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Find the *SMC SYJ3120-5G-M3-F* at our website: *Click HERE*

SMC

4/5 Port Solenoid Valve





Cover (stainless steel)

Improved pilot valve

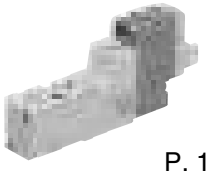
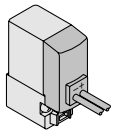
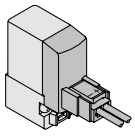
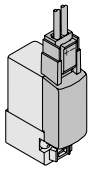
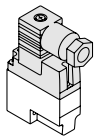
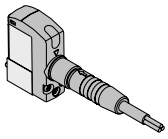
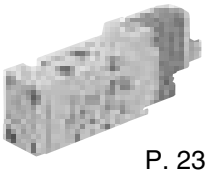
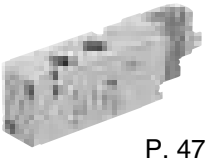
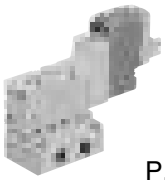
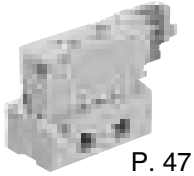
Pilot valve cover is stronger using stainless steel.
Mounting thread is also reinforced from size M1.7 to M2.

● Flow Characteristics

Series	Flow characteristics		
	C [(dm³/s·bar)]	b	Cv
SYJ3000	0.46	0.36	0.12
SYJ5000	0.83	0.32	0.21
SYJ7000	2.9	0.35	0.74

Rubber Seal
4/5 Port Solenoid Valve
Series SYJ3000/5000/7000

Variations

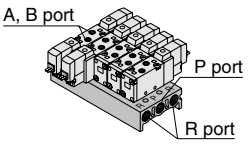
	Series	Sonic conductance: C [dm³/(s·bar)]	Type of actuation	Voltage	Electrical entry	Option: With light/surge voltage suppressor	Manual override
Body ported	**SYJ3000**  P. 1	Effective area 0.9 mm² {4/2 → 5/3 (A/B → EA/EB)}	2 Position • Single • Double 3 Position • Closed center • Exhaust center • Pressure center	**For DC** ■ 24 VDC 12 VDC 6 VDC 5 VDC 3 VDC **For AC** ■ 100 VAC 50/60 Hz 110 VAC 50/60 Hz 200 VAC 50/60 Hz 220 VAC 50/60 Hz	Grommet  L plug connector  M plug connector  DIN terminal  (SYJ5000, 7000 only) M8 connector 	**For DC** ■ With surge voltage suppressor ■ With light/ surge voltage suppressor **For AC**[Note] ■ With light/surge voltage suppressor	■ Non-locking push type ■ Push-turn locking slotted type ■ Push-turn locking lever type
	SYJ5000  P. 23	0.47 {4/2 → 5/3 (A/B → EA/EB)}					
	SYJ7000  P. 47	2.4 {4/2 → 5/3 (A/B → EA/EB)}					
Base mounted	**SYJ3000**  P. 1	0.46 {4/2 → 5/3 (A/B → EA/EB)}					
	SYJ5000  P. 23	0.83 {4/2 → 5/3 (A/B → EA/EB)}					
	SYJ7000  P. 47	2.9 {4/2 → 5/3 (A/B → EA/EB)}					

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

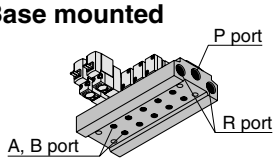
Manifold Variations

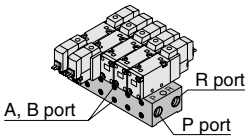
Valve series		A, B port location	A, B port size									Manifold option			Flat ribbon cable manifold
						With one-touch fitting									
			M3	M5	1/8	Applicable tubing O.D						Individual SUP spacer assembly	Individual EXH spacer assembly	Interface regulator	
						ø4	ø6	ø8	N3	N7	N9				
Body ported	SYJ3000	Top	●	—	—	—	—	—	—	—	—	—	—	—	●
	SYJ5000		—	●	—	●	●	—	●	●	—	●	●	—	●
	SYJ7000		—	—	●	—	●	●	—	●	●	—	●	—	●
Base mounted	SYJ3000	Side	●	●	—	●	—	—	●	—	—	—	—	—	●
		Bottom	—	—	—	—	—	—	—	—	—				—
	SYJ5000	Side	—	●	—	●	●	—	●	●	—	●	●	● (P port regulation)	●
		Bottom	—	●	—	—	—	—	—	—	—				—
	SYJ7000	Side	—	—	●	—	●	●	—	●	●	●	●	● (P port regulation)	—
		Bottom	—	—	●	—	—	—	—	—	—				—

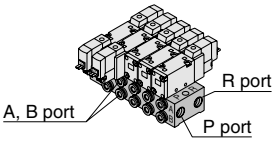
Body ported

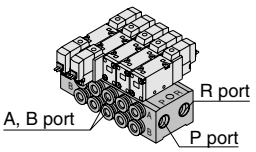


Base mounted

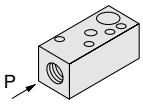




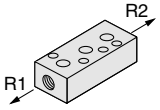




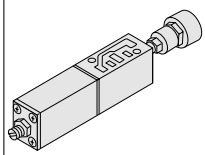
Individual SUP spacer assembly



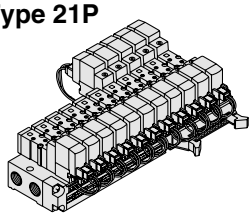
Individual EXH spacer assembly



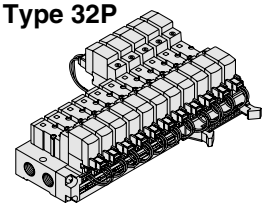
Interface regulator



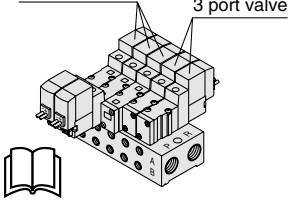
Type 21P



Type 32P

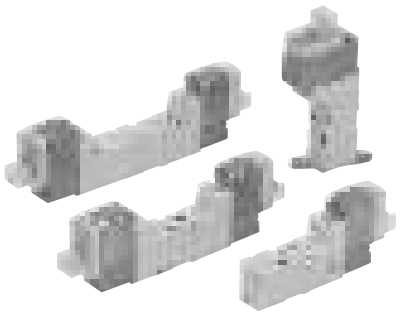


Mixed mounting of 3 port valves and 4, 5 port valves

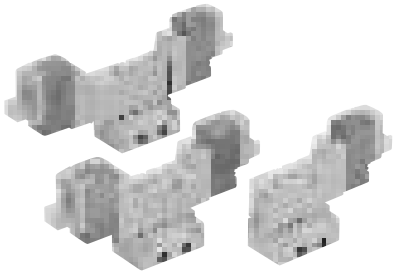


For detailed specifications about SYJ3000, refer to page 14. For SYJ5000, refer to page 38, and for SYJ7000, refer to page 61.

Rubber Seal
4/5 Port Solenoid Valve
Series SYJ3000



Body ported



Base mounted

Specifications

For details about certified products conforming to international standards, visit us at www.smcworld.com.

Fluid		Air
Operating pressure range MPa	**2 position single**	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.2 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (No freezing. Refer to back page 3.)
Response time (ms) Note 1) **(at 0.5 MPa)**	**2 position single, double**	15 or less
	3 position	30 or less
Max. operating frequency (Hz)	**2 position single, double**	10
	3 position	3
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type
Pilot exhaust method		Individual exhaust for the pilot valve, Common exhaust for the pilot and main valve
Lubrication		Not required
Mounting orientation		Unrestricted
Shock/Vibration resistance (m/s^2) Note 2)		150/30
Enclosure		Dust proof (∗ M8 connector conforms to IP65.)

∗ Based on IEC60529
Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge voltage suppressor)
Note 2) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Value in the initial state)
Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

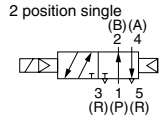
Solenoid Specifications

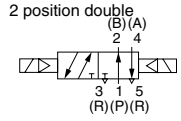
Electrical entry			Gromet (G), (H), L plug connector (L), M plug connector (M), M8 connector (W)
Coil rated voltage (V)	**DC**		24, 12, 6, 5, 3
	AC 50/60 Hz		100, 110, 200, 220
Allowable voltage fluctuation			±10% of rated voltage ∗
Power consumption (W)	**DC**	**Standard**	0.35 (With light: 0.4)
		With power saving circuit	0.1 (With light only)
Apparent power VA ∗	**AC**	**100 V**	0.78 (With light: 0.81)
		110 V [115 V]	0.86 (With light: 0.89) [0.94 (With light: 0.97)]
		200 V	1.18 (With light: 1.22)
		220 V [230 V]	1.30 (With light: 1.34) [1.42 (With light: 1.46)]
Surge voltage suppressor			Diode (Non-polarity type: Valistor)
Indicator light			LED

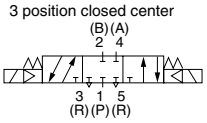
∗ In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.
∗ For 115 VDC and 230 VDC, the allowable voltage is –15% to +5% of rated voltage.
∗ S, Z and T type (with power saving circuit) should be used within the following allowable voltage fluctuation range due to a voltage drop caused by the internal circuit.
S and Z type: 24 VDC: –7% to +10%, 12 VDC: –4% to +10%
T type: 24 VDC: –8% to +10%, 12 VDC: –6% to +10%

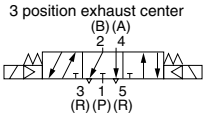
JIS Symbol

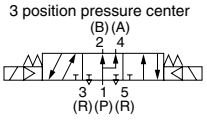
5 port

2 position single


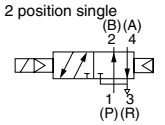
2 position double


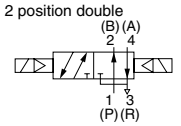
3 position closed center


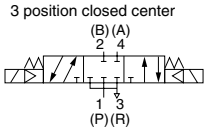
3 position exhaust center


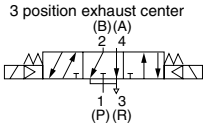
3 position pressure center


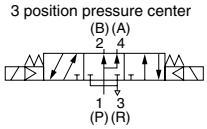
4 port (manifold)

2 position single


2 position double


3 position closed center


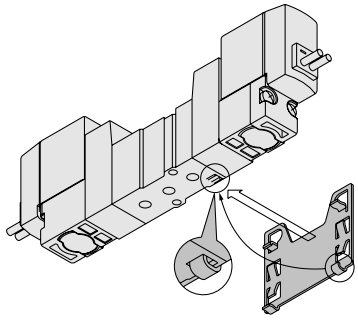
3 position exhaust center


3 position pressure center


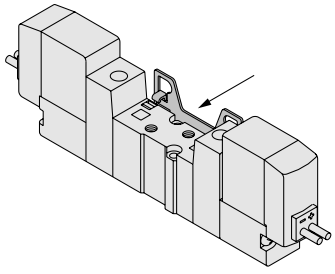
Made to Order
(For details, refer to page 79.)

Bracket Mounting

① Insert the lower hook of the mounting bracket into the groove on the bottom of the valve as shown.



② Press the valve and mounting bracket together until the upper hook of the bracket snaps into place in the groove on top of the valve.



SMC

Flow Characteristics/Weight

Valve model		Type of actuation		Port size		Weight (g) Note 3, 4)			Effective area (mm^2)	Flow characteristics Note 2)					
				1, 5, 3 (P, EA, EB)	4, 2 (A, B)	Grommet	L/M plug connector	M8 connector		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
5 port Base mounted (with sub-plate)	SYJ314□	2 position	Single	M5 x 0.8	M5 x 0.8	62 (36)	63 (37)	67 (41)	—	0.46	0.36	0.12	0.46	0.35	0.12
	SYJ324□		Double			79 (53)	81 (55)	89 (63)							
	SYJ334□	3 position	Closed center			82 (56)	84 (58)	92 (66)	—	0.47	0.33	0.12	0.47	0.31	0.12
	SYJ344□		Exhaust center						—	0.36	0.39	0.10	0.59 [0.40]	0.43 [0.33]	0.16 [0.11]
	SYJ354□		Pressure center						—	0.58 [0.32]	0.42 [0.33]	0.16 [0.080]	0.46	0.32	0.11
5 port Body ported	SYJ312□	2 position	Single	M3 x 0.5	M3 x 0.5	36	37	41	0.9						
	SYJ322□		Double			53	55	63							
	SYJ332□	3 position	Closed center			56	58	66							
	SYJ342□		Exhaust center												
	SYJ352□		Pressure center												
Note 1) 4 Port Base mounted (For manifold base only)	SYJ313□	2 position	Single	1/8	M5 x 0.8	36	37	41	—						
	SYJ323□		Double			53	55	63							
	SYJ333□	3 position	Closed center			56	58	66	—						
	SYJ343□		Exhaust center						—						
	SYJ353□		Pressure center						—						

Note 1) Dedicated for manifold base. For details, refer to page 11.
Note 2) [ ] denotes the normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2
Note 3) ( ): Without sub-plate.
Note 4) For DC voltages. For AC voltages add 3 g to the weight of the single solenoid and 6 g to the weight of the double solenoid and 3 position types.

Cylinder Speed Chart

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

Body Ported

Series	Average speed (mm/s)	Bore size						
		Series CJ2 Pressure 0.5 MPa Load rate: 50% Stroke 60 mm			**Series CM2** Pressure 0.5 MPa Load rate: 50% Stroke 300 mm			
		ø6	ø10	ø16	ø20	ø25	ø32	ø40
SYJ3120-M3	800 700 600 500 400 300 200 100 0	Perpendicular, upward actuation Horizontal actuation						

Base Mounted

Series	Average speed (mm/s)	Bore size						
		Series CJ2 Pressure 0.5 MPa Load rate: 50% Stroke 60 mm			**Series CM2** Pressure 0.5 MPa Load rate: 50% Stroke 300 mm			
		ø6	ø10	ø16	ø20	ø25	ø32	ø40
SYJ3140-M5	800 700 600 500 400 300 200 100 0	Perpendicular, upward actuation Horizontal actuation						

∗ Cylinder is in extending. Speed controller is meter-out, which is directly connected with cylinder and its needle is fully opened.
∗ Average speed of cylinder is obtained by dividing the full stroke time by the stroke.
∗ Load factor: ((Load weight x 9.8) /Theoretical force) x 100%

Conditions

Body ported		**Series CJ2**	**Series CM2**
SYJ3120-M3	Tubing bore x Length	ø4 x 1 m	
	Speed controller	AS1301F-04	
	Silencer	AN120-M5	

Base mounted		**Series CJ2**	**Series CM2**
SYJ3140-M5	Tubing bore x Length	ø6 x 1 m	
	Speed controller	AS2001F-06	AS2301F-06
	Silencer	AN120-M5	

How to Order

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

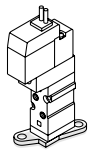
Light/surge voltage suppressor

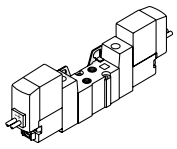
Nil	Without light/surge voltage suppressor
S	With surge voltage suppresor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

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

Bracket

Nil: Without bracket
F: With bracket


Single


Double

∗ Brackets cannot be retrofitted.

Note) • The double solenoid mounting bracket is supplied unattached.
• To order the double solenoid bracket for use with a single solenoid valve, order the single solenoid valve without a bracket and order the bracket (VJ3000-13-1) separately.
(Example) SYJ3120-5M-M3
VJ3000-13-1

Rated voltage

DC

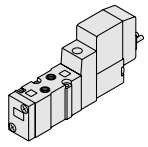
5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

AC (50/60 Hz)

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

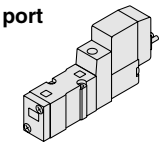
∗ For type W□, DC voltage is only available.

5 port

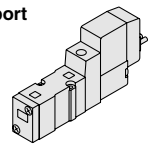

(Type 20 Manifold)

Body ported	SYJ3	1	2	0	□	—	5	M	□	□	—	M3	—	□	
Base mounted (4 port)	SYJ3	2	3	0	□	—	5	M	□	□	(Manifold use only)				
Base mounted (5 port)	SYJ3	2	4	0	□	—	5	M	□	□	—	□			

4 port


(For manifold type 31, S31, 32, S32)

5 port


(For sub-plate, manifold type 41, S41, 46, S46)

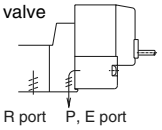
Coil specifications

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

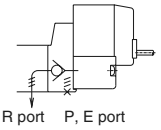
∗ Power saving circuit is not available in the case of W□ type.

Body option

0: Pilot valve individual exhaust for the pilot valve

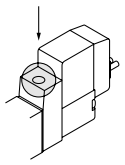


3: Common exhaust type for main and pilot valve

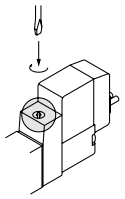


Manual override

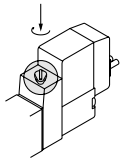
Nil: Non-locking push type



D: Push-turn locking slotted type

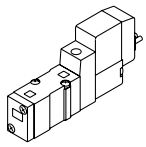


E: Push-turn locking lever type

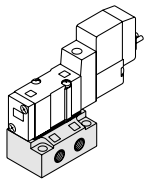


Port size

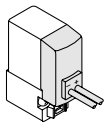
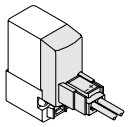
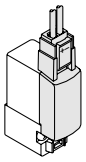
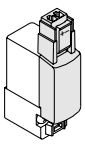
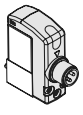
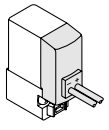
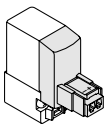
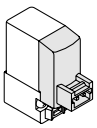
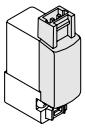
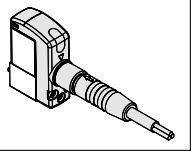
Nil: Without sub-plate


(With gasket and screws)

M5: With M5 port sub-plate



Electrical entry

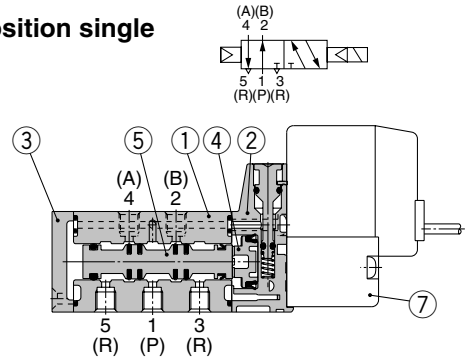
24, 12, 6, 5, 3 VDC 100,110, 200, 220 VAC				24, 12, 6, 5, 3 VDC
Grommet	**L plug connector**	**M plug connector**		**M8 connector**
G: Lead wire length 300 mm	**L:** With lead wire (Length 300 mm)	**M:** With lead wire (Length 300 mm)	**MN:** Without lead wire	**WO:** Without connector cable
				
H: Lead wire length 600 mm	**LN:** Without lead wire	**LO:** Without connector	**MO:** Without connector	**W□:** With connector cable Note 1)
				

∗ LN, MN type: with 2 sockets.
∗ For connector cable of M8 connector, refer to back page 10.
Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to back page 10.

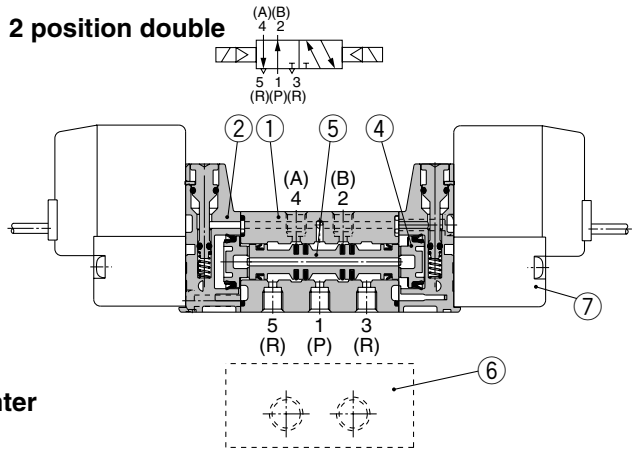
Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 15.)

Construction

2 position single

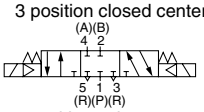


2 position double

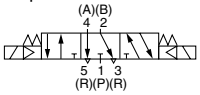


3 position closed center/exhaust center/pressure center

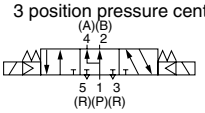
3 position closed center

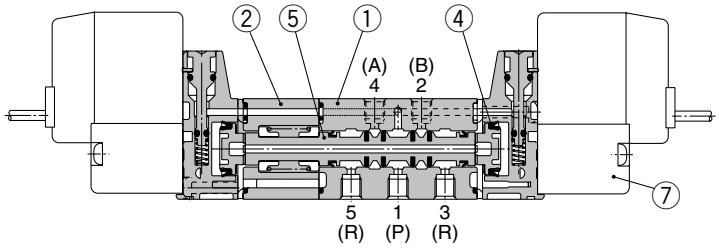


3 position exhaust center



3 position pressure center





(This figure shows a closed center type.)

Component Parts

No.	Description	Material	Note
1	Body	Zinc die-casted	White
2	Piston plate	Resin	White
3	End cover	Resin	White
4	Piston	Resin	
5	Spool valve assembly	Alminum, H-NBR	

Replacement Parts

No.	Description	No.	Note
6	Sub-plate	SYJ3000-22-1	Zinc die-casted
7	Pilot valve	V111 (T) - □□□	

How to Order Pilot Valve Assembly

V111 □ — 5 G □

Coil specifications

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

∗ Power saving circuit is not available in the case of 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 suppresor
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 type "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Electrical entry

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

∗ For connector cable of M8 connector, refer to back page 10.
Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to back page 10.

How to Order Connector Assebmly for L/M Plug Connector

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

V100-49-1- □

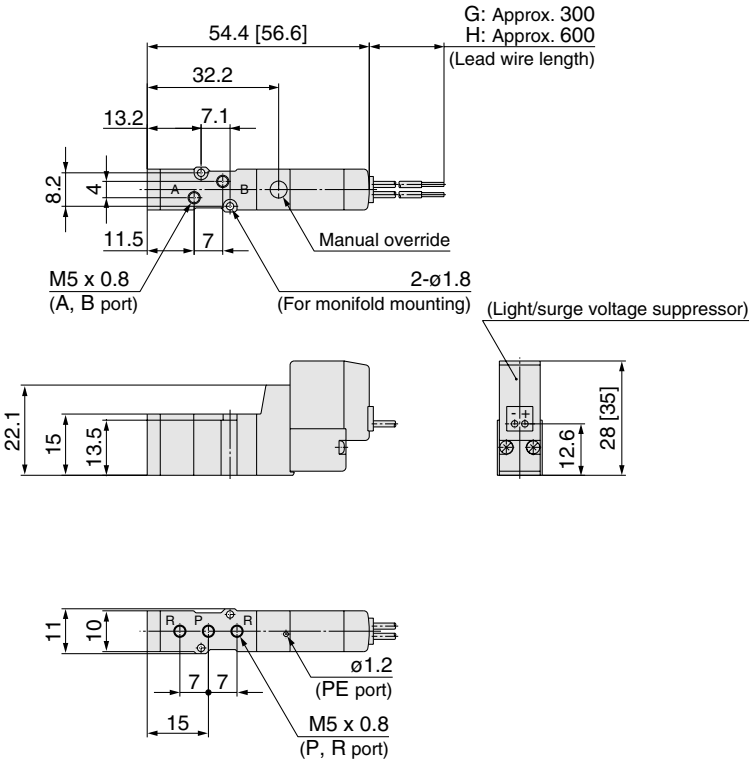
Cable length

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

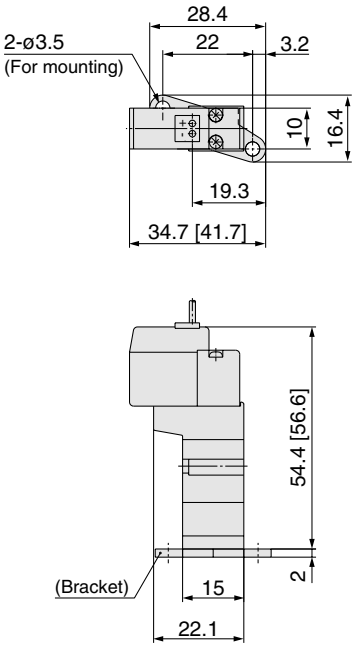
2 Position Single

[ ]: AC

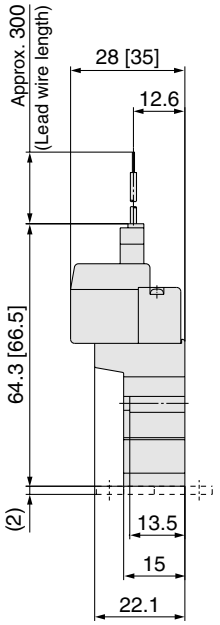
Grommet (G), (H): SYJ3120-□G,H□□-M3



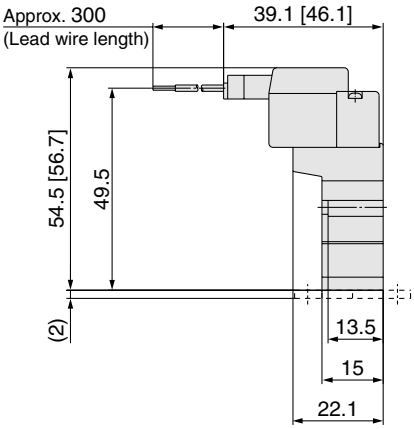
With bracket: SYJ3120-□G,H□□-M3-F



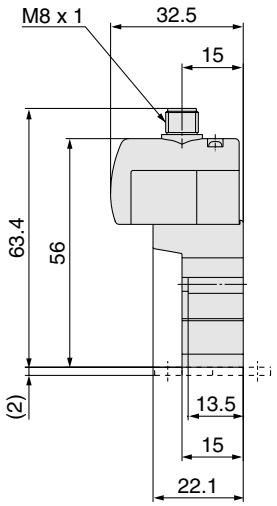
L plug connector (L): SYJ3120-□L□□-M3 (-F)



M plug connector (M): SYJ3120-□M□□-M3 (-F)



M8 connector (WO): SYJ3120-□WO□□-M3 (-F)

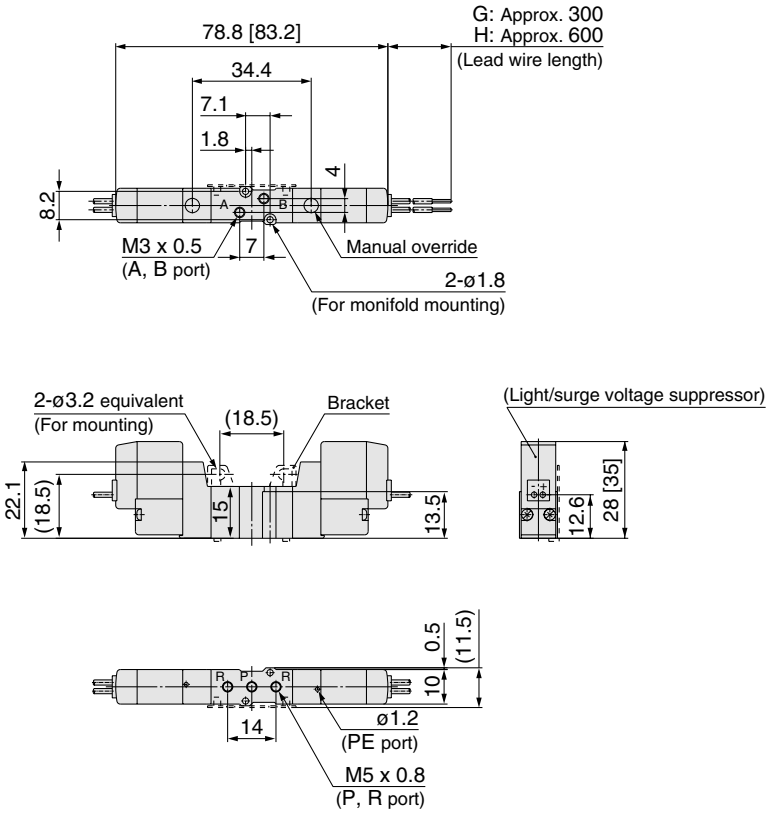


Refer to back page 11 for dimentions with connector cable.

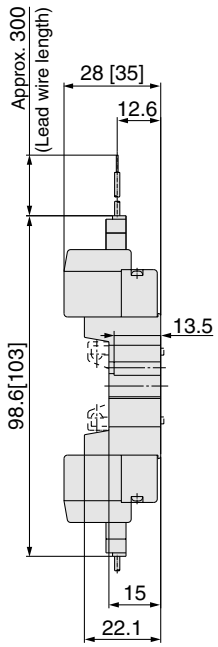
2 Position Double

[ ]: AC

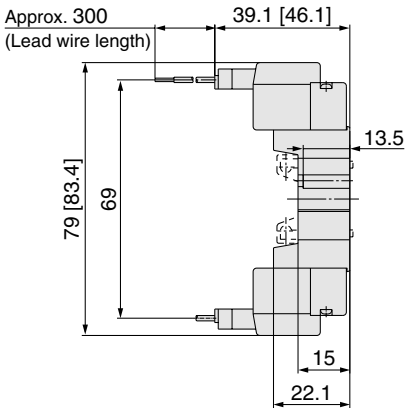
Grommet (G), (H): SYJ3220-□$^{G}_{H}$□□-M3 (-F)



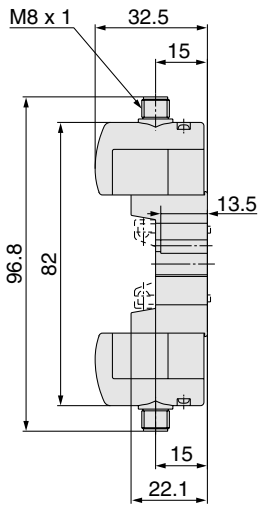
L plug connector (L): SYJ3220-□L□□-M3 (-F)



M plug connector (M): SYJ3220-□M□□-M3 (-F)



M8 connector (WO): SYJ3220-□WO□□-M3 (-F)

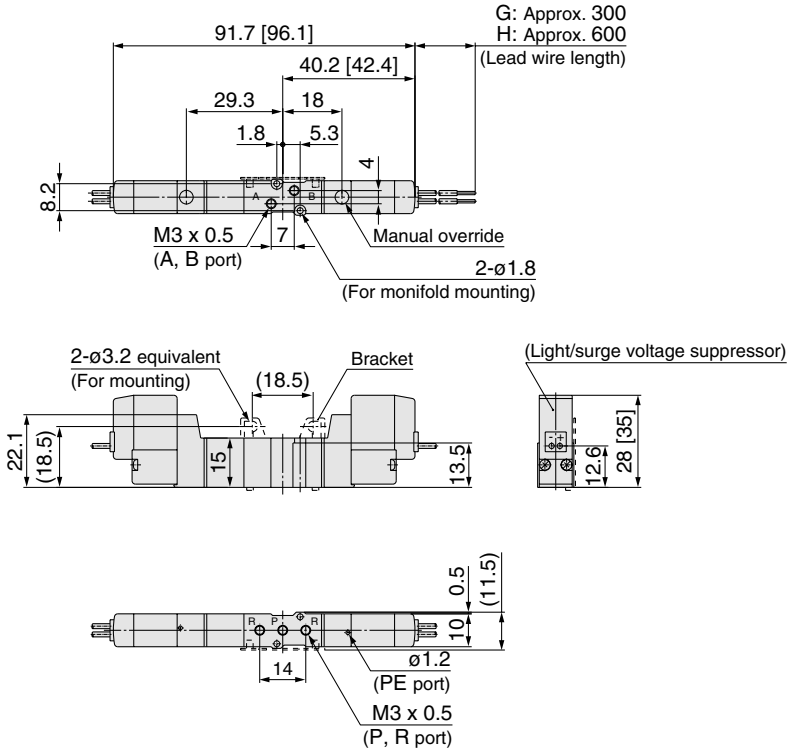


Refer to back page 11 for dimentions with connector cable.

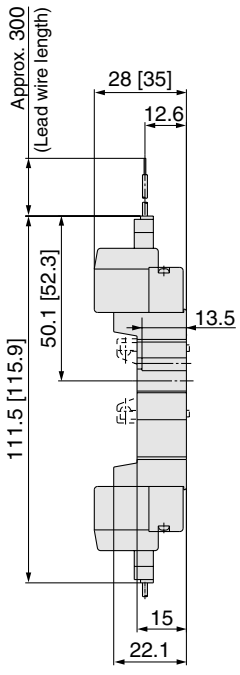
3 Position Closed Center/Exhaust Center/Pressure Center

[ ]: AC

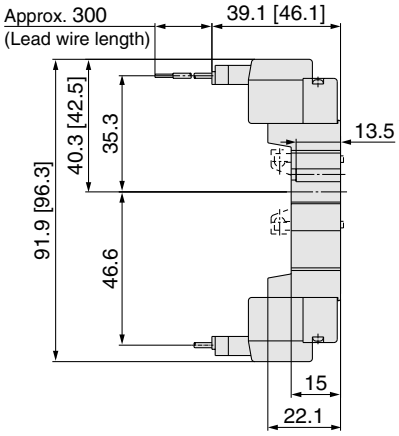
Grommet (G), (H): SYJ3$^{3}_{5}$20-□$^{G}_{H}$□□-M3 (-F)



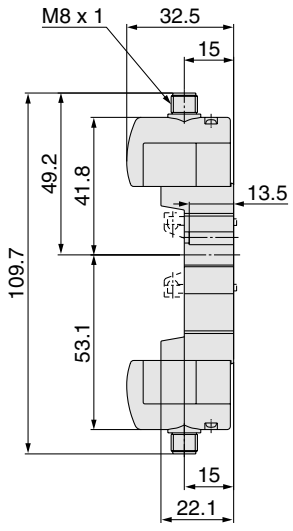
L plug connector (L): SYJ3$^{3}_{5}$20-□L□□-M3 (-F)



M plug connector (M): SYJ3$^{3}_{5}$20-□M□□-M3 (-F)



M8 connector (WO): SYJ3$^{3}_{5}$20-□WO□□-M3 (-F)

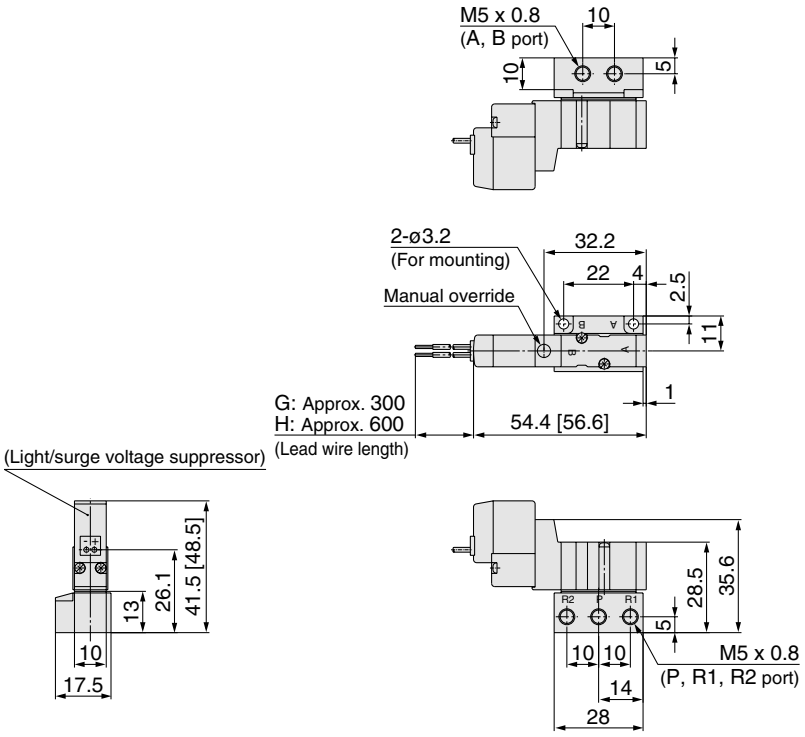


Refer to back page 11 for dimentions with connector cable.

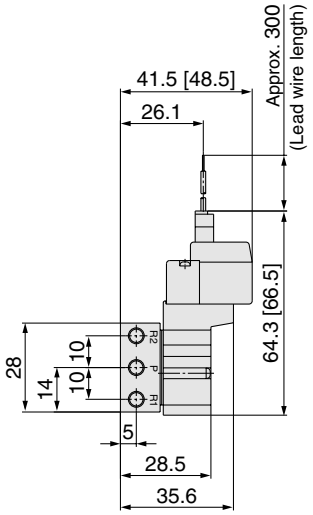
2 Position Single

[ ]: AC

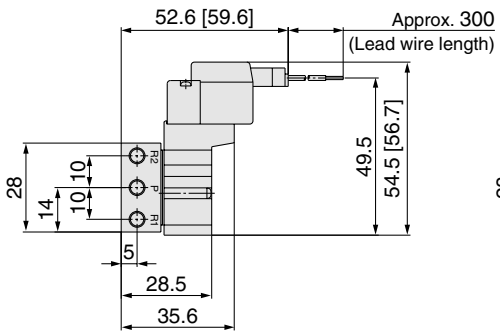
Grommet (G), (H): SYJ3140-□$^{G}_{H}$□□-M5



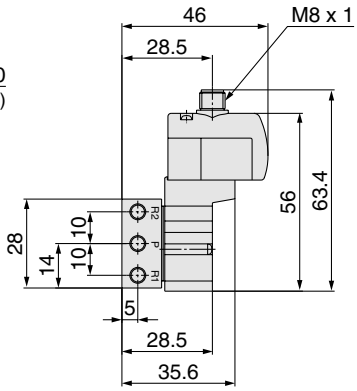
L plug connector (L): SYJ3140-□L□□-M5



M plug connector (M): SYJ3140-□M□□-M5



M8 connector (WO): SYJ3140-□WO□□-M5

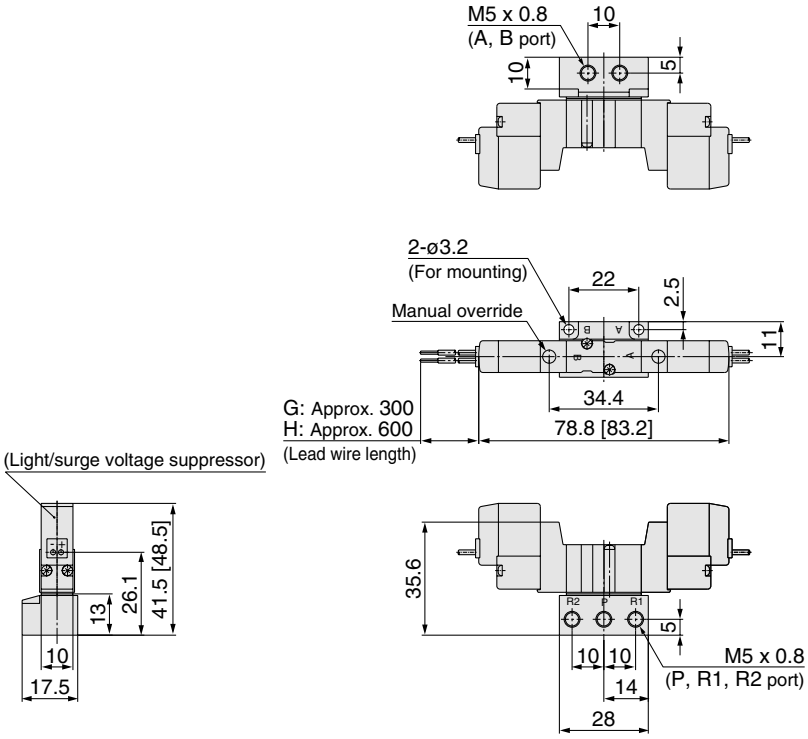


Refer to back page 11 for dimentions with connector cable.

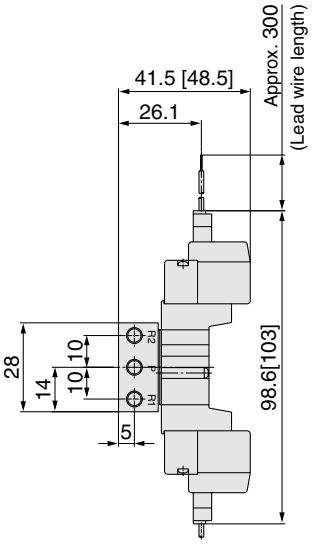
2 Position Double

[ ]: AC

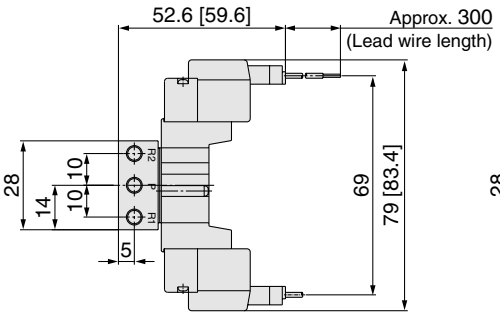
Grommet (G), (H): SYJ3240-□$^{G}_{H}$□□-M5



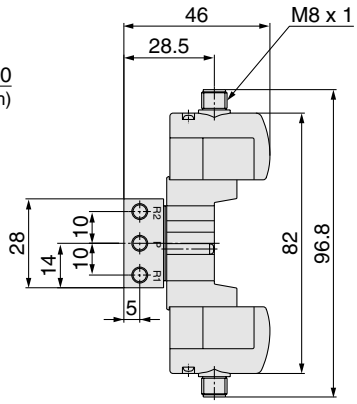
L plug connector (L): SYJ3240-□L□□-M5



M plug connector (M): SYJ3240-□M□□-M5



M8 connector (WO): SYJ3240-□WO□□-M5

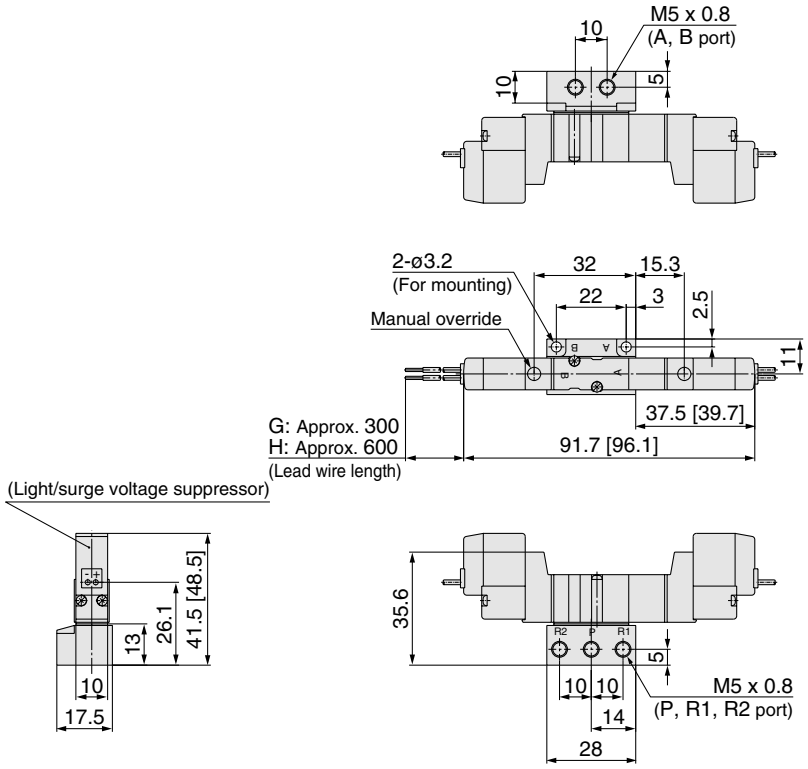


Refer to back page 11 for dimentions with connector cable.

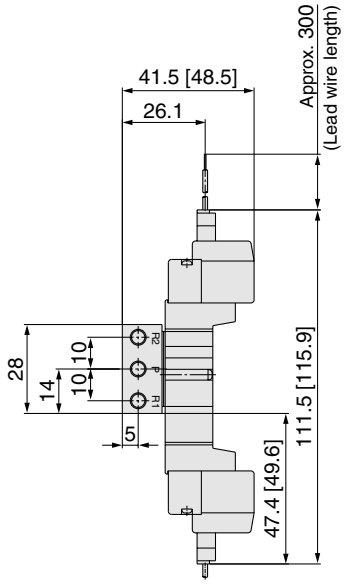
3 Position Closed Center/Exhaust Center/Pressure Center

[ ]: AC

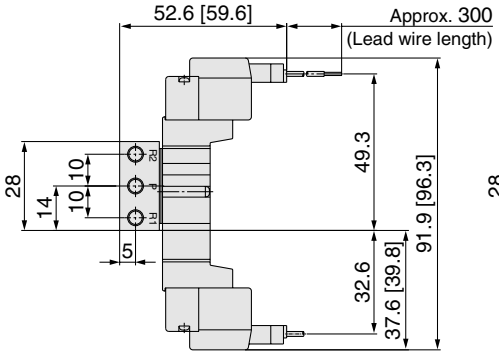
Grommet (G), (H): SYJ3$^{3}_{5}$40-□$^{G}_{H}$□□-M5



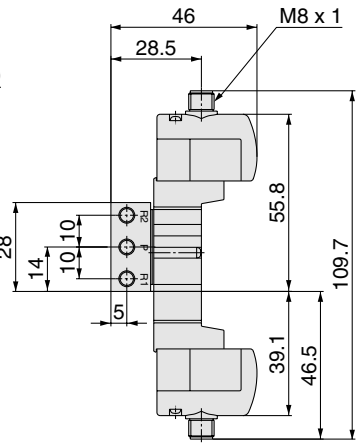
L plug connector (L): SYJ3$^{3}_{5}$40-□L□□-M5



M plug connector (M): SYJ3$^{3}_{5}$40-□M□□-M5



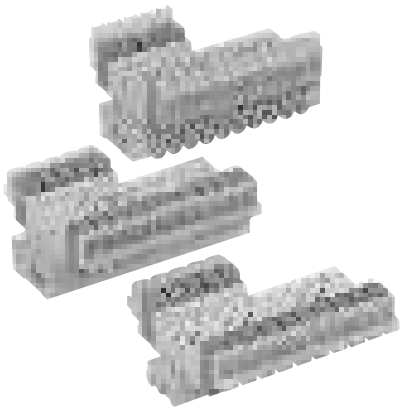
M8 connector (WO): SYJ3$^{3}_{5}$40(R)-□WO□□-M5□



Refer to back page 11 for dimentions with connector cable.

Series SYJ3000
Manifold Specifications

Manifold Standard



Manifold Specifications

Model		Type 20	Type 31, S31	Type 32, S32	Type 41, S41	Type 46, S46
Manifold type		Single base/B mount				
P (SUP), R (EXH)		Common SUP/Common EXH				Common SUP Individual EXH
Valve stations		2 to 20 stations				
A, B port Porting specifications	Location	Valve	Base			
	Direction	Top	Side			
Port size	P, R port	M5 x 0.8		1/8		P: 1/8 R: M5 x 0.8
	A, B port	M3 x 0.5		M5 x 0.8, C4 (One-touch fitting for ø4)		

Flow Characteristics

Manifold			Port size		Flow characteristics						Effective area (mm^2)
					1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → R)			
			1(P), 5/3(R) Port	2(B), 4(A) Port	C [dm^3/(s·bar)]	b	Cv	C [dm^3/(s·bar)]	b	Cv	
Body ported for internal pilot	Type SS5YJ3-20	SYJ3□2□	M5 x 0.8	M3 x 0.5	–	–	–	–	–	–	0.9
Base mounted for internal pilot	Type SS5YJ3-$^{31}_{S31}$	SYJ3□3□	M5 x 0.8	M3 x 0.5	–	–	–	–	–	–	0.9
	Type SS5YJ3-32-M5	SYJ3□3□	1/8	M5 x 0.8	0.25	0.19	0.060	0.32	0.25	0.077	–
	Type SS5YJ3-32-C4			C4	0.25	0.18	0.059	0.30	0.27	0.075	–
	Type SS5YJ3-S32-M5			M5 x 0.8	0.25	0.26	0.060	0.29	0.15	0.062	–
	Type SS5YJ3-S32-C4			C4	0.24	0.21	0.057	0.27	0.18	0.062	–
	Type SS5YJ3-41-M5	SYJ3□4□	1/8	M5 x 0.8	0.32	0.25	0.081	0.33	0.19	0.079	–
	Type SS5YJ3-41-C4			C4	0.32	0.28	0.079	0.35	0.24	0.084	–
	Type SS5YJ3-S41-M5			M5 x 0.8	0.33	0.29	0.082	0.34	0.17	0.081	–
	Type SS5YJ3-S41-C4			C4	0.32	0.27	0.079	0.34	0.24	0.084	–
	Type SS5YJ3-46-M5	SYJ3□4□	1/8 M5 x 0.8	M5 x 0.8	0.20	0.25	0.048	0.10	0.12	0.024	–
	Type SS5YJ3-46-C4			C4	0.21	0.27	0.050	0.21	0.13	0.047	–
	Type SS5YJ3-S46-M5			M5 x 0.8	0.20	0.25	0.048	0.19	0.16	0.024	–
	Type SS5YJ3-S46-C4			C4	0.22	0.34	0.057	0.10	0.090	0.024	–

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold (Example)

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.
Example:

- **SS5YJ3-20-03** ..... 1 set (Manifold base)
  - ∗ **SYJ3120-5G-M3** ··· 2 sets (Valve)
  - ∗ **SYJ3000-21-1A** ···· 1 set (Blanking plate assembly)
- **SS5YJ3-S41-03-C4** ··· 1 set (Manifold base)
  - ∗ **SYJ3140-5LZ** ..... 2 sets (Valve)
  - ∗ **SYJ3000-21-2A** ····· 1 set (Balnking plate assembly)

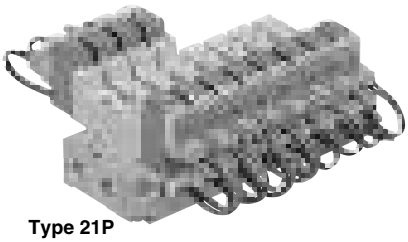
The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

∗ Use manifold specification sheet.

Flat Ribbon Cable Manifold

- **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.



Type 21P

Flat Ribbon Cable Manifold Specifications

Model		Type 21P	Type 32P
Manifold type		Single base/B mount	
P (SUP), R (EXH)		Common SUP, Common EXH	
Valve stations		4 to 12 stations	
A, B port Porting specifications	Location	Valve	Base
	Direction	Top	Side
Port size	P, R port	1/8	
	A, B port	M3 x 0.5	M5 x 0.8, C4 (One-touch fitting for Ø4)
Applicable flat ribbon cable connector		Socket: 26 pins MIL type with strain relief (MIL-C-83503)	
Internal wiring		In common between +COM and –COM (Z type: +COM only)	
Rated voltage		24, 12 VDC/100, 110 VAC	

Note) The withstand voltage specification for the wiring unit section conforms to JIS C 0704, Grade 1 or its equivalent.

Flow Characteristics

Manifold			Port size		Flow characteristics 1 → 4/2 (P → A/B)			Flow characteristics 4/2 → 5/3 (A/B → R)			Effective area (mm^2)
			1(P), 5/3(R) Port	2(B), 4(A) Port	C [dm^3/(s·bar)]	b	Cv	C [dm^3/(s·bar)]	b	Cv	
Body ported for internal pilot	Type SS5YJ3-21P	SYJ3□23	1/8	M3 x 0.5	–	–	–	–	–	–	0.9
Base mounted for internal pilot	Type SS5YJ3-32P-M5	SYJ3□33	1/8	M5 x 0.8	0.25	0.19	0.060	0.32	0.25	0.077	–
	Type SS5YJ3-32P-C4			C4	0.25	0.18	0.059	0.3	0.27	0.075	–

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold

- **SS5YJ3-32P-07-C4** ····· 1 pc. (Manifold base)
  - ∗ **SYJ3133-5LOU** ····· 3 pcs. (Valve)
  - ∗ **SYJ3233-5LOU** ····· 3 pcs. (Valve)
- ∗ **SYJ3000-21-4A** ····· 1 pc. (Blanking plate assembly)
- ∗ **SYJ3000-37-28A** ····· 3 pcs. (Connector assembly)
- ∗ **SYJ3000-37-29A** ····· 3 pcs. (Connector assembly)

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

∗ Use manifold specification sheet.

How to Order Valve

For DC SYJ3 1 2 3 — 5 LO U — —

For AC SYJ3 1 2 3 — 1 LO Z — —

Rated voltage

5	24 VDC
6	12 VDC

Light/surge voltage suppressor

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

Note) Z: Positive common specifications only.

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

A, B port size

Symbol	Port size
Nil	Base mounted
M3	M3 x 0.5

Rated voltage

1	100 VAC
3	110 VAC (AC115V)

Manual override

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

Note) In the case of flat cable type, "U" type is for DC specifications and "Z" type is for AC specifications. For the opposite specification, please contact SMC.

How to Order Connector Assembly

For 12, 24 VDC

Single solenoid	SY3000-37-28A
Double solenoid, 3 position type	SY3000-37-29A

For 100 VAC

Single solenoid	SY3000-37-46A
Double solenoid, 3 position type	SY3000-37-47A

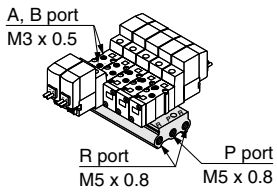
For 110 VAC (115 VAC)

Single solenoid	SY3000-37-54A
Double solenoid, 3 position type	SY3000-37-55A

Common SUP/Common EXH

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 20 (5 Port/Body ported)



How to Order

SS5YJ3–20– 05

Number of stations

02	2 stations
:	:
20	20 stations

Applicable solenoid valve

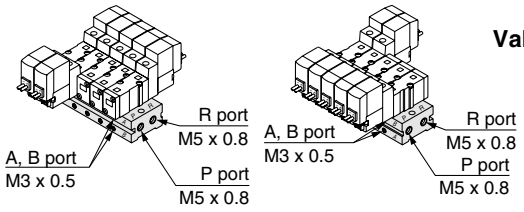
SYJ3□20-□□□□-M3
SYJ3□23-□□□□-M3

Applicable blanking plate assembly

SYJ3000-21-1A

Type 31 (4 Port/Base mounted)

Type 31 **Type S31** (Single solenoid coil is on same side as the A,B port.)



How to Order

SS5YJ3– □ 31– 05 –M3

Valve mounting direction

Nil	Single solenoid coil is on opposite side as the A,B port.
S	Single solenoid coil is on same side as the A,B port.

Stations

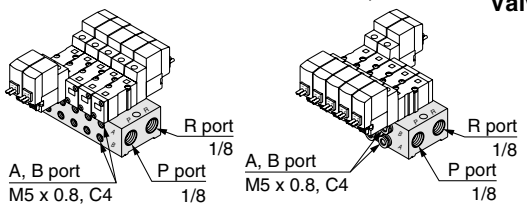
02	2 stations
:	:
20	20 stations

Applicable solenoid valve

SYJ3□30-□□□□
SYJ3□33-□□□□

Type 32 (4 Port/Base mounted)

Type 32 **Type S32** (Single solenoid coil is on same side as the A,B port.)



How to Order

SS5YJ3– □ 32– 05 – M5 □

Valve mounting direction

Nil	Single solenoid coil is on opposite side as the A,B port.
S	Single solenoid coil is on same side as the A,B port.

Stations

02	2 stations
:	:
20	20 stations

A, B port size

M5	M5 x 0.8
C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

Applicable blanking plate assembly

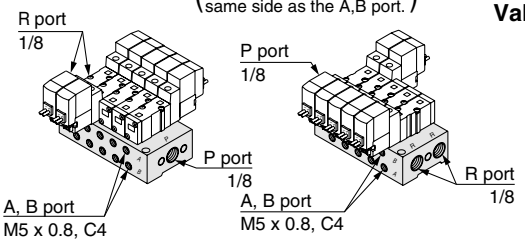
SYJ3000-21-2A

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Type 41 (5 Port/Base mounted)

Type 41 **Type S41** (Single solenoid coil is on same side as the A,B port.)



How to Order

SS5YJ3– □ 41– 05 – C4 □

Valve mounting direction

Nil	Single solenoid coil is on opposite side as the A,B port.
S	Single solenoid coil is on same side as the A,B port.

Stations

02	2 stations
:	:
20	20 stations

A, B port size

M5	M5 x 0.8
C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

Applicable solenoid valve

SYJ3□40-□□□□
SYJ3□43-□□□□

Applicable blanking plate assembly

SYJ3000-21-2A

P, R port thread type

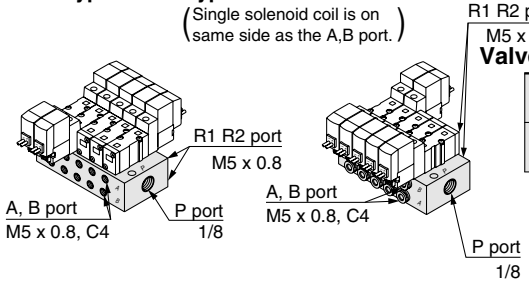
Nil	Rc
F	G
N	NPT
T	NPTF

Common SUP/Individual EXH

Note) For more than10 stations, supply air to both sides of P port.

Type 46 (5 Port/Base mounted)

Type 46 **Type S46** (Single solenoid coil is on same side as the A,B port.)



How to Order

SS5YJ3– □ 46– 05 – M5 □

Valve mounting direction

Nil	Single solenoid coil is on opposite side as the A,B port.
S	Single solenoid coil is on same side as the A,B port.

Stations

02	2 stations
:	:
20	20 stations

A, B port size

M5	M5 x 0.8
C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

Applicable solenoid valve

SYJ3□40-□□□□
SYJ3□43-□□□□

Applicable blanking plate assembly

SYJ3000-21-2A

P port thread type

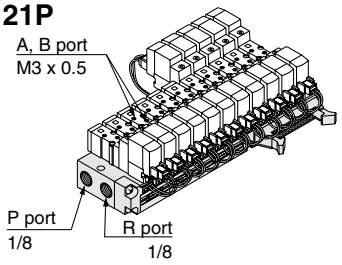
Nil	Rc
F	G
N	NPT
T	NPTF

Flat Ribbon Cable Manifold

Common SUP/Common EXH

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 21P



How to Order

SS5YJ3–21P– 07 –

Stations

04	4 stations
:	:
12	12 stations

P, R port thread type

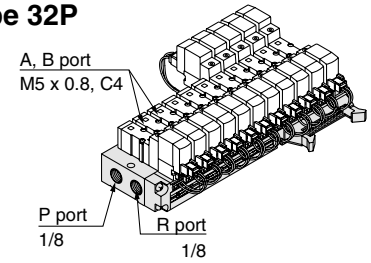
Nil	Rc
00F	G
00N	NPT
00T	NPTF

Applicable solenoid valve
Refer to page 12.

Applicable connector assembly
Refer to page 12.

Applicable blanking plate assembly
SYJ3000-21-3A
(With dust cap)

Type 32P



How to Order

SS5YJ3–32P– 07 – C4

Stations

04	4 stations
:	:
12	12 stations

A, B port size

M5	M5 x 0.8
C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Applicable solenoid valve
Refer to page 12.

Applicable connector assembly
Refer to page 12.

Applicable blanking plate assembly
SYJ3000-21-3A
(With dust cap)

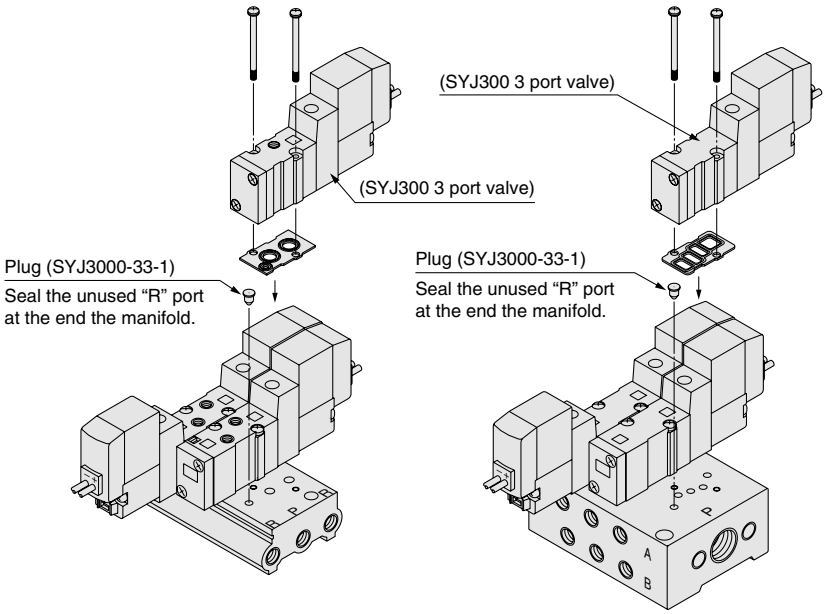
Mixed Installation of the SYJ300 and the SYJ3000 Valves on the Same Manifold

Series SYJ300 valves can be mounted on the manifolds for Series SYJ3000.

① **SS5YJ3-20, SS5YJ3-21P**
The 3 port valve can be used by simply sealing off the unused "R" port with rubber plug SYJ3000-33-1.
Applicable solenoid valves:
Series SYJ312, SYJ312M, SYJ322, SYJ322M

② **SS5YJ3-31, -S31, SS5YJ3-32, -S32, SS5YJ3-46, -S46, SS5YJ3-32P**
The 3 port valve can be used without modification. The A port of the valve will flow out of the B port of the manifold.
Applicable solenoid valves:
Series SYJ314, SYJ314M, SYJ324, SYJ324M

③ **SS5YJ3-41, -S41**
The 3 port valve can be used on the 4 port manifold by simply sealing off the unused "R" port with rubber plug SYJ3000-33-1. The A port of the valve will flow out of the B port of the manifold.
Applicable solenoid valves:
Series SYJ314, SYJ314M, SYJ324, SYJ324M



Type SS5YJ3-20 **Type SS5YJ3-41**

A port of the 3 port valve flows out of the manifold B port.

⚠ Caution

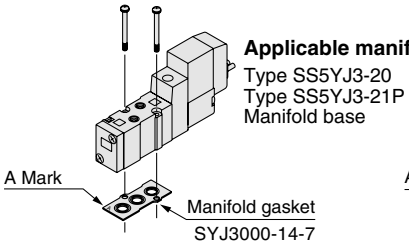
Mounting screw tightening torques

M1.7: 0.12 N·m

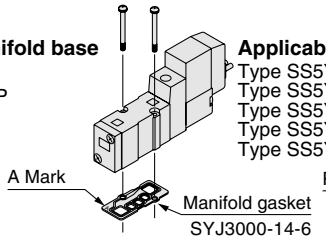
Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.

Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

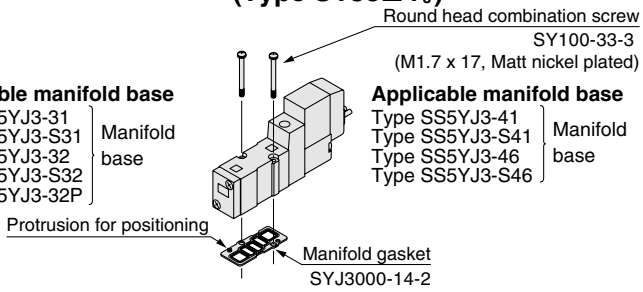
5 port body ported (Type SYJ3□2$^{0}_{3}$)



4 port base mounted (Type SYJ3□3$^{0}_{3}$)



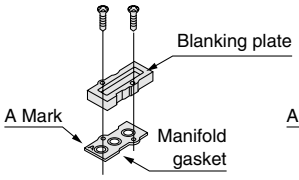
5 port base mounted (Type SYJ3□4$^{0}_{3}$)



Note) Make sure to align the manifold gasket with the groove of the valve body.

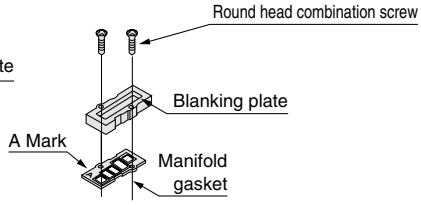
Combination of Blanking Plate Assembly and Manifold Base

Blanking plate assembly SYJ3000-21-1A



Applicable manifold base
Type SS5YJ3-20 Manifold base

Blanking plate assembly SYJ3000-21-2A

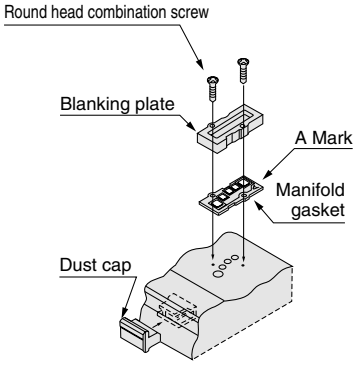


Applicable manifold base
Sub-plate
Type SS5YJ3-41
Type SS5YJ3-S41
Type SS5YJ3-46
Type SS5YJ3-S46
Type SS5YJ3-31
Type SS5YJ3-S31
Type SS5YJ3-32
Type SS5YJ3-S32
Manifold base

Note) Manifold gasket "SYJ3000-14-2" can be used with the following manifold bases.

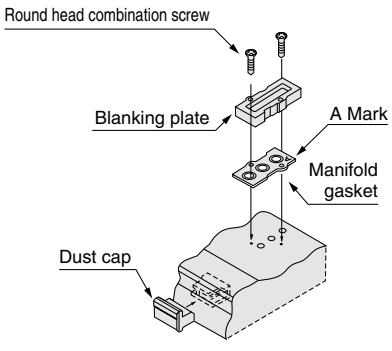
Manifold base of
Type SS5YJ3-31
Type -S31
Type -32
Type -S32

Blanking plate assembly SYJ3000-21-4A



Applicable manifold base
Type SS5YJ3-32P
Manifold base

Blanking plate assembly SYJ3000-21-3A

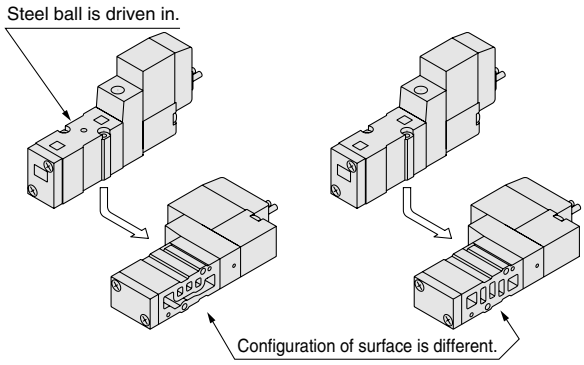


Applicable manifold base
Type SS5YJ3-21P
Manifold base

Difference between SYJ3□3$^{0}_{3}$ and SYJ3□4$^{0}_{3}$

SYJ3□30, 3□33 (4 port)

SYJ3□40, 3□43 (5 port)



⚠ Caution

Mounting screw tightening torques

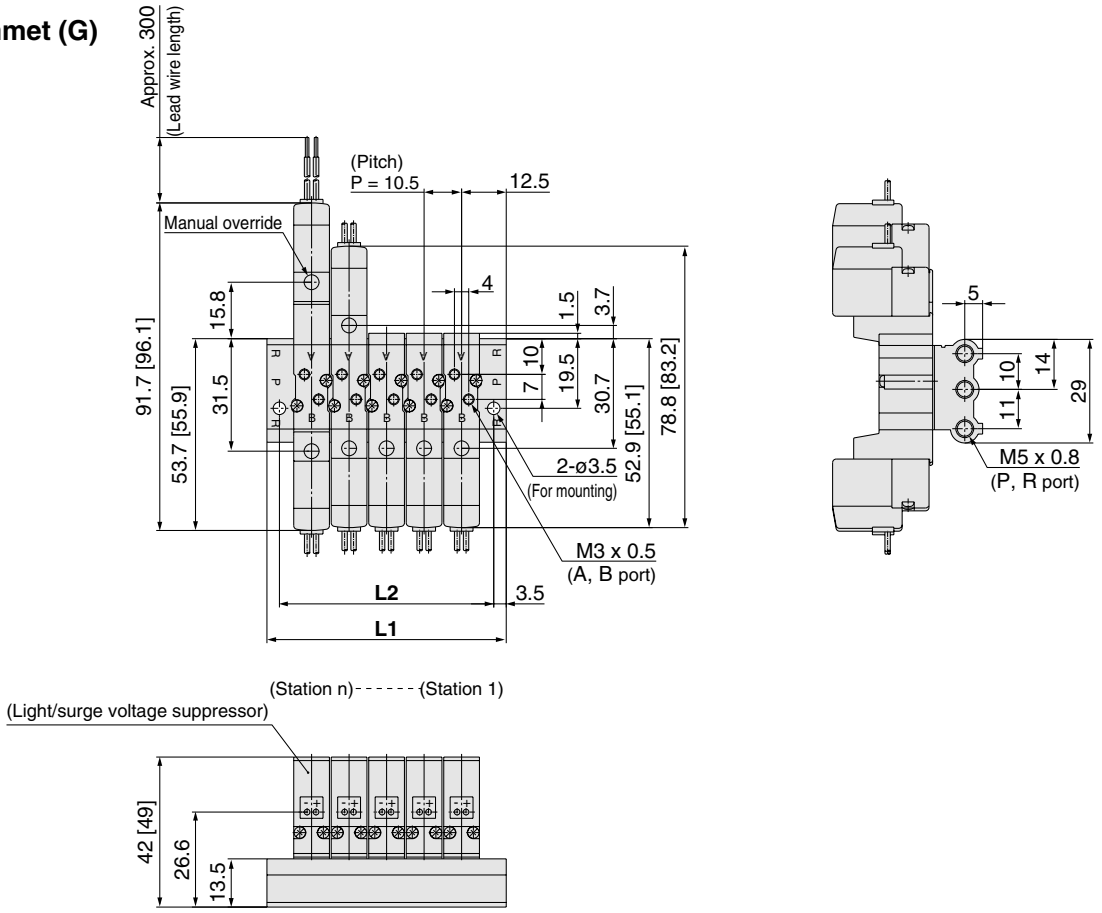
M1.7: 0.12 N·m

Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.

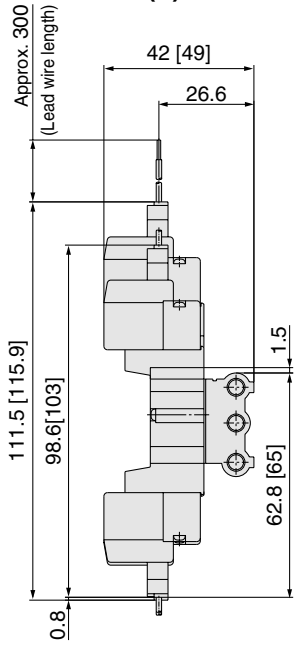
Type 20 Manifold: Top Ported/SS5YJ3-20-Stations

[ ]: AC

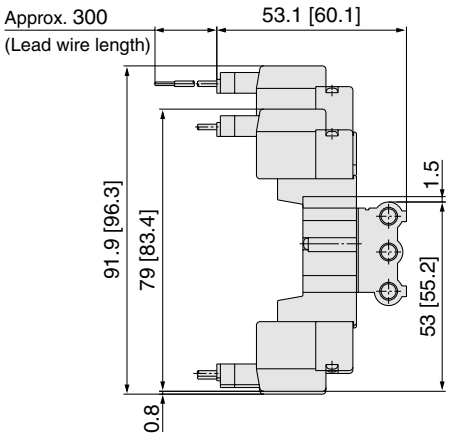
Grommet (G)



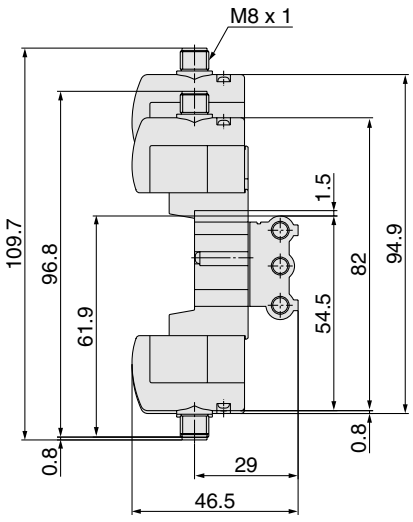
L plug connector (L)



M plug connector (M)



M8 connector (WO)



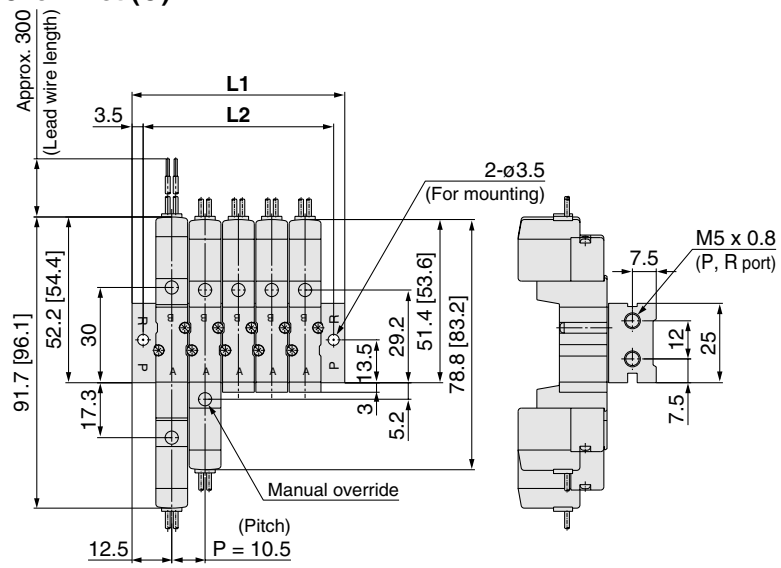
Refer to back page 11 for dimentions with connector cable.

Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5	193	203.5	214	224.5
L2	28.5	39	49.5	60	70.5	81	91.5	102	112.5	123	133.5	144	154.5	165	175.5	186	196.5	207	217.5

Type 31 Manifold: Side Ported/SS5YJ3-31-Stations-M3

[ ]: AC

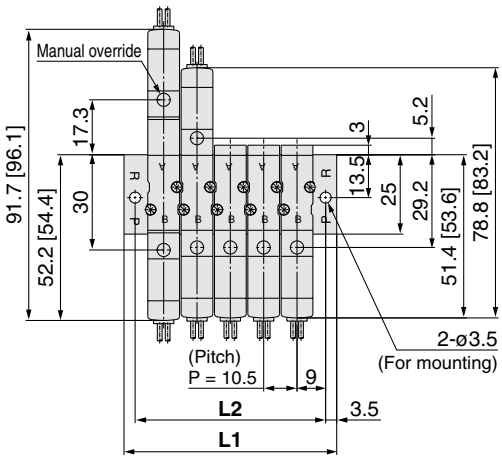
Grommet (G)

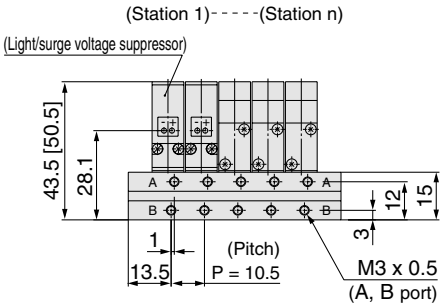


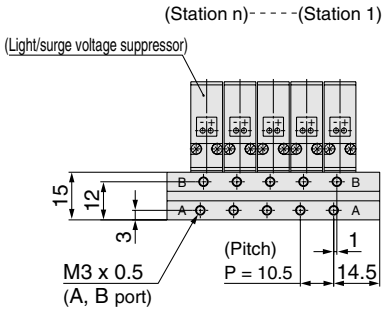
Type S31 Manifold: Side Ported

Single solenoid coil is on same side as the A,B port.

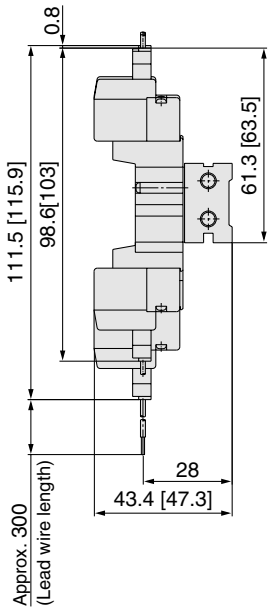
SS5YJ3-S31-Stations-M3



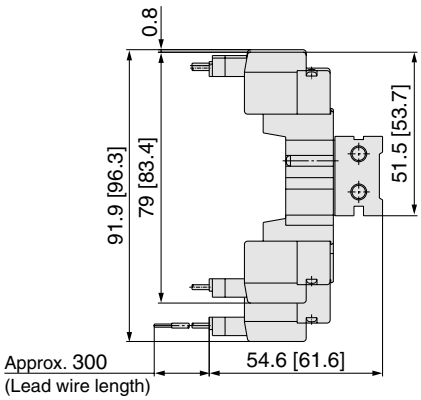




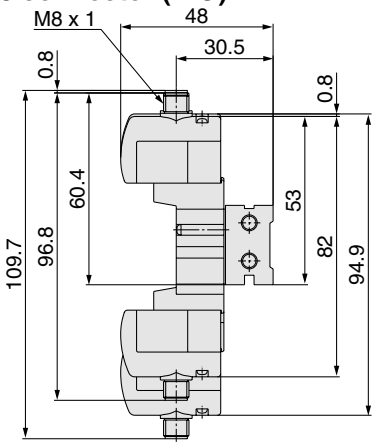
L plug connector (L)



M plug connector (M)



M8 connector (WO)



Refer to back page 11 for dimentions with connector cable.

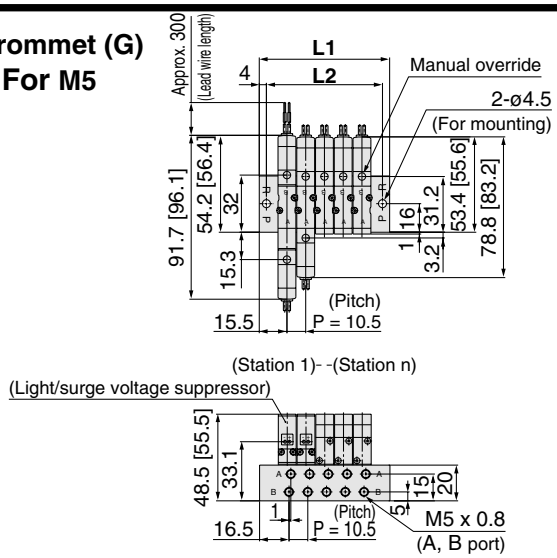
Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5	193	203.5	214	224.5
L2	28.5	39	49.5	60	70.5	81	91.5	102	112.5	123	133.5	144	154.5	165	175.5	186	196.5	207	217.5

Type 32 Manifold: Side Ported/SS5YJ3-32-Stations-M5, C4 N3 □

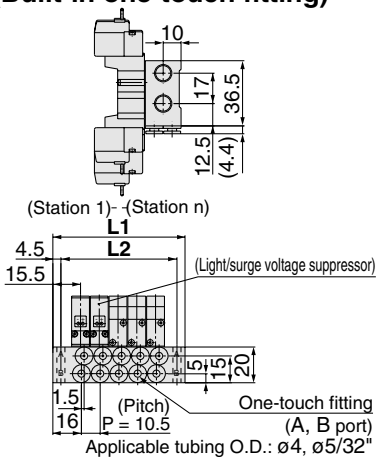
[ ]: AC

Grommet (G)

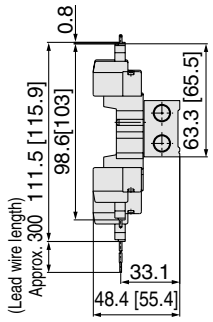
For M5



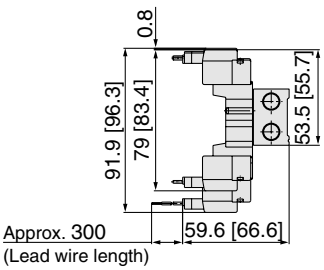
For C4 N3 □ (Built-in one-touch fitting)



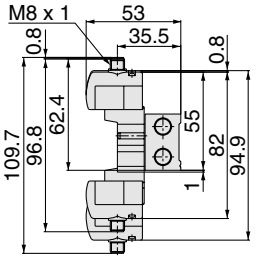
L plug connector (L)



M plug connector (M)



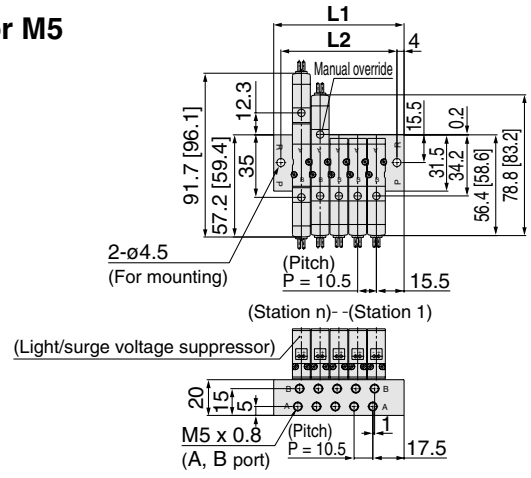
M8 connector (WO)



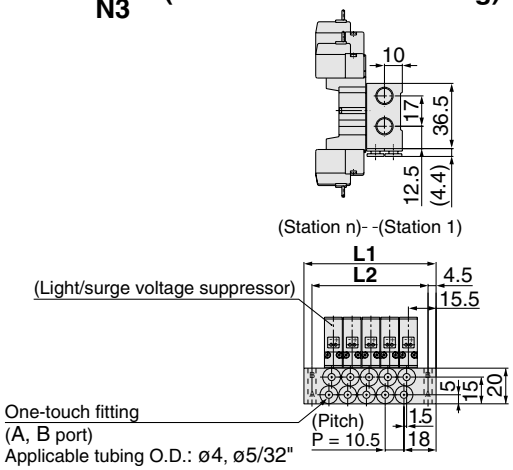
Refer to back page 11 for dimensions with connector cable.

Type S32 Manifold: Side Ported (Single solenoid coil is on same side as the A,B port.)/SS5YJ3-S32-Stations-M5, C4 N3 □

For M5



For C4 N3 □ (Built-in one-touch fitting)



SS5YJ3-32, S32-Stations-M5

Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	41.5	52	62.5	73	83.5	94	104.5	115	125.5	136	146.5	157	167.5	178	188.5	199	209.5	220	230.5
L2	33.5	44	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212	222.5

SS5YJ3-32, S32-Stations-C4

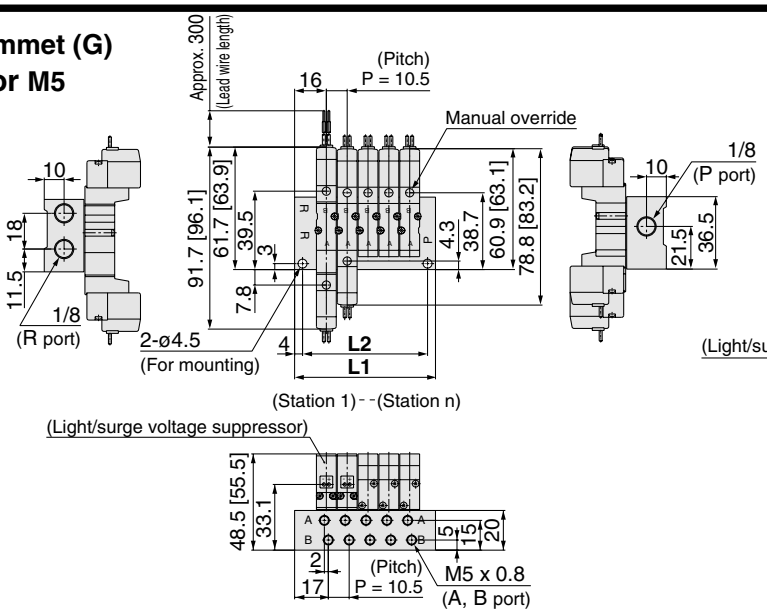
Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	42.5	53	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5	179	189.5	200	210.5	221	231.5
L2	33.5	44	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212	222.5

Type 41 Manifold: Side Ported/SS5YJ3-41-Stations-M5, C4 N3 □

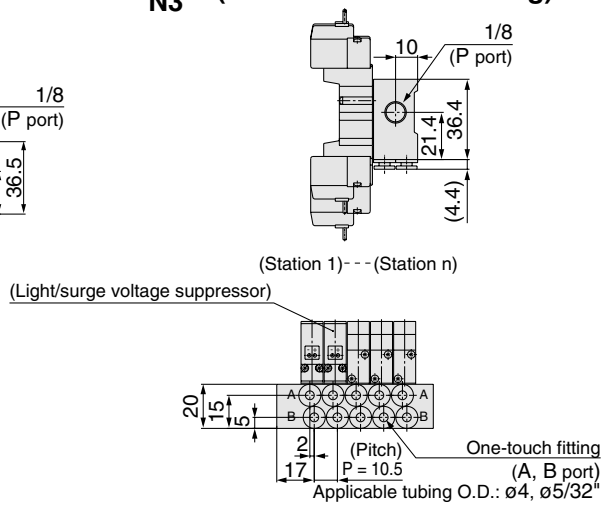
[ ]: AC

Grommet (G)

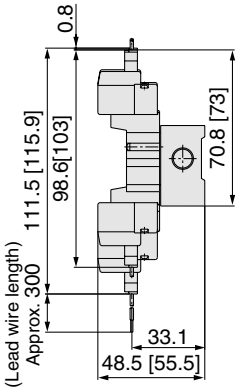
For M5



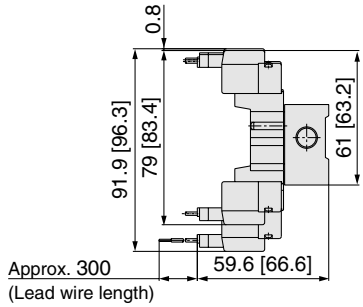
For C4 N3 □ (Built-in one-touch fitting)



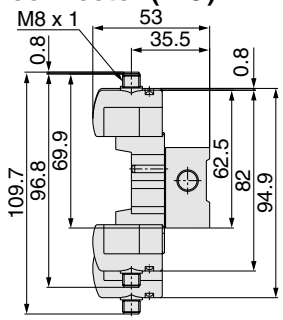
L plug connector (L)



M plug connector (M)



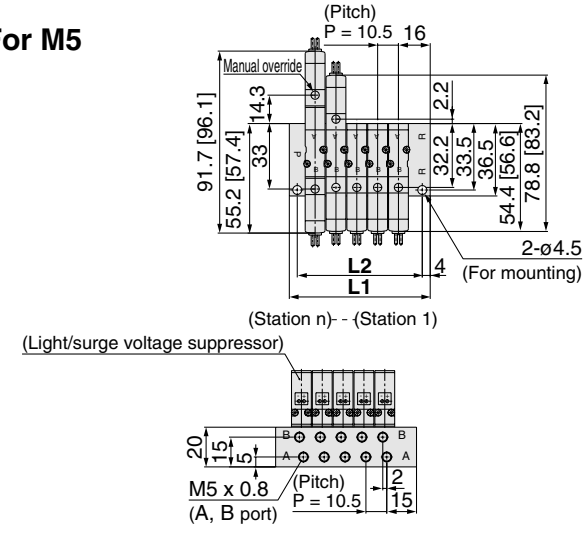
M8 connector (WO)



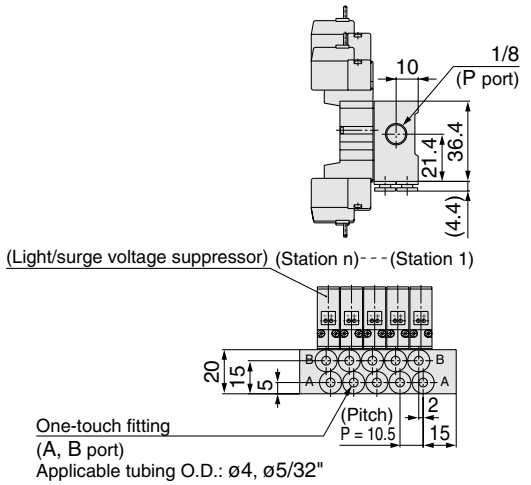
Refer to back page 11 for dimentions with connector cable.

Type S41 Manifold: Side Ported (Single solenoid coil is on same side as the A,B port.)/SS5YJ3-S41-Stations-M5, C4 N3 □

For M5



For C4 N3 □ (Built-in one-touch fitting)

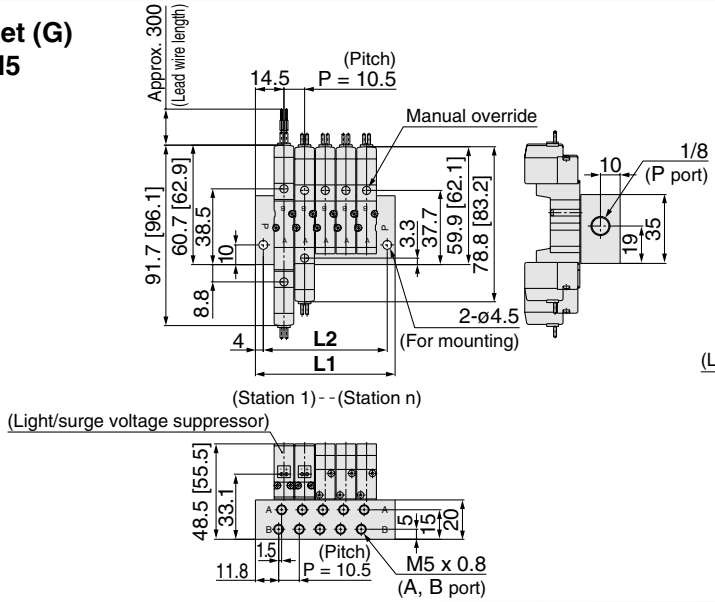


Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	39.5	50	60.5	71	81.5	92	102.5	113	123.5	134	144.5	155	165.5	176	186.5	197	207.5	218	228.5
L2	31.5	42	52.5	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5

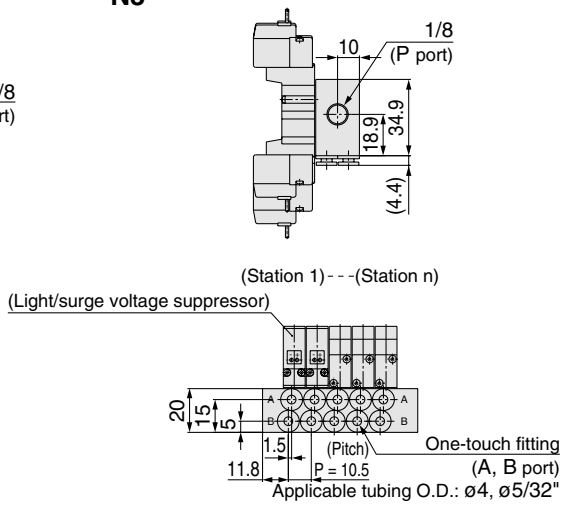
Type 46 Manifold: Side Ported/SS5YJ3-46-Stations-M5, C4 N3□

[ ]: AC

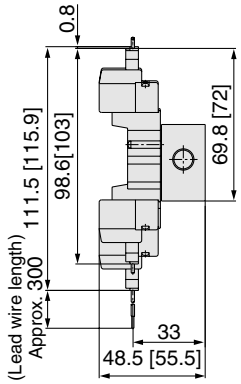
Grommet (G)
For M5



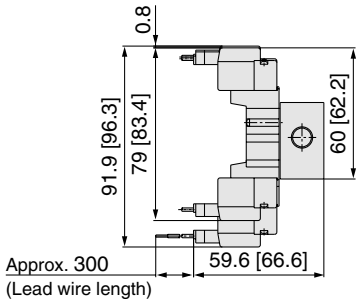
For C4 N3□ (Built-in one-touch fitting)



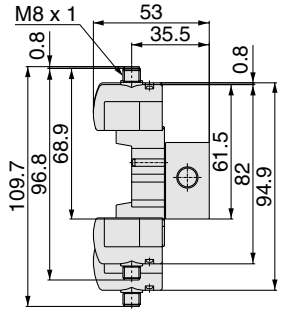
L plug connector (L)



M plug connector (M)



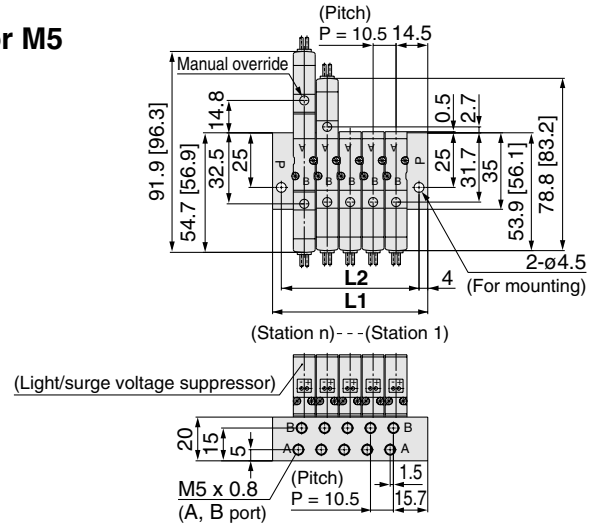
M8 connector (WO)



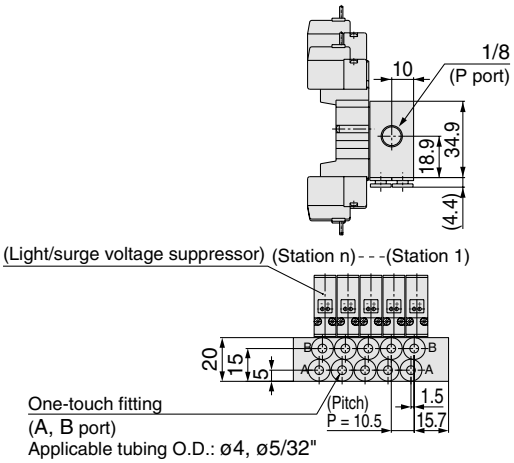
Refer to back page 11 for dimentions with connector cable.

