



Series SY3000/5000/7000/9000 Body Ported Valve Single Unit

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 (A)(B) (EA)(P)(EB)
2	2 position double (A)(B) (EA)(P)(EB)
3	3 position closed center (A)(B) (EA)(P)(EB)
4	3 position exhaust center (A)(B) (EA)(P)(EB)
5	3 position pressure center (A)(B) (EA)(P)(EB)

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

DC

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

AC (50/60Hz)

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

* DC specifications of type "D" and "DO" 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	MN: Without lead wire	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	
H: Lead wire length 600 mm	LN: Without lead wire	LO: Without connector	MO: Without connector	DO: Without connector

24, 12, 6, 5, 3 VDC

M8 connector

WO: Without connector cable

* "LN", "MN" type: with 2 sockets.
* For DIN terminal of SY3000 series, refer to page 1-4-207.
* DIN terminal type "Y" conforming to DIN 43650C is available, too. For details, refer to page 1-4-201.
* For connector cable of M8 connector, refer to page 1-4-209.

A, B port size Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
O1	1/8	SY5000
O2	1/4	SY7000
O2	1/4	SY9000
O3	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	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"	SY7000
N9	One-touch fitting for ø 5/16"	
N11	One-touch fitting for ø 3/8"	SY9000
N9	One-touch fitting for ø 5/16"	
N11	One-touch fitting for ø 3/8"	

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

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.

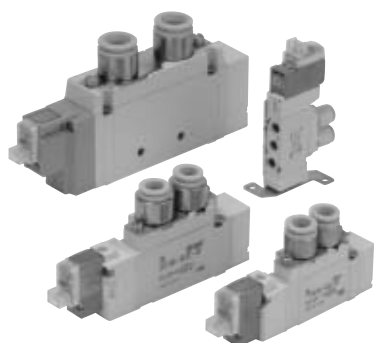
Electrical entry for D

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

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

Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to catalog on page 1-4-61.)

Specifications



Series		SY3000	SY5000	SY7000	SY9000
Fluid		Air			
Internal pilot	2 position single	0.15 to 0.7			
Operating pressure range (MPa)	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. Refer to page 1-7-5.)			
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/s ²) <small>Note</small>		150/30			
Enclosure		Dustproof (* DIN terminal, M8 connector conforms to IP65)			

* Based on IEC529)
 Note) Impact resistance: No malfunction occurred when it is tested with a drop tester 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)

SV
 SZ
 SY
 SYJ
 SX

Made to Order Made to Order Specifications
 (For details, refer to pages 1-4-188 to 202.)

Solenoid Specifications

Electrical entry		Grommet (G), (H) L plug connector (L) M plug connector (M)	DIN terminal (D) M8 connector (W)
Coil rated voltage (V)	DC	24, 12, 6, 5, 3	
	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	1.4 (With indicator light: 1.5)
		110 V	1.6 (With indicator light: 1.7)
		[115 V]	[1.7 (With indicator light: 1.8)]
		200 V	2.3 (With indicator light: 2.4)
		220 V [230 V]	2.5 (With indicator light: 2.6) [2.7 (With indicator light: 2.8)]
Surge voltage suppressor		Diode (DIN terminal is ZNR. G, L or M (Non-polar) is zener diode.)	
Indicator light		LED	

* 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.

Response Time

Note) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)

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

Series SY3000/5000/7000/9000

Flow Characteristics/Weight

Series SY3000

Valve model	Type of actuation		Port size		Flow characteristics						Weight (g)		
			1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grom- met	L, M plug connector	W M8 connector
			C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv					
SY3□20 -□-M5	2 position	Single	M5 x 0.8										
		Double											
	3 position	Closed center											
		Exhaust center											
SY3□20 -□-C4	2 position	Single	M5 x 0.8	C4 (One-touch fitting for ø4)									
		Double											
	3 position	Closed center											
		Exhaust center											
SY3□20 -□-C6	2 position	Single	M5 x 0.8	C6 (One-touch fitting for ø6)									
		Double											
	3 position	Closed center											
		Exhaust center											

Note [] : Denotes normal position.

Series SY7000

Valve model	Type of actuation		Port size		Flow characteristics						Weight (g)			
			1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grom- met	L, M plug connector	DIN terminal	W M8 connector
			C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv						
SY7□20 -□-02	2 position	Single	1/4											
		Double												
	3 position	Closed center												
		Exhaust center												
SY7□20 -□-C8	2 position	Single	1/4	C8 (One-touch fitting for ø8)										
		Double												
	3 position	Closed center												
		Exhaust center												
SY7□20 -□-C10	2 position	Single	1/4	C10 (One-touch fitting for ø10)										
		Double												
	3 position	Closed center												
		Exhaust center												

Note [] : Denotes normal position.

Series SY5000

Valve model	Type of actuation		Port size		Flow characteristics						Weight (g)			
			1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grom- met	L, M plug connector	DIN terminal	W M8 connector
			C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv						
SY5□20 -□-01	2 position	Single	1/8											
		Double												
	3 position	Closed center												
		Exhaust center												
SY5□20 -□-C4	2 position	Single	1/8	C4 (One-touch fitting for ø4)										
		Double												
	3 position	Closed center												
		Exhaust center												
SY5□20 -□-C6	2 position	Single	1/8	C6 (One-touch fitting for ø6)										
		Double												
	3 position	Closed center												
		Exhaust center												
SY5□20 -□-C8	2 position	Single	1/8	C8 (One-touch fitting for ø8)										
		Double												
	3 position	Closed center												
		Exhaust center												

Note [] : Denotes normal position.

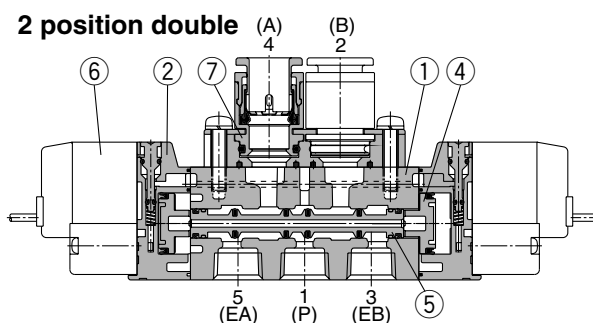
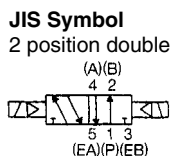
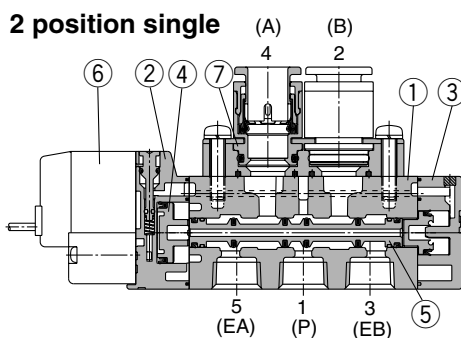
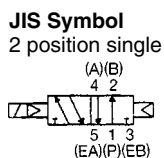
Series SY9000

Valve model	Type of actuation		Port size		Flow characteristics						Weight (g)			
			1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grom- met	L, M plug connector	DIN terminal	W M8 connector
			C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv						
SY9□20 -□-02	2 position	Single	1/4											
		Double												
	3 position	Closed center												
		Exhaust center												
SY9□20 -□-03	2 position	Single	3/8											
		Double												
	3 position	Closed center												
		Exhaust center												
SY9□20 -□-C8	2 position	Single	1/4	C8 (One-touch fitting for ø8)										
		Double												
	3 position	Closed center												
		Exhaust center												
SY9□20 -□-C10	2 position	Single	1/4	C10 (One-touch fitting for ø10)										
		Double												
	3 position	Closed center												
		Exhaust center												
SY9□20 -□-C12	2 position	Single	1/4	C12 (One-touch fitting for ø12)										
		Double												
	3 position	Closed center												
		Exhaust center												

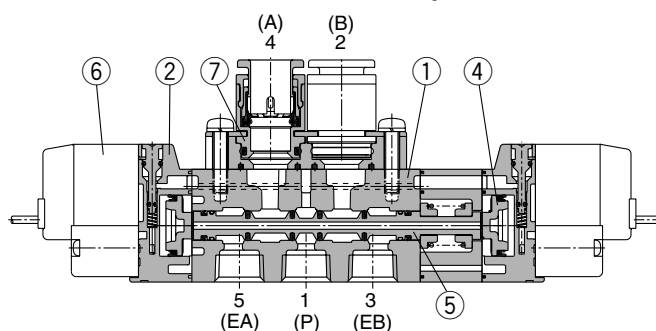
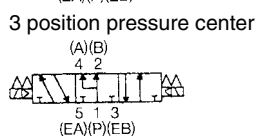
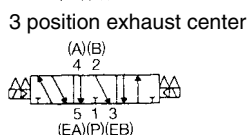
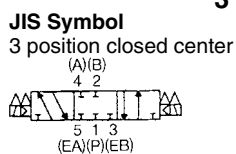
Note [] : Denotes normal position.

Construction

Series SY



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, HNBR	—

Replacement Parts

No.	Description	Part no.
⑥	Pilot valve assembly	Refer to "How to Order Pilot Valve Assembly" on page 1-4-10.
⑦	M5 port block assembly	Refer to "How to Order Port Block Assembly" on page 1-4-11.

Bracket Assembly Part No.

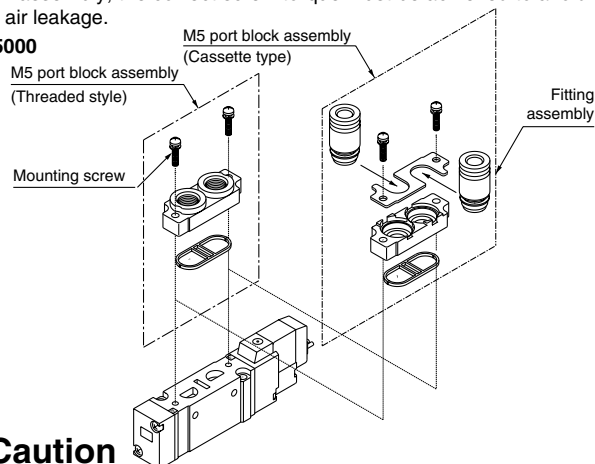
Description	part no.
Bracket (For F1)	SX ³ 000-16-2A (with mounting screw)
Bracket (For F2)	SX ³ 000-16-1A (with mounting screw)

* 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
SY⁵000 (M3): 0.6 N·m
SY9000 (M4): 1.4 N·m

* Refer to "How to Order Port Block Assembly" on page 1-4-11 for part no.

How to Order Pilot Valve Assembly

How to Order Connector Assembly for L/M Plug Connector

V111 5 G

Coil specifications

Nil	Standard: DC specifications
A	Standard: AC specifications
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 VDC ^{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.

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	

Note) For connector cable of M8 connector, refer to page 1-4-209.

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" is not available.
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

D	DIN	With connector
DO	terminal	Without connector

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

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)

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 Order M8 Connector Cable

Straight type

V100-49-1-□

Cable length

1	300 mm
2	500 mm
3	1000 mm
4	2000 mm
7	5000 mm

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

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	SY7000
C8	One-touch fitting for ø8	
C10	One-touch fitting for ø10	SY9000
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	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"	SY7000
N9	One-touch fitting for ø 5/16"	
N11	One-touch fitting for ø 3/8"	SY9000
N9	One-touch fitting for ø 5/16"	
N11	One-touch fitting for ø 3/8"	

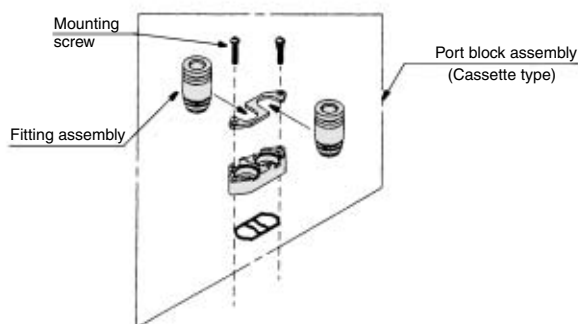
* Only replacement of the fittings assembly is possible.

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



SV

SZ

SY

SYJ

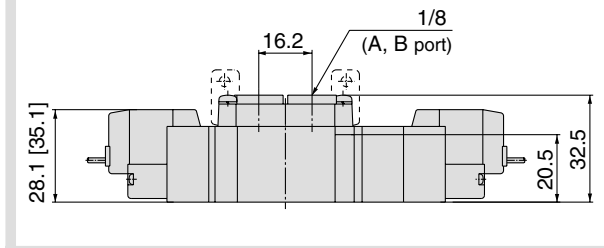
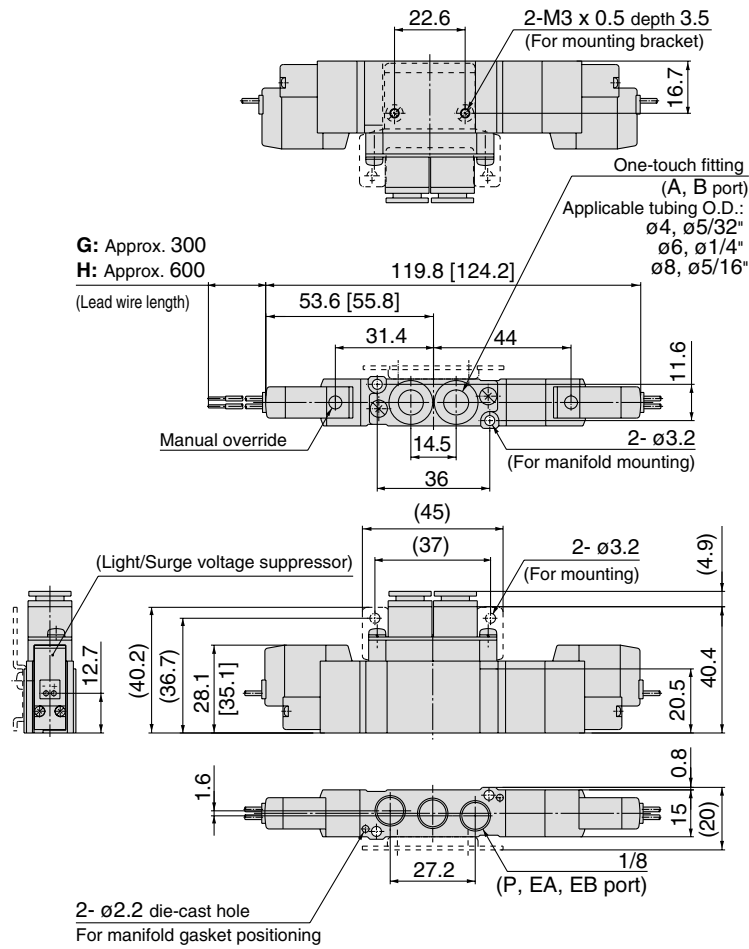
SX

Dimensions: Series SY5000



3 position closed center/exhaust center/pressure center
Grommet (G), (H): SY5³/₅420-□³/₅□□□-³/₅□□□□(-F2)
C4, N3
C6, N7
C8, N9

SY5³/₅420-□³/₅□□□□-01□□(-F2)



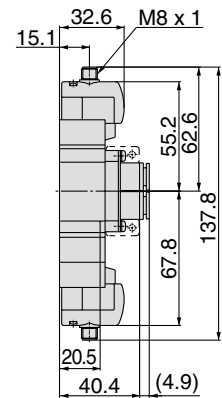
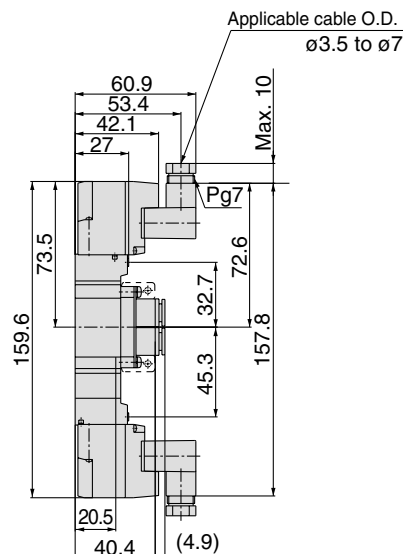
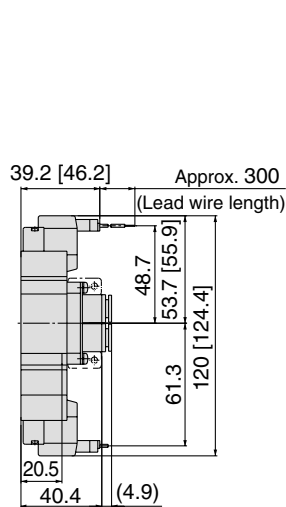
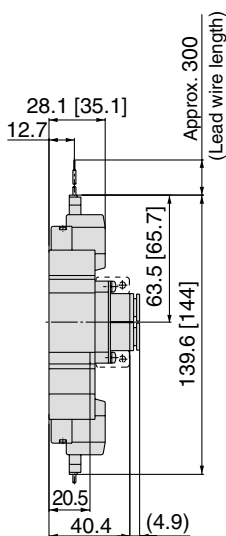
- SV
- SZ
- SY**
- SYJ
- SX

L plug connector: L
SY5³/₅420-□L□□-³/₅□□□□(-F2)
C4, N3
C6, N7
C8, N9

M plug connector: M
SY5³/₅420-□M□□-³/₅□□□□(-F2)
C4, N3
C6, N7
C8, N9

DIN terminal (D):
SY5³/₅420-□D□□-³/₅□□□□(-F2)
C4, N3
C6, N7
C8, N9

M8 connector (WO):
SY5³/₅420-□WO□□-³/₅□□□□(-F2)
C4, N3
C6, N7
C8, N9



Note) Refer to page 1-4-210 for dimensions of connector types.



Series SY3000/5000/7000/9000 Base Mounted Valve Single Unit

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)

Rated voltage

DC

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

AC (50/60 Hz)

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

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

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		Electrical entry for D	
Nil	Without light/surge voltage suppressor	Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor	S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor	Z	With light/surge voltage suppressor (Non-polar type)
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.

* "DOZ" is 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	MN plug connector	DIN terminal (Except SY3000)	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 	D: With connector 	WO: Without connector cable
H: Lead wire length 600 mm 	LN: Without lead wire 	LO: Without connector 	MO: Without connector 	DO: Without connector 	

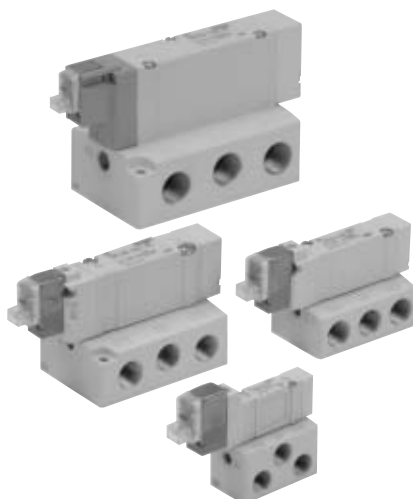
* Power saving circuit is not available in the case of "D", "DO" or "W□" type.

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

* "LN", "MN" type: with 2 sockets.
* For DIN terminal of SY3000 series, refer to page 1-4-207.

* DIN terminal type "Y" conforming to DIN43650C standard is also available. For details, refer to page 1-4-201.
* For connector cable of M8 connector, refer to page 1-4-210.

Specifications



Made to Order Specification
(For details, refer to pages 1-4-188 to 202.)

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. Refer to page 1-7-4.)			
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/s ²) ^{Note)}		150/30			
Enclosure		Dustproof (* DIN terminal, M8 connector conforms to IP65)			



* Based on IEC529)

Note) Impact resistance: No malfunction occurred when it is tested with a drop tester 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)

SV

SZ

SY

SYJ

SX

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	Type S, Z	Type R, U
2 position single	12 or less	15 or less	12 or less	15 or less
2 position double	10 or less	13 or less	10 or less	13 or less
3 position	15 or less	20 or less	16 or less	20 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	Type S, Z	Type R, U
2 position single	19 or less	26 or less	19 or less	26 or less
2 position double	18 or less	22 or less	18 or less	22 or less
3 position	32 or less	38 or less	32 or less	38 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	Type S, Z	Type R, U
2 position single	31 or less	38 or less	33 or less	40 or less
2 position double	27 or less	30 or less	28 or less	35 or less
3 position	50 or less	56 or less	50 or less	56 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	Type S, Z	Type R, U
2 position single	35 or less	41 or less	35 or less	41 or less
2 position double	35 or less	41 or less	35 or less	41 or less
3 position	62 or less	64 or less	62 or less	64 or less

Solenoid Specifications

Electrical entry		Grommet (G), (H) L plug connector: L M plug connector: M DIN terminal (D) M8 connector (W)	
Coil rated voltage (V)	DC	24, 12, 6, 5, 3	
	AC 50/60Hz	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	AC	100 V	1.4 (With indicator light: 1.5)
		110 V [115 V]	1.6 (With indicator light: 1.7) 1.7 (With indicator light: 1.8)
		200 V	2.3 (With indicator light: 2.4)
		220 V [230 V]	2.5 (With indicator light: 2.6) 2.7 (With indicator light: 2.8)
		Surge voltage suppressor	Diode (Varistor is for DIN terminal and Non-polar type.)
Indicator light		LED (AC of DIN terminal is neon bulb.)	



* 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.

Flow Characteristics/Weight

Series SY3000

Valve model	Type of actuation		Port size	Flow characteristics ^{Note 1)}						Weight (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 (dm ³ /(s·bar))	b	Cv	C (dm ³ /(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										
	3 position	Closed center		0.77	0.28	0.18	0.85	0.30	0.19			
		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			
				104 (69)	109 (74)	117 (82)						

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)}						Weight (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 (dm ³ /(s·bar))	b	Cv	C (dm ³ /(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 (82)	127 (65)
		Double											
	3 position	Closed center		1.8	0.47	0.50	1.8	0.40	0.47				
		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				
				144 (82)	150 (87)	192 (129)	158 (95)						

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)}						Weight (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 (dm ³ /(s·bar))	b	Cv	C (dm ³ /(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											
	3 position	Closed center		3.0	0.43	0.80	2.6	0.41	0.72				
		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				
				239 (110)	245 (116)	287 (158)	253 (124)						
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											
	3 position	Closed center		3.0	0.40	0.80	2.6	0.45	0.73				
		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				
				239 (110)	245 (116)	287 (158)	253 (124)						

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

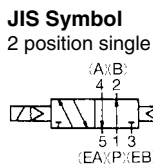
Series SY9000

Valve model	Type of actuation		Port size	Flow characteristics ^{Note 1)}						Weight (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 (dm ³ /(s·bar))	b	Cv	C (dm ³ /(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											
	3 position	Closed center		7.5	0.33	1.8	7.3	0.30	1.7				
		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				
				512(215)	518(221)	560(263)	526(229)						
SY9□40-□-04	2 position	Single	1/2	8.0	0.48	2.2	10	0.29	2.5	448 (151)	453 (156)	472	457(160)
		Double											
	3 position	Closed center		7.6	0.32	1.8	7.3	0.32	1.8				
		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				
				491 (194)	497 (200)	539	505(208)						

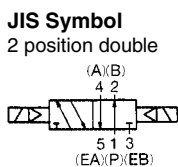
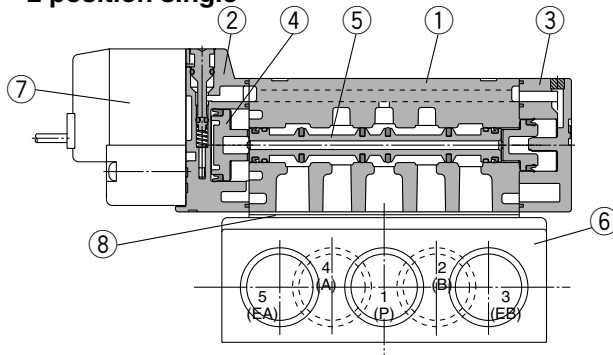
Note 1) [] : Denotes the normal position. Note 2) () : Denotes without sub-plate.

Construction

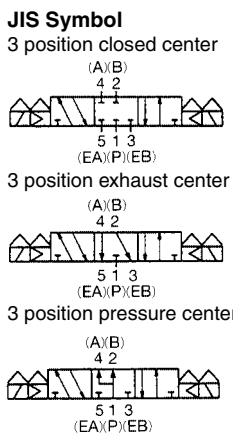
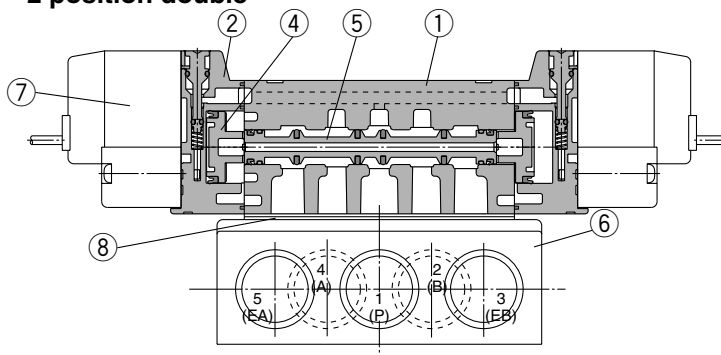
Series SY



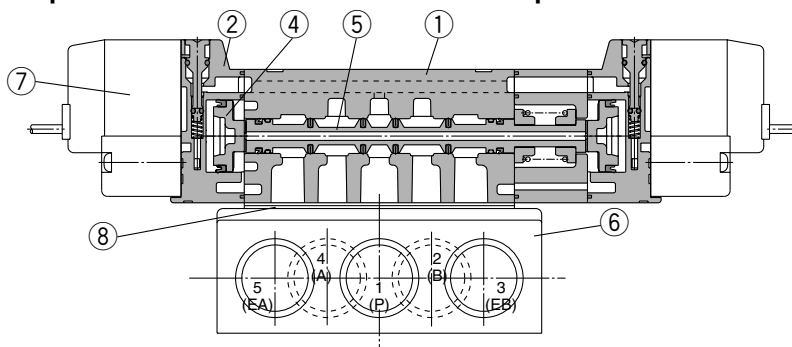
2 position single



2 position double



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, HNBR	—

Replacement Parts

No.	Description	Part no.				Note
		SY3□40	SY5□40	SY7□40	SY9□40	
⑥	Sub-plate	SY3000-27-1*	SY5000-27-1*	1/4: SY7000-27-1* 3/8: SY7000-27-2*	3/8: SY9000-27-1* 1/2: SY9000-27-2*	Aluminum die-casted
⑦	Pilot valve assembly	Refer to "How to Order Pilot Valve Assembly" on page 1-4-187.				
⑧	Gasket	SY3000-11-25	SY5000-11-15	SY7000-11-11	SY9000-11-2	HNBR
—	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

⚠ 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



Coil specifications

Nil	Standard: DC specifications
A	Standard: AC specifications
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 $\frac{50}{60}$ Hz
2	200 VAC $\frac{50}{60}$ Hz
3	110 VAC $\frac{50}{60}$ Hz [115 VAC $\frac{50}{60}$ Hz]
4	220 VAC $\frac{50}{60}$ Hz [230 VAC $\frac{50}{60}$ Hz]

* For type "W□", DC voltage is only available.

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)

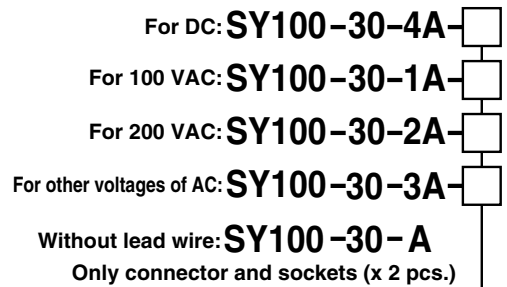
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
* For "R" and "U", DC voltage is only available.
* Power saving circuit is only available in the "Z" type.

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	

Note) For connector cable of M8 connector, refer to page 1-4-210.

How to Order Connector Assembly for L/M Plug Connector

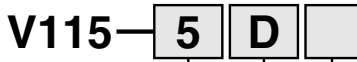


Only connector and sockets (x 2 pcs.)

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

DIN terminal type



Rated voltage

5	24 VDC
6	12 VDC
1	100 VAC $\frac{50}{60}$ Hz
2	200 VAC $\frac{50}{60}$ Hz
3	110 VAC $\frac{50}{60}$ Hz [115 VAC $\frac{50}{60}$ Hz]
4	220 VAC $\frac{50}{60}$ Hz [230 VAC $\frac{50}{60}$ 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" is not available.
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

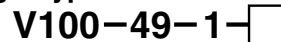
Electrical entry

D	DIN terminal	With connector
DO	terminal	Without connector

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

How to Order M8 Connector Cable

Straight type



Cable length

1	300 mm
2	500 mm
3	1000 mm
4	2000 mm
7	5000 mm

How to Order Interface Regulator

Series SY3000

ARBY3000-05-P-2

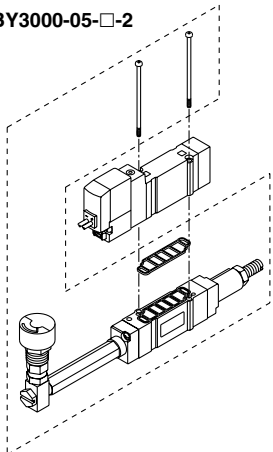
Pressure gauge connection port

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

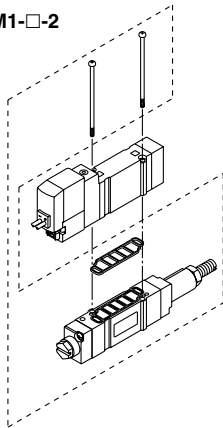
Regulating port

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

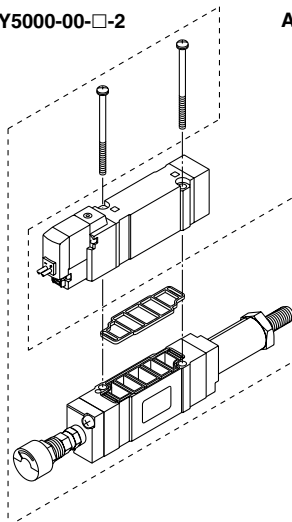
Pressure gauge connection port

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

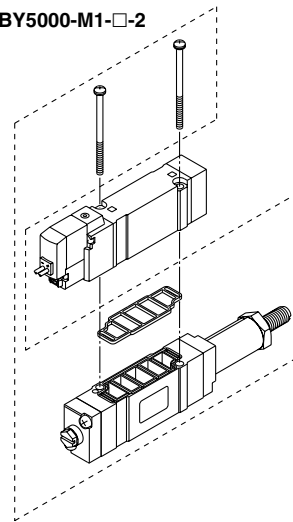
Regulating port

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

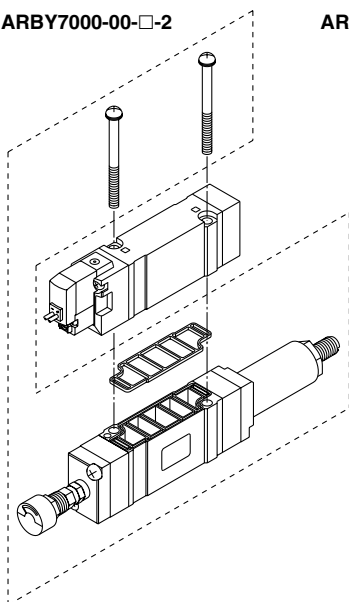
Pressure gauge connection port

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

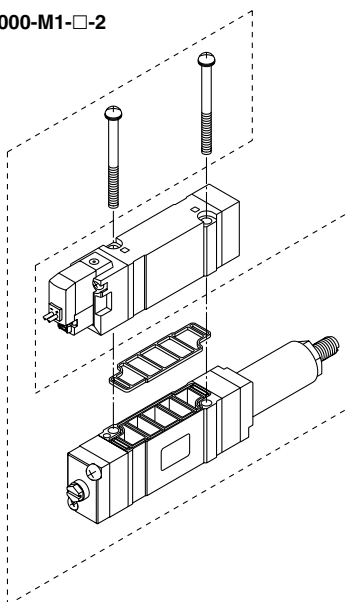
Regulating port

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



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

SV

SZ

SY

SYJ

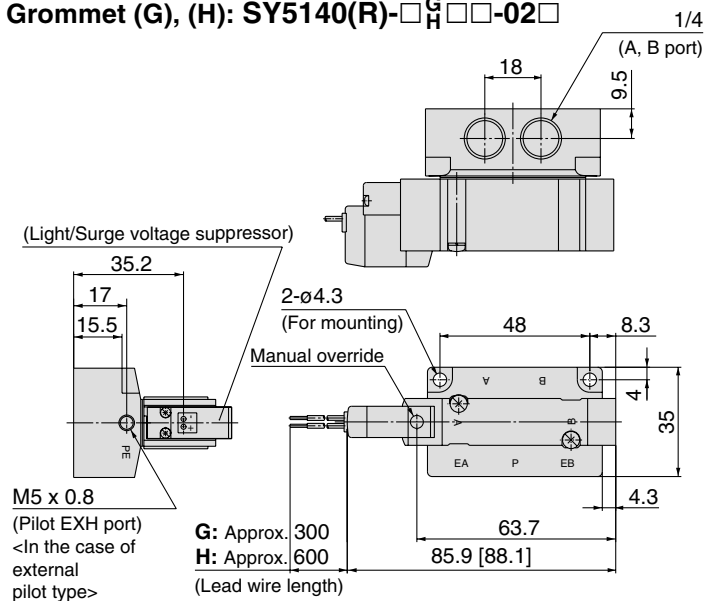
SX

Dimensions: Series SY5000

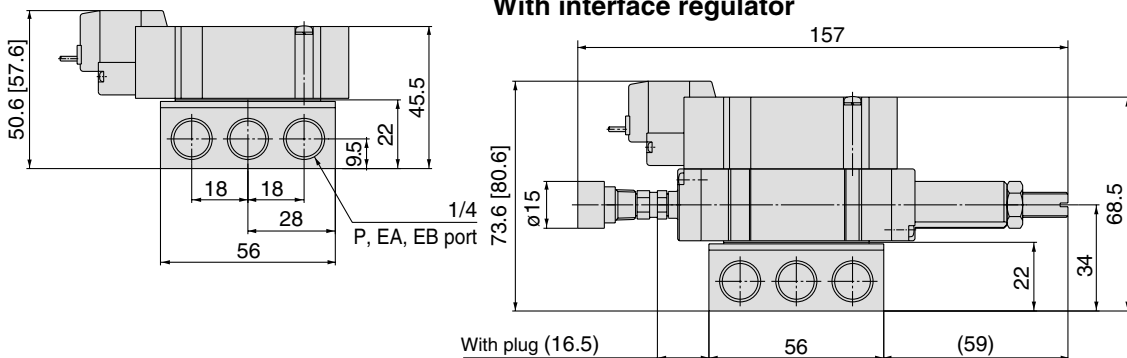


2 position single

Grommet (G), (H): SY5140(R)-□^G_H□□-02□



With interface regulator

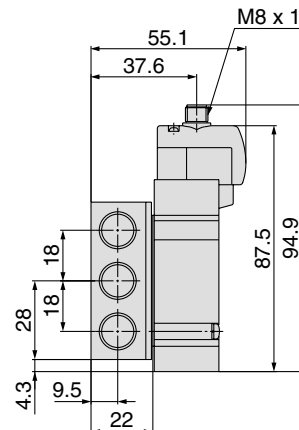
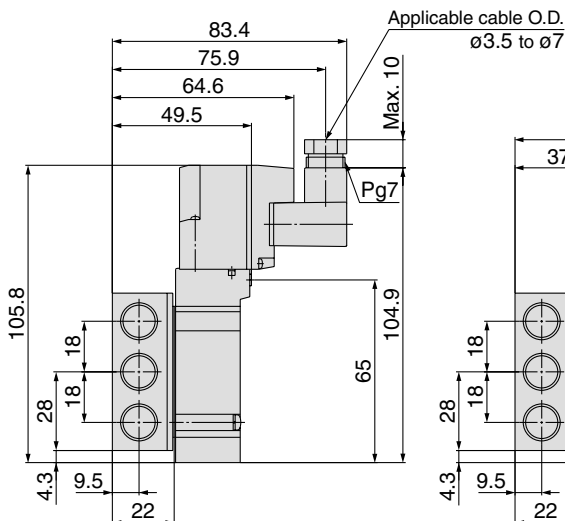
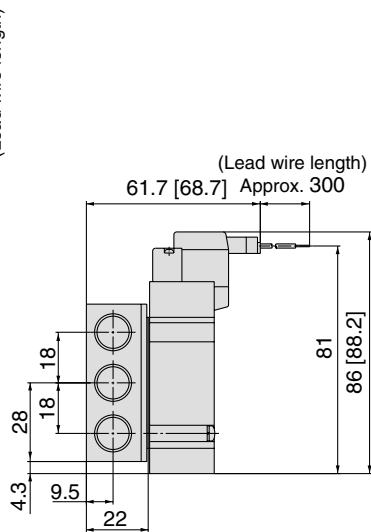
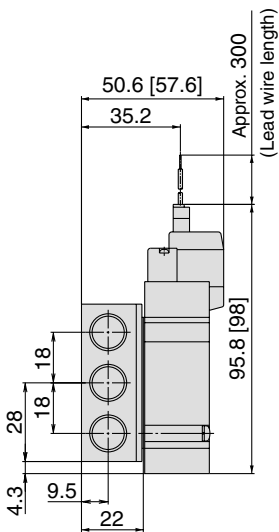


L plug connector (L): SY5140(R)-□L□□-02□

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

DIN terminal (D): SY5140(R)-□D□□-02□

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



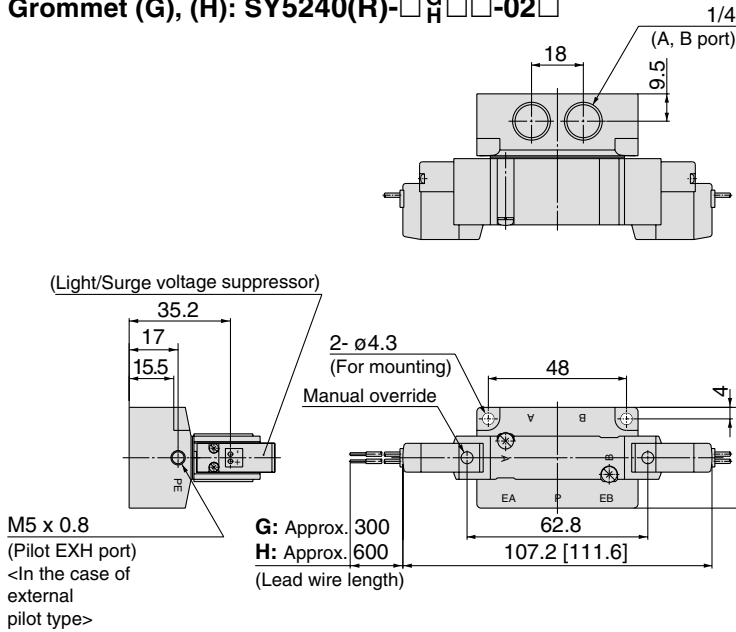
Note) Refer to page 1-4-210 for dimensions of connector types.

- SV
- SZ
- SY**
- SYJ
- SX

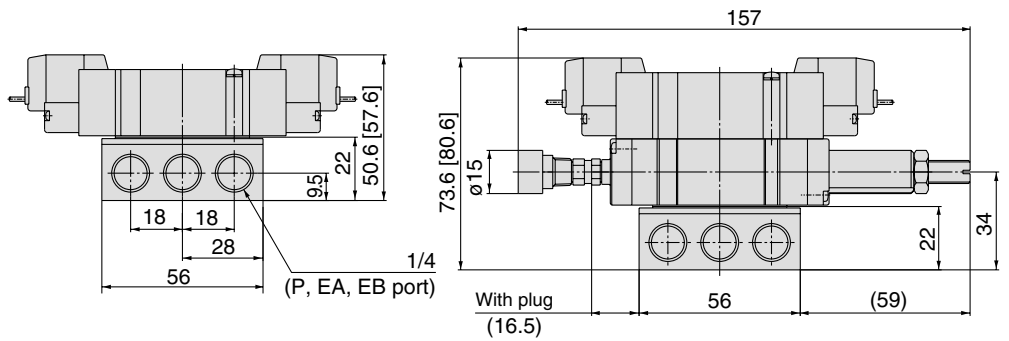
Dimensions: Series SY5000

2 position double

Grommet (G), (H): SY5240(R)-□_G□□-02□



With interface regulator

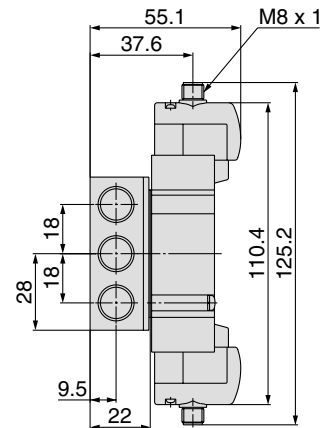
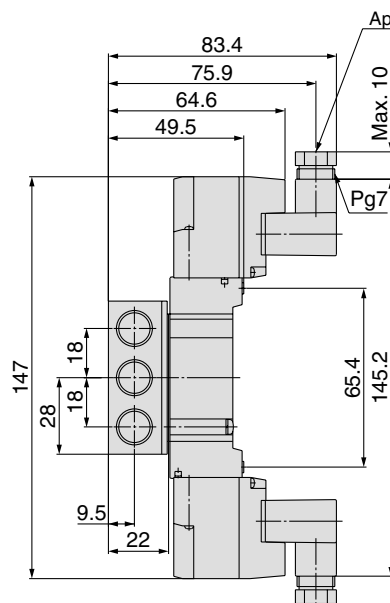
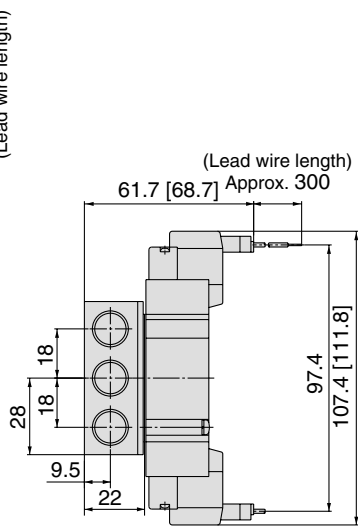
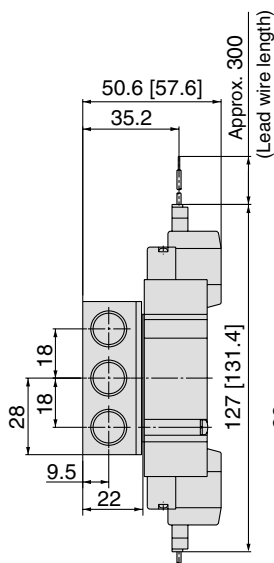


L plug connector (L):
SY5240(R)-□L□□-02□

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

DIN terminal (D):
SY5240(R)-□D□□-02□

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



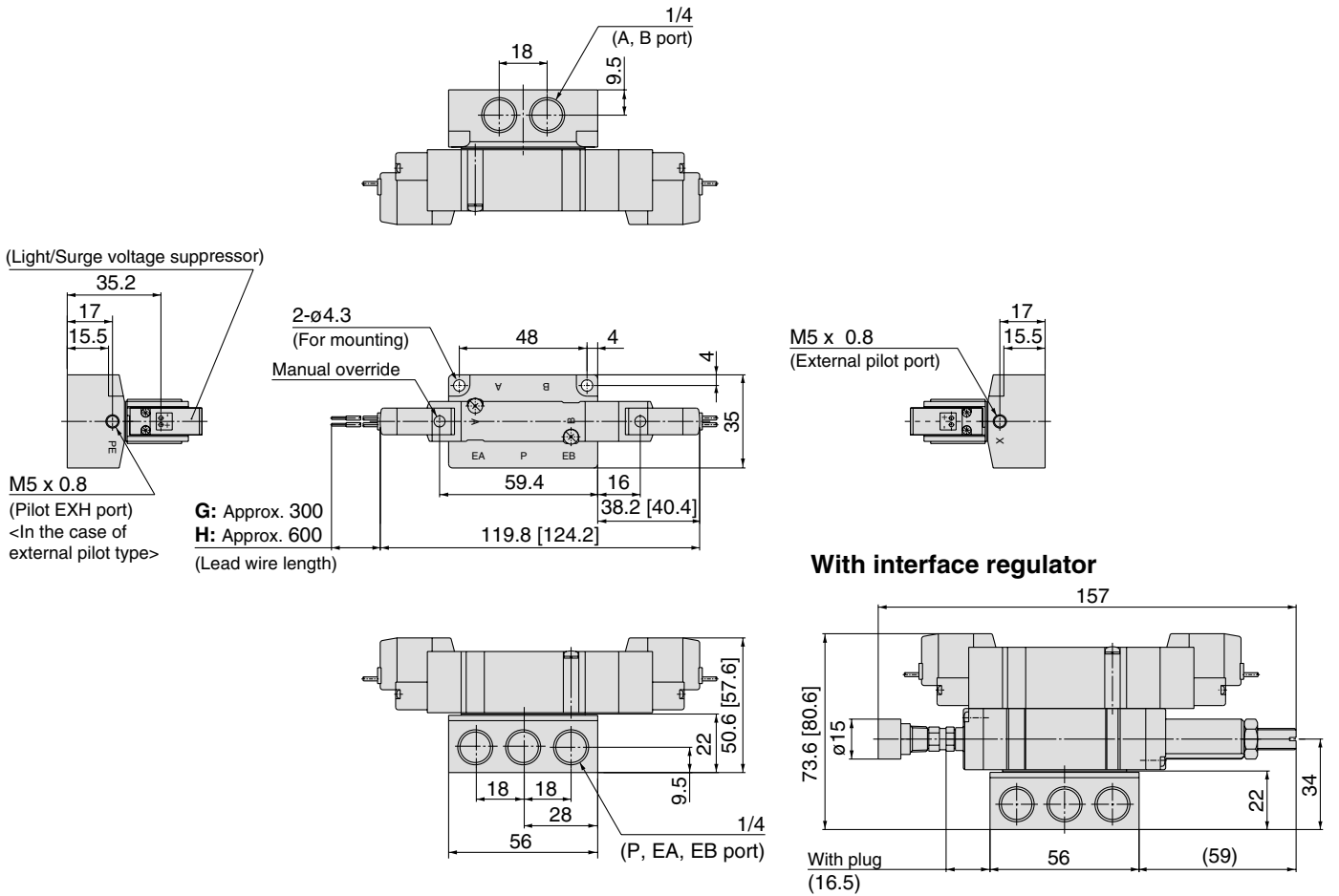
Note) Refer to page 1-4-210 for dimensions of connector types.



