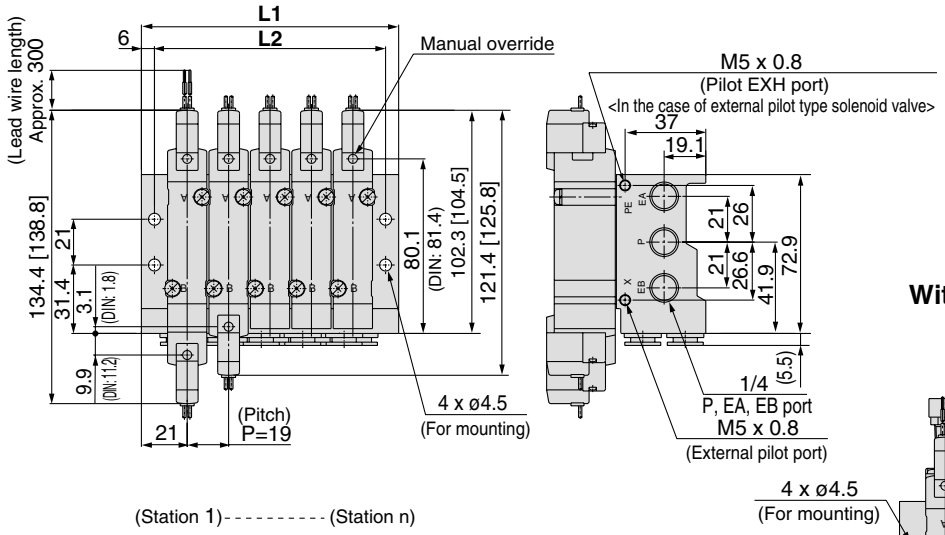
Note) Refer to page 340 for dimensions of connector types.

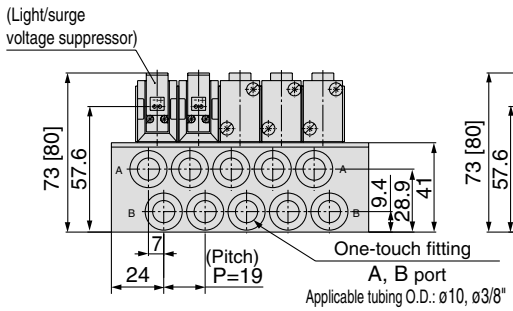
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	59.5	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5	252	269.5	287	304.5	322	339.5	357	374.5
L2	49.5	67	84.5	102	119.5	137	154.5	172	189.5	207	224.5	242	259.5	277	294.5	312	329.5	347	364.5

SY7000: SS5Y7-42-Stations-02, C10, N11

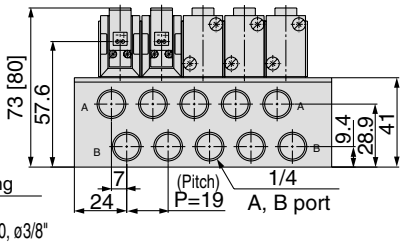
[ ]: AC

Grommet (G)

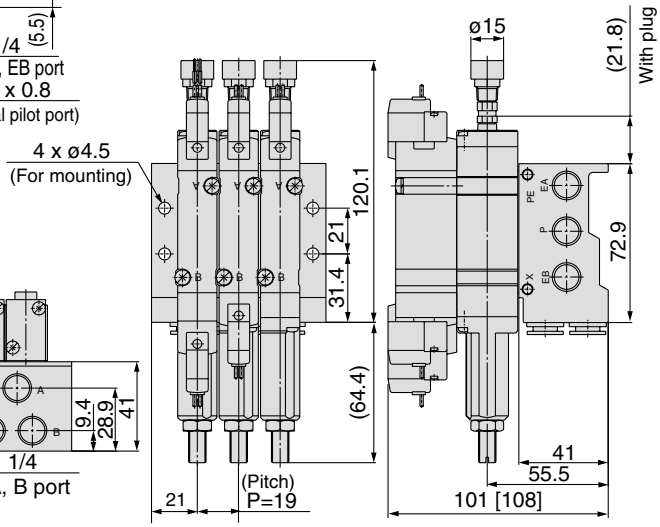




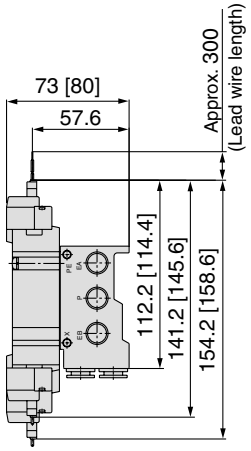
For 1/4

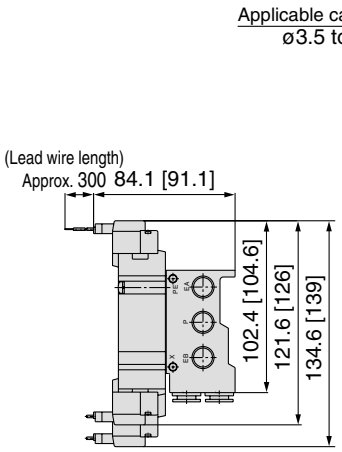


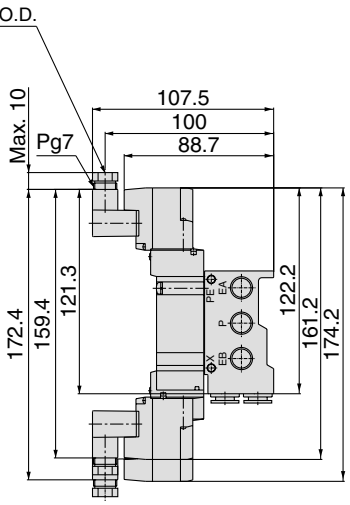
With interface regulator (with gauge)

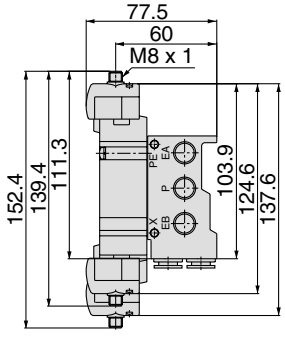


L plug connector (L) **M plug connector (M)** **DIN terminal (D, Y)** **M8 connector (WO)**









Note) Refer to page 340 for dimensions of connector types.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	61	80	99	118	137	156	175	194	213	232	251	270	289	308	327	346	365	384	403
L2	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

5 Port Solenoid Valve
Base Mounted Manifold
Stacking Type/Individual Wiring

Type 43

Series SY9000

How to Order Manifold

SS5Y 9 – 43 – 05 U □ – C8 □ – □ – □

Manifold series

9	SY9000

Valve stations

Symbol	Stations
02	2 stations
⋮	⋮
20	20 stations

∗ This also includes the number of blanking plate assemblies.

P, R port outlets

Symbol	Port outlet	Applicable stations
U	U side	2 to 10 stations
D	D side	
B	Both sides	2 to 20 stations

SUP/EXH block assembly specifications

Symbol	Specifications
Nil	Standard/Internal pilot specification
R	External pilot specification
S	Internal pilot/Built-in silencer
RS	External pilot/Built-in silencer

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Option

Symbol	Mounting
Nil	Direct mounting
D	DIN rail mounting (with DIN rail)
DO	DIN rail mounting (without DIN rail)
D∗	When a longer DIN rail is desired than the specified stations, specify the station number to be required into ∗ mark.

A, B port size

Thread piping

Symbol	Port size
02	1/4
03	3/8

One-touch fitting (Metric size)

Symbol	Port size
C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12
M	Mixed

One-touch fitting (Inch size)

Symbol	Port size
N9	One-touch fitting for ø5/16"
N11	One-touch fitting for ø3/8"
M	Mixed

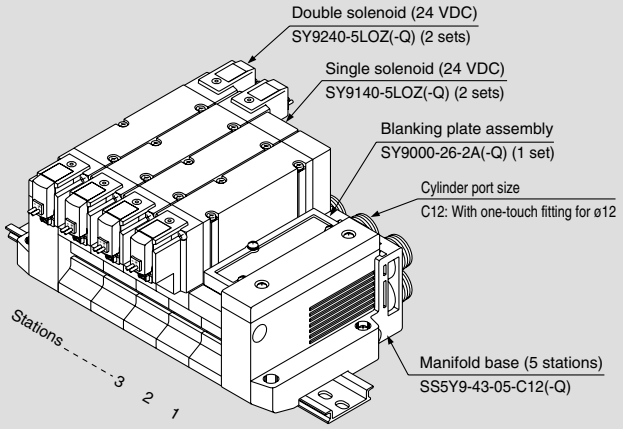
∗ In the case of mixed specifications (M), indicate separately on the manifold specification sheet.

CE-compliant

Nil	—
Q	CE-compliant

How to Order Manifold Assembly (Example)

Example



SS5Y9-43-05B-C12 ··· 1 set (Type 43, 5-station manifold base part no.)
∗ SY9000-26-2A ····· 1 set (Blanking plate assembly part no.)
∗ SY9140-5LOZ ····· 2 sets (Single solenoid part no.)
∗ SY9220-5LOZ ····· 2 sets (Double solenoid part no.)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

How to Order Valve

SY 9 2 40 □ □ – 5 L □ □ – □ – □

Series

9	SY9000

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

Pilot type

Nil	Internal pilot
R	External pilot

Coil specifications

Nil	Standard
T	With power saving circuit (24, 12 VDC only)

∗ Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

Rated voltage

For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

For AC (50/60 Hz)

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

∗ DC specifications of Type D, Y, DO and YO is only available with 12 and 24 VDC.
∗ For type W□, DC voltage is only available.

Light/surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With indicator light and surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
∗ For "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

∗ DOZ and YOZ are not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 332.)

CE-compliant

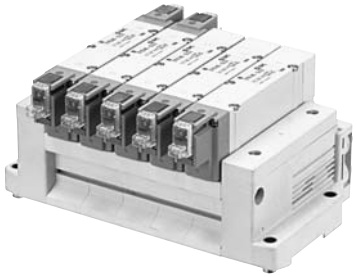
Nil	—
Q	CE-compliant

∗ For DC only except DIN terminal.

Electrical entry

24, 12, 6, 5, 3 VDC/ 100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm **H:** Lead wire length 600 mm	**L:** With lead wire (Length 300 mm) **LN:** Without lead wire **LO:** Without connector	**M:** With lead wire (Length 300 mm) **MN:** Without lead wire **MO:** Without connector	**D:** With connector **DO:** Without connector **Y:** With connector **YO:** Without connector	**WO:** Without connector cable **W□:** With connector cable Note)

∗ LN, MN type: with 2 sockets.
∗ DIN terminal type "Y" which conforms to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 336.
∗ For connector cable of M8 connector, refer to page 339.
∗ M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.
∗ Refer to page 336 for the lead wire length of L and M plug connectors.
∗ Refer to page 337 for the connector assembly with cover for L and M plug connectors.
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.



Manifold Specifications

Model			SS5Y9-43(-Q)
Applicable valve			SY9□40
Manifold type			Stacking type
P(SUP)/R(EXH)			Common SUP, Common EXH
Valve stations			2 to 20 stations (1)
A, B port Porting specifications		**Location**	Base
		Direction	Side
Port size	**P, EA, EB port**		C12 (One-touch fitting for ø12)
	A, B port		1/4 3/8 C8 (One-touch fitting for ø8) C10 (One-touch fitting for ø10) C12 (One-touch fitting for ø12)
Manifold base mass W (g), n: Stations			W = 107n + 330

Note 1) For more than 10 stations, supply pressure to P port on both sides and exhaust from EA/EB port on both sides.
Note 2) Refer to "Manifold Option" on page 238.

Flow Characteristics

Model	Port size		Flow characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)		
			C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv
SS5Y9-43(-Q)	C12	C12	6.4	0.29	1.6	7.3	0.29	1.8

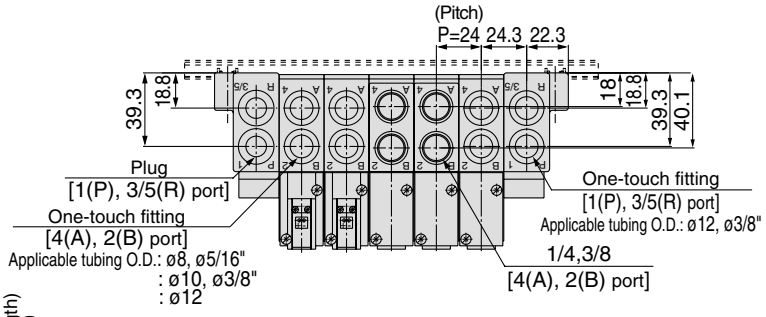
Note) The value is for manifold base with 5 stations and individually operated 2 position type.

SY9000: SS5Y9-43-Stations D□-02, C8, N9 / 03, C10, N11 / C12 □(-D)

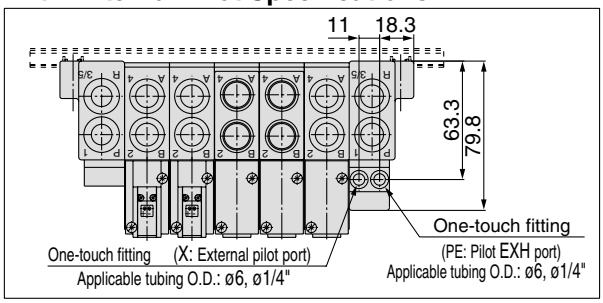
[ ]: AC

Grommet (G)

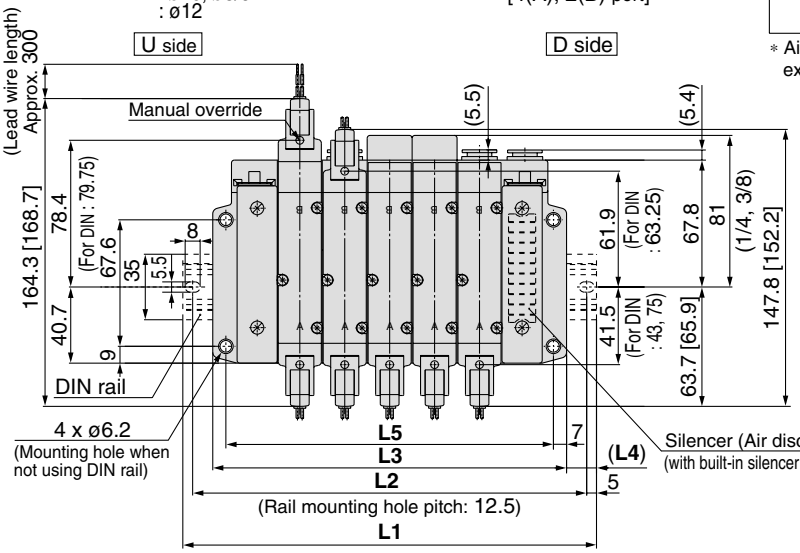
* When P, R port outlets are indicated on the D side, the P, R ports on the opposite side are plugged.

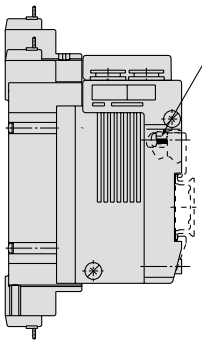


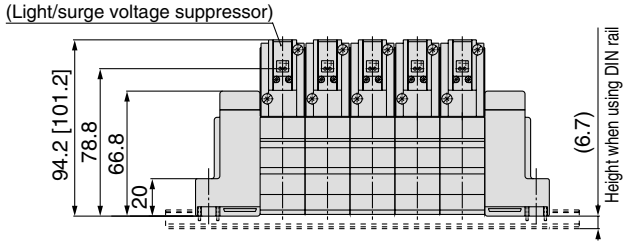
With External Pilot Specifications



* Air discharge port on the built-in silencer type and the external pilot's extracting position are in the D side.

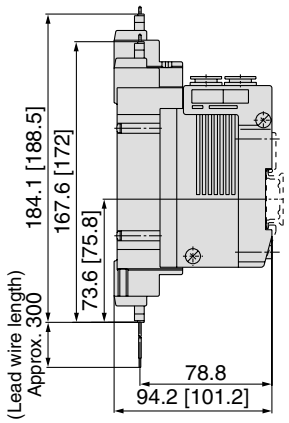




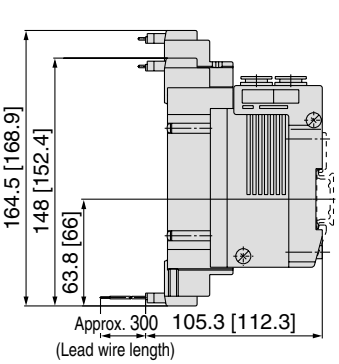


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	173	198	223	248	260.5	285.5	310.5	335.5
L2	137.5	162.5	187.5	212.5	237.5	250	275	300	325
L3	117	141	165	189	213	237	261	285	309
L4	15.5	16	16.5	17	17.5	12	12.5	13	13.5
L5	103	127	151	175	199	223	247	271	295

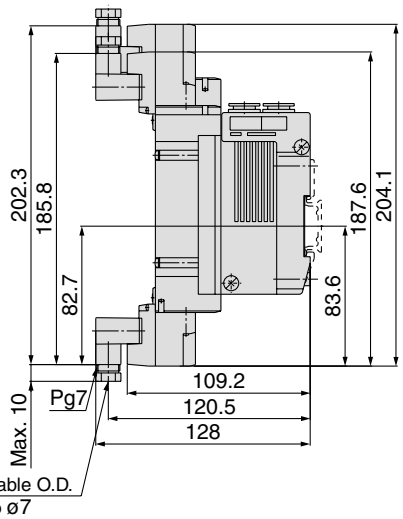
L plug connector (L)



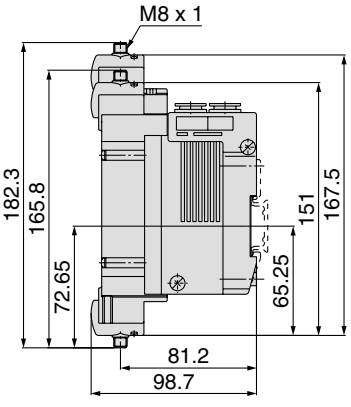
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)

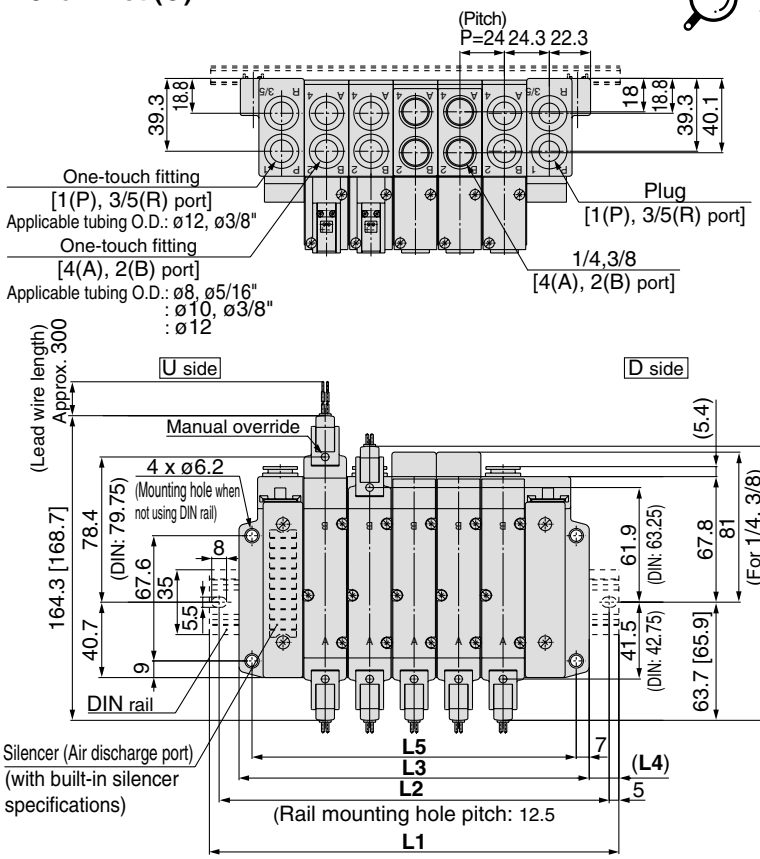


Note) Refer to page 340 for dimensions of connector types.

SY9000: SS5Y9-43-[Stations] U [ ] - [02, C9, N9 / 03, C10, N11 / C12] [ ] (-D)

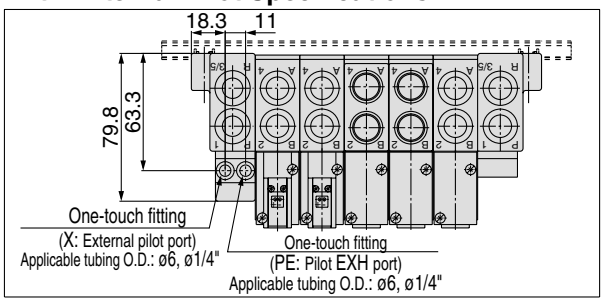
[ ]: AC

Grommet (G)

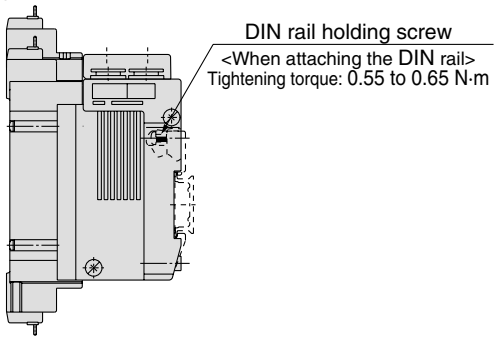


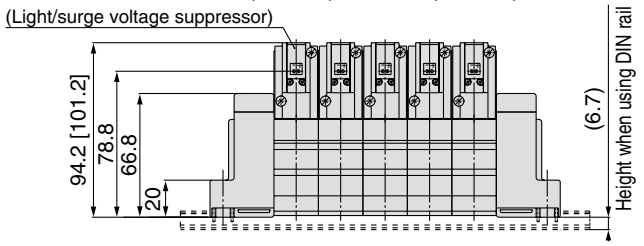
* When P, R port outlets are indicated on the U side, the P, R ports on the opposite side are plugged.

With External Pilot Specifications



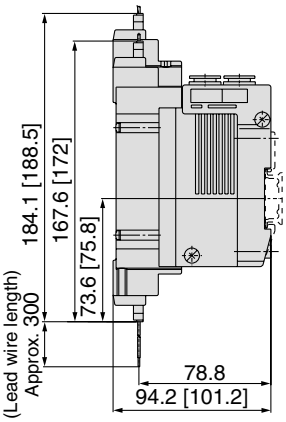
* Air discharge port on the built-in silencer type and the external pilot's extracting position are in the D side.



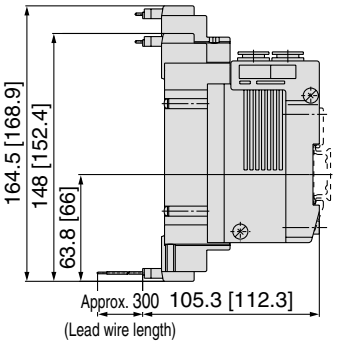


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	173	198	223	248	260.5	285.5	310.5	335.5
L2	137.5	162.5	187.5	212.5	237.5	250	275	300	325
L3	117	141	165	189	213	237	261	285	309
L4	15.5	16	16.5	17	17.5	12	12.5	13	13.5
L5	103	127	151	175	199	223	247	271	295

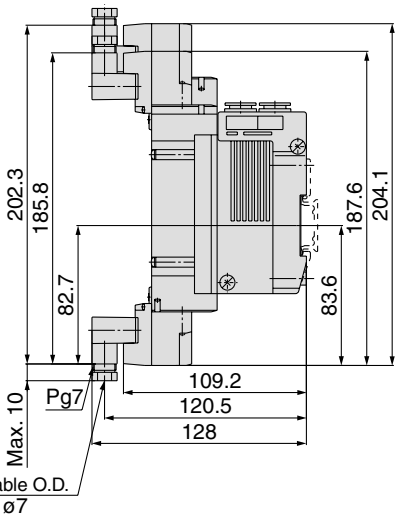
L plug connector (L)



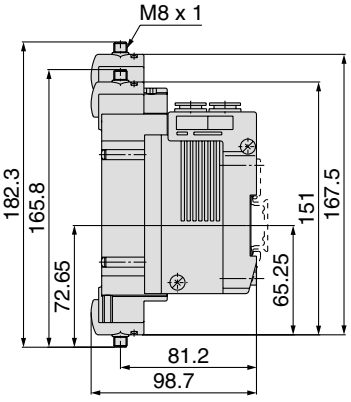
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)

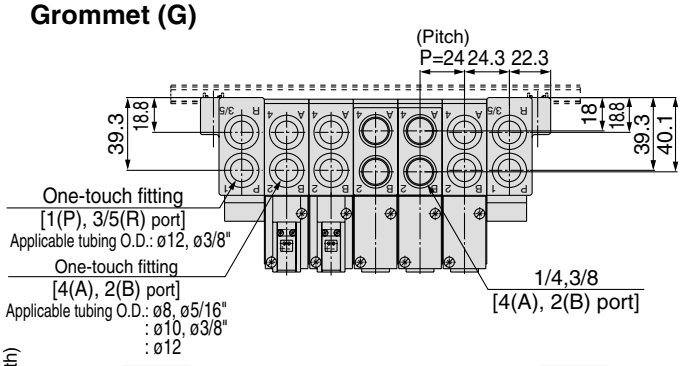


Note) Refer to page 340 for dimensions of connector types.

SY9000: SS5Y9-43-Stations B □ - 02, C8, N9 / 03, C10, N11 / C12 □ (-D)

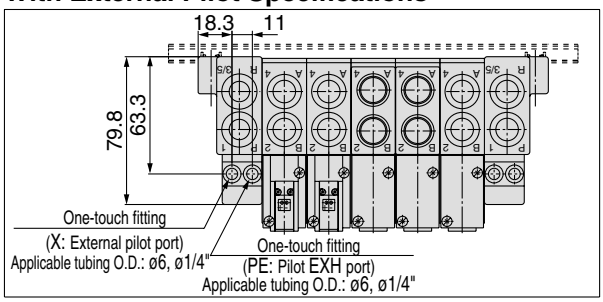
[ ]: AC

Grommet (G)

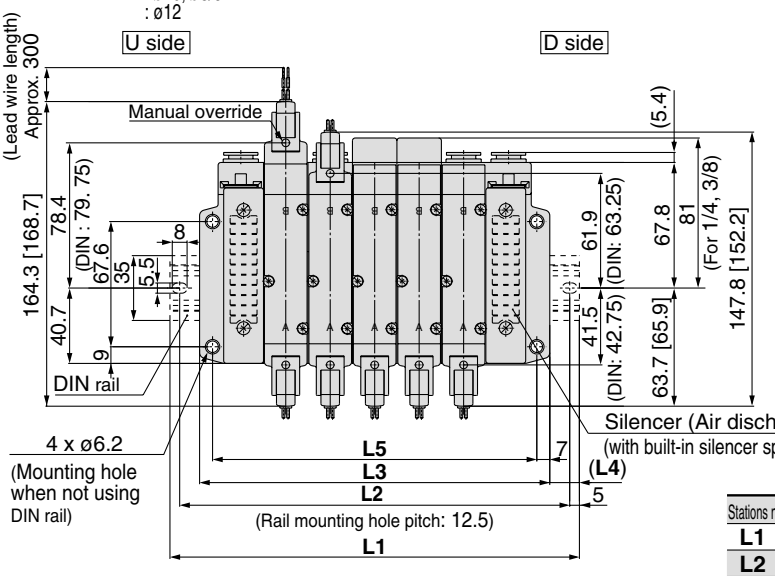


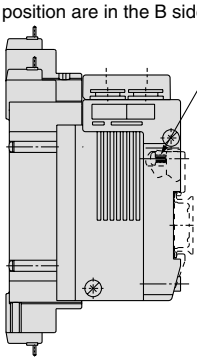
∗ When P, R port outlets are indicated on the B side, the P, R ports on the both sides are in the open state.

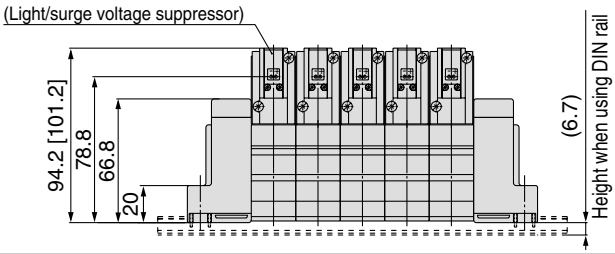
With External Pilot Specifications



∗ Air discharge port on the built-in silencer type and the external pilot's extracting position are in the B side (both sides).



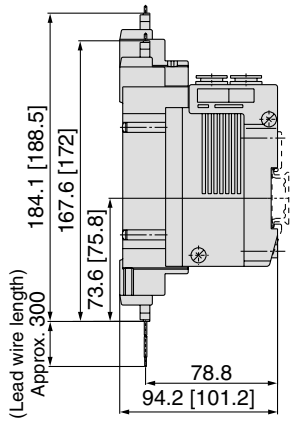




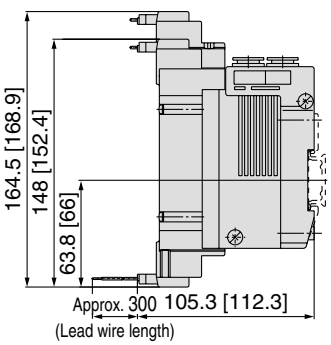
Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	173	198	223	248	260.5	285.5	310.5	335.5
L2	137.5	162.5	187.5	212.5	237.5	250	275	300	325
L3	117	141	165	189	213	237	261	285	309
L4	15.5	16	16.5	17	17.5	12	12.5	13	13.5
L5	103	127	151	175	199	223	247	271	295

Stations n	11 stations	12	13	14	15	16	17	18	19	20 stations
L1	360.5	385.5	410.5	435.5	460.5	485.5	510.5	535.5	560.5	573
L2	350	375	400	425	450	475	500	525	550	562.5
L3	333	357	381	405	429	453	477	501	525	549
L4	14	14.5	15	15.5	16	16.5	17	17.5	18	12
L5	319	343	367	391	415	439	463	487	511	535

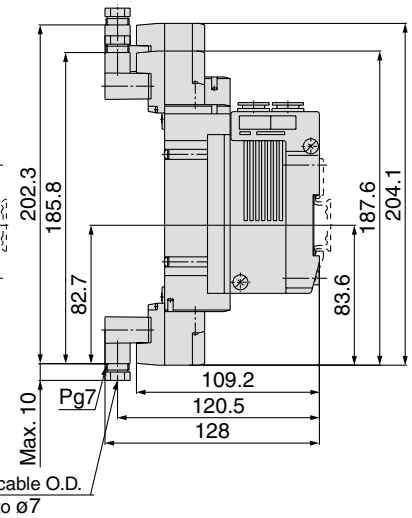
L plug connector (L)



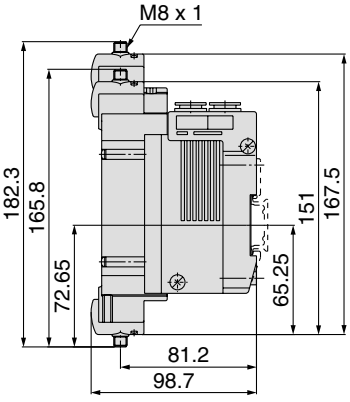
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)



Note) Refer to page 340 for dimensions of connector types.

5 Port Solenoid Valve
Base Mounted Manifold
Bar Stock Type/Flat Ribbon Cable

Type 41P
Type 42P

Series SY3000/5000/7000

How to Order Manifold

Type 41P/Compact style

SS5Y 5 – 41P – 05 – C8 ☐ – ☐

Manifold series

3	SY3000
5	SY5000

Stations

03	3 stations
⋮	⋮
12	12 stations

∗ SS5Y3 has 4 to 12 stations.

A, B port size

Thread piping

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

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ Except for M5

CE-compliant

Nil	—
Q	CE-compliant

∗ For DC only.

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	

Type 42P/Common external pilot capable

SS5Y 5 – 42P – 05 – C8 ☐ – ☐

Manifold series

3	SY3000
5	SY5000
7	SY7000

Stations

03	3 stations
⋮	⋮
12	12 stations

∗ SS5Y3 has 4 to 12 stations.

A, B port size

Thread piping

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

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

CE-compliant

Nil	—
Q	CE-compliant

∗ For DC only.

One-touch fitting (Metric size)

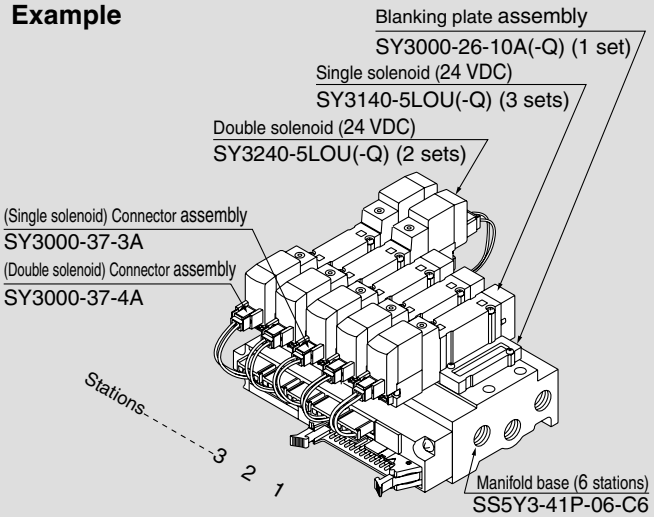
Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	
C10	One-touch fitting for ø10	SY7000

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	
N11	One-touch fitting for ø3/8"	SY7000

How to Order Manifold Assembly (Example)

Example

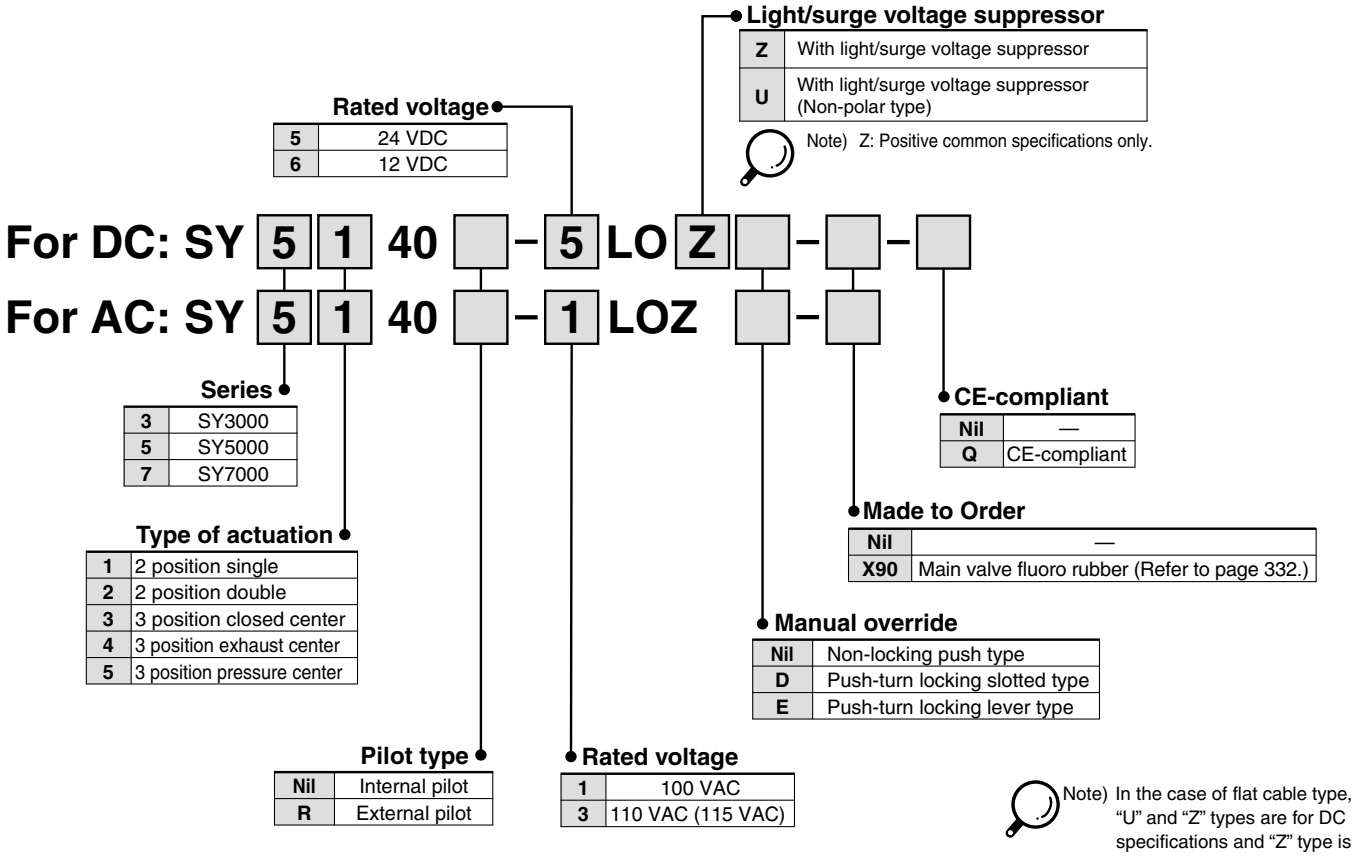


SS5Y3-41P-06-C6 ··· 1 set (Type 41P, 6-station manifold base part no.)
∗ **SX3000-26-10A ····· 1 set (Blanking plate assembly part no)**
∗ **SY3140-5LOU ····· 3 sets (Single solenoid part no.)**
∗ **SY3240-5LOU ····· 2 sets (Double solenoid part no.)**
∗ **SY3000-37-3A ····· 3 sets (Connector assembly part no.)**
∗ **SY3000-37-4A ····· 2 sets (Connector assembly part no.)**

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

How to Order Valve



Note) In the case of flat cable type, "U" and "Z" types are for DC specifications and "Z" type is for AC specifications. "Z" type for DC is positive common specification only. For the other combination, please contact SMC.

How to Order Connector Assembly

For 12, 24 VDC

Specifications	For SY3000	For SY5000/7000
For single solenoid	SY3000-37-3A	SY5000-37-3A
Double solenoid, 3 position type	SY3000-37-4A	SY5000-37-4A
Single with spacer assembly	SY5000-37-3A	SY5000-37-5A
Double, 3 position with spacer assembly	SY3000-37-6A	SY5000-37-6A

For 100 VAC

Specifications	For SY3000	For SY5000/7000
For single solenoid	SY3000-37-32A	SY5000-37-15A
Double solenoid, 3 position type	SY3000-37-33A	SY5000-37-16A
Single with spacer assembly	SY5000-37-15A	SY5000-37-17A
Double, 3 position with spacer assembly	SY3000-37-34A	SY5000-37-18A

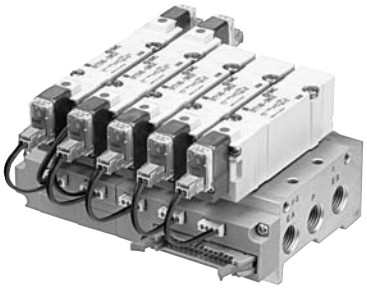
For 100 VAC (115 VAC)

Specifications	For SY3000	For SY5000/7000
For single solenoid	SY3000-37-35A	SY5000-37-19A
Double solenoid, 3 position type	SY3000-37-36A	SY5000-37-20A
Single with spacer assembly	SY5000-37-19A	SY5000-37-21A
Double, 3 position with spacer assembly	SY3000-37-37A	SY5000-37-22A

Flat Ribbon Cable Manifold Specifications

- **Multiple valve wiring is simplified through the use of the flat cable connector.**
- **Clean appearance**

In the case of a flat ribbon cable type, each valve is wired on the print board of manifold base to allow the external wiring to be piped all together with 26 pins MIL connector.



Model		SS5Y3-41P(-Q)	SS5Y3-42P(-Q)	SS5Y5-41P(-Q)	SS5Y5-42P(-Q)	SS5Y7-42P(-Q)
Applicable valve		SY3□40		SY5□40		SY7□40
Manifold type		Single base/B mount				
P(SUP)/R(EXH)		Common SUP, Common EXH				
Valve stations		4 to 12 stations (1)		3 to 12 stations Note 1)		
A, B port Porting specifications	Location	Base				
	Direction	Side				
Port size	P, EA, EB port	1/8		1/4		1/4
	A, B port	M5 x 0.8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	1/8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	1/8 C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	1/4 C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	1/4 C10 (One-touch fitting for ø10)
Manifold base mass W (g), n: Stations		W = 39n + 83	W = 48n + 99	W = 67n + 118	W = 88n + 151	W = 109n + 174
Applicable flat ribbon cable connector		Flat ribbon cable connector, Socket: 26 pins MIL type with strain relief, Conforming to MIL-C-83503				
Internal wiring		In common between +COM and –COM (Z type: +COM only).				
Rated voltage Note 4)		12, 24 VDC, 100, 110 VAC				

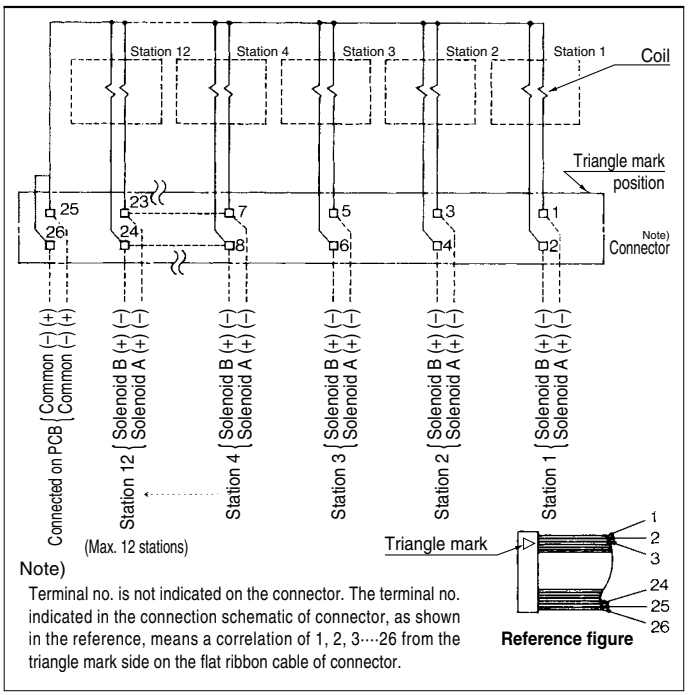
Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.
Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.
Note 3) Refer to "Manifold Option" on page 238.
Note 4) CE-compliant: For DC only.

Flow Characteristics

Model	Port size		Flow characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv
SS5Y3-41P	1/8	C6	0.75	0.19	0.18	0.81	0.23	0.20
SS5Y3-42P	1/8	C6	0.75	0.20	0.18	0.82	0.20	0.20
SS5Y5-41P	1/4	C8	1.8	0.23	0.44	1.9	0.16	0.45
SS5Y5-42P	1/4	C8	1.9	0.20	0.46	1.9	0.12	0.43
SS5Y7-42P	1/4	C10	3.0	0.25	0.75	3.0	0.12	0.66

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

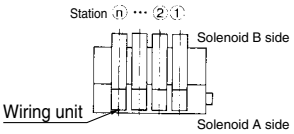
Internal Wiring of Manifold (Non-polar type)



Note)
Terminal no. is not indicated on the connector. The terminal no. indicated in the connection schematic of connector, as shown in the reference, means a correlation of 1, 2, 3····26 from the triangle mark side on the flat ribbon cable of connector.

Reference figure

- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid A side.
- The maximum number of stations that can be accommodated is 12. For more stations, please contact SMC.

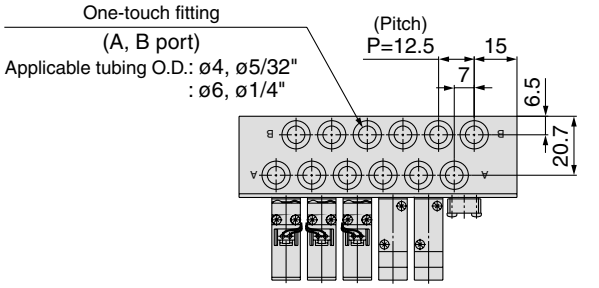


⚠Caution

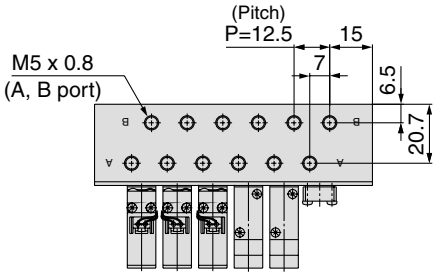
- For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.

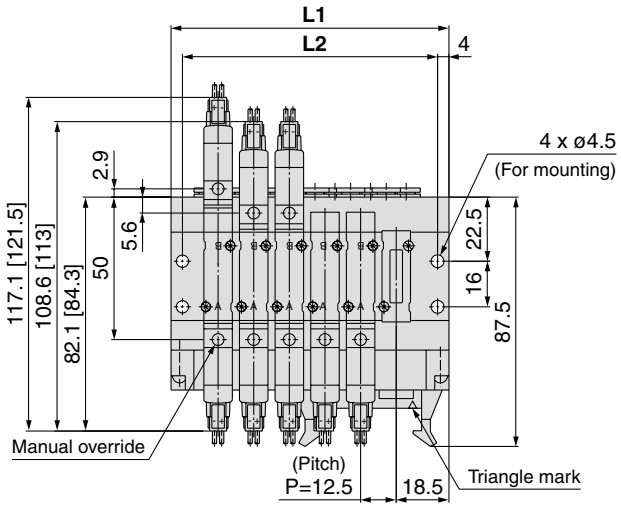
SY3000: SS5Y3-41P- Stations -M5, C4, N3 C6, N7

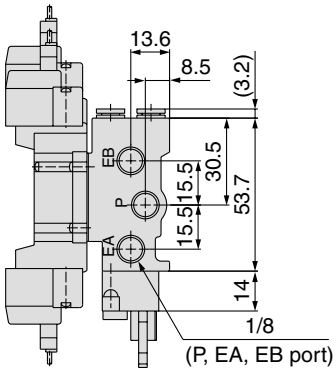
[ ]: AC



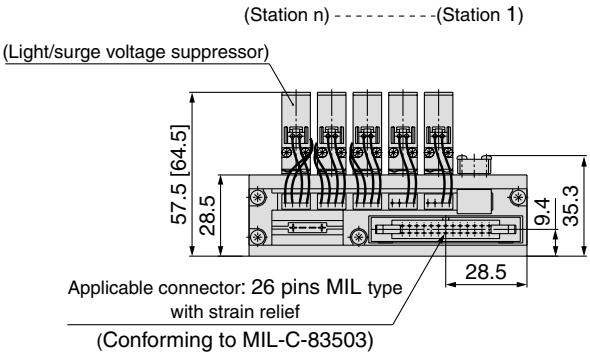
For M5 x 0.8

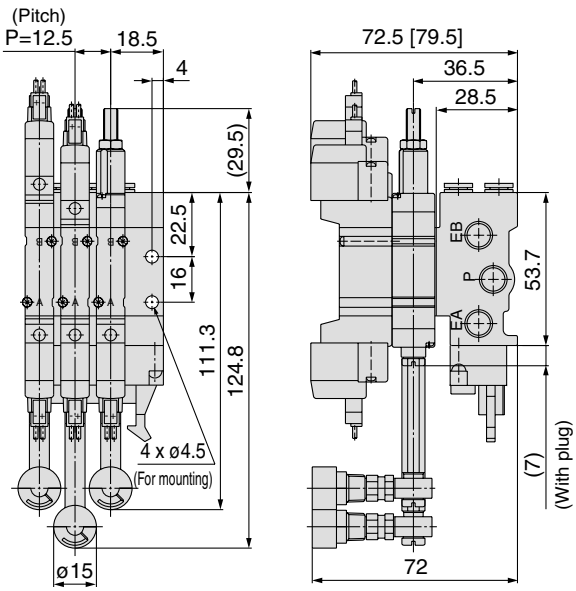






With interface regulator (with gauge)

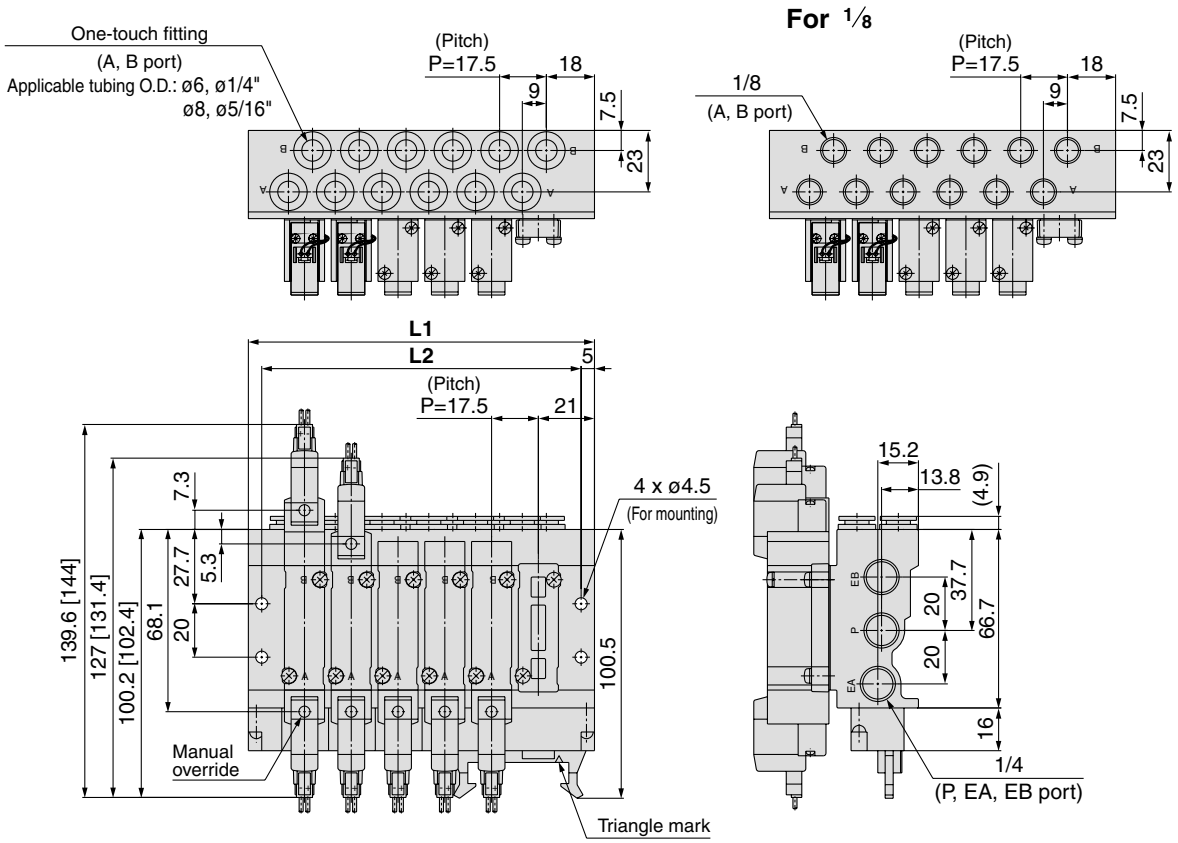


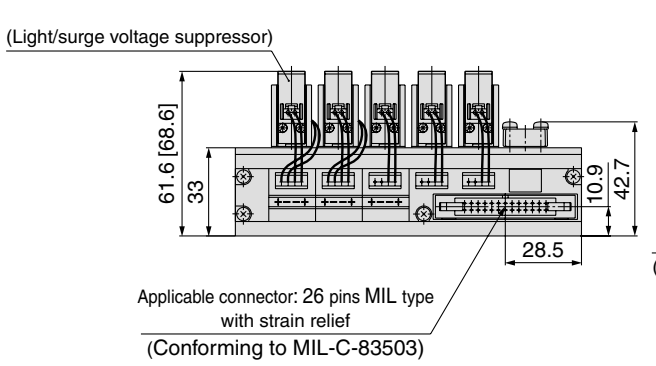


Stations n	4	5	6	7	8	9	10	11	12
L1	72.5	85	97.5	110	122.5	135	147.5	160	172.5
L2	64.5	77	89.5	102	114.5	127	139.5	152	164.5

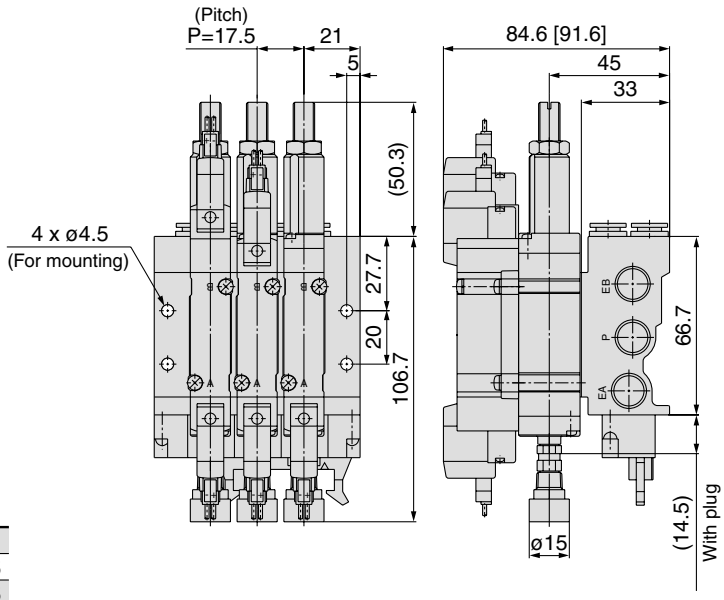
SY5000: SS5Y5-41P- Stations -01, C6,N7 C8,N9 □

[ ]: AC





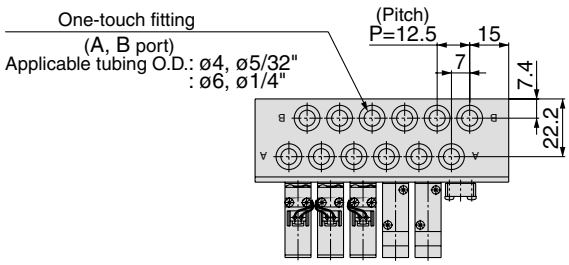
With interface regulator (with gauge)



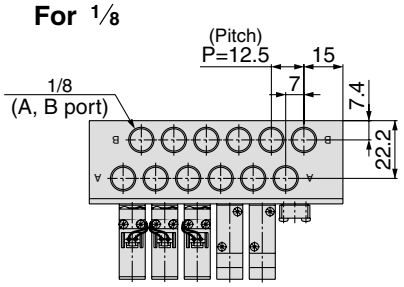
Stations n	3	4	5	6	7	8	9	10	11	12
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L2	67	84.5	102	119.5	137	154.5	172	189.5	207	224.5

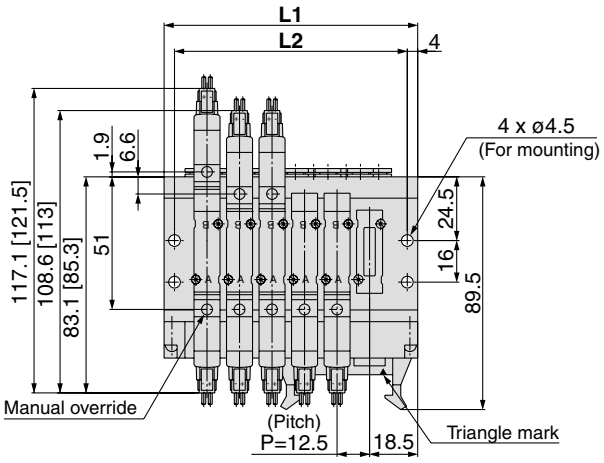
SY3000: SS5Y3-42P- Stations -01, C4, N3 C6, N7 □

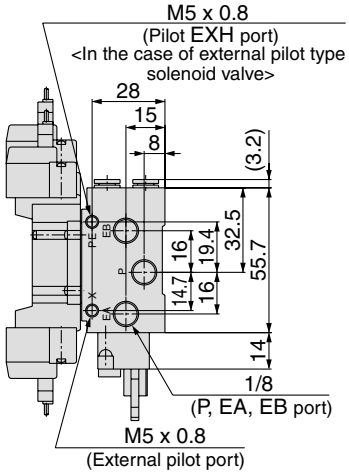
[ ]: AC

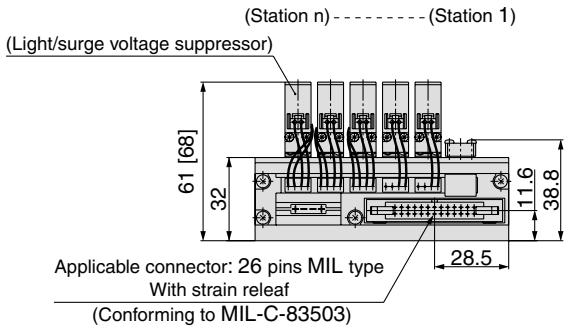


For 1/8

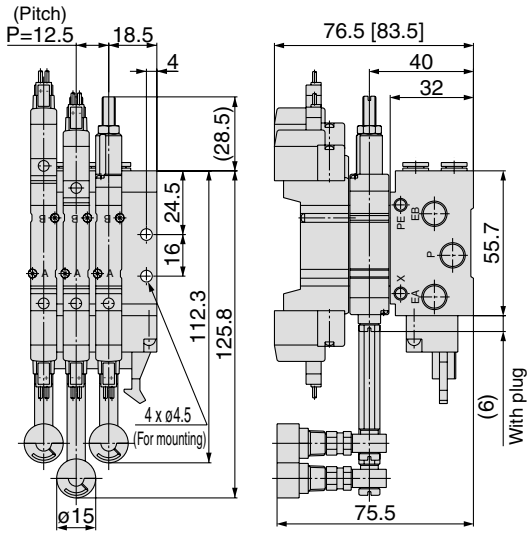








With interface regulator (with gauge)

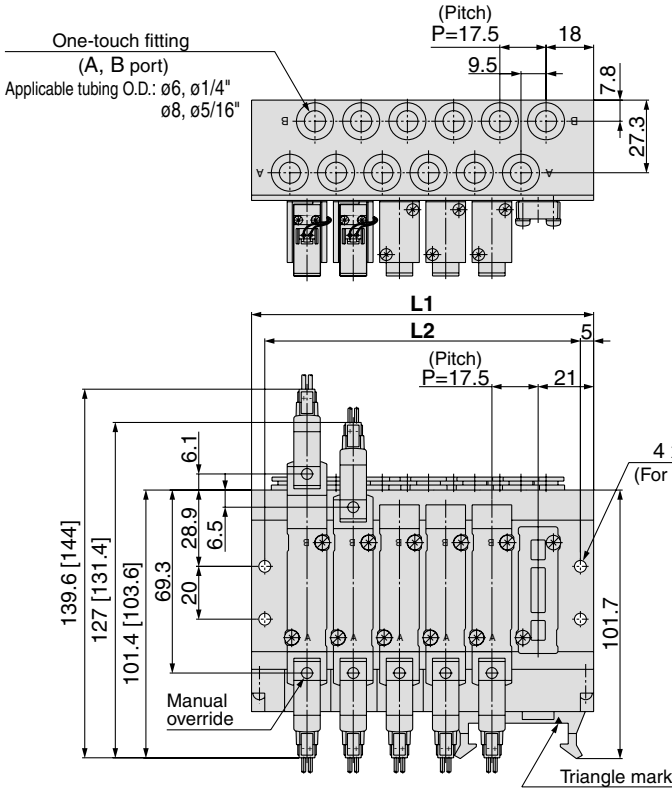


Stations n	4	5	6	7	8	9	10	11	12
L1	72.5	85	97.5	110	122.5	135	147.5	160	172.5
L2	64.5	77	89.5	102	114.5	127	139.5	152	164.5

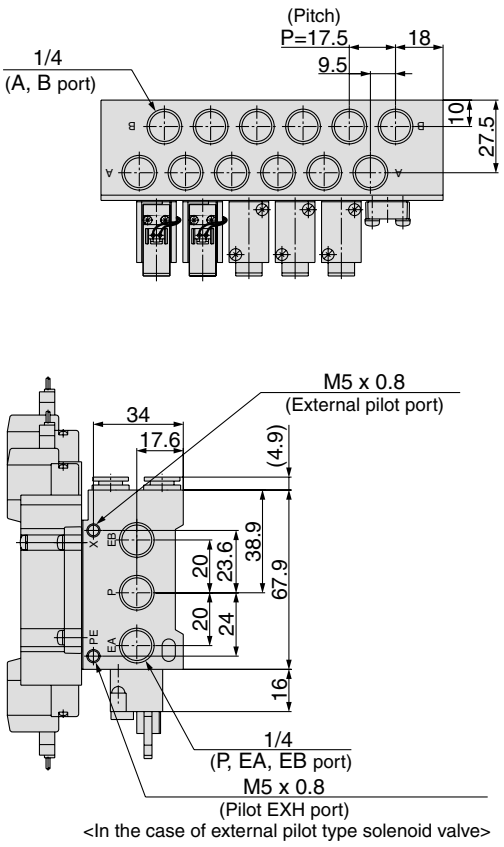
SY5000: SS5Y5-42P- Stations -02, C6, N7 C8, N9 □

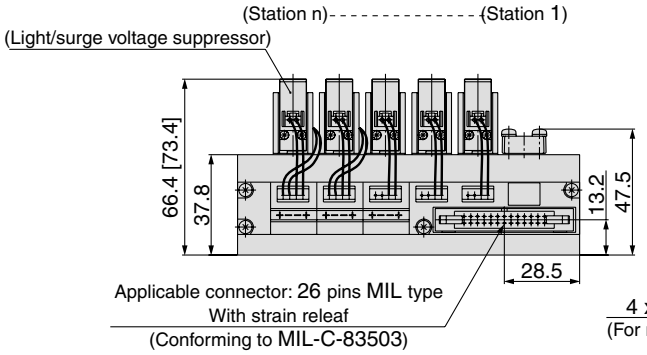
[ ]: AC

Grommet (G)

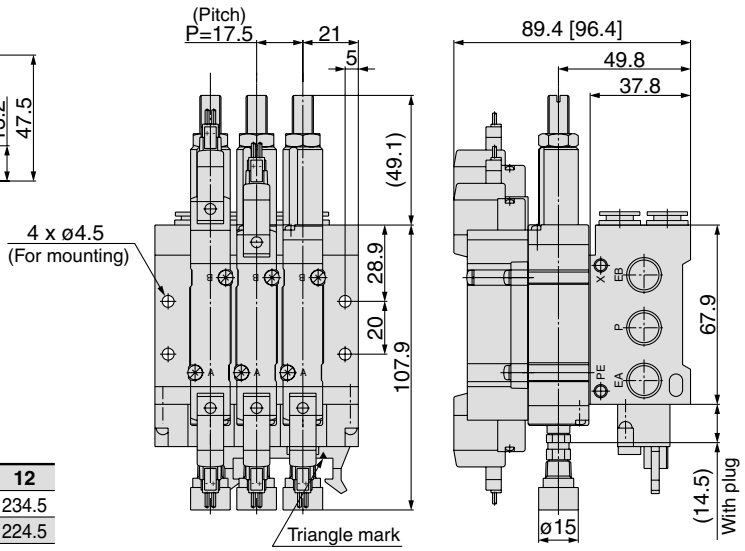


For 1/4





With interface regulator (with gauge)



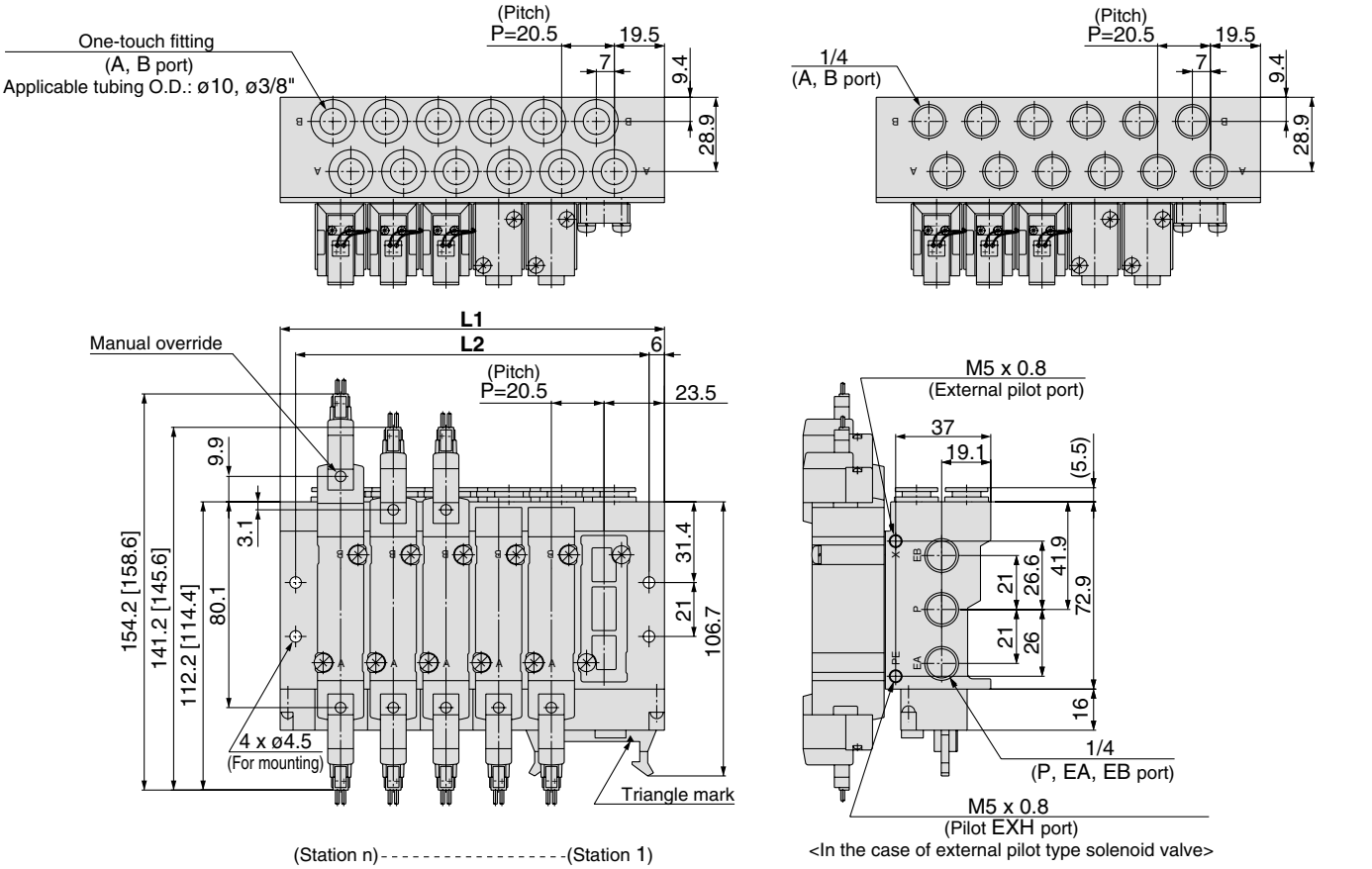
Stations n	3	4	5	6	7	8	9	10	11	12
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L2	67	84.5	102	119.5	137	154.5	172	189.5	207	224.5

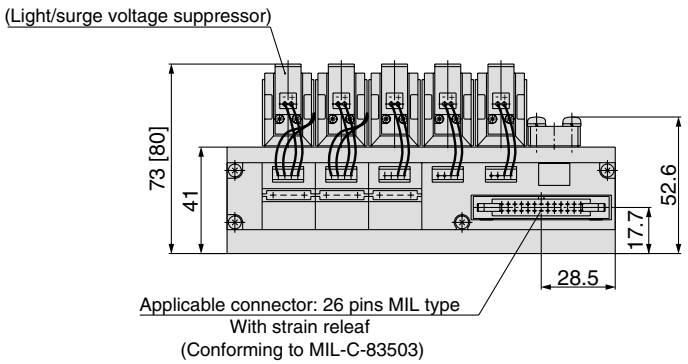
SY7000: SS5Y7-42P- Stations -02, C10, N11

[ ]: AC

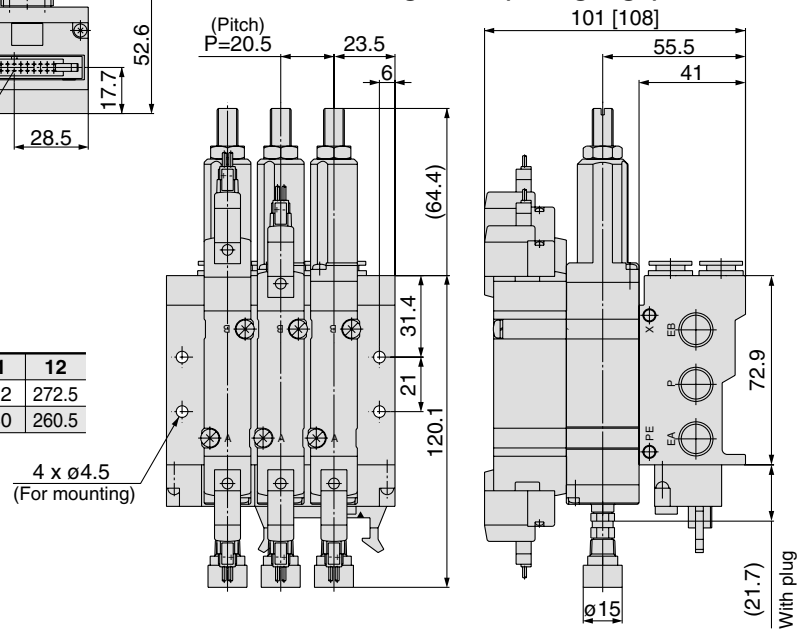
Grommet (G)

For 1/4





With interface regulator (with gauge)



Stations n	3	4	5	6	7	8	9	10	11	12
L1	88	108.5	129	149.5	170	190.5	211	231.5	252	272.5
L2	76	96.5	117	137.5	158	178.5	199	219.5	240	260.5

5 Port Solenoid Valve
Base Mounted Manifold
Stacking Type/Flat Ribbon Cable

Type 43P

Series SY9000

How to Order Manifold

SS5Y9-43P-[05][U][ ]-[C8][ ]-[ ]-[ ]

Manifold series

9	SY9000

Valve stations

Symbol	Stations
04	4 stations
⋮	⋮
12	12 stations

∗ This also includes the number of blanking plate assemblies.

P, R port outlets

Symbol	Port outlet	Applicable stations
U	U side	4 to 10 stations
D	D side	
B	Both sides	4 to 12 stations

SUP/EXH block assembly specifications

Symbol	Specifications
Nil	Standard/Internal pilot specification
R	External pilot specification
S	Internal pilot/Built-in silencer
RS	External pilot/Built-in silencer

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Option

Symbol	Mounting
Nil	Direct mounting
D	DIN rail mounting (with DIN rail)
D0	DIN rail mounting (without DIN rail)
D∗	When a longer DIN rail is desired than the specified stations, specify the station number to be required into ∗ mark.

A, B port size

Thread piping

Symbol	Port size
02	1/4
03	3/8

One-touch fitting (Metric size)

Symbol	Port size
C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12
M	Mixed

One-touch fitting (Inch size)

Symbol	Port size
N9	One-touch fitting for ø5/16"
N11	One-touch fitting for ø3/8"
M	Mixed

∗ In the case of mixed specifications (M), indicate separately on the manifold specification sheet.

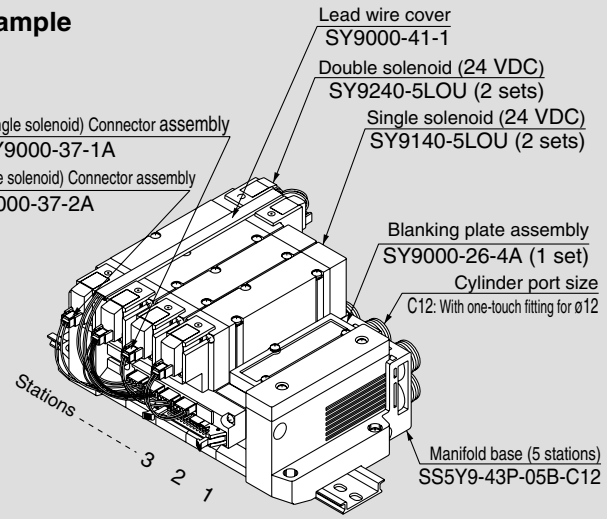
CE-compliant

Nil	—
Q	CE-compliant

∗ For DC only.

How to Order Manifold Assembly (Example)

Example

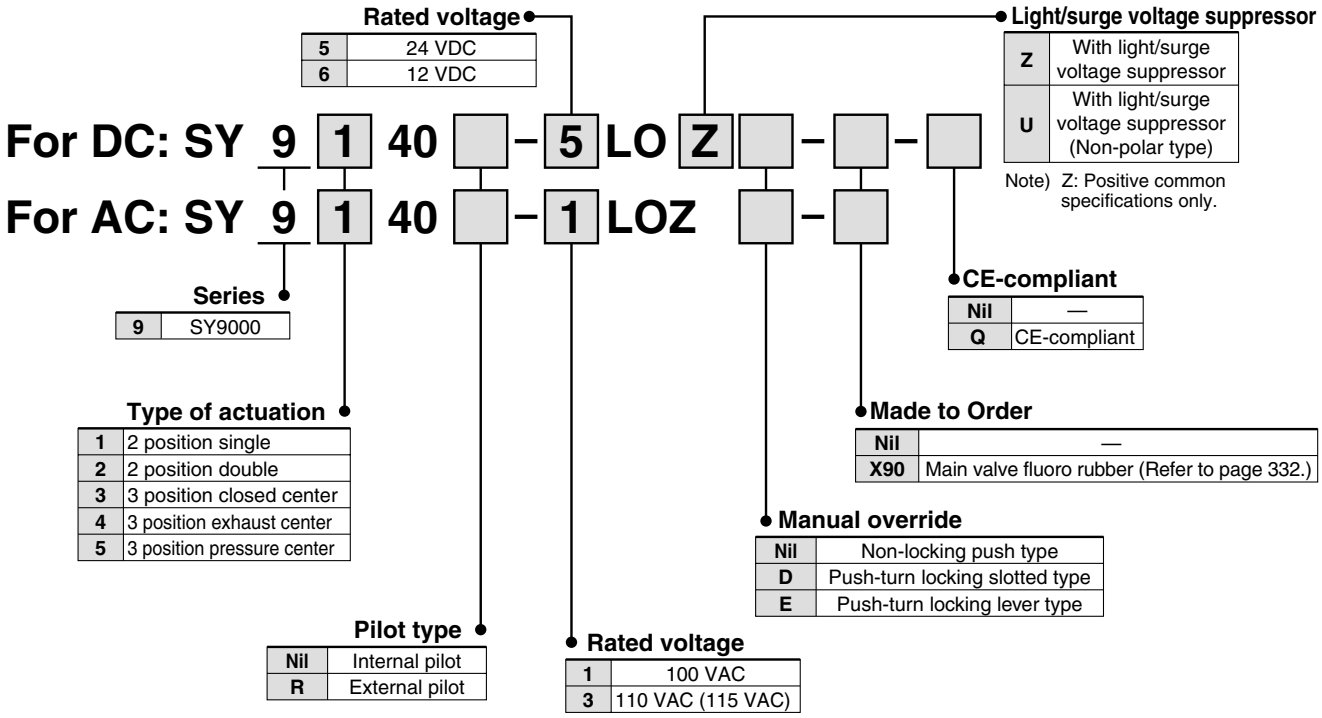


SS5Y9-43P-05B-C12 ·· **1 set (Type 43P, 5-station manifold base part no.)**
∗ **SY9000-26-4A** ····· **1 set (Blanking plate assembly part no.)**
∗ **SY9140-5LOU** ····· **2 sets (Single solenoid part no.)**
∗ **SY9240-5LOU** ····· **2 sets (Double solenoid part no.)**
∗ **SY9000-37-1A** ····· **2 sets (Connector assembly part no.)**
∗ **SY9000-37-2A** ····· **2 sets (Connector assembly part no.)**
∗ **SY9000-41-1** ····· **1 set (Lead wire cover)**

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

How to Order Valve



Note) In the case of flat cable type, "U" and "Z" types are for DC specifications and "Z" type is for AC specifications. "Z" type for DC is positive common specification only.
For the other combination, please contact SMC.