Type S46 Manifold: Side Ported (Single solenoid coil is on same side as the A,B port.)/SS5YJ3-S46-Stations-M5, C4 N3□

For M5



For C4 N3□ (Built-in one-touch fitting)

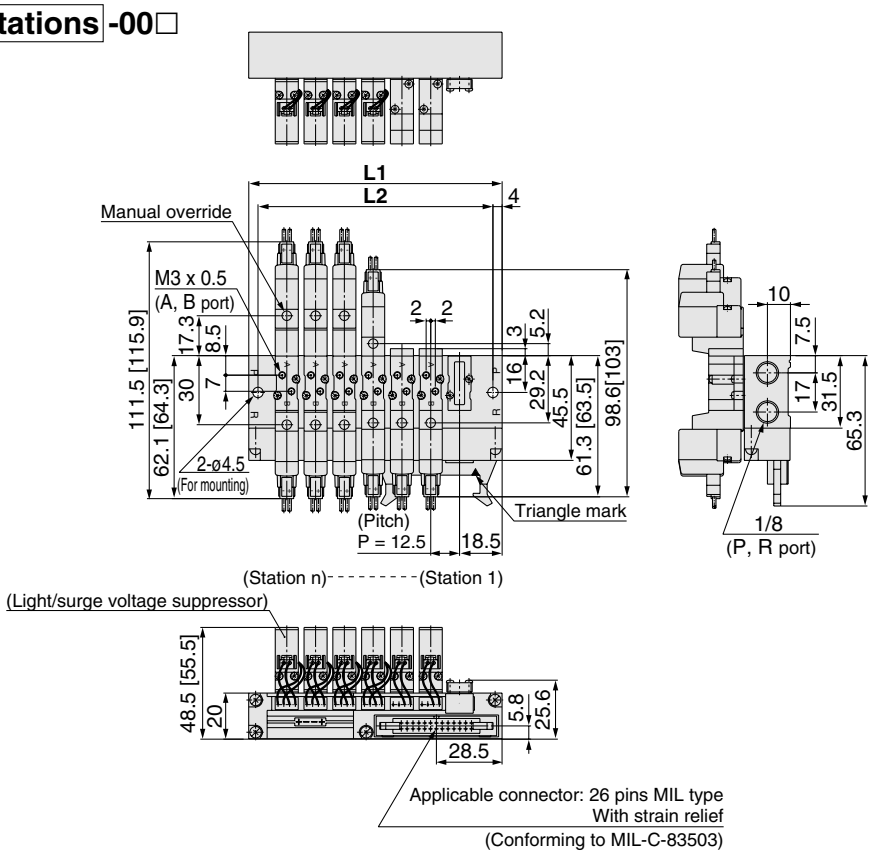


Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	39.5	50	60.5	71	81.5	92	102.5	113	123.5	134	144.5	155	165.5	176	186.5	197	207.5	218	228.5
L2	31.5	42	52.5	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5

Flat Ribbon Cable Manifold

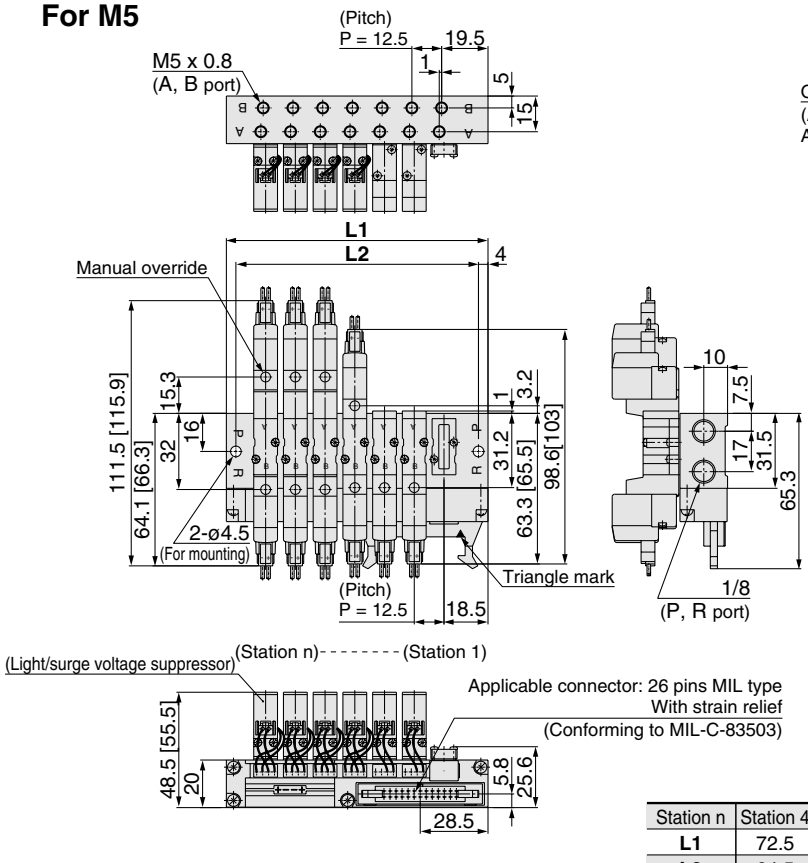
[ ]: AC

SS5YJ3-21P-Stations-00□

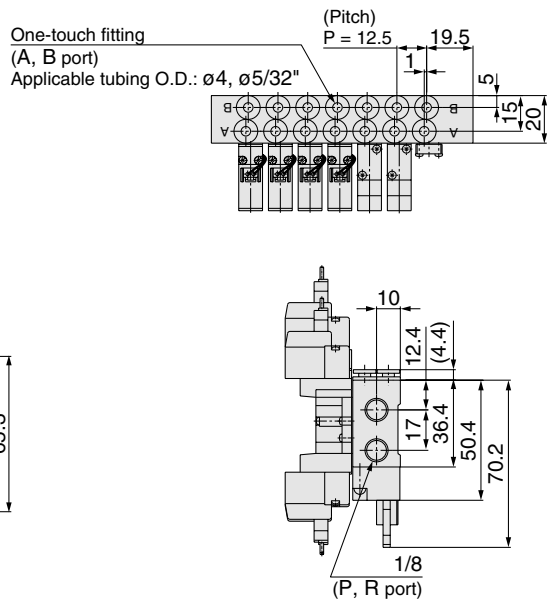


SS5YJ3-32P-Stations-M5, C4/N3□

For M5

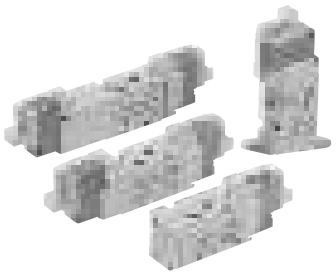


For C4/N3□ (Built-in one-touch fitting)

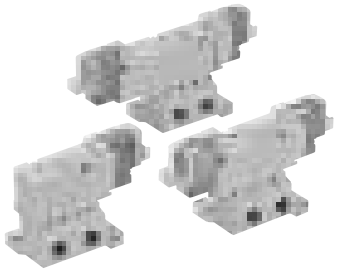


Station n	Station 4	5	6	7	8	9	10	11	Station 12
L1	72.5	85	97.5	110	122.5	135	147.5	160	172.5
L2	64.5	77	89.5	102	114.5	127	139.5	152	164.5

Rubber Seal
5 Port Solenoid Valve
Series SYJ5000



Body ported

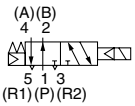


Base mounted

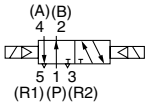
JIS Symbol

Body ported

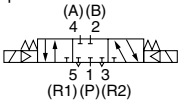
2 position single



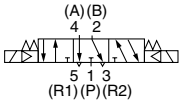
2 position double



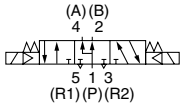
3 position closed center



3 position exhaust center

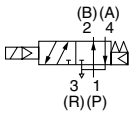


3 position pressure center

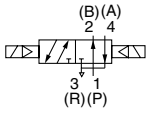


Base mounted (with sub-plate)

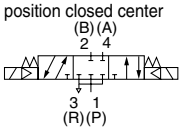
2 position single



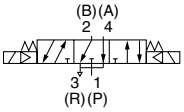
2 position double



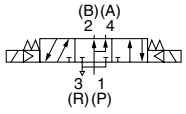
3 position closed center



3 position exhaust center



3 position pressure center





Made to Order
(For details, refer to pages 79 through to 80.)

Specifications

For details about certified products conforming to international standards, visit us at www.smcworld.com.

Fluid		Air
Operating pressure range MPa	**2 position single**	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (No freezing. Refer to back page 3.)
Response time (ms) Note 1) **(at 0.5 MPa)**	**2 position single, double**	25 or less
	3 position	40 or less
Max. operating frequency (Hz)	**2 position single, double**	5
	3 position	3
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type
Pilot exhaust method		Individual exhaust for the pilot valve, Common exhaust for the pilot and main valve
Lubrication		Not required
Mounting orientation		Unrestricted
Shock/Vibration resistance (m/s²) Note 2)		150/30
Enclosure		Dust proof (∗ DIN terminal, M8 connector conforms to IP65.)

∗ Based on IEC60529
Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge voltage suppressor)
Note 2) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Value in the initial state)
Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

Solenoid Specifications

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

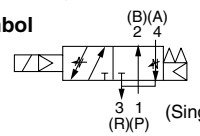
∗ In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.
∗ For 115 VDC and 230 VDC, the allowable voltage is –15% to +5% of rated voltage.
∗ S, Z and T type (with power saving circuit) should be used within the following allowable voltage fluctuation range due to a voltage drop caused by the internal circuit. S and Z type: 24 VDC: –7% to +10%, 12 VDC: –4% to +10%
T type: 24 VDC: –8% to +10%, 12 VDC: –6% to +10%

Built-in Speed Controller

SYJ5□5□

- Built-in exhaust flow controls enable simple cylinder speed adjustments.
- When mounted on the manifold, the common exhaust discharges the pilot and main valve exhaust through a common EXH port to enable simple exhausting.

JIS Symbol



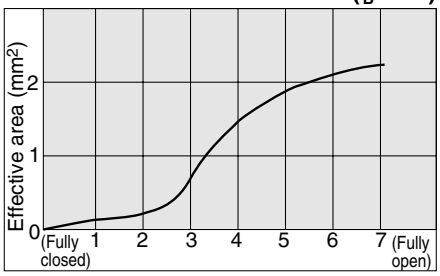
(Single)

How to order valve with built-in speed controller

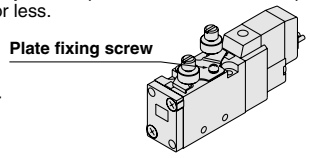
SYJ5□5□-□□□□□-□

- Type of actuation
- Body Option
- Rated voltage
- Lead wire
- Port size
- Manual override
- Light/surge voltage suppressor

Throttle Valve Characteristics ($^{A}_{B} \rightarrow$ R)



- When using SYJ5□53 model the speed controller must be opend more than 1 complete rotation from fully closed in order to function proerly.
- Adjust the speed controller with a torque of 0.3 N•m or less.



Note) Do not loosen plate fixing screw.

SMC

Flow Characteristics/Weight

Valve model		Type of actuation		Port size 1, 5, 3 (P, EA, EB)	Port size 4, 2 (A, B)	Flow characteristics Note 1) 1 → 4/2 (P → A/B) C [dm³/(s·bar)]	b	Cv	4/2 → 5/3 (A/B → EA/EB) C [dm³/(s·bar)]	b	Cv	Weight (g) Note 2, 3) Grommet	L/M plug connector	DIN terminal	M8 connector
Body ported	SYJ5□20-□-M5	2 position	Single	M5 x 0.8	M5 x 0.8	0.47	0.41	0.13	0.47	0.41	0.13	46	47	68	51
			Double									64	66	108	74
		3 position	Closed center			0.49	0.44	0.13	0.44	0.40	0.12	75	77	119	85
			Exhaust center			0.46	0.37	0.12	0.47 [0.39]	0.43 [0.35]	0.13 [0.10]				
			Pressure center			0.49 [0.39]	0.51 [0.38]	0.14 [0.10]	0.45	0.42	0.12				
	SYJ5□20-□-C4	2 position	Single	M5 x 0.8	C4 (One-touch fitting for ø4)	0.69	0.39	0.18	0.44	0.39	0.12	53	54	75	58
			Double									71	73	115	81
		3 position	Closed center			0.69	0.40	0.19	0.43	0.40	0.12	82	84	126	72
			Exhaust center			0.56	0.40	0.15	0.41 [0.41]	0.37 [0.37]	0.10 [0.11]				
			Pressure center			0.57 [0.41]	0.4 [0.37]	0.15 [0.10]	0.41	0.37	0.10				
	SYJ5□20-□-C6	2 position	Single	M5 x 0.8	C6 (One-touch fitting for ø6)	0.70	0.36	0.19	0.47	0.40	0.12	53	54	75	58
			Double									71	73	115	81
		3 position	Closed center			0.72	0.37	0.19	0.44	0.34	0.12	82	84	126	92
			Exhaust center			0.67	0.54	0.19	0.41 [0.41]	0.38 [0.38]	0.11 [0.11]				
			Pressure center			0.82 [0.44]	0.41 [0.39]	0.23 [0.12]	0.41	0.36	0.11				
Base mounted	SYJ5□40-□-01	2 position	Single	1/8	1/8	0.79	0.21	0.19	0.83	0.32	0.21	80 (49)	81 (47)	102 (68)	51
			Double									98 (64)	100 (66)	142 (108)	74
		3 position	Closed center			0.80	0.28	0.18	0.86	0.34	0.20	109 (75)	111 (77)	153 (119)	85
			Exhaust center			0.71	0.26	0.18	1.1 [0.60]	0.24 [0.44]	0.26 [0.18]				
			Pressure center			0.99 [0.47]	0.29 [0.38]	0.24 [0.12]	0.72	0.38	0.18				

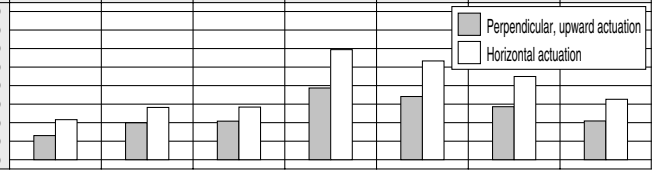
Note 1) [ ]: denotes the normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2
Note 2) ( ): Without sub-plate.
Note 3) For DC voltages. For AC voltages add 3 g to the weight of the single solenoid and 6 g to the weight of the double solenoid and 3 position types.

Cylinder Speed Chart

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

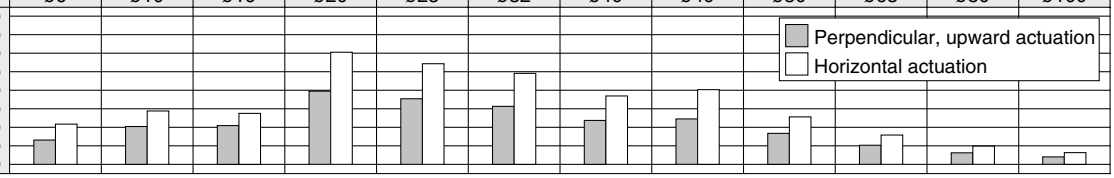
Body Ported

Series	Average speed (mm/s)	Bore size: Series CJ2 Pressure 0.5 MPa Load rate: 50% Stroke 60 mm			Series CM2 Pressure 0.5 MPa Load rate: 50% Stroke 300 mm			
		ø6	ø10	ø16	ø20	ø25	ø32	ø40
SYJ5120-M5	800							
	700							
	600							
	500							
	400							
	300							
	200							
	100							
	0							



Base Mounted

Series	Average speed (mm/s)	Bore size: Series CJ2 Pressure 0.5 MPa Load rate: 50% Stroke 60 mm			Series CM2 Pressure 0.5 MPa Load rate: 50% Stroke 300 mm				Series MB/CA2 Pressure 0.5 MPa Load rate: 50% Stroke 500 mm				
		ø6	ø10	ø16	ø20	ø25	ø32	ø40	ø40	ø50	ø63	ø80	ø100
SYJ5140-01	800												
	700												
	600												
	500												
	400												
	300												
	200												
	100												
	0												



∗ Cylinder is in extending. Speed controller is meter-out, which is directly connected with cylinder and its needle is fully opened.
∗ Average speed of cylinder is obtained by dividing the full stroke time by the stroke.
∗ Load factor: ((Load weight x 9.8) /Theoretical force) x 100%

Conditions

Body ported		Series CJ2	Series CM2	Series MB/CA2
SYJ5120-M5	Tubing bore x Length	ø4 x 1 m	ø6 x 1 m	ø8 x 1 m
	Speed controller	AS1301F-04	AS3301F-06	AS3301F-08
	Silencer	AN120-M5	AN110-01	

Base mounted		Series CJ2	Series CM2	Series MB/CA2
SYJ5140-01	Tubing bore x Length	ø4 x 1 m	ø6 x 1 m	
	Speed controller	AS2301F-04	AS3001F-06	
	Silencer	AN101-01	AN101-01	

How to Order

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Light/surge voltage suppressor

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

Nil	Without light/surge voltage suppressor
S	With surge voltage suppresor
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 type "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

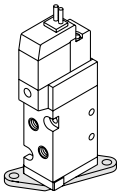
Electrical entry for D

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.

Bracket

Nil: Without bracket
F: With bracket



Note) The mounting bracket is supplied unattached.

Rated voltage

DC

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

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

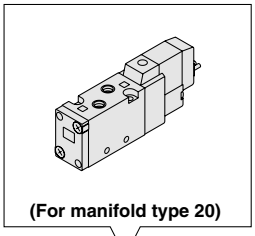
AC (50/60 Hz)

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

∗ For type W□, DC voltage is only available.

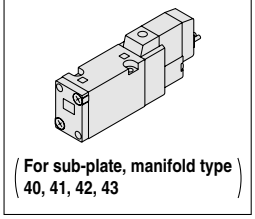
A, B port size

M5	M5 x 0.8
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
N3	One-touch fitting for ø5/32"
N7	One-touch fitting for ø1/4"



(For manifold type 20)

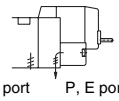
Body ported	SYJ5	1	2	0	□	5	L	□	□	M5	□	
Base mounted	SYJ5	2	4	0	□	5	L	□	□	□	□	



(For sub-plate, manifold type 40, 41, 42, 43)

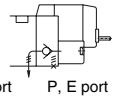
Body option

0: Pilot valve individual exhaust for the pilot valve



R port P, E port

3: Common exhaust type for main and pilot valve



R port P, E port

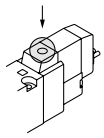
Coil specifications

Nil	Standard
T	With power saving circuit <24 V, 12 VDC only>

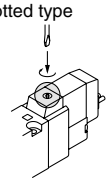
∗ Power saving circuit is not available in the case of D, DO or W□ type.

Manual override

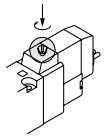
Nil: Non-locking push type



D: Push-turn locking slotted type



E: Push-turn locking lever type

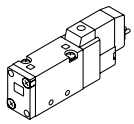


Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

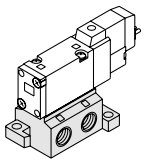
Port size

Nil: Without sub-plate



(With gasket and screws)

01: 1/8 With sub-plate



Electrical entry

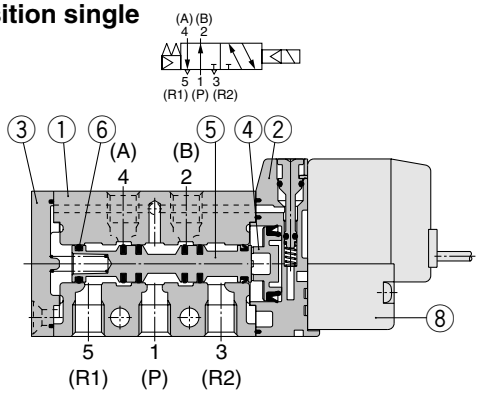
24, 12, 6, 5, 3 VDC 100,110, 200, 220 VAC			24,12 VDC 100,110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm	**L:** With lead wire (Length 300 mm)	**M:** With lead wire (Length 300 mm) **MN:** Without lead wire	**D:** With connector	**WO:** Without connector cable
H: Lead wire length 600 mm	**LN:** Without lead wire	**LO:** Without connector **MO:** Without connector	**DO:** Without connector	**W□:** With connector cable Note 1)

Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to back page 10.

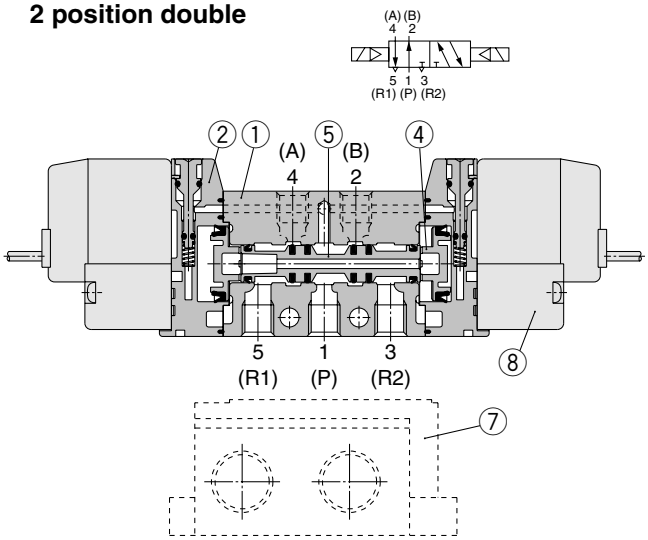
∗ LN, MN type: with 2 sockets.
∗ DIN terminal type "Y" which conforms to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 80.
∗ For connector cable of M8 connector, refer to back page 10.

Construction

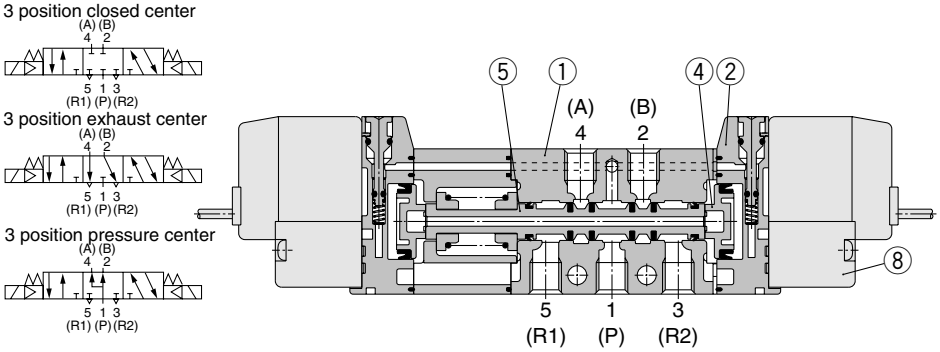
2 position single



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	White
2	Piston plate	Resin	White
3	End cover	Resin	White
4	Piston	Resin	—
5	Spool valve assembly	Aluminum, H-NBR	—
6	Spool spring	Stainless steel	—

Replacement Parts

No.	Description	No.	Note
7	Sub-plate	SYJ5000-22-1	Aluminum die-casted
8	Pilot valve	V111(T)-□□□	
—	Bracket assembly	SYJ5000-13-3A	

How to Order Pilot Valve Assembly

V111 □ — 5 G □

Coil specifications

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

∗ Power saving circuit is not available in the case of 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 suppresor
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 type “R” and “U”, DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Electrical entry

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

∗ For connector cable of M8 connector, refer to back page 10.
Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to back page 10.

How to Order Connector Assembly for L/M Plug Connector

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

V100-49-1- □

Cable length

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

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

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

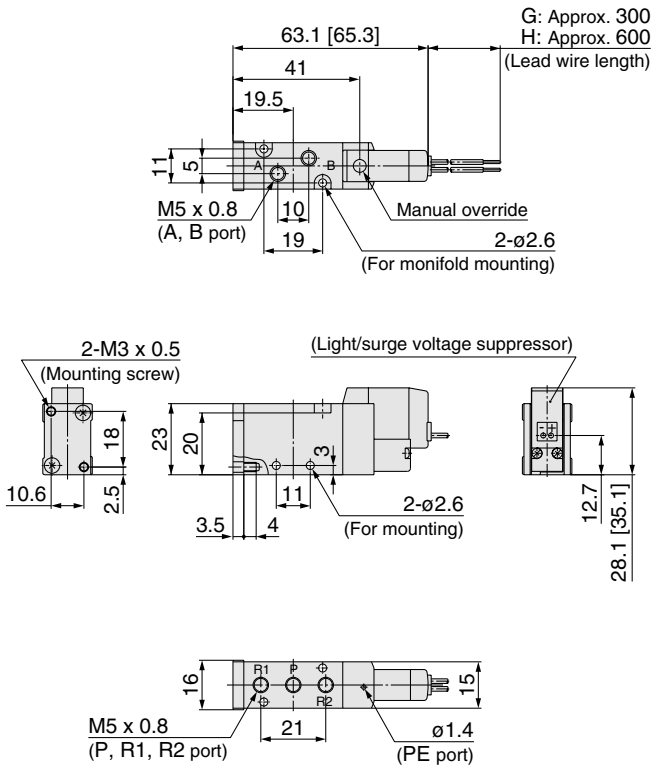
D	DIN terminal	With connector
DO		Without connector

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

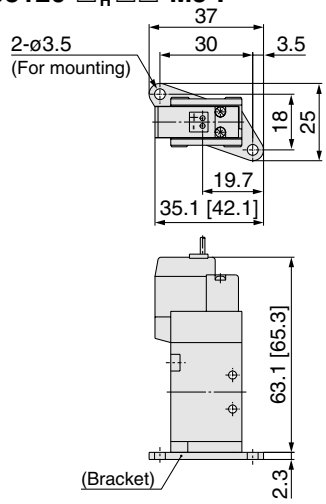
2 Position Single

[ ]: AC

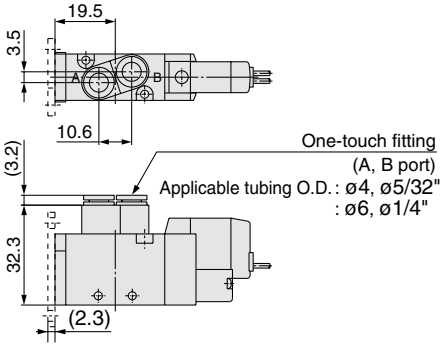
Grommet (G), (H): SYJ5120-□$^{G}_{H}$□□-M5



With bracket
SYJ5120-□$^{G}_{H}$□□-M5-F



Built-in one-touch fitting:
SYJ5120-□$^{G}_{H}$□□-$^{C4, N3}_{C6, N7}$(-F)

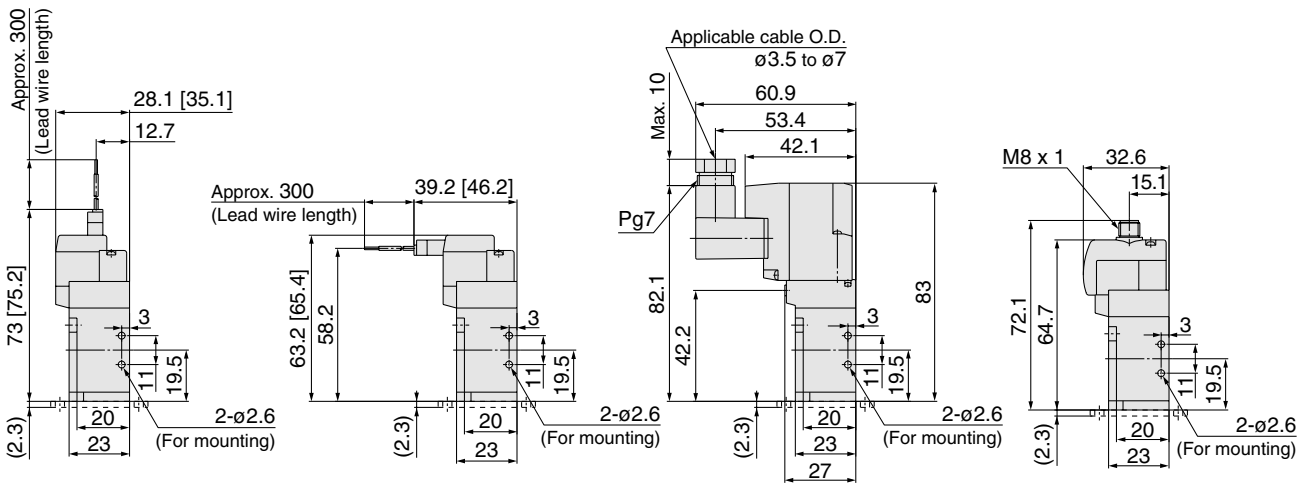


L plug connector (L): SYJ5120-□L□□-M5(-F)

M plug connector (M): SYJ5120-□M□□-M5(-F)

DIN terminal (D): SYJ5120-□D□□-M5(-F)

M8 connector (WO): SYJ5120-□WO□□-M5(-F)

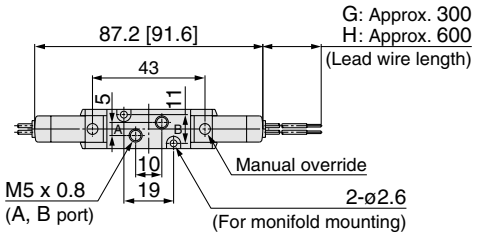


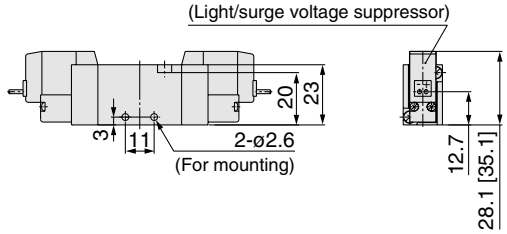
Refer to back page 11 for dimentions with connector cable.

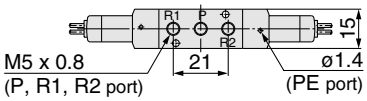
2 Position Double

[ ]: AC

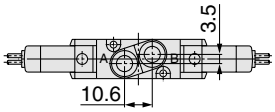
Grommet (G), (H): SYJ5220-□$^{G}_{H}$□□-M5

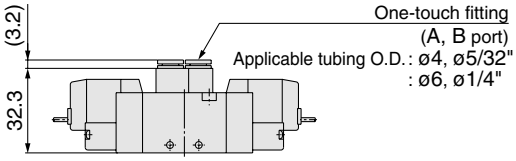




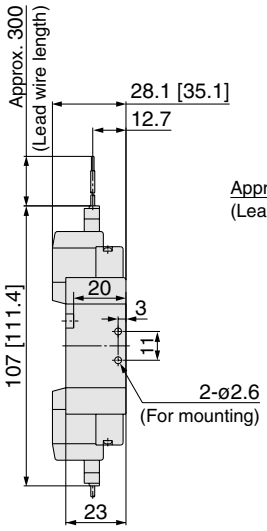


Built-in one-touch fitting: SYJ5220-□$^{G}_{H}$□□-$^{C4, N3}_{C6, N7}$

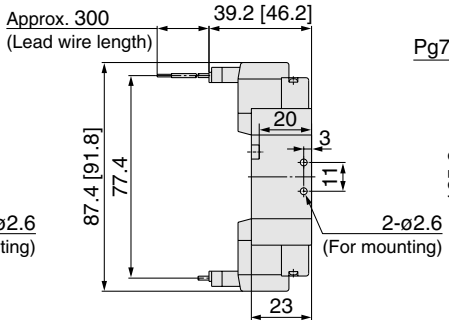




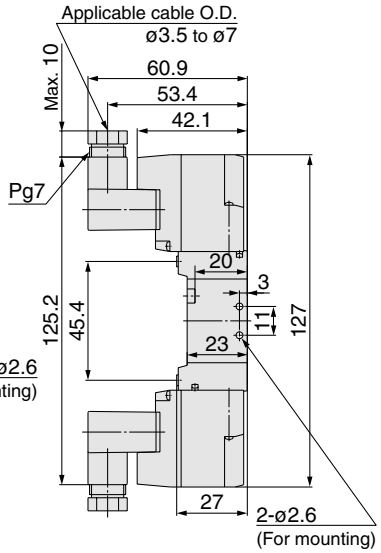
L plug connector (L): SYJ5220-□L□□-M5



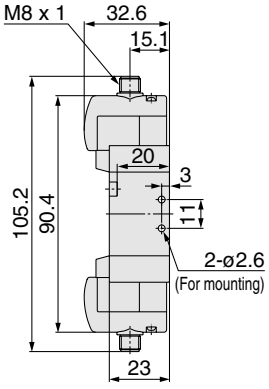
M plug connector (M): SYJ5220-□M□□-M5



DIN terminal (D): SYJ5220-□D□□-M5



M8 connector (WO): SYJ5220-□WO□□-M5

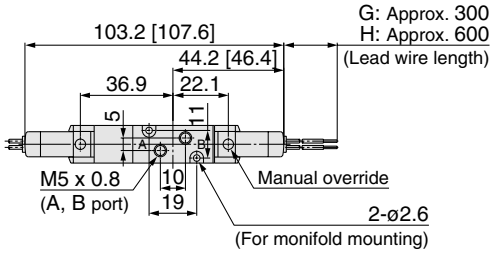


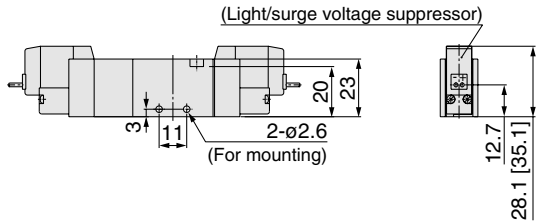
Refer to back page 11 for dimentions with connector cable.

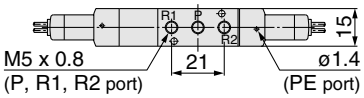
3 Position Closed Center/Exhaust Center/Pressure Center

[ ]: AC

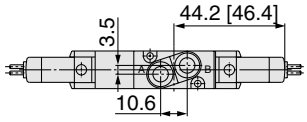
Grommet (G), (H): SYJ5$^{3}_{5}$20-□$^{G}_{H}$□□-M5

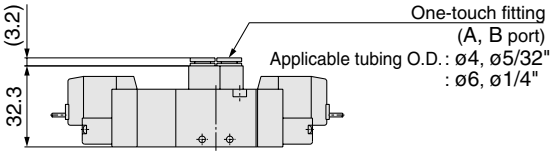






Built-in one-touch fitting: SYJ5$^{3}_{5}$20-□$^{G}_{H}$□□-$^{C4, N3}_{C6, N7}$



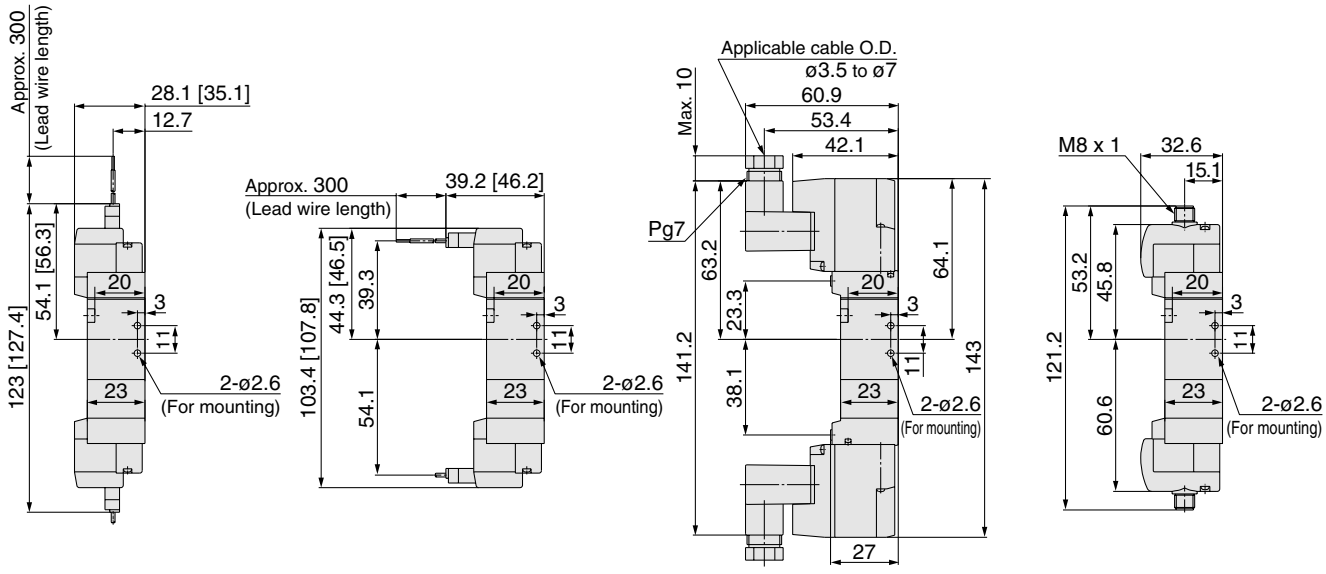


L plug connector (L): SYJ5$^{3}_{5}$20-□L□□-M5

M plug connector (M): SYJ5$^{3}_{5}$20-□M□□-M5

DIN terminal (D): SYJ5$^{3}_{5}$20-□D□□-M5

M8 connector (WO): SYJ5$^{3}_{5}$20-□WO□□-M5

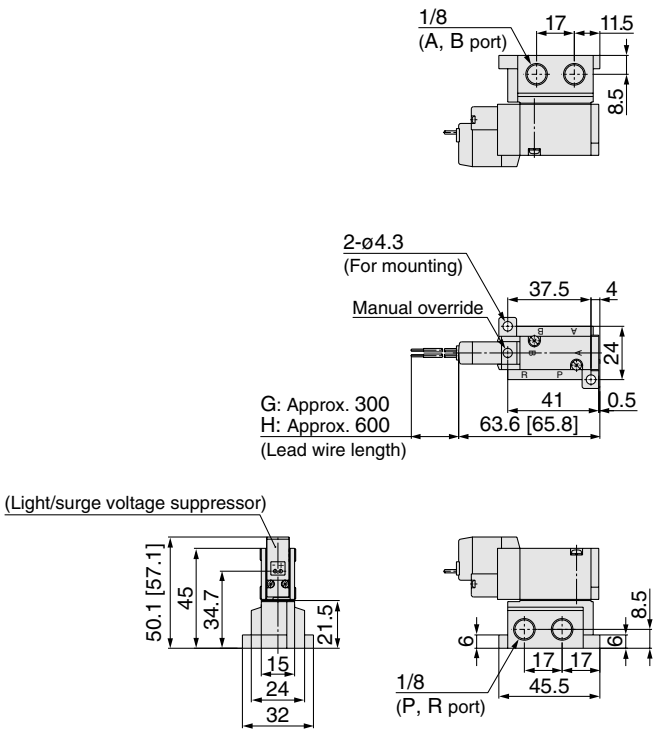


Refer to back page 11 for dimentions with connector cable.

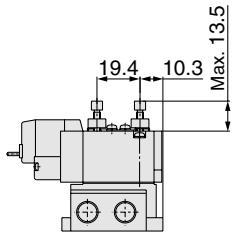
2 Position Single

[ ]: AC

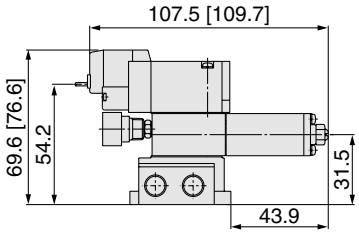
Grommet (G), (H): SYJ5140-□$^{G}_{H}$□□-01□



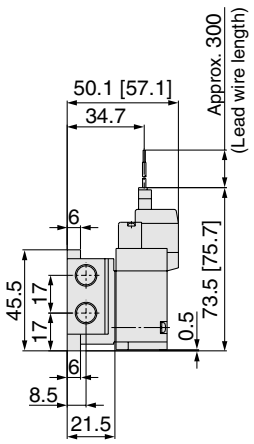
Built-in speed controller: SYJ5150-□$^{G}_{H}$□□-01□



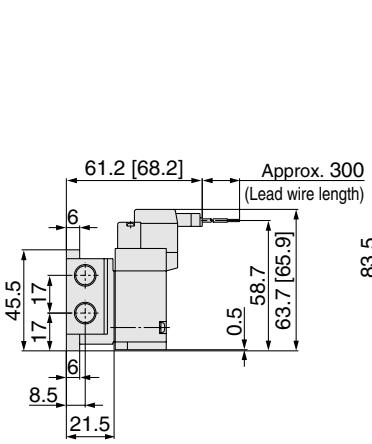
With interface regulator



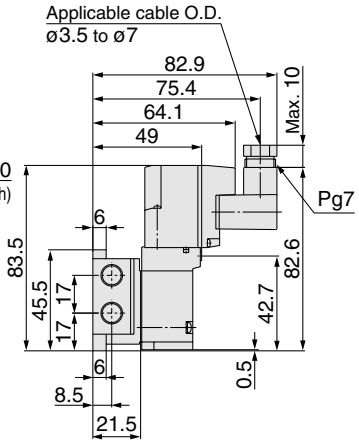
L plug connector (L): SYJ5140-□L□□-01□



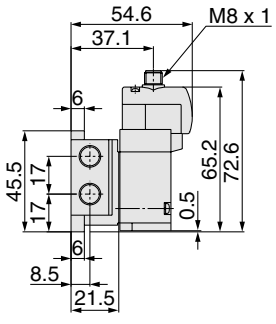
M plug connector (M): SYJ5140-□M□□-01□



DIN terminal (D): SYJ5140-□D□□-01□



M8 connector (WO): SYJ5140-□WO□□-01□

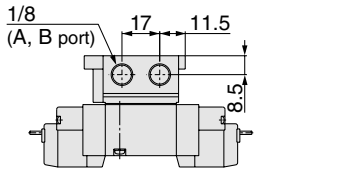


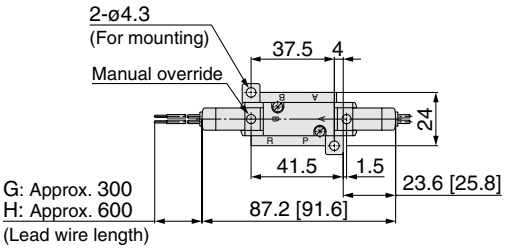
Refer to back page 11 for dimentions with connector cable.

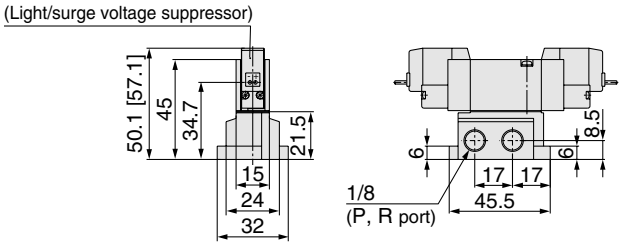
2 Position Double

[ ]: AC

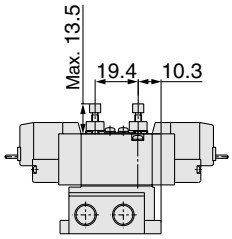
Grommet (G), (H): SYJ5240-□$^{G}_{H}$□□-01□



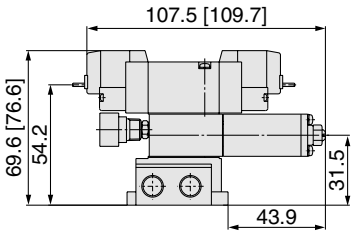




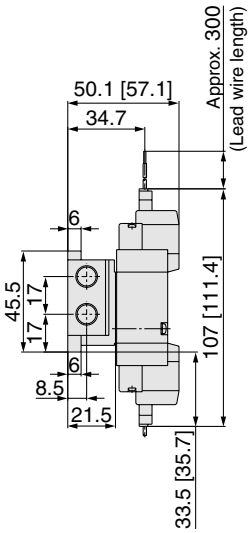
Built-in speed controller: SYJ5250-□$^{G}_{H}$□□-01□



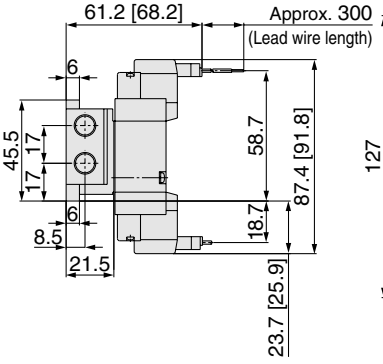
With interface regulator



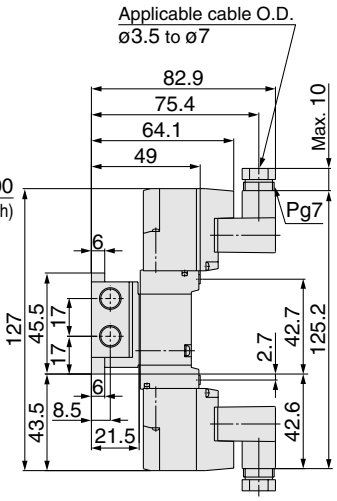
L plug connector (L): SYJ5240-□L□□-01□



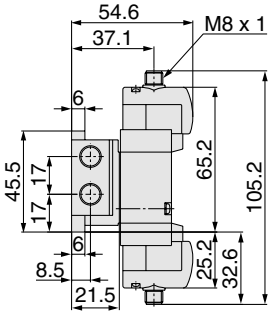
M plug connector (M): SYJ5240-□M□□-01□



DIN terminal (D): SYJ5240-□D□□-01□



M8 connector (WO): SYJ5240-□WO□□-01□

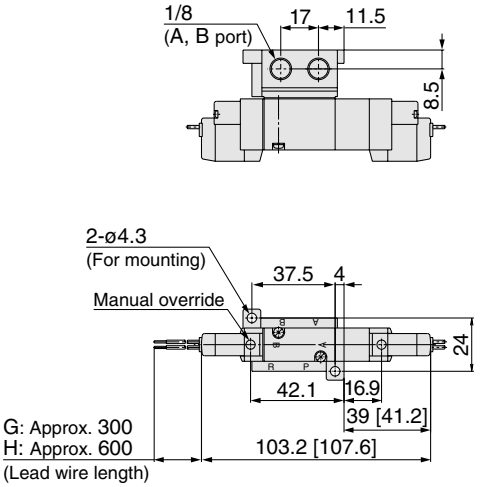


Refer to back page 11 for dimentions with connector cable.

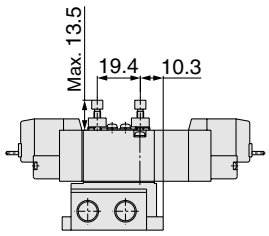
3 Position Closed Center/Exhaust Center/Pressure Center

[ ]: AC

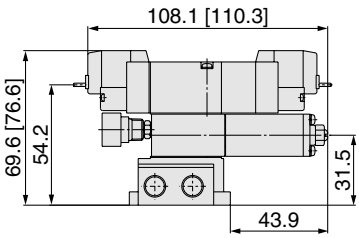
Grommet (G), (H): SYJ5$^{3}_{4}_{5}$40-□$^{G}_{H}$□□-01□

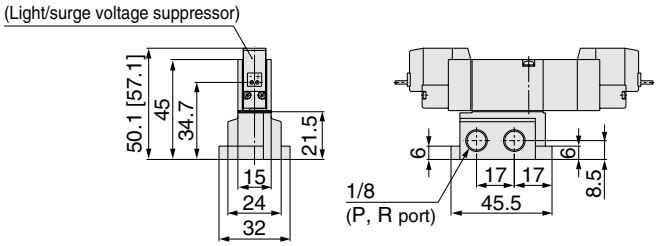


Built-in speed controller: SYJ5$^{3}_{4}_{5}$50-□$^{G}_{H}$□□-01□

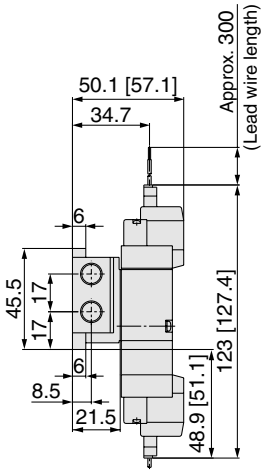


With interface regulator

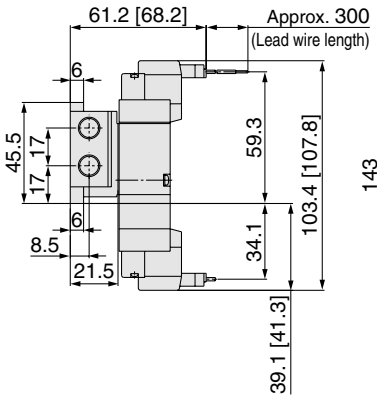




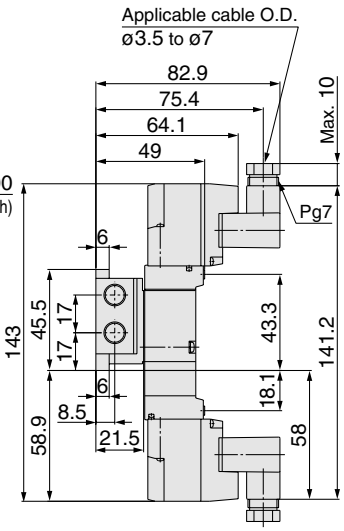
L plug connector (L): SYJ5$^{3}_{4}_{5}$40-□L□□-01□



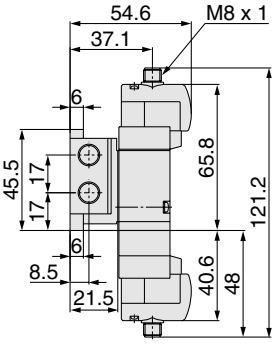
M plug connector (M): SYJ5$^{3}_{4}_{5}$40-□M□□-01□



DIN terminal (D): SYJ5$^{3}_{4}_{5}$40-□D□□-01□



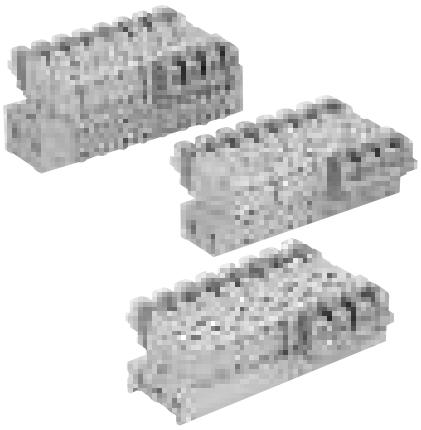
M8 connector (WO): SYJ5$^{3}_{4}_{5}$40-□WO□□-01□



Refer to back page 11 for dimentions with connector cable.

Series SYJ5000
Manifold Specifications

Manifold Standard



Manifold Specifications

Model		Type 20	Type 40	Type 41	Type 42	Type 43
Manifold type		Single base/B mount				
P (SUP), R (EXH)		Common SUP, Common EXH				
Valve stations		2 to 20 stations				
A, B port Porting specifications	Location	Valve	Base	Base		
	Direction	Top	Bottom	Side		
Port size	P, R port	1/8			1/4	1/8
	A, B port	M5 x 0.8, C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	M5 x 0.8		1/8, C6 (One-touch fitting for ø6)	C4 (One-touch fitting for ø4)

Flow Characteristics

Manifold			Port size		Flow characteristics					
					1 → ω4/2 (P → A/B)			4/2 → 5/3 (A/B → R)		
			1(P), 5/3(R) Port	2(B), 4(A) Port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported for internal pilot	Type SS5YJ5-20	SYJ5□2□	1/8	M5 x 0.8	0.46	0.39	0.12	0.75	0.32	0.19
			1/8	C4	0.62	0.33	0.16	0.83	0.27	0.20
			1/8	C6	0.79	0.36	0.21	0.91	0.36	0.24
Base mounted for internal pilot	Type SS5YJ5-40	SYJ5□4□	1/8	M5 x 0.8	0.55	0.35	0.15	0.64	0.26	0.16
	Type SS5YJ5-41		1/8	M5 x 0.8	0.59	0.35	0.16	0.68	0.23	0.17
	Type SS5YJ5-42-01		1/4	1/8	0.74	0.22	0.18	0.82	0.31	0.21
	Type SS5YJ5-42-C6		1/4	C6	0.71	0.24	0.17	0.8	0.29	0.20
	Type SS5YJ5-43		1/8	C4	0.55	0.29	0.14	0.74	0.32	0.19

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold (Example)

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

Example: **SS5YJ5-20-03** ····· 1 pc. (Manifold base)
- ∗ **SYJ5120-5G-M5** ····· 2 pcs. (Valve)
- ∗ **SYJ5000-21-4A** ····· 1 pc. (Blanking plate assembly)

SS5YJ5-43-03-C4 ····· 1 pc. (Manifold base)
- ∗ **SYJ5140-5LZ** ····· 1 pc. (Valve)
- ∗ **SYJ5240-5LZ** ····· 1 pc. (Valve)
- ∗ **SYJ5000-21-4A** ····· 1 pc. (Blanking plate assembly)

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

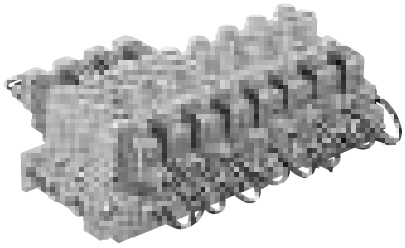
∗ Use manifold specification sheet.

Flat Ribbon Cable Manifold

- **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.



Flat Ribbon Cable Manifold Specifications

Model		Type 20	Type 41P	Type 43P
Manifold type		Single base/B mount		
P (SUP), R (EXH)		Common SUP, Common EXH		
Valve stations		3 to 12 stations		
A, B port Porting specifications	Location	Valve	Base	
	Direction	Top	Side	
Port size	P, R port	1/8	1/8	
	A, B port	M5 x 0.8, C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	M5 x 0.8	C4 (One-touch fitting for ø4)
Applicable flat ribbon cable connector		Socket: 26 pins MIL type with strain relief (MIL-C-83503)		
Internal wiring		In common between +COM and –COM (Z type: +COM only).		
Rated voltage		24, 12 VDC/100, 110 VAC		

Note) The withstand voltage specification for the wiring unit section conforms to JIS C 0704, Grade 1 or its equivalent.

Flow Characteristics

Manifold			Port size		Flow characteristics 1 → 4/2 (P → A/B)			Flow characteristics 4/2 → 5/3 (A/B → R)		
			1(P), 5/3(R) Port	2(B), 4(A) Port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported for internal pilot	Type SS5YJ5-20P	SYJ5□23	1/8	M5 x 0.8	0.46	0.39	0.12	0.75	0.32	0.19
			1/8	C4	0.62	0.33	0.16	0.83	0.27	0.20
			1/8	C6	0.79	0.36	0.21	0.91	0.36	0.24
Base mounted for internal pilot	Type SS5YJ5-41P Type SS5YJ5-43P	SYJ5□43	1/8	M5 x 0.8	0.59	0.35	0.16	0.68	0.23	0.17
			1/8	C4	0.55	0.29	0.14	0.74	0.32	0.19

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold (Example)

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

Example:
- **SS5YJ5-41P-07-C4** ..... 1 pc. (Manifold base)
- ∗ **SYJ5143-5LOU** ..... 3 pcs. (Valve)
- ∗ **SYJ5243-5LOU** ..... 3 pcs. (Valve)
- ∗ **SYJ5000-21-3A** ..... 1 pc. (Blanking plate assembly)
- ∗ **SY3000-37-28A** ..... 3 pcs. (Connector assembly)
- ∗ **SY3000-37-29A** ..... 3 pcs. (Connector assembly)

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

∗ Use manifold specification sheet.

How to Order Valve

Rated voltage

5	24 VDC
6	12 VDC

Light/surge voltage suppressor

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

Note) Z: Positive common specifications only.

For DC SYJ5 **1** **2 4** **3** — **5** **LO** **Z** □ — □

For AC SYJ5 **1** **2 4** **3** — **1** **LOZ** □ — □

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

A, B port size

Symbol	Port size
Nil	Base mounted
M5	M5 x 0.8
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
N3	One-touch fitting for ø5/32"
N7	One-touch fitting for ø1/4"

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 ohter combination, please contact SMC.

How to Order Connector Assembly

For 12, 24 VDC

Single solenoid	SY3000-37-28A
Double solenoid, 3 position type	SY3000-37-29A
Single solenoid, individual SUP, EXH spacer	SY3000-37-3A
Double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-4A
Interface regulator for single solenoid	SY3000-37-3A
Double solenoid, 3 position interface regulator	SY3000-37-6A
3 port adaptor plate	SY3000-37-3A

For 100 VAC

Single solenoid	SY3000-37-46A
Double solenoid, 3 position type	SY3000-37-47A
Single solenoid, individual SUP, EXH spacer	SY3000-37-32A
Double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-33A
Interface regulator for single solenoid	SY3000-37-15A
Double solenoid, 3 position interface regulator	SY3000-37-34A
3 port adaptor plate	SY3000-37-32A

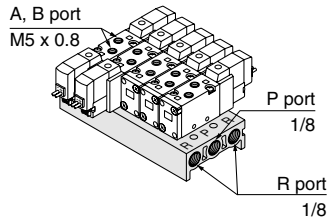
For 100 VAC (115 VAC)

Single solenoid	SY3000-37-54A
Double solenoid, 3 position type	SY3000-37-55A
Single solenoid, individual SUP, EXH spacer	SY3000-37-35A
Double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-36A
Interface regulator for single solenoid	SY3000-37-19A
Double solenoid, 3 position interface regulator	SY3000-37-37A
3 port adaptor plate	SY3000-37-35A

Common SUP/Common EXH

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 20 (5 Port/Body ported)



How to Order

SS5YJ5–20– 05 –

Number of stations

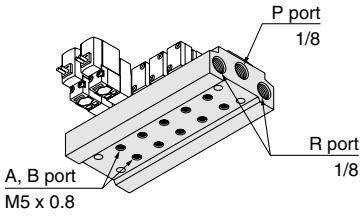
02	2 stations
:	:
20	20 stations

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Applicable solenoid valve
SYJ5□20-□□□□-M5 C4 C6
SYJ5□23-□□□□-M5 C4 C6
Applicable blanking plate assembly
SYJ5000-21-4A
Applicable individual EXH spacer assembly
SYJ5000-17-1A

Type 40 (5 Port/Base mounted)



How to Order

SS5YJ5– 40– 05 – M5

Stations

02	2 stations
:	:
20	20 stations

A, B port size

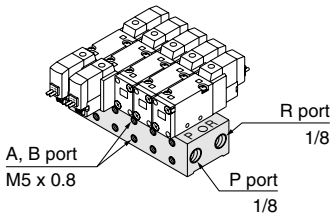
M5	M5 x 0.8

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Applicable solenoid valve
SYJ5□40-□□□□
SYJ5□43-□□□□
SYJ5□50-□□□□
SYJ5□53-□□□□
Applicable blanking plate assembly
SYJ5000-21-4A
Applicable individual EXH spacer assembly
SYJ5000-17-1A
Applicable individual SUP spacer assembly
ARBYJ5000-00-P

Type 41 (5 Port/Base mounted)



How to Order

SS5YJ5– 41– 05 –M5

Stations

02	2 stations
:	:
20	20 stations

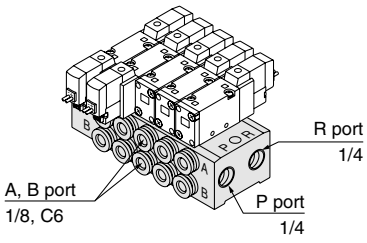
A, B port size

M5	M5 x 0.8

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Type 42 (5 Port/Base mounted)



How to Order

SS5YJ5– 42– 05 – C6

Stations

02	2 stations
:	:
20	20 stations

A, B port size

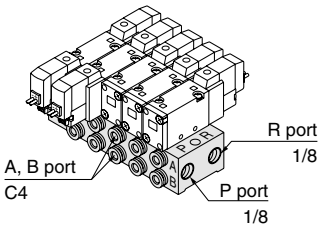
01	1/8
C6	One-touch fitting for ø6
N7	One-touch fitting for ø1/4"

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Applicable solenoid valve
SYJ5□40-□□□□
SYJ5□43-□□□□
SYJ5□50-□□□□
SYJ5□53-□□□□
Applicable blanking plate assembly
SYJ5000-21-4A
Applicable individual EXH spacer assembly
SYJ5000-17-1A
Applicable individual SUP spacer assembly
SYJ5000-16-2A
Applicable individual SUP spacer assembly
ARBYJ5000-00-P

Type 43 (5 Port/Base mounted)



How to Order

SS5YJ5– 43– 05 – C4

Stations

02	2 stations
:	:
20	20 stations

A, B port size

C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

P, R port thread type

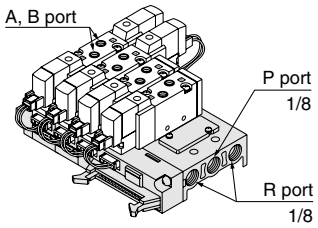
Nil	Rc
F	G
N	NPT
T	NPTF

Flat Ribbon Cable Manifold

Common SUP/Common EXH

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 20 (5 Port/Body ported)



How to Order

SS5YJ5–20P– 05 –

Number of stations

03	3 stations
:	:
12	12 stations

P, R port thread type

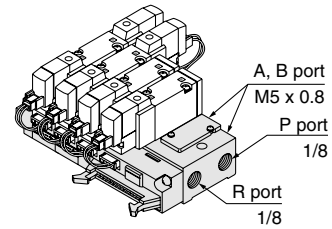
Nil	Rc
00F	G
00N	NPT
00T	NPTF

Applicable solenoid valve
Refer to page 35.

Applicable blanking plate assembly
SYJ5000-21-3A

Applicable connector assembly
Refer to page 35.

Type 41P (5 Port/Base mounted)



How to Order

SS5YJ5–41P– 05 –M5

Number of stations

03	3 stations
:	:
12	12 stations

P, R port thread type

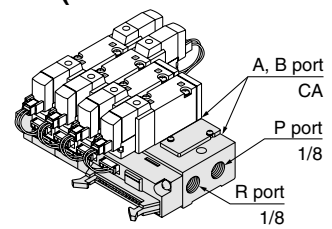
Nil	Rc
F	G
N	NPT
T	NPTF

Applicable solenoid valve
Refer to page 35.

Applicable blanking plate assembly
SYJ5000-21-3A

Applicable connector assembly
Refer to page 35.

Type 43P (5 Port/Base mounted)



How to Order

SS5YJ5–43P– 05 – C4

Number of stations

03	3 stations
:	:
12	12 stations

A, B port size

C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

P, R port thread type

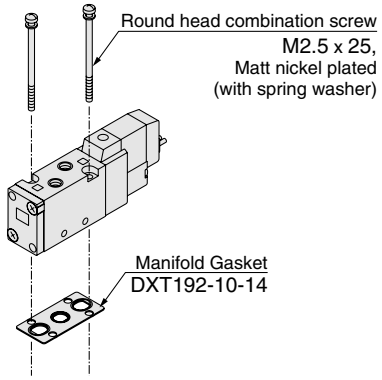
Nil	Rc
F	G
N	NPT
T	NPTF

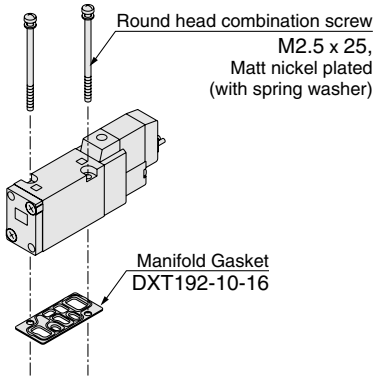
Applicable solenoid valve
Refer to page 35.

Applicable blanking plate assembly
SYJ5000-21-3A

Applicable connector assembly
Refer to page 35.

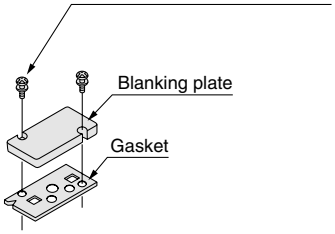
Combinations of Solenoid Valve, Manifold Gasket and Manifold Base





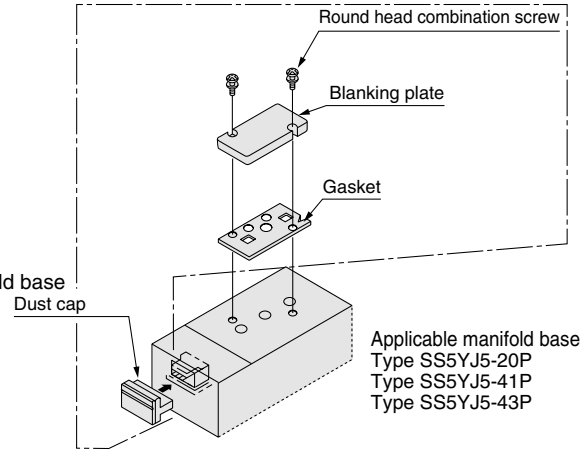
Blanking Plate Assembly

SYJ5000-21-4A



Applicable manifold base
Type SS5YJ5-20
Type SS5YJ5-40
Type SS5YJ5-41
Type SS5YJ5-42
Type SS5YJ5-43

SYJ5000-21-3A



Applicable manifold base
Type SS5YJ5-20P
Type SS5YJ5-41P
Type SS5YJ5-43P

⚠ Caution

Mounting screw tightening torques

M2.5: 0.45 N·m

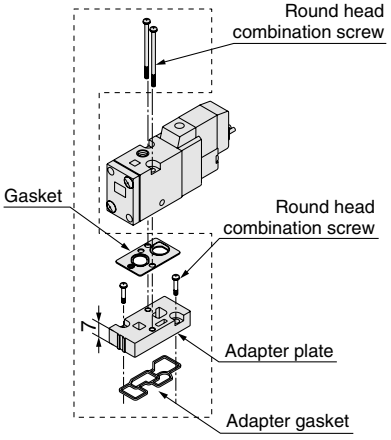
Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.

Mix Installation of the SYJ500 and the SYJ5000 Valves on the Same Manifold

- Use of an adapter plate makes it possible to mount Series SYJ500 on the manifold bases of series SYJ5000.
- When mounting the SYJ500 valve on the SYJ5000 manifold, the SYJ500 solenoid must be positioned on the same side of the manifold as a single solenoid SYJ500. (Refer to the figure below.)
- For base mounted style, the A port of the 3 port valve flows out the B port of manifold base.

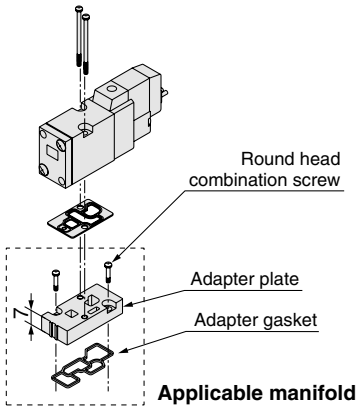
Adapter Plate Assembly

SYJ500-3-2A



Applicable manifold base
Type SS5YJ5-20

SYJ500-3-1A

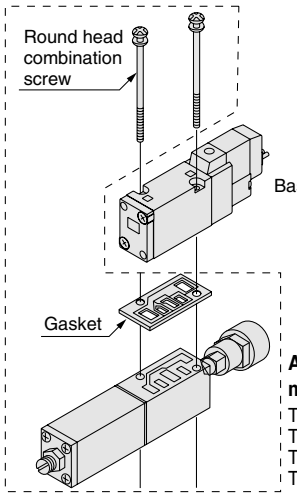


Applicable manifold base
Type SS5YJ5-40
Type SS5YJ5-41
Type SS5YJ5-42
Type SS5YJ5-43

Interface Regulator (P port regulation)

Spacer type regulating valve on manifold block can regulate the pressure to the valve individually.

ARBYJ5000-00-P

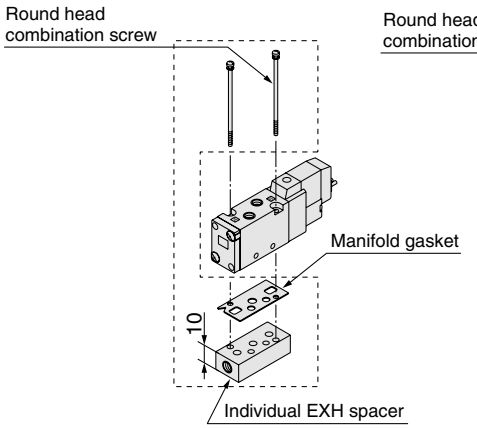


Applicable manifold base
Type SS5YJ5-40
Type SS5YJ5-41
Type SS5YJ5-42
Type SS5YJ5-43

Refer to back page 12 prior to handling.

Individual EXH Spacer Assembly

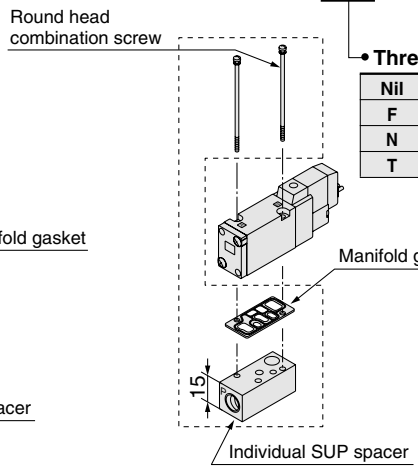
SYJ5000-17-1A



Applicable manifold base
Type SS5YJ5-20
Type SS5YJ5-40
Type SS5YJ5-41
Type SS5YJ5-42
Type SS5YJ5-43

Individual SUP Spacer Assembly

SYJ5000–16–2 □ A



Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Applicable manifold base
Type SS5YJ5-41
Type SS5YJ5-42
Type SS5YJ5-43

⚠ Caution

Mounting screw tightening torques

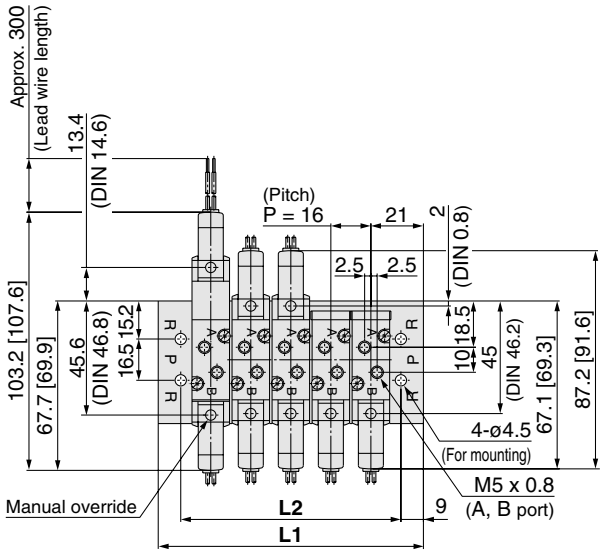
M2.5: 0.45 N·m

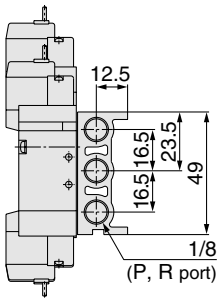
Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.

Type 20: Top Ported/SS5YJ5-20-[Stations]-00□

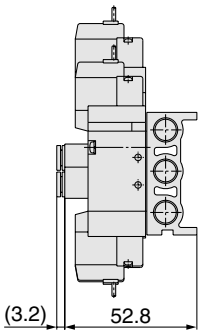
[ ]: AC

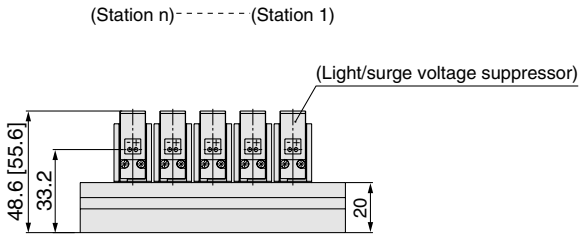
Grommet (G)



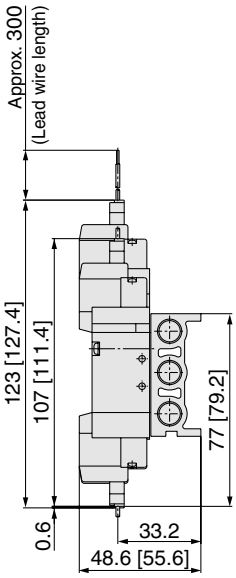


Built-in one-touch fitting

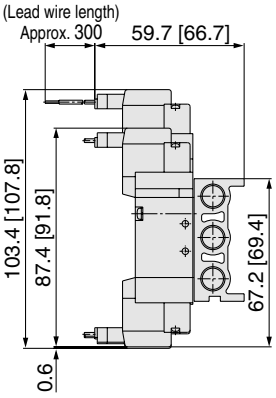




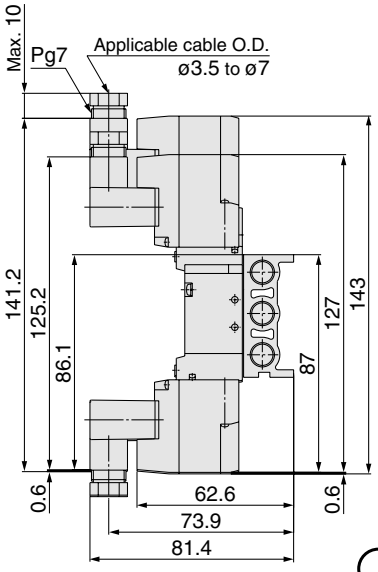
L plug connector (L)



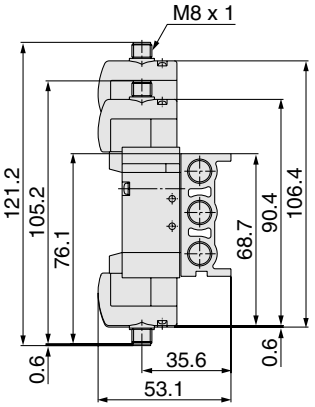
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



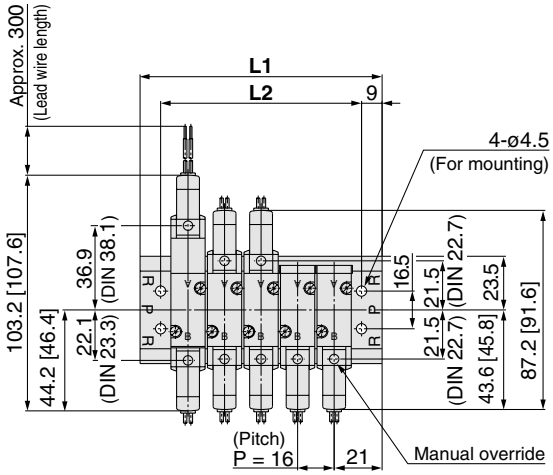
Refer to back page 11 for dimentions with connector cable.

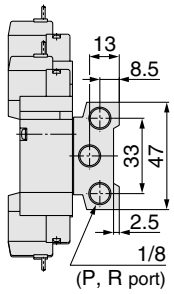
Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330	346
L2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328

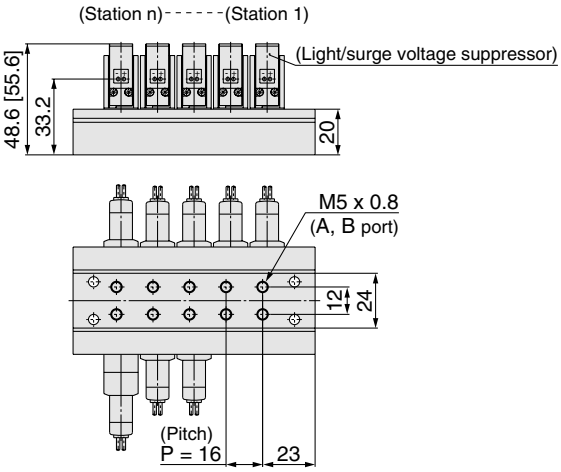
Type 40: Bottom Ported/SS5YJ5-40-Stations-M5□

[ ]: AC

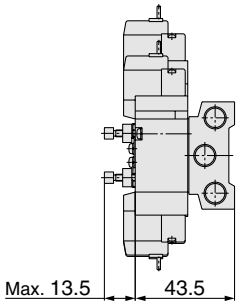
Grommet (G)



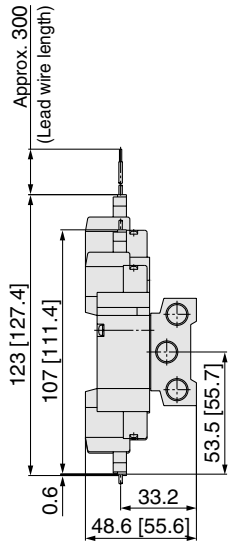




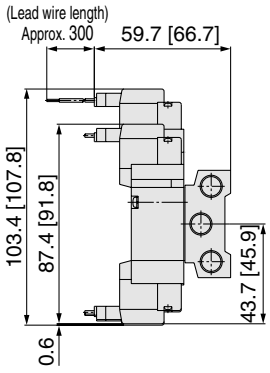
Built-in speed controller



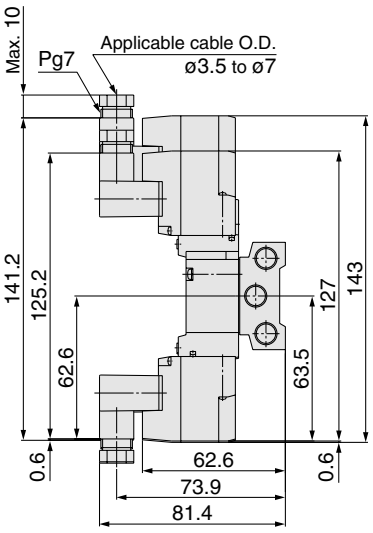
L plug connector (L)



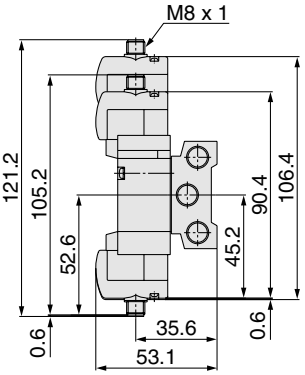
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



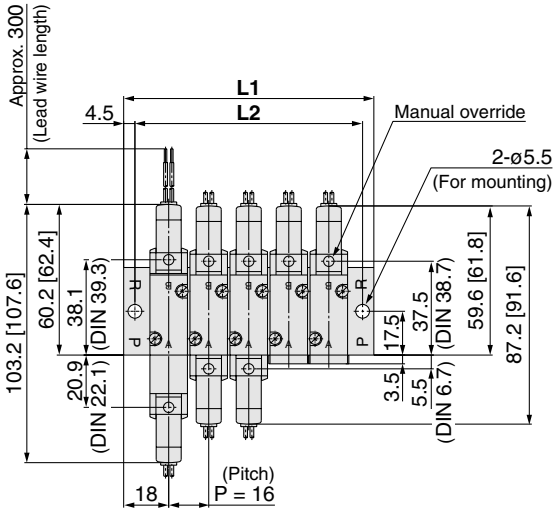
Refer to back page 11 for dimentions with connector cable.

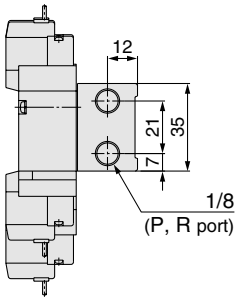
Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330	346
L2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328

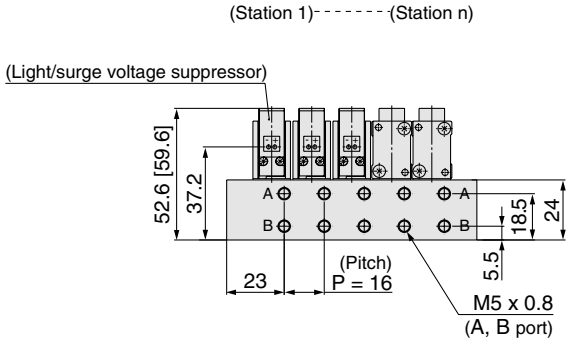
Type 41: Side Ported/SS5YJ5-41- Stations -M5□

[ ]: AC

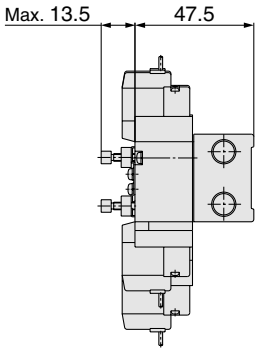
Grommet (G)



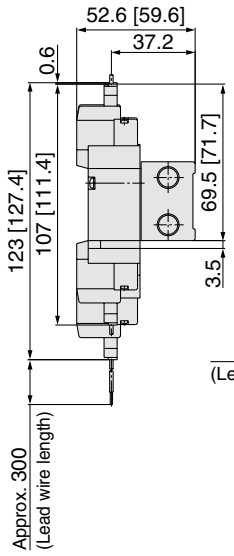




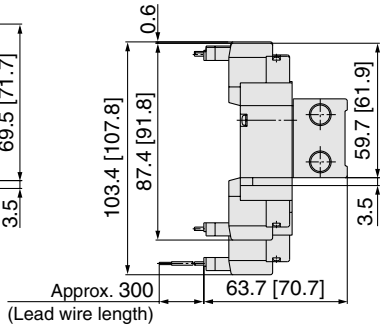
Built-in speed controller



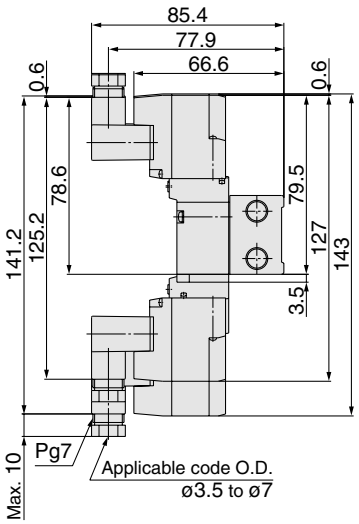
L plug connector (L)



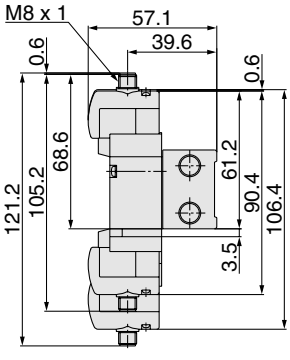
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



Refer to back page 11 for dimentions with connector cable.

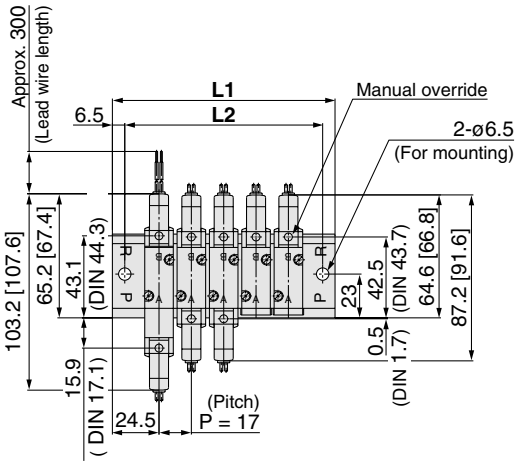
Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
L2	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331

Type 42: Side Ported/SS5YJ5-42-Stations-01, C6/N7□

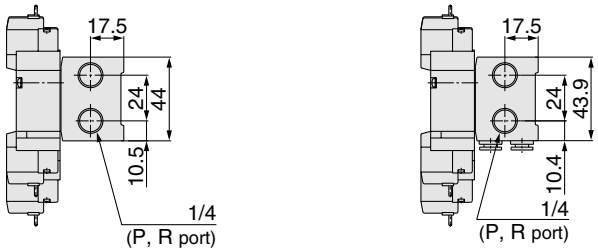
[ ]: AC

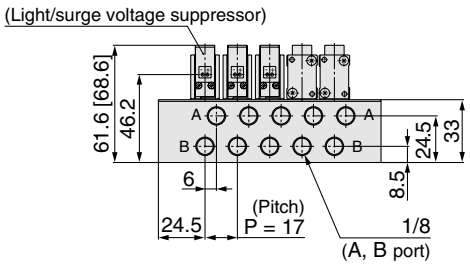
Grommet (G)

For 01□

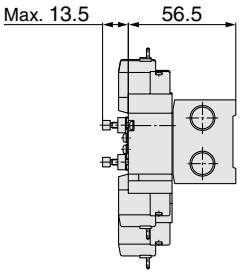


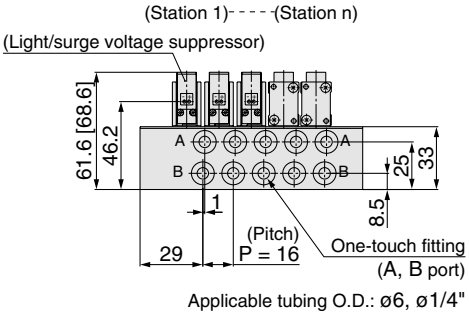
For C6/N7□ (Built-in one-touch fitting)





Built-in speed controller

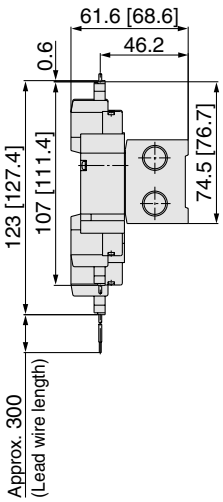




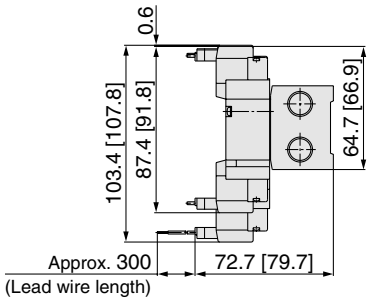
Applicable tubing O.D.: ø6, ø1/4"

∗ Other dimensions are the same as the grommet type.

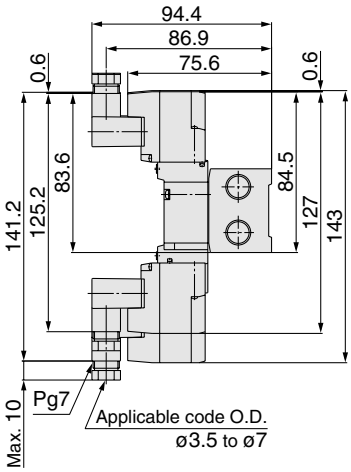
L plug connector (L)



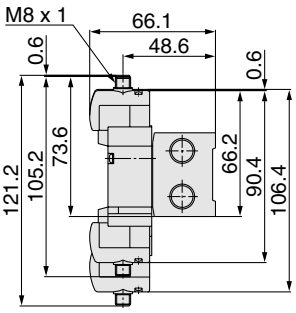
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



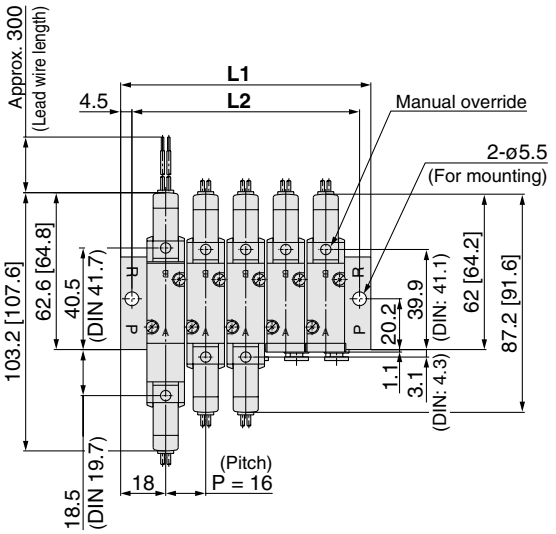
Refer to back page 11 for dimentions with connector cable.

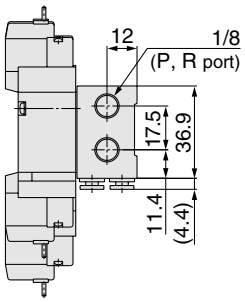
A, B port size	Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
For 1/8	**L1**	66	83	100	117	134	151	168	185	202	219	236	253	270	287	304	321	338	355	372
	L2	53	70	87	104	121	138	155	172	189	206	223	240	257	274	291	308	325	342	359
For C6/N7	**L1**	65	81	97	113	129	145	161	177	193	209	225	241	257	273	289	305	321	337	353
	L2	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340

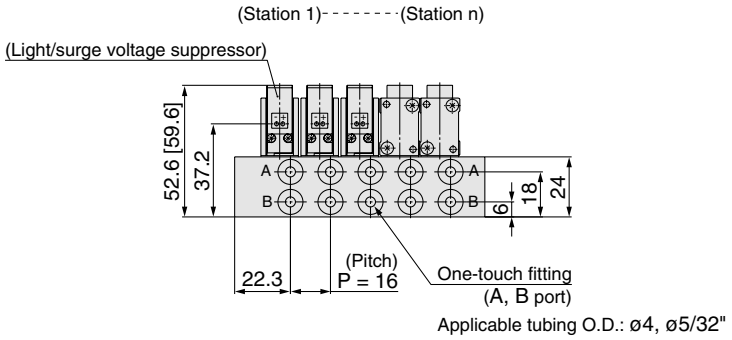
Type 43: Side Ported/SS5YJ3-43-Stations-$^{C4}_{N3}$□

[ ]: AC

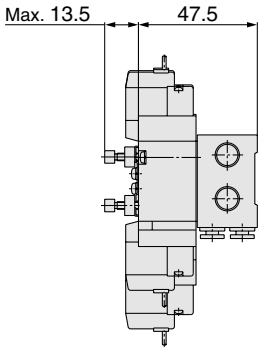
Grommet (G)



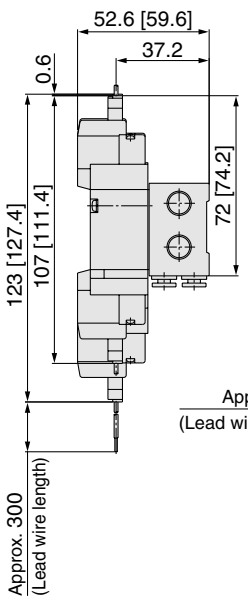




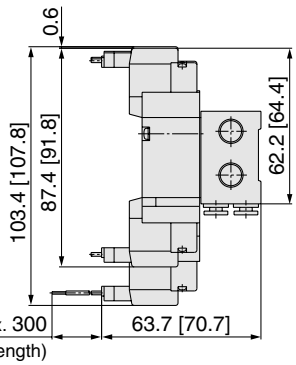
Built-in slottle valve



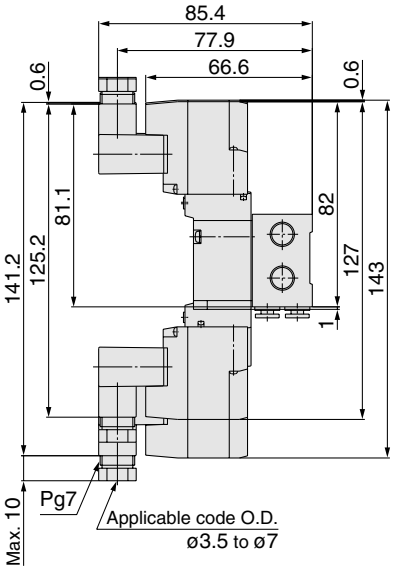
L plug connector (L)



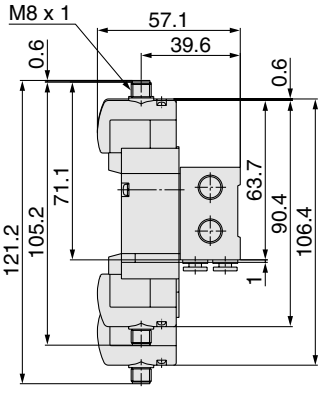
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



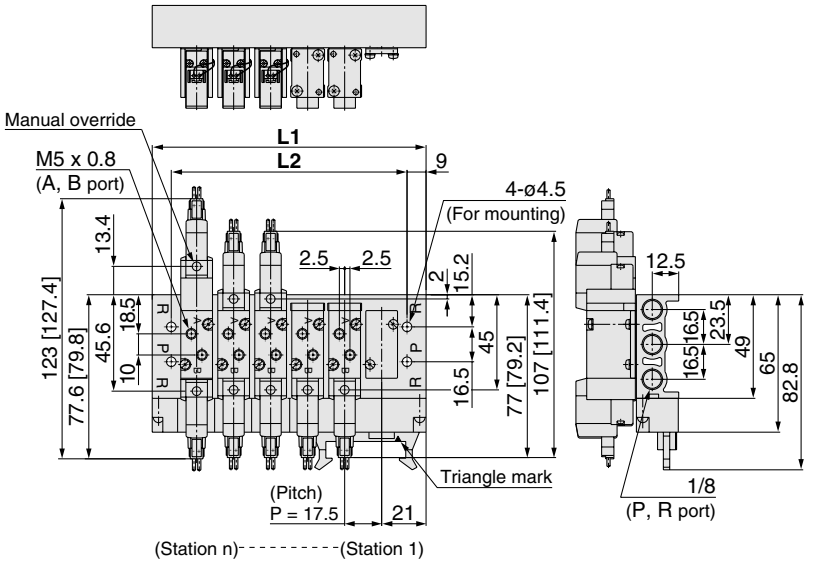
Refer to back page 11 for dimentions with connector cable.

Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
L2	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331

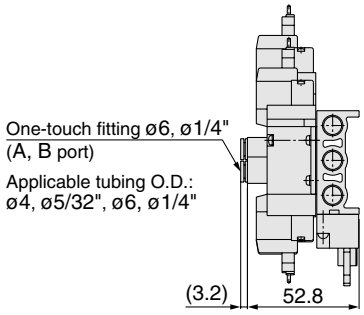
Flat Ribbon Cable Manifold

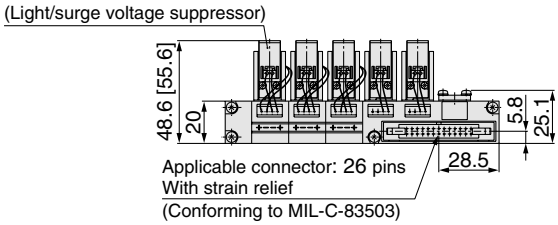
[ ]: AC

SS5YJ5-20P- Stations -00□



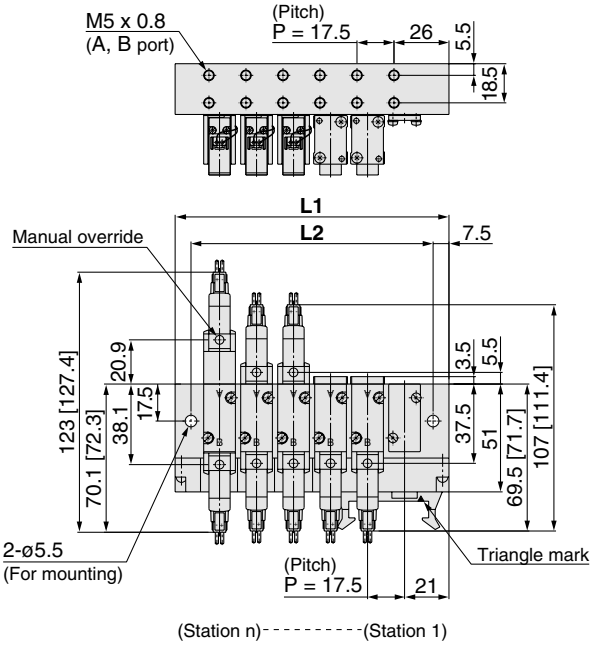
For C4 N3 C6 N7 (Built-in one-touch fitting)



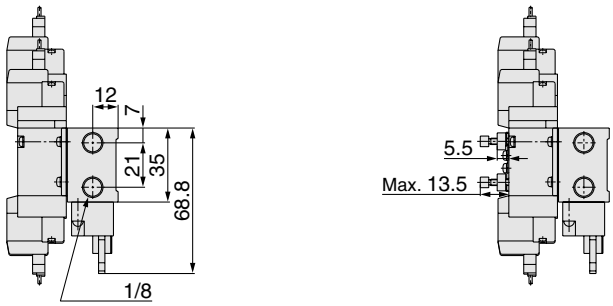


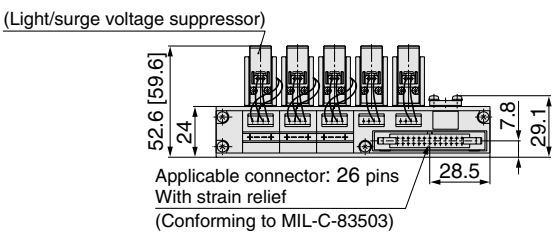
Station n	Station 3	4	5	6	7	8	9	10	11	Station 12
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L2	59	76.5	94	111.5	129	146.5	164	181.5	199	216.5

SS5YJ5-41P- Stations -M5□



Built-in slottle valve



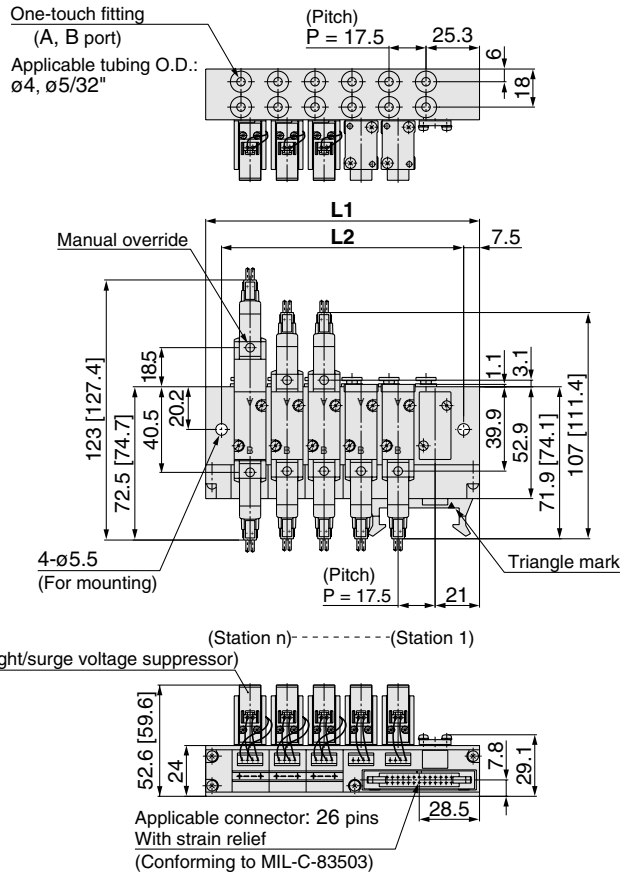


Station n	Station 3	4	5	6	7	8	9	10	11	Station 12
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L2	62	79.5	97	114.5	132	149.5	167	184.5	202	219.5

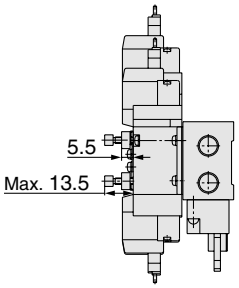
Flat Ribbon Cable Manifold

[ ]: AC

SS5YJ5-43P- Stations -$^{C4}_{N3}$□

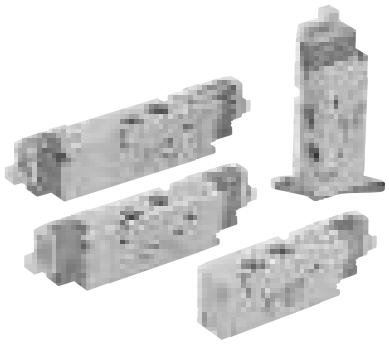


Built-in speed controller

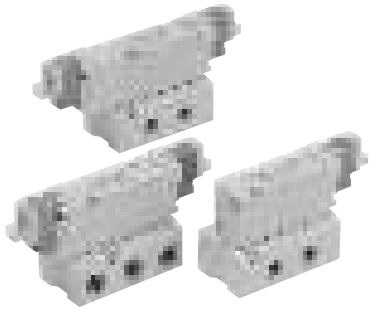


Station n	Station 3	4	5	6	7	8	9	10	11	Station 12
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L2	62	79.5	97	114.5	132	149.5	167	184.5	202	219.5

Rubber Seal
5 Port Solenoid Valve
Series SYJ7000



Body ported



Base mounted

Specifications

For details about certified products conforming to international standards, visit us at www.smcworld.com.

Fluid		Air
Operating pressure range MPa	**2 position single**	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (No freezing. Refer to back page 3.)
Response time (ms) Note 1) **(at 0.5 MPa)**	**2 position single, double**	30 or less
	3 position	60 or less
Max. operating frequency (Hz)	**2 position single, double**	5
	3 position	3
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type
Pilot exhaust method		Individual exhaust for the pilot valve, Common exhaust for the pilot and main valve
Lubrication		Not required
Mounting orientation		Unrestricted
Shock/Vibration resistance (m/s²) Note 2)		150/30
Enclosure		Dust proof (∗ DIN terminal, M8 connector conforms to IP65.)