Dimensions: Series SY5000

3 position closed center/exhaust center/pressure center

Grommet (G), (H): SY5³/₅40(R)-□G□□-02□



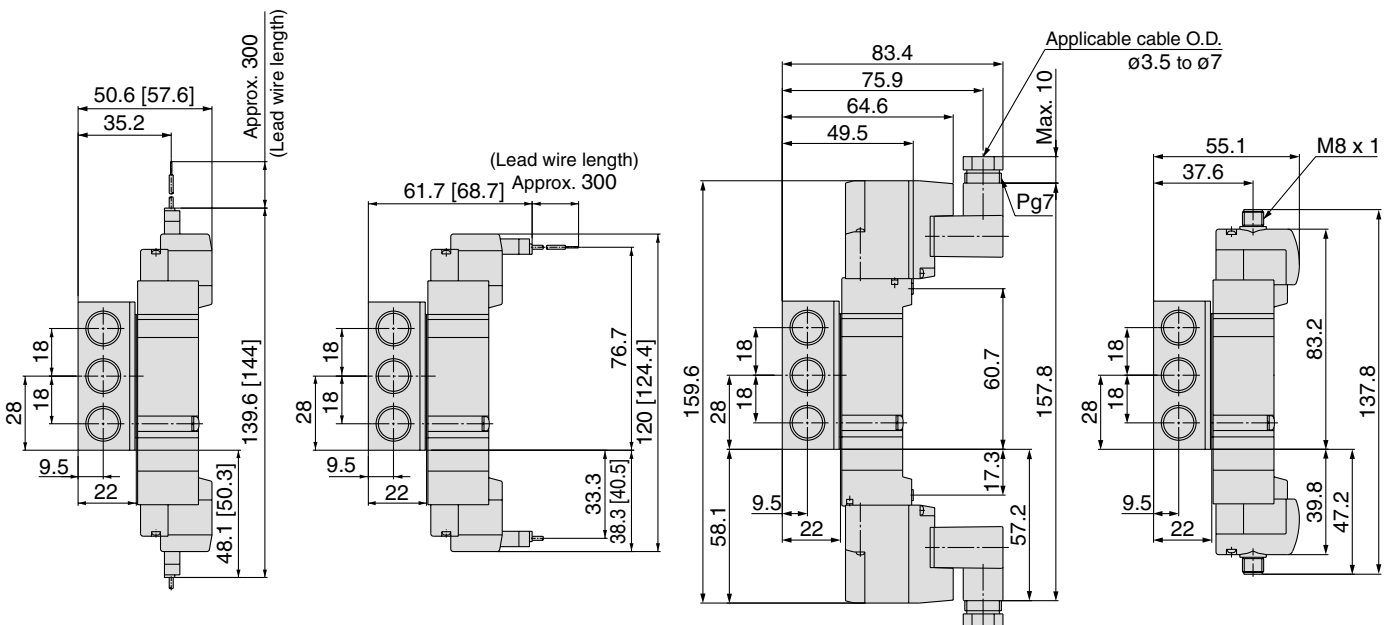
- SV
- SZ
- SY**
- SYJ
- SX

L plug connector (L):
SY5³/₅40(R)-□L□□-02□

M plug connector (M):
SY5³/₅40(R)-□M□□-02□

DIN terminal (D):
SY5³/₅40(R)-□D□□-02□

M8 connector (WO):
SY5³/₅40(R)-□WO□□-02□

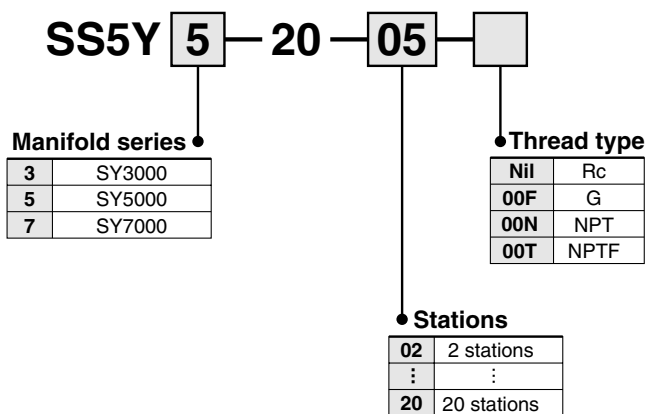



Note) Refer to page 1-4-210 for dimensions of connector types.

Series SY3000/5000/7000 Body Ported Manifold Bar Stock Type Individual Wiring

Type **20**

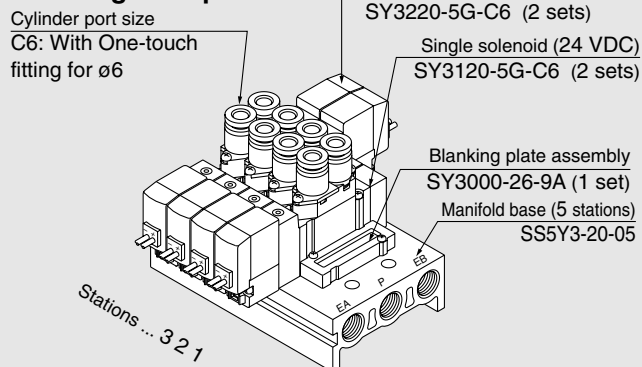
How to Order Manifold



 * This also includes the number of blanking plate assemblies.

How to Order Valve Manifold Assembly

Ordering example



- | | |
|----------------|--|
| SS5Y3-20-05 | 1 set (Type 20, 5 stations 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 Valves

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", "DO" or "W□" type.

Rated voltage

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



* DC specifications of type "D" and "DO" 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	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	D: With connector	WO: Without connector cable
H: Lead wire length 600 mm	LN: Without lead wire	MN: Without lead wire	DO: Without connector	
	LO: Without connector	MO: Without connector		



* "LN", "MN" type: with 2 sockets.
* For DIN terminal of SY3000 series, refer to page 1-4-207.
* DIN terminal type "Y" conforming to DIN4365C standard is also available. For details, refer to catalog on page 1-4-201.
* For connector cable of M8 connector, refer to page 1-4-209.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

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	
C6	One-touch fitting for ø6	SY5000
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"	
N7	One-touch fitting for ø1/4"	SY5000
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 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

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



* "DOZ" is not available.

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.



Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to catalog on page 1-4-61.)

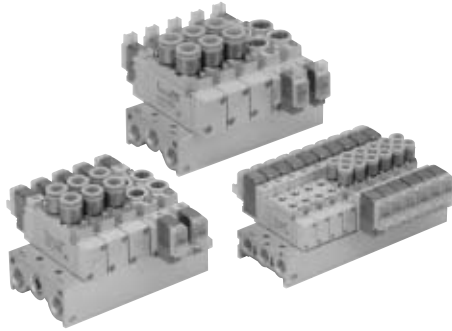
SV

SZ

SY

SYJ

SX



Manifold Specifications

Model	SS5Y3-20	SS5Y5-20	SS5Y7-20	
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 ^{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 weight 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 the case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.

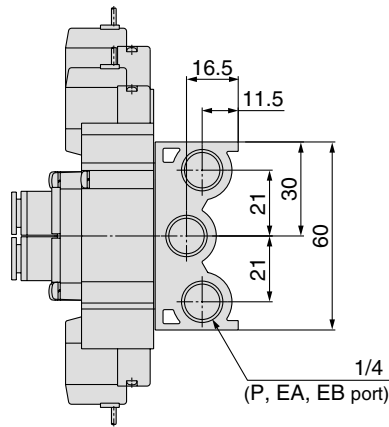
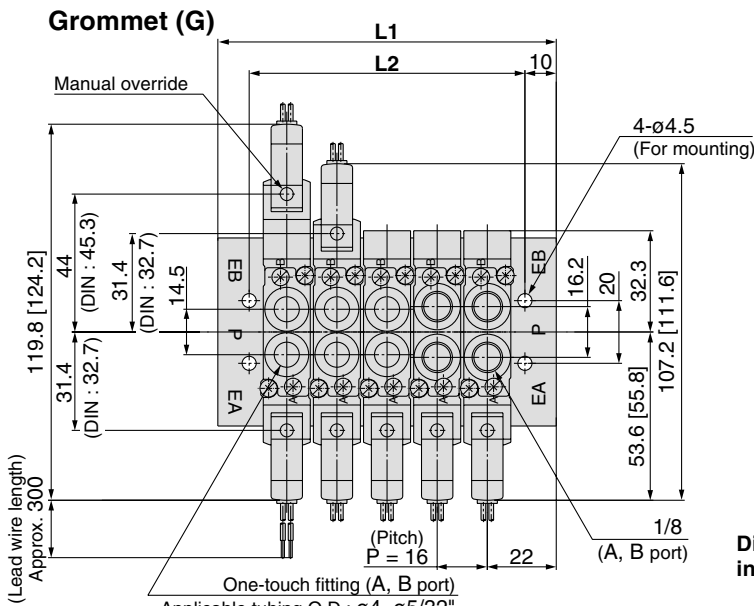
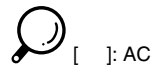
Note 2) Refer to "Manifold Option" on page 1-4-61.

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 (dm ³ /(s·bar))	b	Cv	C (dm ³ /(s·bar))	b	Cv
SS5Y3-20	1/8	C6	0.72	0.29	0.18	0.80	0.36	0.21
SS5Y5-20	1/4	C8	1.9	0.28	0.48	2.2	0.20	0.53
SS5Y7-20	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.

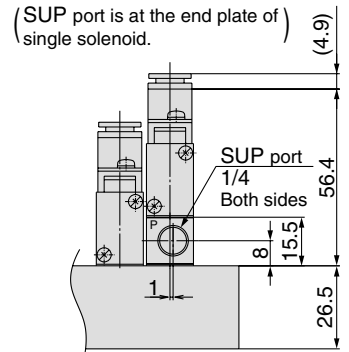
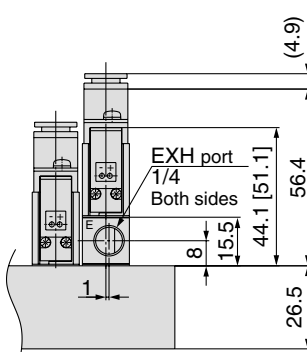
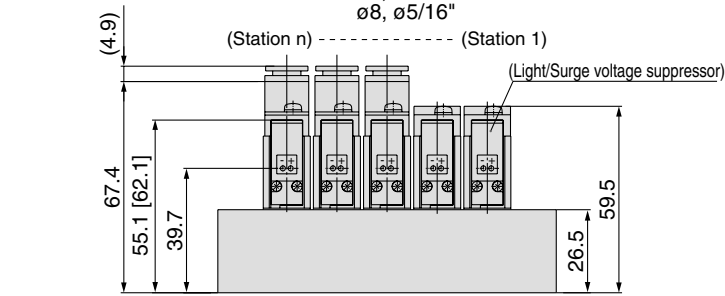
SY5000: SS5Y5-20- Stations -



Dimensions when mounting individual EXH spacer

Dimensions when mounting individual SUP spacer

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

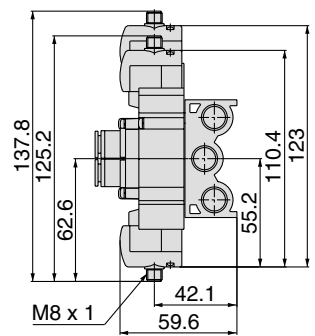
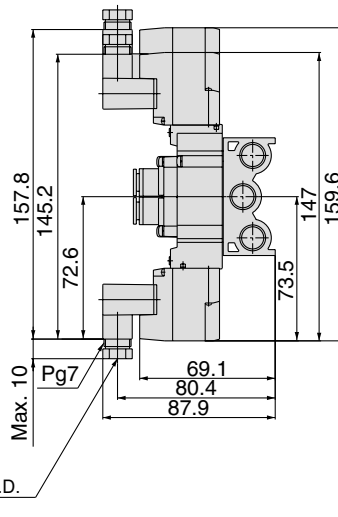
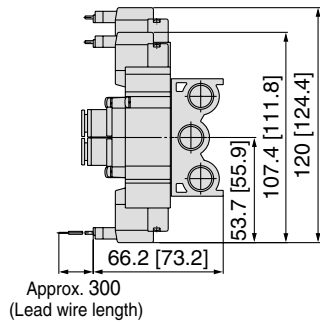
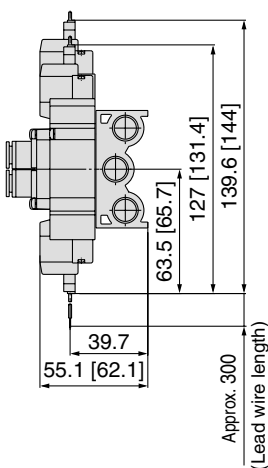


L plug connector (L)

M plug connector (M)

DIN terminal (D)

M8 connector (WO)



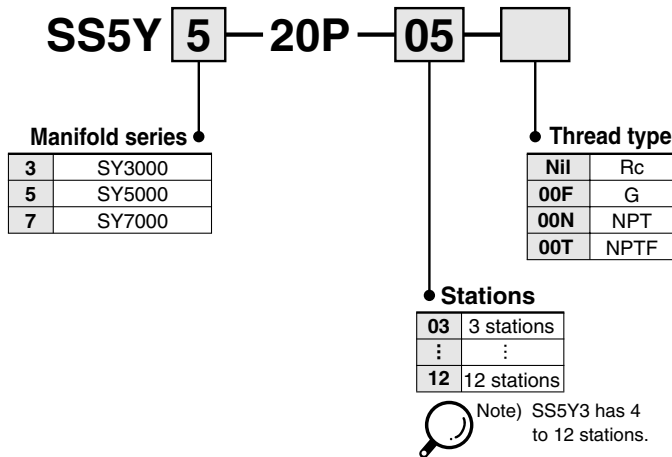
Note) Refer to page 1-4-210 for dimensions of connector types.

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

Series SY3000/5000/7000 Body Ported Manifold Bar Stock Type Flat Ribbon Cable

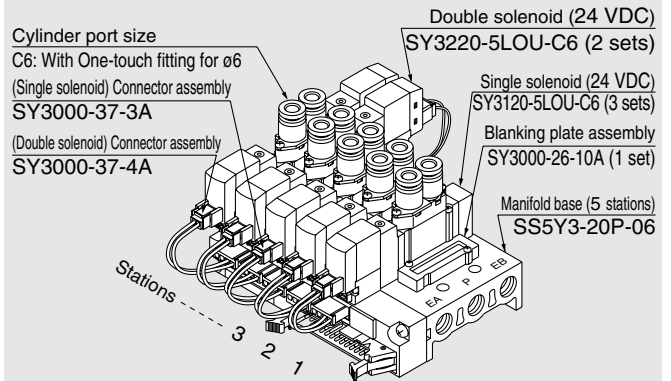
Type **20P**

How to Order Manifold



How to Order Valve Manifold Assembly

Ordering example



SS5Y3-20P-06	1 set (Type 20P, 6 stations 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 Valves

Rated voltage

5	24 VDC
6	12 VDC

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

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.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

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	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

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

Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary.
(For details, refer to page 1-4-61.)

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.

For DC: SY

5

1

20

5

 LO

Z

01

For AC: SY

5

1

20

1

 LO

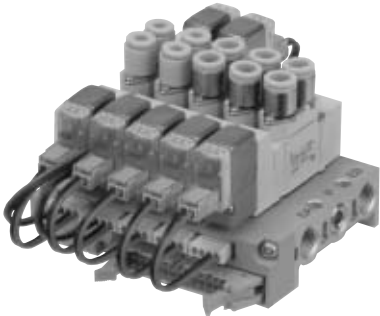
Z

01

- SV
- SZ
- SY
- SYJ
- SX

- 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	SS5Y5-20P	SS5Y7-20P
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
	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)
Manifold base weight 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	12, 24 VDC 100, 110 VAC		

Note 1) For more than 10 stations (more than 5 stations in the 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 1-4-61.

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 [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(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

For DC	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

For DC	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

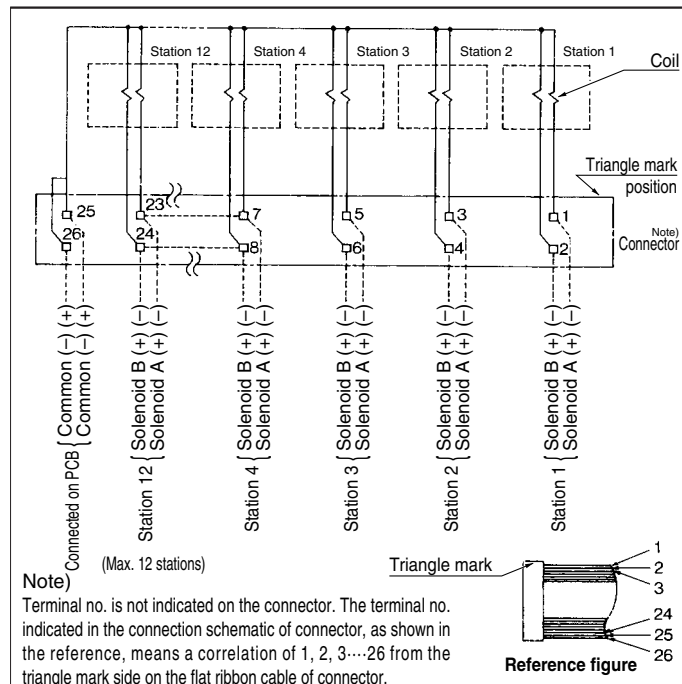
For 100 VAC (115 VAC)

For DC	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

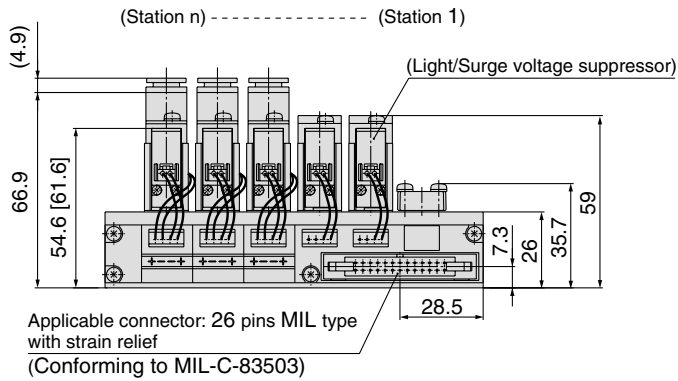
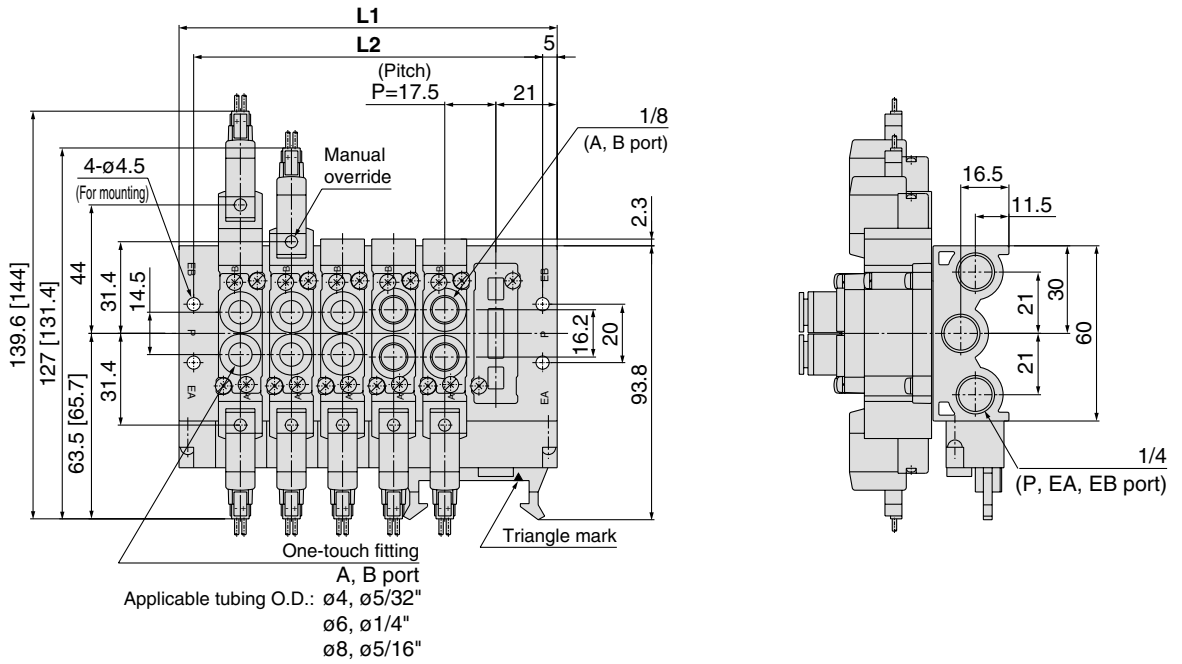
- For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.

Internal Wiring of Manifold (Non-polar Type)



- 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.

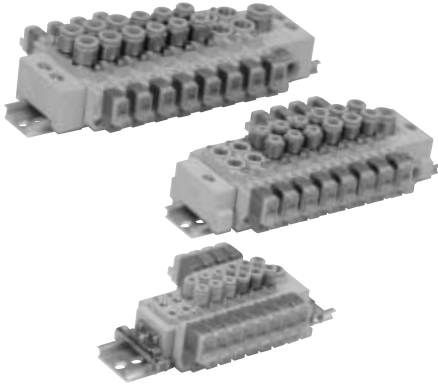
SY5000: SS5Y5-20P-Stations



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

Type **60**

Series SY3000/5000/7000 Body Ported Manifold Cassette Type



How to Order Manifold

SS5Y **3** — 60 — **05** **D** — [Option]

Series

3	SY3000
5	SY5000
7	SY7000

Valve stations

02	2 stations
⋮	⋮
20	20 stations

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

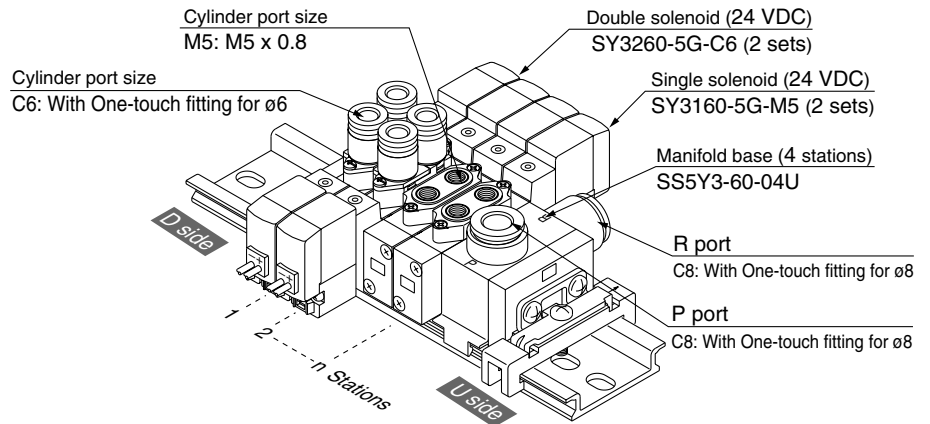
SUP/EXH block assembly mounting position

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

* For special specifications, indicate separately on the manifold specification sheet.

How to Order Valve Manifold Assembly

Ordering example




SS5Y3-60-04U
* SY3260-5G-C6
* SY3160-5G-M5

1 set (Type 60, 4 stations manifold base part no.)
2 sets (Double solenoid part no.)
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	SS5Y5-60	SS5Y7-60
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 weight W (g) ^{Note 2)} (n: Number of SUP/EXH blocks, m: Weight 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 “-stationB (SUP/EXH block on both sides)” (both sides SUP/EXH), applying pressure to the P ports on both sides and exhausting from the R ports on both sides.

Note 2) For DIN rail weight, refer to page 1-4-72.

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 (dm ³ /(s·bar))	b	Cv	C (dm ³ /(s·bar))	b	Cv
SS5Y3-60	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	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	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.

SV

SZ

SY

SYJ

SX

How to Order Valves

SY 3 1 60 — **5 L** — **C6**

Series

3	SY3000
5	SY5000
7	SY7000

Type of actuation

1	2 position single (A)(B)
2	2 position double (A)(B)
3	3 position closed center (A)(B)
4	3 position exhaust center (A)(B)
5	3 position pressure center (A)(B)

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

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

AC (50/60Hz)	
1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

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

A, B port size
Thread piping

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

One-touch fitting (Metric 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	SY7000
C8	One-touch fitting for ø8	SY7000
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"	SY3000
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	SY7000
N9	One-touch fitting for ø5/16"	SY7000
N11	One-touch fitting for ø3/8"	SY7000

Manual override

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

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 (SY5000/7000 only)

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

* 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 (SY5000, 7000)	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	D: With connector	WO: Without connector cable
H: Lead wire length 600 mm	LN: Without lead wire	LO: Without connector	MO: Without connector	DO: Without connector	

* "LN", "MN" type: with 2 sockets.
 * For connector cable of M8 connector, refer to page 1-4-210.

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		Dustproof (* DIN terminal, M8 connector conforms to IP65)		

-  Note) Impact resistance: No malfunction occurred when it is tested with a drop tester 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 IEC529

Solenoid Specifications

Electrical entry		Grommet (G), (H) L plug connector (L) M plug connector (M) DIN terminal (D) M8 connector (W)	
Coil rated voltage (V)	DC	24 , 12 , 6 , 5 , 3	
	AC 50/60Hz	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	100V	1.4 (With indicator light: 1.5)
		110V [115V]	1.6 (With indicator light: 1.7) [1.7 (With indicator light: 1.8)]
		200V	2.3 (With indicator light: 2.4)
		220V [230V]	2.5 (With indicator light: 2.6) [2.7 (With indicator light: 2.8)]
Surge voltage suppressor		Diode (Varistor is for DIN terminal and non-polar)	
Indicator light		LED (AC of DIN connector is neon bulb.)	

-  * 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.

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

SV

SZ

SY


SYJ

SX

Weight

Series SY3000

Valve model	Type of actuation		Port size	Weight (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 SY7000

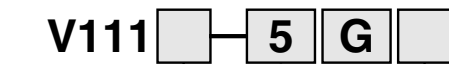
Valve model	Type of actuation		Port size	Weight (g)			
			A, B	Grommet	L, M plug connector	DIN terminal	M8 Connector
SY7□60-□-02	2 position	Single	1/4	103	105	126	109
		Double		125	128	170	136
	3 position	Closed center		133	136	178	144
		Exhaust center					
		Pressure center					
SY7□60-□-C8	2 position	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					

Series SY5000

Valve model	Type of actuation		Port size	Weight (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					

How to Order Pilot Valve Assembly

How to Order Connector Assembly for L/M Plug Connector



Coil specifications

Nil	Standard: DC specifications
A	Standard: AC specifications
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.

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

Note) For connector cable of M8 connector, refer to page 1-4-210.

- 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**

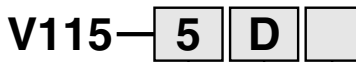
Without lead wire: **SY100-30-A**
Only connector and sockets (x 2 pcs.)

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

- SV
- SZ
- SY
- SYJ
- SX

■ DIN terminal type



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", "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" is not available.
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

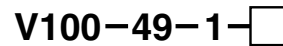
Electrical entry

D	DIN terminal	With connector
DO	DIN terminal	Without connector

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

How to Order M8 Connector Cable

■ Straight type

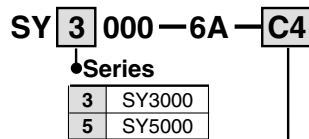


Cable length

1	300 mm
2	500 mm
3	1000 mm
4	2000 mm
7	5000 mm

How to Order Port Block Assembly

Series SY3000



A, B port size Thread piping

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

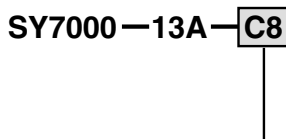
One-touch fitting (Metric size)

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	

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"	

Series SY7000



A, B port size Thread piping

Symbol	Port size	Applicable series
O2	1/4	SY7000

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
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.

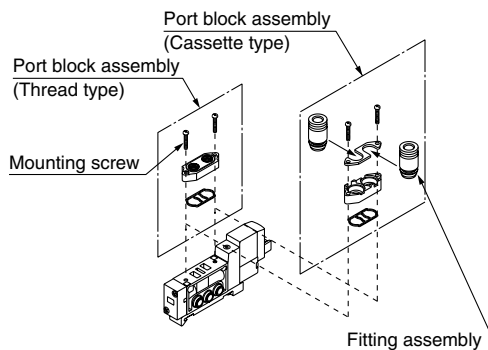
With the one-touch fitting port block assembly, it is only necessary to change the fitting and not the whole block. Refer to following part numbers.

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	SY7000
One-touch fitting for ø8	VVQ2000-51A-C8	
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	SY7000
One-touch fitting for ø1/4"	VVQ2000-51A-N9	
One-touch fitting for ø3/8"	VVQ2000-51A-N11	



⚠ Caution

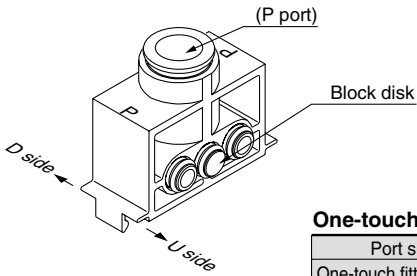
Mounting screw tightening torques

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



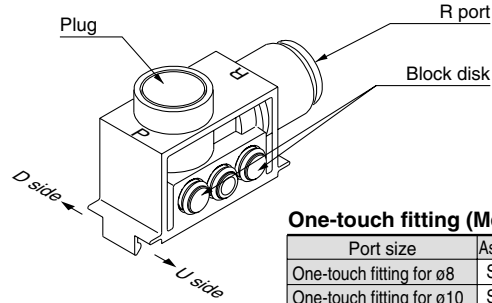
One-touch fitting (Metric size)

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

One-touch fitting (Inch size)

Port size	Assembly part no.	Applicable series
One-touch fitting for ø5/16"	SY3000-54-3C	SY3000
One-touch fitting for ø3/8"	SY5000-54-2C	SY5000
One-touch fitting for ø3/8"	SY7000-54-3C	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	SY3000
One-touch fitting for ø10	SY5000-55-1B	SY5000
One-touch fitting for ø12	SY7000-55-1B	SY7000

One-touch fitting (Inch size)

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

SV

SZ

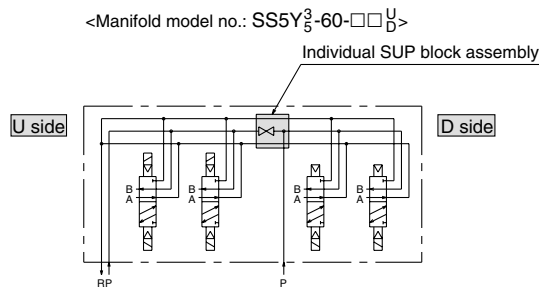
SY

SYJ

SX

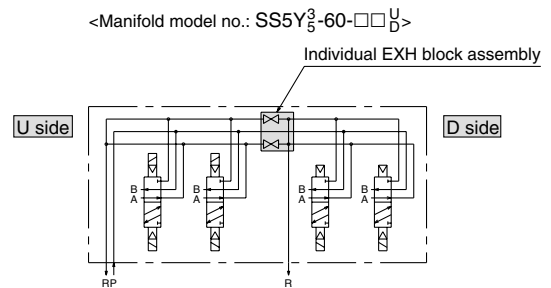
[When supplying the manifold with 2 different supply pressures.]

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



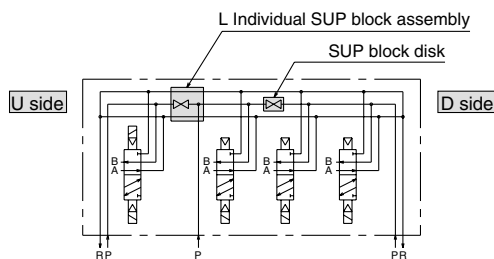
[When 2 different EXH passages are required.]

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



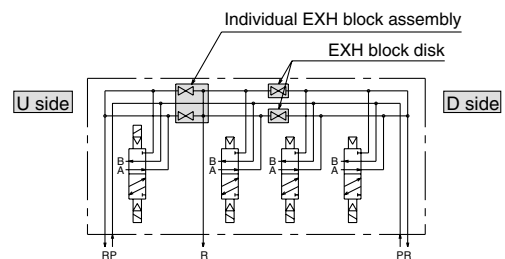
[When a different supply pressure is required for only a middle valve.]

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



Manifold Option

■ SUP block disk

By installing a SUP block 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	SY3000-52-2A
SY5000	SY5000-52-4A
SY7000	SY7000-70-2A

■ EXH block disk

By installing an EXH block 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.)



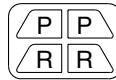
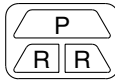
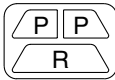
Series	Part no.
SY3000	SY3000-52-2A
SY5000	SY5000-52-4A
SY7000	SY7000-70-2A

■ Label for block disk

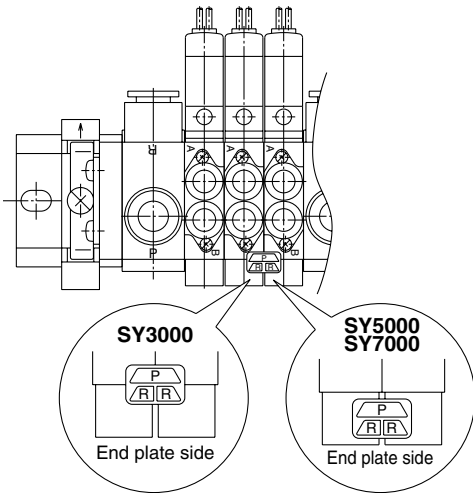
The labels shown below are used on manifold stations containing SUP/EXH block disk(s) to show their location. (3 pcs. each)

VZ3000-123-1A

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

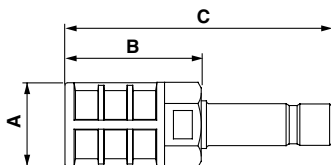


* When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.



■ Silencer with One-touch fitting

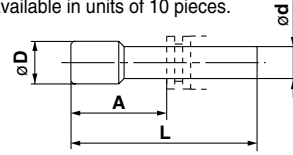
The silencer plugs directly into the One-touch fittings of the manifold.



Series	Model	Effective area	A	B	C
SY3000 (for ø8)	AN203-KM8	14 mm ²	ø16	26	51
SY5000 (for ø10)	AN200-KM10	26 mm ²	ø22	54	80.8
	AN300-KM10	30 mm ²	ø25	70	97
SY7000 (for ø12)	AN300-KM12	41 mm ²	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

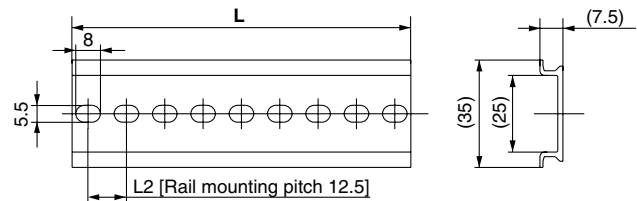
Applicable fittings size ød	Model	A	L	D
4	KQ2P-04	16	32	6
6	KQ2P-06	18	35	8
8	KQ2P-08	20.5	39	10
10	KQ2P-10	22	43	12
12	KQ2P-12	24	45.5	14
5/32"	KQ2P-03	16	32	6
1/4"	KQ2P-07	18	35	8.5
5/16"	KQ2P-09	20.5	39	10
3/8"	KQ2P-11	22	43	11.5

■ DIN Rail Dimensions/Weight 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
Weight (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
Weight (g)	40.1	42.4	44.6	46.9	49.1	51.4	53.6	55.9	58.1	60.4

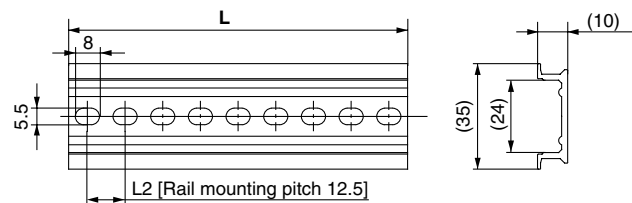
No.	20	21	22	23	24	25	26	27	28	29
L dimension	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5
Weight (g)	62.6	64.9	67.1	69.4	71.6	73.9	76.1	78.4	80.6	82.9

■ DIN Rail Dimensions/Weight 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
Weight (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
Weight (g)	56.4	59.6	62.7	65.9	69.1	72.2	75.4	78.6	81.7	84.9

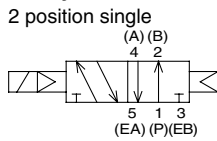
No.	20	21	22	23	24	25	26	27	28	29
L dimension	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5
Weight (g)	88	91.2	94.4	97.5	100.7	103.9	107	110.2	113.3	116.5

Note) For DIN rail mounting, refer to page 1-4-210.

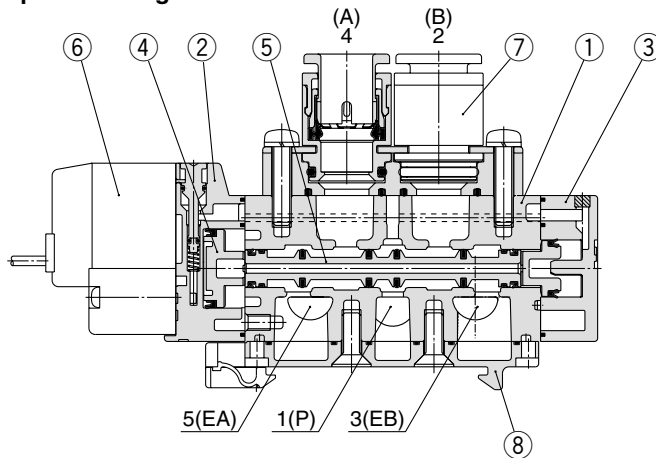
Construction

Series SY

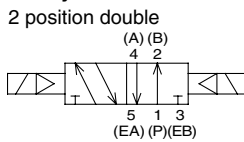
JIS Symbol



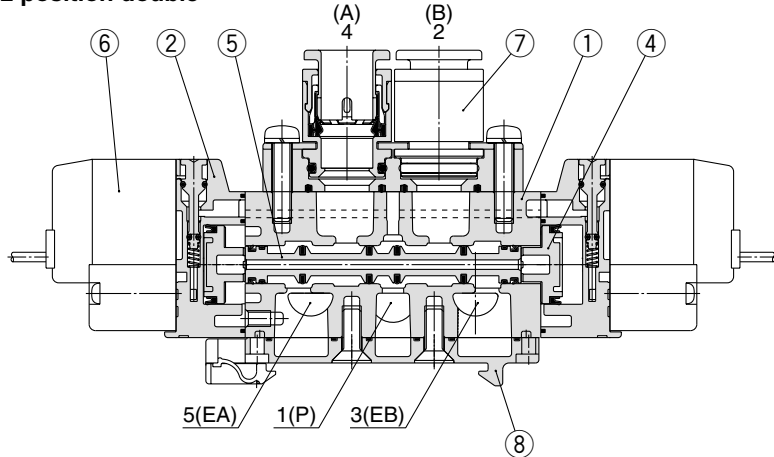
2 position single



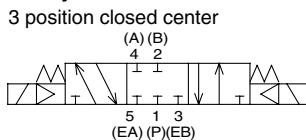
JIS Symbol



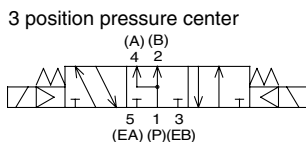
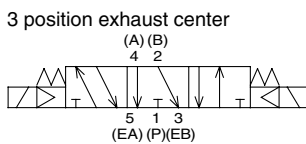
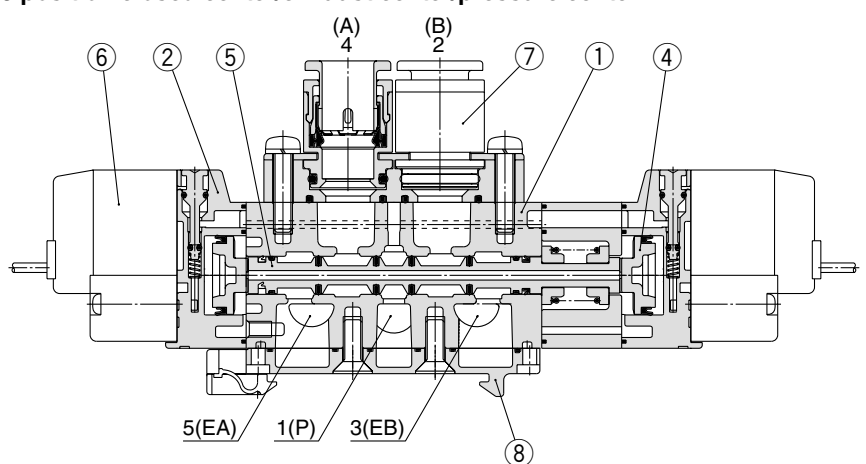
2 position double



JIS Symbol



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/NBR	—

Replacement Parts

No.	Description	Part no.
⑥	Pilot valve assembly	Refer to "How to Order Pilot Valve Assembly" on page 1-4-69.
⑦	Port block assembly	Refer to "How to Order Port Block Assembly" on page 1-4-70.
⑧	Bottom cover assembly ^{Note)}	SY3000-41-2A (with screw, gasket)
		SY5000-41-2A (with screw, gasket)

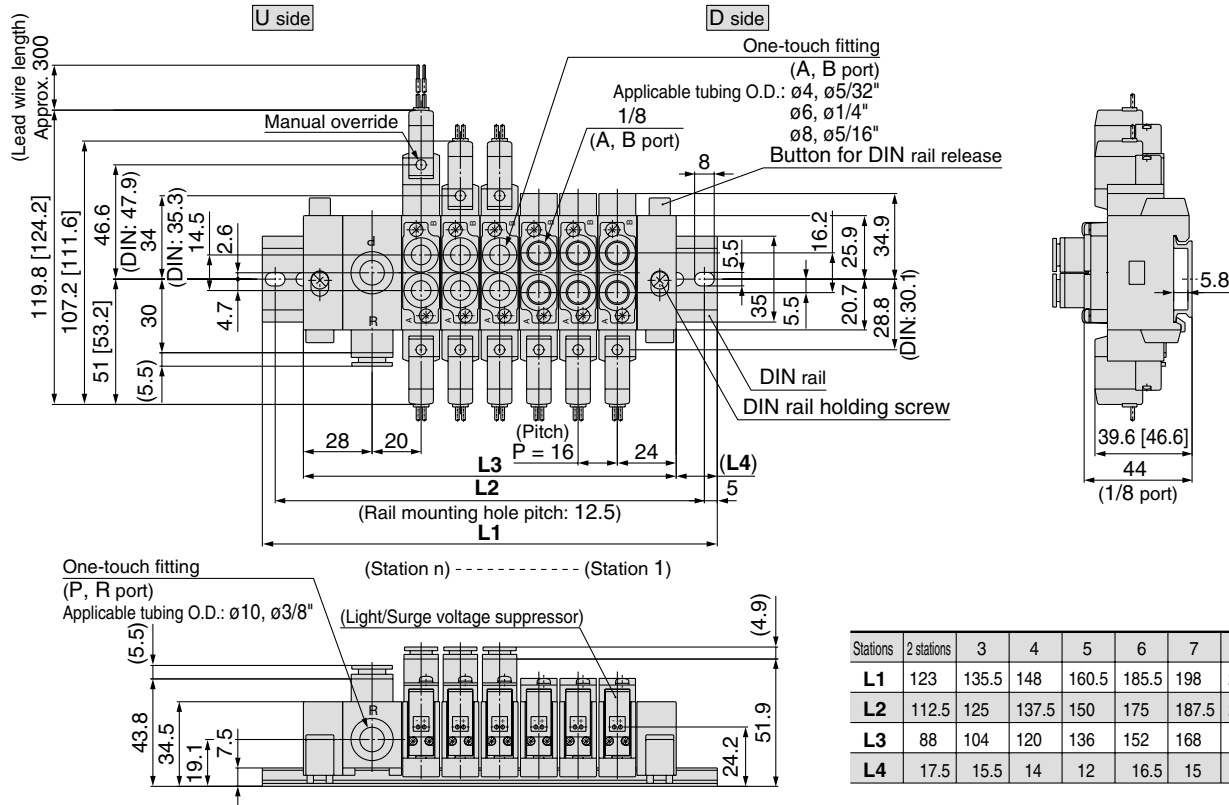
Note) There is no bottom cover assembly available for SY7000.