How to Order Connector Assembly

For 12, 24 VDC

Specifications	For SY9000
For single solenoid	SY9000-37-1A
Double solenoid, 3 position type	SY9000-37-2A
Single with spacer assembly	SY9000-37-3A
Double, 3 position with spacer assembly	SY9000-37-4A

For 100 VAC

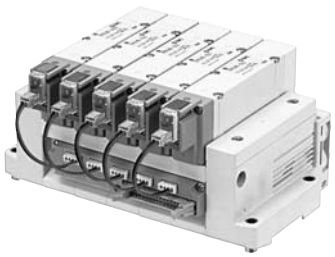
Specifications	For SY9000
For single solenoid	SY9000-37-1B
Double solenoid, 3 position type	SY9000-37-2B
Single with spacer assembly	SY9000-37-3B
Double, 3 position with spacer assembly	SY9000-37-4B

For 110 VAC (115 VAC)

Specifications	For SY9000
For single solenoid	SY9000-37-1C
Double solenoid, 3 position type	SY9000-37-2C
Single with spacer assembly	SY9000-37-3C
Double, 3 position with spacer assembly	SY9000-37-4C

- **Multiple valve wiring is simplified through the use of the flat ribbon cable connector.**
- **Clean appearance**

In the case of a flat ribbon cable type, each valve is wired on the print board of manifold base to allow the external wiring to be piped all together with 26 pins MIL connector.



Flat Ribbon Cable Manifold Specifications

Model		SS5Y9-43P
Applicable valve		SY9□40
Manifold type		Stacking type
P (SUP)/R (EXH)		Common SUP, Common EXH
Valve stations		4 to 12 stations Note 1)
A, B port Porting specifications	Location	Base
	Direction	Side
Port size	P, EA, EB port	C12 (One-touch fitting for ø12)
	A, B port	1/4 3/8 C8 (One-touch fitting for ø8) C10 (One-touch fitting for ø10) C12 (One-touch fitting for ø12)
Manifold base mass W (g) n: Stations		W = 114n + 343
Applicable flat ribbon cable connector		Flat ribbon cable connection, Socket: 26 pins MIL with strain relief, Conforming to MIL-C-83503
Internal wiring		In common between +COM and –COM (Z type: +COM only)
Rated voltage Note 4)		12, 24 VDC, 100, 110 VAC

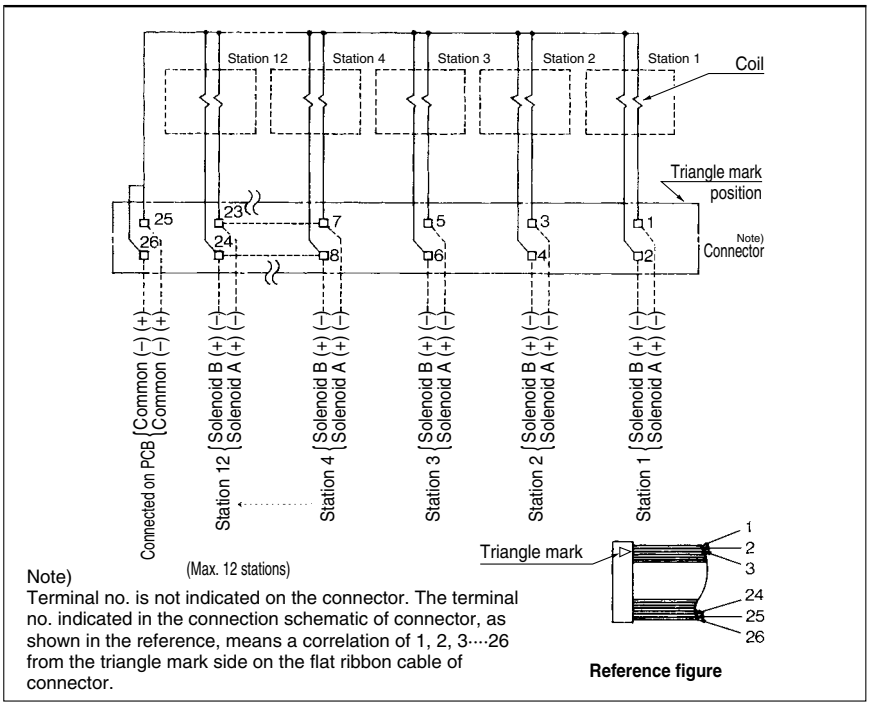
Note 1) For more than 10 stations, supply pressure to P port on both sides and exhaust from EA/EB port on both sides.
Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.
Note 3) Refer to "Manifold Option" on page 238.
Note 4) CE-compliant: For DC only.

Flow Characteristics

Model	Port size		Flow characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv
SS5Y9-43P	C12	C12	6.4	0.29	1.6	7.3	0.29	1.8

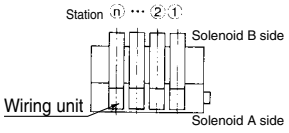
Note) The value is for manifold base with 5 stations and individually operated 2 position type.

Internal Wiring of Manifold (Non-polar type)



Note)
Terminal no. is not indicated on the connector. The terminal no. indicated in the connection schematic of connector, as shown in the reference, means a correlation of 1, 2, 3····26 from the triangle mark side on the flat ribbon cable of connector.

- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid A side.
- The maximum number of stations that can be accommodated is 12. For more stations, please contact SMC.



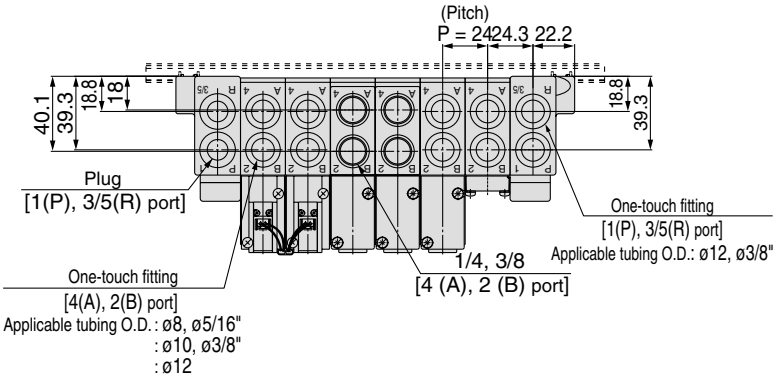
⚠Caution

- For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.

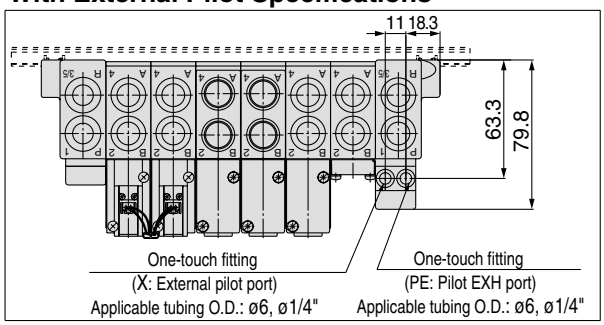
SY9000: SS5Y9-43P-Stations D□-02 C8, N9 / 03 C10, N11 / C12 □ (-D)

[ ]: AC

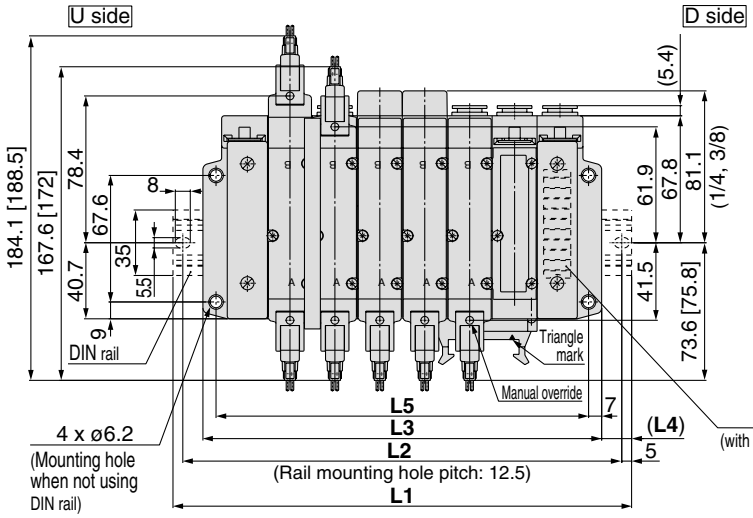
∗ When P, R port outlets are indicated on the D side, the P, R ports on the opposite side are plugged.

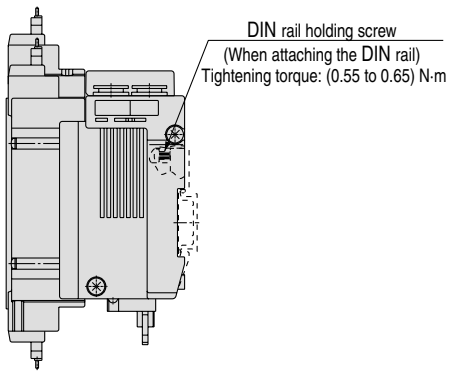


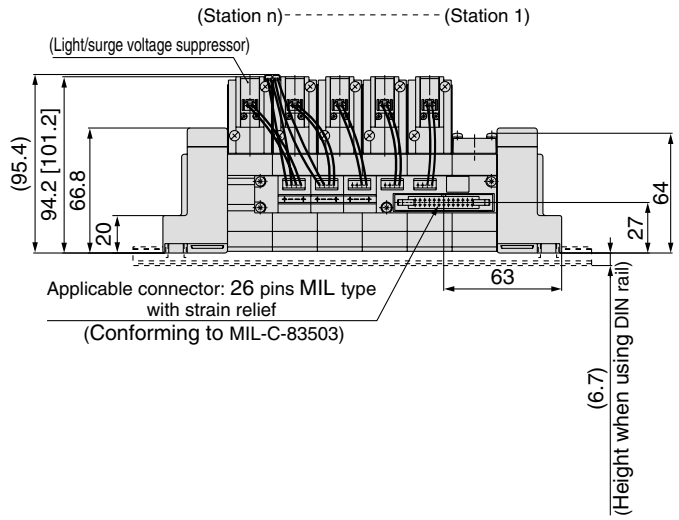
With External Pilot Specifications



∗ Air discharge port on the built-in silencer type and the external pilot's extracting position are in the D side.





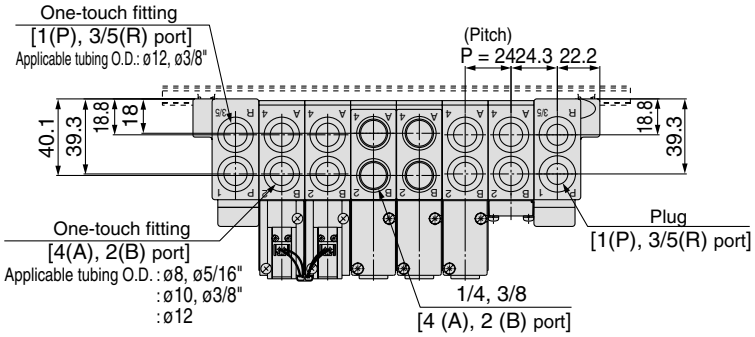


Stations n	4 stations	5	6	7	8	9	10 stations
L1	198	223	248	260.5	285.5	310.5	335.5
L2	187.5	212.5	237.5	250	275	300	325
L3	165	189	213	237	261	285	309
L4	16.5	17	17.5	12	12.5	13	13.5
L5	151	175	199	223	247	271	295

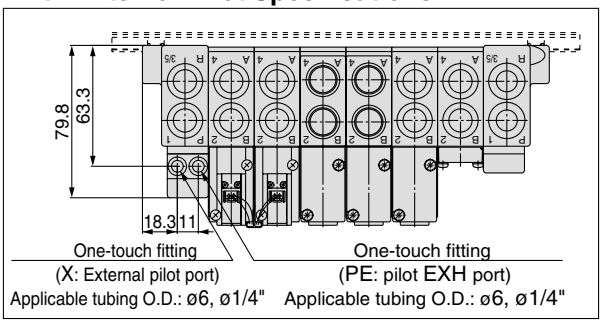
SY9000: SS5Y9-43P- Stations U ☐ -02 C8, N9 / -03 C10, N11 / C12 ☐ (-D)

[ ]: AC

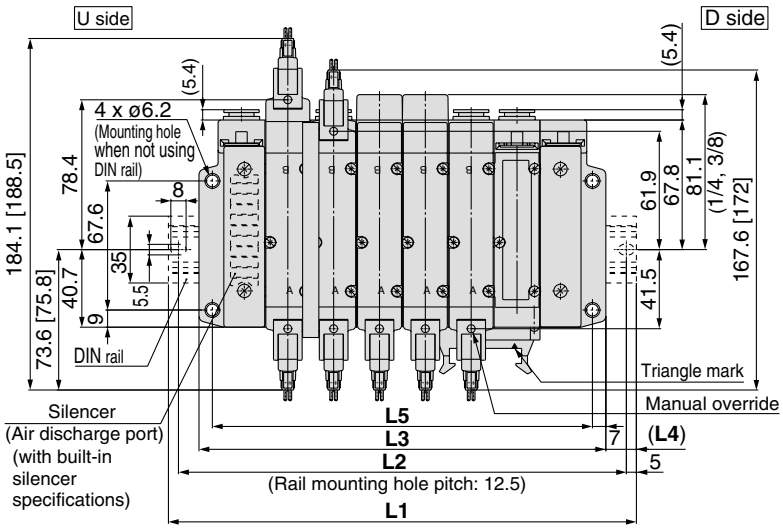
∗ When P, R port outlets are indicated on the U side, the P, R ports on the opposite side are plugged.

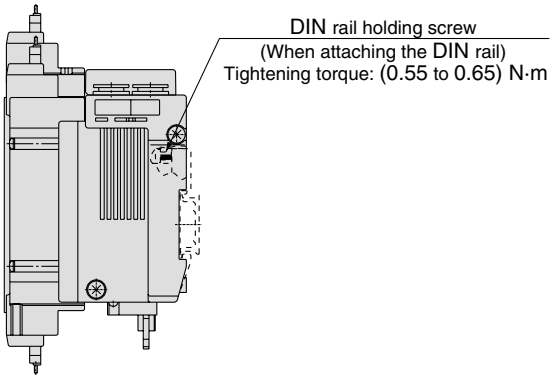


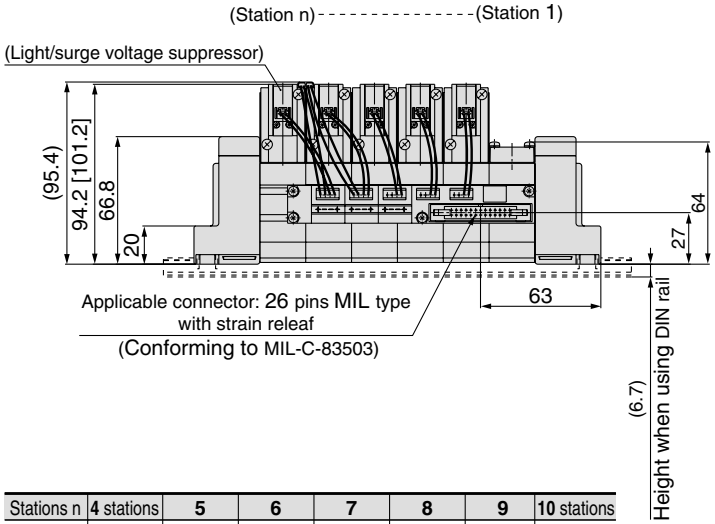
With External Pilot Specifications



∗ Air discharge port on the built-in silencer type and the external pilot's extracting position are in the U side.





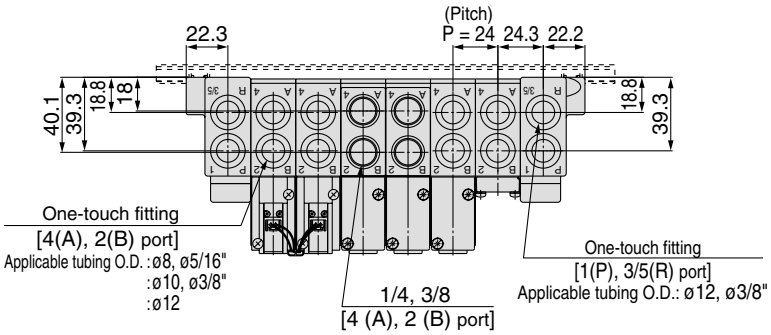


Stations n	4 stations	5	6	7	8	9	10 stations
L1	198	223	248	260.5	285.5	310.5	335.5
L2	187.5	212.5	237.5	250	275	300	325
L3	165	189	213	237	261	285	309
L4	16.5	17	17.5	12	12.5	13	13.5
L5	151	175	199	223	247	271	295

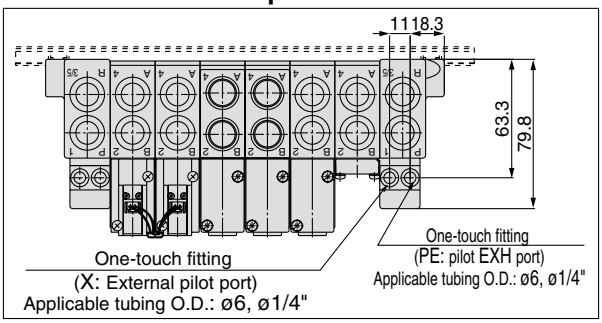
SY9000: SS5Y9-43P- Stations B □ -02 C8, N9 / -03 C10, N11 / C12 □ (-D)

[ ]: AC

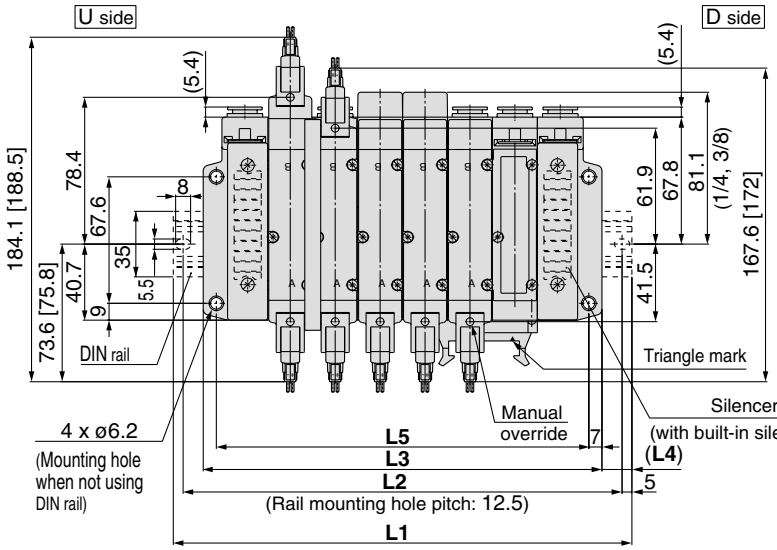
∗ When P, R port outlets are indicated on the B side, the P, R ports on the both sides are in the open state.

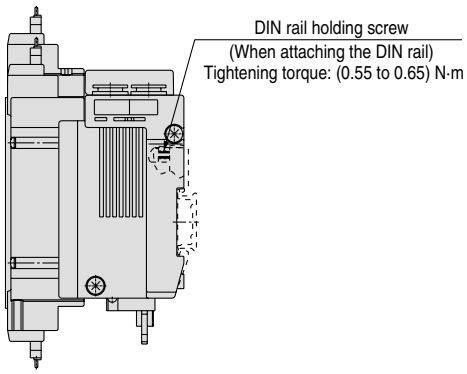


With External Pilot Specifications

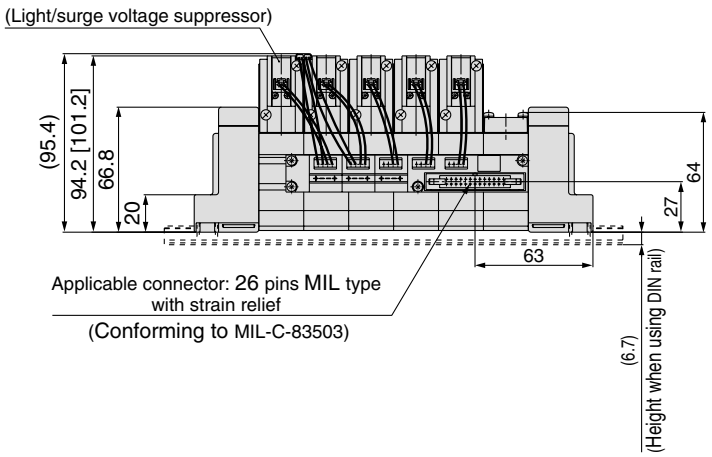


∗ Air discharge port on the built-in silencer type and the external pilot's extracting position are in the B side (both sides).





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



Stations n	4 stations	5	6	7	8	9	10	11	12 stations
L1	198	223	248	260.5	285.5	310.5	335.5	360.5	385.5
L2	187.5	212.5	237.5	250	275	300	325	350	375
L3	165	189	213	237	261	285	309	333	357
L4	16.5	17	17.5	12	12.5	13	13.5	14	14.5
L5	151	175	199	223	247	271	295	319	343

EX510 Gateway System
Serial Transmission System
Base Mounted Manifold/Integrated Type

Type 42SA

Series SY3000/5000/7000

CE

How to Order Manifold

SS5Y 3 – 42SA □ – 03 – 01 □ – □

Manifold series

3	SY3000
5	SY5000
7	SY7000

SI unit

Nil	NPN output (+COM.)
N	PNP output (–COM.)

Valve stations

Symbol	Stations	Note
03	3 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	
03	3 stations	Specified layout Note 2) (Compatible with 16 solenoid valves)
⋮	⋮	
16	16 stations	

- SS5Y3 can be set from 4 stations.
- The number of the blanking plate assembly is also included.

Note 1) Double wiring: Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

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

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

A, B port size

Thread piping

01	1/8	SY3000
02	1/4	SY5000/7000

One-touch fitting (Metric size)

C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	
C10	One-touch fitting for ø10	SY7000

One-touch fitting (Inch size)

N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	
N11	One-touch fitting for ø3/8"	SY7000

CE-compliant

Nil	—
Q	CE-compliant

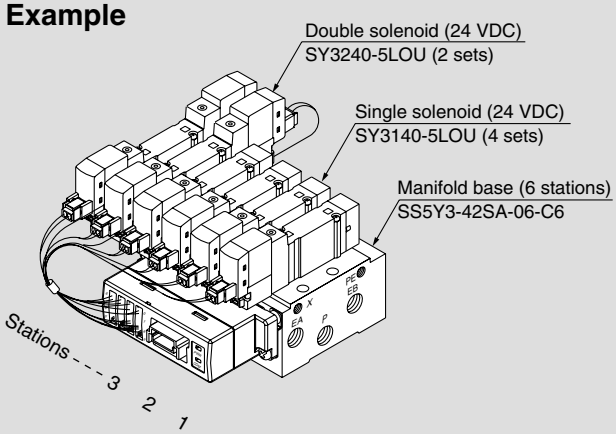
SI unit part no.

Symbol	SI unit specifications	SI unit part no.	Page
Nil	NPN output (+COM.)	EX510-S001	P.1715 to 1717
N	PNP output (–COM.)	EX510-S101	

For details of "Gateway System Serial Transmission System, Series EX510", refer to pages 1696 through to 1724.

How to Order Manifold Assembly (Example)

Example



SS5Y3-42SA-06-C6 ··1 set (42SA type 6-station manifold part no.)
***SY3140-5LOU ·····4 sets (Single solenoid part no.)**
***SY3240-5LOU ·····2 sets (Double solenoid part no.)**
The asterisk denotes the symbol for assembly. Prefix to the part no. of the solenoid valve, etc.

Add the valve and option part number under the manifold base part number.
When entry of part numbers becomes complicated, indicate by the manifold specification sheet. For a manifold for an EX510, the length of the lead wire for a connector assembly depends on the number of stations. Therefore, the manifold assembly is shipped with the valves (including blanking plates) and connector assembly mounted on it, as the standard specification. Be sure to specify the part nos. of the solenoid valves to be mounted.

How to Order Valves

SY 3 1 40 □ – 5 LO Z □ – □ – □

Series

3	SY3000
5	SY5000
7	SY7000

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

Pilot specifications

Nil	Internal pilot
R	External pilot

Rated voltage: 24 VDC

Light/surge voltage suppressor

Z	With light/surge voltage suppressor
U	Without light/surge voltage suppressor (non-polar type)

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Made to Order

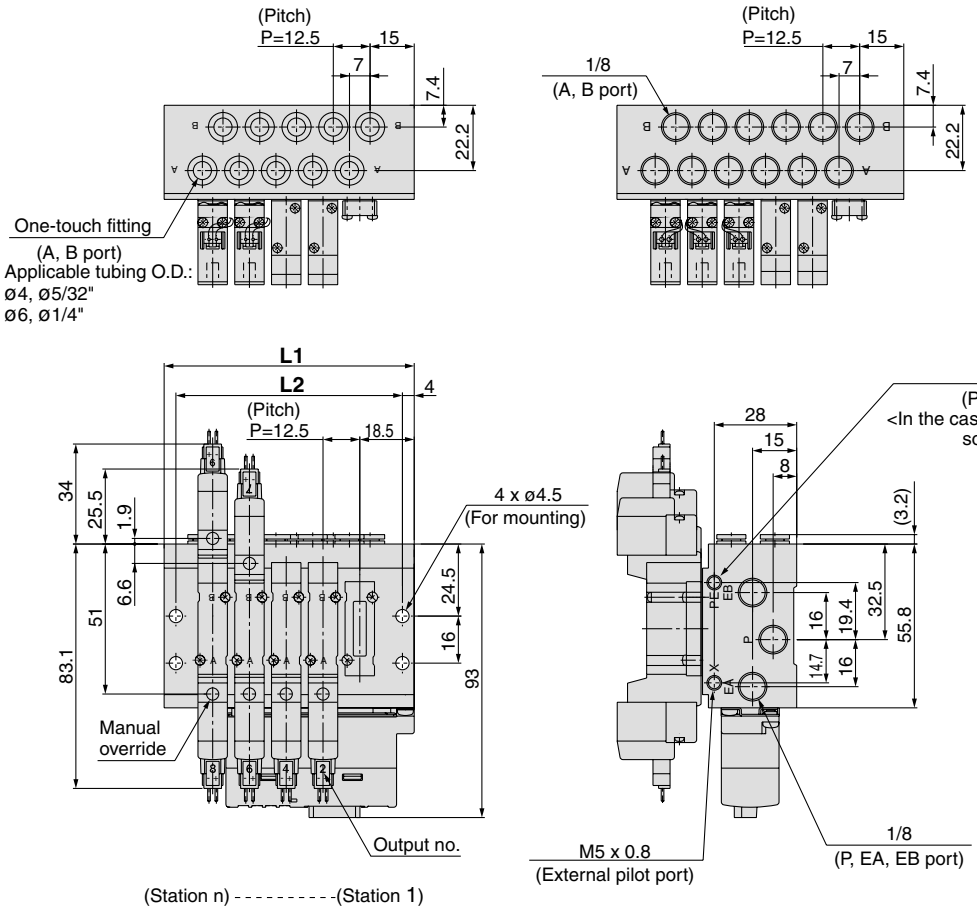
Nil	—
X90	Main valve fluoro rubber (Refer to page 332.)

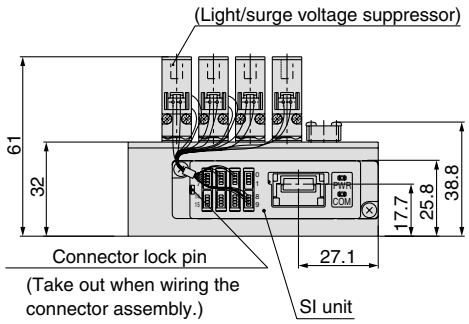
CE-compliant

Nil	—
Q	CE-compliant

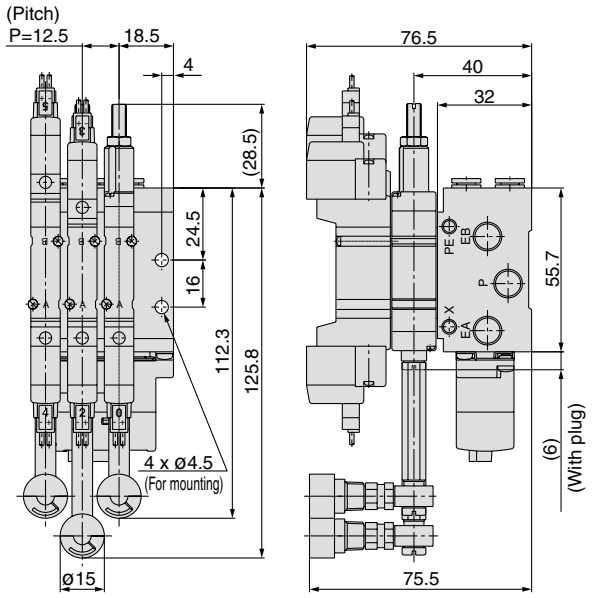
SY3000: SS5Y3-42SA□-Stations-01□, C4, N3 C6, N7

For 1/8



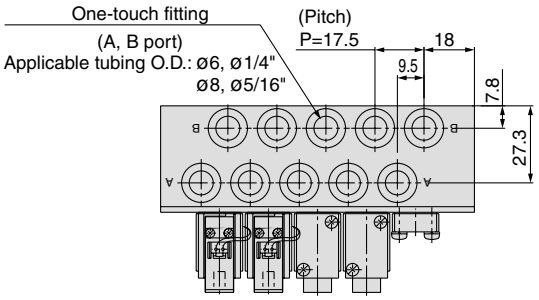


With interface regulator (with gauge)

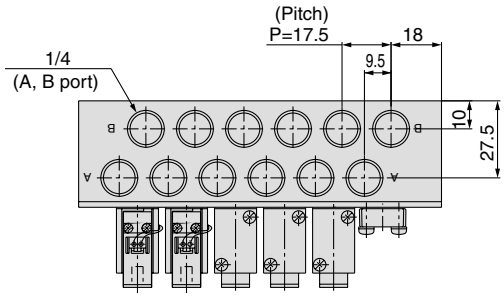


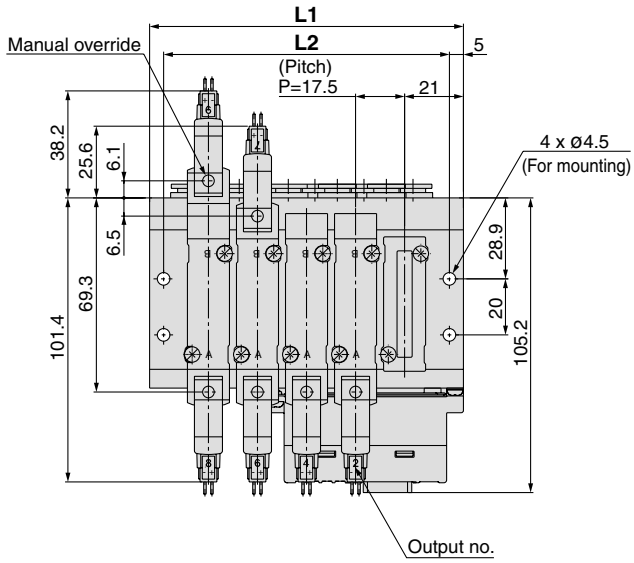
Stations n	4 stations	5	6	7	8	9	10	11	12	13	14	15	16 stations
L1	72.5	85	97.5	110	122.5	135	147.5	160	172.5	185	197.5	210	222.5
L2	64.5	77	89.5	102	114.5	127	139.5	152	164.5	177	189.5	202	214.5

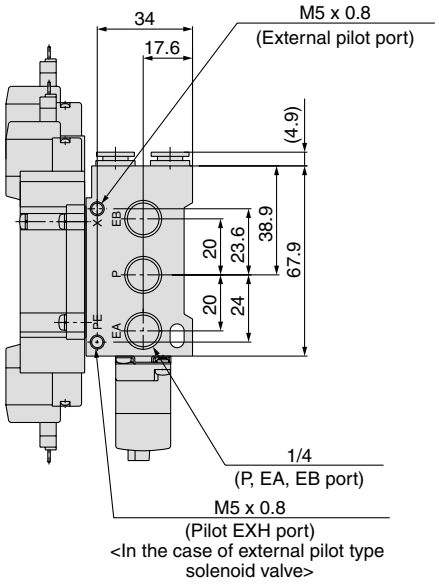
SY5000: SS5Y5-42SA□-Stations-02□, C6, N7 C8, N9

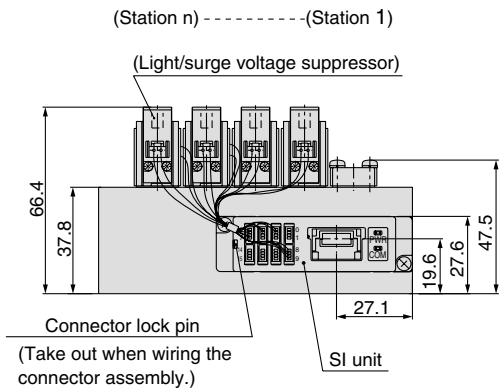


For 1/4

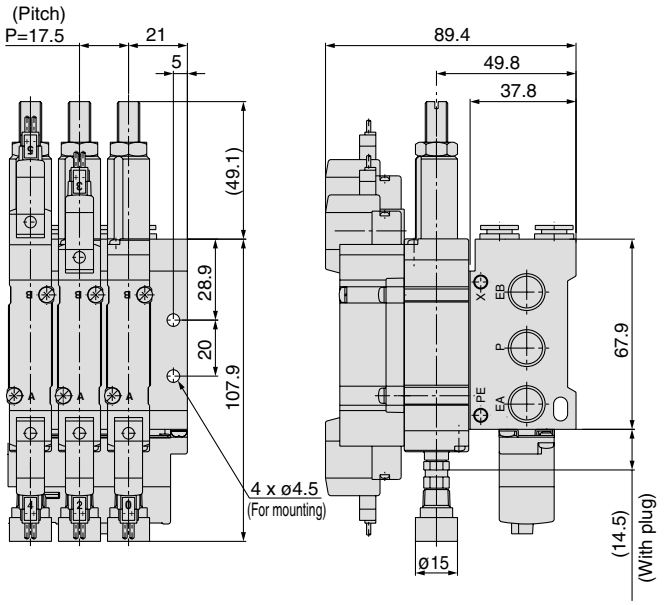






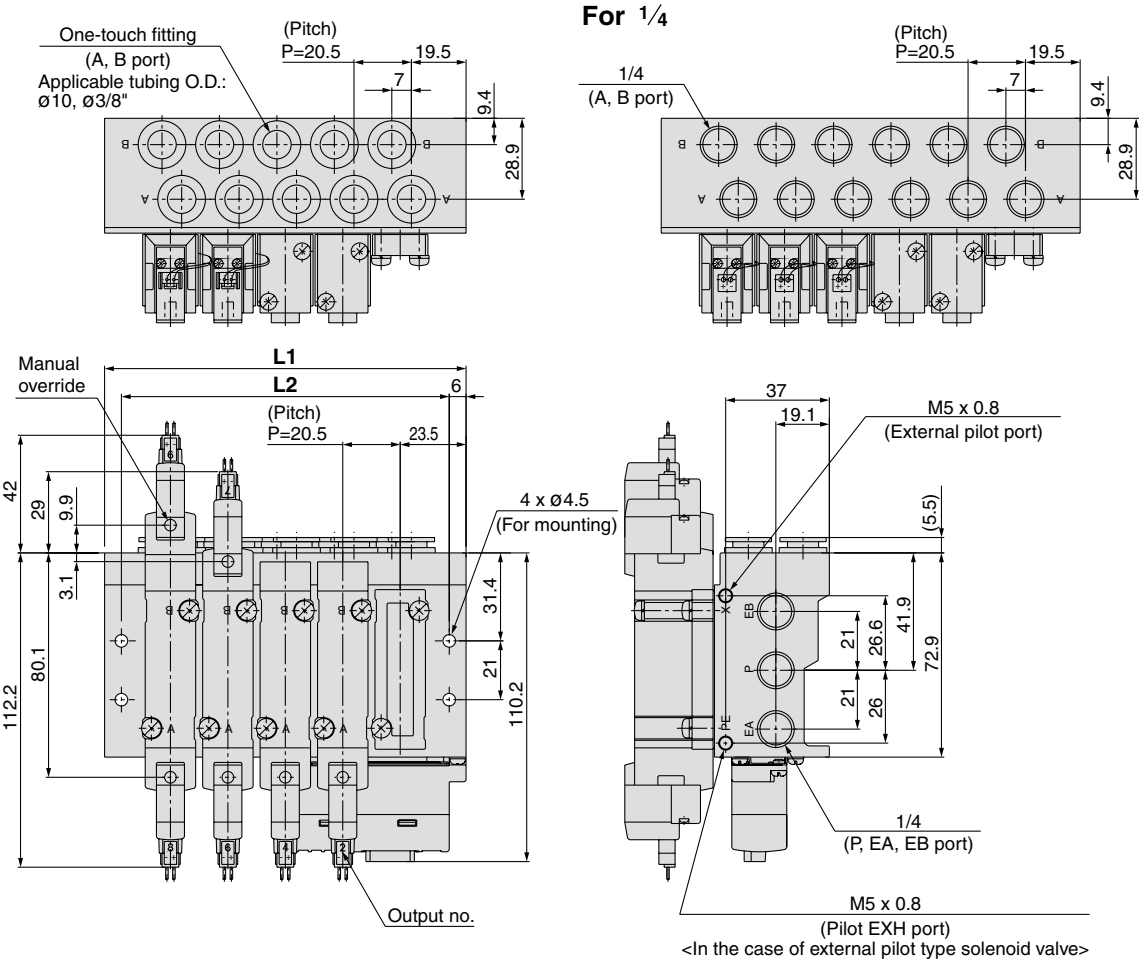


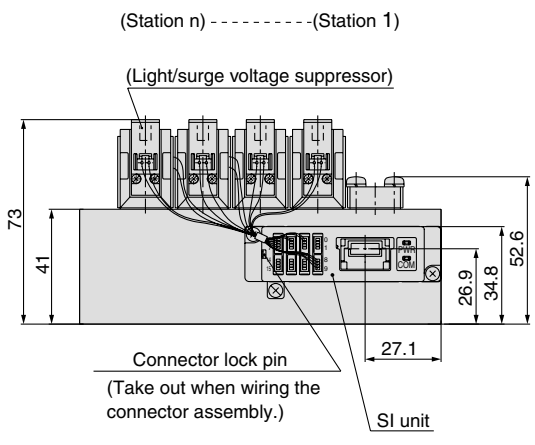
With interface regulator (with gauge)



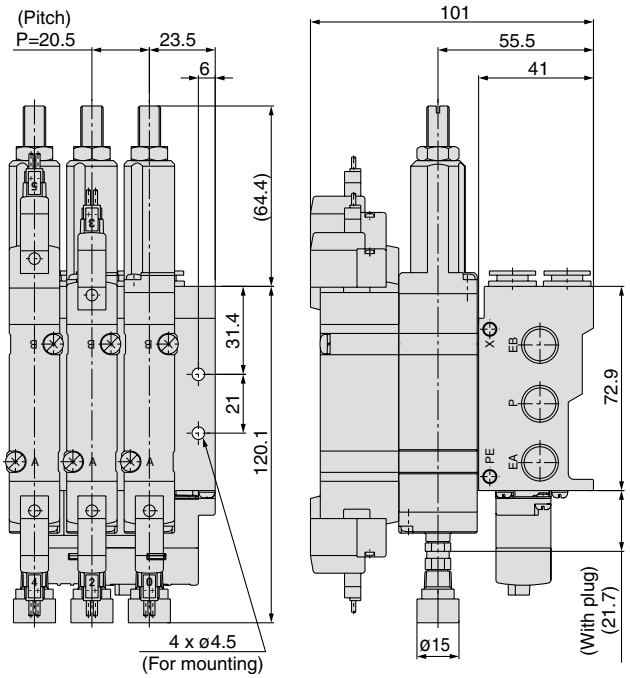
Stations n	3 stations	4	5	6	7	8	9	10	11	12	13	14	15	16 stations
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5	252	269.5	287	304.5
L2	67	84.5	102	119.5	137	154.5	172	189.5	207	224.5	242	259.5	277	294.5

SY7000: SS5Y7-42SA□-Stations-02□, C10, N11





With interface regulator (with gauge)



Stations n	3 stations	4	5	6	7	8	9	10	11	12	13	14	15	16 stations
L1	88	108.5	129	149.5	170	190.5	211	231.5	252	272.5	293	313.5	334	354.5
L2	76	96.5	117	137.5	158	178.5	199	219.5	240	260.5	281	301.5	322	342.5

EX510 Gateway System
Serial Transmission System
Base Mounted Manifold/Stacking Type

Type 43SA

Series SY9000

CE

How to Order Manifold

SS5Y9 − 43SA □ − 03 U □ − 02 □ − □ − □

SI unit

Nil	NPN output (+COM.)
N	PNP output (–COM.)

Valve stations

Symbol	Stations	Note
03	3 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	
03	3 stations	Specified layout Note 2) (Compatible with 16 solenoid valves)
⋮	⋮	
16	16 stations	

• The number of the blanking plate assembly is also included.

Note 1) Double wiring: Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

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

CE-compliant

Nil	—
Q	CE-compliant

Option

Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
DO	DIN rail mounting (Without DIN rail)
D*	When a longer DIN rail is desired than the specified stations, specify the station number to be required into * mark.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

A, B port size
Thread piping

02	1/4
03	3/8

One-touch fitting (Metric size)

C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12
M	Mixed

One-touch fitting (Inch size)

N9	One-touch fitting for ø5/16"
N11	One-touch fitting for ø3/8"
M	Mixed

• For the mixed specification, indicate separately on a manifold specification sheet.

SUP/EXH block assembly specifications

Nil	Standard/Internal pilot
R	External pilot
S	Internal pilot, Built-in silencer
RS	External pilot, Built-in silencer

P, R port outlets

U	U side	3 to 10 stations
D	D side	
B	Both sides	3 to 16 stations

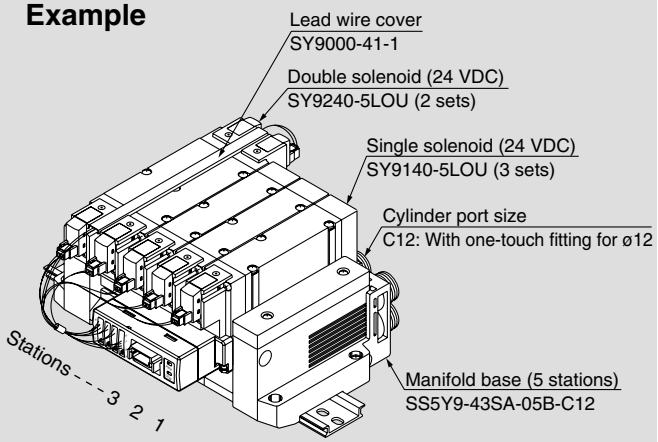
SI unit part no.

Symbol	SI unit specifications	SI unit part no.	Page
Nil	NPN output (+COM.)	EX510-S001	P.1715 to 1717
N	PNP output (–COM.)	EX510-S101	

For details of "Gateway System Serial Transmission System, Series EX510", refer to pages 1696 through to 1724.

How to Order Manifold Assembly (Order Example)

Example



SS5Y9-43SA-05B-C12 ·· 1 set (43SA type 5-station manifold part no.)
*** SY9140-5LOU ····· 3 sets (Single solenoid part no.)**
*** SY9240-5LOU ····· 2 sets (Double solenoid part no.)**
*** SY9000-41-1 ····· 1 set (Lead wire cover)**
→ The asterisk denotes the symbol for assembly. Prefix to the part no. of the solenoid valve, etc.

Add the valve and option part number under the manifold base part number.
When entry of part numbers becomes complicated, indicate by the manifold specification sheet. For a manifold for an EX510, the length of the lead wire for a connector assembly depends on the number of stations. Therefore, the manifold assembly is shipped with the valves (including blanking plates) and connector assembly mounted on it, as the standard specification. Be sure to specify the part nos. of the solenoid valves to be mounted.

How to Order Valves

SY9 1 40 □ – 5 LO Z □ – □ – □

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

Pilot specifications

Nil	Internal pilot
R	External pilot

Rated voltage: 24 VDC

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Light/surge voltage suppressor

Z	With light/surge voltage suppressor
U	Without light/surge voltage suppressor (non-polar type)

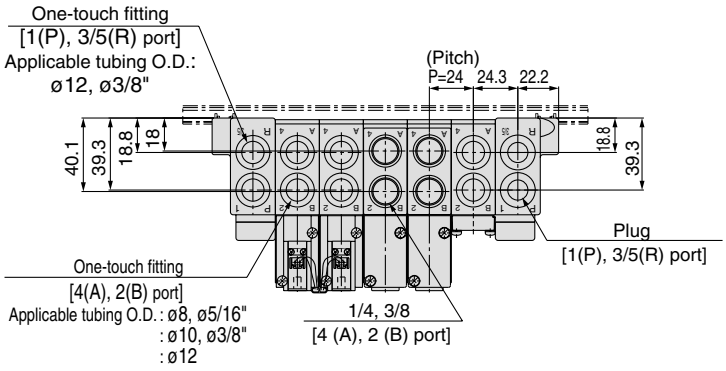
Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 332.)

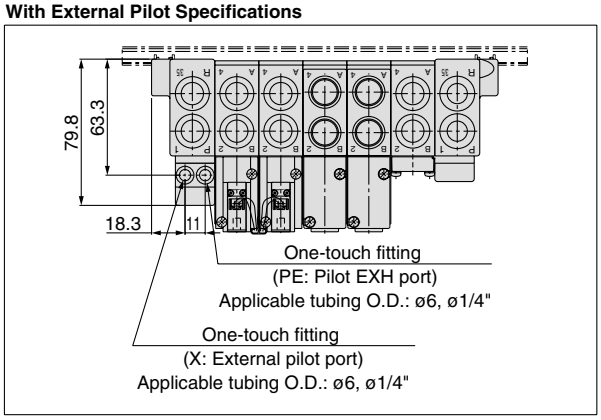
CE-compliant

Nil	—
Q	CE-compliant

SY9000: SS5Y9-43SA□-Stations U□-□ 02/03 □, C8, N9 / C10, N11 / C12 (-D)

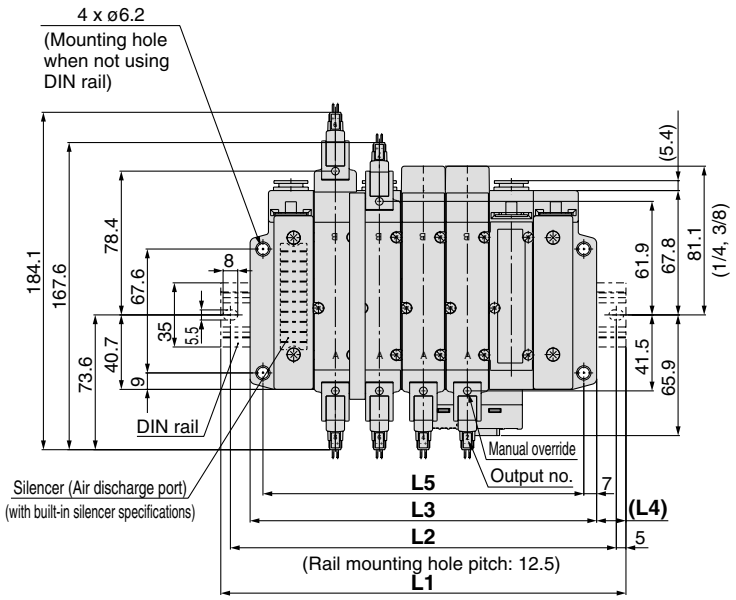


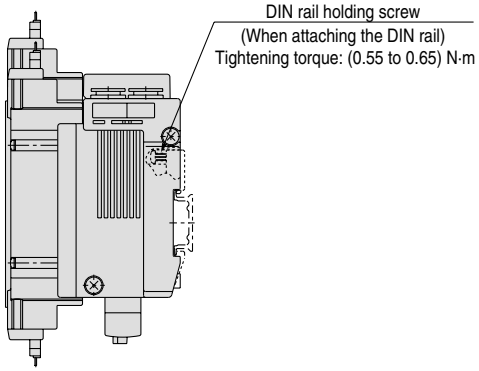
With External Pilot Specifications

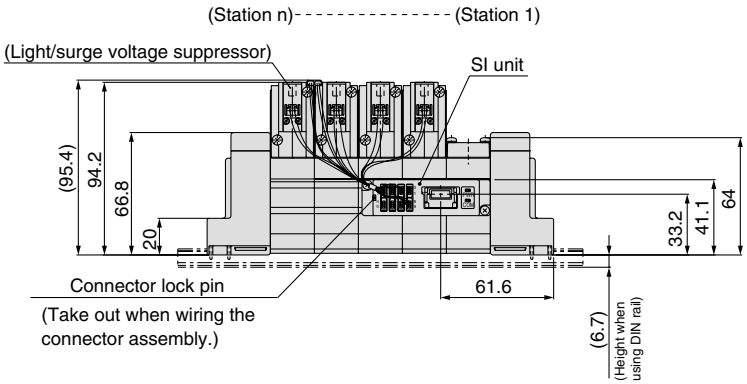


* When P, R port outlets are indicated on the D side, the P, R ports on the opposite side are plugged.
* Air discharge port on the built-in silencer type and the external pilot's extracting position are in the U side.

U side D side

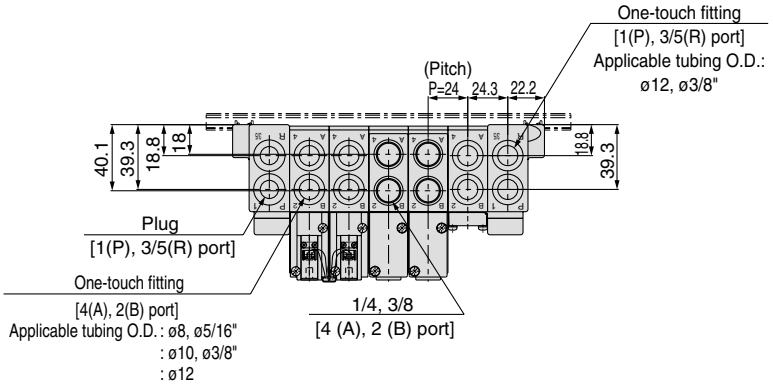




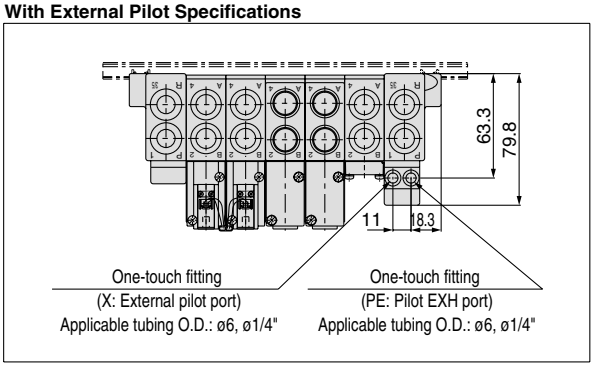


Stations n	**3** stations	**4**	**5**	**6**	**7**	**8**	**9**	**10** stations
L1	173	198	223	248	260.5	285.5	310.5	335.5
L2	162.5	187.5	212.5	237.5	250	275	300	325
L3	141	165	189	213	237	261	285	309
L4	16	16.5	17	17.5	12	12.5	13	13.5
L5	127	151	175	199	223	247	271	295

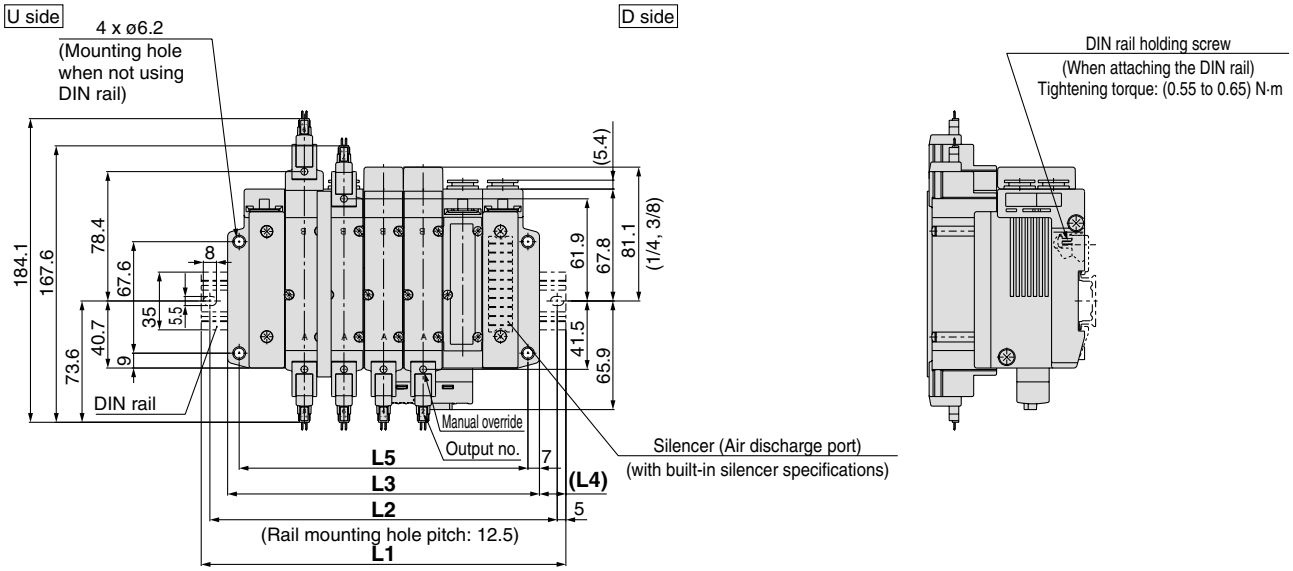
SY9000: SS5Y9-43SA□-Stations D□-□ 02/03□, C8, N9/C10, N11/C12 (-D)

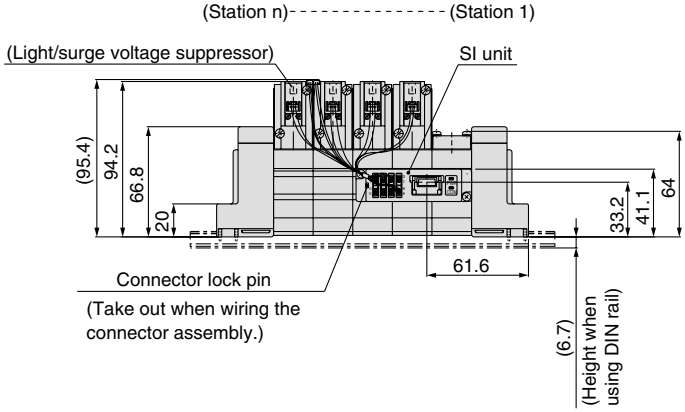


With External Pilot Specifications



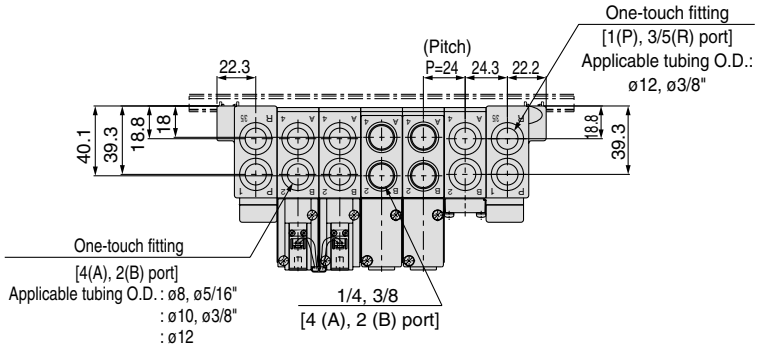
* When P, R port outlets are indicated on the D side, the P, R ports on the opposite side are plugged.
* Air discharge port on the built-in silencer type and the external pilot's extracting position are in the D side.



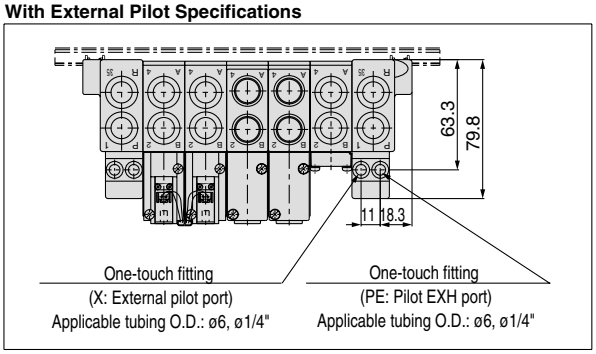


Stations n	3 stations	4	5	6	7	8	9	10 stations
L1	173	198	223	248	260.5	285.5	310.5	335.5
L2	162.5	187.5	212.5	237.5	250	275	300	325
L3	141	165	189	213	237	261	285	309
L4	16	16.5	17	17.5	12	12.5	13	13.5
L5	127	151	175	199	223	247	271	295

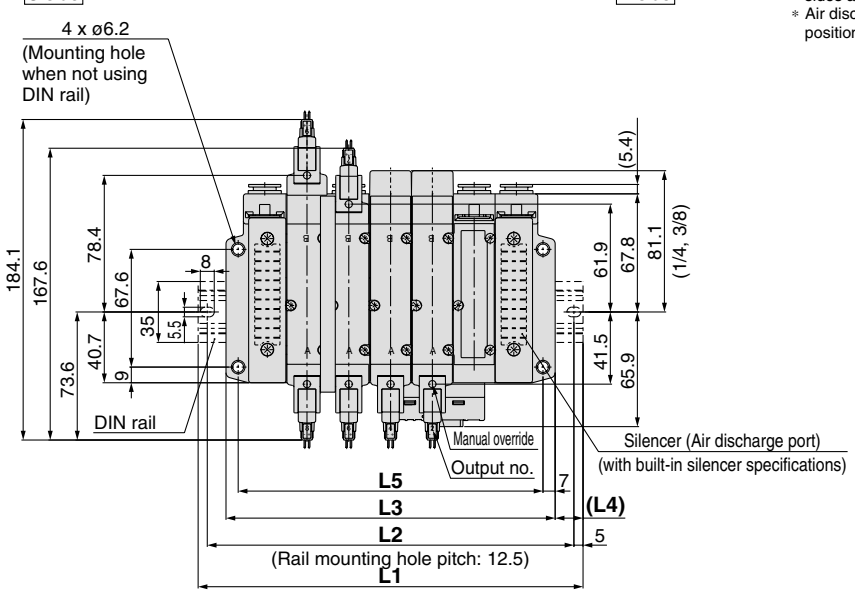
SY9000: SS5Y9-43SA□-Stations B□-□ 02/03 □, C8, N9 C10, N11 C12 (-D)

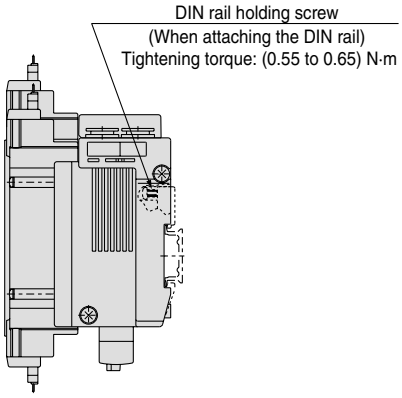


With External Pilot Specifications

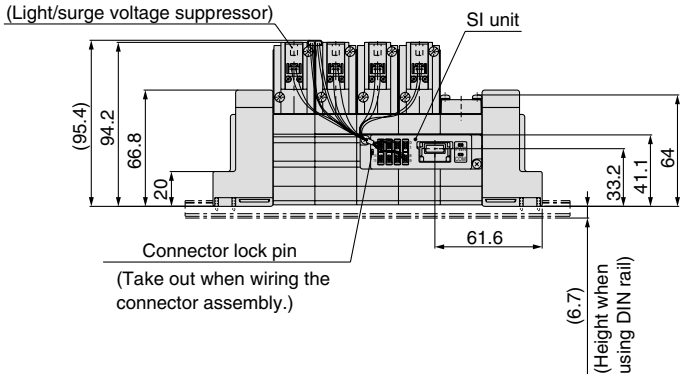


∗ When P, R port outlets are indicated on the B side, the P, R ports on the both sides are in the open state.
∗ Air discharge port on the built-in silencer type and the external pilot's extracting position are in the B side (both sides).





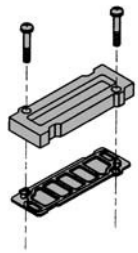
(Station n) - - - - - - - - - - - - - - - (Station 1)



Stations n	3 stations	4	5	6	7	8	9	10	11	12	13	14	15	16 stations
L1	173	198	223	248	260.5	285.5	310.5	335.5	360.5	385.5	410.5	435.5	460.5	485.5
L2	162.5	187.5	212.5	237.5	250	275	300	325	350	375	400	425	450	475
L3	141	165	189	213	237	261	285	309	333	357	381	405	429	453
L4	16	16.5	17	17.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5
L5	127	151	175	199	223	247	271	295	319	343	367	391	415	439

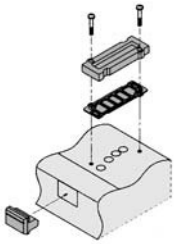
Manifold Option

■ Type 41, 42, 43, 42SA, 43SA Blanking plate assembly



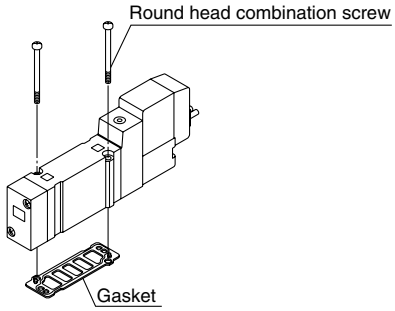
Series	Assembly part no.
SY3000	SY3000-26-9A(-Q)
SY5000	SY5000-26-20A(-Q)
SY7000	SY7000-26-22A(-Q)
SY9000	SY9000-26-2A(-Q)

■ Type 41P, 42P, 43P Blanking plate assembly



Series	Assembly part no.
SY3000	SY3000-26-10A(-Q)
SY5000	SY5000-26-21A(-Q)
SY7000	SY7000-26-23A(-Q)
SY9000	SY9000-26-4A(-Q)

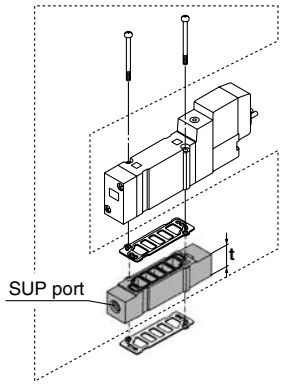
■ Gasket assembly part no.



Series	Gasket assembly part no.
SY3000	SY3000-GS-2
SY5000	SY5000-GS-2(-Q)
SY7000	SY7000-GS-2(-Q)
SY9000	SY9000-GS-2

Note) The gasket assembly includes 10 sets of mounting screws and a gasket.

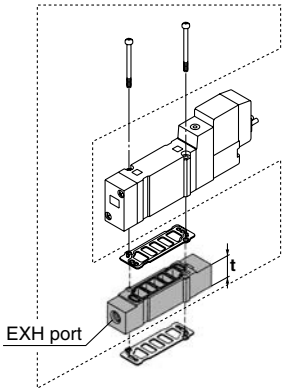
■ Individual SUP spacer assembly



Series	Assembly part no.	Port size	t
SY3000	SY3000-38-2A(-Q)	M5 x 0.8	11
SY5000	SY5000-38-16∗A(-Q)	1/8	15
SY7000	SY7000-38-16∗A(-Q)	1/4	18
SY9000	SY9000-38-2∗A(-Q)	1/4	20

Note) • The SUP port of SY3000, 5000 and 7000 may be either on the lead wire side or on the end plate side. (An assembly is shipped under the condition shown in the figure.)
• The end plate side is only available to SY9000.

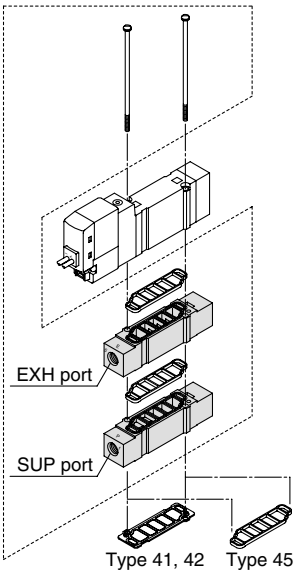
■ Individual EXH spacer assembly



Series	Assembly part no.	Port size	t
SY3000	SY3000-39-2A(-Q)	M5 x 0.8	11
SY5000	SY5000-39-16∗A(-Q)	1/8	15
SY7000	SY7000-39-16∗A(-Q)	1/4	18
SY9000	SY9000-39-2∗A(-Q)	1/4	20

Note) In case of 41P, 42P and 43P, for protection of the wiring unit section from drainage, piping at the EA port should be arranged so that it will not be directly exposed to exhaust from the valve.

■ Individual SUP spacer assembly + Individual EXH spacer assembly (Double spacer)



[●: Available ×: Not available —: Nonapplicable manifold]

Series	Individual SUP + Individual EXP Assemble part no.	Port size	Applicable manifold types						
			41	41P	42	42P	45	45-A 45-NA	45∗
SY3000	SY3000-120-2A(-Q)	M5 x 0.8	●	×	●	×	●	×	×
SY5000	SY5000-75-1∗A(-Q)	1/8	●	×	●	×	●	×	×
SY7000	SY7000-73-1∗A(-Q)	1/4	●	×	●	×	—	—	—

Note) The port on a spacer can be directed to the pilot valve side or end plate side. For mounting the port to the pilot valve side, please make sure to connect the ports to protect the pilot valve wiring section from drainage.
The individual SUP spacer and EXH spacer can be mounted either on the upper side or lower side. (The above illustration shows the condition when the product is shipped out from a factory.)

⚠ Caution

Mounting screw tightening torques

M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

∗ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

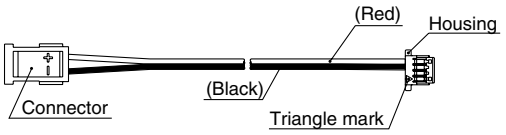
⚠ Warning

When mounting a valve or spacer on the manifold base or sub-plate, etc., those mounting directions are determined. If mounted in the wrong direction, the equipment to be connected may cause malfunction. Refer to external dimensions, and then mount it.

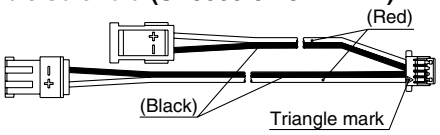
Manifold Option

■ **Connector assembly**

For single solenoid (SY3000-37-81A-□-N)



For double solenoid (SY3000-37-81A-□-□)

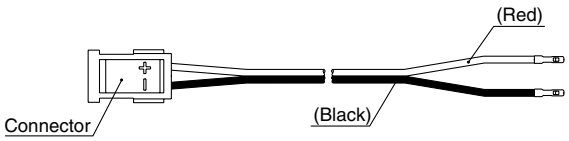


Connector assembly order no. (Can be used for the manifold without a specified layout (8 stations or less))
Integrated type

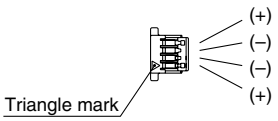
Model	Part no.	Connector mounting position
SS5Y3-42SA	SY3000-37-81A-3-N	Single: For 1 to 4 stations
	SY3000-37-81A-3-6	Double/3 position: For 1 to 4 stations
	SY3000-37-81A-2-N	Single: For 5 to 8 stations
	SY3000-37-81A-2-4	Double/3 position: For 5 to 8 stations
SS5Y5-42SA	SY3000-37-81A-3-N	Single: For 1 to 8 stations
	SY3000-37-81A-3-6	Double/3 position: For 1 to 8 stations
SS5Y7-42SA	SY3000-37-81A-3-N	Single: For 1 to 4 stations
	SY3000-37-81A-3-6	Double/3 position: For 1 to 4 stations
	SY3000-37-81A-4-N	Single: For 5 to 8 stations
	SY3000-37-81A-4-7	Double/3 position: For 5 to 8 stations

Note) The above is for the station addition or maintenance. When ordering a connector assembly separately, a number would not be printed on the connector.

■ **Connector assembly**
SY3000-37-80A-□



■ **Housing (8 pcs./set)**
SY3000-44-3A



Connector assembly order no. (Can be used for the manifold with a specified layout)

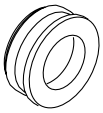
Model	Part no.	Connector mounting position	
SS5Y3-42SA	SY3000-37-80A-3	For A side	For 1 to 8 stations
	SY3000-37-80A-6	For B side	
	SY3000-37-80A-4	For A side	For 9 to 16 stations
	SY3000-37-80A-7	For B side	
SS5Y5-42SA	SY3000-37-80A-3	For A side	For 1 to 8 stations
	SY3000-37-80A-6	For B side	
	SY3000-37-80A-7	For A side	For 9 to 16 stations
	SY3000-37-80A-9	For B side	
SS5Y7-42SA	SY3000-37-80A-4	For A side	For 1 to 8 stations
	SY3000-37-80A-7	For B side	
	SY3000-37-80A-8	For A side	For 9 to 16 stations
	SY3000-37-80A-11	For B side	
SS5Y9-43SA	SY3000-37-80A-6	For A side	For 1 to 8 stations
	SY3000-37-80A-11	For B side	
	SY3000-37-80A-9	For A side	For 9 to 12 stations
	SY3000-37-80A-14	For B side	
	SY3000-37-80A-13	For A side	For 13 to 16 stations
	SY3000-37-80A-18	For B side	

Note 1) The above is for station addition or maintenance. When ordering a connector assembly separately, a number will not be printed on the connector.
Note 2) After inserting the connector assembly into the housing, be sure to confirm that the lead wire will not come off by lightly pulling the wire. Furthermore, do not reuse the lead wire after it has been inserted and removed.
Note 3) Wiring is set longer than the actual wiring distance.

Manifold Option

▪ SUP blocking disk (For SY9000)

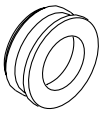
By installing a SUP blocking disk in the pressure supply passage of a manifold base, it is possible to supply two or more different high and low pressures to one manifold.



Series	No.
SY9000	SY9000-57-1A

▪ EXH blocking disk (For SY9000)

By installing an EXH blocking disk in the exhaust passage of a manifold base, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to divide both exhausts.)



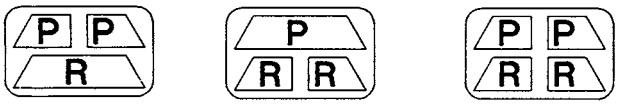
Series	No.
SY9000	SY9000-57-1A

▪ Label for block disk (For SY9000)

The labels shown below are used on manifold stations containing SUP/EXH block disk(s) to show their location. (3 pcs. each)

VZ3000-123-1A

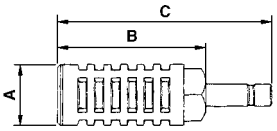
Label for SUP block disk Label for EXH block disk Label for SUP/EXH block disk



Note) When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.

▪ Silencer with One-touch fitting (For SY9000)

The silencer plugs directly into the One-touch fittings of the manifold R (exhaust) port.



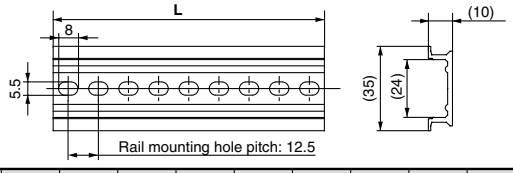
For Series	Model	Effective area	A	B	C
SY9000 (ø12)	AN300-KM12	41 mm²	ø25	70	98

▪ DIN Rail Dimensions/Mass for SY9000

VZ1000 – 11 – 4 – □

● **Refer to L dimensions**

∗ Fill in □ with an appropriate no. listed on the table of DIN rail dimensions shown below.

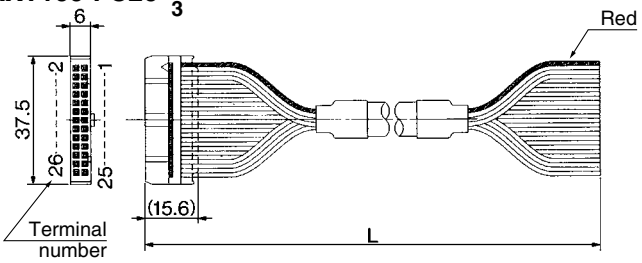


No.	0	1	2	3	4	5	6	7	8	9
L Dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5
Mass (g)	24.8	28	31.1	34.3	37.4	40.6	43.8	46.9	50.1	53.3
No.	10	11	12	13	14	15	16	17	18	19
L Dimension	223	235.5	248	260.5	273	285.5	298	310.5	323	335.5
Mass (g)	56.4	59.6	62.7	65.9	69.1	72.2	75.4	78.6	81.7	84.9
No.	20	21	22	23	24	25	26	27	28	29
L Dimension	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5
Mass (g)	88	91.2	94.4	97.5	100.7	103.9	107	110.2	113.3	116.5

Note) • Refer to page 338 for DIN rail.
• Refer to **L1** dimension on pages 211 to 213, 225 to 227 and 235 to 237 for lengths that correspond to the number of manifold stations.

▪ Cable assembly

AXT100-FC26- $\frac{1}{3}$



Connector Assembly for Flat Ribbon Cables

Cable length (L)	Ass'y part no.	Note
1.5m	AXT100-FC26-1	Cable 26 core x 28 AWG
3m	AXT100-FC26-2	
5m	AXT100-FC26-3	

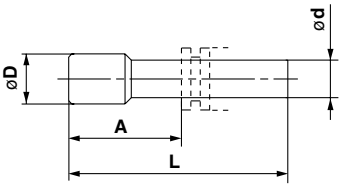
∗ For other commercial connectors, use a 26 pins with strain relief conforming to MIL-C-83503.

Connector manufacturers' example

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

▪ Plug (white)

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.



Dimensions

Applicable fittings size ød	Model	A	L	D
4	**KQ2P-04**	16	32	6
6	**KQ2P-06**	18	35	8
8	**KQ2P-08**	20.5	39	10
10	**KQ2P-10**	22	43	12
12	**KQ2P-12**	24	44.5	14
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

Manifold Option

▪ How to Order Interface Regulator

Series SY3000

ARBY3000 – 05 – P – 2

Pressure gauge connection port

05	Pressure gauge (G15-10-01)
M1	Plug (M-5P)

Regulating port

P	P port
A1	A port (P controlled type, A port regulation)
B1	B port (P controlled type, B port regulation)

Note) In the case of Series ARBY3000 with a pressure gauge when mounting on the manifold, use caution that the part numbers are different between the odd no. stations and the even no. stations to avoid gauges from interfering from each others.