∗ Based on IEC60529

Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)

Note 2) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Value in the initial state)

Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve and armature when pilot signal is ON and OFF. (Value in the initial state)

Solenoid Specifications

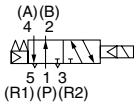
Electrical entry			Grommet (G), (H) L plug connector (L) M plug connector (M) DIN terminal (D) M8 connector (W)	
			G, H, L, M, W	D
Coil rated voltage (V)	**DC**		24, 12, 6, 5, 3	24, 12
	AC 50/60 Hz		100, 110, 200, 220	
Allowable voltage fluctuation			±10% of rated voltage ∗	
Power consumption (W)	**DC**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

∗ In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.
∗ For 115 VAC and 230 VAC, the allowable voltage is –15% to +5% of rated voltage.
∗ S, Z and T type (with power saving circuit) should be used within the following allowable voltage fluctuation range due to a voltage drop caused by the internal circuit.
S and Z type: 24 VDC: –7% to +10%, 12 VDC: –4% to +10%
T type: 24 VDC: –8% to +10%, 12 VDC: –6% to +10%

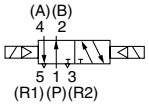
JIS Symbol

Body ported

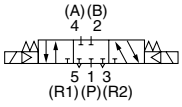
2 position single



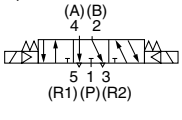
2 position double



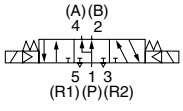
3 position closed center



3 position exhaust center

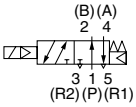


3 position pressure center

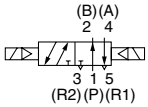


Base mounted

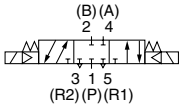
2 position single solenoid



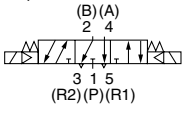
2 position double solenoid



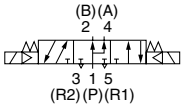
3 position closed center



3 position exhaust center



3 position pressure center



Made to Order
(For details, refer to pages 79 through to 80.)

Flow Characteristics/Weight

Valve model		Type of actuation		Port size 1, 5, 3 (P, EA, EB)	Port size 4, 2 (A, B)	Flow characteristics Note 1) 1 → 4/2 (P → A/B) C [dm³/(s·bar)]	b	Cv	Flow characteristics 4/2 → 5/3 (A/B → EA/EB) C [dm³/(s·bar)]	b	Cv	Weight (g) Note 2, 3) Grommet	L/M plug connector	DIN terminal	M8 connector
Body ported	SYJ7□20-□-01	2 position	Single	1/8	1/8	2.2	0.36	0.58	2.4	0.34	0.63	85	86	107	90
			Double									98	100	142	108
		3 position	Closed center			1.8	0.37	0.45	2.0	0.35	0.49	108	110	152	118
			Exhaust center			1.2	0.50	0.34	3.0 [1.3]	0.35[0.52]	0.73 [0.39]				
			Pressure center			3.0 [0.83]	0.37 [0.50]	0.78 [0.25]	1.8	0.37	0.45				
	SYJ7□20-□-C6	2 position	Single	1/8	C6 (One-touch fitting for ø6)	1.6	0.33	0.4	2.2	0.32	0.53	96	97	98	101
			Double									109	111	153	119
		3 position	Closed center			1.4	0.27	0.35	1.9	0.33	0.49	119	121	163	129
			Exhaust center			1.1	0.37	0.27	2.5 [1.3]	0.32[0.54]	0.61 [0.38]				
			Pressure center			1.8 [0.78]	0.36 [0.40]	0.45 [0.22]	1.6	0.30	0.39				
	SYJ7□20-□-C8	2 position	Single	1/8	C8 (One-touch fitting for ø8)	2.0	0.39	0.52	2.3	0.34	0.61	96	97	98	101
			Double									109	111	153	119
		3 position	Closed center			1.7	0.35	0.42	2.0	0.29	0.49	119	121	163	129
			Exhaust center			1.2	0.38	0.33	2.6 [1.3]	0.35[0.49]	0.67 [0.38]				
			Pressure center			1.9 [0.86]	0.57 [0.46]	0.59 [0.25]	1.7	0.39	0.42				
Base mounted	SYJ7□40-□-01	2 position	Single	1/8	1/8	2.3	0.45	0.57	2.8	0.37	0.71	165 (85)	166 (86)	187 (107)	170 (90)
			Double									178 (98)	180 (100)	222 (142)	188 (108)
		3 position	Closed center			1.9	0.36	0.48	2.1	0.46	0.57	188 (108)	190 (110)	232 (152)	198 (118)
			Exhaust center			1.2	0.48	0.35	3.4 [1.3]	0.36[0.57]	0.86 [0.41]				
			Pressure center			3.3 [0.85]	0.43 [0.54]	0.78 [0.25]	2.1	0.45	0.56				
	SYJ7□40-□-02	2 position	Single	1/4	1/4	2.3	0.41	0.61	2.9	0.35	0.74	165 (85)	166 (86)	187 (107)	170 (90)
			Double									178 (98)	180 (100)	222 (142)	188 (108)
		3 position	Closed center			1.9	0.46	0.50	2.2	0.44	0.60	188 (108)	190 (110)	232 (152)	198 (118)
			Exhaust center			1.3	0.45	0.35	3.7 [1.4]	0.27[0.56]	0.87 [0.43]				
			Pressure center			3.6 [0.83]	0.23 [0.55]	0.84 [0.25]	2.1	0.47	0.58				

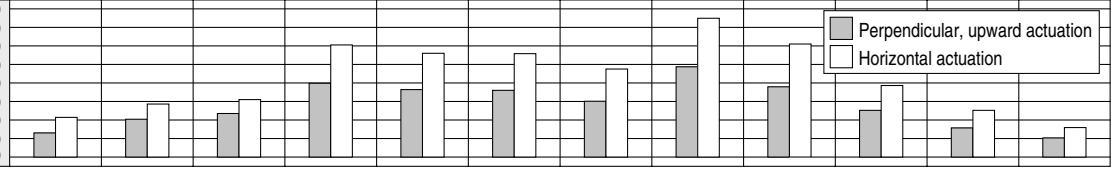
Note 1) [ ]: denotes the normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2
Note 2) ( ): Without sub-plate.
Note 3) For DC voltages. For AC voltages add 3 g to the weight of the single solenoid and 6 g to the weight of the double solenoid and 3 position types.

Cylinder Speed Chart

Body Ported

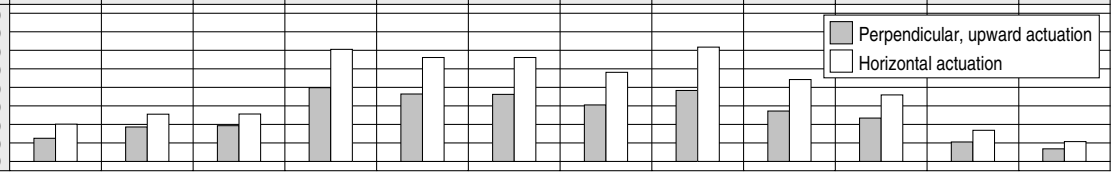
Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

Series	Average speed (mm/s)	Bore size: Series CJ2 Pressure 0.5 MPa Load rate: 50% Stroke 60 mm			Series MB/CM2 Pressure 0.5 MPa Load rate: 50% Stroke 300 mm				Series MB/CA2 Pressure 0.5 MPa Load rate: 50% Stroke 500 mm				
		ø6	ø10	ø16	ø20	ø25	ø32	ø40	ø40	ø50	ø63	ø80	ø100
SYJ7120-01	800 700 600 500 400 300 200 100 0												



Base Mounted

Series	Average speed (mm/s)	Bore size: Series CJ2 Pressure 0.5 MPa Load rate: 50% Stroke 60 mm			Series MB/CM2 Pressure 0.5 MPa Load rate: 50% Stroke 300 mm				Series MB/CA2 Pressure 0.5 MPa Load rate: 50% Stroke 500 mm				
		ø6	ø10	ø16	ø20	ø25	ø32	ø40	ø40	ø50	ø63	ø80	ø100
SYJ7140-02	800 700 600 500 400 300 200 100 0												



∗ Cylinder is in extending. Speed controller is meter-out, which is directly connected with cylinder and its needle is fully opened.
∗ Average speed of cylinder is obtained by dividing the full stroke time by the stroke.
∗ Load factor: ((Load weight x 9.8) /Theoretical force) x 100%

Conditions

Body ported		Series CJ2	Series CM2	Series MB/CA2
SYJ7120-01	Tubing bore x Length	ø6 x 1 m		ø12 x 1 m
	Speed controller	AS2301F-06	AS3301F-06	AS4001F-12
	Silencer	AN110-01	AN200-02	

Base mounted		Series CJ2	Series CM2	Series MB/CA2
SYJ7140-02	Tubing bore x Length	ø6 x 1 m		
	Speed controller	AS1301F-06	AS3001F-06	
	Silencer	AN110-01	AN200-02	AN3301F-06

How to Order

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Light/surge voltage suppressor

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

Nil	Without light/surge voltage suppressor
S	With surge voltage suppresor
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 type "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

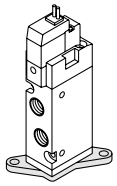
Electrical entry for D

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.

Bracket

Nil: Without bracket
F: With bracket



Note) Do not remove the factory installed bracket from models with the bracket option. Removal of the bracket will cause the valve to leak. Brackets cannot be retrofitted.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Rated voltage

DC

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

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

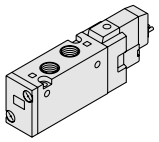
AC (50/60 Hz)

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

∗ For type W□, DC voltage is only available.

A, B port size

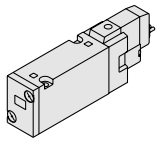
01	1/8
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"



(For manifold type 20, 21)

Body ported SYJ7 [1] [2] [0] [ ] – [5] [M] [ ] [ ] – [01] [ ] [ ]

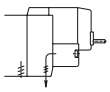
Base mounted SYJ7 [2] [4] [0] [ ] – [5] [M] [ ] [ ] – [ ] [ ]



(For sub-plate, manifold type 40, 41, 42)

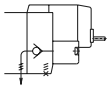
Body option

0: Pilot valve individual exhaust for the pilot valve



R port P, E port

3: Common exhaust type for main and pilot valve



R port P, E port

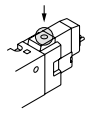
Coil specifications

Nil	Standard
T	With power saving circuit <24 V, 12 VDC only>

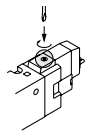
∗ Power saving circuit is not available in the case of D, DO or W□ type.

Manual override

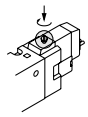
Nil: Non-locking push type



D: Push-turn locking slotted type



E: Push-turn locking lever type

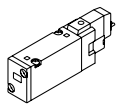


Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

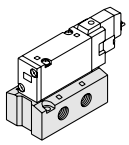
Port size

Nil: Without sub-plate

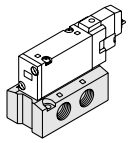


(With gasket and screws)

01: 1/8 With sub-plate Note)



02: 1/4 With sub-plate



Note) R1, R2 port: 1/4

Electrical entry

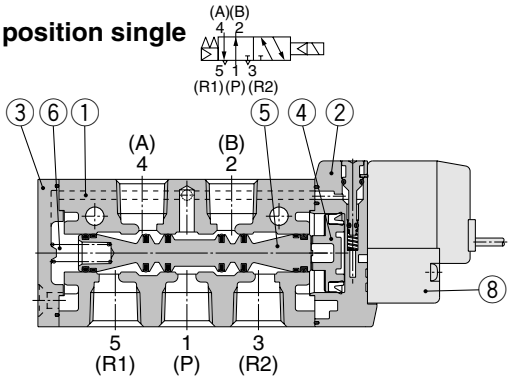
24, 12, 6, 5, 3 VDC 100,110, 200, 220 VAC				24,12 VDC 100,110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector		DIN terminal	M8 connector
G: Lead wire length 300 mm	**L:** With lead wire (Length 300 mm)	**M:** With lead wire (Length 300 mm)	**MN:** Without lead wire	**D:** 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	**W□:** With connector cable Note 1)

Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to back page 10.

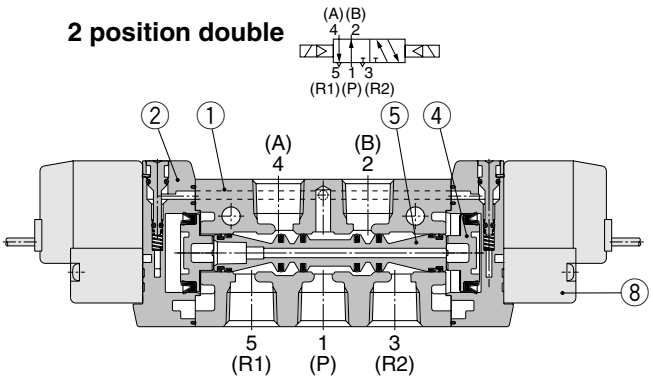
∗ LN, MN type: with 2 sockets.
∗ DIN terminal type "Y" which conforms to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 80.
∗ For connector cable of M8 connector, refer to back page 10.

Construction

2 position single

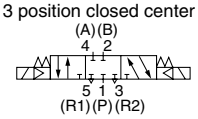


2 position double

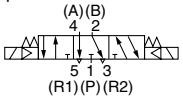


3 position closed center/exhaust center/pressure center

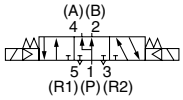
3 position closed center

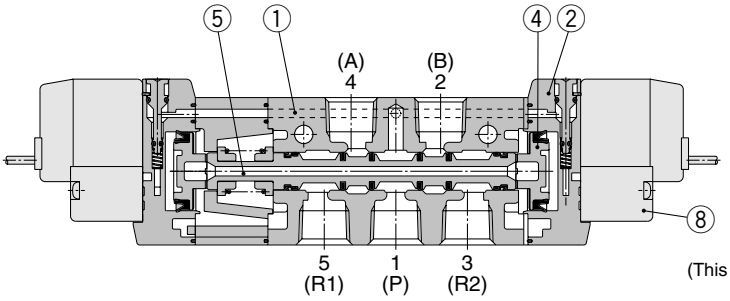


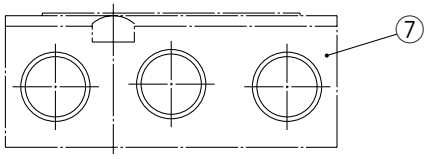
3 position exhaust center



3 position pressure center







(This figure shows a closed center type.)

Component Parts

No.	Description	Material	Note
1	Body	Aluminum die-casted	White
2	Piston plate	Resin	White
3	End cover	Aluminum die-casted	White
4	Piston	Resin	—
5	Spool valve assembly	Aluminum, H-NBR	—
6	Spool spring	Stainless steel	—

Replacement Parts

No.	Description	No.	Note	
7	Sub-plate	SYJ7000-22-1	1/8	Aluminum die-casted
		SYJ7000-22-2	1/4	
8	Pilot valve	V111(T)-□□□	—	

How to Order Pilot Valve Assembly

V111 □ — 5 G □

Coil specifications

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

∗ Power saving circuit is not available in the case of 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 suppresor
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 type R and U, DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Electrical entry

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

∗ For connector cable of M8 connector, refer to back page 10.

Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to back page 10.

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 V AC 50/60 Hz]
4	220 VAC 50/60 Hz [230 VAC 50/60 Hz]

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		Without connector

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

How to Order Connector Assembly for L/M Plug Connector

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

V100-49-1- □

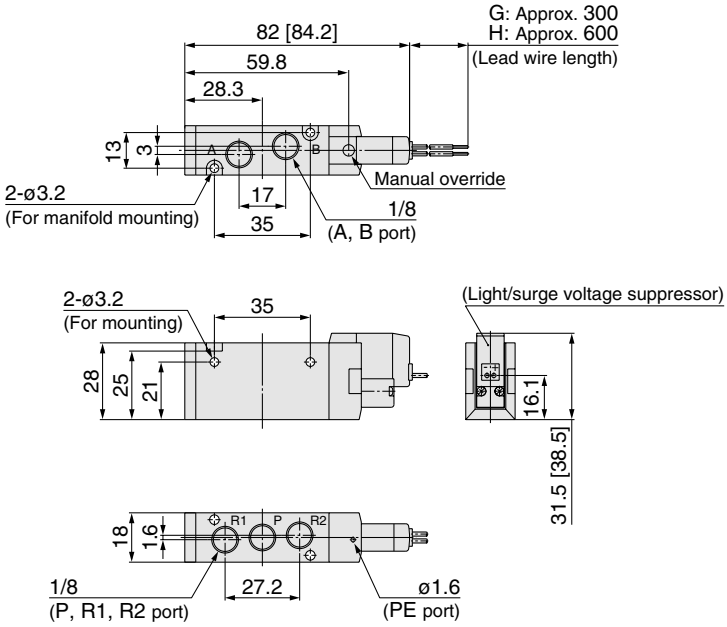
Cable length

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

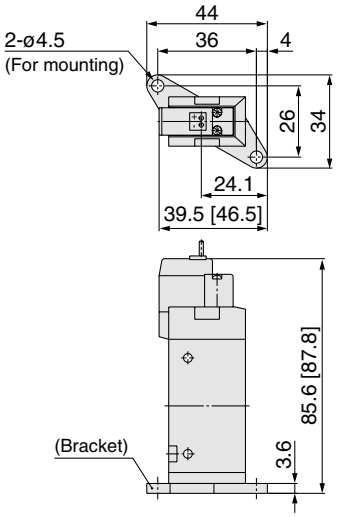
2 Position Single

[ ]: AC

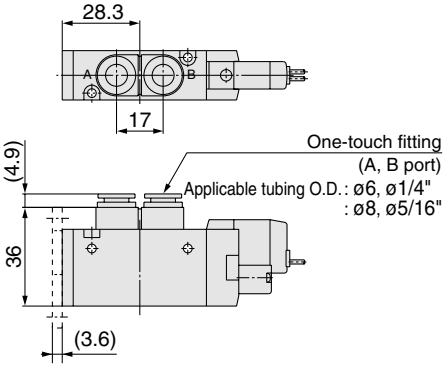
Grommet (G), (H): SYJ7120-□G/H□□-01□



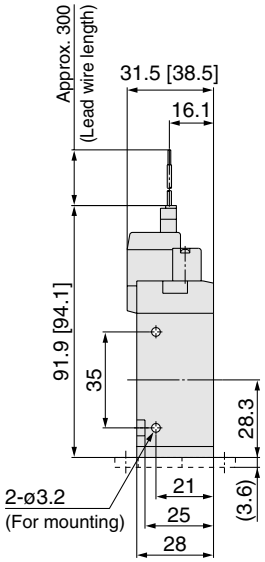
With bracket: SYJ7120-□G/H□□-01□-F



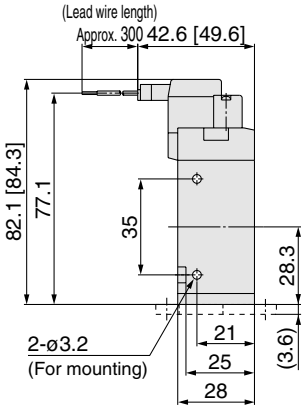
Built-in one-touch fitting: SYJ7120-□G/H□□-C6, N7 C8, N9□ (-F)



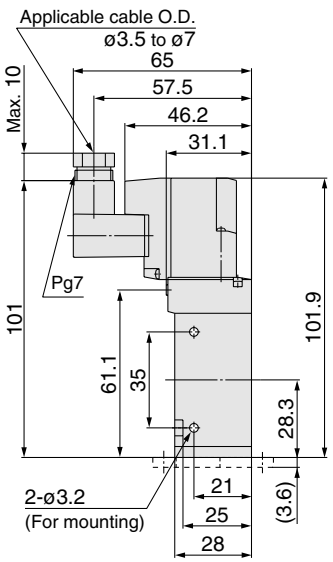
L plug connector (L): SYJ7120-□L□□-01□ (-F)



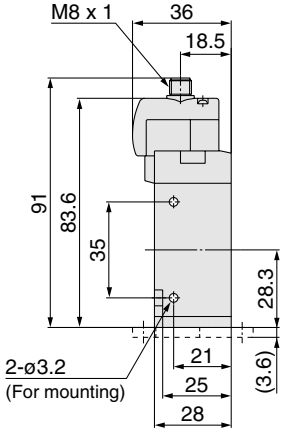
M plug connector (M): SYJ7120-□M□□-01□ (-F)



DIN terminal (D): SYJ7120-□D□□-01□ (-F)



M8 connector (WO): SYJ7120-□WO□□-01□ (-F)

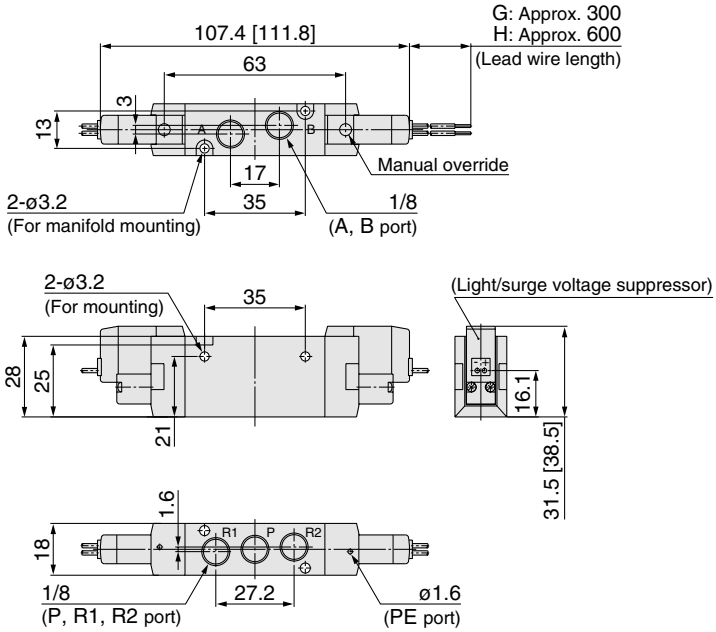


Refer to back page 11 for dimentions with connector cable.

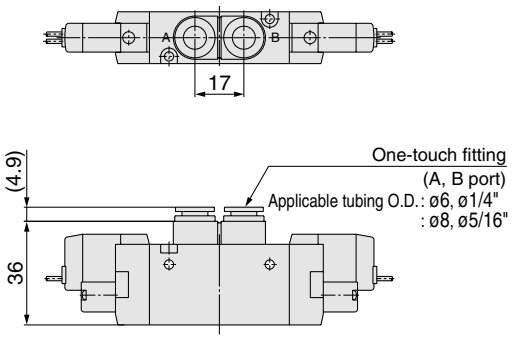
2 Position Double

[ ]: AC

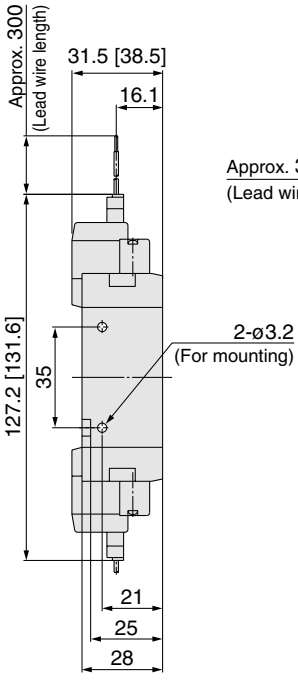
Grommet (G), (H): SYJ7220-□$^{G}_{H}$□□-01□



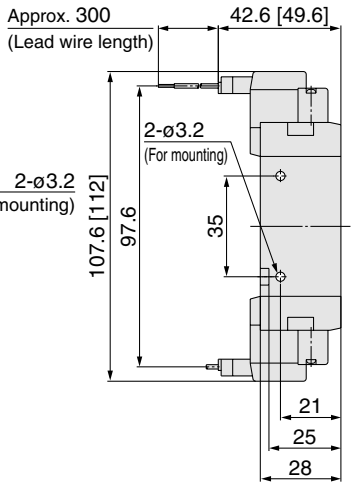
Built-in one-touch fitting: SYJ7220-□$^{G}_{H}$□□-$^{C6, N7}_{C8, N9}$□



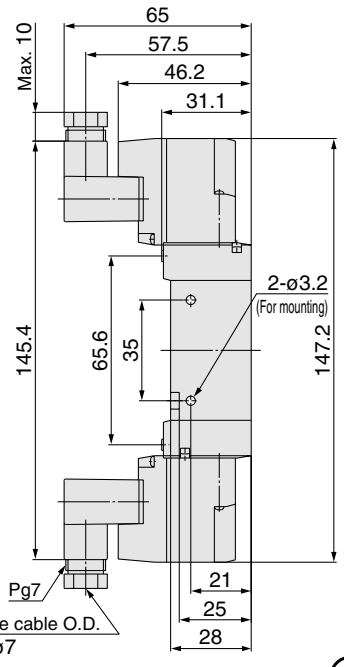
L plug connector (L): SYJ7220-□L□□-01□



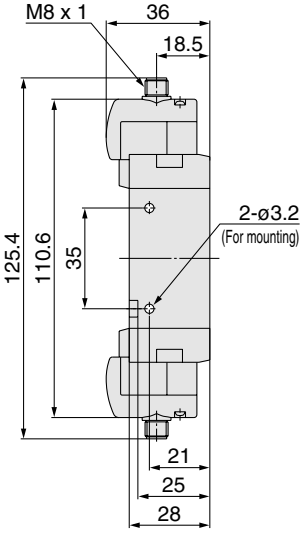
M plug connector (M): SYJ7220-□M□□-01□



DIN terminal (D): SYJ7220-□D□□-01□



M8 connector (WO): SYJ7220-□WO□□-01□

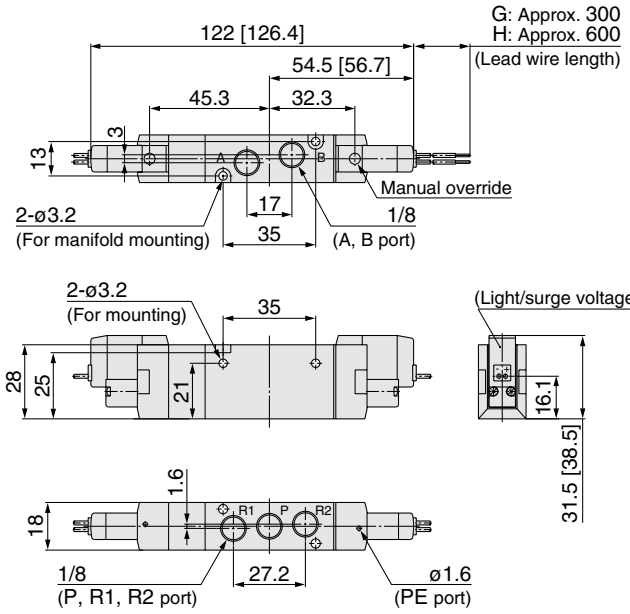


Refer to back page 11 for dimentions with connector cable.

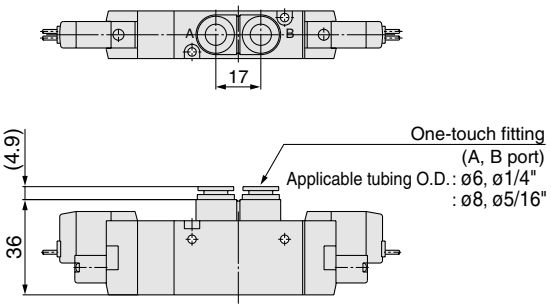
3 Position Closed Center/Exhaust Center/Pressure Center

[ ]: AC

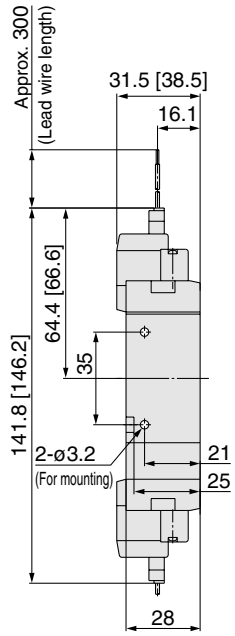
Grommet (G), (H): SYJ7$^{3}_{5}$20-□$^{G}_{H}$□□-01□



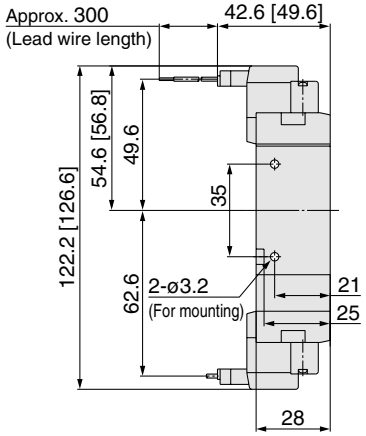
Built-in one-touch fitting: SYJ7$^{3}_{5}$20-□$^{G}_{H}$□□-$^{C6, N7}_{C8, N9}$□



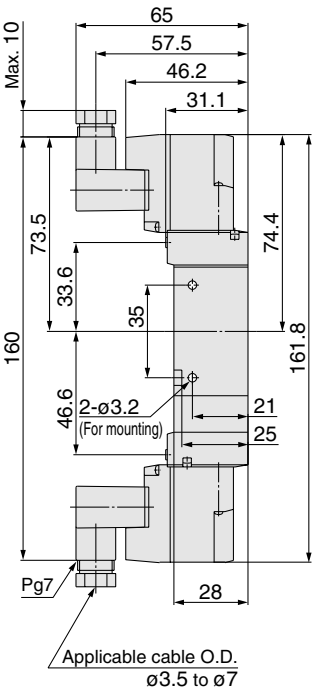
L plug connector (L): SYJ7$^{3}_{5}$20-□L□□-01□



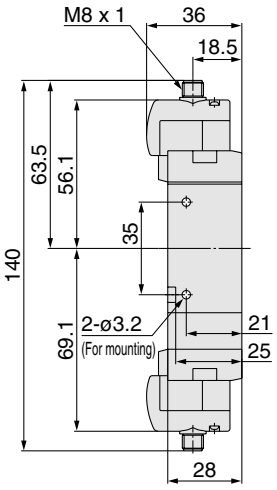
M plug connector (M): SYJ7$^{3}_{5}$20-□M□□-01□



DIN terminal (D): SYJ7$^{3}_{5}$20-□D□□-01□



M8 connector (WO): SYJ7$^{3}_{5}$20-□WO□□-01□

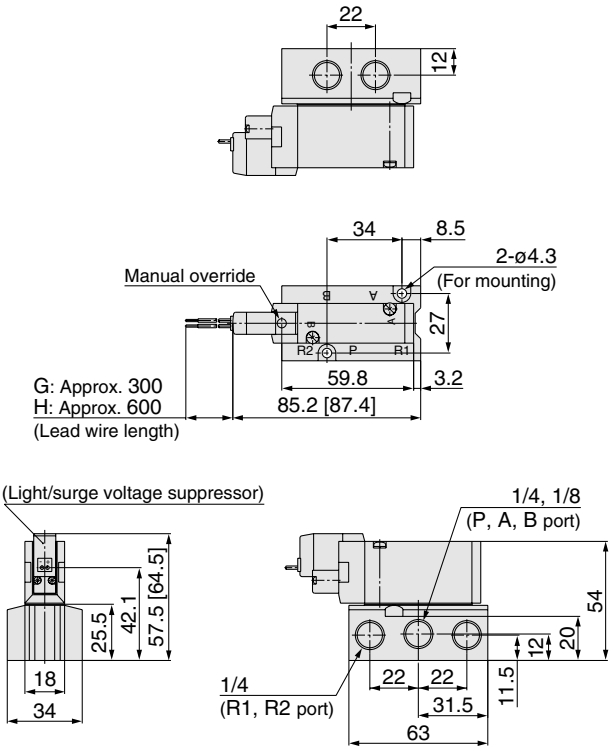


Refer to back page 11 for dimentions with connector cable.

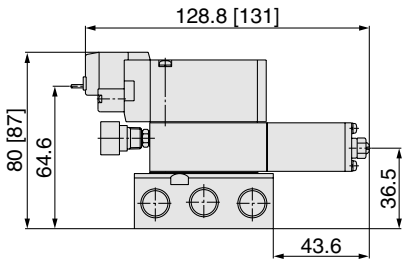
2 Position Single

[ ]: AC

Grommet (G), (H): SYJ7140-□$^{G}_{H}$□□-$^{01}_{02}$□



With interface regulator

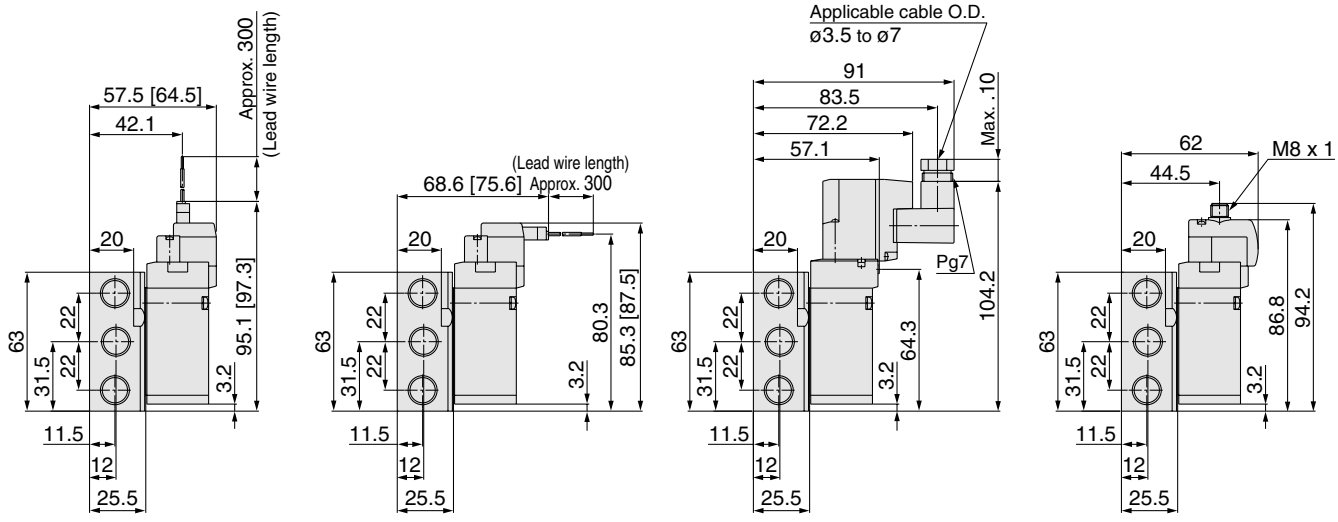


L plug connector (L): SYJ7140-□L□□-$^{01}_{02}$□

M plug connector (M): SYJ7140-□M□□-$^{01}_{02}$□

DIN terminal (D): SYJ7140-□D□□-$^{01}_{02}$□

M8 connector (WO): SYJ7140-□WO□□-$^{01}_{02}$□

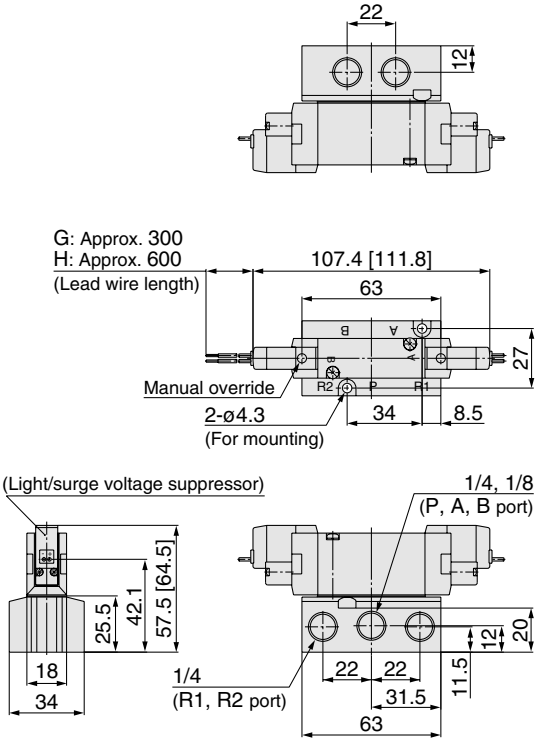


Refer to back page 11 for dimentions with connector cable.

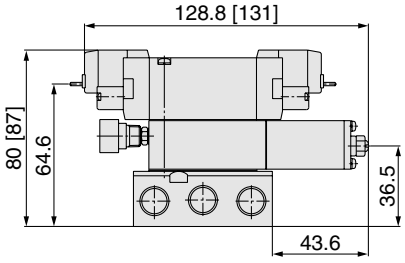
2 Position Double

[ ]: AC

Grommet (G), (H): SYJ7240-□$^{G}_{H}$□□-$^{01}_{02}$□



With interface regulator

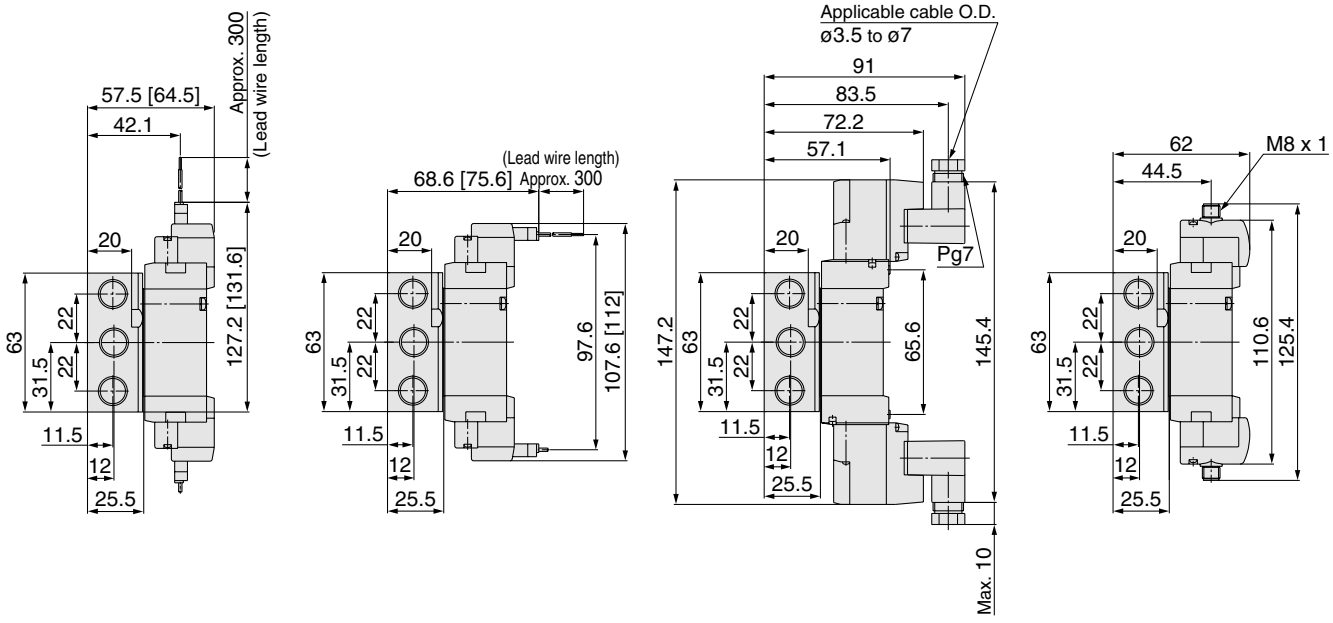


L plug connector (L): SYJ7240-□L□□-$^{01}_{02}$□

M plug connector (M): SYJ7240-□M□□-$^{01}_{02}$□

DIN terminal (D): SYJ7240-□D□□-$^{01}_{02}$□

M8 connector (WO): SYJ7240-□WO□□-$^{01}_{02}$□

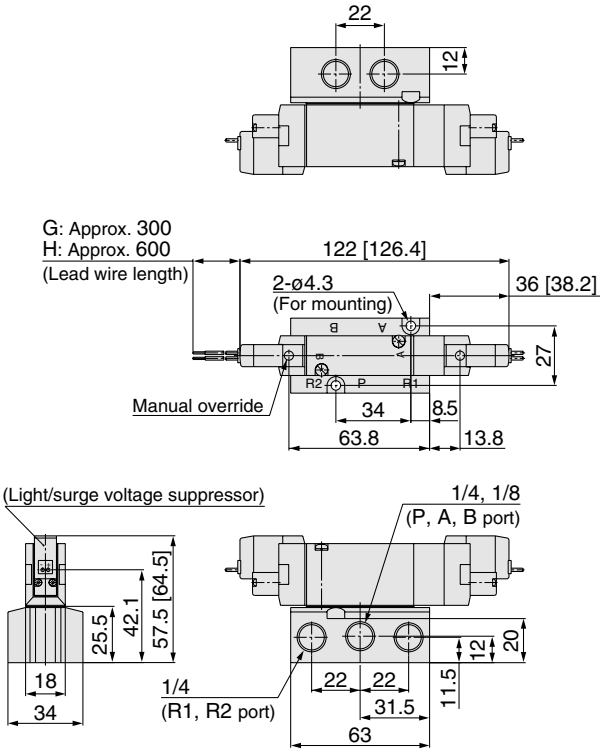


Refer to back page 11 for dimentions with connector cable.

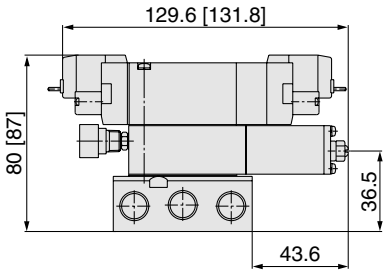
3 Position Closed Center/Exhaust Center/Pressure Center

[ ]: AC

Grommet (G), (H): SYJ7$^{3}_{4}_{5}$40-□$^{G}_{H}$□□-$^{01}_{02}$□



With interface regulator

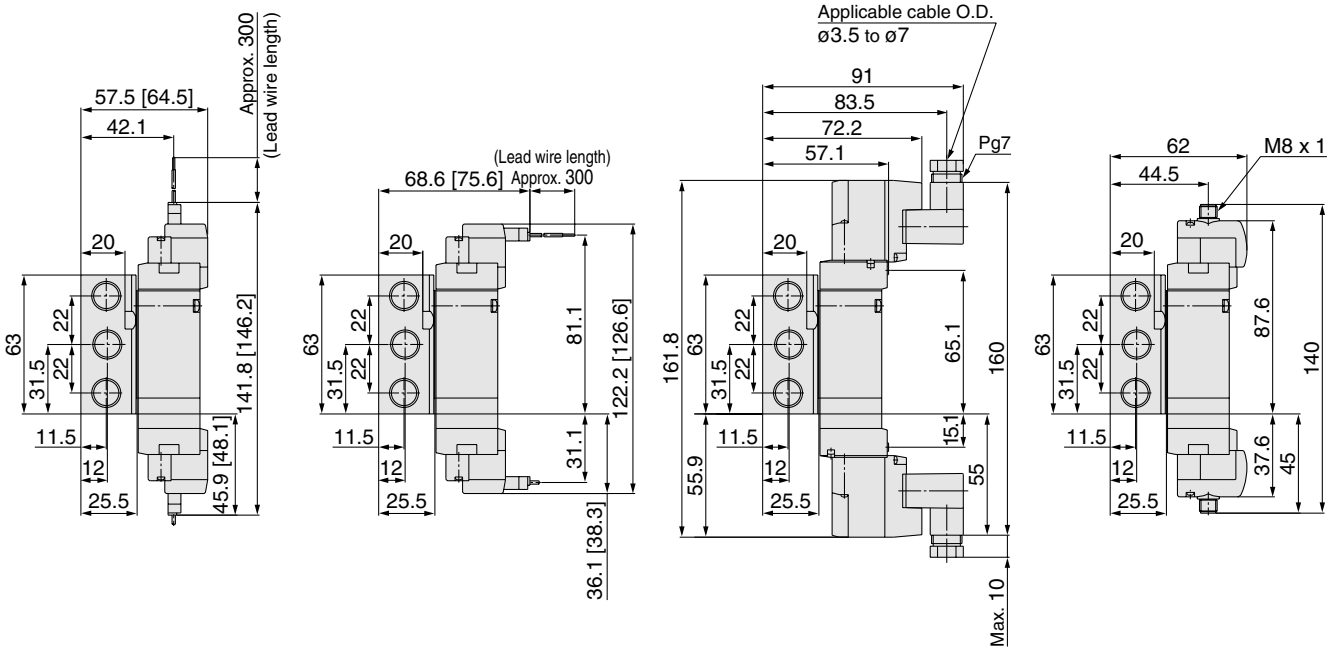


L plug connector (L): SYJ7$^{3}_{4}_{5}$40-□L□□-$^{01}_{02}$□

M plug connector (M): SYJ7$^{3}_{4}_{5}$40-□M□□-$^{01}_{02}$□

DIN terminal (D): SYJ7$^{3}_{4}_{5}$40-□D□□-$^{01}_{02}$□

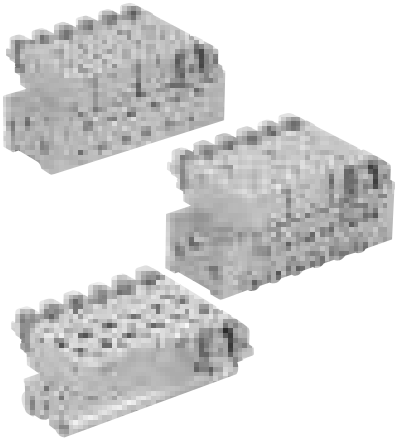
M8 connector (WO): SYJ7$^{3}_{4}_{5}$40-□WO□□-$^{01}_{02}$□



Refer to back page 11 for dimentions with connector cable.

Series SYJ7000
Manifold Specifications

Manifold Standard



Manifold Specifications

Model		Type 20	Type 21	Type 40	Type 20	Type 42
Manifold type		Single base/B mount				
P (SUP), R (EXH)		Common SUP, Common EXH				
Valve stations		2 to 15 stations	2 to 20 stations			
A, B port Porting specifications	Location	Valve		Base	Base	
	Direction	Top		Bottom	Side	
Port size	P, R port	1/8	1/4			
	A, B port	1/8 C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)		1/8		C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)

Flow Characteristics

Manifold			Port size		Flow characteristics					
					1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → R)		
			1(P), 5/3(R) Port	2(B), 4(A) Port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported for internal pilot	Type SS5YJ7-20	SYJ7□2□	1/8	1/8	2.2	0.35	0.57	2.3	0.26	0.55
			1/8	C6	1.4	0.32	0.37	2.0	0.25	0.49
			1/8	C8	1.7	0.38	0.45	2.1	0.25	0.51
	Type SS5YJ7-21		1/4	1/8	2.1	0.36	0.55	2.3	0.26	0.54
			1/4	C6	1.4	0.32	0.36	2.1	0.24	0.50
			1/4	C8	1.8	0.37	0.50	2.1	0.20	0.50
Base mounted for internal pilot	Type SS5YJ7-40	SYJ7□4□	1/4	1/8	2.1	0.28	0.51	2.5	0.23	0.59
	Type SS5YJ7-41		1/4	1/8	2.0	0.30	0.50	2.2	0.30	0.55
	Type SS5YJ7-42-C6		1/4	C6	1.5	0.32	0.38	2.2	0.23	0.52
	Type SS5YJ7-42-C8		1/4	C8	1.9	0.24	0.46	2.2	0.26	0.53

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold (Example)

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

Example: •**SS5YJ7-20-03** ····· 1 pc. (Manifold base)
∗ **SYJ7120-5G-01** ····· 2 pcs. (Valve)
∗ **SYJ7000-21-1A** ····· 1 pc. (Blanking plate assembly)

•**SS5YJ7-41-03-01** ····· 1 pc. (Manifold base)
∗ **SYJ7140-5LZ** ····· 1 pc. (Valve)
∗ **SYJ7240-5LZ** ····· 1 pc. (Valve)
∗ **SYJ7000-21-1A** ····· 1 pc. (Blanking plate assembly)

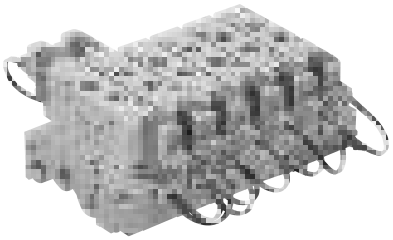
→The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

∗ Use manifold specification sheet.

Flat Ribbon Cable Manifold

- **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.



Flat Ribbon Cable Manifold Specifications

Model		Type 21P
Manifold type		Single base/B mount
P (SUP), R (EXH)		Common SUP, Common EXH
Valve stations		3 to 12 stations
A, B port location		Valve
Port size	P, R port	1/4
	A, B port	1/8, C6, C8
Applicable flat ribbon cable connector		Socket: 26 pins MIL type with strain relief (MIL-C-83503)
Internal wiring		In common between +COM and –COM (Z type: +COM only).
Rated voltage		24, 12 VDC

Note 1) The value is for manifold base and individually operated 2 position type.
Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.

Flow Characteristics

Manifold			Port size		Flow characteristics					
					1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → R)		
			1(P), 5/3(R) Port	2(B), 4(A) Port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported for internal pilot	Type SS5YJ7-21P-01	SYJ7□23	1/4	1/8	2.1	0.36	0.55	2.3	0.26	0.54
	Type SS5YJ7-21P-C6		1/4	C6	1.4	0.32	0.36	2.1	0.24	0.50
	Type SS5YJ7-21P-C8		1/4	C8	1.8	0.37	0.50	2.1	0.20	0.50

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold (Example)

Instruct by specifying the valves, blanking plate assembly and connector assembly to be mounted on the manifold along with the manifold base model no.

Example:
- **SS5YJ7-21P-07** ..... 1 pc. (Manifold base)
- ∗ **SYJ7123-5LOU-C8** ..... 3 pcs. (Valve)
- ∗ **SYJ7223-5LOU-C8** ..... 3 pcs. (Valve)
- ∗ **SYJ7000-21-3A** ..... 1 pc. (Blanking plate assembly)
- ∗ **SY3000-37-3A** ..... 3 pcs. (Connector assembly)
- ∗ **SY3000-37-4A** ..... 3 pcs. (Connector assembly)

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

∗ Use manifold specification sheet.

How to Order Valve

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

For DC SYJ7 **1** 23 — **5** LO **Z** **□** — **01**

For AC SYJ7 **1** 23 — **1** LOZ **□** — **01**

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

A, B port size

Symbol	Port size
01	1/8
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"

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

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

How to Order Connector Assembly

For 12, 24 VDC

Single solenoid	SY3000-37-3A
Double solenoid, 3 position type	SY3000-37-4A
Single solenoid, individual SUP, EXH spacer	SY3000-37-3A
Double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-6A
Interface regulator for single solenoid	SY3000-37-3A
Double solenoid, 3 position interface regulator	SY3000-37-6A
3 port adaptor plate	SY3000-37-3A

For 100 VAC

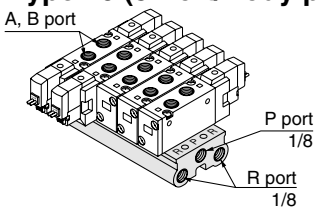
Single solenoid	SY3000-37-32A
Double solenoid, 3 position type	SY3000-37-33A
Single solenoid, individual SUP, EXH spacer	SY3000-37-15A
Double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-34A
Interface regulator for single solenoid	SY3000-37-15A
Double solenoid, 3 position interface regulator	SY3000-37-34A
3 port adaptor plate	SY3000-37-32A

For 100 VAC (115 VAC)

Single solenoid	SY3000-37-35A
Double solenoid, 3 position type	SY3000-37-36A
Single solenoid, individual SUP, EXH spacer	SY3000-37-19A
Double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-37A
Interface regulator for single solenoid	SY3000-37-19A
Double solenoid, 3 position interface regulator	SY3000-37-37A
3 port adaptor plate	SY3000-37-35A

Manifold Standard /Common SUP/Common EXH

Type 20 (5 Port/Body ported)



How to Order

SS5YJ7–20– 05 –

Stations

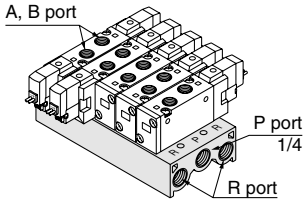
02	2 stations
:	:
15	15 stations

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Note) For more than 6 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 21 (5 Port/Body ported)



How to Order

SS5YJ7–21– 05 –

Stations

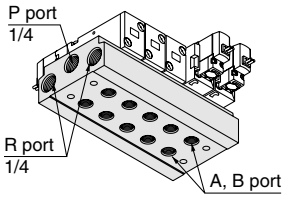
02	2 stations
:	:
20	20 stations

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Note) For more than stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 40 (5 Port/Base mounted)



How to Order

SS5YJ7–40– 05 – 01

Stations

02	2 stations
:	:
20	20 stations

A, B port size

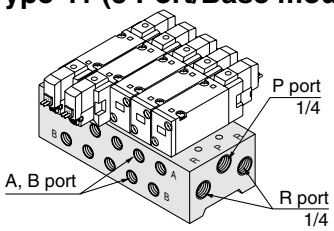
01	1/8

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 41 (5 Port/Base mounted)



How to Order

SS5YJ7–41– 05 – 01

Stations

02	2 stations
:	:
20	20 stations

A, B port size

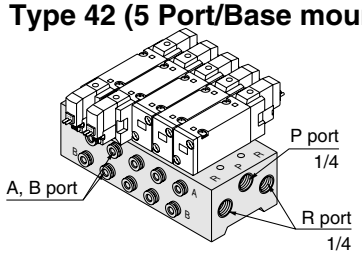
01	1/8

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 42 (5 Port/Base mounted)



How to Order

SS5YJ7–42– 05 – C6

Stations

02	2 stations
:	:
20	20 stations

A, B port size

C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Note) For more than stations, supply air to both sides of P port and exhaust air from both sides of R port.

Applicable solenoid valve

SYJ7□20-□□□□-$^{01}_{C6}$ $_{C8}$

SYJ7□23-□□□□-$^{01}_{C6}$ $_{C8}$

Applicable blanking plate assembly

SYJ7000-21-1A

Applicable individual EXH spacer assembly

SYJ7000-17-1A

Applicable solenoid valve

SYJ7□40-□□□□

SYJ7□43-□□□□

Applicable blanking plate assembly

SYJ7000-21-1A

Applicable individual EXH spacer assembly

SYJ7000-17-2A

Applicable individual SUP spacer assembly

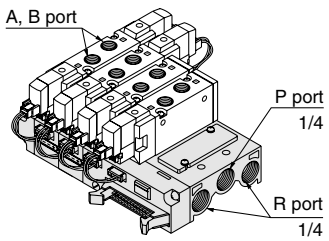
SYJ7000-16-2A

Applicable interface regulator

ARBYJ7000-00-P

Flat Ribbon Cable Manifold /Common SUP/Common EXH

Type 21P (5 Port/Body ported)



How to Order

SS5YJ7–21P– 05 –

Stations

03	3 stations
:	:
12	12 stations

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Applicable solenoid valve

Refer to page 59.

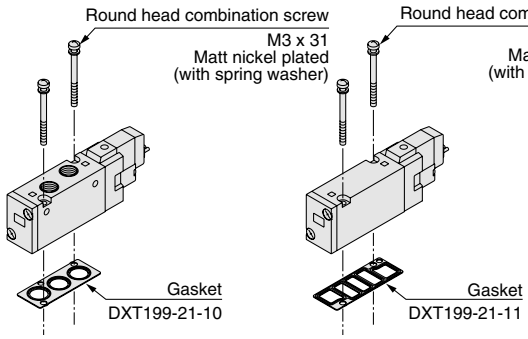
Applicable blanking plate assembly

SYJ7000-21-3A

Applicable connector assembly

Refer to page 59.

Combinations of Solenoid Valve, Manifold Gasket and Manifold Base



Applicable manifold base
Type SS5YJ7-20
Type SS5YJ7-21

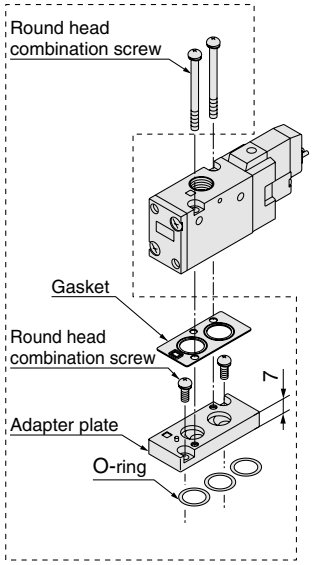
Applicable manifold base Sub-plate
Type SS5YJ7-40
Type SS5YJ7-41
Type SS5YJ7-42

Mix Installation of the SYJ700 and the SYJ7000 Valves on the Same Manifold

- Use of an adapter plate makes it possible to mount Series SYJ700 on the manifold bases of series SYJ7000.
- When mounting the SYJ700 valve on the SYJ7000 manifold, the SYJ700 solenoid must be positioned on the same side of the manifold as a single solenoid SYJ700. (Refer to the figure below.)
- For base mounted style, the A port of the 3 port valve flows out the B port of manifold base.

Adapter plate assembly SYJ700-3-1A

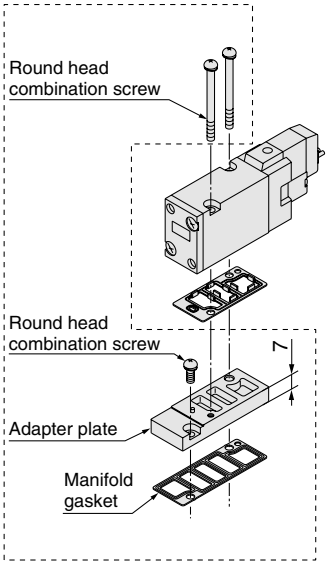
SYJ700 Series Body ported



Applicable manifold base
Type SS5YJ7-20
Type SS5YJ7-21

Adapter plate assembly SYJ700-3-2A

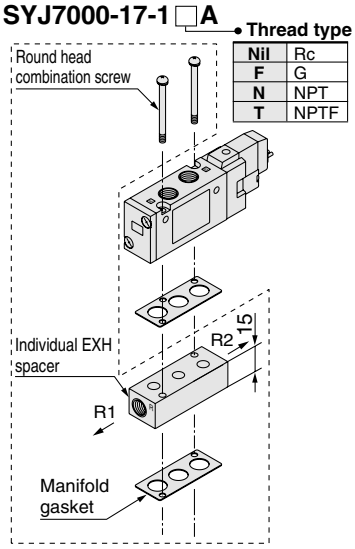
SYJ700 Series Base mounted



Applicable manifold base
Type SS5YJ7-40
Type SS5YJ7-41
Type SS5YJ7-42

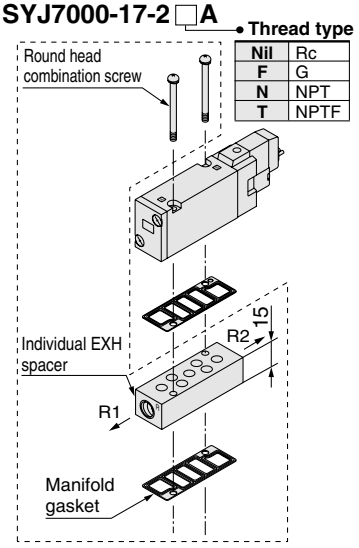
Individual EXH Spacer Assembly

SYJ7000-17-1 □A



Applicable manifold base
Type SS5YJ7-20
Type SS5YJ7-21

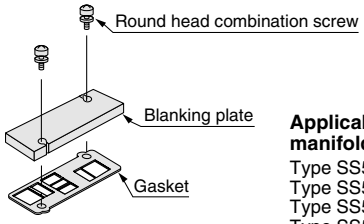
SYJ7000-17-2 □A



Applicable manifold base
Type SS5YJ7-40
Type SS5YJ7-41
Type SS5YJ7-42

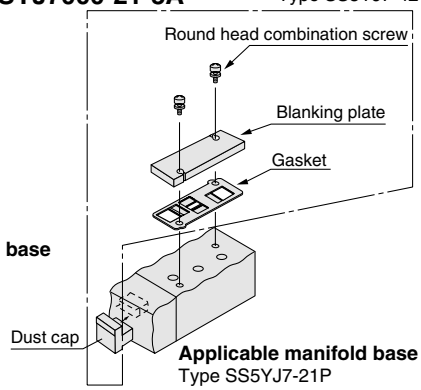
Blanking Plate Assembly

SYJ7000-21-1A



Applicable manifold base
Type SS5YJ7-20
Type SS5YJ7-21
Type SS5YJ7-40
Type SS5YJ7-41
Type SS5YJ7-42

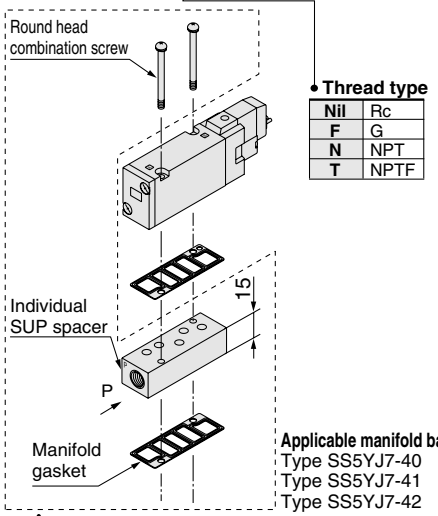
SYJ7000-21-3A



Applicable manifold base
Type SS5YJ7-21P

Individual SUP Spacer Assembly

SYJ7000-16-2 □A

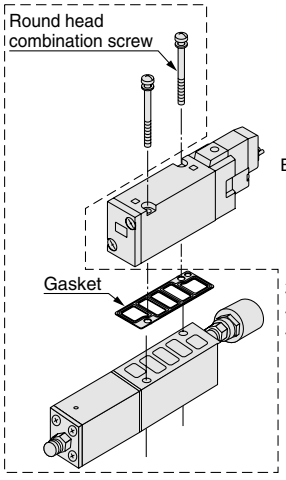


Applicable manifold base
Type SS5YJ7-40
Type SS5YJ7-41
Type SS5YJ7-42

Interface Regulator (P port regulation)

Spacer type regulating valve on manifold block can regulate the pressure to the valve individually.

ARBYJ7000-00-P



Applicable manifold base
Type SS5YJ7-40
Type SS5YJ7-41
Type SS5YJ7-42

Refer to back page 12 prior to handling.

⚠ Caution

Mounting screw tightening torques

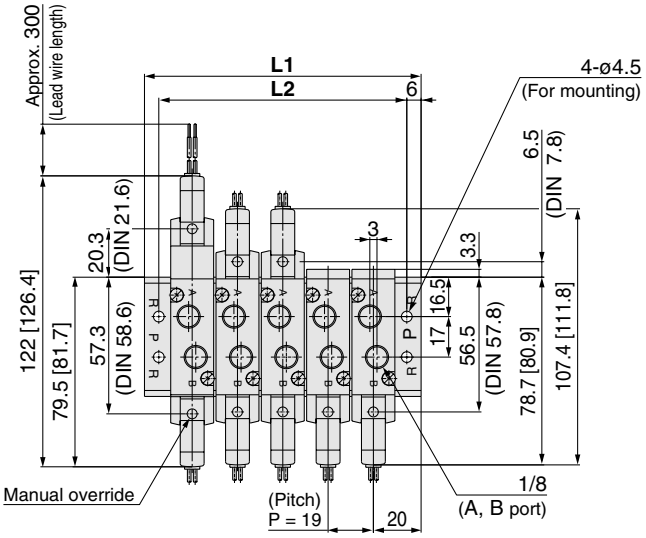
M3: 0.8 N·m

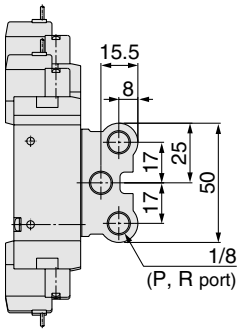
Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.

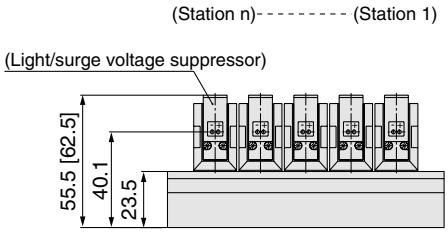
Type 20: Top Proted/SS5YJ7-20-Stations-00□

[ ]: AC

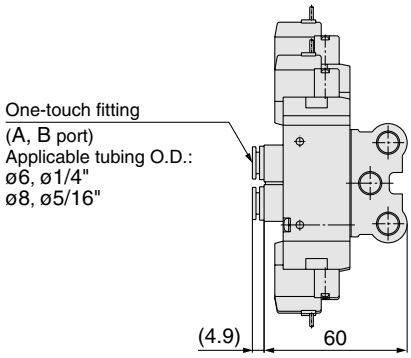
Grommet (G)



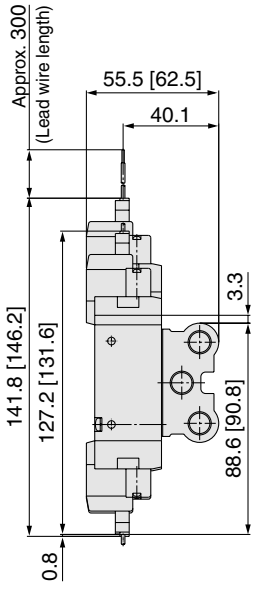




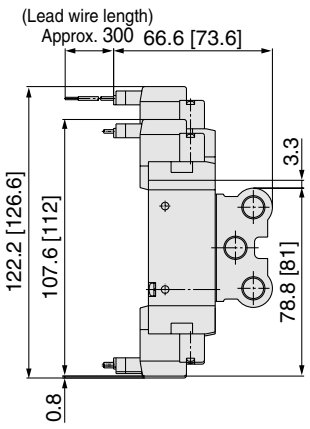
Built-in one-touch fitting



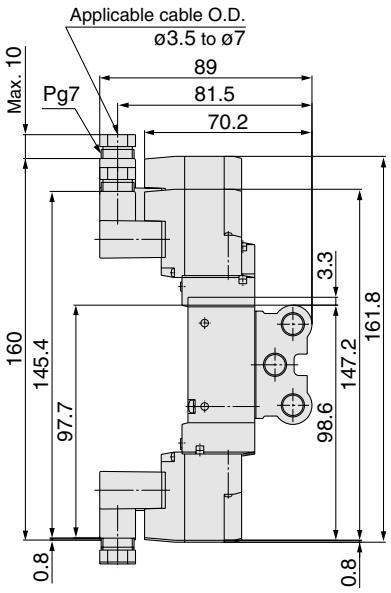
L plug connector (L)



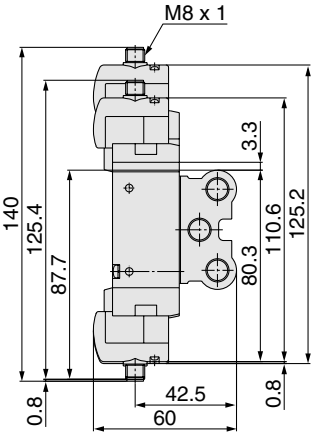
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



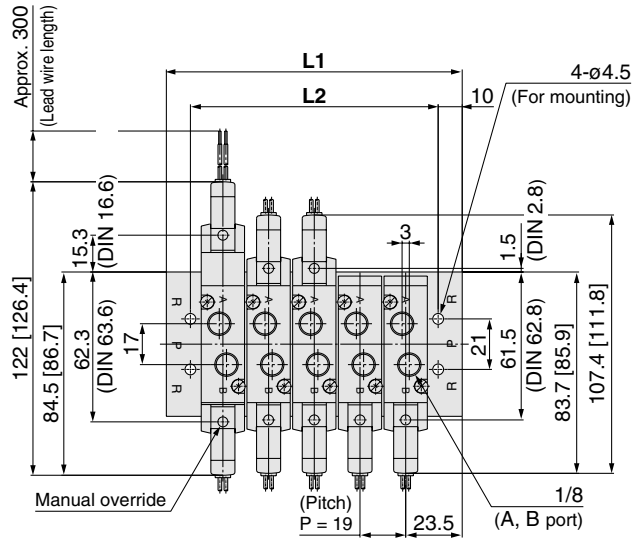
Refer to back page 11 for dimentions with connector cable.

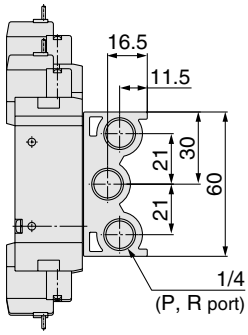
Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	Station 15
L1	59	78	97	116	135	154	173	192	211	230	249	268	287	306
L2	47	66	85	104	123	142	161	180	199	218	237	256	275	294

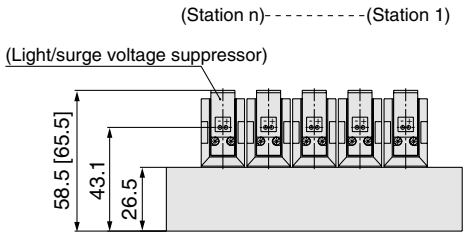
Type 21: Top Ported/SS5YJ7-21-Stations (-00□)

[ ]: AC

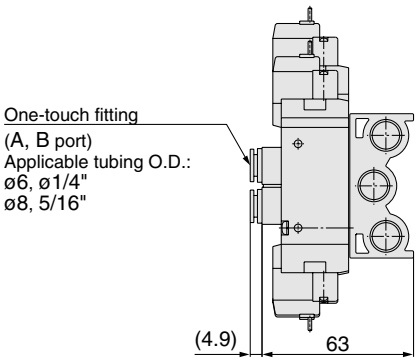
Grommet (G)



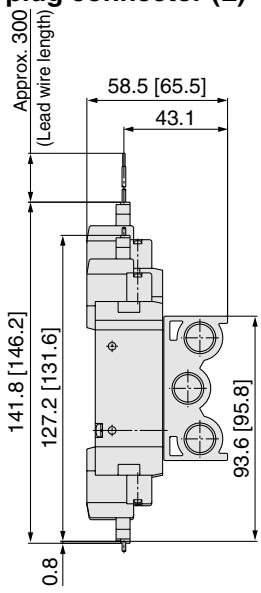




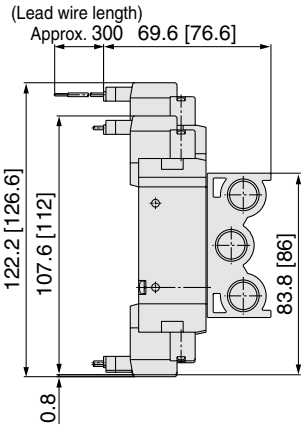
Built-in one-touch fitting



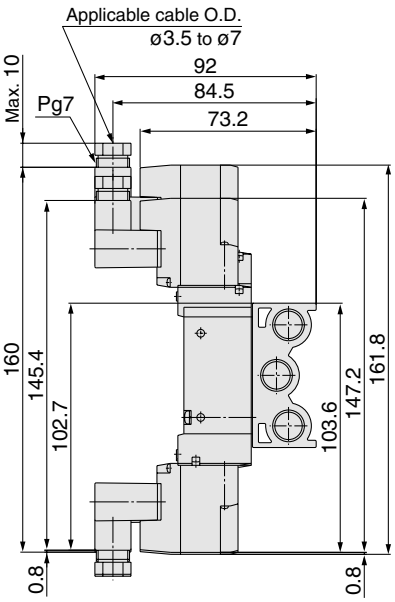
L plug connector (L)



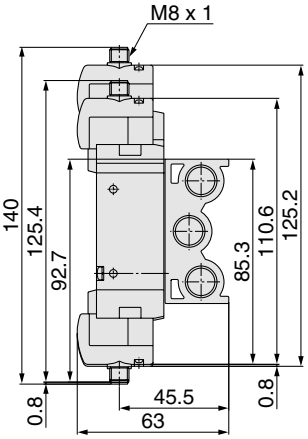
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



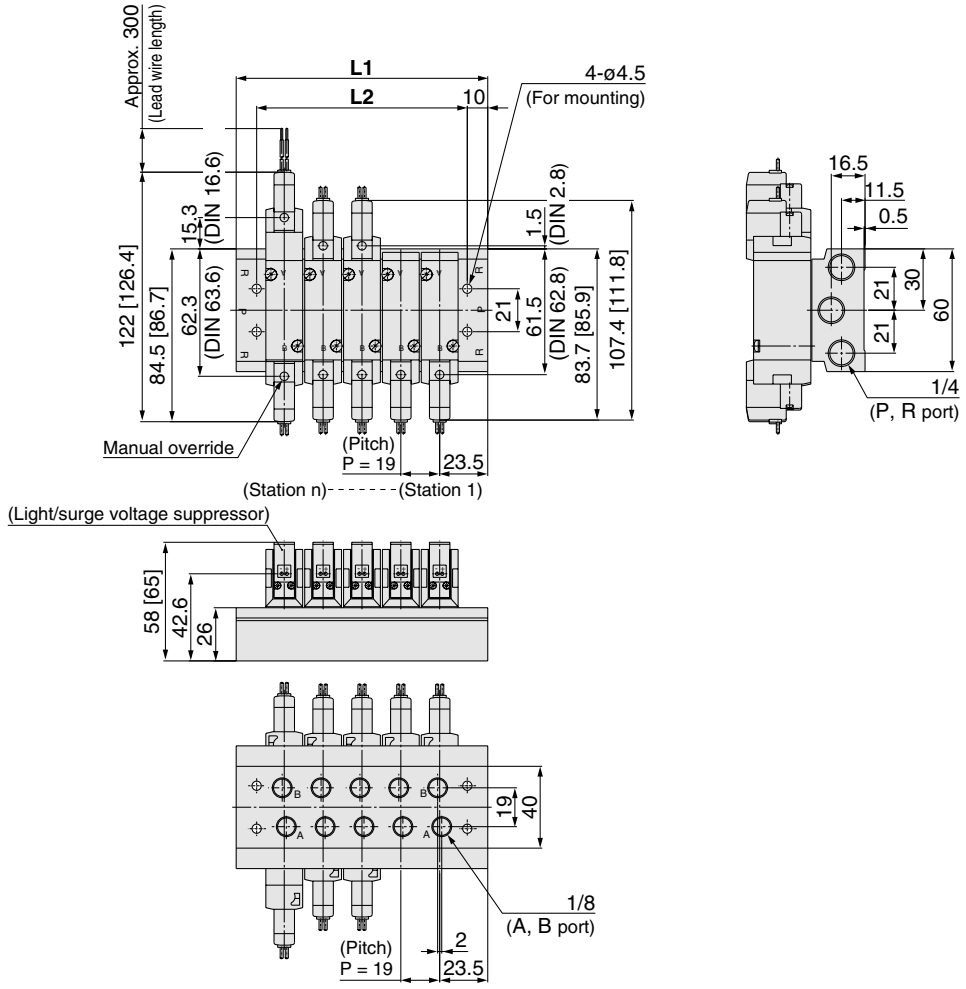
Refer to back page 11 for dimentions with connector cable.

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

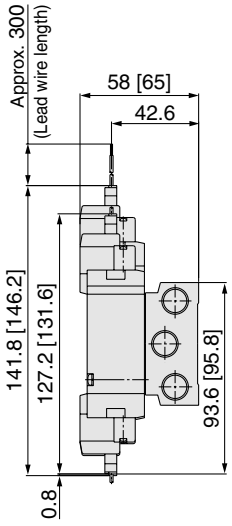
Type 40: Bottom Ported/SS5YJ7-40-Stations-01□

[ ]: AC

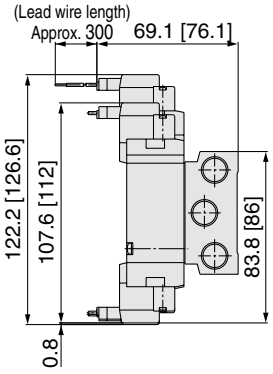
Grommet (G)



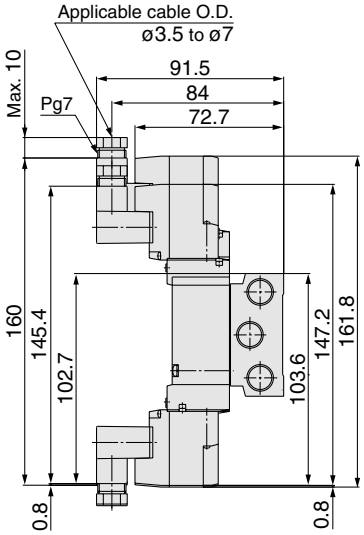
L plug connector (L)



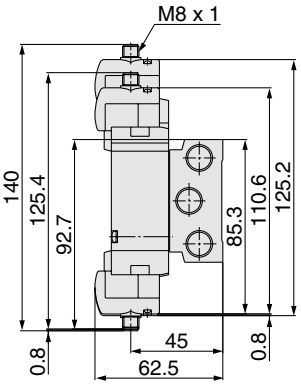
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



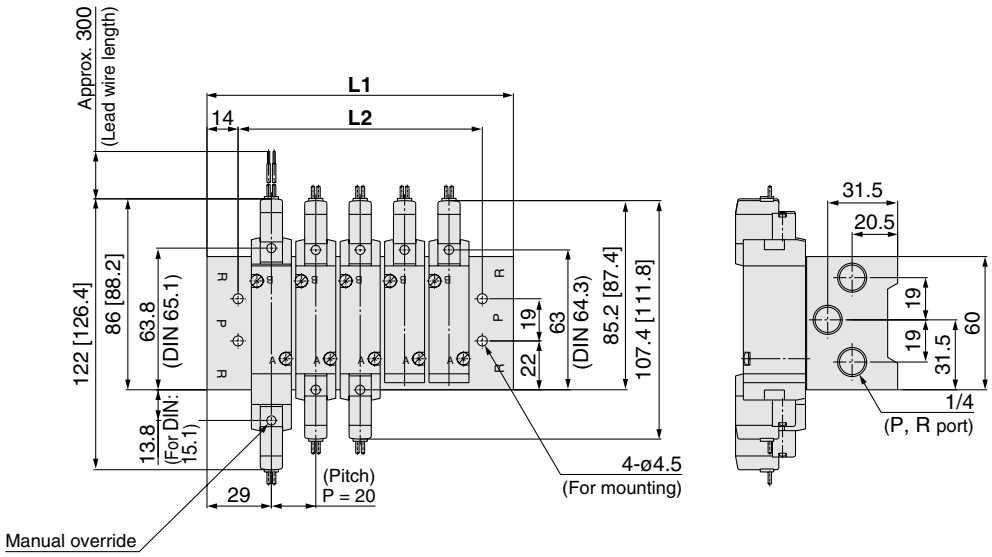
Refer to back page 11 for dimentions with connector cable.

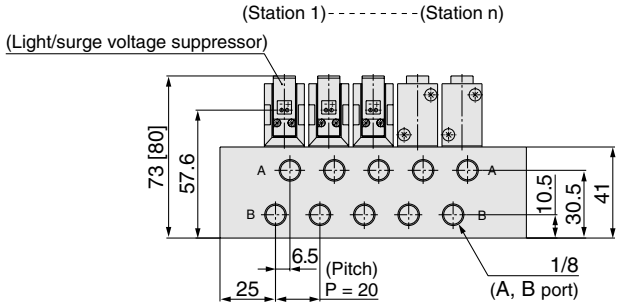
Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	66	85	104	123	142	161	180	199	218	237	256	275	294	313	332	351	370	389	408
L2	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388

Type 41: Side Ported/SS5YJ7-41-Stations-01□

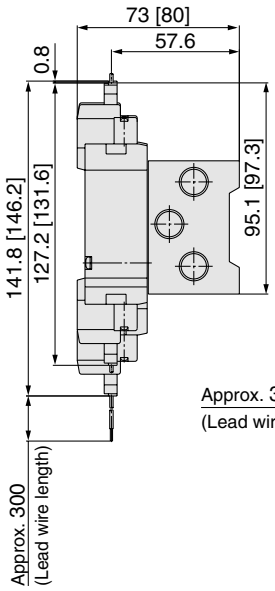
[ ]: AC

Grommet (G)

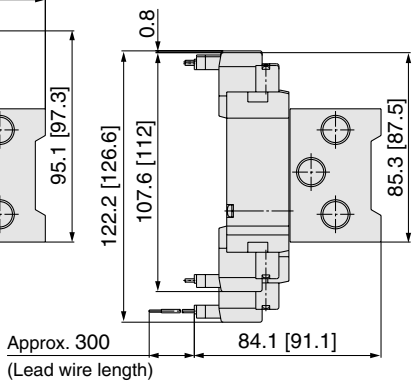




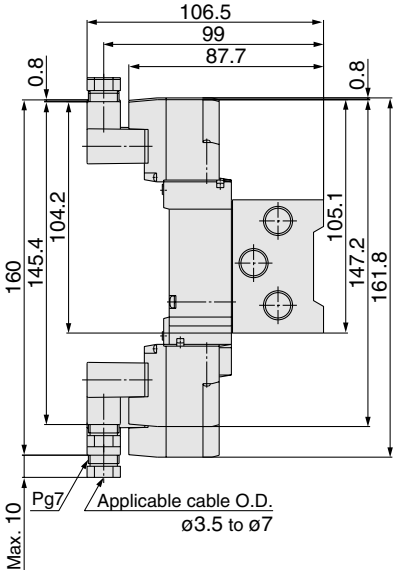
L plug connector (L)



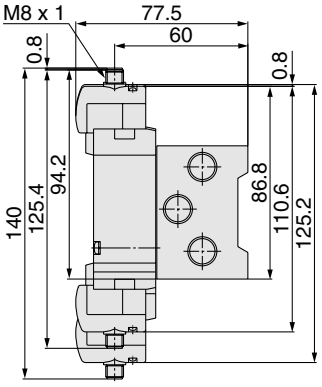
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



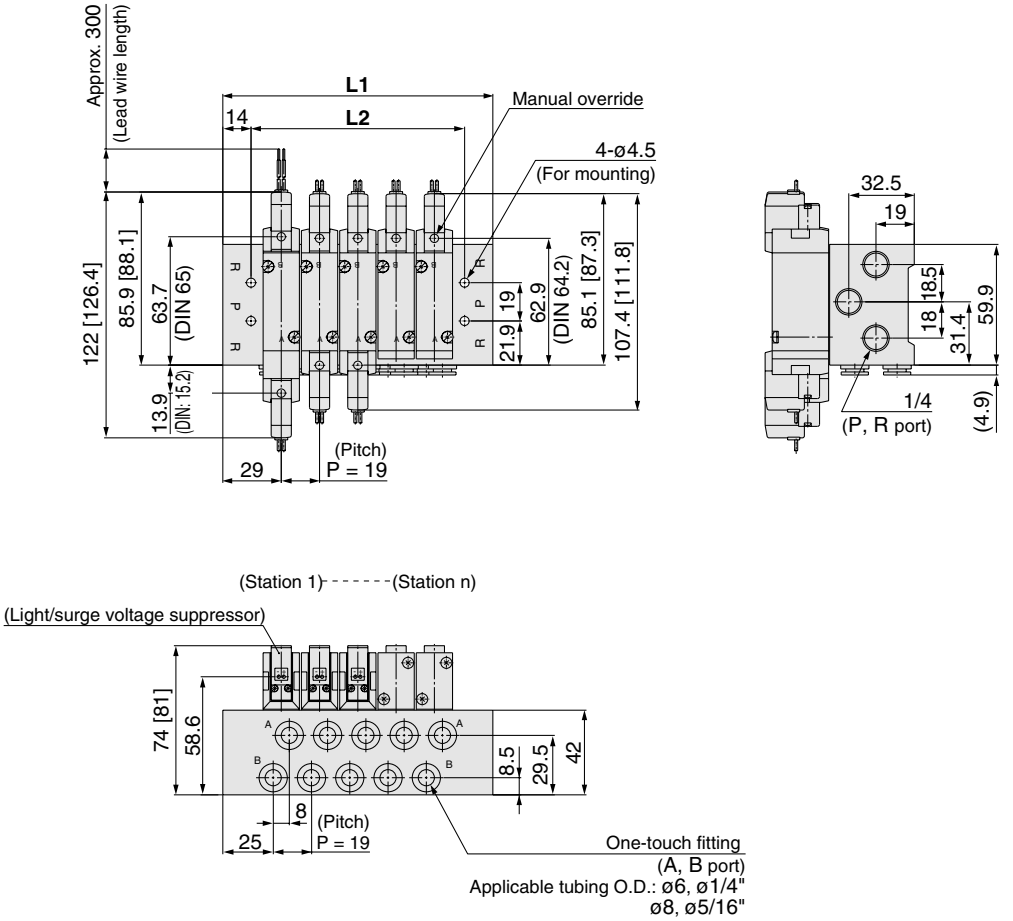
Refer to back page 11 for dimentions with connector cable.

Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	78	98	118	138	158	178	198	218	238	258	278	298	318	338	358	378	398	418	438
L2	50	70	90	110	130	150	170	190	210	230	250	270	290	310	330	350	370	390	410

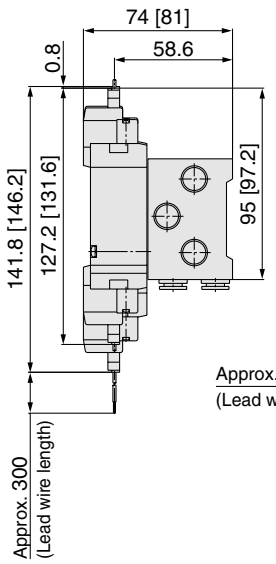
Type 42: Side Ported/SS5YJ7-42-Stations-C6,N7 C8,N9 □

[ ]: AC

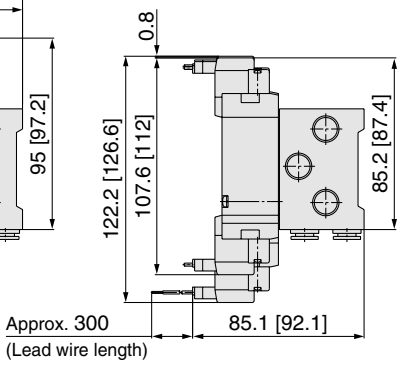
Grommet (G)



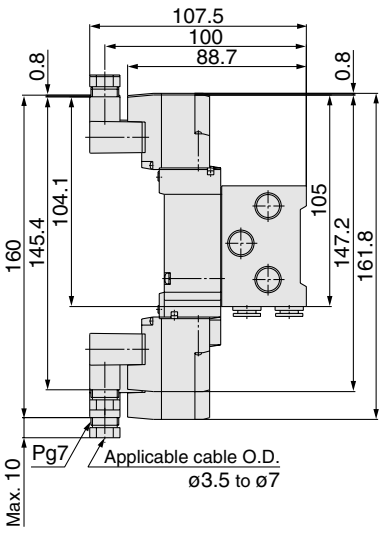
L plug connector (L)



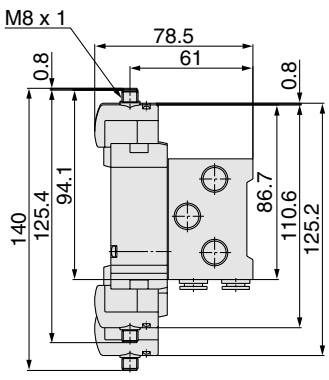
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



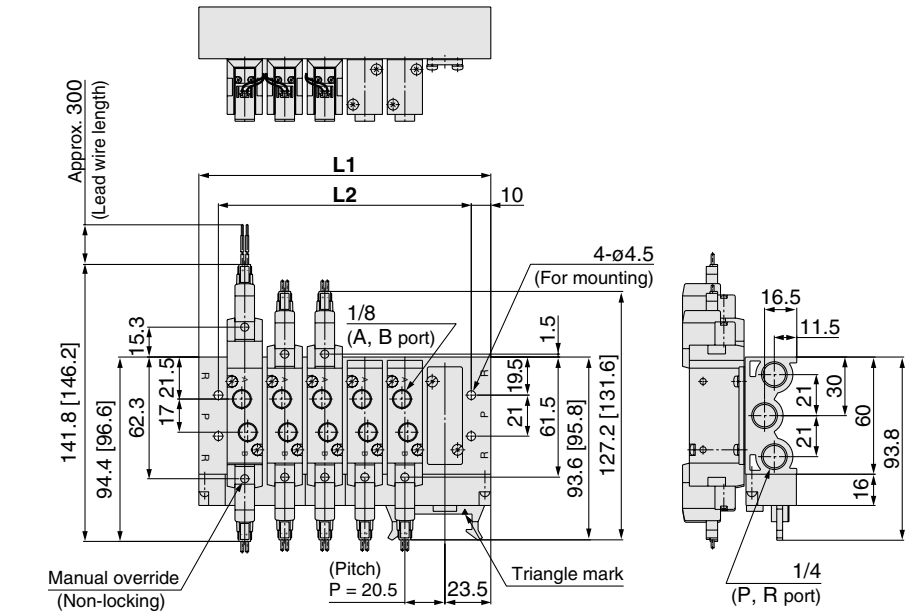
Refer to back page 11 for dimentions with connector cable.

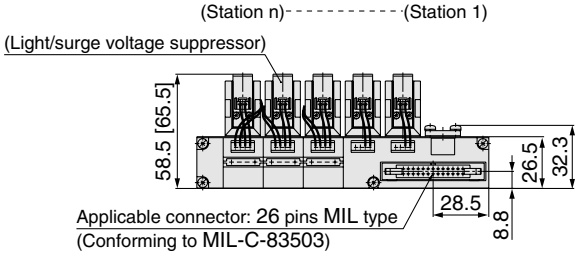
Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	77	96	115	134	153	172	191	210	229	248	267	286	305	324	343	362	381	400	419
L2	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

Flat Ribbon Cable Manifold

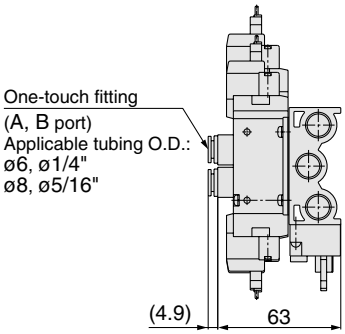
[ ]: AC

SS5YJ7-21P- Stations (-00□)





For built-in one-touch fitting



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

4/5 Port Air Operated Valve
Series SYJA3000

How to Order

Bracket

Nil	Without bracket
F	With bracket

Body ported SYJA3 [1] 20 − M3 − [ ]

Base mounted (4 port) SYJA3 [2] 30 (Manifold use only)

Base mounted (5 port) SYJA3 [2] 40 − [ ]

Port size

Nil	Without sub-plate
M5	M5 port With sub-plate

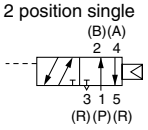
Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

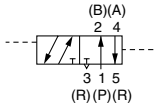
JIS Symbol

5 port

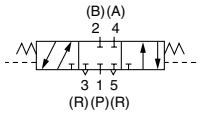
2 position single



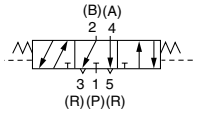
2 position double



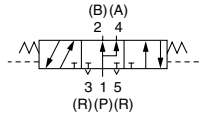
3 position closed center



3 position exhaust center

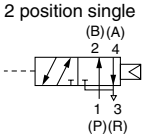


3 position pressure center

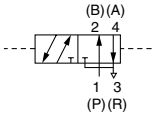


4 port

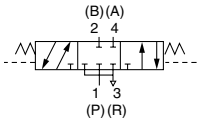
2 position single



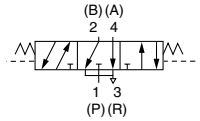
2 position double



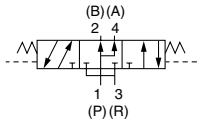
3 position closed center



3 position exhaust center



3 position pressure center



⚠ Caution

Refer to back page 1 through to 5 for Safety Instructions and Common Precautions.

How to Order Manifold Base

Same manifolds as series SYJ3000 are prepared.

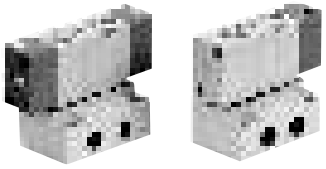
SS5YJA3 − Fill the same as SS5YJ3

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

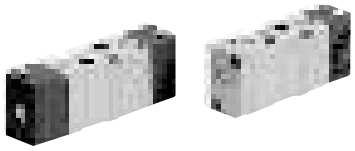
(Example)

SS5YJA3-41-03-M5 ····· 1 pc.
∗SYJA3140 ····· 1 pc.
∗SYJA3240 ····· 1 pc.
∗SYJ3000-21-2A ····· 1 pc.

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



Base mounted



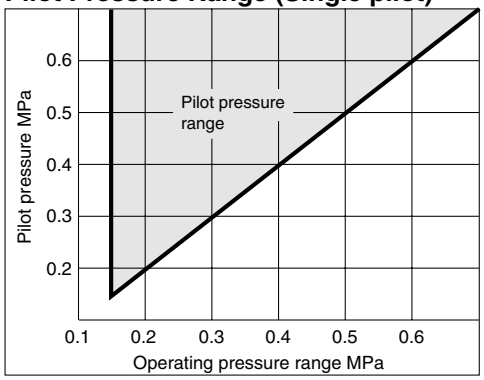
Body ported

Specifications

Fluid		Air
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
Pilot pressure range MPa Note 1)	**2 position single**	Operating pressure to 0.7
	2 position double	0.1 to 0.7
	3 position	0.2 to 0.7
Ambient and fluid temperature °C		–10 to 50 (No freezing. Refer to back page 3.)
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance (m/s²) Note 2)		300/50

Note 1) In case of single type, be certain that pressure within operating pressure range be supplied to supply port, because return pressure is introduced from supply port {1(P)} for activation.
Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve, when pilot signal is ON and OFF. (Value in the initial state)
Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

Pilot Pressure Range (Single pilot)



With Bracket

Air operated valve	SYJA3□20-M3-F

The mounting bracket for the 2 position double solenoid and 3 position is supplied unattached.

Flow Characteristics/Weight

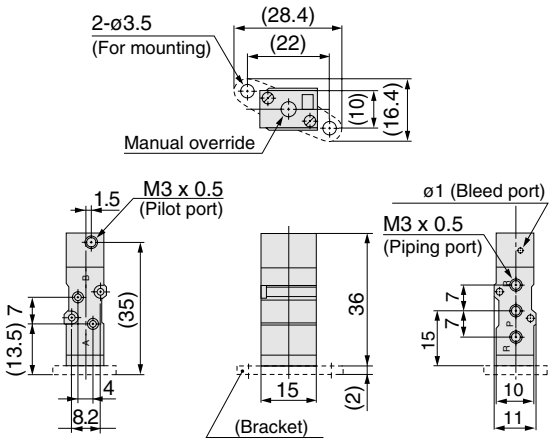
∗ Refer to the memo for changed contents.