- SV
- SZ
- SY**
- SYJ
- SX

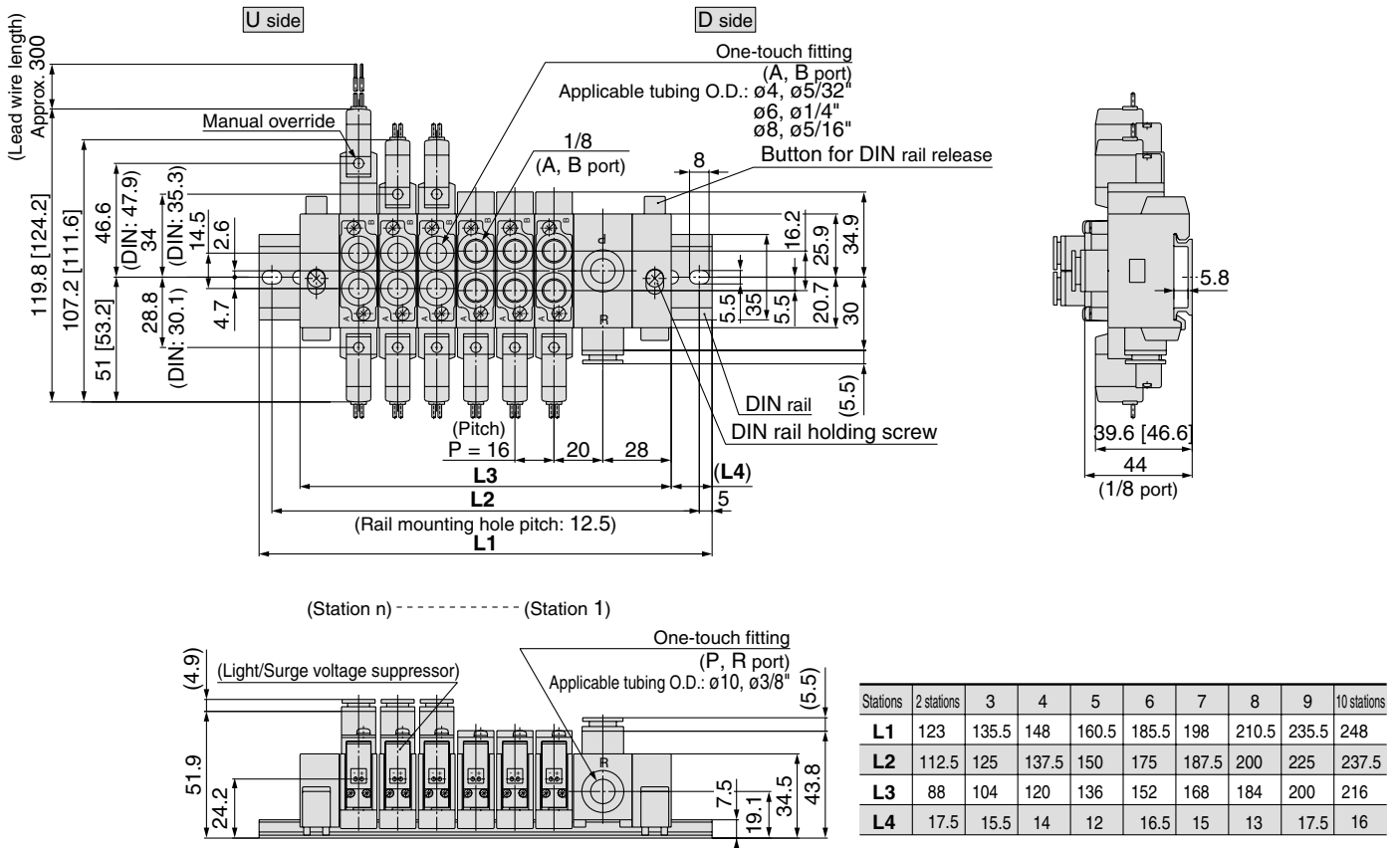


Dimensions (mm)

SS5Y5-60- Stations U

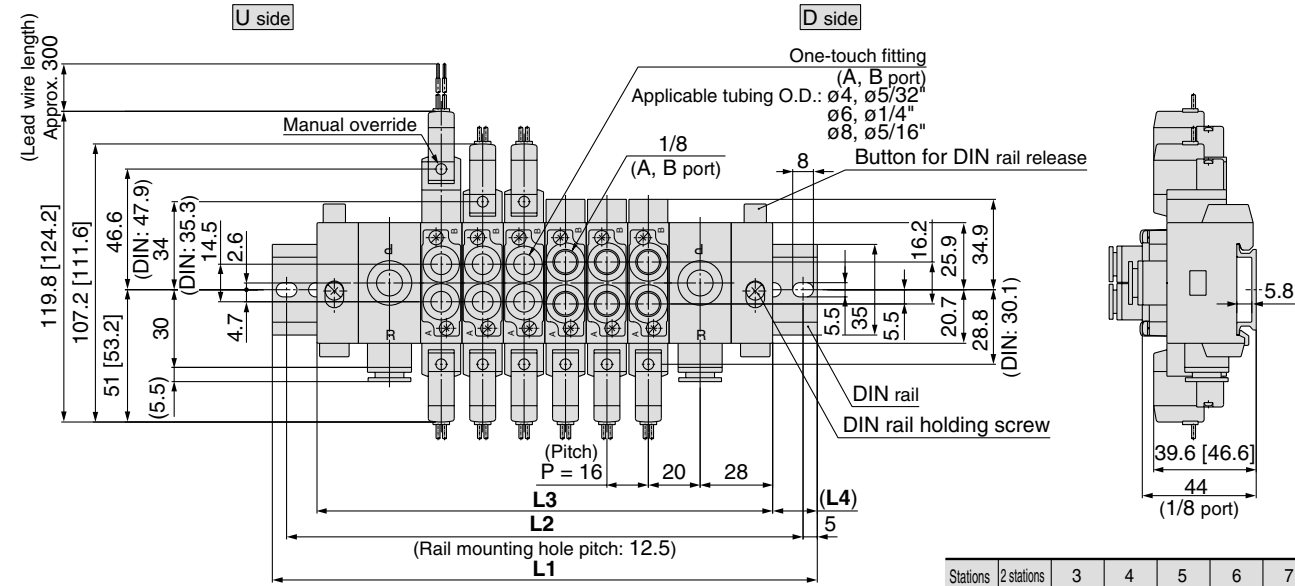


SS5Y5-60- Stations D

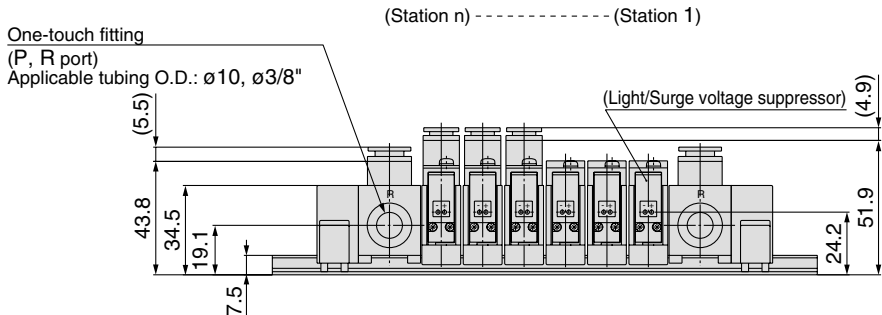




SS5Y5-60- Stations B



- SV
- SZ
- SY
- SYJ
- SX



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

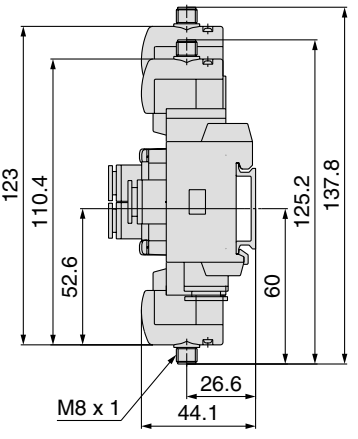
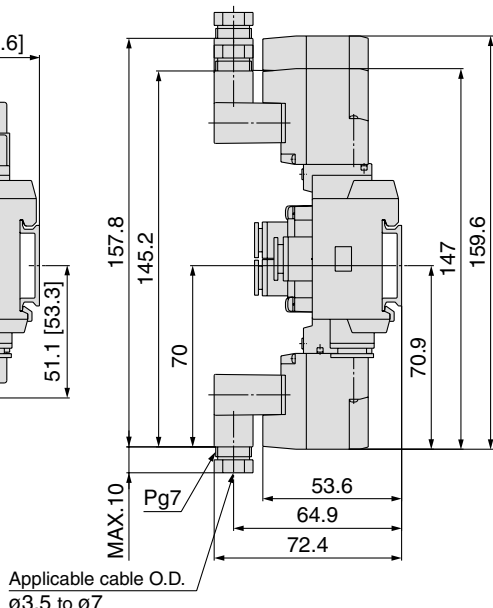
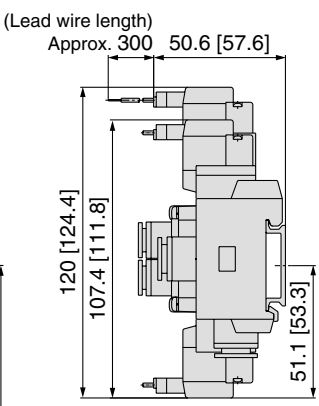
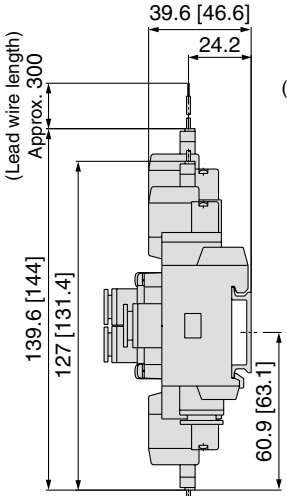
Stations	16 stations	17	18	19	20 stations
L1	360.5	385.5	398	410.5	435.5
L2	350	375	387.5	400	425
L3	336	352	368	384	400
L4	12	16.5	15	13	17.5

L plug connector (L)

M plug connector (M)

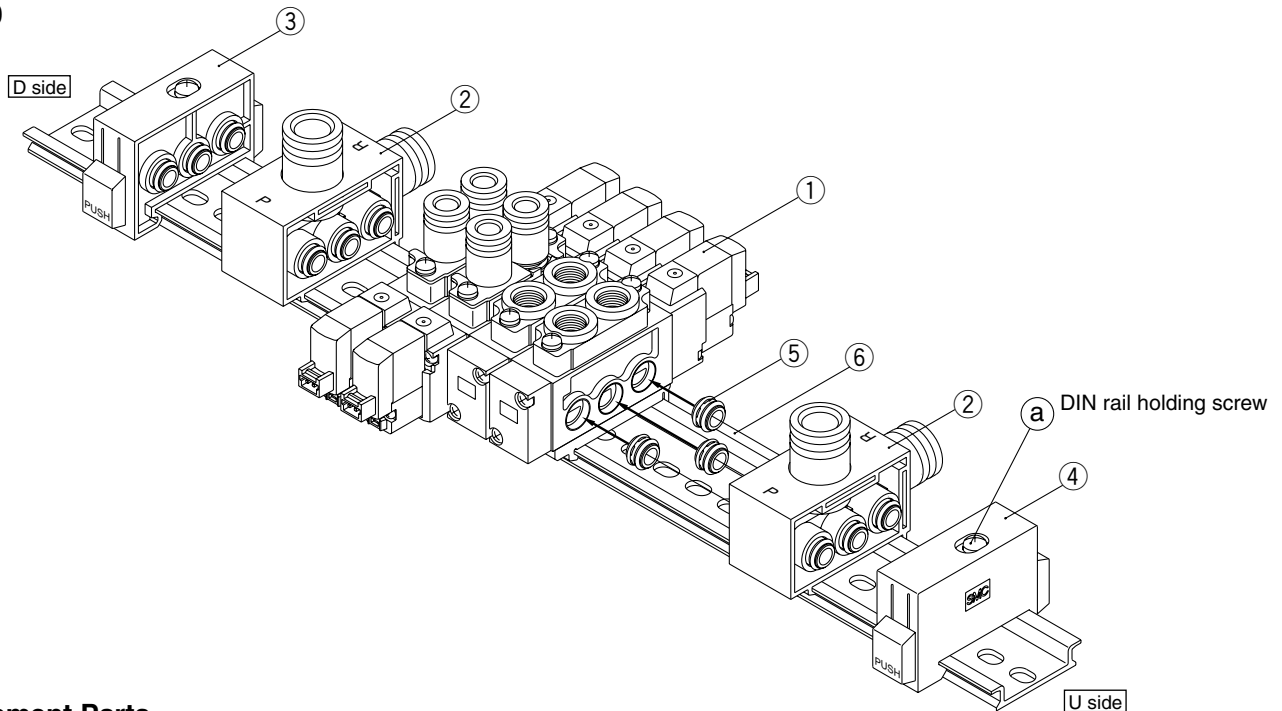
DIN terminal (D)

M8 connector (WO)



Note) Refer to page 1-4-210 for dimensions of connector types.

SY5000
Type 60



- SV
- SZ
- SY**
- SYJ
- SX

Replacement Parts

No.	Description	Part no.	Note
①	Valve	SY5□60-□□-□	□ at the end of part number denotes A. B port size: 01, C4, C6, C8, N3, N7, N9. Includes bushing assembly (SY5000-52-1A) 3 pcs.
②	SUP/EXH block assembly	SY5000-55- $\frac{1}{2}$ A	P, R port (1: One-touch fitting for $\phi 10$, 2: One-touch fitting for $\phi 3/8$ ") Includes bushing assembly (SY5000-52-1A) 3 pcs.
③	End block assembly	SY5000-56-1A	For D side (Bushing assembly: Not available for SY5000-52-1A)
④	End block assembly	SY5000-56-1B	For U side (Bushing assembly: Not available for SY5000-52-1A)
⑤	Bushing assembly	SY5000-52-1A	
⑥	DIN rail	VZ1000-11-1-□	Refer to page 1-4-72.

How to Increase Additional Valves to the DIN Rail

Valves can be added at any station on the rail.

- 1 Loosen the manifold base clamping screw (a).
- 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 others, and tighten the holding screw (a) to fix them to the DIN rail.

Caution

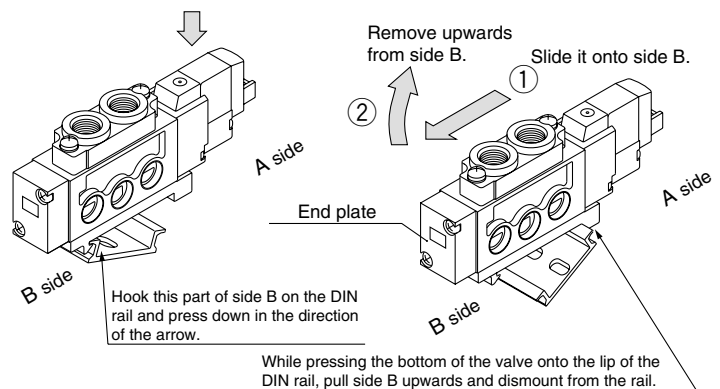
Tightening torque
SY3000: 1 N·m
SY5000: 1.4 N·m

(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 dismantling the valve from the DIN rail.**

Fig. (1) Manifold mounting procedure

Fig. (2) Manifold dismantling procedure



Caution

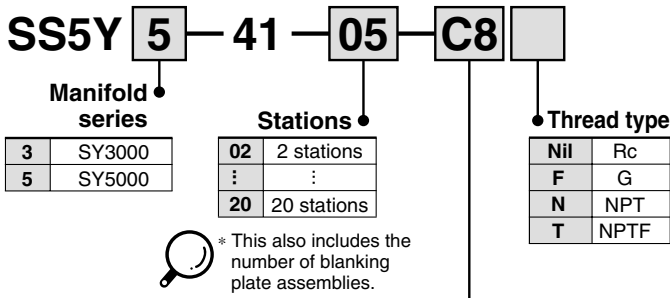
When clamping screw (a) of the end block is not sufficiently tightened during reassembly, air leakage may result. Before supplying air, check that there are no gaps between valves and that the end block is firmly secured to the DIN rail in order to ensure air supply without leakage.

Type **41**
Type **42**

Series SY3000/5000/7000 Base Mounted Monifold Bar Stock Type Individual Wiring

How to Order Manifold

Type 41 (Compact type)



A, B port size Thread piping

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

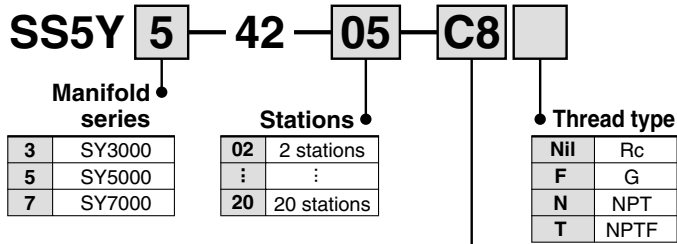
One-touch fitting (Metric size)

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

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
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	SY5000

Type 42 (External pilot capable type)



A, B port size Thread piping

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

One-touch fitting (Metric size)

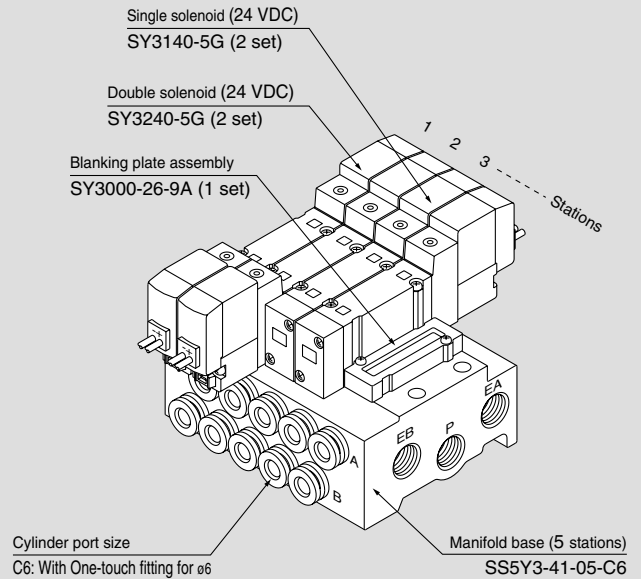
Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	SY3000
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	SY5000
C10	One-touch fitting for ø10	SY7000

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"	SY3000
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	SY5000
N9	One-touch fitting for ø5/16"	SY7000

How to Order Valve Manifold Assembly

Ordering example



SS5Y3-41-05-C6 1 set (Type 41, 5 stations 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.

How to Order Valves

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", "DO" or "W□" type.

Rated voltage

DC

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

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" and "DO" 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

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

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

* "DOZ" is 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 lead H: Lead wire length 600 mm	L: With lead wire (Length 300 mm) LN: Without lead wire LO: Without	M: With lead wire (Length 300 mm) MN: Without lead	D: With connector DO: Without connector	WO: Without connector cable

* "LN", "MN" type: with 2 sockets.
* DIN terminal type "Y" conforming to DIN43650C standard is also available. For details, refer to catalog on page 1-4-201.
* For connector cable of M8 connector, refer to page 1-4-210.

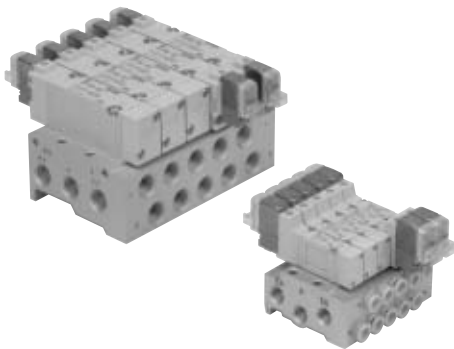
SV

SZ

SY

SYJ

SX



Manifold Specifications

Model	SS5Y3-41	SS5Y3-42	SS5Y5-41	SS5Y5-42	SS5Y7-42	
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	Base					
Porting specifications	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 weight 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 the 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 1-4-114.

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 (dm ³ /s·bar)	b	Cv	C (dm ³ /s·bar)	b	Cv
SS5Y3-41	1/8	C6	0.75	0.19	0.18	0.81	0.23	0.20
SS5Y3-42	1/8	C6	0.75	0.20	0.18	0.82	0.20	0.20
SS5Y5-41	1/4	C8	1.8	0.23	0.44	1.9	0.16	0.45
SS5Y5-42	1/4	C8	1.9	0.20	0.46	1.9	0.12	0.43
SS5Y7-42	1/4	C10	3.0	0.25	0.75	3.0	0.12	0.66

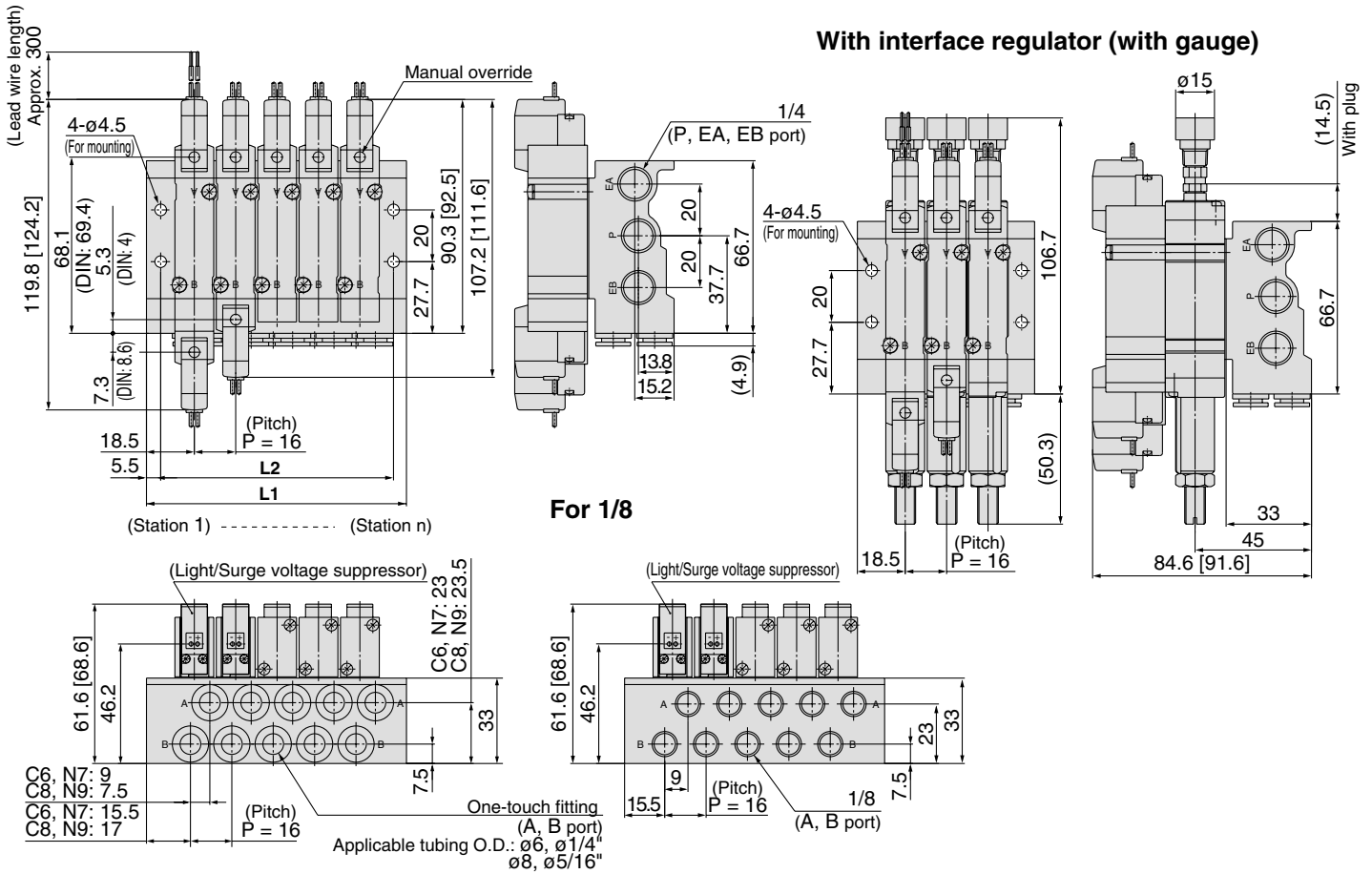


Note) The value is for manifold base with 5 stations and individually operated 2 position type.

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



Grommet (G)

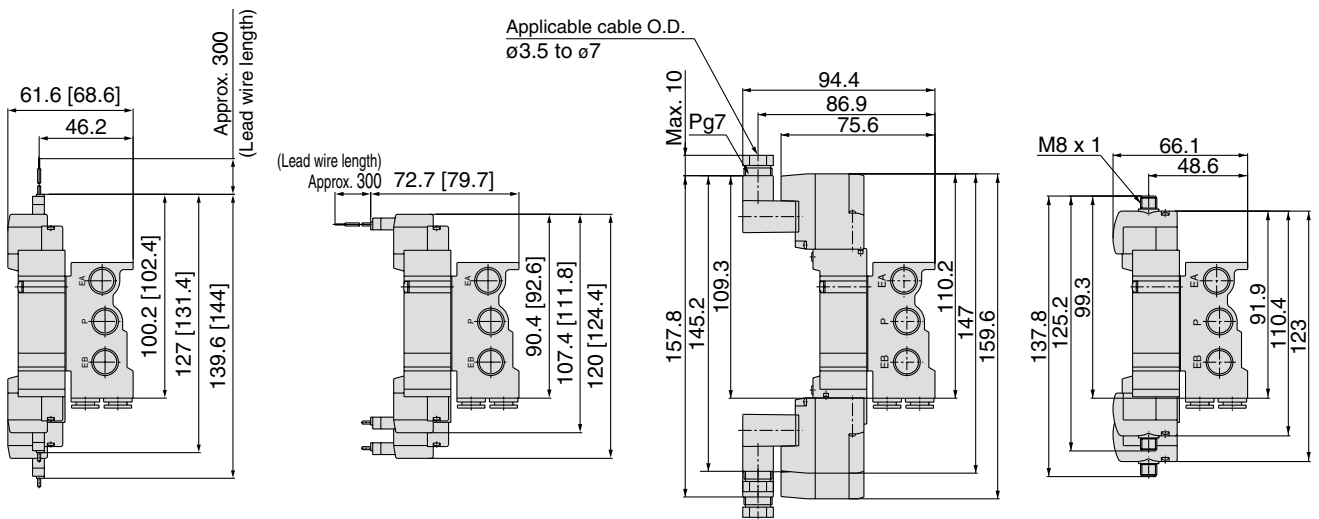


L plug connector: L

M plug connector: M

DIN terminal (D)

M8 connector (WO)



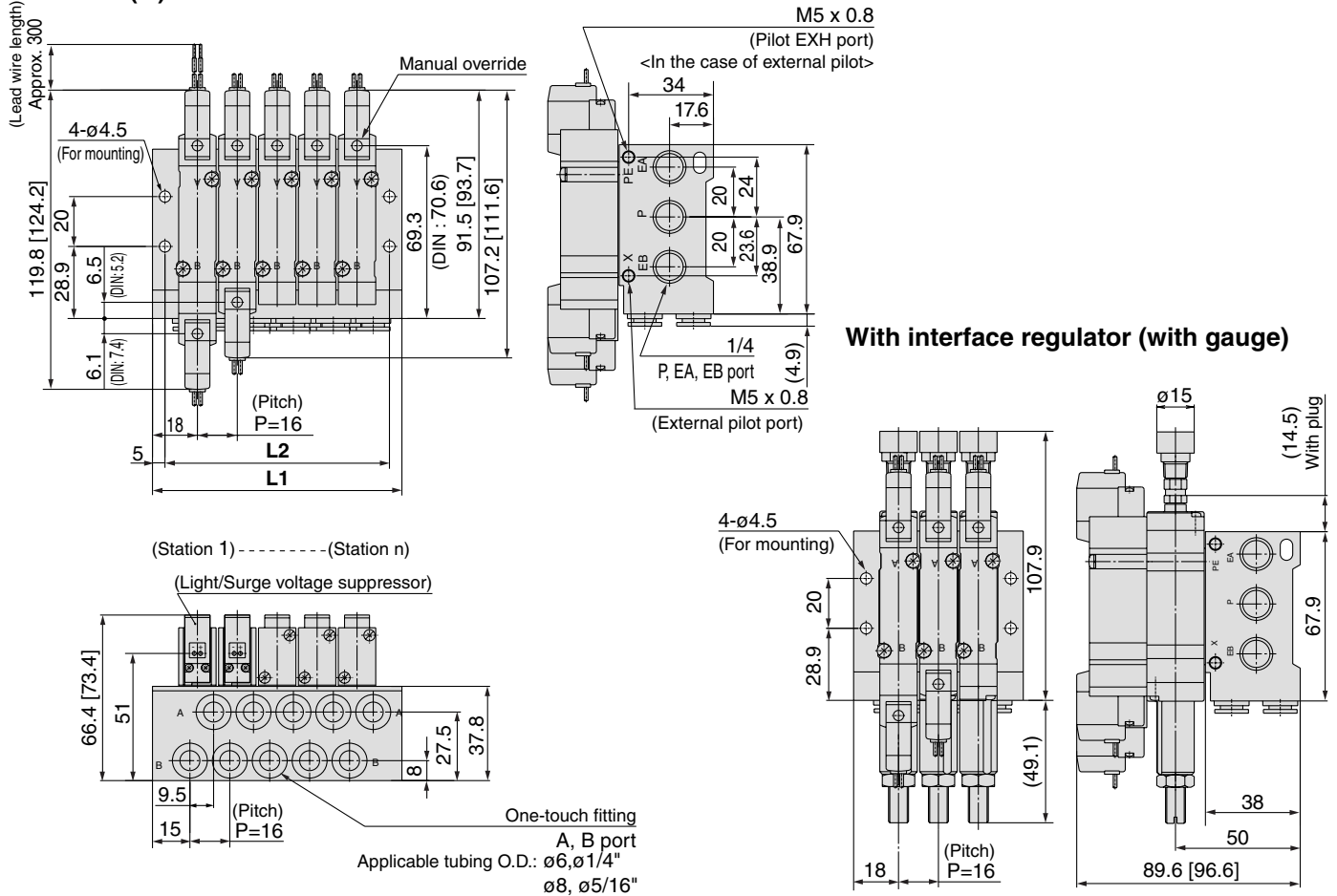
Note) Refer to page 1-4-210 for dimensions of connector types.

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

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



Grommet (G)



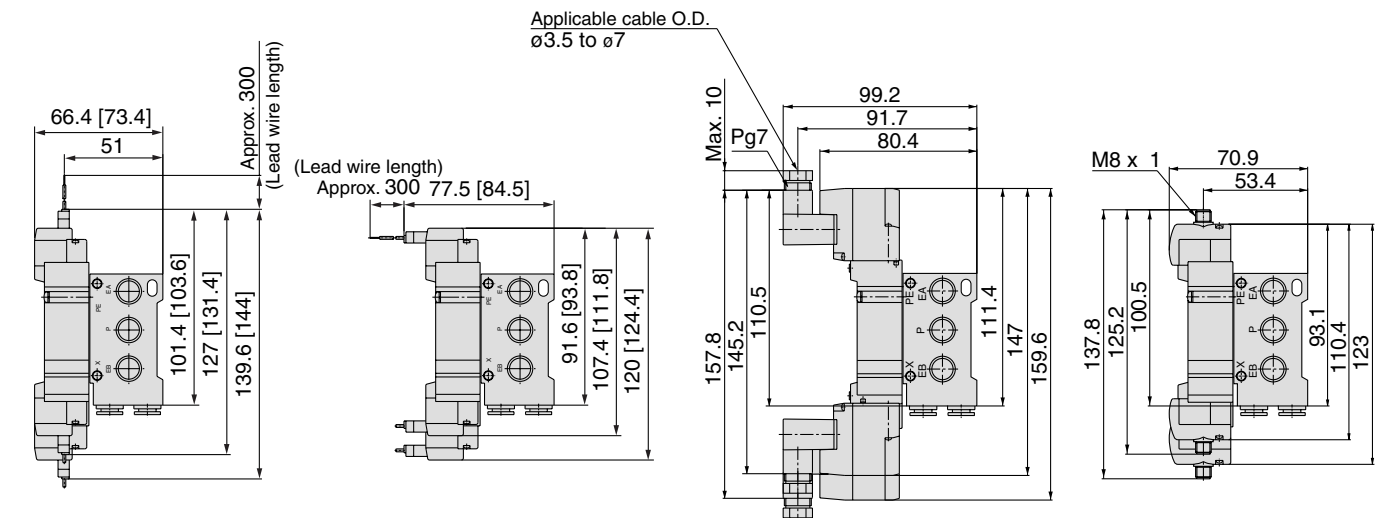
- SV
- SZ
- SY**
- SYJ
- SX

L plug connector (L)

M plug connector (M)

DIN terminal (D)

M8 connector (WO)



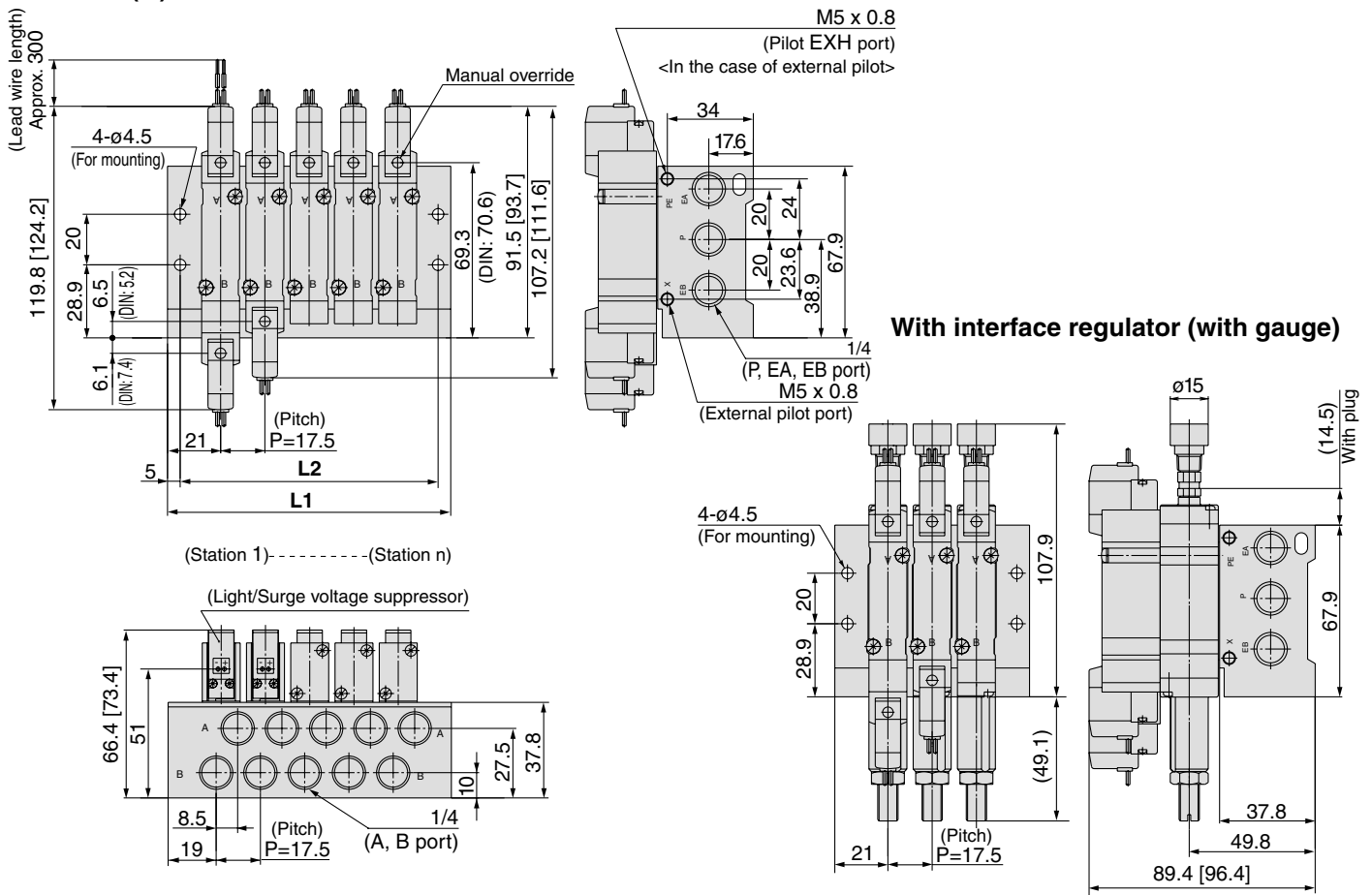
Note) Refer to page 1-4-210 for dimensions of connector types.

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



Grommet (G)

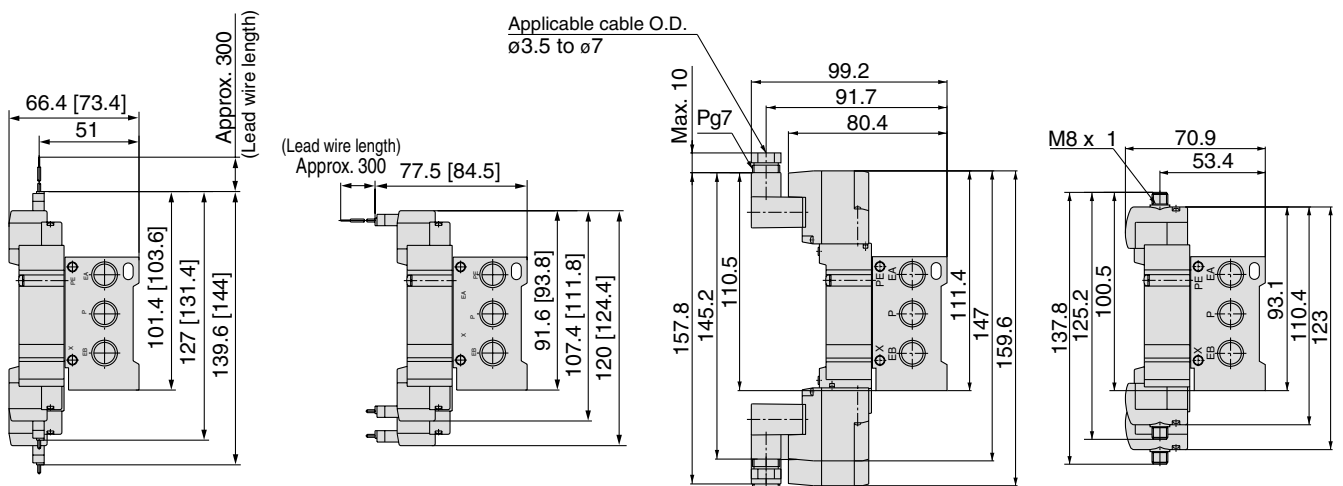


L plug connector (L)

M plug connector (M)

DIN terminal (D)

M8 connector (WO)



Note) Refer to page 1-4-210 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

Type **41P**

Type **42P**

Series SY3000/5000/7000 Base Mounted Monifold Bar Stock Type Flat Ribbon Cable

How to Order Manifold

Type 41P (Compact type)

SS5Y **5** — 41P — **05** — **C8** □

Manifold series

3	SY3000
5	SY5000

Stations

03	3 stations
⋮	⋮
12	12 stations

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

* 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

One-touch fitting (Metric size)

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

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
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	SY5000

Type 42P (Common external pilot type)

SS5Y **5** — 42P — **05** — **C8** □

Manifold series

3	SY3000
5	SY5000
7	SY7000

Stations

03	3 stations
⋮	⋮
12	12 stations

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

* 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

One-touch fitting (Metric size)

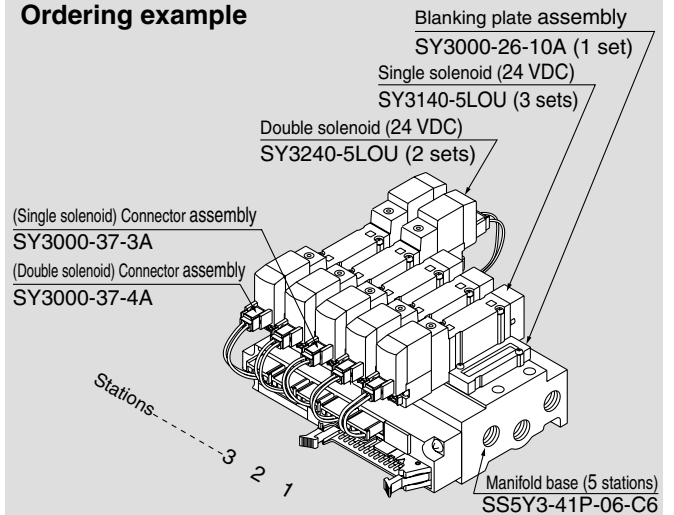
Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	SY3000
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	SY5000
C10	One-touch fitting for ø10	SY7000

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"	SY3000
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	SY5000
N9	One-touch fitting for ø5/16"	SY7000

How to Order Valve Manifold Assembly

Ordering example

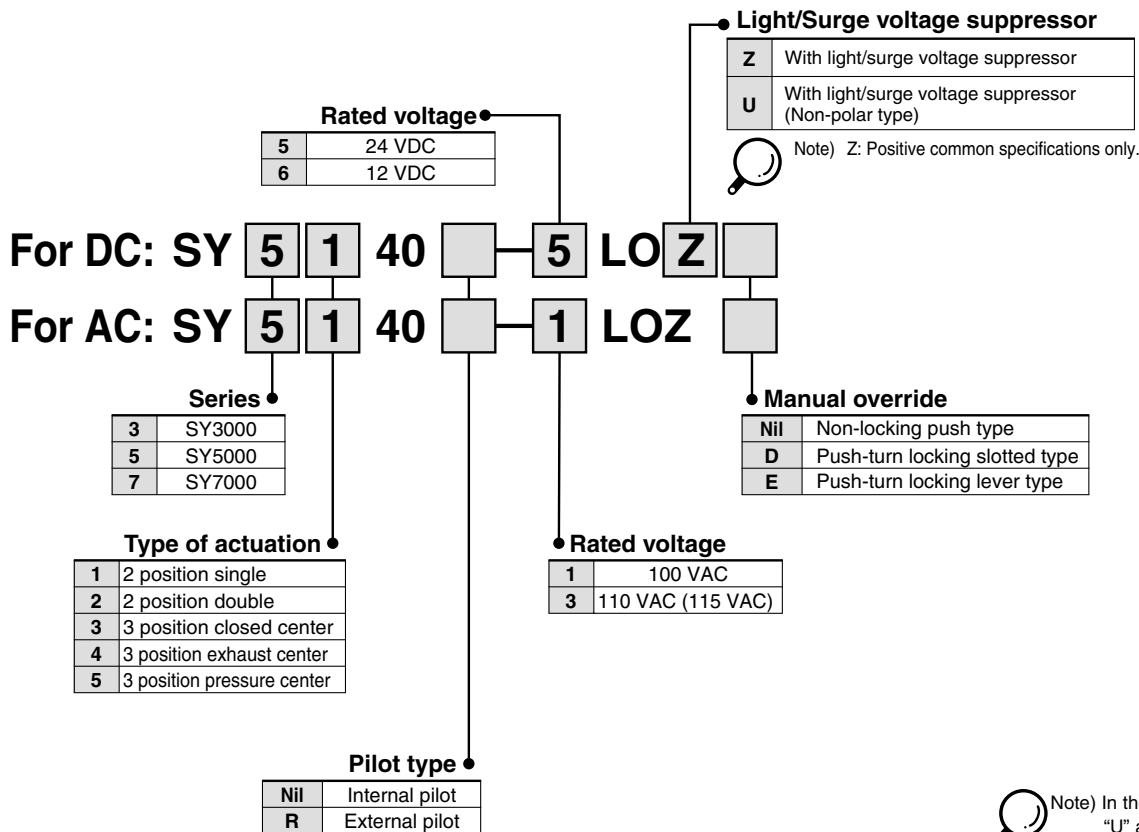


- | | |
|------------------------|--|
| SS5Y3-41P-06-C6 | 1 set (Type 41, 6 stations manifold base part no.) |
| * SX3000-26-10A | 1 set (Blanking plate assembly part no.) |
| * SY3140-5LOU | 3 sets (Single solenoid part no.) |
| * SY3240-5LOU | 2 sets (Double solenoid part no.) |
| * SY3000-37-3A |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



- SV
- SZ
- SY
- SYJ
- SX

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

For DC	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

For DC	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

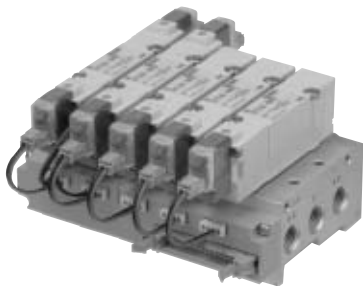
For 100 VAC (115 VAC)

For DC	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	SS5Y3-42P	SS5Y5-41P	SS5Y5-42P	SS5Y7-42P
Applicable valve	SY3□40		SY5□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 Poring specifications	Base				
	Side				
Port size	P, EA, EB port	1/8		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 C8 (One-touch fitting for ø8) C8 (One-touch fitting for ø8)
Manifold base weight 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	12, 24 VDC, 100, 110 VAC				

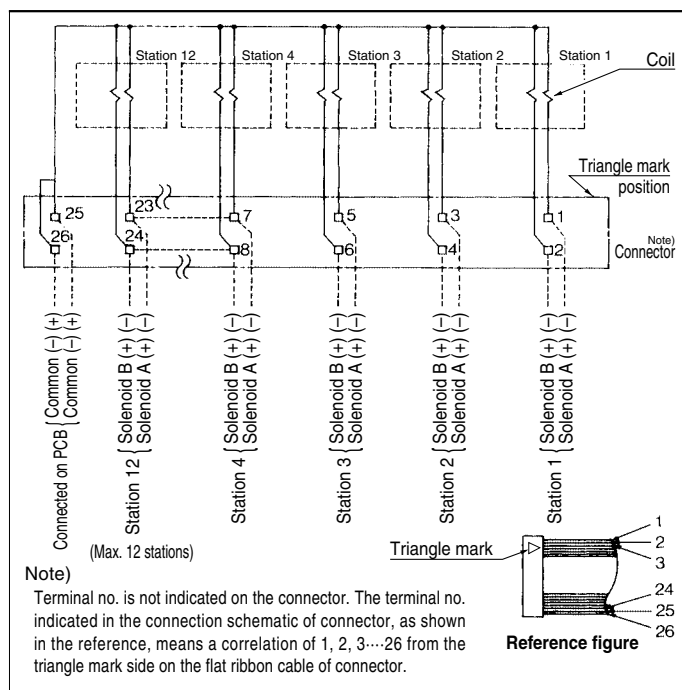
- Note 1) For more than 10 stations (more than 5 stations in the case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.
- Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.
- Note 3) Refer to "Manifold Option" on page 1-4-114.

Flow Characteristics

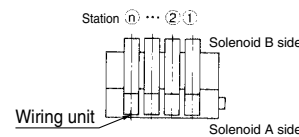
Model	Port size		Flow characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv
SS5Y3-41P	1/8	C6	0.75	0.19	0.18	0.81	0.23	0.20
SS5Y3-42P	1/8	C6	0.75	0.20	0.18	0.82	0.20	0.20
SS5Y5-41P	1/4	C8	1.8	0.23	0.44	1.9	0.16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



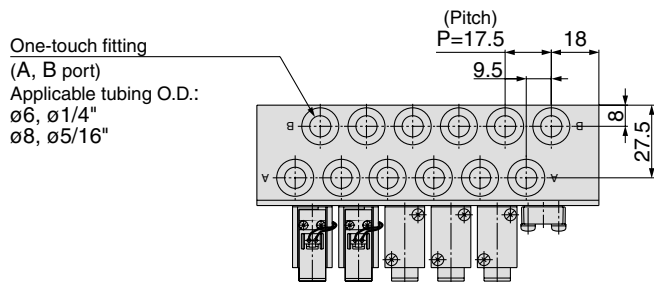
- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid A side.
- The maximum number of stations that can be accommodated is 12. For more stations, please contact SMC.