Series SY5000

ARBY5000 – 00 – P – 2

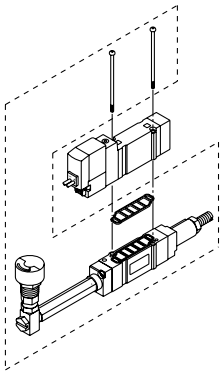
Pressure gauge connection port

00	Pressure gauge (G15-10-01)
M1	Plug (M-5P)

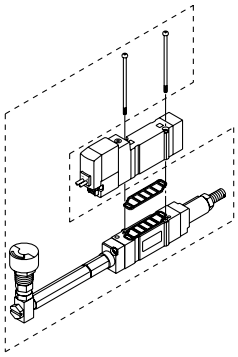
Regulating port

P	P port
A1	A port (P controlled type, A port regulation)
B1	B port (P controlled type, B port regulation)

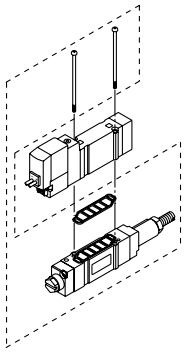
ARBY3000-05-□-2
(For odd number stations)



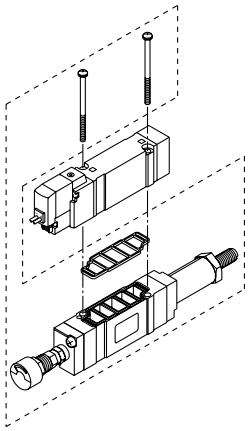
ARBY3000-06-□-2
(For even number stations)



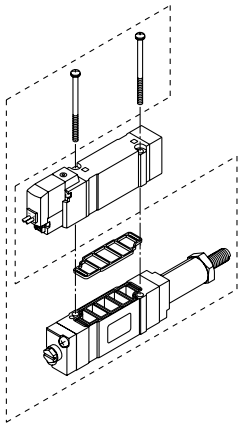
ARBY3000-M1-□-2



ARBY5000-00-□-2



ARBY5000-M1-□-2



Series SY7000

ARBY7000 – 00 – P – 2

Pressure gauge connection port

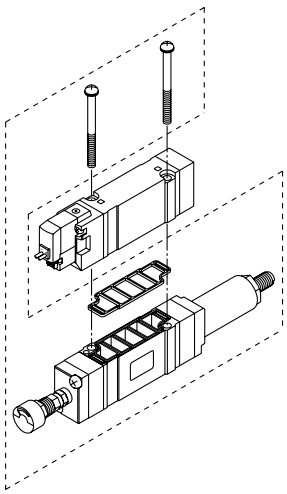
00	Pressure gauge (G15-10-01)
M1	Plug (M-5P)

Regulating port

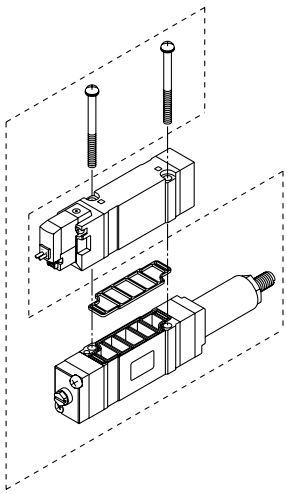
P	P port
A1	A port (P controlled type, A port regulation)
B1	B port (P controlled type, B port regulation)

Note) ARBY is not CE-compliant.

ARBY7000-00-□-2



ARBY7000-M1-□-2



Accessory

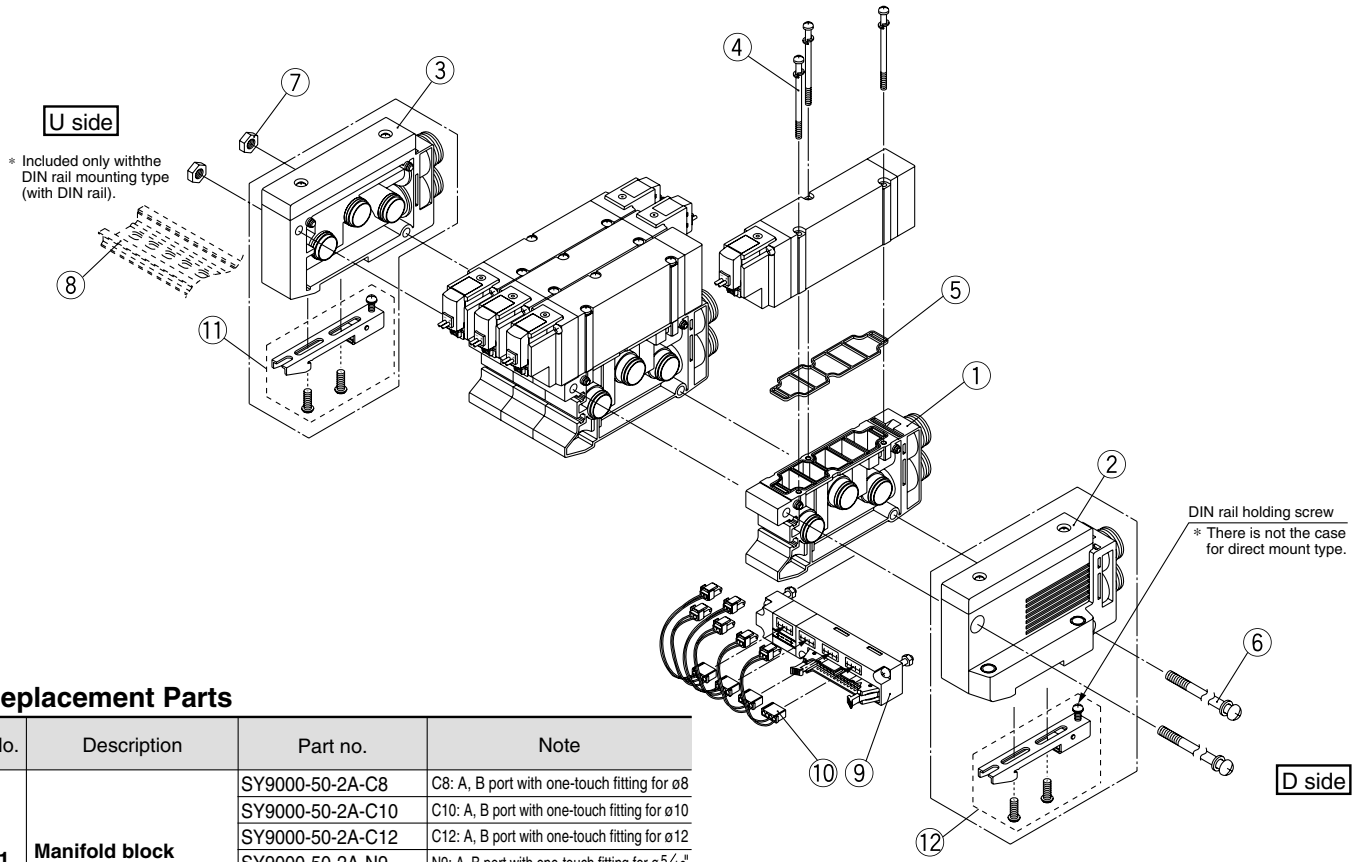
Series	Round head combination screw	Gasket
ARBY3000	SY3000-23-10 (M2 x 36)	SX3000-57-4
ARBY5000	M3 x 48.5, Matt nickel plated	SX5000-57-6
ARBY7000	M4 x 57, Matt nickel plated	SX7000-57-4

⚠ Caution

Mounting screw tightening torques

M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

Base Mounted Manifold Exploded View

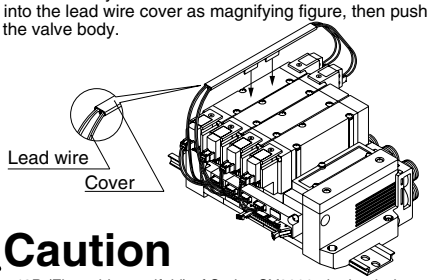


Replacement Parts

No.	Description	Part no.	Note
1	Manifold block assembly	SY9000-50-2A-C8	C8: A, B port with one-touch fitting for ø8
		SY9000-50-2A-C10	C10: A, B port with one-touch fitting for ø10
		SY9000-50-2A-C12	C12: A, B port with one-touch fitting for ø12
		SY9000-50-2A-N9	N9: A, B port with one-touch fitting for ø5/16"
		SY9000-50-2A-N11	N11: A, B port with one-touch fitting for ø3/8"
		SY9000-50-2A-02*	02: A, B port 1/4 (* thread type)
		SY9000-50-2A-03*	03: A, B port 3/8 (* thread type)
4	Round head combination screw	SY9000-18-2	M3 x 42, Matt nickel plated
5	Gasket	SY9000-11-2	
6	Tension bolt	SY9000-23-□	□ at the end of part number corresponds with the number of manifold station. Specify the same number as the number of stations.
7	Hexagon nut	SY9000-25-1	
8	DIN rail	VZ1000-11-4-□	Refer to page 240.
9	Wiring unit assembly	SY9000-36-□A	□ at the end of part number corresponds with the number of manifold station. Specify the same number as the number of stations (4 to 12 stations)
10	Connecter assembly	SY9000-37-□□	Refer to page 223.
11	Lead wire cover	SY9000-41-1	
12	Clamp sub assembly	SY9000-30-1A	Included only with the DIN rail mounting type.

⑪ How to assemble lead wire cover

Lead wire cover is only usable for double solenoid valves. Lead wire is inserted into the lead wire cover as magnifying figure, then push it until it touches the valve body.



⚠Caution

For type 43P (Flat cable manifold) of Series SY9000, the lead wire cover is attached for bundling the lead wires for each solenoid. In case such as adding double solenoid valve, etc., order separately lead wire cover as well.

② SUP/EXH block assembly no. (D side mounting)

• Direct mount type: **SY9000-70-□A-□**

• DIN rail mount type: **SY9000-72-□A-□**

P, R port

C12	One-touch fitting for ø12
N11	One-touch fitting for ø3/8"
00	Plug

Specifications

1	Internal pilot type
3	External pilot type
4	Internal pilot / Built-in silencer type
5	External pilot / Built-in silencer type

③ SUP/EXH block assembly no. (U side mounting)

• Direct mount type: **SY9000-71-□A-□**

• DIN rail mount type: **SY9000-73-□A-□**

P, R port

C12	One-touch fitting for ø12
N11	One-touch fitting for ø3/8"
00	Plug

Specifications

1	Internal pilot type
3	External pilot type
4	Internal pilot / Built-in silencer type
5	External pilot / Built-in silencer type

How to Increase Manifold Bases (Series SY9000 only) Manifold case can be added at any location.

When a type 43 manifold base is added, tension bolts as well as manifold block assembly will be required. Order the tension bolt suitable for the stations after a station was increased (decreased), since the length of a tension bolt differs by the number of stations. (For changing the number of stations for a type 43P manifold, wiring unit for the stations and lead assembly will be required.)

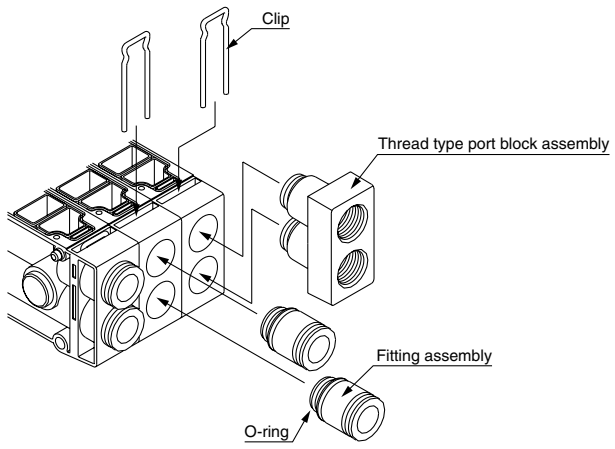
1. Loosen the tension bolts connecting the manifold base, and pull out both of 2 tension bolts.
   (When equipped with a DIN rail, loosen one DIN rail holding screw on either U side or D side.)
2. Separate the blocks at the location where station expansion is desired.
3. Mount additional manifold block assembly.
4. Press block-to-block so that there's no gap. After connection, insert a tension bold for desired stations and then tighten it.
   ⚠ **Caution** (Tightening torque: 2.9 N·m)
   (When equipped with a DIN rail, be sure to tighten the DIN rail holding screws after tightening the tension bolts. Tightening torque: 1.4 N·m)

⚠ Caution

1. Be sure to shut off the power and air supplies before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
2. When disassembly and assembly are performed, air leakage may result if connections between blocks and tightening of the end block's holding screw, is inadequate.
3. By adding wiring unit assembly to type 43 manifold, it can be changed to type 43P manifold, too.

How to Replace A, B Port Fitting Assembly

By replacing manifold block fitting assemblies or the threaded port block assembly of a type 43(P) manifold, the port size of the A and B ports can be changed. To replace these parts, remove the clip with a flat head screwdriver after the valve has been removed. Insert the fitting assemblies or threaded port block assembly, and then reinsert the clip so that it does not protrude from the manifold block.



Fitting Assembly Part No.

Port size	No.	Note
One-touch fitting assembly for ø8	VVQ4000-50B-C8	
One-touch fitting assembly for ø10	VVQ4000-50B-C10	
One-touch fitting assembly for ø12	VVQ4000-50B-C12	
One-touch fitting for ø 5/16"	VVQ4000-50B-N9	
One-touch fitting for ø 3/8"	VVQ4000-50B-N11	
1/4 threaded type port block assembly	SY9000-58A-02∗	–∗ at the end of part number denotes the thread type.
3/8 threaded type port block assembly	SY9000-58A-03∗	–∗ at the end of part number denotes the thread type.
Plug assembly	SY9000-62-1A	

Note 1) Be careful to avoid damage or contamination of O-rings, as this can cause air leakage.
Note 2) Although replacing One-touch fittings of P, R port is also possible, use caution to the cases, etc. in which solenoid valves are often used at the same time by using the smaller sized fittings than the standard size (ø12). Because there may not be able to supply or exhaust air sufficiently in comparison with the valve performances. Besides, although fittings used for A, B port are the same, it is not possible to use the threaded type port block assembly.

5 Port Solenoid Valve
Base Mounted Manifold
Stacking Type/DIN Rail Mounted/Individual Wiring

Type 45

Series SY3000/5000

How to Order Manifold

SS5Y 3 - 45 - 05 U - C6 - [ ] - [ ]

Series

3	SY3000
5	SY5000

Valve stations

02	2 stations
⋮	⋮
20	20 stations

SUP/EXH block assembly mounting position

Symbol	Mounting position	Applicable no. of stations
U	U side	2 to 10 stations
D	D side	
B	(Both sides)	2 to 20 stations
M∗	Special specifications	

∗ For special specifications, indicate separately by the manifold specification sheet.

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

CE-compliant

Nil	—
Q	CE-compliant

A, B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

One-touch fitting (Inch size)

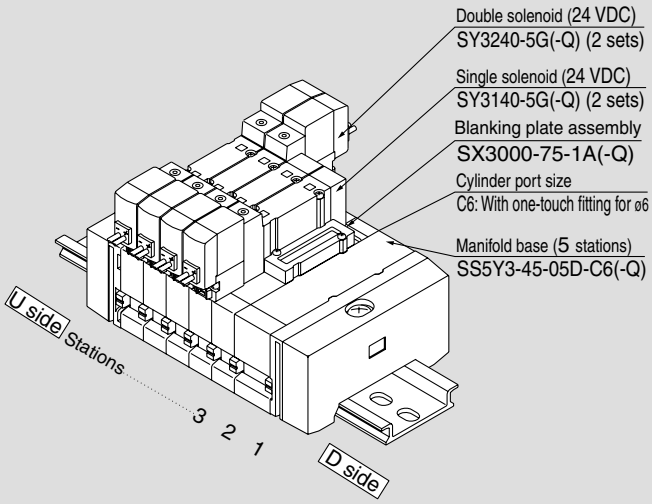
Symbol	Port size	Applicable series
N3	One-touch fitting for ø 5/32"	SY3000
N7	One-touch fitting for ø 1/4"	
M	Mixed	
N3	One-touch fitting for ø 5/32"	SY5000
N7	One-touch fitting for ø 1/4"	
N9	One-touch fitting for ø 5/16"	
M	Mixed	

∗ In the case of mixed specifications (M), indicate separately on the manifold specification sheet.

Refer to pages 324 to 328 for external pilot specifications and built-in silencer.

How to Order Manifold Assembly (Example)

Example



SS5Y3-45-05D-C6 ···· 1 set (Type 45, 5-station manifold base part no.)
∗SX3000-75-1A ····· 1 set (Blanking plate assembly part no.)
∗SY3140-5G ····· 2 sets (Single solenoid part no.)
∗SY3240-5G ····· 2 sets (Double solenoid part no.)

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

The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of SUP/EXH block assembly. In ordering, specify the part nos. in the order from the 1st. station on D side. Besides, when the arrangement will be complicated, fill out the manifold specification sheet to instruct us.

How to Order Valve

SY [5] [2] **40** [ ] – [5] [L] [ ] [ ] – [ ] – [ ]

Series

3	SY3000
5	SY5000

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

Coil specifications

Nil	Standard
T	With power saving circuit (24, 12 VDC only)

∗ Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

Rated voltage

For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

AC (Hz) 50/60

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

∗ DC specifications of type D, Y, DO and YO is only available with 12 and 24 VDC.
∗ For type W□, DC voltage is only available.
∗ D and DO only available for SY5000.

Light/surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With indicator light and surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
∗ For "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

∗ DOZ and YOZ are not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 332.)

CE-compliant

Nil	—
Q	CE-compliant

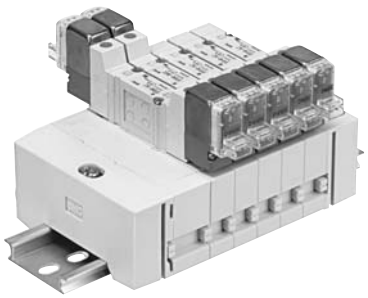
∗ For DC only except DIN terminal.

Electrical entry

24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm **H:** Lead wire length 600 mm	**L:** With lead wire (Length 300 mm) **LN:** Without lead wire **LO:** Without connector	**M:** With lead wire (Length 300 mm) **MN:** Without lead wire **MO:** Without connector	**(SY5000)** **D:** With connector **DO:** Without connector **Y:** With connector **YO:** Without connector	**WO:** Without connector cable **W□:** With connector cable Note 1)

∗ LN, MN type: with 2 sockets.
∗ D and DO only available for SY5000.
∗ "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). Refer to page 336 for details.
∗ Refer to page 339 for connector cable of M8 connector.
∗ M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.
∗ Refer to page 336 for the lead wire length of L and M plug connectors.
∗ Refer to page 337 for the connector assembly with cover for L and M plug connectors.
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

When ordering valve as a single unit, gaskets for the stacking base type are not included. Order them separately, if necessary. (Refer to page 254 for details.)



Manifold Specifications

Model		SS5Y3-45(-Q)	SS5Y5-45(-Q)
Applicable valve		SY3□40	SY5□40
Manifold type		Stacking type/DIN rail mounted	
P (SUP)/R (EXH)		Common SUP, Common EXH	
Valve stations		2 to 20 stations Note 1)	
A, B port Porting specifications	**Location**	Base	
	Direction	Side	
Port size	**P, R port**	C8 (One-touch fitting for ø8)	C10 (One-touch fitting for ø10)
	A, B port	C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)
Manifold base mass W (g), n: Stations		2 to 10 stations: W = 22n + 118 11 to 20 stations: W = 22n + 140	2 to 10 stations: W = 47n + 156 11 to 20 stations: W = 47n + 190

Note 1) For more than 11 stations, supply pressure to P port on both sides and exhaust from R port on both sides.

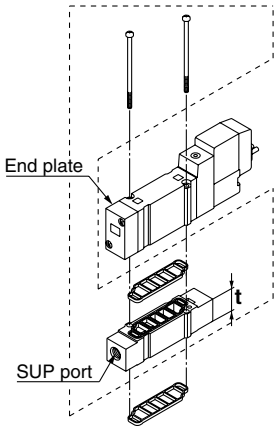
Flow Characteristics

Model	Port size		Flow characteristics					
	1 ,5 ,3 (P ,EA ,EB)	4 ,2 (A ,B)	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv
SS5Y3-45	C8	C6	0.88	0.21	0.22	0.95	0.18	0.22
SS5Y5-45	C10	C8	2.2	0.24	0.53	2.5	0.18	0.58

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

Manifold Option

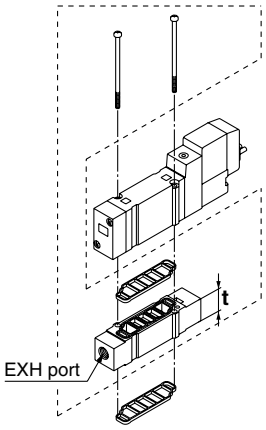
▪Individual SUP spacer assembly



Series	Assembly part no.	Port size	t
SY3000	SY3000-38-2A(-Q)	M5 x 0.8	11
SY5000	SY5000-38-16∗A(-Q)	1/8	15

Note) The SUP port may be either on the lead wire side or on the end plate side. (An assembly is shipped under the condition shown in the figure.)

▪Individual EXH spacer assembly



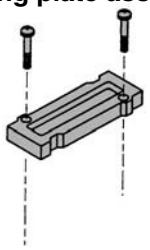
Series	Assembly part no.	Port size	t
SY3000	SY3000-39-2A(-Q)	M5 x 0.8	11
SY5000	SY5000-39-16∗A(-Q)	1/8	15

Note) The EXH port may be either on the lead wire side or on the end plate side.

∗ **Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

▪Blanking plate assembly



Series	Assembly part no.
SY3000	SX3000-75-1A(-Q)
SY5000	SX5000-76-5A(-Q)

⚠ Caution

Mounting screw tightening torques

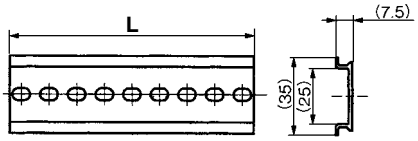
M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

▪Dimensions/DIN rail

VZ1000 – 11 – 1 – □

● **Refer to L dimensions**

∗ Fill in □ with an appropriate no. listed on the table of DIN rail dimensions shown below.



No.	0	1	2	3	4	5	6	7	8	9	10
L Dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223
No.	11	12	13	14	15	16	17	18	19	20	21
L Dimension	235.5	248	260.5	273	285.5	298	310.5	323	335.5	348	360.5
No.	22	23	24	25	26	27	28	29	30	31	32
L Dimension	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498
No.	33	34	35	36	37	38	39	40	41	42	43
L Dimension	510.5	523	535.5	548	560.5	573	585.5	598	610.5	623	635.5
No.	44	45	46	47	48	49	50	51	52	53	54
L Dimension	648	660.5	673	685.5	698	710.5	723	735.5	748	760.5	773
No.	55	56	57	58	59	60	61	62	63	64	65
L Dimension	785.5	798	810.5	823	835.5	848	860.5	873	885.5	898	910.5

No.	66	67	68	69	70	71
L Dimension	923	935.5	948	960.5	973	985.5

∗ Refer to L1 dimension on pages starting with pages 250 to 253 for lengths that correspond to the number of manifold stations.

▪SUP blocking disk

By installing a SUP blocking disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold.

Series	Part no.
SY3000	SX3000-77-1A
SY5000	SX5000-77-1A

▪EXH blocking disk

By installing an EXH blocking disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to divide both exhausts.)

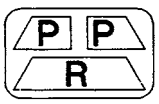
Series	Part no.
SY3000	SX3000-77-1A
SY5000	SX5000-77-1A

▪Label for block disk

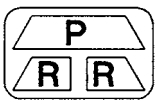
The labels shown below are used on manifold stations containing SUP/EXH blocking disk(s) to show their location. (3 pcs. each)

VZ3000-123-1A

Label for SUP block disk



Label for EXH block disk

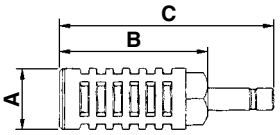


Label for SUP/EXH block disk

Note) When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.

▪Silencer with One-touch fitting

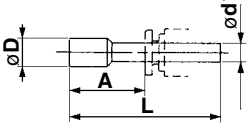
The silencer plugs directly into the One-touch fittings of the manifold.



Series	Model	Effective area	A	B	C
For SY3000 (ø8)	AN203-KM8	14 mm²	ø16	26	51
For SY5000 (ø10)	AN200-KM10	26 mm²	ø22	53.8	80.8
	AN300-KM10	30 mm²	ø25	70	97

▪Plug (white)

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.



Dimensions

Applicable fittings size ød	Model	A	L	D
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
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

Manifold Option

▪ How to Order Interface Regulator (SY3000, 5000 only)

Series SY3000

ARBY3000 − 05 − P − 2

Regulating port

P	P port
A1	A port (P controlled type, A port regulation)
B1	B port (P controlled type, B port regulation)

Pressure gauge connection port

05	Pressure gauge (G15-10-01) [for odd number station]
06	Pressure gauge (G15-10-01) [for even number station]
M1	Plug (M-5P)

∗ In the case of Series ARBY3000 with a pressure gauge when mounting on the manifold, use caution that the part numbers are different between the odd no. stations and the even no.

Series SY5000

ARBY5000 − 00 − P − 2

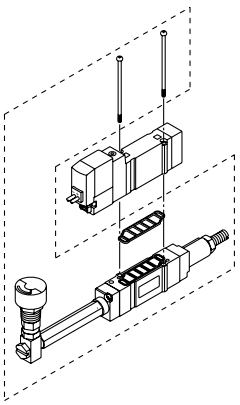
Regulating port

P	P port
A1	A port (P controlled type, A port regulation)
B1	B port (P controlled type, B port regulation)

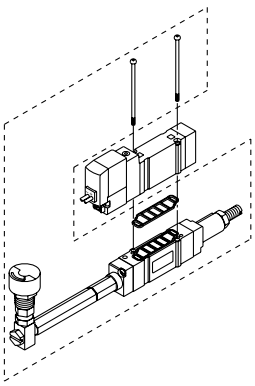
Pressure gauge connection port

00	Pressure gauge (G15-10-01)
M1	Plug (M-5P)

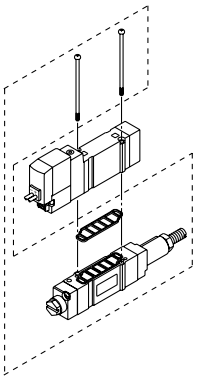
ARBY3000-05-□-2
(For mounting odd number stations)



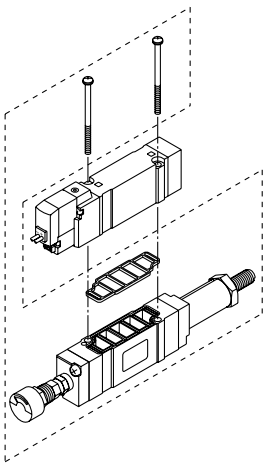
ARBY3000-06-□-2
(For mounting even number stations)



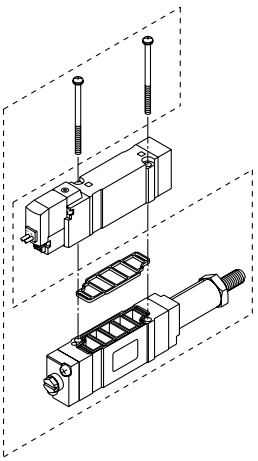
ARBY3000-M1-□-2



ARBY5000-00-□-2



ARBY5000-M1-□-2



Note) ARBY is not CE-compliant.

Accessory

Series	Round head combination screw	Gasket
ARBY3000	SY3000-23-10 (M2 x 36)	SX3000-57-4
ARBY5000	M3 x 48.5, Matt nickel plated	SX5000-57-6

⚠ Caution

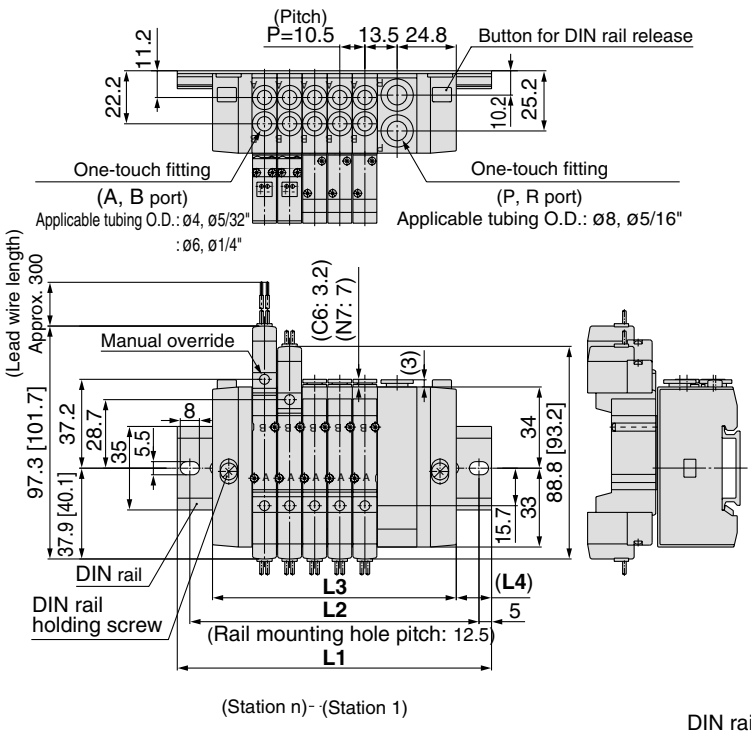
Mounting screw tightening torques

M2: 0.17 N·m
M3: 0.8 N·m

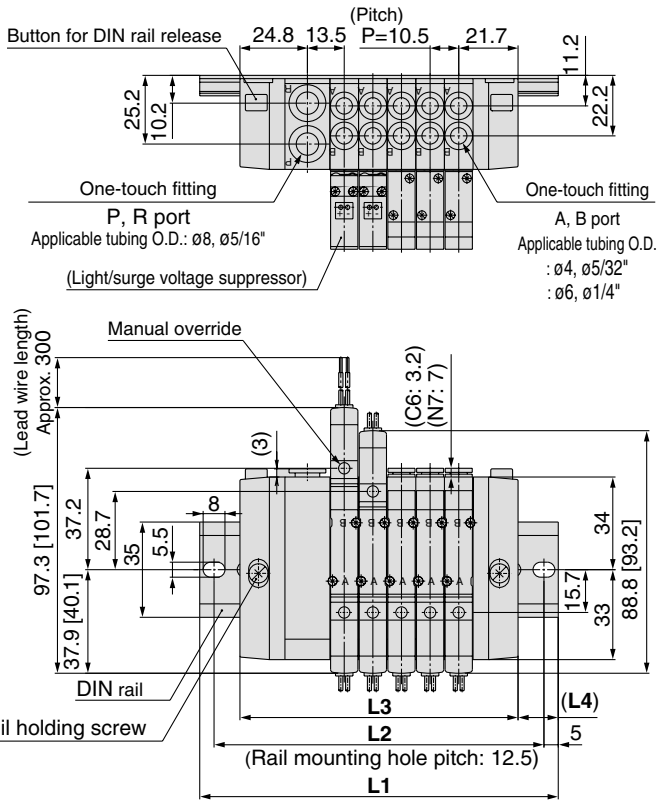
Dimensions: Series SY3000

[ ]: AC

SS5Y3-45- Stations D- C4, N3 C6, N7

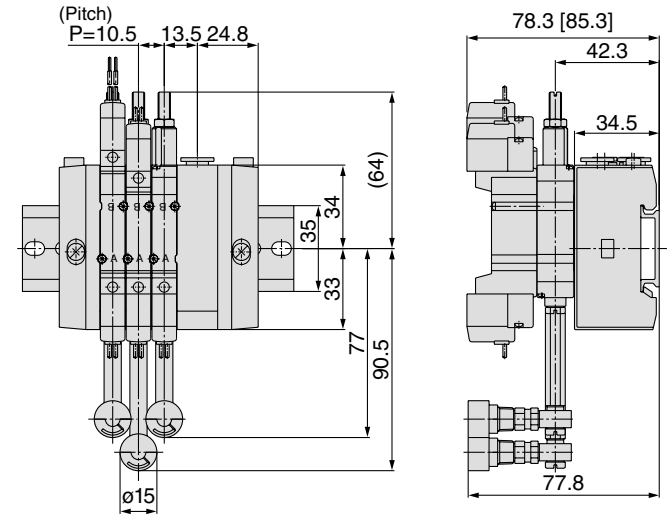


SS5Y3-45- Stations U- C4, N3 C6, N7



Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	98	110.5	123	135.5	148	148	160.5	173	185.5
L2	87.5	100	112.5	125	137.5	137.5	150	162.5	175
L3	70.5	81	91.5	102	112.5	123	133.5	144	154.5
L4	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5

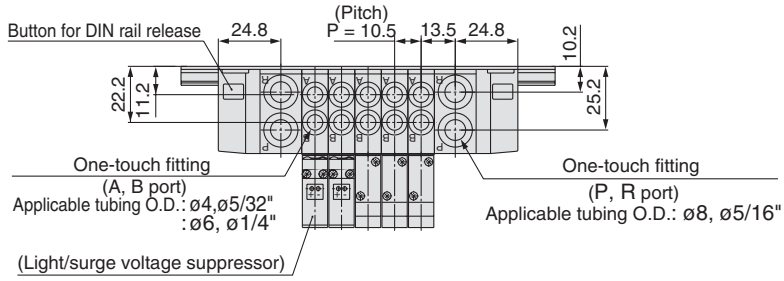
With interface regulator (with gauge)

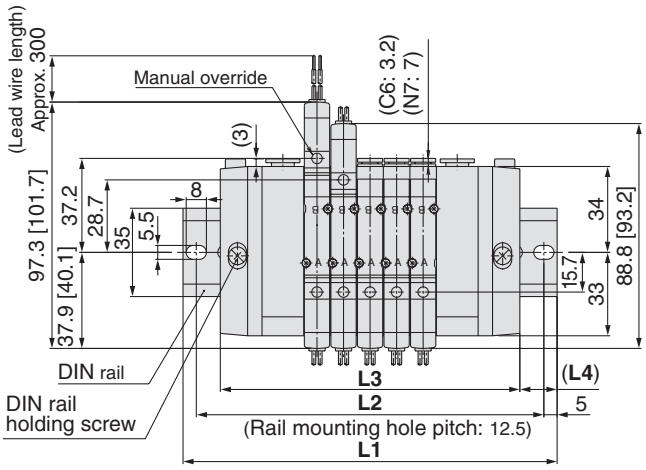


Dimensions: Series SY3000

[ ]: AC

SS5Y3-45- Stations B- C4, N3 C6, N7



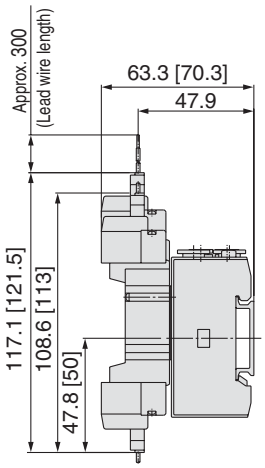


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	110.5	123	135.5	148	160.5	173	185.5	185.5	198
L2	100	112.5	125	137.5	150	162.5	175	175	187.5
L3	87	97.5	108	118.5	129	139.5	150	160.5	171
L4	11.5	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5

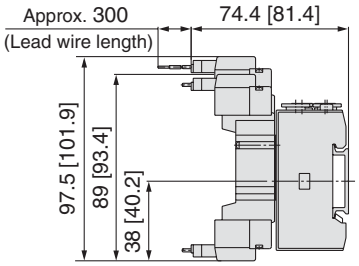
Stations n	11 stations	12	13	14	15	16	17	18	19	20 stations
L1	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5
L2	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300
L3	181.5	192	202.5	213	223.5	234	244.5	255	265.5	276
L4	14.5	15.5	16.5	17.5	12	13	14	15	16	17

Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	98	110.5	123	135.5	148	148	160.5	173	185.5
L2	87.5	100	112.5	125	137.5	137.5	150	162.5	175
L3	70.5	81	91.5	102	112.5	123	133.5	144	154.5
L4	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5

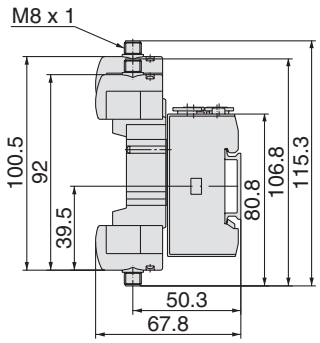
L plug connector



M plug connector



M8 connector (WO)

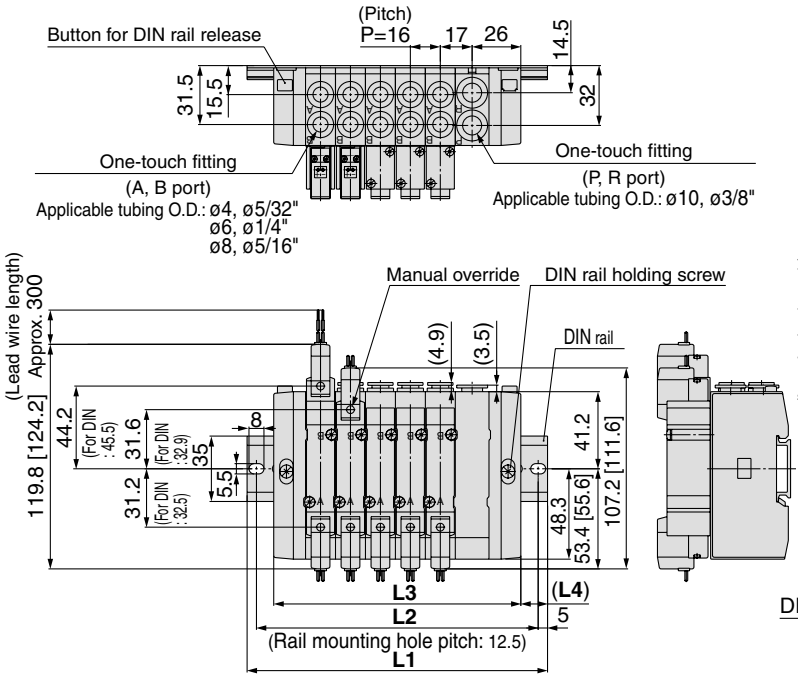


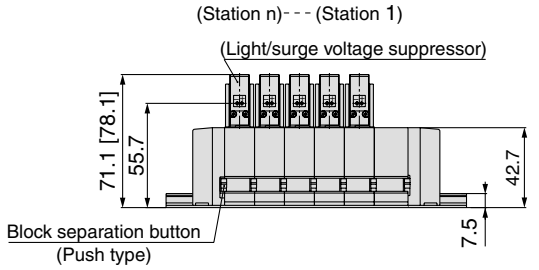
Note) Refer to page 340 for dimensions of connector types.

Dimensions: Series SY5000

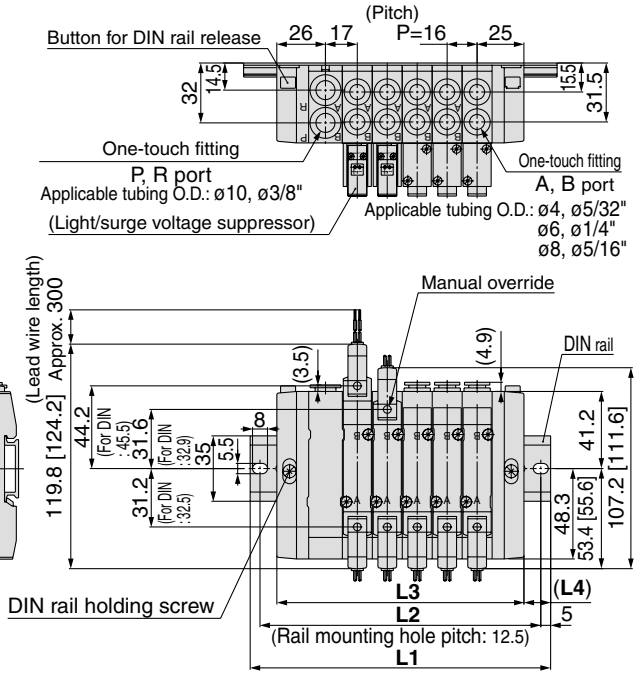
[ ]: AC

SS5Y5-45-Stations D-C4, N3 C6, N7 C8, N9



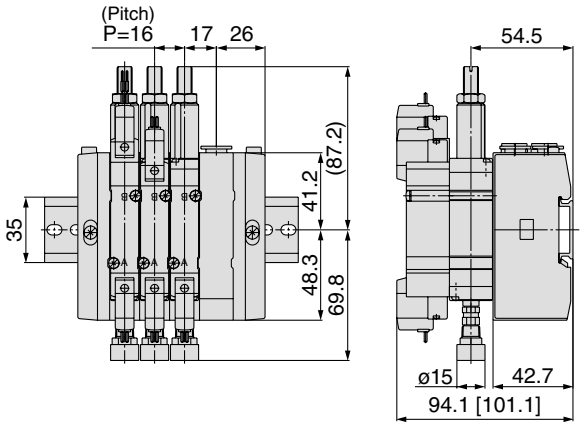


SS5Y5-45-Stations U-C4, N3 C6, N7 C8, N9



Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	110.5	135.5	148	160.5	173	198	210.5	223	235.5
L2	100	125	137.5	150	162.5	187.5	200	212.5	225
L3	84	100	116	132	148	164	180	196	212
L4	13	17.5	16	14	12.5	17	15	13.5	11.5

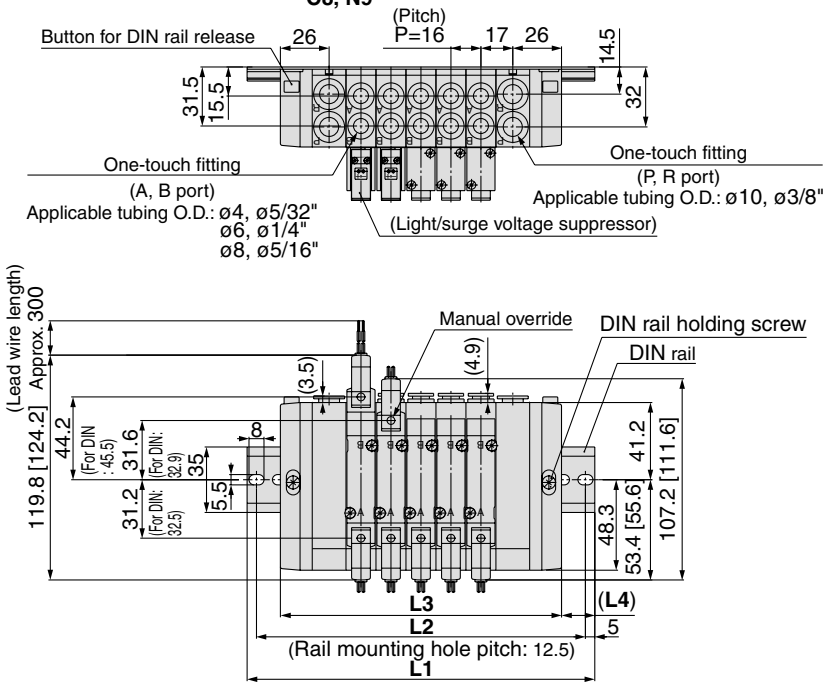
With interface regulator (with gauge)



Dimensions: Series SY5000

[ ]: AC

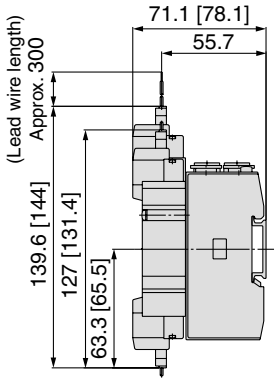
SS5Y3-45- Stations **B-** C4, N3 / C6, N7 / C8, N9



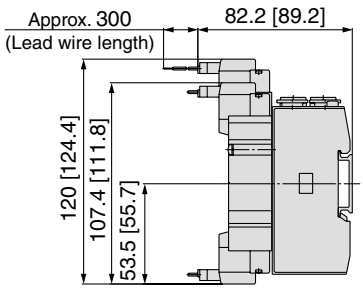
Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	135.5	148	160.5	185.5	198	210.5	223	248	260.5
L2	125	137.5	150	175	187.5	200	212.5	237.5	250
L3	102	118	134	150	166	182	198	214	230
L4	16.5	15	13	17.5	16	14	12.5	17	15

Stations n	11 stations	12	13	14	15	16	17	18	19	20 stations
L1	273	285.5	310.5	323	335.5	360.5	373	385.5	398	423
L2	262.5	275	300	312.5	325	350	362.5	375	387.5	412.5
L3	246	262	278	294	310	326	342	358	374	390
L4	13.5	11.5	16	14.5	12.5	17	15.5	13.5	12	16.5

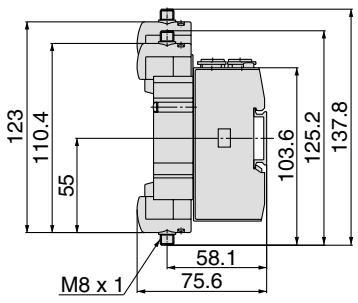
L plug connector



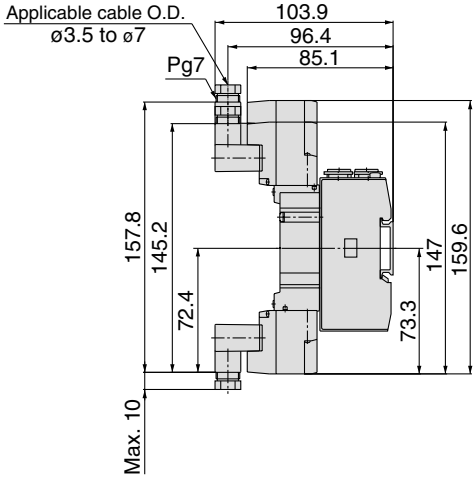
M plug connector



M8 connector (WO)



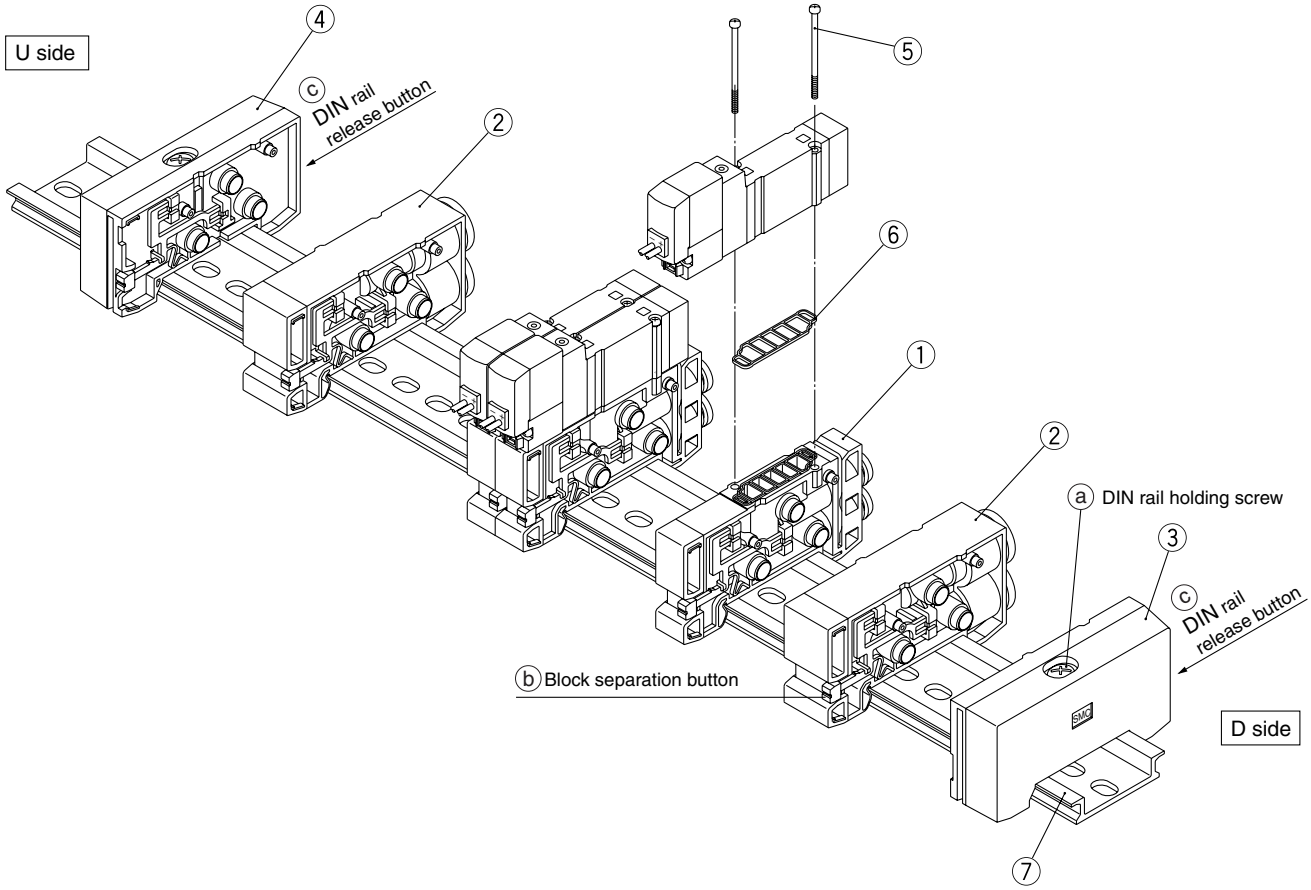
DIN terminal (D, Y)



Note) Refer to page 340 for dimensions of connector types.

DIN Rail Manifold Exploded View

Type 45



Replacement Parts

No.	Description	Part no.		Note
		SY3000	**SY5000**	
1	**Manifold block assembly**	SX3000-50-1A-□□(-Q)	SX5000-50-1A-□□(-Q)	□□: SY3000 (Metric size) C4: With one-touch fitting for ø4 (Inch size) N3: With one-touch fitting for ø5/32" C6: With one-touch fitting for ø6 N7: With one-touch fitting for ø1/4" SY5000 (Metric size) C4: With one-touch fitting for ø4 (Inch size) N3: With one-touch fitting for ø5/32" C6: With one-touch fitting for ø6 N7: With one-touch fitting for ø1/4" C8: With one-touch fitting for ø8 N9: With one-touch fitting for ø5/16" (Gasket 6 is supplied as an accessory.)
2	**SUP/EXH block assembly**	(Metric size) SX3000-51-1A (Inch size) SX3000-51-15A	(Metric size) SX3000-51-1A (Inch size) SX5000-51-15A	P, R port SY3000 (Metric size) With one-touch fitting for ø8 (Inch size) With one-touch fitting for ø5/16" P, R port SY5000 (Metric size) With one-touch fitting for ø10 (Inch size) With one-touch fitting for ø3/8"
3	**End block assembly R**	SX3000-52-1A(-Q)	SX5000-52-1A(-Q)	For D side
4	**End block assembly L**	SX3000-53-1A(-Q)	SX5000-53-1A(-Q)	For U side
5	**Round head combination screw**	SY3000-23-4	M3 x 26 (Matt nickel plated)	
6	**Gasket**	SX3000-57-4	SX5000-57-6	
7	**DIN rail**	VZ1000-11-1-□		Refer to page 247.

DIN Rail Manifold Exploded View

How to Increase Manifold Bases

Station expansion is possible at any position.

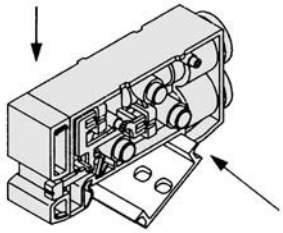
1. Loosen DIN rail holding screw ⓐ fixing the manifold base until it begins to turn idly. (While pressing DIN rail releasing buttons ⓒ, at two locations, separate the manifold base from the DIN rail.)
2. Press manifold block assembly dividing button ⓑ, that are at the location where manifold bases are to be added, until button ⓑ locks, and then separate the block assemblies.
3. Mount additional manifold block assembly on the DIN rail as shown in the figure 1.
4. Press the block assemblies until a click sound is produced, and tighten the DIN rail holding screw ⓐ to fix them to the DIN rail.
   ⚠**Caution** (Tightening torque: 1.4 N·m)
   (While lightly holding the blocks after fixing an end block on one side, tighten the other end block for for better sealing.)

⚠Caution

Note 1) When there are 10 or fewer manifold block assemblies, and more are added to make a total of 11 or more, a supply/exhaust block assembly must also be added.

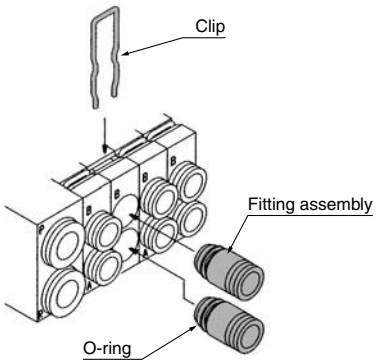
Note 2) When disassembly and assembly are performed, air leakage may result if connections between blocks and tightening of the end block's holding screw, is inadequate. Before supplying air, confirm that there are no gaps, etc. between blocks, and that manifold blocks are securely fastened to the DIN rail. Then supply air and confirm that there is no air leakage before operating.

Fig. (1) Block mounting procedure



Hook the DIN rail here and press down in the direction of the arrow until a click sound is heard.

How to Change Fitting Assembly



Type 45 manifold permits change in the A and B port sizes by changing the manifold block fitting assembly.
After removing the valve, remove the clip with a screwdriver, etc. For mounting a new fitting assembly, insert it and then insert a clip until it will not come out of the manifold block.

Fitting Assembly Part No.

Metric size

SY3000	One-touch fitting for ø4	VVQ1000-50A-C4
	One-touch fitting for ø6	VVQ1000-50A-C6
SY5000	One-touch fitting for ø4	VVQ1000-51A-C4
	One-touch fitting for ø6	VVQ1000-51A-C6
	One-touch fitting for ø8	VVQ1000-51A-C8

Inch size

SY3000	One-touch fitting for ø5/32"	VVQ1000-50A-N3
	One-touch fitting for ø1/4"	VVQ1000-50A-N7
SY5000	One-touch fitting for ø5/32"	VVQ1000-51A-N3
	One-touch fitting for ø1/4"	VVQ1000-51A-N7
	One-touch fitting for ø5/16"	VVQ1000-51A-N9

Note 1) P and R ports cannot be changed.
Note 2) Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.

5 Port Solenoid Valve
Base Mounted Manifold
Stacking Type/DIN Rail Mounted/Connector Box

Type 45-A/NA

Series SY3000/5000

How to Order Manifold

SS5Y 3 -45- A U -05 D -C6- □ -□

Series

3	SY3000
5	SY5000

Specifications

Symbol	Specifications
A	With connector box (+COM spec.)
NA	With connector box (–COM spec.)

The style of attached lead wire assembly is different.

Connector box mounting position

Symbol	Mounting position
U	U side
D	D side

Valve stations

Symbol	Stations	Note
02	2 stations	Applicable up to 16 solenoid valves.
⋮	⋮	
16	16 stations	

SUP/EXH block assembly mounting position

Symbol	Mounting position	Applicable stations
U	U side	2 to 10 stations
D	D side	
B	Both sides	2 to 16 stations
M*	Special specifications	

* For special specifications, indicate separately by the manifold specification sheet.

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (Max. 20 stations)

A/B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
M	Mixed	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
M	Mixed	

* In the case of mixed specifications, indicate separately on the manifold specification sheet.

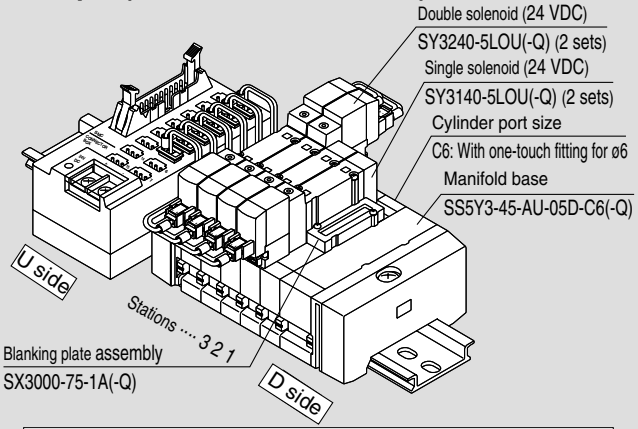
CE-compliant

Nil	—
Q	CE-compliant

Refer to pages 324 to 328 for external pilot specifications and built-in silencer.

How to Order Manifold Assembly (Example)

Example (SY3000, +COM, U side)



SS5Y3-45-AU-05D-C6 ····· **1 set (Type 45, 5-station manifold base part no.)**
* **SX3000-75-1A** ····· **1 set (Blanking plate assembly part no.)**
* **SY3140-5LOU** ····· **2 sets (Single solenoid part no.)**
* **SY3240-5LOU** ····· **2 sets (Double solenoid part no.)**

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

The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of connector box. In ordering, specify the part nos. in the order from the 1st. station on D side. Besides, when the arrangement will be complicated, fill out the manifold specification sheet to instruct us.
SS5Y$^{3}_{5}$-45-A$^{U}_{D}$-□ □-C□ is assembled with solenoid valve and lead wire assembly when shipping. When ordering manifold only (without valves/wires/options), refer to how to order on page 244 and list the connector box (VZ3000-106-1A) and the rail stopper (TXE1-SMC) below the manifold to allow for the connector box mounting at U side. (Be sure to order DIN rail 3 station longer than number of the manifold stations.) In this case, please note that dimensions, L1 and L2 on pages 260 and 261 may vary slightly.) For other components, refer to page 262.

How to Order Valve

SY 5 2 40-5 LOU □ -□ -□

Series

3	SY3000
5	SY5000

Rated voltage

5	24 VDC

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

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

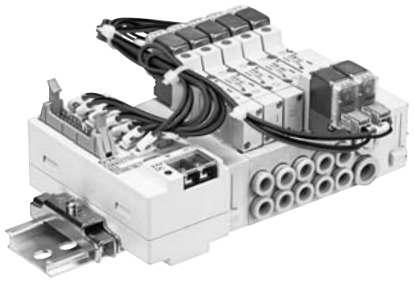
Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 332.)

CE-compliant

Nil	—
Q	CE-compliant

When ordering valve as a single unit, gaskets for the stacking base type are not included. Order them separately, if necessary. (Refer to page 262 for details.)



Manifold Specifications

Model		SS5Y3-45-A/NA-(Q)	SS5Y5-45-A/NA-(Q)
Applicable valve		SY3□40	SY5□40
Manifold type		Stacking type/DIN rail mounted	
P (SUP)/R (EXH)		Common SUP, Common EXH	
Valve stations		2 to 16 stations Note 1, 2)	
A, B port Porting specifications	Location	Base	
	Direction	Side	
Port size	P, R port	C8 (One-touch fitting for ø8)	C10 (One-touch fitting for ø10)
	A, B port	C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)
Manifold base mass W (g) n: Stations		2 to 10 stations: W = 26n + 207 11 to 20 stations: W = 26n + 229	2 to 10 stations: W = 52n + 245 11 to 16 stations: W = 52n + 279
Applicable flat ribbon cable connector		Flat ribbon cable connector Socket: 20 pins MIL type with strain relief conforming to MIL-C-83503	
Wiring specifications		+COM specifications (Type 45-A), –COM specifications (Type 45-NA)	

Note 1) For more than 11 stations, supply pressure to P port on both sides and exhaust from R port on both sides.
Note 2) There is a limit depending on the number of solenoids. Refer to "How to Order".

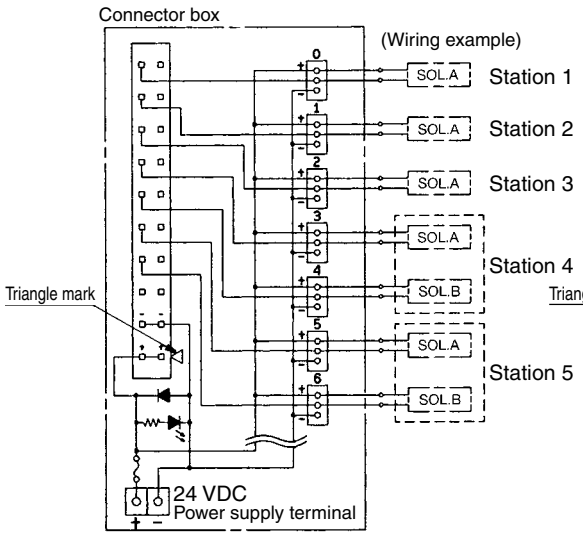
Flow Characteristics

Model	Port size		Flow characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv
SS5Y3-45-□	C8	C6	0.88	0.21	0.22	0.95	0.18	0.22
SS5Y5-45-□	C10	C8	2.2	0.24	0.53	2.5	0.18	0.58

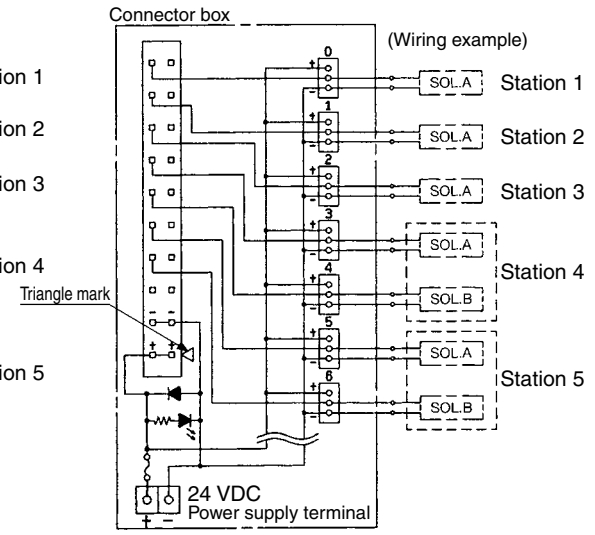
Note) The value is for manifold base with 5 stations and individually operated 2 position type.

Manifold Wiring Diagram (Circuit diagram for the reference layout)

+COM electric circuit diagram

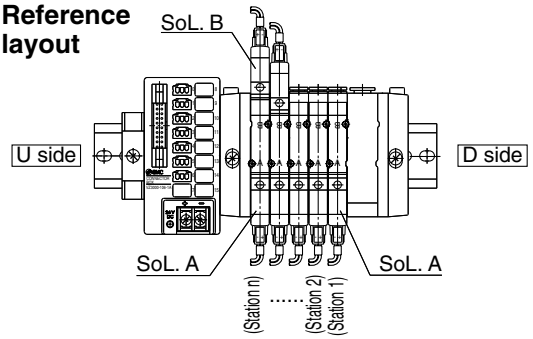


–COM electric circuit diagram



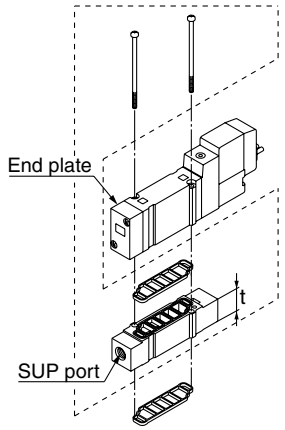
- Connector box for +COM allows transmission until G71-OD16, manufactured by OMRON Corp., to be connected directly for serial transmission. Additionally, it can also be used for the PC wiring system.
- When an external power source must be supplied to the manifold, correct polarity must be observed, otherwise damage to PLC is possible.
- The wiring of solenoid valves, corresponds with the labeled connector box 0 to 15 from D side.
- If valves other than non-polar type are used, this may cause malfunction.

Reference layout



Manifold Option

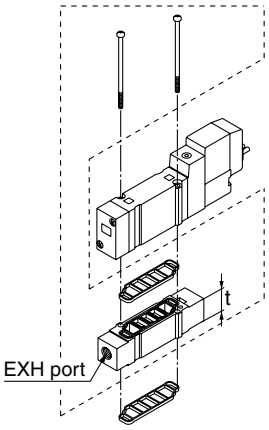
▪ Individual SUP spacer assembly



Series	Assembly part no.	Port size	t
SY3000	SY3000-38-2A(-Q)	M5 x 0.8	11
SY5000	SY5000-38-16∗A(-Q)	1/8	15

Note) The SUP port may be either on the lead wire side or on the end plate side. (An assembly is shipped under the condition shown in the figure.)

▪ Individual EXH spacer assembly



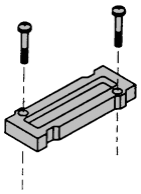
Series	Assembly part no.	Port size	t
SY3000	SY3000-39-2A(-Q)	M5 x 0.8	11
SY5000	SY5000-39-16∗A(-Q)	1/8	15

Note) The EXH port may be either on the lead wire side or on the end plate side. (An assembly is shipped under the condition shown in the figure.)

∗ **Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

▪ Blanking plate assembly



Series	Assembly part no.
SY3000	SX3000-75-1A(-Q)
SY5000	SX5000-76-5A(-Q)

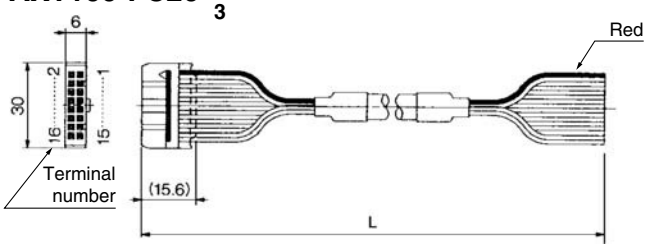
⚠ Caution

Mounting screw tightening torques

M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

▪ Cable assembly

AXT100-FC20- 1 / 3



Connector Assembly for Flat Ribbon Cables

Cable length (**L**)	Assembly part no.	Note
1.5 m	AXT100-FC20-1	Cable 20 core x 22 AWG
3 m	AXT100-FC20-2	
5 m	AXT100-FC20-3	

∗ For other commercial connectors, use a 20 pins with strain relief conforming to MIL-C-83503.

Connector manufacturers' example

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

▪ SUP blocking disk

By installing a SUP blocking disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold.

Series	Part no.
SY3000	SX3000-77-1A
SY5000	SX5000-77-1A

▪ EXH blocking disk

By installing an EXH blocking disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to divide both exhausts.)

Series	Part no.
SY3000	SX3000-77-1A
SY5000	SX5000-77-1A

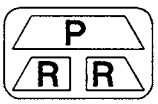
▪ Label for block disk

The labels shown below are used on manifold stations containing SUP/EXH blocking disk(s) to show their location. (3 pcs. each)

VZ3000-123-1A

Label for SUP block disk

Label for EXH block disk

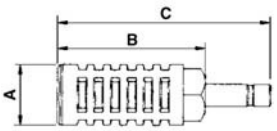


Label for SUP/EXH block disk

Note) When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.

▪ Silencer with One-touch fitting

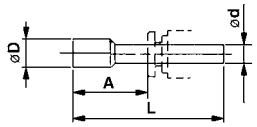
The silencer plugs directly into the One-touch fittings of the manifold.



Series	Model	Effective area	A	B	C
For SY3000 (ø8)	AN203-KM8	14 mm²	ø16	26	51
For SY5000 (ø10)	AN200-KM10	26 mm²	ø22	53.8	80.8
	AN300-KM10	30 mm²	ø25	70	97

▪ Plug (white)

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.



Dimensions

Applicable fittings size ø**d**	Model	A	L	D
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
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

⚠ Warning

When mounting a valve or spacer on the manifold base or sub-plate, etc., those mounting directions are determined. If mounted in the wrong direction, the equipment to be connected may cause malfunction. Refer to external dimensions, and then mount it.

Manifold Option

▪ How to Order Interface regulator (SY3000, 5000 only)

Series SY3000

ARBY3000 − 05 − P − 2

Regulating port

P	P port
A1	A port (P controlled type, A port regulation)
B1	B port (P controlled type, B port regulation)

Pressure gauge connection port

05	Pressure gauge (G15-10-01) [for odd number station]
06	Pressure gauge (G15-10-01) [for even number station]
M1	Plug (M-5P)

* In the case of Series ARBY3000 with a pressure gauge when mounting on the manifold, use caution that the part numbers are different between the odd no. stations and the even no. stations to avoid gauges from interfering from each others.

Series SY5000

ARBY5000 − 00 − P − 2

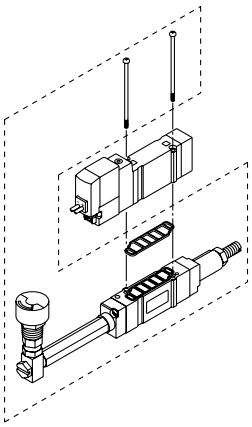
Regulating port

P	P port
A1	A port (P controlled type, A port regulation)
B1	B port (P controlled type, B port regulation)

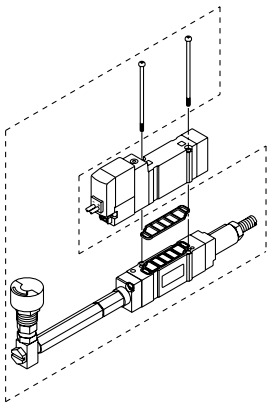
Pressure gauge connection port

00	Pressure gauge (G15-10-01)
M1	Plug (M-5P)

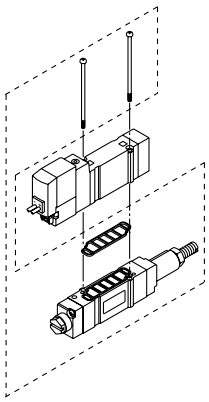
ARBY3000-05-□-2
(For odd number stations)



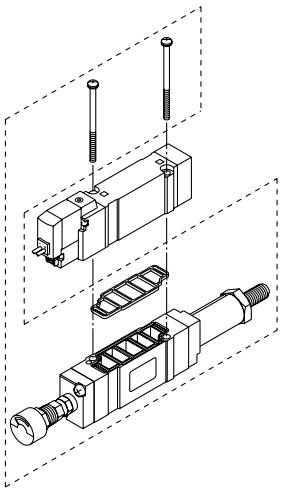
ARBY3000-06-□-2
(For even number stations)



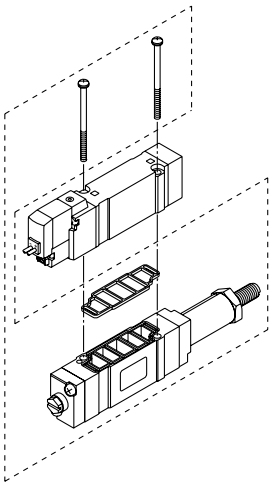
ARBY3000-M1-□-2



ARBY5000-00-□-2



ARBY5000-M1-□-2



Note) ARBY is not CE-compliant.