Valve model		Type of actuation		Port size	Pilot port size	Weight (g) Note 3) Grommet	Effective area mm²	Flow characteristics Note 2) 1 → 4/2 (P → A/B) C [dm³/(s·bar)]	b	Cv	4/2 → 5/3 (A/B → EA/EB) C [dm³/(s·bar)]	b	Cv
5 port Base mounted (with sub-plate)	**SYJA3□40-M5**	2 position	Single	M5 x 0.8	M3 x 0.5	48 (22)	–	0.46	0.36	0.12	0.46	0.35	0.12
			Double			51 (25)							
		3 position	Closed center			54 (28)		0.47	0.33	0.12	0.47	0.31	0.12
			Exhaust center					0.36	0.39	0.10	0.59 [0.40]	0.43 [0.33]	0.16 [0.11]
			Pressure center					0.58 [0.32]	0.42 [0.33]	0.16 [0.080]	0.46	0.32	0.11
Body ported	**SYJA3□20-M3**	2 position	Single	M3 x 0.5	M3 x 0.5	22	0.9						
			Double			25							
		3 position	Closed center			28							
			Exhaust center										
			Pressure center										
4 Port Base Mounted (For manifold) Note 1)	**SYJA3□30**	2 position	Single	–	M3 x 0.5	22							
			Double			25							
		3 position	Closed center			28							
			Exhaust center										
			Pressure center										

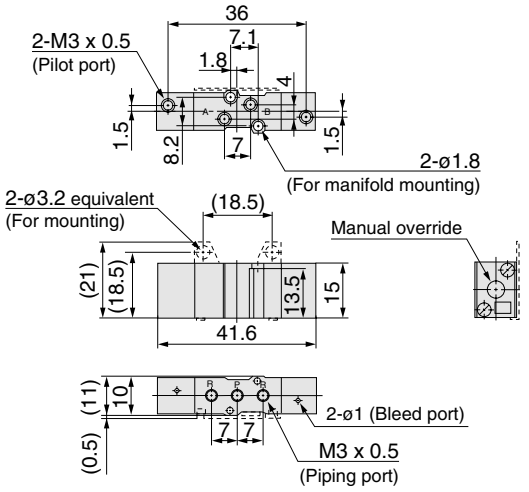
Note 1) Value when used on a manifold. Refer to page 69 for details.
Note 2) [ ]: denotes normal position.
Note 3) ( ): Without sub-plate.
Note 4) 5 port, base mounted without sub-plate: SYJA3□40

Dimensions/Body Ported

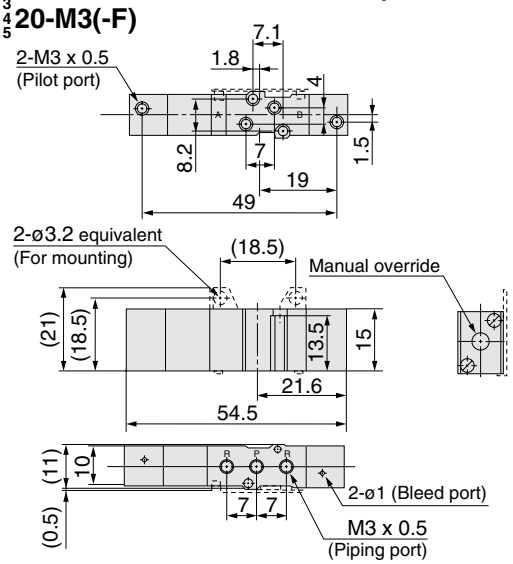
2 position single: SYJA3120-M3(-F)



2 position double: SYJA3220-M3(-F)

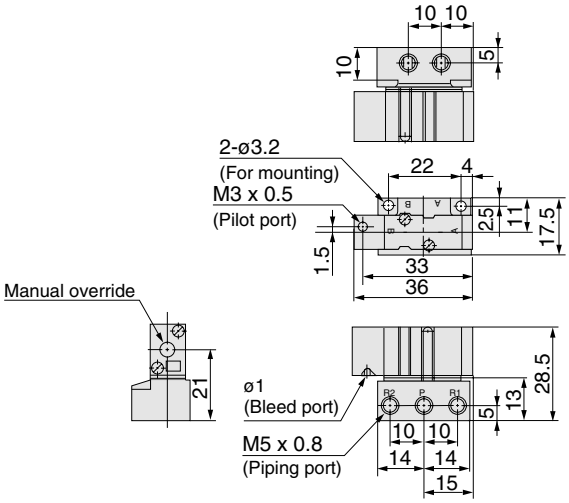


3 position closed center/exhaust center/pressure center SYJA3$^{3}_{5}$20-M3(-F)

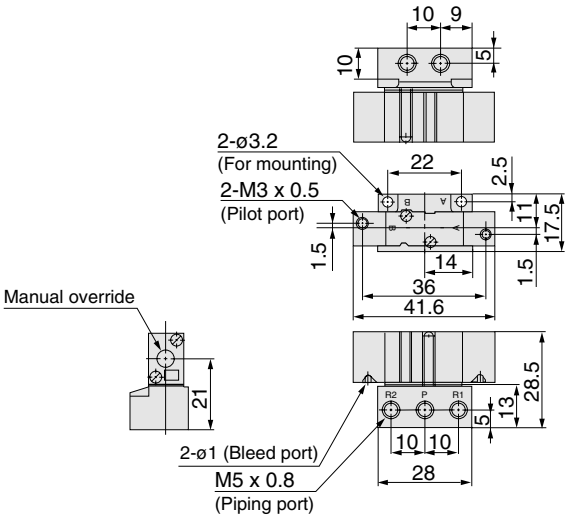


Dimensions/Base Mounted

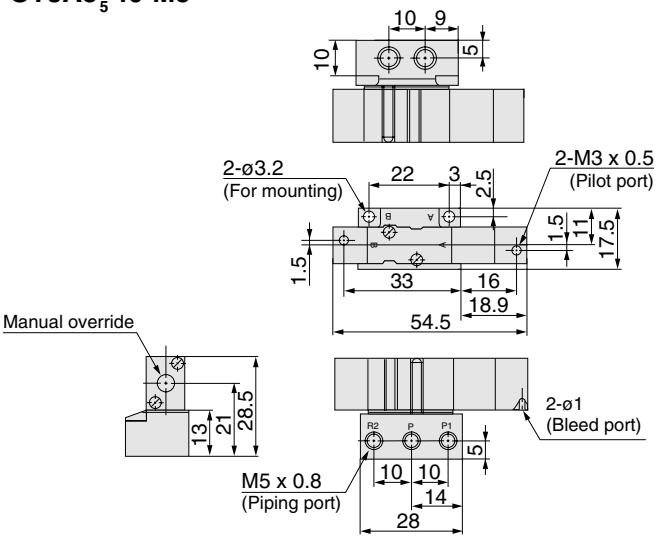
2 position single: SYJA3140-M5



2 position double: SYJA3240-M5



3 position closed center/exhaust center/pressure center SYJA3$^{3}_{5}$40-M5



4/5 Port Air Operated Valve
Series SYJA5000

How to Order

A, B port size

M5	M5 x 0.8
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6

Bracket

Nil	Without bracket
F	With bracket

Body ported SYJA5 **1** 20 – **M5** – □

Base mounted SYJA5 **2** 40 – □ □

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

Port size

Nil	Without sub-plate
01	1/8 With sub-plate

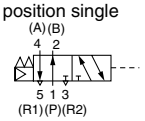
Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

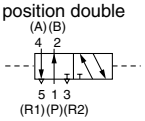
JIS Symbol

Body ported

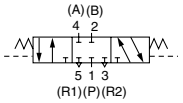
2 position single



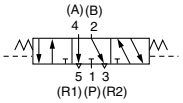
2 position double



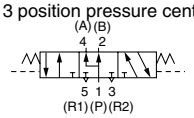
3 position closed center



3 position exhaust center

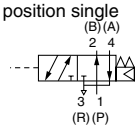


3 position pressure center

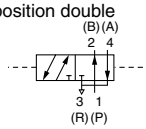


Base mounted

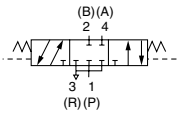
2 position single



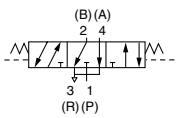
2 position double



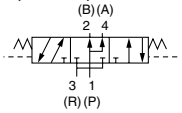
3 position closed center



3 position exhaust center



3 position pressure center



How to Order Manifold Base

Same manifolds as series SYJ5000 are prepared.

SS5YJA5 – Fill the same as SS5YJ5.

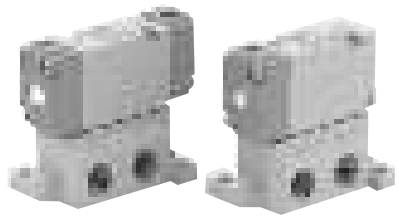
Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

(Ex.)
SS5YJA5-42-03-01 ..... 1 set
* SYJA5140 ..... 1 set
* SYJA5240 ..... 1 set
* SYJ5000-21-1A ..... 1 set

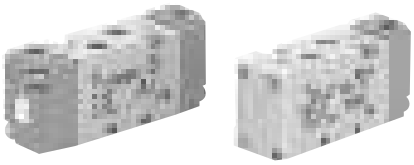
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

⚠ Caution

Refer to back page 1 through to 5 for Safety Instructions and Common Precautions.



Base mounted



Body ported

Specifications

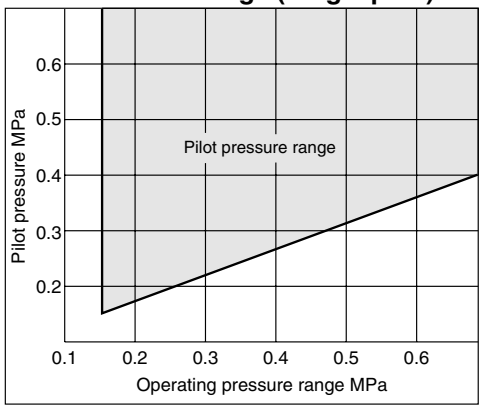
Fluid		Air
Operating pressure range MPa	2 position single	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Pilot pressure range MPa Note 1)	2 position single	(0.4 x P+0.1) to 0.7 P: Operating pressure
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Ambient and fluid temperature °C		–10 to 50 (No freezing. Refer to back page 3.)
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance (m/s²) Note 2)		300/50

Note 1) In case of single type, be certain that pressure within operating pressure range be supplied to supply port, because return pressure is introduced from supply port {1(P)} for activation.

Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve, when pilot signal is ON and OFF. (Value in the initial state)

Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

Pilot Pressure Range (Single pilot)



With Bracket

Air operated valve	SYJA5120-M5-F

The mounting brcket is supplied unttached.

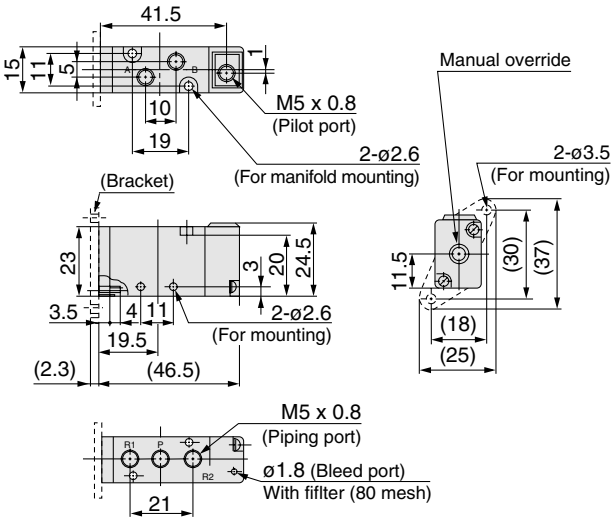
Flow Characteristics/Weight

Valve model		Type of actuation		Port size	Flow characteristics Note 1) 1 → 4/2 (P → A/B) C [dm³/(s·bar)]	b	Cv	4/2 → 5/3 (A/B → EA/EB) C [dm³/(s·bar)]	b	Cv	Pilot port size	Weight (g) Note 2)
Body ported	SYJA5□20-M5	2 position	Single	M5 x 0.8	0.47	0.41	0.13	0.47	0.41	0.13	M5 x 0.8	45
			Double									60
		3 position	Closed center		0.49	0.44	0.13	0.44	0.40	0.12		70
			Exhaust center		0.46	0.37	0.12	0.47 [0.39]	0.43 [0.35]	0.13 [0.10]		
			Pressure center		0.49 [0.39]	0.51 [0.38]	0.14 [0.10]	0.45	0.42	0.12		
	SYJA5□20-C4	2 position	Single	A, B port: C4 (One-touch fitting for ø4) P, R port: M5 x 0.8	0.69	0.39	0.18	0.44	0.39	0.12		52
			Double									67
		3 position	Closed center		0.69	0.40	0.19	0.43	0.40	0.12		77
			Exhaust center		0.56	0.40	0.15	0.41 [0.41]	0.37 [0.37]	0.10 [0.11]		
			Pressure center		0.57 [0.41]	0.40 [0.37]	0.15 [0.10]	0.41	0.37	0.10		
	SYJA5□20-C6	2 position	Single	A, B port: C6 (One-touch fitting for ø6) P, R port: M5 x 0.8	0.70	0.36	0.19	0.47	0.40	0.12		52
			Double									67
		3 position	Closed center		0.72	0.37	0.19	0.44	0.34	0.12		77
			Exhaust center		0.67	0.54	0.19	0.41 [0.41]	0.38 [0.38]	0.11 [0.11]		
			Pressure center		0.82 [0.44]	0.41 [0.39]	0.23 [0.12]	0.41	0.36	0.11		
Base mounted (with sub-plate)	SYJA5□40-01	2 position	Single	1/8	0.79	0.21	0.19	0.83	0.32	0.21	M5 x 0.8	79 (45)
			Double									94 (60)
		3 position	Closed center		0.80	0.28	0.18	0.86	0.34	0.20		104(70)
			Exhaust center		0.71	0.26	0.18	1.1 [0.60]	0.24 [0.44]	0.26 [0.18]		
			Pressure center		0.99 [0.47]	0.29 [0.38]	0.24 [0.12]	0.72	0.38	0.18		

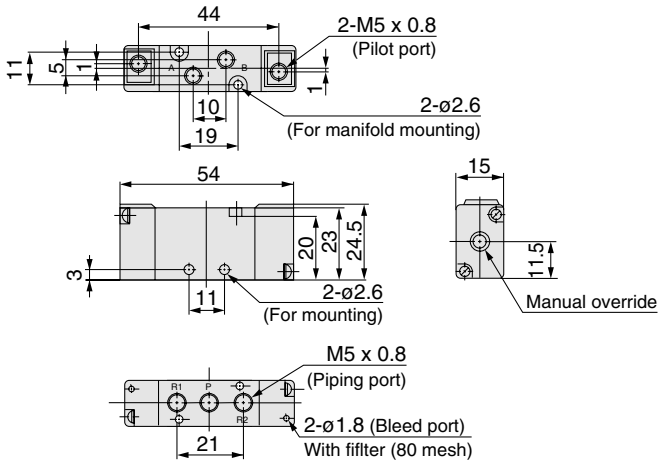
Note 1) [ ]: denotes normal position.
Note 2) ( ): Without sub-plate.
Note 3) Model No. for 5 port base mounted style without sub-plate is SYJA5□40.

Dimensions/Body Ported

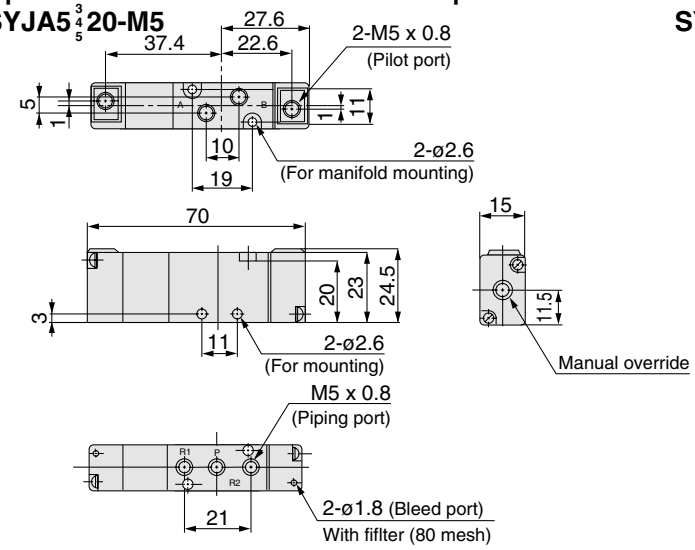
2 position single: SYJA5120-M5(-F)



2 position double: SYJA5220-M5

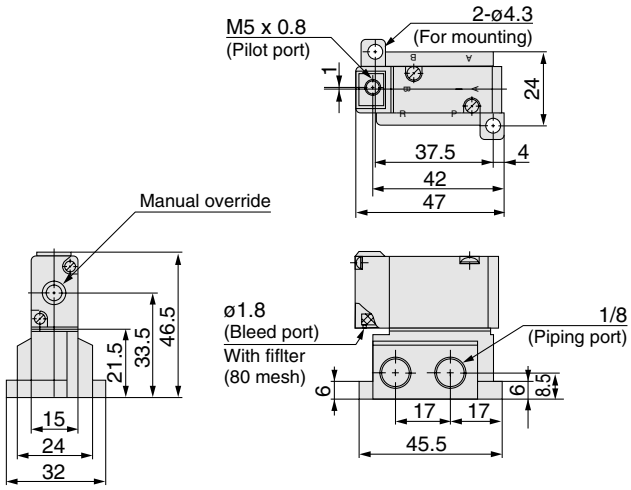


3 position closed center/exhaust center/pressure center SYJA5$^{3}_{4}_{5}$20-M5

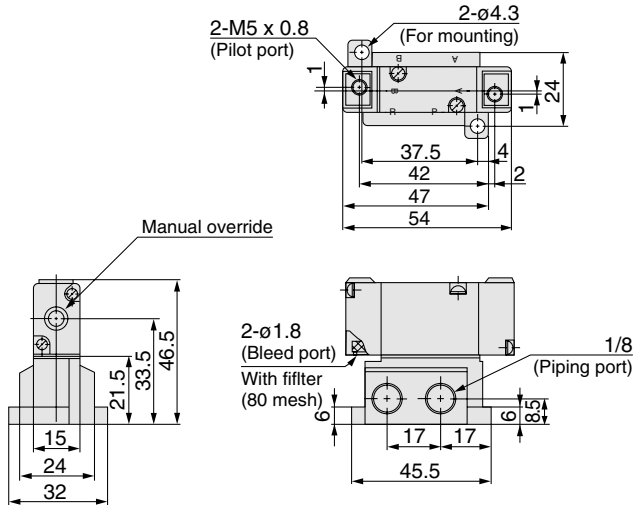


Dimensions/Base Mounted

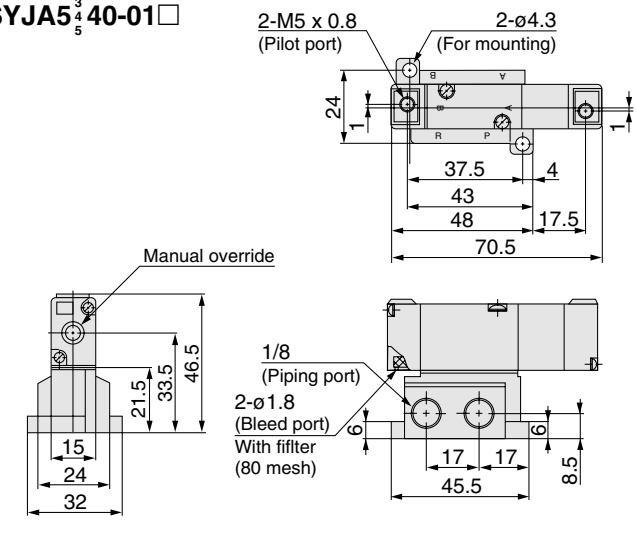
2 position single: SYJA5140-01□



2 position double: SYJA5240-01□



3 position closed center/exhaust center/pressure center SYJA5$^{3}_{4}_{5}$40-01□



4/5 Port Air Operated Valve
Series SYJA7000

How to Order

A, B port size

01	1/8
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8

Bracket

Nil	Without bracket
F	With bracket

Body ported SYJA7 **1** 20 − **01** □ − □

Base mounted SYJA7 **2** 40 − □ □

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

Port size

Nil	Without sub-plate
01	1/8 With sub-plate
02	1/4 With sub-plate

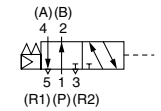
Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

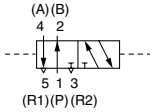
JIS Symbol

Body ported

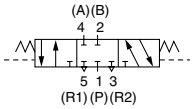
2 position single



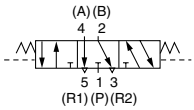
2 position double



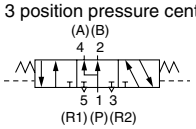
3 position closed center



3 position exhaust center

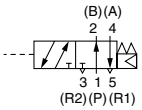


3 position pressure center

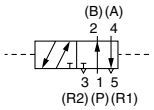


Base mounted

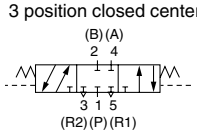
2 position single



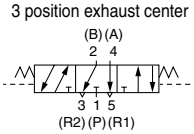
2 position double



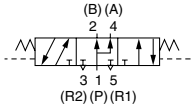
3 position closed center



3 position exhaust center



3 position pressure center



⚠ Caution

Refer to back page 1 through to 5 for Safety Instructions and Common Precautions.

How to Order Manifold Base

Same manifolds as series SYJ7000 are prepared.

SS5YJA7− Fill the same as SS5YJ7.

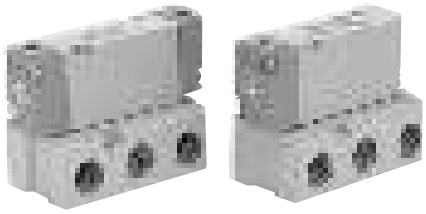
Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

(Ex.)

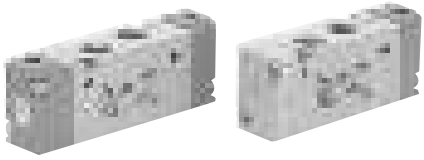
SS5YJA7-41-03-01 ..... 1 pc.
∗SYJA7140 ..... 1 pc.
∗SYJA7240 ..... 1 pc.
∗SYJ7000-21-1A ..... 1 pc.

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

Specifications



Base mounted



Body ported

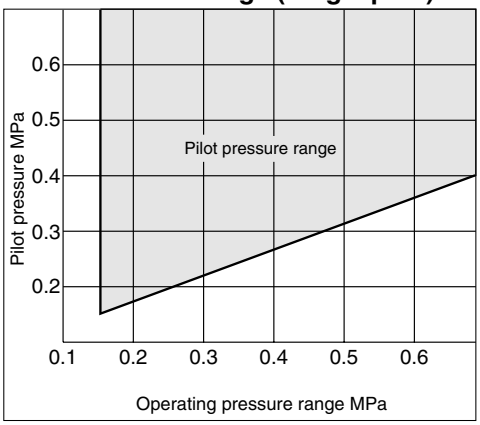
Fluid		Air
Operating pressure range MPa	2 position single	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Pilot pressure range MPa Note 1)	2 position single	(0.4 x P+0.1) to 0.7 P: Operating pressure
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Ambient and fluid temperature °C		–10 to 50 (No freezing. Refer to back page 3.)
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance (m/s²) Note 2)		300/50

Note 1) In case of single type, be certain that pressure within operating pressure range be supplied to supply port, because return pressure is introduced from supply port {1(P)} for activation.

Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve, when pilot signal is ON and OFF. (Value in the initial state)

Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

Pilot Pressure Range (Single pilot)



With Bracket

Air operated valve	SYJA7120-01-F

As a bracket is designed for a body, be sure that a bracket is attached when ordering and operating.

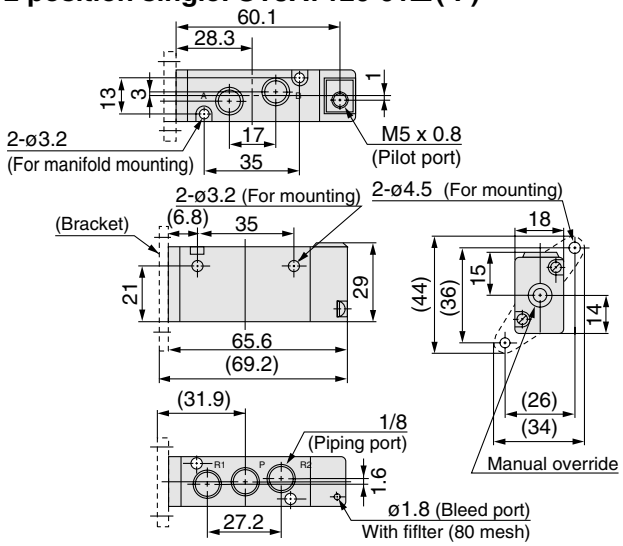
Flow Characteristics/Weight

Valve model		Type of actuation		Port size	Flow characteristics Note 2)						Pilot port size	Weight Note 3) (g)
					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		
Body ported	SYJA7□20-01	2 position	Single	1/8	2.2	0.36	0.58	2.4	0.34	0.63	M5 x 0.8	90
			Double									110
		3 position	Closed center		1.8	0.37	0.45	2.0	0.35	0.49		120
			Exhaust center		1.2	0.50	0.34	3.0 [1.3]	0.35 [0.52]	0.73 [0.39]		
			Pressure center		3.0 [0.83]	0.37 [0.50]	0.78 [0.25]	1.8	0.37	0.45		
	SYJA7□20-C6	2 position	Single	A, B port: C6 (One-touch fitting for ø6) P, R port: 1/8	1.6	0.33	0.4	2.2	0.32	0.53		101
			Double									121
		3 position	Closed center		1.4	0.27	0.35	1.9	0.33	0.49		131
			Exhaust center		1.1	0.37	0.27	2.5 [1.3]	0.32 [0.54]	0.61 [0.38]		
			Pressure center		1.8 [0.78]	0.36 [0.40]	0.45 [0.22]	1.6	0.30	0.39		
	SYJA7□20-C8	2 position	Single	A, B port: C8 (One-touch fitting for ø8) P, R port: 1/8	2.0	0.39	0.52	2.3	0.34	0.61		101
			Double									121
		3 position	Closed center		1.7	0.35	0.42	2.0	0.29	0.49		131
			Exhaust center		1.2	0.38	0.33	2.6 [1.3]	0.35 [0.49]	0.67 [0.38]		
			Pressure center		1.9 [0.86]	0.57 [0.46]	0.59 [0.25]	1.7	0.39	0.42		
Base mounted (with sub-plate)	SYJA7□40-01	2 position	Single	1/8 Note 1)	2.3	0.45	0.57	2.8	0.37	0.71	M5 x 0.8	170 (90)
			Double									190 (110)
		3 position	Closed center		1.9	0.36	0.48	2.1	0.46	0.57		200 (120)
			Exhaust center		1.2	0.48	0.35	3.4 [1.3]	0.36 [0.57]	0.86 [0.41]		
			Pressure center		3.3 [0.85]	0.43 [0.54]	0.78 [0.25]	2.1	0.45	0.56		
	SYJA7□40-02	2 position	Single	1/4 Note 1)	2.3	0.41	0.61	2.9	0.35	0.74	M5 x 0.8	170 (90)
			Double									190 (110)
		3 position	Closed center		1.9	0.46	0.50	2.2	0.44	0.60		200 (120)
			Exhaust center		1.3	0.45	0.35	3.7 [1.4]	0.27 [0.56]	0.87 [0.43]		
			Pressure center		3.6 [0.83]	0.23 [0.55]	0.84 [0.25]	2.1	0.47	0.58		

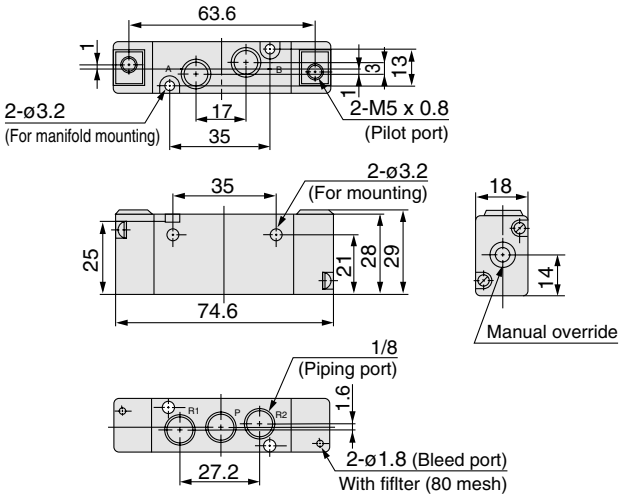
Note1) P, A, B port: Rc1/8 is R1, R2 port: Rc (PT) 1/4
Note2) [ ]: for nomal position
Note3) ( ): without sub-plate
Note4) Model No. for base mounted style without sub-plate is SYJA□40.

Dimensions/Body Ported

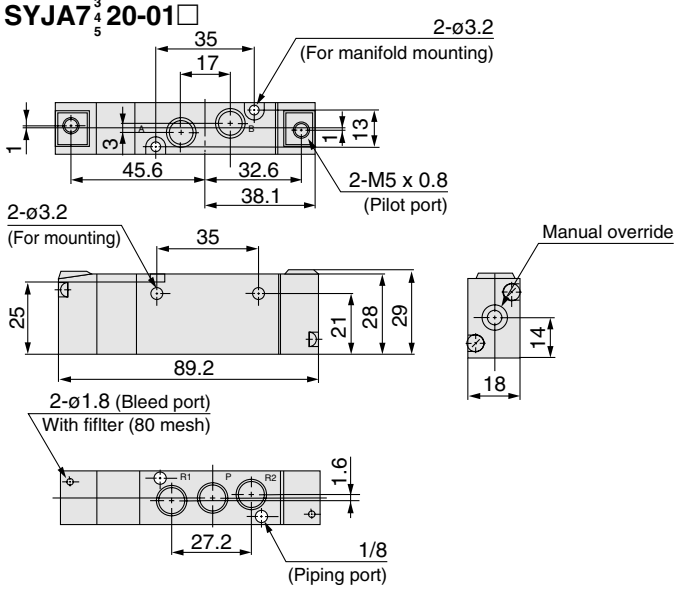
2 position single: SYJA7120-01□(-F)



2 position double: SYJA7220-01□

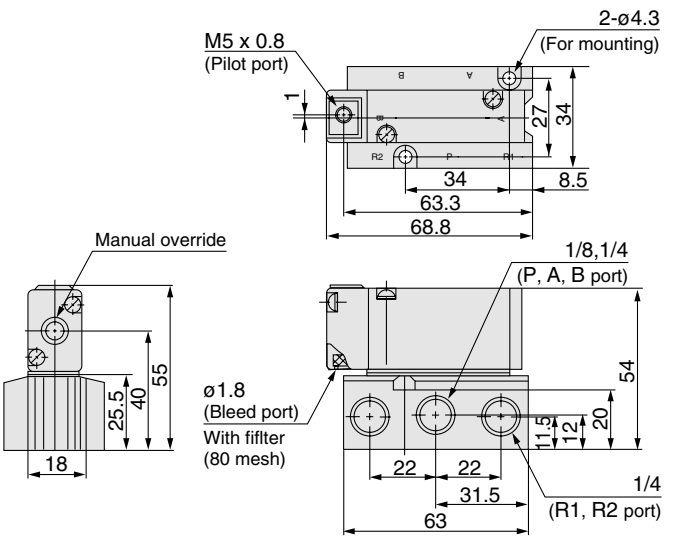


3 position closed center/exhaust center/pressure center SYJA7$^{3}_{5}$20-01□

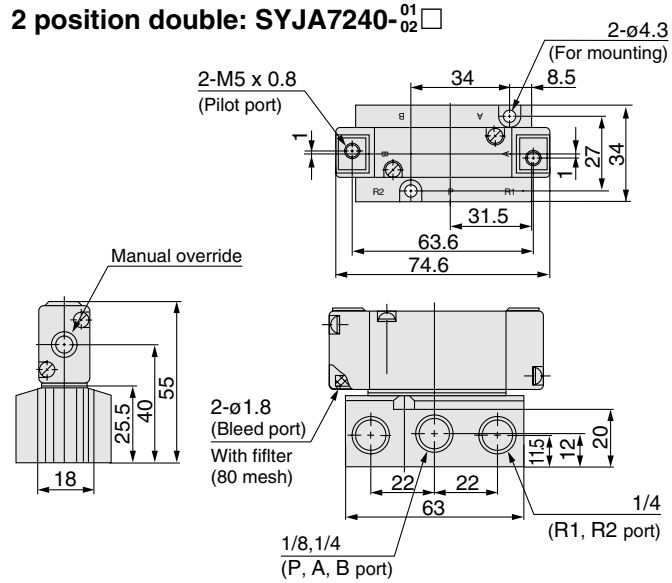


Dimensions/Base Mounted

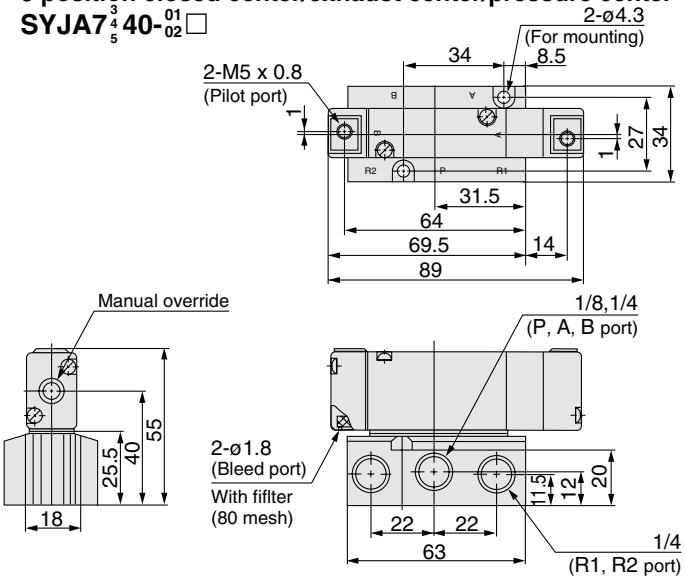
2 position single: SYJA7140-$^{01}_{02}$□



2 position double: SYJA7240-$^{01}_{02}$□



3 position closed center/exhaust center/pressure center SYJA7$^{3}_{5}$40-$^{01}_{02}$□



Series SYJ5000/7000
Made to Order
(For detailed specifications, delivery and pricing, please contact SMC.)

Body Ported External Pilot

Applicable solenoid valve series SYJ5□20R, SYJ7□20R

SYJ $\frac{5}{7}$ □ 20R □ – □ □ □ □ – □ – □ – X20

● Entry is the same as standard products.

Operating Pressure Range MPa

Operating pressure range	-100 kPa to 0.7
Pilot pressure range	0.15 to 0.7

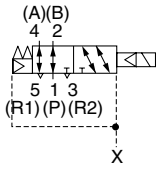
External Pilot Port

Series	Port size
SYJ5000, SYJ7000	M5 x 0.8

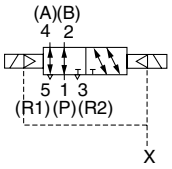
Dimensions
SYJ5000: 8 mm
SYJ7000: 8 mm } **longer in total length.**

JIS Symbol
Body ported

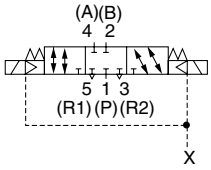
2 position single



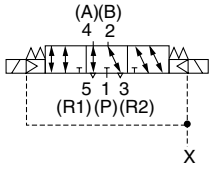
2 position double



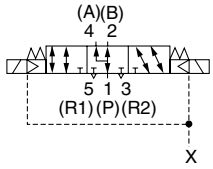
3 position closed center



3 position exhaust center



3 position pressure center



Series SYJ5000/7000
Made to Order
DIN Connector Conforming to EN-175301-803C (former DIN 43650C)

DIN connector type that conforms to the 8 mm pitch standards between DIN terminals.

How to Order Valve

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

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.

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]

A, B port size

M5	M5 x 0.8
01	1/8 (SYJ7000 only)
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
N3	One-touch fitting for ø5/32"
N7	One-touch fitting for ø1/4"

Bracket

Nil	Without bracket
F	With bracket

Note) Do not remove the factory installed bracket from models with the bracket option. Removal of he bracket will cause the valve to leak.

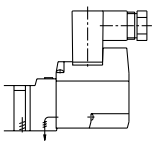
Body ported	SYJ	5	1	2	0	—	5	Y			— M5	—	—
Base mounted	SYJ	5	2	4	0	—	5	Y			—		

Series

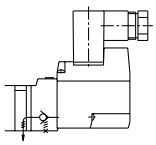
5	SYJ5000
7	SYJ7000

Body option

0: Pilot valve individual exhaust for the pilot valve

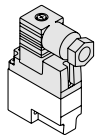


3: Common exhaust type for main and pilot valve

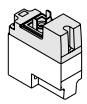


Electrical entry

Y: With connector



YO: Without connector



Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Port size

Nil	Without sub-plate	
01	1/8	SYJ5000
		SYJ7000
02	1/4	SYJ7000

Manual override

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

How to Order Pilot Valve Assembly

V115 — 5 Y ☐

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 terminal	With connector
YO		Without connector

DIN Connector Part No.

Without light	SY100-82-1

With light

Rated voltage	Voltage symbol	No.
24 VDC	24 VN	SY100-82-3-05
12 VDC	12 VN	SY100-82-3-06
100 VAC	100 VN	SY100-82-3-01
200 VAC	200 VN	SY100-82-3-02
110 VAC (115 VAC)	110 VN	SY100-82-3-03
220 VAC (230 VAC)	220 VN	SY100-82-3-04

⚠ Caution

1. 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 back page 8.
2. D type DIN connector with 9.4 mm pitch between terminals is not interchangeable.
3. DIN connector except D type has the "N" indication in the end of voltage symbol. In case of DIN connector without light, "N" is not indicated. Please refer to the name plate to distinguish.
4. Dimensions are completely the same as D type connector.
5. When exchanging the pilot valve assembly only, "V115-☐D" is interchangeable with "V115-☐Y". Do not replace V114 (G, H, L, M, W) to V115-☐D/☐Y (DIN terminal), and vice versa.

Series SYJ
Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by labels of **"Caution", "Warning"** or **"Danger"**. To ensure safety, be sure to observe ISO 4414 Note 1), JIS B 8370 Note 2) and other safety practices.

⚠ Caution : Operator error could result in injury or equipment damage.

⚠ Warning : Operator error could result in serious injury or loss of life.

⚠ Danger : In extreme conditions, there is a possible result of serious injury or loss of life.

Note 1) ISO 4414: Pneumatic fluid power--General rules relating to systems.
Note 2) JIS B 8370: General Rules for Pneumatic Equipment

⚠ Warning

1. The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.

Since the products specified here are used in various operating conditions, their compatibility for the specific pneumatic system must be based on specifications or after analysis and/or tests to meet your specific requirements. The expected performance and safety assurance will be the responsibility of the person who has determined the compatibility of the system. This person should continuously review the suitability of all items specified, referring to the latest catalog information with a view to giving due consideration to any possibility of equipment failure when configuring a system.

2. Only trained personnel should operate pneumatically operated machinery and equipment.

Compressed air can be dangerous if an operator is unfamiliar with it. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced operators.

3. Do not service machinery/equipment or attempt to remove components until safety is confirmed.

1. Inspection and maintenance of machinery/equipment should only be performed once measures to prevent falling or runaway of the driver objects have been confirmed.
2. When equipment is to be removed, confirm the safety process as mentioned above. Cut the supply pressure for this equipment and exhaust all residual compressed air in the system.
3. Before machinery/equipment is restarted, take measures to prevent shooting-out of cylinder piston rod, etc.

4. Contact SMC if the product is to be used in any of the following conditions:

1. Conditions and environments beyond the given specifications, or if product is used outdoors.
2. Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverages, recreation equipment, emergency stop circuits, clutch and brake circuits in press applications, or safety equipment.
3. An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

4/5 Port Solenoid Valves/Common Precautions 1

Be sure to read before handling.

Design

⚠ Warning

1. Actuator drive

When an actuator, such as a cylinder, is to be driven using a valve, take appropriate measures to prevent potential danger caused by actuator operation.

2. Intermediate stopping

When a 3 position closed center valve is used to stop a cylinder at an intermediate position, accurate stopping of the piston in a predetermined position is not possible due to the compressibility of air. Furthermore, since valves and cylinders are not guaranteed for zero air leakage, it may not be possible to hold a stopped position for an extended length of time. Contact SMC if it is necessary to hold a stopped position for an extended time.

3. Effect of back pressure when using a manifold

Use caution when valves are used on a manifold, as actuator malfunction due to back-pressure may occur. In case of 3 position closed exhaust center valve or single acting cylinder, take appropriate measures to prevent the malfunction using with individual EXH interface assembly or individual exhaust manifold.

4. Holding of pressure (including vacuum)

Since valves are subject to air leakage, they cannot be used for applications such as holding pressure (including vacuum) in a pressure vessel.

5. Cannot be used as an emergency shut off valve, etc.

The valves presented in this catalog are not designed for safety applications such as an emergency shut off valve. If the valves are used in this type of system, other reliable safety assurance measures should also be adopted.

6. Maintenance space

The installation should allow sufficient space for maintenance activities (removal of valve, etc.).

7. Release of residual pressure

Provide a residual pressure release function for maintenance purpose. Especially in case of 3 position closed center valve, ensure the release of residual pressure between valve and cylinder.

8. Vacuum applications

When a valve is used for vacuum switching, etc., take measures against the suction of external dust or other contaminants from vacuum pads and exhaust ports, etc. Moreover, an external pilot type valve should be used in this case. Contact SMC in case of an internal pilot type or air operated valve, etc.

9. About using the double solenoid type

When using the double solenoid type for the first time, actuators may travel in an unexpected direction depending on the switching position of a valve. Implement countermeasures not to occur any danger by the actuator's operation.

10. Ventilation

When a valve is used inside a sealed control panel, etc., provide ventilation to prevent a pressure increase caused by exhausted air inside the control panel or temperature rise caused by the heat generated by the valve.

Selection

⚠ Warning

1. Confirm the specification

The products presented in this catalog are designed only for use in compressed air systems (including vacuum). Do not operate at pressures or temperatures, etc., beyond the range of specifications, as this can cause damage or malfunction. (Refer to specifications.)
Contact SMC when using a fluid other than compressed air (including vacuum).

2. Extended periods of continuous energization

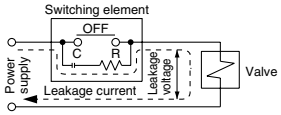
- Continuous energization of the valve for extended periods of time may have an adverse effect on the solenoid valve performance and the peripheral equipment due to temperature rises caused by the heat generation of the coil. Consult with SMC if valves will be continuously energized for extended periods of time or the energized period per day will be longer than the de-energized period. It is also possible to shorten the energization period by using valves of the N.O. (normally open) type.
- When solenoid valves are mounted in a control panel, employ measures to radiate excess heat, so that temperatures remain within the valve specification range. Use special caution when three or more stations sequentially aligned on the manifold are continuously energized since this will cause a drastic temperature rise.
  (As for AC specifications, since the applicable products are ready to provide separately, contact SMC.)

⚠ Caution

1. Momentary energization

If a double solenoid valve will be operated with momentary energization, it should be energized for at least 0.1 second. However, depending on the secondary load conditions, it should be energized until the cylinder reaches the stroke end position, as there is a possibility of malfunction otherwise.

2. Leakage voltage



When using a resistor in parallel with the switching element or using a C-R element (surge voltage suppressor) for protection of the switching element, note that leakage voltage will increase due to leakage current flowing through the resistor or C-R element. Limit the amount of residual leakage voltage to the following value:

With DC coil : 3% or less of rated voltage

With AC coil : 8% or less of rated voltage

4/5 Port Solenoid Valves/Common Precautions 2

Be sure to read before handling.

Selection

⚠Caution

3. Solenoid valve drive for AC with solid state output (SSR, TRIAC output, etc.)

1) Current leakage
When using a snubber circuit (C-R element) for surge protection of the output element, a very small electric current will still continue to flow in spite of the OFF state. This results in the valve not returning. In the cases when exceeding the tolerance as shown above, take measures to install a bleeder resistor.

2) Minimum load allowable amount (Min. load current)
When the consumption current of a valve is less than the output element's minimum load allowable volume or the margin is small, the output element may not be switched normally. Please confirm SMC.

4. Surge voltage suppressor

If a surge protection circuit contains non-ordinary diodes such as Varistor, a residual voltage that is in proportion to the protective elements and the rated voltage will remain. Therefore, give consideration to surge voltage protection of the controller. In the case of diodes, the residual voltage is approximately 1 V.

5. Use in low temperature environments

Unless otherwise indicated in the specifications for each valve, operation is possible to –10°C, but appropriate measures should be taken to avoid solidification or freezing of drainage and moisture, etc.

6. Operation for air blowing

When using a solenoid valve for air blow, use an external pilot type.
Take note that when internal pilots and external pilots are used on the same manifold, the pressure drop caused by the air blowing can have an effect on the internal pilot type valves.
Moreover, when compressed air within the pressure range of the established specifications is supplied to the external pilot port, and a double solenoid valve is used for air blowing, the solenoids should normally be energized when air is being blown.

7. Mounting orientation

Rubber seal: Refer to the specifications of each series.

Mounting

⚠Warning

1. If air leakage increases or equipment does not operate properly, stop operation.

Check mounting conditions when air and power supplies are connected. Initial function and leakage tests should be performed after installation.

2. Instruction manual

Mount and operate the product after reading the manual carefully and understanding its contents.
Also keep the manual where it can be referred to as necessary.

3. Painting and coating

Warnings or specifications printed or pasted on the product should not be erased, removed or covered up. Consult with SMC if paint is to be applied to resinous parts, as this may have an adverse effect due to the paint solvent.

Port Direction

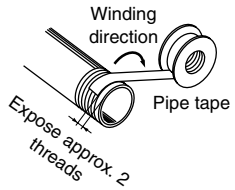
⚠Caution

1. Preparation before piping

Before piping is connected, it should be thoroughly blown out with air (flushing) or washed to remove chips, cutting oil and other debris from inside the pipe.

2. Wrapping of sealant tape

When connecting pipes and fittings, etc., be sure that chips from the pipe thread and sealing materials do not get inside the valve. Furthermore, when pipe tape is used, leave 1.5 to 2 thread ridges exposed at the end of the threads.



3. Closed center valves

When using closed center type valves, carefully check to ascertain that there is no air leakage from the piping between the valves and cylinders.

4. Screwing in fittings

When connecting fittings to valves, tighten as indicated below.

1) For M3 and M5 type
(1) When using SMC fittings, follow the guidelines below.
After tightening by hand, tighten an additional M3: 1/4, M5: 1/6 turn with a tightening tool. However, if miniature fittings are used, tighten an additional 1/4 turn with a tightening tool after tightening by hand. For fittings with gaskets in 2 locations, e.g., universal elbow or universal tee, tighten an additional 1/2 turn.

Note) If fittings are over-tightened, air leakage may result due to breaking of fitting threads or deformation of the gaskets. However, if fittings are not tightened sufficiently, loosening of the threads and air leakage and may occur.

(2) When fittings other than SMC fittings are used, follow the instructions of the respective fitting manufacturer.

2) For Rc (PT)
When installing fitting, etc., follow the given torque levels below.

Tightening Torque for Piping

Connection threads	Applicable tightening torque N·m
1/8	7 to 9
1/4	12 to 14
3/8	22 to 24
1/2	28 to 30
3/4	28 to 30
1	36 to 38
11/4	40 to 42
11/2	48 to 50
2	48 to 50

5. Connection of piping to products

When connecting piping to a product, refer to its instruction manual to avoid mistakes regarding the supply port, etc.

4/5 Port Solenoid Valves/Common Precautions 3

Be sure to read before handling.

Wiring

⚠Caution

1. Polarity

When connecting power to a DC specification solenoid valve equipped with (indicator light) surge voltage suppressor, confirm whether or not there is polarity.
If there is polarity, take note of the following points.

Without built-in diode to protect polarity (including any power saving circuit):

If a mistake is made regarding polarity, the diode in the valve, the control device switching element or power supply equipment, etc., may burn out.

With diode to protect polarity:

If a mistake is made regarding polarity, it will not be possible to switch the valve.

2. Applied voltage

When electric power is connected to a solenoid valve, be careful to apply the proper voltage. Improper voltage may cause malfunction or coil damage.

3. Confirm the connections.

After completing the wiring, confirm that the connections are correct.

Lubrication

⚠Caution

1. Lubrication

[Rubber seal]

1) The valve has been lubricated for life at the factory, and does not require any further lubrication.
2) In the event that it is lubricated, use class 1 turbine oil (without additives), ISO VG32.
However, once lubrication is applied it must be continued, as loss of the original lubricant may lead to malfunction.
Contact SMC regarding class 2 turbine oil (with additives), ISO VG32.

Air Supply

⚠Warning

1. Use clean air.

Do not use compressed air which contains chemicals, synthetic oils containing organic solvents, salts or corrosive gases, etc., as this can cause damage or malfunction.

Air Supply

⚠Caution

1. Install air filters.

Install air filters close to valves at their upstream side. A filtration degree of 5 μm or less should be selected.

2. Install an air dryer, after cooler or Drain Catch (water separator), etc.

Air that includes excessive drainage may cause malfunction of valves and other pneumatic equipment. To prevent this, install an air dryer, after-cooler or Drain Catch (water separator), etc.

3. If excessive carbon dust is generated, eliminate it by installing mist separators at the upstream side of valves.

If excessive carbon dust is generated by the compressor, it may adhere to the inside of valves and cause malfunction.

Refer to “SMC Best Pneumatics” catalog Vol. 14 for compressed air quality.

Operating Environment

⚠Warning

1. Do not use valves in atmospheres of corrosive gases, chemicals, salt water, water or steam or where there is direct contact with any of these.

2. Products with IP65 enclosures (based on IEC60529) are protected against dust and water, however, these products cannot be used in water.
Take measures to prevent water and dust from coming from the exhaust port.

3. Products compliant to IP65 satisfy the specifications by mounting each product properly. Be sure to read the Specific Product Precautions for each product.

4. Do not use in an explosive atmosphere.

5. Do not use in locations subject to vibration or impact. Confirm the specifications in the main section of the catalog.

6. A protective cover, etc., should be used to shield valves from direct sunlight.

7. Shield valves from radiated heat generated by nearby heat sources.

8. Employ suitable protective measures in locations where there is contact with water droplets, oil or welding spatter, etc.

9. When solenoid valves are mounted in a control panel or are energized for extended periods of time, employ measures to radiate excess heat, so that temperatures remain within the valve specification range.

4/5 Port Solenoid Valves/Common Precautions 4

Be sure to read before handling.

Maintenance

⚠ Warning

1 Perform maintenance procedures as shown in the instruction manual.

If handled improperly, malfunction or damage of machinery or equipment may occur.

2 Equipment removal and supply/exhaust of compressed air

When equipment is removed, first confirm that measures are in place to prevent dropping of work pieces and run-away of equipment, etc. Then cut the supply pressure and power, and exhaust all compressed air from the system using its residual pressure release function.

In the case of 3 position closed center style, exhaust the residual pressure between valve and cylinder.

When the equipment is to be started again after remounting or replacement, first confirm that measures are in place to prevent lurching of actuators, etc and then confirm that the equipment is operating normally.

3 Low frequency operation

Valves should be switched at least once every 30 days to prevent malfunction. (Use caution regarding the air supply.)

4. Manual override operation

When the manual override is operated, connected equipment will be actuated. Confirm safety before operating.

⚠ Caution

1 Drain flushing

Remove drainage from air filters regularly.

Series SYJ3000/5000/7000
Specific Product Precautions 1

Be sure to read before handling.
Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.

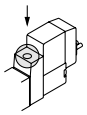
Manual Override Operation

⚠Warning

When the manual override is operated, connected equipment will be actuated. Confirm safety before operating.

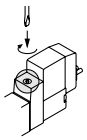
■ **Non-locking push type [Standard]**

Press in the direction of the arrow

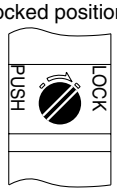


■ **Push-turn locking slotted type [Type D]**

While pressing, turn in the direction of the arrow.
If it is not turned, it can be operated the same way as the non-locking type.



Locked position

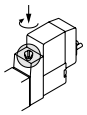


⚠Caution

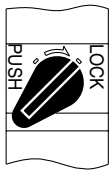
When operating the locking type D with a screw driver, turn it gently using a watchmakers screw driver.
[Torque: Less than 0.1 N·m]

■ **Push-turn locking lever type [Type E]**

While pressing, turn in the direction of the arrow.
If it is not turned, it can be operated the same way as the non-locking type.



Locked position



⚠Caution

When locking the manual override on the push-turn locking types (D, E), be sure to push it down before turning.
Turning without first pushing it down can cause damage to the manual override and trouble such as air leakage, etc.

Solenoid Valve for 200 V, 220 VAC Specifications

⚠Warning

Solenoid valves with grommet and L/M type plug connector AC specifications have a built-in rectifier circuit in the pilot section to operate the DC coil.
With 200 V, 220 VAC specification pilot valves, this built-in rectifier generates heat when energized. The surface may become hot depending on the energized condition; therefore, do not touch the solenoid valves.

Common Exhaust Type for Main and Pilot Valve

⚠Caution

Pilot air is exhausted through the main valve body rather than directly to atmosphere.

- Suitable for applications where exhausting the pilot valve to atmosphere would be detrimental to the surrounding working environment.
- For use in extremely dirty environments where there is the possibility that dust could enter the pilot exhaust and damage the valve.

Ensure that the piping of exhaust air is not too restrictive.

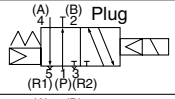
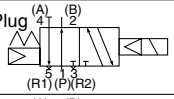
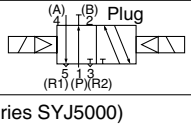
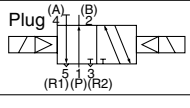
Series SYJ3000/5000/7000 Mixed Installation of 3 Port and 5 Port Valves on Same Manifold.

⚠Caution

Series SYJ3000/5000/7000 and Series SYJ300/500/700 can be mounted on the same manifold. How to mount on the same manifold is shown on the following pages.

SYJ3000, SYJ300 ····· P. 14
SYJ5000, SYJ500 ····· P. 38
SYJ7000, SYJ700 ····· P. 61

If 4 or 5 port valve is used as a 3 port valve
Series SYJ3000, 5000, 7000 may be used as a N.C.or N.O. 3 port valve by plugging one of the A,B ports. Be sure not to plug the exhaust ports (R). Can be used when a double solenoid, 3 port valve is required.

Plug position		B port	A port
Type of actuation		N.C.	N.O.
Number of solenoids	Single		
	Double		

(JIS symbols above: Series SYJ5000)

Series SYJ3000/5000/7000
Specific Product Precautions 2

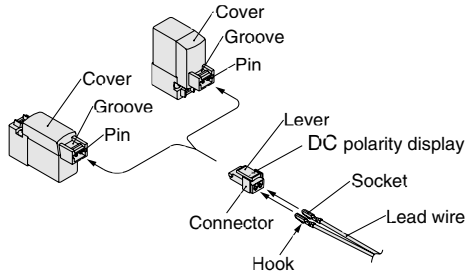
Be sure to read before handling.
Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.

How to Use Plug Connector

⚠ Caution

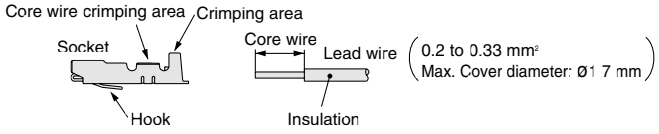
1 Attaching and detaching connectors

- To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks
- To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.



2. Crimping of lead wires and sockets

Strip 3.2 to 3.7 mm at the end of the lead wires, insert the ends of the core wires evenly into the sockets, and then crimp with a crimping tool. When this is done, take care that the coverings of the lead wires do not enter the core wire crimping area.
Use an exclusive crimping tool for crimping.
(Contact SMC for special crimping tools.)



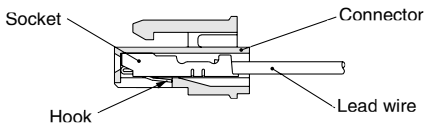
3. Attaching and detaching sockets with lead wires

• Attaching

Insert the sockets into the square holes of the connector (+, indication), and continue to push the sockets all the way in until they lock by hooking into the seats in the connector. (When they are pushed in, their hooks open and they are locked automatically) Then confirm that they are locked by pulling lightly on the lead wires.

• Detaching

To detach a socket from a connector, pull out the lead wire while pressing the socket's hook with a stick having a thin tip (approx. 1 mm). If the socket will be used again, first spread the hook outward



Plug Connector Lead Wire Length

⚠ Caution

Standard length is 300 mm, but the following lengths are also available.

How to Order Connector Assembly

For DC: **SY100 30 – 4A**
For 100 VAC: **SY100 30 1A**
For 200 VAC: **SY100 30 – 2A**
For other voltages of AC: **SY100 30 – 3A**
Without lead wire: **SY100 30 A**
(with connector and 2 of sockets only)

• 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

Include the connector assembly part number together with the part number for the plug connector's solenoid valve without connector.

Ex.) In case of 2000 mm of lead wire

For DC	**For AC**
SYJ3120-5LO-M3	**SYJ3120-1LO-M3**
SY100-30-4A-20	**SY100-30-1A-20**

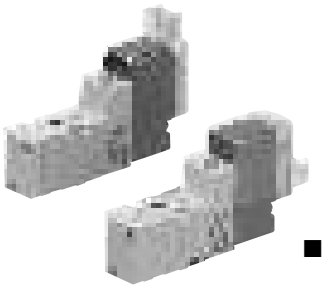
Series SYJ3000/5000/7000
Specific Product Precautions 3

Be sure to read before handling.
Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.

Surge Voltage Suppressor

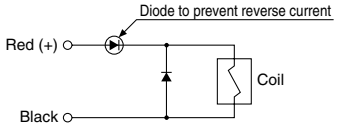
⚠ Caution

<For DC>
Grommet, L/M Plug Connector

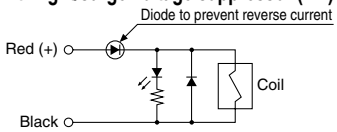


■ **Standard type (with polarity)**

Surge voltage suppressor (□S)

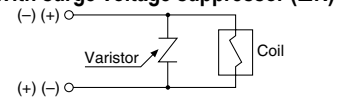


With light/surge voltage suppressor (□Z)

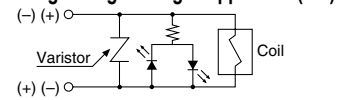


■ **Non-polar type**

With surge voltage suppressor (□R)



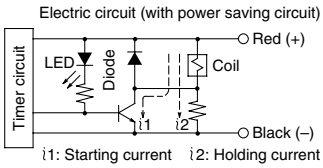
With light/surge voltage suppressor (□U)



- Connect the standard type in accordance with the +, – polarity indication. (The non-polar type can be used with the connections made either way.)
- Since voltage specifications other than standard 24 V and 12 VDC do not have diodes for polarity protection, be careful not to make errors in the polarity.
- Please use caution regarding the allowable voltage fluctuation because there is about a 1 volt drop for a valve with polarity protection. (For details, refer to the solenoid specifications for the individual valve.)
- When wiring is done at the factory, positive (+) is red and negative (–) is black.

■ **With power saving circuit**

Power consumption is decreased by 1/4 by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 62 ms at 24 VDC.)

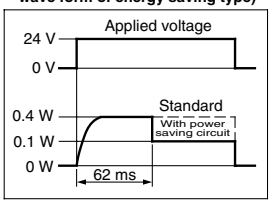


Operating Principle

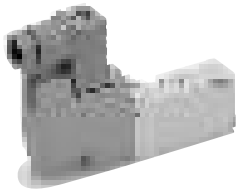
With the above circuit, the current consumption when holding is reduced to save energy. Please refer to the electric wave data to the right.

- Please be careful not to reverse the polarity, since a diode to prevent the reversed current is not provided for the power saving circuit.
- Please use caution regarding the allowable voltage fluctuation because there is about a 0.5 volt drop due to the transistor. (For details, refer to the solenoid specifications for the individual valve.)

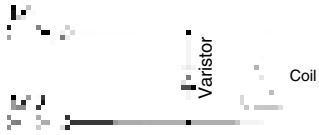
(In the case of SYJ$\frac{3}{7}$□□T, the electric wave form of energy saving type)



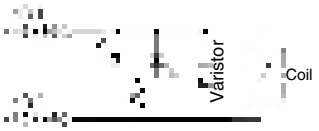
DIN Terminal



With surge voltage suppressor (DS)

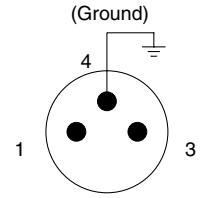


With light/surge voltage suppressor (DZ)



DIN terminal has no polarity.

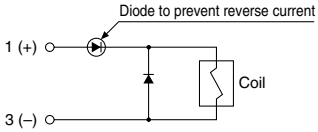
M8 Connector



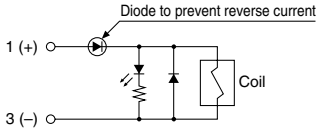
Solenoid valve side pin wiring diagram

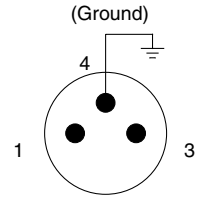
■ **Standard type (with polarity)**

With light/surge voltage suppressor (□S)



With light/surge voltage suppressor (□Z)

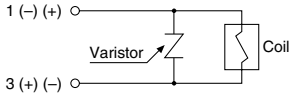




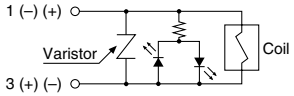
Solenoid valve side pin wiring diagram

■ **Non-polar type**

With surge voltage suppressor (□R)



With light/surge voltage suppressor (□U)



- In the case of standard type, connect + to 1 and – to 3 according the polarity.
- For DC voltages other than 12 V and 24 V, incorrect wiring will case damage to the surge suppressor circuit.
- Please use caution regarding the allowable voltage fluctuation because there is about a 1 volt drop for a valve with polarity protection. (For details, refer to the solenoid specifications for the individual valve.)

Series SYJ3000/5000/7000
Specific Product Precautions 4

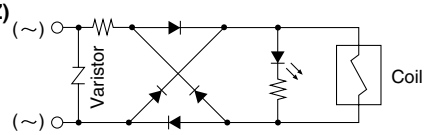
Be sure to read before handling.
Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.

Surge Voltage Suppressor

<For AC>
(There is no "S" type because the generation of surge voltage is prevented by a rectifier.)

Grommet, L/M Plug Connector

With light (□Z)



DIN Terminal

With light (DZ)



NL: Neon light

Note) Surge voltage suppressor of varistor has residual voltage corresponding to the protective element and rated voltage; therefore, protect the controller side from the surge. The residual voltage of the diode is approximately 1 V.

How to Use DIN Terminal

⚠Caution

Connection

1. Loosen the holding screw and pull the connector out of the solenoid valve terminal block.
2. After removing the holding screw, insert a flat head screwdriver, etc. into the notch on the bottom of the terminal block and pry it open, separating the terminal block and the housing.
3. Loosen the terminal screws (slotted screws) on the terminal block, insert the cores of the lead wires into the terminals according to the connection method, and fasten them securely with the terminal screws.
4. Secure the cord by fastening the ground nut.

⚠Caution

When making connections, take note that using other than the supported size (ø3.5 to ø7) heavy duty cord will not satisfy IP65 (enclosure) standards. Also, be sure to tighten the ground nut and holding screw within their specified torque ranges.

⚠Caution

Changing the entry direction

After separating the terminal block and housing, the cord entry can be changed by attaching the housing in the desired direction (4 directions at 90° intervals).

* When equipped with a light, be careful not to damage the light with the cord's lead wires.

Precautions

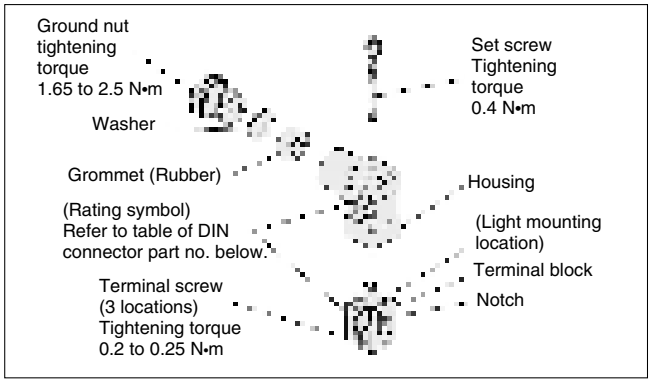
Plug in and pull out the connector vertically without tilting to one side.

Compatible cable

Cord O.D.: ø3.5 to ø7

(Reference) 0.5 mm², 2-core or 3-core, equivalent to JIS C 3306

How to Use DIN Terminal



DIN Connector Part No.

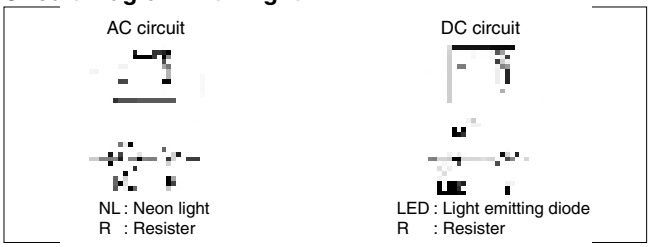
⚠Caution

Without light	SY100-61-1

With light

Rated voltage	Voltage symbol	Model no.
24 VDC	24 V	SY100-61-3-05
12 VDC	12 V	SY100-61-3-06
100 VAC	100 V	SY100-61-2-01
200 VAC	200 V	SY100-61-2-02
110 VAC	110 V	SY100-61-2-03
220 VAC	220 V	SY100-61-2-04

Circuit Diagram with Light



Note) Refer to page 80 for DIN connector (Y) conforming to EN-175301-803C (former DIN 43650C).

Series SYJ3000/5000/7000
Specific Product Precautions 5

Be sure to read before handling.
Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.

Connector Assembly with Cover

⚠ Caution

Connector assembly with dust proof protective cover.

- Effective to prevention of short circuit failure due to the entry of foreign matter into the connector.
- Chloroprene rubber for electrical use, which provides outstanding weather resistance and electrical insulation, is used for the cover material. However, do not allow contact with cutting oil, etc.
- Simple and unencumbered appearance by adopting round-shaped cord.

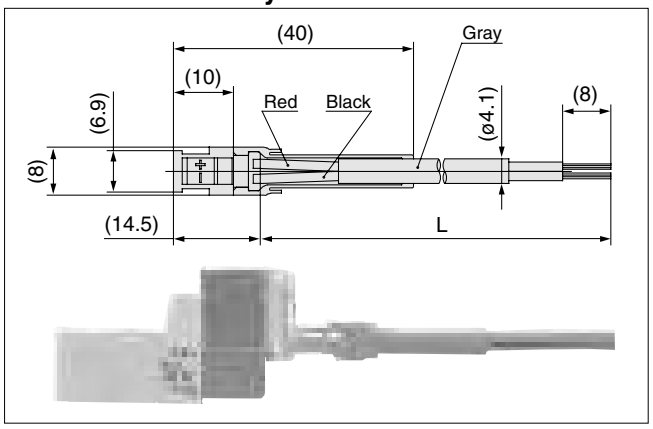
How to Order

SY100−68−A−□

Lead wire length

Nil	300 mm
6	600 mm
10	1000 mm
15	1500 mm
20	2000 mm
25	2500 mm
30	3000 mm
50	5000 mm

Connector Assembly with Cover: Dimensions



How to Order

Enter the part number for a plug connector solenoid valve without connector together with the part number for a connector assembly with cover.

Ex. 1) Lead wire length of 2000 mm
SYJ3120-5LOZ-M3
SY100-68-A-20

Ex. 2) Lead wire length of 300 mm (standard)
SYJ3120-5LPZ-M3
Symbol for connector assembly with cover

∗ In this case, the part number for the connector assembly with cover is not required.

M8 Connector

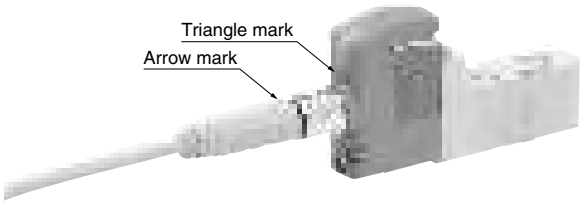
⚠ Caution

1. M8 connector types have an IP65 (enclosure) rating, offering protection from dust and water. However please note: these products are not intended for use in water.
Select a SMC connector cable (V100-49-1-□) or a FA sensor type connector, with M8 threaded 3 pin specifications conforming to Nippon Electric Control Equipment Association Standard, NECA4202 (IEC60947-5-2). Make sure the connector O.D. is 10.5 mm or less when used with the Series SYJ3000 manifold. If more than 10.5 mm, it cannot be mounted due to the size.
2. Do not use a tool to mount the connector, as this may cause damage. Only tighten by hand. (0.4 to 0.6 Nm)
3. The excessive stress on the cable connector will not be able to satisfy the IP65 rating. Please use caution and do not apply a stress of 30 N or greater.

⚠ Caution

Failure to meet IP65 performance may result if using alternative connectors than those shown above, or when insufficiently tightened.

• Connector cable mounting



Note) Connector cable should be mounted in the correct direction. Make sure that the arrow symbol on the connector is facing the triangle symbol on the valve when using SMC connector cable (V100-49-1-□). Be careful not to squeeze it in the wrong direction, as problems such as pin damage may occur.

■ Connector cable

• M8 connector cable for M8 can be ordered as follows:

How to Order

1. To order solenoid valve and connector cable at the same time. (Connector cable will be included in the shipment of the solenoid valve.)

SYJ$\frac{3}{5}$□□□−□□□□−□□

Electrical entry
W1: Cable length 300 mm
W2: Cable length 500 mm
W3: Cable length 1000 mm
W4: Cable length 2000 mm
W7: Cable length 5000 mm

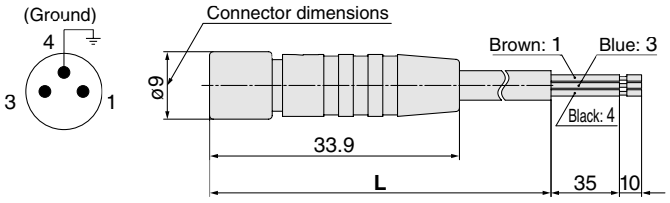
Ex. 1) Cable length: 300 mm
SYJ3120-5W1ZE-M3
Symbol for electrical entry

Series SYJ3000/5000/7000
Specific Product Precautions 6

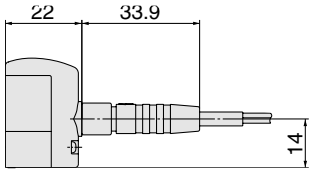
Be sure to read before handling.
Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.

M8 Connector

2. To order connector cable only



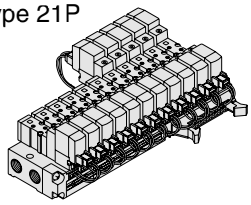
Cable length (L)	No.
300 mm	V100-49-1-1
500 mm	V100-49-1-2
1000 mm	V100-49-1-3
2000 mm	V100-49-1-4
5000 mm	V100-49-1-7



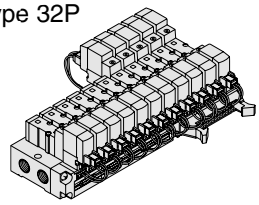
Flat Ribbon Cable Manifold

⚠Caution

Type 21P



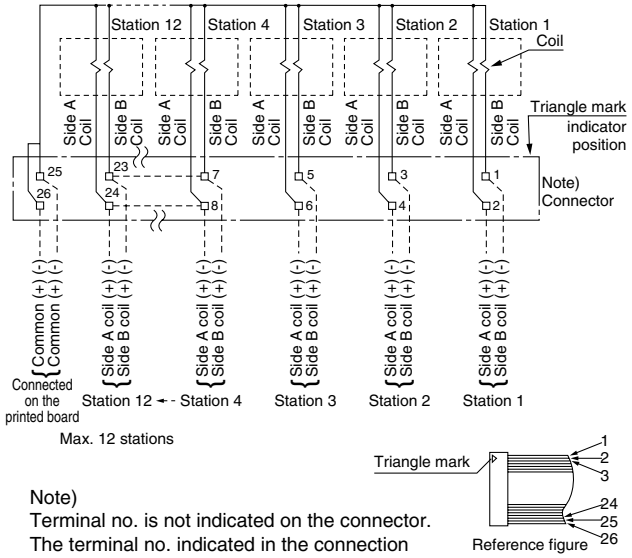
Type 32P



- In the manifold valves, the wiring to the individual valves is provided on a printed circuit board, and the connection to the external wires is consolidated through the use of a flat cable.
- A single MIL flat cable connects the entire manifold to your power source. This greatly reduces installation time.

Flat Ribbon Cable Manifold

Manifold Internal Wiring



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

- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid B side.
- The maximum number of stations that can be accommodated is 12. For more stations, contact SMC.
- Only non-polar valves are available for the DC flat cable manifold, therefore negative COM or positive COM wiring of the manifold is possible. The valve does not switch with negative COM if a Z type is used. Be sure to use a positive COM.

Bracket

⚠Caution

For bracket attached styles of SYJ3000 (Single) and SYJ7000, do not use it without bracket.

Replacement of Pilot Valve

⚠Caution

Mount it so that there is no slippage or deformation in gaskets, and tighten with the tightening torque as shown below.

Model	Thread size	Tightening torque
SYJ3000	M1.7	0.12 N·m
SYJ5000	M2.5	0.45 N·m
SYJ7000	M3	0.8 N·m

Series SYJ3000/5000/7000
Specific Product Precautions 7

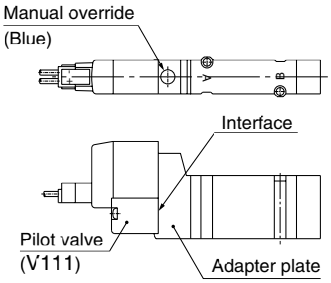
Be sure to read before handling.
Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.

Replacement of Pilot Valve

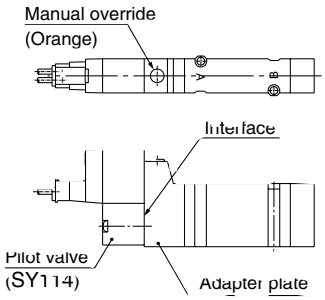
⚠ Caution

Pilot valves in this series are improved to provide excellent energy saving results. However following this improvement, these new valves are no longer compatible with the conventional pilot valve used at the interface. Consult with SMC when you need to exchange these pilot valves, in the case of manual override (marked in orange) of the adapter plate.

New type

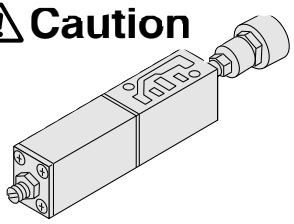


Conventional type



Interface Regulator

⚠ Caution



Spacer type regulating valve on manifold block can regulate the pressure to the valve individually.

Specifications

Interface regulator		ARBYJ5000	ARBYJ7000
Applicable solenoid valve model		SYJ5000	SYJ7000
Regulating port		P	P
Proof pressure		1.5 MPa	
Maximum operating pressure		1.0 MPa	
Set pressure range		0.05 to 0.7 MPa Note 1)	
Ambient and fluid temperature		-5 to 60°C (No freezing) Note 2)	
Thread size for connection of pressure gauge		M5 x 0.8	
Weight (kg)		0.06	0.09
Effective area at exhaust side (mm^2) Note 3) S at P_1 = 0.7 MPa, P_2 = 0.5 MPa	P → A	1.9	5.1
	P → B	2.1	5.8
Effective area at supply side (mm^2) Note 3) S at P_1 = 0.7 MPa, P_2 = 0.5 MPa	A → EA	4.5	12.6
	B → EB	4.5	12.6

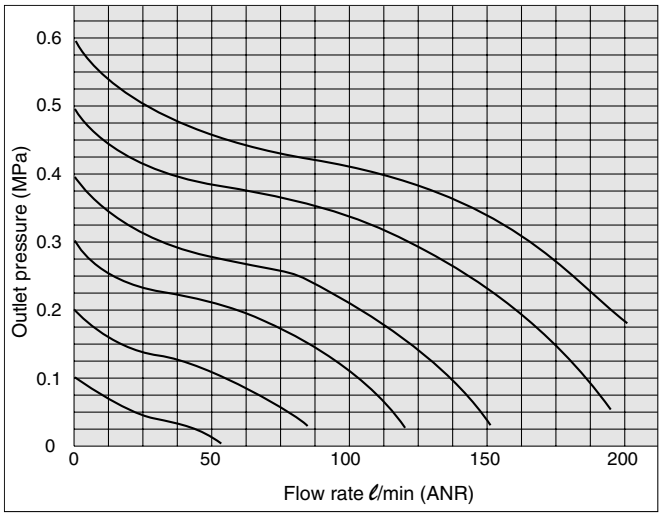
Interface Regulator

Note 1 Set the pressure within the operating pressure range of the solenoid valve.
Note 2) The maximum operating temperature for the solenoid valve is 50°C.
Note 3) The effective area listed is for a single solenoid 2 position valve mounted on a sub-plate.
Note 4) Apply pressure from P port in the base for interface regulator.

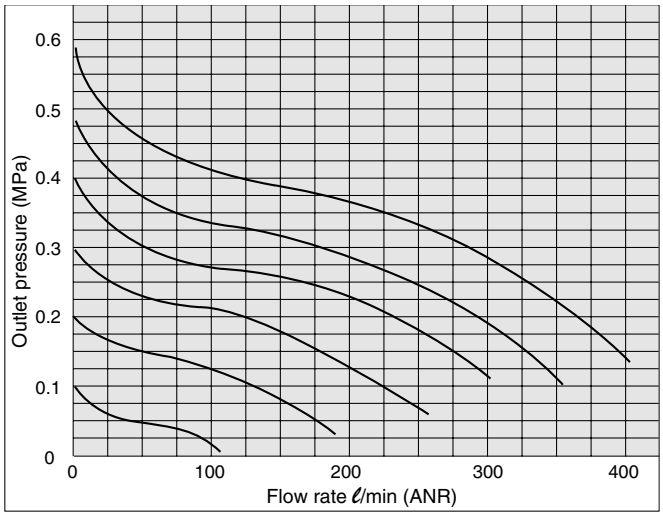
Flow Characteristics

(P → A) Condition: Inlet pressure 0.7 MPa

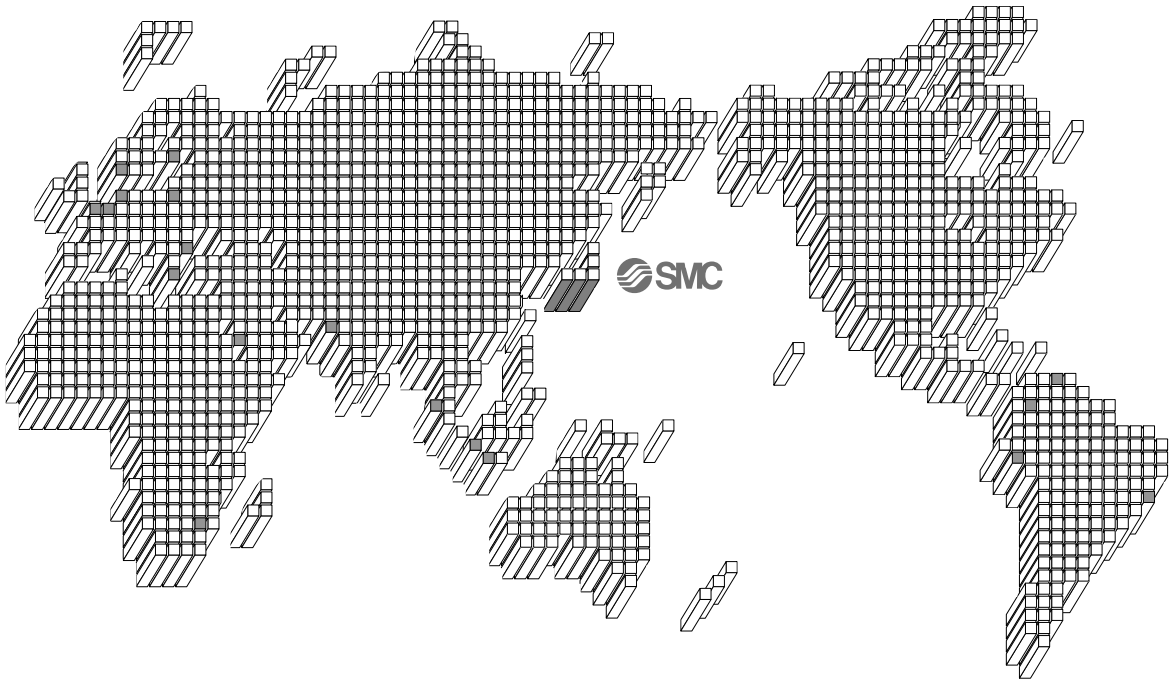
●ARBYJ5000-00-P



●ARBYJ7000-00-P



SMC'S GLOBAL MANUFACTURING, DISTRIBUTION AND SERVICE NETWORK



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AUSTRIA
SMC Pneumatik GmbH

BELGIUM
SMC Pneumatics N.V./S.A.

BULGARIA
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CROATIA
SMC Industrijska automatika d.o.o.

CZECH REPUBLIC
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DENMARK
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ESTONIA
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FINLAND
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SMC Priemyselna Automatizacia, s.r.o.

SLOVENIA
SMC INDUSTRIJSKA AVTOMATIKA d.o.o.

SPAIN/PORTUGAL
SMC España, S.A.

SWEDEN
SMC Pneumatics Sweden AB

SWITZERLAND
SMC Pneumatik AG.

UK
SMC Pneumatics (U.K.) Ltd.

ASIA

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SMC (China) Co., Ltd.

HONG KONG
SMC Pneumatics (Hong Kong) Ltd.

INDIA
SMC Pneumatics (India) Pvt. Ltd.

INDONESIA
PT. SMC Pneumatics Indonesia

MALAYSIA
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4-14-1 Sotokanda, Chiyoda-ku, Tokyo 101-0021 JAPAN
Tel: 03-5207-8249 Fax: 03-5298-5362
URL http://www.smcworld.com

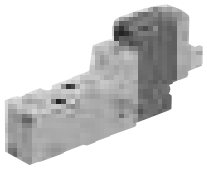
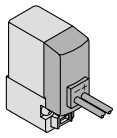
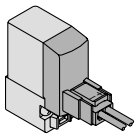
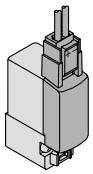
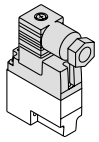
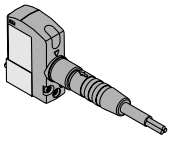
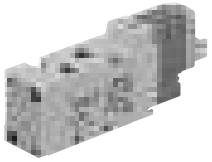
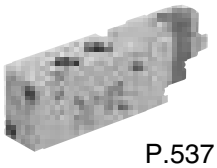
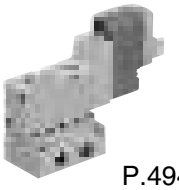
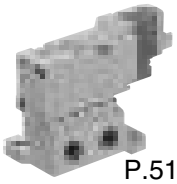
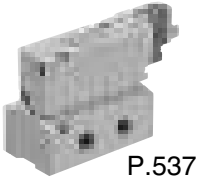
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Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.

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Variations

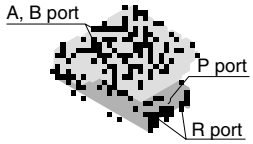
	Series	Sonic conductance C[dm³/(s·bar)]	Type of actuation	Voltage	Electrical entry	Option: Light/Surge voltage suppresser	Manual override
Body ported	**10-SYJ3000**  P.494	Effective area 0.9mm² {4/2→5/3 (A/B→EA/EB)}	2 position · Single · Double 3 position · Closed center · Exhaust center · Pressure center	**For DC** ■ 24 VDC 12 VDC 6 VDC 5 VDC 3 VDC **For AC** ■ AC 100V 50/60Hz AC 110V 50/60Hz AC 200V 50/60Hz AC 220V 50/60Hz	Grommet  L plug connector  M plug connector  DIN terminal  (10-SYJ5000/7000 only) M8 connector 	**For DC** ■ With surge voltage suppresser ■ With light/surge voltage suppressor **For AC** Note) ■ With light/surge voltage suppresser	■ Non-locking push type ■ Push-turn locking slotted type ■ Push-turn locking lever type
	10-SYJ5000  P.515	0.47 {4/2→5/3 (A/B→EA/EB)}					
	10-SYJ7000  P.537	2.4 {4/2→5/3 (A/B→EA/EB)}					
Base mounted type	**10-SYJ3000**  P.494	0.46 {4/2→5/3 (A/B→EA/EB)}					
	10-SYJ5000  P.515	0.83 {4/2→5/3 (A/B→EA/EB)}					
	10-SYJ7000  P.537	2.9 {4/2→5/3 (A/B→EA/EB)}					

Note) All standard AC voltage models have built-in surge voltage suppresser.

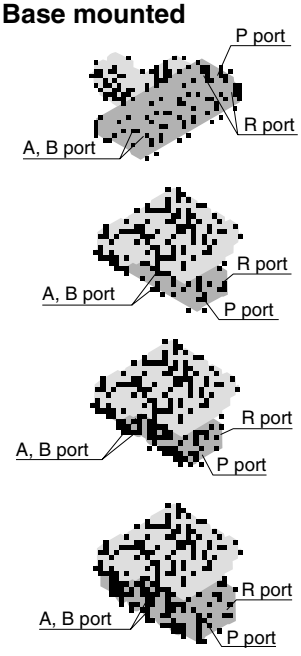
Manifold variations

Valve series		A, B port location	A, B port size									Manifold option		Flat ribbon cable manifold
			M3	M5	1/8	One-touch fitting						Individual SUP spacer assembly	Individual EXH spacer assembly	
						Applicable tubing O.D.								
						ø4	ø6	ø8	N3	N7	N9			
Body ported	**10-SYJ3000**	Top	●	—	—	—	—	—	—	—	—	—	—	●
	10-SYJ5000		—	●	—	●	●	—	●	●	—	●	●	●
	10-SYJ7000		—	—	●	—	●	●	—	●	●	—	●	●
Base mounted	**10-SYJ3000**	Side	●	●	—	●	—	—	●	—	—	—	—	●
		Bottom	—	—	—	—	—	—	—	—	—			—
	10-SYJ5000	Side	—	●	—	●	●	—	●	●	—	●	●	●
		Bottom	—	●	—	—	—	—	—	—	—			—
	10-SYJ7000	Side	—	—	●	—	●	●	—	●	●	●	●	—
		Bottom	—	—	●	—	—	—	—	—	—			—

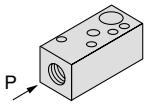
Body ported



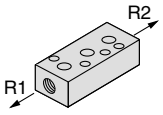
Base mounted



Individual SUP spacer assembly



Individual EXH spacer assembly



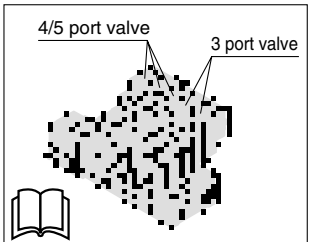
Type 21P



Type 32P



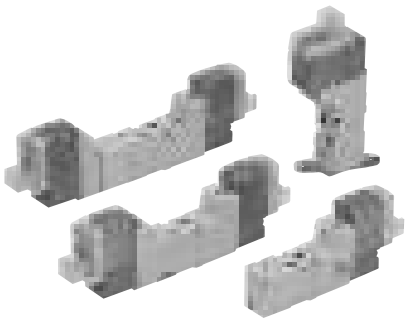
Mixed mounting of 3 port valves and 4, 5 port valves



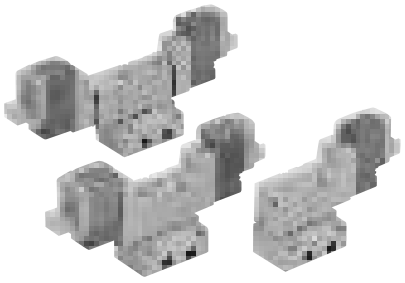
· For detailed specifications about 10-SYJ3000, refer to page 507. For 10-SYJ5000, refer to page 529, and for 10-SYJ7000, refer to page 550.

Series 10-SYJ3000

Rubber seal
4/5 port solenoid valve

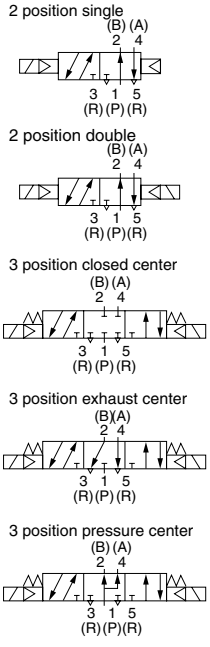


Body ported

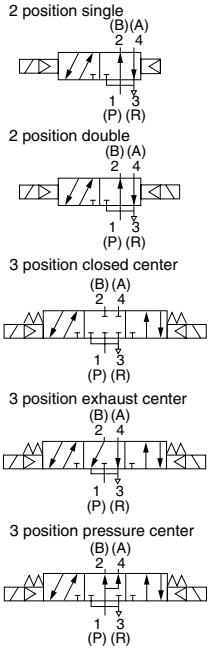


Base mounted

JIS Symbol
5 port



4 port (For manifold use only)



Made to Order — Made to order specifications (Refer to page 557 for details.)

Specifications

Fluid		Air
Operating pressure range (MPa)	**2 position single**	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.2 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (with no freezing. Refer to page 714.)
Response time ms (0.5MPa) Note 1)	**2 position single, double**	15 or less
	3 position	30 or less
Max. operating frequency (Hz)	**2 position single, double**	10
	3 position	3
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type
Pilot exhaust method		Common exhaust for the pilot and main valve
Lubrication		Not required
Mounting orientation		Unrestricted
Shock/Vibration resistance m/s² Note 2)		150/30
Enclosure		Dustproof (∗ M8 connector conforms to IP65.)

∗ Based on IEC60529

Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature : 20°C, at rated voltage and without surge voltage suppressor)

Note 2) 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. (Value in the initial state)
Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000Hz. Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

Solenoid specifications

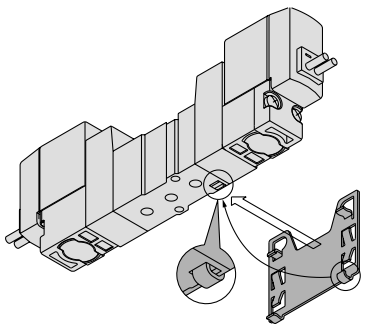
Electrical entry			Grommet (G)/(H), L plug connector (L), M plug connector (M), M8 connector (W)
Coil rated voltage V		**DC**	24, 12, 6, 5, 3
		AC50/60Hz	100, 110, 200, 220
Allowable voltage fluctuation			±10% of rated voltage ∗
Power consumption (W)	**DC**	**Standard**	0.35 (With indicator light: 0.4)
		With power saving circuit	0.1 (With indicator light only)
Apparent power (VA) ∗	**AC**	**100 VAC**	0.78 (With indicator light: 0.81)
		110 VAC	0.86 (With indicator light: 0.89)
		[115 VAC]	[0.94(With indicator light: 0.97)]
		200 VAC	1.18 (With indicator light: 1.22)
		220 VAC	1.30 (With indicator light: 1.34)
		[230 VAC]	[1.42 (With indicator light: 1.46)]
Surge voltage suppressor			Diode (Non-polar type: Varistor)
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.
∗ For the allowable voltage fluctuation for S, Z and T types (with power saving circuit), please observe the following range because they have voltage drop due to internal circuit.

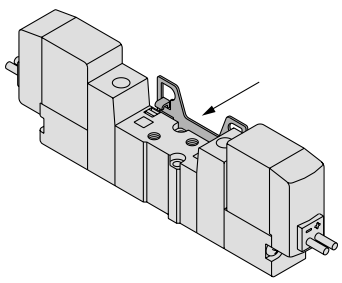
S and Z types 24 VDC: -7% to +10% 12 VDC: -4% to +10%
T type 24 VDC: -8% to +10% 12 VDC: -6% to +10%

Bracket mounting

(1) Insert the lower hook of the mounting bracket into the groove on the bottom of the valve as shown.



(2) Press the valve and mounting bracket together until the upper hook of the bracket snaps into place in the groove on top of the valve.



SMC

Flow characteristics / Weight

Valve model		Type of actuation		Port size		Weight (g) Note 3, 4)			Effective area mm²	Flow characteristics Note 2)					
				1, 5, 3 (P, EA, EB)	4, 2 (A, B)	Grommet	L/M plug connector	M8 Connector		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
5 port base mounted (With sub-plate)	**10-SYJ3143**	2 position	Single	M5 x 0.8	M5 x 0.8	62(36)	63(37)	67(41)	—	0.46	0.36	0.12	0.46	0.35	0.12
	10-SYJ3243		Double			79(53)	81(55)	89(63)							
	10-SYJ3343	3 position	Closed center			82(56)	84(58)	92(66)	—	0.47	0.33	0.12	0.47	0.31	0.12
	10-SYJ3443		Exhaust center						—	0.36	0.39	0.10	0.59[0.40]	0.43[0.33]	0.16[0.11]
	10-SYJ3543		Pressure center						—	0.58[0.32]	0.42[0.33]	0.16[0.080]	0.46	0.32	0.11
5 port body ported	**10-SYJ3123**	2 position	Single	M3 x 0.5	M3 x 0.5	36	37	41	0.9						
	10-SYJ3223		Double			53	55	63							
	10-SYJ3323	3 position	Closed center			56	58	66							
	10-SYJ3423		Exhaust center												
	10-SYJ3523		Pressure center												
4 port base mounted (For manifold base only) Note 1)	**10-SYJ3133**	2 position	Single	1/8	M5 x 0.8	36	37	41	—						
	10-SYJ3233		Double			53	55	63							
	10-SYJ3333	3 position	Closed center			56	58	66	—						
	10-SYJ3433		Exhaust center						—						
	10-SYJ3533		Pressure center						—						

Note 1) Dedicated for manifold base, refer to page 11 for details.
Note 2) [ ] denotes normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2
Note 3) ( ): Without sub-plate
Note 4) For DC voltages. For AC voltages add 3g to the weight of the single solenoid and 6g to the weight of the double solenoid and 3 position types.

How to Order

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

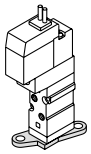
Light/surge voltage suppressor

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.

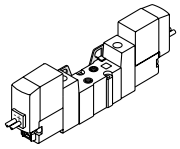
Bracket

Nil: Without bracket



Single
(Bracket cannot be retrofitted.)

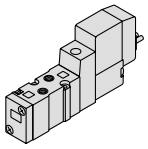
F: With bracket



Double

Note) The double solenoid mounting bracket is supplied unattached.
To order the double solenoid bracket for use with a single solenoid valve, order the single solenoid valve without a bracket and double solenoid bracket separately by specifying the part number of the bracket VJ3000-13-1besides the part number of the solenoid valve.
[Example] 10-SYJ3123-5M-M3
VJ3000-13-1

5 port



(Type 20 manifold)

Rated voltage

DC

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

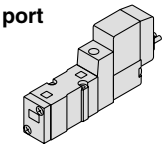
AC (50/60Hz)

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

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

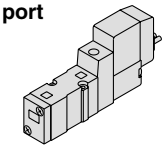
Body ported	10—	SYJ3	1	23	□	—	5	M	□	□	—	M3	— □
Base mounted (4 port)	10—	SYJ3	2	33	□	—	5	M	□	□		(Manifold use only)	
Base mounted (5 port)	10—	SYJ3	2	43	□	—	5	M	□	□	— □		

4 port



For manifold type 31, S31, 32, S32

5 port



For sub-plate, manifold type 41, S41, 46, S46

Clean series

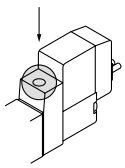
Coil specifications

Nil	Standard
T	With power saving circuit <24, 12 VDC only>

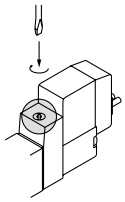
∗ Power saving circuit is not available in the case of "W□" type.

Manual override

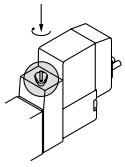
Nil: Non-locking push type



D: Push-turn locking slotted type

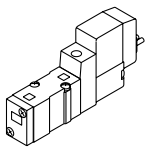


E: Push-turn locking lever type



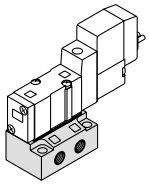
Port size

Nil: Without sub-plate



(With gasket and screws)

M5: With M5 port sub-plate



Electrical entry

24, 12, 6, 5, 3 VDC 100, 110, 200, 220 VAC				24, 12 VDC 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)	**MN**: Without lead wire	**WO**: Without connector cable
H: Lead wire length 600 mm	**LN**: Without lead wire	**LO**: Without connector	**MO**: Without connector	**W□**: With connector cable Note 1)

∗ "LN", "MN" types: with 2 sockets.
∗ For connector cable of M8 connector, refer to page 562.
Note 1) Be sure to enter a symbol of the cable length in □ with reference to P562.

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.
(Refer to catalog page 508 for details.)

How to Order Pilot Valve Assembly

10—V111 □ — 5 G □

Clean series

Coil specifications

Nil	Standard
T	With power saving circuit <24, 12 VDC only>

∗ Power saving circuit is not available in the case of "W□" type.

Light/Surge voltage suppressor

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

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

Rated voltage

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC
1	100 VAC50/60Hz
2	200 VAC50/60Hz
3	110 VAC50/60Hz [115 VAC50/60Hz]
4	220 VAC50/60Hz [230 VAC50/60Hz]

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

Electrical entry

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

∗ For connector cable of M8 connector, refer to page 562.
Note 1) Be sure to enter a symbol of the cable length in □ with reference to page 562.

How to Order Connector Assembly for L/M Plug Connector

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 (With connector and 2 of sockets only): **SY100-30-A**

Lead wire length

Nil	300mm
6	600mm
10	1000mm
15	1500mm
20	2000mm
25	2500mm
30	3000mm
50	5000mm

How to Order M8 Connector Cable

V100-49-1- □

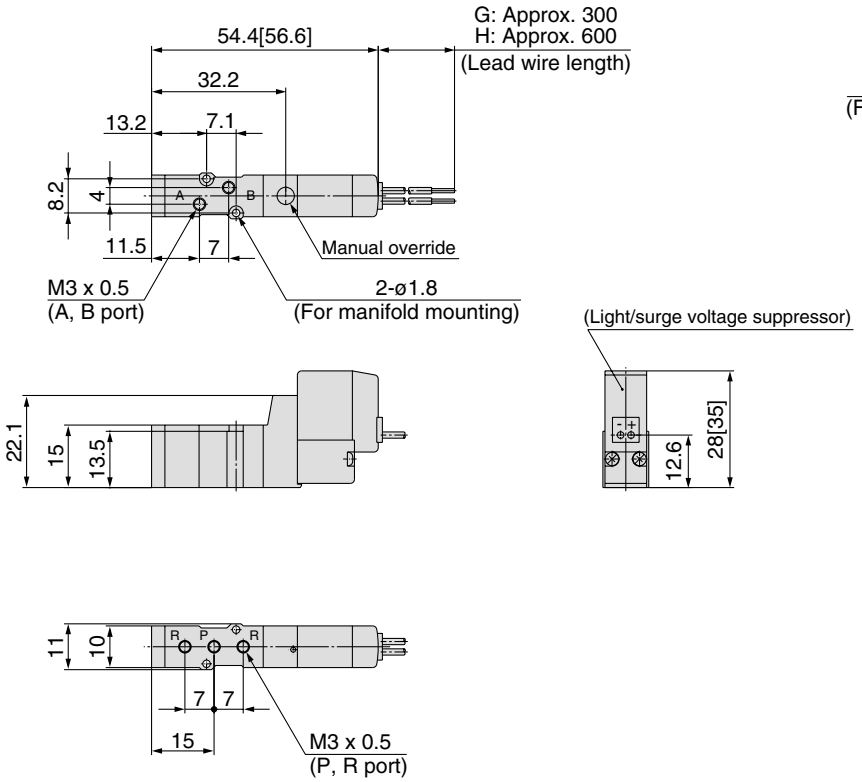
Cable length

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

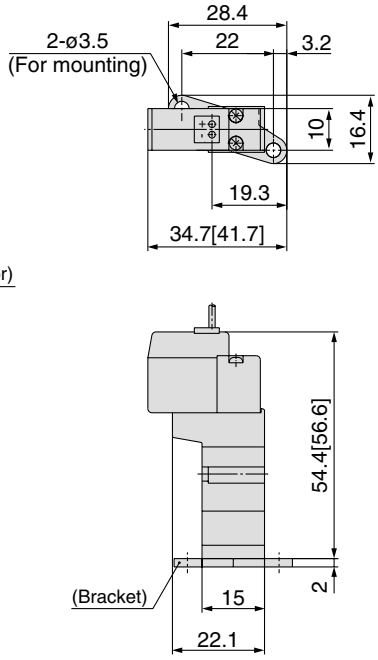
2 position single

∗[ ]: AC

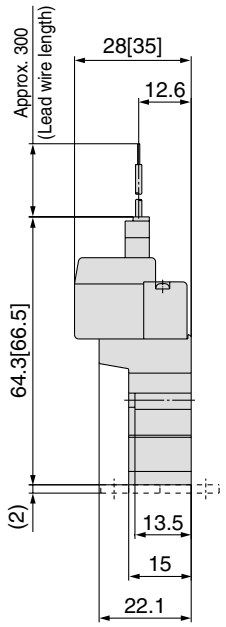
Grommet (G), (H): 10-SYJ3123-□$^{G}_{H}$□□-M3



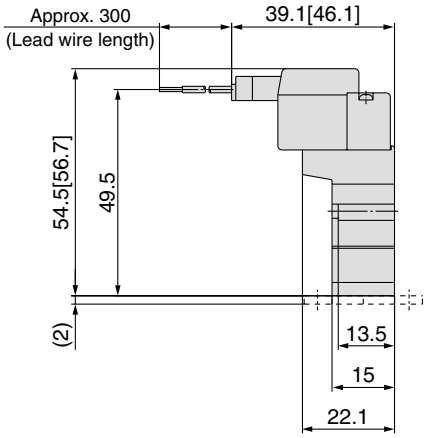
With bracket: 10-SYJ3123-□$^{G}_{H}$□□-M3-F



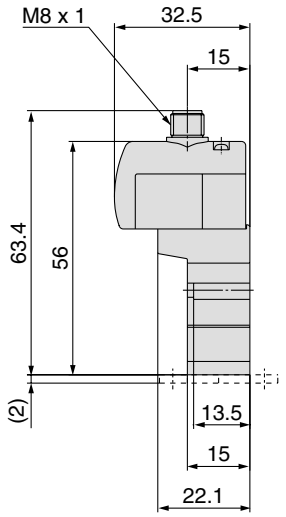
L plug connector (L): 10-SYJ3123-□L□□-M3 (-F)



M plug connector (M): 10-SYJ3123-□M□□-M3 (-F)



M8 Connector (WO): 10-SYJ3123-□WO□□-M3 (-F)

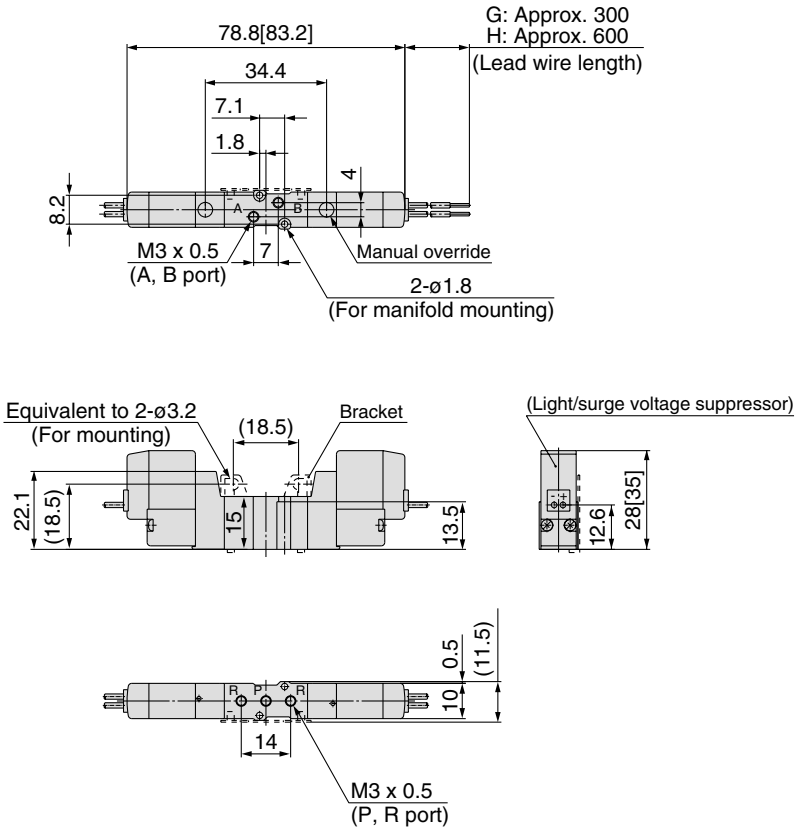


∗ Refer to page 563 for dimensions with connector cable.