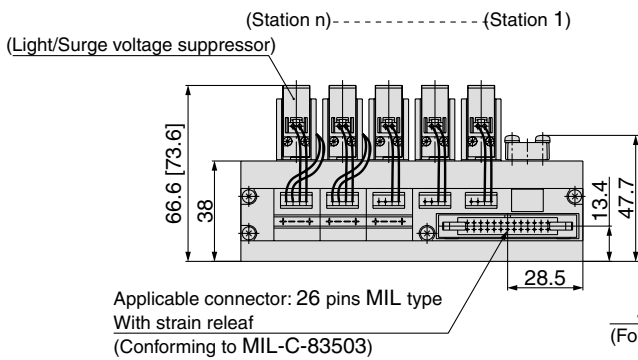
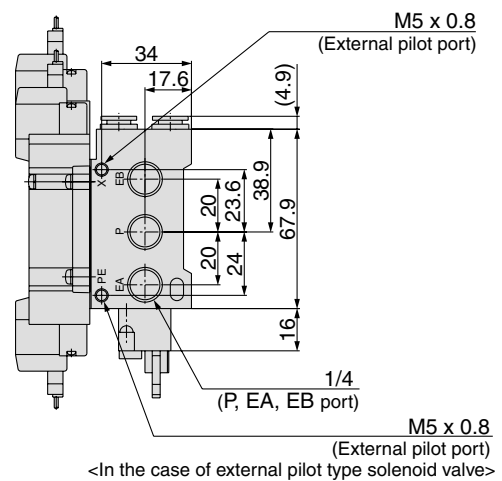
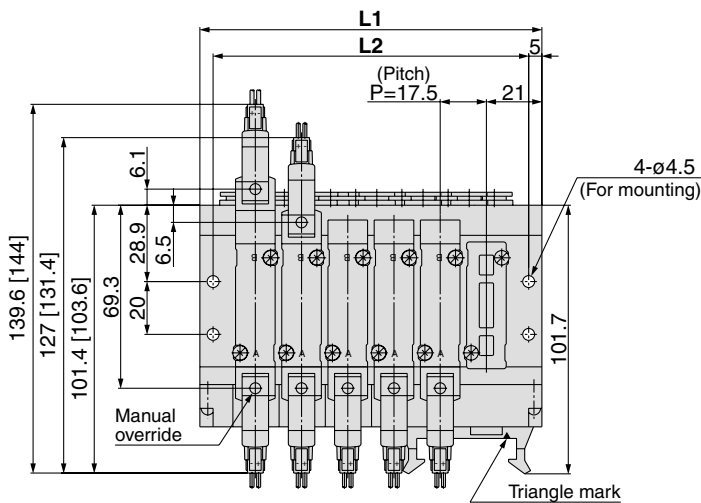
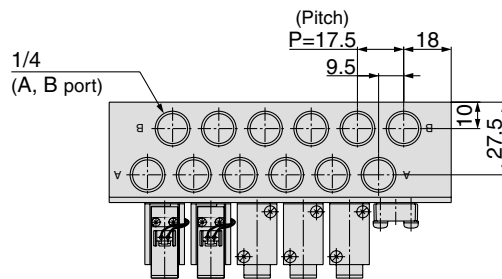
Caution

- 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.

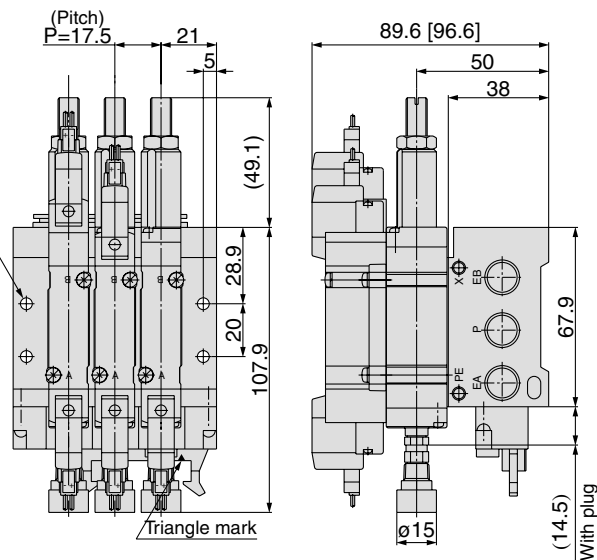
Grommet (G)



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

Series SY3000/5000 Base Mounted Monifold Stacking Type/DIN Rail Mounted Individual Wiring

How to Order Manifold

SS5Y 3 - 45 - 05 U - C6

Series	Valve stations
3 SY3000	02 2 stations
5 SY5000	⋮ ⋮
	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	2 to 10 stations
B	(Both sides)	2 to 20 stations
M*	Special specifications	

* For special specifications, indicate separately on the manifold specification sheet.

A, B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for $\phi 4$	SY3000
C6	One-touch fitting for $\phi 6$	
M	Mixed	SY5000
C4	One-touch fitting for $\phi 4$	
C6	One-touch fitting for $\phi 6$	
C8	One-touch fitting for $\phi 8$	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for $\phi 5/32$ "	SY3000
N7	One-touch fitting for $\phi 1/4$ "	
M	Mixed	SY5000
N3	One-touch fitting for $\phi 5/32$ "	
N7	One-touch fitting for $\phi 1/4$ "	
N9	One-touch fitting for $\phi 5/16$ "	
M	Mixed	

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

Option

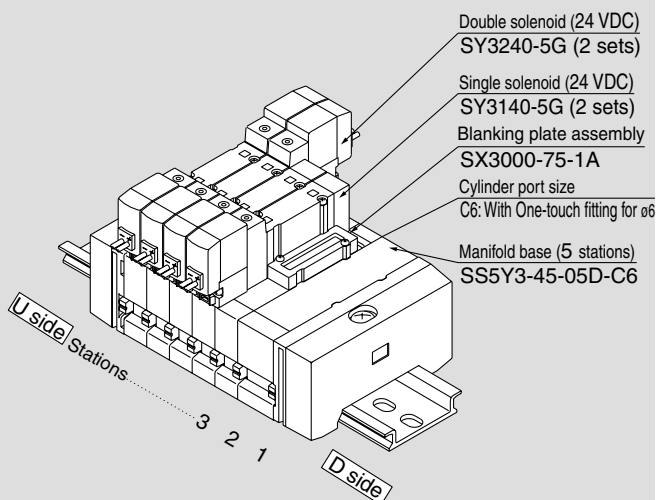
When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)



For external pilot specifications and built-in silencer, refer to catalog on page 1-4-194.

How to Order Valve Manifold Assembly

Ordering example



SS5Y3-45-05D-C6 1 set (Type 45, 5 stations 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 Valves

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", "DO" or "W□" type.

Rated voltage

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" and "DO" is only available with 12 and 24 VDC.
 * For type "W□", DC voltage is only available.
 * "D" and "DO" only available for SY5000.

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

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

* "DOZ" is 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) LN: Without lead wire	M: With lead wire (Length 300 mm) MN: Without lead wire	(SY5000) D: With connector DO: Without connector	WO: Without connector cable
H: Lead wire length 600 mm	LO: Without connector	MO: Without connector		

* "LN", "MN" type: with 2 sockets.
 * D and DO only available for SY5000.
 * DIN terminal type "Y" conforming to DIN43650C standard is also available. For details, refer to page 1-4-201.
 * For connector cable of M8 connector, refer to page 1-4-209.

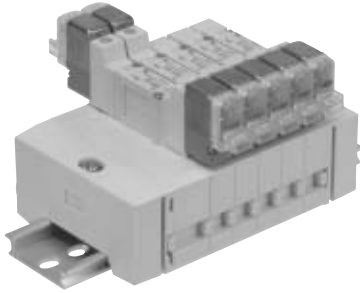
SV

SZ

SY

SYJ

SX



Manifold Specifications

Model	SS5Y3-45		SS5Y5-45	
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	Location	Base		
Porting specifications	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 weight 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

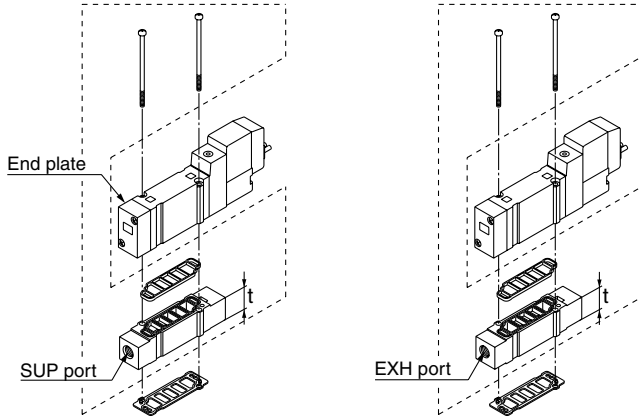
Model	Port size		Flow characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C (dm ³ /s·bar)	b	Cv	C (dm ³ /s·bar)	b	Cv
SS5Y3-45	C8	C6	0.88	0.21	0.22	0.95	0.18	0.22
SS5Y5-45	C10	C8	2.2	0.24	0.53	2.5	0.18	0.58



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

Manifold Option

▪ Individual SUP spacer assembly ▪ Individual EXH spacer assembly



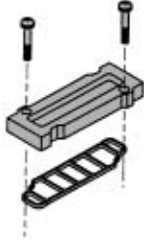
Series	Assembly part no.	Port size	t
SY3000	SY3000-38-2A	M5 x 0.8	11
SY5000	SY5000-38-16*A	1/8	15

Note) The SUP port may be either on the lead wire side or on the end plate side.

Series	Assembly part no.	Port size	t
SY3000	SY3000-39-2A	M5 x 0.8	11
SY5000	SY5000-39-16*A	1/8	15

Note) The EXH port may be either on the lead wire side or on the end plate side.

▪ Blanking plate assembly



Series	Assembly part no.
SY3000	SX3000-75-1A
SY5000	SX5000-76-5A

* Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Caution

Mounting screw tightening torques

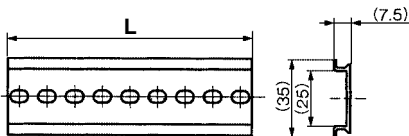
M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

▪ 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 page 1-4-126 for lengths that correspond to the number of manifold stations.

▪ SUP block disk

By installing a SUP block 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

▪ SUP block disk

By installing an EXH block 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 block disks are needed to divide both exhausts.)



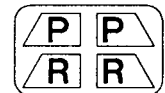
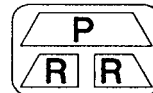
Series	Part no.
SY3000	SX3000-77-1A
SY5000	SX5000-77-1A

▪ L 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

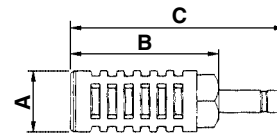
Label for SUP block disk Label for EXH block disk Label for SUP/EXH block disk



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

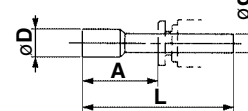
The silencer plugs directly into the One-touch fittings of the manifold.



Series	Model	Effective area	A	B	C
For SY3000 (ø8)	AN203-KM8	14 mm ²	ø16	26	51
For SY5000 (ø10)	AN200-KM10	26 mm ²	ø22	53.8	80.8
	AN300-KM10	30 mm ²	ø25	70	97

▪ L 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

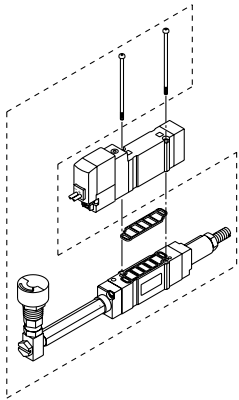
● **Regulating port**

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

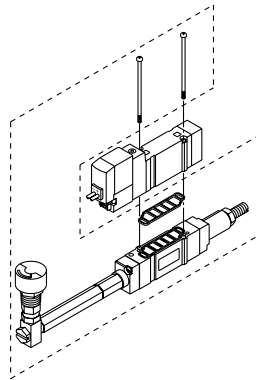
● **Pressure gauge connection port**

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

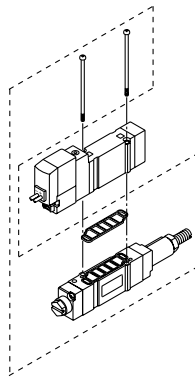
ARBY3000-05-□-2
(For mounting odd number stations)



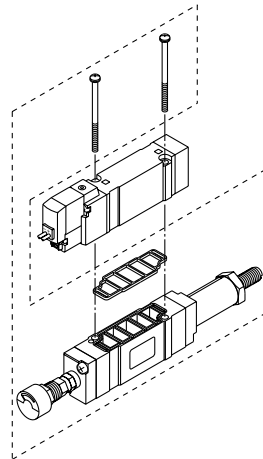
ARBY3000-06-□-2
(For mounting even number stations)



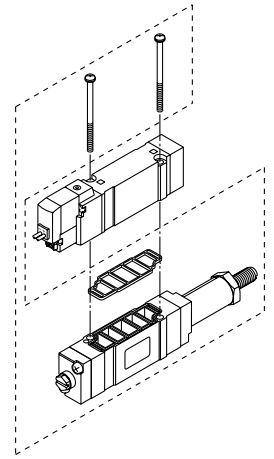
ARBY3000-M1-□-2



ARBY5000-00-□-2



ARBY5000-M1-□-2



Accessory

Series	Round head combination screw	Gasket
ARBY3000	SY3000-23-10 (M2336)	SX3000-57-4
ARBY5000	M3 x 48.5, Matt nickel plated	SX5000-57-6

Caution

Mounting screw tightening torques

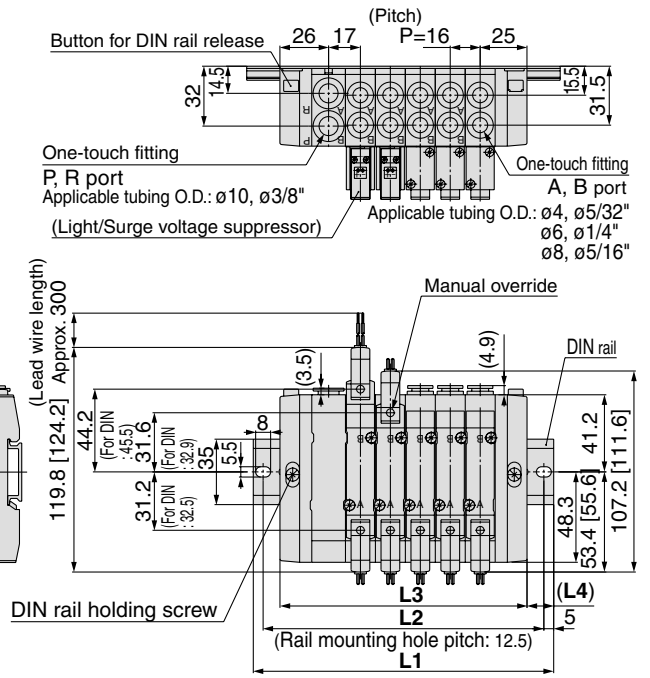
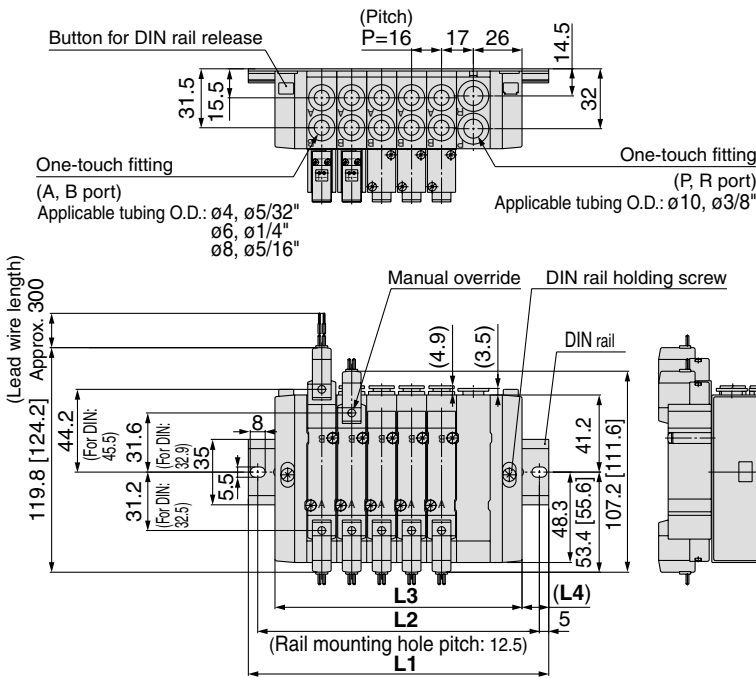
M2: 0.17 N·m
M3: 0.8 N·m



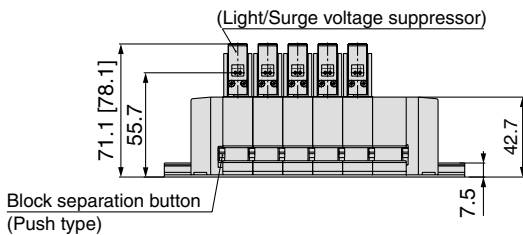
Dimensions: Series SY5000

SS5Y5-45- Stations D- C4, N3
C6, N7
C8, N9

SS5Y5-45- Stations U- C4, N3
C6, N7
C8, N9

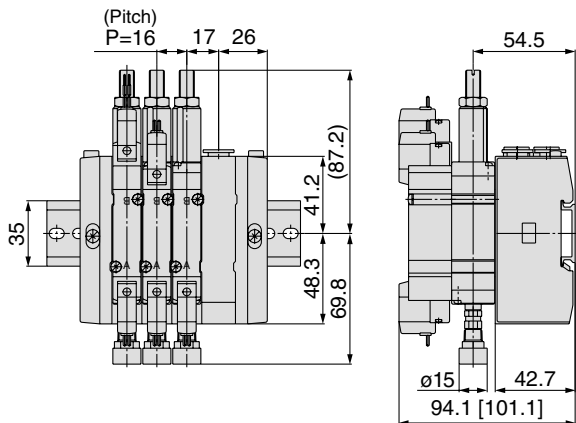


(Station n) --- (Station 1)



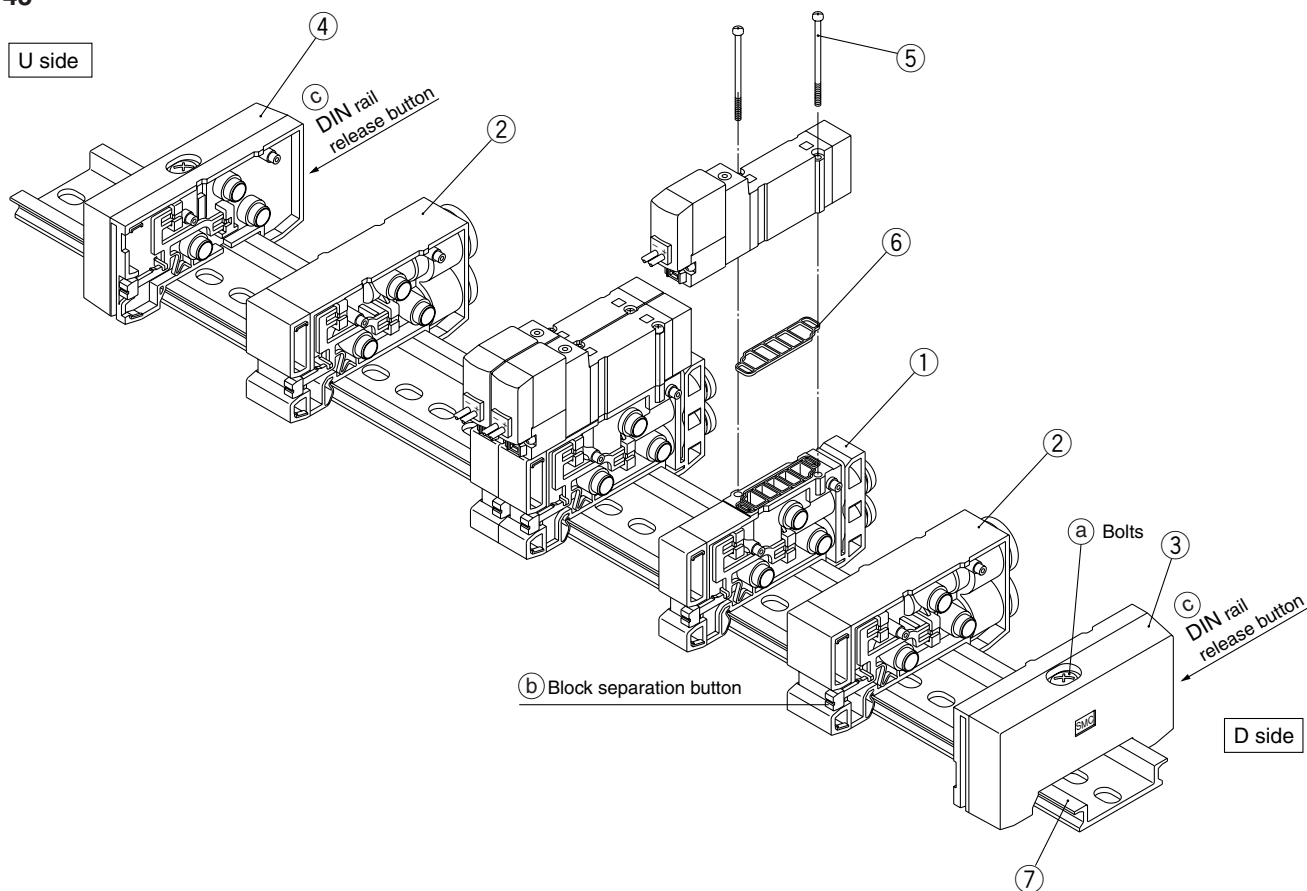
Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	110.5	135.5	148	160.5	173	198	210.5	223	235.5
L2	100	125	137.5	150	162.5	187.5	200	212.5	225
L3	84	100	116	132	148	164	180	196	212
L4	13	17.5	16	14	12.5	17	15	13.5	11.5

With interface regulator (with gauge)



DIN Rail Manifold Exploded View

Type 45



Replacement Parts

No.	Description	Part no.		Note
		SY3000	SY5000	
①	Manifold block assembly	SX3000-50-1A-□□	SX5000-50-1A-□□	□□: SY3000 (Metric size) C4: With One-touch fitting for ø4 (Inch size) N3: With One-touch fitting for ø 5/32" SY5000 (Metric size) C4: With One-touch fitting for ø4 (Inch size) N3: With One-touch fitting for ø 5/32" C6: With One-touch fitting for ø6 N7: With One-touch fitting for ø 1/4" C6: With One-touch fitting for ø6 N7: With One-touch fitting for ø 1/4" C8: With One-touch fitting for ø8 N9: With One-touch fitting for ø 5/16" (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	SX5000-52-1A	For D side
④	End block assembly R	SX3000-53-1A	SX5000-53-1A	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 1-4-123.

DIN Rail Manifold Exploded View

How to Increase Manifold Base Station expansion is possible at any position.

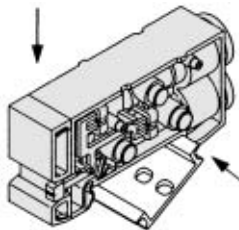
- 1 Loosen bolt (a) fixing the manifold base until it begins to turn idly. (While pressing DIN rail releasing buttons (c), at two locations, separate the manifold base from the DIN rail.)
- 2 Press manifold block assembly dividing button (b), that are at the location where manifold bases are to be added, until button (b) locks, and then separate the block assemblies.
- 3 Mount additional manifold block assembly on the DIN rail as shown in the Fig. (1).
- 4 Press the block assemblies until a click sound is produced, and tighten the bolts (a) 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.

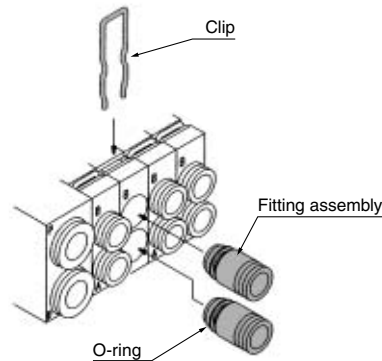
Note 2) When disassembly and assembly are performed, air leakage may result if connections between blocks and tightening of the end block's holding screw, is inadequate. Before supplying air, confirm that there are no gaps, etc. between blocks, and that manifold blocks are securely fastened to the DIN 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 $\phi 4$	VVQ1000-50A-C4
	One-touch fitting for $\phi 6$	VVQ1000-50A-C6
SY5000	One-touch fitting for $\phi 4$	VVQ1000-51A-C4
	One-touch fitting for $\phi 6$	VVQ1000-51A-C6
	One-touch fitting for $\phi 8$	VVQ1000-51A-C8

Inch size

SY3000	One-touch fitting for $\phi 5/32''$	VVQ1000-50A-N3
	One-touch fitting for $\phi 1/4''$	VVQ1000-50A-N7
SY5000	One-touch fitting for $\phi 5/32''$	VVQ1000-51A-N3
	One-touch fitting for $\phi 1/4''$	VVQ1000-51A-N7
	One-touch fitting for $\phi 5/16''$	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.

SV

SZ

SY

SYJ

SX

Type **45-A** NA

Series SY3000/5000 Base Mounted Manifold Stacking Type/DIN Rail Mounted Connector Box

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 on the manifold specification sheet.

A/B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for $\phi 4$	SY3000
C6	One-touch fitting for $\phi 6$	
M	Mixed	
C4	One-touch fitting for $\phi 4$	SY5000
C6	One-touch fitting for $\phi 6$	
C8	One-touch fitting for $\phi 8$	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for $\phi^{3/32}$ "	SY3000
N7	One-touch fitting for $\phi^{1/4}$ "	
M	Mixed	
N3	One-touch fitting for $\phi^{3/32}$ "	SY5000
N7	One-touch fitting for $\phi^{1/4}$ "	
N9	One-touch fitting for $\phi^{9/32}$ "	
M	Mixed	

* In the case of mixed specifications, indicate separately on the manifold specification sheet.

Option

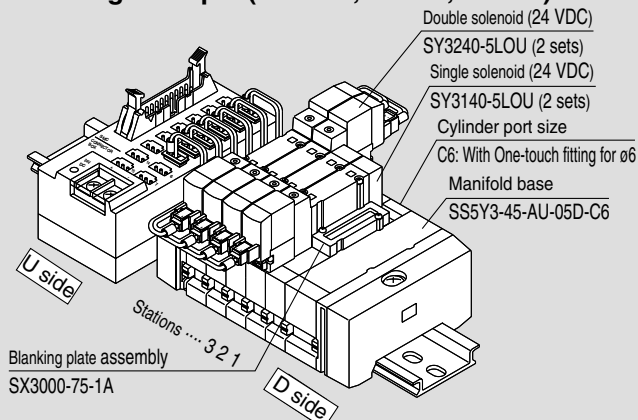
When a longer DIN rail is desired than the specified stations, specify the station number to be required. (Max. 20 stations)



For external pilot specifications and built-in silencer, refer to page 1-4-194.

How to Order Valve Manifold Assembly

Ordering example (SY3000, +COM, U side)



SS5Y3-45-AU-05D-C6	1 set (Type 45, 5 stations 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.

SS5Y₃-45-A_U-□□-□□ 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 1-4-120 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 1-4-136 and 1-4-137 may vary slightly.) For other components, refer to page 1-4-138.

How to Order Valves

SY **5** **2** 40 - **5** LOU □

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

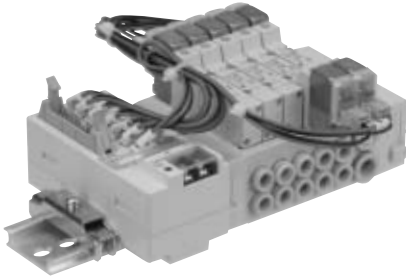
Manual override

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

Rated voltage

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

Manifold Specifications



Model		SS5Y3-45-A _{NA}	SS5Y5-45-A _{NA}
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 <small>Note 1, 2)</small>	
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 weight 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".

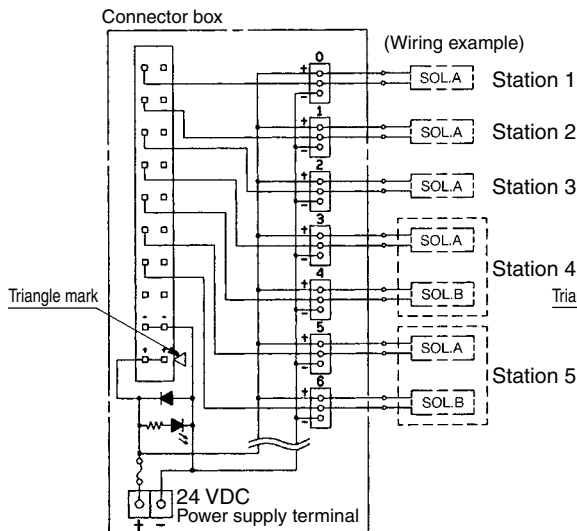
Flow Characteristics

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 (dm ³ /(s·bar))	b	Cv	C (dm ³ /(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

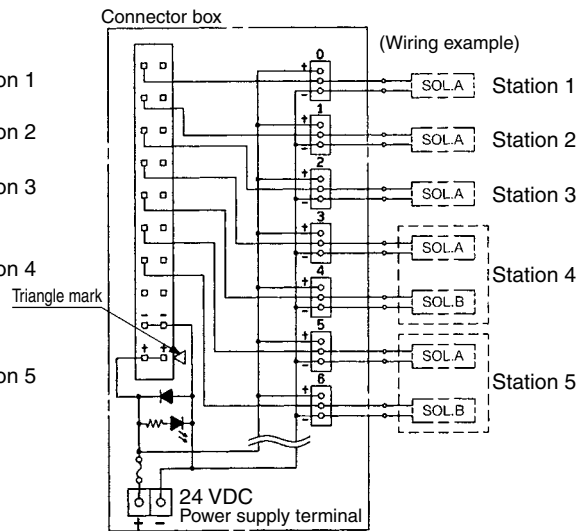
- Note) The value is for manifold base with 5 stations and individually operated 2 position type.

Manifold Wiring Diagram (Circuit diagram for the reference layout)

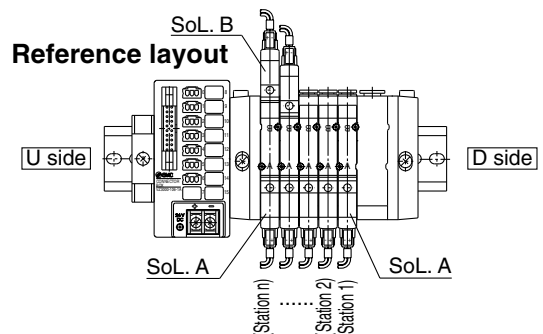
+COM electric circuit diagram



-COM electric circuit diagram

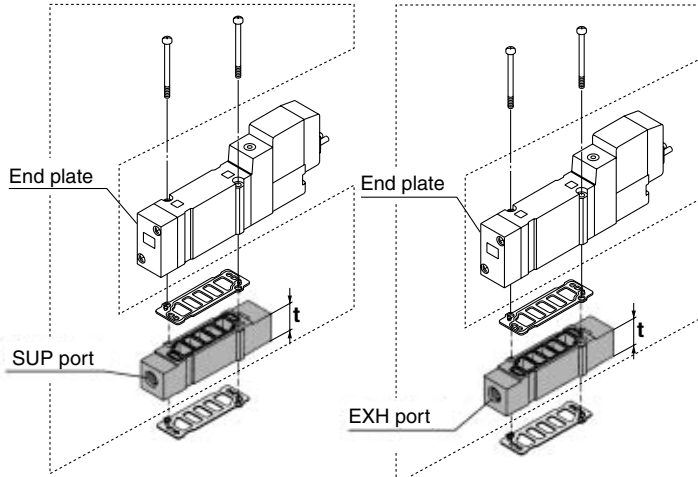


- Connector box for +COM allows transmission until G71-OD16, manufactured by OMRON Corp., to be connected directly for serial transmission. Additionally, it can also be used for the PC wiring system.
- When an external power source must be supplied to the manifold, correct polarity must be observed, 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.



Manifold Option

Individual SUP spacer assembly ■ Individual EXH spacer assembly



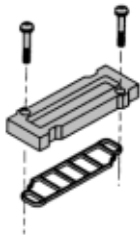
Series	Assembly part no.	Port size	t
SY3000	SY3000-38-2A	M5 x 0.8	11
SY5000	SY5000-38-16*A	1/8"	15

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.)

Series	Assembly part no.	Port size	t
SY3000	SY3000-39-2A	M5 x 0.8	11
SY5000	SY5000-39-16*A	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.)

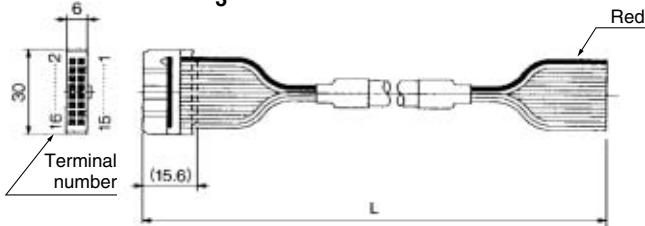
Blanking plate assembly



Series	Assembly part no.
SY3000	SX3000-75-1A
SY5000	SX5000-76-5A

Cable assembly

AXT100-FC20-¹/₃



Connector Assembly for Flat Ribbon Cable

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.

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.

SUP block disk

By installing a SUP block 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 block disk

By installing an EXH block 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 block disks are needed to divide both exhausts.)



Series	Part no.
SY3000	SX3000-77-1A
SY5000	SX5000-77-1A

Label for block disk

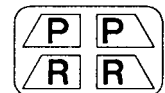
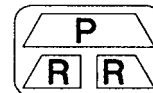
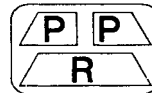
The labels shown below are used on manifold stations containing SUP/EXH block disk(s) to show their location. (3 pcs. each)

VZ3000-123-1A

Label for SUP block disk

Label for EXH block disk

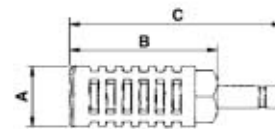
Label for SUP/EXH block disk



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

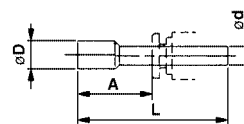
The silencer plugs directly into the One-touch fittings of the manifold.



Series	Model	Effective area	A	B	C
For SY3000 (ø8)	AN203-KM8	14 mm ²	ø16	26	51
For SY5000 (ø10)	AN200-KM10	26 mm ²	ø22	53.8	80.8
	AN300-KM10	30 mm ²	ø25	70	97

Plug (white)

These are inserted in unused cylinder ports and 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. stations to avoid gauges from interfering with 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)

SV

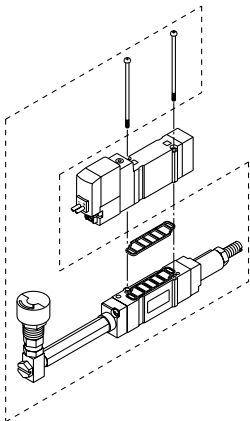
SZ

SY

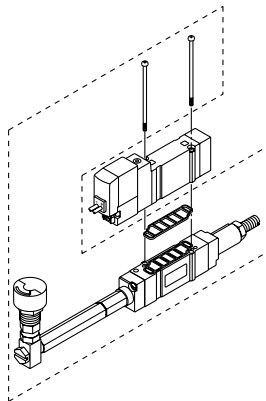
SYJ

SX

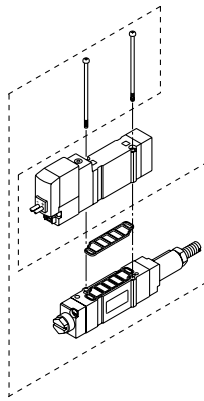
ARBY3000-05-□-2
(For odd number stations)



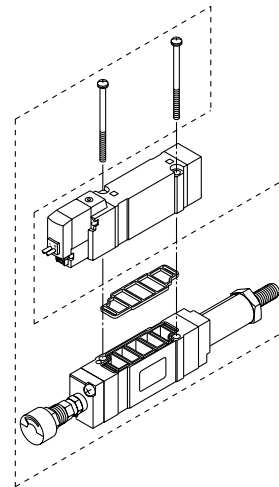
ARBY3000-06-□-2
(For even number stations)



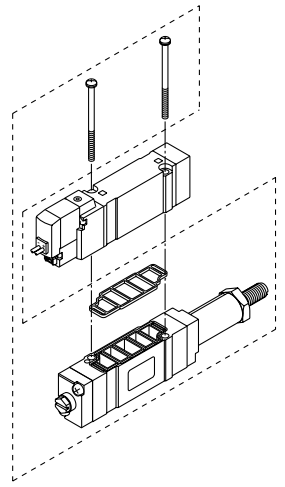
ARBY3000-M1-□-2



ARBY5000-00-□-2



ARBY5000-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

⚠ Caution

Mounting screw tightening torques

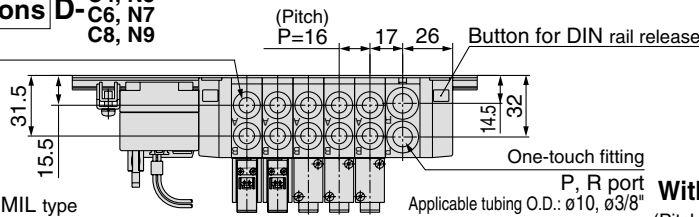
M2: 0.16 N·m

M3: 0.8 N·m

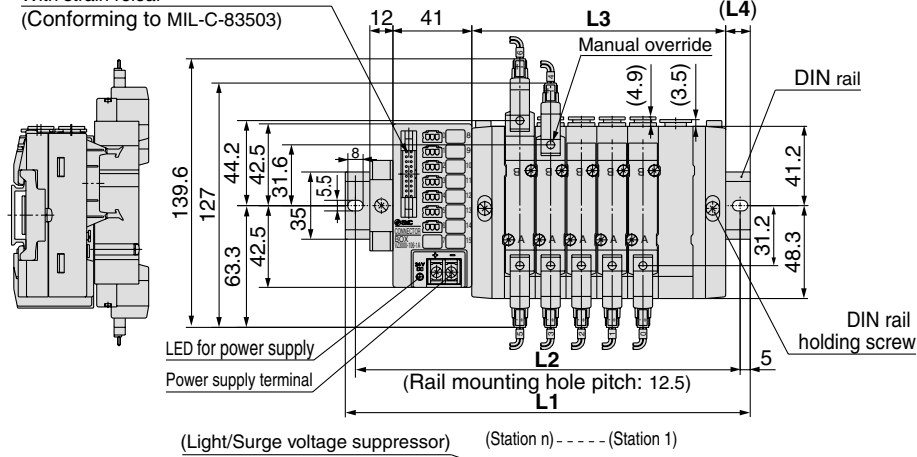
Dimensions: Series SY5000

SS5Y5-45-AU- Stations D- C4, N3 C6, N7 C8, N9

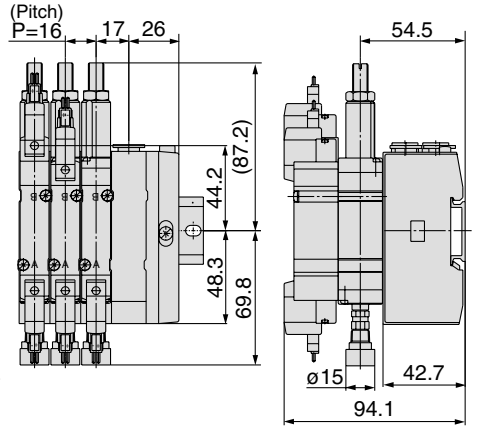
One-touch fitting (A, B port)
Applicable tubing O.D.: $\phi 4, \phi 5/32''$
 $\phi 6, \phi 1/4''$
 $\phi 8, \phi 5/16''$



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

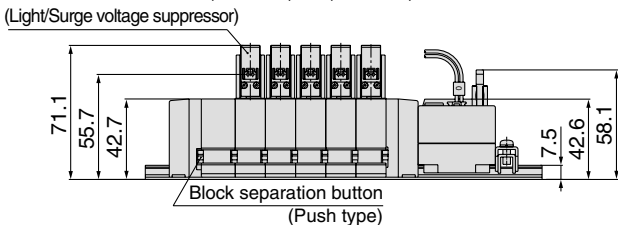
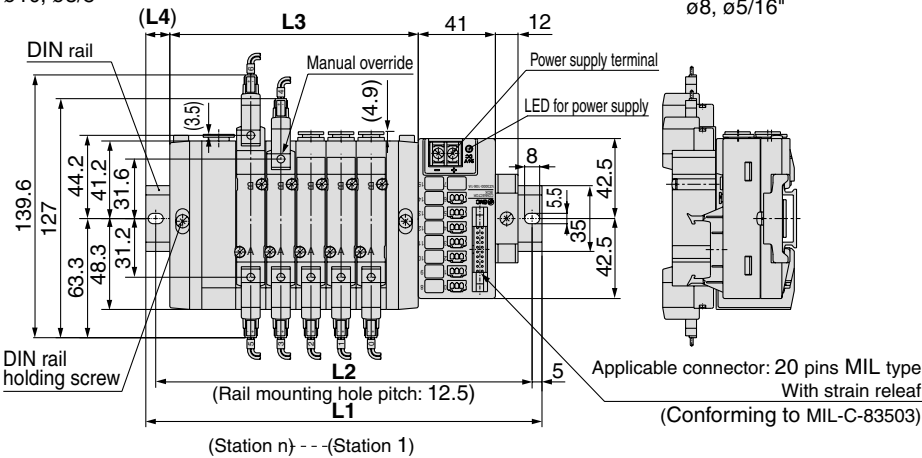
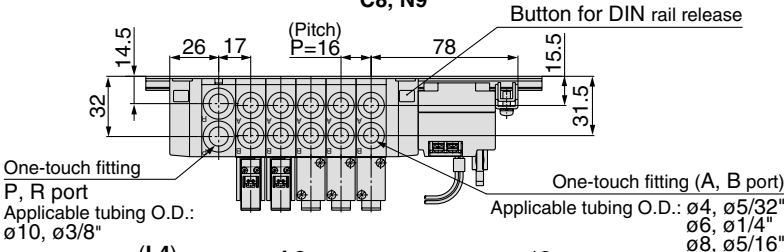


With interface regulator (with gauge)



- SV
- SZ
- SY**
- SYJ
- SX

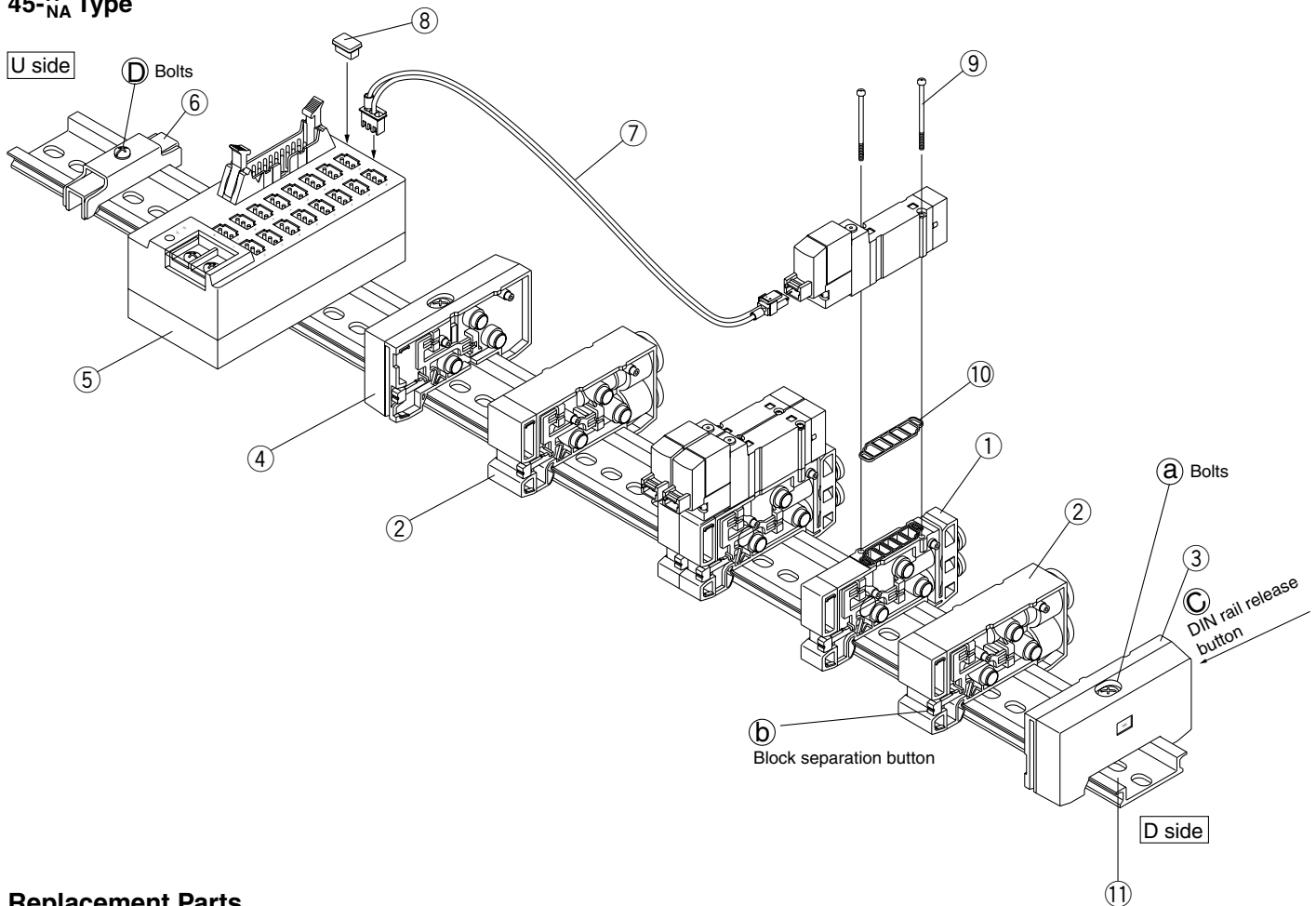
SS5Y5-45-AD- Stations U- C4, N3 C6, N7 C8, N9



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

45-A_{NA} Type

Replacement Parts

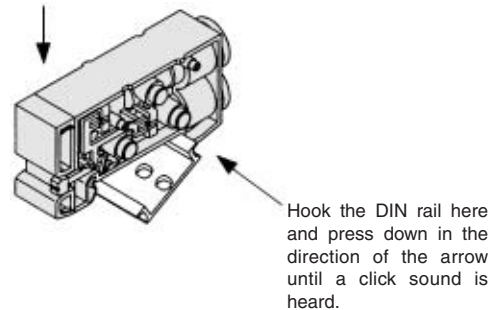
No.	Description	Part no.		Note
		SY3000	SY5000	
①	Manifold block assembly	SX3000-50-1A-□□	SX5000-50-1A-□□	•SY3000 (Metric size) (Inch size) C4: With One-touch fitting for $\phi 4$ N3: With One-touch fitting for $\phi 5/32$ " C6: With One-touch fitting for $\phi 6$ N7: With One-touch fitting for $\phi 1/4$ " For SY5000 (Metric size) (Inch size) C4: With One-touch fitting for $\phi 4$ N3: With One-touch fitting for $\phi 5/32$ " C6: With One-touch fitting for $\phi 6$ N7: With One-touch fitting for $\phi 1/4$ " C8: With One-touch fitting for $\phi 8$ N9: With One-touch fitting for $\phi 5/16$ " (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 $\phi 8$ (Inch size) With One-touch fitting for $\phi 5/16$ " P, R port SY5000 (Metric size) With One-touch fitting for $\phi 10$ (Inch size) With One-touch fitting for $\phi 3/8$ "
③	End block assembly R	SX3000-52-1A	SX5000-52-1A	For D side
④	End block assembly L	SX3000-53-1A	SX5000-53-1A	For U side
⑤	Connector box	VZ3000-106-1A		For 24 VDC only
⑥	Rail stopper	TXE1-SMC		Made by Kasuga Electric Works, Ltd.
⑦	Connector 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 1-4-123.