Accessory

Series	Round head combination screw	Gasket
ARBY3000	SY3000-23-10 (M2 x 36)	SX3000-57-4
ARBY5000	M3 x 48.5, Matt nickel plated	SX5000-57-6

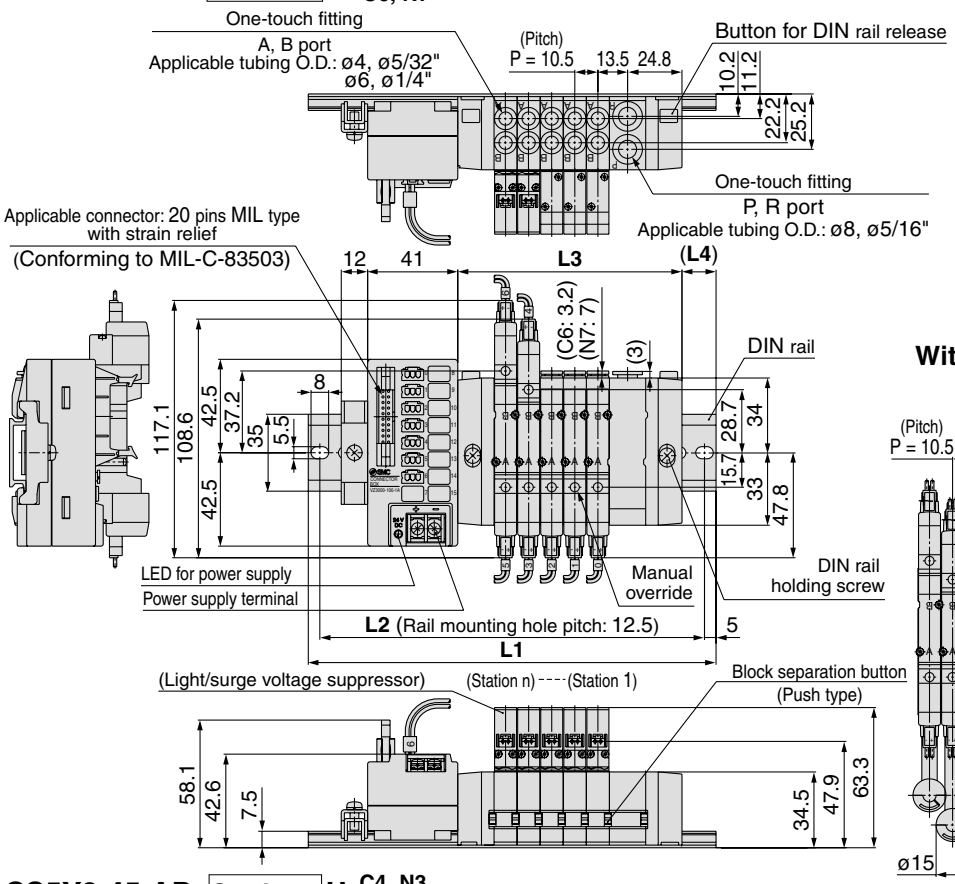
⚠ Caution

Mounting screw tightening torques

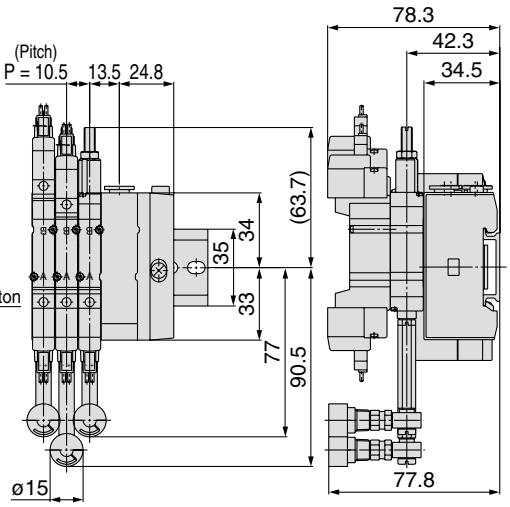
M2: 0.16 N·m
M3: 0.8 N·m

Dimensions: Series SY3000

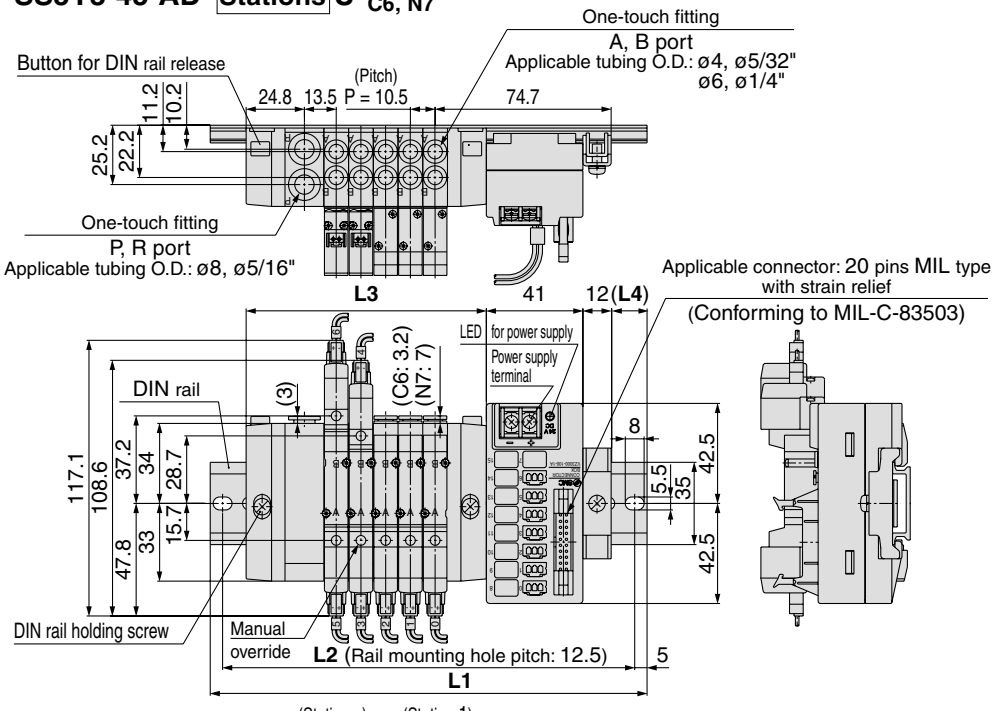
SS5Y3-45-AU-Stations D-C4, N3 C6, N7

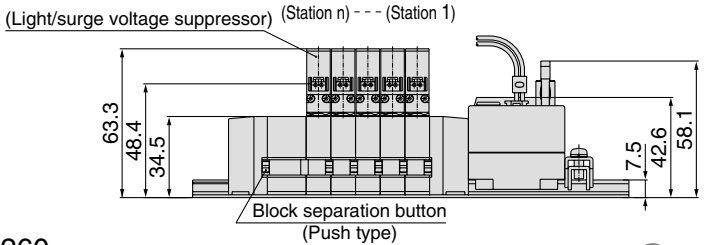


With interface regulator (with gauge)



SS5Y3-45-AD-Stations U-C4, N3 C6, N7



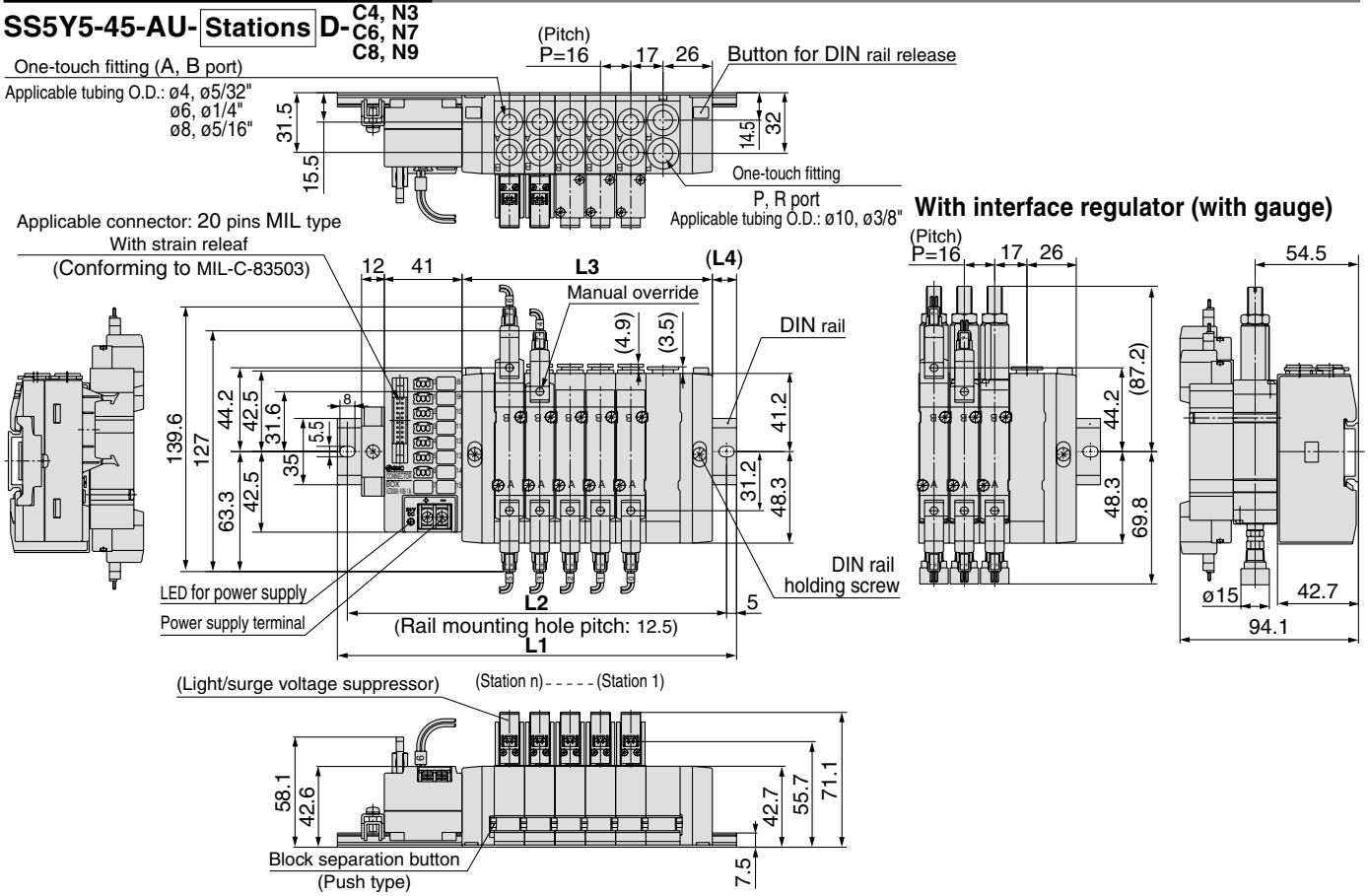


Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16 stations
L1	148	160.5	173	185.5	198	210.5	210.5	223	235.5	260.5	273	285.5	298	310.5	310.5
L2	137.5	150	162.5	175	187.5	200	200	212.5	225	250	262.5	275	287.5	300	300
L3	70.5	81	91.5	102	112.5	123	133.5	144	154.5	181.5	192	202.5	213	223.5	234
L4	12	13	14	15	16	17	12	13	14	13	14	15	16	17	11.5

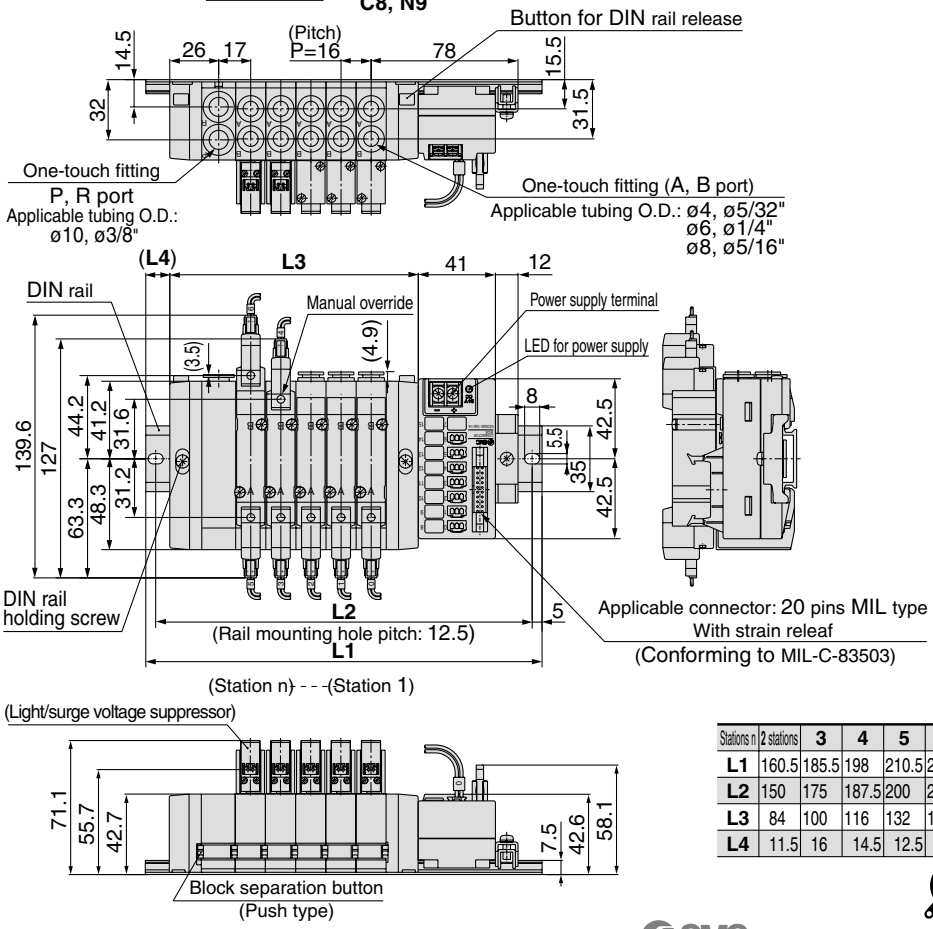
* Two SUP/EXH blocks are provided for models with 11 stations or more.

Dimensions: Series SY5000

SS5Y5-45-AU-Stations D-C4, N3 C6, N7 C8, N9



SS5Y5-45-AD-Stations U-C4, N3 C6, N7 C8, N9

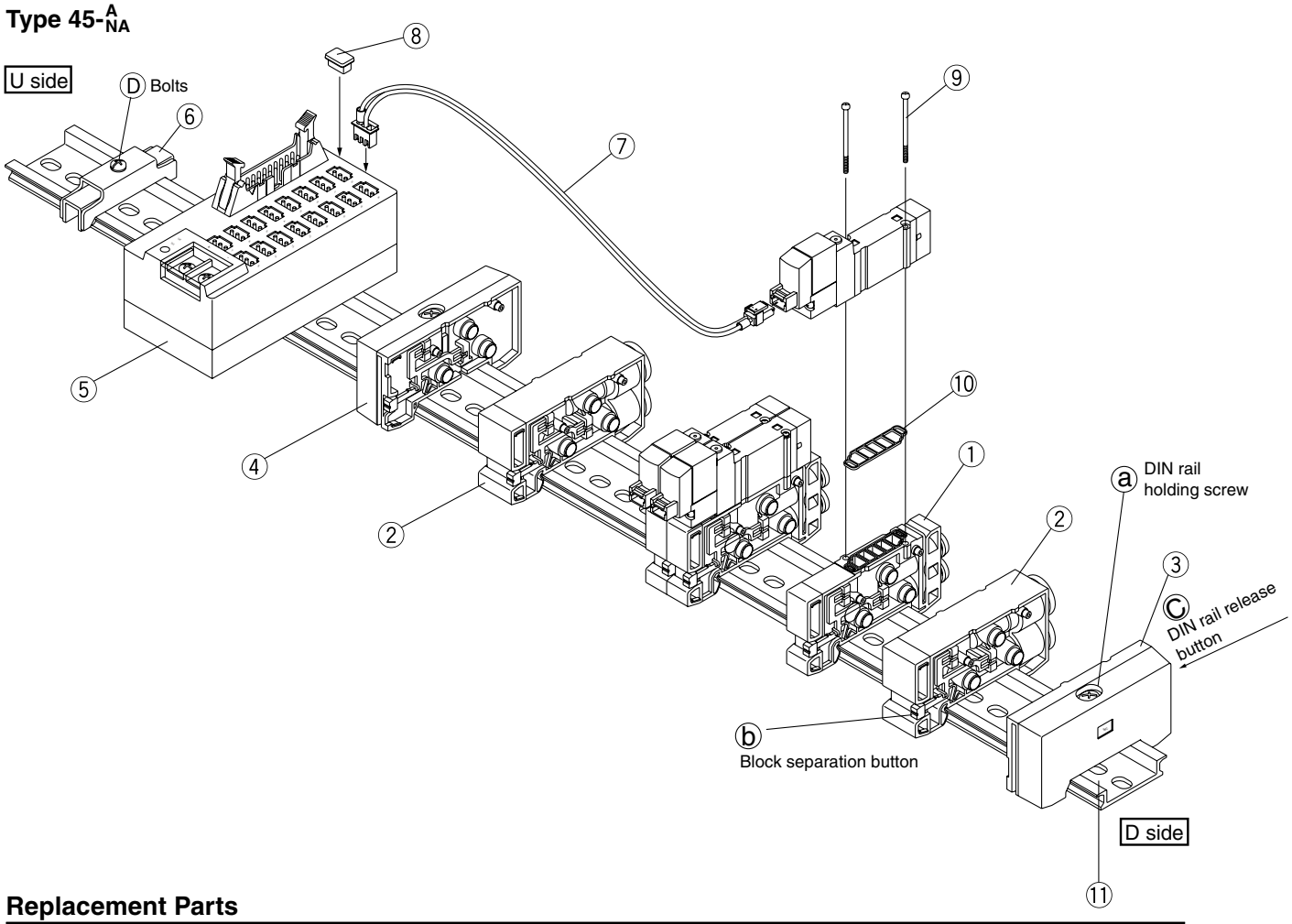


Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16 stations
L1	160.5	185.5	198	210.5	235.5	248	260.5	273	298	323	348	360.5	373	398	410.5
L2	150	175	187.5	200	225	237.5	250	262.5	287.5	312.5	337.5	350	362.5	387.5	400
L3	84	100	116	132	148	164	180	196	212	246	262	278	294	310	326
L4	11.5	16	14.5	12.5	17	15.5	13.5	12	16.5	12	16.5	14.5	13	17.5	15.5

* Two SUP/EXH blocks are provided for models with 11 stations or more.

DIN Rail Manifold Exploded View

Type 45-A/NA



Replacement Parts

No.	Description	Part no.		Note
		SY3000	**SY5000**	
1	**Manifold block assembly**	SX3000-50-1A-□□(-Q)	SX5000-50-1A-□□(-Q)	•SY3000 (Metric size) (Inch size) C4: With one-touch fitting for ø4 N3: With one-touch fitting for ø5/32" C6: With one-touch fitting for ø6 N7: With one-touch fitting for ø1/4" •SY5000 (Metric size) (Inch size) C4: With one-touch fitting for ø4 N3: With one-touch fitting for ø5/32" C6: With one-touch fitting for ø6 N7: With one-touch fitting for ø1/4" C8: With one-touch fitting for ø8 N9: With one-touch fitting for ø5/16" (Gasket 10 is supplied as an accessory.)
2	**SUP/EXH block assembly**	(Metric size) SX3000-51-1A (Inch size) SX3000-51-15A	(Metric size) SX3000-51-1A (Inch size) SX5000-51-15A	P, R port SY3000 (Metric size) With one-touch fitting for ø8 (Inch size) With one-touch fitting for ø5/16" P, R port SY5000 (Metric size) With one-touch fitting for ø10 (Inch size) With one-touch fitting for ø3/8"
3	**End block assembly R**	SX3000-52-1A(-Q)	SX5000-52-1A(-Q)	For D side
4	**End block assembly L**	SX3000-53-1A(-Q)	SX5000-53-1A(-Q)	For U side
5	**Connector box**	VZ3000-106-1A		For 24 VDC only
6	**Rail stopper**	TXE1-SMC		Made by Kasuga Electric Works
7	**Connecter assembly**	SY3000-43-1A-□	SY3000-43-2A-□	+COM Type D, 2 to 8 stations Type U, 9 to 16 stations
		SY3000-43-2A-□	SY3000-43-3A-□	+COM Type D, 9 to 16 stations Type U, 2 to 8 stations
		SY3000-43-1NA-□	SY3000-43-2NA-□	–COM Type D, 2 to 8 stations Type U, 9 to 16 stations
		SY3000-43-2NA-□	SY3000-43-3NA-□	–COM Type D, 9 to 16 stations Type U, 2 to 8 stations
8	**Dust cap**	VZ3000-63-2		
9	**Round head combination screw**	SY3000-23-4	M3 x 26, Matt nickel plated	
10	**Gasket**	SX3000-57-4	SX5000-57-6	
11	**DIN rail**	VZ1000-11-1-□		Refer to page 247.

How to Increase Manifold Bases

Station expansion is possible at any position.

1. Loosen DIN rail holding screw ⓐ fixing the manifold base until it begins to turn idly. (While pressing DIN rail releasing buttons ⓒ, at two locations, separate the manifold base from the DIN rail.)
2. Press manifold block assembly dividing button ⓑ, that are at the location where manifold bases are to be added, until button ⓑ locks, and then separate the block assemblies.
3. Mount additional manifold block assembly on the DIN rail as shown in the figure 1.
4. Press the block assemblies until a click sound is produced, and tighten the DIN rail holding screw ⓐ to fix them to the DIN rail.
   ⚠**Caution** (Tightening torque: 1.4 N·m)
   (While lightly holding the blocks after fixing an end block on one side, tighten the other end block for for better sealing.)
5. Untighten the rail stopper bolt Ⓓ to demount the connector box from the DIN rail, and when remounting it, tighten the bolt while pressing it against the rail.

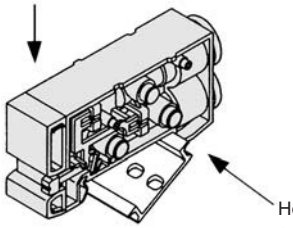
⚠Caution

Note 1) When there are 10 or fewer manifold block assemblies, and more are added to make a total of 11 or more, a supply/exhaust block assembly must also be added.

Note 2) When disassembly and assembly are performed, air leakage may result if connections between blocks and tightening of the end block's holding screw, is inadequate. Before supplying air, confirm that there are no gaps, etc. between blocks, and that manifold blocks are securely fastened to the DIN rail. Then supply air and confirm that there is no air leakage before operating.

Note 3) One connector assembly is necessary for one solenoid.
When a number is necessary for the connector assembly mark tube, suffix the number to the part no. (0 to 15 are provided as mark tube numbers.)
Ex) +COM spec.: D type for 2 to 8 stations: No. 10
SY3000-43-1A-10

Fig. (1) Block mounting procedure



How to Change Fitting Assembly

Type 45 manifold permits change in the A and B port sizes by changing the manifold block fitting assembly.
After removing the valve, remove the clip with a screwdriver, etc. For mounting a new fitting assembly, insert it and then insert a clip until it will not come out of the manifold block.

Fitting Assembly Part No.

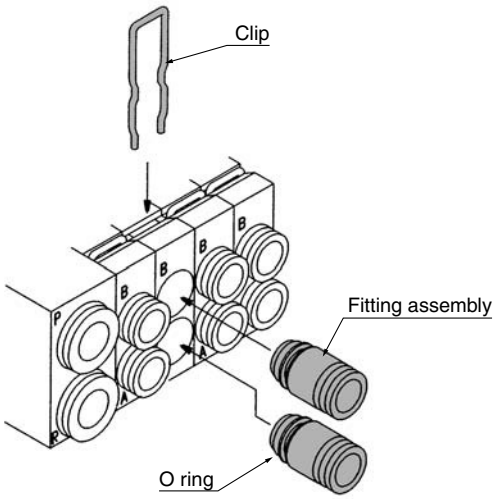
Metric size

SY3000	One-touch fitting for ø4	VVQ1000-50A-C4
	One-touch fitting for ø6	VVQ1000-50A-C6
SY5000	One-touch fitting for ø4	VVQ1000-51A-C4
	One-touch fitting for ø6	VVQ1000-51A-C6
	One-touch fitting for ø8	VVQ1000-51A-C8

Inch size

SY3000	One-touch fitting for ø5/32"	VVQ1000-50A-N3
	One-touch fitting for ø1/4"	VVQ1000-50A-N7
SY5000	One-touch fitting for ø5/32"	VVQ1000-51A-N3
	One-touch fitting for ø1/4"	VVQ1000-51A-N7
	One-touch fitting for ø5/16"	VVQ1000-51A-N9

Note 1) P and R ports cannot be changed.
Note 2) Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.



EX510 Gateway System
Serial Transmission System
Base Mounted Manifold/Stacking Type

Type 45S6A

Series SY3000/5000

How to Order Manifold

SS5Y 3 – 45S6A □ U – 02 U □ – C4 – □ – □

Manifold series

3	SY3000
5	SY5000

SI unit

Nil	NPN output (+COM.)
N	PNP output (–COM.)

SI unit mounting position

U	U side
D	D side

Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	
02	2 stations	Specified layout Note 2) (Compatible with 16 solenoid valves)
⋮	⋮	
16	16 stations	

• The number of the blanking plate assembly is also included.

Note 1) Double wiring: Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

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

A, B port size

One-touch fitting (Metric size)

C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

One-touch fitting (Inch size)

N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
M	Mixed	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
M	Mixed	

• For the mixed specification, indicate separately on a manifold specification sheet.

Pilot specifications

Nil	Internal pilot
S	Internal pilot/built-in silencer
R	External pilot
RS	External pilot/built-in silencer

SUP/EXH block assembly mounting position

U	U side	2 to 10 stations
D	D side	
B	Both sides	2 to 16 stations
M	Special specifications*	

*For the special specifications, indicate separately on a manifold specification sheet.

Option

When a DIN rail that is longer than the specified stations is desired, specify the required station number. (Max. 20 stations)

CE-compliant

Nil	—
Q	CE-compliant

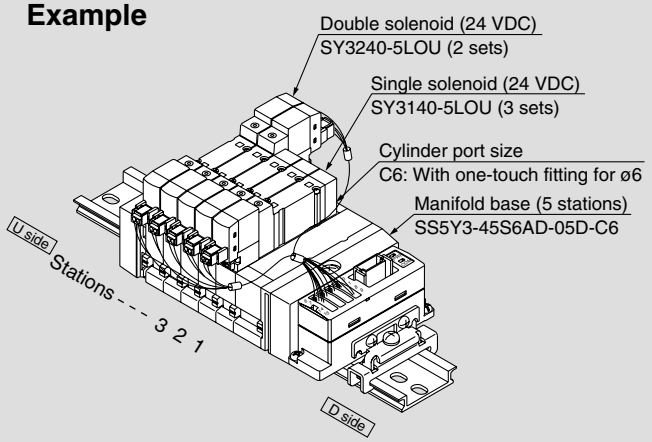
SI unit part no.

Symbol	SI unit specifications	SI unit part no.	Page
Nil	NPN output (+COM.)	EX510-S001	P.1715 to 1717
N	PNP output (–COM.)	EX510-S101	

For details of "Gateway System Serial Transmission System, Series EX510", refer to pages 1696 through to 1724.

How to Order Manifold Assembly (Order Example)

Example



SS5Y3-45S6AD-05D-C6 ·· 1 set (45S6A type 5-station manifold part no.)
*** SY3140-5LOU ····· 3 sets (Single solenoid part no.)**
*** SY3240-5LOU ····· 2 sets (Double solenoid part no.)**

→ The asterisk denotes the symbol for assembly. Prefix to the part no. of the solenoid valve, etc.

Add the valve and option part number under the manifold base part number.
When entry of part numbers becomes complicated, indicate by the manifold specification sheet. For a manifold for an EX510, the length of the lead wire for a connector assembly depends on the number of stations. Therefore, the manifold assembly is shipped with the valves (including blanking plates) and connector assembly mounted on it, as the standard specification. Be sure to specify the part nos. of the solenoid valves to be mounted.

How to Order Valves

SY 3 1 40 □ – 5 LO Z □ – □ – □

Series

3	SY3000
5	SY5000

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

Pilot specifications

Nil	Internal pilot
R	External pilot

Rated voltage: 24 VDC

Light/surge voltage suppressor

Z	With light/surge voltage suppressor
U	Without light/surge voltage suppressor (non-polar type)

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Made to Order

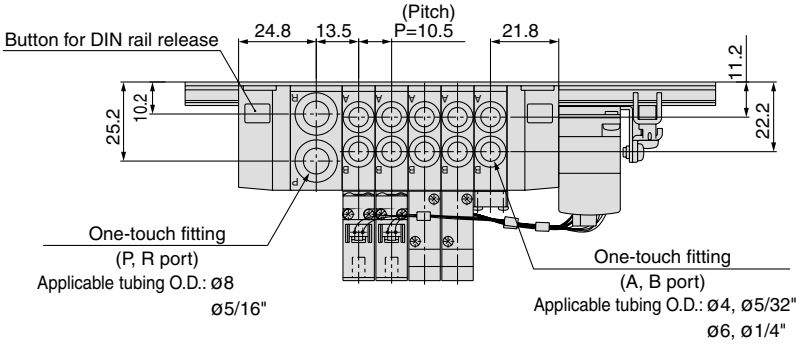
Nil	—
X90	Main valve fluoro rubber (Refer to page 332.)

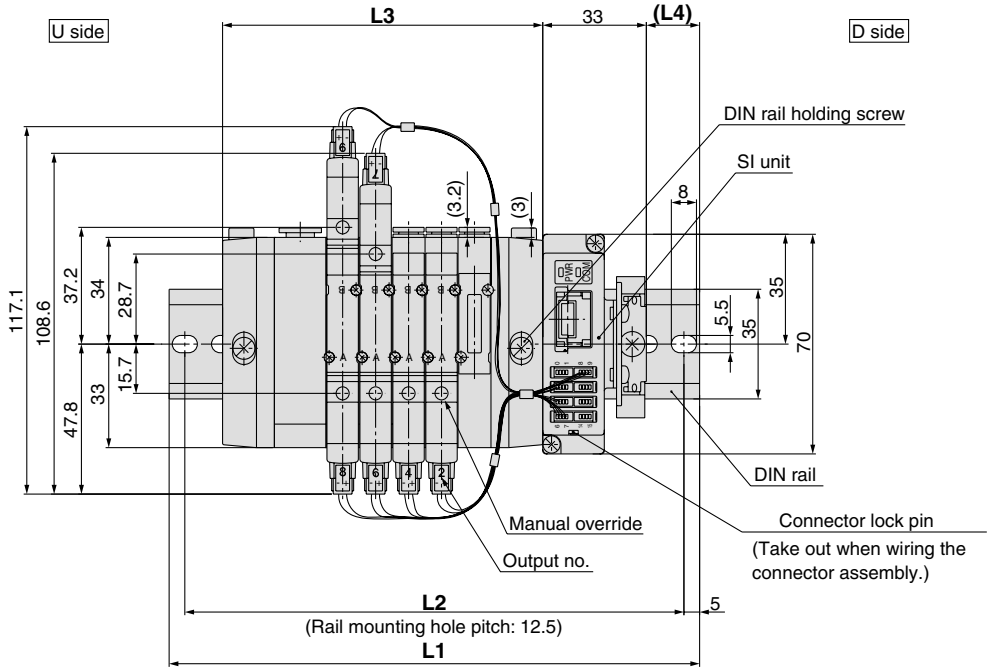
CE-compliant

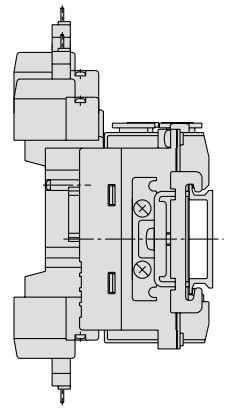
Nil	—
Q	CE-compliant

When ordering valve as a single unit, gaskets for the stacking base type are not included. Order them separately, if necessary. (Refer to page 262 for details.)

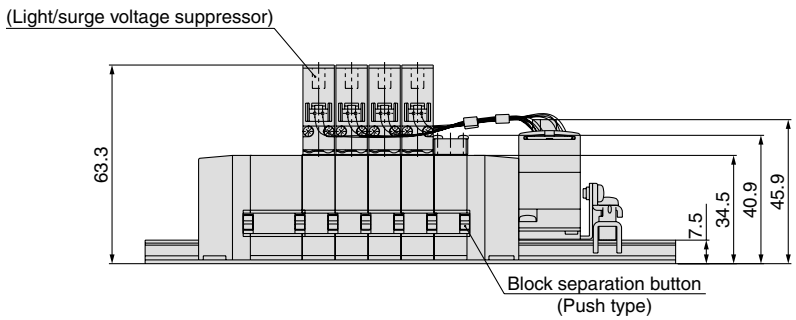
SY3000: SS5Y3-45S6A ☐ D- Stations U- C4, N3 / C6, N7





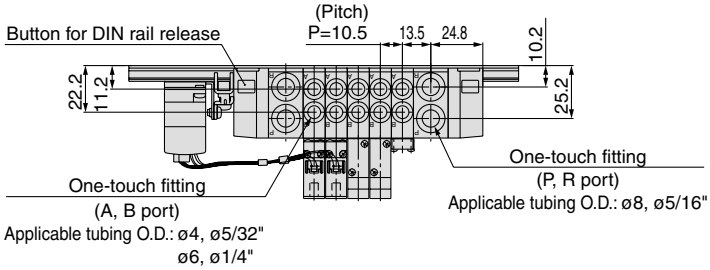


(Station n)- - - (Station 1)

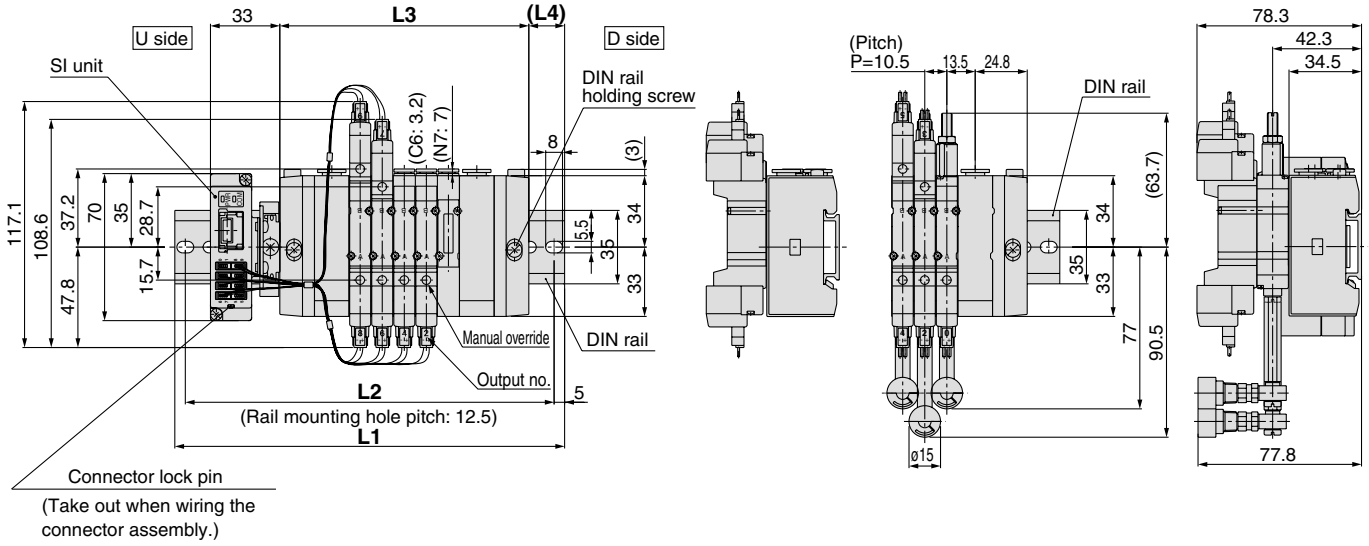


Stations n	**2** stations	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10** stations
L1	135.5	148	148	160.5	173	185.5	198	210.5	223
L2	125	137.5	137.5	150	162.5	175	187.5	200	212.5
L3	70.5	81	91.5	102	112.5	123	133.5	144	154.5
L4	16	17	12	13	14	15	16	17	18

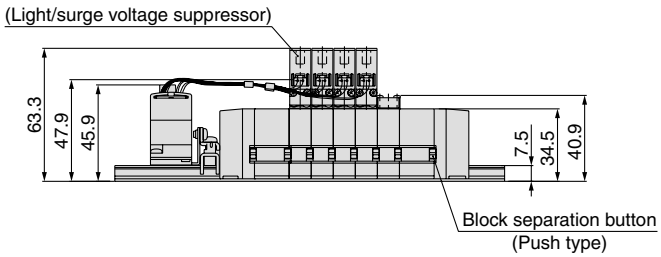
SY3000: SS5Y3-45S6A □ U- Stations B- C4, N3 / C6, N7



With interface regulator (with gauge)

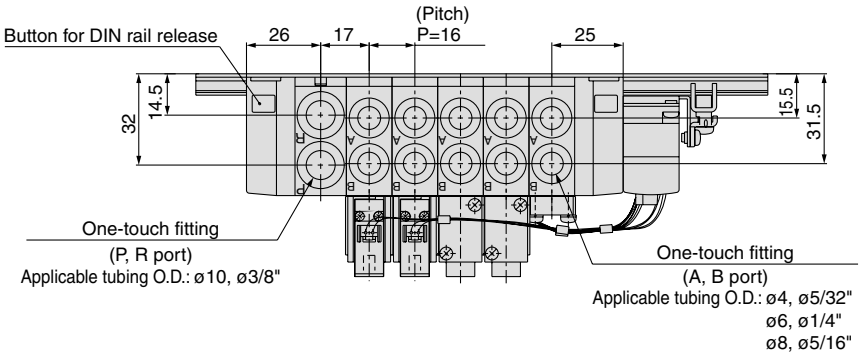


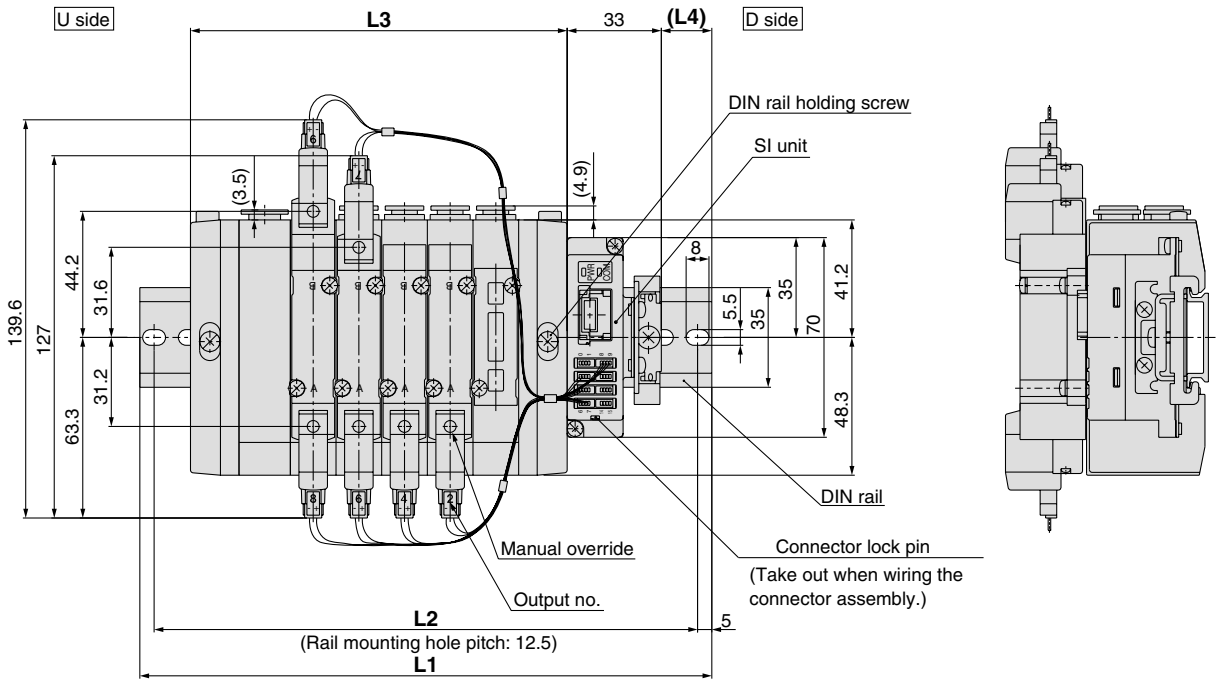
(Station n) - - - (Station 1)



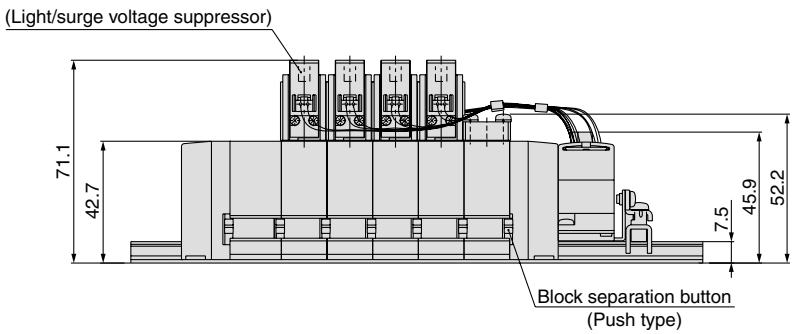
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16 stations
L1	148	160.5	173	185.5	185.5	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298
L2	137.5	150	162.5	175	175	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5
L3	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192	202.5	213	223.5	234
L4	14	15	16	17	12	13	14	15	16	17	18	12.5	13.5	14.5	15.5

SY5000: SS5Y5-45S6A ☐ D- Stations U- C4, N3 / C6, N7 / C8, N9



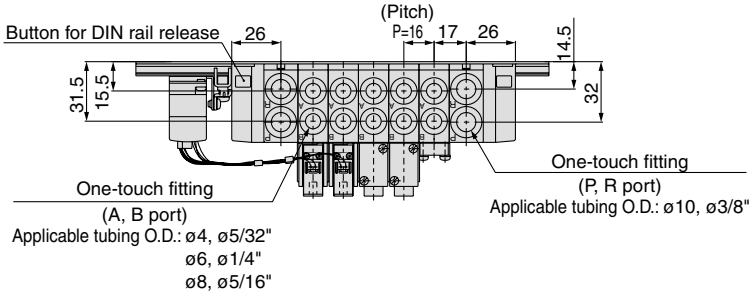


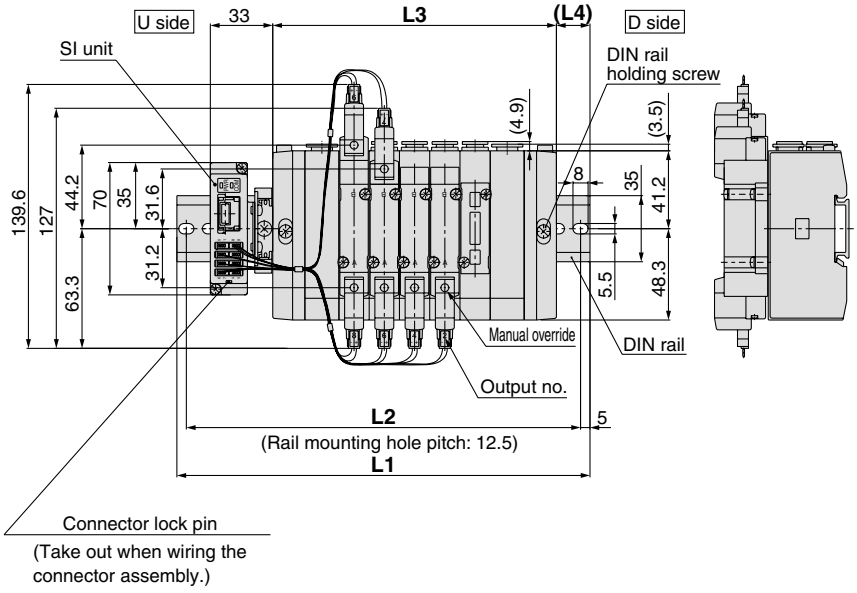
(Station n)- - - (Station 1)



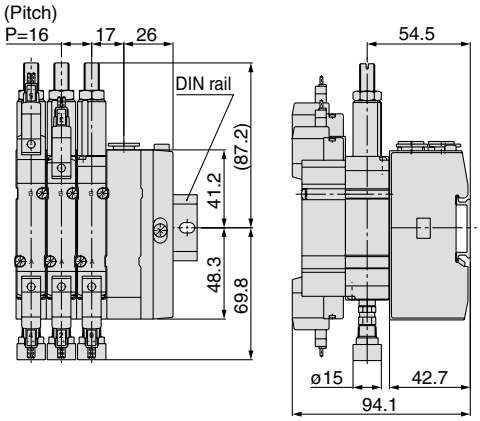
Stations n	**2** stations	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10** stations
L1	148	160.5	173	198	210.5	223	248	260.5	273
L2	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5
L3	84	100	116	132	148	164	180	196	212
L4	15.5	14	12	16.5	15	13	17.5	16	14

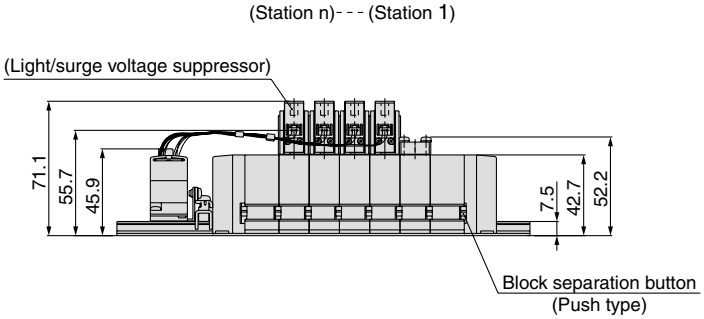
SY5000: SS5Y5-45S6A ☐ U- Stations B- C4, N3 / C6, N7 / C8, N9





With interface regulator (with gauge)

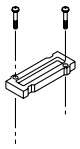




Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16 stations
L1	160.5	185.5	198	210.5	223	248	260.5	273	298	310.5	323	335.5	360.5	373	385.5
L2	150	175	187.5	200	212.5	237.5	250	262.5	287.5	300	312.5	325	350	362.5	375
L3	102	118	134	150	166	182	198	214	230	246	262	278	294	310	326
L4	13	17.5	15.5	14	12	16.5	15	13	17.5	16	14	12.5	17	15	13.5

Manifold Option

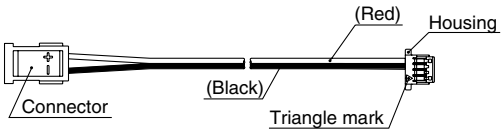
■ For type SS5Y$^{3}_{5}$-45S6A
Blanking plate assembly



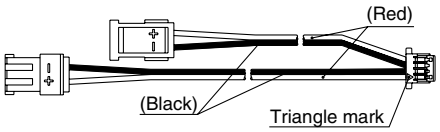
(The shape varies depending on the series.)

Model	Blanking plate assembly part no.
SS5Y3-45S6A	SX3000-75-1A(-Q)
SS5Y5-45S6A	SX5000-76-5A(-Q)

■ Connector assembly
For single solenoid (SY3000-37-81A-□-N)



For double solenoid (SY3000-37-81A-□-□)

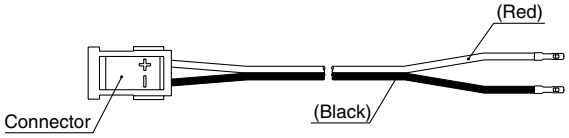


Connector assembly order no. (Can be used for the manifold without a specified layout (8 stations or less))
Integrated type

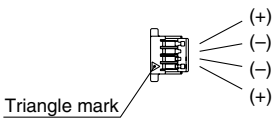
Model	Part no.	Connector mounting position
SS5Y3-45S6A	SY3000-37-81A-3-N	Starting from the SI unit side: From unit 1 to unit 4
	SY3000-37-81A-3-3	Starting from the SI unit side: From unit 5 to unit 8
	SY3000-37-81A-4-N	Starting from the SI unit side: From unit 9 to unit 12
	SY3000-37-81A-4-4	Starting from the SI unit side: From unit 13 to unit 16
SS5Y5-45S6A	SY3000-37-81A-4-N	Starting from the SI unit side: From unit 1 to unit 4
	SY3000-37-81A-4-4	Starting from the SI unit side: From unit 5 to unit 8
	SY3000-37-81A-6-N	Starting from the SI unit side: From unit 9 to unit 12
	SY3000-37-81A-6-6	Starting from the SI unit side: From unit 13 to unit 16
SS5Y9-$^{23}_{43}$SA	SY3000-37-81A-4-N	Single : For 1 to 4 stations
	SY3000-37-81A-4-9	Double/3 position : For 1 to 4 stations
	SY3000-37-81A-6-N	Single : For 5 to 8 stations
	SY3000-37-81A-6-11	Double/3 position : For 5 to 8 stations

Note) The above is for the station addition or maintenance. When ordering a connector assembly separately, a number would not be printed on the connector.

■ Connector assembly
SY3000-37-80A-□



■ Housing (8 pcs./set)
SY3000-44-3A



Connector assembly order no. (Can be used for the manifold with a specified layout)

Model	Part no.	Connector mounting position
SS5Y3-45S6A	SY3000-37-80A-3	Starting from the SI unit side: From unit 1 to unit 4
	SY3000-37-80A-4	Starting from the SI unit side: From unit 5 to unit 8
	SY3000-37-80A-6	Starting from the SI unit side: From unit 9 to unit 12
	SY3000-37-80A-7	Starting from the SI unit side: From unit 13 to unit 16
SS5Y5-45S6A	SY3000-37-80A-4	Starting from the SI unit side: From unit 1 to unit 4
	SY3000-37-80A-6	Starting from the SI unit side: From unit 5 to unit 8
	SY3000-37-80A-8	Starting from the SI unit side: From unit 9 to unit 12
	SY3000-37-80A-10	Starting from the SI unit side: From unit 13 to unit 16

Note 1) The above is for station addition or maintenance. When ordering a connector assembly separately, a number will not be printed on the connector.
Note 2) After inserting the connector assembly into the housing, be sure to confirm that the lead wire will not come off by lightly pulling the wire. Furthermore, do not reuse the lead wire after it has been inserted and removed.
Note 3) Wiring is set longer than the actual wiring distance.

5 Port Solenoid Valve
Base Mounted Manifold
Stacking Type/DIN Rail Mounted/Plug-in

Type 45□

Series SY3000/5000

How to Order Manifold

Type 45F (D-sub connector, 25 pins)

SS5Y 3 - 45 □ F D - 05 U - C4 - □ - □ - □

Series

3	SY3000
5	SY5000

Common specifications

Nil	Positive common
N	Negative common

Connector mounting position

Symbol	Mounting position
U	U side
D	D side

Voltage

Nil	24 VDC
12V	12 VDC

Valve stations

Symbol	Stations	Note
02	2 stations	Single wining spec. (Applicable up to 20 solenoid valves.)
⋮	⋮	
20	20 stations	

∗ This also includes the number of blanking plate assemblies.
∗ Two stations are necessary for the double, 3 position (Dual body type).

SUP/EXH block assembly mounting position

Symbol	Mounting position	Stations
U	U side	2 to 10 stations
D	D side	2 to 10 stations
B	(Both sides)	2 to 20 stations
M	Special specifications	

∗ For special specifications, indicate separately by the manifold specification

A, B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
M	Mixed	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
M	Mixed	

∗ In the case of mixed specifications (M), indicate separately on the manifold specification sheet.

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

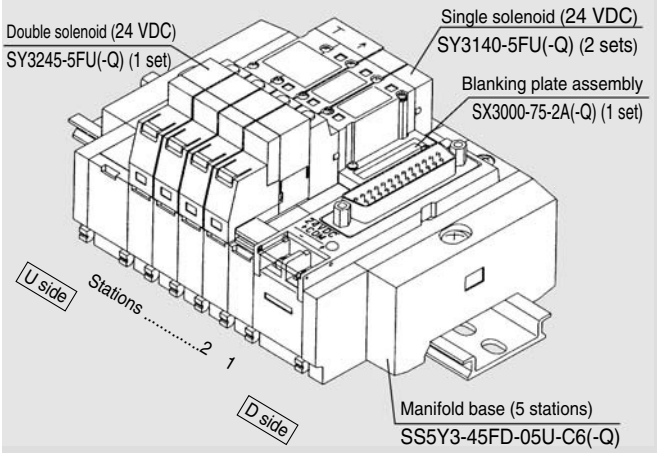
CE-compliant

Nil	—
Q	CE-compliant

Refer to pages 324 to 328 for external pilot specifications and built-in silencer.

How to Order Manifold Assembly (Example)

Example (Type 45F/D-sub connector (25 pin))



SS5Y3-45FD-05U-C6 ·· 1 set (Type 45F, D-sub connector 5-station manifold base part no.)
∗ **SX3000-75-2A ····· 1 set (Blanking plate assembly part no)**
∗ **SY3140-5FU ····· 2 sets (Single solenoid part no.)**
∗ **SY3245-5FU ····· 1 set (Double solenoid part no.)**

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

- The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of connector box.
- When ordering double solenoid valves/3 position (Dual body type), please keep in mind that they require two manifold stations.

How to Order Valve (Type 45F, 45P□, 45T, 45T1)

2 position single **SY 3 1 40 - 5 FU □ - □ - □**

Double, 3 position **SY 3 2 45 - 5 FU □ - □ - □**

Series

3	SY3000
5	SY5000

Type of actuation

2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Dual body type (Double, 3 position)

Rated voltage

5	24 VDC
6	12 VDC

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 332.)

CE-compliant

Nil	—
Q	CE-compliant

When ordering plug-in type valve as a single unit, gaskets are not included. Order them separately, if necessary. (Refer to page 300 for details.)

How to Order Manifold

Type 45P□ (Flat ribbon cable)

SS5Y 3 - 45 □ P □ D - 05 U - C4 - □ - □ - □

Series

3	SY3000
5	SY5000

Common specifications

Nil	Positive common
N	Negative common

Connector poles

Symbol	Poles	Stations
Nil	26	2 to 20 stations
G	20	2 to 16 stations
H	10	2 to 8 stations

Connector mounting position

Symbol	Mounting position
U	U side
D	D side

Valve stations (Blanking plate assemblies are included.)

26 pins (P) connector

Symbol	Stations	Note
02	2 stations	Single wiring spec. (Applicable up to 20 solenoid valves.)
⋮	⋮	
20	20 stations	

20 pins (PG) connector

Symbol	Stations	Note
02	2 stations	Single wiring spec. (Applicable up to 16 solenoid valves.)
⋮	⋮	
16	16 stations	

10 pins (PH) connector

Symbol	Stations	Note
02	2 stations	Single wiring spec. (Applicable up to 8 solenoid valves)
⋮	⋮	
08	8 stations	

• Two stations are necessary for the double, 3 position (Dual body type).

A, B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
M	Mixed	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
M	Mixed	

∗ In the case of mixed specifications, indicate separately on the manifold specification sheet.

SUP/EXH block assembly mounting position

Symbol	Mounting position	Stations
U	U side	2 to 10 stations
D	D side	2 to 10 stations
B	Both sides	2 to 20 stations
M	Special specifications	

∗ For special specifications, indicate separately by the manifold specification sheet.

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

Voltage

Nil	24 VDC
12V	12 VDC

CE-compliant

Nil	—
Q	CE-compliant

Type 45T (9 pins terminal block)

SS5Y 3 - 45T D - 05 U - C4 - □ - □

Series

3	SY3000
5	SY5000

Terminal block mounting position

Symbol	Mounting position
U	U side
D	D side

Valve stations

Symbol	Stations	Note
02	2 stations	Single wiring spec. (Applicable up to 8 solenoid valves)
⋮	⋮	
08	8 stations	

∗ This also includes the number of blanking plate assemblies.
∗ Two stations are necessary for the double, 3 position (Dual body type).

SUP/EXH block assembly mounting position

Symbol	Mounting position	Stations
U	U side	2 to 8 stations
D	D side	2 to 8 stations
B	Both sides	2 to 8 stations
M	Special specifications	

∗ For special specifications, indicate separately by the manifold specification sheet.

Note) The terminal block (45T□) manifold has no common polarity. It can be used for both positive and negative common.

A, B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
M	Mixed	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
M	Mixed	

∗ In the case of mixed specifications (M), indicate separately on the manifold

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

CE-compliant

Nil	—
Q	CE-compliant

Type 45T1 (18 pins terminal block)

SS5Y 3 - 45T1 D - 15 B - C4 - □ - □

Series

3	SY3000
5	SY5000

Terminal block mounting position

Symbol	Mounting position
U	U side
D	D side

Valve stations

Symbol	Stations	Note
02	2 stations	Single wining spec. (Applicable up to 17 solenoid valves.)
⋮	⋮	
17	17 stations	

∗ This also includes the number of blanking plate assemblies.
∗ Two stations are necessary for the double, 3 position (Dual body type).

SUP/EXH block assembly mounting position

Symbol	Mounting position	Stations
U	U side	2 to 10 stations
D	D side	2 to 10 stations
B	Both sides	2 to 17 stations
M	Special specifications	

∗ For special specifications, indicate separately by the manifold specification sheet.

A, B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
M	Mixed	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
M	Mixed	

∗ In the case of mixed specifications (M), indicate separately on the manifold

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

CE-compliant

Nil	—
Q	CE-compliant

How to Order Manifold

Type 45G (Flat ribbon cable, PC Wiring System compatible)

SS5Y 3 - 45G D - 05 U □ - C4 - □ - □

Series

3	SY3000
5	SY5000

Connector mounting position

Symbol	Mounting position
U	U side
D	D side

Valve stations

Symbol	Stations	Note
02	2 stations	Single wiring spec. (Applicable up to 16 solenoid valves.)
⋮	⋮	
16	16 stations	

∗ Two stations are necessary for the double, 3 position (Dual body type).
∗ This also includes the number of blanking plate assemblies.

SUP/EXH block assembly mounting position

Symbol	Mounting position	Stations
U	U side	2 to 10 stations
D	D side	2 to 10 stations
B	Both sides	2 to 16 stations
M	Special specifications	

∗ For special specifications, indicate separately by the manifold specification sheet.

A, B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
M	Mixed	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
M	Mixed	

∗ In the case of mixed specifications, indicate separately on the manifold specification sheet.

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

CE-compliant

Nil	—
Q	CE-compliant

SUP/EXH block assembly specifications

Symbol	Specifications
Nil	Internal pilot specifications
R	External pilot specifications
S	Internal pilot / Built-in silencer
RS	External pilot / Built-in silencer

How to Order Valve

2 position single **SY 3 1 4 0 □ – 5 FU □ – □ – □**

Double, 3 position **SY 3 2 4 5 □ – 5 FU □ – □ – □**

Series

3	SY3000
5	SY5000

Type of actuation

2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Rated voltage

5	24 VDC

Pilot type

Nil	Inernal pilot
R	External pilot

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 332.)

CE-compliant

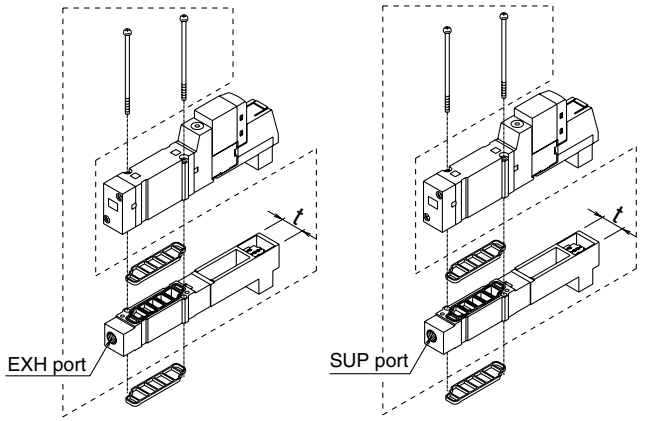
Nil	—
Q	CE-compliant

Dual body type (Double, 3 position)

When ordering plug-in type valve as a single unit, gaskets are not included. Order them separately, if necessary. (Refer to page 300 for details.)

Manifold Option

■ **Individual EXH spacer assembly** ■ **Individual SUP spacer assembly**

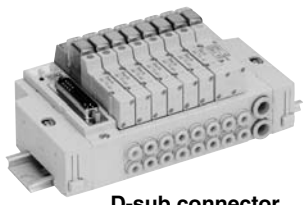


Series	Assembly part no.	Port no.	t
SY3000	SY3000-39-3A(-Q)	M5 x 0.8	11
SY5000	SY5000-39-17A(-Q)	1/8	15

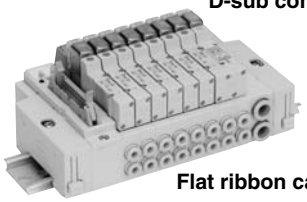
Note) Please be careful because the dual body type (double solenoid, 3-position) requires two pieces. In this case, the exhaust is performed in the direction of the arrow mark indicated on the valve surface.

Series	Assembly part no.	Port no.	t
SY3000	SY3000-38-3A(-Q)	M5 x 0.8	11
SY5000	SY5000-38-17A(-Q)	1/8	15

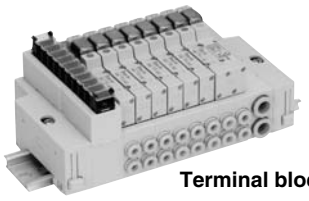
Note) Please be careful because the dual body type (double solenoid, 3-position) requires two pieces. In this case, both supply ports require the piping.



D-sub connector



Flat ribbon cable



Terminal block

Manifold Specifications

Model			D-sub connector Type 45F	Flat ribbon cable Type 45PI			Terminal block		Flat ribbon cable PC wiring system compatible
				Type 45P	Type 45PG	Type 45PH	Type 45T	Type 45T1	Type 45G
Manifold			Plug-in						
P (SUP)/R (EXH)			Common SUP, Common EXH						
Valve stations Note 1, 2)			2 to 20 stations		2 to 16 stations	2 to 8 stations		2 to 17 stations	2 to 16 stations
A, B port Porting specifications		Location	Base						
		Direction	Side						
Port size	P, R port	SY3000	C8 (One-touch fitting for ø8)						
		SY5000	C10 (One-touch fitting for ø10)						
	A, B port	SY3000	C4 (One-touch fitting for ø4)/C6 (One-touch fitting for ø6)						
		SY5000	C4 (One-touch fitting for ø4)/C6 (One-touch fitting for ø6)/C8 (One-touch fitting for ø8)						
Applicable connector			D-sub connector Complies with MIL-C-24308 JIS-X-5101	Flat ribbon cable connector Socket: 26 pins MIL type with strain relief Conforming to MIL-C-83503	Flat ribbon cable connector Socket: 20 pins MIL type with strain relief Conforming to MIL-C-83503	Flat ribbon cable connector Socket: 10 pins MIL type with strain relief Conforming to MIL-C-83503	Terminal block (M3) 9 pins	Terminal block (M3) 18 pins	Flat ribbon cable connector Socket: 20 pins MIL type with strain relief Conforming to MIL-C-83503
Internal wiring			+COM (Type 45□), –COM (Type 45N□)				In common between +COM and –COM.		+ COM
Manifold base mass w (g) n: Stations (D-sub connector)		SY3000	2 to 10 stations: W = 26n + 172 11 to 20 stations: W = 26n + 199						
		SY5000	2 to 10 stations: W = 54n + 227 11 to 20 stations: W = 52n + 264						

Note 1) For more than 11 stations, supply pressure to P port on both sides and exhaust from R port on both sides.
Note 2) There is a limit depending on the number of solenoids. Refer to "How to Order".

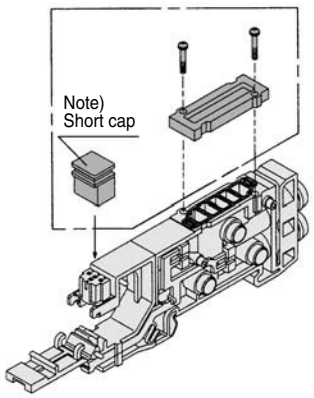
Flow Characteristics

Model	Port size		Flow characteristics					
	1 ,5 ,3 (P ,EA ,EB)	4 ,2 (A ,B)	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv
SS5Y3-45□	C8	C6	0.88	0.21	0.22	0.95	0.18	0.22
SS5Y5-45□	C10	C8	2.2	0.24	0.53	2.5	0.18	0.58

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

Manifold Option

▪ Blanking plate assembly



Series	Assembly part no.
SY3000	SX3000-75-2A(-Q)
SY5000	SX5000-76-6A(-Q)

Note) • When mounting blanking plate, be sure to mount a short cap.
• Two stations are necessary for the double, 3 position (Dual body type).

▪ SUP blocking disk

By installing a SUP blocking disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold.

Series	Part no.
SY3000	SX3000-77-1A
SY5000	SX5000-77-1A

▪ EXH blocking disk

By installing an EXH blocking disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to divide both exhausts.)

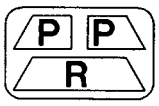
Series	Part no.
SY3000	SX3000-77-1A
SY5000	SX5000-77-1A

▪ Label for block disk

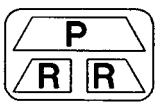
The labels shown below are used on manifold stations containing SUP/EXH block disk(s) to show their location. (3 pcs. each)

VZ3000-123-1A (In common with SY3000, 5000)

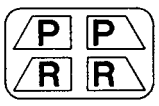
Label for SUP block disk



Label for EXH block disk



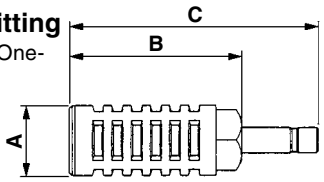
Label for SUP/EXH block disk



Note) When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.

▪ Silencer with One-touch fitting

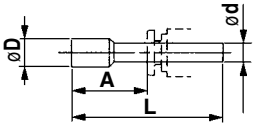
The silencer plugs directly into the One-touch fittings of the manifold.



Series	Model	Effective area	A	B	C
For SY3000 (ø8)	AN203-KM8	14 mm²	ø16	26	51
For SY5000 (ø10)	AN200-KM10	26 mm²	ø22	53.8	80.8
	AN300-KM10	30 mm²	ø25	70	97

▪ Plug (white)

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.



Dimensions

Applicable fittings size ød	Model	A	L	D
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
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

⚠ Caution

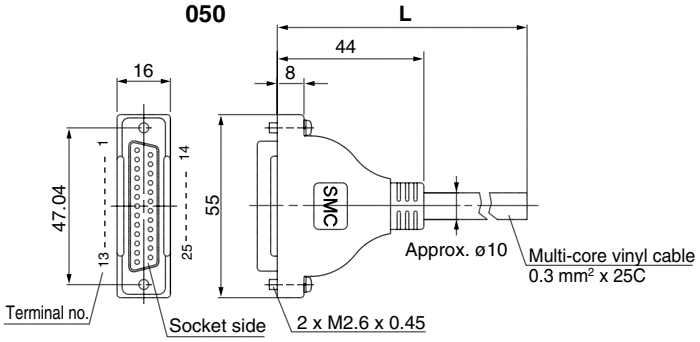
Mounting screw tightening torques

M2: 0.17 N·m
M3: 0.8 N·m
M4: 1.4 N·m

Manifold Option

▪ D-sub connector (25 pins)/Cable assembly

AXT100-DS25- 015 / 030 / 050



D-sub connector cable

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-DS25-015	Cable 25 core x 24 AWG
3 m	AXT100-DS25-030	
5 m	AXT100-DS25-050	

∗ When a commercially available connector is required, use a 25 pin female connector conforming to MIL-C24308.

Electric characteristics

Item	Characteristics
Conductor resistance Ω/km, 20°C	65 or less
Voltage limit V, 1 min, AC	1000
Insulation resistance MΩkm, 20°C	5 or more

Note) The min. bending radius of D-sub cable assembly is 20 mm.

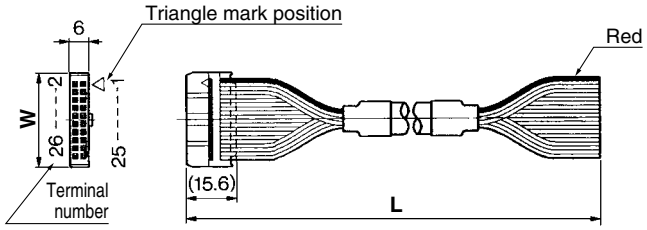
D-sub connector cable assembly Terminal numbers

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

Connector manufacturers' example
- Hirose Electric Co., Ltd.
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.

▪ Flat Ribbon Cable Connector/Cable assembly

AXT100-FC□- 1 to 3



Flat Ribbon Cable Assembly

Cable length (L)	10 pins	20 pins	26 pins
1.5 m	AXT100-FC10-1	AXT100-FC20-1	AXT100-FC26-1
3 m	AXT100-FC10-2	AXT100-FC20-2	AXT100-FC26-2
5 m	AXT100-FC10-3	AXT100-FC20-3	AXT100-FC26-3
Connector width (W)	17.2	30	37.5

∗ For other commercial connectors, use a type with strain relief that conform to MIL-C-83503.

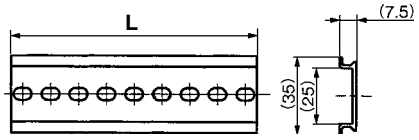
Connector manufacturers' example
- Hirose Electric Co., Ltd.
- Sumitomo 3M Limited
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.

▪ Dimensions/DIN rail

VZ1000-11-1-□

● Refer to L dimensions

∗ Fill in □ with an appropriate no. listed on the table of DIN rail dimensions shown below.



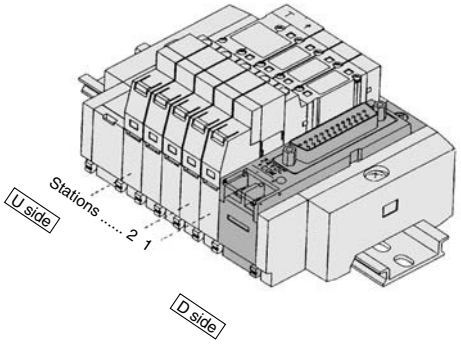
No.	0	1	2	3	4	5	6	7	8	9	10
L Dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223
No.	11	12	13	14	15	16	17	18	19	20	21
L Dimension	235.5	248	260.5	273	285.5	298	310.5	323	335.5	348	360.5
No.	22	23	24	25	26	27	28	29	30	31	32
L Dimension	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498
No.	33	34	35	36	37	38	39	40	41	42	43
L Dimension	510.5	523	535.5	548	560.5	573	585.5	598	610.5	623	635.5
No.	44	45	46	47	48	49	50	51	52	53	54
L Dimension	648	660.5	673	685.5	698	710.5	723	735.5	748	760.5	773
No.	55	56	57	58	59	60	61	62	63	64	65
L Dimension	785.5	798	810.5	823	835.5	848	860.5	873	885.5	898	910.5
No.	66	67	68	69	70	71					
L Dimension	923	935.5	948	960.5	973	985.5					

∗ Refer to L1 dimension on pages starting with pages 282 to 299 for lengths that correspond to the number of manifold stations.

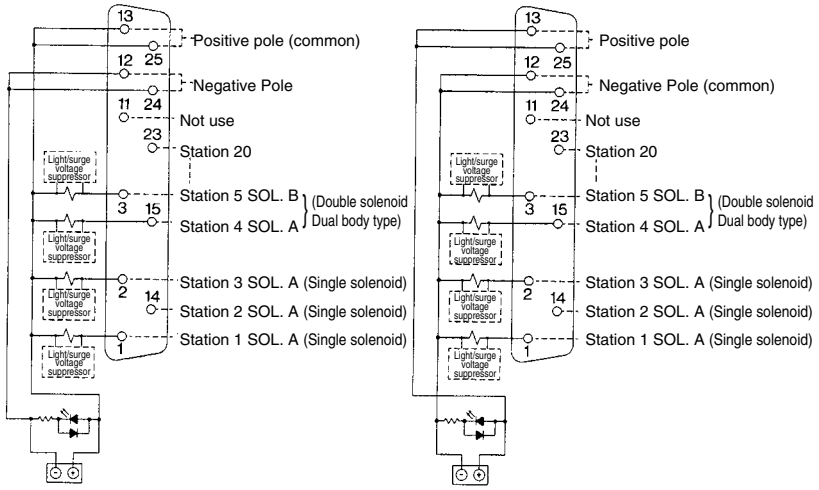
Manifold Internal Wiring

45(N)F/D-sub Connector

A D-sub connector used for electric wiring reduces labor during wiring operation. Connectors conforming to MIL are used for interchangeability.



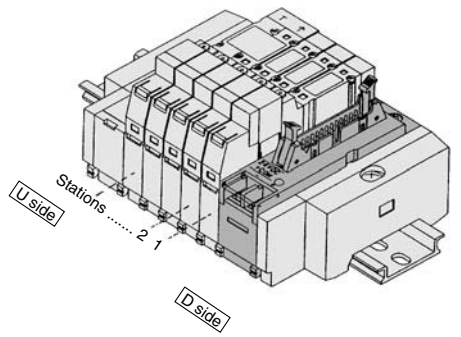
<For positive common (45F)> **<For negative common (45NF)>**



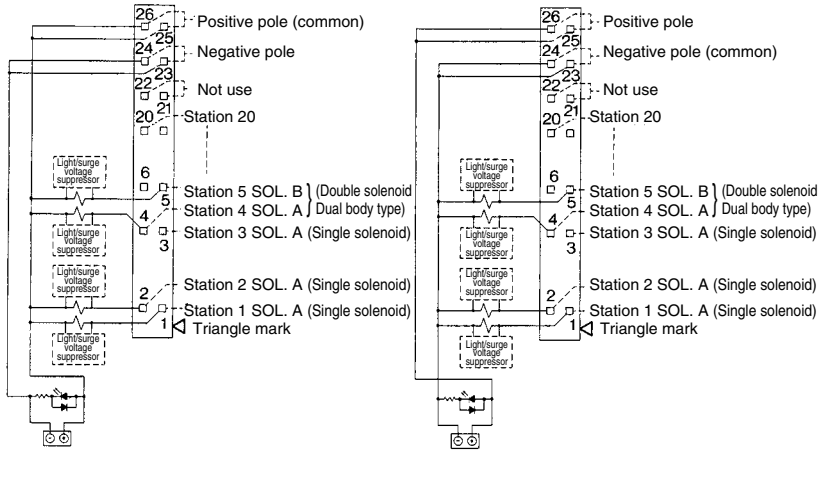
- The power source terminal is used for connecting to an external power source.
- The maximum number of stations that can be accommodated is 20 manifold stations, with up to 20 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.

Type 45(N)P/Flat Ribbon Cable (26 pins)

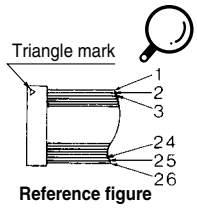
A flat ribbon cable connector used for electric wiring reduces labor during wiring operation. Connectors conforming to MIL are used for interchangeability.



<For positive common (45P)> **<For negative common (45NP)>**



- The power source terminal is used for connecting to an external power source.
- The maximum number of stations that can be accommodated is 20 manifold stations, with up to 20 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.

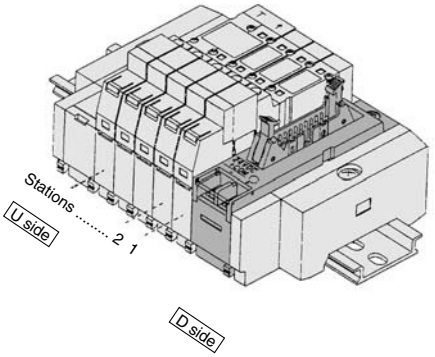


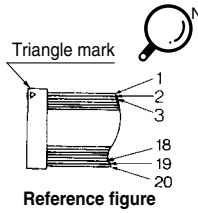
Note)
Terminal no. is not indicated on the connector. The terminal no. indicated in the connection schematic of connector, as shown in the reference, means a correlation of 1, 2, 3···26 from the triangle mark side on the flat ribbon cable of connector.

Manifold Internal Wiring

Type 45(N)PG/Flat Ribbon Cable (20 pins)

A flat ribbon cable connector used for electric wiring reduces labor during wiring operation. Connectors conforming to MIL are used for interchangeability.

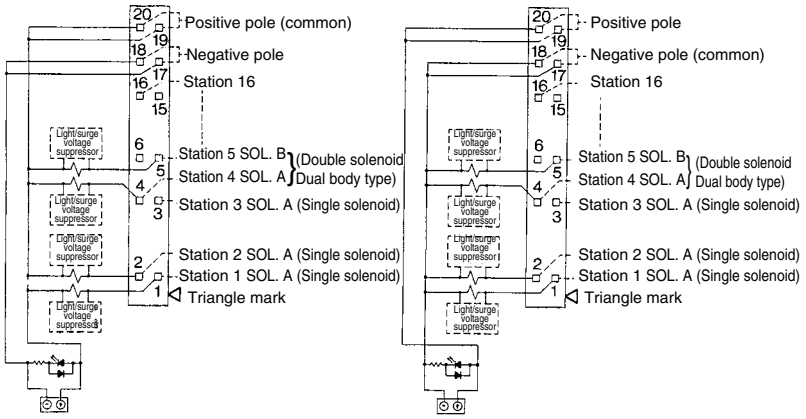




Reference figure

Note) Terminal no. is not indicated on the connector. The terminal no. indicated in the connection schematic of connector, as shown in the reference, means a correlation of 1, 2, 3····20 from the triangle mark side on the flat ribbon cable of connector.

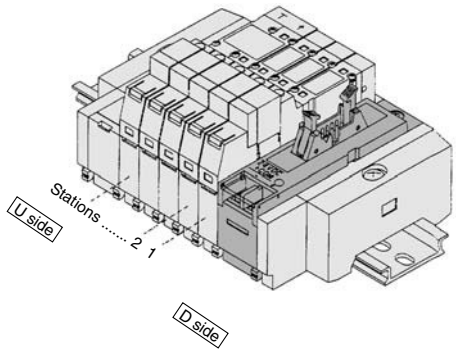
<For positive common (45PG)> **<For negative common (45NPG)>**

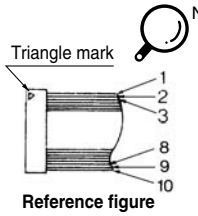


- The power source terminal is used for connecting to an external power source.
- The maximum number of stations that can be accommodated is 16 manifold stations, with up to 16 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.

Type 45(N)PH/Flat Ribbon Cable (10 pins)

A flat ribbon cable connector used for electric wiring reduces labor during wiring operation. Connectors conforming to MIL are used for interchangeability.

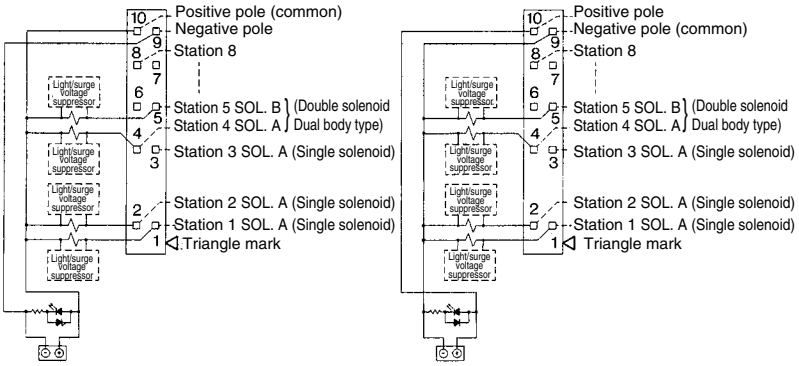




Reference figure

Note) Terminal no. is not indicated on the connector. The terminal no. indicated in the connection schematic of connector, as shown in the reference, means a correlation of 1, 2, 3····10 from the triangle mark side on the flat ribbon cable of connector.

<For positive common (45PH)> **<For negative common (45NPH)>**

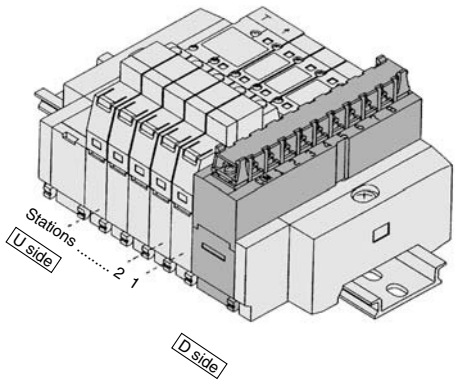


- The power source terminal is used for connecting to an external power source.
- The maximum number of stations that can be accommodated is 8 manifold stations, with up to 8 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.