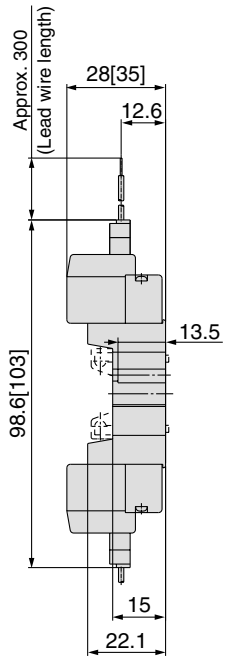
2 position double

∗ [ ]: AC

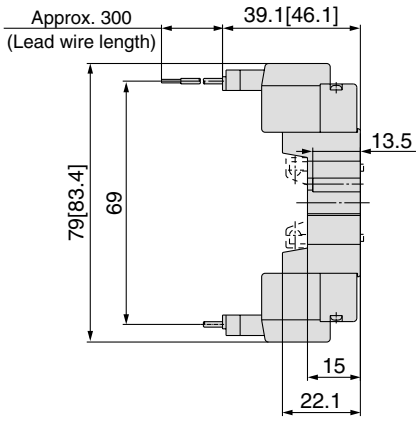
Grommet (G), (H): 10-SYJ3223-□$^{G}_{H}$□□-M3 (-F)



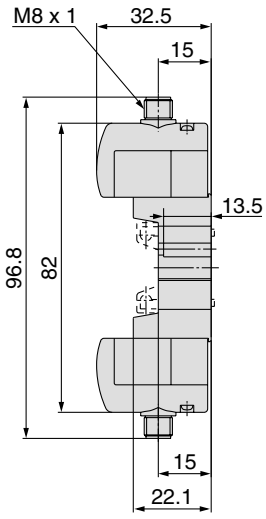
L plug connector (L): 10-SYJ3223-□L□□-M3 (-F)



M plug connector (M): 10-SYJ3223-□M□□-M3 (-F)



M8 connector (WO): 10-SYJ3223-□WO□□-M3 (-F)

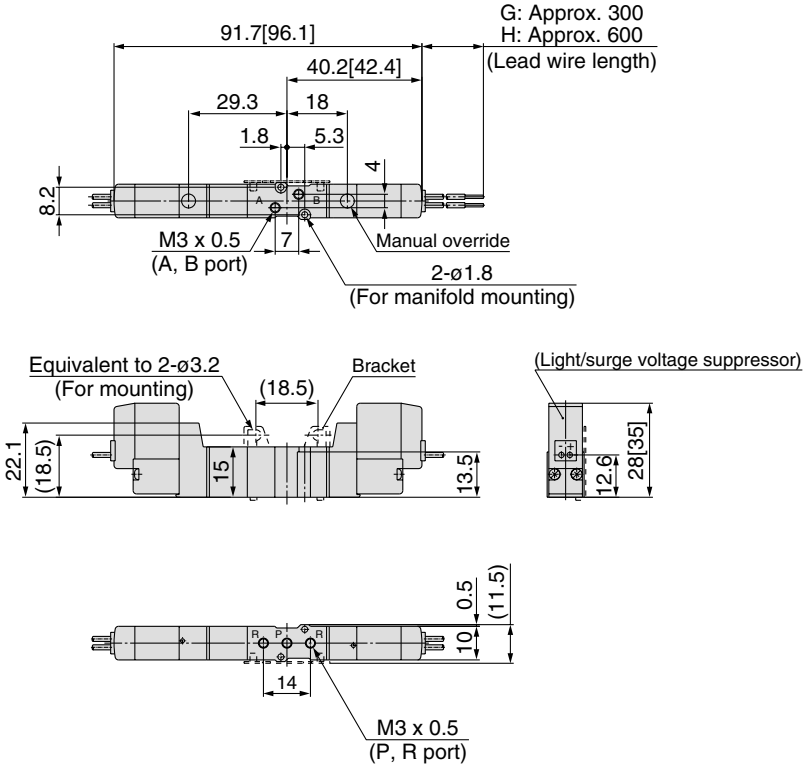


∗ Refer to page 563 for dimensions with connector cable.

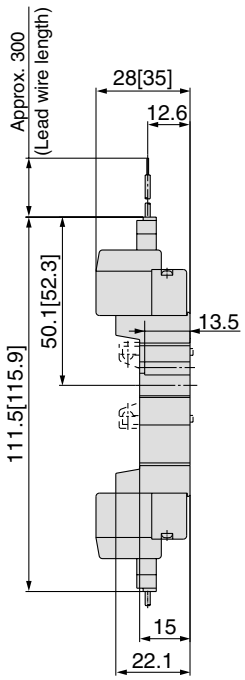
3 position closed center / exhaust center / pressure center

∗ [ ]: AC

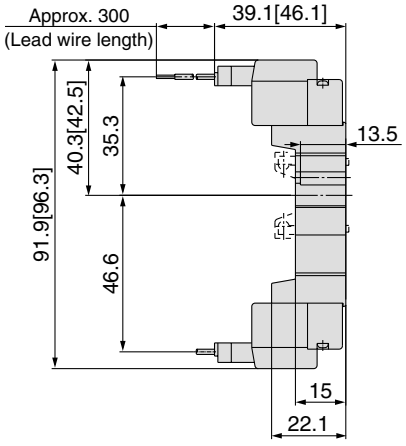
Grommet (G), (H): 10-SYJ3$^{3}_{5}$^{4}23-□GH□□-M3 (-F)



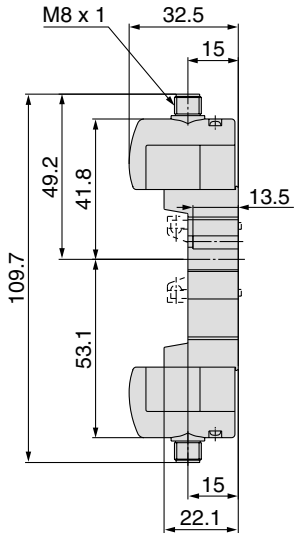
L plug connector (L): 10-SYJ3$^{3}_{5}$^{4}23-□L□□-M3 (-F)



M plug connector (M): 10-SYJ3$^{3}_{5}$^{4}23-□M□□-M3 (-F)



M8 Connector (WO): 10-SYJ3$^{3}_{5}$^{4}23-□WO□□-M3 (-F)

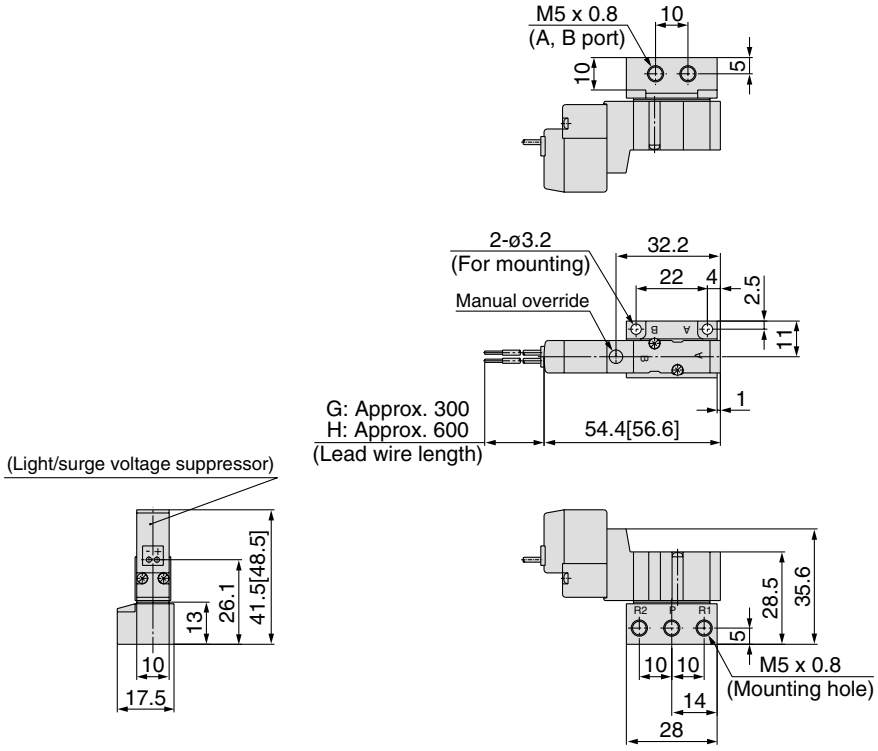


∗ Refer to page 563 for dimensions with connector cable.

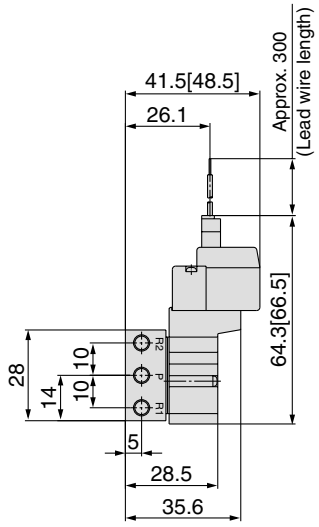
2 position single

∗ [ ]: AC

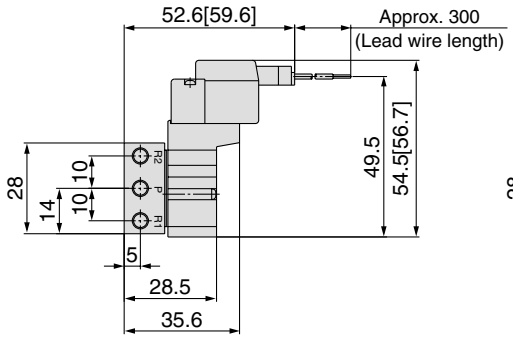
Grommet (G), (H): 10-SYJ3143-□$^{G}_{H}$□□-M5



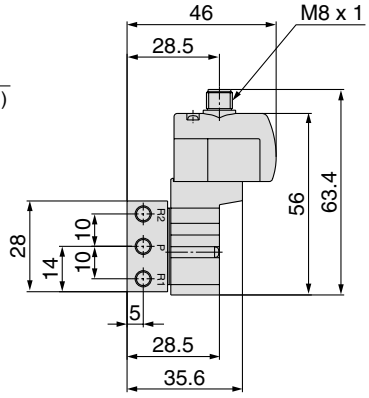
L plug connector (L): 10-SYJ3143-□L□□-M5



M plug connector (M): 10-SYJ3143-□M□□-M5



M8 Connector (WO): 10-SYJ3143-□WO□□-M5

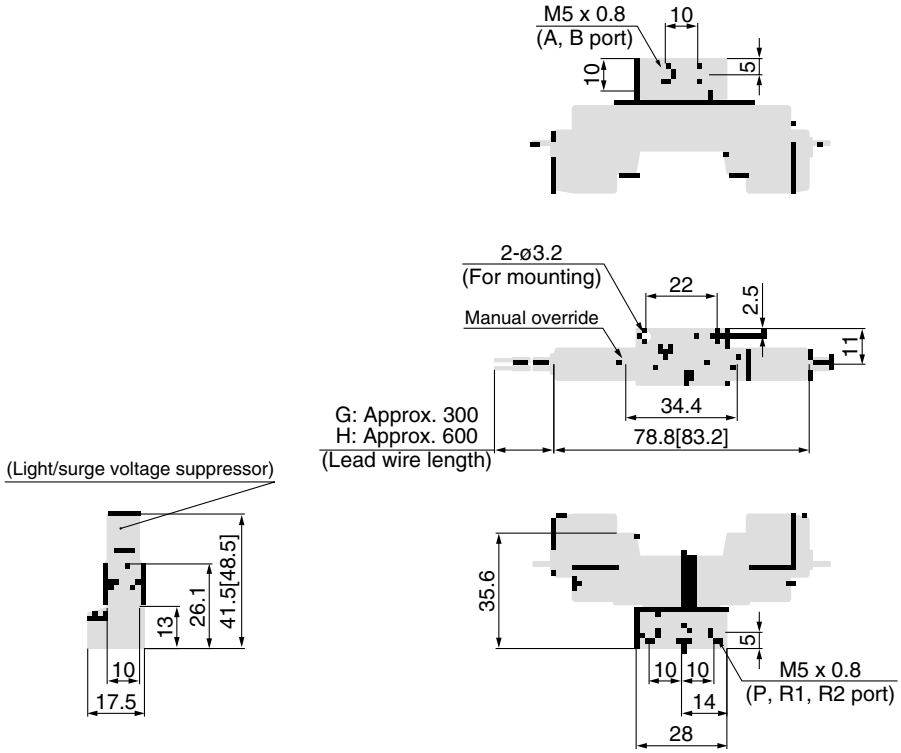


∗ Refer to page 563 for dimensions with connector cable.

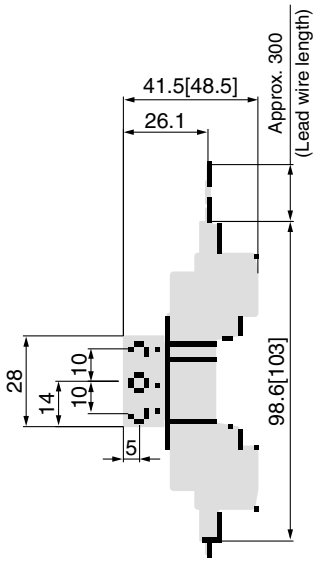
2 position double

∗ [ ]: AC

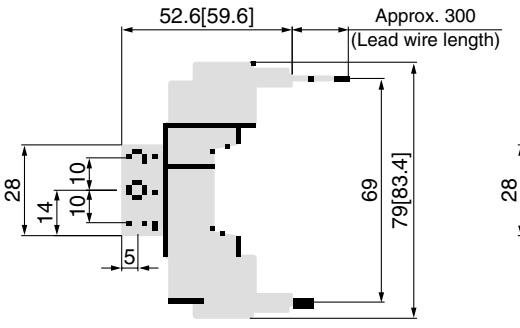
Grommet (G), (H): 10-SYJ3243-□$^{G}_{H}$□□-M5



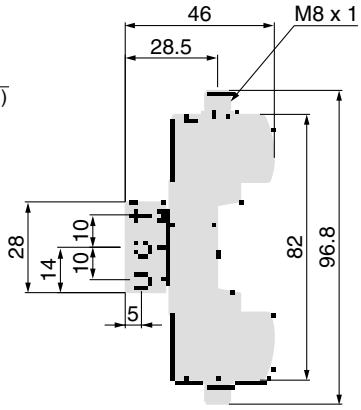
L plug connector (L): 10-SYJ3243-□L□□-M5



M plug connector (M): 10-SYJ3243-□M□□-M5



M8 connector (WO): 10-SYJ3243-□WO□□-M5

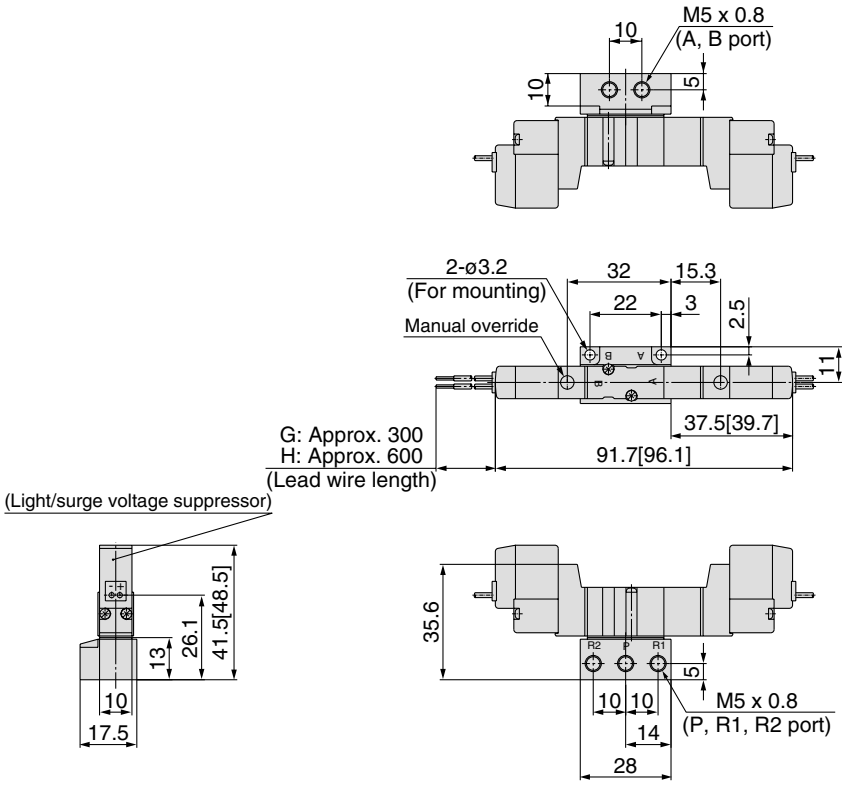


∗ Refer to page 563 for dimensions with connector cable.

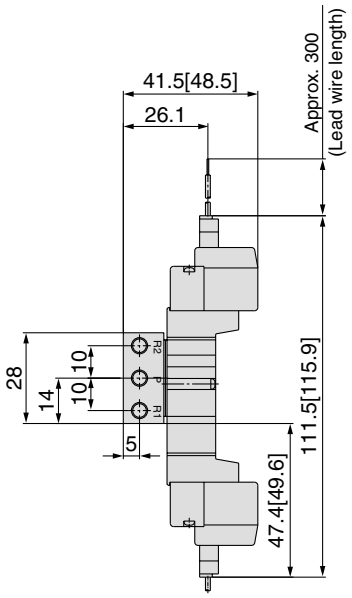
3 position closed center / Exhaust center / Pressure center

∗ [ ]: AC

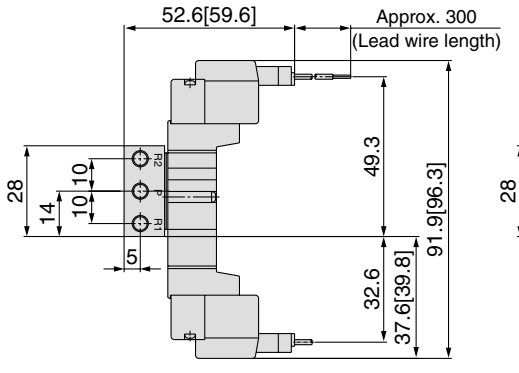
Grommet (G), (H): 10- SYJ3$^{3}_{5}$43-□$^{G}_{H}$□□-M5



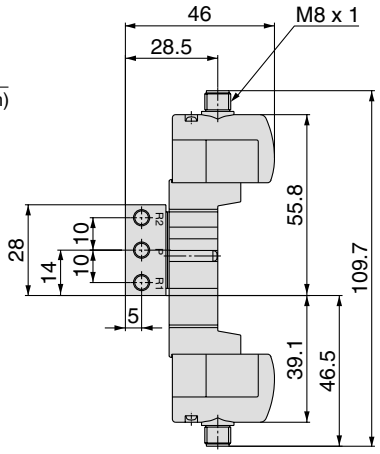
L plug connector (L): 10-SYJ3$^{3}_{5}$43-□L□□-M5



M plug connector (M): 10-SYJ3$^{3}_{5}$43-□M□□-M5

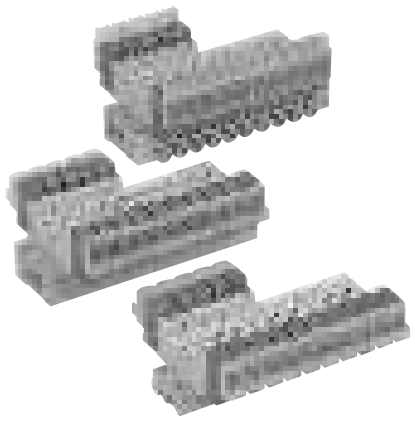


M8 Connector (WO): 10-SYJ3$^{3}_{5}$43-□WO□□-M5□



∗ Refer to page 563 for dimensions with connector cable.

Manifold standard



Manifold specifications

Model		Type 20	Type 31/S31	Type 32/S32	Type 41/S41	Type 46/S46
Manifold type		Single base / B mount				
P (SUP) / R (EXH)		Common SUP / Common EXH				Common SUP / Individual EXH
Valve stations		2 to 20 stations				
A, B port porting specifications	Location	Valve	Base			
	Direction	Top	Side			
Port size	P, R port	M5 x 0.8		1/8		P: 1/8 R: M5 x 0.8
	A, B port	M3 x 0.5		M5 X 0.8, C4 (One-touch fitting for ø4)		

Flow characteristics

Manifold			Port size		Flow characteristics 1→4/2 (P→A/B)			Flow characteristics 4/2→5/3 (A/B→R)			Effective area (mm²)
			1(P), 5/3(R) port	2(B), 4(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
Body ported for internal pilot	10-SS5YJ3-20	10-SYJ3□23	M5 x 0.8	M3 x 0.5	—	—	—	—	—	—	0.9
Base mounted for internal pilot	10-SS5YJ3-31-S31	10-SYJ3□33	M5 x 0.8	M3 x 0.5	—	—	—	—	—	—	0.9
	10-SS5YJ3-32-M5	10-SYJ3□33	1/8	M5 x 0.8	0.25	0.19	0.060	0.32	0.25	0.077	—
	10-SS5YJ3-32-C4			C4	0.25	0.18	0.059	0.30	0.27	0.075	—
	10-SS5YJ3-S32-M5			M5 x 0.8	0.25	0.26	0.060	0.29	0.15	0.062	—
	10-SS5YJ3-S32-C4			C4	0.24	0.21	0.057	0.27	0.18	0.062	—
	10-SS5YJ3-41-M5	10-SYJ3□43	1/8	M5 x 0.8	0.32	0.25	0.081	0.33	0.19	0.079	—
	10-SS5YJ3-41-C4			C4	0.32	0.28	0.079	0.35	0.24	0.084	—
	10-SS5YJ3-S41-M5			M5 x 0.8	0.33	0.29	0.082	0.34	0.17	0.081	—
	10-SS5YJ3-S41-C4			C4	0.32	0.27	0.079	0.34	0.24	0.084	—
	10-SS5YJ3-46-M5	10-SYJ3□43	1/8 M5 x 0.8	M5 x 0.8	0.20	0.25	0.048	0.10	0.12	0.024	—
	10-SS5YJ3-46-C4			C4	0.21	0.27	0.050	0.21	0.13	0.047	—
	10-SS5YJ3-S46-M5			M5 x 0.8	0.20	0.25	0.048	0.19	0.16	0.024	—
	10-SS5YJ3-S46-C4			C4	0.22	0.34	0.057	0.10	0.090	0.024	—

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold (Example)

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

Example

●**10-SS5YJ3-20-03**····· 1 set (Manifold base)

∗ **10-SYJ3123-5G-M3**····· 2 sets (Valve)

∗ **SYJ3000-21-1A**····· 1 set (Blanking plate assembly)

●**10-SS5YJ3-S41-03-C4**····· 1 set (Manifold base)

∗ **10-SYJ3143-5LZ**····· 2 sets (Valve)

∗ **SYJ3000-21-2A**····· 1 set (Blanking plate assembly)

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

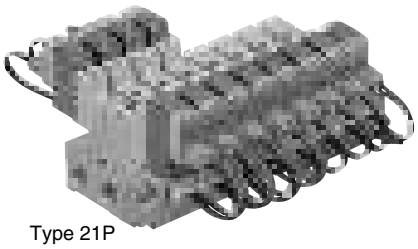
∗ Use manifold specification sheet.

Flat ribbon cable manifold

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

- **Clean appearance**

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



Type 21P

Flat ribbon cable manifold specifications

Model		Type 21P	Type 32P
Manifold		Single base / B mount	
P(SUP) / R(EXH)		Common SUP / Common EXH	
Valve stations		4 to 12 stations	
A, B port piping specifications	Location	Valve	Base
	Direction	Top	Side
Port size	P, R port	1/8	
	A, B port	M3 x 0.5	M5 x 0.8 C4 (One-touch fitting for ø4)
Applicable 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) The withstand voltage specification for the wiring unit section conforms to JIS C0704, Grade 1 or its equivalent.

Flow characteristics

Manifold			Port size		Flow characteristics 1→4/2 (P→A/B)			Flow characteristics 4/2→5/3 (A/B→R)			Effective area (mm²)
			1(P), 5/3(R) port	2(B), 4(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
Body ported for internal pilot	10-SS5YJ3-21P	10-SYJ3□23	1/8	M3 x 0.5	—	—	—	—	—	—	0.9
Base mounted for internal pilot	10-SS5YJ3-32P-M5	10-SYJ3□33	1/8	M5 x 0.8	0.25	0.19	0.060	0.32	0.25	0.077	—
	10-SS5YJ3-32P-C4			C4	0.25	0.18	0.059	0.3	0.27	0.075	—

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifolds

- **10-SS5YJ3-32P-07-C4** ··1 set (Manifold base)
  - ∗ **10-SYJ3133-5LOU** ····3 sets (Valve)
  - ∗ **10-SYJ3233-5LOU** ····3 sets (Valve)

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

- ∗ **SYJ3000-21-4A** ··1set (Blanking plate assembly)
- ∗ **SYJ3000-37-28A** ··3 sets (Connector assembly)
- ∗ **SYJ3000-37-29A** ··3 sets (Connector assembly)

∗ Use manifold specification sheet.

How to Order Valves

Clean series

For DC 10 — SYJ3 [1 / 2 / 3] 3 — [5] LO [U] [ ] — [ ]

For AC 10 — SYJ3 [1 / 2 / 3] 3 — [1] LO [Z] [ ] — [ ]

Rated voltage

5	24 VDC
6	12 VDC

Light/Surge voltage suppressor

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

Note) Z: Positive common specifications only.

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

A, B port size

Symbol	Port size
Nil	Base mounted
M3	M3 x 0.5

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

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

How to Order Connector Assemblies

For 12, 24 VDC

For single solenoid	**SY3000-37-28A**
Double solenoid 3 position type	**SY3000-37-29A**

For 100 VAC

For single solenoid	**SY3000-37-46A**
Double solenoid 3 position type	**SY3000-37-47A**

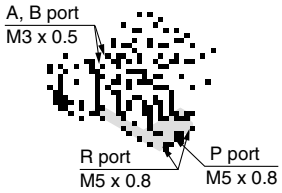
110 VAC (115 VAC)

For single solenoid	**SY3000-37-54A**
Double solenoid 3 position type	**SY3000-37-55A**

Common SUP / Common EXH

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 20 (5 port / Body ported)



How to Order

10–SS5YJ3–20– **05**

- **Clean series**
- **Stations**

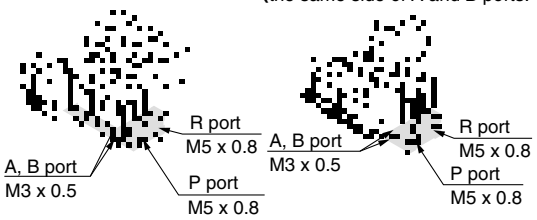
02	2 stations
:	:
20	20 stations

Applicable solenoid valve
10-SYJ3□23-□□□□-M3

Applicable blanking plate assembly
SYJ3000-21-1A

Type 31 (4 port / Base mounted)

Type 31 **Type S31** (Single solenoid coil is located on the same side of A and B ports.)



How to Order

10–SS5YJ3– **□** **31–** **05** **–M3**

- **Clean series**
- **Valve mounting direction**

Nil	Single solenoid coil is located on the opposite side of A and B ports.
S	Single solenoid coil is located on the same side of A and B ports.

- **Manifold stations**

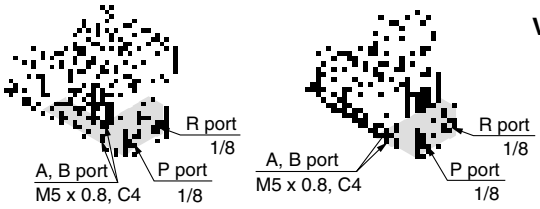
02	2 stations
:	:
20	20 stations

Applicable solenoid valve
10-SYJ3□33-□□□□

Applicable blanking plate assembly
SYJ3000-21-2A

Type 32 (4 port / Base mounted)

Type 32 **Type S32** (Single solenoid coil is located on the same side of A and B ports.)



How to Order

10–SS5YJ3– **□** **32–** **05** **–** **M5** **□**

- **Clean series**
- **Valve mounting direction**

Nil	Single solenoid coil is located on the opposite side of A and B ports.
S	Single solenoid coil is located on the same side of A and B ports.

- **Manifold stations**

02	2 stations
:	:
20	20 stations

- **A, B port size**

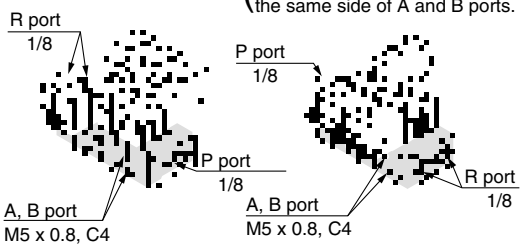
M5	M5 x 0.8
C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

- **P, R port thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

Type 41 (5 port / Base mounted)

Type 41 **Type S41** (Single solenoid coil is located on the same side of A and B ports.)



How to Order

10–SS5YJ3– **□** **41–** **05** **–** **C4** **□**

- **Clean series**
- **Valve mounting direction**

Nil	Single solenoid coil is located on the opposite side of A and B ports.
S	Single solenoid coil is located on the same side of A and B ports.

- **Manifold stations**

02	2 stations
:	:
20	20 stations

- **A, B port size**

M5	M5 x 0.8
C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

- **P, R port thread type**

Nil	Rc
F	G
N	**NPT**
T	**NPTF**

Applicable solenoid valve
10-SYJ3□43-□□□□

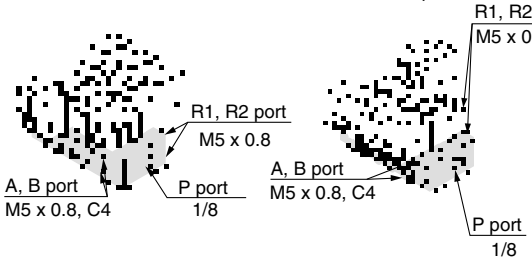
Applicable blanking plate assembly
SYJ3000-21-2 A

Common SUP / Individual EXH

Note) For more than 10 stations, supply air to both sides of P port.

Type 46 (5 port / Base mounted)

Type 46 **Type S46** (Single solenoid coil is located on the same side of A and B ports.)



How to Order

10–SS5YJ3– **□** **46–** **05** **–** **M5** **□**

- **Clean series**
- **Valve mounting direction**

Nil	Single solenoid coil is located on the opposite side of A and B ports.
S	Single solenoid coil is located on the same side of A and B ports.

- **Manifold stations**

02	2 stations
:	:
20	20 stations

- **A, B port size**

M5	M5 x 0.8
C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

- **P port thread type**

Nil	Rc
F	G
N	**NPT**
T	**NPTF**

Applicable solenoid valve
10-SYJ3□43-□□□□

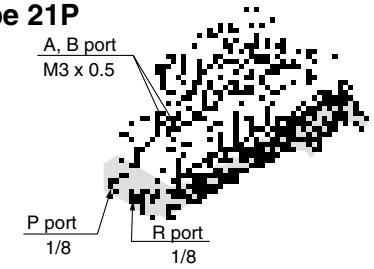
Applicable blanking plate assembly
SYJ3000-21-2A

Flat ribbon cable manifold

Common SUP / Common EXH

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 21P



How to Order

10–SS5YJ3–21P– 07 –

- Clean series
- Manifold stations

04	4 stations
:	:
12	12 stations

- P, R port thread type

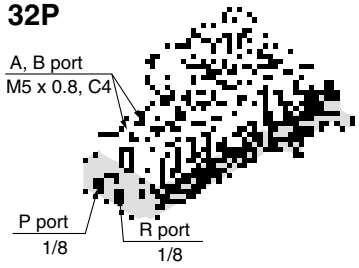
Nil	Rc
00F	G
00N	NPT
00T	NPTF

Applicable solenoid valve
Refer to page 505.

Applicable connector assembly
Refer to page 505.

Applicable blanking plate assembly
SYJ3000-21-3A
(With dust cap)

Type 32P



How to Order

10–SS5YJ3–32P– 07 – C4

- Clean series
- Manifold stations

04	4 stations
:	:
12	12 stations

- A, B port size

M5	M5 x 0.8
C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

- P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Applicable solenoid valve
Refer to page 505.

Applicable connector assembly
Refer to page 505.

Applicable blanking plate assembly
SYJ3000-21-4A
(With dust cap)

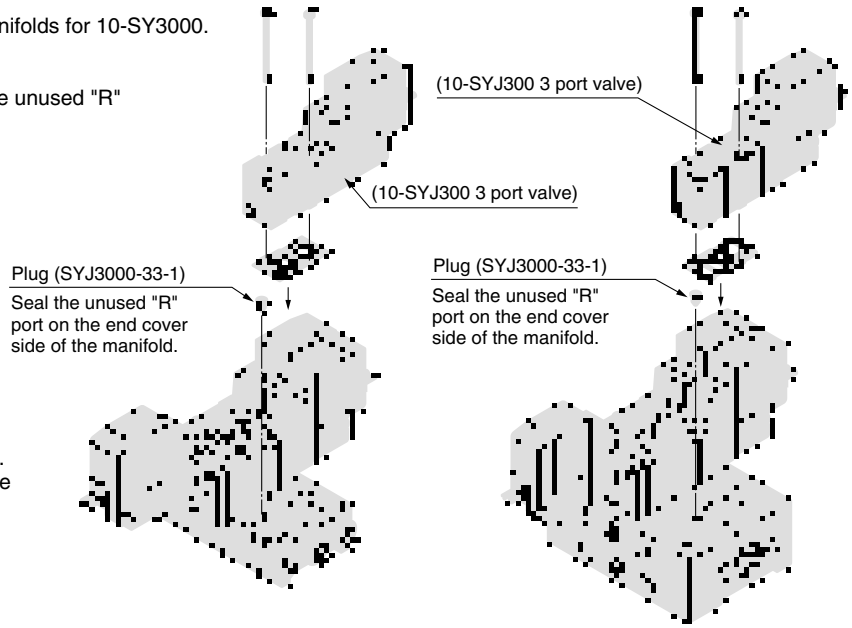
Mixed installation of the 10-SYJ300 and the 10-SY3000 valves on the same manifold

Series 10-SYJ300 valves can be mounted on the manifolds for 10-SY3000.

① **10-SS5YJ3-20, 10-SS5YJ3-21P**
The 3 port valve can be used by simply sealing off the unused "R" port with rubber plug, SYJ3000-33-1.
Applicable solenoid valves: Type 10-SYJ312M
Type 10-SYJ322M

② **10-SS5YJ3-31/-S31, 10-SS5YJ3-32/-S32, 10-SS5YJ3-46/-S46, 10-SS5YJ3-32P**
The 3 port valve can be used without modification.
The A port of the valve will flow out of the B port of the manifold.
Applicable solenoid valve: Type 10-SYJ314M
Type 10-SYJ324M

③ **10-SS5YJ3-41/-S41**
The 3 port valve can be used by simply sealing off the unused "R" port with rubber plug (SYJ3000-33-1).
The A port of the valve will flow out of the B port of the manifold.
Applicable solenoid valve: Type 10-SYJ314M
Type 10-SYJ324M



Type 10-SS5YJ3-20

Type 10-SS5YJ3-41

"B" port becomes "A" port of 3 port valve.

⚠ Caution

Mounting screw tightening torque

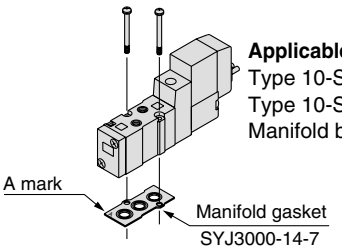
M1.7: 0.12N·m

Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.

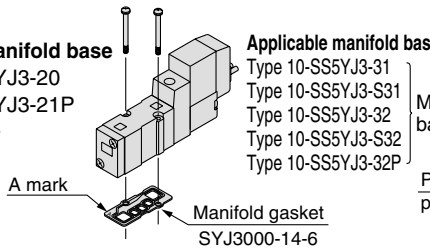
<Manifold option>

Combinations of solenoid valve, manifold gasket and manifold base

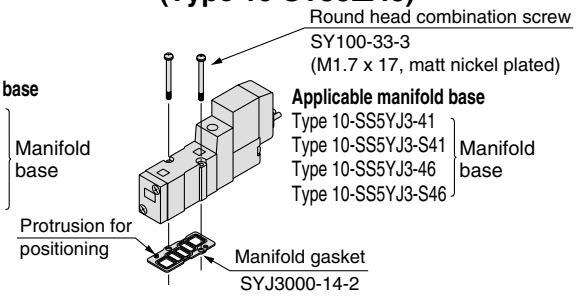
5 port body ported (Type 10-SYJ3□23)



4 port base mounted (Type 10-SYJ3□33)



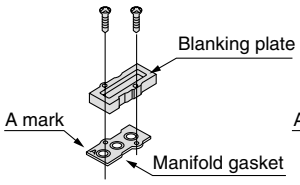
5 port base mounted (Type 10-SYJ3□43)



Note) Please insert the protrusion for positioning of the manifold gasket into the hole of the valve body completely.

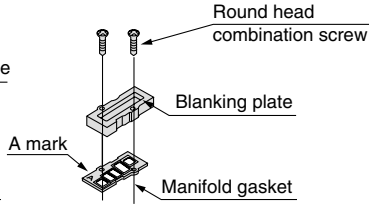
Combination of blanking plate assembly and manifold base

Blanking plate assembly SYJ3000-21-1A



Applicable base
Type SS5YJ3-20 manifold base

Blanking plate assembly SYJ3000-21-2A

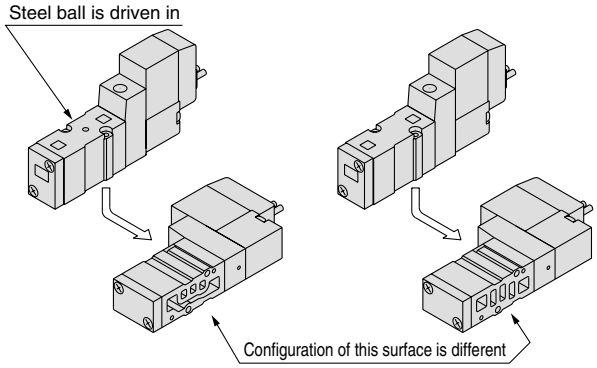


Applicable base sub-plate
Type 10-SS5YJ3-41
Type 10-SS5YJ3-S41
Type 10-SS5YJ3-46
Type 10-SS5YJ3-S46
Type 10-SS5YJ3-31
Type 10-SS5YJ3-S31
Type 10-SS5YJ3-32
Type 10-SS5YJ3-S32
} Manifold base

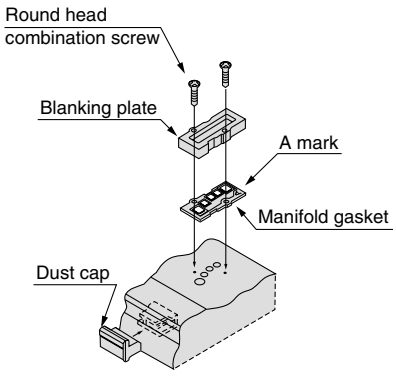
Note) The SYJ3000-14-2 manifold gasket can be used for 10-SS5YJ3-31/-S31 and 10-SS5YJ3-32/-S32 manifold bases.

Difference between types 10-SYJ3□33 and 10-SYJ3□43

Type 10-3□33 (4 port) Type 10-3□43 (5 port)

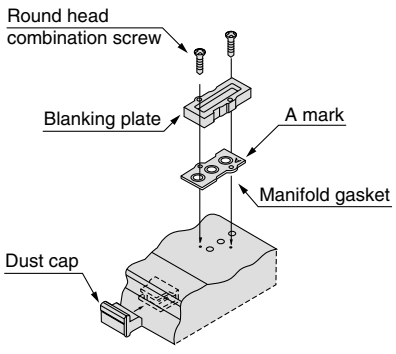


Blanking plate assembly SYJ3000-21-4A



Applicable base
Type **10-SS5YJ3-32P** manifold base

Blanking plate assembly SYJ3000-21-3A



Applicable base
Type **10-SS5YJ3-21P** manifold base

⚠ Caution

Mounting screw tightening torque

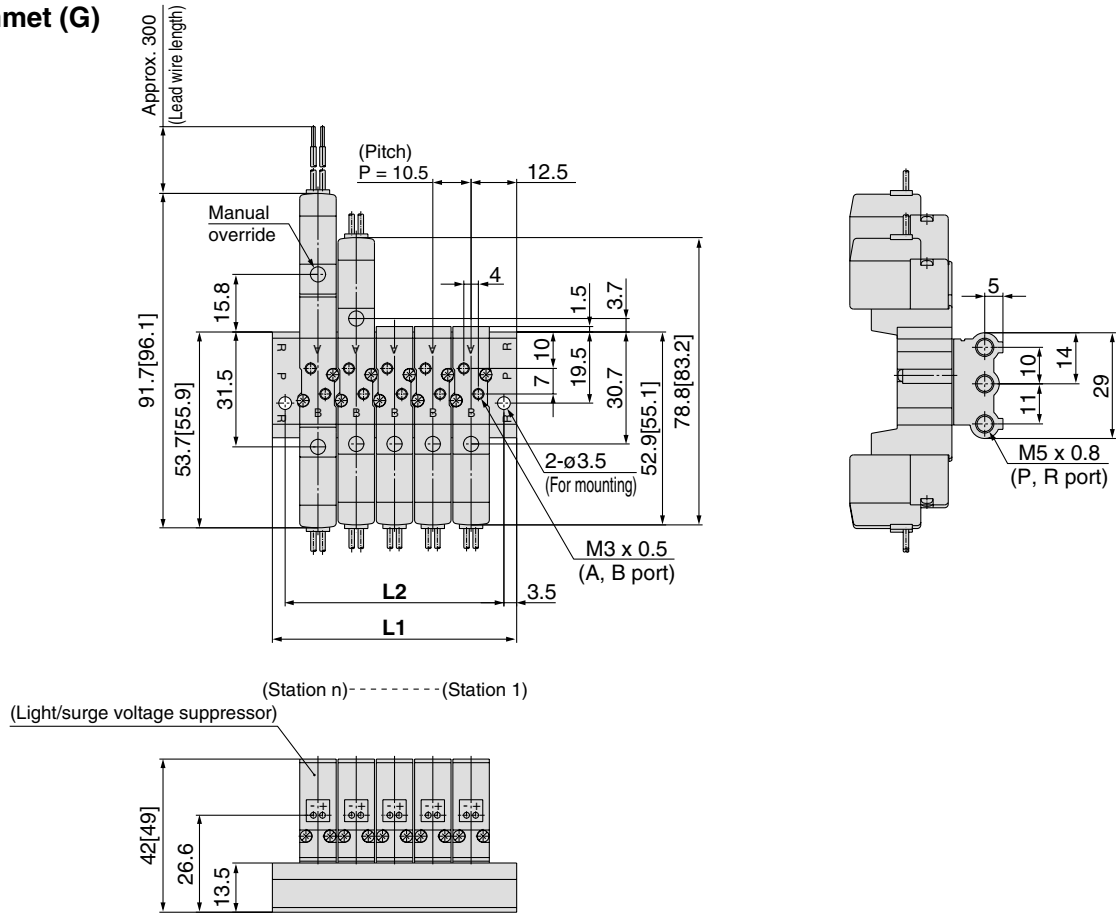
M1.7: 0.12N·m

Use caution to the assembly orientation for solenoid valves, gasket and option parts.

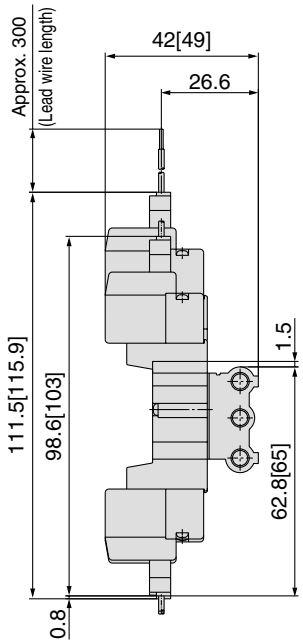
Type 20 manifold: Top ported / 10-SS5YJ3-20-Stations

∗ [ ]: AC

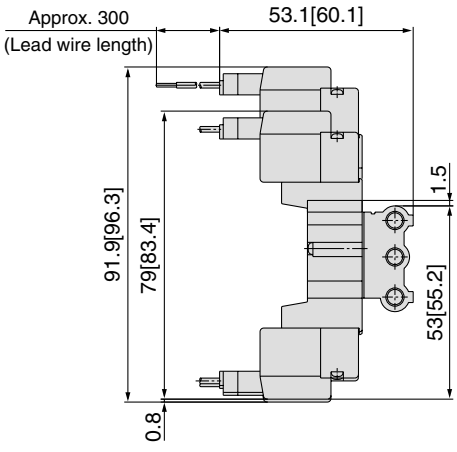
Grommet (G)



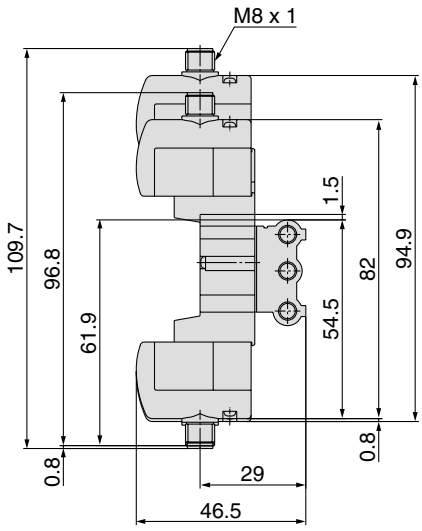
L plug connector (L)



M plug connector (M)



M8 connector (WO)



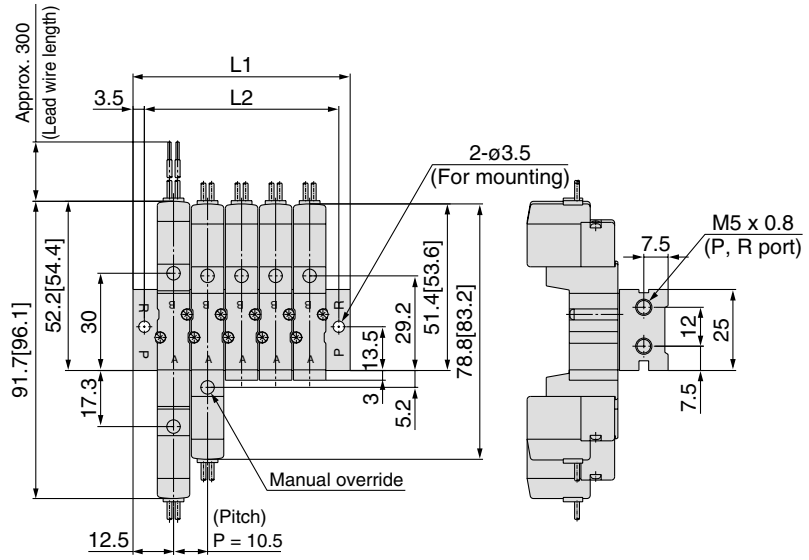
∗ Refer to page 563 for dimensions with connector cable.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5	193	203.5	214	224.5
L2	28.5	39	49.5	60	70.5	81	91.5	102	112.5	123	133.5	144	154.5	165	175.5	186	196.5	207	217.5

Type 31 manifold: Side ported / 10-SS5YJ3-31-Stations-M3

∗ [ ]: AC

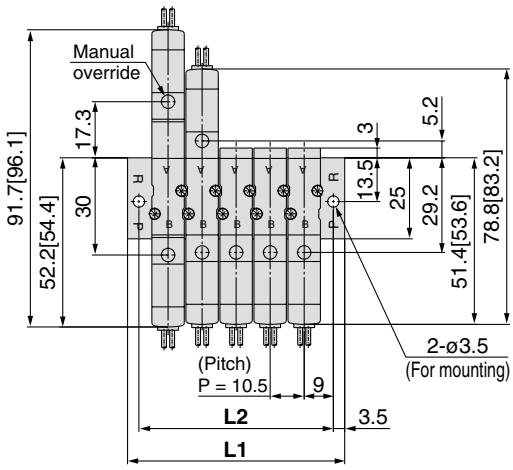
Grommet (G)

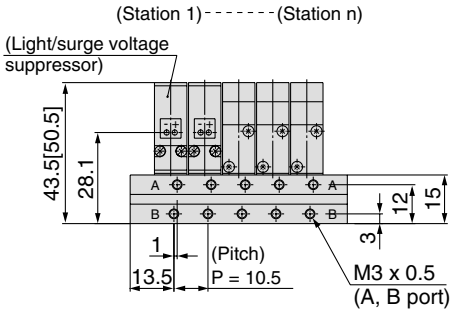


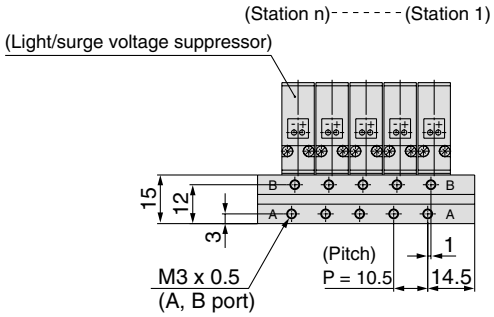
Type S3: Side ported

Pilot valve of single solenoid valve is located on the same side of A and B ports.

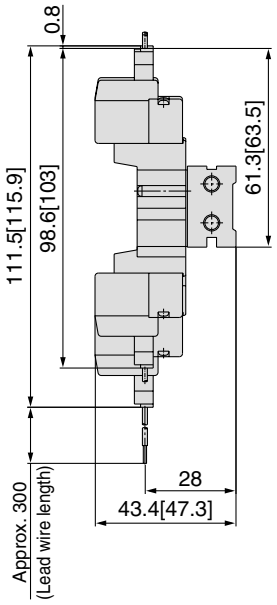
10-SS5YJ3-S31-Stations-M3



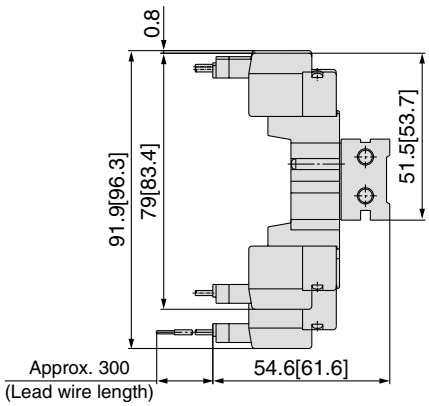




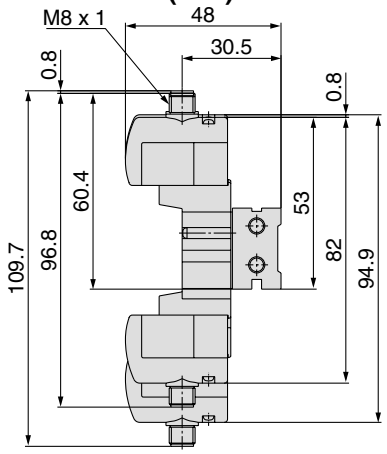
L plug connector (L)



M plug connector (M)



M8 connector (WO)



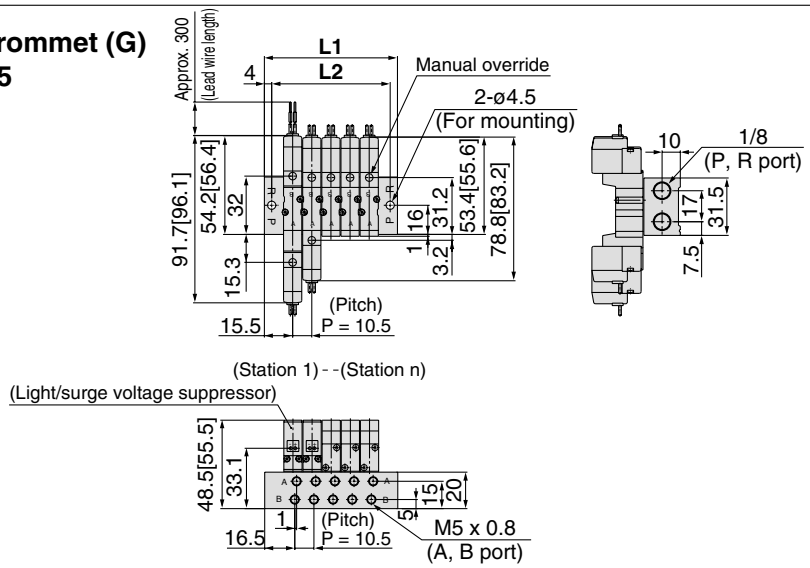
∗ Refer to page 563 for dimensions with connector cable.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5	193	203.5	214	224.5
L2	28.5	39	49.5	60	70.5	81	91.5	102	112.5	123	133.5	144	154.5	165	175.5	186	196.5	207	217.5

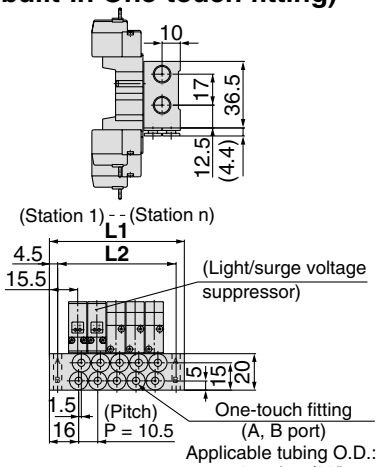
Type 32 manifold: Side ported / 10-SS5YJ3-32-Stations-M5, C4 N3□

∗ [ ]: AC

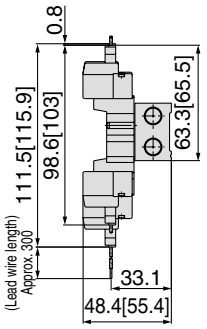
Grommet (G) M5



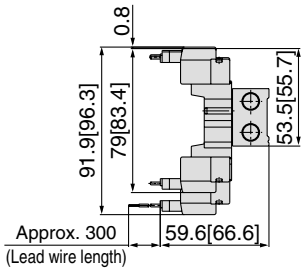
C4 N3□(With built-in One-touch fitting)



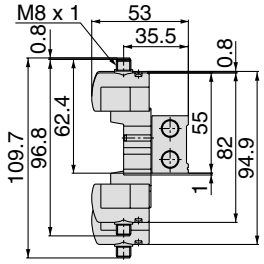
L plug connector (L)



M plug connector (M)



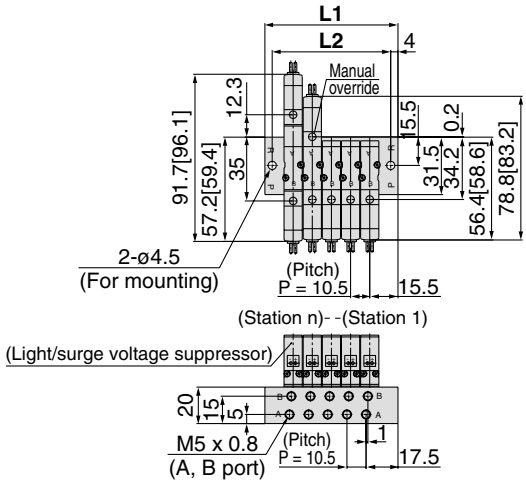
M8 connector (WO)



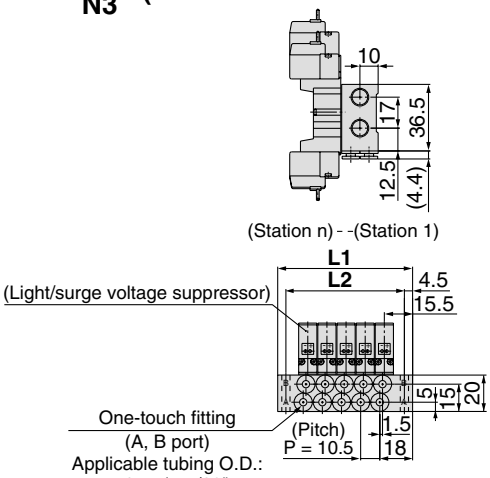
∗ Refer to page 563 for dimensions with connector cable.

Type S32 manifold: Side ported (Pilot valve of single solenoid valve is located on the same side of A and B ports.) /10-SS5YJ3-S32-Stations-M5, C4 N3 □

M5



C4 N3□(With built-in One-touch fitting)



SS5YJ3-32,S32-Stations-M5

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	41.5	52	62.5	73	83.5	94	104.5	115	125.5	136	146.5	157	167.5	178	188.5	199	209.5	220	230.5
L2	33.5	44	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212	222.5

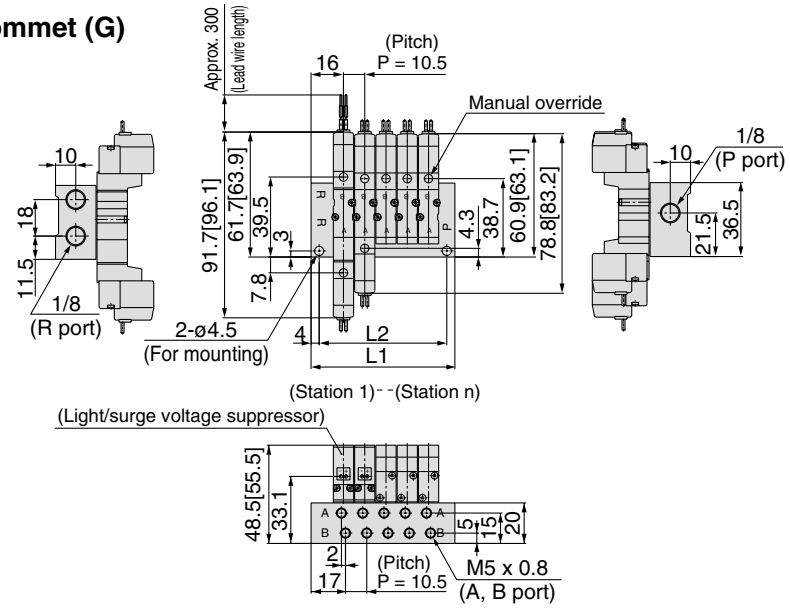
10-SS5YJ3-32,S32-Stations-C4

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	42.5	53	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5	179	189.5	200	210.5	221	231.5
L2	33.5	44	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212	222.5

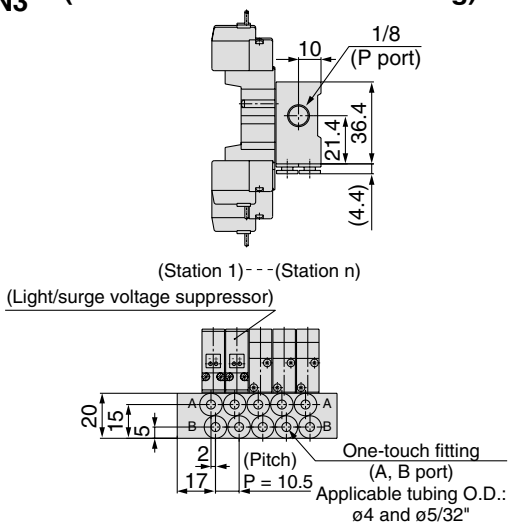
Type 41 manifold: Side ported / 10-SS5YJ3-41-Stations-M5, C4 N3 □

* [ ]: AC

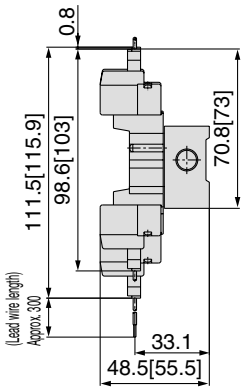
Grommet (G) M5



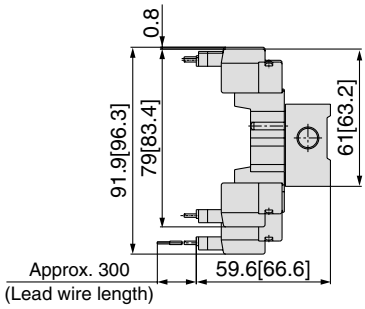
C4 N3 □ (With built-in One-touch fitting)



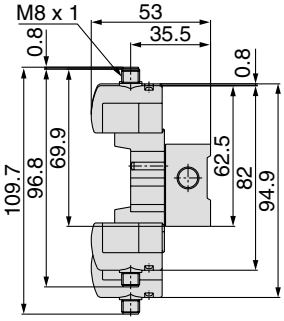
L plug connector (L)



M plug connector (M)



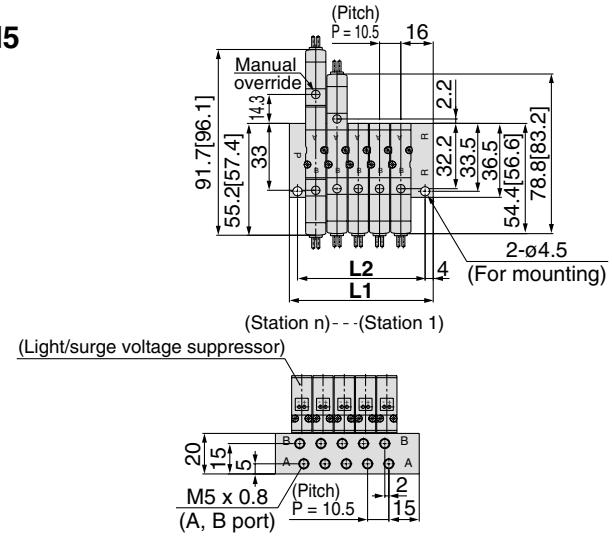
M8 connector (WO)



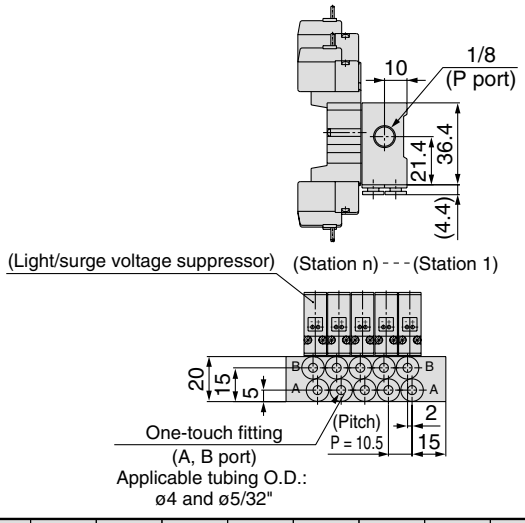
* Refer to page 563 for dimensions with connector cable.

Type S41 manifold: Side ported (Pilot valve of single solenoid valve is located on the same side of A and B ports.) 10-SS5YJ3-S41-Stations-M5, C4 N3 □

M5



C4 N3 □ (With built-in One-touch fitting)

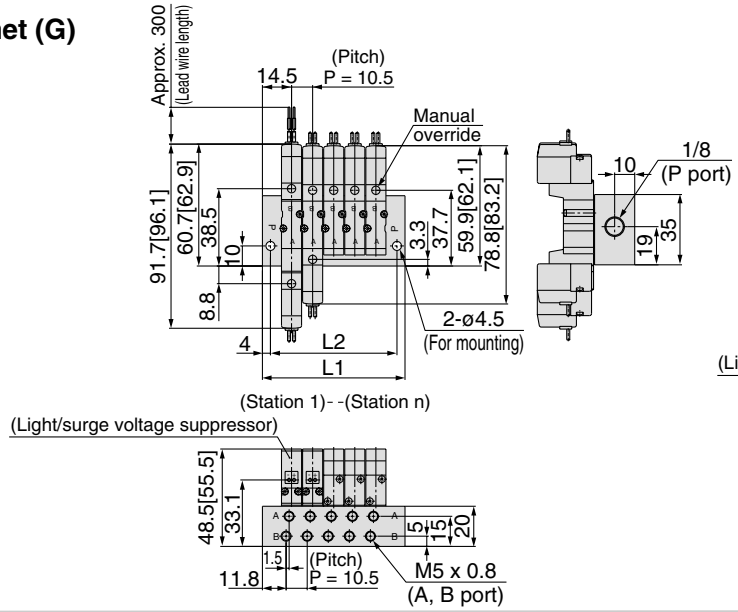


Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	39.5	50	60.5	71	81.5	92	102.5	113	123.5	134	144.5	155	165.5	176	186.5	197	207.5	218	228.5
L2	31.5	42	52.5	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5

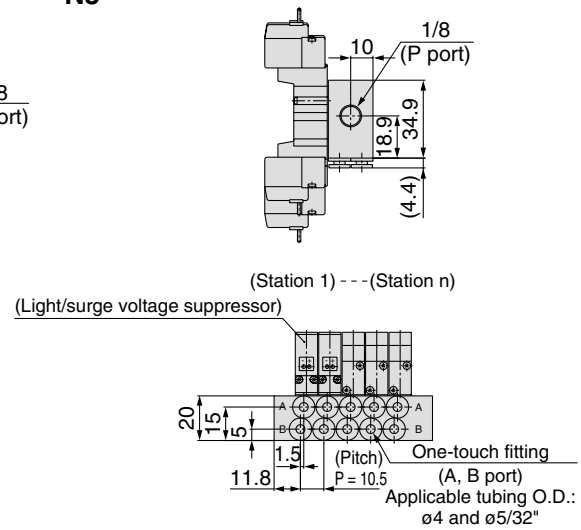
Type 46 manifold: Side ported / 10-SS5YJ3-46-Stations-M5, C4 / N3 □

* [ ]: AC

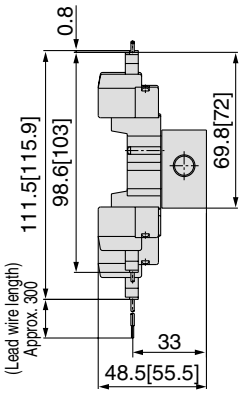
Grommet (G)
M5



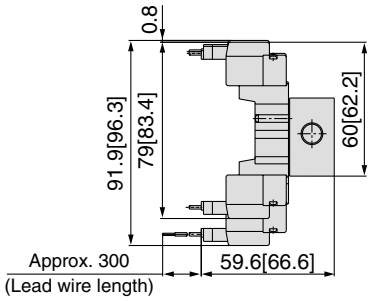
C4 / N3 □ (With built-in One-touch fitting)



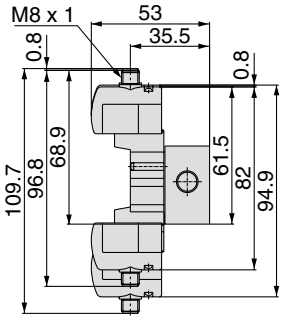
L plug connector (L)



M plug connector (M)



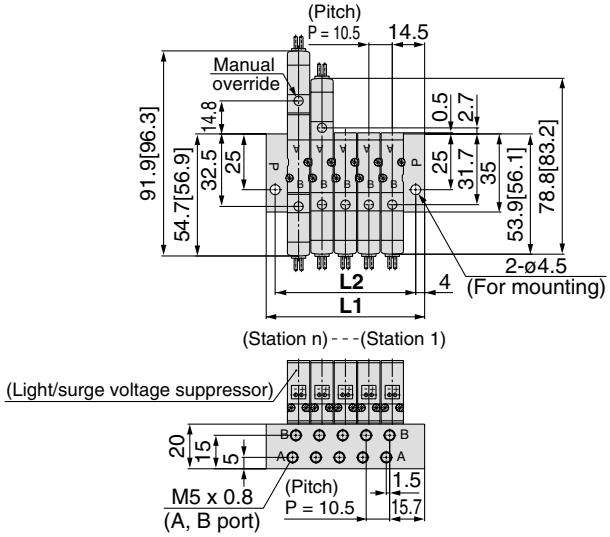
M8 connector (WO)



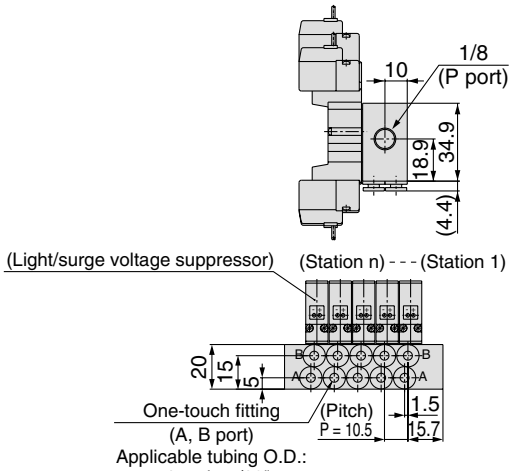
* Refer to page 563 for dimensions with connector cable.

Type S46 manifold: Side ported (Pilot valve of single solenoid valve is located on the same side of A and B ports.)/10-SS5YJ3-S46-Stations-M5, C4 / N3 □

M5



C4 / N3 □ (With built-in One-touch fitting)

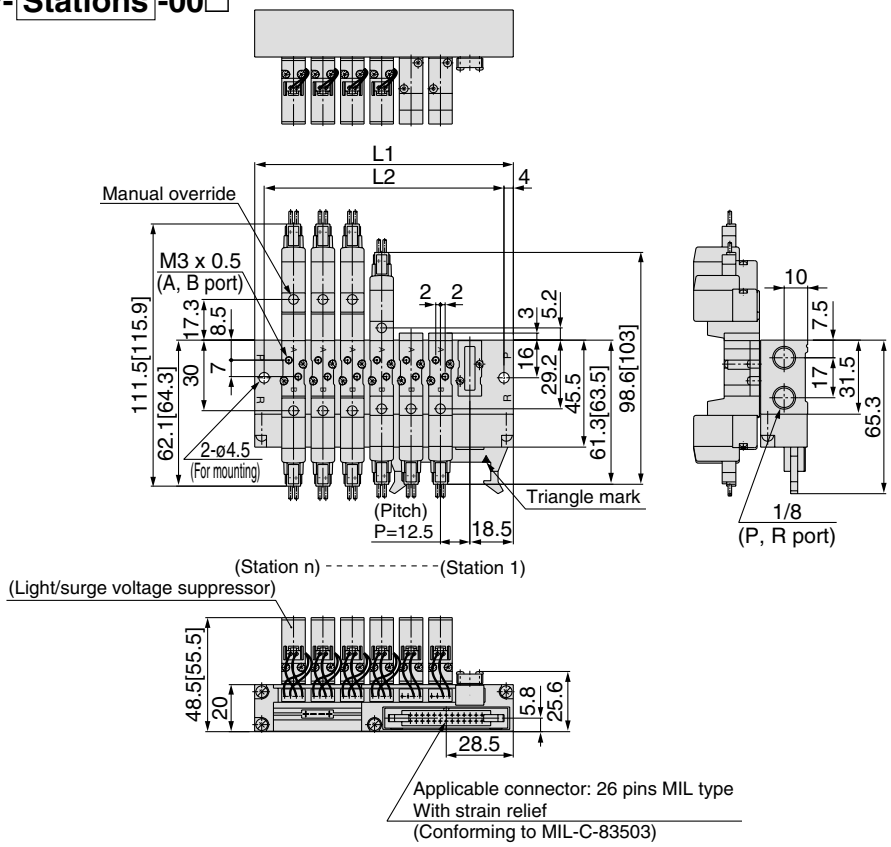


Stations n	2 Stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 Stations
L1	39.5	50	60.5	71	81.5	92	102.5	113	123.5	134	144.5	155	165.5	176	186.5	197	207.5	218	228.5
L2	31.5	42	52.5	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5

Flat ribbon cable manifold

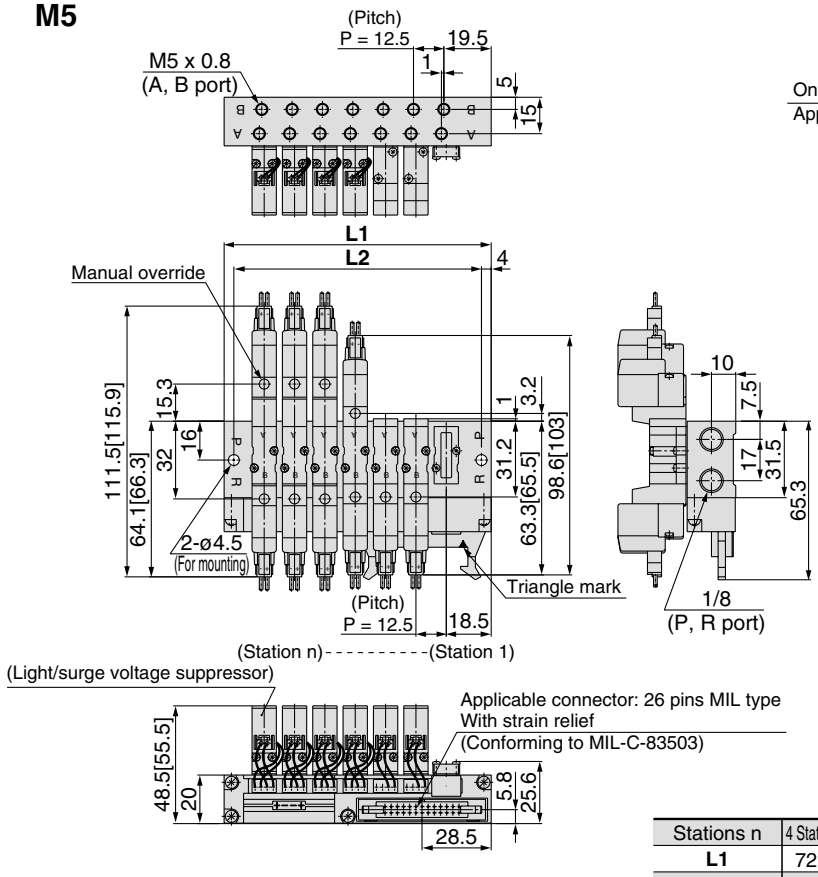
* [ ]: AC

10-SS5YJ3-21P-Stations-00□

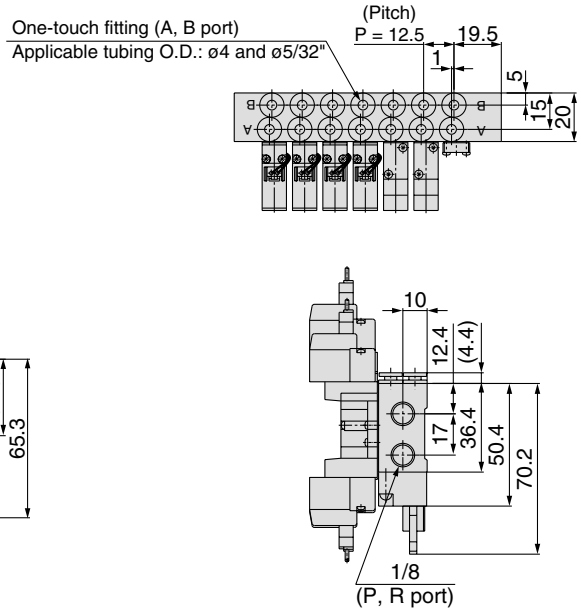


10-SS5YJ3-32P-Stations-M5, C4 N3□

M5



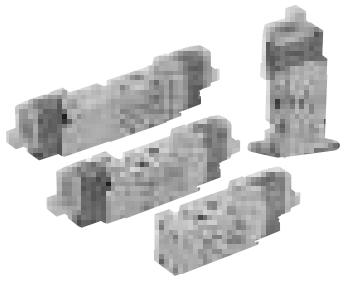
C4 N3□(With built-in One-touch fitting)



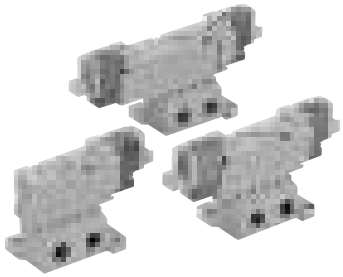
Stations n	4 Stations	5	6	7	8	9	10	11	12 Stations
L1	72.5	85	97.5	110	122.5	135	147.5	160	172.5
L2	64.5	77	89.5	102	114.5	127	139.5	152	164.5

Series 10-SYJ5000

Rubber seal
5 port solenoid valve



Body ported

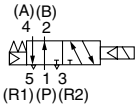


Base mounted

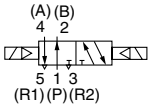
JIS Symbol

Body ported

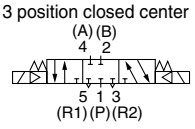
2 position single



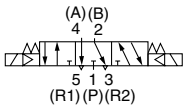
2 position double



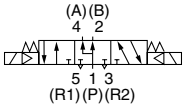
3 position closed center



3 position exhaust center

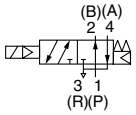


3 position pressure center

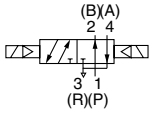


Base mounted (With sub-plate)

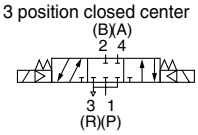
2 position single



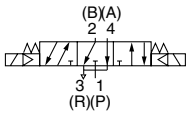
2 position double



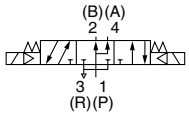
3 position closed center



3 position exhaust center



3 position pressure center



Made to Order Made to order specifications
(Refer to page 557 for details.)

Specifications

Fluid		Air
Operating pressure range MPa	**2 position single**	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Ambient and fluid temperature		-10 to 50°C (with no freezing. Refer to page 714.)
Response time ms Note 1) **(0.5 MPa)**	**2 position single, double**	25 or less
	3 position	40 or less
Max. operating frequency (Hz)	**2 position single, double**	5
	3 position	3
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type
Pilot exhaust method		Common exhaust for the main and pilot valve
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance m/s² Note 2)		150/30
Enclosure		Dustproof (∗ DIN terminal, M8 connector conforms to IP65.)

∗ Based on IEC60529
Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge voltage suppressor)
Note 2) 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. (Value in the initial state)

Vibration resistance: No malfunction occurred in one sweep between 45 and 2000Hz. Test was performed 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. (Value in the initial state)

Solenoid specifications

Electrical entry			Grommet(G), (H) , L plug connector (L), M plug connector (M), DIN terminal (D), M8 connector (W)	
			G, H, L, M, W	D
Rated coil voltage V	**DC**		24, 12, 6, 5, 3	24, 12
	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**	0.78 (With indicator light: 0.81)	0.78 (With indicator light: 0.87)
		110V [115V]	0.86 (With indicator light: 0.89) [0.94 (With indicator light: 0.97)]	0.86 (With indicator light: 0.97) [0.94 (With indicator light: 1.07)]
		200V	1.18 (With indicator light: 1.22)	1.15 (With indicator light: 1.30)
		220V [230V]	1.30 (With indicator light: 1.34) [1.42 (With indicator light: 1.46)]	1.27 (With indicator light: 1.46) [1.39 (With indicator light: 1.60)]
Surge voltage suppressor			Diode (DIN terminal, varistor for non-polar types)	
Indicator light			LED (Neon light for DIN terminal AC)	

∗ In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.
∗ For 115 and 230 VAC, the allowable voltage fluctuation is -15% to +5% of rated voltage.
∗ For the allowable voltage fluctuation for S, Z and T types (with power saving circuit), please observe the following range because they have voltage drop due to internal circuit.

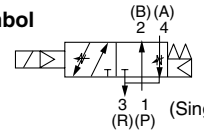
S and Z types 24 VDC: -7% to +10% 12 VDC: -4% to +10%
T type 24 VDC: -8% to +10% 12 VDC: -6% to +10%

Built-in speed controller

10-SYJ5□53

- Built-in exhaust flow controls enable simple cylinder speed adjustments.
- When mounted on the manifold, the common exhaust discharges the pilot and main valve exhaust through a common EXH port to enable simple exhausting.

JIS Symbol

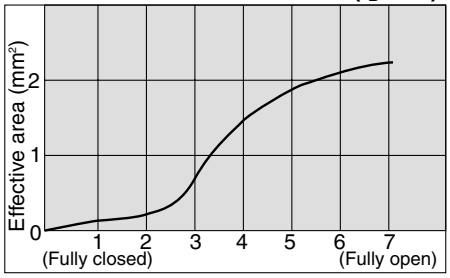


How to order valve with built-in speed controller

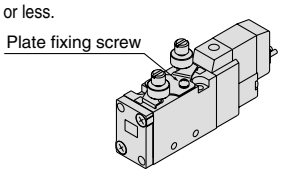
10–SYJ5□53–□□□□–□

- Type of actuation: Clean series
- Rated voltage
- Electrical entry
- Light/Surge voltage suppressor
- Manual override
- Port size

Throttle valve characteristics (A/B →R)



Note) ● When using 10-SYJ5□53 model, the speed controller must be opened more than 1 complete rotation from fully closed in order to function properly.
● Adjust the speed controller with a torque of 0.3 N·m or less.



Note) Do not loosen plate fixing screw.

Flow characteristics / Weight

Valve model		Type of actuation		Port size		Flow characteristics Note 1)						Weight (g) Note 2, 3)			
				1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grommet	L/M plug connector	DIN terminal	M8 connector
						C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv				
Body ported	10-SYJ5□23-□-M5	2 position	Single	M5 x 0.8	M5 x 0.8	0.47	0.41	0.13	0.47	0.41	0.13	46	47	68	51
			Double									64	66	108	74
		3 position	Closed center			0.49	0.44	0.13	0.44	0.40	0.12	75	77	119	85
			Exhaust center			0.46	0.37	0.12	0.47[0.39]	0.43[0.35]	0.13[0.10]				
			Pressure center			0.49[0.39]	0.51[0.38]	0.14[0.10]	0.45	0.42	0.12				
	10-SYJ5□23-□-C4	2 position	Single	M5 x 0.8	C4 (One-touch fitting for ø4)	0.69	0.39	0.18	0.44	0.39	0.12	53	54	75	58
			Double									71	73	115	81
		3 position	Closed center			0.69	0.40	0.19	0.43	0.40	0.12	82	84	126	72
			Exhaust center			0.56	0.40	0.15	0.41[0.41]	0.37[0.37]	0.10[0.11]				
			Pressure center			0.57[0.41]	0.4[0.37]	0.15[0.10]	0.41	0.37	0.10				
	10-SYJ5□23-□-C6	2 position	Single	M5 x 0.8	C6 (One-touch fitting for ø6)	0.70	0.36	0.19	0.47	0.40	0.12	53	54	75	58
			Double									71	73	115	81
		3 position	Closed center			0.72	0.37	0.19	0.44	0.34	0.12	82	84	126	92
			Exhaust center			0.67	0.54	0.19	0.41[0.41]	0.38[0.38]	0.11[0.11]				
			Pressure center			0.82[0.44]	0.41[0.39]	0.23[0.12]	0.41	0.36	0.11				
Base mounted	10-SYJ5□43-□-01	2 position	Single	1/8	1/8	0.79	0.21	0.19	0.83	0.32	0.21	80 (49)	81 (47)	102 (68)	51
			Double									98 (64)	100 (66)	142 (108)	74
		3 position	Closed center			0.80	0.28	0.18	0.86	0.34	0.20	109 (75)	111 (77)	153 (119)	85
			Exhaust center			0.71	0.26	0.18	1.1[0.60]	0.24[0.44]	0.26[0.18]				
			Pressure center			0.99[0.47]	0.29[0.38]	0.24[0.12]	0.72	0.38	0.18				

Note 1) [ ] denotes normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2

Note 2) ( ): Without sub-plate

Note 3) For DC voltages. For AC voltages add 3g to the weight of the single solenoid and 6g to the weight of the double solenoid and 3 position types.

How to Order

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Light/Surge voltage suppressor
Electrical entry for G, H, L, M, W

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

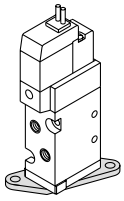
Electrical entry for D

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.

Bracket

Nil: Without bracket
F: With bracket



Note) The mounting bracket is supplied unattached.

Rated voltage

DC specifications

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

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

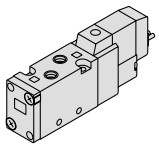
AC specifications (50/60Hz)

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

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

A, B port size

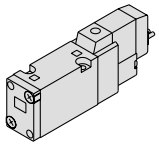
M5	M5 x 0.8
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
N3	One-touch fitting for ø5/32"
N7	One-touch fitting for ø1/4"



(For manifold type 20)

Body ported 10—SYJ5 1 23 □ — 5 L □ □ — M5 — □

Base mounted 10—SYJ5 2 43 □ — 5 L □ □ — □ □



(Sub-plate, 40, 41, 42, 43 manifold)

Clean series

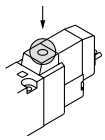
Coil specifications

Nil	Standard
T	With power saving circuit <For 24 and 12 VDC only>

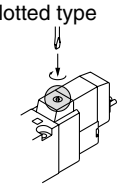
∗ Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Manual override

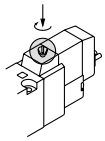
Nil: Non-locking push type



D: Push-turn locking slotted type



E: Push-turn locking lever type

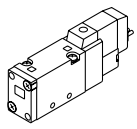


Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

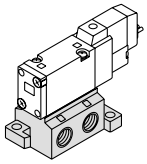
Port size

Nil: Without sub-plate

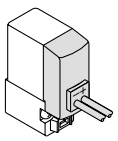
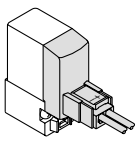
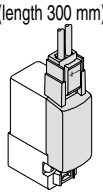
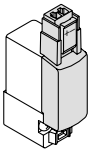
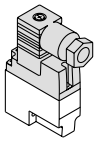
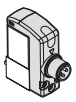
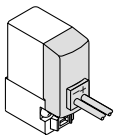
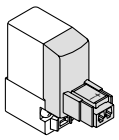
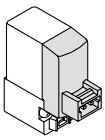
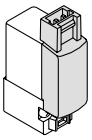
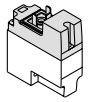
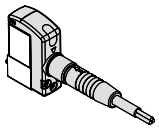


(With gasket and screws)

01: 1/8 with sub-plate



Electrical entry

24, 12, 6, 5, 3 VDC / 100, 110, 200, 220 VAC				24, 12 VDC, 100, 110, 200, 220 VAC	24, 12 VDC, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector		DIN terminal	M8 connector
G: Lead wire length 300 mm	**L:** With lead wire (length 300 mm)	**M:** With lead wire (length 300 mm)	**MN:** Without lead wire	**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	**W□:** With connector cable Note 1)
					

Note 1) Be sure to enter a symbol of the cable length with reference to page 562.

∗ "LN", "MN" types: with 2 sockets.
∗ DIN terminal type "Y" conforming to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 557.
∗ For connector cable of M8 connector, refer to page 562.

How to Order Pilot Valve Assembly

10—V111□—5G□

Clean series

Coil specifications

Nil	Standard
T	With power saving circuit <24 and 12 VDC only>

∗ Power saving circuit is not available in the case of "W□" type.

Rated voltage

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

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

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

∗ For connector cable of M8 connector, refer to page 562.

Note 1) Be sure to enter a symbol of the cable length with reference to page 562.

10—V115—5D□

Clean series

Rated voltage

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

∗ DC specifications of type "D" and "DO" is only available with 12 and 24 V DC.
∗ Power saving circuit is not available in the case of "D" or "DO" type.

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		Without connector

Note) Do not replace 10-V111 (G, H, L, M, W) to 10-V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

How to Order Connector Assembly for L/M Plug Connector

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	300mm
6	600mm
10	1000mm
15	1500mm
20	2000mm
25	2500mm
30	3000mm
50	5000mm

How to Order M8 Connector Cable

V100-49-1-□

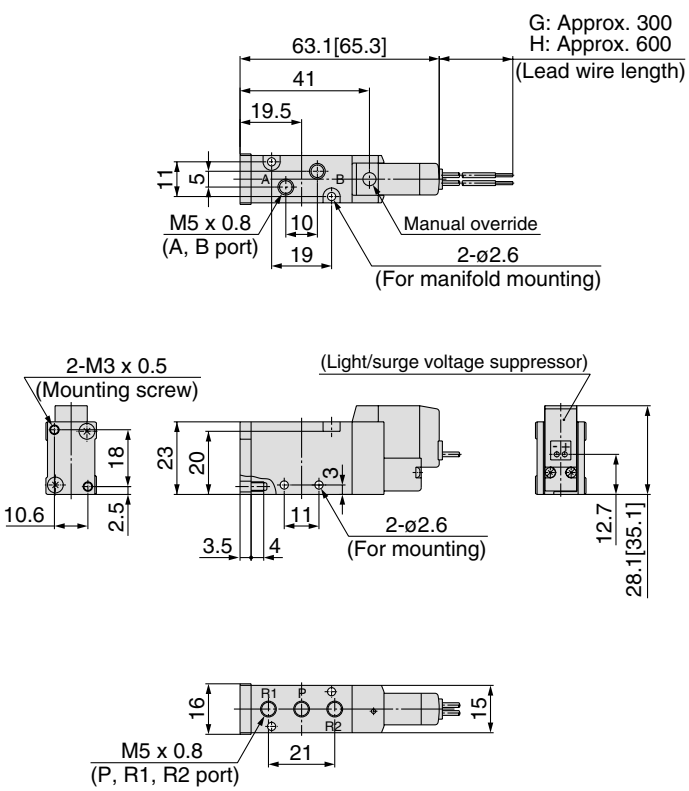
Cable length

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

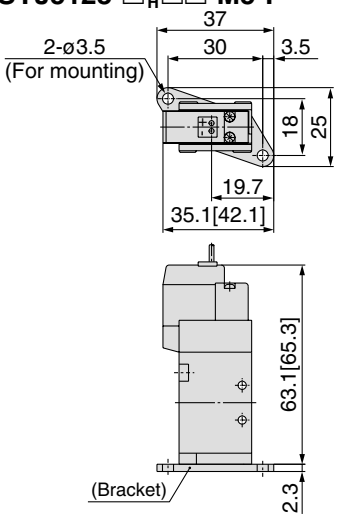
2 position single

∗ [ ]: AC

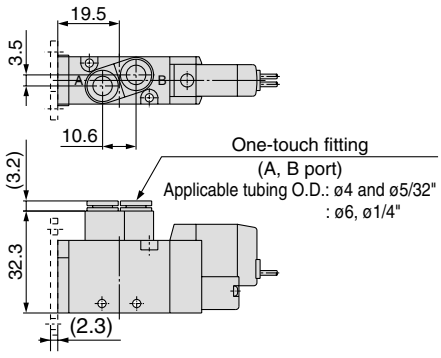
Grommet (G), (H):10- SYJ5123-□$^{G}_{H}$□□-M5



With bracket
10-SYJ5123-□$^{G}_{H}$□□-M5-F



Built-in One-touch Fitting:
10-SYJ5123-□$^{G}_{H}$□□-$^{C4,N3}_{C6,N7}$(-F)

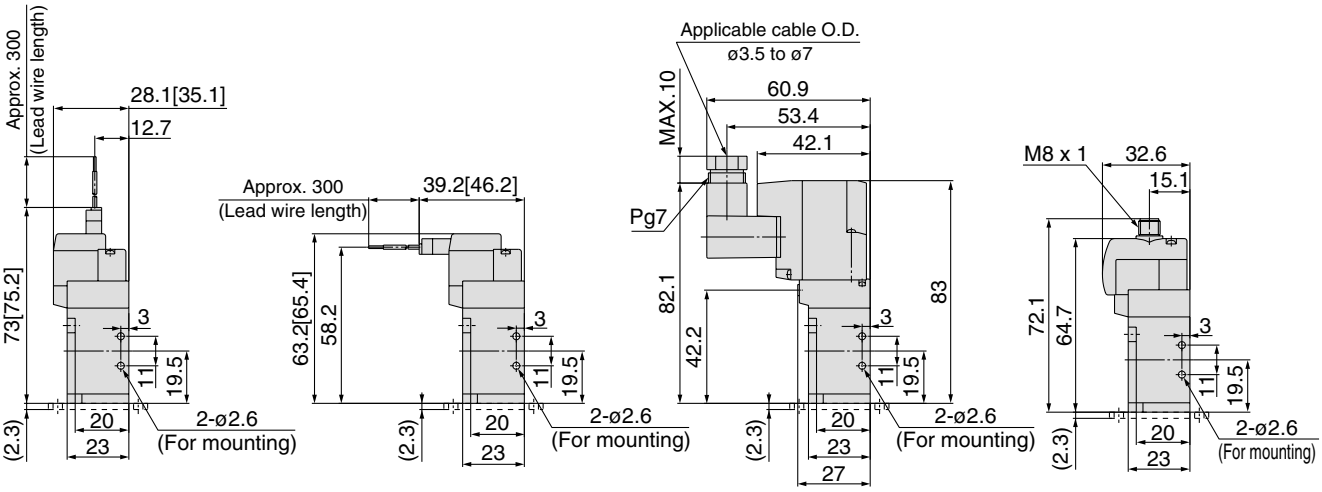


L plug connector (L): 10-SYJ5123-□L□□-M5(-F)

M plug connector (M): 10-SYJ5123-□M□□-M5(-F)

DIN Terminal (D): 10-SYJ5123-□D□□-M5(-F)

M8 connector (WO): 10-SYJ5123-□WO□□-M5(-F)

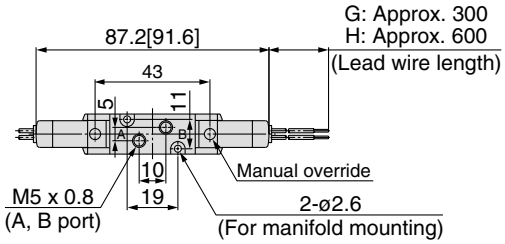


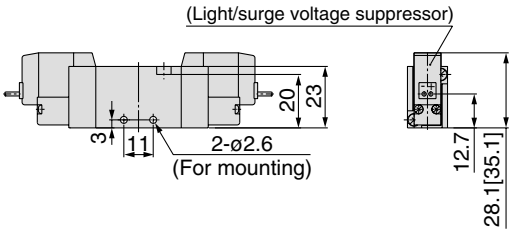
∗ Refer to page 563 for dimensions with connector cable.