How to Increase Manifold Base

Station expansion is possible at any position.

- 1 Loosen bolt (a) fixing the manifold base until it begins to turn idly. (While pressing DIN rail releasing buttons (c), at two locations, separate the manifold base from the DIN rail.)
- 2 Press manifold block assembly dividing button (b), that are at the location where manifold bases are to be added, until button (b) locks, and then separate the block assemblies.
- 3 Mount additional manifold block assembly on the DIN rail as shown in the Fig. (1).
- 4 Press the block assemblies until a click sound is produced, and tighten the bolts (a) 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 better sealing.)
- 5 Untighten the rail stopper bolt (d) to demount the connector box from the DIN rail, and when remounting it, tighten the bolt while pressing it against the rail.

Fig. (1) Block mounting procedure



SV

SZ

SY

SYJ

SX

⚠ 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

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.

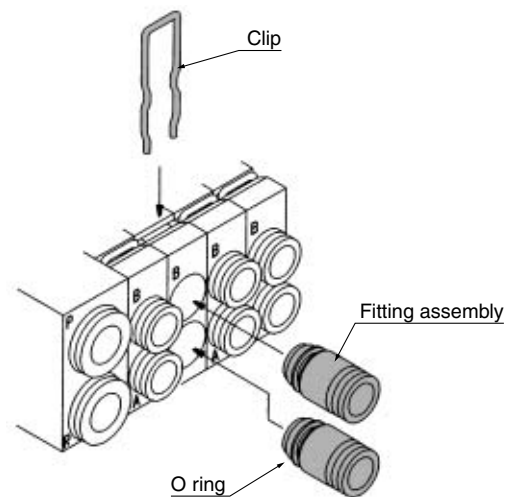
Metric size

SY3000	One-touch fitting for $\phi 4$	VVQ1000-50A-C4
	One-touch fitting for $\phi 6$	VVQ1000-50A-C6
SY5000	One-touch fitting for $\phi 4$	VVQ1000-51A-C4
	One-touch fitting for $\phi 6$	VVQ1000-51A-C6
	One-touch fitting for $\phi 8$	VVQ1000-51A-C8

Inch size

SY3000	One-touch fitting for $\phi 5/32$ "	VVQ1000-50A-N3
	One-touch fitting for $\phi 1/4$ "	VVQ1000-50A-N7
SY5000	One-touch fitting for $\phi 5/32$ "	VVQ1000-51A-N3
	One-touch fitting for $\phi 1/4$ "	VVQ1000-51A-N7
	One-touch fitting for $\phi 5/16$ "	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.



Series SY3000/5000 Base Mounted Monifold Stacking Type/DIN Rail Mounted Plug-in

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

Valve stations

Symbol	Stations	Note
02	2 stations	Single wiring 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 on the manifold specification sheet.

A, B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for $\phi 4$	SY3000
C6	One-touch fitting for $\phi 6$	
M	Mixed	
C4	One-touch fitting for $\phi 4$	SY5000
C6	One-touch fitting for $\phi 6$	
C8	One-touch fitting for $\phi 8$	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for $\phi 5/32$ "	SY3000
N7	One-touch fitting for $\phi 1/4$ "	
M	Mixed	
N3	One-touch fitting for $\phi 5/32$ "	SY5000
N7	One-touch fitting for $\phi 1/4$ "	
N9	One-touch fitting for $\phi 5/16$ "	
M	Mixed	

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

Voltage

Nil	24 VDC
12V	12 VDC

Option

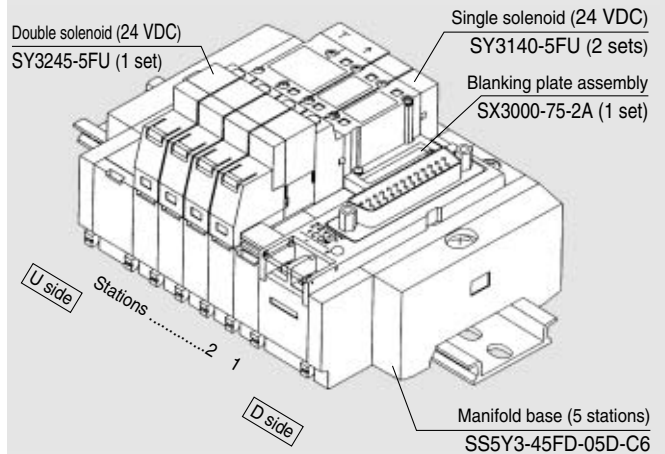
When a longer DIN rail is desired than the specified stations, specify the station number to be required.
(20 stations at maximum)



For external pilot and built-in silencer, refer to page 1-4-197.

How to Order Valve Manifold Assembly

Example (Type 45F/D-sub connector (25 pins))



SS5Y3-45FD-05U-C6 1 set
(Type 45F, D-sub connector 5 port 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 Valves

(Type 45F, 45P□, 45T, 45T1)

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
6	12 VDC

Manual override

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

How to Order Manifold

Type 45G (Flat cable, PC wiring system compatible)

SS5Y 3-45G D-05 U C4

Series

3	SY3000
5	SY5000

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

Connector mounting position

Symbol	Mounting position
U	U side
D	D side

A, B port size

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

* In the case of mixed specifications, indicate separately on the manifold specification sheet.

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	SY5000
N3	One-touch fitting for ø5/32"	
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
M	Mixed	

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 specifications

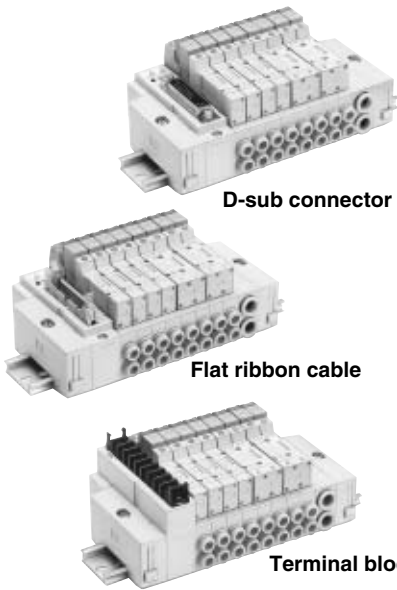
Symbol	Specifications
Nil	Internal pilot
R	External pilot
S	Internal pilot/Built-in silencer
RS	External pilot/Built-in silencer

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 on the manifold specification sheet.

Manifold Specifications



Model	D-sub connector Type 45F	Flat ribbon cable Type 45P□			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)	
		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)	
	A, B port	SY3000 C4 (One-touch fitting for ø4)/C6 (One-touch fitting for ø6)/C8 (One-touch fitting for ø8)					SY5000 C4 (One-touch fitting for ø4)/C6 (One-touch fitting for ø6)/C8 (One-touch fitting for ø8)	
		SY3000 C4 (One-touch fitting for ø4)/C6 (One-touch fitting for ø6)/C8 (One-touch fitting for ø8)					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.			
Manifold base weight w (g)	SY3000	2 to 10 stations: W = 26n + 172 11 to 20 stations: W = 26n + 199						
n: Stations (D-sub connector)	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".

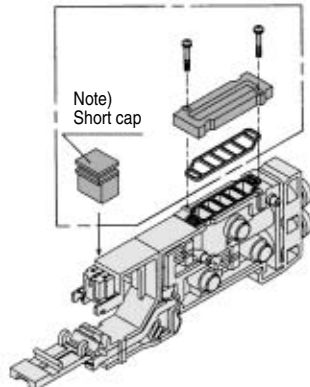
Flow Characteristics

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 (dm ³ /s-bar)	b	Cv	C (dm ³ /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
SY5000	SX5000-76-6A

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 block disk

By installing a SUP block 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 block disk

By installing an EXH block 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 block disks are needed to divide both exhausts.)

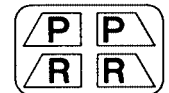
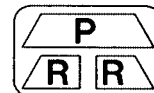
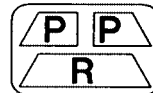


Series	Part no.
SY3000	SX3000-77-1A
SY5000	SX5000-77-1A

■ 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)

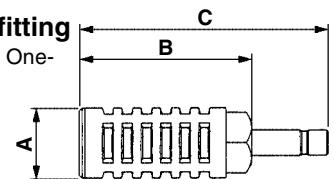
Label for SUP block disk Label for EXH block disk Label for SUP/EXH block disk



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

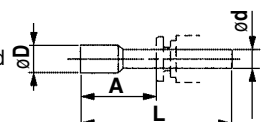
The silencer plugs directly into the One-touch fittings of the manifold.



Series	Model	Effective area	A	B	C
For SY3000 (ø8)	AN203-KM8	14 mm ²	ø16	26	51
	AN200-KM10	26 mm ²	ø22	53.8	80.8
For SY5000 (ø10)	AN300-KM10	30 mm ²	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

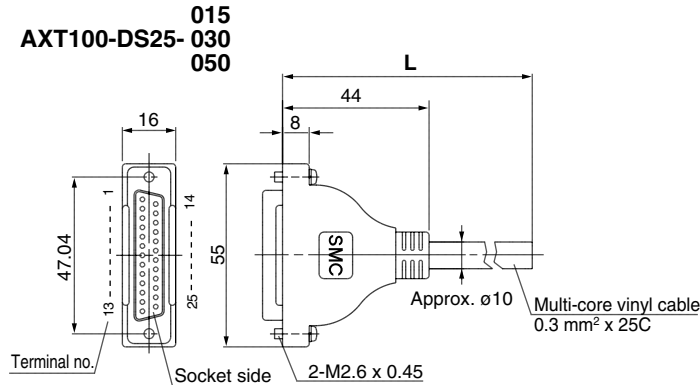
⚠ Caution

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



D-sub Connector Cable Assembly Terminal No.

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

D-sub Connector Cable

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

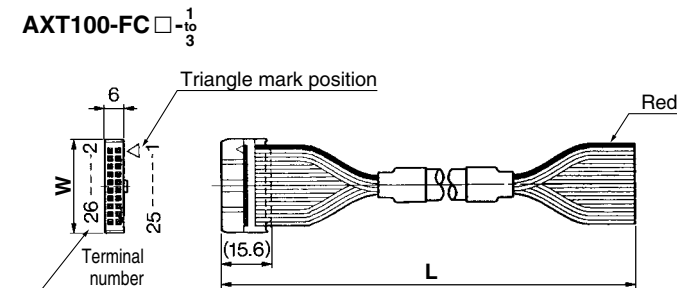
Item	Characteristics
Conductor resistance Ω/km, 20°C	65 or less
Voltage limit V, 1 min, AC	1000
Insulation resistance MΩkm, 20°C	5 or more

Note) The min. bending radius of D-sub cable assembly is 20 mm.

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



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

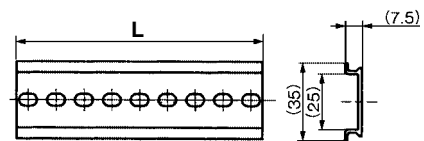
- Hirose Electric Co., Ltd.
- Sumitomo 3M Limited
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.

▪ 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.



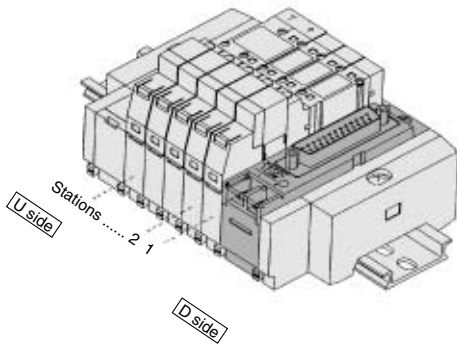
No.	0	1	2	3	4	5	6	7	8	9	10
L Dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223
No.	11	12	13	14	15	16	17	18	19	20	21
L Dimension	235.5	248	260.5	273	285.5	298	310.5	323	335.5	348	360.5
No.	22	23	24	25	26	27	28	29	30	31	32
L Dimension	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498
No.	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 page 1-4-150 for lengths that correspond to the number of manifold stations.

Manifold Internal Wiring

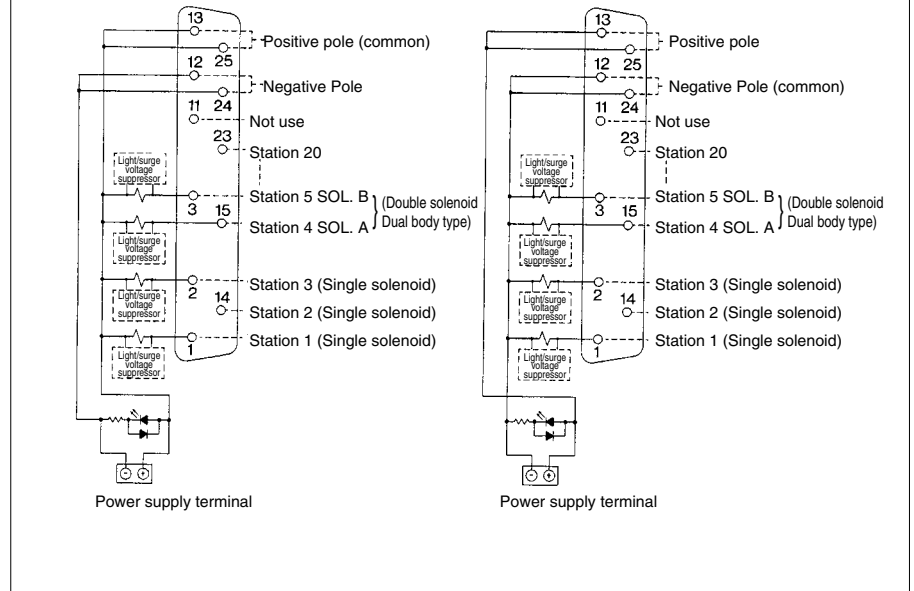
Type 45(N)F: D-sub Connector

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)>

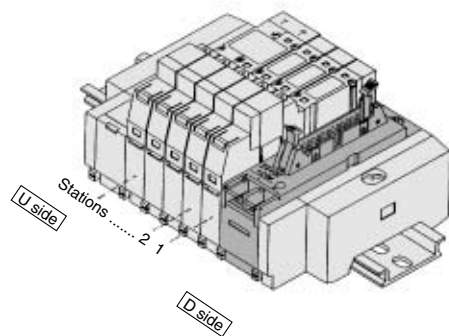


- The power source terminal is used for connecting to an external power source.
- The maximum number of stations that can be accommodated is 20 manifold stations, with up to 22 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.

SV
 SZ
 SY
 SYJ
 SX

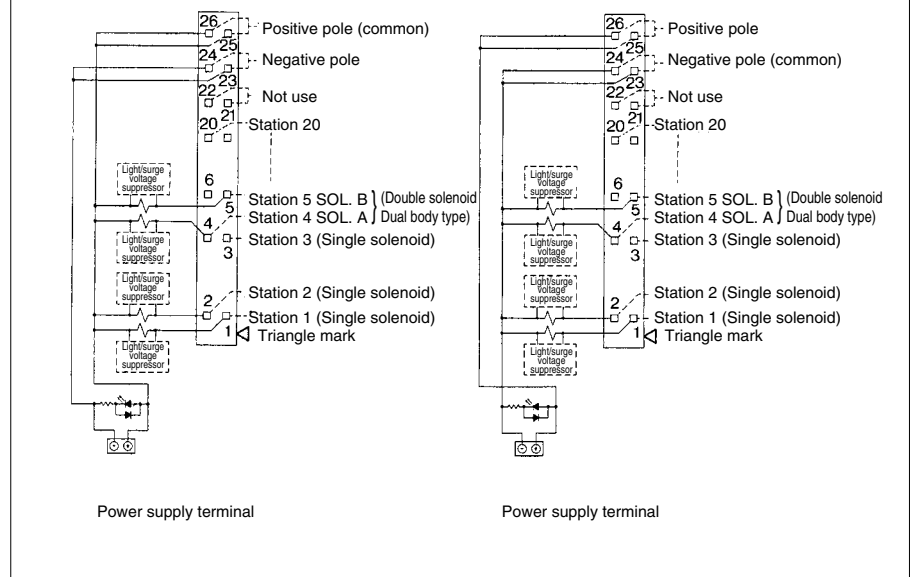
Type 45(N)P: Flat Ribbon Cable (26 pins)

A flat cable connector used for electric wiring reduces labor during wiring operation. Connectors conforming to MIL are used for interchangeability.

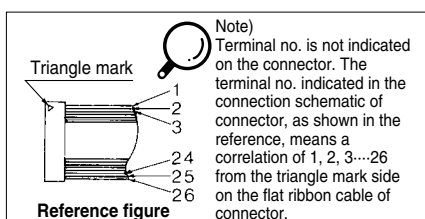


<For positive common (45P)>

<For negative common (45NP)>



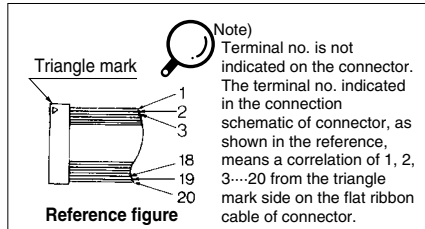
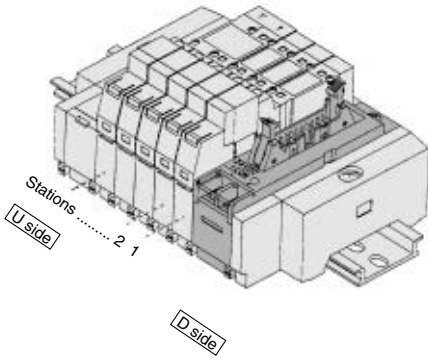
- The power source terminal is used for connecting to an external power source.
- The maximum number of stations that can be accommodated is 20 manifold stations, with up to 20 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.



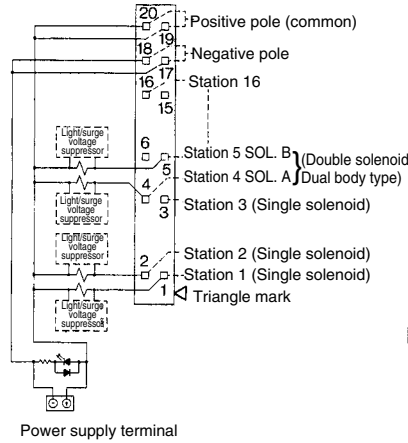
Manifold Internal Wiring

Type 45(N)PG: Flat Ribbon Cable (20 pins)

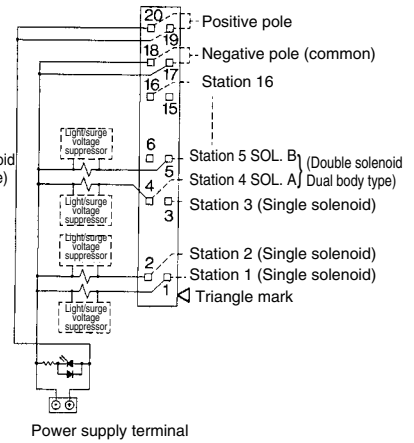
A flat cable connector used for electric wiring reduces labor during wiring operation. Connectors conforming to MIL are used for interchangeability.



<For positive common (45PG)>



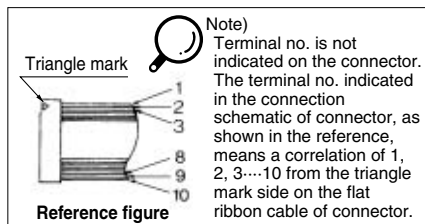
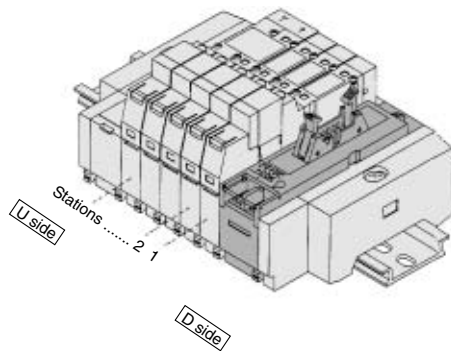
<For negative common (45NPG)>



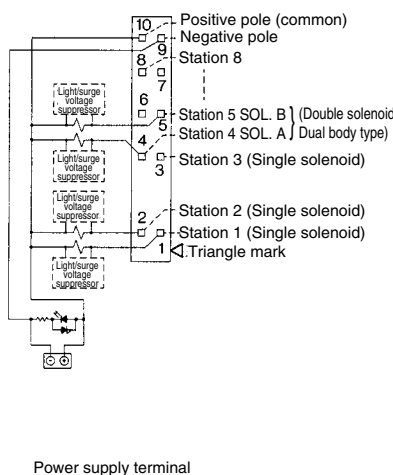
- The power source terminal is used for connecting to an external power source.
- The maximum number of stations that can be accommodated is 16 manifold stations, with up to 16 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.

Type 45(N)PH: Flat Ribbon Cable (10 pins)

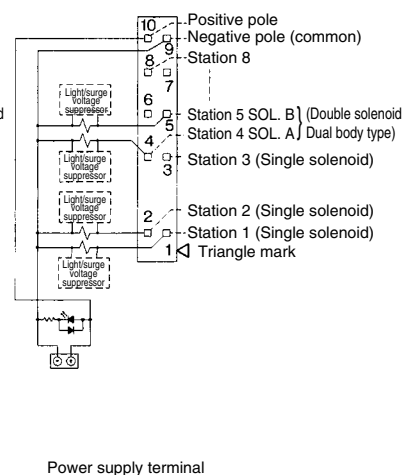
A flat cable connector used for electric wiring reduces labor during wiring operation. Connectors conforming to MIL are used for interchangeability.



<For positive common (45PH)>



<For negative common (45NPH)>

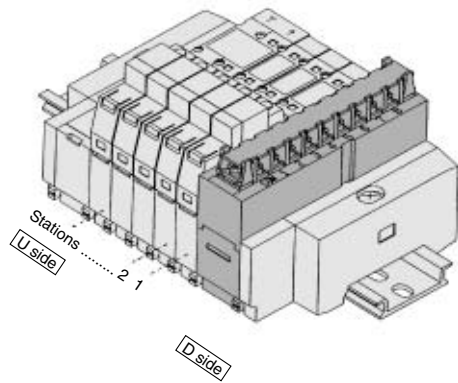


- The power source terminal is used for connecting to an external power source.
- The maximum number of stations that can be accommodated is 8 manifold stations, with up to 8 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.

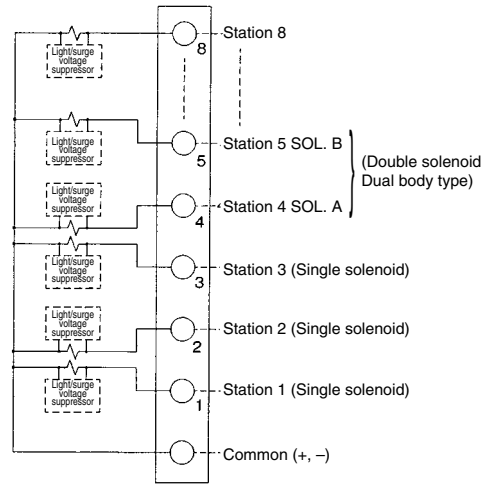
Manifold Internal Wiring

Type 45T: Terminal Block

A terminal block style permits direct cable connection without treatment of lead wires.



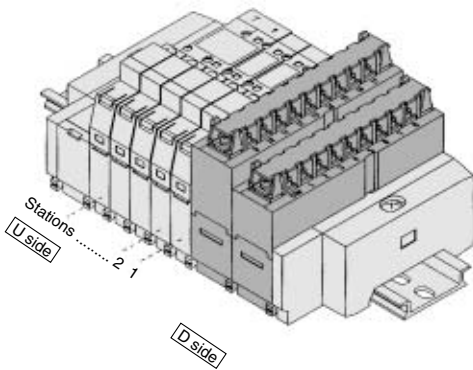
(45T)



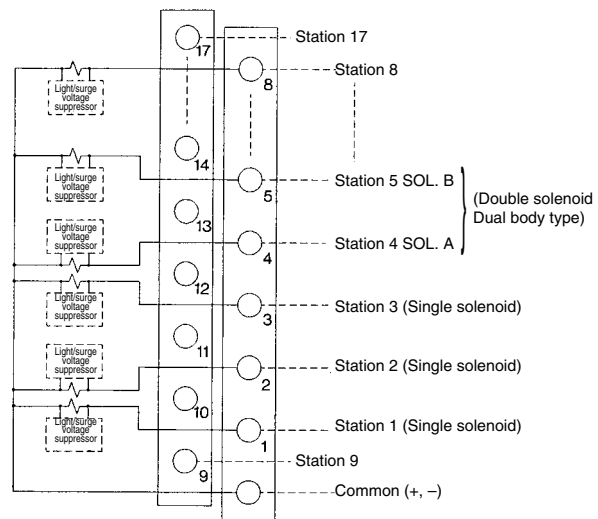
- SV
- SZ
- SY
- SYJ
- SX

- 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)

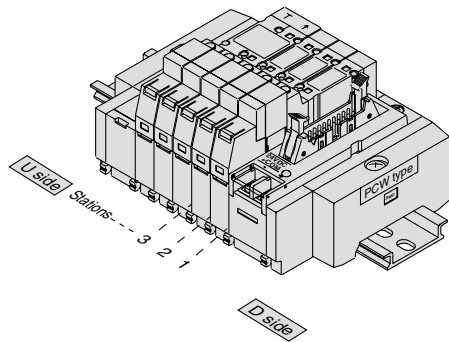


- The maximum number of stations that can be accommodated is 17 manifold stations, with up to 17 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.
- There is no polarity in the COM wiring. Supply positive power for +COM spec. and negative power for -COM spec.

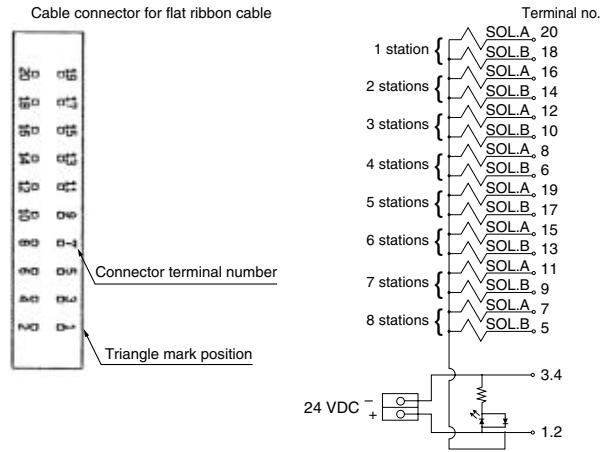
Manifold Internal Wiring

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.)



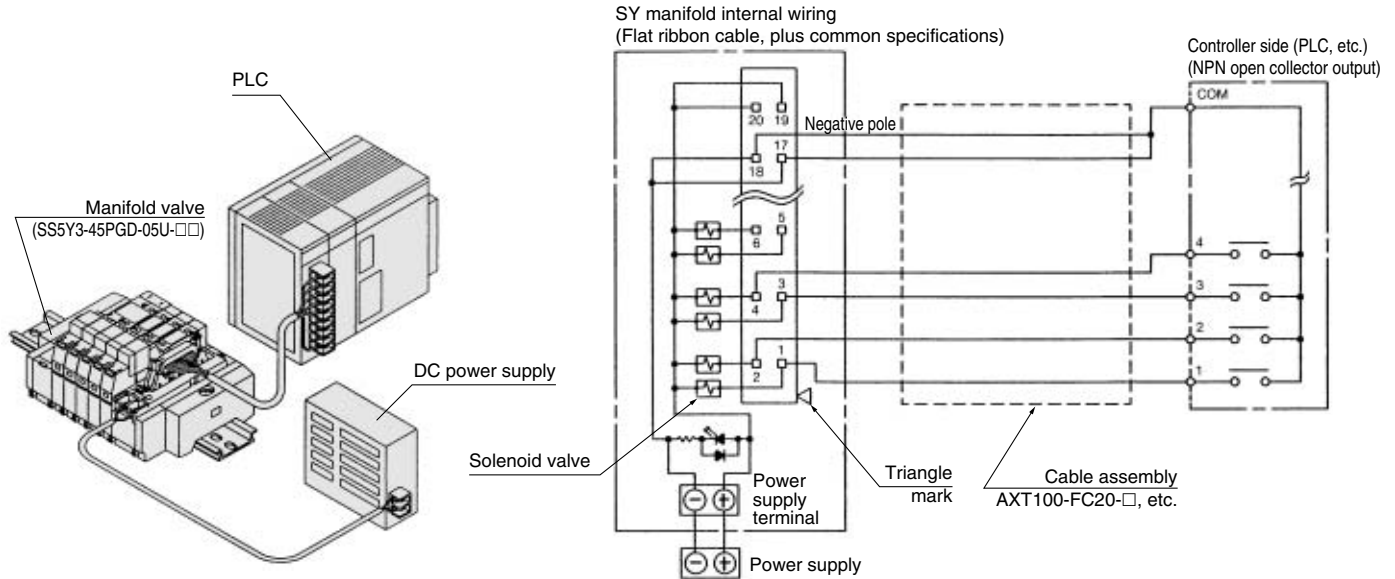
- The maximum number of stations that can be accommodated is 16 manifold stations, with up to 16 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.

(For details about the PC wiring system, refer to catalog)
CAT.ES02-20 separately.

How to Connect SS5Y□-45□ (Plug-in)

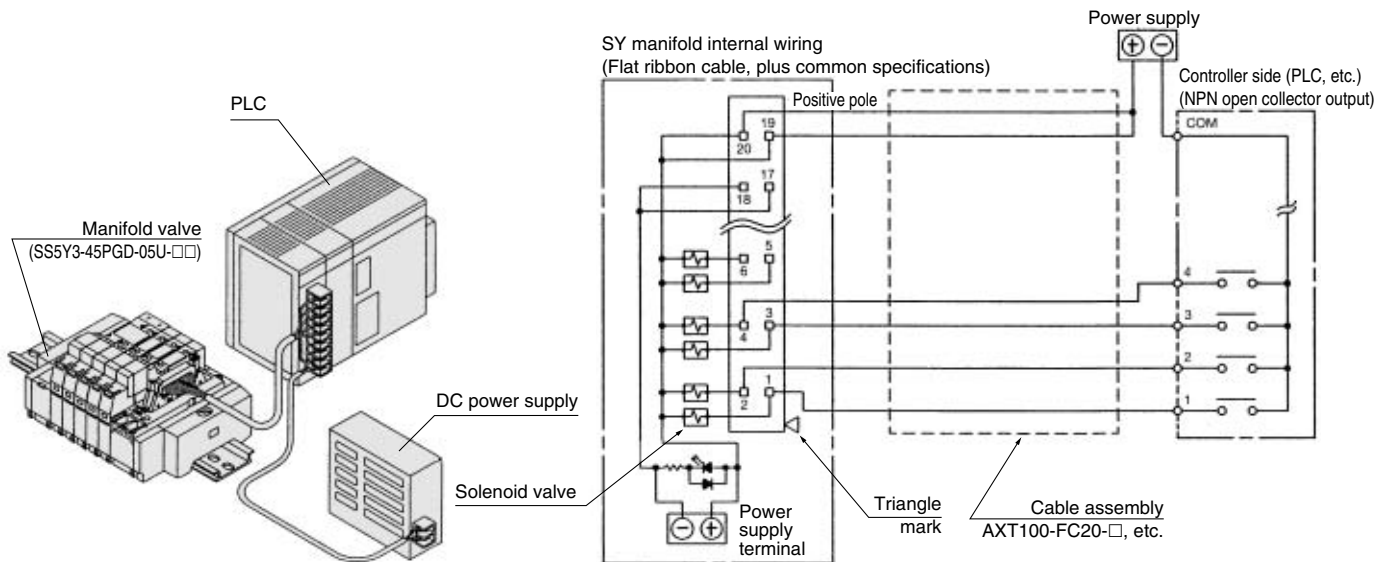
Power terminal is equipped with plug-in manifold of Series SY as standard.
 Power terminal enables the power supply to valve from either of manifold or controller side.

1. Wiring example when using manifold power supply terminals



SV
 SZ
SY
 SYJ
 SX

2. Wiring example when not using manifold power supply terminals (Power is supplied to the controller side or along the wiring, etc.)

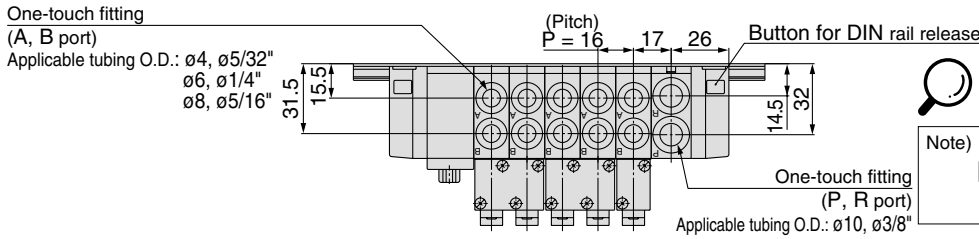


⚠ Caution

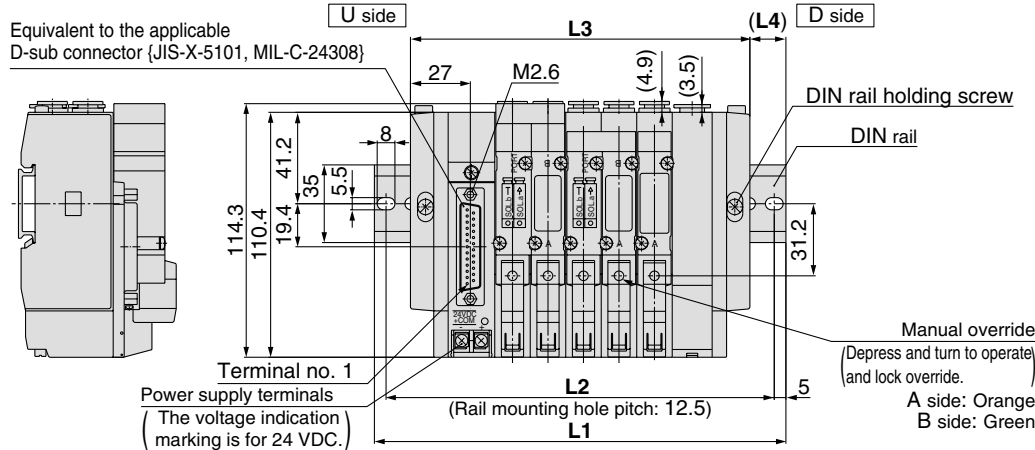
- Single wire, COM position, etc. of PLC are different from each manufacturer. When connecting with PLC, read the specifications carefully and understand the electrical circuit. Poor wiring could cause damage to PLC, power source, etc. as well as manifold and valve.

SY5000: D-sub Connector/Plug-in

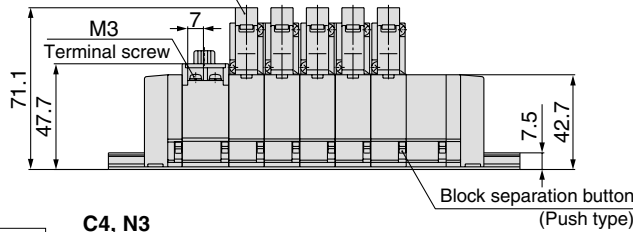
SS5Y5-45FU- Stations D-C6, N7
C4, N3
C8, N9



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.

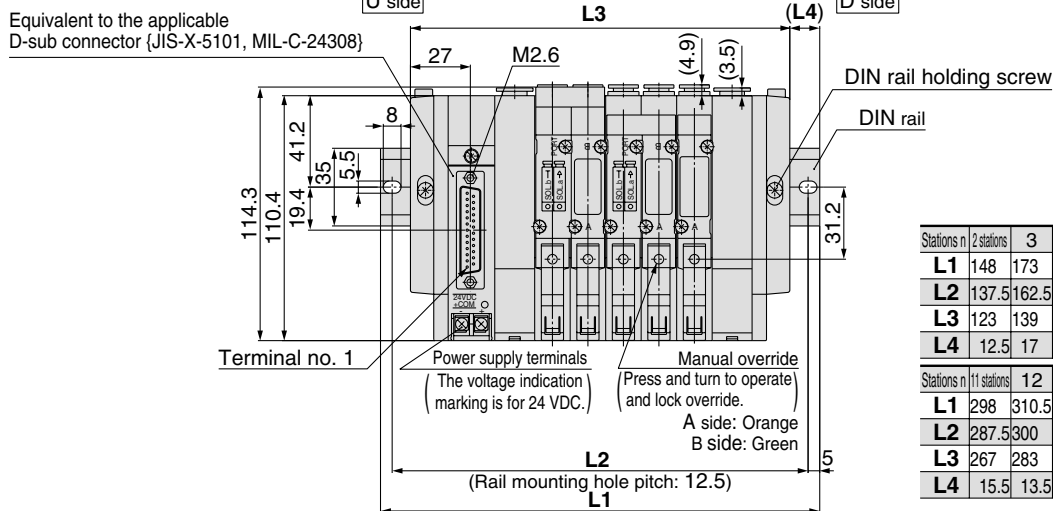
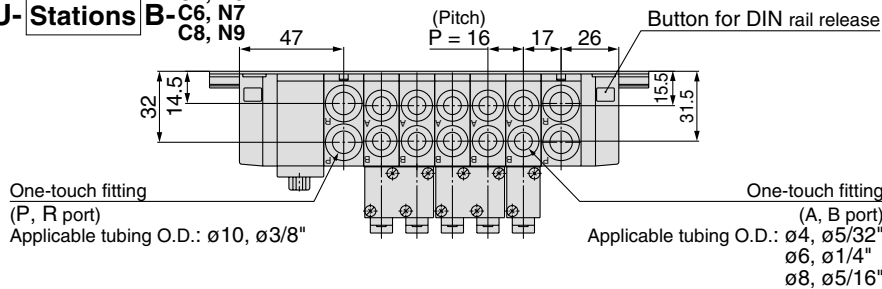


(Station n)----- (Station 1)
(Light/Surge voltage suppressor)



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

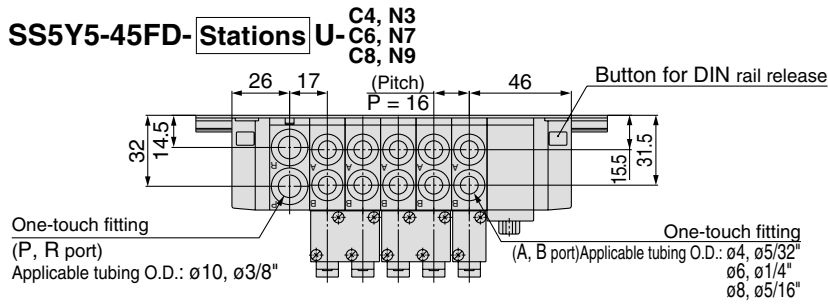
SS5Y5-45FU- Stations B-C6, N7
C4, N3
C8, N9



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

SY5000: D-sub Connector/Plug-in



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

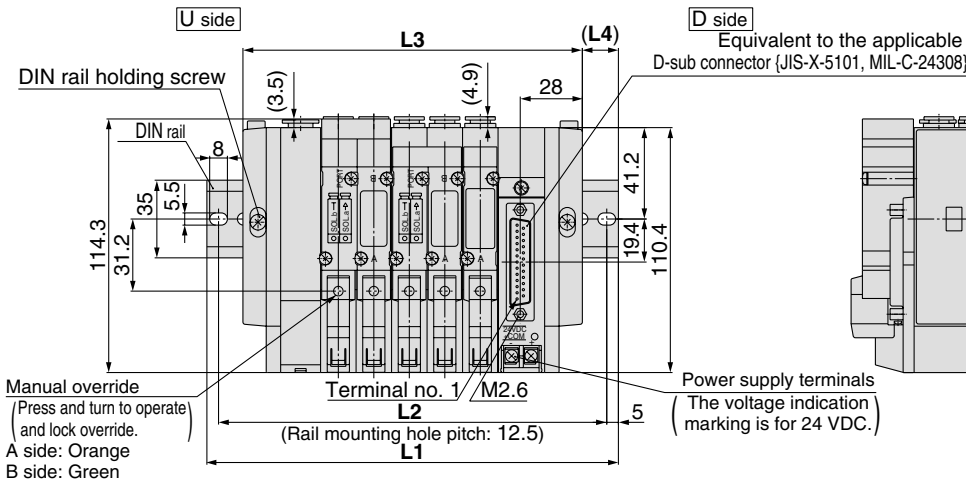
SV

SZ

SY

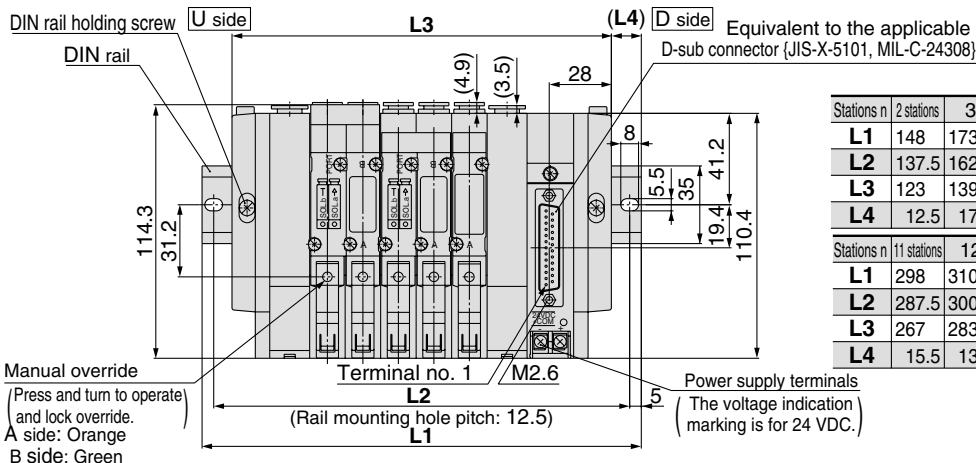
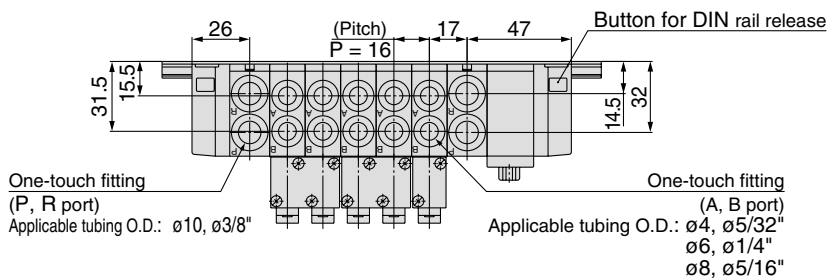
SYJ

SX



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

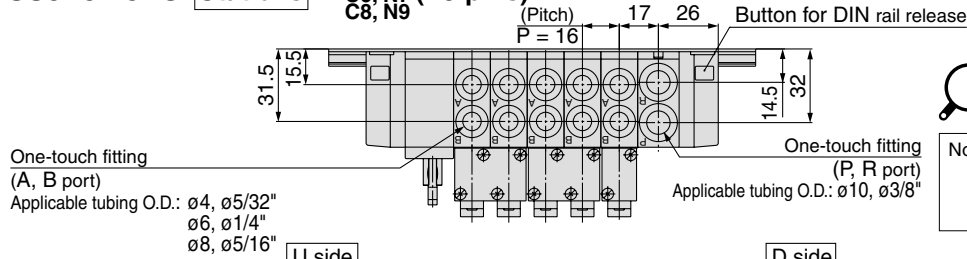


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	173	185.5	198	210.5	235.5	248	260.5	285.5
L2	137.5	162.5	175	187.5	200	225	237.5	250	275
L3	123	139	155	171	187	203	219	235	251
L4	12.5	17	15	13.5	11.5	16	14.5	12.5	17

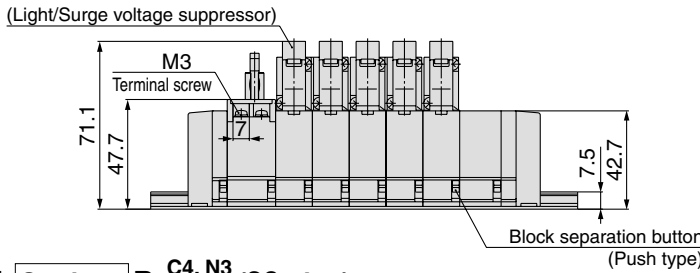
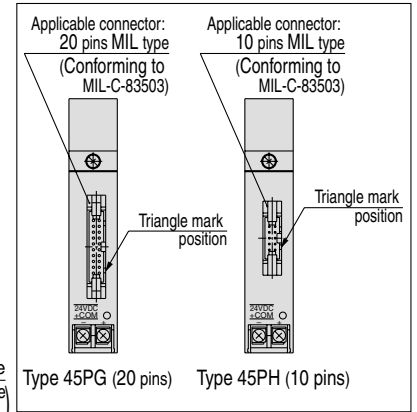
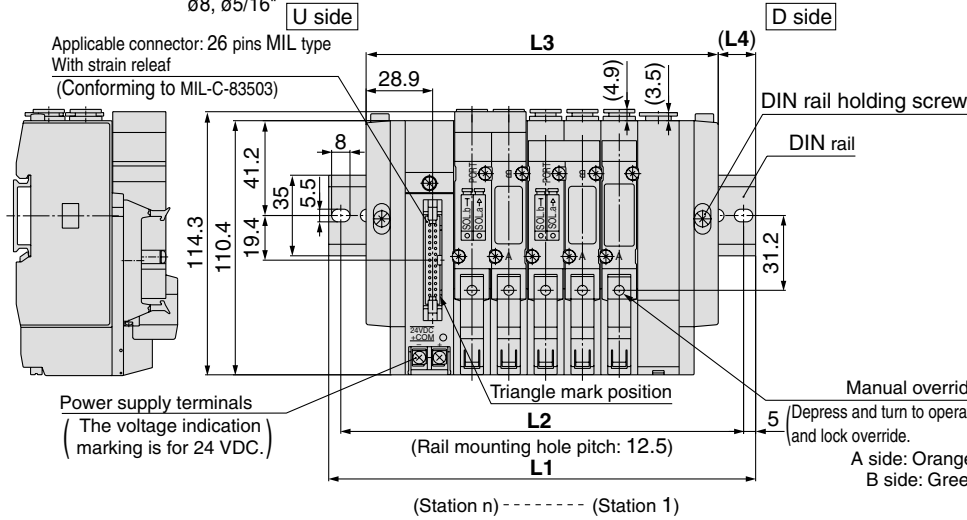
Stations n	11 stations	12	13	14	15	16	17	18	19	20 stations
L1	298	310.5	323	348	360.5	373	398	410.5	423	435.5
L2	287.5	300	312.5	337.5	350	362.5	387.5	400	412.5	425
L3	267	283	299	315	331	347	363	379	395	411
L4	15.5	13.5	12	16.5	14.5	13	17.5	15.5	14	12

SY5000: Flat Ribbon Cable/Plug-in

SS5Y5-45PU- Stations D-C4, N3, C6, N7, C8, N9 (26 pins)

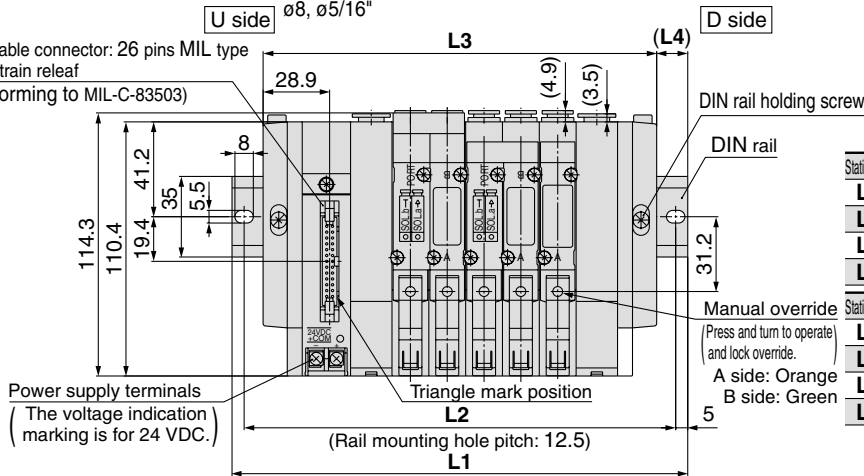
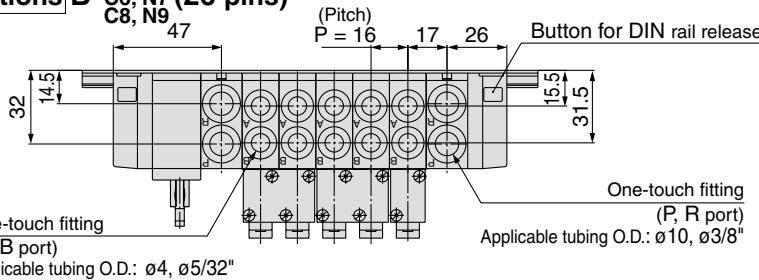


Note) The L1 to L4 dimensions of SS5Y5-45P□U- Stations U-C4, N3, C6, N7, C8, N9 are identical to those of SS5Y5-45P□U- Stations D-C4, N3, C6, N7, C8, N9.