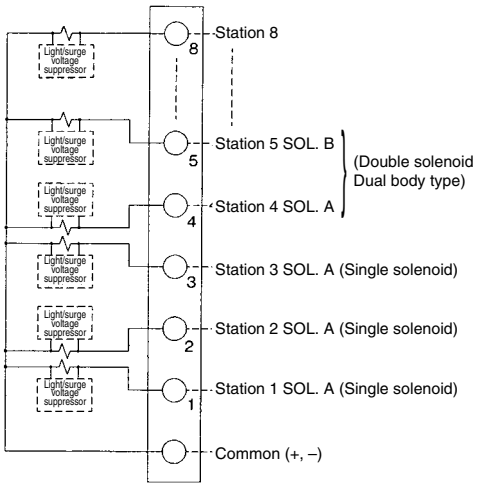
Manifold Internal Wiring

Type 45T/Terminal Block

A terminal block style permits direct cable connection without treatment of lead wires.

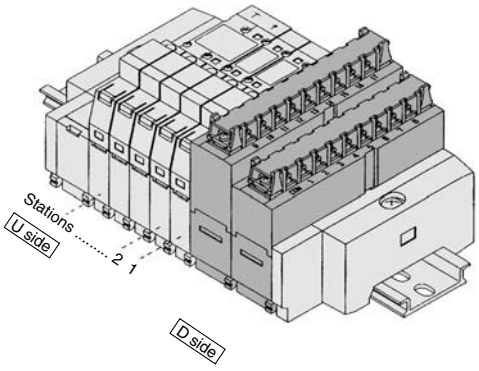


(45T)

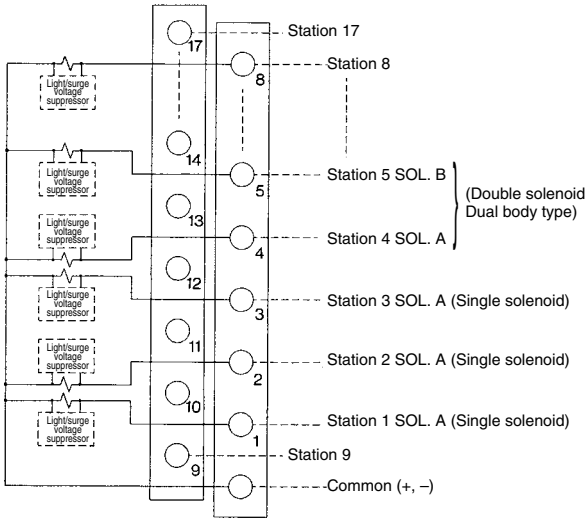


- The maximum number of stations that can be accommodated is 8 manifold stations, with up to 8 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.
- There is no polarity in the COM wiring. Supply positive power for +COM spec. and negative power for –COM spec.

Type 45T1/Terminal Block



(45T1)

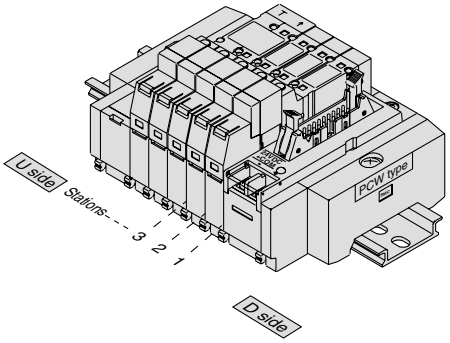


- The maximum number of stations that can be accommodated is 17 manifold stations, with up to 17 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.
- There is no polarity in the COM wiring. Supply positive power for +COM spec. and negative power for –COM spec.

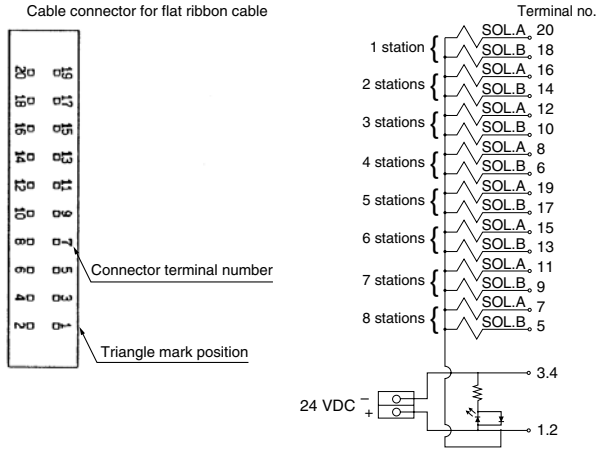
Manifold Internal Wiring

Type 45G Flat Ribbon Cable (PC Wiring System compatible)

It's the manifold for 20 pins flat ribbon cable connector which is compliant for PC wiring system.



Electric circuit diagram
(Below wiring is the case of all double solenoid connections.)



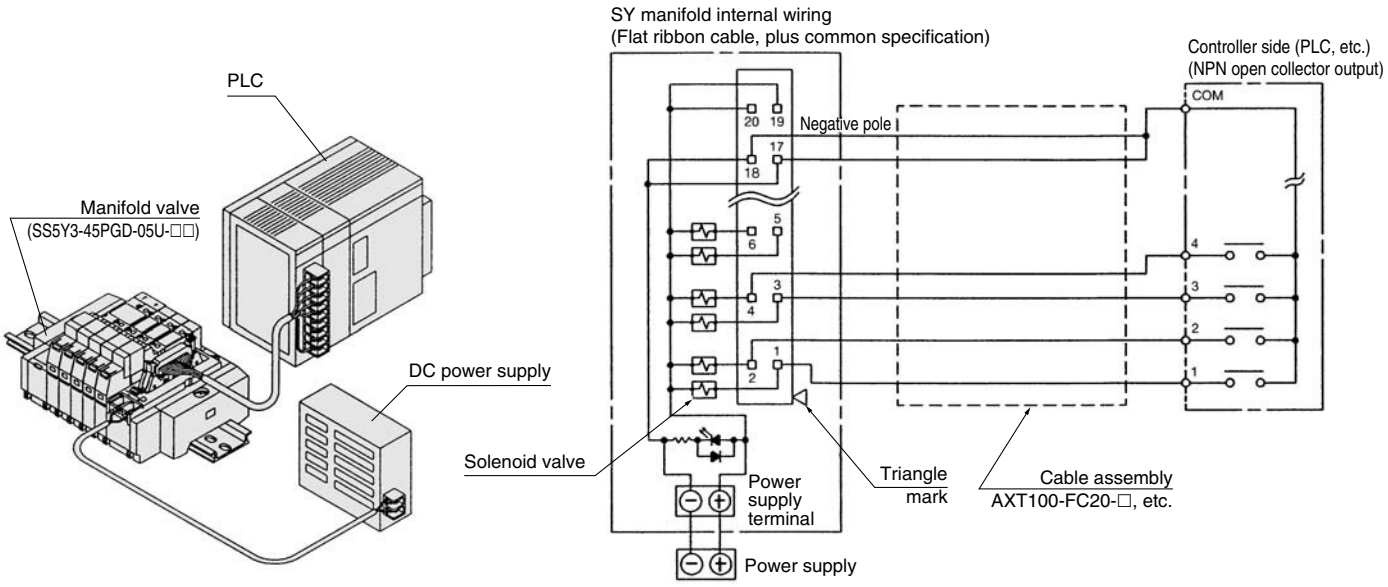
- The maximum number of stations that can be accommodated is 16 manifold stations, with up to 16 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.

(For details about the PC wiring system, refer to catalog CAT.E02-20 separately.)

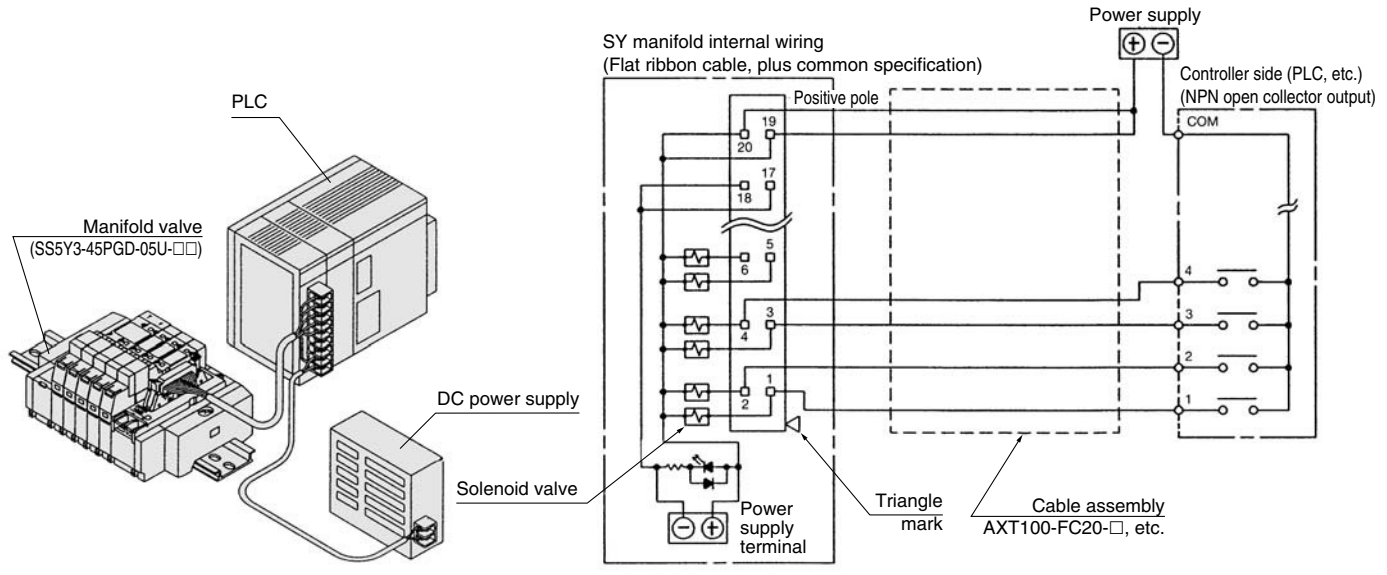
How to Connect SS5Y□-45□ (Plug-in)

Power terminal is equipped with plug-in manifold of Series SY as standard.
Power terminal enables the power supply to valve from either of manifold or controller side.
The wiring examples should be used for reference when wiring is performed.

1. Wiring example when using manifold power supply terminals



2. Wiring example when not using manifold power supply terminals (Power is supplied to the controller side or along the wiring, etc.)

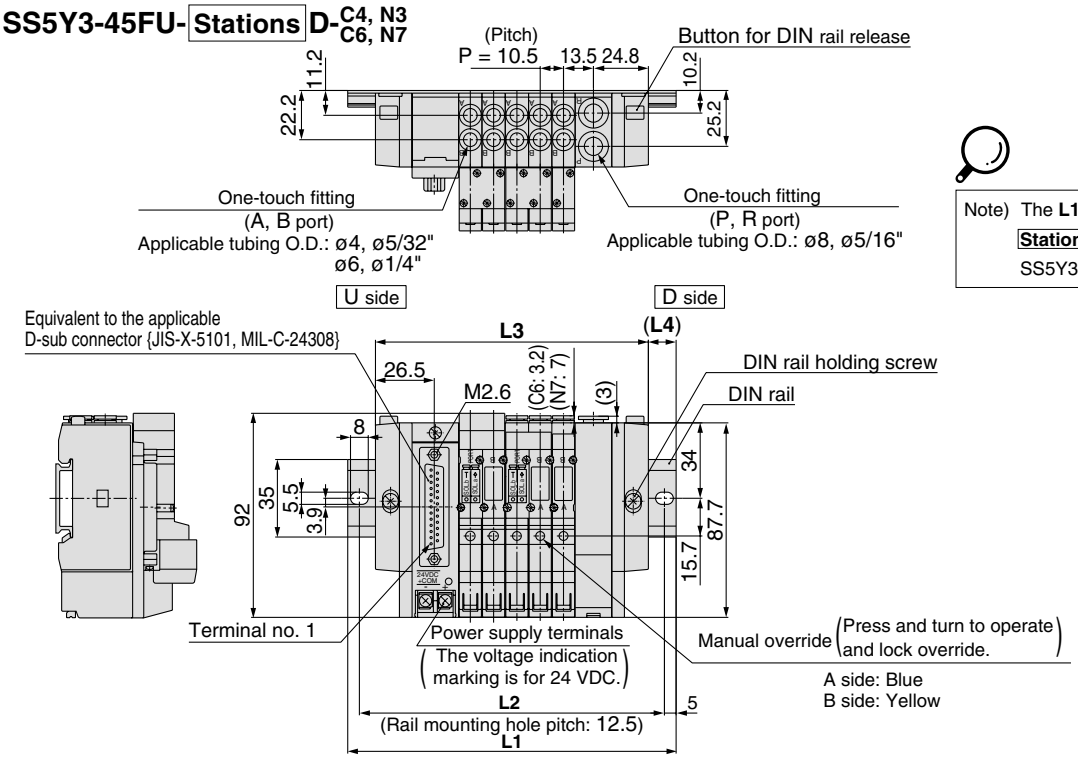


⚠Caution

- Single wire, COM position, etc. of PLC are different from each manufacturer. When connecting with PLC, read the specifications carefully and understand the electrical circuit. Poor wiring could cause damage to PLC, power source, etc. as well as manifold and valve.

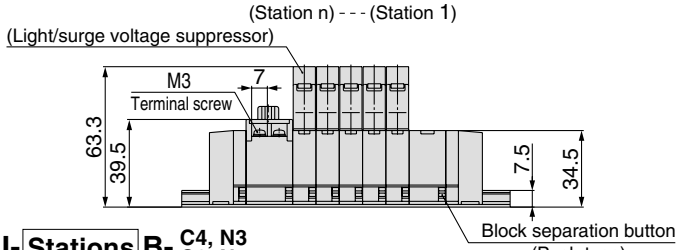
SY3000: D-sub Connector/Plug-in

SS5Y3-45FU-[Stations]D-$^{C4, N3}_{C6, N7}$

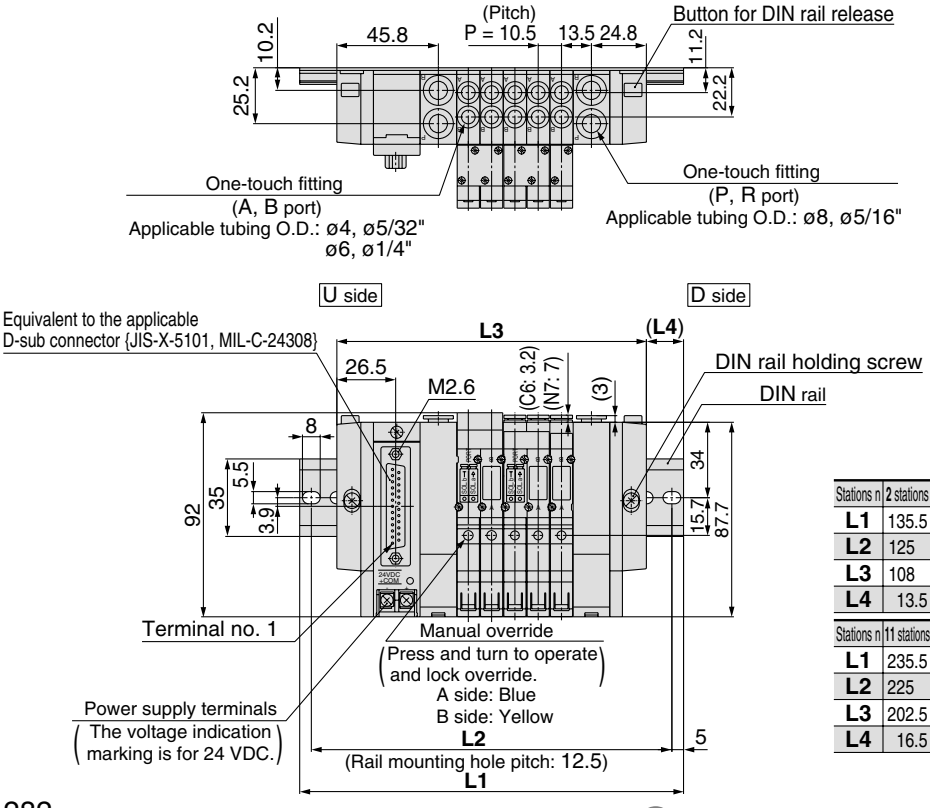


Note) The **L1** to **L4** dimensions of **SS5Y3-45FU-[Stations]U-$^{C4, N3}_{C6, N7}$** are identical to those of SS5Y3-45FU-[Stations]D-$^{C4, N3}_{C6, N7}$.

Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	123	135.5	148	148	160.5	173	185.5	198	210.5
L2	112.5	125	137.5	137.5	150	162.5	175	187.5	200
L3	91.5	102	112.5	123	133.5	144	154.5	165	175.5
L4	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5



SS5Y3-45FU-[Stations]B-$^{C4, N3}_{C6, N7}$

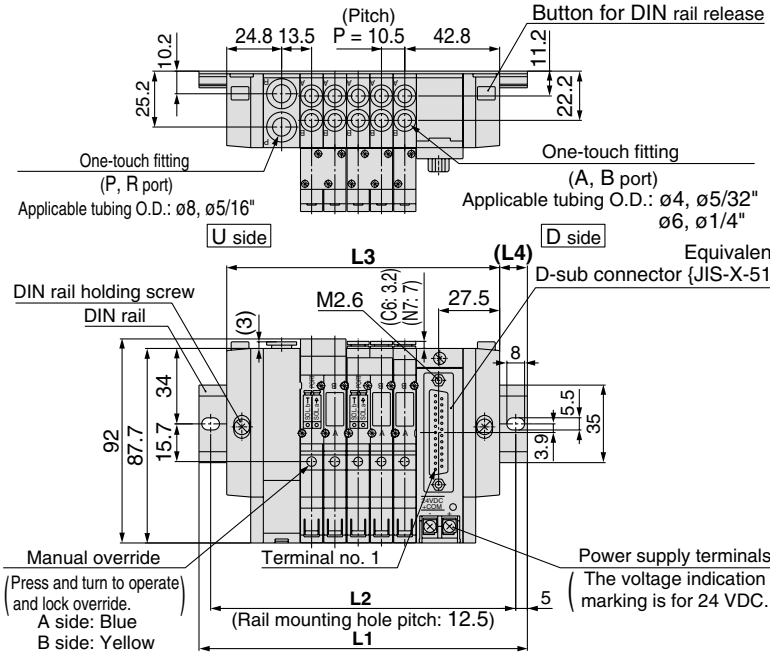


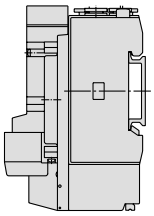
Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	135.5	148	160.5	173	185.5	185.5	198	210.5	223
L2	125	137.5	150	162.5	175	175	187.5	200	212.5
L3	108	118.5	129	139.5	150	160.5	171	181.5	192
L4	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5

Stations n	11 stations	12	13	14	15	16	17	18	19	20 stations
L1	235.5	248	248	260.5	273	285.5	298	310.5	310.5	323
L2	225	237.5	237.5	250	262.5	275	287.5	300	300	312.5
L3	202.5	213	223.5	234	244.5	255	265.5	276	286.5	297
L4	16.5	17.5	12	13	14	15	16	17	12	13

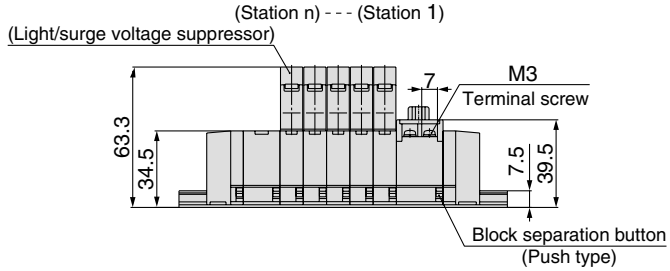
SY3000: D-sub Connector/Plug-in

SS5Y3-45FD-[Stations] U-$^{C4, N3}_{C6, N7}$



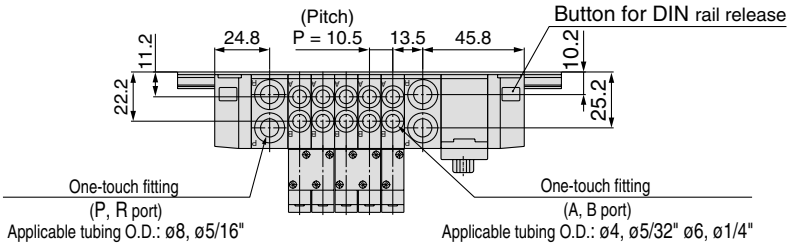


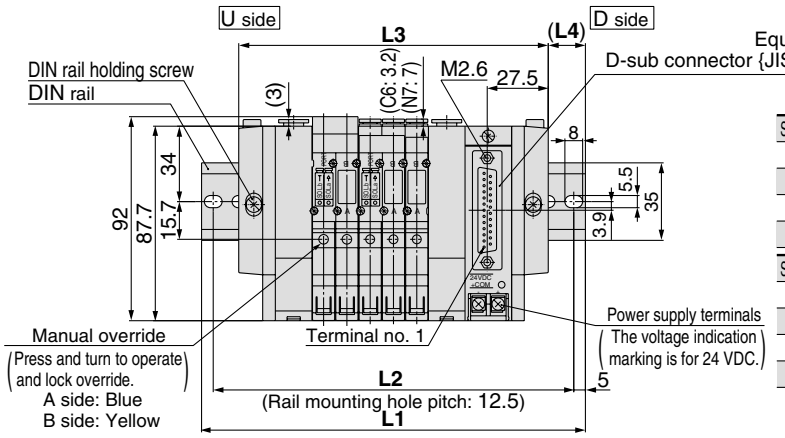
Note) The **L1** to **L4** dimensions of **SS5Y3-45FD-[Stations]D-$^{C4, N3}_{C6, N7}$** are identical to those of SS5Y3-45FD-[Stations]U-$^{C4,N3}_{C6,N7}$.



Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	123	135.5	148	148	160.5	173	185.5	198	210.5
L2	112.5	125	137.5	137.5	150	162.5	175	187.5	200
L3	91.5	102	112.5	123	133.5	144	154.5	165	175.5
L4	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5

SS5Y3-45FD-[Stations] B-$^{C4,N3}_{C6,N7}$



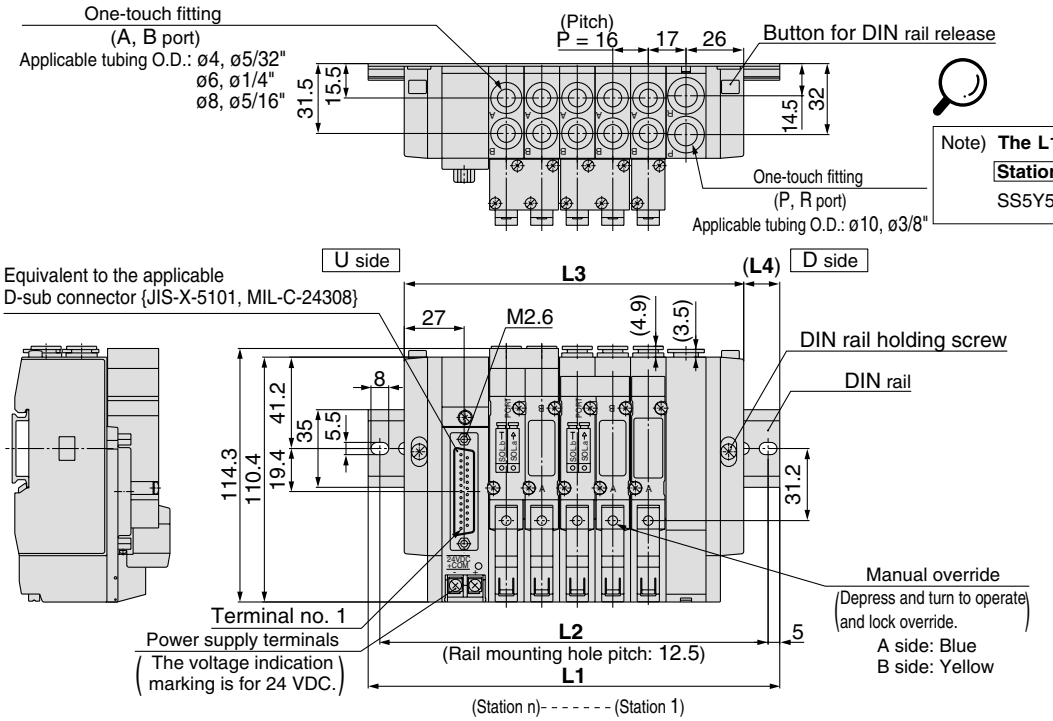


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	135.5	148	160.5	173	185.5	185.5	198	210.5	223
L2	125	137.5	150	162.5	175	175	187.5	200	212.5
L3	108	118.5	129	139.5	150	160.5	171	181.5	192
L4	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5

Stations n	11 stations	12	13	14	15	16	17	18	19	20 stations
L1	235.5	248	248	260.5	273	285.5	298	310.5	310.5	323
L2	225	237.5	237.5	250	262.5	275	287.5	300	300	312.5
L3	202.5	213	223.5	234	244.5	255	265.5	276	286.5	297
L4	16.5	17.5	12	13	14	15	16	17	12	13

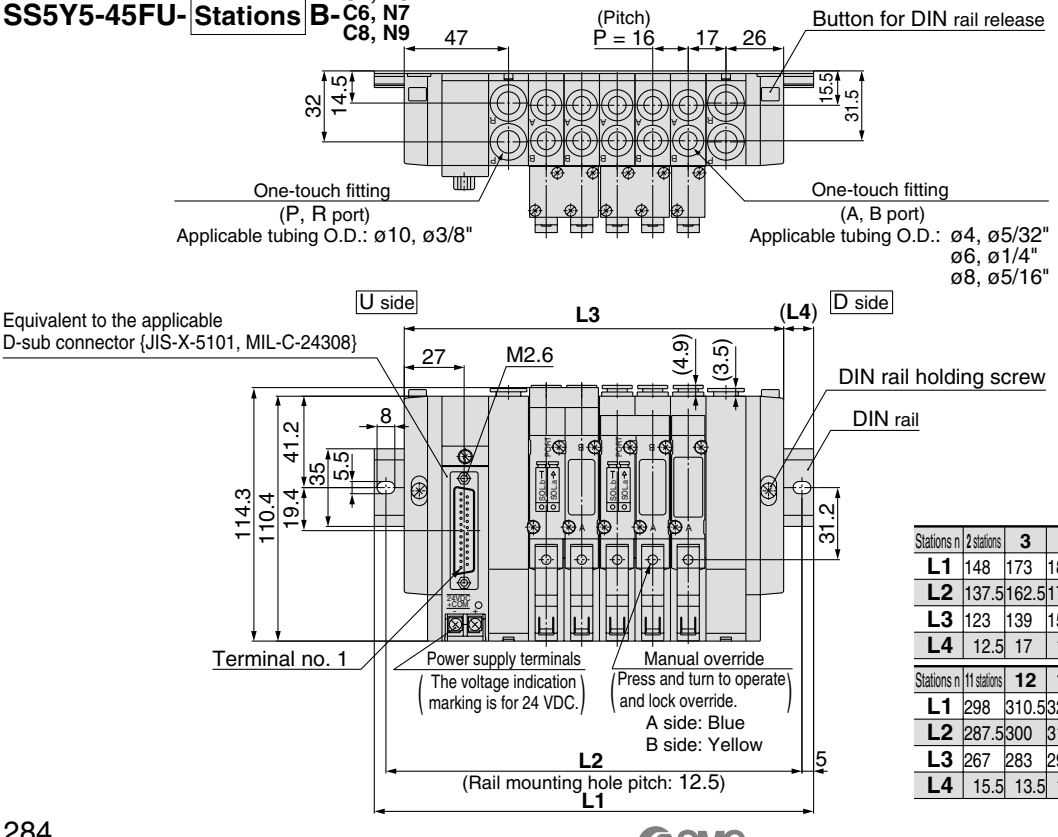
SY5000: D-sub Connector/Plug-in

SS5Y5-45FU-[Stations]D-C4, N3 C6, N7 C8, N9



Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	135.5	148	160.5	185.5	198	210.5	235.5	248	260.5
L2	125	137.5	150	175	187.5	200	225	237.5	250
L3	105	121	137	153	169	185	201	217	233
L4	15	13.5	11.5	16	14.5	12.5	17	15.5	13.5

SS5Y5-45FU-[Stations]B-C4, N3 C6, N7 C8, N9



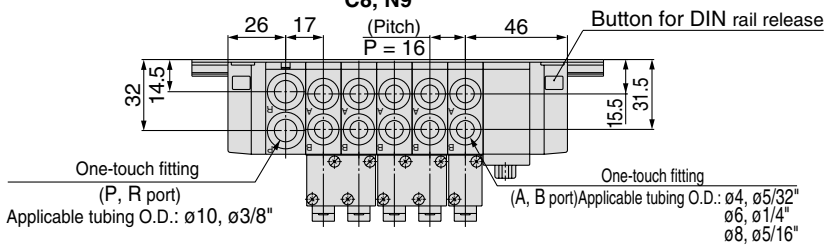
Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	173	185.5	198	210.5	235.5	248	260.5	285.5
L2	137.5	162.5	175	187.5	200	225	237.5	250	275
L3	123	139	155	171	187	203	219	235	251
L4	12.5	17	15	13.5	11.5	16	14.5	12.5	17

Stations n	11 stations	12	13	14	15	16	17	18	19	20 stations
L1	298	310.5	323	348	360.5	373	398	410.5	423	435.5
L2	287.5	300	312.5	337.5	350	362.5	387.5	400	412.5	425
L3	267	283	299	315	331	347	363	379	395	411
L4	15.5	13.5	12	16.5	14.5	13	17.5	15.5	14	12

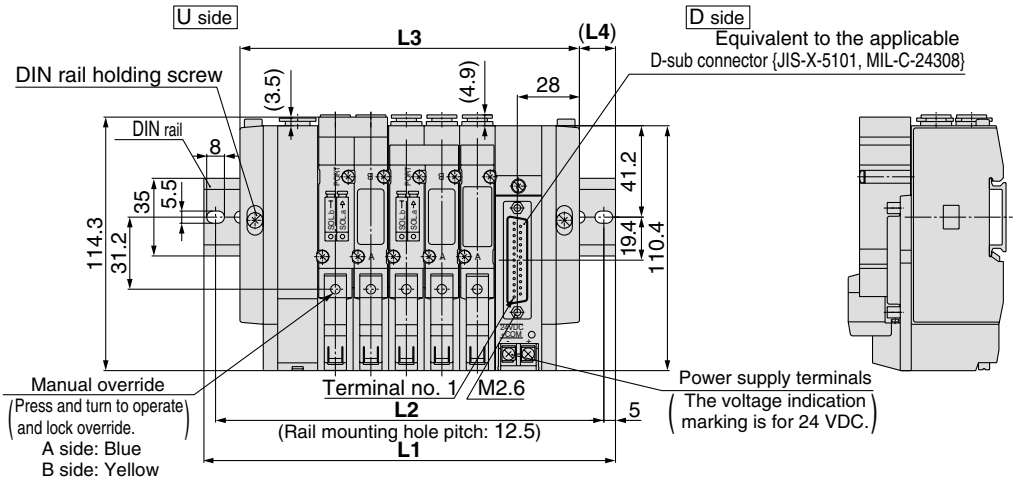
Note) **The L1** to **L4** dimensions of **SS5Y5-45FU-[Stations]U-C4, N3 C6, N7 C8, N9** are identical to those of SS5Y5-45FU-[Stations]D-C4, N3 C6, N7 C8, N9.

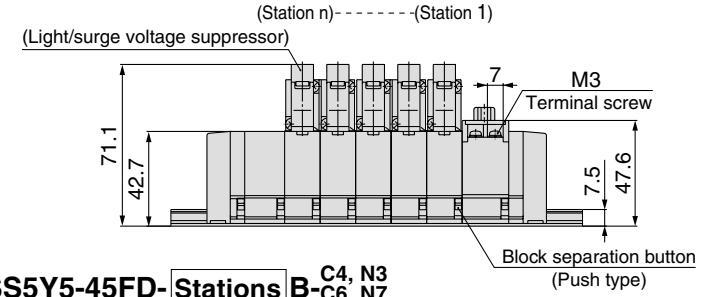
SY5000: D-sub Connector/Plug-in

SS5Y5-45FD-[Stations]U-C4, N3 C6, N7 C8, N9



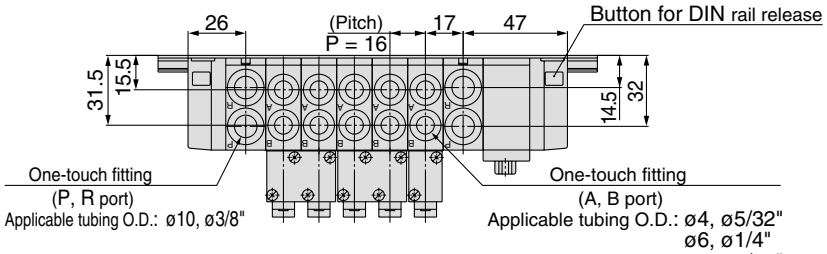
Note) **The L1** to **L4** dimensions of **SS5Y5-45FD-[Stations]D-C4, N3 C6, N7 C8, N9** are identical to those of SS5Y5-45FD-[Stations]U-C4, N3 C6, N7 C8, N9.

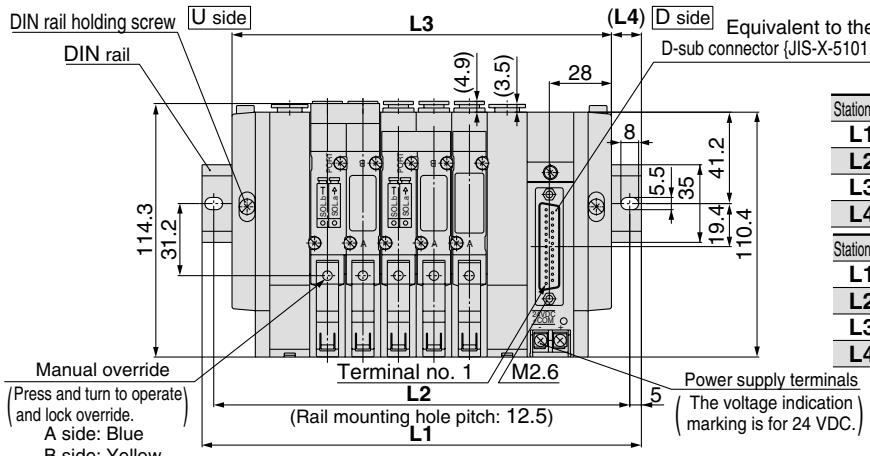




Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	135.5	148	160.5	185.5	198	210.5	235.5	248	260.5
L2	125	137.5	150	175	187.5	200	225	237.5	250
L3	105	121	137	153	169	185	201	217	233
L4	15	13.5	11.5	16	14.5	12.5	17	15.5	13.5

SS5Y5-45FD-[Stations]B-C4, N3 C6, N7 C8, N9



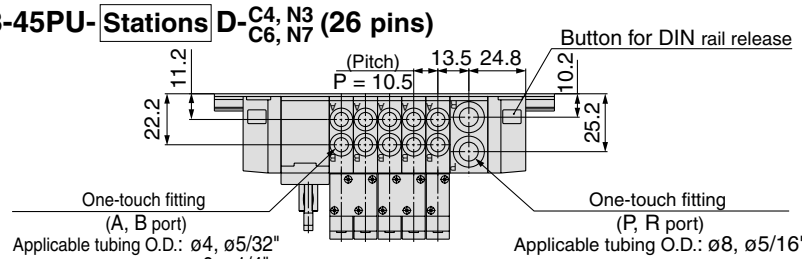


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	173	185.5	198	210.5	235.5	248	260.5	285.5
L2	137.5	162.5	175	187.5	200	225	237.5	250	275
L3	123	139	155	171	187	203	219	235	251
L4	12.5	17	15	13.5	11.5	16	14.5	12.5	17

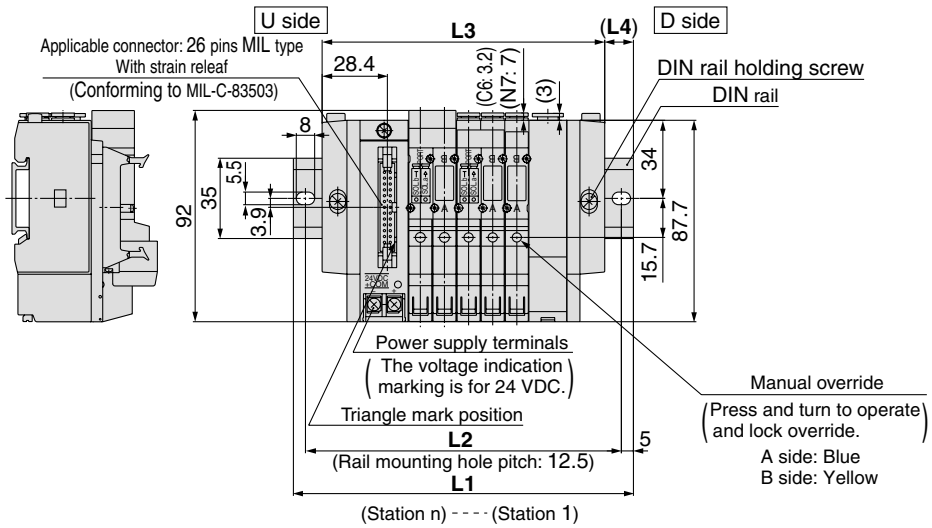
Stations n	11 stations	12	13	14	15	16	17	18	19	20 stations
L1	298	310.5	323	348	360.5	373	398	410.5	423	435.5
L2	287.5	300	312.5	337.5	350	362.5	387.5	400	412.5	425
L3	267	283	299	315	331	347	363	379	395	411
L4	15.5	13.5	12	16.5	14.5	13	17.5	15.5	14	12

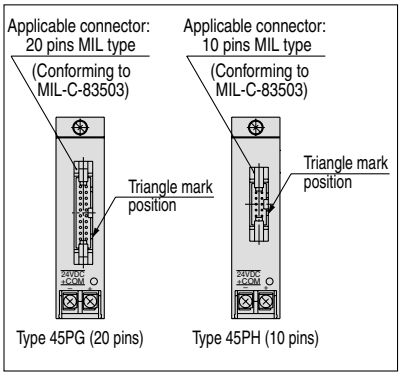
SY3000: Flat Ribbon Cable/Plug-in

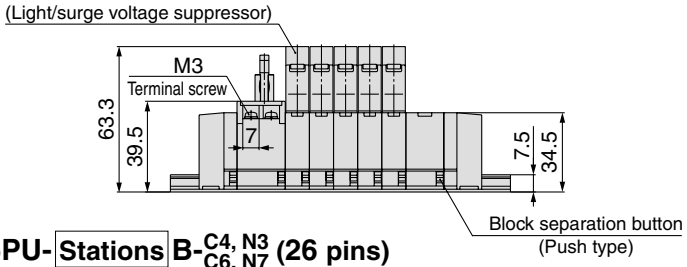
SS5Y3-45PU-[Stations]D-$^{C4, N3}_{C6, N7}$ (26 pins)



Note) **The L1** to **L4** dimensions of **SS5Y3-45P□U-[Stations]U-$^{C4, N3}_{C6, N7}$** are identical to those of SS5Y3-45PIU-[Stations]D-$^{C4, N3}_{C6, N7}$.

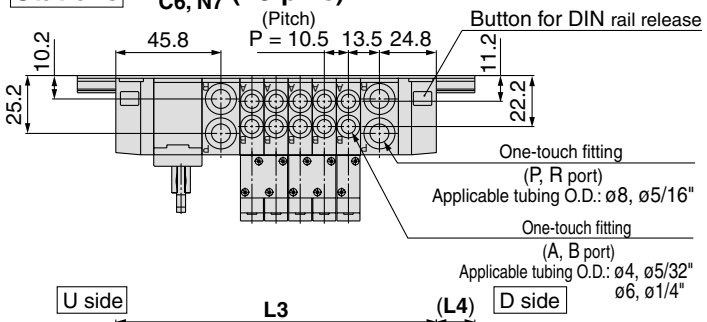


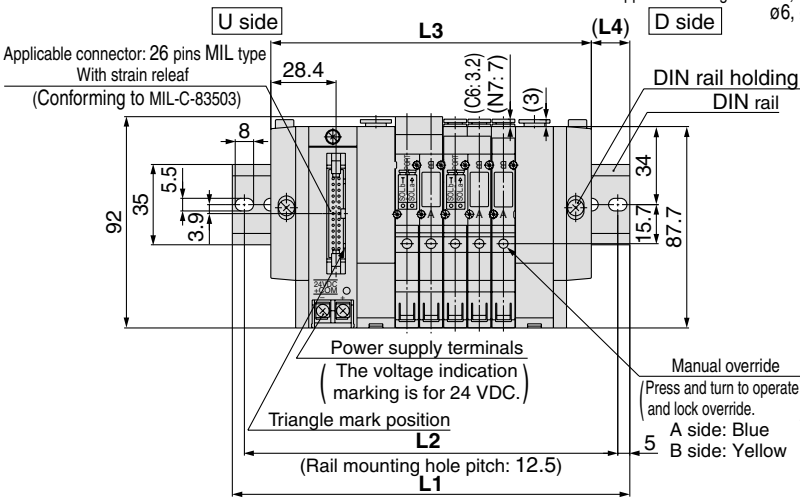




Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	123	135.5	148	148	160.5	173	185.5	198	210.5
L2	112.5	125	137.5	137.5	150	162.5	175	187.5	200
L3	91.5	102	112.5	123	133.5	144	154.5	165	175.5
L4	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5

SS5Y3-45PU-[Stations]B-$^{C4, N3}_{C6, N7}$ (26 pins)



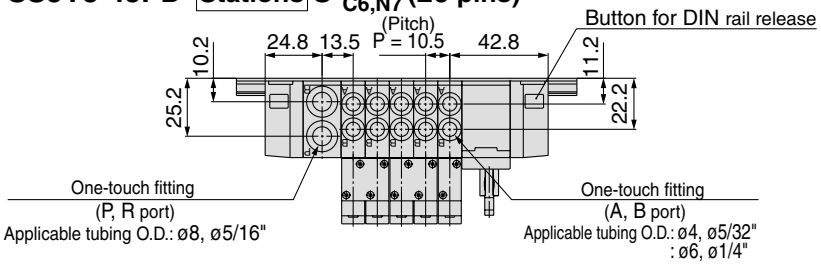


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	135.5	148	160.5	173	185.5	185.5	198	210.5	223
L2	125	137.5	150	162.5	175	175	187.5	200	212.5
L3	108	118.5	129	139.5	150	160.5	171	181.5	192
L4	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5

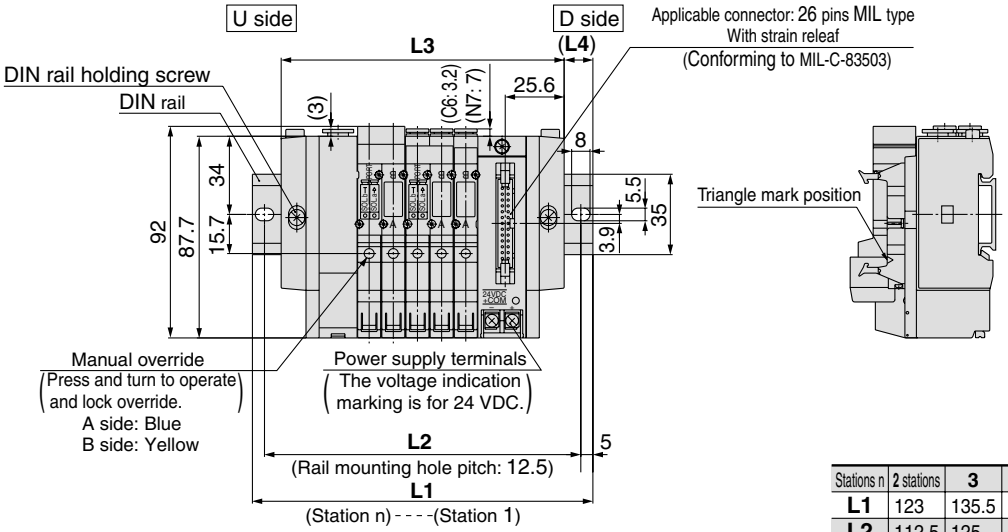
Stations n	11 stations	12	13	14	15	16	17	18	19	20 stations
L1	235.5	248	248	260.5	273	285.5	298	310.5	310.5	323
L2	225	237.5	237.5	250	262.5	275	287.5	300	300	312.5
L3	202.5	213	223.5	234	244.5	255	265.5	276	286.5	297
L4	16.5	17.5	12	13	14	15	16	17	12	13

SY3000: Flat Ribbon Cable/Plug-in

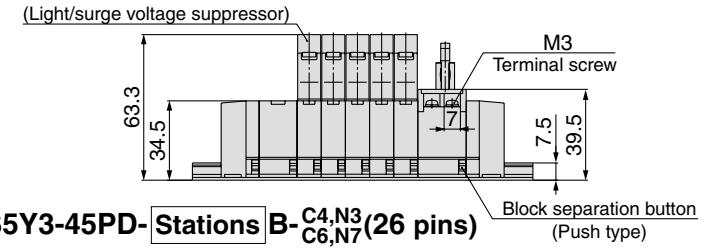
SS5Y3-45PD-[Stations]U-C4,N3 C6,N7 (26 pins)



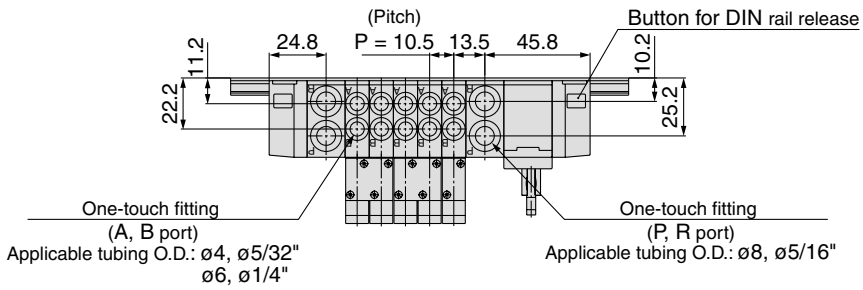
Note) The **L1** to **L4** dimensions of **SS5Y3-45P□D-[Stations]D-C4, N3 C6, N7** are identical to those of SS5Y3-45P□D-[Stations]U-C4, N3 C6, N7.

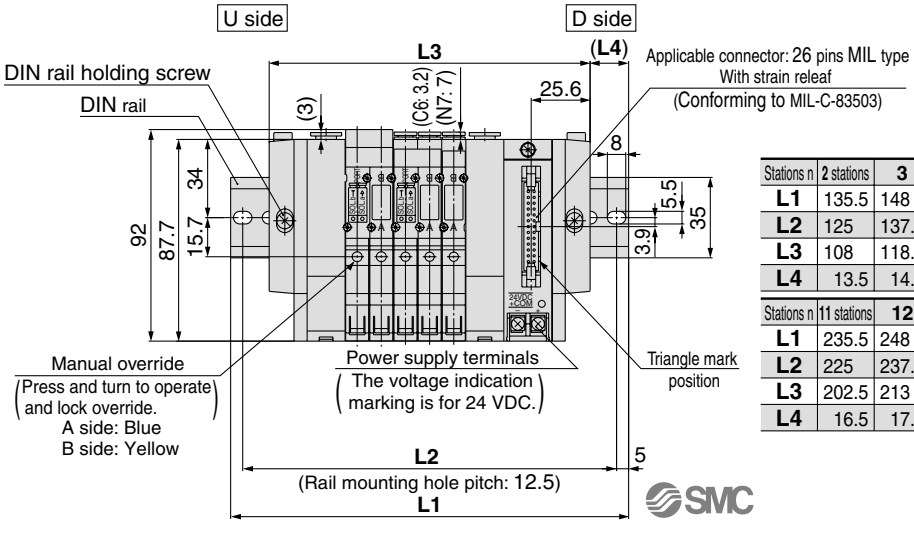


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	123	135.5	148	148	160.5	173	185.5	198	210.5
L2	112.5	125	137.5	137.5	150	162.5	175	187.5	200
L3	91.5	102	112.5	123	133.5	144	154.5	165	175.5
L4	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5



SS5Y3-45PD-[Stations]B-C4,N3 C6,N7 (26 pins)



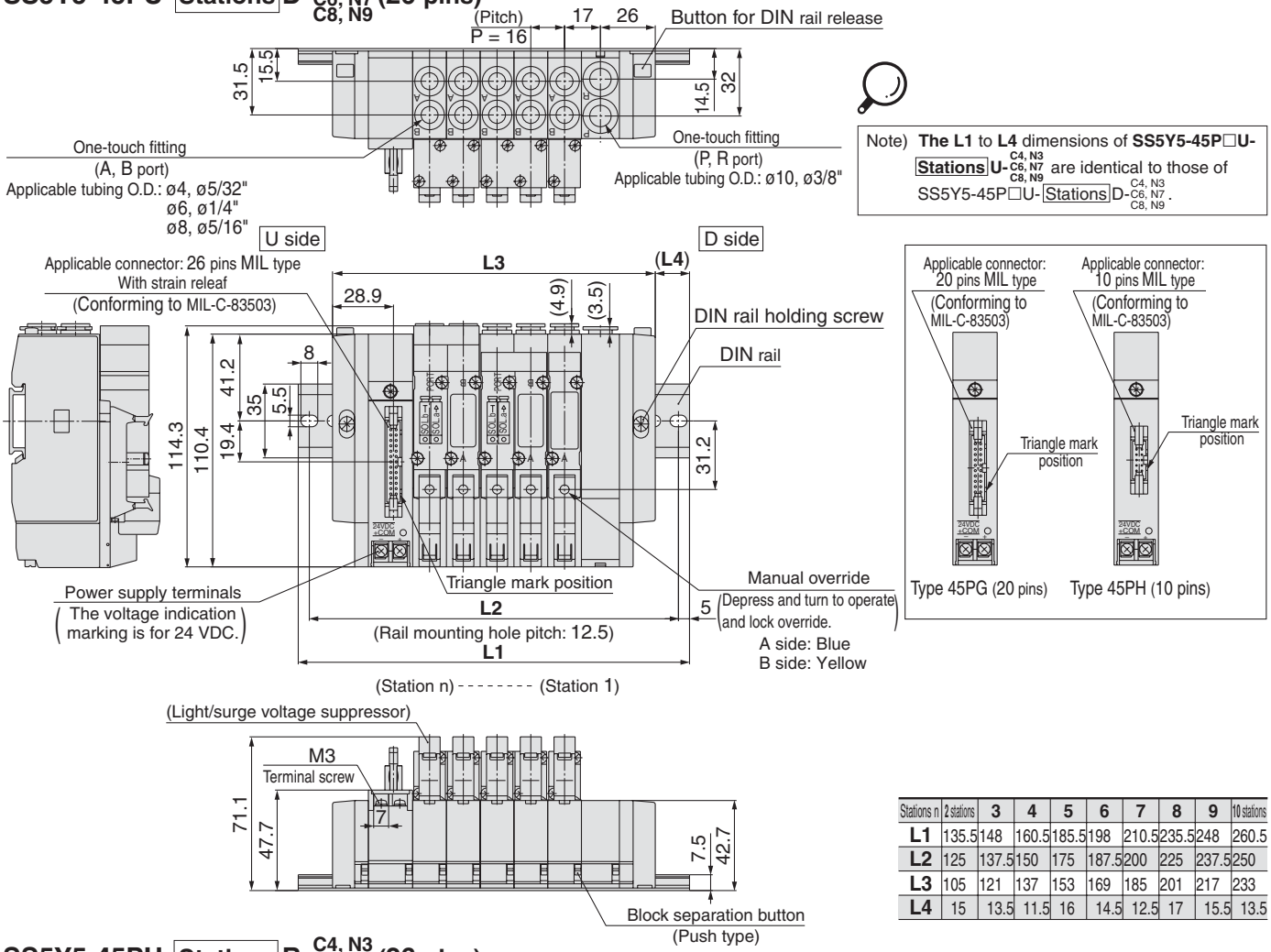


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	135.5	148	160.5	173	185.5	185.5	198	210.5	223
L2	125	137.5	150	162.5	175	175	187.5	200	212.5
L3	108	118.5	129	139.5	150	160.5	171	181.5	192
L4	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5

Stations n	11 stations	12	13	14	15	16	17	18	19	20 stations
L1	235.5	248	248	260.5	273	285.5	298	310.5	310.5	323
L2	225	237.5	237.5	250	262.5	275	287.5	300	300	312.5
L3	202.5	213	223.5	234	244.5	255	265.5	276	286.5	297
L4	16.5	17.5	12	13	14	15	16	17	12	13

SY5000: Flat Ribbon Cable/Plug-in

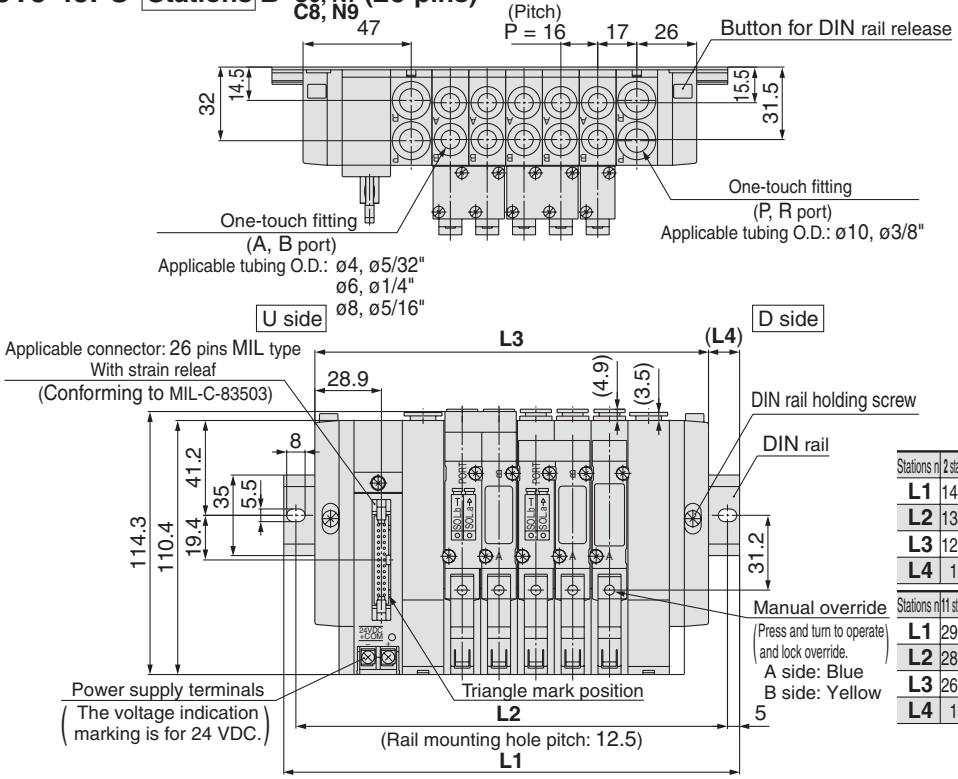
SS5Y5-45PU-[Stations]D-[C4, N3 / C6, N7 / C8, N9] (26 pins)



Note) **The L1** to **L4** dimensions of **SS5Y5-45P□U-[Stations]U-[C4, N3 / C6, N7 / C8, N9]** are identical to those of SS5Y5-45P□U-[Stations]D-[C4, N3 / C6, N7 / C8, N9].

Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	135.5	148	160.5	185.5	198	210.5	235.5	248	260.5
L2	125	137.5	150	175	187.5	200	225	237.5	250
L3	105	121	137	153	169	185	201	217	233
L4	15	13.5	11.5	16	14.5	12.5	17	15.5	13.5

SS5Y5-45PU-[Stations]B-[C4, N3 / C6, N7 / C8, N9] (26 pins)

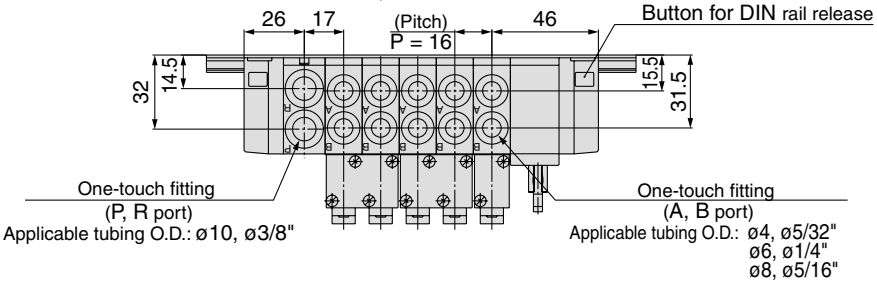


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	173	185.5	198	210.5	235.5	248	260.5	285.5
L2	137.5	162.5	175	187.5	200	225	237.5	250	275
L3	123	139	155	171	187	203	219	235	251
L4	12.5	17	15	13.5	11.5	16	14.5	12.5	17

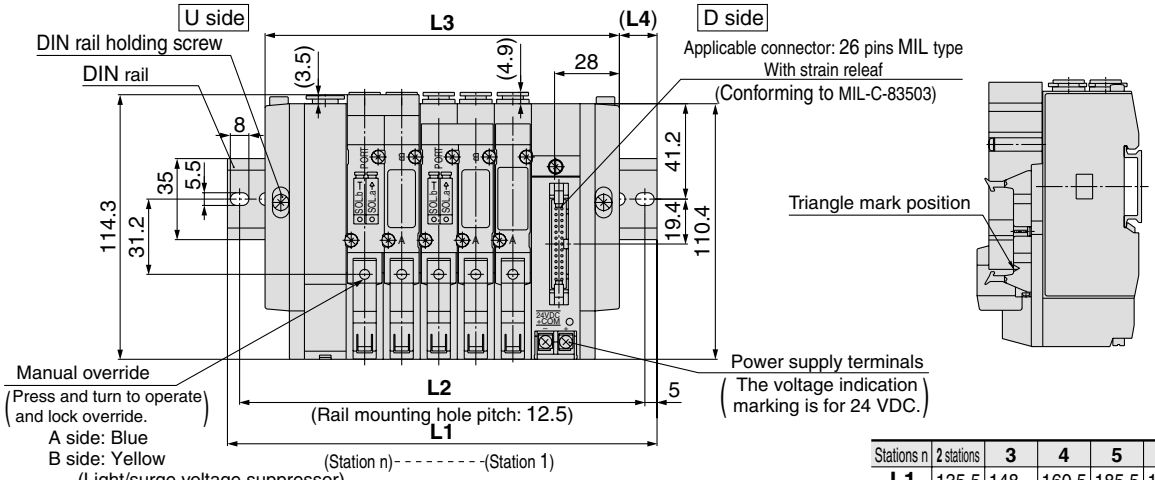
Stations n	11 stations	12	13	14	15	16	17	18	19	20 stations
L1	298	310.5	323	348	360.5	373	398	410.5	423	435.5
L2	287.5	300	312.5	337.5	350	362.5	387.5	400	412.5	425
L3	267	283	299	315	331	347	363	379	395	411
L4	15.5	13.5	12	16.5	14.5	13	17.5	15.5	14	12

SY5000: Flat Ribbon Cable/Plug-in

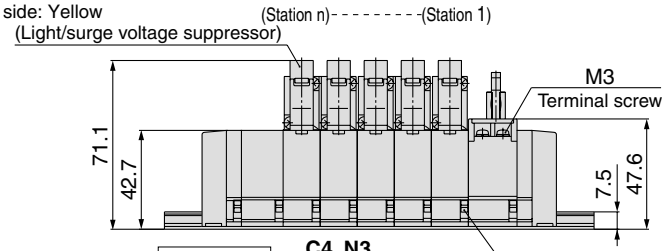
SS5Y5-45PD-[Stations]U-[C4, N3 / C6, N7 / C8, N9] (26 pins)



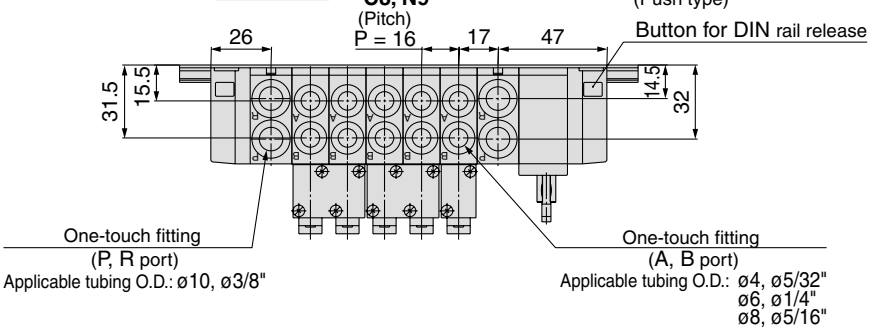
Note) **The L1** to **L4** dimensions of **SS5Y5-45P□D-[Stations]D-[C4, N3 / C6, N7 / C8, N9]** are identical to those of SS5Y3-45P□D-[Stations]U-[C4, N3 / C6, N7 / C8, N9].

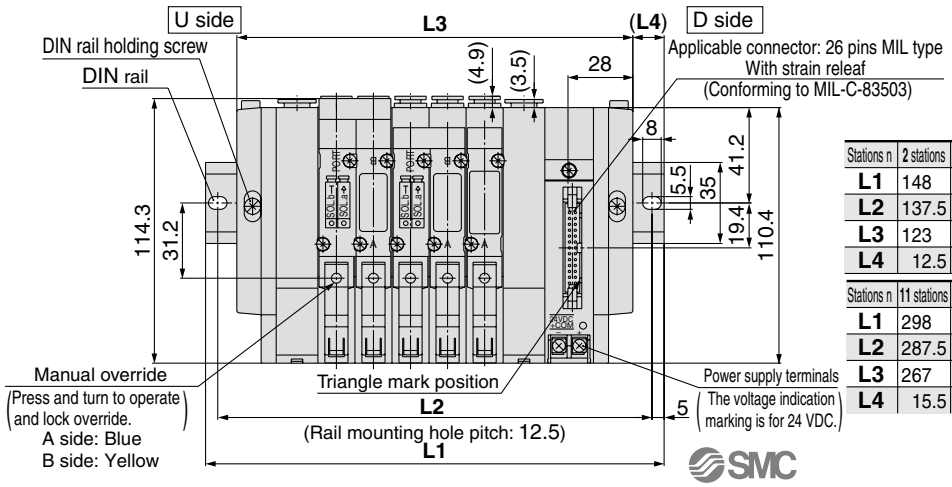


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	135.5	148	160.5	185.5	198	210.5	235.5	248	260.5
L2	125	137.5	150	175	187.5	200	225	237.5	250
L3	105	121	137	153	169	185	201	217	233
L4	15	13.5	11.5	16	14.5	12.5	17	15.5	13.5



SS5Y5-45PD-[Stations]B-[C4, N3 / C6, N7 / C8, N9] (26 pins)



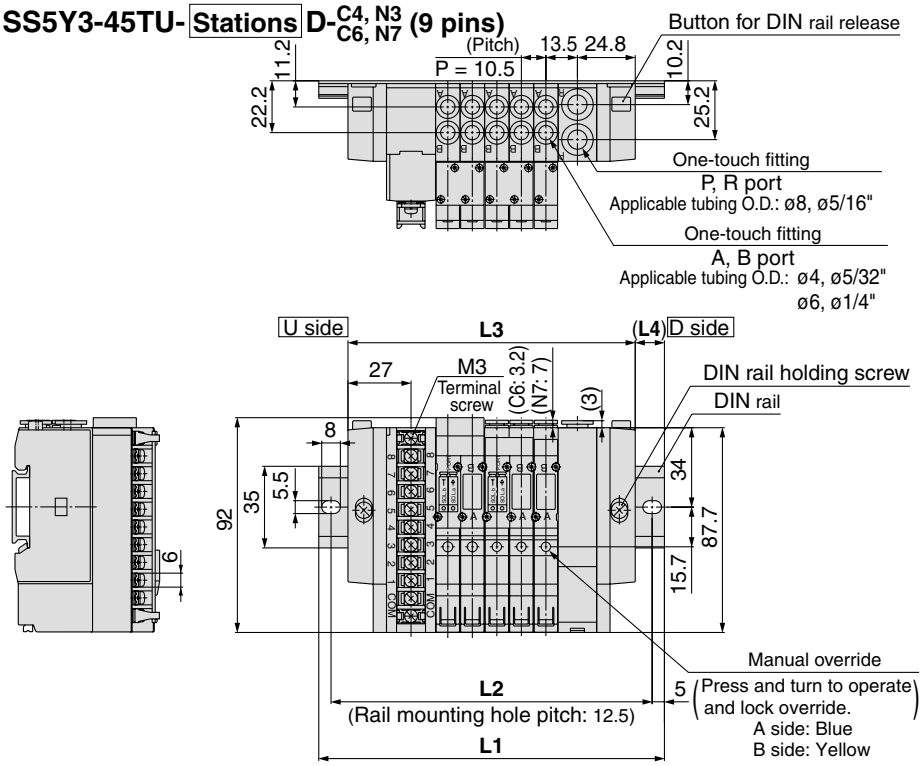


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	173	185.5	198	210.5	235.5	248	260.5	285.5
L2	137.5	162.5	175	187.5	200	225	237.5	250	275
L3	123	139	155	171	187	203	219	235	251
L4	12.5	17	15	13.5	11.5	16	14.5	12.5	17

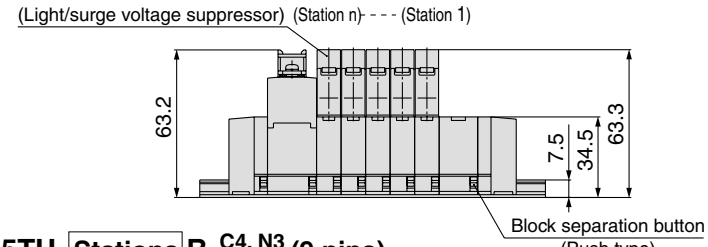
Stations n	11 stations	12	13	14	15	16	17	18	19	20 stations
L1	298	310.5	323	348	360.5	373	398	410.5	423	435.5
L2	287.5	300	312.5	337.5	350	362.5	387.5	400	412.5	425
L3	267	283	299	315	331	347	363	379	395	411
L4	15.5	13.5	12	16.5	14.5	13	17.5	15.5	14	12

SY3000: 9 Pins Terminal Block/Plug-in

SS5Y3-45TU-[Stations]D-$^{C4, N3}_{C6, N7}$ (9 pins)

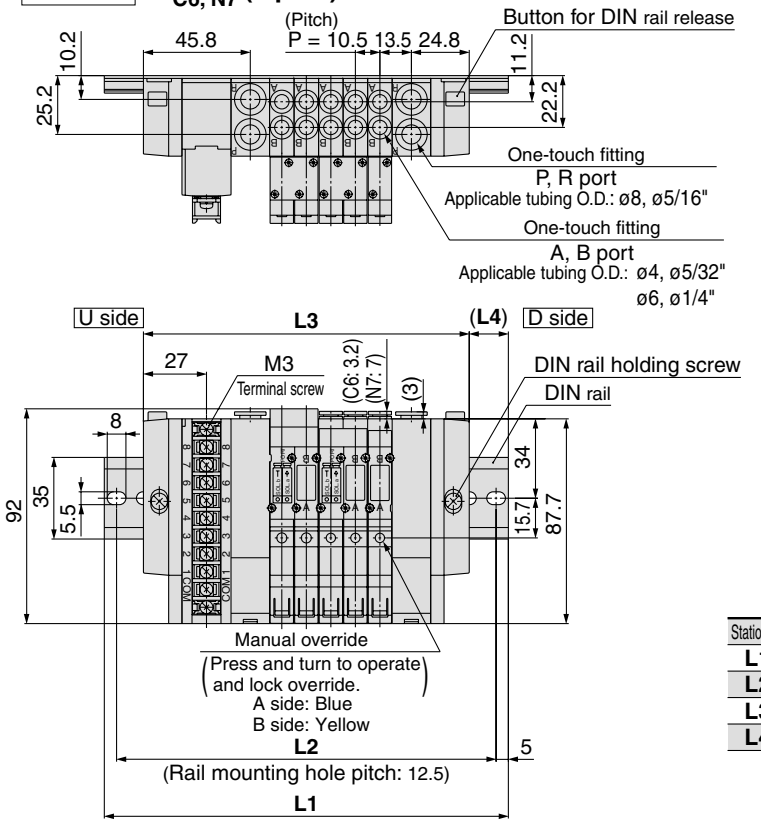


Note) The **L1** to **L4** dimensions of **SS5Y3-45TU-[Stations]U-$^{C4, N3}_{C6, N7}$**, **SS5Y3-45TD-[Stations]U-$^{C4, N3}_{C6, N7}$**, **SS5Y3-45TD-[Stations]D-$^{C4, N3}_{C6, N7}$** are identical those of SS5Y3-45TU-[Stations]D-$^{C4, N3}_{C6, N7}$.



Stations n	2 stations	3	4	5	6	7	8 stations
L1	123	135.5	148	148	160.5	173	185.5
L2	112.5	125	137.5	137.5	150	162.5	175
L3	91.5	102	112.5	123	133.5	144	154.5
L4	15.5	16.5	17.5	12.5	13.5	14.5	15.5

SS5Y3-45TU-[Stations]B-$^{C4, N3}_{C6, N7}$ (9 pins)

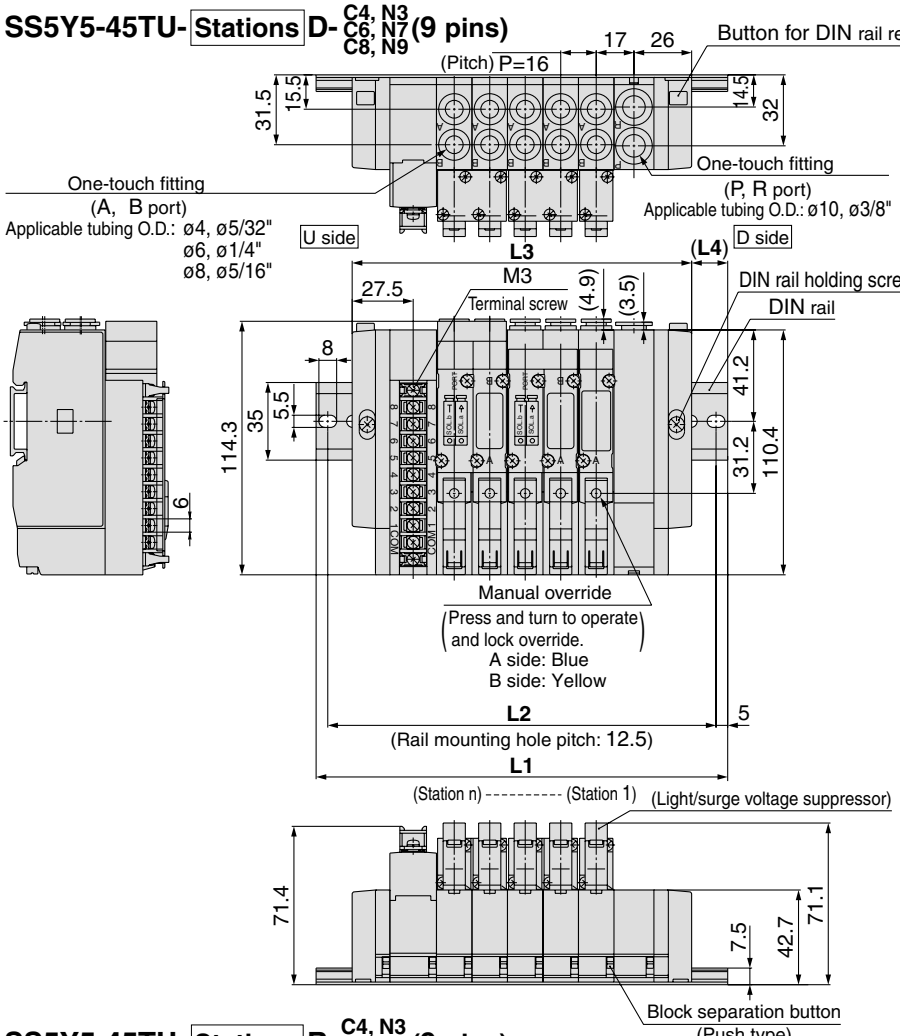


Note) The **L1** to **L4** dimensions of **SS5Y3-45TD-[Stations]B-$^{C4, N3}_{C6, N7}$** are identical to those of SS5Y3-45TU-[Stations]B-$^{C4, N3}_{C6, N7}$.