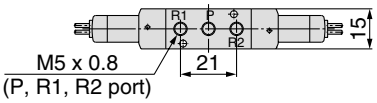
2 position double

∗ [ ]: AC

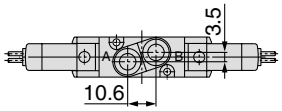
Grommet (G), (H): 10-SYJ5223-□$^{G}_{H}$□□-M5

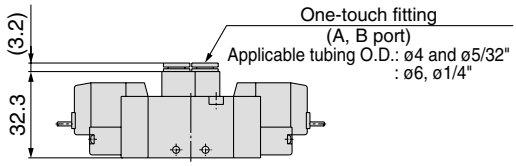




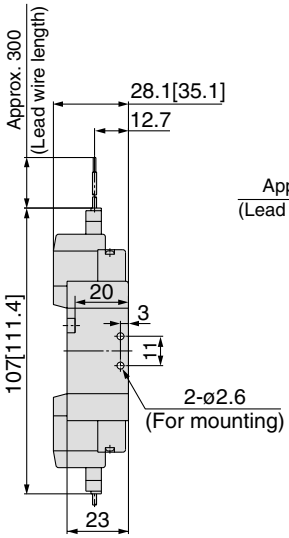


Built-in One-touch fitting
10-SYJ5223-□$^{G}_{H}$□□-$^{C4,N3}_{C6,N7}$

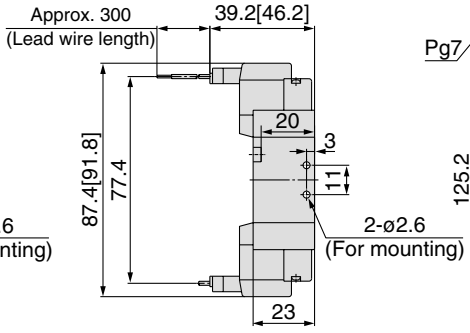




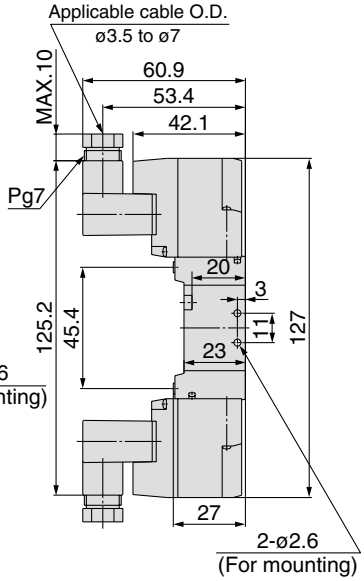
L plug connector (L): 10-SYJ5223-□L□□-M5



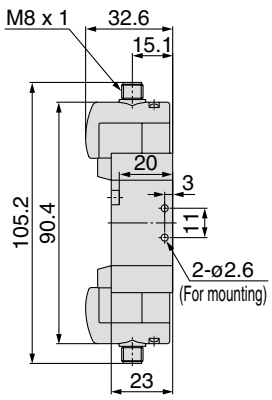
M plug connector (M): 10-SYJ5223-□M□□-M5



DIN Terminal (D): 10-SYJ5223-□D□□-M5



M8 connector (WO): 10-SYJ5223-□WO□□-M5

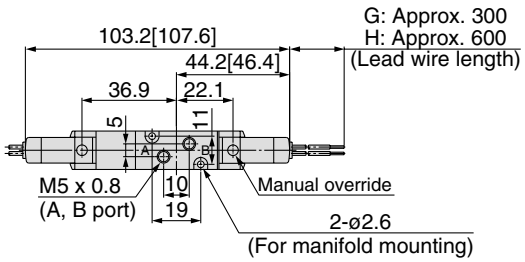


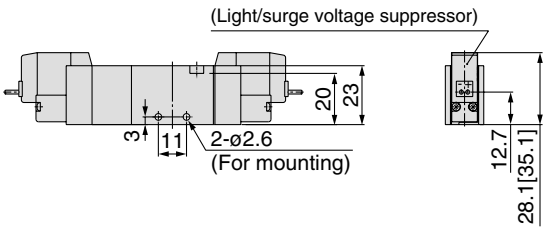
∗ Refer to page 563 for dimensions with connector cable.

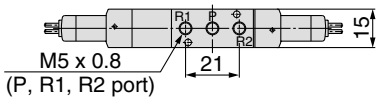
3 position closed center / exhaust center / pressure center

∗ [ ]: AC

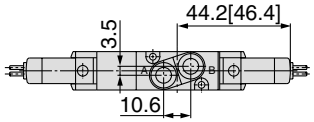
Grommet (G), (H): 10-SYJ5$^{3}_{4}_{5}$23-□$^{G}_{H}$□□-M5

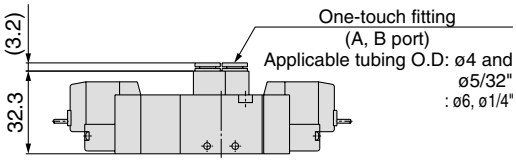




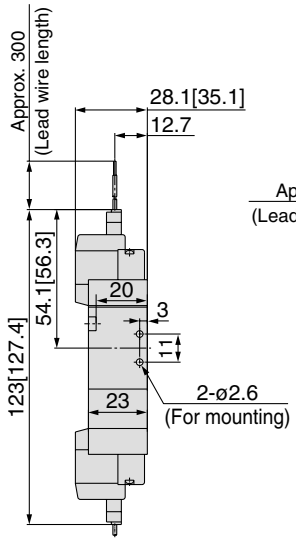


Built-in One-touch fitting: 10-SYJ5$^{3}_{4}_{5}$23-□$^{G}_{H}$□□-$^{C4,N3}_{C6,N7}$

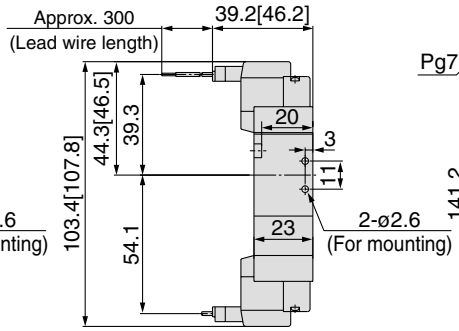




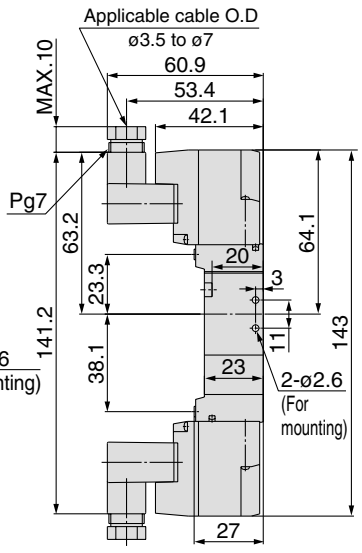
L plug connector (L): 10-SYJ5$^{3}_{4}_{5}$23-□L□□-M5



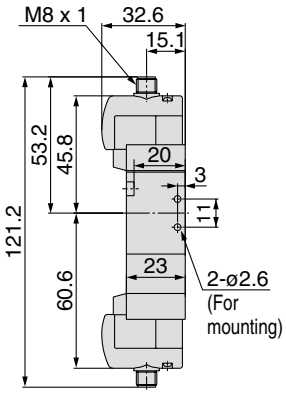
M plug connector (M): 10-SYJ5$^{3}_{4}_{5}$23-□M□□-M5



DIN Terminal (D): 10-SYJ5$^{3}_{4}_{5}$23-□D□□-M5



M8 connector (WO): 10-SYJ5$^{3}_{4}_{5}$23-□WO□□-M5

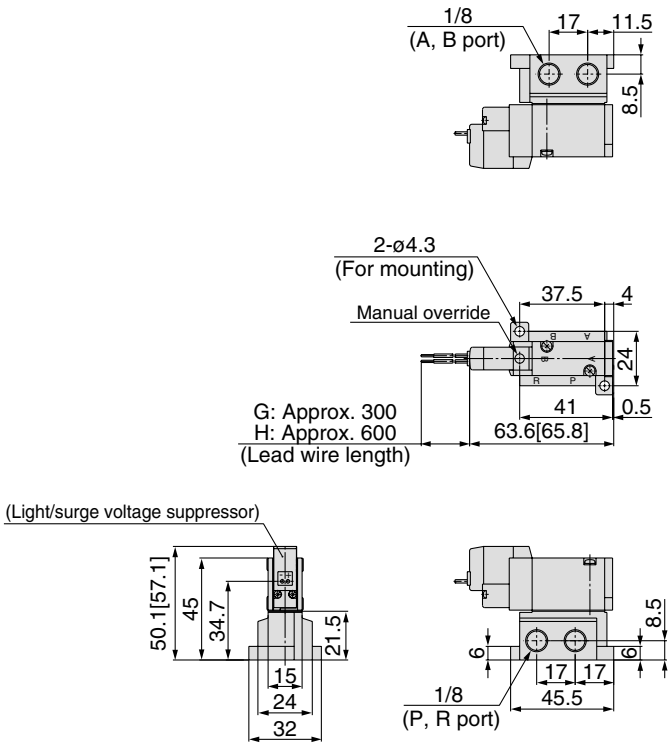


∗ Refer to page 563 for dimensions with connector cable.

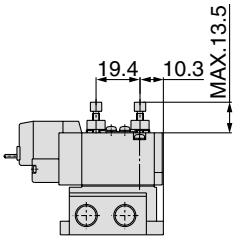
2 position single

∗ [ ]: AC

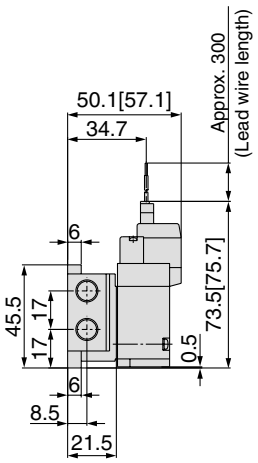
Grommet (G), (H): 10-SYJ5143-□$^{G}_{H}$□□-01□



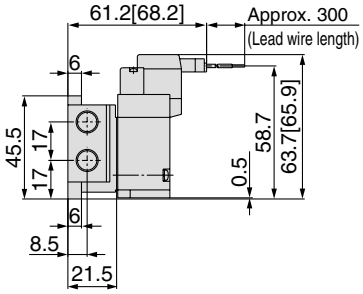
Built-in speed controller: 10-SYJ5153-□$^{G}_{H}$□□-01□



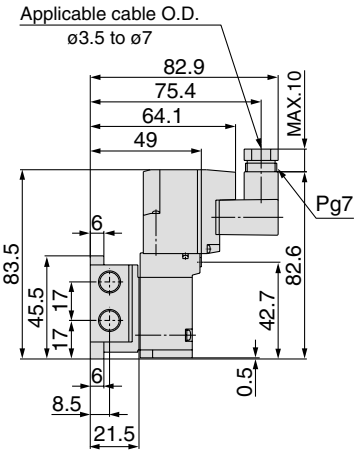
L plug connector (L): 10-SYJ5143-□L□□-01□



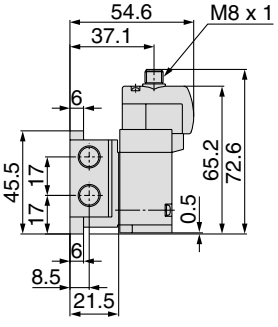
M plug connector (M): 10-SYJ5143-□M□□-01□



DIN Terminal (D): 10-SYJ5143-□D□□-01□



M8 connector (WO): 10-SYJ5143-□WO□□-01□

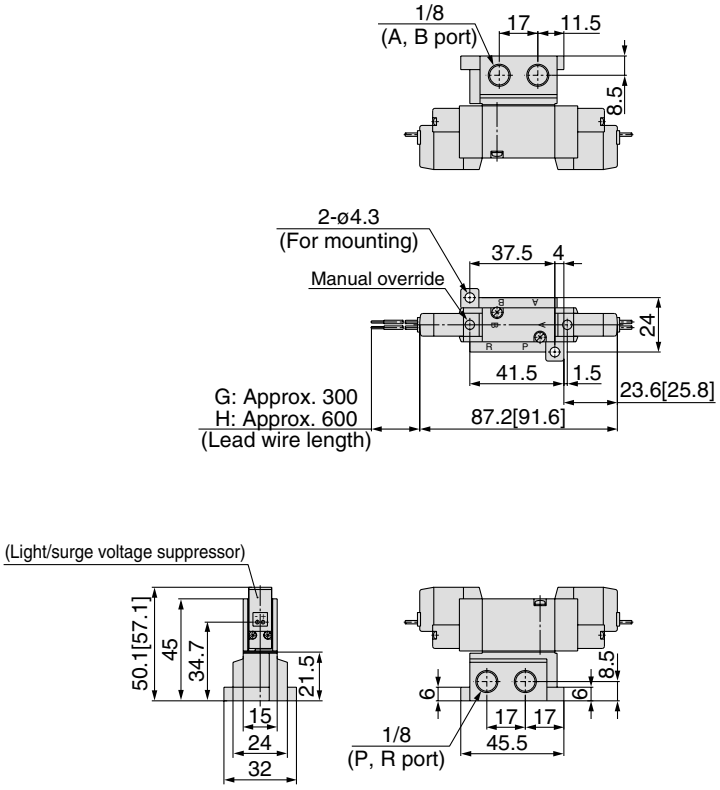


∗ Refer to page 563 for dimensions with connector cable.

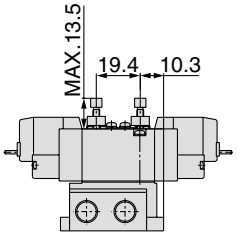
2 position double

∗ [ ]: AC

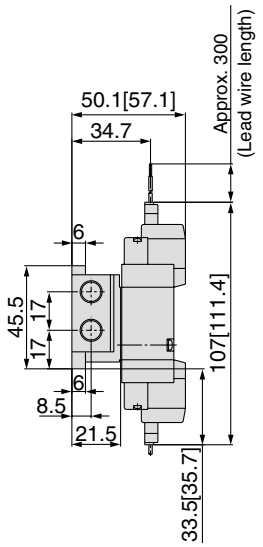
Grommet (G), (H): 10-SYJ5243-□$^{G}_{H}$□□-01□



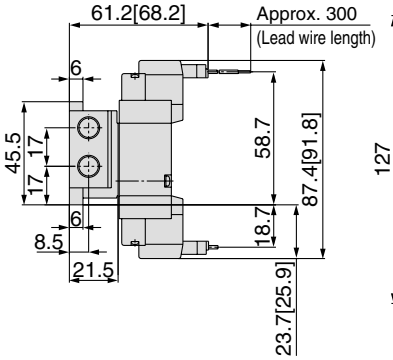
Built-in speed controller: 10-SYJ5253-□$^{G}_{H}$□□-01□



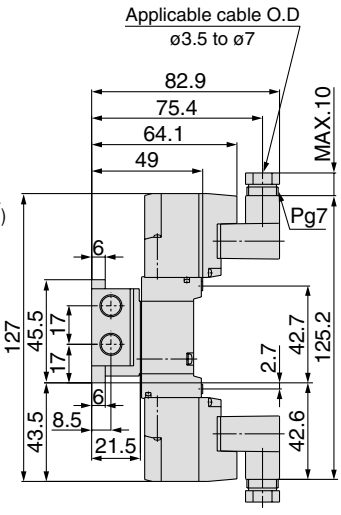
L plug connector (L): 10-SYJ5243-□L□□-01□



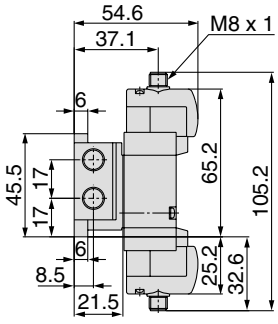
M plug connector (M): 10-SYJ5243-□M□□-01□



DIN Terminal (D): 10-SYJ5243-□D□□-01□



M8 connector (WO): 10-SYJ5243-□WO□□-01□

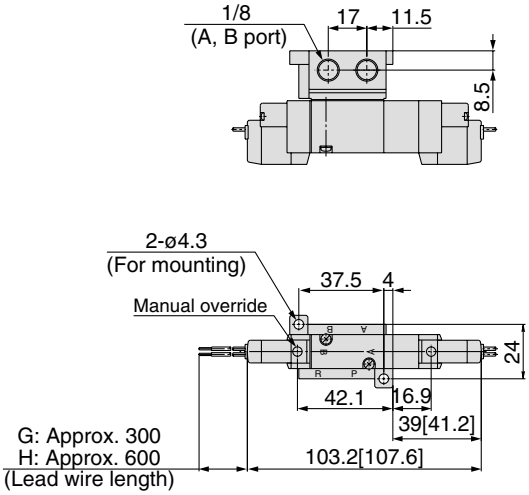


∗ Refer to page 563 for dimensions with connector cable.

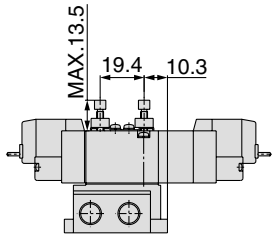
3 position closed center / Exhaust center / Pressure center

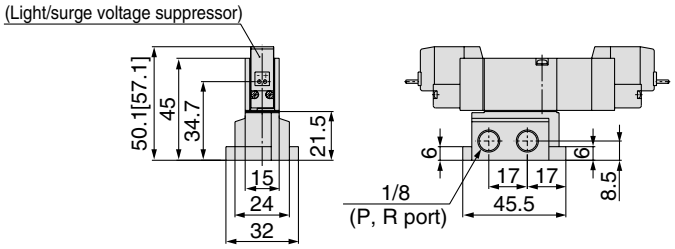
∗ [ ]: AC

Grommet (G), (H): 10-SYJ5$^{3}_{4}_{5}$43-□$^{G}_{H}$□□-01□

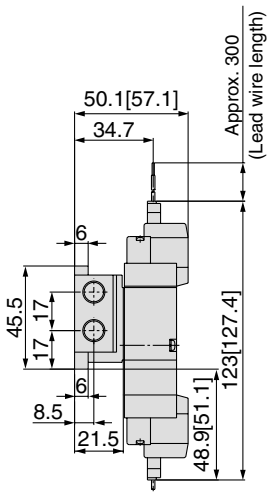


Built-in speed controller: 10-SYJ5$^{3}_{4}_{5}$53-□$^{G}_{H}$□□-01□

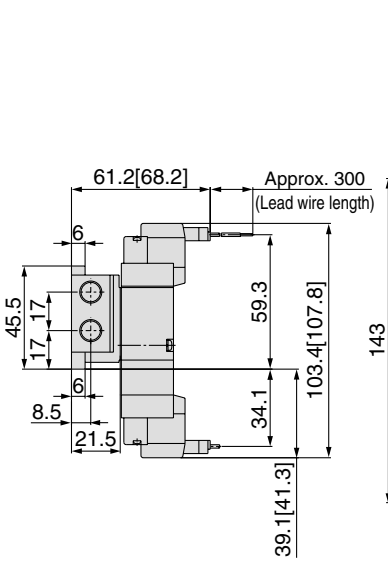




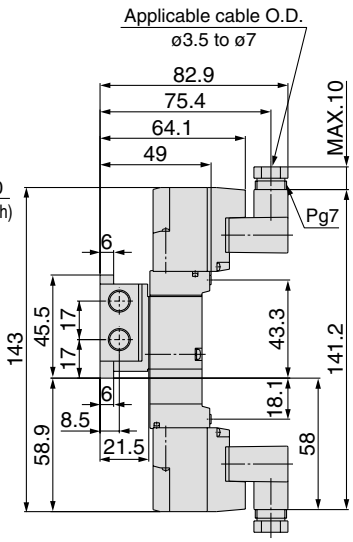
L plug connector (L): 10-SYJ5$^{3}_{4}_{5}$43-□L□□-01□



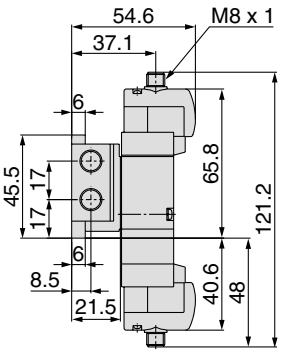
M plug connector (M): 10-SYJ5$^{3}_{4}_{5}$43-□M□□-01□



DIN Terminal (D): 10-SYJ5$^{3}_{4}_{5}$43-□D□□-01□



M8 connector (WO): 10-SYJ5$^{3}_{4}_{5}$43-□WO□□-01□



∗ Refer to page 563 for dimensions with connector cable.

Manifold standard



Manifold specifications

Model		Type 20	Type 40	Type 41	Type 42	Type 43
Manifold type		Single base / B mount				
P (SUP) / R (EXH)		Common SUP / Common EXH				
Valve stations		2 to 20 stations				
A, B port piping specifications	Location	Valve	Base	Base		
	Direction	Top	Bottom	Side		
Port size	P, R port	1/8			1/4	1/8
	A, B port	M5 x 0.8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	M5 x 0.8		1/8, C6 (One-touch fitting for ø6)	C4 (One-touch fitting for ø4)

Flow characteristics

Manifold model			Port size		Flow characteristics					
					1→4/2 (P→A/B)			4/2→5/3(A/B→R)		
			1(P), 5/3(R) port	2(B), 4(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported for internal pilot	10- SS5YJ5-20	10-SYJ5□23	1/8	M5 x 0.8	0.46	0.39	0.12	0.75	0.32	0.19
			1/8	C4	0.62	0.33	0.16	0.83	0.27	0.20
			1/8	C6	0.79	0.36	0.21	0.91	0.36	0.24
Base mounted for internal pilot	10-SS5YJ5-40	10-SYJ5□43	1/8	M5 x 0.8	0.55	0.35	0.15	0.64	0.26	0.16
	10-SS5YJ5-41		1/8	M5 x 0.8	0.59	0.35	0.16	0.68	0.23	0.17
	10-SS5YJ5-42-01		1/4	1/8	0.74	0.22	0.18	0.82	0.31	0.21
	10-SS5YJ5-42-C6		1/4	C6	0.71	0.24	0.17	0.8	0.29	0.20
	10-SS5YJ5-43		1/8	C4	0.55	0.29	0.14	0.74	0.32	0.19

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold (Example)

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model number.

Example
10-SS5YJ5-20-03 ····· 1 set (Manifold base)
∗ **10-SYJ5123-5G-M5** ····· 2 sets (Valve)
∗ **SYJ5000-21-4A** ····· 1 set (Blanking plate assembly)

10-SS5YJ5-43-03-C4 ····· 1 set (Manifold base)
∗ **10-SYJ5143-5LZ** ····· 1 set (Valve)
∗ **10-SYJ5243-5LZ** ····· 1 set (Valve)
∗ **SYJ5000-21-4A** ····· 1 set (Blanking plate assembly)

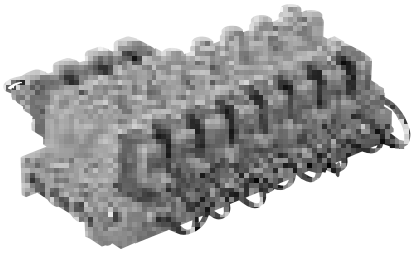
The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

∗ Use manifold specification sheet.

Flat ribbon cable manifold

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

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



Flat ribbon cable manifold specifications

Model		Type 20P	Type 41P	Type 43P
Manifold type		Single base / B mount		
P(SUP) / R(EXH)		Common SUP / Common EXH		
Valve stations		3 to 12 stations		
A, B port piping specifications	Location	Valve	Base	
	Direction	Top	Side	
Port size	P, R port	1/8	1/8	
	A, B port	M5 x 0.8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	M5 x 0.8	C4 (One-touch fitting for ø4)
Applicable 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) The withstand voltage specification for the wiring section conforms to JIS C0704, Grade 1 or its equivalent.

Flow characteristics

Manifold			Port size		Flow characteristics					
					1→4/2 (P→A/B)			4/2→5/3 (A/B→R)		
			1(P), 5/3(R) port	2(B), 4(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported for internal pilot	**10-SS5YJ5-20P**	**10-SYJ5□23**	1/8	M5 x 0.8	0.46	0.39	0.12	0.75	0.32	0.19
			1/8	C4	0.62	0.33	0.16	0.83	0.27	0.20
			1/8	C6	0.79	0.36	0.21	0.91	0.36	0.24
Base mounted for internal pilot	**10-SS5YJ5-41P**	**10-SYJ5□43**	1/8	M5 x 0.8	0.59	0.35	0.16	0.68	0.23	0.17
	10-SS5YJ5-43P		1/8	C4	0.55	0.29	0.14	0.74	0.32	0.19

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifolds (Example)

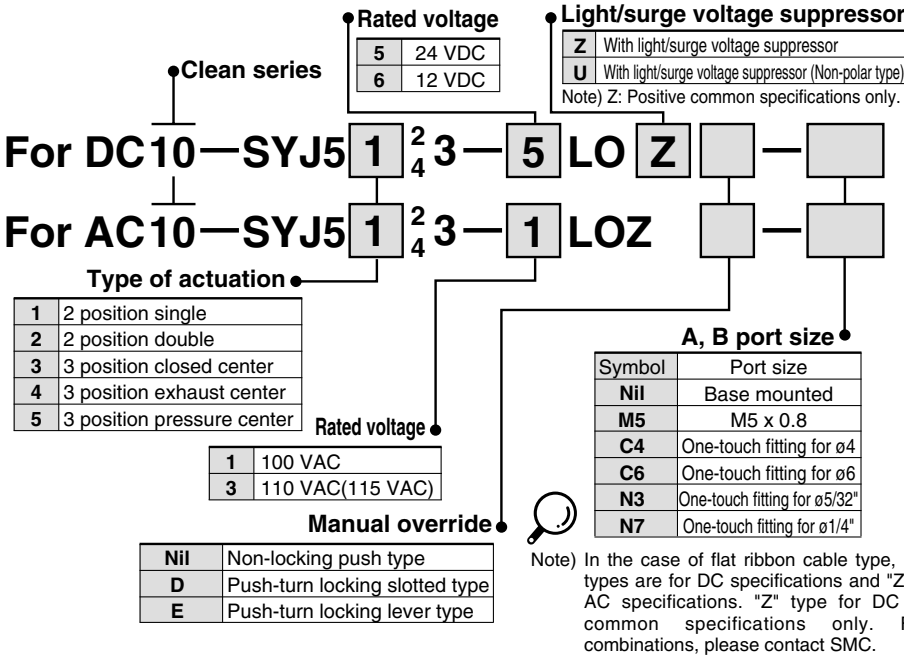
Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model number.

Example
- **10-SS5YJ5-41P-07-C4** ····· 1 set (Manifold base)
- ∗ **10-SYJ5143-5LOU** ····· 3 sets (Valve)
- ∗ **10-SYJ5243-5LOU** ····· 3 sets (Valve)
- ∗ **SYJ5000-21-3A** ····· 1 set (Blanking plate assembly)
- ∗ **SY3000-37-28A** ····· 3 sets (Connector assembly)
- ∗ **SY3000-37-29A** ····· 3 sets (Connector assembly)

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

∗ Use manifold specification sheet.

How to Order Valves



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

How to Order Connector Assembly

12, 24 VDC

Single solenoid	SY3000-37-28A
Double solenoid 3 position type	SY3000-37-29A
For single solenoid, individual SUP/EXH spacer	SY3000-37-3A
For double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-4A
For 3 port adaptor plate	SY3000-37-3A

For 100 VAC

For single solenoid	SY3000-37-46A
Double solenoid 3 position type	SY3000-37-47A
For single solenoid, individual SUP/EXH spacer	SY3000-37-32A
For double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-33A
3 port adaptor plate	SY3000-37-32A

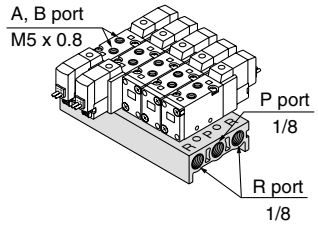
For 100 VAC (115 VAC)

For single solenoid	SY3000-37-54A
Double solenoid 3 position type	SY3000-37-55A
For single solenoid, individual SUP/EXH spacer	SY3000-37-35A
For double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-36A
For 3 port adaptor plate	SY3000-37-35A

Common SUP / Common EXH

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 20 (5 port / Body ported)



How to Order

10—SS5YJ5—20— 05 —

- Clean series
- Number of stations

02	2 stations
:	:
20	20 stations

- P, R port thread type

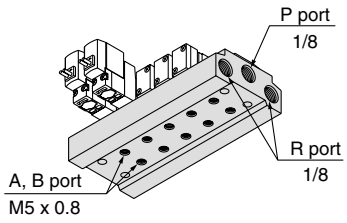
Nil	Rc
00F	G
00N	NPT
00T	NPTF

Applicable solenoid valve
10-SYJ5□23-□□□□-M5 C4 C6

Applicable blanking plate assembly
SYJ5000-21-4A

Applicable individual EXH spacer assembly
SYJ5000-17-1A

Type 40 (5 port / Base mounted)



How to Order

10—SS5YJ5—40— 05 —M5

- Clean series
- Number of stations

02	2 stations
:	:
20	20 stations

- P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

- A, B port size

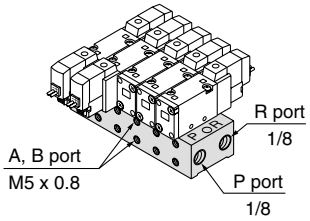
M5	M5 x 0.8

Applicable solenoid valve
10-SYJ5□43-□□□□
10-SYJ5□53-□□□□

Applicable blanking plate assembly
SYJ5000-21-4A

Applicable individual EXH spacer assembly
SYJ5000-17-1A

Type 41 (5 port / base mounted)



How to Order

10—SS5YJ5—41— 05 —M5

- Clean series
- Number of stations

02	2 stations
:	:
20	20 stations

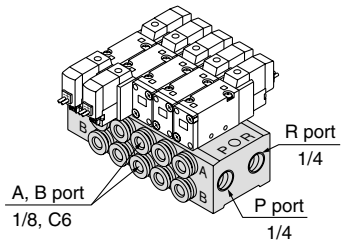
- P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

- A, B port size

M5	M5 x 0.8

Type 42 (5 port / base mounted)



How to Order

10—SS5YJ5—42— 05 — C6

- Clean series
- Number of stations

02	2 stations
:	:
20	20 stations

- A, B port size

01	1/8
C6	One-touch fitting for ø6
N7	One-touch fitting for ø1/4"

- Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

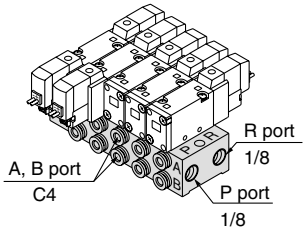
Applicable solenoid valve
10-SYJ5□43-□□□□
10-SYJ5□53-□□□□

Applicable blanking plate assembly
SYJ5000-21-4A

Applicable individual EXH spacer assembly
SYJ5000-17-1A

Applicable individual SUP spacer assembly
SYJ5000-16-2A

Type 43 (5 port / base mounted)



How to Order

10—SS5YJ5—43— 05 —C4

- Clean series
- Manifold stations

02	2 stations
:	:
20	20 stations

- A, B port size

C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

- P, R port thread type

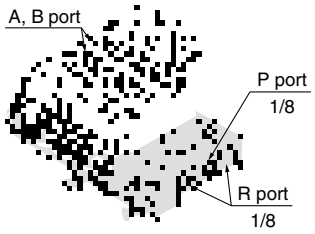
Nil	Rc
F	G
N	NPT
T	NPTF

Flat ribbon cable manifold

Common SUP / Common EXH

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 20P (5 port / body ported)



How to Order

10—SS5YJ5—20P— 05 —

- Clean series
- Number of stations

03	3 stations
:	:
12	12 stations

- P, R port thread type

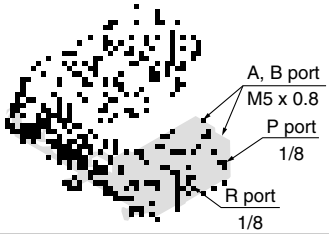
Nil	Rc
00F	G
00N	NPT
00T	NPTF

Applicable solenoid valve
Refer to page 526.

Applicable blanking plate assembly
SYJ5000-21-3A

Applicable connector assembly
Refer to page 526.

Type 41P (5 port / base mounted)



How to Order

10—SS5YJ5—41P— 05 —M5

- Clean series
- Number of stations

03	3 stations
:	:
12	12 stations

- P, R port size

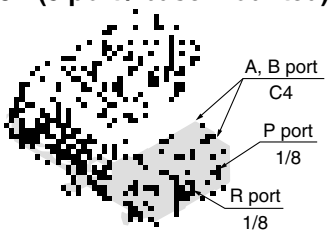
Nil	Rc
F	G
N	NPT
T	NPTF

Applicable solenoid valve
Refer to page 526.

Applicable blanking plate assembly
SYJ5000-21-3A

Applicable connector assembly
Refer to page 526.

Type 43P (5 port / base mounted)



How to Order

10—SS5YJ5—43P— 05 — C4

- Clean series
- Number of stations

03	3 stations
:	:
12	12 stations

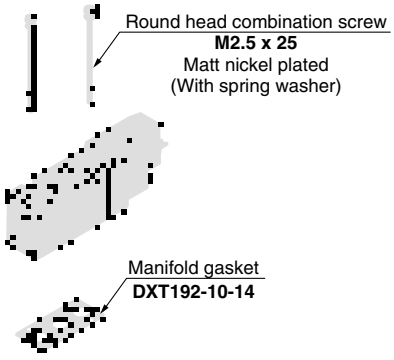
- A, B port size

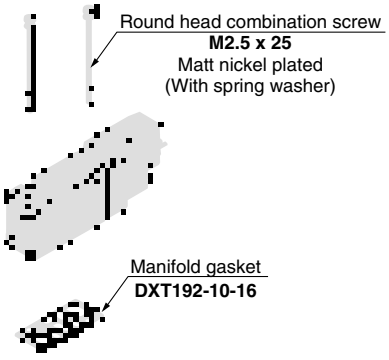
C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

- P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

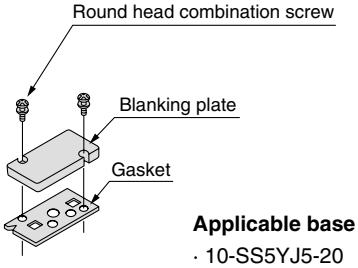
<Manifold option>
Combinations of solenoid valve, manifold gasket and manifold base





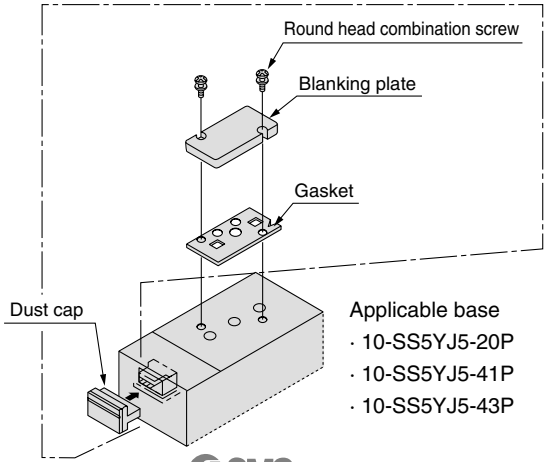
Blanking plate assembly

SYJ5000-21-4A



Applicable base
- 10-SS5YJ5-20
- 10-SS5YJ5-40
- 10-SS5YJ5-41
- 10-SS5YJ5-42
- 10-SS5YJ5-43

SYJ5000-21-3A



Applicable base
- 10-SS5YJ5-20P
- 10-SS5YJ5-41P
- 10-SS5YJ5-43P

⚠ Caution

Mounting screw tightening torque

M2.5: 0.45N·m

Use caution to the assembly orientation for solenoid valve, gasket, and optional parts.

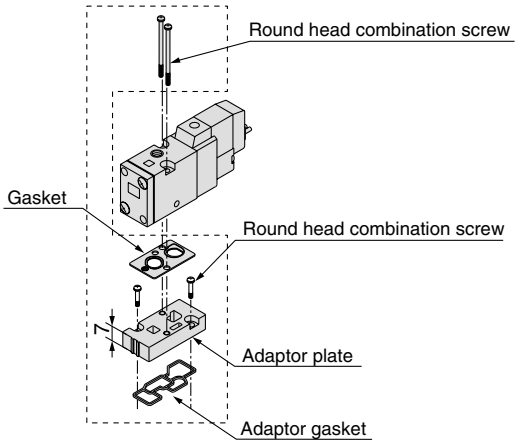
SMC

<Manifold option>
Mix installation of the 10-SYJ500 and the 10-SYJ5000 valves on the same manifold

- Use of an adapter plate makes it possible to mount Series 10-SYJ500 on the manifold bases of series 10-SYJ5000.
- When mounting the 10-SYJ500 valve on the 10-SYJ5000 manifold, the 10-SYJ500 solenoid must be positioned on the same side of the manifold as a single solenoid of 10-SYJ5000.
- For base mounted style, the A port of the 3 port valve flows out the B port of manifold base.

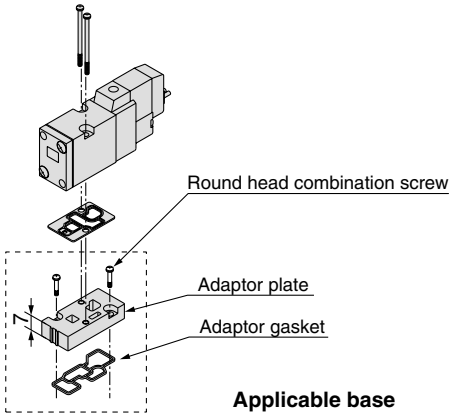
Adaptor plate assembly

SYJ500-3-2A



Applicable base
· 10-SS5YJ5-20

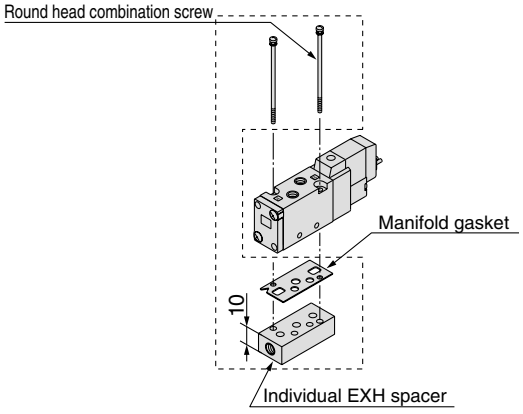
SYJ500-3-1A



Applicable base
· 10-SS5YJ5-40
· 10-SS5YJ5-41
· 10-SS5YJ5-42
· 10-SS5YJ5-43

Individual EXH spacer assembly

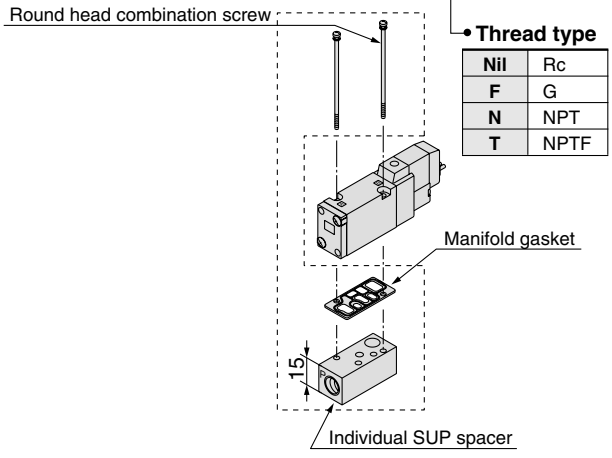
SYJ5000-17-1A



Applicable base
· 10-SS5YJ5-20
· 10-SS5YJ5-40
· 10-SS5YJ5-41
· 10-SS5YJ5-42
· 10-SS5YJ5-43

Individual SUP spacer assembly

SYJ5000-16-2 □ A



Nil	Rc
F	G
N	NPT
T	NPTF

Applicable base
· 10-SS5YJ5-41
· 10-SS5YJ5-42
· 10-SS5YJ5-43

⚠ Caution

Mounting screw tightening torque

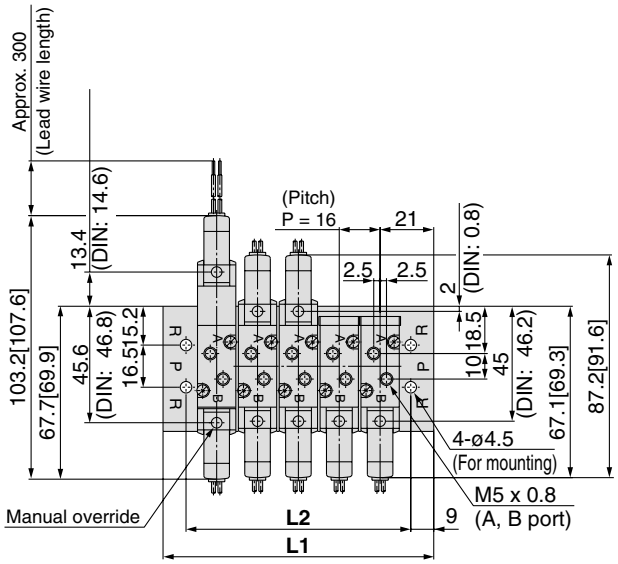
M2.5: 0.45N·m

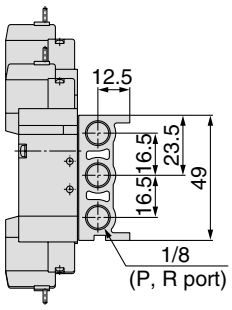
Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.

Type 20: Top ported / 10-SS5YJ5-20-Station-00□

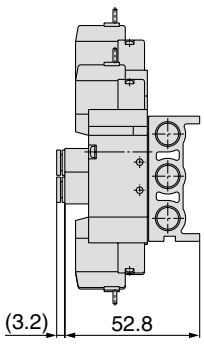
∗ [ ]: AC

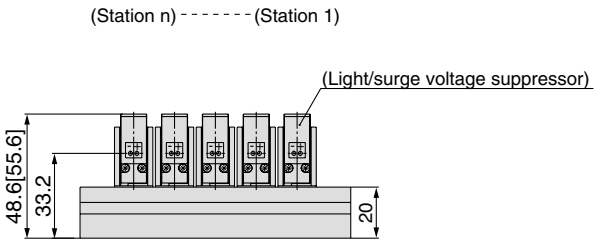
Grommet (G)



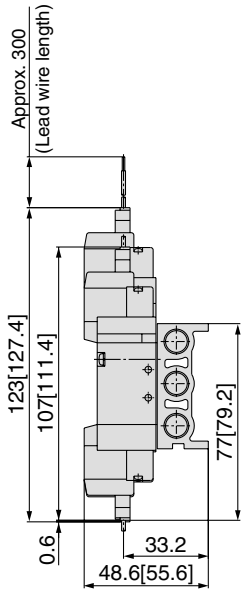


Built-in One-touch fitting

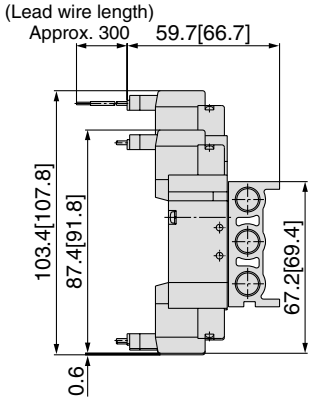




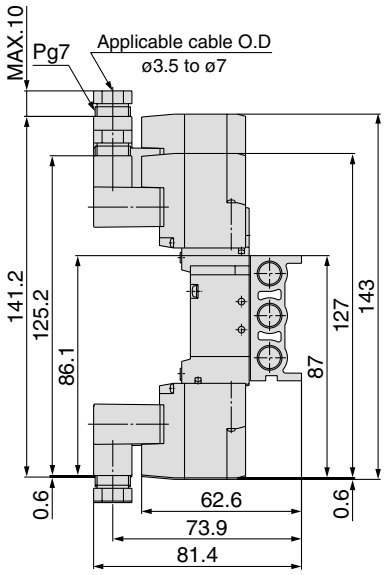
L plug connector (L)



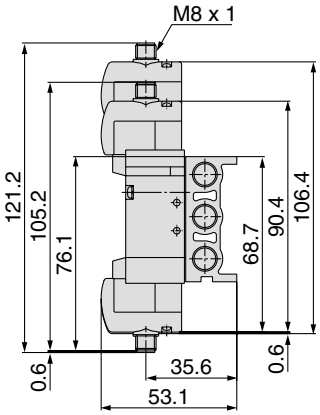
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)





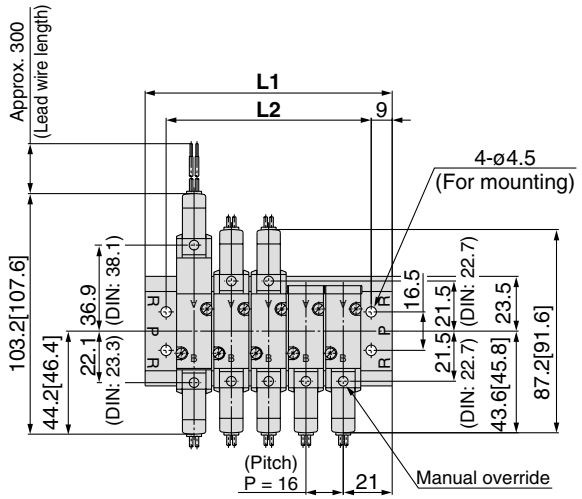
∗ Refer to page 563 for dimensions with connector cable.

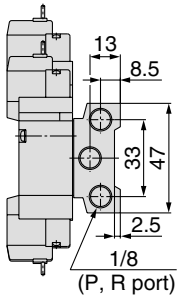
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330	346
L2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328

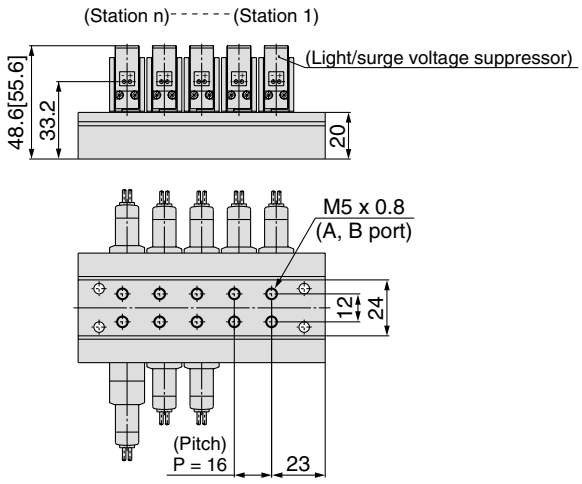
Type 40: Bottom ported / 10-SS5YJ5-40-Stations-M5□

∗ [ ]: AC

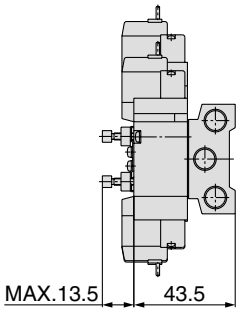
Grommet (G)



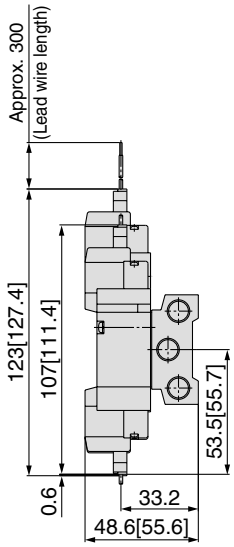




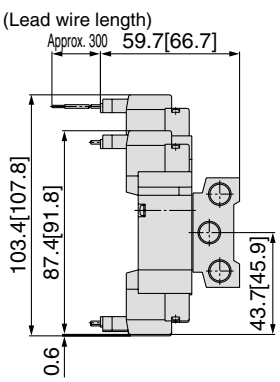
Built-in speed controller



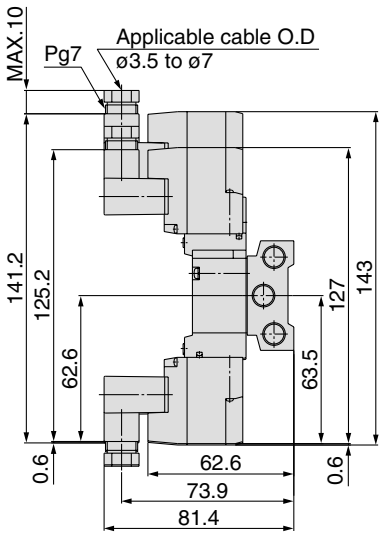
L plug connector (L)



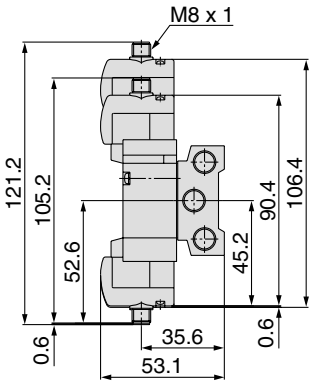
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



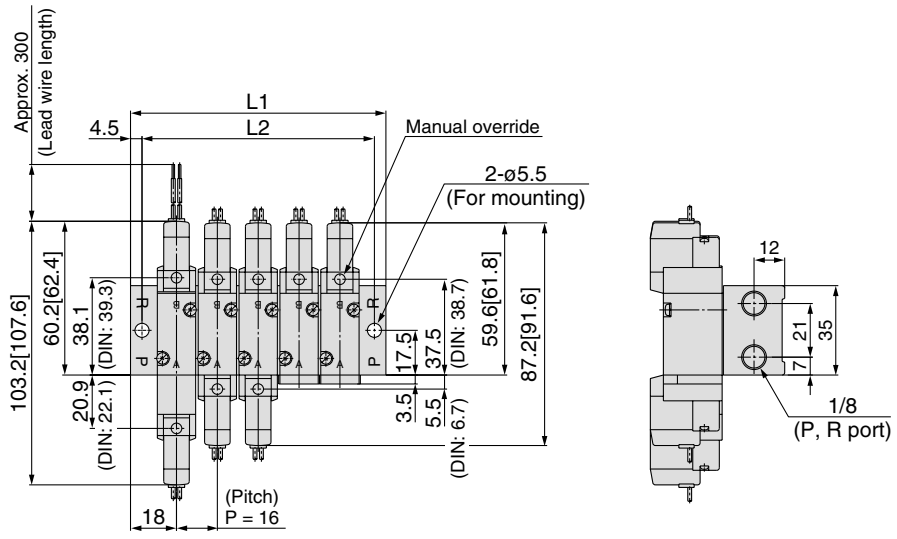
∗ Refer to page 563 for dimensions with connector cable.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330	346
L2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328

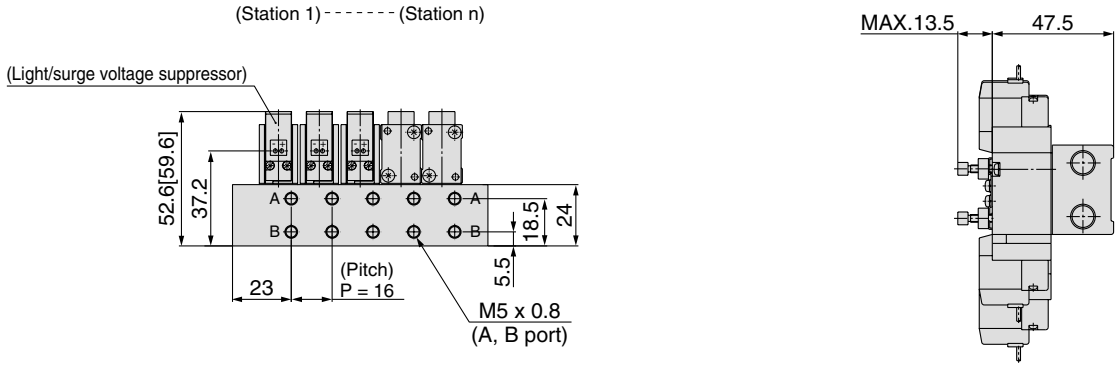
Type 41: Side ported / 10-SS5YJ5-41-Stations-M5□

∗ [ ]: AC

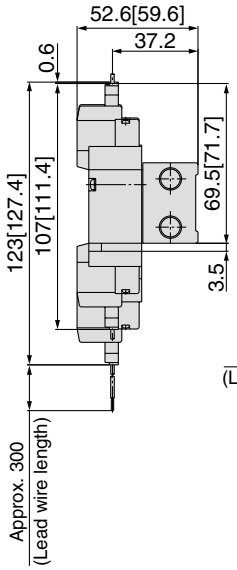
Grommet (G)



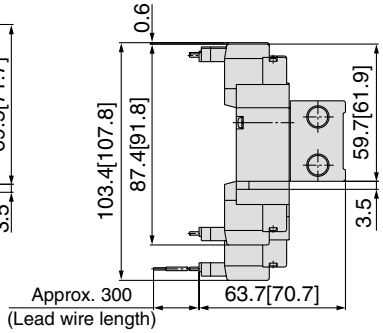
Built-in speed controller



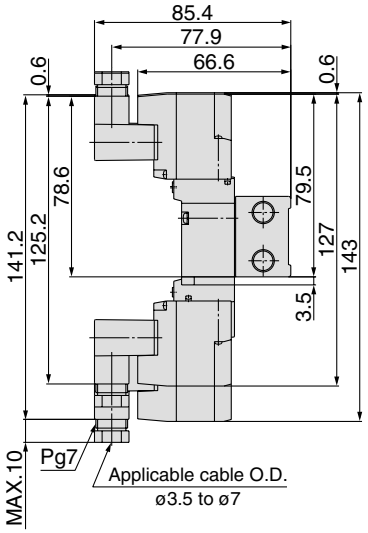
L plug connector (L)



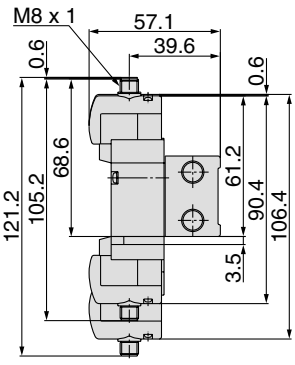
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



∗ Refer to page 563 for dimensions with connector cable.

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	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331

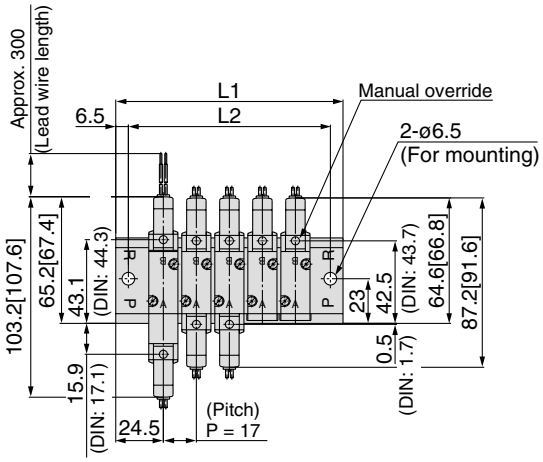
Type 42: Side ported / 10-SS5YJ5-42-Stations-01, C6/N7□

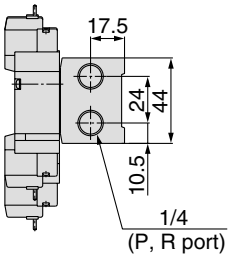
∗ [ ]: AC

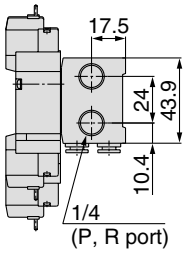
Grommet (G)

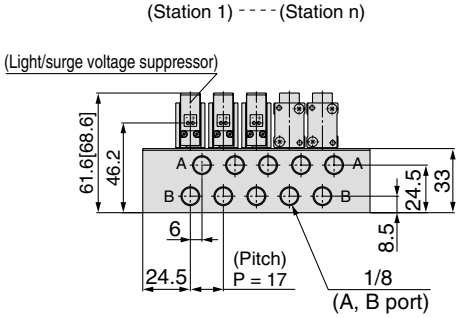
01□

C6/N7□(With built-in One-touch fitting)

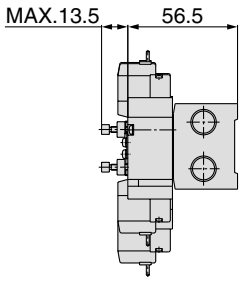


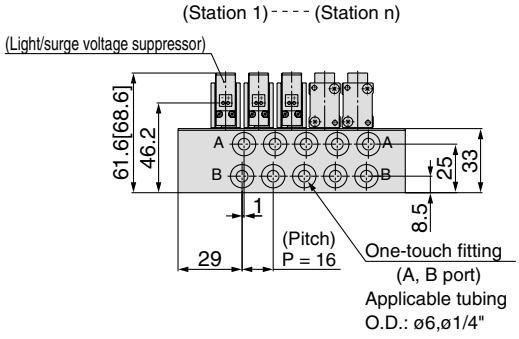






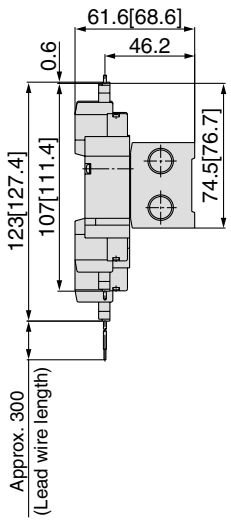
Built-in speed controller



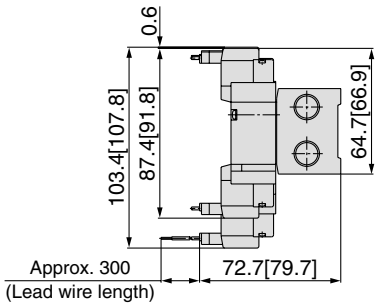


∗ Other dimensions are the same as the grommet type.

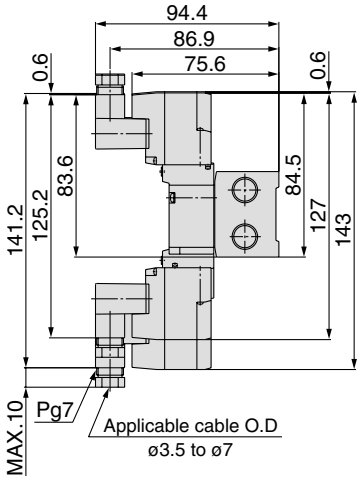
L plug connector (L)



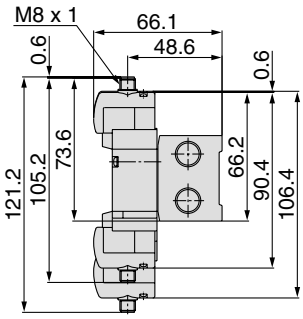
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



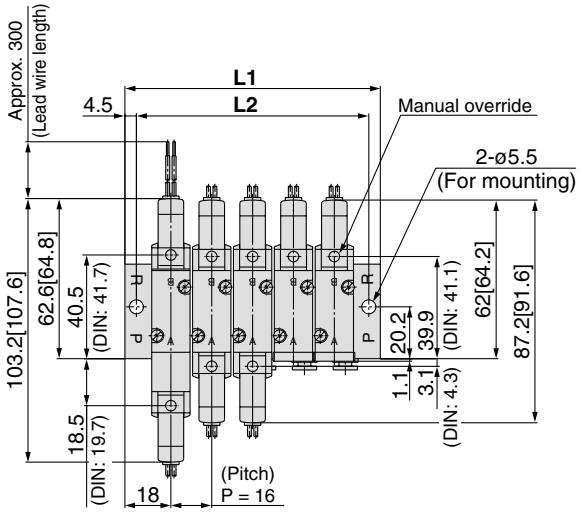
∗ Refer to page 563 for dimensions with connector cable.

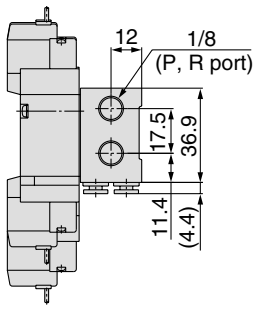
A, B port size	Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
1/8	**L1**	66	83	100	117	134	151	168	185	202	219	236	253	270	287	304	321	338	355	372
	L2	53	70	87	104	121	138	155	172	189	206	223	240	257	274	291	308	325	342	359
C6/N7	**L1**	65	81	97	113	129	145	161	177	193	209	225	241	257	273	289	305	321	337	353
	L2	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340

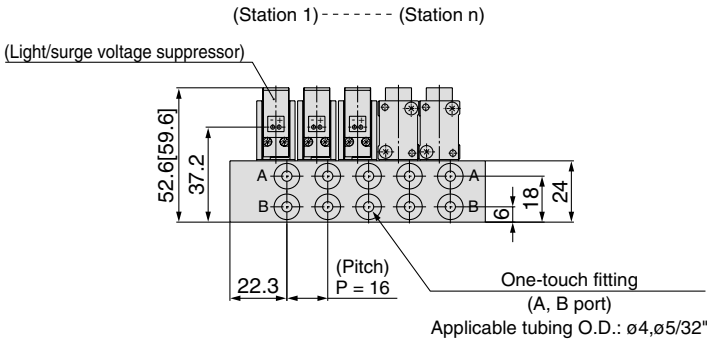
Type 43: Side ported / 10-SS5YJ5-43-Stations-$^{C4}_{N3}$□

∗ [ ]: AC

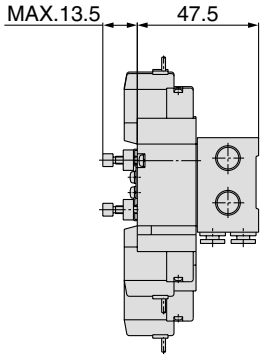
Grommet (G)



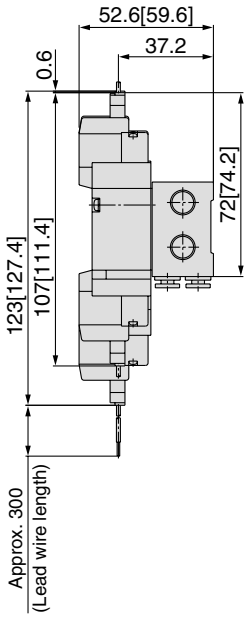




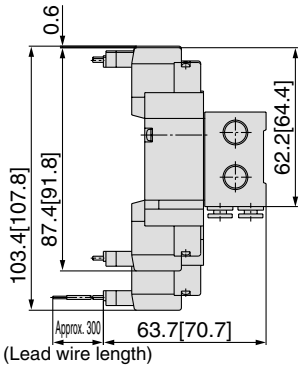
Built-in speed controller



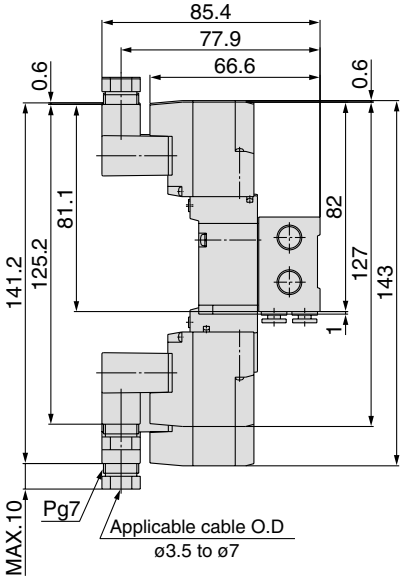
L plug connector (L)



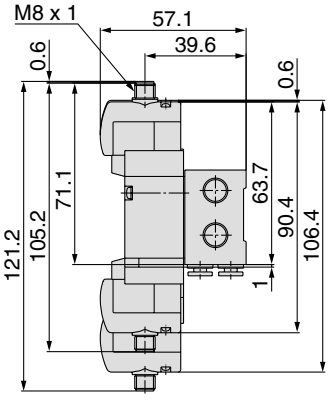
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



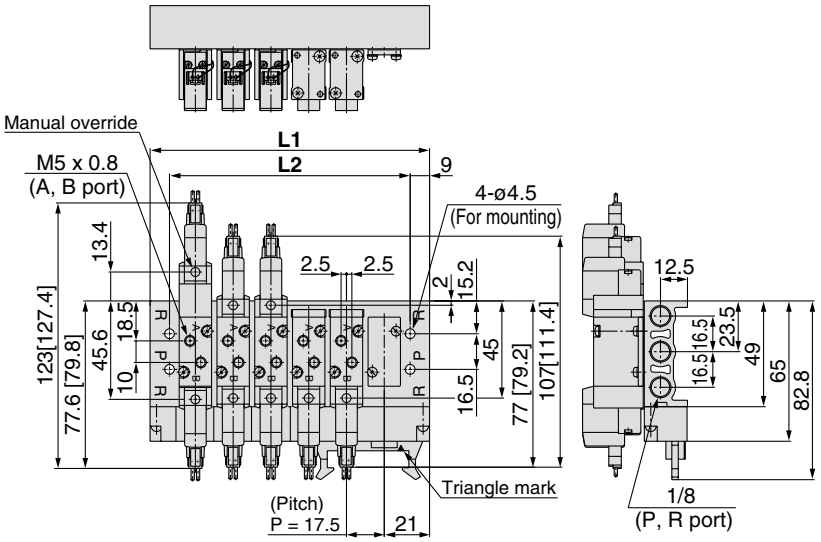
∗ Refer to page 563 for dimensions with connector cable.

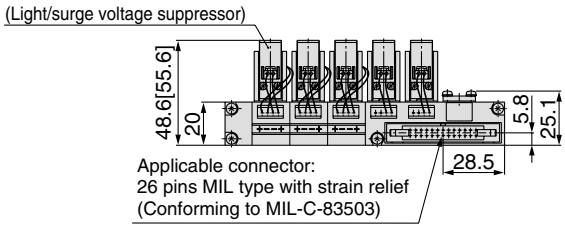
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
L2	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331

Flat ribbon cable manifold

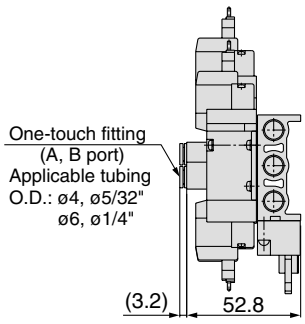
* [ ]: AC

10-SS5YJ5-20P-Stations-00□



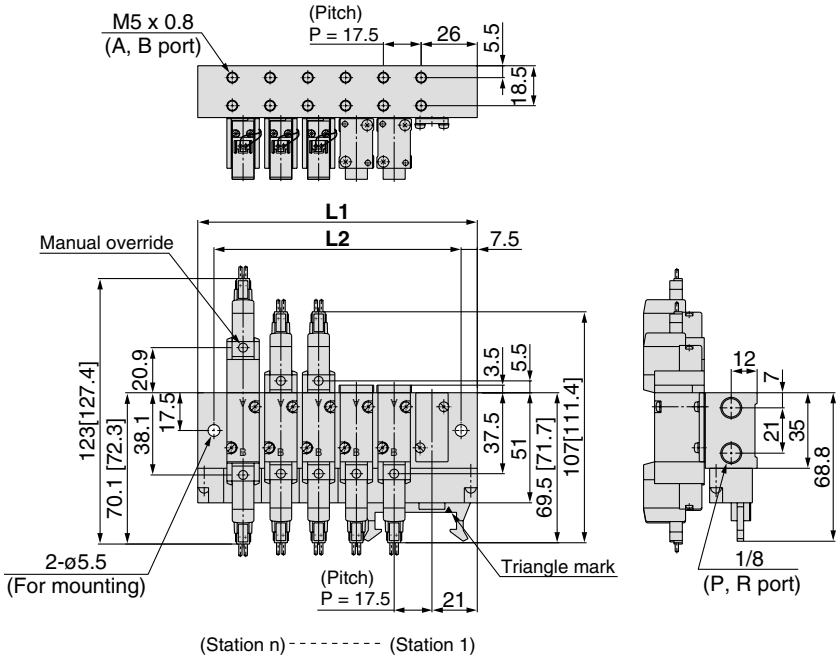


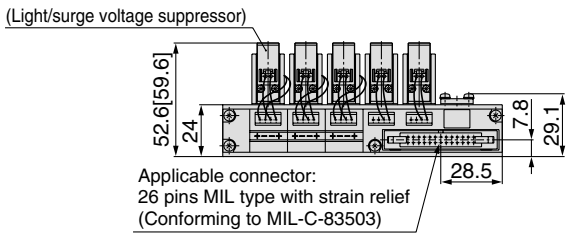
C4, N3
C6, N7
(With built-in One-touch fitting)



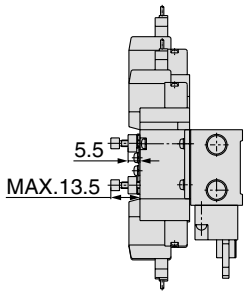
Stations n	3 stations	4	5	6	7	8	9	10	11	12 stations
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L2	59	76.5	94	111.5	129	146.5	164	181.5	199	216.5

10-SS5YJ5-41P-Stations-M5□





Built-in speed controller

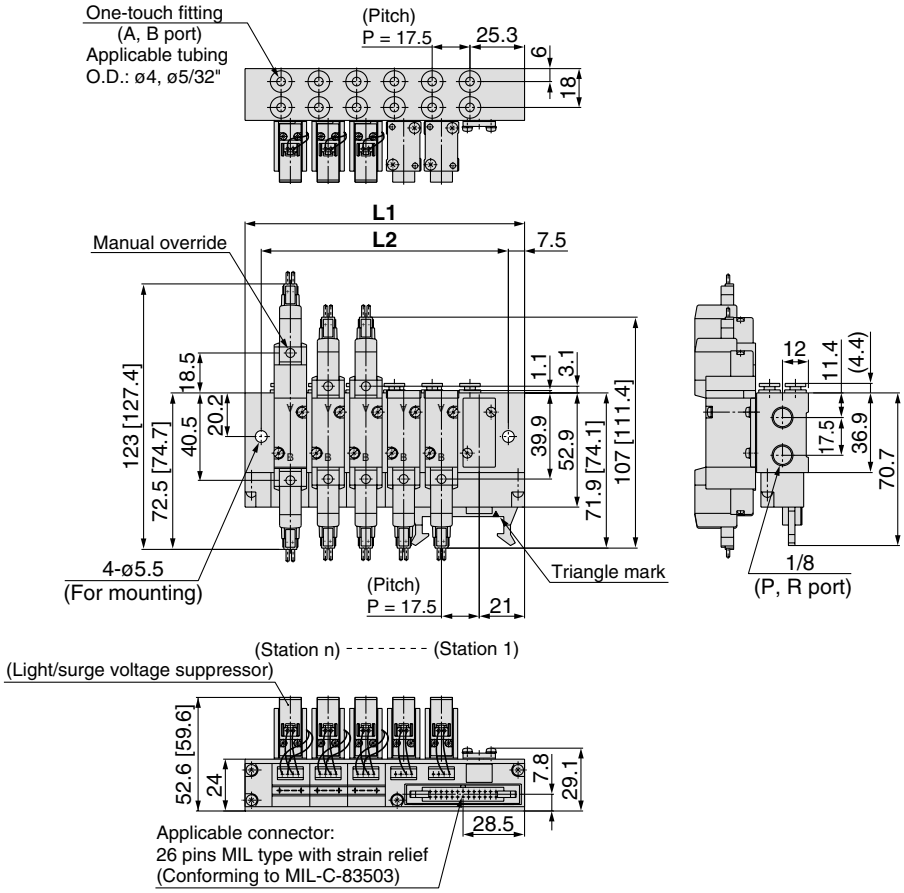


Stations n	3 stations	4	5	6	7	8	9	10	11	12 stations
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L2	62	79.5	97	114.5	132	149.5	167	184.5	202	219.5

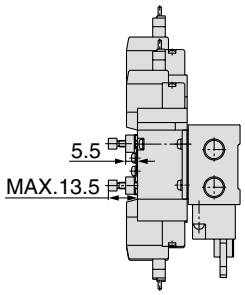
Flat ribbon cable manifold

∗ [ ]: AC

10-SS5YJ5-43P-Stations-$^{C4}_{N3}$□

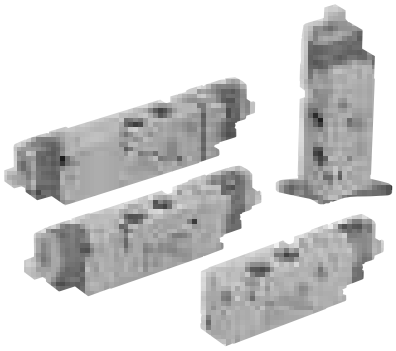


Built-in speed controller

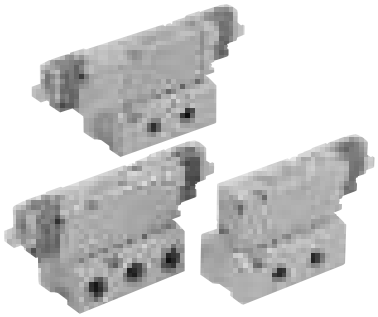


Stations n	3 stations	4	5	6	7	8	9	10	11	12 stations
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L2	62	79.5	97	114.5	132	149.5	167	184.5	202	219.5

Series 10-SYJ7000 Rubber seal 5 port solenoid valve



Body ported



Base mounted

Specifications

Fluid		Air
Operating pressure range (MPa)	**2 position single**	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (with no freezing. Refer to page 714.)
Response time ms (0.5MPa) Note 1)	**2 position single, double**	30 or less
	3 position	60 or less
Max. operating frequency (Hz)	**2 position single, double**	5
	3 position	3
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type
Pilot exhaust method		Common exhaust for the pilot and main valve
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance m/s² Note 2)		150/30
Enclosure		Dustproof (∗DIN terminal, M8 connector conforms to IP65.)

∗ Based on IEC60529

Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature : 20°C, at rated voltage, without surge voltage suppressor)

Note 2) 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. (Value in the initial state)
Vibration resistance: No malfunction occurred in one sweep between 45 and 2000Hz. Test was performed 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. (Value in the initial state)

Solenoid specifications

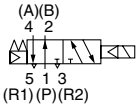
Electrical entry			Grommet (G), (H) L plug connector (L) M plug connector (M) DIN terminal (D) M8 connector (W)	
			G, H, L, M, W	D
Coil rated voltage V	**DC**		24, 12, 6, 5, 3	24, 12
	AC 50/60Hz		100, 110, 200, 220	
Allowable voltage fluctuation			±10% of rated voltage ∗	
Power consumption (W)	**DC**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

∗ In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.
∗ For 115 and 230 VAC, the allowable voltage fluctuation is -15% to +5% of rated voltage.
∗ For the allowable voltage fluctuation for S, Z and T types (with power saving circuit), please observe the following range because they have voltage drop due to internal circuit.
S and Z types 24 VDC: –7% to +10%
12 VDC: –4% to +10%
T type 24 VDC: –8% to +10%
12 VDC: –6% to +10%

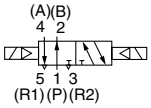
JIS Symbol

Body ported

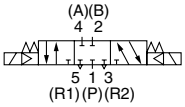
2 position single



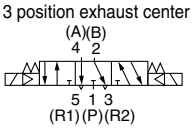
2 position double



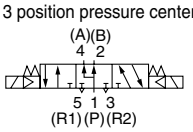
3 position closed center



3 position exhaust center

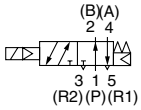


3 position pressure center

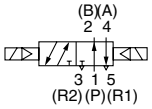


Base mounted

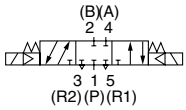
2 position single solenoid



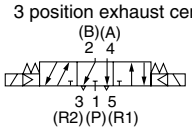
2 position double solenoid



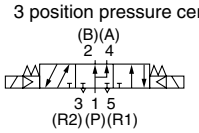
3 position closed center



3 position exhaust center



3 position pressure center



Made to Order Made to order specifications (Refer to page 557 for details.)

Flow characteristics / Weight

Valve model		Type of actuation		Port size		Flow characteristics[Note 1]						Weight (g)[Note 2, 3]			
				1,5,3 (P,EA,EB)	4,2 (A,B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grommet	L/M plug connector	DIN terminal	M8 connector
						C[dm³/(s·bar)]	b	Cv	C[dm³/(s·bar)]	b	Cv				
Body ported	10-SYJ7□23-□-01	2 position	Single	1/8	1/8	2.2	0.36	0.58	2.4	0.34	0.63	85	86	107	90
			Double									98	100	142	108
		3 position	Closed center			1.8	0.37	0.45	2.0	0.35	0.49	108	110	152	118
			Exhaust center			1.2	0.50	0.34	3.0[1.3]	0.35[0.52]	0.73[0.39]				
			Pressure center			3.0[0.83]	0.37[0.50]	0.78[0.25]	1.8	0.37	0.45				
	10-SYJ7□23-□-C6	2 position	Single	1/8	C6 (One-touch fitting for ø6)	1.6	0.33	0.4	2.2	0.32	0.53	96	97	98	101
			Double									109	111	153	119
		3 position	Closed center			1.4	0.27	0.35	1.9	0.33	0.49	119	121	163	129
			Exhaust center			1.1	0.37	0.27	2.5[1.3]	0.32[0.54]	0.61[0.38]				
			Pressure center			1.8[0.78]	0.36[0.40]	0.45[0.22]	1.6	0.30	0.39				
	10-SYJ7□23-□-C8	2 position	Single	1/8	C8 (One-touch fitting for ø8)	2.0	0.39	0.52	2.3	0.34	0.61	96	97	98	101
			Double									109	111	153	119
		3 position	Closed center			1.7	0.35	0.42	2.0	0.29	0.49	119	121	163	129
			Exhaust center			1.2	0.38	0.33	2.6[1.3]	0.35[0.49]	0.67[0.38]				
			Pressure center			1.9[0.86]	0.57[0.46]	0.59[0.25]	1.7	0.39	0.42				
Base mounted	10-SYJ7□43-□-01	2 position	Single	1/8	1/8	2.3	0.45	0.57	2.8	0.37	0.71	165(85)	166(86)	187(107)	170(90)
			Double									178(98)	180(100)	222(142)	188(108)
		3 position	Closed center			1.9	0.36	0.48	2.1	0.46	0.57	188(108)	190(110)	232(152)	198(118)
			Exhaust center			1.2	0.48	0.35	3.4[1.3]	0.36[0.57]	0.86[0.41]				
			Pressure center			3.3[0.85]	0.43[0.54]	0.78[0.25]	2.1	0.45	0.56				
	10-SYJ7□43-□-02	2 position	Single	1/4	1/4	2.3	0.41	0.61	2.9	0.35	0.74	165(85)	166(86)	187(107)	170(90)
			Double									178(98)	180(100)	222(142)	188(108)
		3 position	Closed center			1.9	0.46	0.50	2.2	0.44	0.60	188(108)	190(110)	232(152)	198(118)
			Exhaust center			1.3	0.45	0.35	3.7[1.4]	0.27[0.56]	0.87[0.43]				
			Pressure center			3.6[0.83]	0.23[0.55]	0.84[0.25]	2.1	0.47	0.58				

Note 1) [ ] denotes normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2
Note 2) ( ): Without sub-plate
Note 3) For DC voltages. For AC voltages add 3g to the weight of the single solenoid and 6g to the weight of the double solenoid and 3 position types.

How to Order

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Light/Surge voltage suppressor

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

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

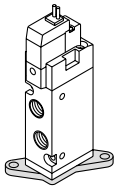
Electrical entry for D

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

Bracket

Nil: Without bracket
F: With bracket



Note) Do not remove the factory installed bracket from models with the bracket option. Removal of the bracket will cause the valve to leak. Brackets cannot be retrofitted.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Rated voltage

DC specifications

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

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

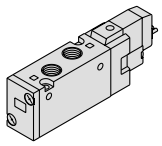
AC specifications (50/60Hz)

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

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

A, B port size

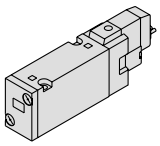
01	1/8
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"



(For manifold type 20, 21)

Body ported 10—SYJ7 1 23 □ — 5 M □ □ — 01 □ —

Base mounted 10—SYJ7 2 43 □ — 5 M □ □ — □ □



(Sub-plate, 40, 41, 42 manifold)

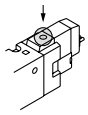
Coil specifications

Nil	Standard
T	With power saving circuit <For 24 and 12 VDC only>

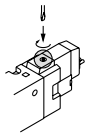
∗ Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Manual override

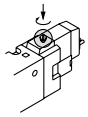
Nil: Non-locking push type



D: Push-turn locking slotted type



E: Push-turn locking lever type

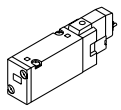


Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

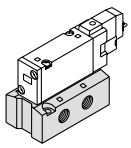
Port size

Nil: Without sub-plate

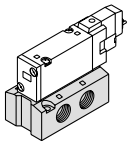


(With gasket and screws)

01: 1/8 with sub-plate Note)



02: 1/4 with sub-plate



Note) R1, R2 ports : 1/4

Electrical entry

24, 12, 6, 5, 3 VDC / 100, 110, 200, 220 VAC				24, 12 VDC, 100, 110, 200, 220 VAC	24, 12 VDC, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector		DIN terminal	M8 connector
G: Lead wire length 300 mm	**L**: With lead wire (length 300 mm)	**M**: With lead wire (length 300 mm)	**MN**: Without lead wire	**D**: With connector	**WO**: Without connector
H: Lead wire length 600 mm	**LN**: Without lead wire	**LO**: Without connector	**MO**: Without connector	**DO**: Without connector	**W□**: With connector cable Note 1)

Note 1) Be sure to enter a symbol of the cable length with reference to page 562.

∗ "LN", "MN" type : with 2 sockets.
∗ DIN terminal type "Y" conforming to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 557.
∗ For connector cable of M8 connector, refer to page 562.

How to Order Pilot Valve Assembly

10—V111 □ — 5 G □

Clean series

Coil specifications

Nil	Standard
T	With power saving circuit <24 and 12 VDC only>

∗ Power saving circuit is not available in the case of "W□" type.

Rated voltage

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

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

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

∗ For connector cable of M8 connector, refer to page 562.

Note 1) Be sure to enter a symbol of the cable length with reference to page 562.

10—V115 — 5 D □

Clean series

Rated voltage

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

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		Without connector

Note) Do not replace 10-V111 (G, H, L, M, W) to 10-V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

How to Order L/M Plug Connector Assembly

For DC: **SY100-30-4A-□**

For 100 VAC: **SY100-30-1A-□**

For 200 VAC: **SY100-30-2A-□**

For other voltages of AC: **SY100-30-3A-□**

Without lead wire (With connector and 2 of sockets only): **SY100-30-A**

Lead wire length

Nil	300mm
6	600mm
10	1000mm
15	1500mm
20	2000mm
25	2500mm
30	3000mm
50	5000mm

How to Order M8 Connector Cable

V100-49-1-□

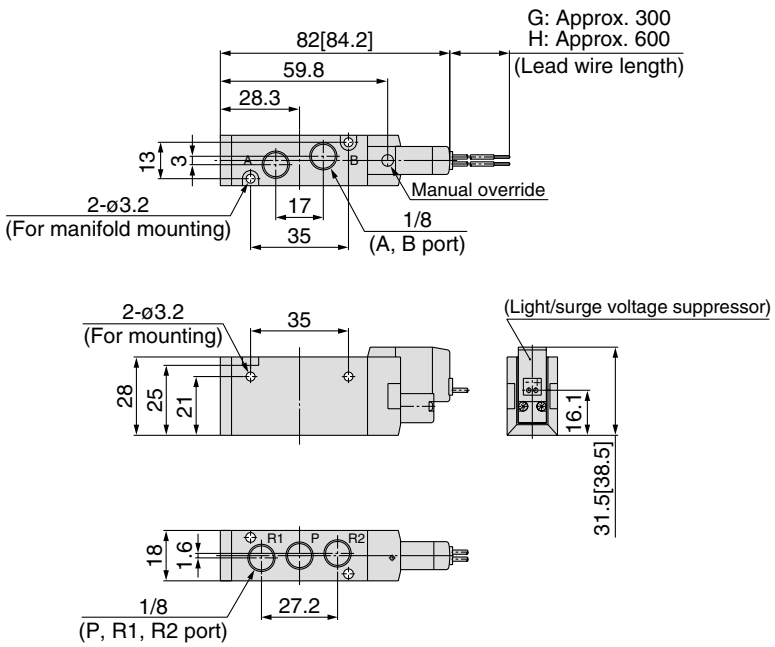
Cable length

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

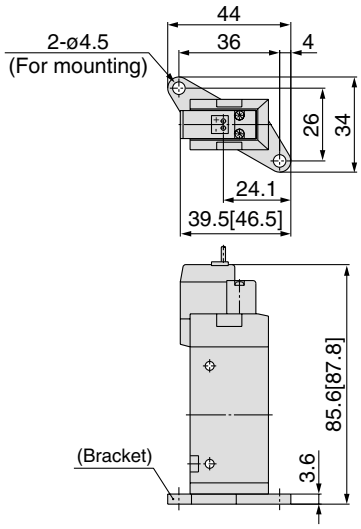
2 position single

∗ [ ]: AC

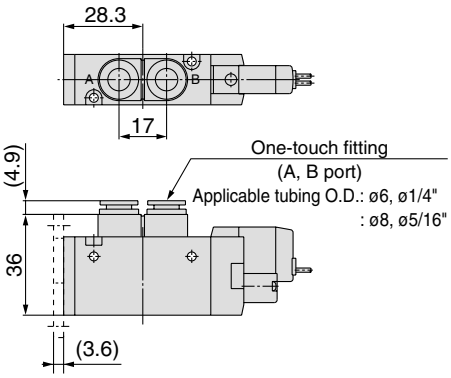
Grommet (G), (H): 10- SYJ7123-□$^{G}_{H}$□□-01□



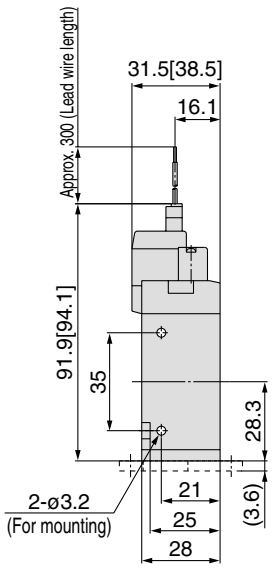
With bracket
10-SYJ7123-□$^{G}_{H}$□□-01□-F



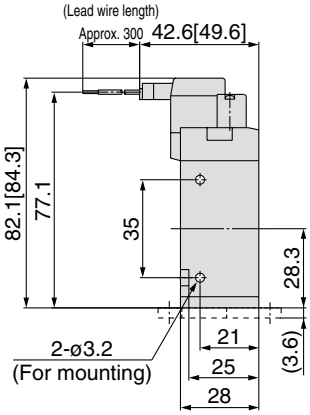
Built-in One-touch fitting:
10-SYJ7123-□$^{G}_{H}$□□-$^{C6, N7}_{C8, N9}$□ (-F)



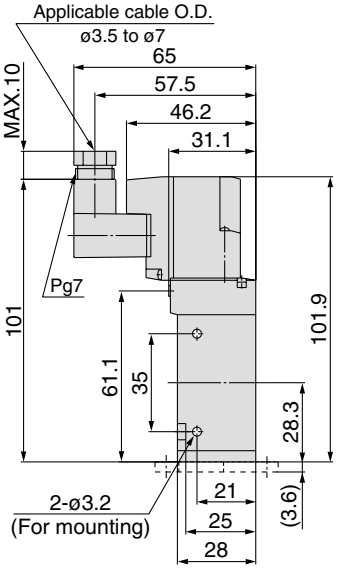
L plug connector (L)
10-SYJ7123-□L□□-01□ (-F)



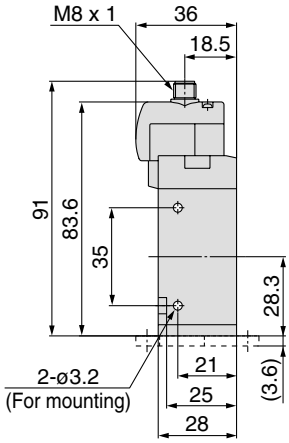
M plug connector (M)
10-SYJ7123-□M□□-01□ (-F)



DIN Terminal (D):
10-SYJ7123-□D□□-01□ (-F)



M8 connector (WO):
10-SYJ7123-□WO□□-01□ (-F)

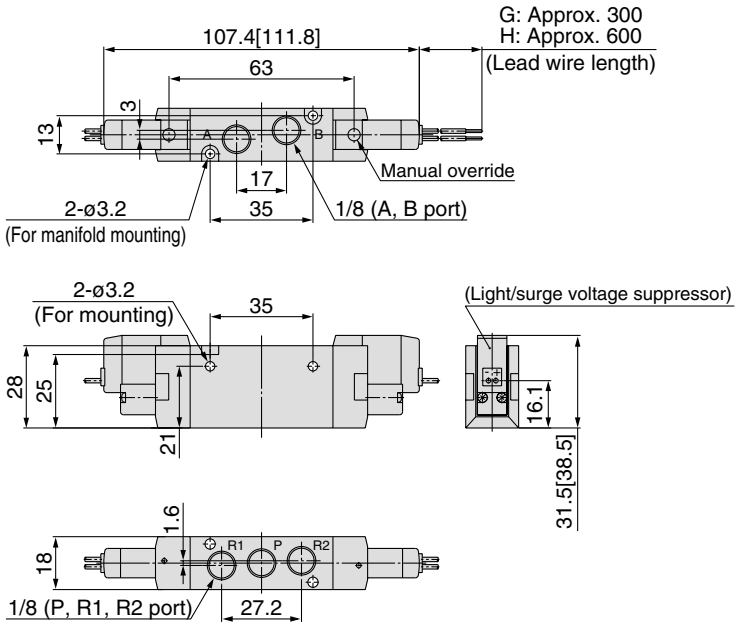


∗ Refer to page 563 for dimensions with connector cable.

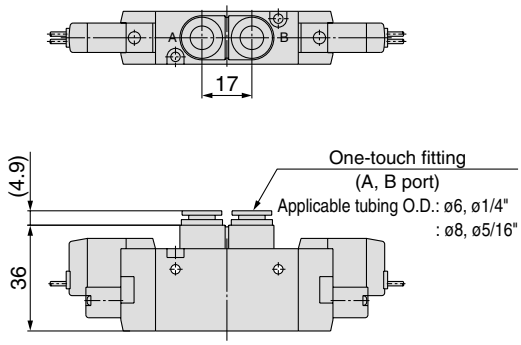
2 position double

∗ [ ]: AC

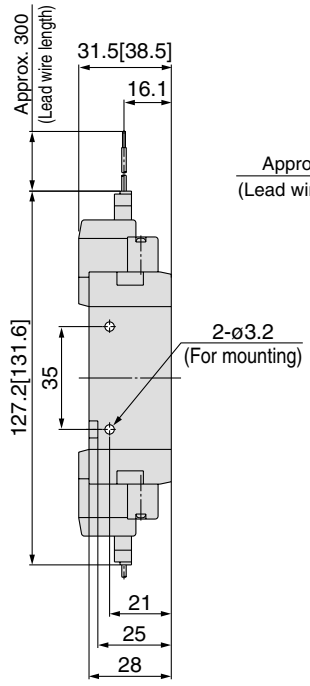
Grommet (G), (H): 10-SYJ7223-□$^{G}_{H}$□□-01□



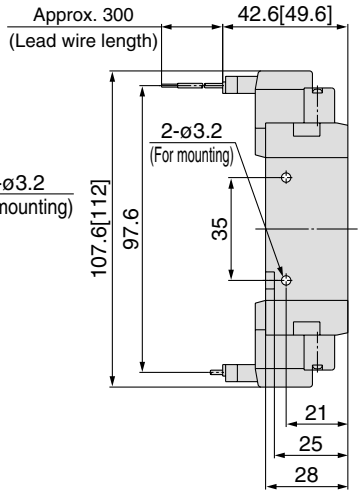
Built-in One-touch fitting: 10-SYJ7223-□$^{G}_{H}$□□-$^{C6, N7}_{C8, N9}$□



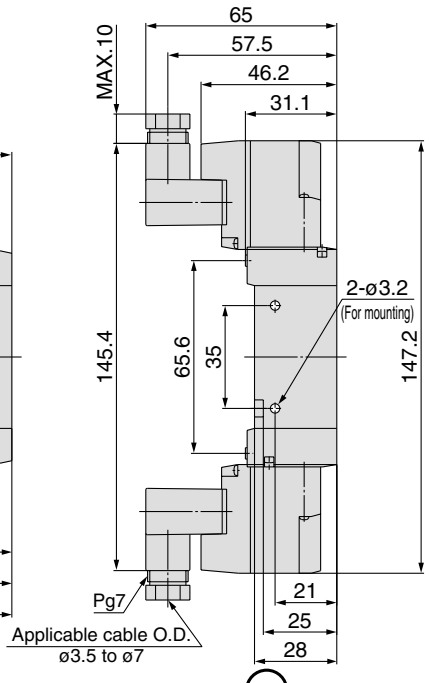
L plug connector (L): 10-SYJ7223-□L□□-01□



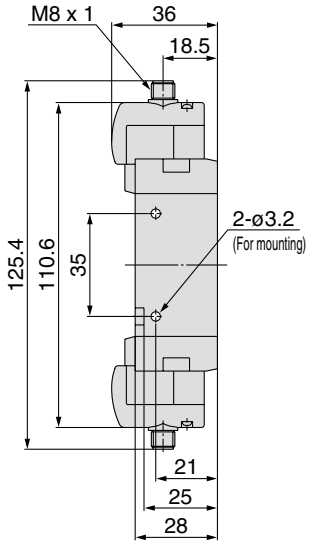
M plug connector (M): 10-SYJ7223-□M□□-01□



DIN Terminal (D): 10-SYJ7223-□D□□-01□



M8 connector (WO): 10-SYJ7223-□WO□□-01□



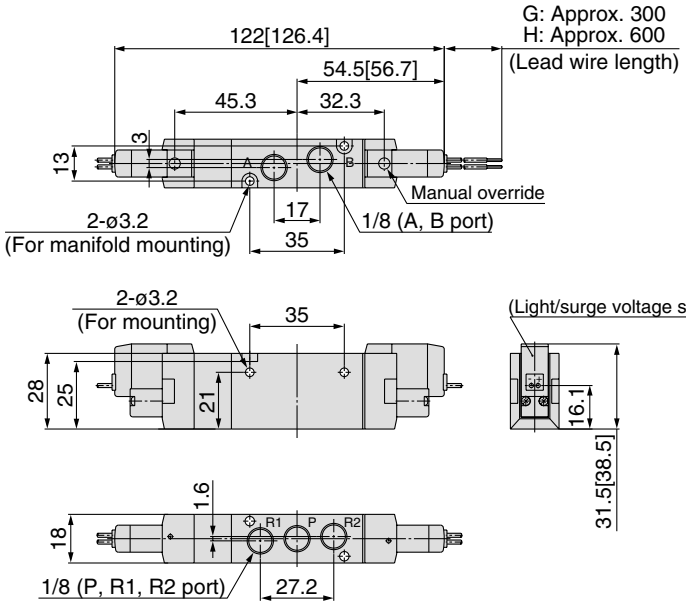


∗ Refer to page 563 for dimensions with connector cable.

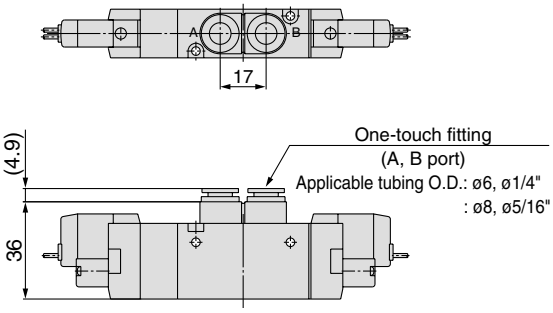
3 position closed center / Exhaust center / Pressure center

∗ [ ]: AC

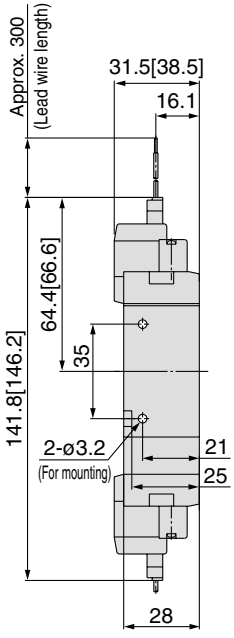
Grommet (G), (H): 10-SYJ7$^{3}_{5}$^{4}23-□$^{G}_{H}$□□-01□



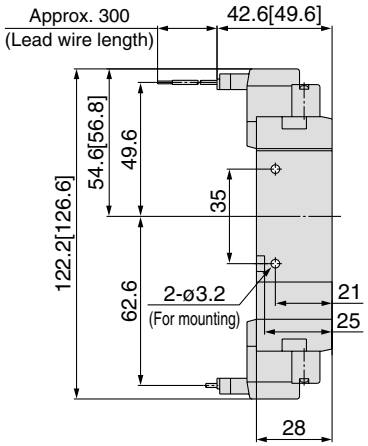
Built-in One-touch fitting: 10-SYJ7$^{3}_{5}$^{4}23-□$^{G}_{H}$□□-$^{C6, N7}_{C8, N9}$□



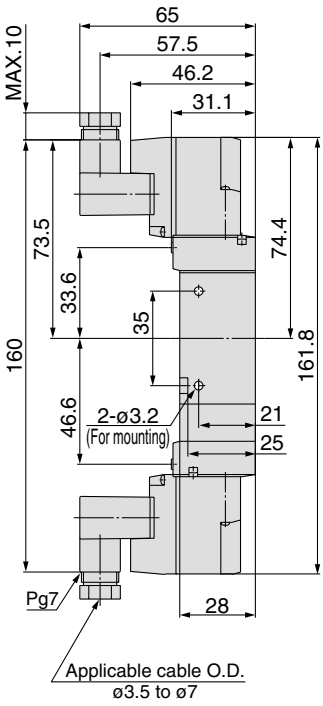
L plug connector (L): 10-SYJ7$^{3}_{5}$^{4}23-□L□□-01□



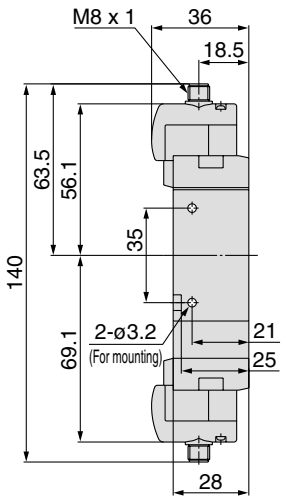
M plug connector (M): 10-SYJ7$^{3}_{5}$^{4}23-□M□□-01□



DIN Terminal (D): 10-SYJ7$^{3}_{5}$^{4}23-□D□□-01□



M8 connector (WO): 10-SYJ7$^{3}_{5}$^{4}23-□WO□□-01□

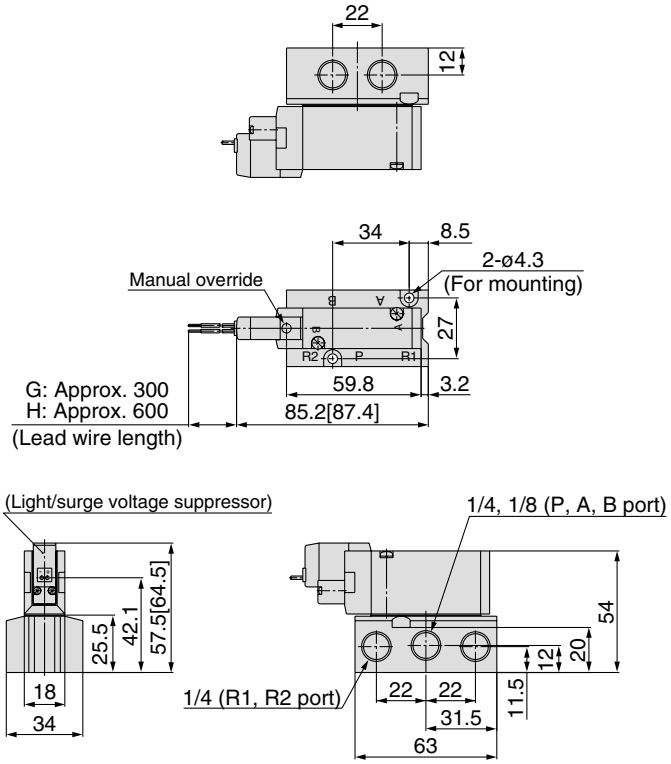


∗ Refer to page 563 for dimensions with connector cable.