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)

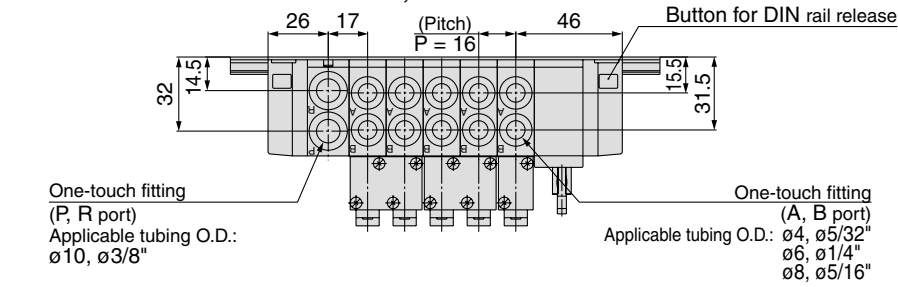


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	173	185.5	198	210.5	235.5	248	260.5	285.5
L2	137.5	162.5	175	187.5	200	225	237.5	250	275
L3	123	139	155	171	187	203	219	235	251
L4	12.5	17	15	13.5	11.5	16	14.5	12.5	17

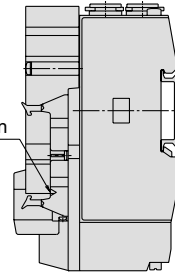
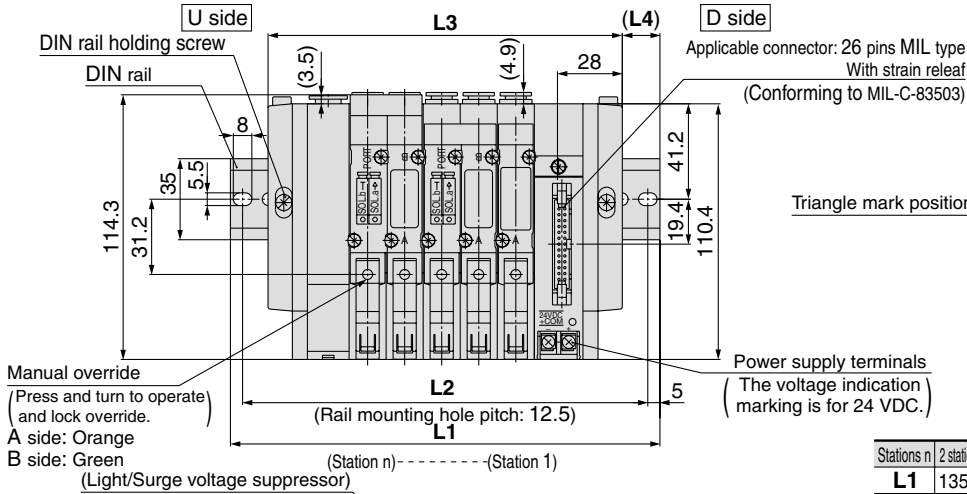
Stations n	11 stations	12	13	14	15	16	17	18	19	20 stations
L1	298	310.5	323	348	360.5	373	398	410.5	423	435.5
L2	287.5	300	312.5	337.5	350	362.5	387.5	400	412.5	425
L3	267	283	299	315	331	347	363	379	395	411
L4	15.5	13.5	12	16.5	14.5	13	17.5	15.5	14	12

SY5000: Flat Ribbon Cable/Plug-in

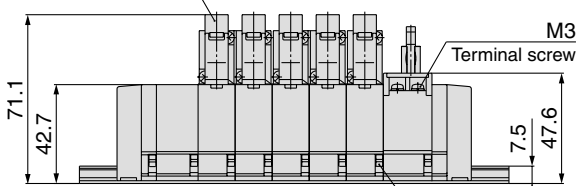
SS5Y5-45PD- Stations U-C4, N3, C6, N7, C8, N9 (26 pins)



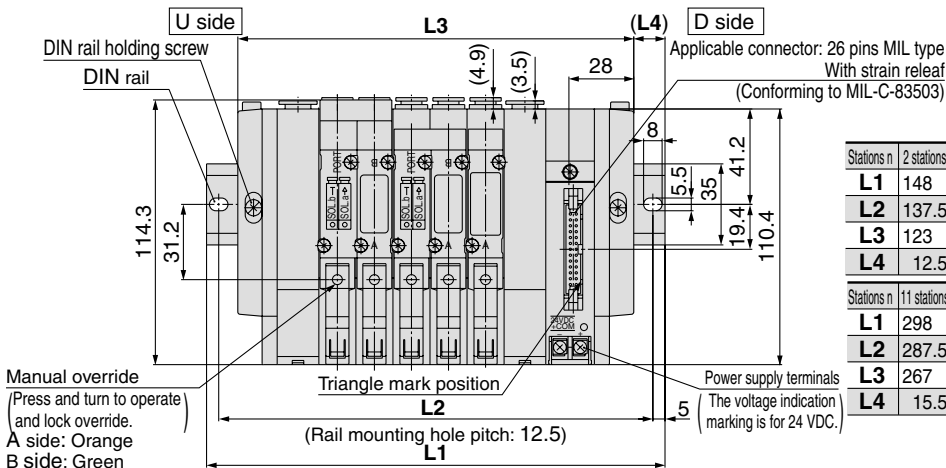
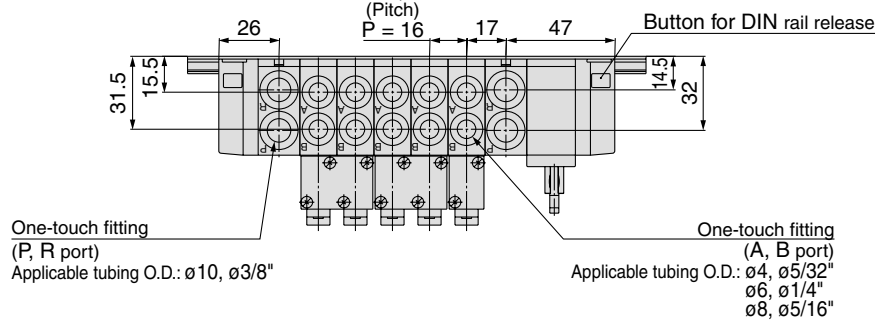
Note) The L1 to L4 dimensions of SS5Y5-45P□D- Stations D-C4, N3, C6, N7, C8, N9 are identical to those of SS5Y3-45P□D- Stations U-C4, N3, C6, N7, C8, N9.



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)



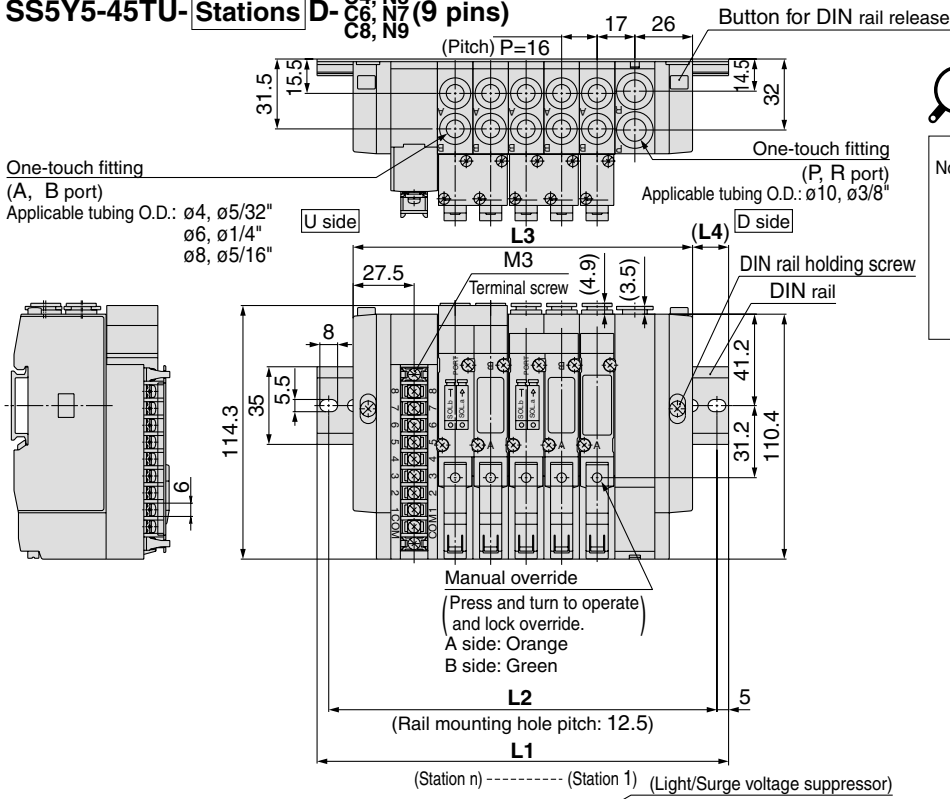
Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	173	185.5	198	210.5	235.5	248	260.5	285.5
L2	137.5	162.5	175	187.5	200	225	237.5	250	275
L3	123	139	155	171	187	203	219	235	251
L4	12.5	17	15	13.5	11.5	16	14.5	12.5	17

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

- SV
- SZ
- SY
- SYJ
- SX

SY5000: 9 Pins Terminal Block/Plug-in

SS5Y5-45TU- Stations D-C₄, N₃, C₆, N₇, C₈, N₉ (9 pins)

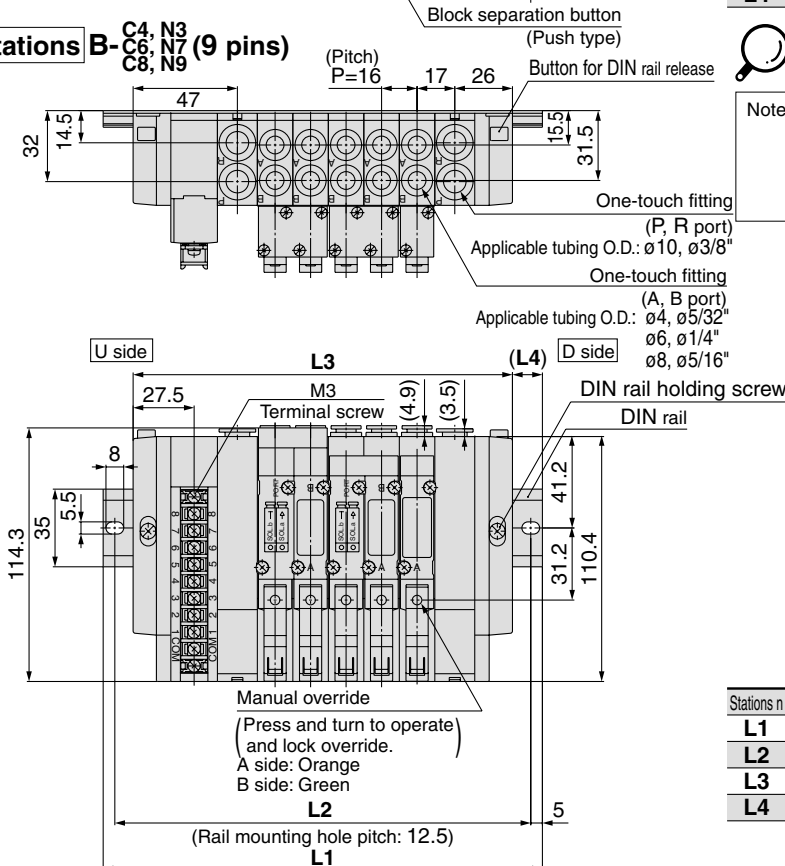


Note) The L1 to L4 dimensions of SS5Y5-45TU- Stations U-C₄, N₃, C₆, N₇, C₈, N₉, SS5Y5-45TD- Stations U-C₄, N₃, C₆, N₇, C₈, N₉ are identical those of SS5Y5-45TU- Stations D-C₄, N₃, C₆, N₇, C₈, N₉

- SV
- SZ
- SY
- SYJ
- SX

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)

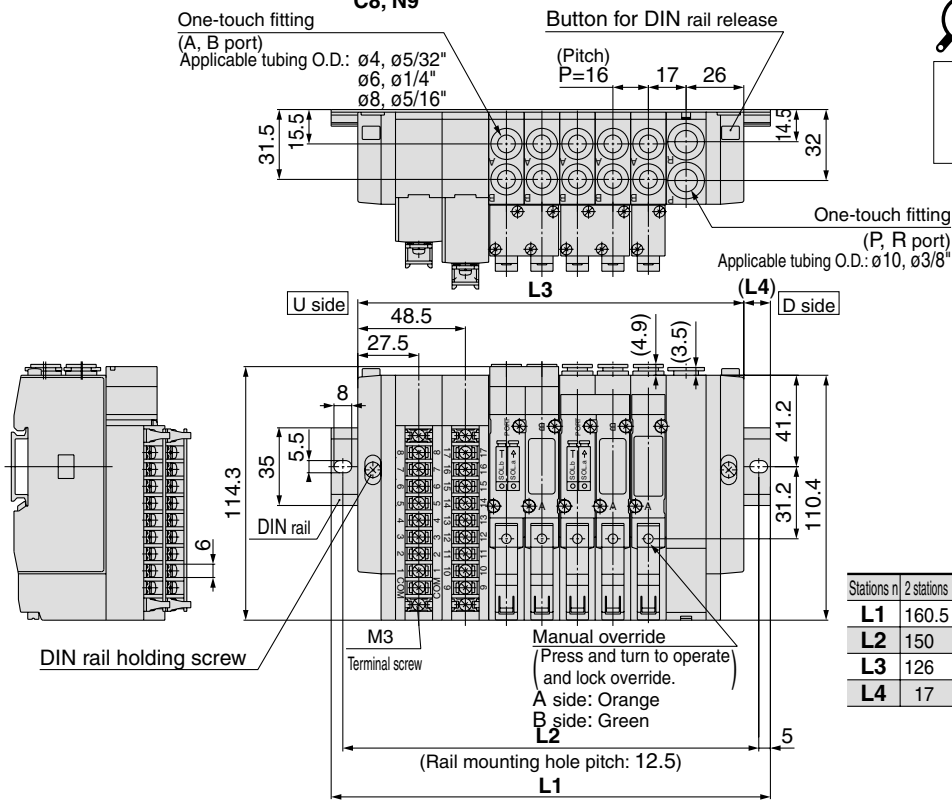


Note) The L1 to L4 dimensions of SS5Y5-45TD- Stations B-C₄, N₃, C₆, N₇, C₈, N₉ are identical to those of SS5Y5-45TU- Stations B-C₄, N₃, C₆, N₇, C₈, N₉

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

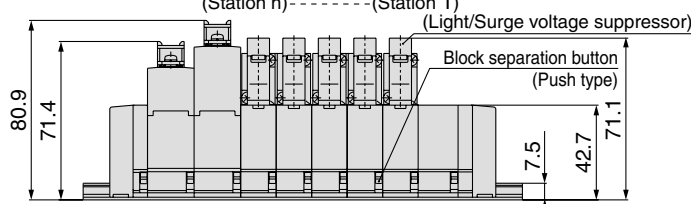
SY5000: 18 Pins Terminal Block/Plug-in

SS5Y5-45T1U- Stations D-^{C4, N3}_{C6, N7} (18 pins)
^{C8, N9}

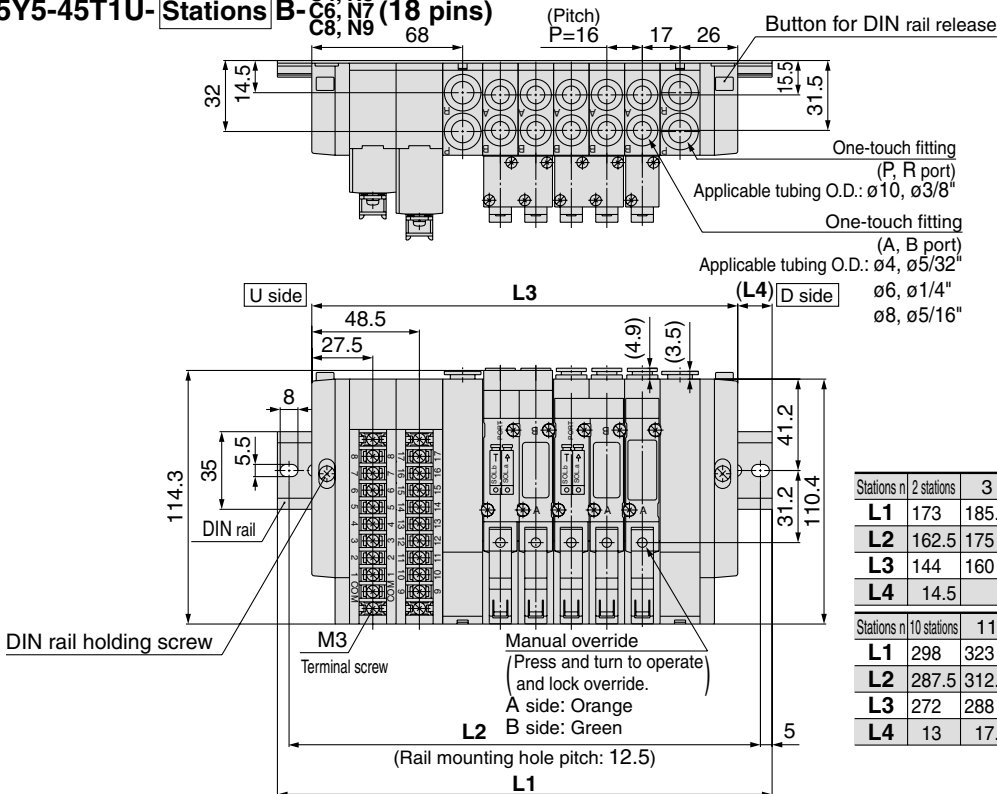


Note) The L1 to L4 dimensions of SS5Y5-45T1U-^{C4, N3}_{C6, N7} Stations U-^{C4, N3}_{C8, N9} are identical to those of SS5Y5-45T1U-^{C4, N3}_{C6, N7} Stations D-^{C4, N3}_{C8, N9}

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} (18 pins)
^{C8, N9}

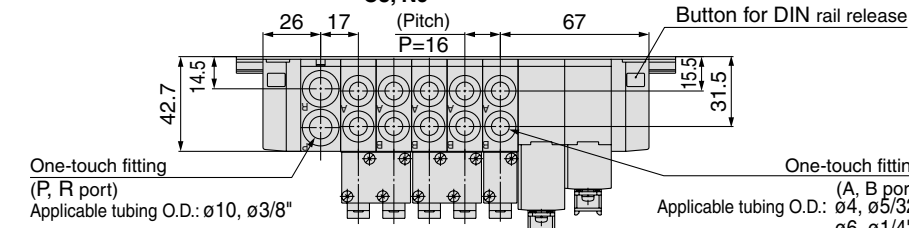


Stations n	2 stations	3	4	5	6	7	8	9 stations
L1	173	185.5	210.5	223	235.5	248	273	285.5
L2	162.5	175	200	212.5	225	237.5	262.5	275
L3	144	160	176	192	208	224	240	256
L4	14.5	17	15.5	13.5	12	16.5	14.5	

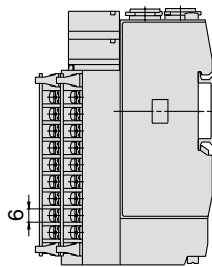
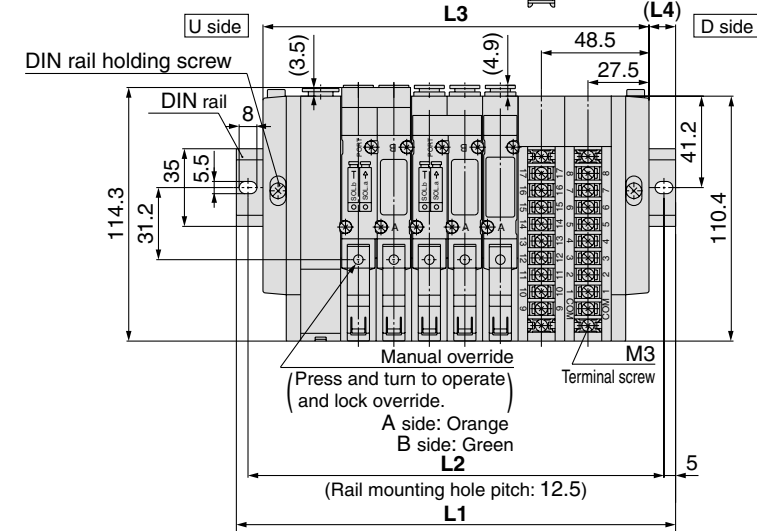
Stations n	10 stations	11	12	13	14	15	16	17 stations
L1	298	323	335.5	348	360.5	385.5	398	410.5
L2	287.5	312.5	325	337.5	350	375	387.5	400
L3	272	288	304	320	336	352	368	384
L4	13	17.5	15.5	14	12	16.5	15	13

SY5000: 18 Pins Terminal Block/Plug-in

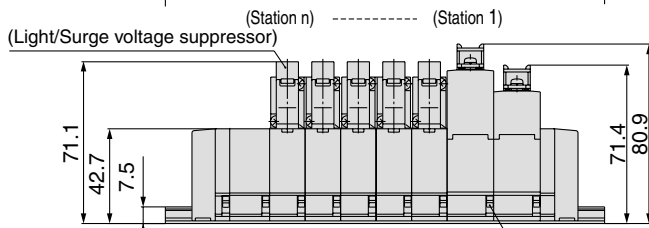
SS5Y5-45T1D- Stations U-C₄, N₃-C₆, N₇ (18 pins)
C₈, N₉



Note) The L1 to L4 dimensions of SS5Y5-45T1D- Stations D-C₄, N₃-C₆, N₇ are identical to those of SS5Y5-45T1D- Stations U-C₄, N₃-C₆, N₇.

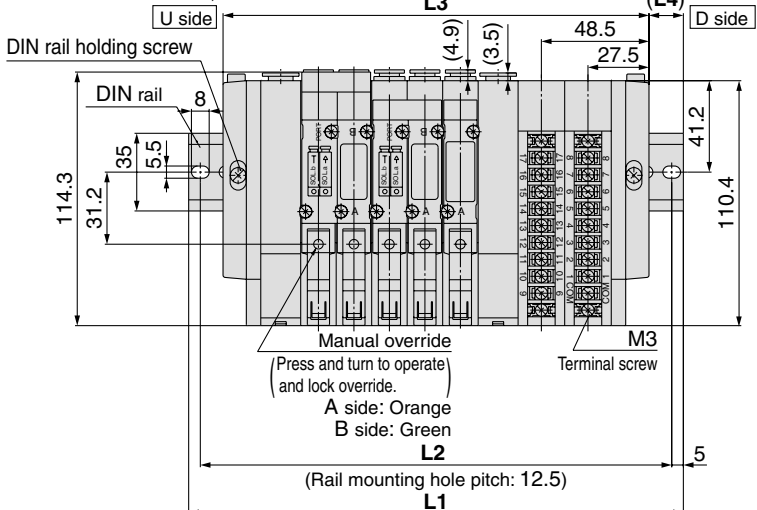
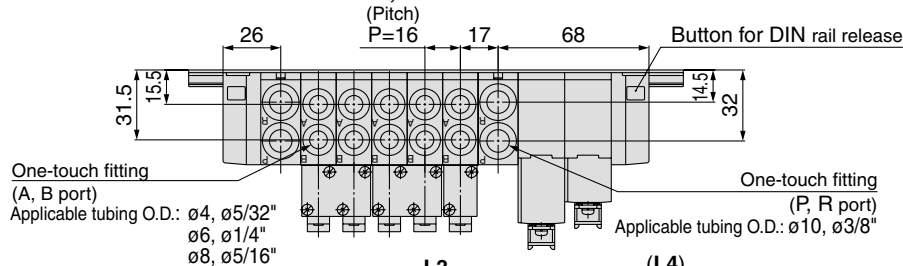


- SV
- SZ
- SY
- SYJ
- SX



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 (18 pins)
C₈, N₉

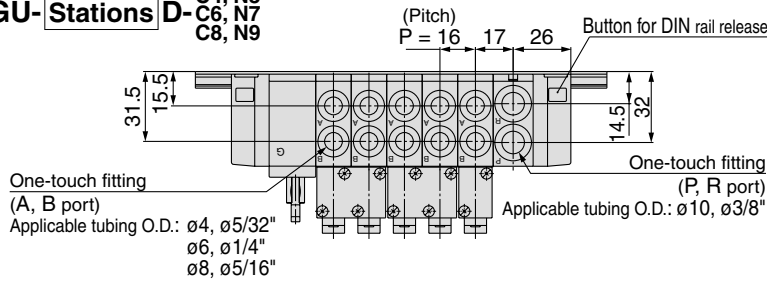


Stations n	2 stations	3	4	5	6	7	8	9 stations
L1	173	185.5	210.5	223	235.5	248	273	285.5
L2	162.5	175	200	212.5	225	237.5	262.5	275
L3	144	160	176	192	208	224	240	256
L4	14.5	12.5	17	15.5	13.5	12	16.5	14.5

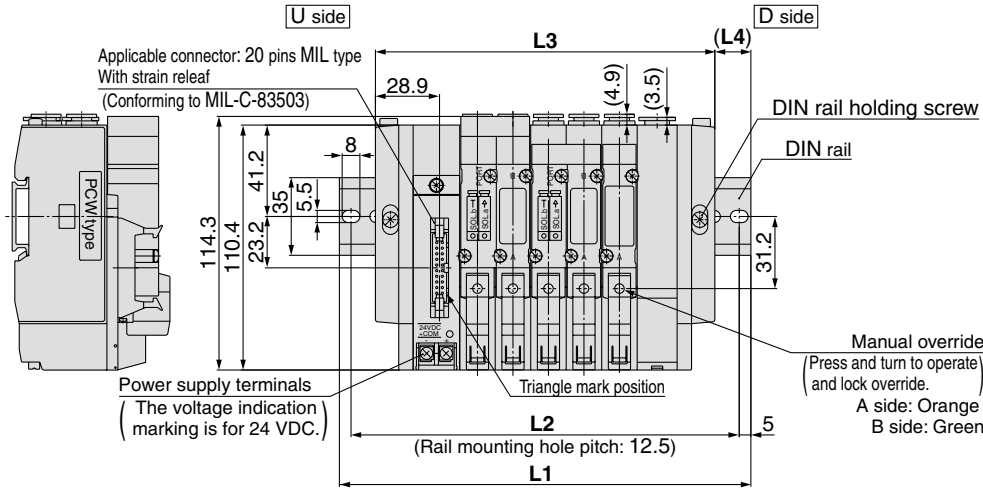
Stations n	10 stations	11	12	13	14	15	16	17 stations
L1	298	323	335.5	348	360.5	385.5	398	410.5
L2	287.5	312.5	325	337.5	350	375	387.5	400
L3	272	288	304	320	336	352	368	384
L4	13	17.5	15.5	14	12	16.5	15	13

SY5000: PC Wiring System Compatible (Flat ribbon cable/Plug-in)

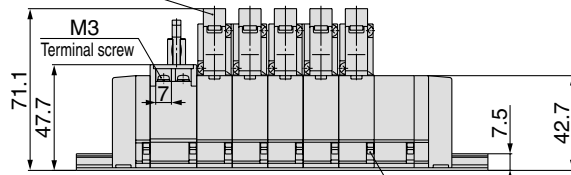
SS5Y5-45GU- Stations D- C4, N3 C6, N7 C8, N9



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.

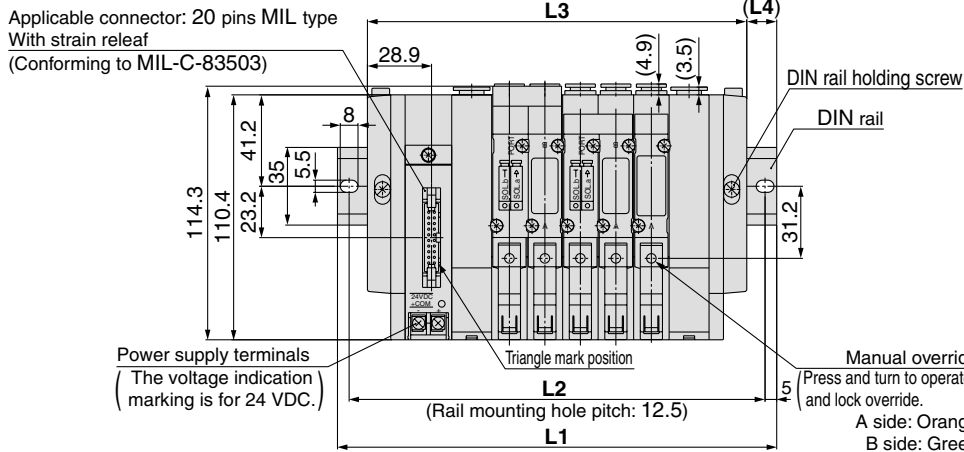
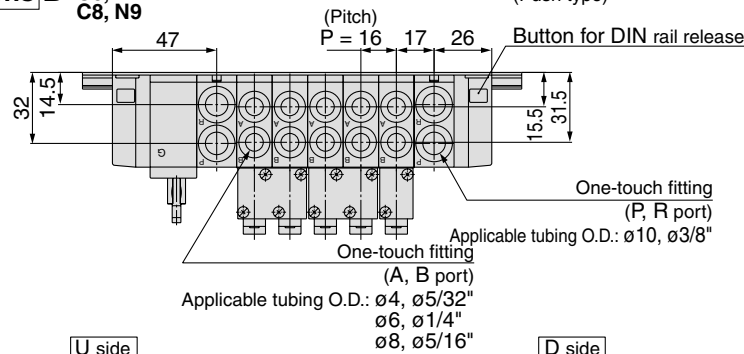


(Light/Surge voltage suppressor) (Station n)----- (Station 1)



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

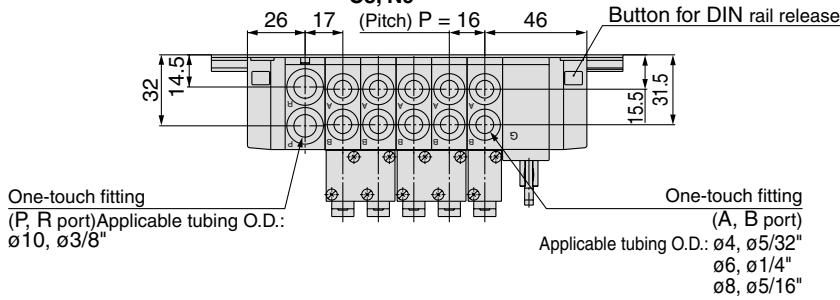


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	173	185.5	198	210.5	235.5	248	260.5	285.5
L2	137.5	162.5	175	187.5	200	225	237.5	250	275
L3	123	139	155	171	187	203	219	235	251
L4	12.5	17	15	13.5	11.5	16	14.5	12.5	17

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)

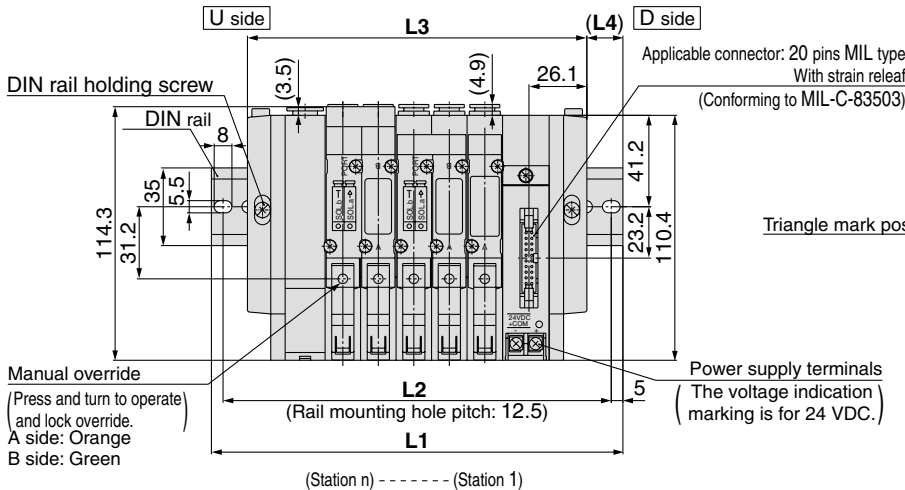
SS5Y5-45GD- Stations U-^{C4, N3} C6, N7 C8, N9



One-touch fitting
(P, R port) Applicable tubing O.D.:
ø10, ø3/8"

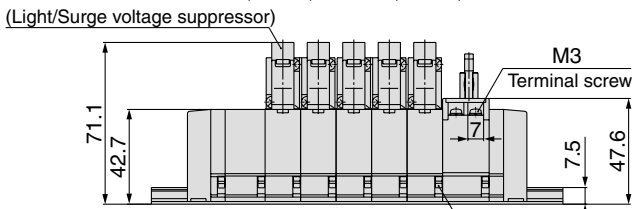
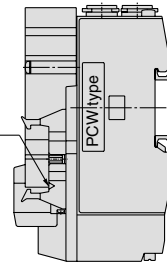
One-touch fitting
(A, B port)
Applicable tubing O.D.: ø4, ø5/32"
ø6, ø1/4"
ø8, ø5/16"

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



Manual override
(Press and turn to operate)
and lock override.
A side: Orange
B side: Green

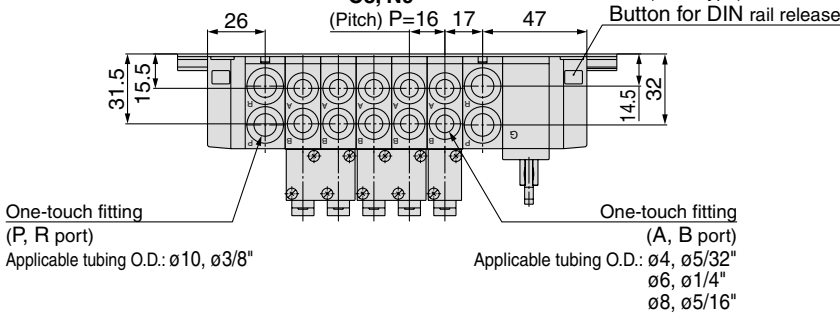
Power supply terminals
(The voltage indication
marking is for 24 VDC.)



(Light/Surge voltage suppressor)

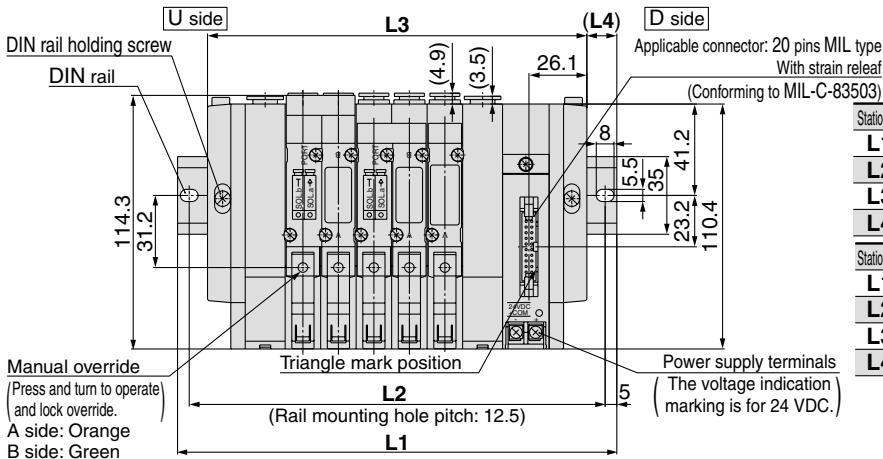
Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	135.5	148	160.5	185.5	198	210.5	235.5	248	260.5
L2	125	137.5	150	175	187.5	200	225	237.5	250
L3	105	121	137	153	169	185	201	217	233
L4	15	13.5	11.5	16	14.5	12.5	17	15.5	13.5

SS5Y5-45GD- Stations B-^{C4, N3} C6, N7 C8, N9



One-touch fitting
(P, R port)
Applicable tubing O.D.: ø10, ø3/8"

One-touch fitting
(A, B port)
Applicable tubing O.D.: ø4, ø5/32"
ø6, ø1/4"
ø8, ø5/16"



Manual override
(Press and turn to operate)
and lock override.
A side: Orange
B side: Green

Power supply terminals
(The voltage indication
marking is for 24 VDC.)

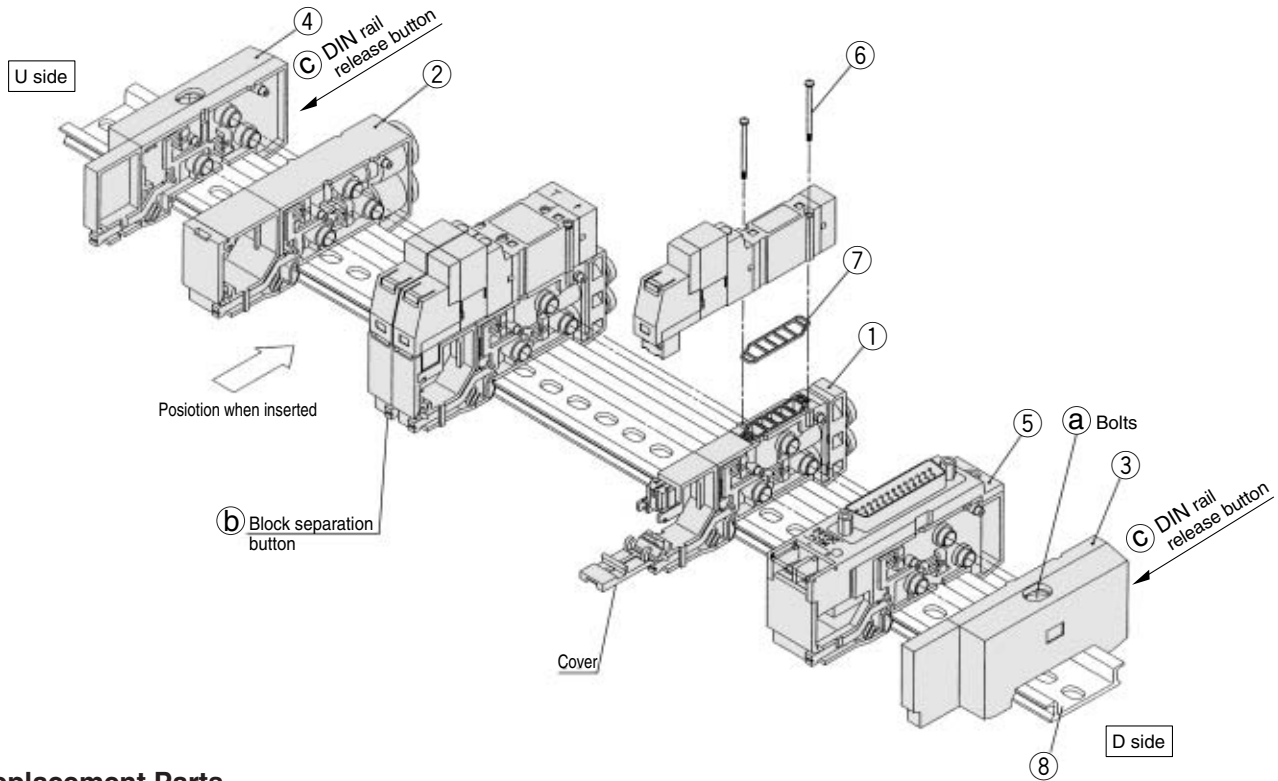
Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	148	173	185.5	198	210.5	235.5	248	260.5	285.5
L2	137.5	162.5	175	187.5	200	225	237.5	250	275
L3	123	139	155	171	187	203	219	235	251
L4	12.5	17	15	13.5	11.5	16	14.5	12.5	17

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

- SV
- SZ
- SY
- SYJ
- SX

DIN Rail Manifold Exploded View

Type 45F (D-sub Connector) Manifold



Replacement Parts

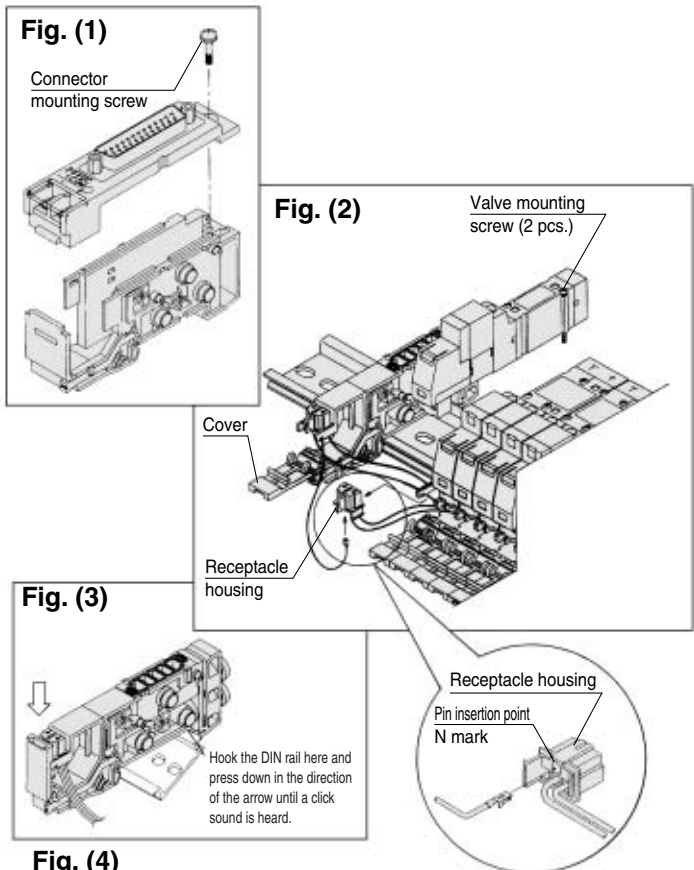
No.	Description	Part no.		Note
		SY3000	SY5000	
①	Manifold block assembly	Manifold block assembly part number differs according to an attached lead wire assembly based on the connector spec. Select an appropriate part number from the table of manifold block assembly part number shown below. (Gasket 7 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 $\phi 8$ SY5000: P, R port with One-touch fitting for $\phi 10$ Inch size With One-touch fitting for $\phi 5/16$ " With One-touch fitting for $\phi 3/8$ "
③	End block assembly	SX3000-52-2A	SX5000-52-2A	For D side
④	End block assembly	SX3000-53-2A	SX5000-53-2A	For U side
⑤-1	Connector block assembly (for D-sub connector)	SX3000-64-1A-1NA	SX5000-64-1A-1NA	-1A: +COM -1NA: -COM
⑤-2	Connector block assembly (for 26 pins flat cable)	SX3000-64-2A-2NA-26	SX5000-64-2A-2NA-26	Note) For 24 VDC
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-I		Refer to page 1-4-123.