Stations n	2 stations	3	4	5	6	7	8 stations
L1	135.5	148	160.5	173	185.5	185.5	198
L2	125	137.5	150	162.5	175	175	187.5
L3	108	118.5	129	139.5	150	160.5	171
L4	13.5	14.5	15.5	16.5	17.5	12.5	13.5

SY5000: 9 Pins Terminal Block/Plug-in

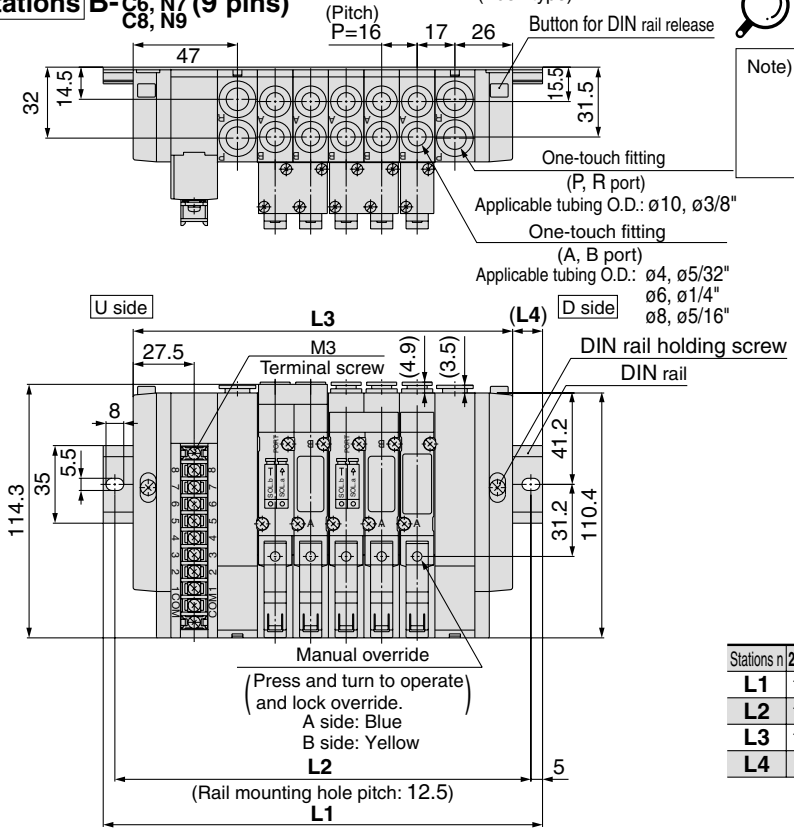
SS5Y5-45TU-[Stations]D-C4, N3 C6, N7 C8, N9 (9 pins)



Note) The **L1** to **L4** dimensions of **SS5Y5-45TU-[Stations]U-C4, N3 C6, N7, C8, N9**, **SS5Y5-45TD-[Stations]U-C4, N3 C6, N7, C8, N9** **SS5Y5-45TD-[Stations]D-C4, N3 C6, N7 C8, N9** are identical those of SS5Y5-45TU-[Stations]D-C4, N3 C6, N7, C8, N9

Stations n	2 stations	3	4	5	6	7	8 stations
L1	135.5	148	160.5	185.5	198	210.5	235.5
L2	125	137.5	150	175	187.5	200	225
L3	105	121	137	153	169	185	201
L4	15	13.5	11.5	16	14.5	12.5	17

SS5Y5-45TU-[Stations]B-C4, N3 C6, N7 C8, N9 (9 pins)

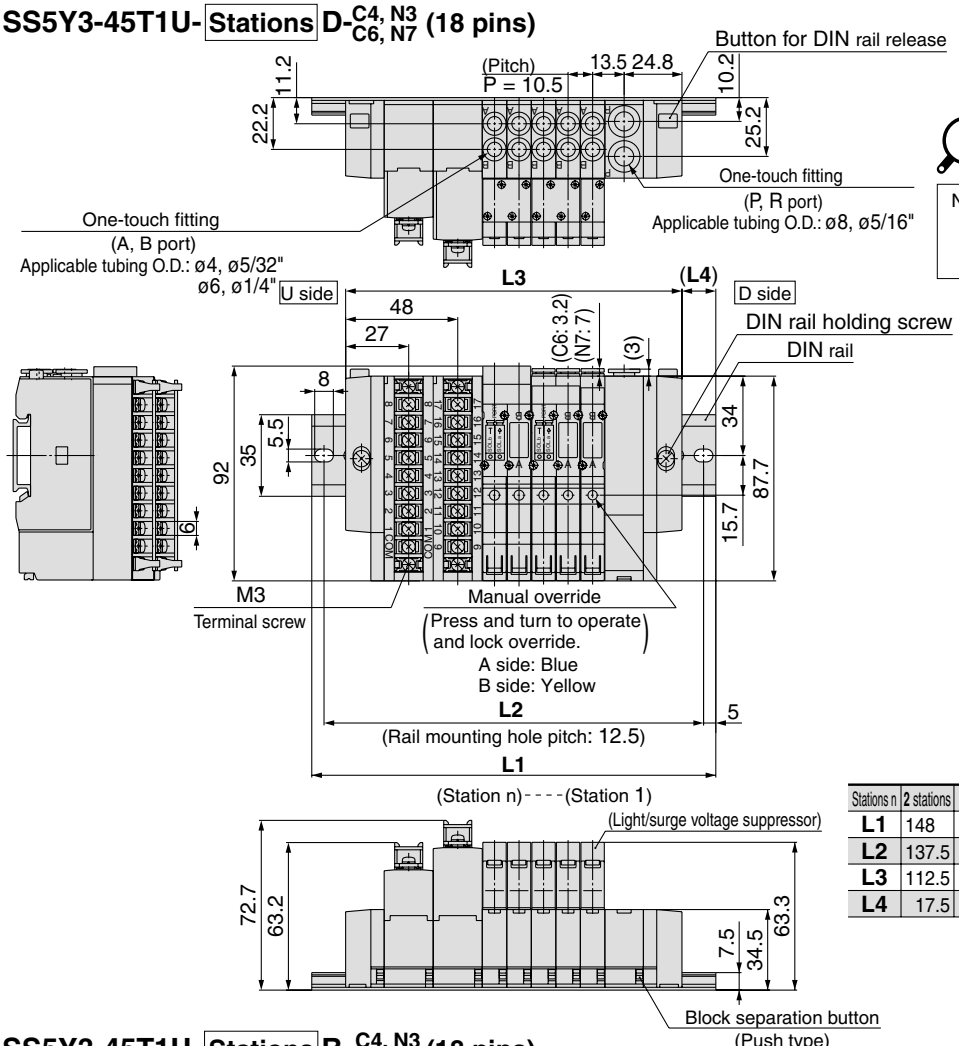


Note) **The L1** to **L4** dimensions of **SS5Y5-45TD-[Stations]B-C4, N3 C6, N7 C8, N9** are identical to those of SS5Y5-45TU-[Stations]B-C4, N3 C6, N7, C8, N9

Stations n	2 stations	3	4	5	6	7	8 stations
L1	148	173	185.5	198	210.5	235.5	248
L2	137.5	162.5	175	187.5	200	225	237.5
L3	123	139	155	171	187	203	219
L4	12.5	17	15	13.5	11.5	16	14.5

SY3000: 18 Pins Terminal Block/Plug-in

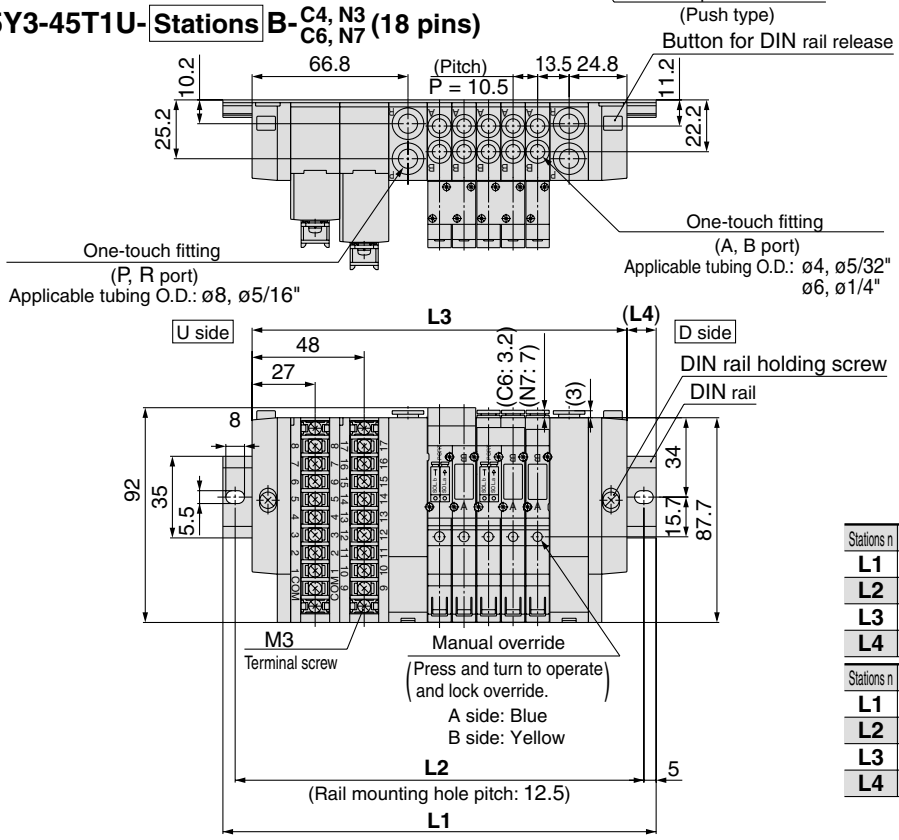
SS5Y3-45T1U-Stations D-C4, N3 C6, N7 (18 pins)



Note) The **L1** to **L4** dimensions of **SS5Y3-45T1U-Stations U-C4, N3 C6, N7** are identical to those of SS5Y3-45T1U-Stations D-C4, N3 C6, N7.

Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	148	160.5	173	185.5	198	210.5	210.5	223
L2	137.5	137.5	150	162.5	175	187.5	200	200	212.5
L3	112.5	123	133.5	144	154.5	165	175.5	186	196.5
L4	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12	13

SS5Y3-45T1U-Stations B-C4, N3 C6, N7 (18 pins)

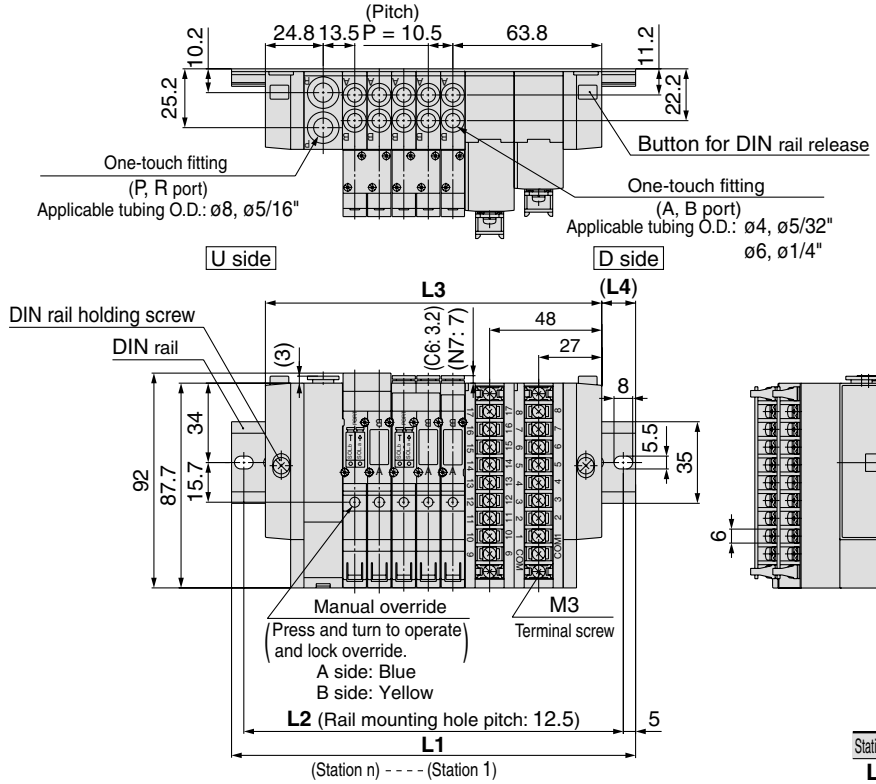


Stations n	2 stations	3	4	5	6	7	8	9 stations
L1	160.5	173	185.5	185.5	198	210.5	223	235.5
L2	150	162.5	175	175	187.5	200	212.5	225
L3	129	139.5	150	160.5	171	181.5	192	202.5
L4	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5

Stations n	10 stations	11	12	13	14	15	16	17 stations
L1	248	248	260.5	273	285.5	298	310.5	310.5
L2	237.5	237.5	250	262.5	275	287.5	300	300
L3	213	223.5	234	244.5	255	265.5	276	286.5
L4	17.5	12	13	14	15	16	17	12

SY3000: 9 Pins Terminal Block/Plug-in

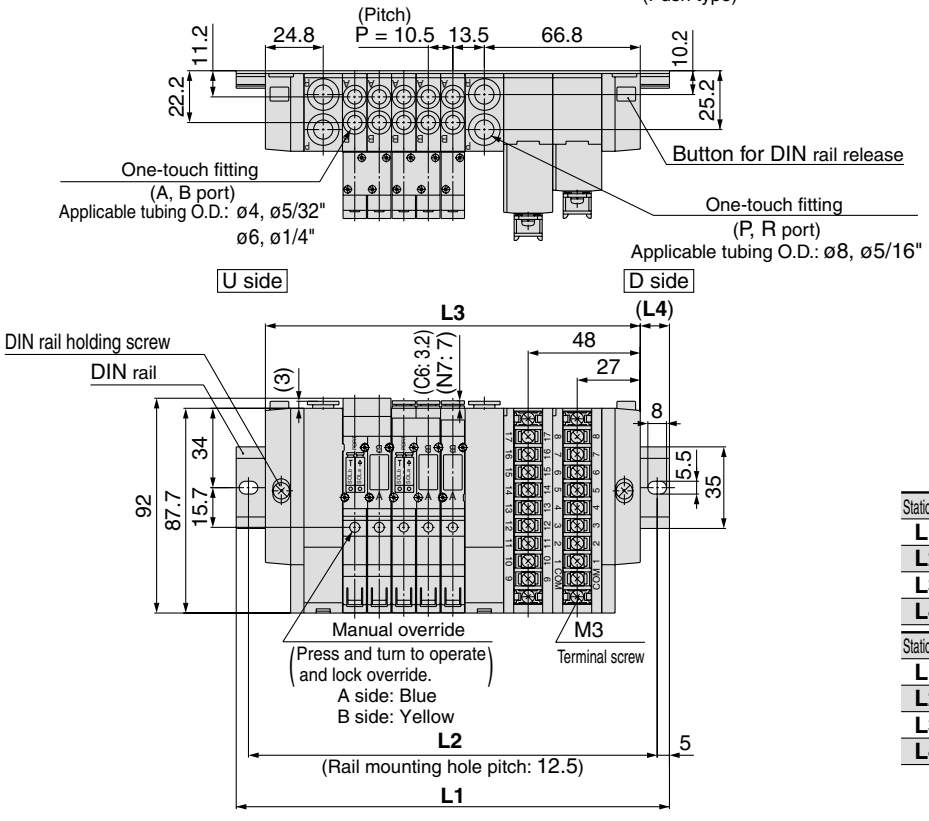
SS5Y3-45T1D-[Stations]U-C4, N3 C6, N7 (18 pins)



Note) The **L1** to **L4** dimensions of **SS5Y3-45T1D-[Stations]D-C4, N3 C6, N7** are identical to those of SS5Y3-45T1D-[Stations]U-C4, N3 C6, N7.

Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	148	160.5	173	185.5	198	210.5	210.5	223
L2	137.5	137.5	150	162.5	175	187.5	200	200	212.5
L3	112.5	123	133.5	144	154.5	165	175.5	186	196.5
L4	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12	13

SS5Y3-45T1D-[Stations]B-C4, N3 C6, N7 (18 pins)

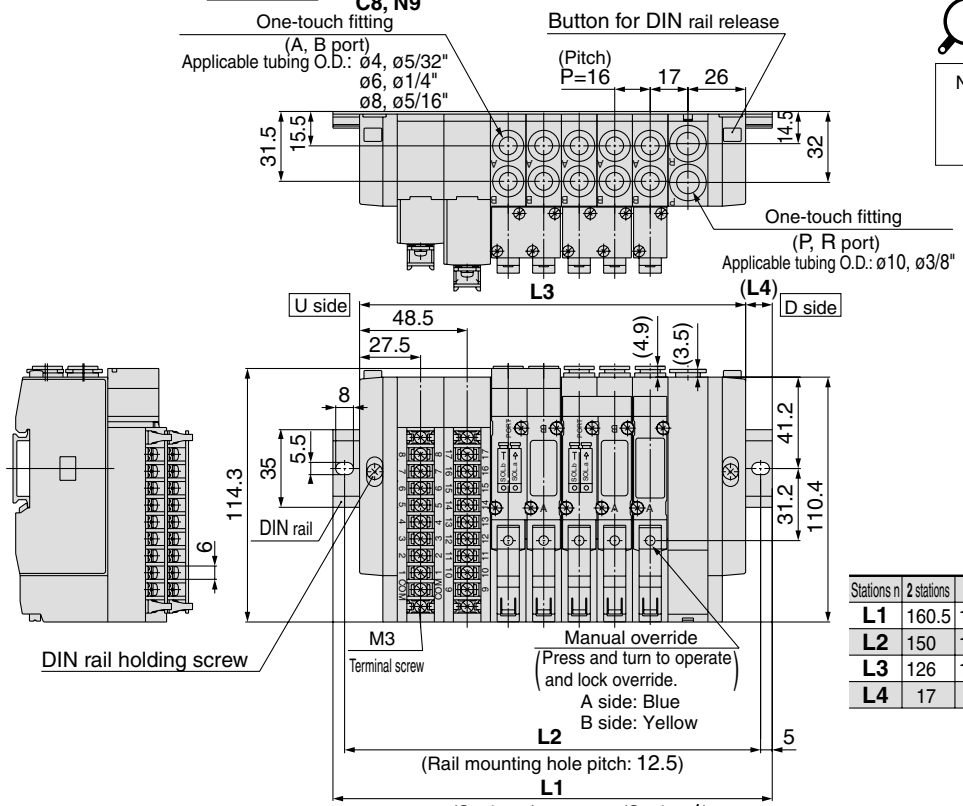


Stations n	2 stations	3	4	5	6	7	8	9 stations
L1	160.5	173	185.5	185.5	198	210.5	223	235.5
L2	150	162.5	175	175	187.5	200	212.5	225
L3	129	139.5	150	160.5	171	181.5	192	202.5
L4	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5

Stations n	10 stations	11	12	13	14	15	16	17 stations
L1	248	248	260.5	273	285.5	298	310.5	310.5
L2	237.5	237.5	250	262.5	275	287.5	300	300
L3	213	223.5	234	244.5	255	265.5	276	286.5
L4	17.5	12	13	14	15	16	17	12

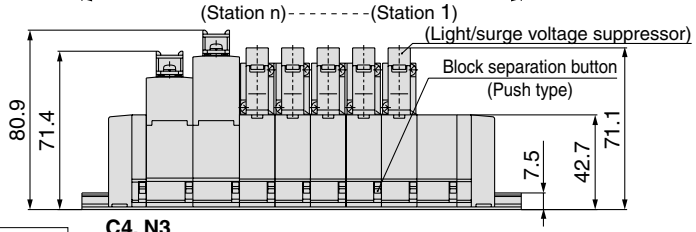
SY5000: 18 Pins Terminal Block/Plug-in

SS5Y5-45T1U-[Stations]D-C4, N3 C6, N7 C8, N9 (18 pins)

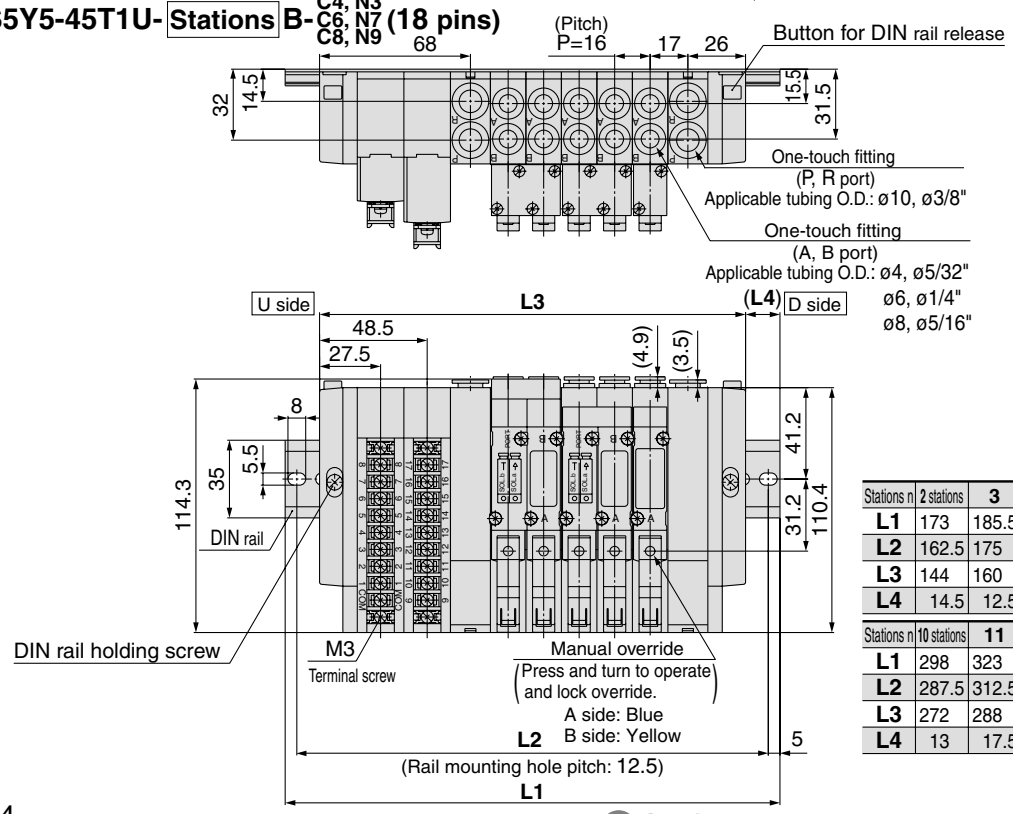


Note) The **L1** to **L4** dimensions of **SS5Y5-45T1U-[Stations]U-C4, N3 C6, N7 C8, N9** are identical to those of SS5Y5-45T1U-[Stations]D-C4, N3 C6, N7 C8, N9.

Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	160.5	173	185.5	198	223	235.5	248	273	285.5
L2	150	162.5	175	187.5	212.5	225	237.5	262.5	275
L3	126	142	158	174	190	206	222	238	254
L4	17	15.5	13.5	12	16.5	14.5	13	17.5	15.5



SS5Y5-45T1U-[Stations]B-C4, N3 C6, N7 C8, N9 (18 pins)

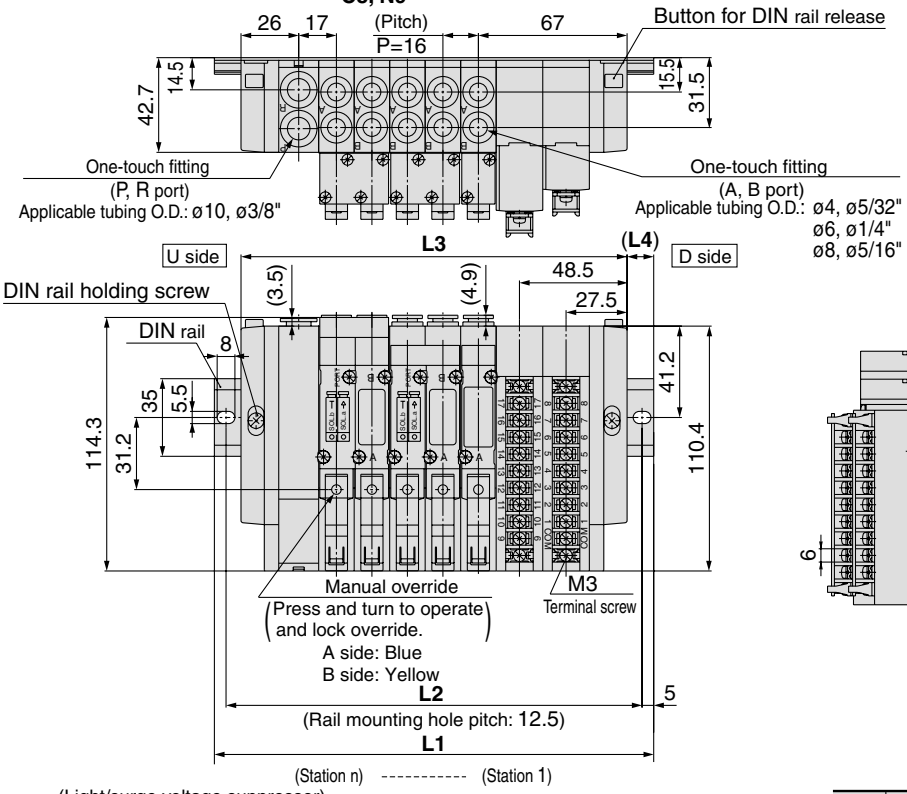


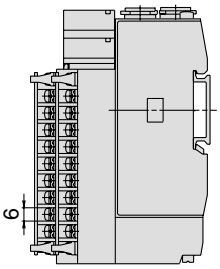
Stations n	2 stations	3	4	5	6	7	8	9 stations
L1	173	185.5	210.5	223	235.5	248	273	285.5
L2	162.5	175	200	212.5	225	237.5	262.5	275
L3	144	160	176	192	208	224	240	256
L4	14.5	12.5	17	15.5	13.5	12	16.5	14.5

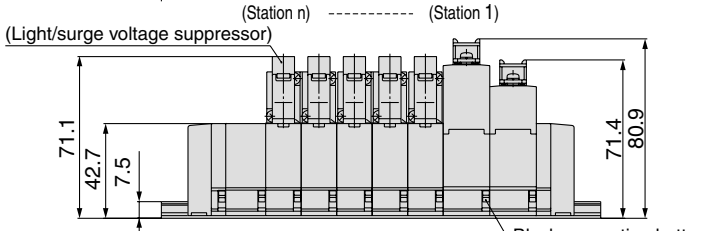
Stations n	10 stations	11	12	13	14	15	16	17 stations
L1	298	323	335.5	348	360.5	385.5	398	410.5
L2	287.5	312.5	325	337.5	350	375	387.5	400
L3	272	288	304	320	336	352	368	384
L4	13	17.5	15.5	14	12	16.5	15	13

SY5000: 18 Pins Terminal Block/Plug-in

SS5Y5-45T1D-[Stations]U-C4, N3 C6, N7 C8, N9 (18 pins)



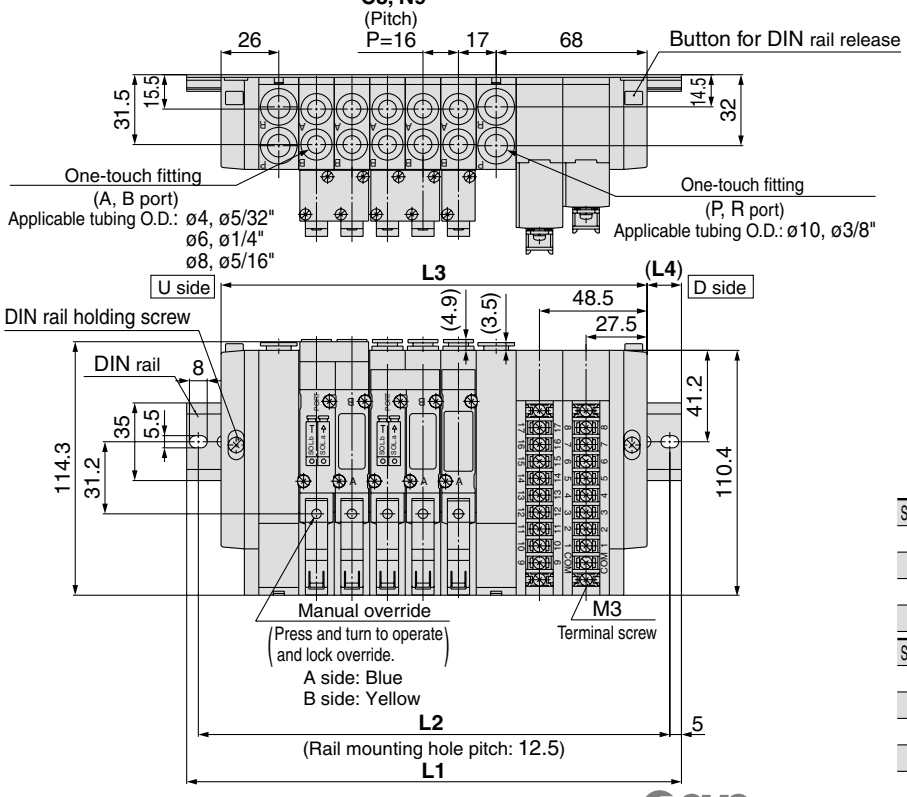




Note) **The L1** to **L4** dimensions of **SS5Y5-45T1D-[Stations]D-C4, N3 C6, N7 C8, N9** are identical to those of SS5Y5-45T1D-[Stations]U-C4, N3 C6, N7 C8, N9

Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	160.5	173	185.5	198	223	235.5	248	273	285.5
L2	150	162.5	175	187.5	212.5	225	237.5	262.5	275
L3	126	142	158	174	190	206	222	238	254
L4	17	15.5	13.5	12	16.5	14.5	13	17.5	15.5

SS5Y5-45T1D-[Stations]B-C4, N3 C6, N7 C8, N9 (18 pins)

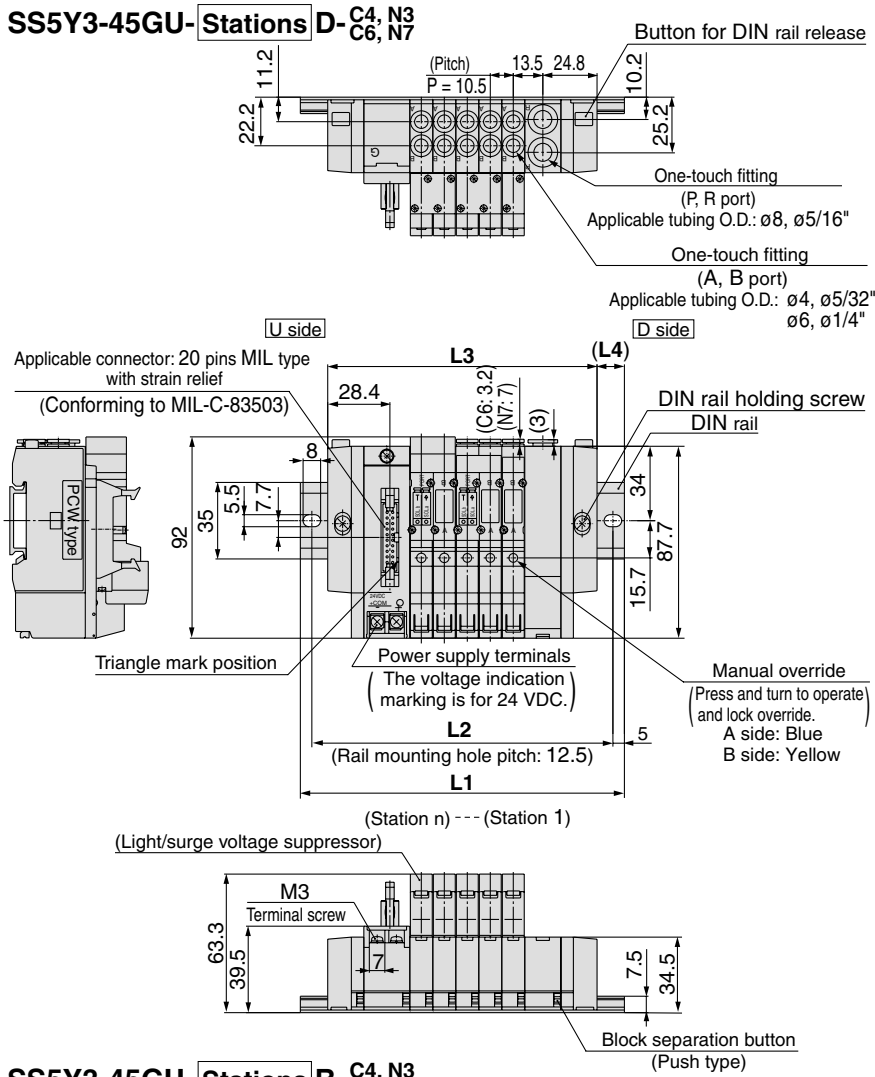


Stations n	2 stations	3	4	5	6	7	8	9 stations
L1	173	185.5	210.5	223	235.5	248	273	285.5
L2	162.5	175	200	212.5	225	237.5	262.5	275
L3	144	160	176	192	208	224	240	256
L4	14.5	12.5	17	15.5	13.5	12	16.5	14.5

Stations n	10 stations	11	12	13	14	15	16	17 stations
L1	298	323	335.5	348	360.5	385.5	398	410.5
L2	287.5	312.5	325	337.5	350	375	387.5	400
L3	272	288	304	320	336	352	368	384
L4	13	17.5	15.5	14	12	16.5	15	13

SY3000: PC Wiring System Compatible (Flat ribbon cable/Plug-in)

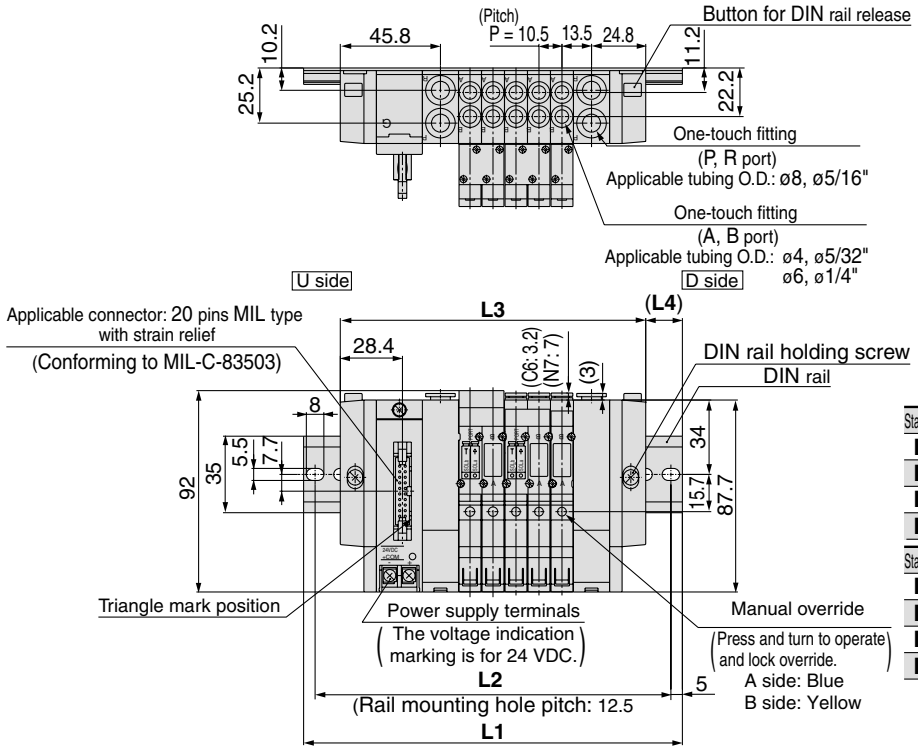
SS5Y3-45GU-[Stations]D-C4, N3 C6, N7



Note) The **L1** to **L4** dimensions of **SS5Y3-45GU-[Stations]U-C4, N3 C6, N7** are identical to those of SS5Y3-45GU-[Stations]D-C4, N3 C6, N7.

Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	123	135.5	148	148	160.5	173	185.5	198	210.5
L2	112.5	125	137.5	137.5	150	162.5	175	187.5	200
L3	91.5	102	112.5	123	133.5	144	154.5	165	175.5
L4	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5

SS5Y3-45GU-[Stations]B-C4, N3 C6, N7

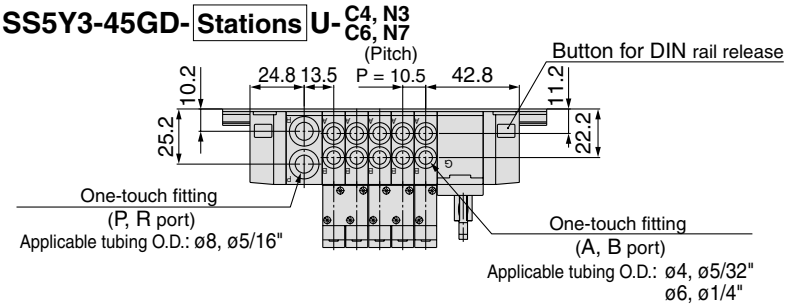


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	135.5	148	160.5	173	185.5	185.5	198	210.5	223
L2	125	137.5	150	162.5	175	175	187.5	200	212.5
L3	108	118.5	129	139.5	150	160.5	171	181.5	192
L4	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5

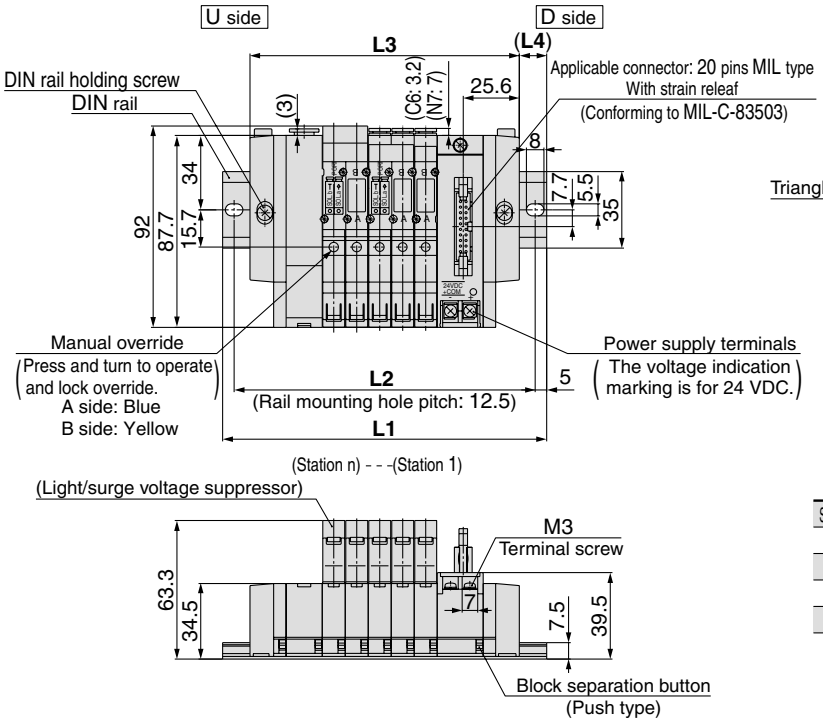
Stations n	11 stations	12	13	14	15	16 stations
L1	235.5	248	248	260.5	273	285.5
L2	225	237.5	237.5	250	262.5	275
L3	202.5	213	223.5	234	244.5	255
L4	16.5	17.5	12	13	14	15

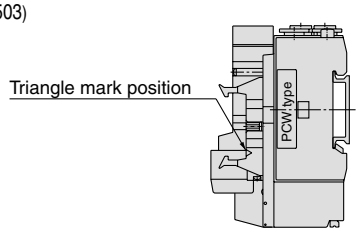
SY3000: PC Wiring System Compatible (Flat ribbon cable/Plug-in)

SS5Y3-45GD-[Stations]U-C4, N3 C6, N7



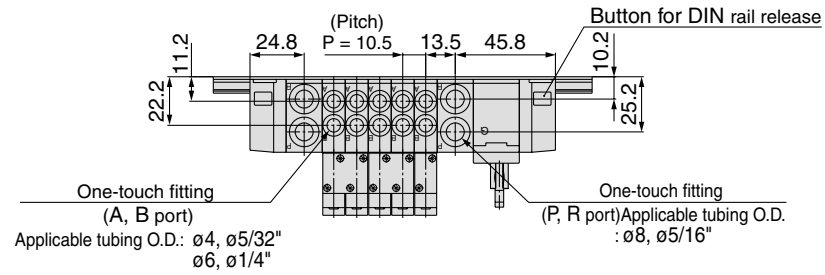
Note) The **L1** to **L4** dimensions of **SS5Y3-45GD-[Stations]D-C4, N3 C6, N7** are identical to those of SS5Y3-45GD-[Stations]U-C4, N3 C6, N7.

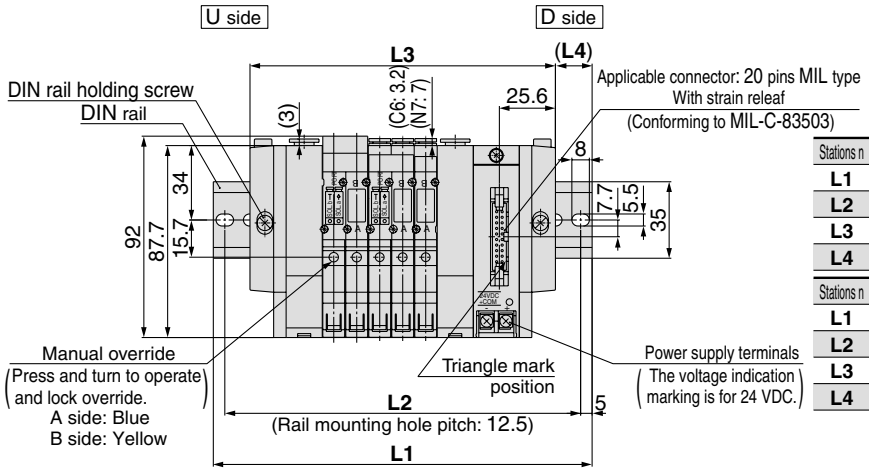




Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	123	135.5	148	148	160.5	173	185.5	198	210.5
L2	112.5	125	137.5	137.5	150	162.5	175	187.5	200
L3	91.5	102	112.5	123	133.5	144	154.5	165	175.5
L4	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5

SS5Y3-45GD-[Stations]B-C4, N3 C6, N7



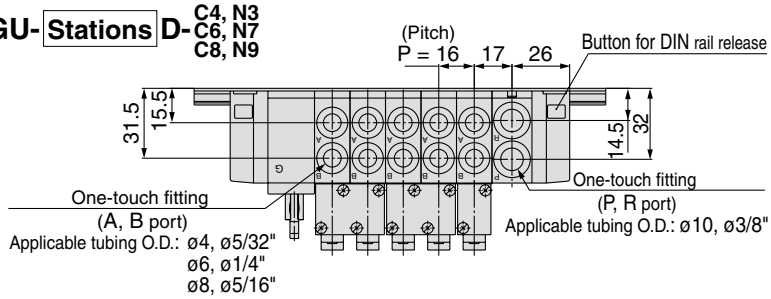


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	135.5	148	160.5	173	185.5	185.5	198	210.5	223
L2	125	137.5	150	162.5	175	175	187.5	200	212.5
L3	108	118.5	129	139.5	150	160.5	171	181.5	192
L4	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5

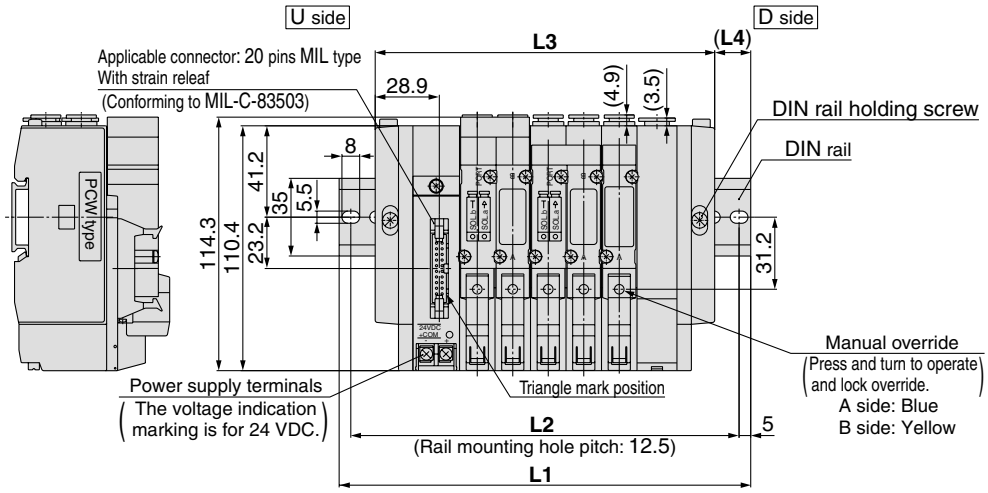
Stations n	11 stations	12	13	14	15	16 stations
L1	235.5	248	248	260.5	273	285.5
L2	225	237.5	237.5	250	262.5	275
L3	202.5	213	223.5	234	244.5	255
L4	16.5	17.5	12	13	14	15

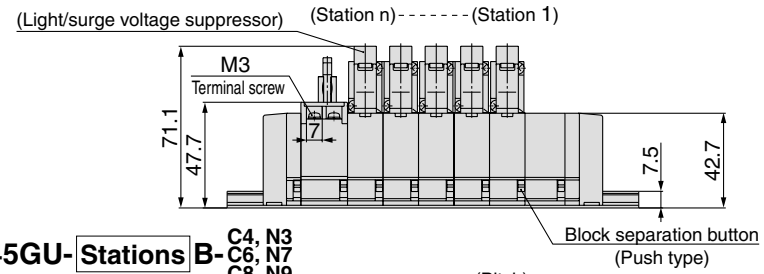
SY5000: PC Wiring System Compatible (Flat ribbon cable/Plug-in)

SS5Y5-45GU-[Stations] D-[C4, N3 / C6, N7 / C8, N9]



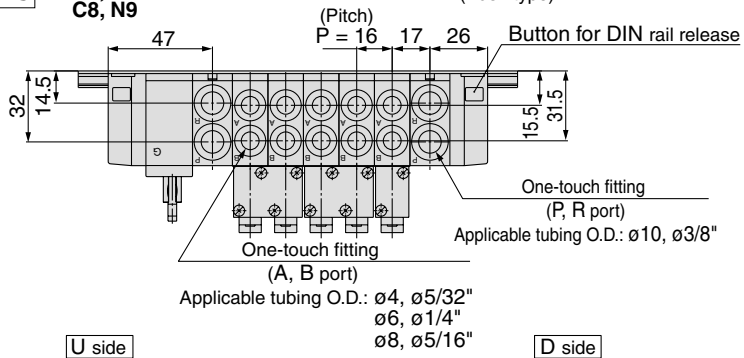
Note) The **L1** to **L4** dimensions of **SS5Y5-45GU-[Stations] U-[C4, N3 / C6, N7 / C8, N9]** are identical to those of SS5Y5-45GU-[Stations] D-[C4, N3 / C6, N7 / C8, N9].

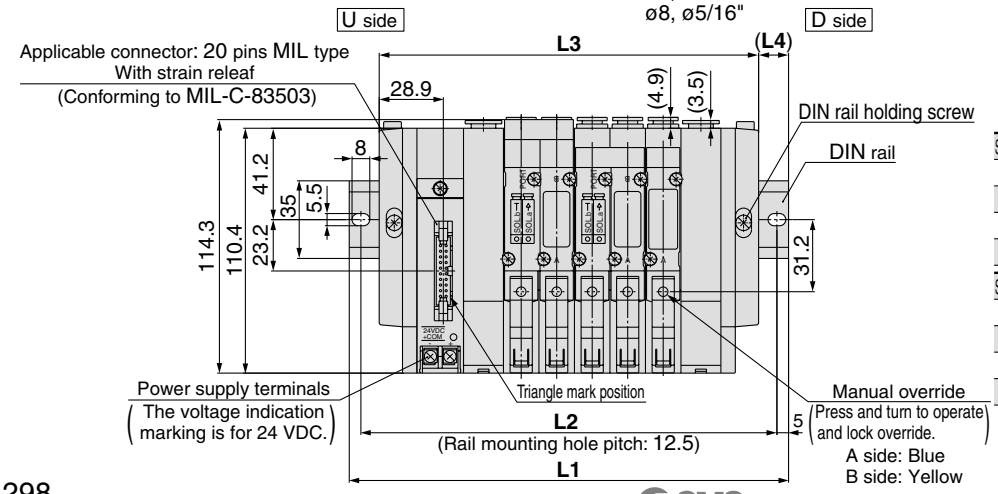




Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	135.5	148	160.5	185.5	198	210.5	235.5	248	260.5
L2	125	137.5	150	175	187.5	200	225	237.5	250
L3	105	121	137	153	169	185	201	217	233
L4	15	13.5	11.5	16	14.5	12.5	17	15.5	13.5

SS5Y5-45GU-[Stations] B-[C4, N3 / C6, N7 / C8, N9]



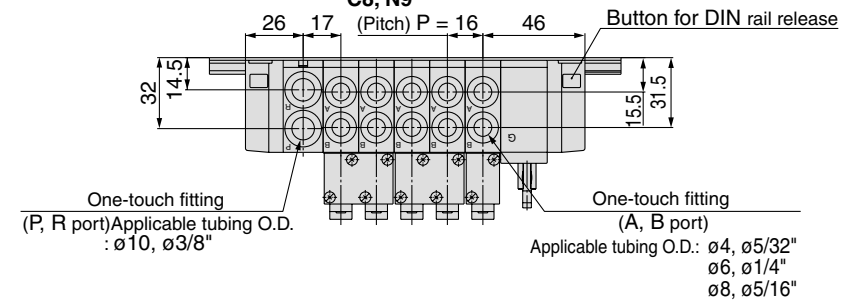


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	173	185.5	198	210.5	235.5	248	260.5	285.5
L2	137.5	162.5	175	187.5	200	225	237.5	250	275
L3	123	139	155	171	187	203	219	235	251
L4	12.5	17	15	13.5	11.5	16	14.5	12.5	17

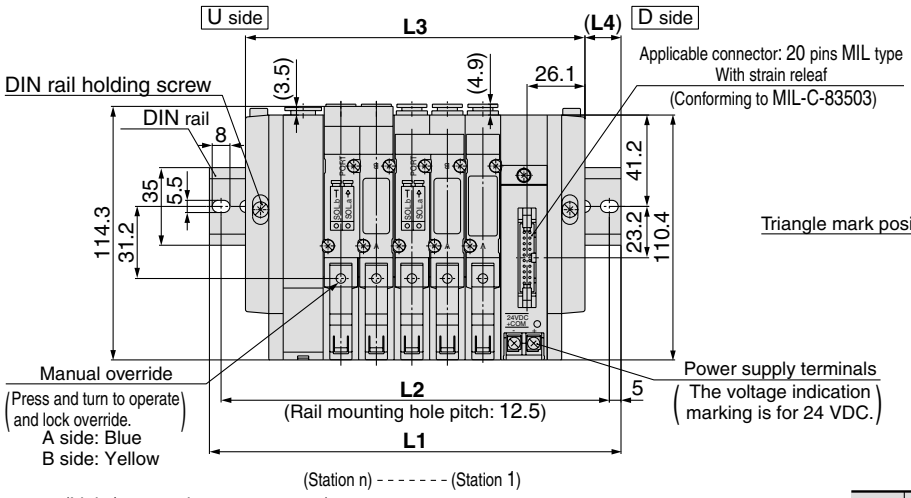
Stations n	11 stations	12	13	14	15	16 stations
L1	298	310.5	323	348	360.5	373
L2	287.5	300	312.5	337.5	350	362.5
L3	267	283	299	315	331	347
L4	15.5	13.5	12	16.5	14.5	13

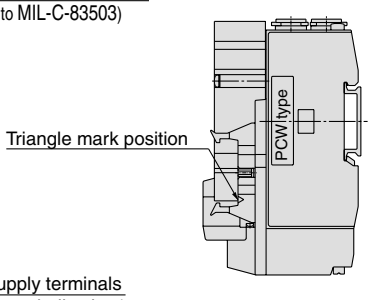
SY5000: PC Wiring System Compatible (Flat ribbon cable/Plug-in)

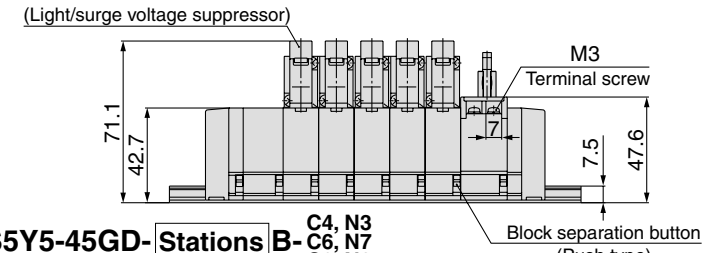
SS5Y5-45GD-Stations U-C4, N3 C6, N7 C8, N9



Note) The **L1** to **L4** dimensions of **SS5Y5-45GD-Stations D-C4, N3 C6, N7 C8, N9** are identical to those of SS5Y5-45GD-Stations U-C4, N3 C6, N7 C8, N9.

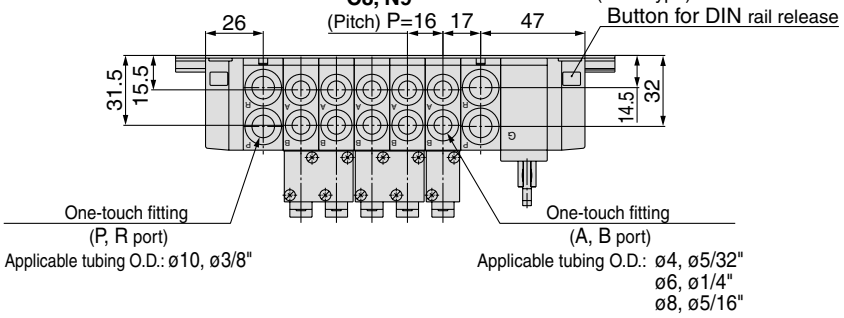


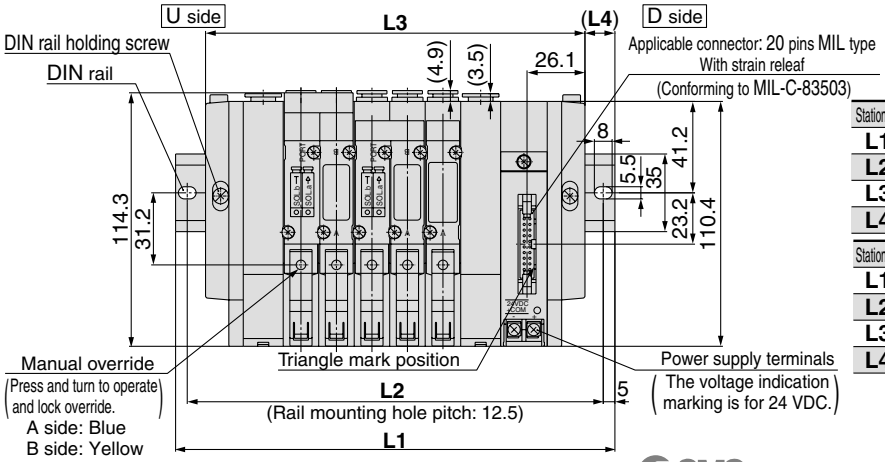




Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	135.5	148	160.5	185.5	198	210.5	235.5	248	260.5
L2	125	137.5	150	175	187.5	200	225	237.5	250
L3	105	121	137	153	169	185	201	217	233
L4	15	13.5	11.5	16	14.5	12.5	17	15.5	13.5

SS5Y5-45GD-Stations B-C4, N3 C6, N7 C8, N9



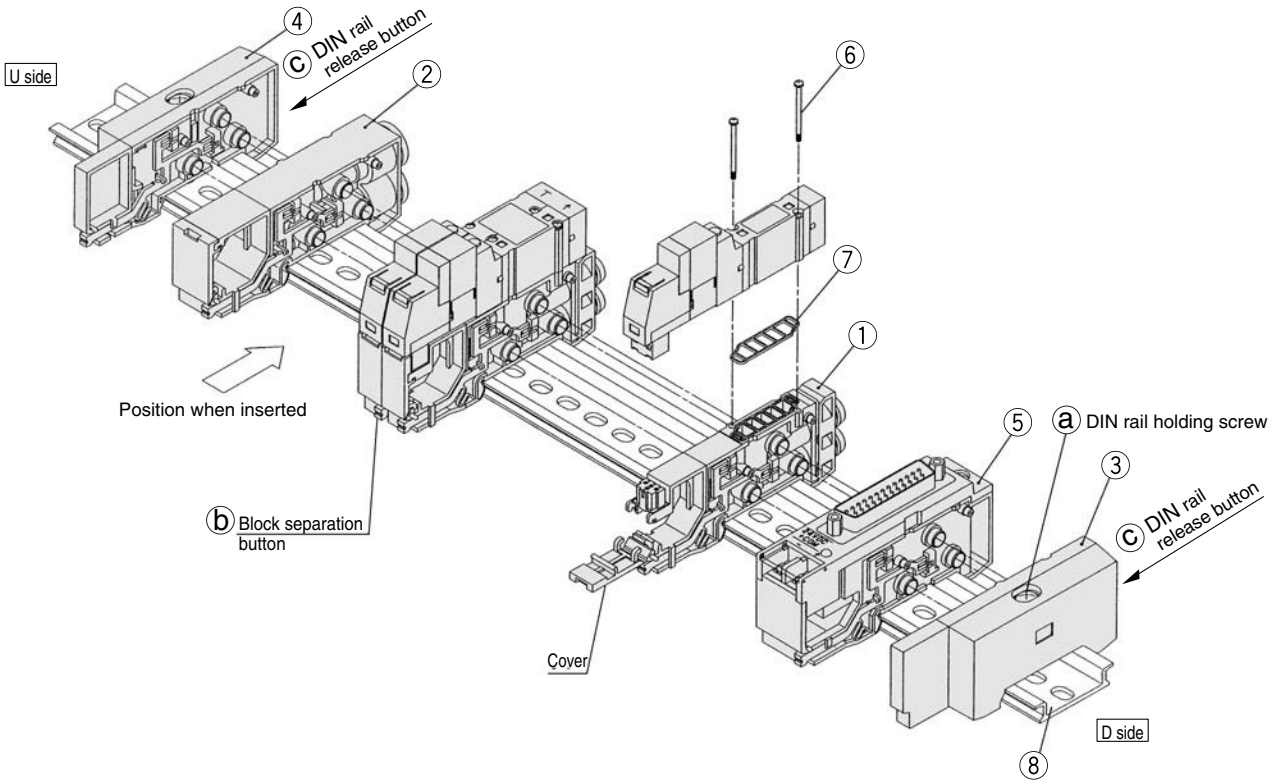


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	173	185.5	198	210.5	235.5	248	260.5	285.5
L2	137.5	162.5	175	187.5	200	225	237.5	250	275
L3	123	139	155	171	187	203	219	235	251
L4	12.5	17	15	13.5	11.5	16	14.5	12.5	17

Stations n	11 stations	12	13	14	15	16 stations
L1	298	310.5	323	348	360.5	373
L2	287.5	300	312.5	337.5	350	362.5
L3	267	283	299	315	331	347
L4	15.5	13.5	12	16.5	14.5	13

DIN Rail Manifold Exploded View

Type 45F (D-sub Connector) Manifold



No.	Description	Part no.		Note	
		SY3000	SY5000		
1	Manifold block assembly	Manifold block assembly part number differs according to an attached lead wire assembly based on the connector spec. Select an appropriate part number from the table of manifold block assembly part number shown below. (Gasket 7 is supplied as an accessory.)			
2	SUP/EXH block assembly	(Metric size) SX3000-51-2A (Inch size) SX3000-51-16A	(Metric size) SX3000-51-2A (Inch size) SX5000-51-16A	Metric size SY3000: P, R port with one-touch fitting for ø8 SY5000: P, R port with one-touch fitting for ø10	Inch size With one-touch fitting for ø5/16" With one-touch fitting for ø3/8"
3	End block assembly	SX3000-52-2A(-Q)	SX5000-52-2A(-Q)	For D side	
4	End block assembly	SX3000-53-2A(-Q)	SX5000-53-2A(-Q)	For U side	
5-1	Connector block assembly (for D-sub connector)	SX3000-64-$^{1A}_{1NA}$	SX5000-64-$^{1A}_{1NA}$	-1A: +COM -1NA: -COM	Note) For 24 VDC
5-2	Connector block assembly (for 26 pins flat cable)	SX3000-64-$^{2A}_{2NA}$-26	SX5000-64-$^{2A}_{2NA}$-26	-2A: +COM -2NA: -COM	
5-3	Connector block assembly (for 20 pins flat cable)	SX3000-64-$^{2A}_{2NA}$-20	SX5000-64-$^{2A}_{2NA}$-20		
5-4	Connector block assembly (for 10 pins flat cable)	SX3000-64-$^{2A}_{2NA}$-10	SX5000-64-$^{2A}_{2NA}$-10		
5-5	Connector block assembly (for 2 to 8 stations (T, T1) terminal block)	SX3000-64-3A	SX5000-64-3A	In common between +COM and –COM.	
5-6	Connector block assembly (for 9 to 17 stations (T1) terminal block)	SX3000-64-8A	SX5000-64-8A		
6	Round head combination screw	SY3000-23-4	M3 x 26, Matt nickel plated		
7	Gasket	SX3000-57-4	SX5000-57-6		
8	DIN rail	VZ1000-11-1-l□		Refer to page 276.	

Note 1) The numbers 5-1 to 4 are for 24 VDC. For 12 VDC, suffix "-12V" to the end of parts number. (Example) SX3000-64-1A-12 V
Note 2) Two manifold block assemblies are necessary for the double, 3 position (Dual body type).

Style of manifold	Manifold block assembly part no.	Note
For 45(N)F (D-sub connector)	SX$^{3}_{5}$000-50-3A-□□(-Q)	□□: AB port SY3000 (metric size) C4: With one-touch fitting for ø4 C6: With one-touch fitting for ø6 (inch size) N3: With one-touch fittign for ø5/32" N7: With one-touch fitting for ø1/4" A, B port SY5000 (metric size) C4: With one-touch fitting for ø4 C6: With one-touch fitting for ø6 C8: With one-touch fitting for ø8 (inch size) N3: WIth one-touch fitting for ø5/32" N7: With one-touch fitting for ø1/4" N9: With one-touch fitting for ø5/16"
For 45(N)$^{P}_{PG}$ (Flat ribbon cable)	SX$^{3}_{5}$000-50-5A-□□(-Q)	
For 45G PC Wiring System compatible		
For 45$^{T}_{T1}$ (Terminal block)	SX$^{3}_{5}$000-50-7A-□□(-Q)	

How to Increase Manifold Bases

1. Loosen DIN rail holding screw ⓐ fixing the manifold base until it begins to turn idly. (While pressing DIN rail releasing buttons ⓒ, at two locations, separate the manifold base from the DIN rail.)
2. Additional bases are to be added to the U side. Press splitting button ⓑ of the manifold block assembly on the U side until button ⓑ locks, and then separate the block assemblies.
3. Separate the connector block assembly in the same manner as 2, and remove the connector mounting screw shown in Fig. 1.
4. Loosen the valve mounting screw on the U side, remove the valve, and take out the receptacle housing. (Refer to Fig. 2.)
5. Insert the common wire (red) of the manifold block assembly to be added into the pin insertion section (N mark) of the receptacle housing that was taken out in 4, mount it on the manifold block, and mount the removed valve.
6. As shown in Fig. 3, mount the additional manifold block assembly on the DIN rail on the U side. Refer to the circuit diagram, and insert the lead wire (black) as shown in Fig. 4.
7. Press the blocks against each other until a click sound is produced, place the lead wire in the manifold block, and close the lid without pinching the lead wire.
8. While lightly holding the blocks together so that there are no gaps between them, secure them to the DIN rail by tightening the DIN rail holding screws ⓐ. ⚠ (Tightening torque: 1.4 N·m)

⚠ Caution

1. Depending on the connector, there is a limit to the number of solenoids that can be used. Manifold bases that can be added cannot exceed the number of usable solenoids.
2. The manifold block assembly mounting position for additional manifold bases is always on the U side, because wires are connected to respective connectors sequentially from the D side.
3. When DIN rail holding screw ⓐ for the end block is not sufficiently tightened during reassembly, air leakage may result. Before supplying air, check that there is no gap between blocks and that the manifold block is firmly fixed to the DIN rail in order to ensure air supply without leakage.

Fig. 1

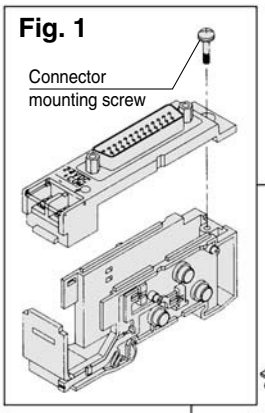


Fig. 2

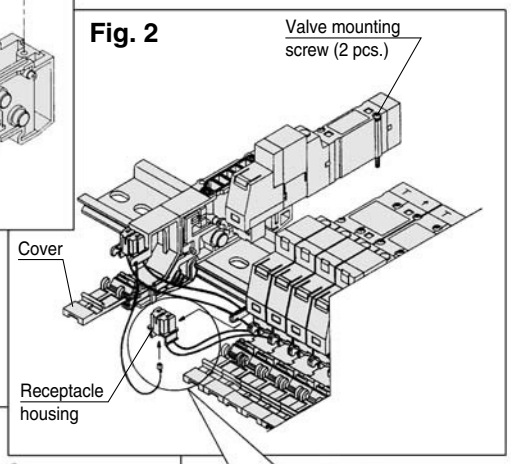
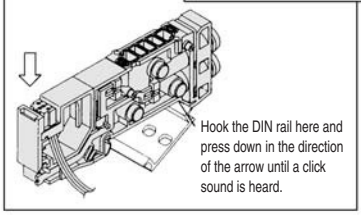


Fig. 3



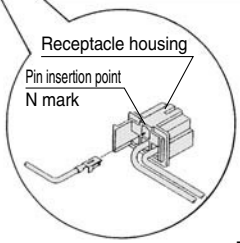
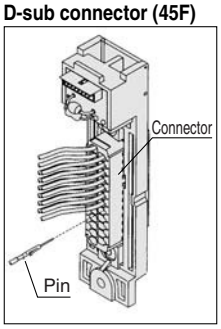


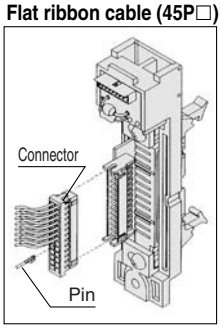
Fig. 4

D-sub connector (45F)



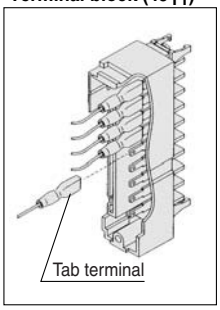
Note)
After inserting pins, lightly pull lead wiresto check that pins are locked.

Flat ribbon cable (45P□)



Note)
Insert pins after removing the connectorfrom the main unit. After inserting pins, lightly pull lead wires to check that the pins are locked.

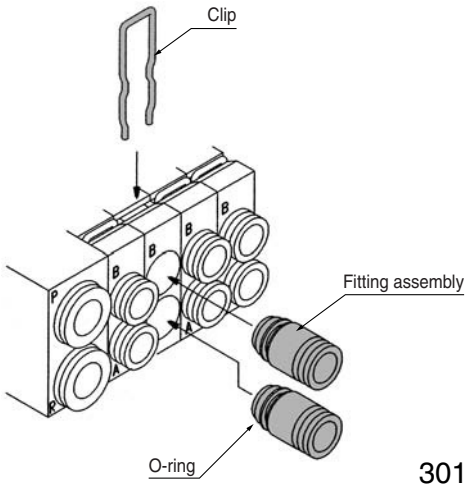
Terminal block (45^{T}_{T1})



Note)
Insert tab terminals completely.

How to Change Fitting Assembly

Type 45 manifold permits change in the A and B port sizes by changing the manifold block fitting assembly.
After removing the valve, remove the clip with a screwdriver, etc. For mounting a new fitting assembly, insert it and then insert a clip until it will not come out of the manifold block.



Fitting Assembly Part No.

Metric size

SY3000	One-touch fitting for ø4	VVQ1000-50A-C4
	One-touch fitting for ø6	VVQ1000-50A-C6
SY5000	One-touch fitting for ø4	VVQ1000-51A-C4
	One-touch fitting for ø6	VVQ1000-51A-C6
	One-touch fitting for ø8	VVQ1000-51A-C8

Inch size

SY3000	One-touch fitting for ø5/32"	VVQ1000-50A-N3
	One-touch fitting for ø1/4"	VVQ1000-50A-N7
SY5000	One-touch fitting for ø5/32"	VVQ1000-51A-N3
	One-touch fitting for ø1/4"	VVQ1000-51A-N7
	One-touch fitting for ø5/16"	VVQ1000-51A-N9

Note 1) P and R ports cannot be changed.
Note 2) Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.

SY3000/5000 Base Mounted Manifold
Stacking Type/DIN Rail Mounted
EX122 Integrated Type (for Output) Serial Transmission System

Type 45S□

How to Order Manifold

SS5Y 3 -45S V -05 U -C6 - □ - □

Series

3	SY3000
5	SY5000

SI unit specifications

Symbol	Protocol type
0	Without SI unit
F1	NKE Corp.: Uni-wire System
H	NKE Corp.: Uni-wire H System
J1	SUNX Corp.: S-LINK (16 outputs)
J2	SUNX Corp.: S-LINK (8 outputs)
Q	DeviceNet
R1	OMRON Corp.: CompoBus/S (16 outputs) compatible
R2	OMRON Corp.: CompoBus/S (8 outputs) compatible
V	CC-LINK

∗ Even though when it is not equipped with SI unit, DIN rail length is long enough for future expectancy of mounting SI unit.

Valve stations

Symbol	Stations	Note
02	2 stations	Single wining spec. (Applicable up to 16 solenoid valves.)
⋮	⋮	
16	16 stations	

∗ This also includes the number of blanking plate assemblies.
∗ Two stations are necessary for the double, 3 position (Dual body type).

SUP/EXH block assembly mounting position

Symbol	Mounting position	Stations
U	U side	2 to 10 stations
D	D side	2 to 10 stations
B	(Both sides)	2 to 16 stations
M	Special specifications	

∗ For special specifications, indicate separately by the manifold specification sheet.

A, B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
M	Mixed	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
M	Mixed	

∗ In the case of mixed specifications, indicate separately on the manifold specification sheet.

CE-compliant

Nil	—
Q	CE-compliant

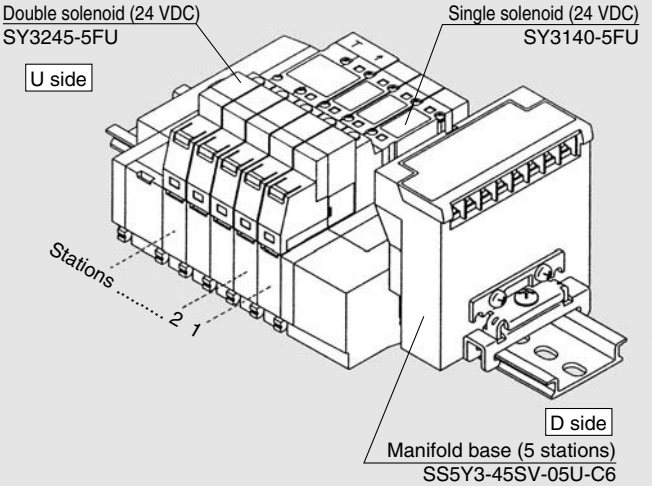
∗ Refer to the SI unit part no. for the SI unit compatible with CE.

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (Max. 20 stations)

How to Order Manifold Assembly (Example)

Example



SS5Y3-45SV-05U-C6 ····· 1 set (45S with SI unit 5-station manifold base part number)
∗ SY3140-5FU ····· 3 sets (Single solenoid part no.)
∗ SY3245-5FU ····· 1 set (Double solenoid part no.)

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

∗ The valve arrangement is numbered as the 1st. station from D side.
∗ When ordering double solenoid valves/3 position (Dual body type), please keep in mind that they require two manifold stations.
∗ SI unit is available only for the D-side mounting type.

How to Order Valve

2 position single SY 3 1 4 0 - 5 FU □ - □ - □

Double, 3 position SY 3 2 4 5 - 5 FU □ - □ - □

Series

3	SY3000
5	SY5000

Type of actuation

2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Dual body type (Double, 3 position)

Rated voltage

5	24 VDC

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 332.)

CE-compliant

Nil	—
Q	CE-compliant

SI Unit Part No.

Symbol	Protocol type	SI unit No.	CE-compliant	Symbol	Protocol type	SI unit No.	CE-compliant
F1	NKE Corp.: Uni-wire System	EX122-SUW1	—	Q	DeviceNet	EX122-SDN1	○
H	NKE Corp.: Uni-wire H System	EX122-SUH1	—	R1	OMRON Corp.: CompoBus/S (16 outputs) compatible	EX122-SCS1	○
J1	SUNX Corp.: S-LINK (16 outputs)	EX122-SSL1	—	R2	OMRON Corp.: CompoBus/S (8 outputs) compatible	EX122-SCS2	○
J2	SUNX Corp.: S-LINK (8 outputs)	EX122-SSL2	—	V	CC-LINK	EX122-SMJ1	○

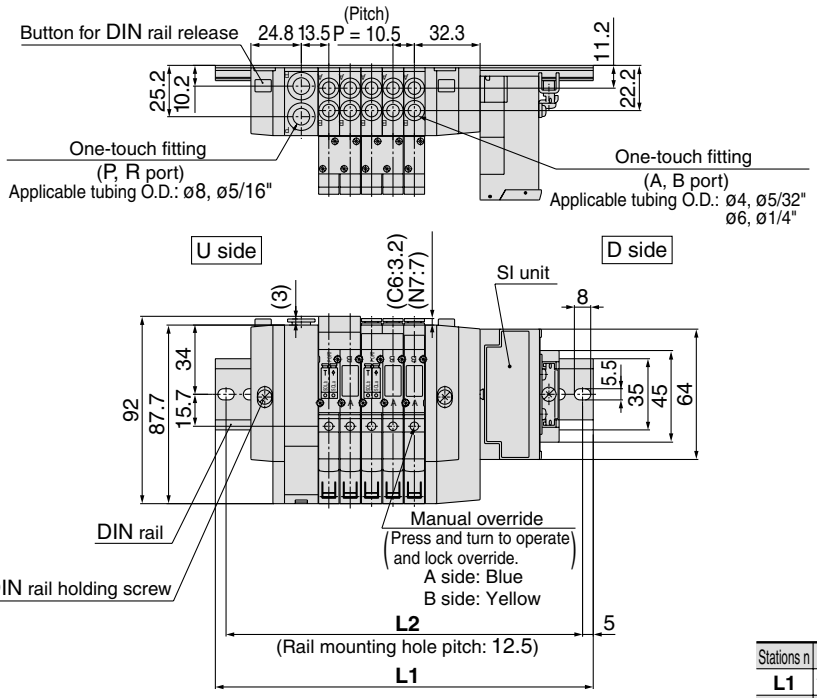
Refer to pages 1650 to 1652 for the details of the EX122 integrated type (for output) serial transmission system.

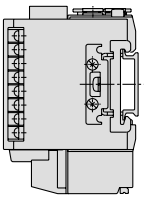
When ordering plug-in type valve as a single unit, gaskets are not included. Order them separately, if necessary. (Refer to page 300 for details.)

SMC

Series SY3000: EX122 Integrated Type (for Output) Serial Transmission System/Plug-in

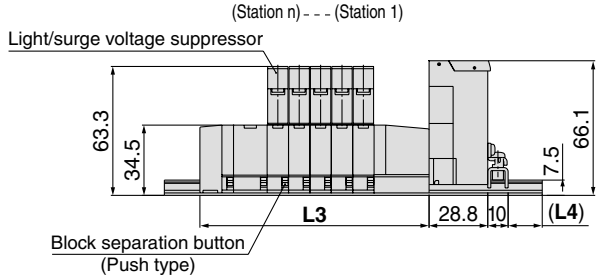
SS5Y3-45S□- Stations U-C4, N3 C6, N7



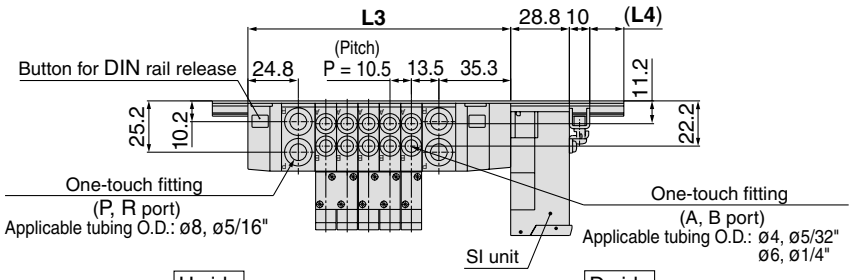


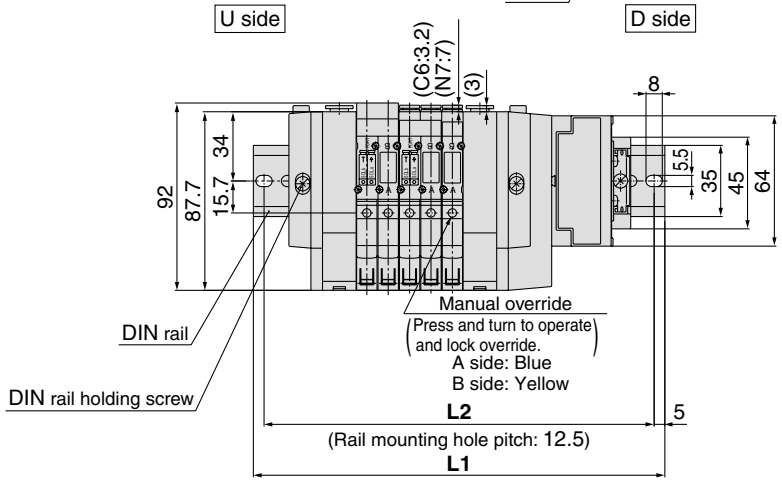
Note) The **L1** to **L4** dimensions of **SS5Y3-45S□- Stations U-C4, N3 C6, N7** are identical to those of SS5Y3-45S□- Stations D-C4, N3 C6, N7.

Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	160.5	173	185.5	185.5	198	210.5	223	235.5
L2	137.5	150	162.5	175	175	187.5	200	212.5	225
L3	81	91.5	102	112.5	123	133.5	144	154.5	165
L4	14.5	15.5	16.5	17.5	12	13	14	15	16



SS5Y3-45S□- Stations B-C4, N3 C6, N7



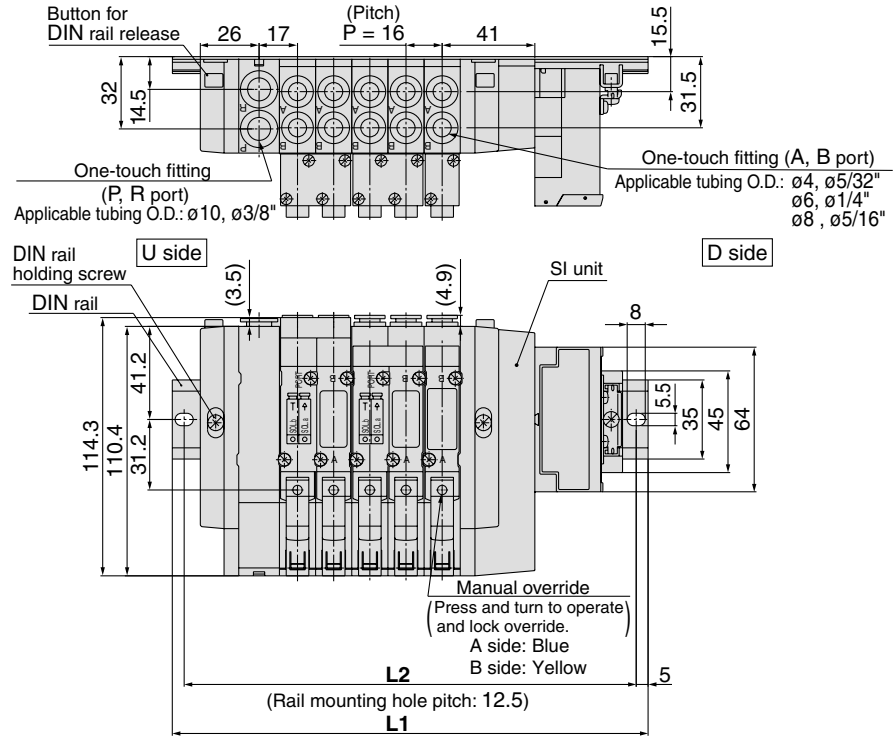


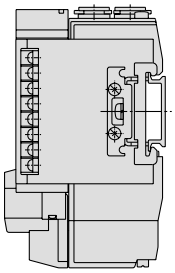
Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	160.5	173	185.5	198	210.5	223	223	235.5	248
L2	150	162.5	175	187.5	200	212.5	212.5	225	237.5
L3	97.5	108	118.5	129	139.5	150	160.5	171	181.5
L4	12.5	13.5	14.5	15.5	16.5	17.5	12	13	14

Stations n	11 stations	12	13	14	15	16 stations
L1	260.5	273	285.5	285.5	298	310.5
L2	250	262.5	275	275	287.5	300
L3	192	202.5	213	223.5	234	244.5
L4	15	16	17	12	13	14

Series SY5000: EX122 Integrated Type (for Output) Serial Transmission System/Plug-in

SS5Y5-45S□- Stations U- C4, N3 C6, N7 C8, N9

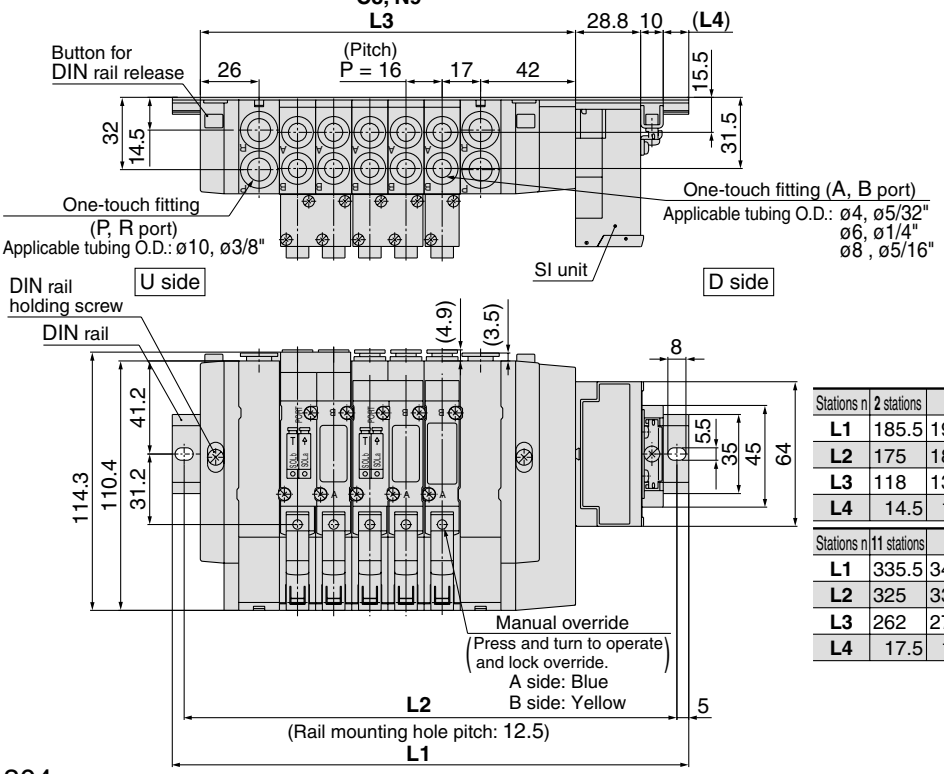




Note) The **L1** to **L4** dimensions of **SS5Y5-45S□- Stations U- C4, N3 C6, N7 C8, N9** are identical to those of SS5Y5-45S□- Stations D- C4, N3 C6, N7 C8, N9.

Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	173	185.5	198	210.5	235.5	248	260.5	285.5	298
L2	162.5	175	187.5	200	225	237.5	250	275	287.5
L3	100	116	132	148	164	180	196	212	228
L4	17.5	15.5	14	12	16.5	15	13	17.5	16

SS5Y5-45S□- Stations B- C4, N3 C6, N7 C8, N9

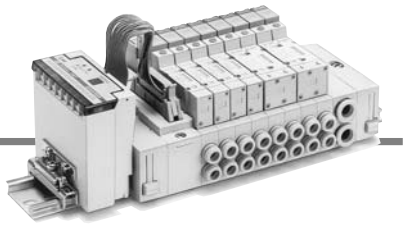


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	185.5	198	223	235.5	248	260.5	285.5	298	310.5
L2	175	187.5	212.5	225	237.5	250	275	287.5	300
L3	118	134	150	166	182	198	214	230	246
L4	14.5	13	17.5	15.5	14	12	16.5	15	13

Stations n	11 stations	12	13	14	15	16 stations
L1	335.5	348	360.5	373	398	410.5
L2	325	337.5	350	362.5	387.5	400
L3	262	278	294	310	326	342
L4	17.5	16	14	12.5	17	15

SY3000/5000 Base Mounted Manifold Stacking Type/DIN Rail Mounted EX 121 Separate Type (for Output) Serial Transmission System

Type 45S1□



How to Order Manifold

SS5Y 3 - 45S1 V D - 05 U - C4 - □ - □

Series

3	SY3000
5	SY5000

SI unit specifications

Symbol	Protocol type
0	Without SI unit
F1	NKE Corp.: Uni-wire System
H	NKE Corp.: Uni-wire H System
J1	SUNX Corp.: S-LINK (16 outputs)
J2	SUNX Corp.: S-LINK (8 outputs)
Q	DeviceNet
R1	OMRON Corp.: CompoBus/S (16 outputs) compatible
R2	OMRON Corp.: CompoBus/S (8 outputs) compatible
V	CC-LINK

• Even though when it is not equipped with SI unit, DIN rail length is long enough for future expectancy of mounting SI unit. When a shorter rail is required (same as type 45□), suffix "0" in the optional blank at the end of part number.

SI unit mounting position

Symbol	Mounting position
U	U side
D	D side

A, B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø 5/32"	SY3000
N7	One-touch fitting for ø 1/4"	
M	Mixed	
N3	One-touch fitting for ø 5/32"	SY5000
N7	One-touch fitting for ø 1/4"	
N9	One-touch fitting for ø 5/16"	
M	Mixed	

∗ In the case of mixed specifications, indicate separately on the manifold specification sheet.

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (Max. 20 stations)

SUP/EXH block assembly mounting position

Symbol	Mounting position	Stations
U	U side	2 to 10 stations
D	D side	2 to 10 stations
B	Both sides	2 to 16 stations
M	Special specifications	

∗ For special specifications, indicate separately by the manifold specification sheet.

Valve stations

Symbol	Stations	Note
02	2 stations	Single wiring spec. (Applicable up to 16 solenoid valves.)
⋮	⋮	
16	16 stations	

∗ This also includes the number of blanking plate assemblies.
∗ Two stations are necessary for the double, 3 position (Dual body type).

CE-compliant

Nil	—
Q	CE-compliant

∗ Refer to the SI unit part no. for the SI unit compatible with CE.

SI Unit Part No.

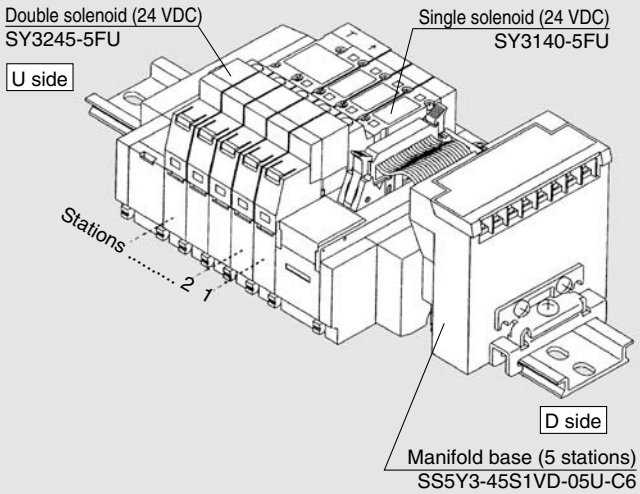
Symbol	Protocol type	SI unit No.	CE-compliant	Symbol	Protocol type	SI unit No.	CE-compliant
F1	NKE Corp.: Uni-wire System	EX121-SUW1	—	Q	DeviceNet	EX121-SDN1	○
H	NKE Corp.: Uni-wire H System	EX121-SUH1	—	R1	OMRON Corp.: CompoBus/S (16 outputs) compatible	EX121-SCS1	○
J1	SUNX Corp.: S-LINK (16 outputs)	EX121-SSL1	—	R2	OMRON Corp.: CompoBus/S (8 outputs) compatible	EX121-SCS2	○
J2	SUNX Corp.: S-LINK (8 outputs)	EX121-SSL2	—	V	CC-LINK	EX121-SMJ1	○

• For external pilot specifications and built-in silencer, refer to pages 324 to 328.

Refer to pages 1650 to 1652 for the details of the EX121 separate type (for output) serial transmission system.

How to Order Valve Manifold Assembly (Example)

Example



SS5Y3-45S1VD-05U-C6 1 set··· (Type 45S1 with serial unit 5-station manifold base part no.)
∗ SY3140-5FU ····· 3 sets (Single solenoid part no.)
∗ SY3245-5FU ····· 1 set (Double solenoid part no.)

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

- The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of SI unit.
- When ordering double solenoid valves/3 position (Dual body type), please keep in mind that they require two manifold stations.

How to Order Valve

2 position single **SY 3 1 4 0 — 5 FU □**

Double, 3 position **SY 3 2 4 5 — 5 FU □**

Series

3	SY3000
5	SY5000

Type of actuation

2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Dual body type (Double, 3 position)

Rated voltage

5	24 VDC

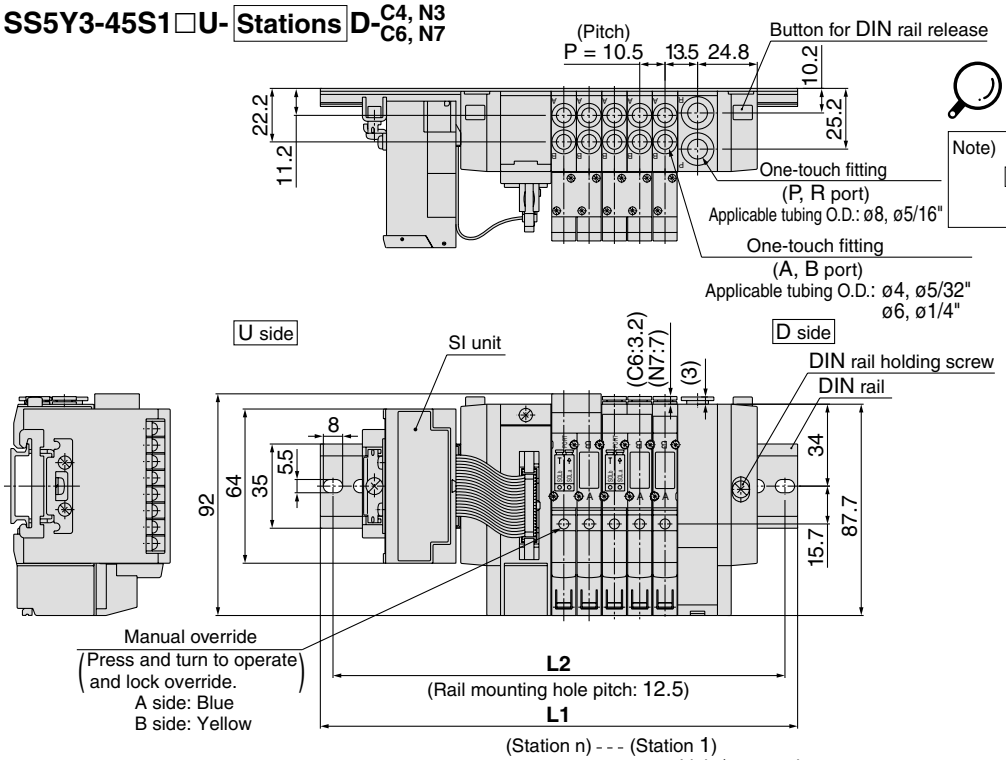
Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

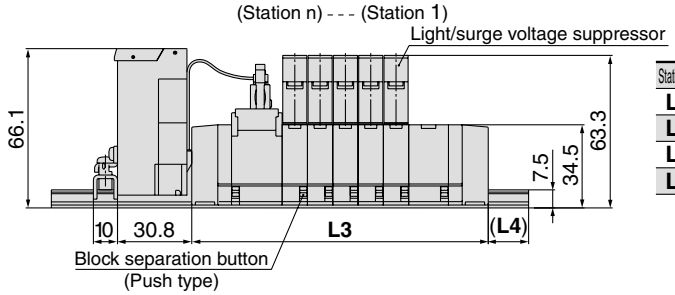
When ordering plug-in type valve as a single unit, gaskets are not included. Order them separately, if necessary. (Refer to page 300 for details.)

SY3000: EX121 Separate Type (for Output) Serial Transmission System/Plug-in

SS5Y3-45S1□U-[Stations]D-C4, N3 / C6, N7

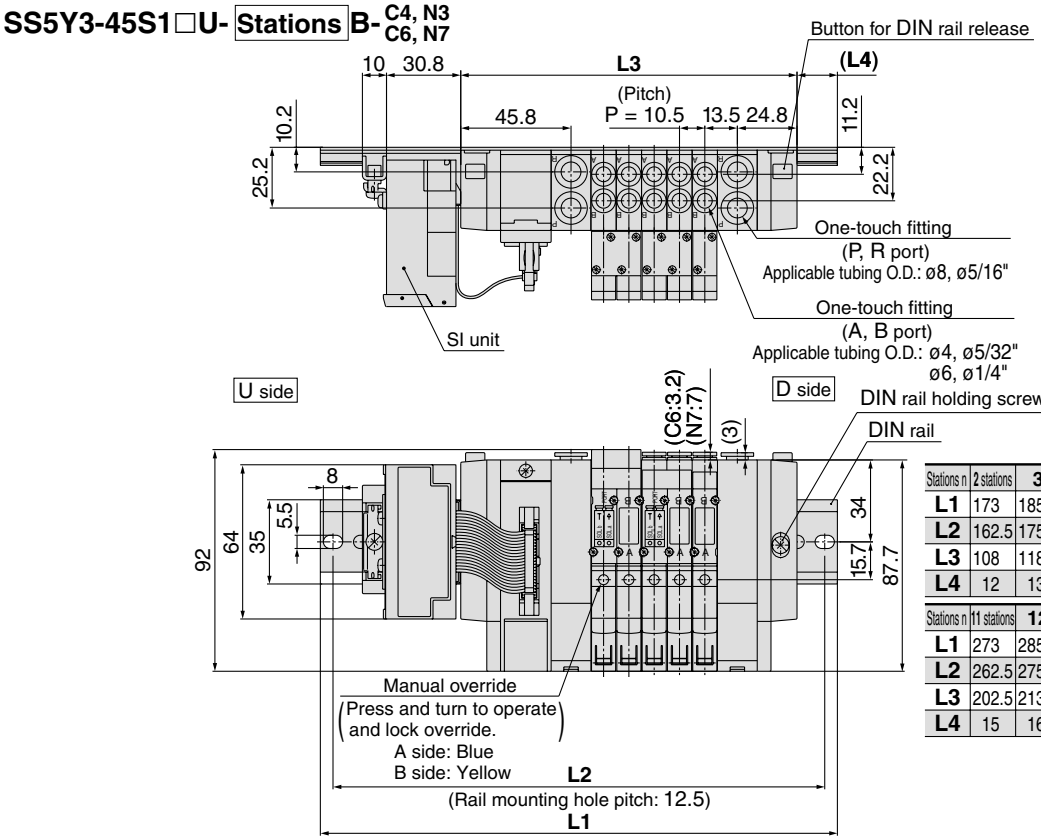


Note) The **L1** to **L4** dimensions of **SS5Y3-45S1□U-[Stations]U-C4, N3 / C6, N7** are identical to those of SS5Y3-45S1□U-[Stations]D-C4, N3 / C6, N7.



Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	160.5	173	185.5	198	198	210.5	223	235.5	248
L2	150	162.5	175	187.5	187.5	200	212.5	225	237.5
L3	91.5	102	112.5	123	133.5	144	154.5	165	175.5
L4	14	15	16	17	12	13	14	15	16

SS5Y3-45S1□U-[Stations]B-C4, N3 / C6, N7

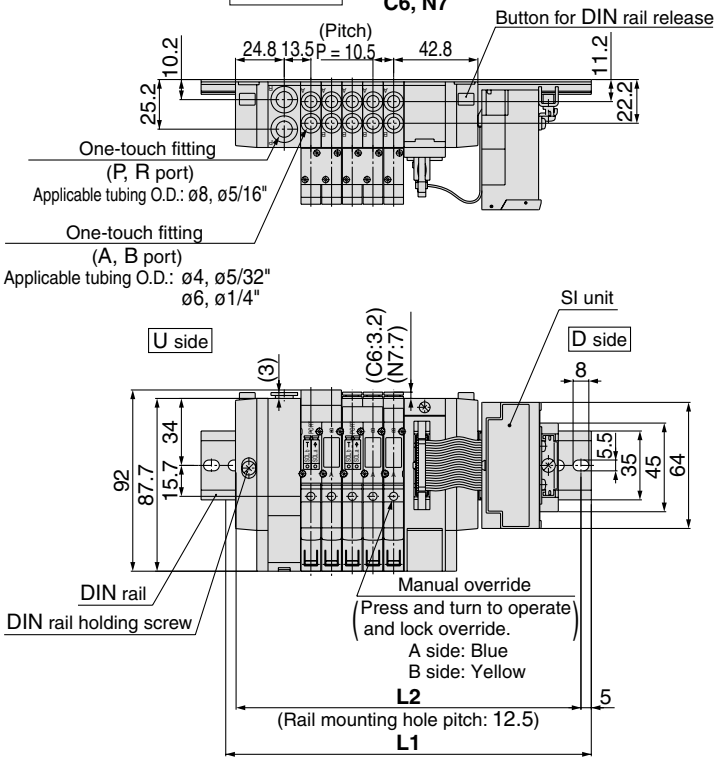


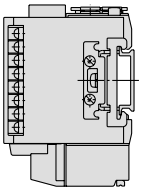
Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	173	185.5	198	210.5	223	235.5	235.5	248	260.5
L2	162.5	175	187.5	200	212.5	225	225	237.5	250
L3	108	118.5	129	139.5	150	160.5	171	181.5	192
L4	12	13	14	15	16	17	12	13	14

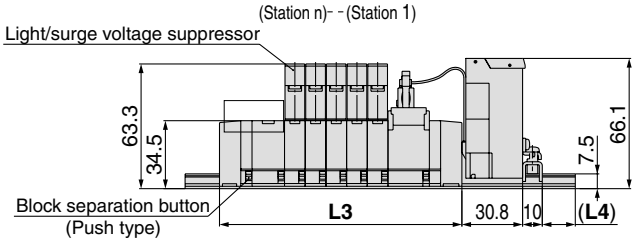
Stations n	11 stations	12	13	14	15	16 stations
L1	273	285.5	298	298	310.5	323
L2	262.5	275	287.5	287.5	300	312.5
L3	202.5	213	223.5	234	244.5	255
L4	15	16	17	11.5	12.5	13.5

SY3000: EX121 Separate Type (for Output) Serial Transmission System/Plug-in

SS5Y3-45S1□D- Stations U- C4, N3 C6, N7



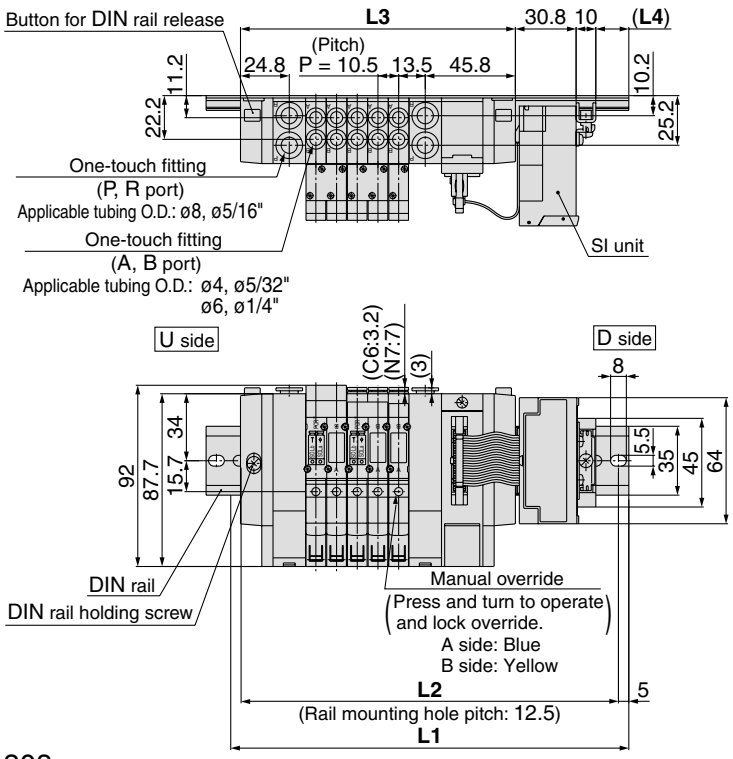




Note) The **L1** to **L4** dimensions of **SS5Y3-45S1□D- Stations D- C4, N3 C6, N7** are identical to those of SS5Y3-45S1□D- Stations U- C4, N3 C6, N7.

Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	160.5	173	185.5	198	198	210.5	223	235.5	248
L2	150	162.5	175	187.5	187.5	200	212.5	225	237.5
L3	91.5	102	112.5	123	133.5	144	154.5	165	175.5
L4	14	15	16	17	12	13	14	15	16

SS5Y3-45S1□D- Stations B- C4, N3 C6, N7

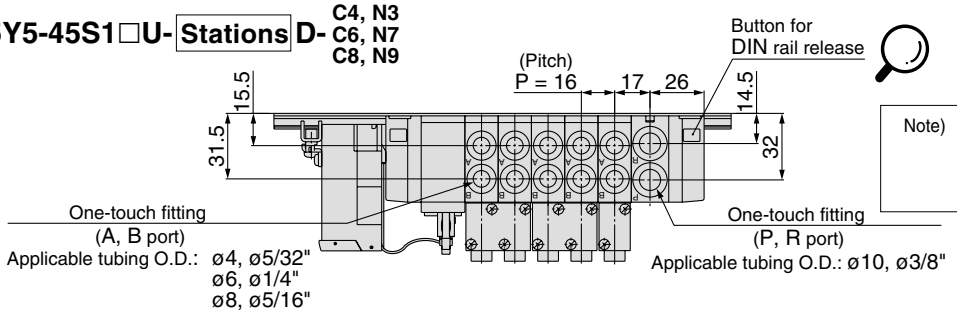


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	173	185.5	198	210.5	223	235.5	235.5	248	260.5
L2	162.5	175	187.5	200	212.5	225	225	237.5	250
L3	108	118.5	129	139.5	150	160.5	171	181.5	192
L4	12	13	14	15	16	17	12	13	14

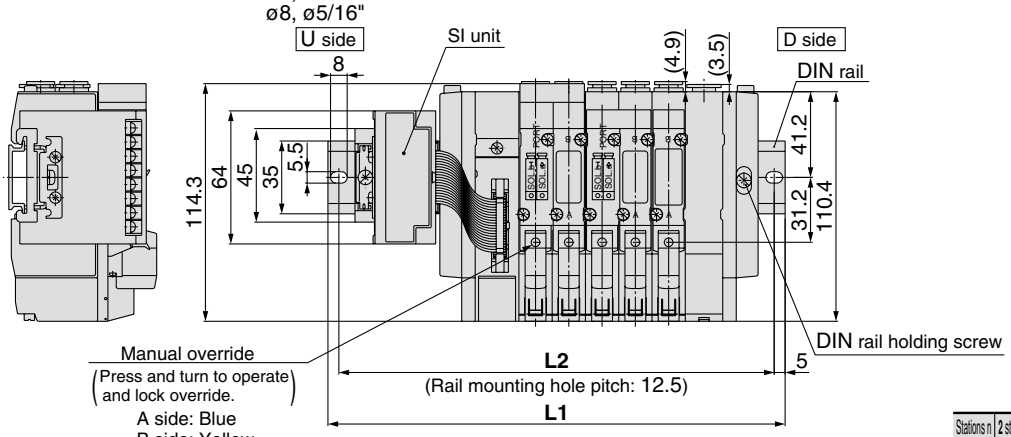
Stations n	11 stations	12	13	14	15	16 stations
L1	273	285.5	298	298	310.5	323
L2	262.5	275	287.5	287.5	300	312.5
L3	202.5	213	223.5	234	244.5	255
L4	15	16	17	11.5	12.5	13.5

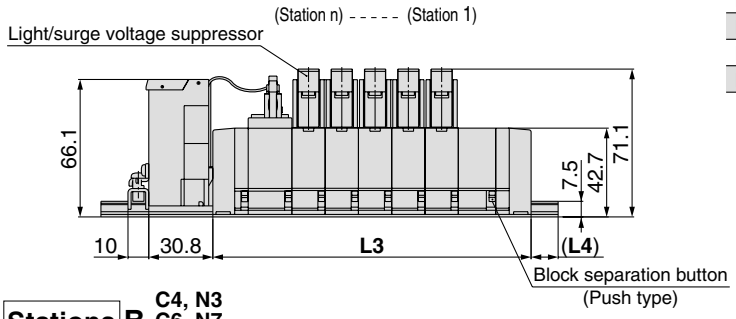
SY5000: EX121 Separate Type (for Output) Serial Transmission System/Plug-in

SS5Y5-45S1□U-Stations D-C4, N3 C6, N7 C8, N9



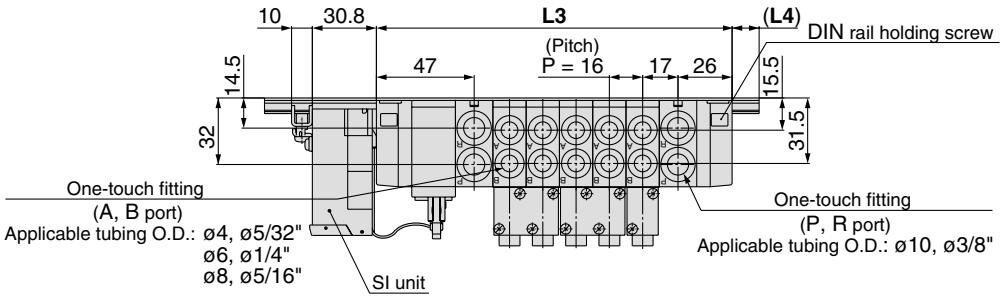
Note) The **L1** to **L4** dimensions of **SS5Y5-45S1□U-Stations U-C4, N3 C6, N7 C8, N9** are identical to those of SS5Y5-45S1□U-Stations D-C4, N3 C6, N7, C8, N9.

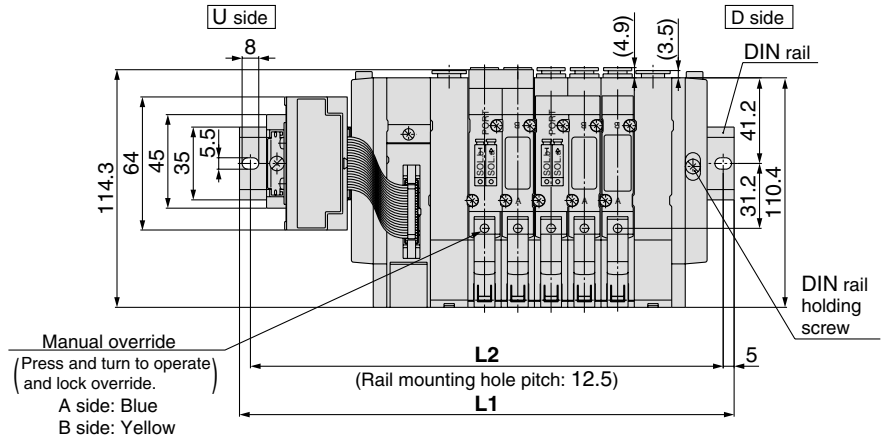




Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	173	185.5	210.5	223	235.5	260.5	273	285.5	298
L2	162.5	175	200	212.5	225	250	262.5	275	287.5
L3	105	121	137	153	169	185	201	217	233
L4	13.5	12	16.5	14.5	13	17.5	15.5	14	12

SS5Y5-45S1□U-Stations B-C4, N3 C6, N7 C8, N9



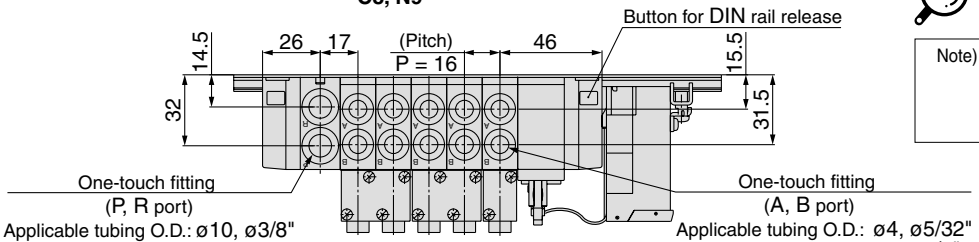


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	198	210.5	223	235.5	260.5	273	285.5	310.5	323
L2	187.5	200	212.5	225	250	262.5	275	300	312.5
L3	123	139	155	171	187	203	219	235	251
L4	17	15.5	13.5	12	16.5	14.5	13	17.5	15.5

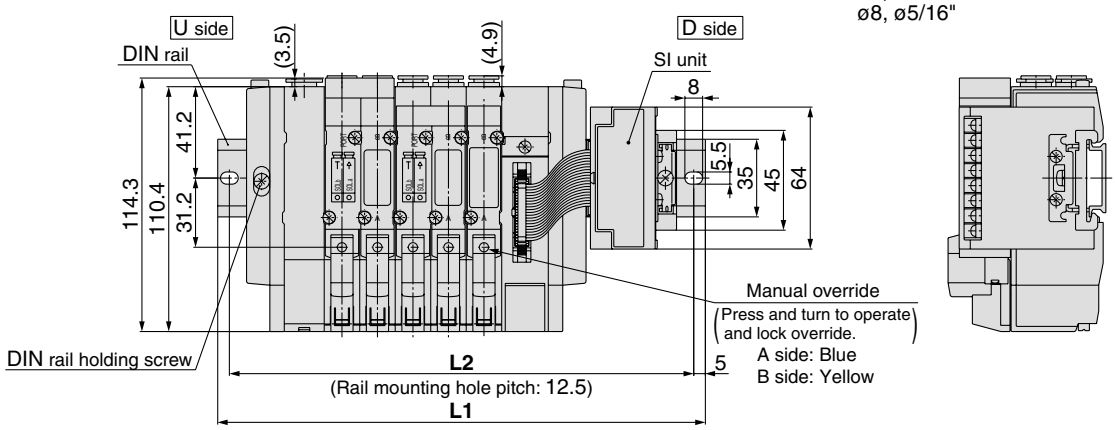
Stations n	11 stations	12	13	14	15	16 stations
L1	335.5	348	373	385.5	398	410.5
L2	325	337.5	362.5	375	387.5	400
L3	267	283	299	315	331	347
L4	14	12	16.5	15	13	11.5

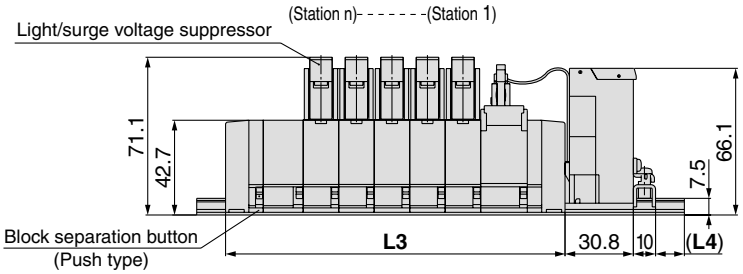
SY5000: EX121 Separate Type (for Output) Serial Transmission System/Plug-in

SS5Y5-45S1□D-Stations U-C4, N3 C6, N7 C8, N9



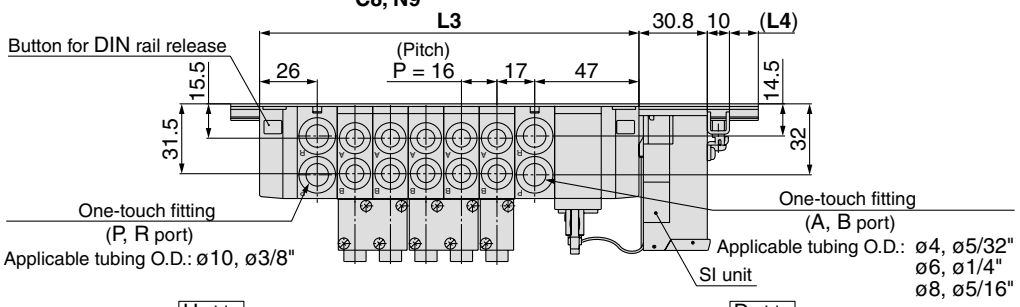
Note) The **L1** to **L4** dimensions of **SS5Y5-45S1□D-Stations D-C4, N3 C6, N7 C8, N9** are identical to those of SS5Y5-45S1□D-Stations U-C4, N3 C6, N7 C8, N9.

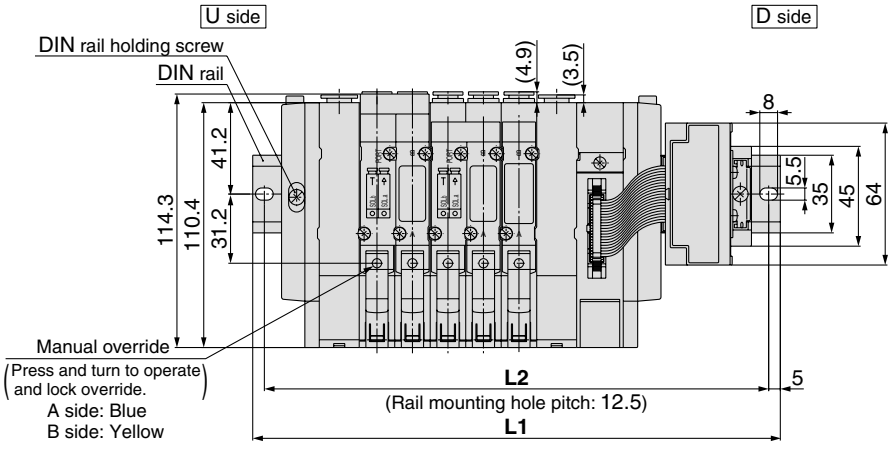




Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	173	185.5	210.5	223	235.5	260.5	273	285.5	298
L2	162.5	175	200	212.5	225	250	262.5	275	287.5
L3	105	121	137	153	169	185	201	217	233
L4	13.5	12	16.5	14.5	13	17.5	15.5	14	12

SS5Y5-45S1□D-Stations B-C4, N3 C6, N7 C8, N9





Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	198	210.5	223	235.5	260.5	273	285.5	310.5	323
L2	187.5	200	212.5	225	250	262.5	275	300	312.5
L3	123	139	155	171	187	203	219	235	251
L4	17	15.5	13.5	12	16.5	14.5	13	17.5	15.5

Stations n	11 stations	12	13	14	15	16 stations
L1	335.5	348	373	385.5	398	410.5
L2	325	337.5	362.5	375	387.5	400
L3	267	283	299	315	331	347
L4	14	12	16.5	15	13	11.5

EX510 Gateway System
Serial Transmission System
Base Mounted Manifold/Stacking Type/Plug-in Type

Type 45S6B

Series SY3000/5000

How to Order Manifold

SS5Y 3 – 45S6B [ ] U – 02 U [ ] – C4 – [ ] – [ ]

Manifold series

3	SY3000
5	SY5000

SI unit

Nil	NPN output (+COM.)
N	PNP output (–COM.)

SI unit mounting position

U	U side
D	D side

Valve stations

Symbol	Stations	Note
02	2 stations	Compatible with 16 solenoid valves
⋮	⋮	
16	16 stations	

*The number of the blanking plate assembly is also included.

SI unit part no.

Symbol	SI unit specifications	SI unit part no.	Page
Nil	NPN output (+COM.)	EX510-S002A	P.1715 to 1717
N	PNP output (–COM.)	EX510-S102A	

A, B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
M	Mixed	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
M	Mixed	

• For the mixed specification, indicate separately on a manifold specification sheet.

Pilot specifications

Nil	Internal pilot
S	Internal pilot/built-in silencer
R	External pilot
RS	External pilot/built-in silencer

SUP/EXH block assembly mounting position

U	U side	2 to 10 stations
D	D side	
B	Both sides	2 to 16 stations
M	Special specifications*	

*For the special specifications, indicate separately on a manifold specification sheet.

CE-compliant

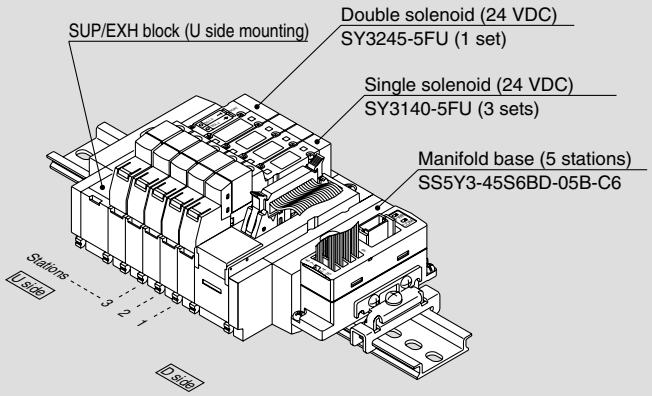
Nil	—
Q	CE-compliant

Option

When a DIN rail that is longer than the specified stations is desired, specify the required station number. (Max. 20 stations)

How to Order Manifold Assembly (Example)

Example

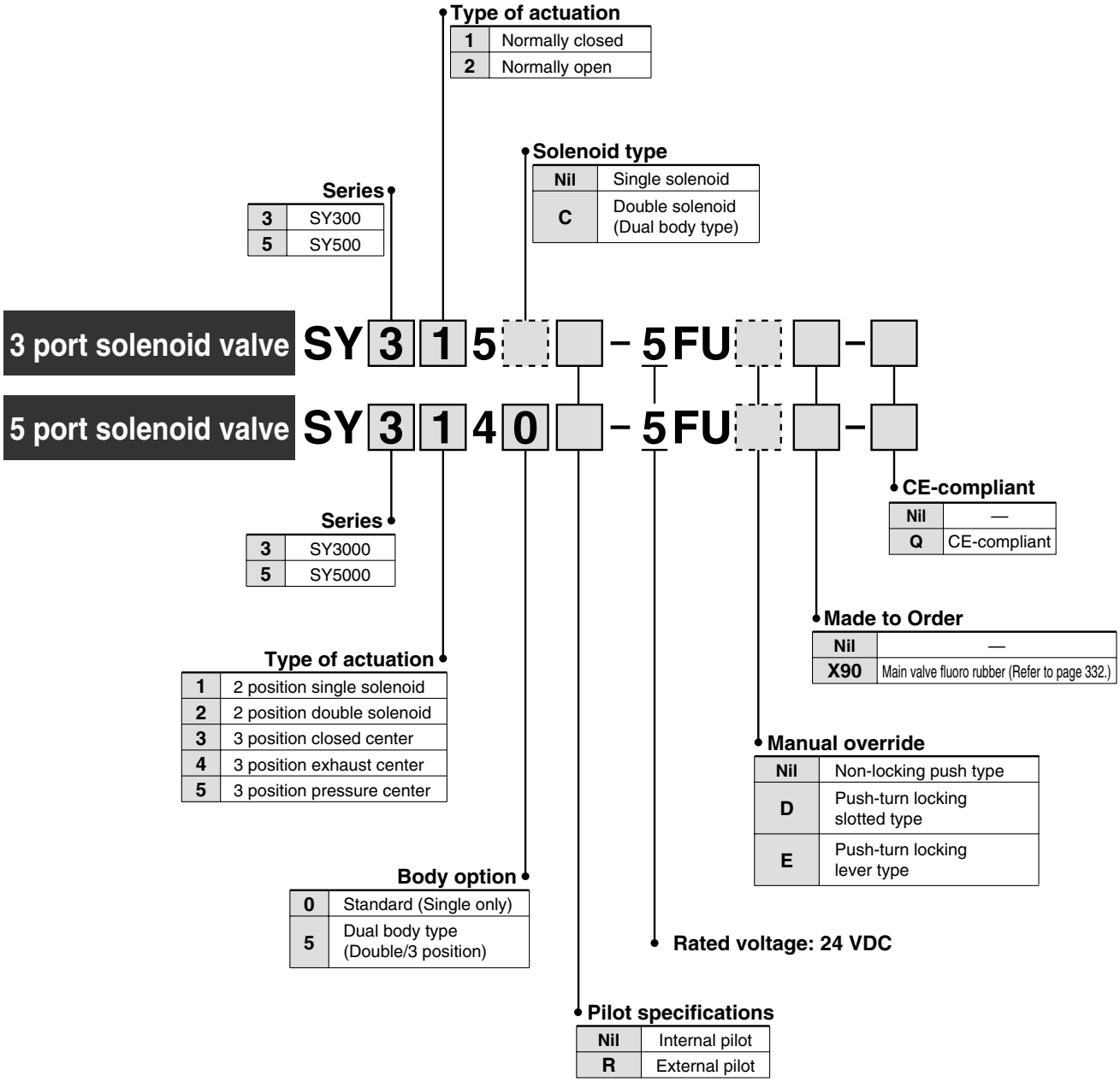


SS5Y3-45S6BD-05U-C6 ··1 set (45S6B type 5-station manifold part no.)
*** SY3140-5FU ····· 3 sets (Single solenoid part no.)**
*** SY3245-5FU ····· 1 set (Double solenoid part no.)**
→The asterisk denotes the symbol for assembly. Prefix to the part no. of the solenoid valve, etc.

• They will be assembled in the order listed starting at the first station at the D side whether the connector box is located at either end.
• When ordering double solenoid valves/3 position (dual body style), please keep in mind that they require two manifold stations.

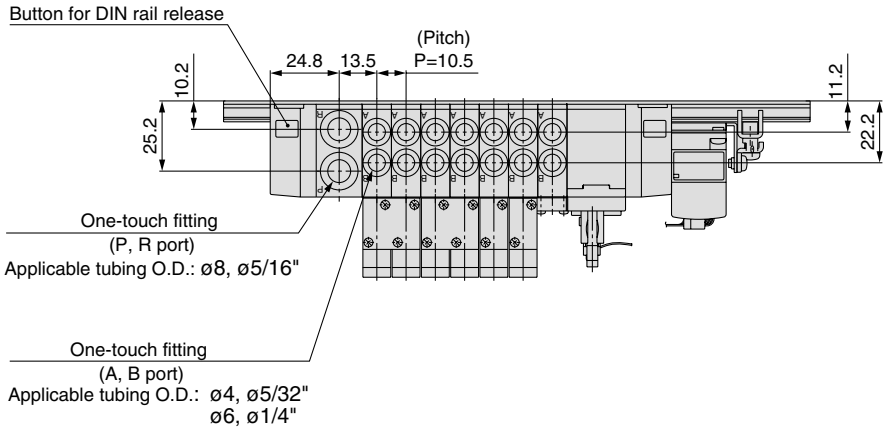
For details of "Gateway System Serial Transmission System, Series EX510", refer to pages 1696 through to 1724.

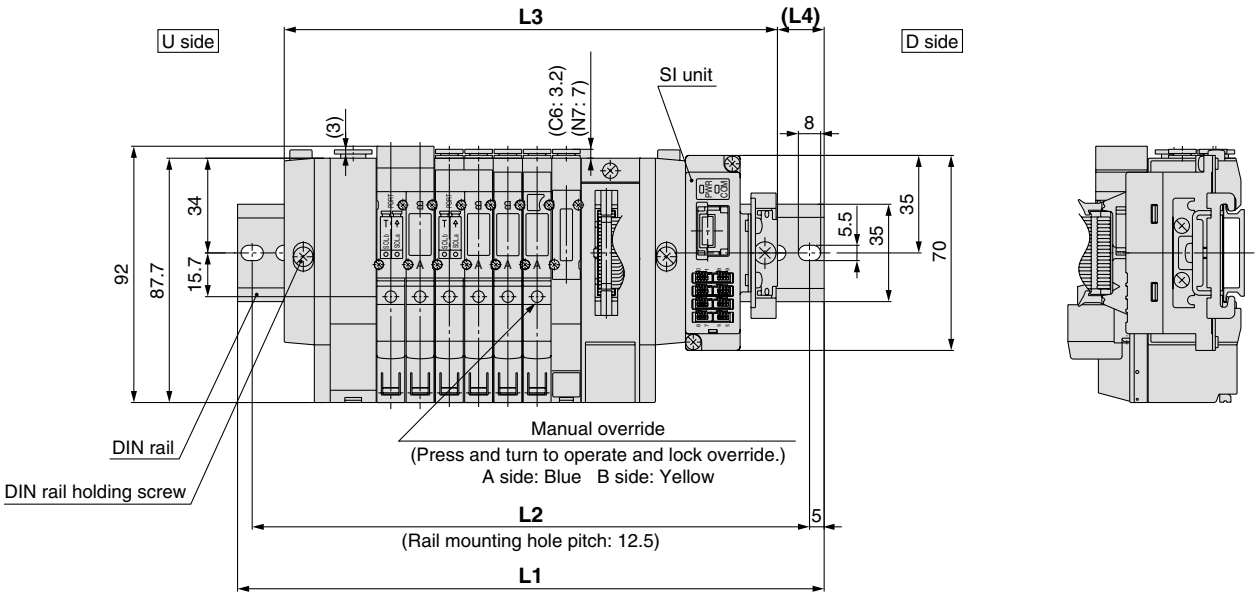
How to Order Valves

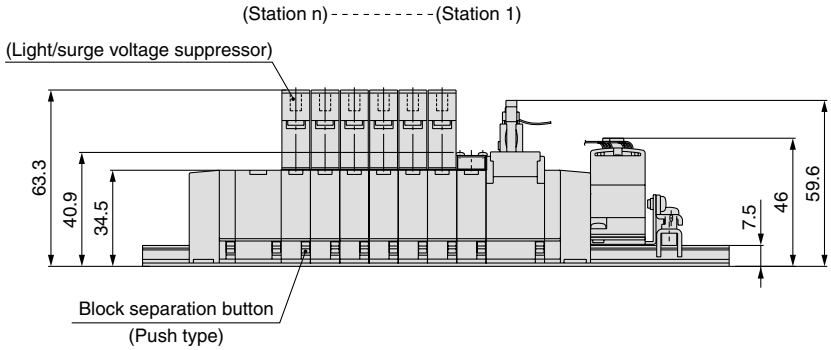


When ordering plug-in type valve as a single unit, gaskets are not included. Order them separately, if necessary. (Refer to page 300 for details.)

SS5Y3-45S6B ☐ D- Stations U- C4, N3 / C6, N7





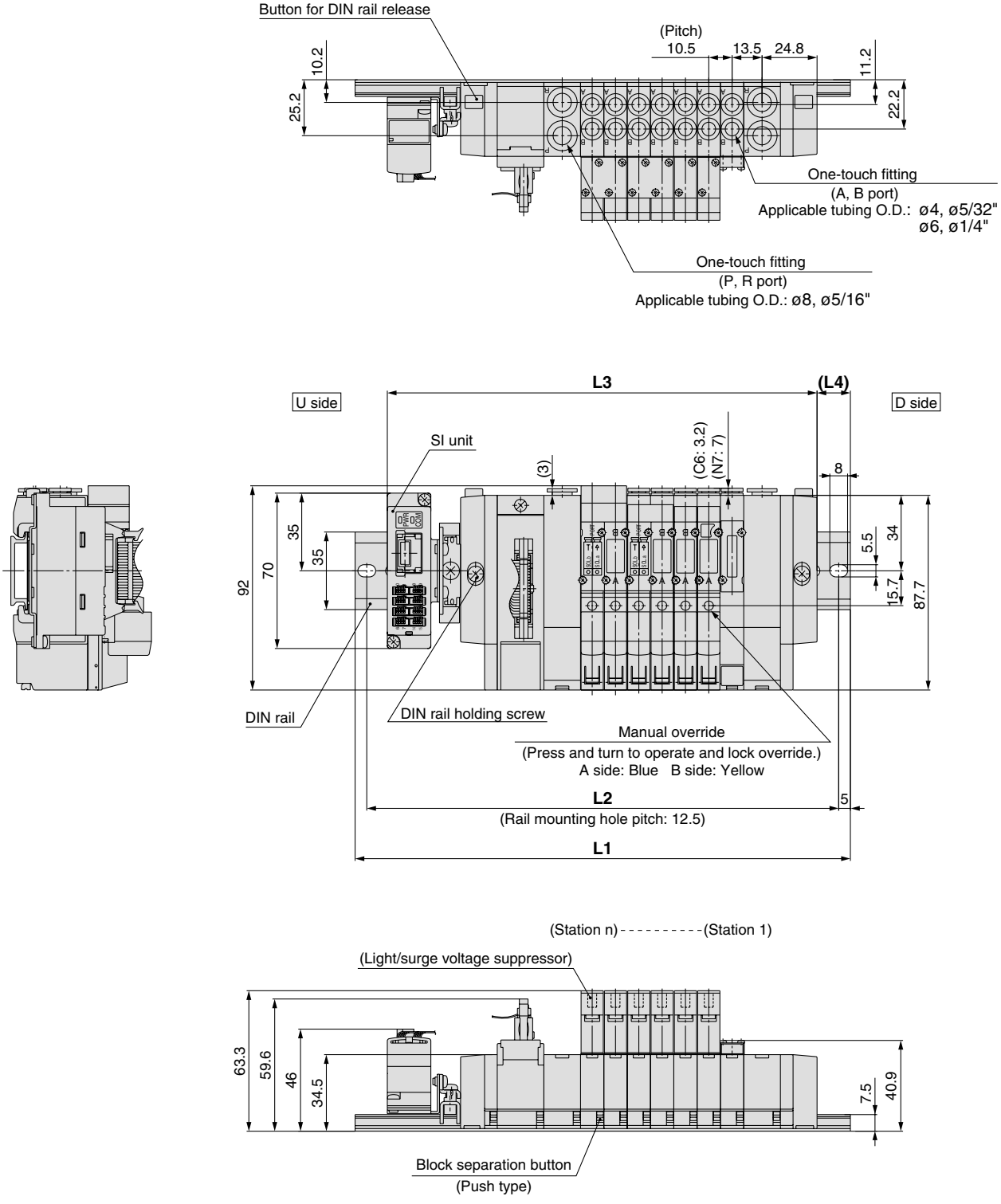


L: Dimensions

n: Stations

L \ n	2	3	4	5	6	7	8	9	10
L1	148	160.5	173	185.5	198	210.5	223	223	235.5
L2	137.5	150	162.5	175	187.5	200	212.5	212.5	225
L3	124.5	135	145.5	156	166.5	177	187.5	198	208.5
L4	12	13	14	15	16	17	18	12.5	13.5

SS5Y3-45S6B ☐ U- Stations B- C4, N3 / C6, N7

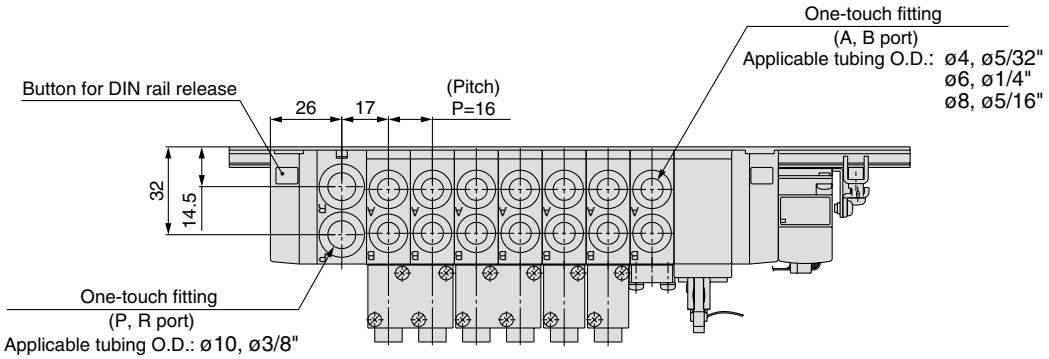


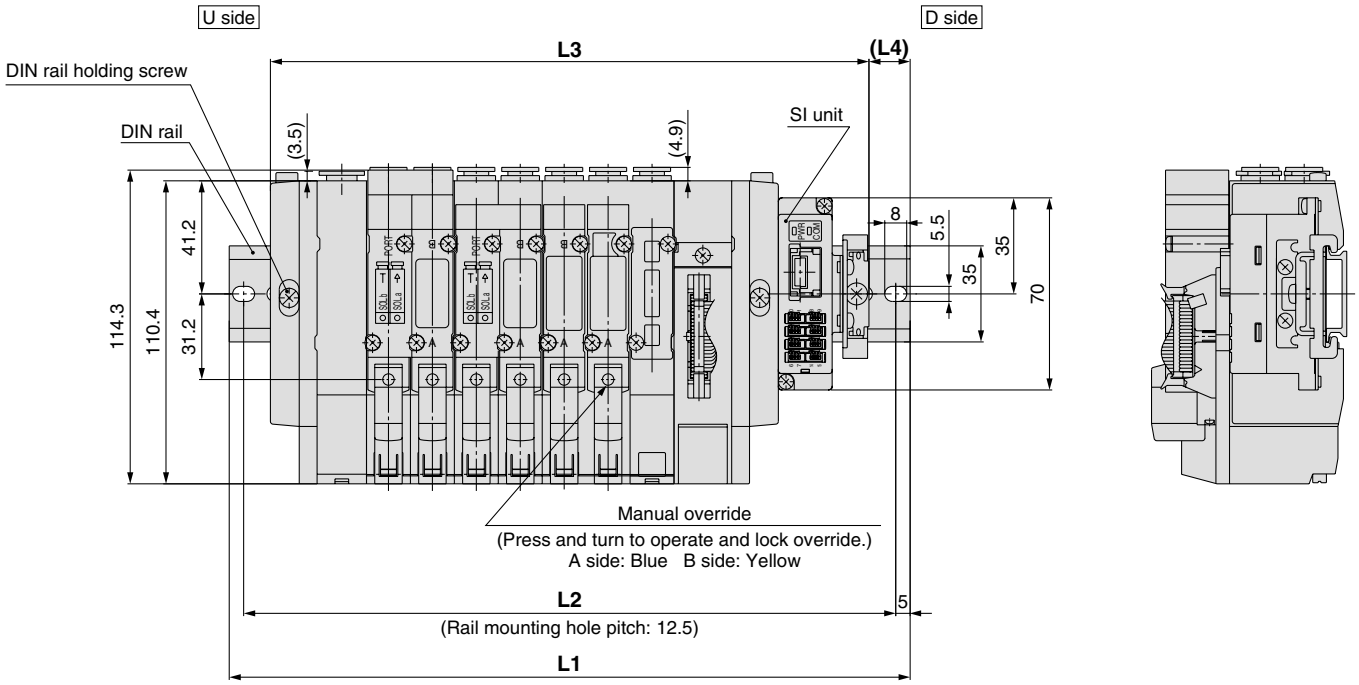
L: Dimensions

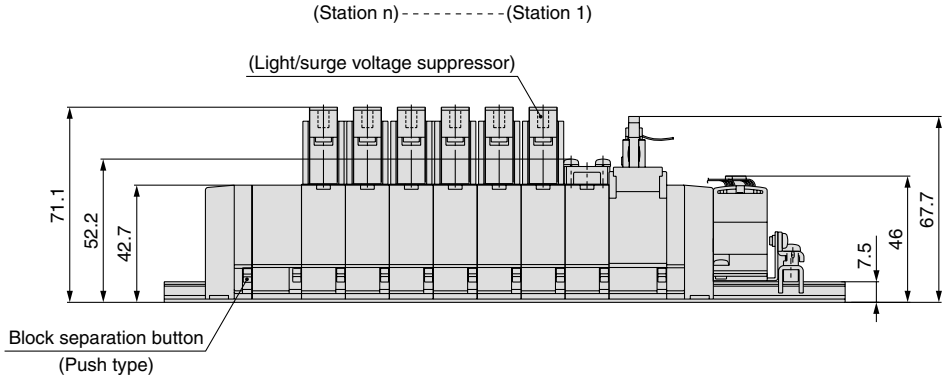
n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	173	185.5	198	198	210.5	223	235.5	248	260.5	273	273	285.5	298	310.5	323
L2	162.5	175	187.5	187.5	200	212.5	225	237.5	250	262.5	262.5	275	287.5	300	312.5
L3	141	151.5	162	172.5	183	193.5	204	214.5	225	235.5	246	256.5	267	277.5	288
L4	16	17	18	13	14	15	16	17	18	19	13.5	14.5	15.5	16.5	17.5

SS5Y5-45S6B ☐ D- Stations U- C4, N3 / C6, N7 / C8, N9







L: Dimensions

n: Stations

L \ n	2	3	4	5	6	7	8	9	10
L1	173	185.5	198	210.5	235.5	248	260.5	285.5	298
L2	162.5	175	187.5	200	225	237.5	250	275	287.5
L3	138	154	170	186	202	218	234	250	266
L4	17.5	16	14	12.5	17	15	13.5	18	16

3 Port Valve
Mixed Mounting Type
on 5 Port Valve Manifold

Series SY300/500

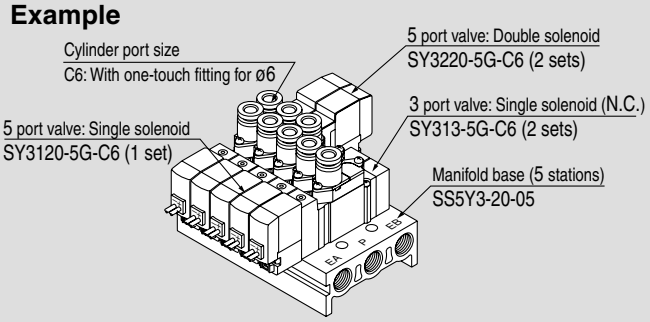
3 port valve can be mounted on manifold for 5 port valve.

Applications

Possible to be mounted on all kinds of manifolds for Series SY3000/5000.
Refer to “How to Order Manifold” for the details.

How to Order Manifold Assembly (Example)

Example



SS5Y3-20-05 ····· **1 set (Type 20, 5-station manifold base part no.)**
∗ **SY313-5G-C6** ····· **2 sets (3 port valve, type NC part no.)**
∗ **SY3120-5G-C6** ····· **1 set (5 port valve, single solenoid part no.)**
∗ **SY3220-5G-C6** ····· **2 sets (5 port valve, double solenoid part no.)**

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

Body Ported/How to Order Valve

Individual Wiring: For SS5Y$^{3}_{5}$-20

SY 5 1 3 □ □ – 5 L □ □ – 01 □ – □

Series

3	SY300
5	SY500

Type of actuation

1	Normally closed (N.C.)
2	Normally open (N.O.)

Solenoid type

Nil	Single solenoid
D	Double solenoid

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

∗ Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

Rated voltage

For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

For AC

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

∗ DC specifications of Type D, Y, DO and YO is only available with 12 and 24 VDC.
∗ For type W□, DC voltage is only available.

Electrical entry

24, 12, 6, 5, 3 VDC/ 100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm **H:** Lead wire length 600 mm	**L:** With lead wire (Length 300 mm) **LN:** Without lead wire **LO:** Without connector	**M:** With lead wire (Length 300 mm) **MN:** Without lead wire **MO:** Without connector	**D:** With connector **DO:** Without connector **Y:** With connector **YO:** Without connector	**WO:** Without connector cable **W□:** With connector cable Note)

∗ LN, MN type: with 2 sockets.
∗ Refer to page 337 for DIN terminal of SY300 series.
∗ "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 336.
∗ For connector cable of M8 connector, refer to page 339.
∗ M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.
∗ Refer to page 336 for the lead wire length of L and M plug connectors.
∗ Refer to page 337 for the connector assembly with cover for L and M plug connectors.
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary. (Refer to page 173 for details.)

CE-compliant

Nil	—
Q	CE-compliant

∗ For DC only except DIN terminal.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ Except for M5

A port size

Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY300
01	1/8	SY500

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY300
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SY500
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY300
N7	One-touch fitting for ø1/4"	
N3	One-touch fitting for ø5/32"	SY500
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Light/surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
* For "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y (SY500 only)

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor

∗ DOZ and YOZ are not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Body Ported/How to Order Valve

Flat ribbon cable: SS5Y$^{3}_{5}$-20P

Light/surge voltage suppressor

Z	With light/surge voltage suppressor
U	With light/surge voltage suppressor (Non-polar type)

Note) Z: Positive common specifications only.

Rated voltage

5	24 VDC
6	12 VDC

A port size

Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY300
01	1/8	SY500

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY300
C6	One-touch fitting for ø6	
C6	One-touch fitting for ø6	SY500
C8	One-touch fitting for ø8	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY300
N7	One-touch fitting for ø1/4"	
N7	One-touch fitting for ø1/4"	SY500
N9	One-touch fitting for ø5/16"	

CE-compliant

Nil	—
Q	CE-compliant

For DC: SY 5 1 3 □ – 5 LO Z □ – □ □ – □

For AC: SY 5 1 3 □ – 1 LOZ □ – □ □ – □

Series

3	SY300
5	SY500

Type of actuation

1	Normally closed (N.C.)
2	Normally open (N.C.)

Rated voltage

1	100 VAC
3	110 VAC [115 VAC]

Solenoid type

Nil	Single solenoid
D	Double solenoid

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ Except for M5

Base Mounted/How to Order Valve

Individual wiring: For SS5Y$^{3}_{5}$-41/42/45

SY 5 1 5 □ □ □ – 5 L □ □ – □

Series

3	SY300
5	SY500

Type of actuation

1	Normally closed (N.C.)
2	Normally open (N.C.)

Solenoid type

Nil	Single solenoid
D	Double solenoid

Pilot type

Nil	Internal pilot
R	External pilot

∗ External pilot is not available for Type 41 manifold.

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

∗ Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

Rated voltage

For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

AC

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

∗ DC specifications of Type D, Y, DO and YO is only available with 12 and 24 VDC.
∗ For type W□, DC voltage is only available.

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

CE-compliant

Nil	—
Q	CE-compliant

∗ For DC only except DIN terminal.

Light/surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
∗ For "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y (SY500 only)

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor

∗ DOZ and YOZ are not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

24, 12, 6, 5, 3 VDC/ 100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm **H:** Lead wire length 600 mm	**L:** With lead wire (Length 300 mm) **LN:** Without lead wire **LO:** Without connector	**M:** With lead wire (Length 300 mm) **MN:** Without lead wire **MO:** Without connector	**D:** With connector **DO:** Without connector **Y:** With connector **YO:** Without connector	**WO:** Without connector cable **W□:** With connector cable Note)

∗ LN, MN type: with 2 sockets.
∗ Refer to page 337 for DIN terminal of SY300 series.
∗ "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 336.
∗ Refer to page 339 for connector cable of M8 connector.
∗ M8 conector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.
∗ Refer to page 336 for the lead wire length of L and M plug connectors.
∗ Refer to page 337 for the connector assembly with cover for L and M plug connectors.
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

Base Mounted/How to Order Valve

Flat ribbon cable:
Connector box type: **For SS5Y$^{3}_{5}$-41P/42P/45-A**

Light/surge voltage suppressor

Z	With light/surge voltage suppressor
U	With light/surge voltage suppressor (Non-polar type)

Note) Z: Positive common specifications only.

Rated voltage

5	24 VDC
6	12 VDC

41P/42P 45-A **For DC: SY 5 1 5 □ □ – 5 LO Z □ – □**

41P/42P **For AC: SY 5 1 5 □ □ – 1 LOZ □**

Series

3	SY300
5	SY500

Type of actuation

1	Normally closed (N.C.)
2	Normally open (N.O.)

Solenoid type

Nil	Single solenoid
D	Double solenoid

Pilot type

Nil	Internal pilot
R	External pilot

∗ External pilot is not available for Type 41P manifold.

CE-compliant

Nil	—
Q	CE-compliant

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Rated voltage

1	100 VAC
3	110 VAC [115 VAC]

Plug-in: For SS5Y$^{3}_{5}$-45□

Single solenoid: **SY 5 1 5 □ – 5 FU □ – □**

Double solenoid: **SY 5 1 5C □ – 5 FU □ – □**

Series

3	SY300
5	SY500

Type of actuation

1	Normally closed (N.C.)
2	Normally open (N.C.)

Dual body type

∗ When ordering double solenoid valves (Dual body type), please keep in mind that they require two manifold stations.

CE-compliant

Nil	—
Q	CE-compliant

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Rated voltage

For DC

5	24 VDC
6	12 VDC

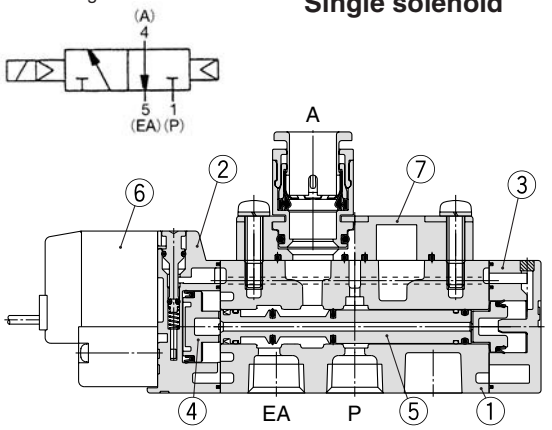
Pilot type

Nil	Internal pilot
R	External pilot

Construction

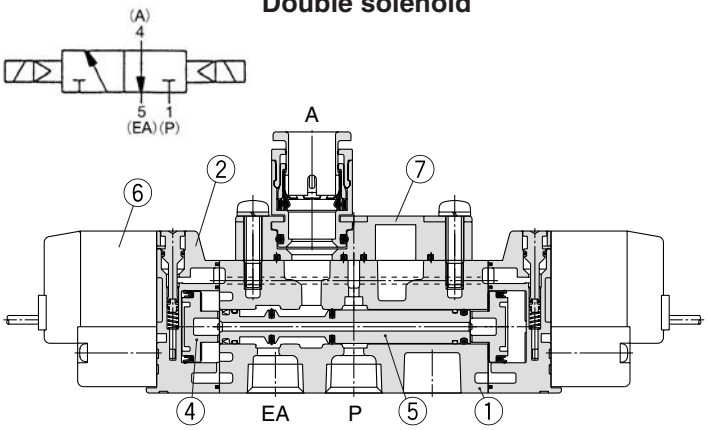
JIS Symbol
Single

Normally closed (N.C.)
Single solenoid



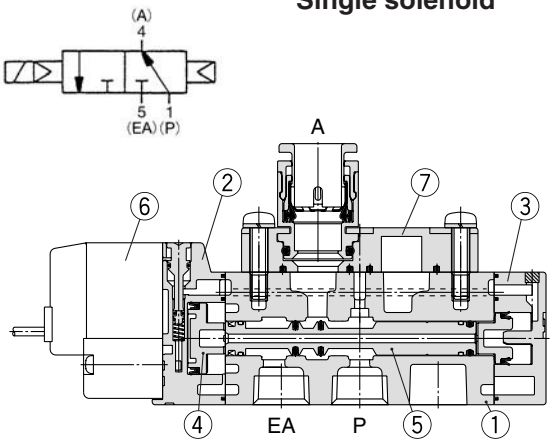
JIS Symbol
Double

Normally closed (N.C.)
Double solenoid



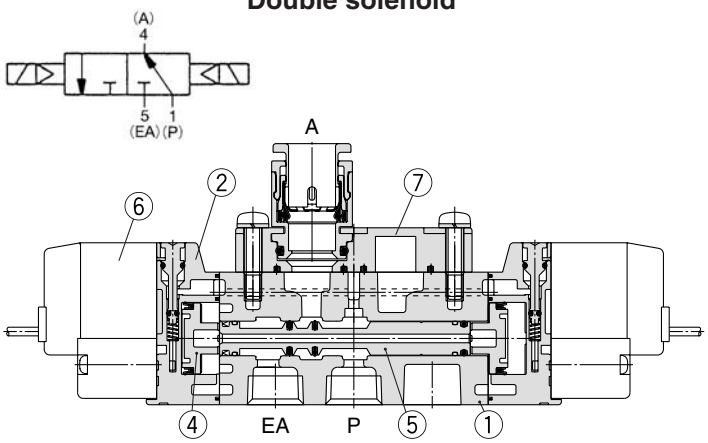
JIS Symbol
Single

Normally open (N.O.)
Single solenoid



JIS Symbol
Double

Normally open (N.O.)
Double solenoid



Component Parts

No.	Description	Material	Note
1	Body	Aluminum die-casted (SY3000: Zinc die-casted)	White
2	Adapter plate	Resin	White
3	End plate	Resin	White
4	Piston	Resin	–
5	Spool valve assembly	Aluminum, H-NBR	–

Replacement Parts

No.	Description	No.
6	Pilot valve assembly	Refer to "How to Order Pilot Valve Assembly" on page 112.
7	M5 port block assembly	Refer to "How to Order Port Block Assembly" below.

How to Order M5 Port Block Assembly

SY □ 00 − 2A − □ □

Series

3	Series SY300
5	Series SY500

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ Except for M5

A, B port size

Thread piping

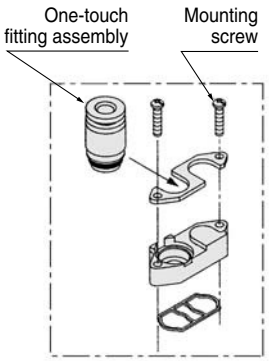
Symbol	Port size	Applicable series
M5	M5 x 0.8	SY300
01	1/8	SY500

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY300
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SY500
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY300
N7	One-touch fitting for ø1/4"	
N3	One-touch fitting for ø5/32"	SY500
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	



Port block assembly (cassette type)

∗ Only replacement of the fittings assembly is possible.

Metric size

SY300	One-touch fitting for ø4	VVQ1000-50A-C4
	One-touch fitting for ø6	VVQ1000-50A-C6
SY500	One-touch fitting for ø4	VVQ1000-51A-C4
	One-touch fitting for ø6	VVQ1000-51A-C6
	One-touch fitting for ø8	VVQ1000-51A-C8

Inch size

SY300	One-touch fitting for ø5/32"	VVQ1000-50A-N3
	One-touch fitting for ø1/4"	VVQ1000-50A-N7
SY500	One-touch fitting for ø5/32"	VVQ1000-51A-N3
	One-touch fitting for ø1/4"	VVQ1000-51A-N7
	One-touch fitting for ø5/16"	VVQ1000-51A-N9

⚠ Caution

Mounting screw tightening torques

SY300 (M2) : 0.12 N·m
SY500 (M3) : 0.6 N·m

Specifications

Dimensions, specifications, solenoid specifications, response time and effective area are the same as 5 port valve.

Mass

Series SY300

Valve model	Type of actuation	Mass (g)	
		Grommet	L, M plug connector
SY3□3-□□-M5	Single	51	53
	Double	68	74
SY3□3-□□-C4 N3	Single	56	59
	Double	74	79
SY3□3-□□-C6 N7	Single	54	57
	Double	72	77
SY3□5-□□	Single	47	50
	Double	65	70

Series SY500

Valve model	Type of actuation	Mass (g)		
		Grommet	L, M plug connector	DIN terminal
SY5□3-□-01□	Single	69	72	93
	Double	87	93	135
SY5□3-□-C4 N3	Single	82	82	103
	Double	100	102	144
SY5□3-□-C6 N7	Single	79	77	98
	Double	97	98	140
SY5□3-□-C8 N9	Single	75	84	105
	Double	93	105	147
SY5□5-□□	Single	55	58	79
	Double	73	78	120

SY3000/5000
Made to Order
External Pilot/Built-in Silencer

Type 45

External pilot manifold bases for low-pressure/vacuum use are added to split style/DIN rail manifolds. The built-in silencer has materialized a clear-cut appearance.

Individual Wiring/Connector Box Type

How to Order Manifold

Type 45

SS5Y$\frac{3}{5}$-45(-A)-[05][U][R]-[C6]-[ ]-[ ]

Series

3	SY3000
5	SY5000

Valve stations

Symbol	Stations
02	2 stations
⋮	⋮
20	20 stations

The number of blanking plate assembly is included.

SUP/EXH block assembly mounting position

Symbol	Mounting position	Stations
U	U side	2 to 10 stations
D	D side	
B	Both sides	2 to 20 stations
M	Special specifications	

∗ For special specifications, indicate separately by the manifold specification

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (Max. 20 stations)

SUP/EXH block assembly specifications

Symbol	Specifications
R	External pilot specifications
S	Internal pilot/Built-in silencer
RS	External pilot/Built-in silencer

A, B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
M	Mixed	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
M	Mixed	

∗ In the case of mixed specifications, indicate separately on the manifold specification sheet.