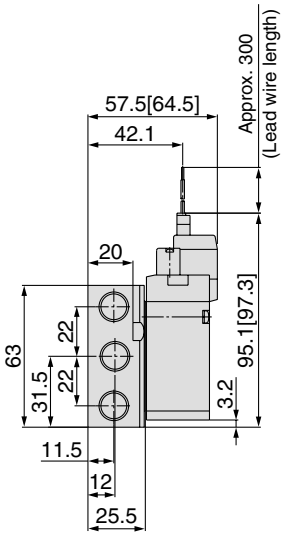
2 position single

∗ [ ]: AC

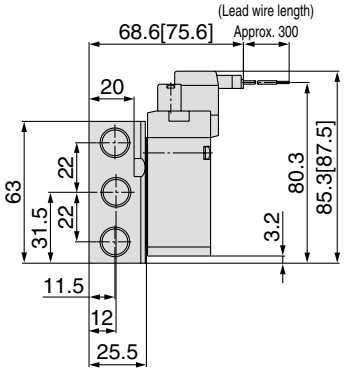
Grommet (G), (H): 10- SYJ7143-□$^{G}_{H}$□□-$^{01}_{02}$□



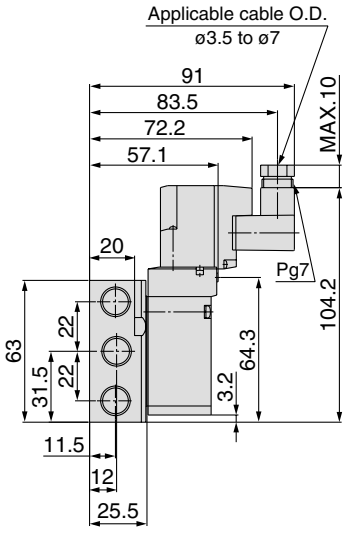
L plug connector (L): 10-SYJ7143-□L□□-$^{01}_{02}$□



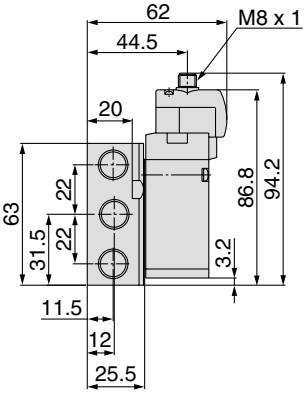
M plug connector (M): 10-SYJ7143-□M□□-$^{01}_{02}$□



DIN Terminal (D): 10-SYJ7143-□D□□-$^{01}_{02}$□



M8 connector (WO): 10-SYJ7143-□WO□□-$^{01}_{02}$□

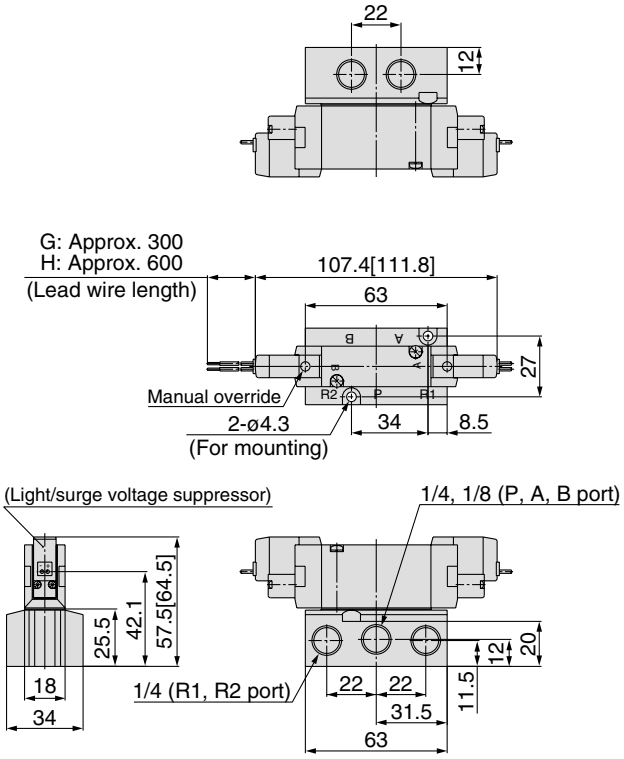


∗ Refer to page 563 for dimensions with connector cable.

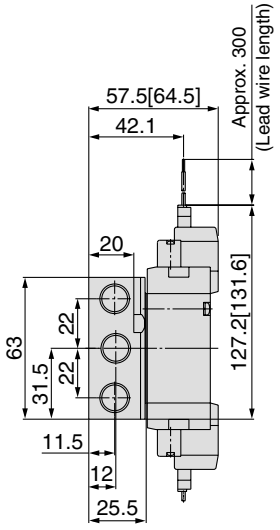
2 position double

∗ [ ]: AC

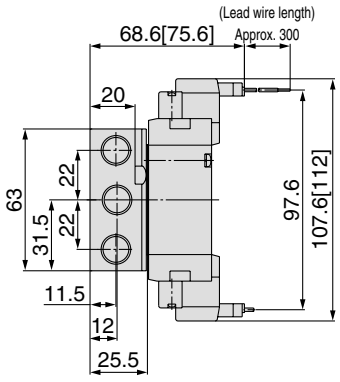
Grommet (G), (H): 10-SYJ7243-□$^{G}_{H}$□□-$^{01}_{02}$□



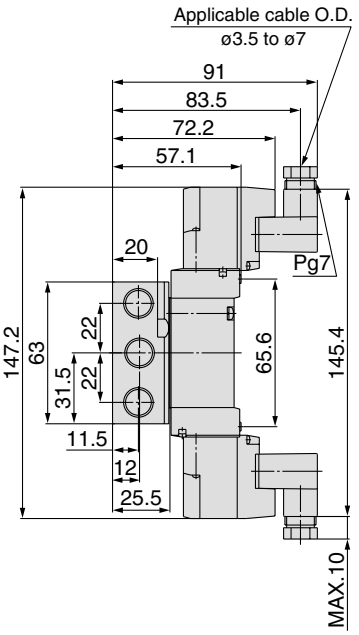
L plug connector (L): 10-SYJ7243-□L□□-$^{01}_{02}$□



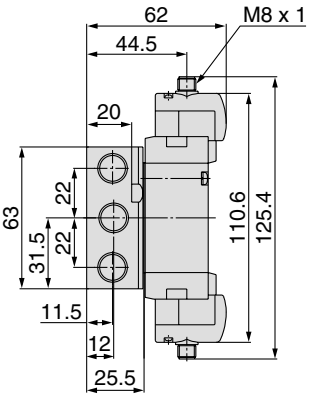
M plug connector (M): 10-SYJ7243-□M□□-$^{01}_{02}$□



DIN Terminal (D): 10-SYJ7243-□D□□-$^{01}_{02}$□



M8 connector (WO): 10-SYJ7243-□WO□□-$^{01}_{02}$□

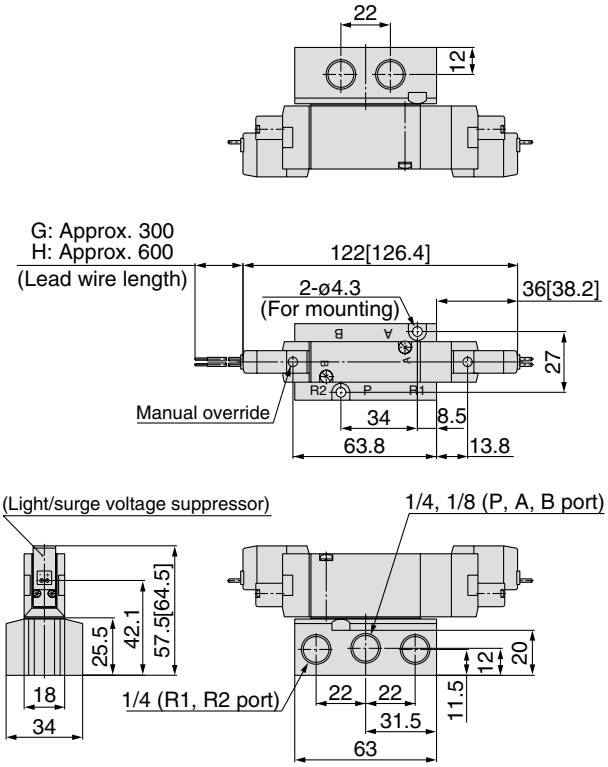


∗ Refer to page 563 for dimensions with connector cable.

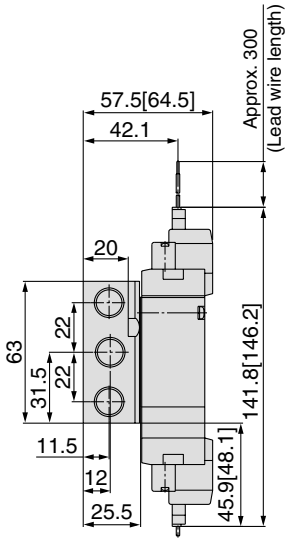
3 position closed center / Exhaust center / Pressure center

∗ [ ]: AC

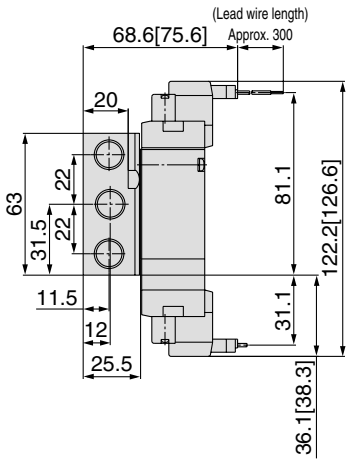
Grommet (G), (H): 10-SYJ7$^{3}_{4}_{5}$43-□$^{G}_{H}$□□-$^{01}_{02}$□



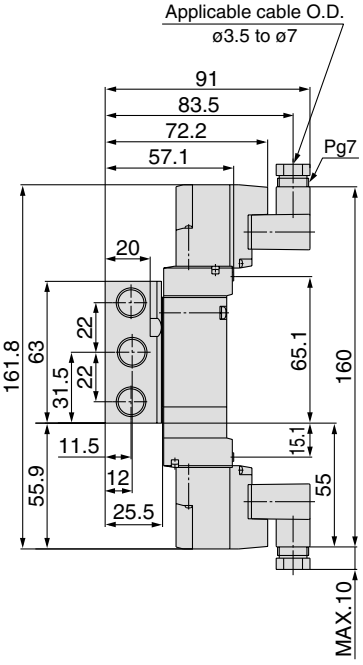
L plug connector (L): 10-SYJ7$^{3}_{4}_{5}$43-□L□□-$^{01}_{02}$□



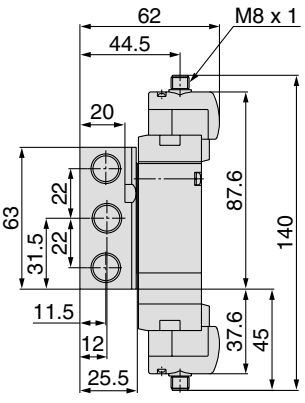
M plug connector (M): 10-SYJ7$^{3}_{4}_{5}$43-□M□□-$^{01}_{02}$□



DIN Terminal (D): 10-SYJ7$^{3}_{4}_{5}$43-□D□□-$^{01}_{02}$□

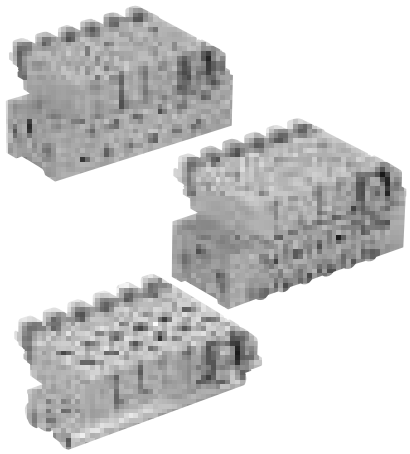


M8 connector (WO): 10-SYJ7$^{3}_{4}_{5}$43-□WO□□-$^{01}_{02}$□



∗ Refer to page 563 for dimensions with connector cable.

Manifold standard



Manifold specifications

Model		Type 20	Type 21	Type 40	Type 41	Type 42
Manifold type		Single base / B mount				
P (SUP) / R (EXH)		Common SUP / Common EXH				
Valve stations		2 to 15 stations	2 to 20 stations			
A, B port porting specifications	**Location**	Valve		Base	Base	
	Direction	Top		Bottom	Side	
Port size	**P, R port**	1/8	1/4			
	A, B port	1/8 C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)		1/8		C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)

Flow characteristics

Manifold			Port size		Flow characteristics					
					1→4/2 (P→A/B)			4/2→5/3 (A/B→R)		
			1(P), 5/3(R) port	2(B), 4(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported for internal pilot	**10-SS5YJ7-20**	**10-SYJ7□23**	1/8	1/8	2.2	0.35	0.57	2.3	0.26	0.55
			1/8	C6	1.4	0.32	0.37	2.0	0.25	0.49
			1/8	C8	1.7	0.38	0.45	2.1	0.25	0.51
	10-SS5YJ7-21		1/4	1/8	2.1	0.36	0.55	2.3	0.26	0.54
			1/4	C6	1.4	0.32	0.36	2.1	0.24	0.50
			1/4	C8	1.8	0.37	0.50	2.1	0.20	0.50
Base mounted for internal pilot	**10-SS5YJ7-40**	**10-SYJ7□43**	1/4	1/8	2.1	0.28	0.51	2.5	0.23	0.59
	10-SS5YJ7-41		1/4	1/8	2.0	0.30	0.50	2.2	0.30	0.55
	10-SS5YJ7-42-C6		1/4	C6	1.5	0.32	0.38	2.2	0.23	0.52
	10-SS5YJ7-42-C8		1/4	C8	1.9	0.24	0.46	2.2	0.26	0.53

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model number.

Example
- ● **10-SS5YJ7-20-03** ····· 1 set (Manifold base)
- ∗ **10-SYJ7123-5G-01** ····· 2 sets (Valve)
- ∗ **SYJ7000-21-1A** ····· 1 set (Blanking plate assembly)
- ● **10- SS5YJ7-41-03-01** ·· 1 set (Manifold base)
- ∗ **10- SYJ7143-5LZ** ····· 1 set (Valve)
- ∗ **10- SYJ7243-5LZ** ····· 1 set (Valve)
- ∗ **SYJ7000-21-1A** ····· 1 set (Blanking plate assembly)

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

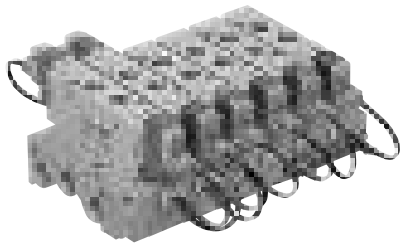
∗ Use manifold specification sheet.

Flat ribbon cable manifold

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

- **Clean appearance**

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



Flat ribbon cable manifold specifications

Model		Type 21P
Manifold type		Single base / B mount
P(SUP) / R(EXH)		Common SUP / Common EXH
Valve stations		3 to 12 stations
A, B port porting specifications		Valve
Port size	P, R port	1/4
	A, B port	1/8, C6, C8
Applicable flat ribbon cable connector		Socket: 26 pins MIL type with strain relief (Conforming to MIL-C-83503) (MIL-C-83503 compliant)
Internal wiring		In common between +COM and –COM (Z type: +COM only)
Rated voltage		24, 12 VDC

Note) The value is for manifold base and individually operated 2 position type.
Note 2) The withstand voltage specification for the wiring unit section is JIS C0704, Grade 1 or its equivalent.

Flow characteristics

Manifold			Port size		Flow characteristics					
					1→4/2 (P→A/B)			4/2→5/3 (A/B→R)		
			1(P), 5/3(R) port	2(B), 4(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported for internal pilot	10-SS5YJ7-21P-01	10-SYJ7□23	1/4	1/8	2.1	0.36	0.55	2.3	0.26	0.54
	10-SS5YJ7-21P-C6		1/4	C6	1.4	0.32	0.36	2.1	0.24	0.50
	10-SS5YJ7-21P-C8		1/4	C8	1.8	0.37	0.50	2.1	0.20	0.50

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold (Example)

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model number.

(Example) ● 10-SS5YJ7-21P-07 ···· 1 set (Manifold base)
* 10-SYJ7123-5LOU-C8 ·····3 sets (Valve)
* 10-SYJ7223-5LOU-C8 ·····3 sets (Valve)
* SYJ7000-21-3A ····· 1 set (Blanking plate assembly)
* SY3000-37-3A ····· 3 sets (Connector assembly)
* SY3000-37-4A ····· 3 sets (Connector assembly)

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

* Use manifold specification sheet.

How to Order Valve

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

For DC10—SYJ7 1 23 — 5 LO Z □ — 01

For AC10—SYJ7 1 23 — 1 LOZ □ — 01

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

A, B port size

Symbol	Port size
01	1/8
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"

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

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

How to Order Connector Assembly

12V, 24 VDC

For single solenoid	SY3000-37-3A
For double solenoid 3 position type	SY3000-37-4A
For single solenoid, individual SUP/EXH spacer	SY3000-37-3A
For double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-6A
3 port adaptor plate	SY3000-37-3A

100 VAC

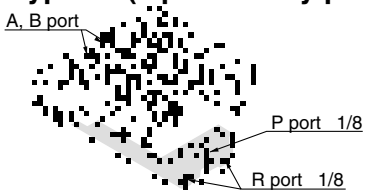
For single solenoid	SY3000-37-32A
For double solenoid 3 position type	SY3000-37-33A
For single solenoid, individual SUP/EXH spacer	SY3000-37-15A
For double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-34A
3 port adaptor plate	SY3000-37-32A

100 VAC (115 VAC)

For single solenoid	SY3000-37-35A
For double solenoid 3 position type	SY3000-37-36A
For single solenoid, individual SUP/EXH spacer	SY3000-37-19A
For double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-37A
3 port adaptor plate	SY3000-37-35A

Manifold standard
Common SUP / Common EXH

Type 20 (5 port / Body ported)



How to Order

10–SS5YJ7–20– 05 –

Stations

02	2 stations
:	:
15	15 stations

P,R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

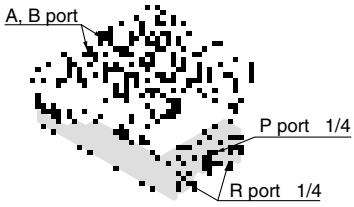
Note) For more than 6 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Applicable solenoid valve
10-SYJ7□23-□□□□-C6 / C8 (01)

Applicable blanking plate assembly
SYJ7000-21-1A

Applicable individual EXH spacer assembly
SYJ7000-17-1A

Type 21 (5 port / Body ported)



How to Order

10–SS5YJ7–21– 05 –

Stations

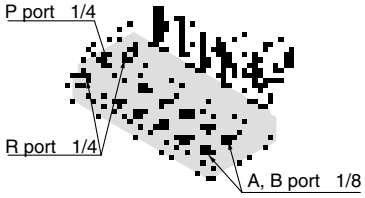
02	2 stations
:	:
20	20 stations

P,R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 40 (5 port / Base mounted)



How to Order

10–SS5YJ7–40– 05 – 01

Stations

02	2 stations
:	:
20	20 stations

A, B port size

01	1/8

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

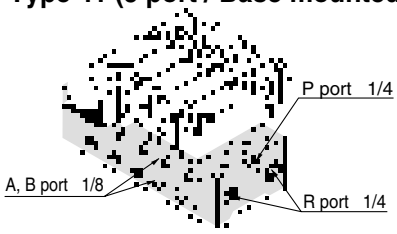
Applicable solenoid valve
10-SYJ7□43-□□□□

Applicable blanking plate assembly
SYJ7000-21-1A

Applicable individual EXH spacer assembly
SYJ7000-17-2A

Applicable individual SUP spacer assembly
SYJ7000-16-2A

Type 41 (5 port / Base mounted)



How to Order

10–SS5YJ7–41– 05 – 01

Stations

02	2 stations
:	:
20	20 stations

A, B port size

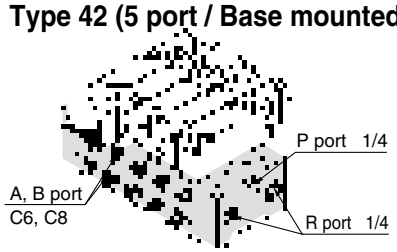
01	1/8

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 42 (5 port / Base mounted)



How to Order

10–SS5YJ7– 42– 05 – C6

Stations

02	2 stations
:	:
20	20 stations

A, B port size

C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"

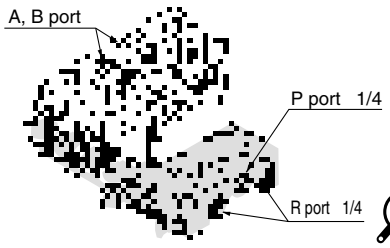
Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Flat ribbon cable manifold
Common SUP / Common EXH

Type 21P (5 port / Body ported)



How to Order

10-SS5YJ7-21P - 05 -

Stations

03	3 stations
:	:
12	12 stations

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

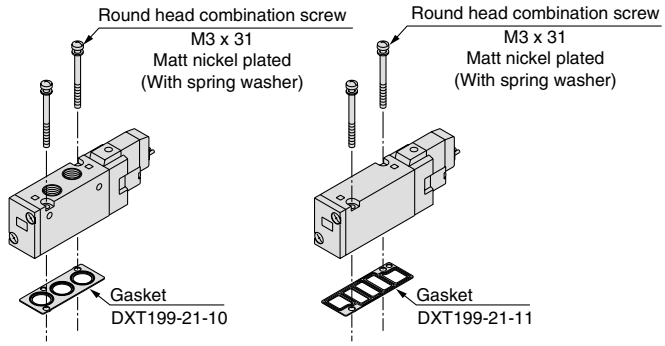
Applicable solenoid valve
Refer to page 548.

Applicable blanking plate assembly
SYJ7000-21-3A

Applicable connector assembly
Refer to page 548.

<Manifold option>

Combinations of solenoid valve, manifold gasket and manifold base



Applicable base
· 10-SS5YJ7-20
· 10-SS5YJ7-21

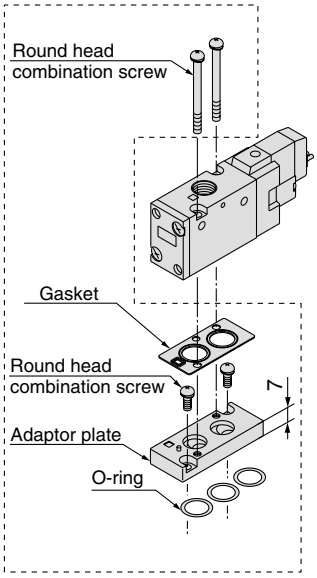
Applicable base
· Sub-plate
· 10-SS5YJ7-40
· 10-SS5YJ7-41
· 10-SS5YJ7-42

Mix installation of 10-SYJ700 and 10-SYJ7000 valves on the same manifold

- Use of an adapter plate makes it possible to mount series 10-SYJ700 on the manifold bases of series 10-SYJ7000.
- When mounting the 10-SYJ700 valve on the 10-SYJ7000 manifold, the 10-SYJ700 solenoid must be positioned on the same side of a single solenoid of the 10-SYJ7000.
- For base mounted style, the A port of the 3 port valve become the B port of manifold base.

Adaptor plate assembly SYJ700-3-1A

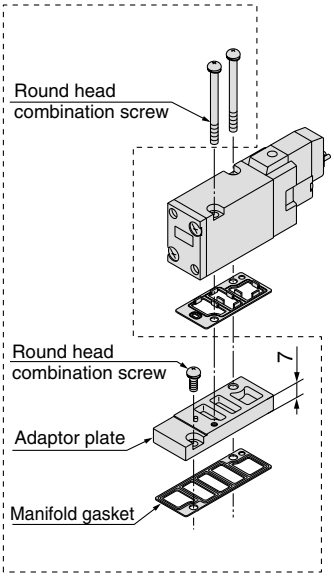
Series 10-SYJ700 body ported type



Applicable base
· 10-SS5YJ7-20
· 10-SS5YJ7-21

Adaptor plate assembly SYJ700-3-2A

Series 10-SYJ700 base mounted type



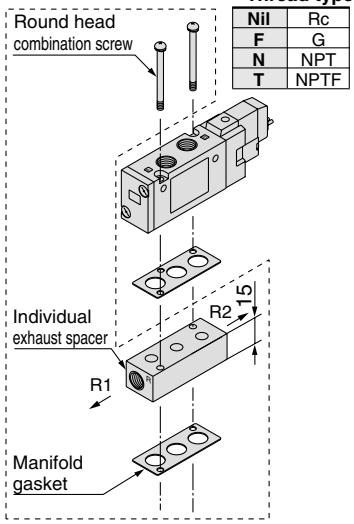
Applicable base
· 10-SS5YJ7-40
· 10-SS5YJ7-41
· 10-SS5YJ7-42

Individual EXH spacer assembly

SYJ7000-17-1 □ A

• **Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

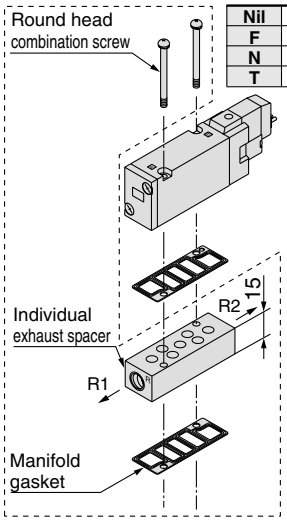


Applicable base
· 10-SS5YJ7-20
· 10-SS5YJ7-21

SYJ7000-17-2 □ A

• **Thread type**

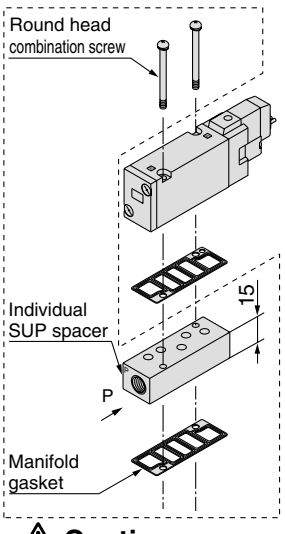
Nil	Rc
F	G
N	NPT
T	NPTF



Applicable base
· 10-SS5YJ7-40
· 10-SS5YJ7-41
· 10-SS5YJ7-42

Individual SUP spacer assembly

SYJ7000-16-2 □ A



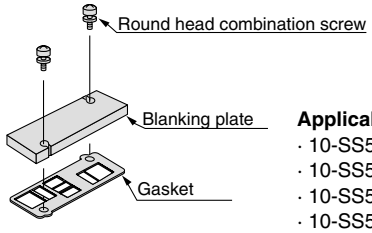
• **Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

Applicable base
· 10-SS5YJ7-40
· 10-SS5YJ7-41
· 10-SS5YJ7-42

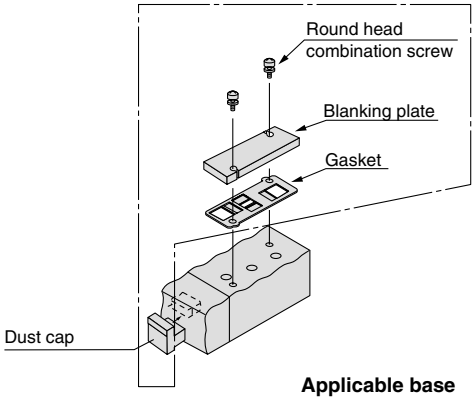
Blanking plate assembly

SYJ7000-21-1A



Applicable base
· 10-SS5YJ7-20
· 10-SS5YJ7-21
· 10-SS5YJ7-40
· 10-SS5YJ7-41
· 10-SS5YJ7-42

SYJ7000-21-3A



Applicable base
· 10-SS5YJ7-21P

⚠ Caution

Mounting screw tightening torque	Use caution to the assembly orientation of solenoid valves, gasket, and optional parts.

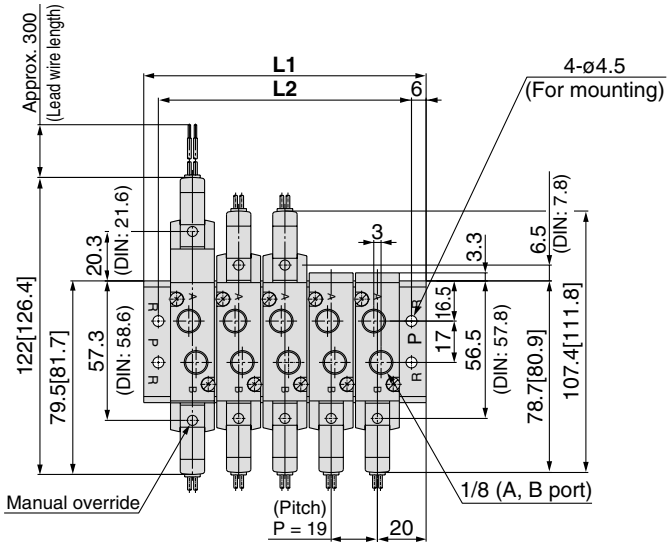
M3: 0.8N·m

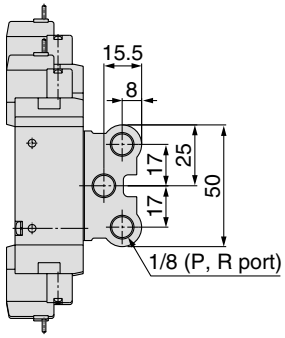
SMC

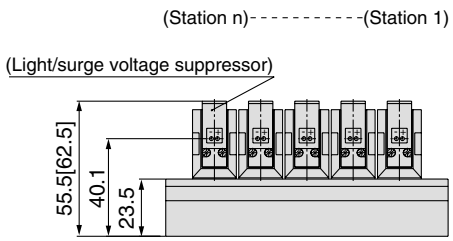
Type 20: Top ported / 10-SS5YJ7-20-Stations-00□

∗ [ ]: AC

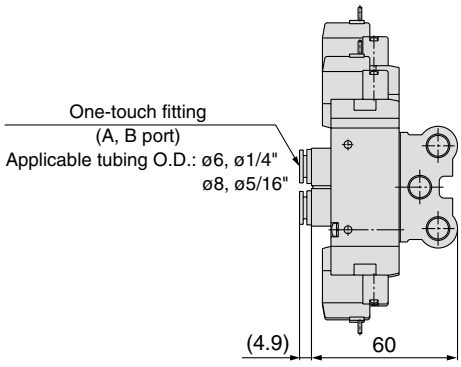
Grommet (G)



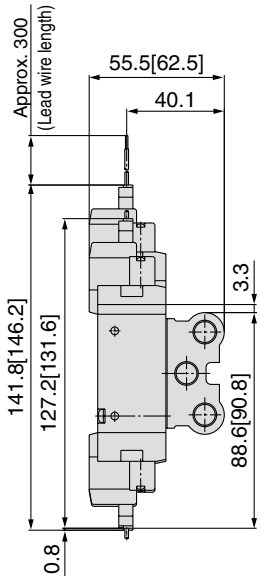




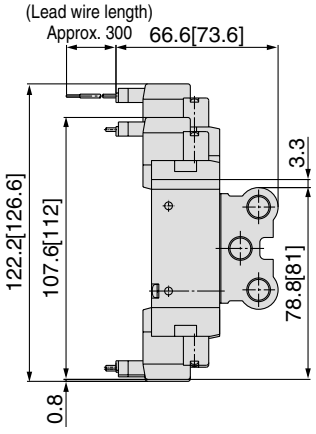
Built-in One-touch fitting



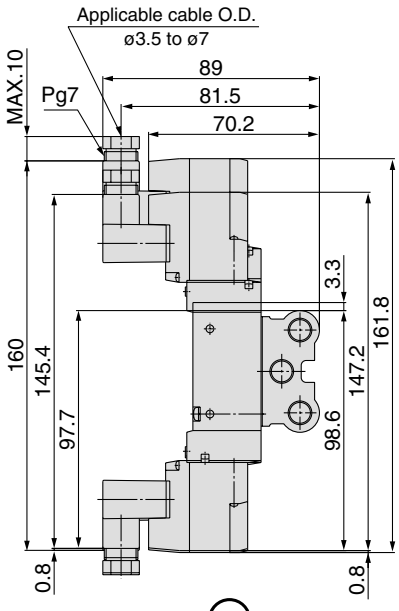
L plug connector (L)



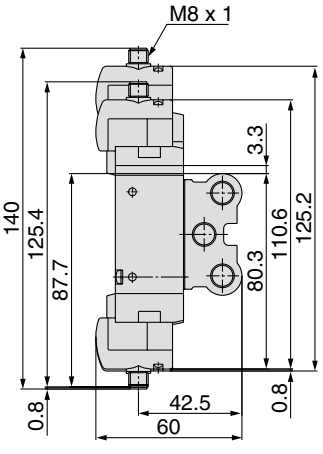
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



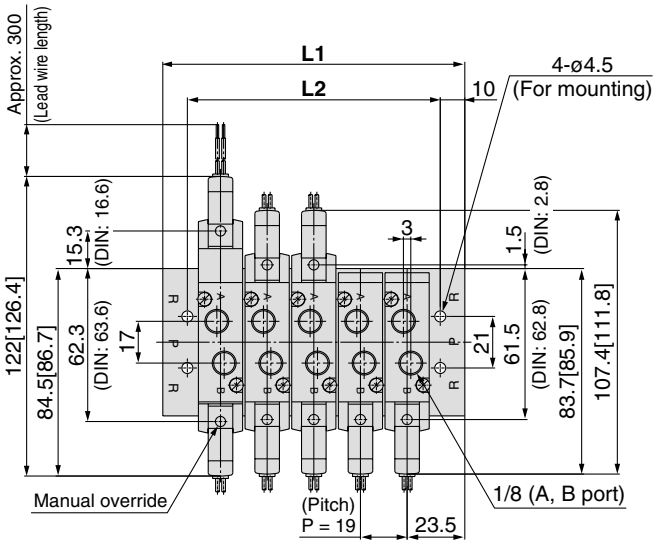
∗ Refer to page 563 for dimensions with connector cable.

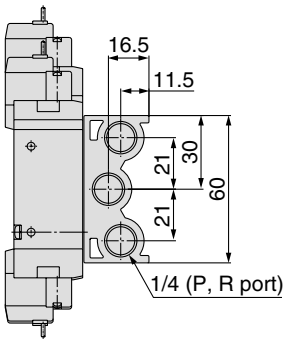
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15 stations
L1	59	78	97	116	135	154	173	192	211	230	249	268	287	306
L2	47	66	85	104	123	142	161	180	199	218	237	256	275	294

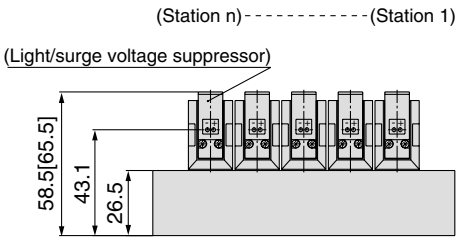
Type 21: Top ported / 10-SS5YJ7-21-Stations(-00)

∗ [ ]: AC

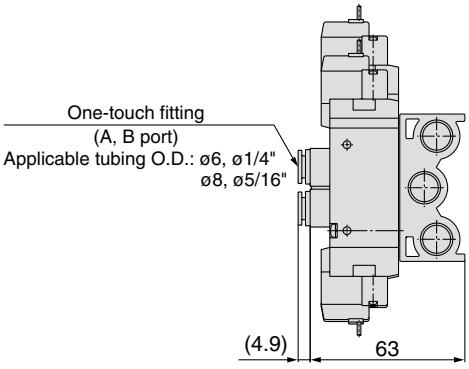
Grommet (G)



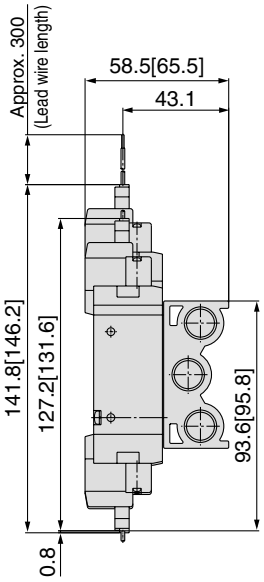




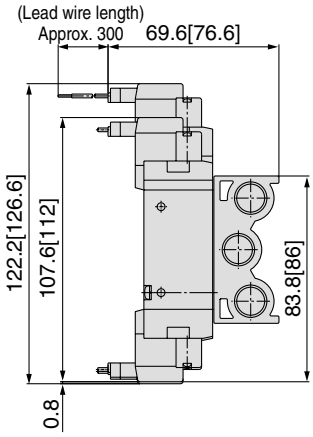
Built-in One-touch fitting



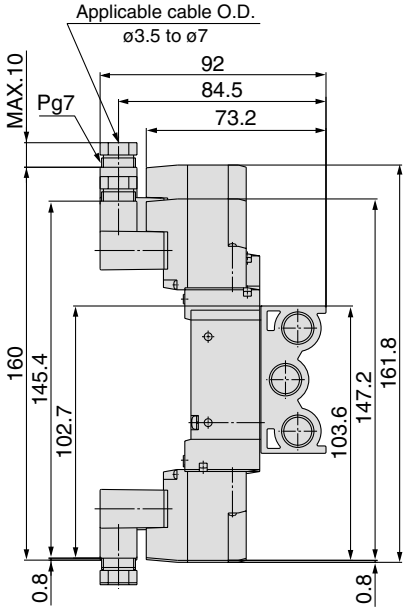
L plug connector (L)



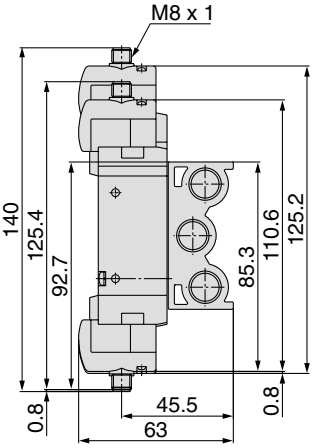
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



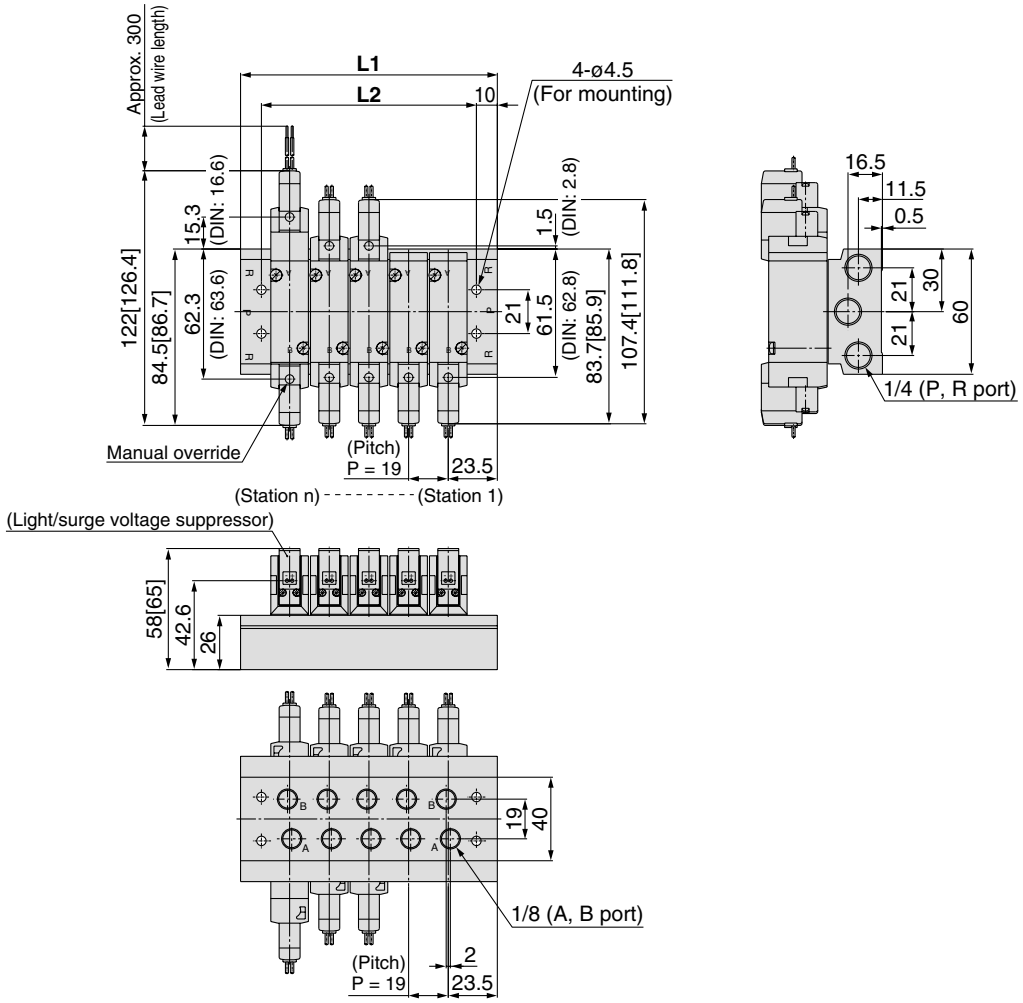
∗ Refer to page 563 for dimensions with connector cable.

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

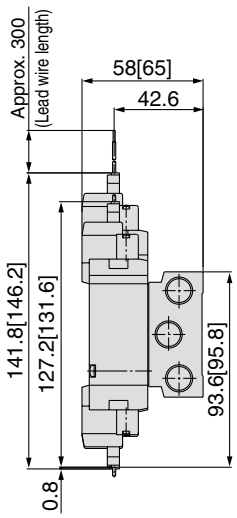
Type 40: Bottom ported / 10-SS5YJ7-40-Stations-01□

∗ [ ]: AC

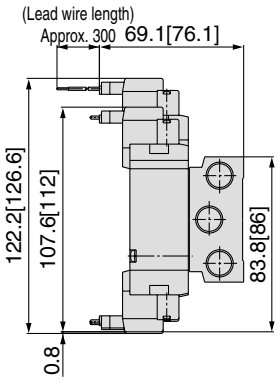
Grommet (G)



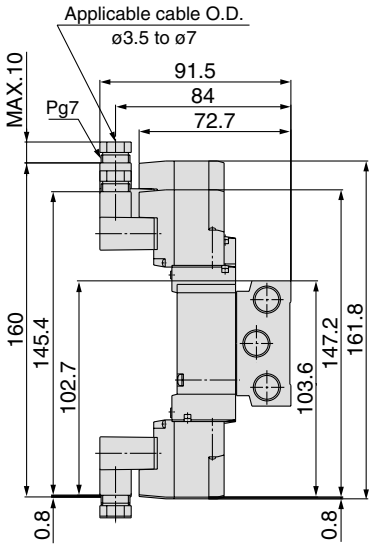
L plug connector (L)



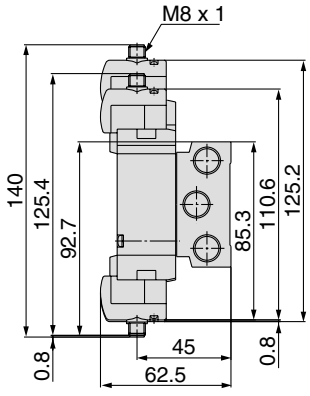
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



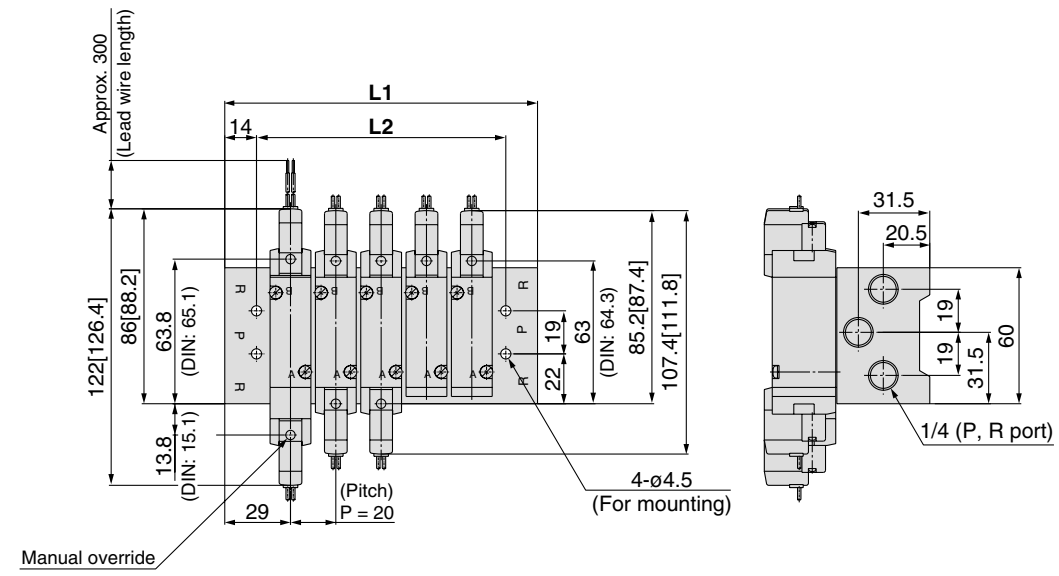
∗ Refer to page 563 for dimensions with connector cable.

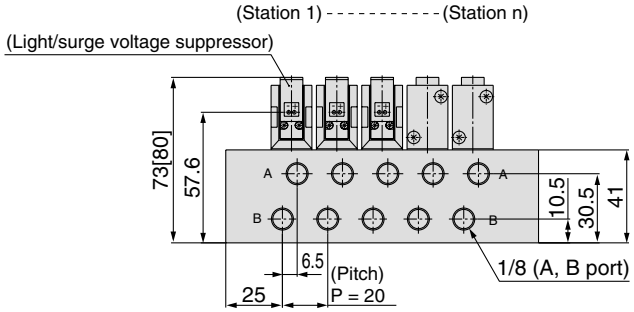
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	66	85	104	123	142	161	180	199	218	237	256	275	294	313	332	351	370	389	408
L2	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388

Type 41: Side ported / 10-SS5YJ7-41-Stations-01□

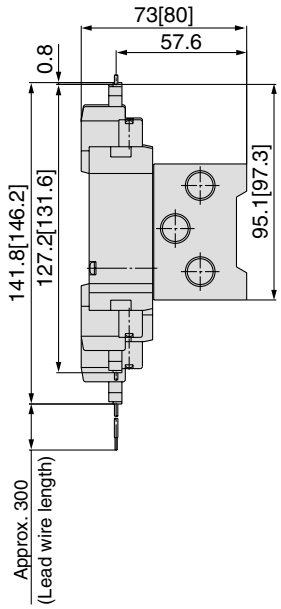
∗ [ ]: AC

Grommet (G)

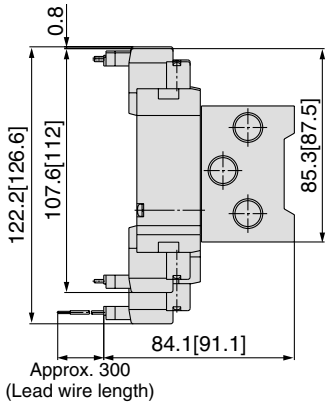




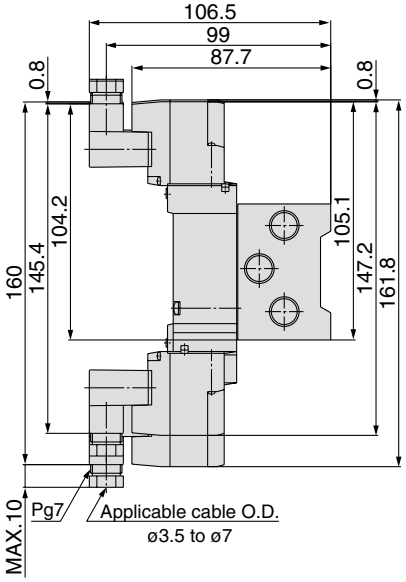
L plug connector (L)



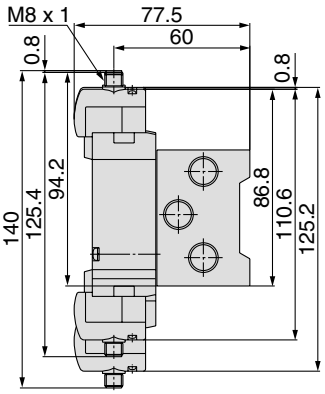
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



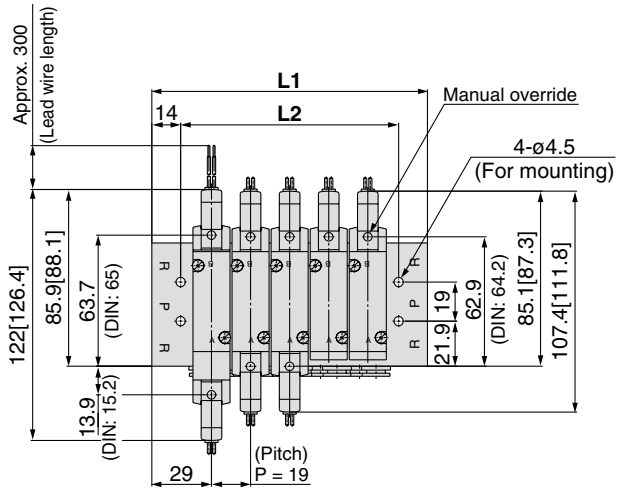
∗ Refer to page 563 for dimensions with connector cable.

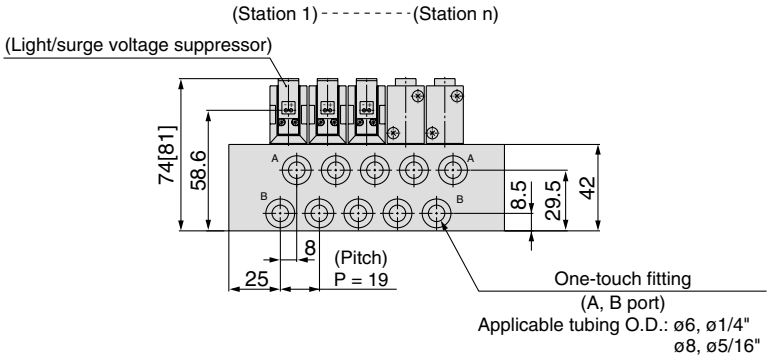
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	78	98	118	138	158	178	198	218	238	258	278	298	318	338	358	378	398	418	438
L2	50	70	90	110	130	150	170	190	210	230	250	270	290	310	330	350	370	390	410

Type 42: Side ported / 10-SS5YJ7-42-Stations-C6,N7 C8,N9

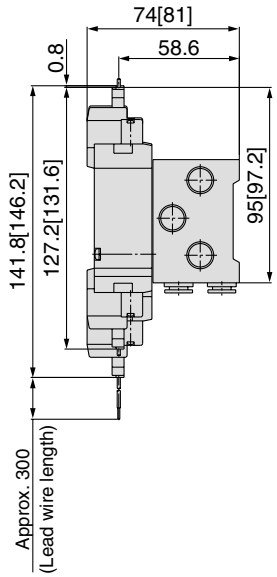
∗ [ ]: AC

Grommet (G)

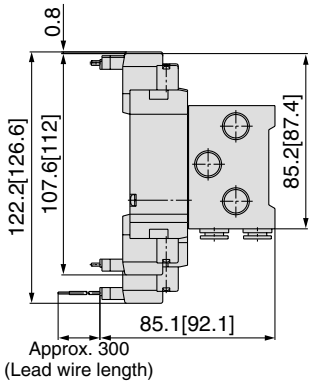




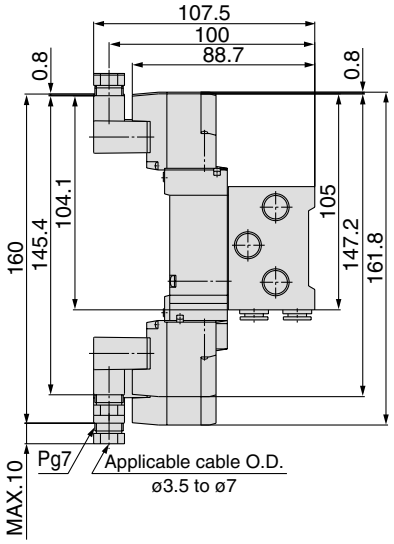
L plug connector (L)



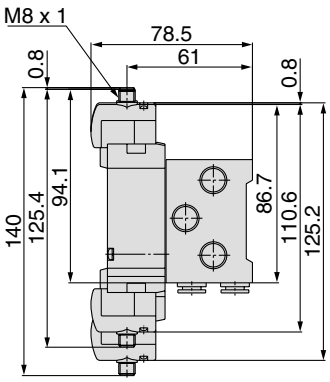
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



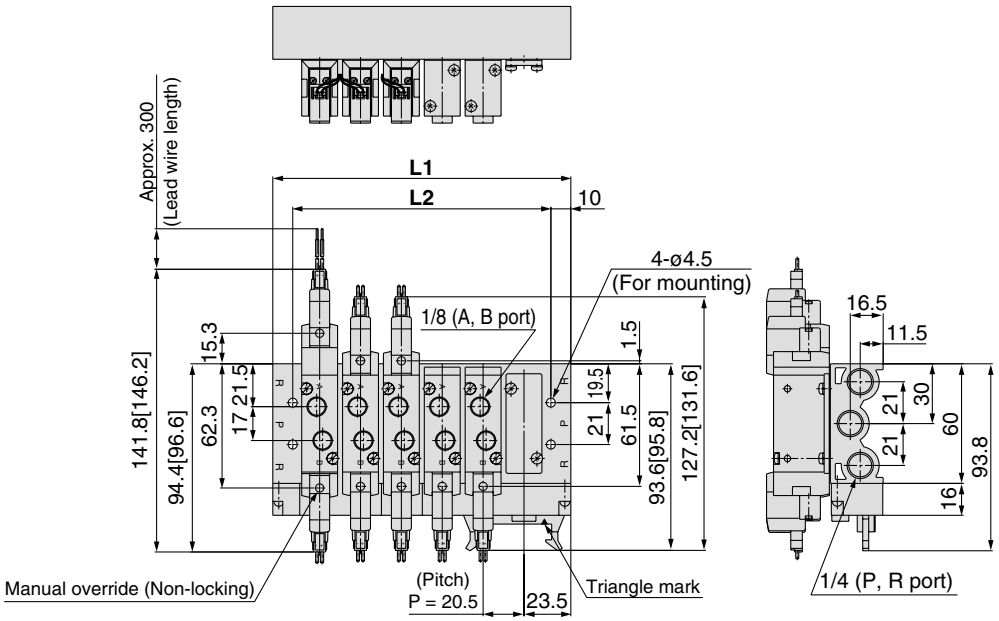
∗ Refer to page 563 for dimensions with connector cable.

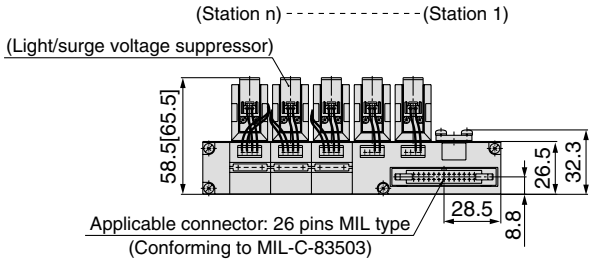
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	77	96	115	134	153	172	191	210	229	248	267	286	305	324	343	362	381	400	419
L2	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

Flat ribbon cable manifold

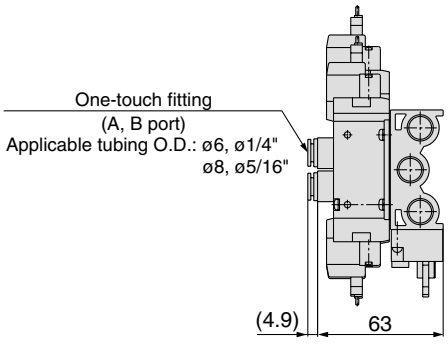
∗ [ ]: AC

10-SS5YJ7-21P-Stations(-00)





With built-in One-touch fitting



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

Series 10-SYJ5000/7000

Made to order specifications
DIN terminal connector conforming to EN-175301-803C (former DIN 43650C) standard

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

How to Order Valves

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Light/surge voltage suppressor

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

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

Bracket

Nil	Without bracket
F	With bracket

Note) Do not remove the factory installed bracket from models with the bracket option. Removal of the bracket will cause air leakage.

Rated voltage

DC specifications

5	24 VDC
6	12 VDC

AC specifications (50/60Hz)

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

A, B port size

M5	M5 x 0.8
01	1/8 (10- SYJ7000 only)
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
N3	One-touch fitting for ø5/32"
N7	One-touch fitting for ø1/4

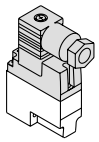
Body ported	10—SYJ	5	1	23—	5	Y			—	M5	—	—
Base mounted	10—SYJ	5	2	43—	5	Y			—			

Series

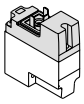
5	10-SYJ5000
7	10-SYJ7000

Electrical entry

Y: With connector



YO: Without connector



Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Port size

Nil	Without sub-plate	
1	1/8	10-SYJ5000
		10-SYJ7000
2	1/4	10-SYJ7000

Manual override

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

How to Order Pilot Valve Assembly

10—V115— 5 Y □

Rated voltage

DC specifications

5	24 VDC
6	12 VDC

AC specifications (50/60Hz)

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 suppresser
Z	With light/surge voltage suppresser

* "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 terminal	With connector
YO		Without connector

DIN connector part no.

Without light	SY100-82-1

With light

Rated voltage	Voltage symbol	Part 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

1. Use caution in wiring because it won't meet the IP65 (enclosure) standard if you use the other cord than prescribed cabtire cable of size (ø3.5 to ø7).
   Also be sure to 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 560.
2. D type DIN connector with 9.4 mm pitch between terminals is not interchangeable.
3. DIN connector except D type has the "N" indication in the end of voltage symbol. In case of DIN connector without light, "N" is not indicated. Please refer to the name plate to distinguish.
4. Dimensions are completely the same as D type connector.
5. When exchanging the pilot valve assembly only, "10-V115-□D" is interchangeable with "10-V115-□Y". Do not replace 10-V114 (G, H, L, M, W) to 10-V115-□D/□Y (DIN terminal), and vice versa.

Series 10-SYJ3000/5000/7000 Specific Product Precautions 1

Be sure to read before handling.

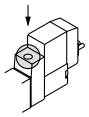
Manual override operation

⚠Warning

When the manual override is operated, connected equipment will be actuated. Confirm safety before operating.

■Non-locking push type (Standard)

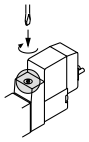
Press in the direction of the arrow.



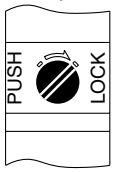
■Push-turn locking slotted [Type D]

While pressing, turn in the direction of the arrow.

If it is not turned, it can be operated in the same way as the non-locking type.



Locked position



⚠Caution

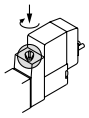
When handling the locking type D with a screwdriver, turn it gently using a watchmaker's screwdriver.

[Torque: 0.1 N·m or less]

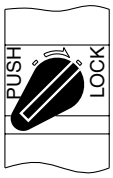
■Push-turn locking lever [Type E]

While pressing, turn in the direction of the arrow.

If it is turned, it can be operated in the same way as the non-locking type.



Locked position



⚠Caution

When locking the manual override on the push-turn locking types (D, E), be sure to push it down before turning.

Turning without first pushing it down can cause damage to the manual override and trouble such as air leakage, etc.

Solenoid valve for 200/220 VAC specifications

⚠Warning

Solenoid valves with grommet and L/M type plug connector AC specificatinos have a built-in rectifier circuit in the pilot section to operate the DC coil.

With 200/220 VAC specification pilot valves, this built-in rectifier generates heat when energized. The surface may become hot depending on the energized condition. Therefore, do not touch the solenoid valves.

Series 10-SYJ3000, 5000, 7000 Mixed installation of 3 port and 5 port valves on the same manifold.

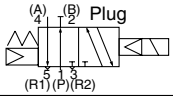
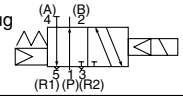
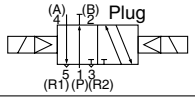
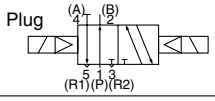
⚠Caution

Series 10-SYJ3000/5000/7000 and Series 10-SYJ300/500/700 can be mounted on the same manifold. How to mount on the same manifold is shown on the following pages.

10-SYJ3000, 10-SYJ300 ····· Page 507
10-SYJ5000, 10-SYJ500 ····· Page 529
10-SYJ7000, 10-SYJ700 ····· Page 550

If 4 or 5 port valve is used as a 3 port valve

Series 10-SY 3000/5000/7000 may be used as a N.C. or N.O. 3 port valve by plugging one of the A, B ports. Be sure not to plug the exhaust ports (R). Can be used when a double solenoide, 3 port valve is required.

Plug position		B port	A port
Type of actuation		N.C.	N.O.
Number of solenoids	Single		
	Double		

(JIS Symbols above: Series 10-SYJ5000)

SMC

Series 10-SYJ3000/5000/7000
Specific Product Precautions 2

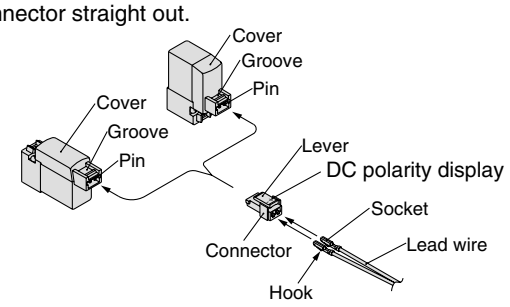
Be sure to read before handling.

How to use plug connector

⚠Caution

1. Attaching and detaching connectors

- To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.
- To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.



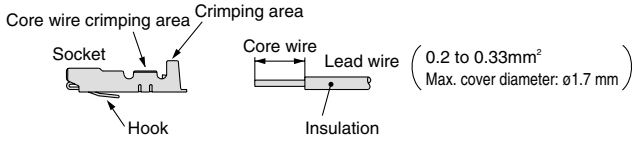
2. Crimping of lead wires and sockets

Strip 3.2 to 3.7 mm at the end of the lead wires, insert the ends of the core wires evenly into the sockets, and then crimp with a crimping tool.

When this is done, take care that the coverings of the lead wires do not enter the core wire crimping area.

Use an exclusive crimping tool for crimping.

(For special crimping tools, please contact SMC.)



3. Attaching and detaching sockets with lead wires

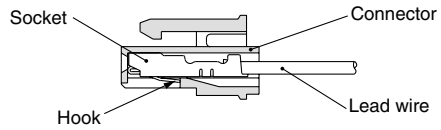
- **Attaching**

  Insert the sockets into the square holes of the connector (⊕ and ⊖ indication), and continue to push the sockets all the way in until they lock by hooking into the seats in the connector. (When they are pushed in, their hooks open and they are locked automatically.) Then confirm that they are locked by pulling lightly on the lead wires.

- **Detaching**

  To detach a socket from a connector, pull out the lead wire while pressing the socket's hook with a stick having a thin tip (approx. 1 mm).

  If the socket will be used again, first spread the hook outward.



Plug connector lead wire length

⚠Caution

Standard length is 300 mm, but the following lengths are also available.

How to Order Connector Assembly

For DC: **SY100 – 30 – 4A –** □

For 100 VAC: **SY100 – 30 – 1A –** □

For 200 VAC: **SY100 – 30 – 2A –** □

For other voltages of AC: **SY100 – 30 – 3A –** □

Without lead wire: **SY100 – 30 – A**
(with connector and 2 of sockets only)

● **Lead wire length**

Nil	300mm
6	600mm
10	1000mm
15	1500mm
20	2000mm
25	2500mm
30	3000mm
50	5000mm

How to Order

Specify the connector assembly part number together with the part number for the plug connector's solenoid valve without connector.

<Example> Lead wire length 2000 mm

(For DC) **For AC**

10-SYJ3123-5LO-M3 **10-SYJ3123-1LO-M3**

SY100-30-4A-20 **SY100-30-1A-20**

Series 10-SYJ3000/5000/7000
Specific Product Precautions 3

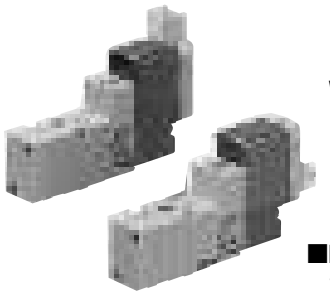
Be sure to read before handling.

Surge voltage suppressor

⚠Caution

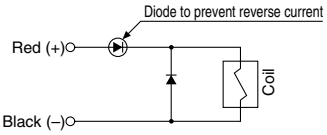
(For DC)

Grommet, L/M plug connector type

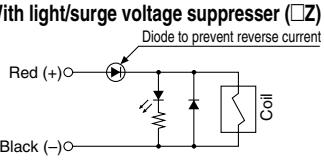


■Standard type (with polarity)

With surge voltage suppresser (□S)

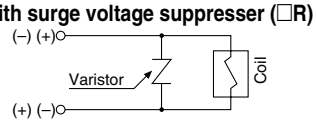


With light/surge voltage suppresser (□Z)

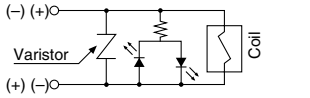


■Non-polar type

With surge voltage suppresser (□R)



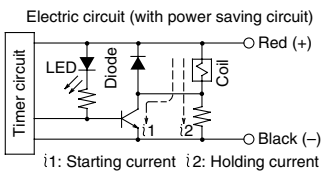
With light/surge voltage suppresser (□U)



- Connect the standard type in accordance with the +, – polarity indication.
  (The non-polar type can be used with the connections made either way.)
- Since voltage specifications other than standard 24 and 12 VDC do not have diodes for polarity protection, be careful not to make errors in the polarity.
- Be careful about the allowable voltage fluctuation since the valves with a diode to prevent reverse current has about a 1V voltage drop. (Refer to the solenoid specifications of each valve for details.)
- When wiring is done at the factory, positive (+) is red and negative (–) is black.

■With power saving circuit

Power consumption is decreased by 1/4 by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 62 ms at 24 VDC.)

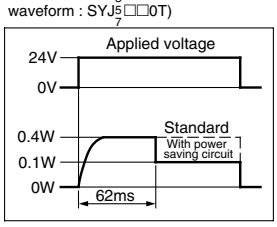


Working principle

With the above circuit, the current consumption when holding is reduced to save energy. Please refer to the electric wave data to the right.

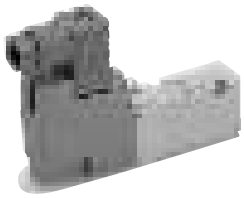
- When a power saving circuit is installed, a diode to prevent reverse current is not provided. Therefore, use caution not to connect in reverse.

(Energy saving type's electrical power waveform : SYJ$^{3}_{7}$□□0T)

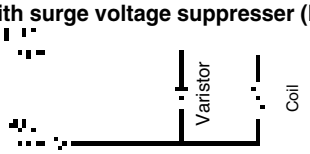


- Be careful about the allowable voltage fluctuation since voltage drop of about 0.5V occurs due to a transistor. (Refer to the solenoid specifications of each valve for details.)

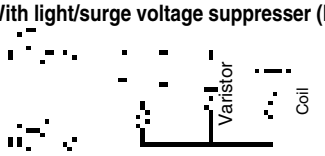
DIN terminal



With surge voltage suppresser (DS)

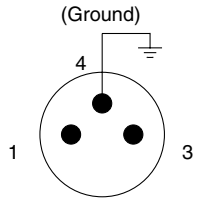


With light/surge voltage suppresser (DZ)



DIN terminal has no polarity.

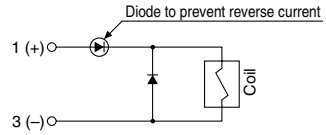
M8 connector type



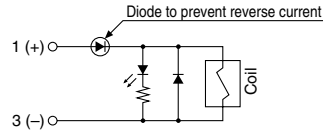
Solenoid valve side Pin wiring diagram

■Standard type (with polarity)

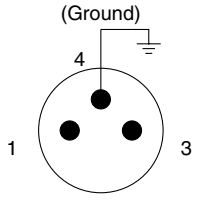
With surge voltage suppresser (□S)



With light/surge voltage suppresser(□Z)

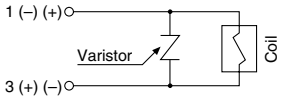


■Non-polar type

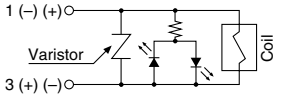


Solenoid valve side Pin wiring diagram

With surge voltage suppresser (□R)



With light/surge voltage suppresser (□U)



- In the case of standard type, connect + to 1 and – to 3 according to the polarity.
- For DC voltages other than standard 12/24 VDC, use caution not to mistake the polarity because a diode to prevent reverse current is not provided.
- Be careful about the allowable voltage fluctuation since the valves with a diode to prevent reverse current has about a 1V voltage drop. (Refer to the solenoid specifications of each valve for details.)

Series 10-SYJ3000/5000/7000
Specific Product Precautions 4

Be sure to read before handling.

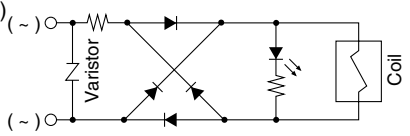
Surge voltage suppressor

<For AC>

(There is no "S" type because the generation of surge voltage is prevented by a rectifier.)

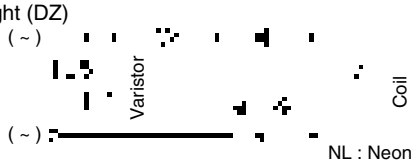
Grommet, L/M plug connector

With indicator light (□Z)



DIN terminal

With indicator light (DZ)



Note) Surge voltage suppressor of varistor has residual voltage corresponding to the protective element and rated voltage. Therefore, protect the controller side from the surge. The residual voltage of the diode is approximately 1 V.

How to use DIN Terminal

⚠Caution

Connection

1. Loosen the holding screw and pull the connector out of the solenoid valve terminal block.
2. After removing the holding screw, insert a flat head screwdriver, etc. into the notch on the bottom of the terminal block and pry it open, separating the terminal block and the housing.
3. Loosen the terminal screws (slotted screws) on the terminal block, insert the cores of the lead wires into the terminals according to the connection method, and fasten them securely with the terminal screws.
4. Secure the cord by fastening the ground nut.

⚠Caution

When making connections, note that using other than the supported size (ø3.5 to ø7) cabtire cable will not satisfy IP65 (enclosure) standards.

Also, be sure to tighten the ground nut and holding screw within their specified torque ranges.

⚠Caution

Changing the entry direction

After separating the terminal block and housing, the cord entry can be changed by attaching the housing in the desired direction (4 directions at 90° intervals).

* When equipped with an indicator light, be careful not to damage the light with the cord's lead wires.

Precautions

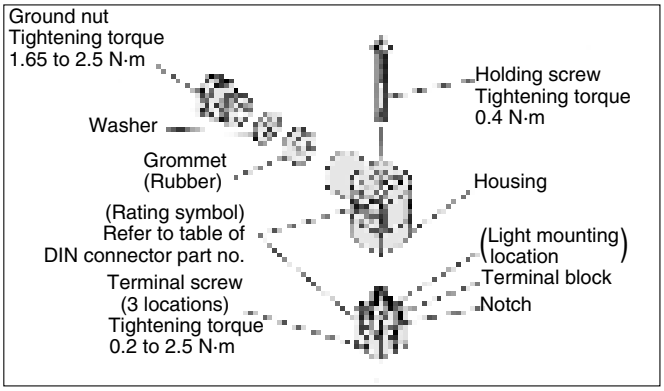
Plug in and pull out the connector vertically without tilting to one side.

Compatible cable

Cord O.D.: ø3.5 to ø7

(Reference) 0.5 mm², 2 core or 3 core, equivalent to JIS C 3306

How to use DIN Terminal

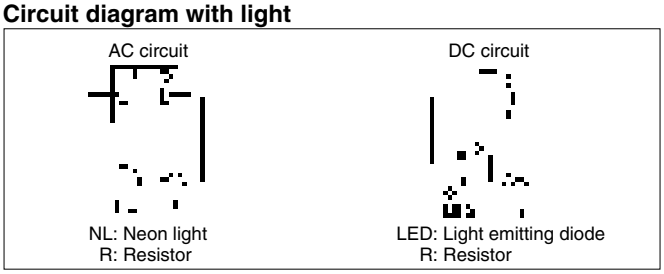


DIN connector part no.

⚠Caution

Without light	SY100-61-1	
With light		
Rated voltage	Voltage symbol	Part no.
24 VDC	24V	SY100-61-3-05
12 VDC	12V	SY100-61-3-06
100 VAC	100V	SY100-61-2-01
200 VAC	200V	SY100-61-2-02
110 VAC	110V	SY100-61-2-03
220 VAC	220V	SY100-61-2-04

Circuit diagram with light



Note) Refer to page 557 for DIN connector (Y) conforming to EN-175301-803C (former DIN 43650C).

Series 10-SYJ3000/5000/7000
Specific Product Precautions 5

Be sure to read before handling.

Connector assembly with cover

⚠ Caution

Connector assembly with dustproof protective cover

- Effective to prevent short circuit failure due to the entry of foreign matter into the connector
- Chloroprene rubber for electrical use, which provides outstanding weather resistance and electrical insulation, is used for the cover material. However, do not allow contact with cutting oil, etc.
- Simple and unencumbered appearance by adopting round-shaped cord.

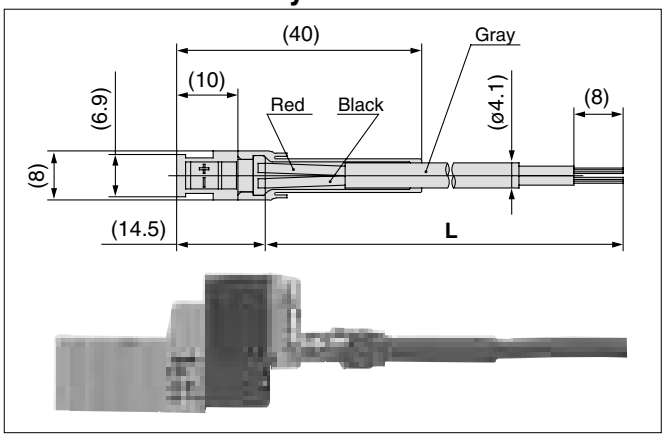
How to Order

SY100−68−A−□

Lead wire length

Nil	300mm
6	600mm
10	1000mm
15	1500mm
20	2000mm
25	2500mm
30	3000mm
50	5000mm

Connector assembly with cover: Dimensions



How to Order

Enter the part number for a plug connector solenoid valve without connector together with the part number for a connector assembly with cover.

<Example 1> Lead wire length 2000 mm
10-SYJ3123-5LOZ-M3
SY100-68-A-20

<Example 2> Lead wire length 300mm (Standard)
10-SYJ3123-5LPZ-M3

Symbol for connector assembly with cover

∗ In this case, the part number for the connector assembly with cover is not required.

M8 connector

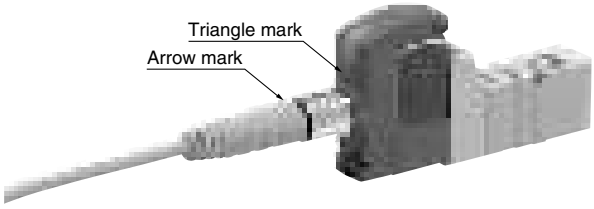
⚠ Caution

1. M8 connector types have an IP65 (enclosure) rating, offering protection from dust and water. However please note that these products are not intended for use in water.
   Select a SMC connector cable (V100-49-1-□) or a FA sensor type connector, with M8 threaded 3 pin specifications conforming to Nippon Electric Control Equipment Association Standard, NECA4202 (IEC60947-5-2). Make sure the connector O.D. is 10.5 mm or less when used with the Series 10-SY3000 manifold. If more than 10.5mm, it cannot be mounted due to the size.
2. Do not use a tool to mount the connector, as this may cause damage. Only tighten by hand. (0.4 to 0.6N)
3. Do not apply excessive power greater than 30N to the connector cable, otherwise IP65 cannot be satisfied.

⚠ Caution

Failure to meet IP65 performance may result if using alternative connectors than shown above, or when insufficiently tightened.

・Connector cable mounting



Note) Connector cable should be mounted in the correct direction. Make sure that the arrow symbol on the connector is facing the triangle symbol on the valve when using SMC connector cable (V100-49-1-□).
Be careful not to squeeze it in the wrong direction, as problems such as pin damage may occur.

MConnector cable

・Connector cable for M8 can be ordered as follows:

How to Order

1. To order solenoid valve and connector cable at the same time. (Connector cable will be included in the shipment of the solenoid valve.)

10−SYJ$\frac{3}{5}\frac{}{7}$□□3−□□□□−□□

Electrical entry
W1: Cable length 300 mm
W2: Cable length 500 mm
W3: Cable length 1000 mm
W4: Cable length 2000 mm
W7: Cable length 5000 mm

(Example 1) Cable length 300 mm
10-SYJ3123-5W1ZE-M3

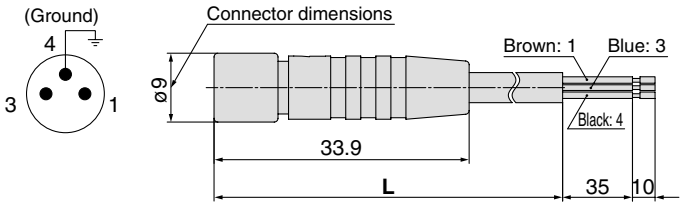
Symbol for electrical entry

Series 10-SYJ3000/5000/7000
Specific Product Precautions 6

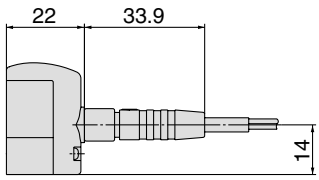
Be sure to read before handling.

M8 connector

2. To order connector cable only



Cable length (L)	Part no.
300mm	V100-49-1-1
500mm	V100-49-1-2
1000mm	V100-49-1-3
2000mm	V100-49-1-4
5000mm	V100-49-1-7



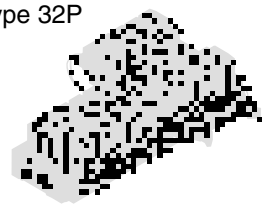
Flat ribbon cable manifold

⚠ Caution

Type 21P



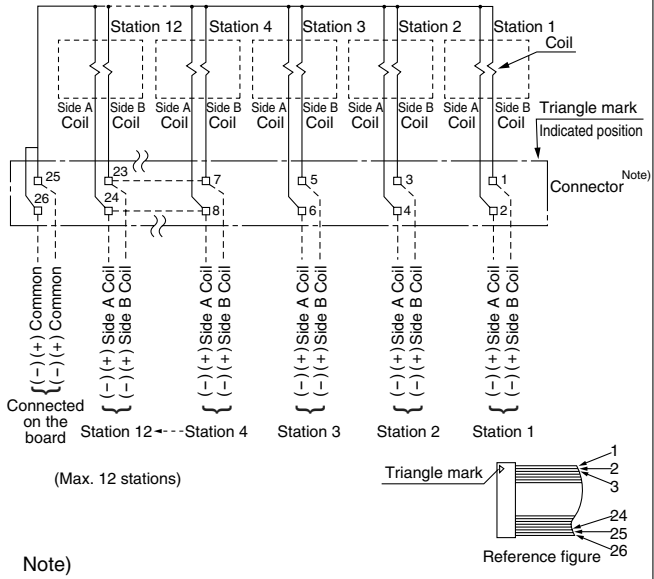
Type 32P



- In the manifold valves, the wiring to the individual valves is provided on a printed circuit board, and the connection to the external wires is consolidated through the use of a flat cable.
- A single MIL flat cable connects the entire manifold to your power source. This greatly reduces installation time and provides clean appearance.

Flat ribbon cable manifold

Internal wiring of manifold



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

- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid B side.
- The maximum number of stations that can be accommodated is 12. Please contact SMC for more stations.
- Only non-polar valves are available for the DC flat ribbon cable manifold, therefore negative COM or positive COM wiring of the manifold is possible. The valve dose not switch with negative COM if a Z type is used. Be sure to use positive COM.

Bracket

⚠ Caution

For 10-SYJ3000 (Single) or 10-SYJ7000 with bracket, do not use it without bracket.

Replacement of solenoid valve

⚠ Caution

Mount it so that there is no slippage or deformation in gaskets, and tighten with the tightening torque as shown below.

Model	Thread size	Tightening torque
10-SYJ3000	M1.7	0.12N·m
10-SYJ5000	M2.5	0.45N·m
10-SYJ7000	M3	0.8N·m

Series 10-SYJ3000/5000/7000
Specific Product Precautions 7

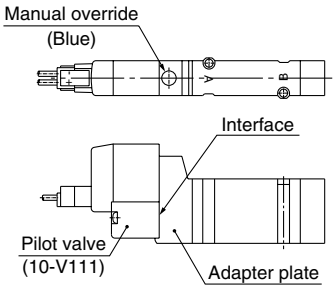
Be sure to read before handling.

Replacement of pilot valve

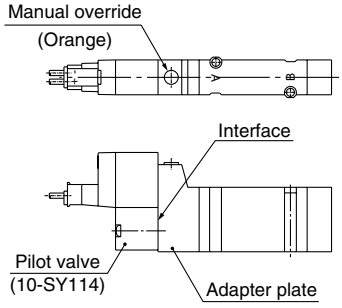
⚠ Caution

Pilot valves in this series are improved to provide excellent energy saving results. However, following this improvement, these new valves are no longer compatible with the conventional pilot valve used at the interface. Please consult with SMC when you need to exchange these pilot valves, in the case of manual override (marked in orange) of the adapter plate.

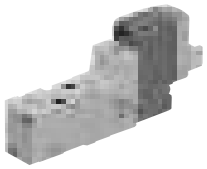
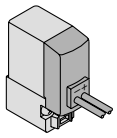
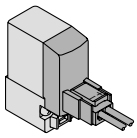
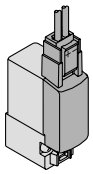
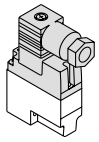
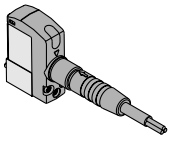
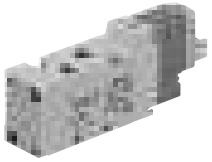
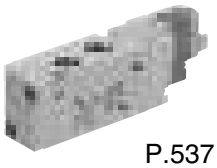
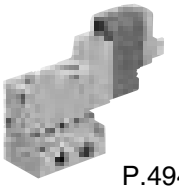
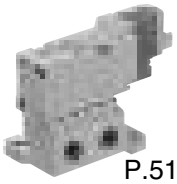
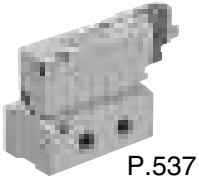
New type



Conventional type



Variations

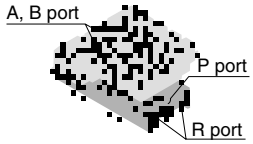
	Series	Sonic conductance C[dm³/(s·bar)]	Type of actuation	Voltage	Electrical entry	Option: Light/Surge voltage suppresser	Manual override
Body ported	**10-SYJ3000**  P.494	Effective area 0.9mm² {4/2→5/3 (A/B→EA/EB)}	2 position · Single · Double 3 position · Closed center · Exhaust center · Pressure center	**For DC** ■ 24 VDC 12 VDC 6 VDC 5 VDC 3 VDC **For AC** ■ AC 100V 50/60Hz AC 110V 50/60Hz AC 200V 50/60Hz AC 220V 50/60Hz	Grommet  L plug connector  M plug connector  DIN terminal  (10-SYJ5000/7000 only) M8 connector 	**For DC** ■ With surge voltage suppresser ■ With light/surge voltage suppressor **For AC** Note) ■ With light/surge voltage suppresser	■ Non-locking push type ■ Push-turn locking slotted type ■ Push-turn locking lever type
	10-SYJ5000  P.515	0.47 {4/2→5/3 (A/B→EA/EB)}					
	10-SYJ7000  P.537	2.4 {4/2→5/3 (A/B→EA/EB)}					
Base mounted type	**10-SYJ3000**  P.494	0.46 {4/2→5/3 (A/B→EA/EB)}					
	10-SYJ5000  P.515	0.83 {4/2→5/3 (A/B→EA/EB)}					
	10-SYJ7000  P.537	2.9 {4/2→5/3 (A/B→EA/EB)}					

Note) All standard AC voltage models have built-in surge voltage suppresser.

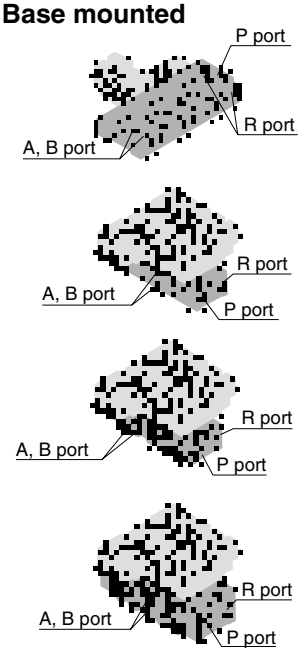
Manifold variations

Valve series		A, B port location	A, B port size									Manifold option		Flat ribbon cable manifold
			M3	M5	1/8	One-touch fitting						Individual SUP spacer assembly	Individual EXH spacer assembly	
						Applicable tubing O.D.								
						ø4	ø6	ø8	N3	N7	N9			
Body ported	**10-SYJ3000**	Top	●	—	—	—	—	—	—	—	—	—	—	●
	10-SYJ5000		—	●	—	●	●	—	●	●	—	●	●	●
	10-SYJ7000		—	—	●	—	●	●	—	●	●	—	●	●
Base mounted	**10-SYJ3000**	Side	●	●	—	●	—	—	●	—	—	—	—	●
		Bottom	—	—	—	—	—	—	—	—	—			—
	10-SYJ5000	Side	—	●	—	●	●	—	●	●	—	●	●	●
		Bottom	—	●	—	—	—	—	—	—	—			—
	10-SYJ7000	Side	—	—	●	—	●	●	—	●	●	●	●	—
		Bottom	—	—	●	—	—	—	—	—	—			—

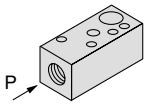
Body ported



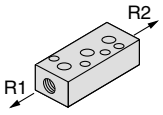
Base mounted



Individual SUP spacer assembly



Individual EXH spacer assembly



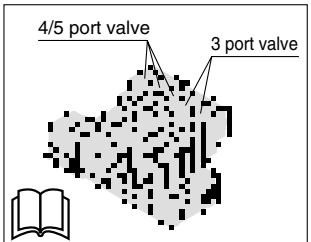
Type 21P



Type 32P



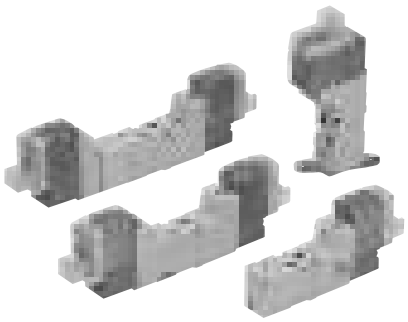
Mixed mounting of 3 port valves and 4, 5 port valves



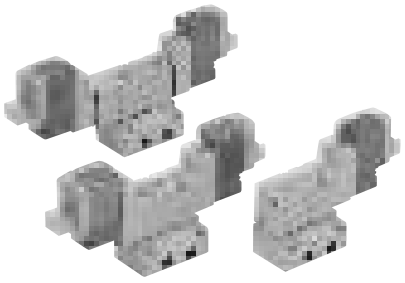
· For detailed specifications about 10-SYJ3000, refer to page 507. For 10-SYJ5000, refer to page 529, and for 10-SYJ7000, refer to page 550.

Series 10-SYJ3000

Rubber seal
4/5 port solenoid valve

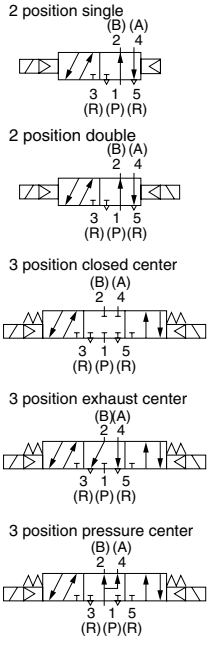


Body ported

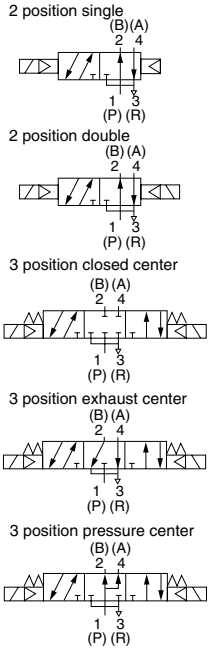


Base mounted

JIS Symbol
5 port



4 port (For manifold use only)



Made to Order — Made to order specifications (Refer to page 557 for details.)

Specifications

Fluid		Air
Operating pressure range (MPa)	**2 position single**	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.2 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (with no freezing. Refer to page 714.)
Response time ms (0.5MPa) Note 1)	**2 position single, double**	15 or less
	3 position	30 or less
Max. operating frequency (Hz)	**2 position single, double**	10
	3 position	3
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type
Pilot exhaust method		Common exhaust for the pilot and main valve
Lubrication		Not required
Mounting orientation		Unrestricted
Shock/Vibration resistance m/s² Note 2)		150/30
Enclosure		Dustproof (∗ M8 connector conforms to IP65.)

∗ Based on IEC60529

Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature : 20°C, at rated voltage and without surge voltage suppressor)

Note 2) 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. (Value in the initial state)
Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000Hz. Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

Solenoid specifications

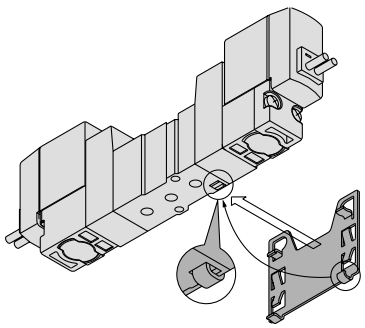
Electrical entry			Grommet (G)/(H), L plug connector (L), M plug connector (M), M8 connector (W)
Coil rated voltage V		**DC**	24, 12, 6, 5, 3
		AC50/60Hz	100, 110, 200, 220
Allowable voltage fluctuation			±10% of rated voltage ∗
Power consumption (W)	**DC**	**Standard**	0.35 (With indicator light: 0.4)
		With power saving circuit	0.1 (With indicator light only)
Apparent power (VA) ∗	**AC**	**100 VAC**	0.78 (With indicator light: 0.81)
		110 VAC	0.86 (With indicator light: 0.89)
		[115 VAC]	[0.94(With indicator light: 0.97)]
		200 VAC	1.18 (With indicator light: 1.22)
		220 VAC	1.30 (With indicator light: 1.34)
		[230 VAC]	[1.42 (With indicator light: 1.46)]
Surge voltage suppressor			Diode (Non-polar type: Varistor)
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.
∗ For the allowable voltage fluctuation for S, Z and T types (with power saving circuit), please observe the following range because they have voltage drop due to internal circuit.

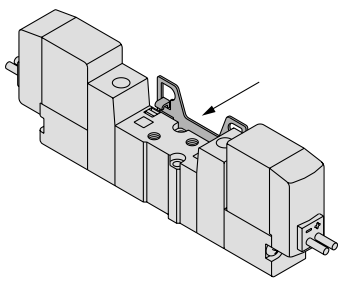
S and Z types 24 VDC: -7% to +10% 12 VDC: -4% to +10%
T type 24 VDC: -8% to +10% 12 VDC: -6% to +10%

Bracket mounting

(1) Insert the lower hook of the mounting bracket into the groove on the bottom of the valve as shown.



(2) Press the valve and mounting bracket together until the upper hook of the bracket snaps into place in the groove on top of the valve.



SMC

Flow characteristics / Weight

Valve model		Type of actuation		Port size		Weight (g) Note 3, 4)			Effective area mm²	Flow characteristics Note 2)					
				1, 5, 3 (P, EA, EB)	4, 2 (A, B)	Grommet	L/M plug connector	M8 Connector		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
5 port base mounted (With sub-plate)	**10-SYJ3143**	2 position	Single	M5 x 0.8	M5 x 0.8	62(36)	63(37)	67(41)	—	0.46	0.36	0.12	0.46	0.35	0.12
	10-SYJ3243		Double			79(53)	81(55)	89(63)							
	10-SYJ3343	3 position	Closed center			82(56)	84(58)	92(66)	—	0.47	0.33	0.12	0.47	0.31	0.12
	10-SYJ3443		Exhaust center						—	0.36	0.39	0.10	0.59[0.40]	0.43[0.33]	0.16[0.11]
	10-SYJ3543		Pressure center						—	0.58[0.32]	0.42[0.33]	0.16[0.080]	0.46	0.32	0.11
5 port body ported	**10-SYJ3123**	2 position	Single	M3 x 0.5	M3 x 0.5	36	37	41	0.9						
	10-SYJ3223		Double			53	55	63							
	10-SYJ3323	3 position	Closed center			56	58	66							
	10-SYJ3423		Exhaust center												
	10-SYJ3523		Pressure center												
4 port base mounted (For manifold base only) Note 1)	**10-SYJ3133**	2 position	Single	1/8	M5 x 0.8	36	37	41	—						
	10-SYJ3233		Double			53	55	63							
	10-SYJ3333	3 position	Closed center			56	58	66	—						
	10-SYJ3433		Exhaust center						—						
	10-SYJ3533		Pressure center						—						

Note 1) Dedicated for manifold base, refer to page 11 for details.
Note 2) [ ] denotes normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2
Note 3) ( ): Without sub-plate
Note 4) For DC voltages. For AC voltages add 3g to the weight of the single solenoid and 6g to the weight of the double solenoid and 3 position types.

How to Order

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

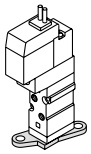
Light/surge voltage suppressor

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.

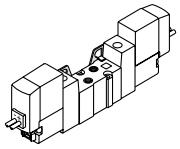
Bracket

Nil: Without bracket



Single
(Bracket cannot be retrofitted.)

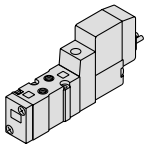
F: With bracket



Double

Note) The double solenoid mounting bracket is supplied unattached.
To order the double solenoid bracket for use with a single solenoid valve, order the single solenoid valve without a bracket and double solenoid bracket separately by specifying the part number of the bracket VJ3000-13-1besides the part number of the solenoid valve.
[Example] 10-SYJ3123-5M-M3
VJ3000-13-1

5 port



(Type 20 manifold)

Rated voltage

DC

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

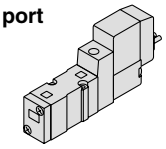
AC (50/60Hz)

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

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

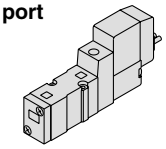
Body ported	10—	SYJ3	1	23	□	—	5	M	□	□	—	M3	— □
Base mounted (4 port)	10—	SYJ3	2	33	□	—	5	M	□	□		(Manifold use only)	
Base mounted (5 port)	10—	SYJ3	2	43	□	—	5	M	□	□	— □		

4 port



For manifold type 31, S31, 32, S32

5 port



For sub-plate, manifold type 41, S41, 46, S46

Clean series

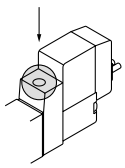
Coil specifications

Nil	Standard
T	With power saving circuit <24, 12 VDC only>

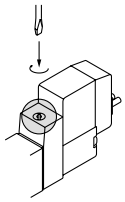
∗ Power saving circuit is not available in the case of "W□" type.