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 ³ 000-50-3A-□□	□□: AB port SY3000 (metric size) (inch size) C4: With One-touch fitting for $\phi 4$ C6: With One-touch fitting for $\phi 6$ N3: With One-touch fitting for $\phi 5/32$ " N7: With One-touch fitting for $\phi 1/4$ "
For 45(N) _{PC} (Flat ribbon cable)	SX ³ 000-50-5A-□□	A, B port SY5000 (metric size) (inch size) C4: With One-touch fitting for $\phi 4$ C6: With One-touch fitting for $\phi 6$ C8: With One-touch fitting for $\phi 8$ N3: With One-touch fitting for $\phi 5/32$ " N7: With One-touch fitting for $\phi 1/4$ " N9: With One-touch fitting for $\phi 5/16$ "
For 45G PC Wiring System compatible		
For 45 ^T ₁ (Terminal block)	SX ³ 000-50-7A-□□	

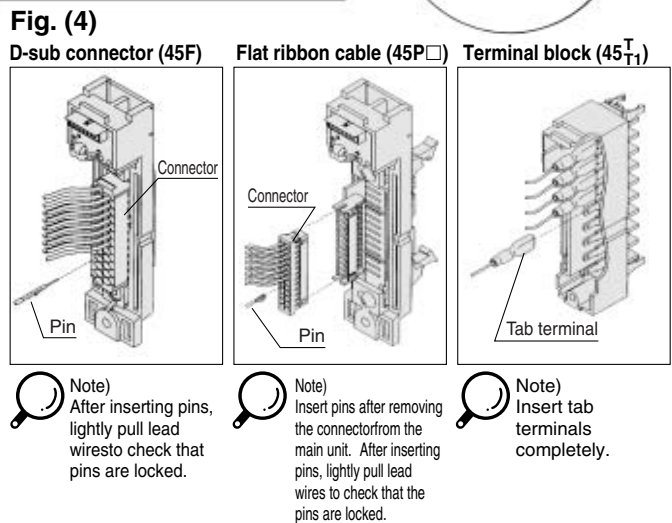
How to Increase Manifold Base

- 1** Loosen bolt (a) fixing the manifold base until it begins to turn idly. (While pressing DIN rail releasing buttons (c), 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 (b) of the manifold block assembly on the U side until button (b) 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 screws (a). Δ (Tightening torque: 1.4 N·m)



SV
 SZ
 SY
 SYJ
 SX

- ⚠ 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 bolt (a) 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.



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.

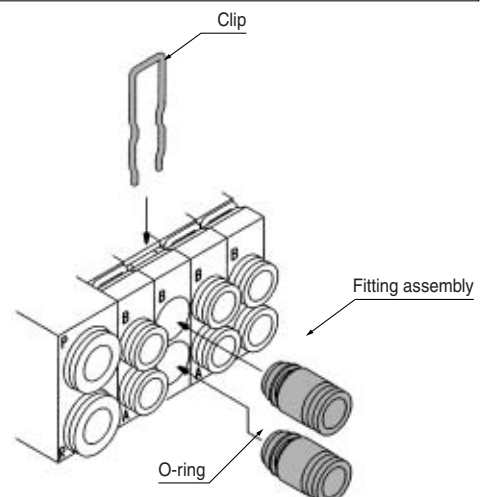
Metric size

SY3000	One-touch fitting for $\phi 4$	VVQ1000-50A-C4
	One-touch fitting for $\phi 6$	VVQ1000-50A-C6
	One-touch fitting for $\phi 4$	VVQ1000-51A-C4
SY5000	One-touch fitting for $\phi 6$	VVQ1000-51A-C6
	One-touch fitting for $\phi 8$	VVQ1000-51A-C8

Inch size

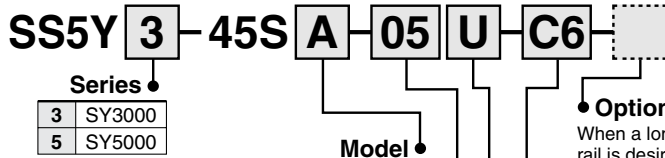
SY3000	One-touch fitting for $\phi 9/32$ "	VVQ1000-50A-N3
	One-touch fitting for $\phi 1/4$ "	VVQ1000-50A-N7
	One-touch fitting for $\phi 5/32$ "	VVQ1000-51A-N3
SY5000	One-touch fitting for $\phi 1/4$ "	VVQ1000-51A-N7
	One-touch fitting for $\phi 5/16$ "	VVQ1000-51A-N9

- 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.



Series SY3000/5000 Base Mounted Monifold Stacking Type/DIN Rail Mounted Serial Transmission (Integrated)

How to Order Manifold



Symbol	Specifications
0	Without SI unit
A	With general type SI unit (Series EX300)
B	Mitsubishi Electric Corp.: MELSECNET/ MINI-S3 Data Link System
C	OMRON Corp.: SYSBUS Wire System
D	SHARP Corp.: Satellite I/O Link System
E	Matsushita Electric Works: MEWNET-F System
F1	NKE Corp.: Uni-wire System (16 output points)
G	Rockwell Automation: Allen Bradley Remote I/O (RIO) System
H	NKE Corp.: Uni-wire H System
J1	SUNX Corp.: S-LINK System (16 output points)
J2	SUNX Corp.: S-LINK System (8 output points)
K	Fuji Electric Co.: T-LINK Mini System
Q	DeviceNet, CompoBus/D (OMRON Corp.)
R1	OMRON Corp.: CompoBus/S System (16 output points)
R2	OMRON Corp.: CompoBus/S System (8 output points)
U	JEMANET (JPCN-1)
V	Mitsubishi Electric Corp.: CC-LINK System

* For the general purpose type, a transmission unit is require on the CPU side.
* 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	

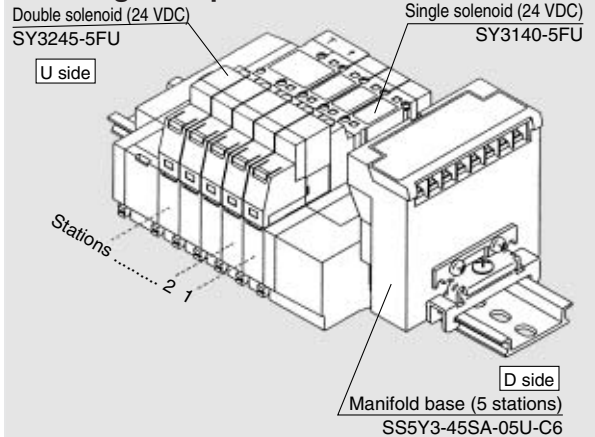
* For special specifications, indicate separately on the manifold specification sheet.

SI Unit Part No.

Symbol	Specifications	For SS5Y□-45S	Symbol	Specifications:	For SS5Y□-45S
A	With general type SI unit (Series EX300)	EX322-S001	J1	SUNX Corp.: S-LINK System (16 output points)	EX122-SSL1
B	Mitsubishi Electric Corp.: MELSECNET/ MINI-S3 Data Link System	EX122-SMB1	J2	SUNX Corp.: S-LINK System (8 output points)	EX122-SSL2
C	OMRON Corp.: SYSBUS Wire System	EX122-STA1	K	Fuji Electric Co.: T-LINK Mini System	EX122-SFU1
D	SHARP Corp.: Satellite I/O Link System	EX122-SSH1	Q	Device Net: CompoBus/D (OMRON Corp.)	EX122-SDN1
E	Matsushita Electric Works: MEWNET-F System	EX122-SPA1	R1	OMRON Corp.: CompoBus/S (16 output points)	EX122-SCS1
F1	NKE Corp.: Uni-wire System (16 output points)	EX122-SUW1	R2	OMRON Corp.: CompoBus/S (8 output points)	EX122-SCS2
G	Rockwell Automation: Allen Bradley Remote I/O (RIO) System	EX122-SAB1	U	JEMANET (JPCN-1)	EX122-SJN1
H	NKE Corp.: Uni-wire H System	EX122-SUH1	V	Mitsubishi Electric Corp.: CC-LINK System	EX122-SMJ1

How to Order Valve Manifold Assembly

Ordering example

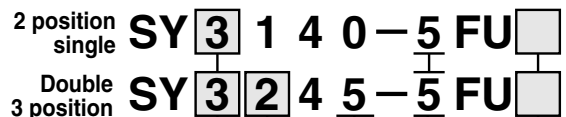


SS5Y3-45SA-05U-C6 1 set (Type 45S with serial unit 5 stations manifold base part no.)
* SY3140-5FU 3 sets (Single solenoid part no.)
* SY3245-5FU 1 set (Double solenoid part no.)

* 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.
* When ordering double solenoid valves/3 position (Dual body type), please keep in mind that they require two manifold stations.
* Serial unit is available only for the D-side mounting type.

How to Order Valves



Series	Symbol	Specifications
3	SY3000	
5	SY5000	

Type of actuation	Symbol	Specifications
2 position double	2	
3 position closed center	3	
3 position exhaust center	4	
3 position pressure center	5	

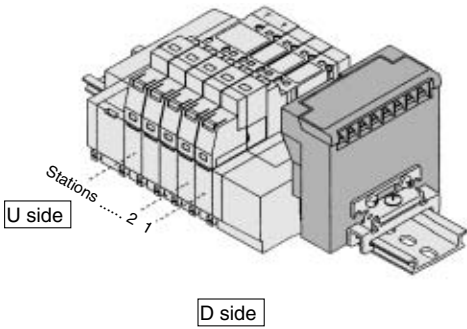
Rated voltage
5 24 VDC

Dual body type (Double, 3 position)

Manual override

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

- The serial transmission system reduces wiring work, while minimizing wiring and saving space.
- 16 stations max. (Specify a model with more than 8 stations by using a manifold specification sheet.)



- The total number of stations is tabulated starting from station one on the D side.
- Maximum station: Up to 16 solenoids (16 single solenoids).

Item	Specifications
External power supply	24 VDC +10%/−5%
Current consumption (Internal unit)	0.1A SA, SB, SD, SE, SF1, SG, SJ1, SJ2, SK, SR1, SR2, SH, SU, SV
	0.3A SC, SQ

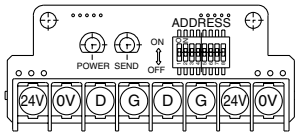
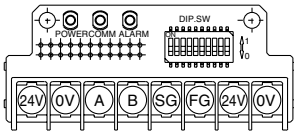
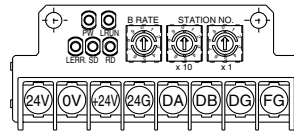
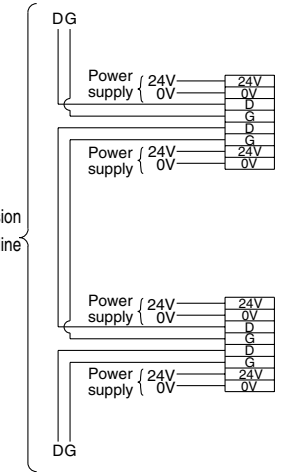
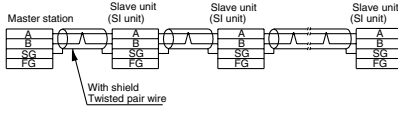
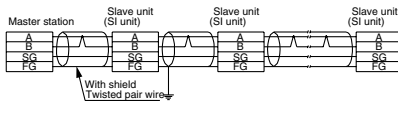
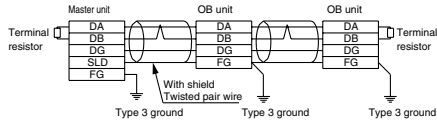
	Type SA Applicable to Series EX300	Type SB Mitsubishi Electric Corporation MELSECNET/mini-S3 Data Link System																		
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Note	<ul style="list-style-type: none"> • Connection to T unit PLC manufacturer's I/O card enables serial transmission. EX300-TMB1 For models of Mitsubishi Electric Corporation EX300-TTA1 For models of OMRON Corporation EX300-TFU1 For models of Fuji Electric Co., Ltd. EX300-T001 For general models * Up to 32 points per unit. • No. of output points: 16 points 	<ul style="list-style-type: none"> • MELSECNET/mini-S3 Data Link System Master unit: AJ71PT32-S3, AJ71T32-S3, A1SJ71PT32-S3 * No. of output points: 16 points No. of sta. occupied: 2 stations 																		
Cable wiring	<p>* Ground either the reception side or the transmission side of the shielding wire shield.</p>	<p>* Ground either the reception side or the transmission side of the shielding wire shield.</p>																		

- SV
- SZ
- SY
- SYJ
- SX

	Type SC OMRON Corporation SYSBUS Wiring System	Type SD SHARP Corporation Satellite I/O Link System	Type SE Matsushita Electric Works, Ltd. MEWNET-F System																								
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Note	<ul style="list-style-type: none"> • SYSBUS Wire System Master unit: Type C500-RM201, Type C200H-RM201 • No. of output points: 16 points 	<ul style="list-style-type: none"> • Satellite I/O Link System Master unit: ZW-31LM, JW-31LM, JW-23LM • No. of output points: 16 points 	<ul style="list-style-type: none"> • MEWNET-F System Master unit: AFP3740, AFP5740 • No. of output points: 16 points 																								
Cable wiring		<p>a) 2-wire type Wiring does not include signal ground line (SG).</p> <p>a) 3-wire type Wiring does not include signal ground line (SG).</p>																									

	Type SF1 NKE Corporation Uni-wire System	Type SG Rockwell Automation, Inc. Allen Bradley Remote I/O (RIO) System	Type SJ1, SJ2 SUNX Corporation S-LINK System																				
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Note	<ul style="list-style-type: none"> Uni-wire System Send unit: SD-120 No. of output points: 16 points 	<ul style="list-style-type: none"> Remote I/O (RIO) System No. of output points: 16 points 	<ul style="list-style-type: none"> S-LINK System S-LINK Controller: SL-CU1 No. of output points: 16 points (Type SJ1) No. of output points: 8 points (Type SJ2) 																				
Cable wiring			<p>a) Type T branching multi-drop wiring (S-LINK System) b) Crossover wiring (Sensor Link System)</p> <p>The above is the example of using dedicated S-LINK flat ribbon cable SL-RCMI00.</p>																				

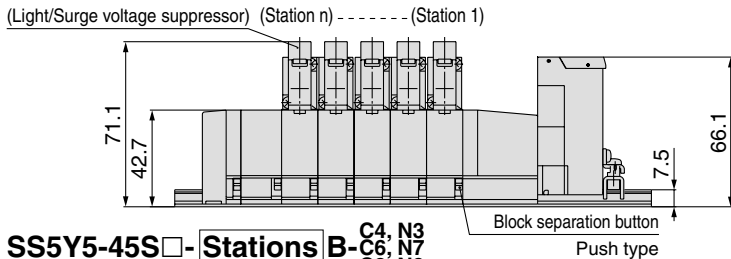
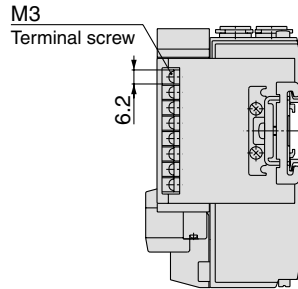
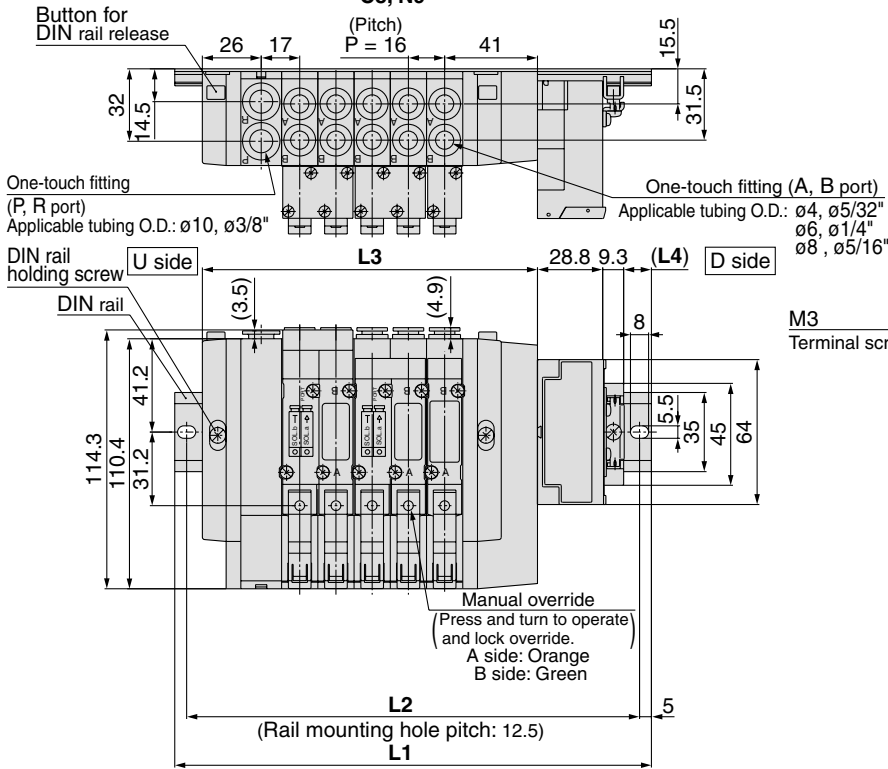
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Note	<ul style="list-style-type: none"> T Link Mini System Master unit: FTM100B Converter: FRC100A-G02 Repeater: FRC200A-C10 No. of output points: 16 points 	<ul style="list-style-type: none"> DeviceNet OMRON Corporation: CompoBus/D System Master station unit: C200HW-DSM21 No. of output points: 16 points 	<ul style="list-style-type: none"> CompoBus/S System Master unit: C200HW-SRM21 Master unit: COM1-SRM21 No. of output points: 16 points (Type SR1) No. of output points: 8 points (Type SR2) 																				
Cable wiring	<p>Connect the shielding wire to the SD terminal. If the shielding wire is not connected to the SD terminal, normal transmission will be impossible even for short distances. Furthermore, do not ground the shielding wire (SD).</p>																						

	Type SH NKE Corporation Uni-wire H System	Type SU JEMANET (JPCN-1)	Type SV Mitsubishi Electric Corporation CC-LINK System																										
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Note	<ul style="list-style-type: none"> • Uni-wire H System Send unit: SD-H2 • No. of output points: 16 points 	<ul style="list-style-type: none"> • JEMA Net (JPCN-1) (Reference) AJ71J92-S3 (Mitsubishi Electric Corporation) A1SJ71J92-S3 (Mitsubishi Electric Corporation) C200HW-JRM21 (OMRON Corporation) NJ-JPCN-1 (Fuji Electric Co., Ltd.) NP1L-JP1 (Fuji Electric Co., Ltd.) • No. of output points: 16 points 	<ul style="list-style-type: none"> • CC-Link System Master unit: AJ61BT11 Master unit: A1SJ61BT11 Master unit: AJ61QBT11 Master unit: A1SJ61QBT11 • No. of output points: 16 points 																										
Cable wiring		<p>a) 2-wire type</p>  <p>a) 3-wire type</p> 																											

- SV
- SZ
- SY
- SYJ
- SX

Series SY5000: Serial Transmission Unit/Plug-in

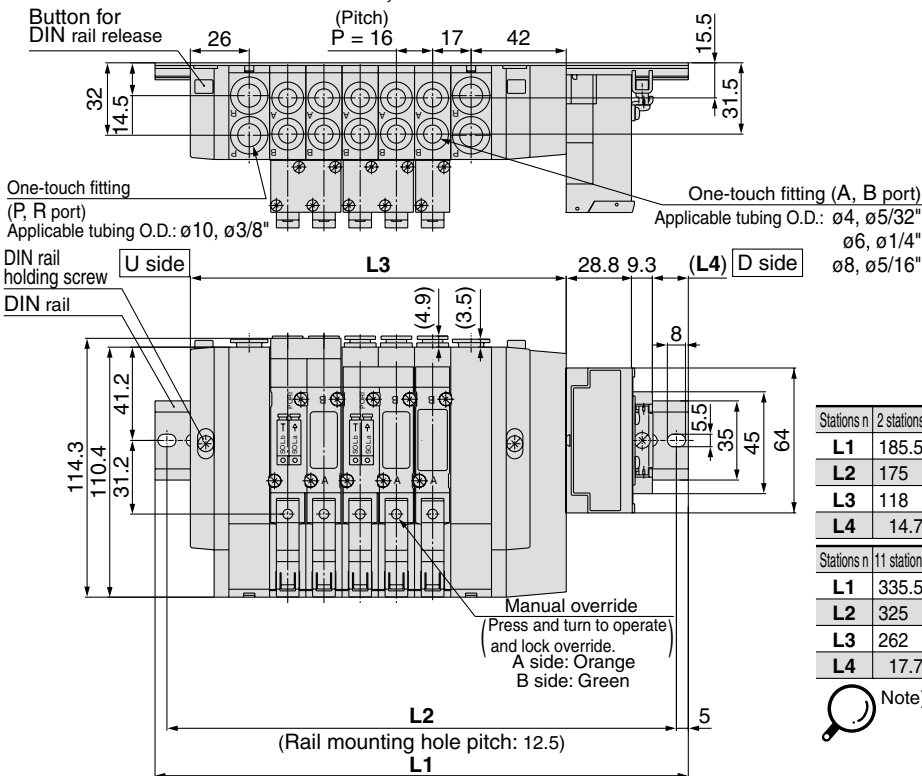
SS5Y5-45S□ - Stations U-C4, N3 C6, N7 C8, N9



Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	173	185.5	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	17.45	15.7	13.95	12.2	16.7	14.95	13.2	17.7	15.95

Note) Width of SI unit applicable to "E": Matsushita Electric Works, Ltd. and "G": Rockwell Automation, Inc. widens to 24.3 mm. For further information, please consult with SMC.

SS5Y5-45S□ - Stations B-C4, N3 C6, N7 C8, N9



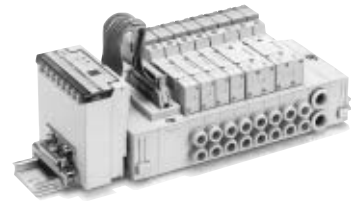
Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	185.5	198	223	235.5	248	260.5	285.5	298	310.5
L2	175	187.5	212.5	225	237.5	250	275	287.5	300
L3	118	134	150	166	182	198	214	230	246
L4	14.7	12.95	17.45	15.7	13.95	12	16.5	14.95	13.2

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	17.7	15.95	14.2	12.45	16.95	15.2

Note) Width of SI unit applicable to "E": Matsushita Electric Works, Ltd. and "G": Rockwell Automation, Inc. widens to 24.3 mm. For further information, please consult with SMC.

- SV
- SZ
- SY
- SYJ
- SX

Series SY3000/5000 Base Mounted Monifold Stacking Type/DIN Rail Mounted Serial Transmission (Separated)



Type 45S1

How to Order Manifold

SS5Y **3** - 45S1 **A D** - **05 U** - **C4** - []

Series

3	SY3000
5	SY5000

Model

Symbol	Specifications
0	Without SI unit
A	With general type SI unit (Series EX300)
B	Mitsubishi Electric Corp.: MELSECNET/ MINI-S3 Data Link System
C	OMRON Corp.: SYSBUS Wire System
D	SHARP Corp: Satellite I/O Link System
E	Matsushita Electric Works: MEWNET-F System
F1	NKE Corp.: Uni-wire System (16 outout points)
G	Rockwell Automation: Allen Bradley Remote I/O (RIO) System
H	NKE Corp.: Uni-wire H System
J1	SUNX Corp.: S-LINK System (16 output points)
J2	SUNX Corp.: S-LINK System (8 output points)
K	Fuji Electric Co.: T-LINK Mini System
Q	DeviceNet, CompoBus/D (OMRON Corp.)
R1	OMRON Corp.: CompoBus/S System (16 output points)
R2	OMRON Corp.: CompoBus/S System (8 output points)
U	JEMANET (JPCN-1)
V	Mitsubishi Electric Corp.: CC-LINK System

- For the general purpose type, a transmission unit is require on the CPU side.
- 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.
- For SI unit specifications, Refer to pages 1-4-171 to 1-4-173.

SI unit mounting position

Symbol	Mounting position
U	U side
D	D side

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 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.

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 on 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).

SI Unit Part No.

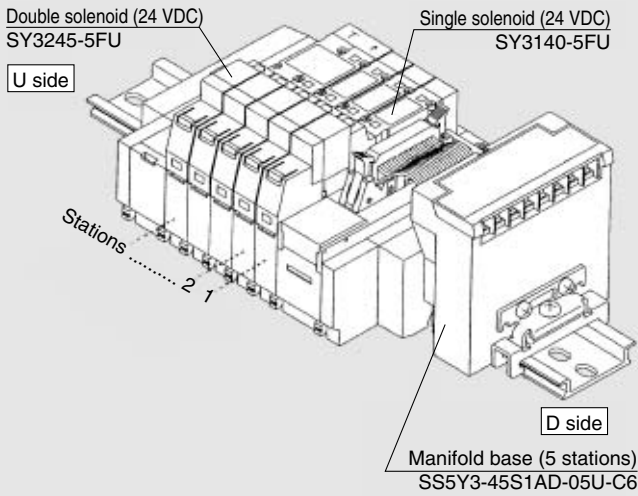
Symbol	Specifications	For SS5Y□-45S1	Symbol	Specifications:	For SS5Y□-45S1
A	With general type SI unit (Series EX300)	EX321-S001	J1	SUNX Corp.: S-LINK System (16 output points)	EX121-SSL1
B	Mitsubishi Electric Corp.: MELSECNET/ MINI-S3 Data Link System	EX121-SMB1	J2	SUNX Corp.: S-LINK System (8 output points)	EX121-SSL2
C	OMRON Corp.: SYSBUS Wire System	EX121-STA1	K	Fuji Electric Co.: T-LINK Mini System	EX121-SFU1
D	SHARP Corp.: Satellite I/O Link System	EX121-SSH1	Q	Device Net: CompoBus/D (OMRON Corp.)	EX121-SDN1
E	Matsushita Electric Works: MEWNET-F System	EX121-SPA1	R1	OMRON Corp.: CompoBus/S (16 output points)	EX121-SCS1
F1	NKE Corp.: Uni-wire System (16 output points)	EX121-SUW1	R2	OMRON Corp.: CompoBus/S (8 output points)	EX121-SCS2
G	Rockwell Automation: Allen Bradley Remote I/O (RIO) System	EX121-SAB1	U	JEMANET (JPCN-1)	EX121-SJN1
H	NKE Corp.: Uni-wire H System	EX121-SUH1	V	Mitsubishi Electric Corp.: CC-LINK System	EX121-SMJ1

* For terminal LED descriptions and cable wiring, etc. for each SI unit, refer to pages 1-4-171 to 1-4-173.

For external pilot specifications and built-in silencer, refer to catalog on page 1-4-196.

How to Order Valve Manifold Assembly

Ordering example



SS5Y3-45S1AD-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 Valves

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)

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

Rated voltage

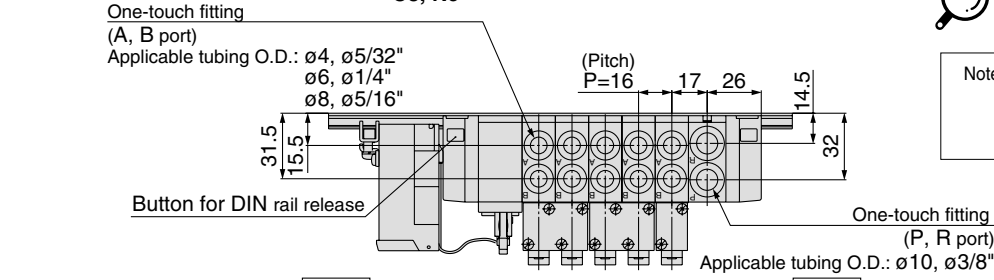
Manual override

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

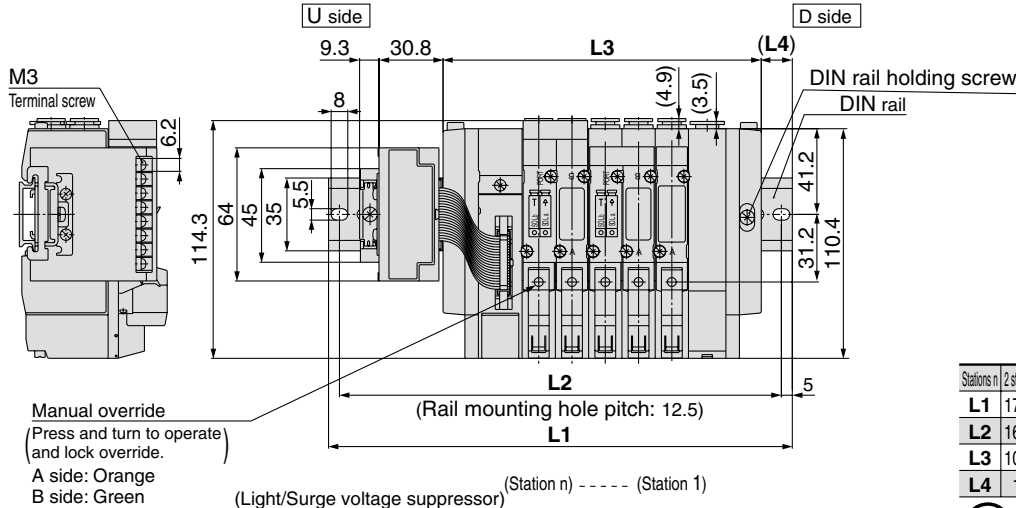
SV
SZ
SY
SYJ
SX

SY5000: Serial Transmission Unit/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.

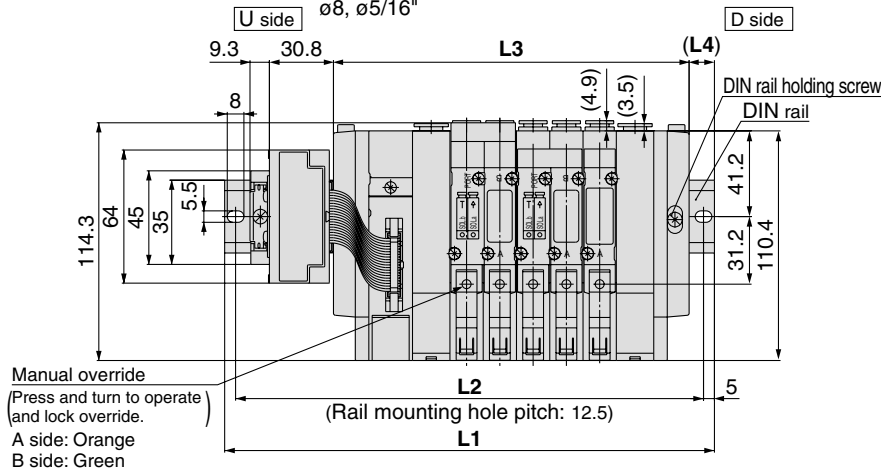
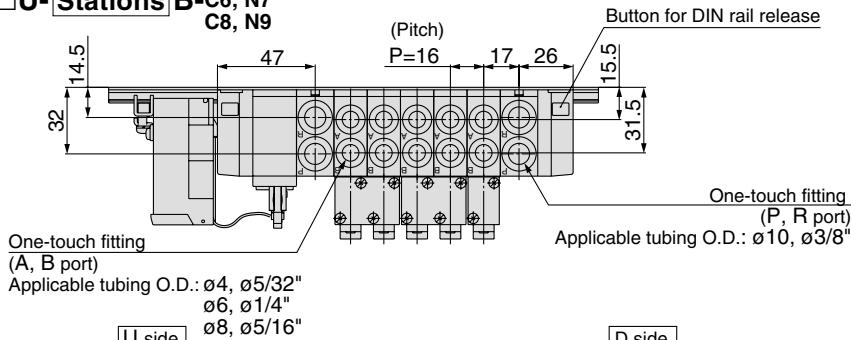


Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	173	185.5	210.5	223	235.5	260.5	273	285.5	298
L2	162.5	175	200	212.5	225	250	262.5	275	287.5
L3	105	121	137	153	169	185	201	217	233
L4	13.5	12	16.5	14.5	13	17.5	15.5	14	12



Note) Width of SI unit applicable to "E": Matsushita Electric Works, Ltd. and "G": Rockwell Automation, Inc. widens to [24.3 mm]. For further information, please consult with SMC.

SS5Y5-45S1□U- Stations B- C4, N3 C6, N7 C8, N9



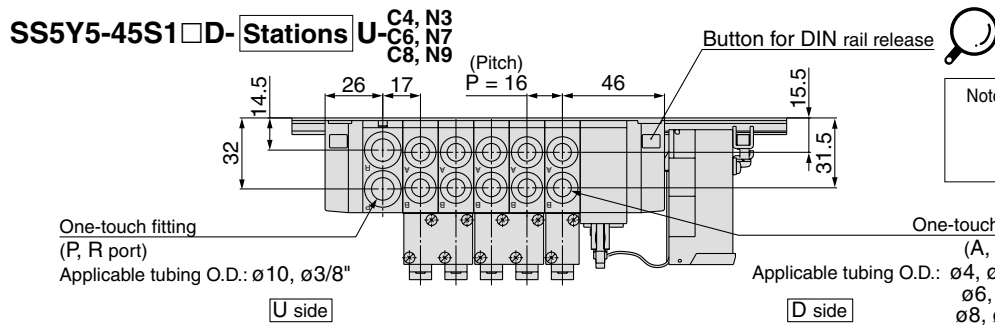
Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	198	210.5	223	235.5	260.5	273	285.5	310.5	323
L2	187.5	200	212.5	225	250	262.5	275	300	312.5
L3	123	139	155	171	187	203	219	235	251
L4	17	15.5	13.5	12	16.5	14.5	13	17.5	15.5

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



Note) Width of SI unit applicable to "E": Matsushita Electric Works, Ltd. and "G": Rockwell Automation, Inc. widens to [24.3 mm]. For further information, please consult with SMC.

SY5000: Serial Transmission Unit/Plug-in



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}.

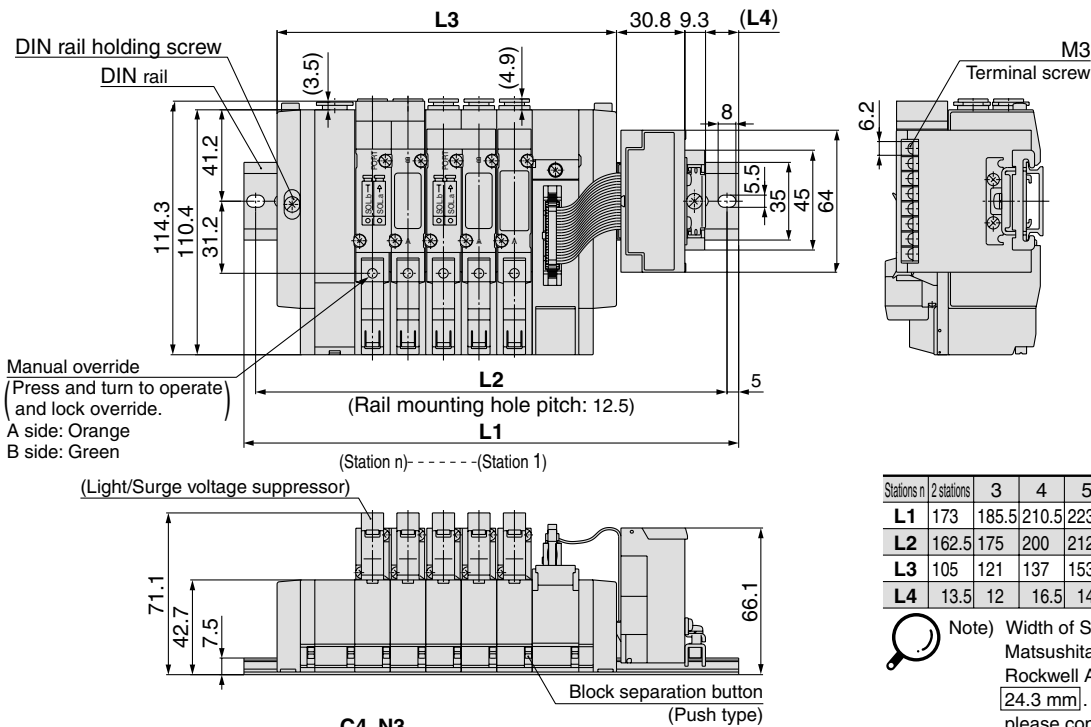
SV

SZ

SY

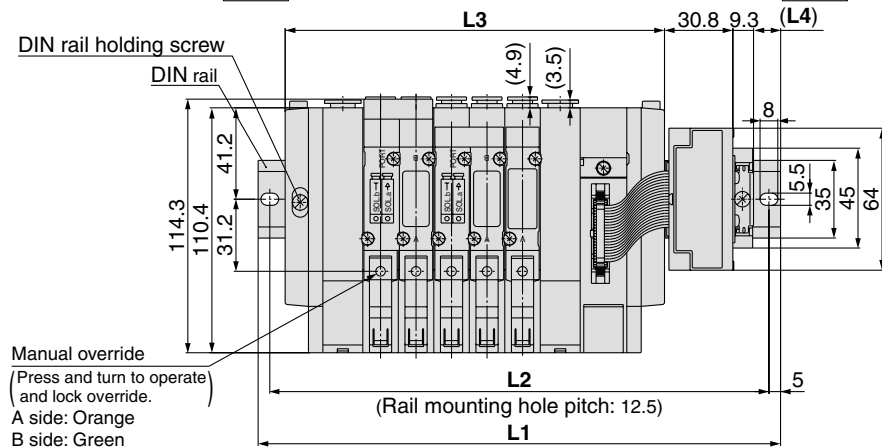
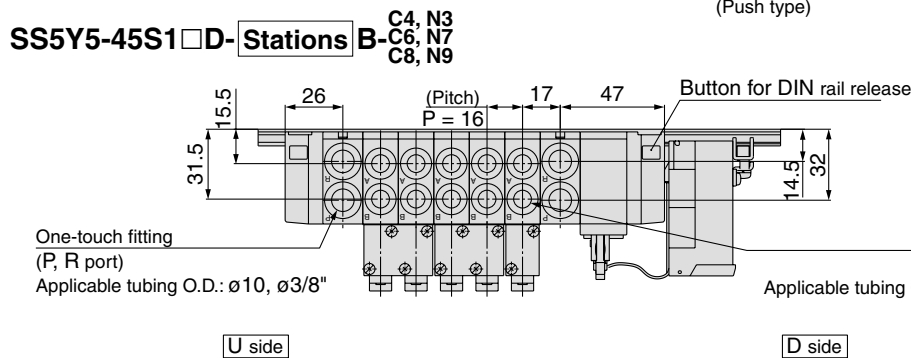
SYJ

SX



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	255	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

Note) Width of SI unit applicable to "E":
Matsushita Electric Works, Ltd. and "G":
Rockwell Automation, Inc. widens to [24.3 mm]. For further information, please consult with SMC.



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

Note) Width of SI unit applicable to "E":
Matsushita Electric Works, Ltd. and "G":
Rockwell Automation, Inc. widens to [24.3 mm]. For further information, please consult with SMC.

3 Port Valve

Series SY300/500

Mixed Mounting Type on 5 Port Valve Manifold

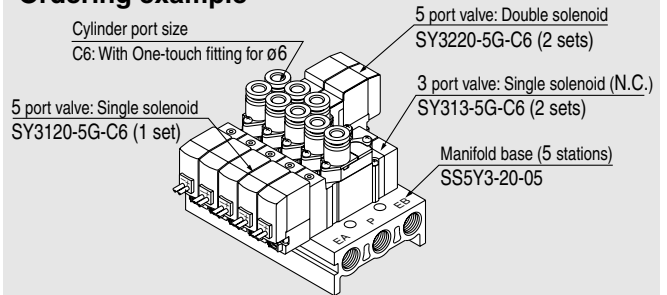
3 port valve can be mounted on manifold for 5 port valve.

Application

Possible to be mounted on all kinds of manifolds for Series SY3000/5000.
Refer to "How to Order Manifold" for details.

How to Order Valve Manifold Assembly

Ordering 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 Valves

Individual Wiring: For SS5Y³-20

SY 5 1 3 **5 L** **01**

Series

3	SY300
5	SY500

Type of actuation

1	Normally closed (N.C.)
2	Normally open

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", "DO" or "W□" type.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

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	SY300
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 ø 5/32"	SY300
N7	One-touch fitting for ø 1/4"	SY300
N7	One-touch fitting for ø 1/4"	SY500
N9	One-touch fitting for ø 9/16"	SY500

Manual override

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

Rated voltage

DC	AC		
5	1	24 VDC	100 VAC
6	2	12 VDC	200 VAC
V	3	6 VDC	110 VAC [115 VAC]
S	4	5 VDC	220 VAC [230 VAC]
R		3 VDC	

* DC specifications of type "D" and "DO" 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	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	D: With connector DO: Without connector	WO: Without connector cable
H: Lead wire length 600 mm	LN: Without lead wire LO: Without connector	MN: Without lead wire MO: Without connector		

* "LN", "MN" type: with 2 sockets.
* For DIN terminal of SY300 series, refer to page 1-4-207.
* DIN terminal type "Y" conforming to DIN 43650C is also available. For details, refer to page 1-4-201.
* For connector cable of M8 connector, refer to page 1-4-209.

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 (SY500 only)

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

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

Note When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary.
(For details, refer to catalog on page 1-4-61.)

SV
SZ
SY
SYJ
SX

Body Ported/How to Order Valves

Flat ribbon cable: SS5Y³/₅-20P

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	SY300
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 ø5/32"	SY300
N7	One-touch fitting for ø1/4"	SY300
N7	One-touch fitting for ø1/4"	SY500
N9	One-touch fitting for ø5/16"	SY500

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

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]

Solenoid type

Nil	Single solenoid
D	Double solenoid

Type of actuation

1	Normally closed (N.C.)
2	Normally open (N.C.)

Series

3	SY300
5	SY500

For DC: SY 5 1 3 [] 5 LO Z [] [] []

For AC: SY 5 1 3 [] 1 LOZ [] [] []

Base Mounted/How to Order Valves

Individual wiring: For SS5Y³/₅-41/42/45

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", "DO" or "W□" type.

Rated voltage

DC		AC	
5	24 VDC	1	100 VAC
6	12 VDC	2	200 VAC
V	6 VDC	3	110 VAC [115 VAC]
S	5 VDC	4	220 VAC [230 VAC]
R	3 VDC		

* DC specifications of type "D" and "DO" 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

Light/Surge voltage suppressor

Electrical entry for G, H, L, M, W		Electrical entry for D (SY500 only)	
Nil	Without light/surge voltage suppressor	Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor	S	With surge voltage suppressor
Z	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.
* For "R" and "U", DC voltage is only available.
* Power saving circuit is only available in the "Z" type.

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

Electrical entry

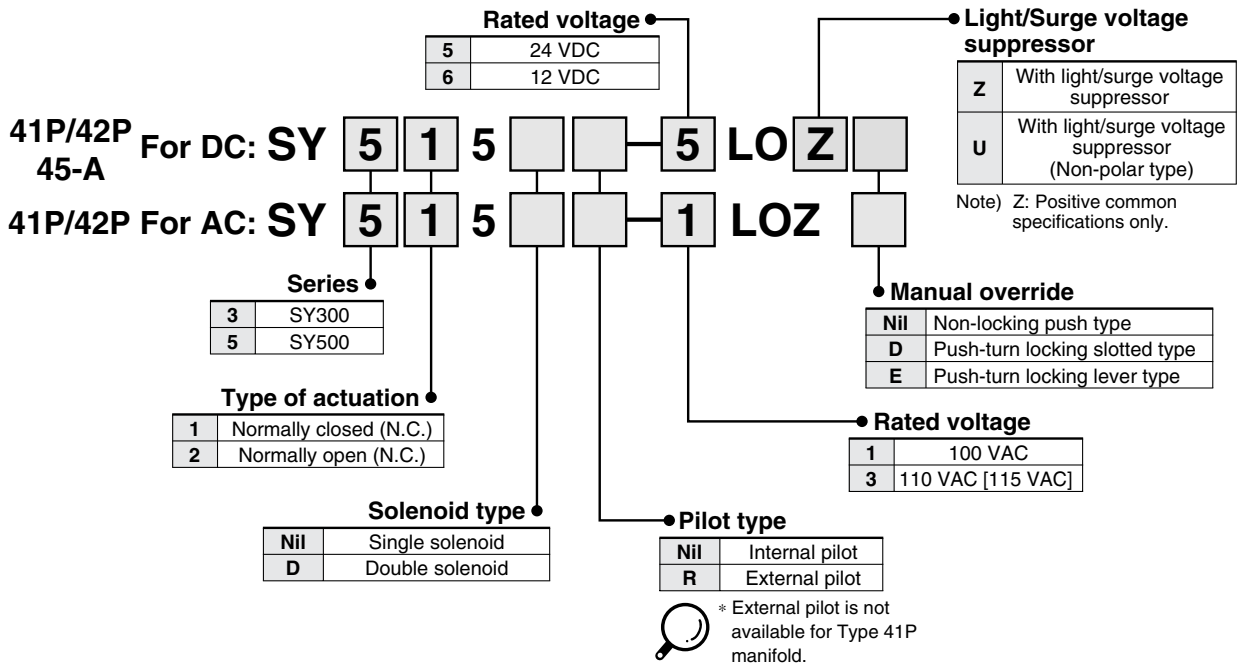
24, 12, 6, 5, 3 VDC/ 100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	D: With connector	WO: Without connector cable
H: Lead wire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

* "LN", "MN" type: with 2 sockets.
* For DIN terminal of SY300 series, refer to page 1-4-207.
* DIN terminal type "Y" conforming to DIN

43650C is also available. For details, refer to page 1-4-201.
* For connector cable of M8 connector, refer to page 1-4-209.