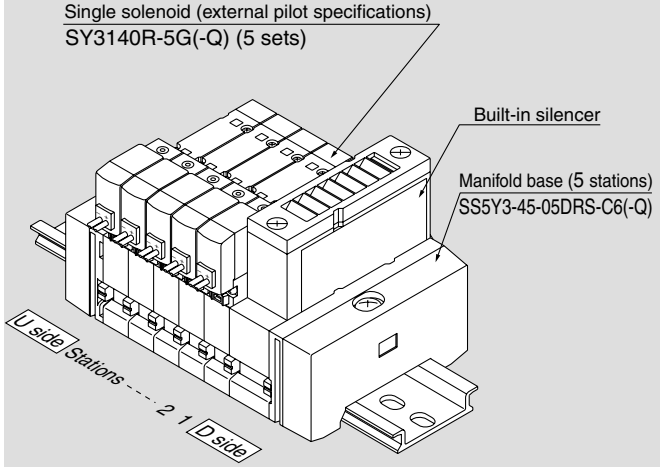
CE-compliant

Nil	—
Q	CE-compliant

How to Order Manifold Assembly (Example)

Example

Single solenoid (external pilot specifications)
SY3140R-5G(-Q) (5 sets)



SS5Y3-45-05DRS-C6 ····1 set (External pilot specification with built-in silencer part no.)
∗ SY3140R-5G ····· 5 sets (Single solenoid part no.)
→ The asterisk denotes the symbol for assembly.
Prefix it to the part nos. of the solenoid valve, etc.

The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of SUP/EXH block assembly. In ordering, specify the part nos. in the order from the 1st. station on D side. Besides, when the arrangement will be complicated, fill out the manifold specification sheet to instruct us.
For manifolds with SUP/EXH block assembly at each end of the manifold, external pilot ports and silencers will be also located at each end of the manifold.
The SUP/EXH block assembly (SX3/5000-51-1A), for special usage, as shown on page 254, can also be mounted. Please specify the mounting position, by correctly filling in the blank space on the manifold specification sheet.

How to Order Valve

SY [5] [2] 40 [ ] [ ] – [5] [L] [ ] [ ] – [ ] – [ ]

Series

3	SY3000
5	SY5000

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

Pilot type

Nil	Internal pilot
R	External pilot

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

∗ Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

Rated voltage

For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

For AC (50/60 Hz)

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

∗ DC specifications of Type D, Y, DO and YO is only available with 12 and 24 VDC.
∗ For type W□, DC voltage is only available.
∗ D, Y, DO and YO only available for SY5000.

Light/surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
∗ For "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y (SY5000 only)

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

∗ DOZ and YOZ are not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 332.)

CE-compliant

Nil	—
Q	CE-compliant

∗ For DC only except DIN terminal.

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Electrical entry

24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm **H:** Lead wire length 600 mm	**L:** With lead wire (Length 300 mm) **LN:** Without lead wire **LO:** Without connector	**M:** With lead wire (Length 300 mm) **MN:** Without lead wire **MO:** Without connector	**(SY5000 only)** **D:** With connector **DO:** Without connector **Y:** With connector **YO:** Without connector	**WO:** Without connector cable **W□:** With connector cable Note)

∗ LN, MN type: with 2 sockets.
∗ D, Y, DO and YO only available for SY5000.
∗ "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). Refer to page 336 for details.
∗ Setting "-5LOU" is available only for connector box type.
∗ Refer to page 339 for connector cable of M8 connector.
∗ M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.
∗ Refer to page 336 for the lead wire length of L and M plug connectors.
∗ Refer to page 337 for the connector assembly with cover for L and M plug connectors.
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

Plug-in

How to Order Manifold

Type 45□

SS5Y3/5-45 □ F U - 05 U R - □ - □ - □ - □

Series

3	SY3000
5	SY5000

Common specifications

Nil	Positive common
N	Negative common

No symbol is used for T, T1, S□ types.

Connector mounting position

Symbol	Mounting position
U	U side
D	D side

Connector type

Symbol	Mounting position
F	D-sub connector
P	Flat ribbon cable 26 pins
PG	Flat ribbon cable 20 pins
PH	Flat ribbon cable 10 pins
T	Terminal block 9 pins
T1	Terminal block 18 pins
S□	Serial Transmission Type

∗ For details, refer to pages from 272.

Valve stations

Symbol	Stations	Note
02	2 stations	Single wining spec.
⋮	⋮	
20	20 stations	

∗ This also includes the number of blanking plate assemblies.
∗ Depending on the connector, the number of stations is limited. Refer to page 275.
∗ Two stations are necessary for the double, 3 position (Dual body type).

SUP/EXH block assembly mounting position

Symbol	Mounting position	Stations
U	U side	2 to 10 stations
D	D side	
B	Both sides	2 to 20 stations
M	Special specifications	

∗ For special specifications, indicate separately by the manifold specification

SUP/EXH block assembly specifications

Symbol	Specifications
R	External pilot specifications
S	Internal pilot/Built-in silencer
RS	External pilot/Built-in silencer

A, B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
M	Mixed	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
M	Mixed	

∗ In the case of mixed specifications, indicate separately on the manifold specification sheet.

Voltage

Nil	24 VDC
12V	12 VDC

No symbol is used for T, T1, S□ types.

Option

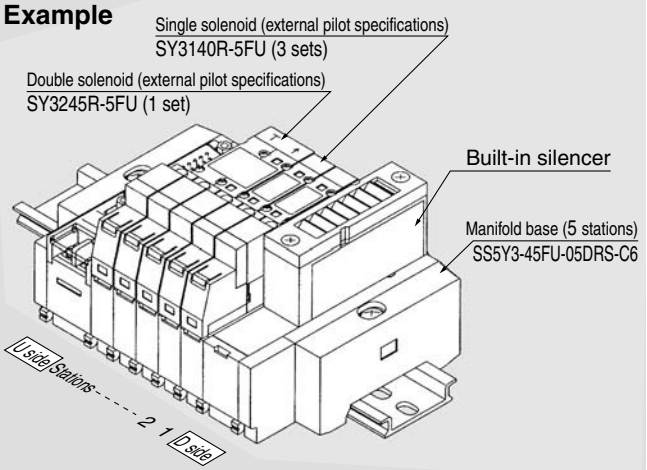
When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

CE-compliant

Nil	—
Q	CE-compliant

How to Order Manifold Assembly (Example)

Example



SS5Y3-45FU-05DRS-C6 ··· 1 set (External pilot specification with built-in silencer part no.)
∗ **SY3140R-5FU ····· 3 sets (Single solenoid part no.)**
∗ **SY3245R-5FU ····· 1 set (Double solenoid part no.)**
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of SUP/EXH block assembly. In ordering, specify the part nos. in the order from the 1st. station on D side. Besides, when the arrangement will be complicated, fill out the manifold specification sheet to instruct us.
For manifolds with SUP/EXH block at each end of the manifold, external pilot ports and silencers will be also located at each end of the manifold.
The SUP/EXH block assembly (SX3/5000-51-1A), for special usage, can also be mounted. Please specify the mounting position, by correctly filling in the blank space on the manifold specification sheet.
Two stations of the manifold base are necessary for the double, 3 position (Dual body type). Use caution when specifying the number of stations required for the manifold base.

How to Order Valve

SY 3 1 4 □ □ - 5 FU □ - □ - □

Series

3	SY3000
5	SY5000

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

Body Option

0	Standard (Single only)
5	Dual body type (Double, 3 position)

Pilot type

Nil	Internal pilot
R	External pilot

Rated voltage

5	24 VDC
6	12 VDC
V∗	6 VDC
S∗	5 VDC
R∗	3 VDC

∗ Mark: 45T and T1 only
S□ type is available for 24 VDC only.

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 332.)

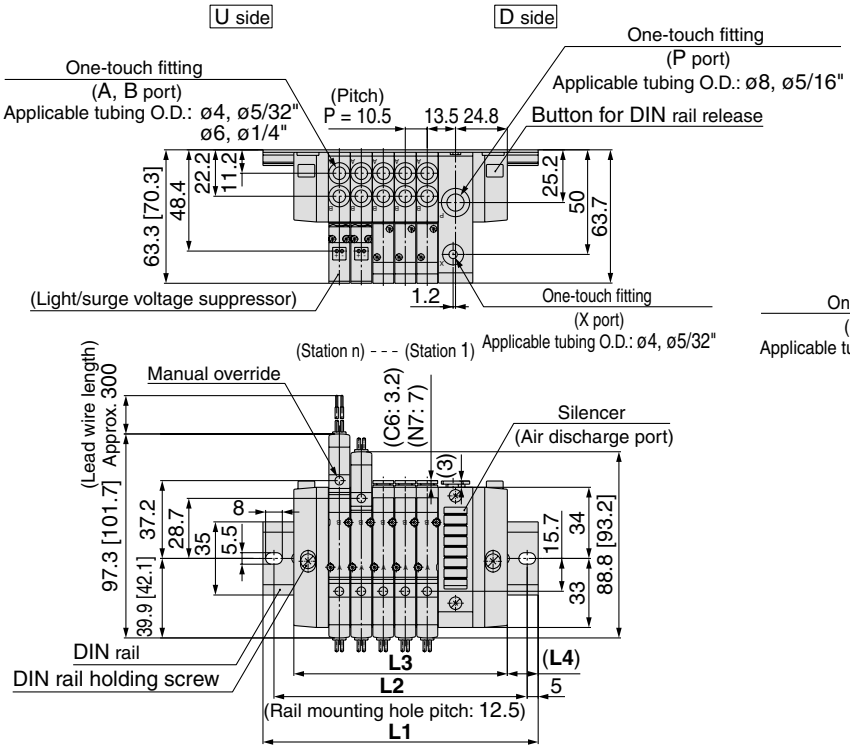
CE-compliant

Nil	—
Q	CE-compliant

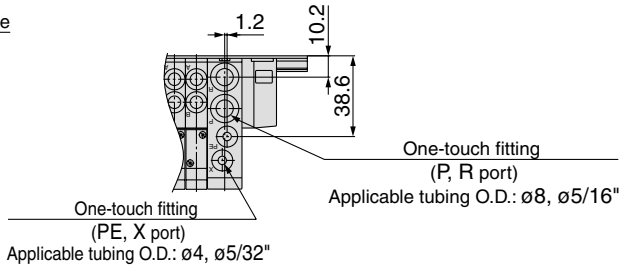
External Pilot/Built-in Silencer

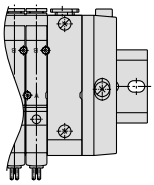
[ ]: AC

SY3000: SS5Y3-45-[Stations]DRS-C4, N3 / C6, N7



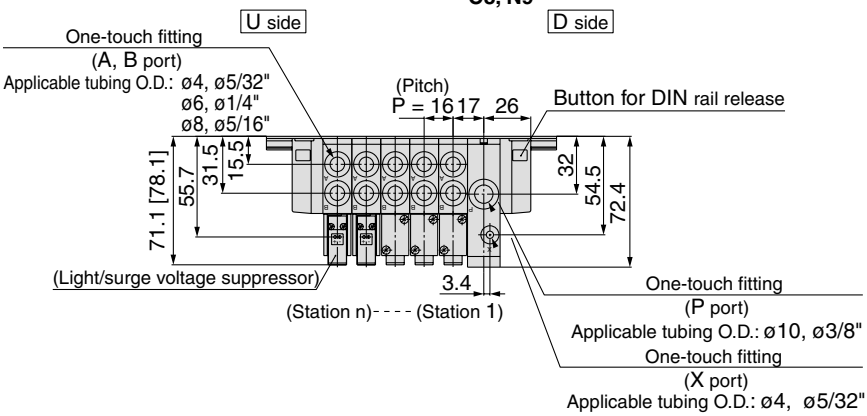
SS5Y3-45-[Stations]DR-C4, N3 / C6, N7



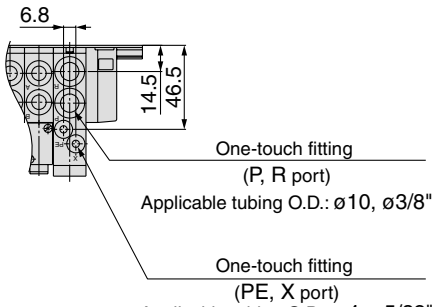


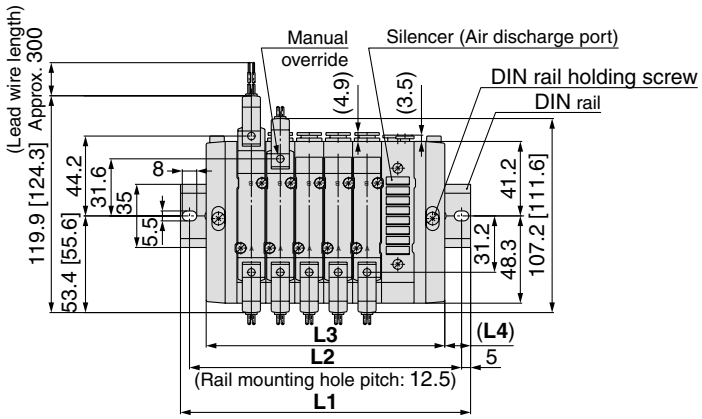
∗ The dimensions **L1** to **L4** are identical to those of **SS5Y3-45-[Stations]** U, D, B - C4, N3 / C6, N7.

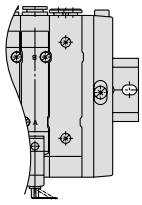
SY5000: SS5Y5-45-[Stations]DRS-C4, N3 / C6, N7 / C8, N9



SS5Y5-45-[Stations]DR-C4, N3 / C6, N7 / C8, N9





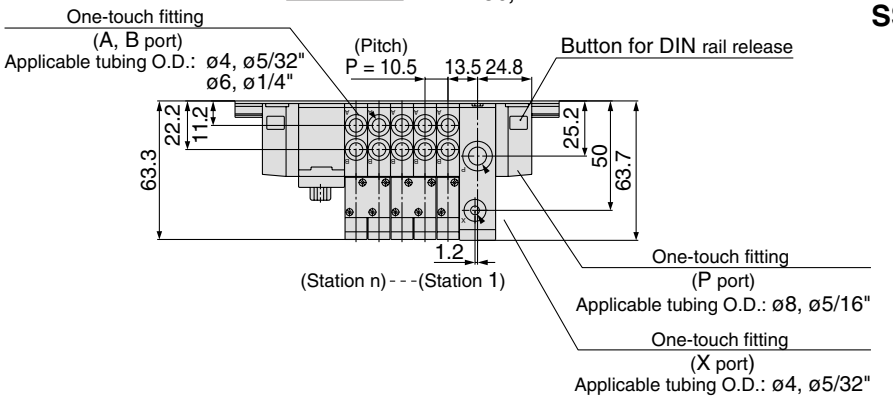


∗ The dimensions **L1** to **L4** are identical to those of **SS5Y3-45-[Stations]** U, D, B - C4, N3 / C6, N7 / C8, N9.

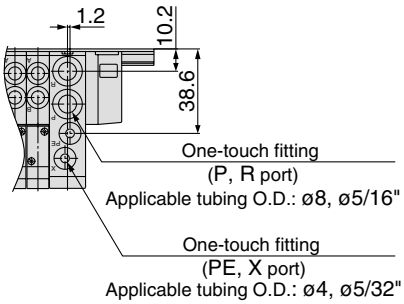
∗ The dimensions of **SS5Y$^{3}_{5}$-45-[Stations]URS** are identical to those of SS5Y$^{3}_{5}$-45-[Stations]DRS.

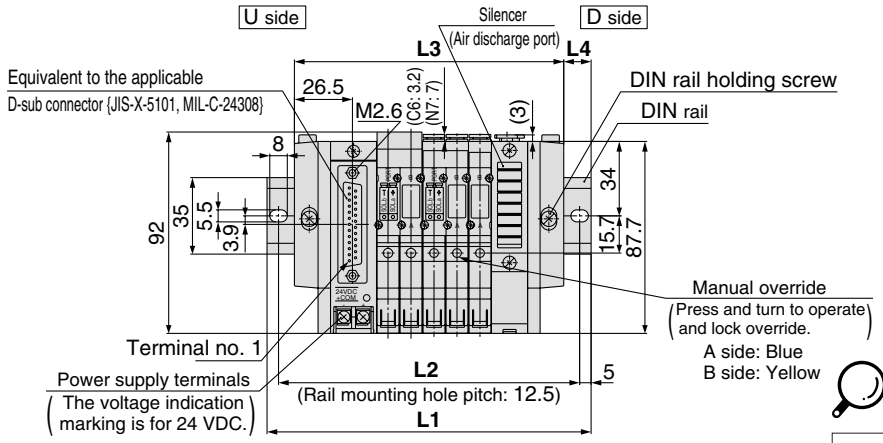
External Pilot/Built-in Silencer

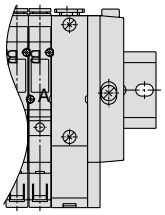
SY3000: SS5Y3-45FU-[Stations]DRS-C4,N3 C6,N7



SS5Y3-45FU-[Stations]DR-C4,N3 C6,N7

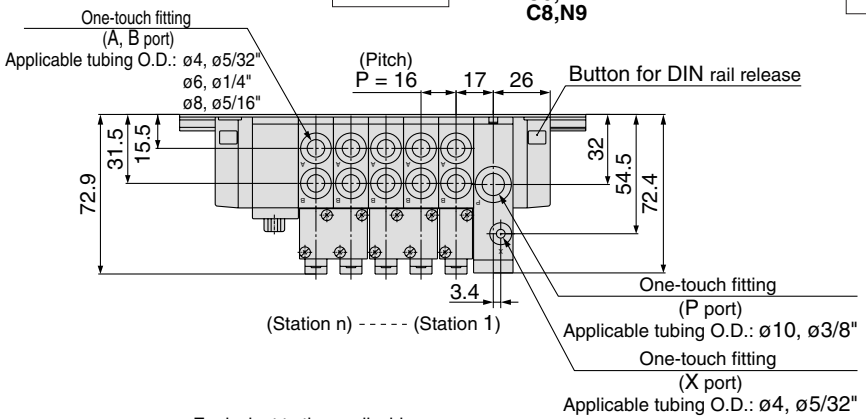




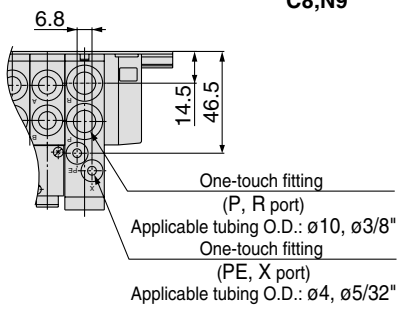


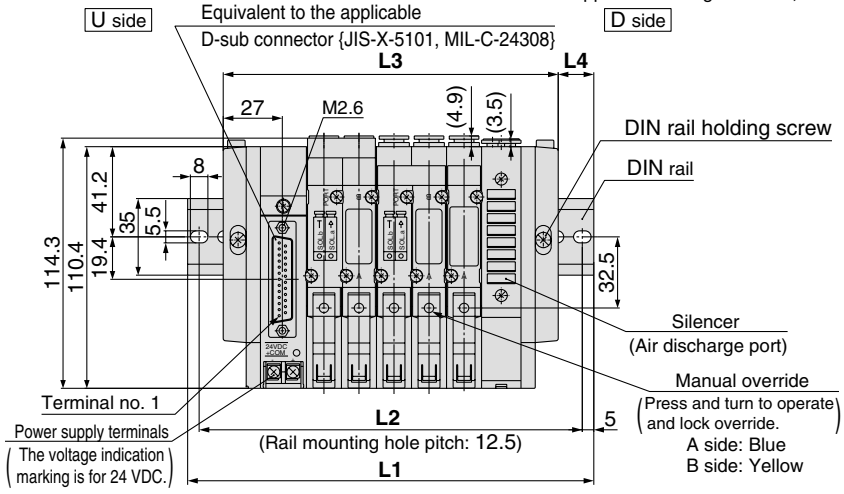
∗ The dimensions **L1** to **L4** are identical to those of **SS5Y3-45F$^{U}_{D}$-[Stations]$^{U}_{B}$-C4, N3 C6, N7.**

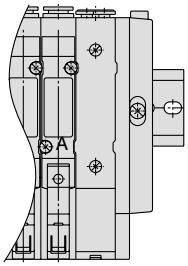
SY5000: SS5Y5-45FU-[Stations]DRS-C4,N3 C6,N7 C8,N9



SS5Y5-45FU-[Stations]DR-C4,N3 C6,N7 C8,N9







∗ The dimensions **L1** to **L4** are identical to those of **SS5Y5-45F$^{U}_{D}$-[Stations]$^{U}_{B}$-C4, N3 C6, N7. C8, N9**

∗ The dimensions of **SS5Y$^{3}_{5}$-45-[Stations]URS** are identical to those of SS5Y$^{3}_{5}$-45-[Stations]DRS.

SY3000/5000
Made to Order
Mixed Mounting Type

Type M45

Made to Order

Non plug-in

This manifold makes it possible to mount SY3000 onto base of SY5000.

How to Order Manifold

Type M45 (Mixed mounting style)

SS5Y5-M45 05 U □ - C86 □ - □

Mixed mounting style

Valve stations

Symbol	Stations
02	2 stations
⋮	⋮
20	20 stations

The number of blanking plate ass'y is included, too.

SUP/EXH block assembly mounting position

Symbol	Mounting position	Stations
U	U side	2 to 10 stations
D	D side	
B	Both sides	2 to 20 stations
M	Special specifications	

∗ For special specifications, indicate separately by the manifold specification heet.

SUP/EXH block assembly specifications

Symbol	Specifications
Nil	Standard/Internal pilot specifications
S	Built-in silencer

∗ External pilot specification is unavailable for mixed mounting style.

CE-compliant

Nil	—
Q	CE-compliant

∗ For DC only.

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (Max. 20 stations)

A, B port size

One-touch fitting (Metric size)

Symbol	Port size
C44	SY5000: One-touch fitting for ø4 SY3000: One-touch fitting for ø4
C46	SY5000: One-touch fitting for ø4 SY3000: One-touch fitting for ø6
C64	SY5000: One-touch fitting for ø6 SY3000: One-touch fitting for ø4
C66	SY5000: One-touch fitting for ø6 SY3000: One-touch fitting for ø6
C84	SY5000: One-touch fitting for ø8 SY3000: One-touch fitting for ø4
C86	SY5000: One-touch fitting for ø8 SY3000: One-touch fitting for ø6
M	Mixed

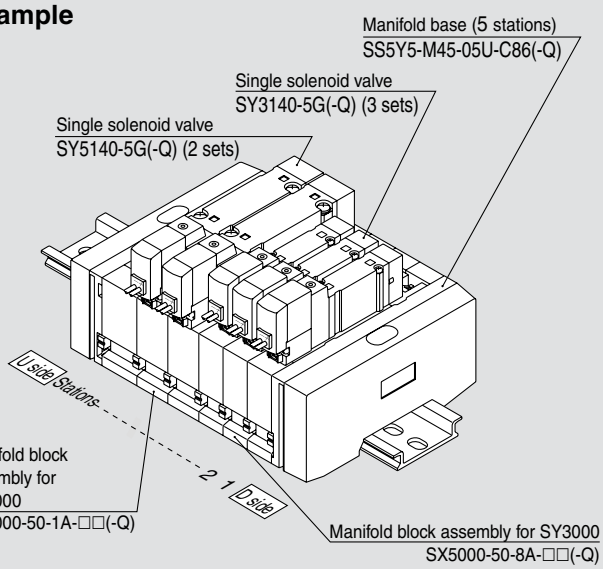
One-touch fitting (Inch size)

Symbol	Port size
N33	SY5000: One-touch fitting for ø5/32" SY3000: One-touch fitting for ø5/32"
N37	SY5000: One-touch fitting for ø5/32" SY3000: One-touch fitting for ø1/4"
N73	SY5000: One-touch fitting for ø1/4" SY3000: One-touch fitting for ø5/32"
N77	SY5000: One-touch fitting for ø1/4" SY3000: One-touch fitting for ø1/4"
N93	SY5000: One-touch fitting for ø5/16" SY3000: One-touch fitting for ø5/32"
N97	SY5000: One-touch fitting for ø5/16" SY3000: One-touch fitting for ø1/4"
M	Mixed

∗ In the case of mixed specifications, indicate separately on the manifold specification sheet.

How to Order Manifold Assembly (Example)

Example



SS5Y5-M45-05U-C86 ·· 1 set (Type M45, manifold base part no.)
∗ SY3140-5G ····· 3 sets (Single solenoid part no.)
∗ SY5140-5G ····· 2 sets (Single solenoid part no.)
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of SUP/EXH block assembly. In ordering, specify the part nos. in the order from the 1st. station on D side. Besides, when the arrangement will be complicated, fill out the manifold specification sheet to instruct us.

How to Order Valve

SY 5 2 40 □ - 5 L □ □ - □ - □

Series

3	SY3000
5	SY5000

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

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

∗ Power saving circuit is not available in the case of W□ type.

Rated voltage

For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

For AC (50/60 Hz)

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

∗ For type W□, DC voltage is only available.

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
∗ For "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Electrical entry

24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC			24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	M8 connector
G: Lead wire length 300 mm H: Lead wire length 600 mm	L: With lead wire (Length 300 mm) LN: Without lead wire LO: Without connector	M: With lead wire (Length 300 mm) MN: Without lead wire MO: Without connector	WO: Without connector cable W□: With connector cable Note)

∗ LN, MN type: with 2 sockets.
∗ Refer to page 339 for connector cable of M8 connector.
∗ M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.
∗ Refer to page 336 for the lead wire length of L and M plug connectors.
∗ Refer to page 337 for the connector assembly with cover for L and M plug connectors.
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

CE-compliant

Nil	—
Q	CE-compliant

∗ For DC only.

Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 332.)

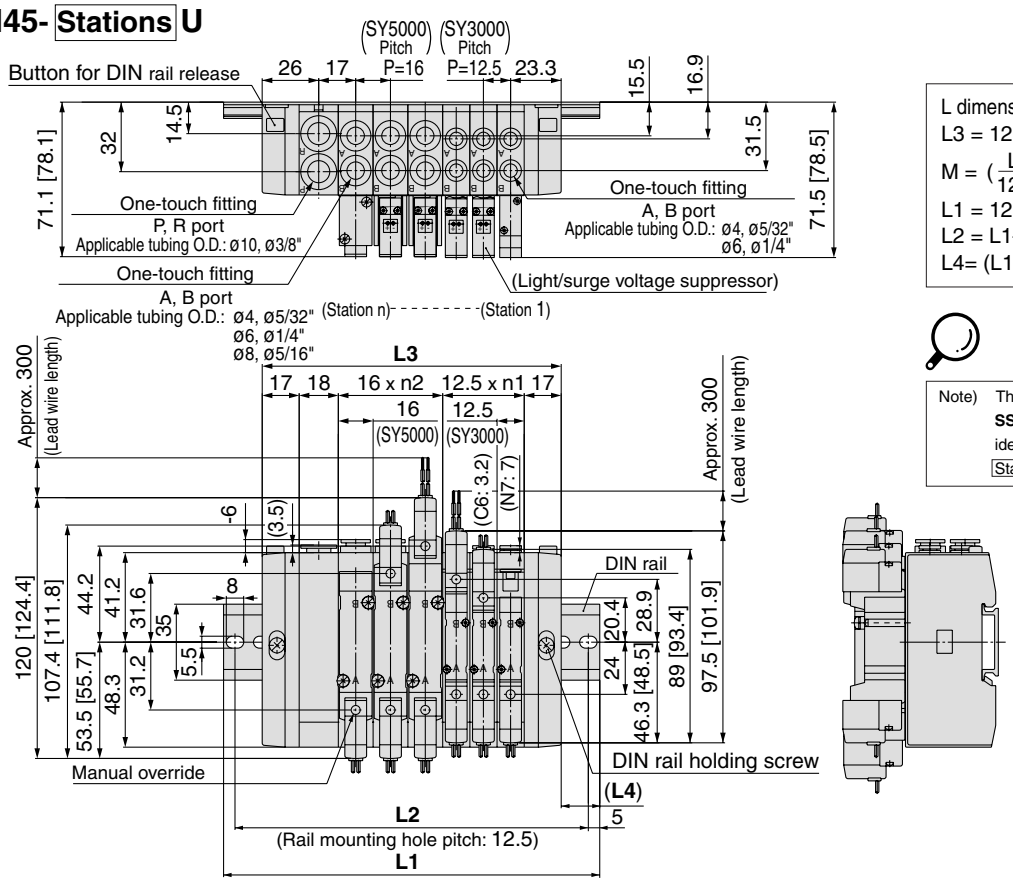
Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Dimensions: Mixed Mounting

[ ]: AC

SS5Y5-M45- Stations U



L dimension: Formulae for L1 to L4

$L3 = 12.5 \times n1 + 16 \times n2 + 52$

$M = (\frac{L3}{12.5} + 1)$ Omit decimals

$L1 = 12.5 \times M + 23$

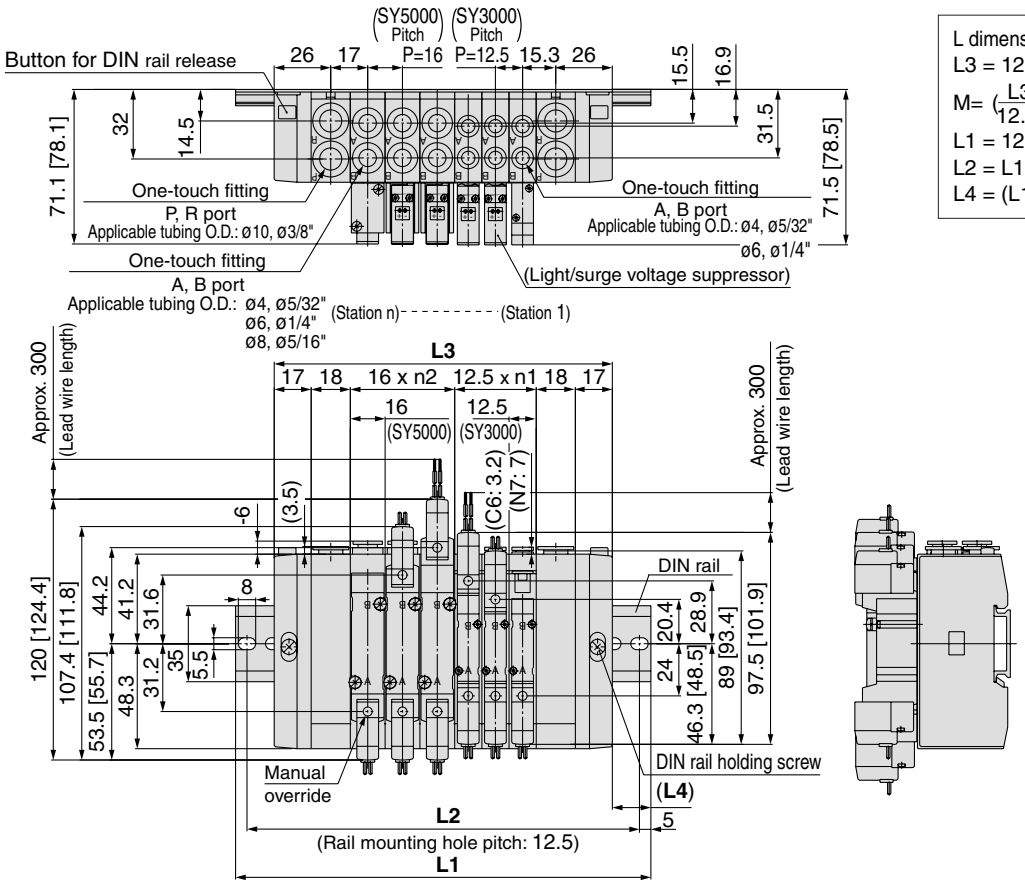
$L2 = L1 - 10.5$

$L4 = (L1 - L3)/2$

n1 = Number of SY3000
n2 = Number of SY5000

Note) The **L1** to **L4** dimensions of **SS5Y5-M45-** Stations **D** are identical to those of SS5Y5-M45- Stations U.

SS5Y5-M45- Stations B



L dimension: Formulae for L1 to L4

$L3 = 12.5 \times n1 + 16 \times n2 + 70$

$M = (\frac{L3}{12.5} + 1)$ Omit decimals

$L1 = 12.5 \times M + 23$

$L2 = L1 - 10.5$

$L4 = (L1 - L3)/2$

n1 = Number of SY3000
n2 = Number of SY5000

[*Series SY3000/5000/7000/9000/SY300/500*]
Made to Order
M8 Connector Conforming to IEC60947-5-2

How to Order Valve

Type of actuation

3	Body ported
5	Base mounted

Type of actuation

1	Normally open
2	Normally closed

Series

3	SY300
5	SY500

A port size

Thread piping

Symbol	Port size	Applicable series
Nil	Base mounted	
M5	M5 x 0.8	SY300
01	1/8	SY500

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY300
C6	One-touch fitting for ø6	SY300
C4	One-touch fitting for ø4	SY500
C6	One-touch fitting for ø6	SY500
C8	One-touch fitting for ø8	SY500

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for 5/32"	SY300
N7	One-touch fitting for 1/4"	SY300
N7	One-touch fitting for 1/4"	SY500
N9	One-touch fitting for 5/16"	SY500

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

CE-compliant

Nil	—
Q	CE-compliant

3 port valve (5 port valve mixed mounting style) SY 3 1 3 – 5 WAO – –

5 port valve SY 3 2 2 0 – 5 WAO – – –

Series

3	SY3000
5	SY5000
7	SY7000
9	SY9000

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

Body type

2	Body ported
4	Base mounted
6	Body ported cassette type

∗ The body ported cassette type is not available for series SY9000.

Pilot type

Nil	Internal pilot
R∗	External pilot

∗ Base mounted type only.

Rated voltage

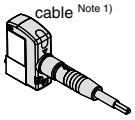
For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

Electrical entry

WAO: Without connector cable

WA□: With connector cable Note 1)



Note 1) □: Enter a symbol for cable length. Enter referring page 340.

Light/surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With indicator light and surge voltage suppressor
R	Without surge voltage suppressor (non-polar type)
U	Without light/surge voltage suppressor (non-polar type)

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Made to Order

Nil	—
X20	Body ported external pilot (Refer to page 332.)
X90	Main valve fluoro rubber (Refer to page 332.)

∗ X20 for series SY9000 is not available.
∗ X20 for the base mounted type is not available.

A, B port size

For body ported

Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
01	1/8	SY5000
02	1/4	SY7000
02	1/4	SY9000
03	3/8	SY9000

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	SY3000
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	SY5000
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	SY7000
C8	One-touch fitting for ø8	SY9000
C10	One-touch fitting for ø10	SY9000
C12	One-touch fitting for ø12	SY9000

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	SY3000
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	SY5000
N9	One-touch fitting for ø5/16"	SY7000
N11	One-touch fitting for ø3/8"	SY7000
N9	One-touch fitting for ø5/16"	SY9000
N11	One-touch fitting for ø3/8"	SY9000

For Base Mounted

Symbol	Port size	Applicable series
Nil	Without sub-plate	
01	1/8 With sub-plate	SY3000
02	1/4 With sub-plate	SY5000 SY7000
03	3/8 With sub-plate	SY7000 SY9000
04	1/2 With sub-plate	SY9000

Note) When placing an order for body ported solenoid valve as a single unit, gaskets are not included. Order them separately, if necessary. (Refer to catalog on page 173 for details.)

How to Order Pilot Valve

V111 – 5 WAO

Rated voltage

For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

Light/surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With indicator light and surge voltage suppressor
R	Without surge voltage suppressor (non-polar type)
U	Without light/surge voltage suppressor (non-polar type)

Electrical entry

WAO	M8 connector	Without connector cable
WA□		With connector cable Note 1)

Note 1) □: Enter a symbol for cable length. Enter referring page 340.

Since V111 is CE-compliant as standard, the suffix "-Q" is not necessary.

Series SY3000/5000/7000/9000
Made to Order
Body Ported External Pilot/Fluoro Rubber for Main Valve

Made to Order

Body Ported External Pilot

Applicable solenoid valves: Series SY3□$^{2}_{6}$0, SY5□$^{2}_{6}$0, SY7□$^{2}_{6}$0

Model no. SY$^{3}_{5}_{7}$ □ $^{2}_{6}$0- □□□□ - □ - □ - X20- □

- **Entry is the same as standard products.**
- **CE-compliant**

Nil	—
Q	CE-compliant

Operating pressure range MPa

Operating pressure range	–100 kPa to 0.7
Pilot pressure range	0.25 to 0.7

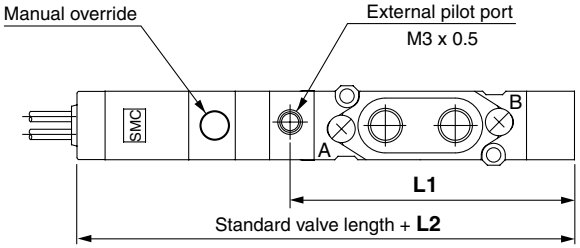
Dimensions: For SY3□$^{20}_{60}$, SY5□$^{20}_{60}$, SY7□$^{20}_{60}$

Dimensions SY3000 becomes 6.5 mm longer
SY5000 and SY7000 becomes 10 mm longer.

External pilot port

Series	Port size
SY3000	M3 x 0.5
SY$^{5}_{7}$000	M5 x 0.8

Dimensions: For SY3□60, SY5□60, SY7□60



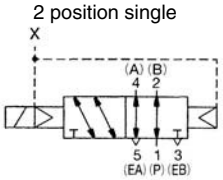
Dimentions/External Pilot Port Position

Series	**L1** dimensions	**L2** dimensions
SY3000	41.5	6.5
SY5000	60.4	9
SY7000	71.9	9

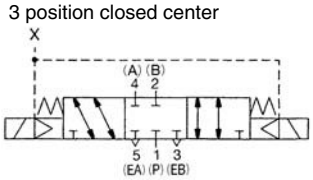
JIS Symbol

Body ported

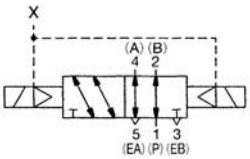
2 position single



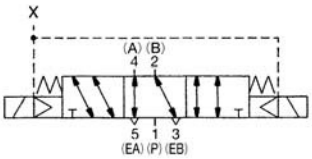
3 position closed center



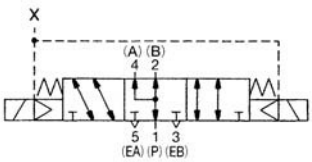
2 position double



3 position exhaust center



3 position pressure center



Main Valve Fluoro Rubber Specifications

Fluoro rubber 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 solenoid valves: Series SY3□$^{2}_{4}_{6}$0, SY5□$^{2}_{4}_{6}$0, SY7□$^{2}_{4}_{6}$0, SY9□$^{2}_{4}$0

Model no. SY$^{3}_{5}_{7}_{9}$ □ $^{20}_{40}_{60}$- □□□□ - □ - □ - X90- □

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

Nil	—
Q	CE-compliant

Series SY
Specific Product Precautions 1

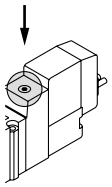
Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Manual Override Operation

⚠Warning

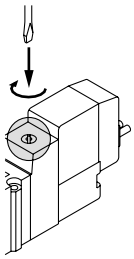
■ Non-locking push type [Standard]

Press in the direction of the arrow

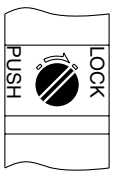


■ Push-turn locking slotted type [Type D]

While pressing, turn in the direction of the arrow.
If it is not turned, it can be operated the same way as the non-locking type.



Locked position

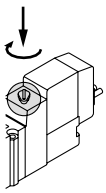


⚠Caution

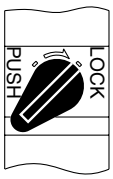
When operating the locking type D with a screw driver, turn it gently using a watchmakers screw driver.
[Torque: Less than 0.1 N·m]

■ Push-turn locking lever type [Type E]

While pressing, turn it the direction of the arrow.
If it is not turned, it can be operated the same way as the non-locking type.



Locked position



⚠Caution

When locking the manual override on the push-turn locking types (D, E), be sure to push it down before turning.
Turning without first pushing it down can cause damage to the manual override and trouble such as air leakage, etc.

Solenoid Valve for 200, 220 VAC Specifications

⚠Warning

Solenoid valves with grommet and L/M type plug connector AC specifications have a built-in rectifier circuit in the pilot section to operate the DC coil.
With 200 V, 220 VAC specification pilot valves, this built-in rectifier generates heat when energized. The surface may become hot depending on the energized condition; therefore, do not touch the solenoid valves.

Exhaust Throttle

⚠Caution

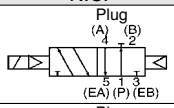
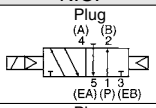
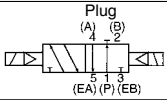
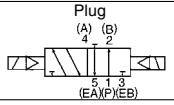
With series SY, the pilot valve and main valve share a common exhaust inside the valve. Therefore, do not block the exhaust port when arranging the piping.

Series SY3000/5000/7000/9000 Used as a 3-Port Valve

⚠ Caution

In case of using a 5-port valve as a 3-port valve

Series SY3000/5000/7000/9000 can be used as normally closed (N.C.) or normally open (N.O.) 3-port port valves by closing one of the cylinder ports (A or B) with a plug. However, they should be used with the exhaust ports kept open. (Refer to pages 318 to 323 for dedicated 3-port solenoid valve.)

Plug position		B port	A port
Configuration		N.C.	N.O.
Number of solenoids	Single		
	Double		

Series SY
Specific Product Precautions 2

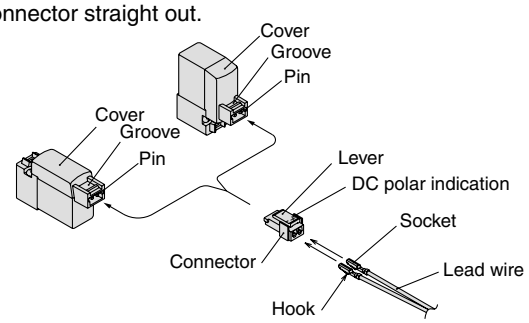
Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

How to Use Plug Connector

⚠ Caution

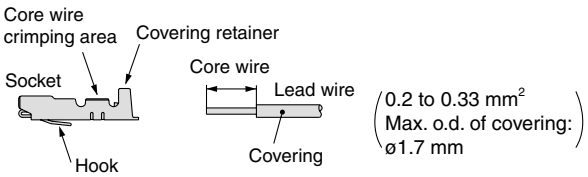
1. Attaching and detaching connectors

- To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.
- To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.



2. Crimping connection of lead wire and socket

Strip 3.2 to 3.7 mm at the end of lead wires, insert the end of the core wires evenly into the sockets, and then crimp it by a crimping tool. When this is done, take care that the coverings of the lead wires do not enter the core wire crimping area.
(Crimping tool: Model no. DXT170-75-1)



3. Attaching and detaching lead wires with sockets

• Attaching

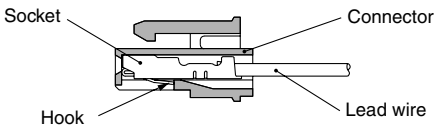
Insert the sockets into the square holes of the connector (+, – indication), and continue to push the sockets all the way in until they lock by hooking into the seats in the connector.

(When they are pushed in, their hooks open and they are locked automatically.) Then confirm that they are locked by pulling lightly on the lead wires.

• Detaching

To detach a socket from a connector, pull out the lead wire while pressing the socket's hook with a stick having a thin tip (approx. 1 mm).

If the socket will be used again, first spread the hook outward.



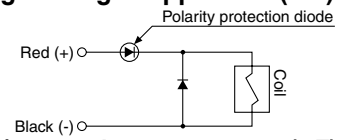
Surge Voltage Suppressor

⚠ Caution

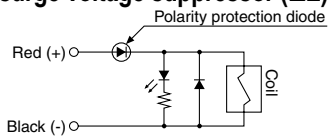
<For DC>
Grommet, L/M Plug Connector

■ Standard type (With polarity)

With surge voltage suppressor (□S)

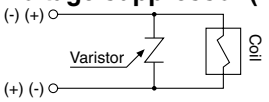


With light/surge voltage suppressor (□Z)

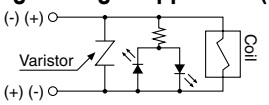


■ Non-polar type

With surge voltage suppressor (□R)



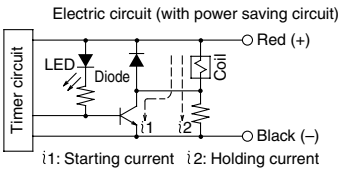
With light/surge voltage suppressor (□U)



- Connect the standard type in accordance with the +, – polarity indication. (The non-polar type can be used with the connections made either way.)
- Since voltage specifications other than standard 24 V and 12 VDC do not have diodes for polarity protection, be careful not to make errors in the polarity.
- Please use caution regarding the allowable voltage fluctuation because there is about a 1 volt drop for a valve with polarity protection. (For details, refer to the solenoid specifications for the individual valve.)
- When wiring is done at the factory, positive (+) is red and negative (–) is black.

■ With power saving circuit

Power consumption is decreased by 1/4 by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 62 ms at 24 VDC.)

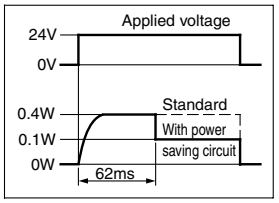


Operating Principle

With the above circuit, the current consumption when holding is reduced to save energy. Please refer to the electric wave data below.

- Please be careful not to reverse the polarity, since a diode to prevent the reversed current is not provided for the power saving circuit.
- Please use caution regarding the allowable voltage fluctuation because there is about a 0.5 volt drop due to the transistor. (For details, refer to the solenoid specifications for the individual valve.)

(In the case of SY$^{3}_{5}_{9}$0T, the electric wave form of energy saving type)**

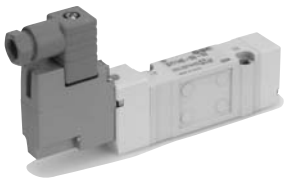


Series SY
Specific Product Precautions 3

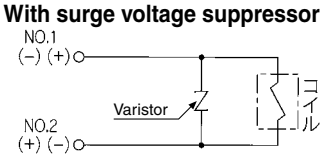
Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Surge Voltage Suppressor

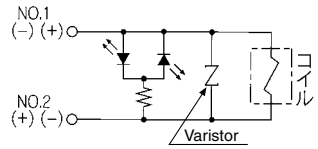
DIN Terminal



With surge voltage suppressor (DS)



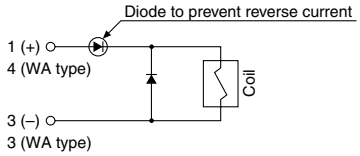
With light/surge voltage suppressor (DZ)



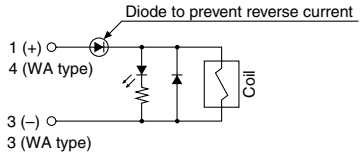
DIN terminal has no polarity.

M8 Connector

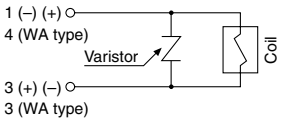
■ Standard type (without polarity)
With surge voltage suppressor (□S)



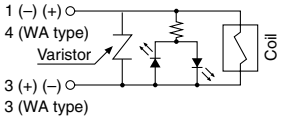
With light/surge voltage suppressor (□Z)



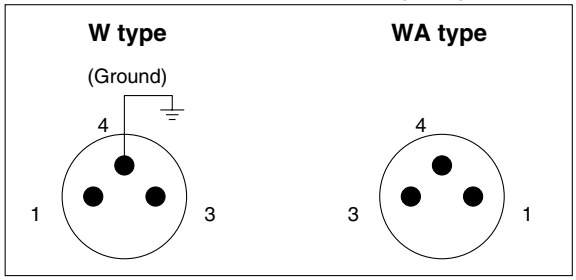
■ Non-polar type
With surge voltage suppressor (□R)



With light/surge voltage suppressor (□U)



Solenoid valve side pin wiring diagram

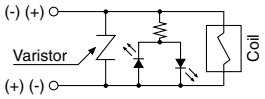


M8 Connector

- For the standard type, connect + to 1 and – to 3 for Type W according to polarity, while + to 4 and – to 3 for Type WA.
- For DC voltages other than 12 V and 24 V, incorrect wiring will case damage to the surge suppressor circuit.
- Please use caution regarding the allowable voltage fluctuation because there is about a 1 volt drop for a valve with polarity protection. (For details, refer to the solenoid specifications for the individual valve.)
- The WA-type valve cannot be grounded.

Plug-in

Circuit for non-polar (FU)

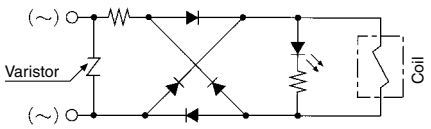


Plug-in valve has no polarity, so its possible to use for both manifold bases for positive (SS5Y$^{3}_{5}$-45□) and negative its common (SS5Y$^{3}_{5}$-45N□) types.

<For AC>
(There is no "S" option, because the generation of surge voltage is prevented by a rectifier.)

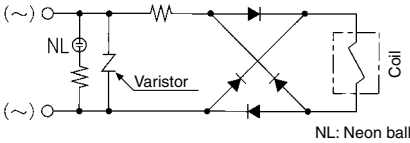
Grommet, L/M Plug Connector

With light { **GZ** / **LZ, LOZ, MZ, MOZ** }



DIN Terminal

With light (DZ) (YZ)



Note) Surge voltage suppressor of varistor has residual voltage corresponding to the protective element and rated voltage; therefore, protect the controller side from the surge voltage. The residual voltage of the diode is approximately 1 V.

Specific Product Precautions 4

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Plug Connector Lead Wire Length

⚠ Caution

Standard length is 300mm, but the following lengths are also available.

How to Order Connector Assembly

For DC: **SY100−30−4A−** □
For 100 VAC: **SY100−30−1A−** □
For 200 VAC: **SY100−30−2A−** □
For other voltages of AC: **SY100−30−3A−** □
Without lead wire: **SY100−30−A**
(with connector and 2 of sockets only)

• How to Order

Specify the part numbers of the solenoid valve without connector and the connector assembly with protective cover separately.
<Example> Lead wire length 2000 mm

For DC	For AC
SY3120-5LO-M5	SY3120-1LO-M5
SY100-30-4A-20	SY100-30-1A-20

Lead wire length

Nil	300 mm
6	600 mm
10	1000 mm
15	1500 mm
20	2000 mm
25	2500 mm
30	3000 mm
50	5000 mm

How to Use DIN Terminal

⚠ Caution

Connection

1. Loosen the holding screw and pull the connector out of the solenoid valve terminal block.
2. After removing the holding screw, insert a flat head screwdriver, etc. into the notch on the bottom of the terminal block and pry it open, separating the terminal block and the housing.
3. Loosen the terminal screws (slotted screws) on the terminal block, insert the cores of the lead wires into the terminals according to the connection method, and fasten them securely with the terminal screws.
4. Secure the cord by fastening the ground nut.

⚠ Caution

When making connections, take note that using other than the supported size (ø3.5 to ø7) heavy duty cord will not satisfy IP65 (enclosure) standards. Also, be sure to tighten the ground nut and holding screw within their specified torque ranges.

Changing the entry direction

After separating the terminal block and housing, the cord entry can be changed by attaching the housing in the desired direction (4 directions at 90° intervals).

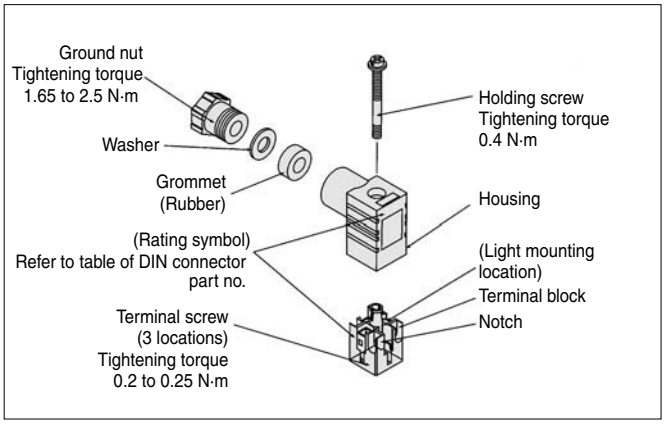
* When equipped with a light, be careful not to damage the light with the cord's lead wires.

Precautions

Plug in and pull out the connector vertically without tilting to one side.

Compatible cable

Cord O.D.: ø3.5 to ø7
(Reference) 0.5mm^2, 2-core or 3-core, equivalent to JIS C 3306



Type "Y"

DIN connector type Y is a DIN connector that confirms to the DIN pitch 8-mm standard.

- D type DIN connector with 9.4 mm pitch between terminals is not interchangeable.
- To distinguish from the D type DIN connector, "N" is listed at the end of voltage symbol. (For connector parts without lights, "N" is not indicated. Please refer to the name plate to distinguish.)
- Dimensions are completely the same as D type DIN connector.
- When exchanging the pilot valve assembly only, "SY115-□D" is interchangeable with "SY115-□Y". Do not replace SY114 (G, L, M) to SY115-□D/□Y (DIN terminal), and vice versa.

Series SY
Specific Product Precautions 5

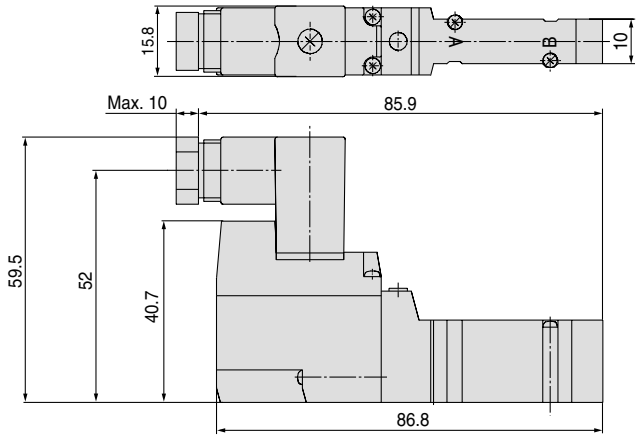
Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Series SY300, SY3000 How to Use DIN Terminal Connector

⚠Caution

- SMC can provide a DIN style terminal connector (body ported type, sub-plate type) for the series SY300 and SY3000. This cannot be assembled to a standard manifold since the DIN connector width (15.8mm) exceeds that of the valve body (10mm). Contact SMC if you wish to use with a manifold. Please also note: that bracket F1 cannot be mounted.

∗ The external pilot type is not available.



DIN Connector Part No.

⚠Caution

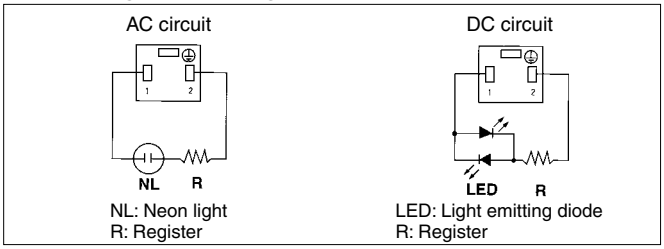
<Type D>

Without light	SY100-61-1	
With light		
Rated voltage	Voltage symbol	Part no.
24 VDC	24 V	SY100-61-3-05
12 VDC	12 V	SY100-61-3-06
100 VAC	100 V	SY100-61-2-01
200 VAC	200 V	SY100-61-2-02
110 VAC	110 V	SY100-61-2-03
220 VAC	220 V	SY100-61-2-04

<Type Y>

Without light	SY100-82-1	
With light		
Rated voltage	Voltage symbol	Part no.
24 VDC	24 VN	SY100-82-3-05
12 VDC	12 VN	SY100-82-3-06
100 VAC	100 VN	SY100-82-2-01
200 VAC	200 VN	SY100-82-2-02
110 VAC (115 VAC)	110 VN	SY100-82-2-03
220 VAC (230 VAC)	220 VN	SY100-82-2-04

Circuit Diagram with Light



NL: Neon light
R: Register

LED: Light emitting diode
R: Register

Connector Assembly with Cover

⚠Caution

Connector assembly with dust proof protective cover.

- Effective to prevention of short circuit failure due to the entry of foreign matter into the connector.
- Chloroprene rubber for electrical use, which provides outstanding weather resistance and electrical insulation, is used for the cover material. However, do not allow contact with cutting oil, etc.
- Simple and unencumbered appearance by adopting round-shaped cord.

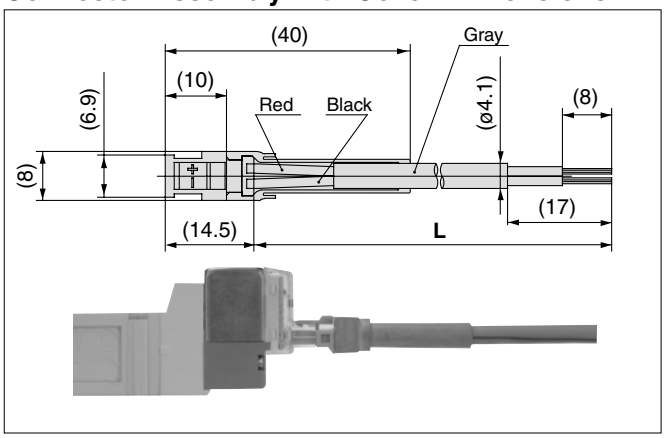
How to Order

SY100−68−A −□

Lead wire length (L)

Nil	300 mm
6	600 mm
10	1000 mm
15	1500 mm
20	2000 mm
25	2500 mm
30	3000 mm
50	5000 mm

Connector Assembly with Cover: Dimensions



How to Order

Enter the part number for a plug connector solenoid valve without connector together with the part number for a connector assembly with cover.

<Example 1> Lead wire length of 2000 mm
SY3120-5LOZ-M5
SY100-68-A-20

<Example 2> Lead wire length of 300 mm (standard)
SY3120-5LPZ-M5
Symbol for connector assembly with cover

∗ In this case, the part number for the connector assembly with cover is not required.

Specific Product Precautions 6

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Plug-in

⚠Caution

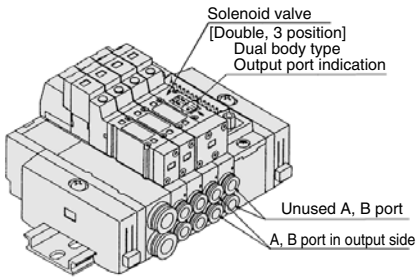
■ When using a double solenoid valve (Dual body type: SY$^{3}_{5}$245-□FU) on the plug-in style manifold (SS5Y$^{3}_{5}$-45(N)□), two manifold stations are required per valve.

Output to A/B ports will be made through the manifold block on the side indicated by an arrow on the top of the solenoid valve. Therefore, arrange the piping on the side indicated by the arrow.

Although the "T" side will not be used, plugs will not be necessary since it is sealed with the valve.

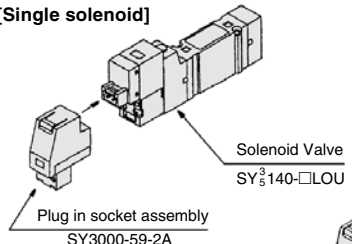
(However, insert a plug into the A/B ports if dust intrusion is possible. Refer to page 275.)

Manifold valve
SS5Y$^{3}_{5}$-45 (N)□

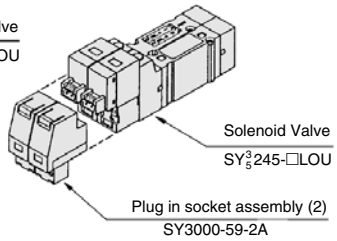


Plug-in type solenoid valves consist of a non-polar solenoid valve and a plug-in socket. When ordering them separately, refer to the following part numbers.

[Single solenoid]



[Double, 3 position]
Dual body type



Note) Using a valve other than a non-polar type may cause trouble.

DIN Rail for Series SY7000/9000

⚠Caution

The DIN rail used with Series SY7000 and SY9000 is stronger than that used with Series SY3000 and SY5000. Use this exclusive DIN rail with Series SY7000 and SY9000. Furthermore, if using a DIN rail other than that supplied by SMC, refer to the manifold mounting section below, and mount using the same method as prescribed for side facing and rear facing, regardless of the mounting orientation.

Manifold Mounting

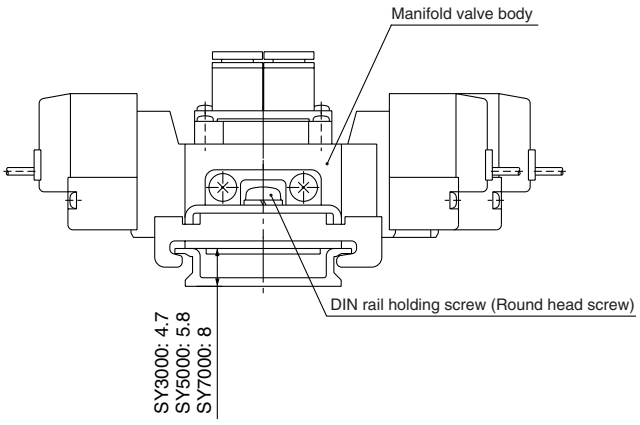
⚠Caution

For Type 23, 43, 45, 45□ and 60 DIN rail mounting, when attaching a manifold to a mounting surface, etc., with bolts, if the entire bottom surface of the DIN rail contacts the mounting surface in a horizontal mounting, it can be used by simply securing both ends of the DIN rail. However, for any other mounting method or for side facing and rear facing, etc., secure the DIN rail with bolts at uniform intervals using the following as a guide: 2 to 5 stations at 2 locations, 6 to 10 stations at 3 locations, 11 to 15 stations at 4 locations, and 16 to 20 stations at 5 locations. In addition, even in the case of a horizontal mounting, if the mounting surface is subject to vibration, etc., take the same measures indicated above. If secured at fewer than the specified number of locations, warping or twisting may occur in the DIN rail and manifold, causing trouble such as air leakage.

Also, when using mounting screws for the DIN rail on the bottom side (L3 dimension in the dimension table) of the manifold valve body, the height of the screw head has to be as follows.

Type 23, 43 (SY9000): 8 mm or less
Type 45 (SY3000, 5000): 5.8 mm or less

For type 60:
SY3000: 4.7 mm or less
SY5000: 5.8 mm or less
SY7000: 8 mm or less



[This is the case for type 60.]

Series SY
Specific Product Precautions 7

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

One-touch Fittings

⚠Caution

The pitch determined for each of the series SY piping ports (P, A, B, etc.) is based on the assumption that series KJ one-touch fittings will be used. For this reason, other pipe fittings may interfere with each other depending on their type and size. Dimensions should be confirmed in a pipe fitting catalog before they are used.

- **Tubing attachment/detachment for One-touch fittings**

1) Attaching of tubing

1. Take a tubing having no flaws on its periphery and cut it off at a right angle. When cutting the tubing, use tubing cutters TK-1, 2 or 3. Do not use pinchers, nippers or scissors, etc. If cutting is done with tools other than tubing cutters, the tubing may be cut diagonally or become flattened, etc., making a secure installation impossible, and causing problems such as the tubing pulling out after installation or air leakage. Allow some extra length in the tubing.
2. Grasp the tubing and push it in slowly, inserting it securely all the way into the fitting.
3. After inserting the tubing, 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 tubing pulling out.

2) Detaching of tubing

1. Push in the release button sufficiently, pushing its collar equally around the circumference.
2. Pull out the tubing 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 tubing and it will become more difficult to pull it out.
3. When the removed tubing is to be used again, cut off the portion which has been chewed before reusing it. If the chewed portion of the tubing is used as is, this can cause trouble such as air leakage or difficulty in removing the tubing.

- The pitch determined for each of the series SY piping ports (A, B, etc.) is based on the assumption that series KJ one-touch fittings will be used. For this reason, other pipe fittings may interfere with each other depending on their type and size. Dimensions should be confirmed in a pipe fitting catalog before they are used.

Other Tubing Brands

⚠Caution

1. When using other than SMC brand tubing, confirm that the following specifications are satisfied with respect to the outside diameter tolerance of the tubing.

1) Nylon tubing	within ±0.1 mm
2) Soft nylon tubing	within ±0.1 mm
3) Polyurethane tubing	within +0.15 mm, within –0.2 mm.

Do not use tubing 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 tubing pulling out after connection.

M8 Connector

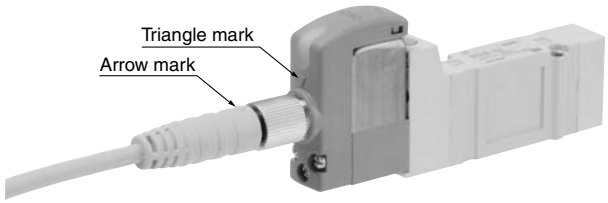
⚠Caution

1. M8 connector types have an IP65 (enclosure) rating, offering protection from dust and water. However please note: these products are not intended for use in water.
   Select a SMC connector cable (V100-49-1-□) or a FA sensor type connector, with M8 threaded 3 pin specifications conforming to Nippon Electric Control Equipment Association Standard, NECA4202 (IEC60947-5-2). Make sure the connector O.D. is 10.5mm or less when used with the Series SY3000 manifold. If more than 10.5mm, it cannot be mounted due to the size.
2. Do not use a tool to mount the connector, as this may cause damage. Only tighten by hand. (0.4 to 0.6 N·m)
3. The excessive stress on the cable connector will not be able to satisfy the IP65 rating. Please use caution and do not apply a stress of 30 N or greater.

⚠ Caution

Failure to meet IP65 performance may result if using alternative connectors than those shown above, or when insufficiently tightened.

Connector cable mounting



Note) Connector cable should be mounted in the correct direction.
Make sure that the arrow symbol on the connector is facing the triangle symbol on the valve when using SMC connector cable (V100-49-1-□).

Be careful not to squeeze it in the wrong direction, as problems such as pin damage may occur.

Series SY
Specific Product Precautions 8

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

M8 Connector

⚠Caution

■ Connector cable

- Connector cable for M8 can be ordered as follows:

How to Order

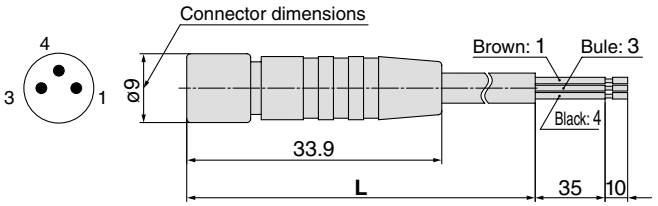
1. To order solenoid valve and connector cable at the same time.
   (Connector cable will be included in the shipment of the solenoid valve.)

SY 3/5/7/9 □□□ – □□□□ – □□

Electrical entry
W1, WA1: Cable length 300 mm
W2, WA2: Cable length 500 mm
W3, WA3: Cable length 1000 mm
W4, WA4: Cable length 2000 mm
W7, WA7: Cable length 5000 mm

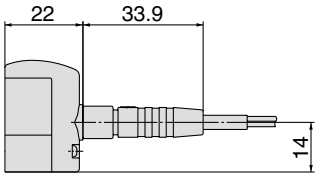
Ex. 1) Cable length: 300mm
SY312-5W1ZE-C4
Symbol for electrical entry

2. To order connector cable only



Cable length (L)	Part no.
300 mm	V100-49-1-1
500 mm	V100-49-1-2
1000 mm	V100-49-1-3
2000 mm	V100-49-1-4
5000 mm	V100-49-1-7

[Dimensions when installed]



Solenoid Valve Mounting

⚠Caution

Mount it so that there is no slippage or deformation in gaskets, and tighten with the tightening torque as shown below.

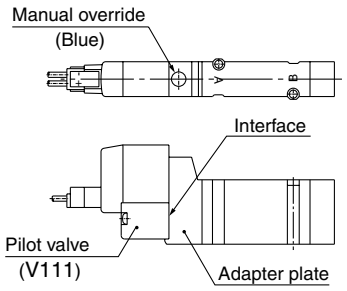
Model	Thread size	Tightening torque
SY3000	M2	0.16 N·m
SY5000	M3	0.8 N·m
SY7000	M4	1.4 N·m
SY9000	M3	0.8 N·m

Replacement of Pilot Valve

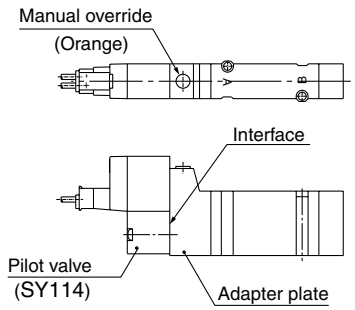
⚠Caution

Pilot valves in this series are improved to provide excellent energy saving results. However following this improvement, these new valves are no longer compatible with the conventional pilot valve used at the interface. Consult with SMC when you need to exchange these pilot valves, in the case of manual override (marked in orange) of the adapter plate.

New type



Conventional type



Specific Product Precautions 9

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

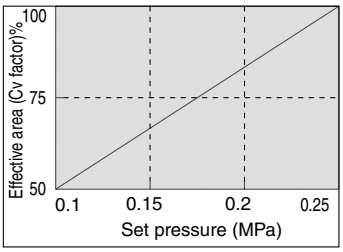
Interface Regulator

⚠Caution

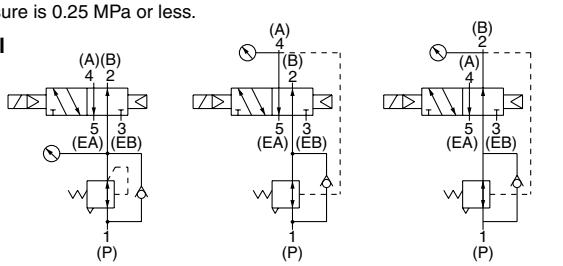
Specifications

Interface regulator model		ARBY3000-□-P-2	ARBY3000-□-$^{A1}_{B1}$-2		ARBY5000-□-P-2	ARBY5000-□-$^{A1}_{B1}$-2		ARBY7000-□-P-2	ARBY7000-□-$^{A1}_{B1}$-2	
Applicable solenoid valve model		SY3□40(R)			SY5□40(R)			SY7□40(R)		
Regulated port		P	A	B	P	A	B	P	A	B
Set pressure range		0.1 to 0.7 MPa								
Maximum operating pressure		0.7 MPa								
Fluid		Air								
Ambient and fluid temperature		Max. 50°C								
Connection port of pressure gauge		M5 x 0.8								
Mass W (g)	With pressure gauge	46 g (05), 50 g (06)			66.8 g			110.8 g		
	With plug	20 g			60.4 g			103.2 g		
Supply side effective area Note 3)	P→A,B	—	2.45 mm²		—	7.61 mm²		—	13.54 mm²	
Exhaust side effective area Note 3)	A,B→EA,EB	4.05 mm²	3.91 mm²		11.1 mm²	10.1 mm²		15.71 mm²	15.71 mm²	

Note 1) Pressurize the interface regulator from P port on the base.
Note 2) With closed center and pressure center valves, the pressure can be regulated through P port only.
Note 3) Effective area, excluding the regulated port, when a primary pressure of 0.5 MPa is supplied with regulators mounted on the solenoid valves (2 positions) and sub-plate. Refer to "Flow Characteristics" regarding the regulated port.
Note 4) Valves for weight include gasket and mounting screws.
Note 5) With A, B ports regulated (P port controlled A, B ports regulated), the effective area (Cv factor) for the regulated port and unregulated passage (P to B or P to A) decreases as shown in the graph below when the set pressure is 0.25 MPa or less.



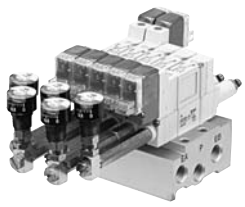
JIS Symbol



P port regulated | **A port regulated (P controlled, A port regulated)** | **B port regulated (P controlled, B port regulated)**

How to Order Interface Regulator

ARBY3000 – 05 – P – 2



Regulated port

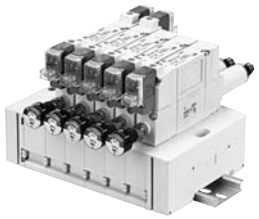
P	P port
A1	A port (P controlled, A port regulated)
B1	B port (P controlled, B port regulated)

Pressure gauge connection port

05	Pressure gauge (G15-10-01) [for odd number stations]
06	Pressure gauge (G15-10-01) [for even number stations]
M1	Plug (M-5P)

Note) For series ARBY3000 with pressure gauge, note that the part numbers for odd number and even number stations differ to prevent interference between the pressure gauges when installing on the manifold.

ARBY5000 – 00 – P – 2



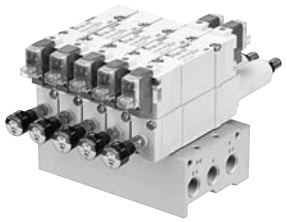
Regulated port

P	P port
A1	A port (P controlled, A port regulated)
B1	B port (P controlled, B port regulated)

Pressure gauge connection port

00	Pressure gauge (G15-10-01)
M1	Plug (M-5P)

ARBY7000 – 00 – P – 2



Regulated port

P	P port
A1	A port (P controlled, A port regulated)
B1	B port (P controlled, B port regulated)

Pressure gauge connection port

00	Pressure gauge (G15-10-01)
M1	Plug (M-5P)

Specific Product Precautions 10

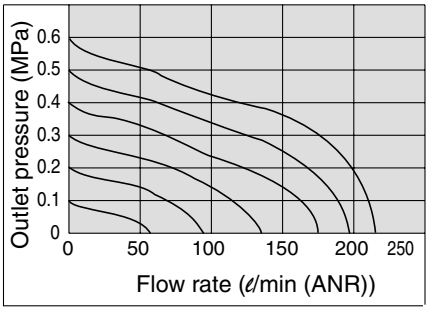
Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Flow Characteristics

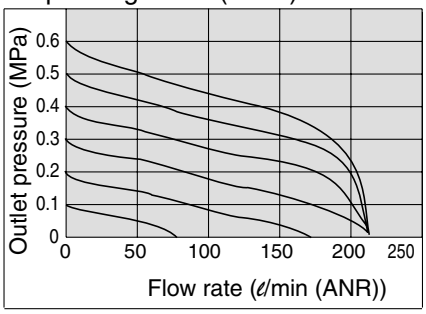
(Conditions: Inlet pressure 0.7 MPa when 2 position solenoid valve is mounted.)

ARBY3000

P port regulated (P→A, B)

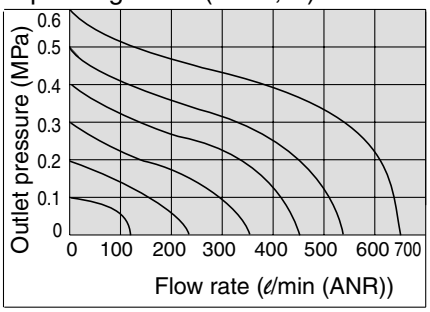


A1 port regulated (P→A),
B1 port regulated (P→B)

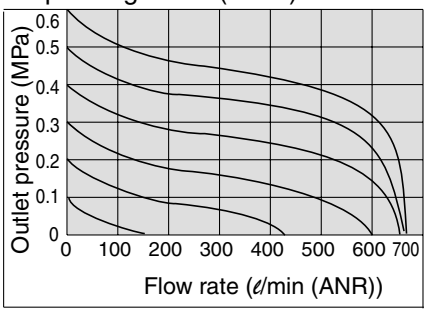


ARBY5000

P port regulated (P→A, B)

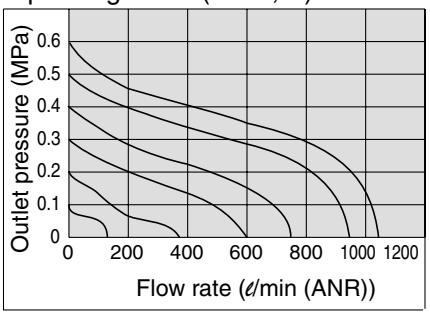


A1 port regulated (P→A),
B1 port regulated (P→B)



ARBY7000

P port regulated (P→A, B)



A1 port regulated (P→A),
B1 port regulated (P→B)