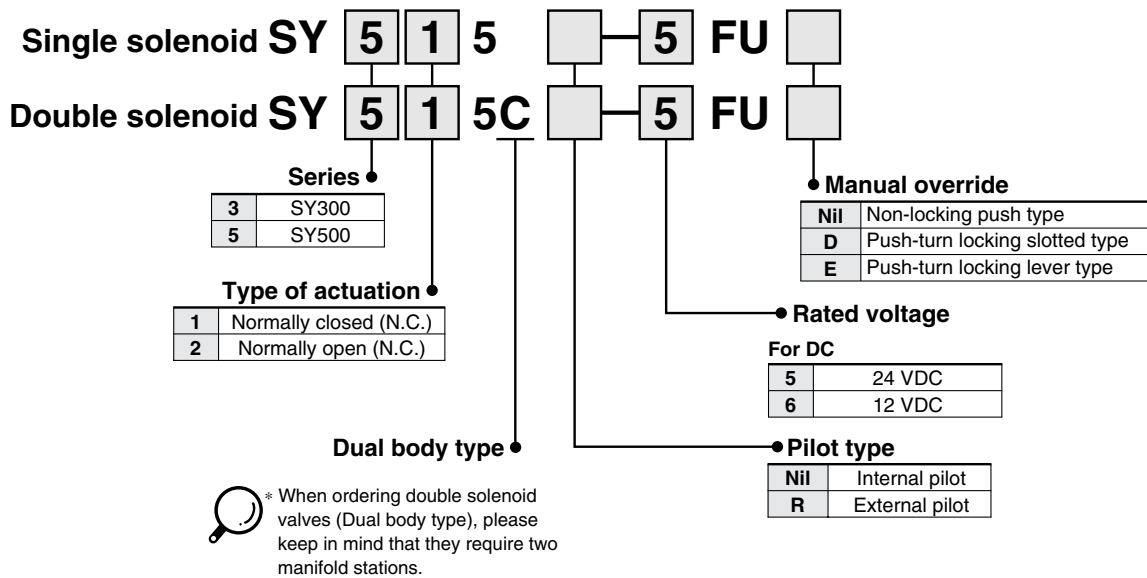
Base Mounted/How to Order Valves

Flat ribbon cable:
Connector box type: For SS5Y³-41P/42P/45-A



- SV
- SZ
- SY
- SYJ
- SX

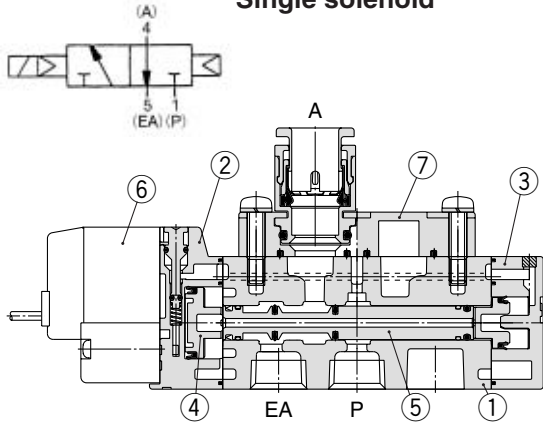
Plug-in: For SS5Y³-45□



Construction

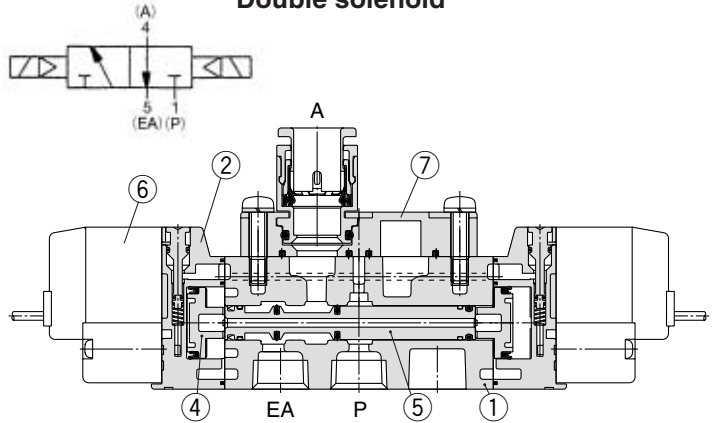
JIS Symbol
Single solenoid

**Normally closed (N.C.)
Single solenoid**



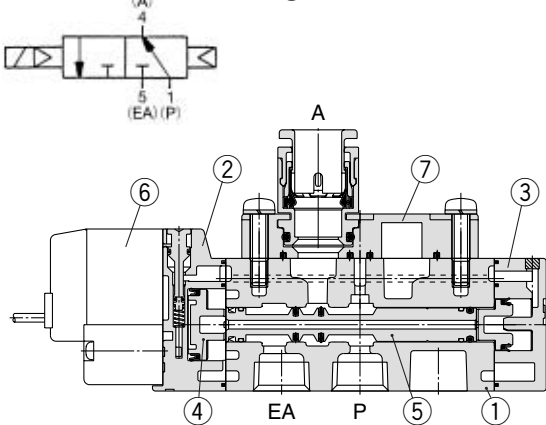
JIS Symbol
Double solenoid

**Normally closed (N.C.)
Double solenoid**



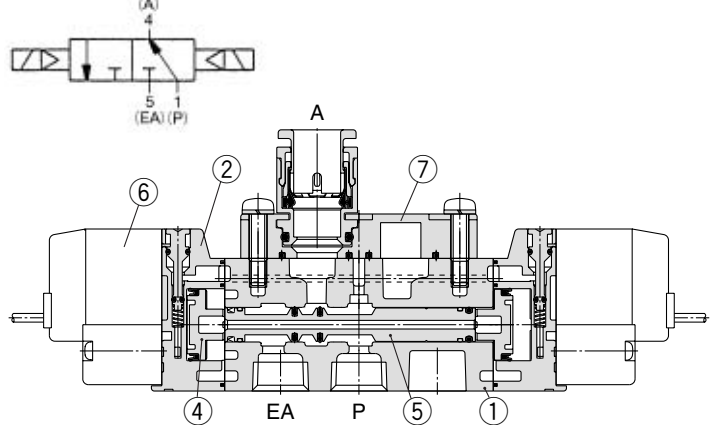
JIS Symbol
Single solenoid

**Normally open (N.O.)
Single solenoid**



JIS Symbol
Double solenoid

**Normally open (N.O.)
Double solenoid**



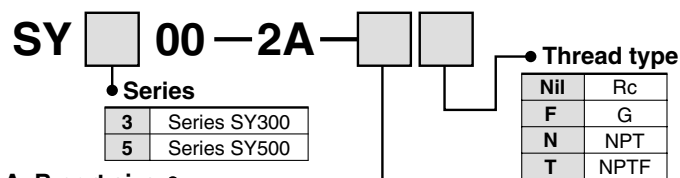
Component Parts

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, HNBR	—

Replacement Parts

No.	Description	No.
⑥	Pilot valve assembly	Refer to "How to Order Pilot Valve Assembly" on page 1-4-10.
⑦	M5 port block assembly	Refer to "How to Order Port Block Assembly" below.

How to Order M5 Port Block Assembly



A, B port size •
Thread piping

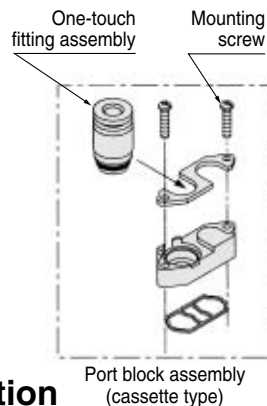
Symbol	Port size	Applicable series
M5	M5 x 0.8	SY300
O1	1/8	SY500

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 ø5/32"	SY300
N7	One-touch fitting for ø1/4"	SY300
N3	One-touch fitting for ø5/32"	SY500
N7	One-touch fitting for ø1/4"	SY500
N9	One-touch fitting for ø5/16"	SY500



* Only replacement of the fittings assembly is possible.

Metric size

Series	One-touch fitting for	Part No.
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 ø8	VVQ1000-51A-C8

Inch size

Series	One-touch fitting for	Part No.
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.

Weight

Series SY300

Valve model	Type of actuation	Weight (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	Weight (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

SV

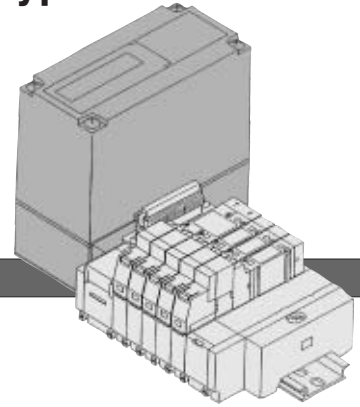
SZ

SY

SYJ

SX

Made to Order Specifications: Series *SX3000/5000* Serial Transmission Type With **SMC's IN313**



Serial Transmission Manifold Equipped with SMC's IN313

How to Order Manifold

Type 45S2 (Serial type with IN313)

SS5Y 3-45S2 U-06 D-C4 [] [] [] [] [] []

Series •

3	SY3000
5	SY5000

SI unit 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	



- * 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 on 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)



For external pilot specifications and built-in silencer, refer to page 1-4-196.

How to Order Applicable SI Unit

IN313 — MB1

Applicable makers

MB1	For Mitsubishi Electric Corporation
TA1	For OMRON Corporation
FU1	For Fuji Electric Co., Ltd.
SH1	For SHARP Corporation
TY1	For Toyoda Machine Works, Ltd.
TY2	
PA1	For Matsushita Electric Works Ltd.
HT1	For Hitachi, Ltd.
AB1	For Rockwell Automation, Inc.
TS1	For TOSHIBA Corporation

How to Order Valves

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 •

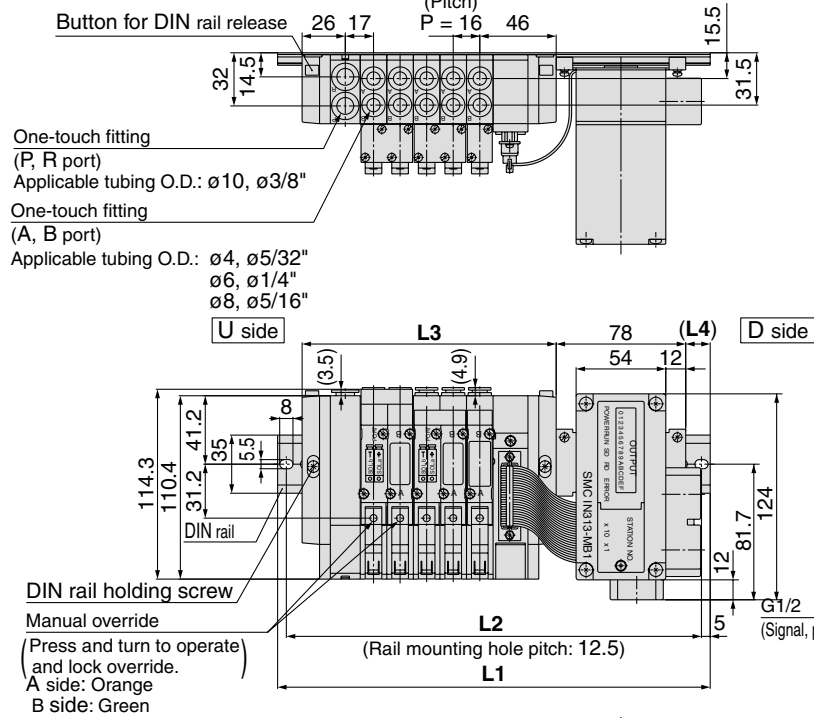
5	24 VDC
---	--------

Manual override •

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

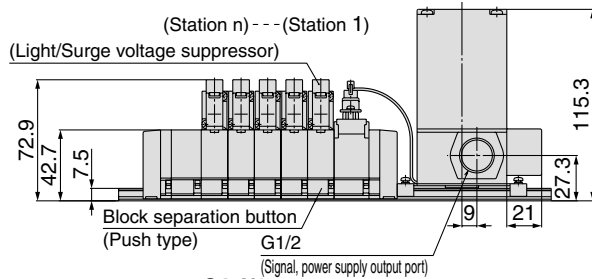
SY5000: Serial Transmission Unit/Plug-in

SS5Y3-45S2D- Stations U-C4, N3, C6, N7, C8, N9



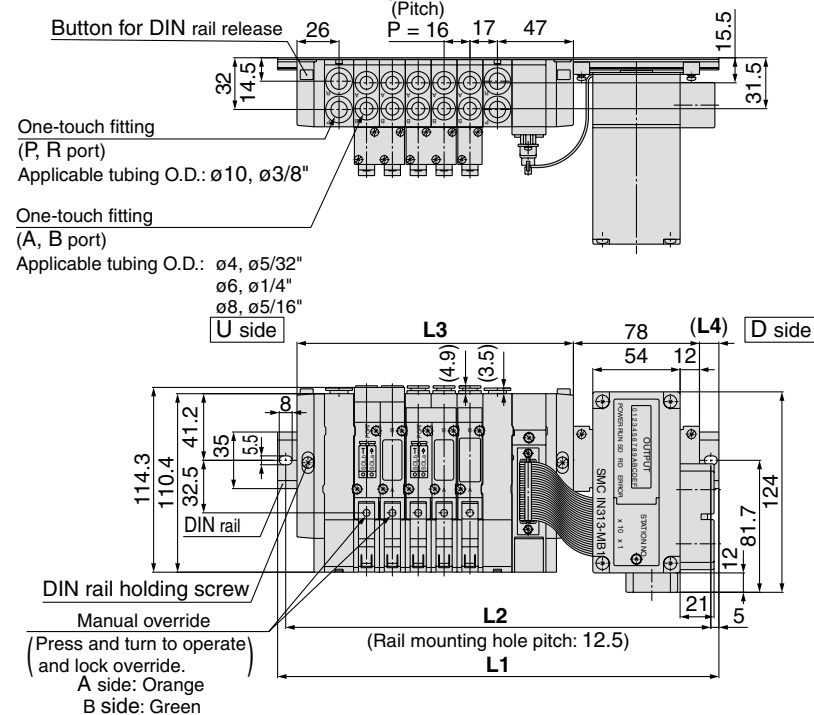
Note) The L1 to L4 dimensions of SS5Y3-45S2D-

Stations D-C4, N3, C6, N7, C8, N9, SS5Y3-45S2U- Stations D-C4, N3, C6, N7, C8, N9
SS5Y3-45S2U- Stations U-C4, N3, C6, N7, C8, N9 are identical to those of SS5Y3-45S2D- Stations U-C4, N3, C6, N7, C8, N9.



Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	210.5	223	248	260.5	273	298	310.5	323	335.5
L2	200	212.5	237.5	250	262.5	287.5	300	312.5	325
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

SS5Y5-45S2U- Stations B-C4, N3, C6, N7, C8, N9



Note) The L1 to L4 dimensions of SS5Y5-45S2U-

Stations B-C4, N3, C6, N7, C8, N9 are identical to those of SS5Y5-45S2D- Stations B-C4, N3, C6, N7, C8, N9.

Stations n	2 stations	3	4	5	6	7	8	9 stations
L1	235.5	248	260.5	273	298	310.5	323	348
L2	225	237.5	250	262.5	287.5	300	312.5	337.5
L3	123	139	155	171	187	203	219	235
L4	17	15.5	13.5	12	16.5	14.5	13	17.5

Stations n	10 stations	11	12	13	14	15	16 stations
L1	360.5	373	385.5	410.5	423	435.5	460.5
L2	350	362.5	375	400	412.5	425	450
L3	251	267	283	299	315	331	347
L4	15.5	14	12	16.5	15	13	17.5

Type **45S3**

Made to Order Specifications: Series **SX3000/5000** Serial Transmission Type With **OMRON Corp's G71-OD16**

Serial Transmission Manifold Equipped with OMRON Corp's Transmission Unit G71-OD16

How to Order Manifold

Type 45S3 (Serial type with transmission unit)

SS5Y 3 - 45S3 [] U - 06 D - C4 []

Series

3	SY3000
5	SY5000

Specifications

Symbol	Specifications
Nil	With transmission unit
0 ^(Note)	Without transmission unit

Note) Even though when it is not equipped with transmission unit, DIN rail length is long enough for future expectancy of mounting transmission unit. When a shorter rail is required (same as type 45□), suffix "0" in the optional blank at the end of part number.

Transmission unit 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	

* 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 on 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)

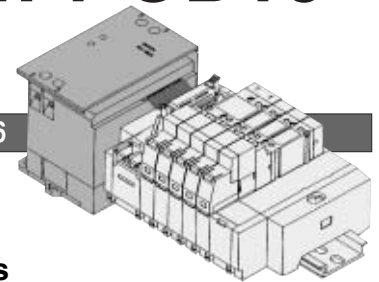
Symbol	Port size	Applicable series
N3	One-touch fitting for ø 5/32"	SY3000
N7	One-touch fitting for ø 1/4"	
M	Mixed	
N3	One-touch fitting for ø 5/32"	SY5000
N7	One-touch fitting for ø 1/4"	
N9	One-touch fitting for ø 5/16"	
M	Mixed	

* 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. (20 stations at maximum)

For external pilot specifications and built-in silencer, refer to page 1-4-196.



How to Order Valves

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

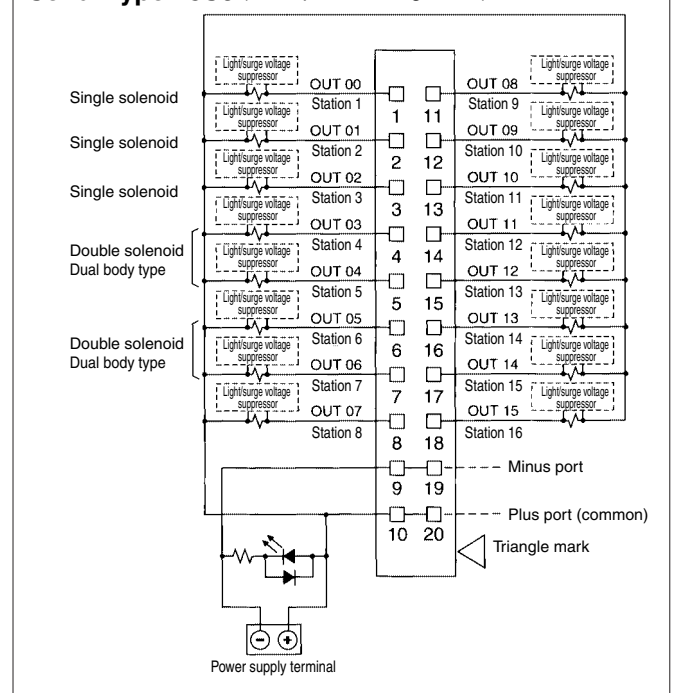
5	24 VDC
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Manual override

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

Internal Wiring of Manifold

Serial Type 45S3 (Example of arrangement)



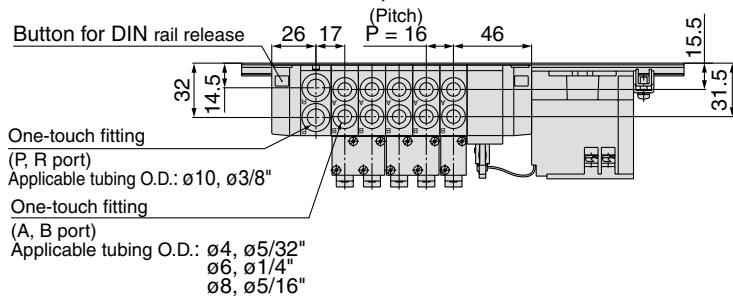
- For specifications on OMRON Corp's transmitter terminals, refer to the instruction manual or the catalog of transmitter terminals, etc.
- Max. 16 solenoids are applicable. Please consult with SMC for more solenoids.

Caution

- The wiring specifications for SS5Y₃-45S30 are different from those for SS5Y₃-45PG.

SY5000: Serial Transmission Unit/Plug-in

SS5Y5-45S3D- Stations U-C4, N3 C6, N7 C8, N9



Note) The L1 to L4 dimensions of SS5Y5-45S3D-

Stations D-^{C4, N3}
C6, N7, SS5Y5-45S3U- Stations D-^{C4, N3}
C8, N9, SS5Y5-45S3U- Stations U-^{C4, N3}
C6, N7, C8, N9 are identical
to those of SS5Y5-45S3D- Stations U-^{C4, N3}
C6, N7, C8, N9

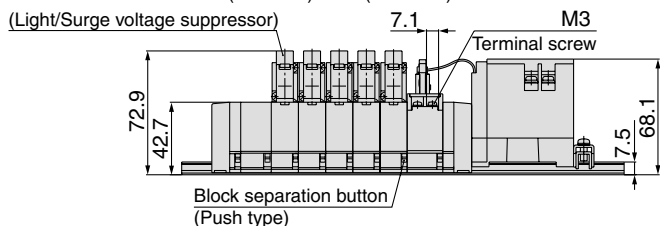
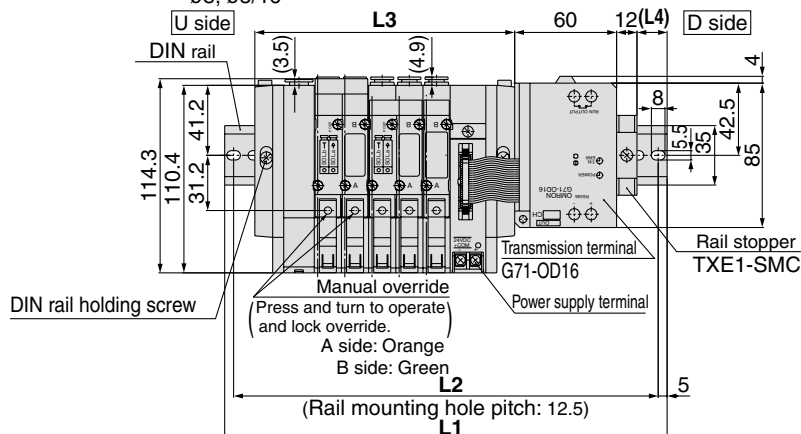
SV

SZ

SY

SYJ

SX



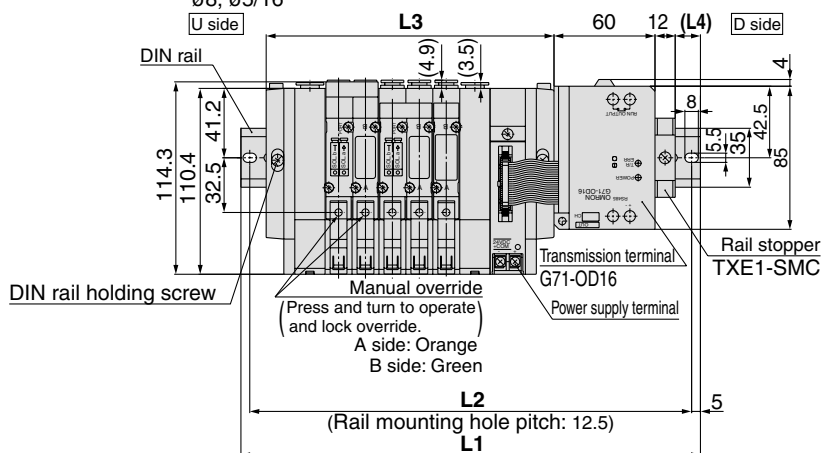
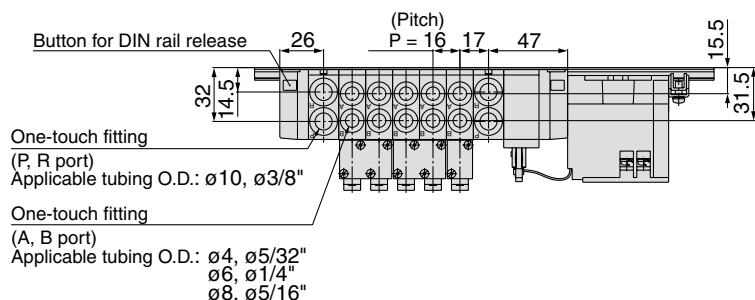
Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	210.5	223	235.5	260.5	273	285.5	298	323	335.5
L2	200	212.5	225	250	262.5	275	287.5	312.5	325
L3	105	121	137	153	169	185	201	217	233
L4	16.5	15	13	17.5	16	14	12.5	17	15



Note) The L1 to L4 dimensions of SS5Y5-

45S3U- Stations B-^{C4, N3}
C6, N7 are identical to
those of SS5Y5-45S3D- Stations B-^{C4, N3}
C6, N7, C8, N9

SS5Y5-45S3D- Stations B-C4, N3 C6, N7 C8, N9



Stations n	2 stations	3	4	5	6	7	8	9 stations
L1	223	235.5	260.5	273	285.5	310.5	323	335.5
L2	212.5	225	250	262.5	275	300	312.5	325
L3	123	139	155	171	187	203	219	235
L4	14	12	16.5	15	13	17.5	16	14

Stations n	10 stations	11	12	13	14	15	16 stations
L1	348	373	385.5	398	410.5	435.5	448
L2	337.5	362.5	375	387.5	400	425	437.5
L3	251	267	283	299	315	331	347
L4	12.5	17	15	13.5	11.5	16	14.5

Made to Order Specifications: Series SY3000/5000

Type **45**

External Pilot/Built-in Silencer

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

SS5Y³₅-45(-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 on the manifold specification sheet.

SUP/EXH block assembly specifications

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

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)

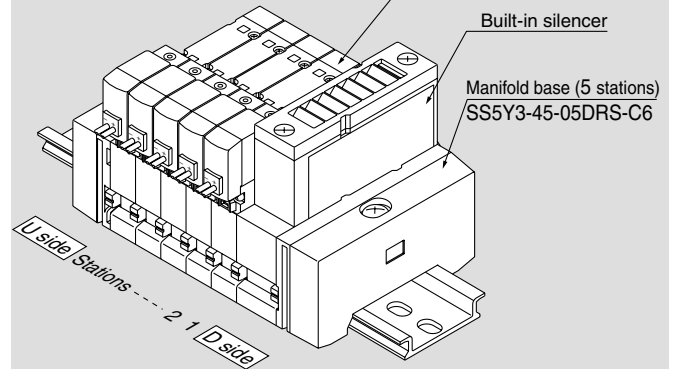
Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
M	Mixed	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
M	Mixed	

* In the case of mixed specifications, indicate separately on the manifold specification sheet.

How to Order Valve Manifold Assembly

Ordering example

Single solenoid (external pilot specifications)
SY3140R-5G (5 sets)



SS5Y3-45-05DRS-C6 1 set (External pilot 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 1-4-130, can also be mounted. Please specify the mounting position, by correctly filling in the blank space on the manifold specification sheet.

How to Order Valves

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", "DO" or "W" type.

Rated voltage

DC

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

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" and "DO" is only available with 12 and 24 VDC.
 * For type "W", DC voltage is only available.
 * "D" and "DO" only available for SY5000.

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 (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" is not available.
 * For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

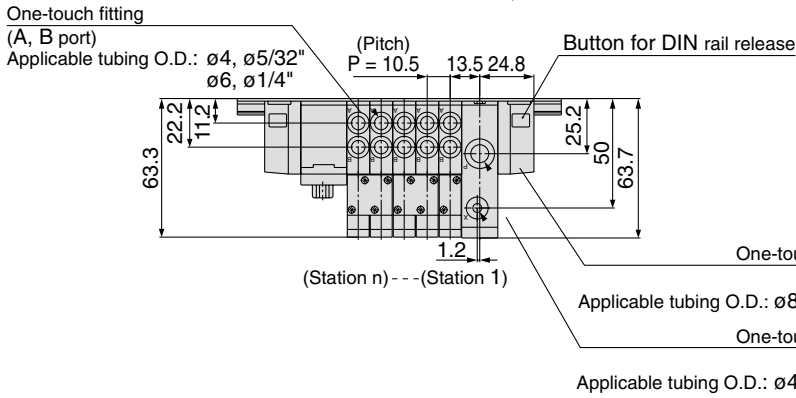
24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	(SY5000 only) D: With connector DO: Without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

* "LN", "MN" type: with 2 sockets.
 * "D" and "DO" only available for SY5000.
 * DIN terminal type "Y" conforming to DIN43650C standard is also available. For details, refer to page 1-4-201.
 * Setting "-5LOU" is available only for connector box type.
 * For connector cable of M8 connector, refer to pages 1-4-209 to 210.

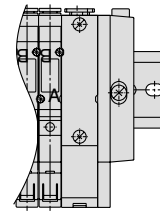
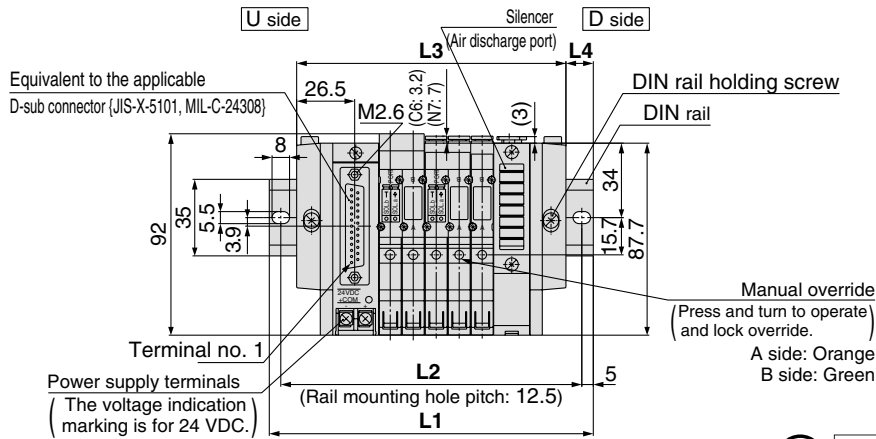
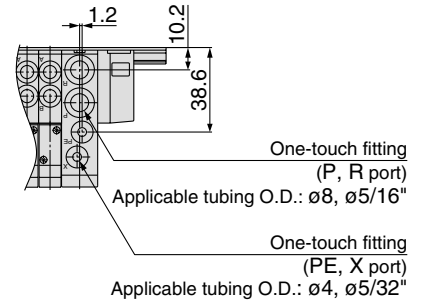
SV
SZ
SY
SYJ
SX

External Pilot/Built-in Silencer

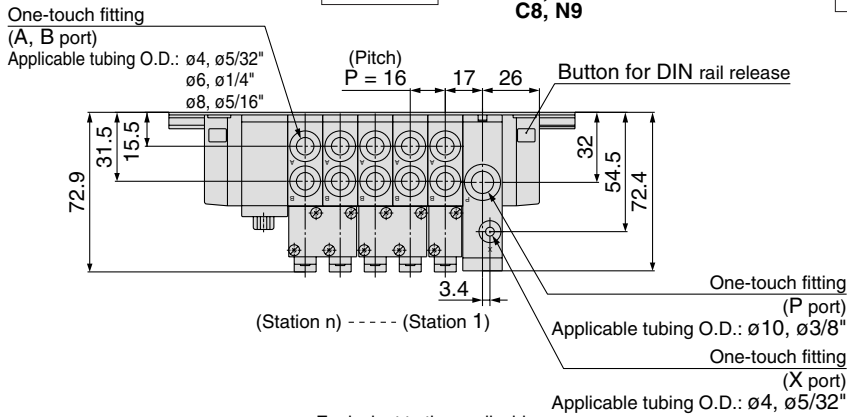
**SY3000: SS5Y3-45FU- Stations DRS- C4, N3
C6, N7**



**SS5Y3-45FU- Stations DR- C4, N3
C6, N7**

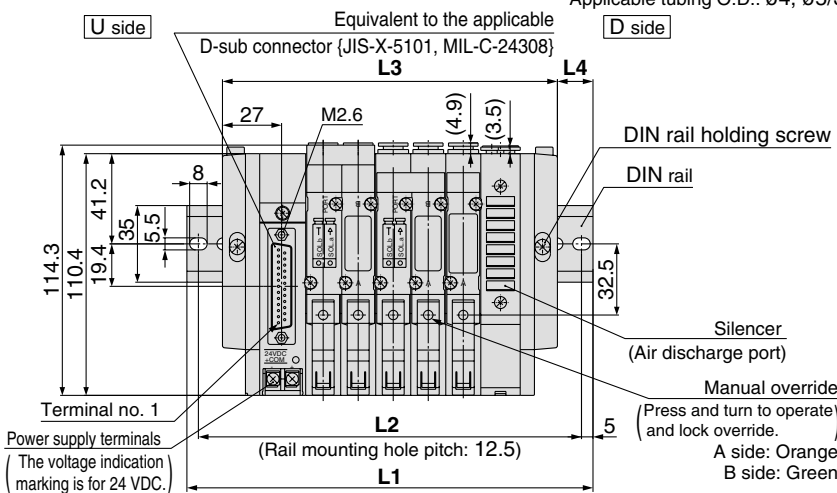
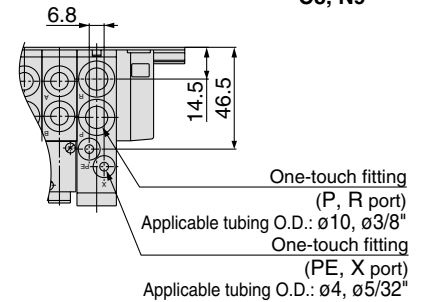


**SY5000: SS5Y5-45FU- Stations DRS- C4, N3
C6, N7
C8, N9**



* The dimensions L1 to L4 are identical to those of SS5Y3-45FU- Stations DRS- C4, N3 C6, N7.

**SS5Y5-45FU- Stations DR- C4, N3
C6, N7
C8, N9**



* The dimensions L1 to L4 are identical to those of SS5Y3-45FU- Stations DRS- C4, N3 C6, N7 C8, N9.

* The dimensions of SS5Y5-45FU- Stations URS are identical to those of SS5Y5-45FU- Stations DRS.

Made to Order Specifications: Series SY3000/5000 Mixed Mounting

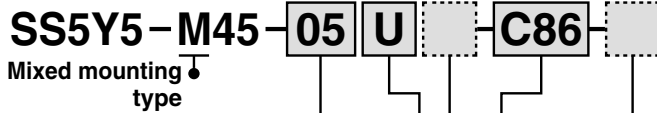
Type **M45**

Non plug-in

Use SY3000 together with SY5000, which has a large Cv and is mounted only in a place where it is needed, permits a selection of economic manifold bases.

How to Order Manifold

Type M45 (Mixed mounting type)



Valve stations

Symbol	Stations	SUP/EXH block assembly mounting position
02	2 stations	U
⋮	⋮	D
20	20 stations	B
		M

The number of blanking plate ass'y is included, too.

* For special specifications, indicate separately on the manifold specification sheet.

SUP/EXH block assembly specifications

Symbol	Specifications
Nil	Standard/Internal pilot
S	Built-in silencer

* External pilot is unavailable for mixed mounting style.

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

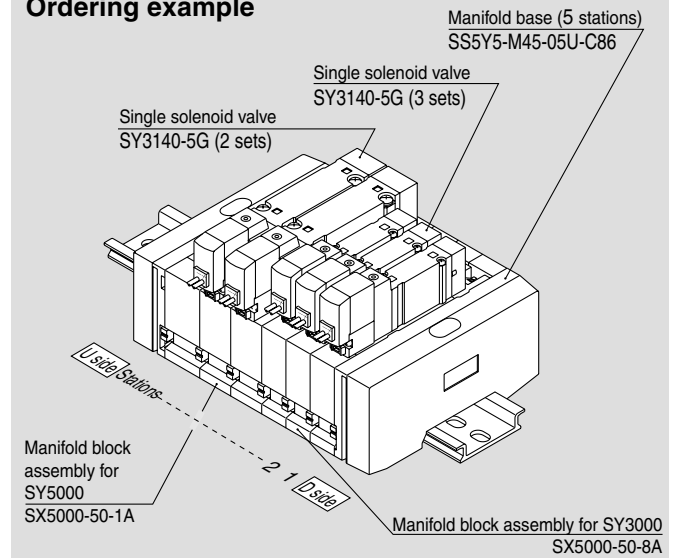
One-touch fitting (Inch size)

Symbol	Port size
N33	SY5000: One-touch fitting for ø ⁵ / ₃₂ " SY3000: One-touch fitting for ø ⁵ / ₃₂ "
N37	SY5000: One-touch fitting for ø ⁵ / ₃₂ " SY3000: One-touch fitting for ø ¹ / ₄ "
N73	SY5000: One-touch fitting for ø ¹ / ₄ " SY3000: One-touch fitting for ø ⁵ / ₃₂ "
N77	SY5000: One-touch fitting for ø ¹ / ₄ " SY3000: One-touch fitting for ø ¹ / ₄ "
N93	SY5000: One-touch fitting for ø ³ / ₁₆ " SY3000: One-touch fitting for ø ⁵ / ₃₂ "
N97	SY5000: One-touch fitting for ø ³ / ₁₆ " SY3000: One-touch fitting for ø ¹ / ₄ "
M	Mixed

* In the case of mixed specifications, indicate separately on the manifold specification sheet.

How to Order Valve Manifold Assembly

Ordering example



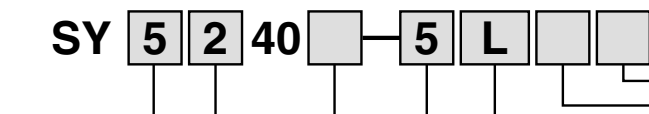
SS5Y5-M45-05U-C86 1 set (Type M45, manifold base part no.)
* **SY3140-5G** 3 sets (Single solenoid part no.)
* **SY5140-5G** 2 sets (Single solenoid part no.)

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.

- SV
- SZ
- SY
- SYJ
- SX

How to Order Valves



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 "D", "DO" or "W□" type.

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.

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, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	M8 connector
G: Lead wire length 300 mm	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	WO: Without connector cable
H: Lead wire length 600 mm	LN: Without lead wire	MN: Without lead wire	
	LO: Without connector	MO: Without connector	

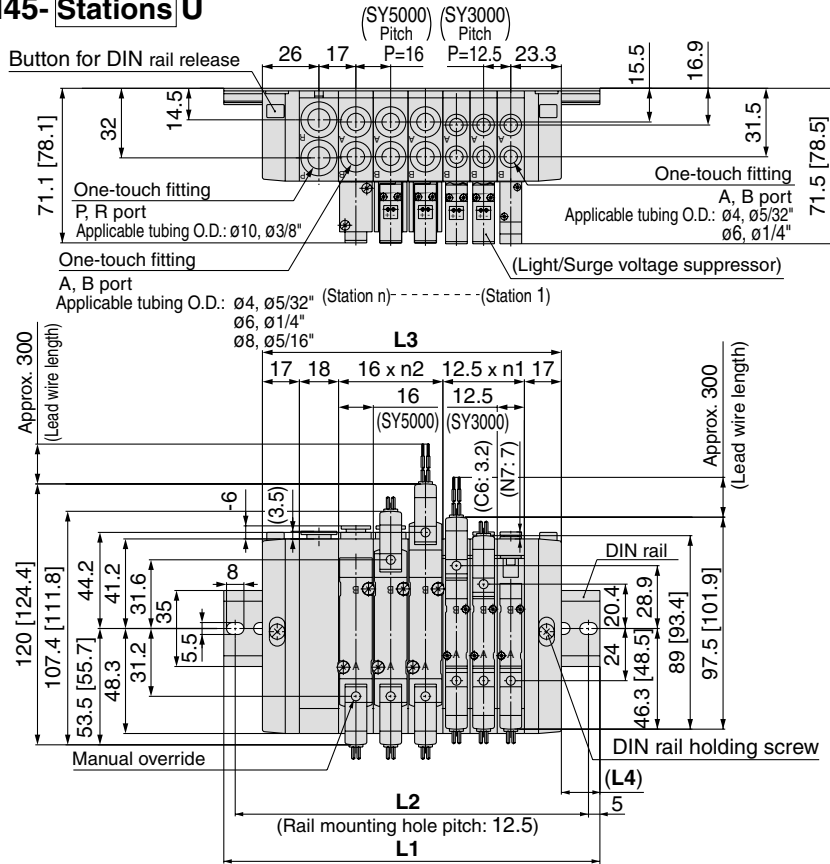
* "LN", "MN" type: with 2 sockets.
* For connector cable of M8 connector, refer to page 1-4-209.

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

* For type "W□", DC voltage is only available.

Dimensions: Mixed Mounting

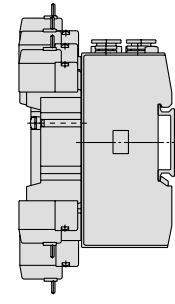
SS5Y5-M45- Stations U



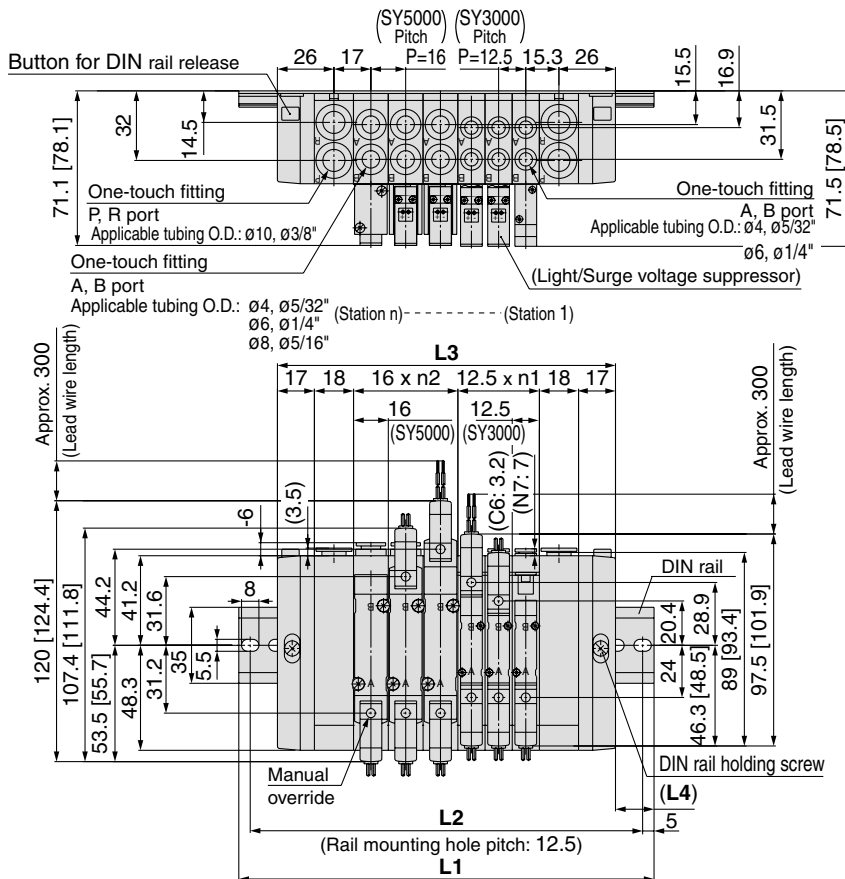
L dimension: Formulae for L1, L4
 $L3 = 12.5 \times n1 + 16 \times n2 + 52$
 $M = (\frac{L3}{12.5} + 1)$ Omit decimals
 $L1 = 12.5 \times M + 23$
 $L2 = L1 - 10.5$
 $L4 = (L1 - L3) / 2$

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**.

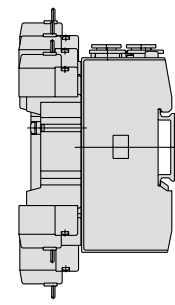


SS5Y5-M45- Stations B



L dimension: Formulae for L1, 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



Made to Order Specifications:

Series SY5000/7000/9000, SY500

DIN Terminal* (DIN 43650C)

* DIN terminal type conforming to DIN 43650C (DIN pitch 8 mm) standard.

How to Order Valves

Series

5	SY500
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Type of actuation

1	Normally open
2	Normally closed

Type

3	Body ported
5	Base mounted

Rated voltage

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

Light/Surge voltage suppressor

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

Manual override

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

A port size

Symbol	Port size
Nil	Base mounted
01	1/8
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
N3	One-touch fitting for ø5/32"
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Electrical entry

Y: With connector
YO: Without connector

For body ported Thread piping

Symbol	Port size	Applicable series
01	1/8	SY5000
02	1/8	SY7000
03	3/8	SY9000

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
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 ø10	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
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"	
N9	One-touch fitting for ø5/16"	SY9000
N11	One-touch fitting for ø3/8"	

Base Mounted

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

Note When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to catalog on page 1-4-61.)

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

- SV
- SZ
- SY
- SYJ
- SX

How to Order Pilot Valve Assembly

V115-5Y

Rated voltage

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

Light/Surge voltage suppressor

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

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

Electrical entry

Y	DIN	With connector
YO	terminal	Without connector

DIN Terminal Part No.

Without light	SY100-82-1	
With indicator light		
Rated voltage	Voltage symbol	No.
24 VDC	24VN	SY100-82-3-05
12 VDC	12VN	SY100-82-3-06
100 VAC	100VN	SY100-82-3-01
200 VAC	200VN	SY100-82-3-02
110 VAC (115 VAC)	110VN	SY100-82-3-03
220 VAC (230 VAC)	220VN	SY100-82-3-04

Caution

- Use caution in wiring because it won't meet the IP65 (enclosure) standard if you use the other cord than prescribed heavy-duty cord of size (ø3.5 to ø7.5). Also be sure to tighten the ground nut and holding screw with the prescribed torque range. Tighten the ground nut and set screw within the specified range of torque. For how to use DIN terminal. (wiring procedures, procedures for changing electrical entries, precautions, applicable cable circuit diagram), refer to page 1-4-207.
- Type D, DIN terminal with 9.4 mm pitch between terminals if not interchangeable.
- To distinguish from the Type D, 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 type D DIN terminal.
- When exchanging the pilot valve assembly only, "SY115-□D" is interchangeable with "SY115-□Y". Do not replace SY114 (G, L, M) to SY115 (DIN terminal), and vice versa.

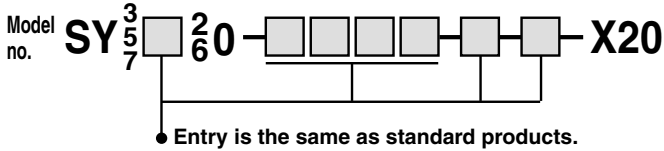
Made to Order Specifications: Series SY3000/5000/7000/9000 Body Ported External Pilot/Fluoro Rubber



* for Main Value

Body Ported External Pilot

Applicable solenoid valves: Series SY3□₆₀²⁰, SY5□₆₀²⁰, SY7□₆₀²⁰



Operating Pressure Range MPa

Operating pressure range	-100 kPa to 0.7
Pilot pressure range	0.25 to 0.7

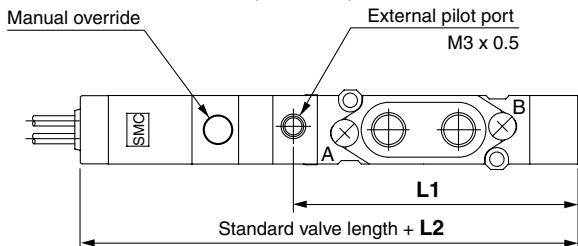
Dimensions: For SY3□₆₀²⁰60, SY5□₆₀²⁰60, SY7□₆₀²⁰60

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 ⁵ 000	M5 x 0.8

Dimensions: For SY3□₆₀, SY5□₆₀, SY7□₆₀

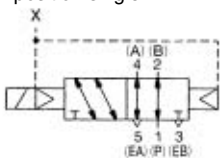


Dimensions/External Pilot Port Position

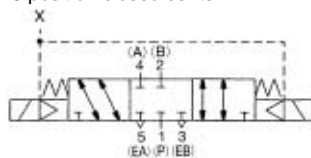
Series	L1 dimensions	L2 dimensions
SY3000	41.5	6.5
SY5000	60.4	9
SY7000	71.9	9

JIS Symbol

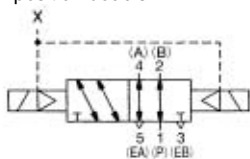
Body ported
2 position single



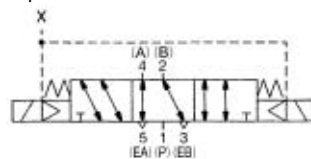
3 position closed center



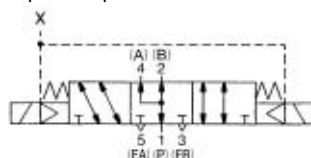
2 position double



3 position exhaust center



3 position pressure center

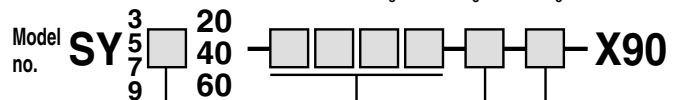


Main Valve Fluoro Rubber Specifications

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□₆₀²⁰, SY5□₆₀²⁰, SY7□₆₀²⁰, SY9□₆₀²⁰



● Entry is the same as standard products.

Specifications and performance are the same as standard products.