Manual override

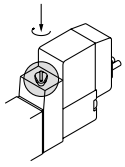
Nil: Non-locking push type



D: Push-turn locking slotted type

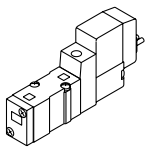


E: Push-turn locking lever type



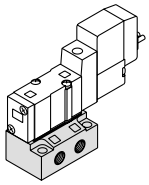
Port size

Nil: Without sub-plate



(With gasket and screws)

M5: With M5 port sub-plate



Electrical entry

24, 12, 6, 5, 3 VDC 100, 110, 200, 220 VAC				24, 12 VDC 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)	**MN**: Without lead wire	**WO**: Without connector cable
H: Lead wire length 600 mm	**LN**: Without lead wire	**LO**: Without connector	**MO**: Without connector	**W□**: With connector cable Note 1)

∗ "LN", "MN" types: with 2 sockets.
∗ For connector cable of M8 connector, refer to page 562.
Note 1) Be sure to enter a symbol of the cable length in □ with reference to P562.

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.
(Refer to catalog page 508 for details.)

How to Order Pilot Valve Assembly

10—V111 □ — 5 G □

Clean series

Coil specifications

Nil	Standard
T	With power saving circuit <24, 12 VDC only>

∗ Power saving circuit is not available in the case of "W□" type.

Light/Surge voltage suppressor

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

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

Rated voltage

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC
1	100 VAC50/60Hz
2	200 VAC50/60Hz
3	110 VAC50/60Hz [115 VAC50/60Hz]
4	220 VAC50/60Hz [230 VAC50/60Hz]

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

Electrical entry

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

∗ For connector cable of M8 connector, refer to page 562.
Note 1) Be sure to enter a symbol of the cable length in □ with reference to page 562.

How to Order Connector Assembly for L/M Plug Connector

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 (With connector and 2 of sockets only): **SY100-30-A**

Lead wire length

Nil	300mm
6	600mm
10	1000mm
15	1500mm
20	2000mm
25	2500mm
30	3000mm
50	5000mm

How to Order M8 Connector Cable

V100-49-1- □

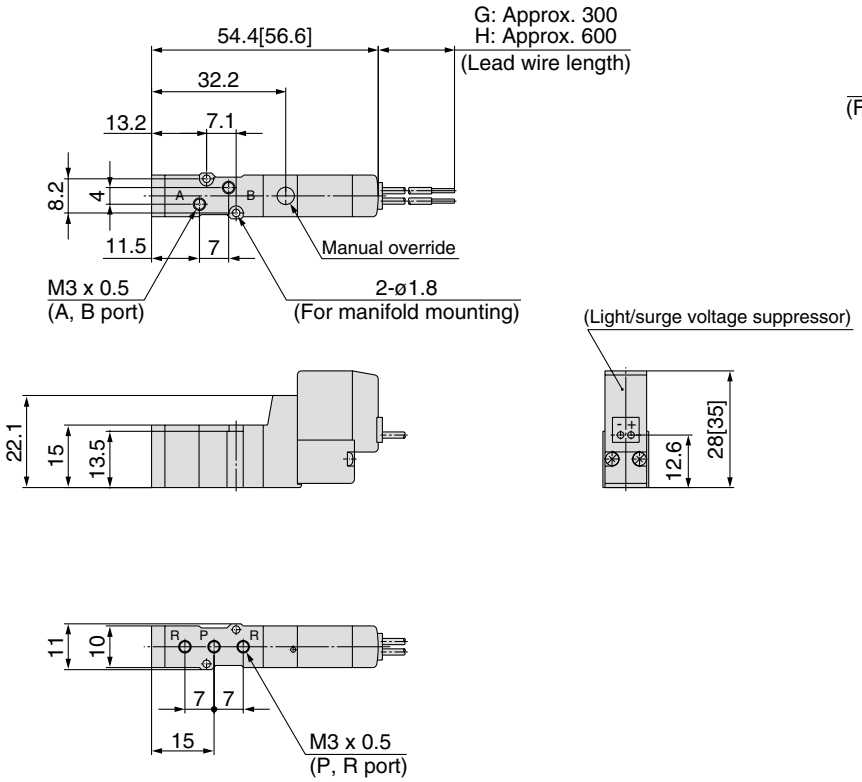
Cable length

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

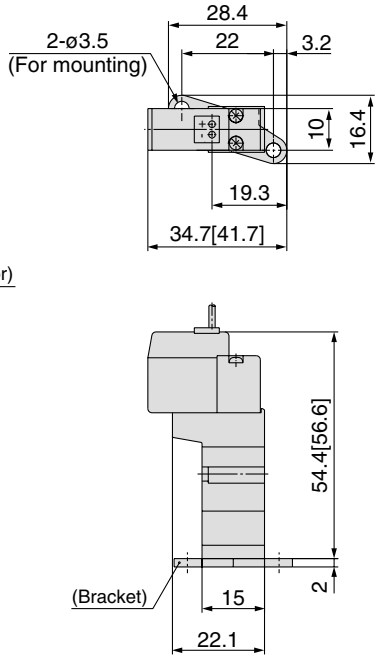
2 position single

∗[ ]: AC

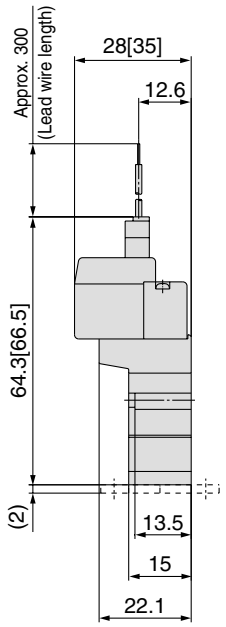
Grommet (G), (H): 10-SYJ3123-□$^{G}_{H}$□□-M3



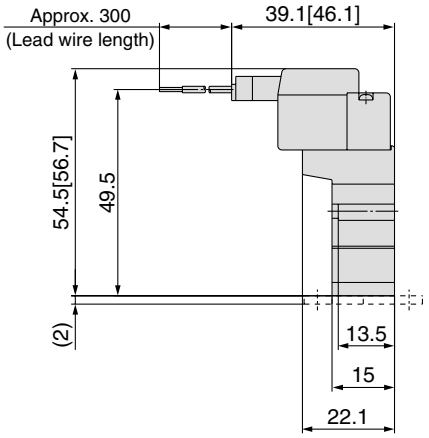
With bracket: 10-SYJ3123-□$^{G}_{H}$□□-M3-F



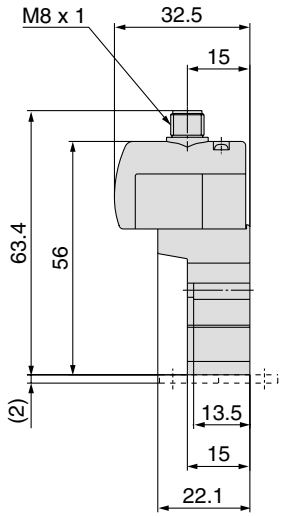
L plug connector (L): 10-SYJ3123-□L□□-M3 (-F)



M plug connector (M): 10-SYJ3123-□M□□-M3 (-F)



M8 Connector (WO): 10-SYJ3123-□WO□□-M3 (-F)

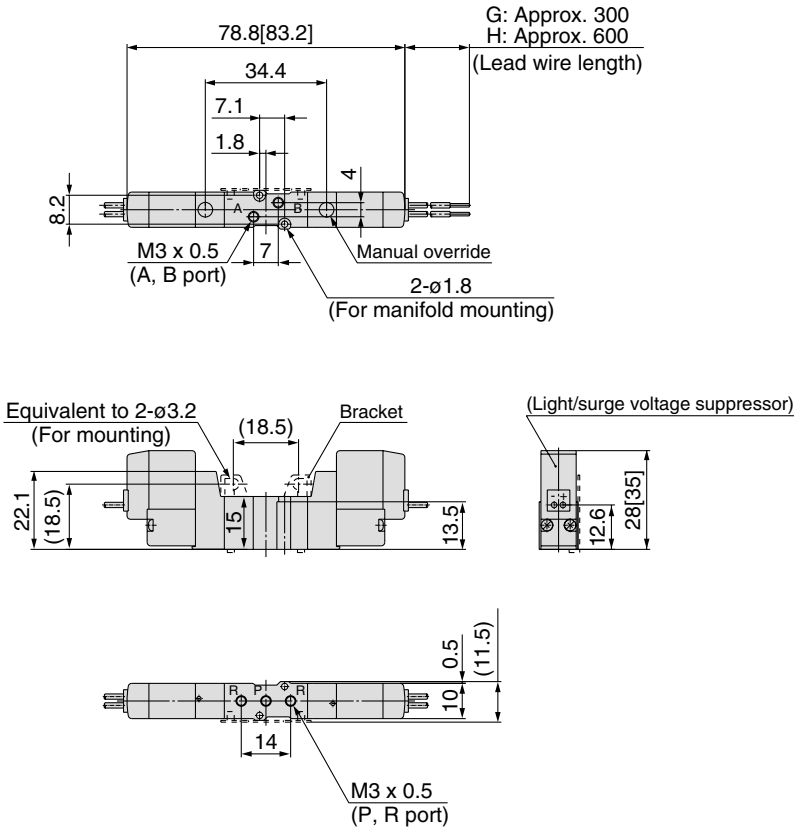


∗ Refer to page 563 for dimensions with connector cable.

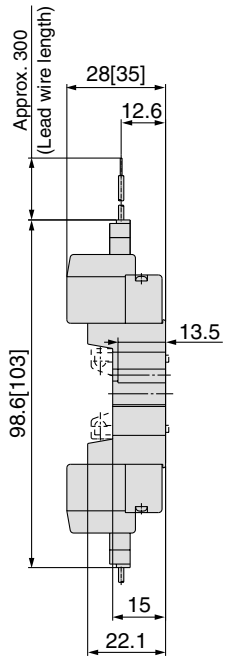
2 position double

∗ [ ]: AC

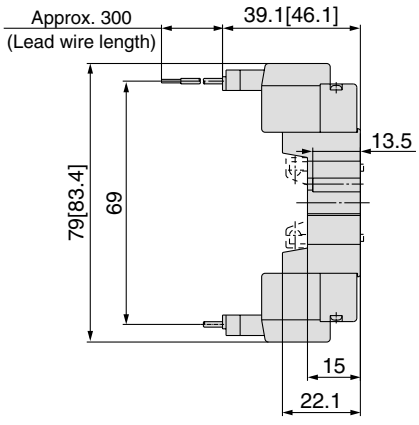
Grommet (G), (H): 10-SYJ3223-□$^{G}_{H}$□□-M3 (-F)



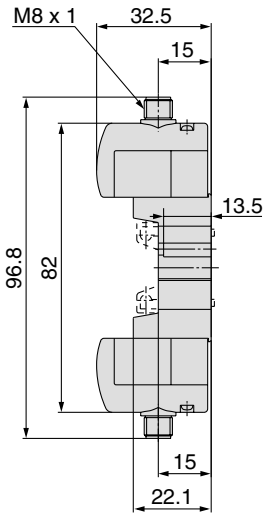
L plug connector (L): 10-SYJ3223-□L□□-M3 (-F)



M plug connector (M): 10-SYJ3223-□M□□-M3 (-F)



M8 connector (WO): 10-SYJ3223-□WO□□-M3 (-F)

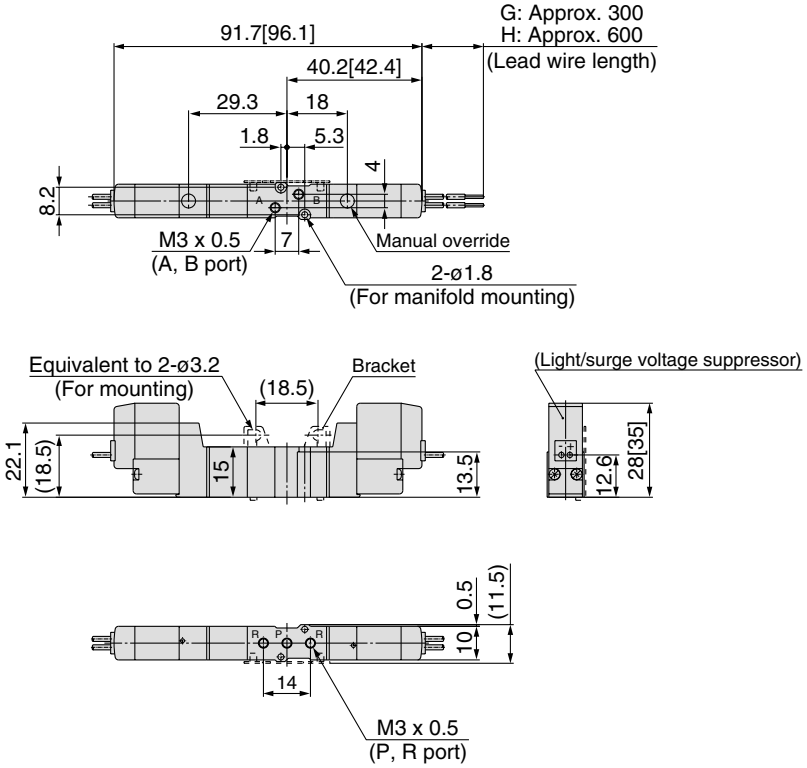


∗ Refer to page 563 for dimensions with connector cable.

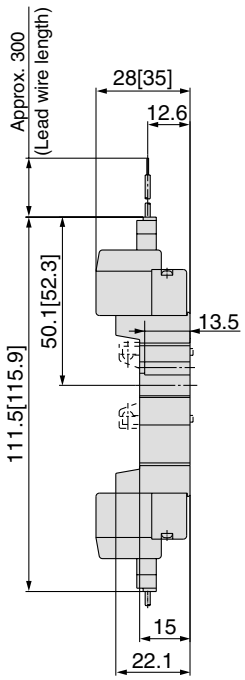
3 position closed center / exhaust center / pressure center

∗ [ ]: AC

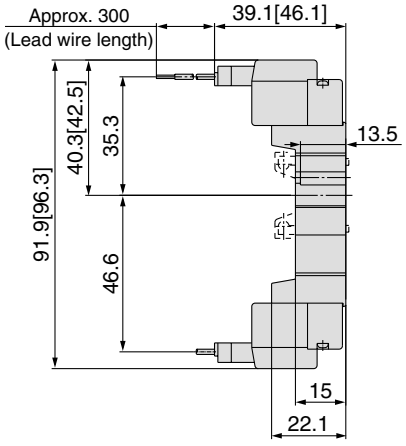
Grommet (G), (H): 10-SYJ3$^{3}_{5}$^{4}23-□GH□□-M3 (-F)



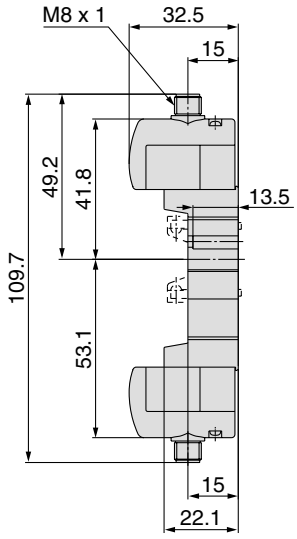
L plug connector (L): 10-SYJ3$^{3}_{5}$^{4}23-□L□□-M3 (-F)



M plug connector (M): 10-SYJ3$^{3}_{5}$^{4}23-□M□□-M3 (-F)



M8 Connector (WO): 10-SYJ3$^{3}_{5}$^{4}23-□WO□□-M3 (-F)

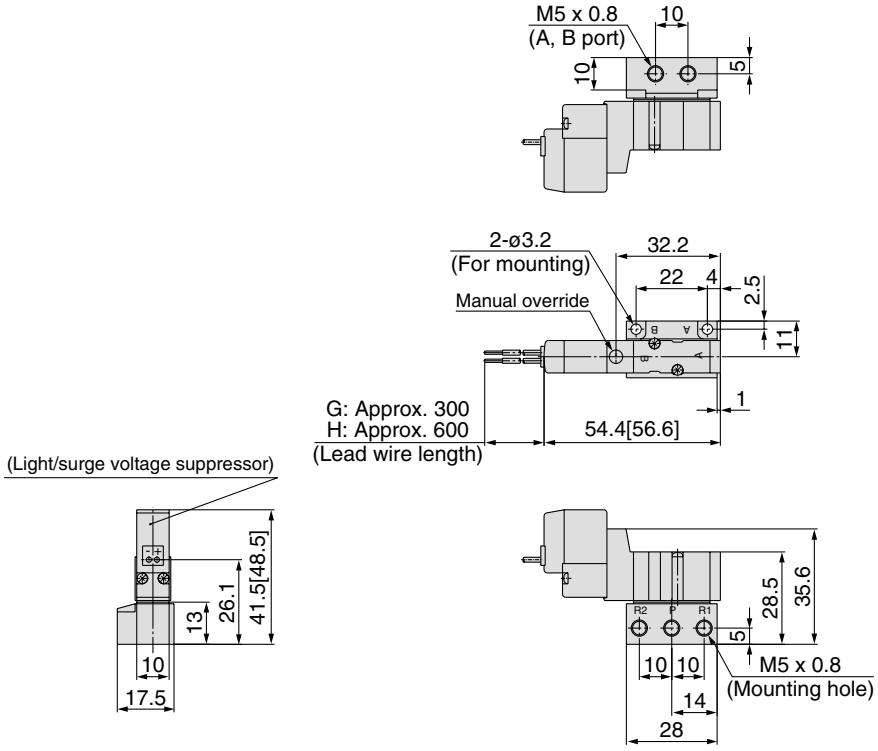


∗ Refer to page 563 for dimensions with connector cable.

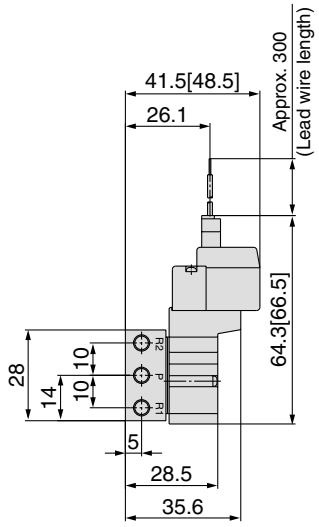
2 position single

∗ [ ]: AC

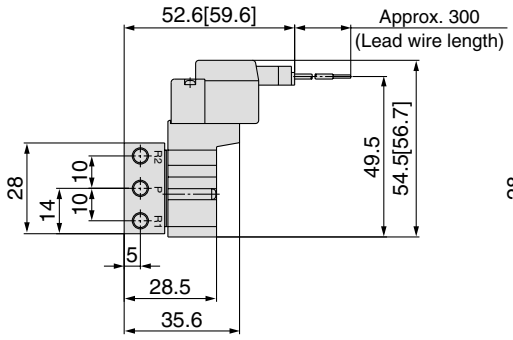
Grommet (G), (H): 10-SYJ3143-□$^{G}_{H}$□□-M5



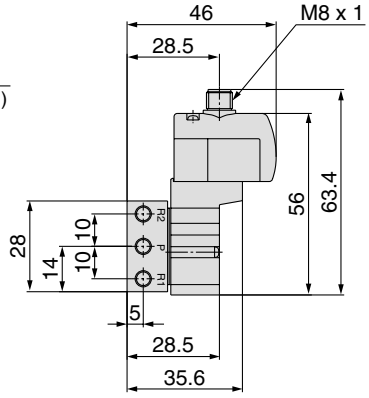
L plug connector (L): 10-SYJ3143-□L□□-M5



M plug connector (M): 10-SYJ3143-□M□□-M5



M8 Connector (WO): 10-SYJ3143-□WO□□-M5

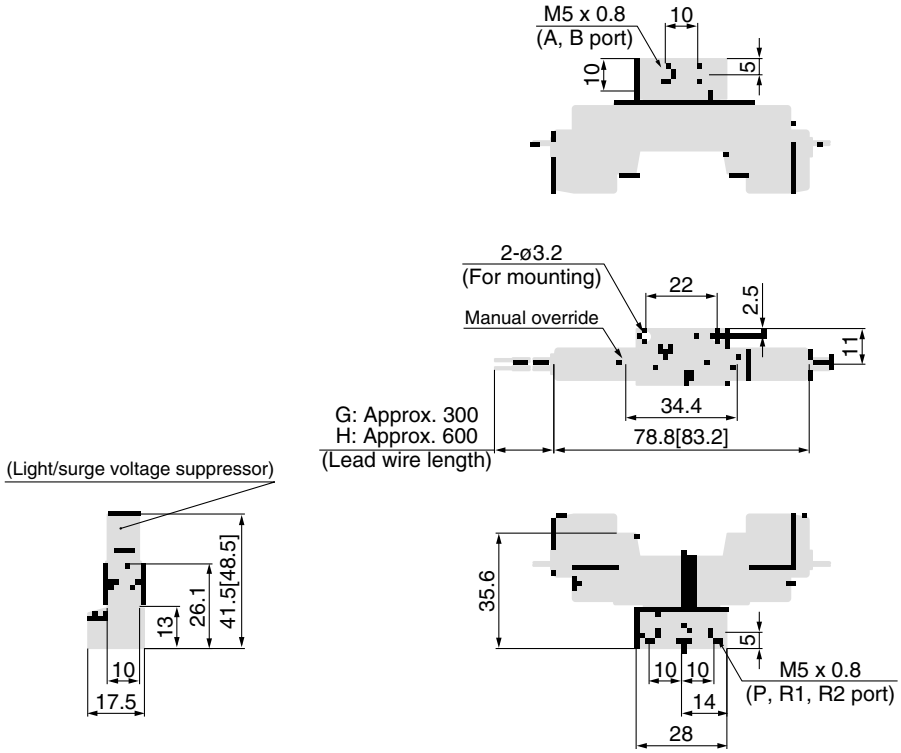


∗ Refer to page 563 for dimensions with connector cable.

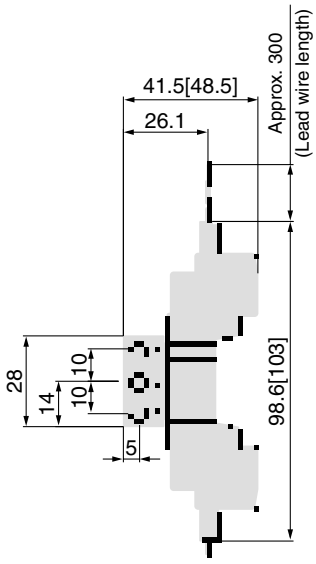
2 position double

∗ [ ]: AC

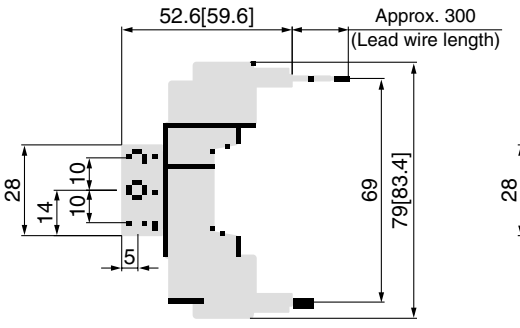
Grommet (G), (H): 10-SYJ3243-□$^{G}_{H}$□□-M5



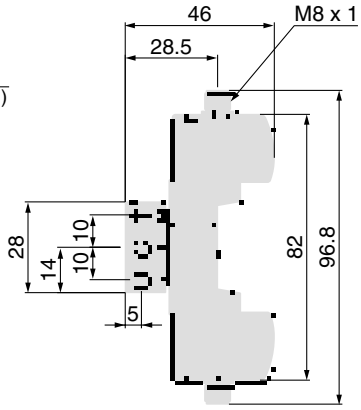
L plug connector (L): 10-SYJ3243-□L□□-M5



M plug connector (M): 10-SYJ3243-□M□□-M5



M8 connector (WO): 10-SYJ3243-□WO□□-M5

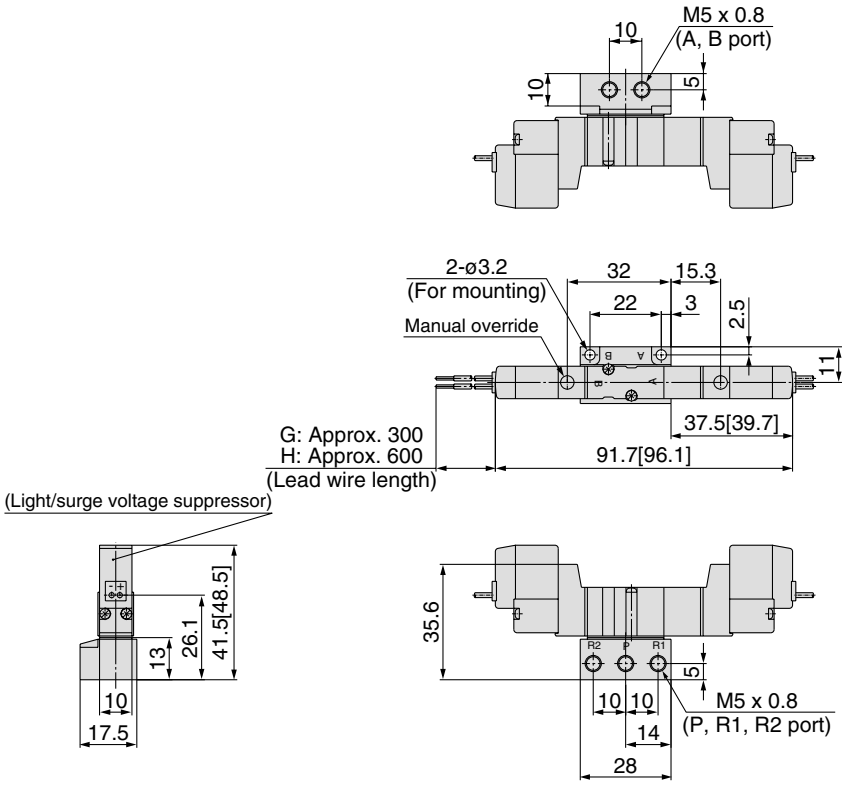


∗ Refer to page 563 for dimensions with connector cable.

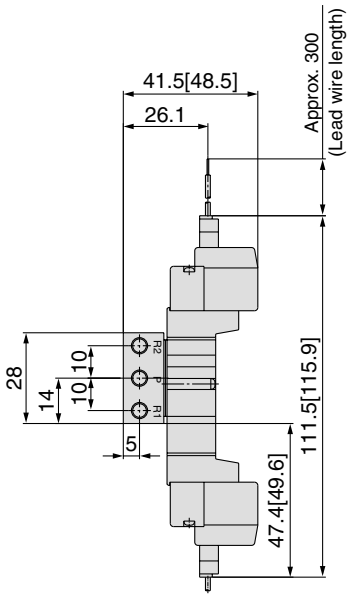
3 position closed center / Exhaust center / Pressure center

∗ [ ]: AC

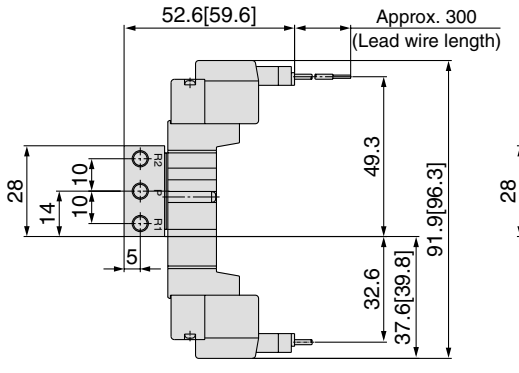
Grommet (G), (H): 10- SYJ3$^{3}_{5}$43-□$^{G}_{H}$□□-M5



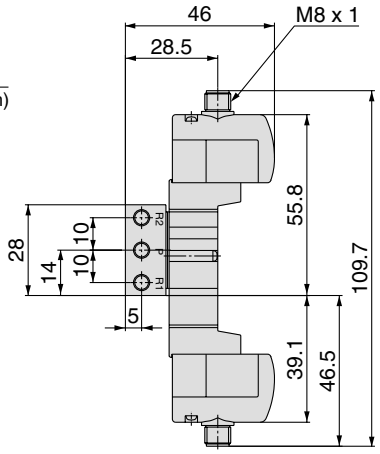
L plug connector (L): 10-SYJ3$^{3}_{5}$43-□L□□-M5



M plug connector (M): 10-SYJ3$^{3}_{5}$43-□M□□-M5

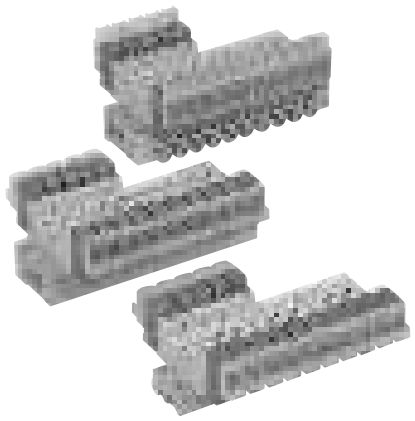


M8 Connector (WO): 10-SYJ3$^{3}_{5}$43-□WO□□-M5□



∗ Refer to page 563 for dimensions with connector cable.

Manifold standard



Manifold specifications

Model		Type 20	Type 31/S31	Type 32/S32	Type 41/S41	Type 46/S46
Manifold type		Single base / B mount				
P (SUP) / R (EXH)		Common SUP / Common EXH				Common SUP / Individual EXH
Valve stations		2 to 20 stations				
A, B port porting specifications	Location	Valve	Base			
	Direction	Top	Side			
Port size	P, R port	M5 x 0.8		1/8		P: 1/8 R: M5 x 0.8
	A, B port	M3 x 0.5		M5 X 0.8, C4 (One-touch fitting for ø4)		

Flow characteristics

Manifold			Port size		Flow characteristics 1→4/2 (P→A/B)			Flow characteristics 4/2→5/3 (A/B→R)			Effective area (mm²)
			1(P), 5/3(R) port	2(B), 4(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
Body ported for internal pilot	10-SS5YJ3-20	10-SYJ3□23	M5 x 0.8	M3 x 0.5	—	—	—	—	—	—	0.9
Base mounted for internal pilot	10-SS5YJ3-31-S31	10-SYJ3□33	M5 x 0.8	M3 x 0.5	—	—	—	—	—	—	0.9
	10-SS5YJ3-32-M5	10-SYJ3□33	1/8	M5 x 0.8	0.25	0.19	0.060	0.32	0.25	0.077	—
	10-SS5YJ3-32-C4			C4	0.25	0.18	0.059	0.30	0.27	0.075	—
	10-SS5YJ3-S32-M5			M5 x 0.8	0.25	0.26	0.060	0.29	0.15	0.062	—
	10-SS5YJ3-S32-C4			C4	0.24	0.21	0.057	0.27	0.18	0.062	—
	10-SS5YJ3-41-M5	10-SYJ3□43	1/8	M5 x 0.8	0.32	0.25	0.081	0.33	0.19	0.079	—
	10-SS5YJ3-41-C4			C4	0.32	0.28	0.079	0.35	0.24	0.084	—
	10-SS5YJ3-S41-M5			M5 x 0.8	0.33	0.29	0.082	0.34	0.17	0.081	—
	10-SS5YJ3-S41-C4			C4	0.32	0.27	0.079	0.34	0.24	0.084	—
	10-SS5YJ3-46-M5	10-SYJ3□43	1/8 M5 x 0.8	M5 x 0.8	0.20	0.25	0.048	0.10	0.12	0.024	—
	10-SS5YJ3-46-C4			C4	0.21	0.27	0.050	0.21	0.13	0.047	—
	10-SS5YJ3-S46-M5			M5 x 0.8	0.20	0.25	0.048	0.19	0.16	0.024	—
	10-SS5YJ3-S46-C4			C4	0.22	0.34	0.057	0.10	0.090	0.024	—

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold (Example)

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

Example

●**10-SS5YJ3-20-03**····· 1 set (Manifold base)

∗ **10-SYJ3123-5G-M3**····· 2 sets (Valve)

∗ **SYJ3000-21-1A**····· 1 set (Blanking plate assembly)

●**10-SS5YJ3-S41-03-C4**····· 1 set (Manifold base)

∗ **10-SYJ3143-5LZ**····· 2 sets (Valve)

∗ **SYJ3000-21-2A**····· 1 set (Blanking plate assembly)

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

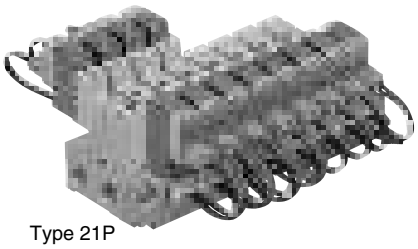
∗ Use manifold specification sheet.

Flat ribbon cable manifold

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

- **Clean appearance**

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



Type 21P

Flat ribbon cable manifold specifications

Model		Type 21P	Type 32P
Manifold		Single base / B mount	
P(SUP) / R(EXH)		Common SUP / Common EXH	
Valve stations		4 to 12 stations	
A, B port piping specifications	Location	Valve	Base
	Direction	Top	Side
Port size	P, R port	1/8	
	A, B port	M3 x 0.5	M5 x 0.8 C4 (One-touch fitting for ø4)
Applicable 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) The withstand voltage specification for the wiring unit section conforms to JIS C0704, Grade 1 or its equivalent.

Flow characteristics

Manifold			Port size		Flow characteristics 1→4/2 (P→A/B)			Flow characteristics 4/2→5/3 (A/B→R)			Effective area (mm²)
			1(P), 5/3(R) port	2(B), 4(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
Body ported for internal pilot	10-SS5YJ3-21P	10-SYJ3□23	1/8	M3 x 0.5	—	—	—	—	—	—	0.9
Base mounted for internal pilot	10-SS5YJ3-32P-M5	10-SYJ3□33	1/8	M5 x 0.8	0.25	0.19	0.060	0.32	0.25	0.077	—
	10-SS5YJ3-32P-C4			C4	0.25	0.18	0.059	0.3	0.27	0.075	—

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifolds

- **10-SS5YJ3-32P-07-C4** ··1 set (Manifold base)
  - ∗ **10-SYJ3133-5LOU** ····3 sets (Valve)
  - ∗ **10-SYJ3233-5LOU** ····3 sets (Valve)

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

- ∗ **SYJ3000-21-4A** ··1set (Blanking plate assembly)
- ∗ **SYJ3000-37-28A** ··3 sets (Connector assembly)
- ∗ **SYJ3000-37-29A** ··3 sets (Connector assembly)

∗ Use manifold specification sheet.

How to Order Valves

Clean series

For DC 10 — SYJ3 [1 / 2 / 3] 3 — [5] LO [U] [ ] — [ ]

For AC 10 — SYJ3 [1 / 2 / 3] 3 — [1] LO [Z] [ ] — [ ]

Rated voltage

5	24 VDC
6	12 VDC

Light/Surge voltage suppressor

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

Note) Z: Positive common specifications only.

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

A, B port size

Symbol	Port size
Nil	Base mounted
M3	M3 x 0.5

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

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

How to Order Connector Assemblies

For 12, 24 VDC

For single solenoid	**SY3000-37-28A**
Double solenoid 3 position type	**SY3000-37-29A**

For 100 VAC

For single solenoid	**SY3000-37-46A**
Double solenoid 3 position type	**SY3000-37-47A**

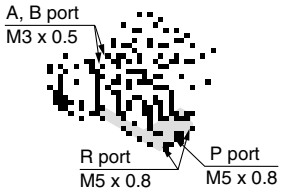
110 VAC (115 VAC)

For single solenoid	**SY3000-37-54A**
Double solenoid 3 position type	**SY3000-37-55A**

Common SUP / Common EXH

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 20 (5 port / Body ported)



How to Order

10–SS5YJ3–20– **05**

- **Clean series**
- **Stations**

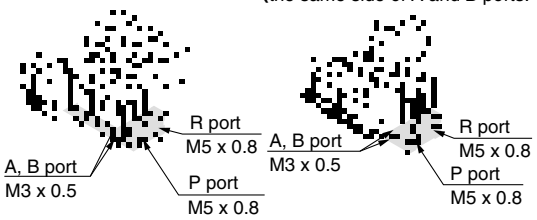
02	2 stations
:	:
20	20 stations

Applicable solenoid valve
10-SYJ3□23-□□□□-M3

Applicable blanking plate assembly
SYJ3000-21-1A

Type 31 (4 port / Base mounted)

Type 31 **Type S31** (Single solenoid coil is located on the same side of A and B ports.)



How to Order

10–SS5YJ3– **□** **31–** **05** **–M3**

- **Clean series**
- **Valve mounting direction**

Nil	Single solenoid coil is located on the opposite side of A and B ports.
S	Single solenoid coil is located on the same side of A and B ports.

- **Manifold stations**

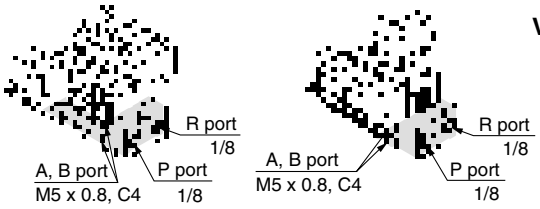
02	2 stations
:	:
20	20 stations

Applicable solenoid valve
10-SYJ3□33-□□□□

Applicable blanking plate assembly
SYJ3000-21-2A

Type 32 (4 port / Base mounted)

Type 32 **Type S32** (Single solenoid coil is located on the same side of A and B ports.)



How to Order

10–SS5YJ3– **□** **32–** **05** **–** **M5** **□**

- **Clean series**
- **Valve mounting direction**

Nil	Single solenoid coil is located on the opposite side of A and B ports.
S	Single solenoid coil is located on the same side of A and B ports.

- **Manifold stations**

02	2 stations
:	:
20	20 stations

- **A, B port size**

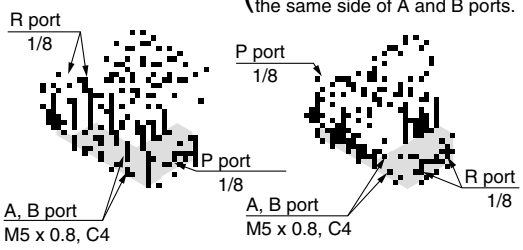
M5	M5 x 0.8
C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

- **P, R port thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

Type 41 (5 port / Base mounted)

Type 41 **Type S41** (Single solenoid coil is located on the same side of A and B ports.)



How to Order

10–SS5YJ3– **□** **41–** **05** **–** **C4** **□**

- **Clean series**
- **Valve mounting direction**

Nil	Single solenoid coil is located on the opposite side of A and B ports.
S	Single solenoid coil is located on the same side of A and B ports.

- **Manifold stations**

02	2 stations
:	:
20	20 stations

- **A, B port size**

M5	M5 x 0.8
C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

- **P, R port thread type**

Nil	Rc
F	G
N	**NPT**
T	**NPTF**

Applicable solenoid valve
10-SYJ3□43-□□□□

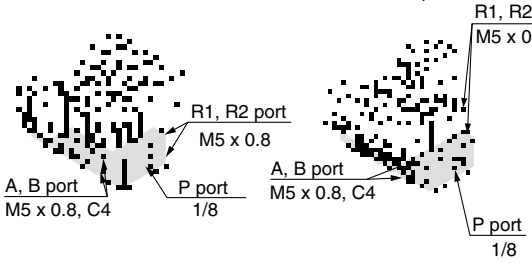
Applicable blanking plate assembly
SYJ3000-21-2 A

Common SUP / Individual EXH

Note) For more than 10 stations, supply air to both sides of P port.

Type 46 (5 port / Base mounted)

Type 46 **Type S46** (Single solenoid coil is located on the same side of A and B ports.)



How to Order

10–SS5YJ3– **□** **46–** **05** **–** **M5** **□**

- **Clean series**
- **Valve mounting direction**

Nil	Single solenoid coil is located on the opposite side of A and B ports.
S	Single solenoid coil is located on the same side of A and B ports.

- **Manifold stations**

02	2 stations
:	:
20	20 stations

- **A, B port size**

M5	M5 x 0.8
C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

- **P port thread type**

Nil	Rc
F	G
N	**NPT**
T	**NPTF**

Applicable solenoid valve
10-SYJ3□43-□□□□

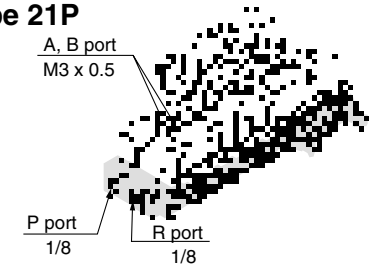
Applicable blanking plate assembly
SYJ3000-21-2A

Flat ribbon cable manifold

Common SUP / Common EXH

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 21P



How to Order

10–SS5YJ3–21P– 07 –

- Clean series
- Manifold stations

04	4 stations
:	:
12	12 stations

- P, R port thread type

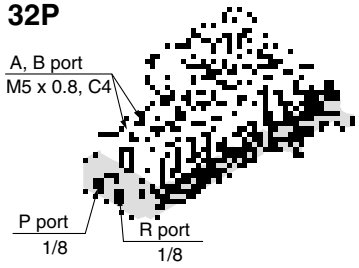
Nil	Rc
00F	G
00N	NPT
00T	NPTF

Applicable solenoid valve
Refer to page 505.

Applicable connector assembly
Refer to page 505.

Applicable blanking plate assembly
SYJ3000-21-3A
(With dust cap)

Type 32P



How to Order

10–SS5YJ3–32P– 07 – C4

- Clean series
- Manifold stations

04	4 stations
:	:
12	12 stations

- A, B port size

M5	M5 x 0.8
C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

- P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Applicable solenoid valve
Refer to page 505.

Applicable connector assembly
Refer to page 505.

Applicable blanking plate assembly
SYJ3000-21-4A
(With dust cap)

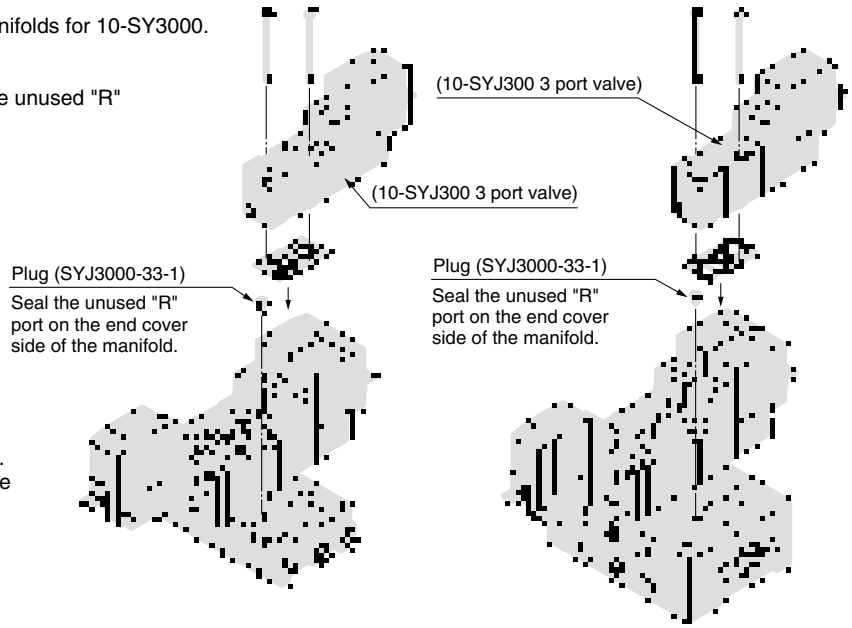
Mixed installation of the 10-SYJ300 and the 10-SY3000 valves on the same manifold

Series 10-SYJ300 valves can be mounted on the manifolds for 10-SY3000.

① **10-SS5YJ3-20, 10-SS5YJ3-21P**
The 3 port valve can be used by simply sealing off the unused "R" port with rubber plug, SYJ3000-33-1.
Applicable solenoid valves: Type 10-SYJ312M
Type 10-SYJ322M

② **10-SS5YJ3-31/-S31, 10-SS5YJ3-32/-S32, 10-SS5YJ3-46/-S46, 10-SS5YJ3-32P**
The 3 port valve can be used without modification.
The A port of the valve will flow out of the B port of the manifold.
Applicable solenoid valve: Type 10-SYJ314M
Type 10-SYJ324M

③ **10-SS5YJ3-41/-S41**
The 3 port valve can be used by simply sealing off the unused "R" port with rubber plug (SYJ3000-33-1).
The A port of the valve will flow out of the B port of the manifold.
Applicable solenoid valve: Type 10-SYJ314M
Type 10-SYJ324M



Type 10-SS5YJ3-20

Type 10-SS5YJ3-41

"B" port becomes "A" port of 3 port valve.

⚠ Caution

Mounting screw tightening torque

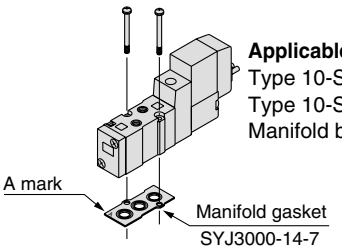
M1.7: 0.12N·m

Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.

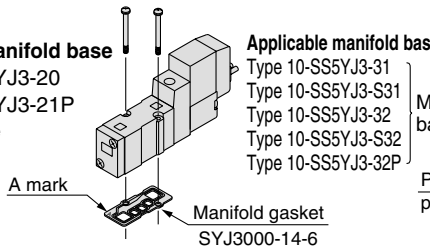
<Manifold option>

Combinations of solenoid valve, manifold gasket and manifold base

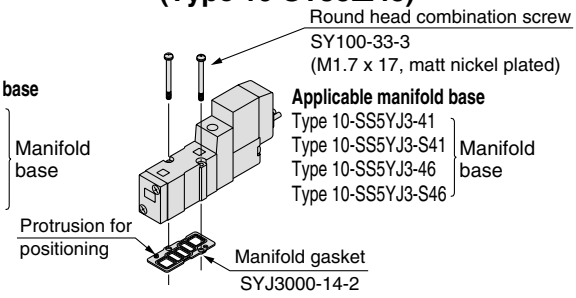
5 port body ported (Type 10-SYJ3□23)



4 port base mounted (Type 10-SYJ3□33)



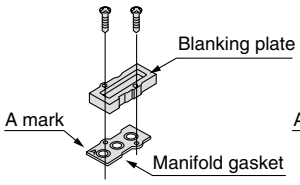
5 port base mounted (Type 10-SYJ3□43)



Note) Please insert the protrusion for positioning of the manifold gasket into the hole of the valve body completely.

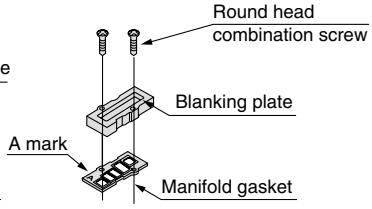
Combination of blanking plate assembly and manifold base

Blanking plate assembly SYJ3000-21-1A



Applicable base
Type SS5YJ3-20 manifold base

Blanking plate assembly SYJ3000-21-2A

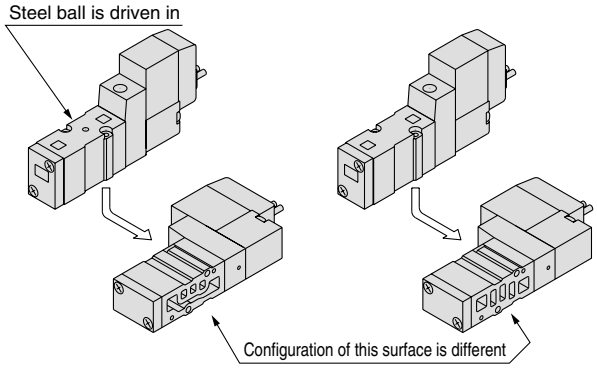


Applicable base sub-plate
Type 10-SS5YJ3-41
Type 10-SS5YJ3-S41
Type 10-SS5YJ3-46
Type 10-SS5YJ3-S46
Type 10-SS5YJ3-31
Type 10-SS5YJ3-S31
Type 10-SS5YJ3-32
Type 10-SS5YJ3-S32
} Manifold base

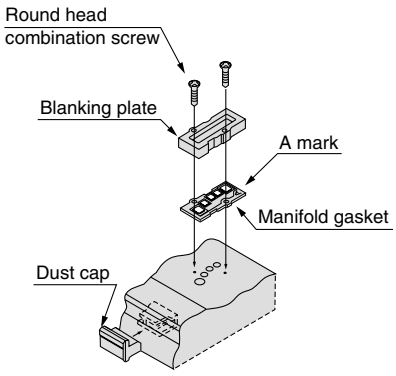
Note) The SYJ3000-14-2 manifold gasket can be used for 10-SS5YJ3-31/-S31 and 10-SS5YJ3-32/-S32 manifold bases.

Difference between types 10-SYJ3□33 and 10-SYJ3□43

Type 10-3□33 (4 port) Type 10-3□43 (5 port)

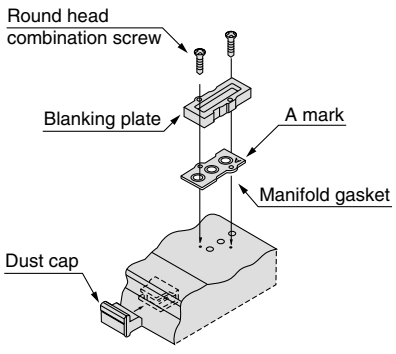


Blanking plate assembly SYJ3000-21-4A



Applicable base
Type **10-SS5YJ3-32P** manifold base

Blanking plate assembly SYJ3000-21-3A



Applicable base
Type **10-SS5YJ3-21P** manifold base

⚠ Caution

Mounting screw tightening torque

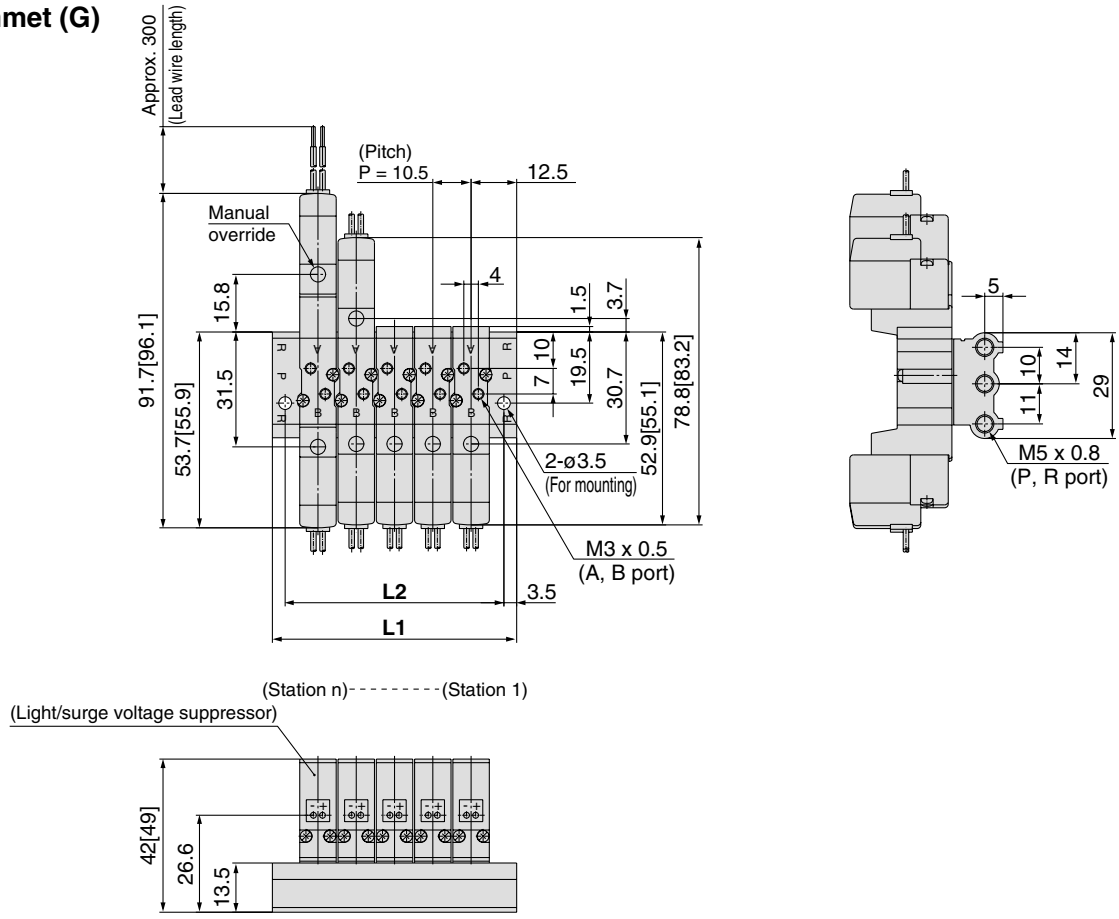
M1.7: 0.12N·m

Use caution to the assembly orientation for solenoid valves, gasket and option parts.

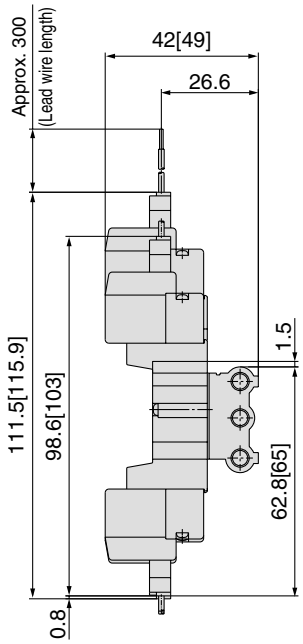
Type 20 manifold: Top ported / 10-SS5YJ3-20-Stations

∗ [ ]: AC

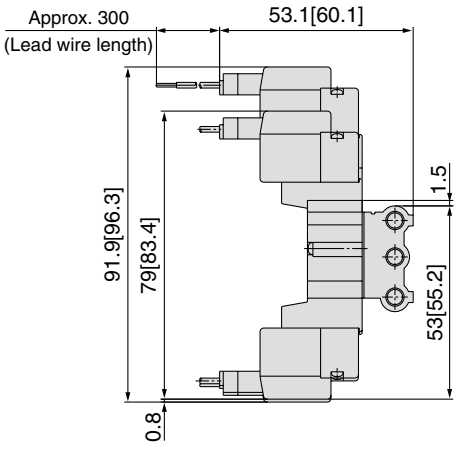
Grommet (G)



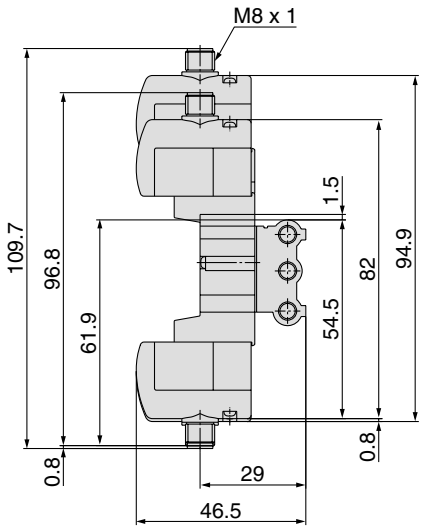
L plug connector (L)



M plug connector (M)



M8 connector (WO)



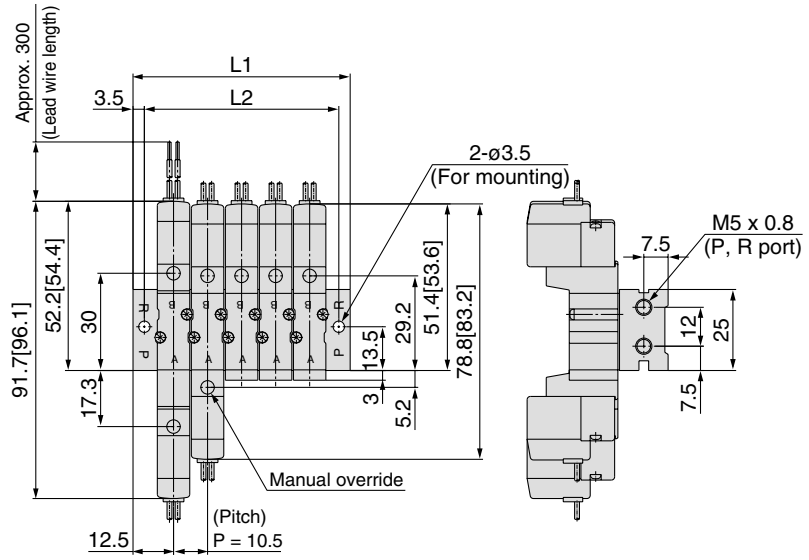
∗ Refer to page 563 for dimensions with connector cable.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5	193	203.5	214	224.5
L2	28.5	39	49.5	60	70.5	81	91.5	102	112.5	123	133.5	144	154.5	165	175.5	186	196.5	207	217.5

Type 31 manifold: Side ported / 10-SS5YJ3-31-Stations-M3

∗ [ ]: AC

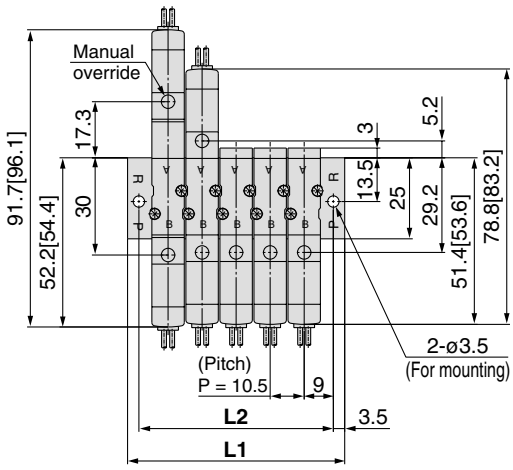
Grommet (G)

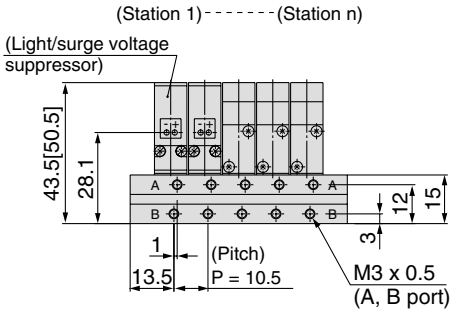


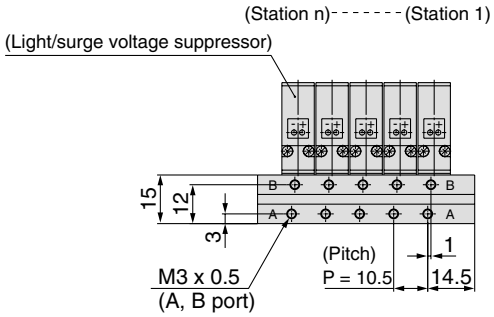
Type S3: Side ported

Pilot valve of single solenoid valve is located on the same side of A and B ports.

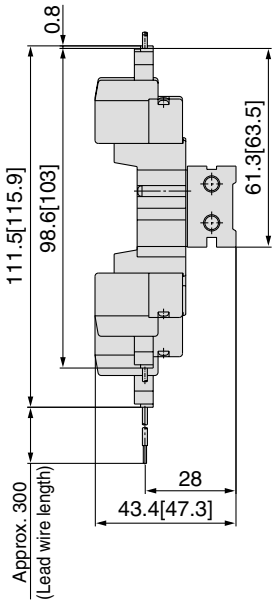
10-SS5YJ3-S31-Stations-M3



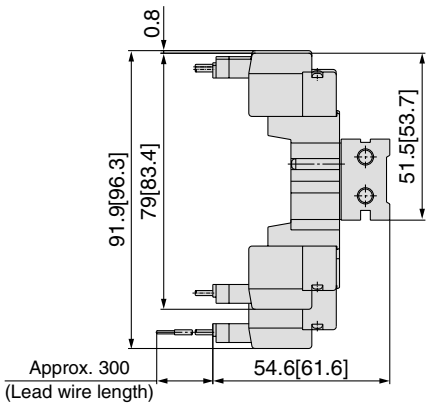




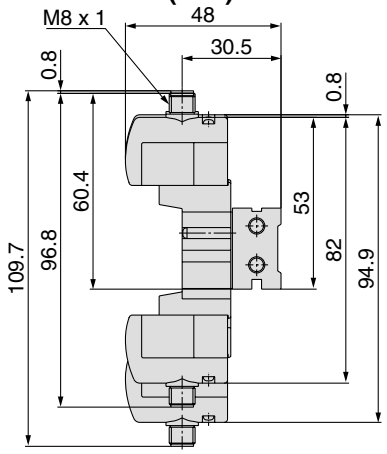
L plug connector (L)



M plug connector (M)



M8 connector (WO)



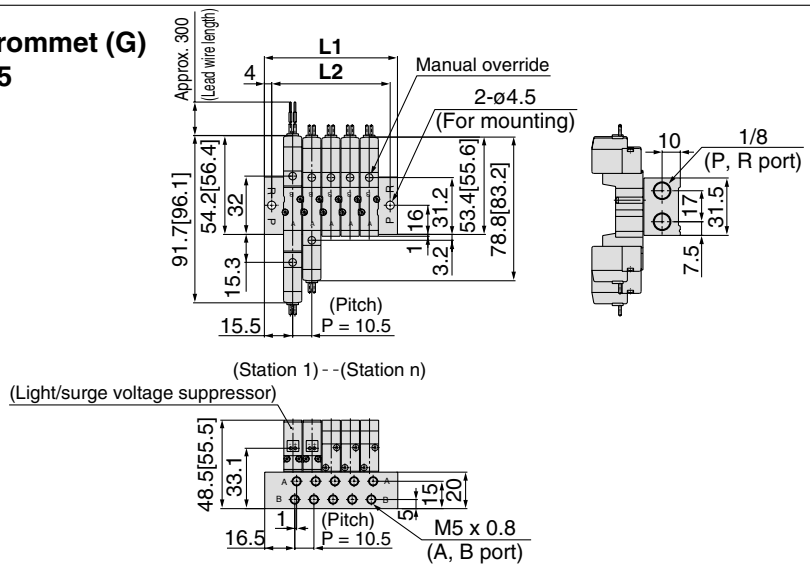
∗ Refer to page 563 for dimensions with connector cable.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5	193	203.5	214	224.5
L2	28.5	39	49.5	60	70.5	81	91.5	102	112.5	123	133.5	144	154.5	165	175.5	186	196.5	207	217.5

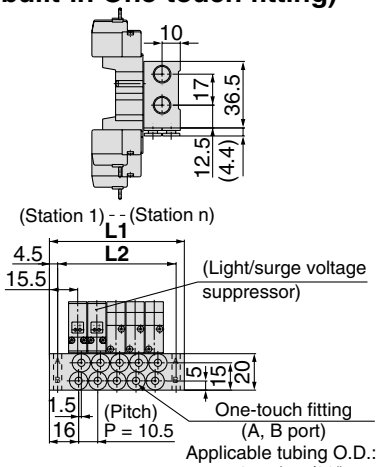
Type 32 manifold: Side ported / 10-SS5YJ3-32-Stations-M5, C4 N3□

∗ [ ]: AC

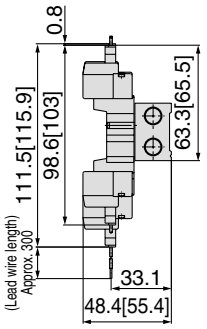
Grommet (G) M5



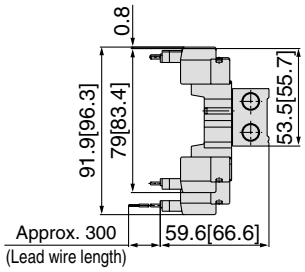
C4 N3□(With built-in One-touch fitting)



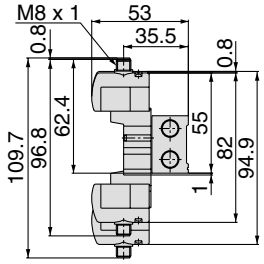
L plug connector (L)



M plug connector (M)



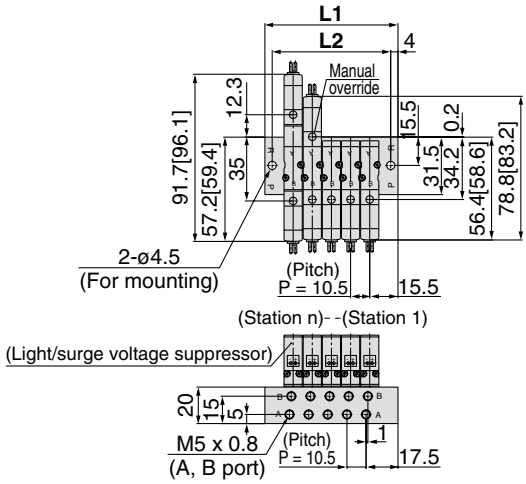
M8 connector (WO)



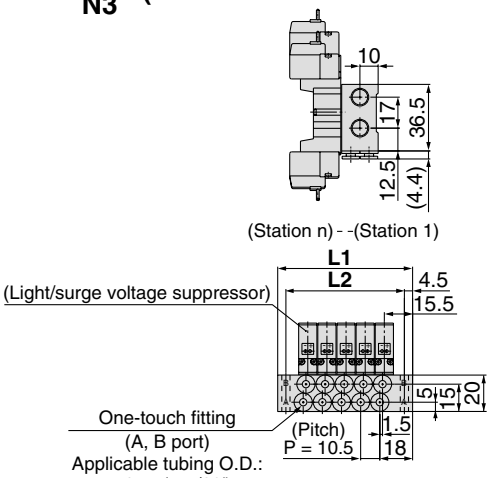
∗ Refer to page 563 for dimensions with connector cable.

Type S32 manifold: Side ported (Pilot valve of single solenoid valve is located on the same side of A and B ports.) /10-SS5YJ3-S32-Stations-M5, C4 N3 □

M5



C4 N3□(With built-in One-touch fitting)



SS5YJ3-32,S32-Stations-M5

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	41.5	52	62.5	73	83.5	94	104.5	115	125.5	136	146.5	157	167.5	178	188.5	199	209.5	220	230.5
L2	33.5	44	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212	222.5

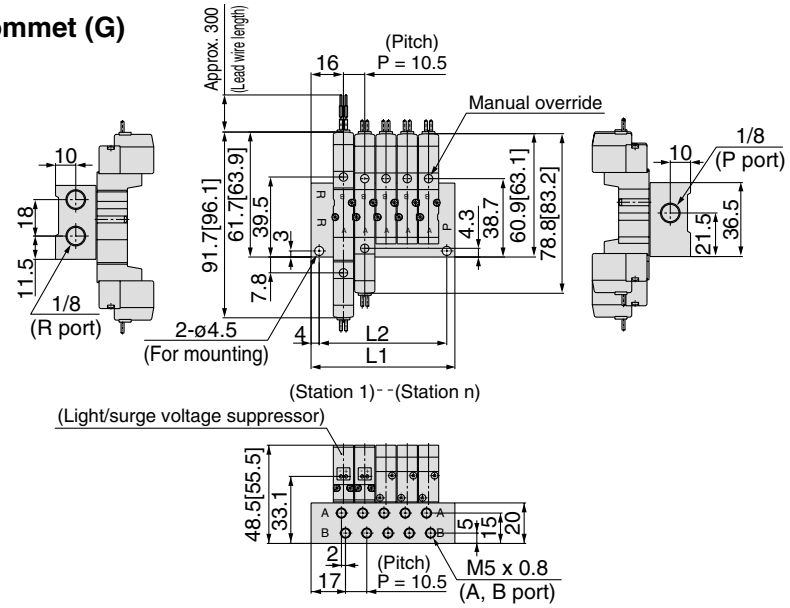
10-SS5YJ3-32,S32-Stations-C4

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	42.5	53	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5	179	189.5	200	210.5	221	231.5
L2	33.5	44	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212	222.5

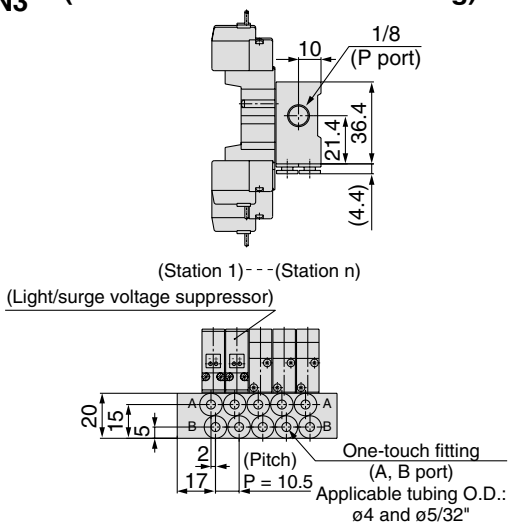
Type 41 manifold: Side ported / 10-SS5YJ3-41-Stations-M5, C4 N3 □

* [ ]: AC

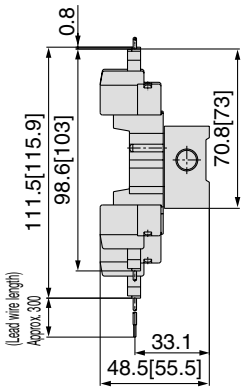
Grommet (G) M5



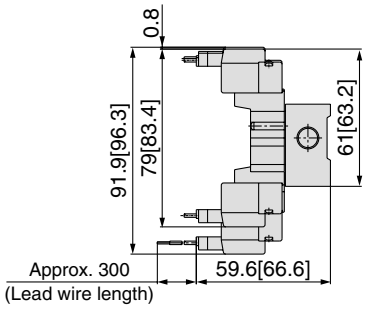
C4 N3 □ (With built-in One-touch fitting)



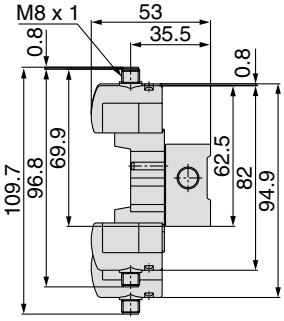
L plug connector (L)



M plug connector (M)



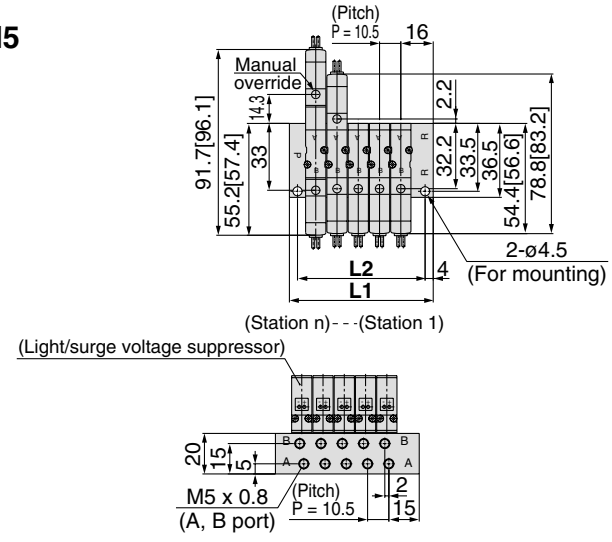
M8 connector (WO)



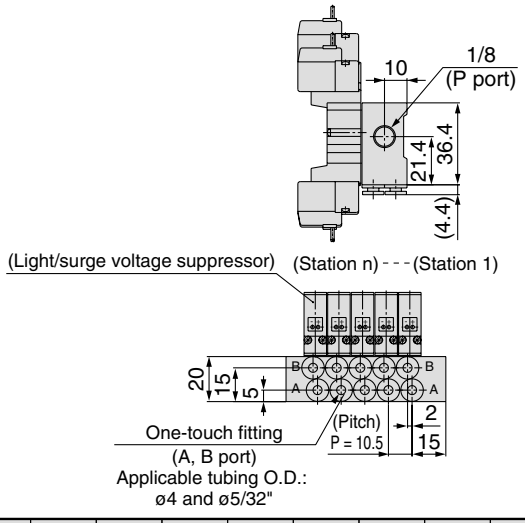
* Refer to page 563 for dimensions with connector cable.

Type S41 manifold: Side ported (Pilot valve of single solenoid valve is located on the same side of A and B ports.) 10-SS5YJ3-S41-Stations-M5, C4 N3 □

M5



C4 N3 □ (With built-in One-touch fitting)

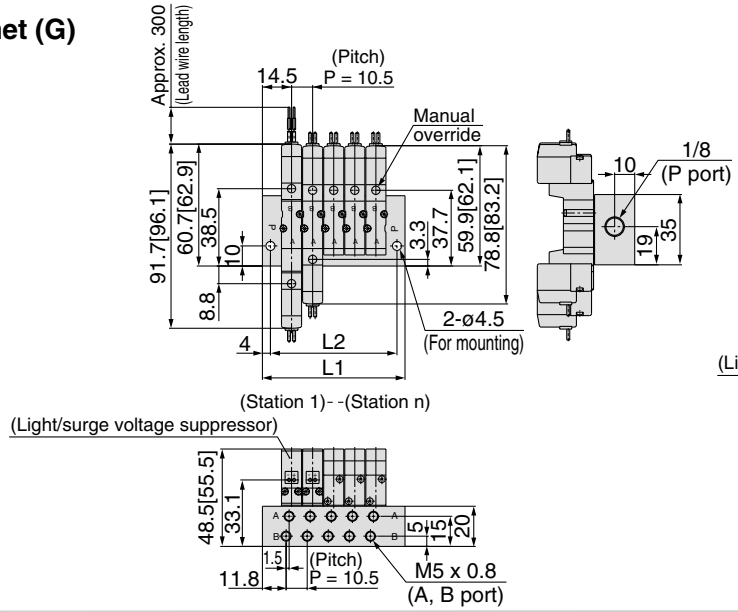


Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	39.5	50	60.5	71	81.5	92	102.5	113	123.5	134	144.5	155	165.5	176	186.5	197	207.5	218	228.5
L2	31.5	42	52.5	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5

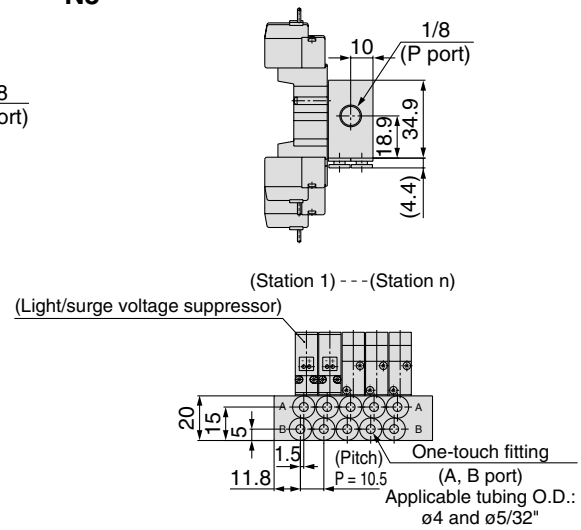
Type 46 manifold: Side ported / 10-SS5YJ3-46-Stations-M5, C4 / N3 □

* [ ]: AC

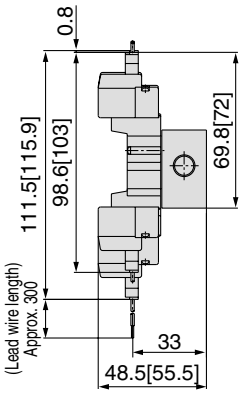
Grommet (G)
M5



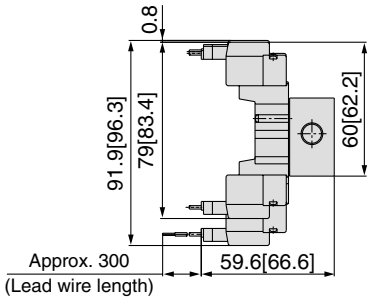
C4 / N3 □ (With built-in One-touch fitting)



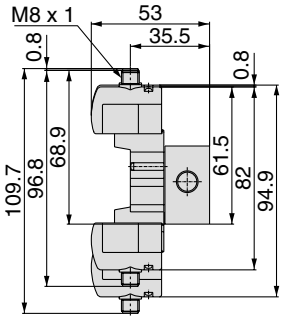
L plug connector (L)



M plug connector (M)



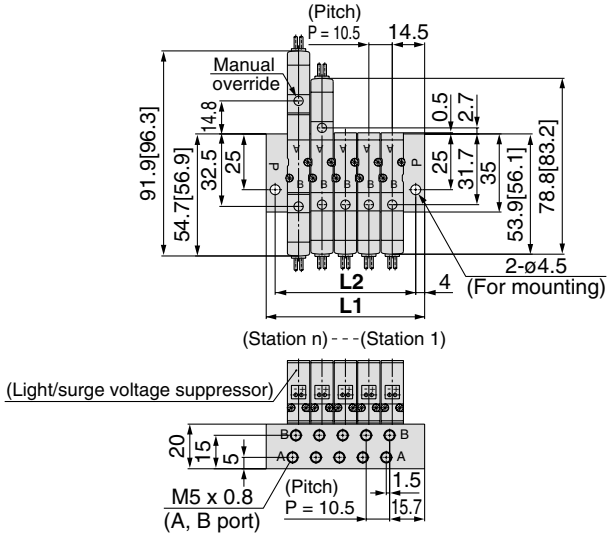
M8 connector (WO)



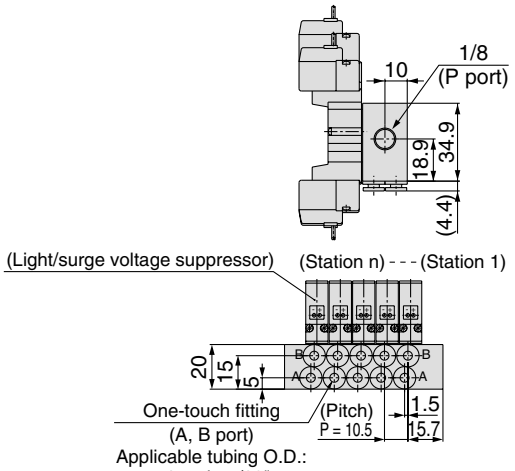
* Refer to page 563 for dimensions with connector cable.

Type S46 manifold: Side ported (Pilot valve of single solenoid valve is located on the same side of A and B ports.)/10-SS5YJ3-S46-Stations-M5, C4 / N3 □

M5



C4 / N3 □ (With built-in One-touch fitting)

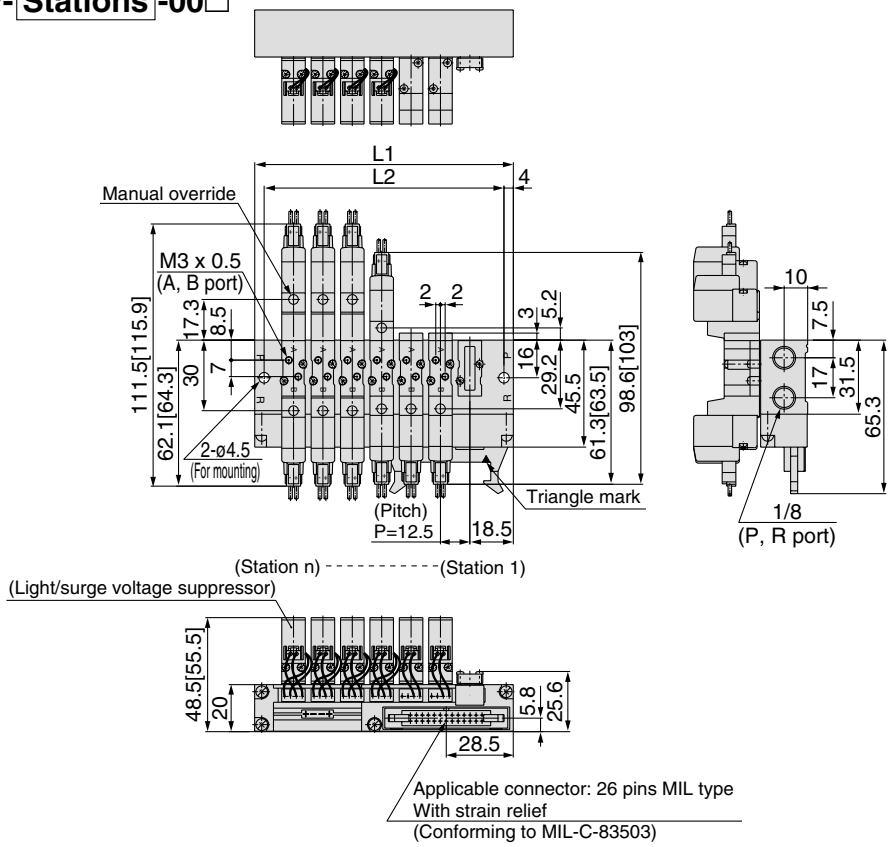


Stations n	2 Stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 Stations
L1	39.5	50	60.5	71	81.5	92	102.5	113	123.5	134	144.5	155	165.5	176	186.5	197	207.5	218	228.5
L2	31.5	42	52.5	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5

Flat ribbon cable manifold

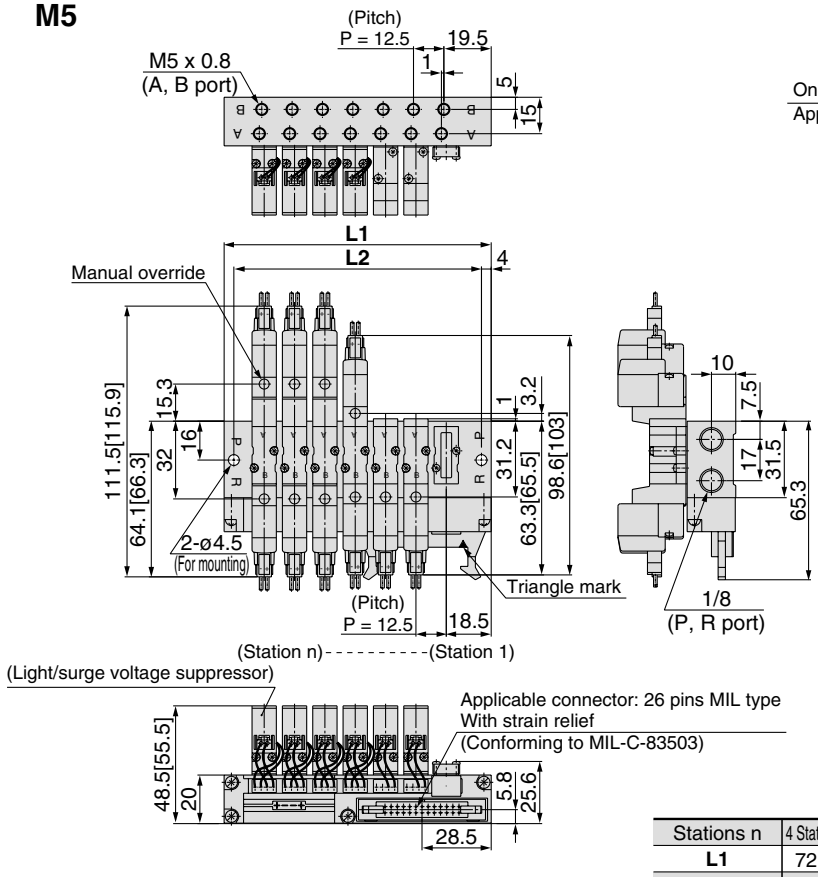
* [ ]: AC

10-SS5YJ3-21P-Stations-00□

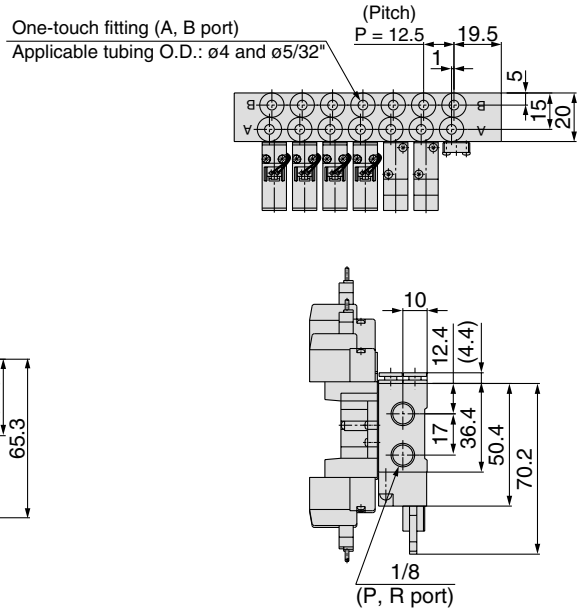


10-SS5YJ3-32P-Stations-M5, C4 N3□

M5



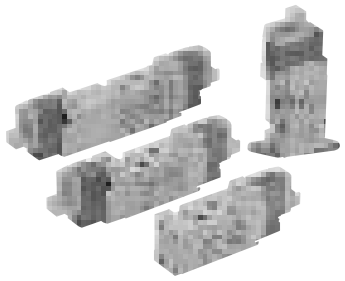
C4 N3□(With built-in One-touch fitting)



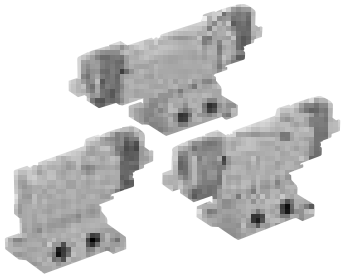
Stations n	4 Stations	5	6	7	8	9	10	11	12 Stations
L1	72.5	85	97.5	110	122.5	135	147.5	160	172.5
L2	64.5	77	89.5	102	114.5	127	139.5	152	164.5

Series 10-SYJ5000

Rubber seal
5 port solenoid valve



Body ported

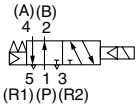


Base mounted

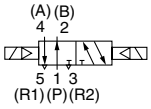
JIS Symbol

Body ported

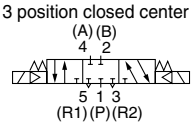
2 position single



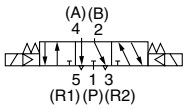
2 position double



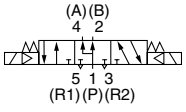
3 position closed center



3 position exhaust center

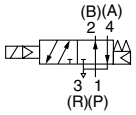


3 position pressure center

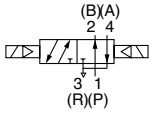


Base mounted (With sub-plate)

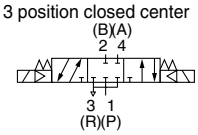
2 position single



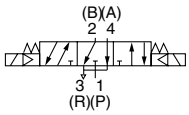
2 position double



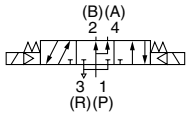
3 position closed center



3 position exhaust center



3 position pressure center



Made to Order Made to order specifications
(Refer to page 557 for details.)

Specifications

Fluid		Air
Operating pressure range MPa	**2 position single**	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Ambient and fluid temperature		-10 to 50°C (with no freezing. Refer to page 714.)
Response time ms Note 1) **(0.5 MPa)**	**2 position single, double**	25 or less
	3 position	40 or less
Max. operating frequency (Hz)	**2 position single, double**	5
	3 position	3
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type
Pilot exhaust method		Common exhaust for the main and pilot valve
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance m/s² Note 2)		150/30
Enclosure		Dustproof (∗ DIN terminal, M8 connector conforms to IP65.)

∗ Based on IEC60529
Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge voltage suppressor)
Note 2) 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. (Value in the initial state)

Vibration resistance: No malfunction occurred in one sweep between 45 and 2000Hz. Test was performed 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. (Value in the initial state)

Solenoid specifications

Electrical entry			Grommet(G), (H) , L plug connector (L), M plug connector (M), DIN terminal (D), M8 connector (W)	
			G, H, L, M, W	D
Rated coil voltage V	**DC**		24, 12, 6, 5, 3	24, 12
	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**	0.78 (With indicator light: 0.81)	0.78 (With indicator light: 0.87)
		110V [115V]	0.86 (With indicator light: 0.89) [0.94 (With indicator light: 0.97)]	0.86 (With indicator light: 0.97) [0.94 (With indicator light: 1.07)]
		200V	1.18 (With indicator light: 1.22)	1.15 (With indicator light: 1.30)
		220V [230V]	1.30 (With indicator light: 1.34) [1.42 (With indicator light: 1.46)]	1.27 (With indicator light: 1.46) [1.39 (With indicator light: 1.60)]
Surge voltage suppressor			Diode (DIN terminal, varistor for non-polar types)	
Indicator light			LED (Neon light for DIN terminal AC)	

∗ In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.
∗ For 115 and 230 VAC, the allowable voltage fluctuation is -15% to +5% of rated voltage.
∗ For the allowable voltage fluctuation for S, Z and T types (with power saving circuit), please observe the following range because they have voltage drop due to internal circuit.

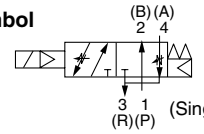
S and Z types 24 VDC: -7% to +10% 12 VDC: -4% to +10%
T type 24 VDC: -8% to +10% 12 VDC: -6% to +10%

Built-in speed controller

10-SYJ5□53

- Built-in exhaust flow controls enable simple cylinder speed adjustments.
- When mounted on the manifold, the common exhaust discharges the pilot and main valve exhaust through a common EXH port to enable simple exhausting.

JIS Symbol

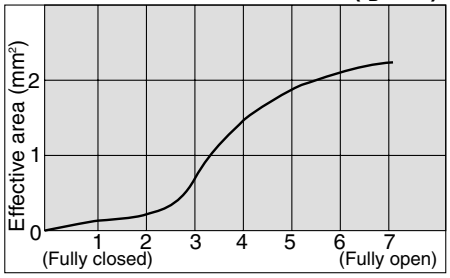


How to order valve with built-in speed controller

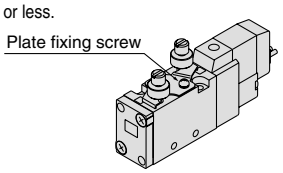
10–SYJ5□53–□□□□–□

- Type of actuation: Clean series
- Rated voltage
- Electrical entry
- Light/Surge voltage suppressor
- Manual override
- Port size

Throttle valve characteristics (A/B →R)



Note) ● When using 10-SYJ5□53 model, the speed controller must be opened more than 1 complete rotation from fully closed in order to function properly.
● Adjust the speed controller with a torque of 0.3 N·m or less.



Note) Do not loosen plate fixing screw.

Flow characteristics / Weight

Valve model		Type of actuation		Port size		Flow characteristics Note 1)						Weight (g) Note 2, 3)			
				1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grommet	L/M plug connector	DIN terminal	M8 connector
						C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv				
Body ported	10-SYJ5□23-□-M5	2 position	Single	M5 x 0.8	M5 x 0.8	0.47	0.41	0.13	0.47	0.41	0.13	46	47	68	51
			Double									64	66	108	74
		3 position	Closed center			0.49	0.44	0.13	0.44	0.40	0.12	75	77	119	85
			Exhaust center			0.46	0.37	0.12	0.47[0.39]	0.43[0.35]	0.13[0.10]				
			Pressure center			0.49[0.39]	0.51[0.38]	0.14[0.10]	0.45	0.42	0.12				
	10-SYJ5□23-□-C4	2 position	Single	M5 x 0.8	C4 (One-touch fitting for ø4)	0.69	0.39	0.18	0.44	0.39	0.12	53	54	75	58
			Double									71	73	115	81
		3 position	Closed center			0.69	0.40	0.19	0.43	0.40	0.12	82	84	126	72
			Exhaust center			0.56	0.40	0.15	0.41[0.41]	0.37[0.37]	0.10[0.11]				
			Pressure center			0.57[0.41]	0.4[0.37]	0.15[0.10]	0.41	0.37	0.10				
	10-SYJ5□23-□-C6	2 position	Single	M5 x 0.8	C6 (One-touch fitting for ø6)	0.70	0.36	0.19	0.47	0.40	0.12	53	54	75	58
			Double									71	73	115	81
		3 position	Closed center			0.72	0.37	0.19	0.44	0.34	0.12	82	84	126	92
			Exhaust center			0.67	0.54	0.19	0.41[0.41]	0.38[0.38]	0.11[0.11]				
			Pressure center			0.82[0.44]	0.41[0.39]	0.23[0.12]	0.41	0.36	0.11				
Base mounted	10-SYJ5□43-□-01	2 position	Single	1/8	1/8	0.79	0.21	0.19	0.83	0.32	0.21	80 (49)	81 (47)	102 (68)	51
			Double									98 (64)	100 (66)	142 (108)	74
		3 position	Closed center			0.80	0.28	0.18	0.86	0.34	0.20	109 (75)	111 (77)	153 (119)	85
			Exhaust center			0.71	0.26	0.18	1.1[0.60]	0.24[0.44]	0.26[0.18]				
			Pressure center			0.99[0.47]	0.29[0.38]	0.24[0.12]	0.72	0.38	0.18				

Note 1) [ ] denotes normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2

Note 2) ( ): Without sub-plate

Note 3) For DC voltages. For AC voltages add 3g to the weight of the single solenoid and 6g to the weight of the double solenoid and 3 position types.

How to Order

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Light/Surge voltage suppressor
Electrical entry for G, H, L, M, W

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

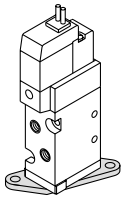
Electrical entry for D

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.

Bracket

Nil: Without bracket
F: With bracket



Note) The mounting bracket is supplied unattached.

Rated voltage

DC specifications

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

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

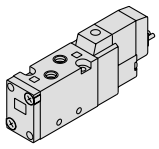
AC specifications (50/60Hz)

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

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

A, B port size

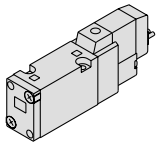
M5	M5 x 0.8
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
N3	One-touch fitting for ø5/32"
N7	One-touch fitting for ø1/4"



(For manifold type 20)

Body ported 10—SYJ5 1 23 □ — 5 L □ □ — M5 — □

Base mounted 10—SYJ5 2 43 □ — 5 L □ □ — □ □



(Sub-plate, 40, 41, 42, 43 manifold)

Clean series

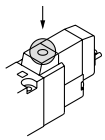
Coil specifications

Nil	Standard
T	With power saving circuit <For 24 and 12 VDC only>

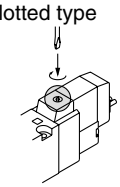
∗ Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Manual override

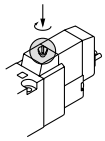
Nil: Non-locking push type



D: Push-turn locking slotted type



E: Push-turn locking lever type

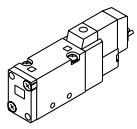


Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

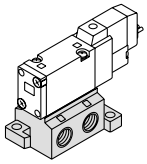
Port size

Nil: Without sub-plate

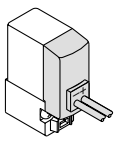
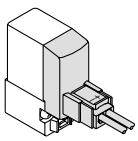
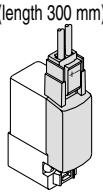
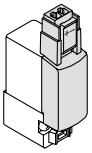
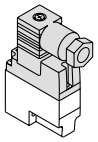
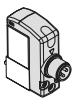
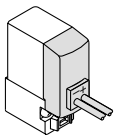
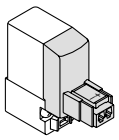
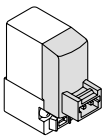
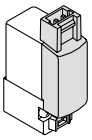
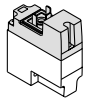
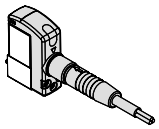


(With gasket and screws)

01: 1/8 with sub-plate



Electrical entry

24, 12, 6, 5, 3 VDC / 100, 110, 200, 220 VAC				24, 12 VDC, 100, 110, 200, 220 VAC	24, 12 VDC, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector		DIN terminal	M8 connector
G: Lead wire length 300 mm	**L:** With lead wire (length 300 mm)	**M:** With lead wire (length 300 mm)	**MN:** Without lead wire	**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	**W□:** With connector cable Note 1)
					

Note 1) Be sure to enter a symbol of the cable length with reference to page 562.

∗ "LN", "MN" types: with 2 sockets.
∗ DIN terminal type "Y" conforming to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 557.
∗ For connector cable of M8 connector, refer to page 562.

How to Order Pilot Valve Assembly

10—V111□—5G□

Clean series

Coil specifications

Nil	Standard
T	With power saving circuit <24 and 12 VDC only>

∗ Power saving circuit is not available in the case of "W□" type.

Rated voltage

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

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

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

∗ For connector cable of M8 connector, refer to page 562.

Note 1) Be sure to enter a symbol of the cable length with reference to page 562.

10—V115—5D□

Clean series

Rated voltage

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

∗ DC specifications of type "D" and "DO" is only available with 12 and 24 V DC.
∗ Power saving circuit is not available in the case of "D" or "DO" type.

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		Without connector

Note) Do not replace 10-V111 (G, H, L, M, W) to 10-V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

How to Order Connector Assembly for L/M Plug Connector

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	300mm
6	600mm
10	1000mm
15	1500mm
20	2000mm
25	2500mm
30	3000mm
50	5000mm

How to Order M8 Connector Cable

V100-49-1-□

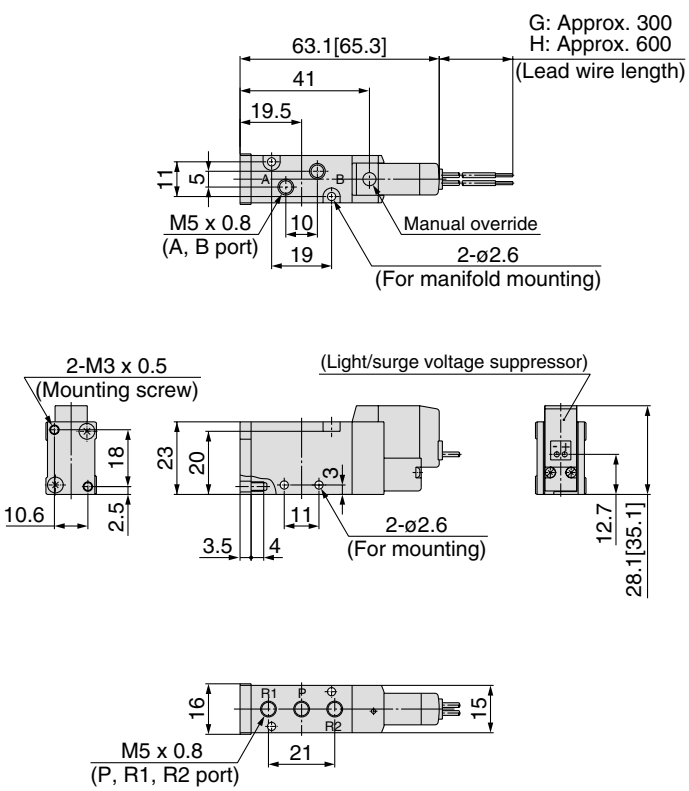
Cable length

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

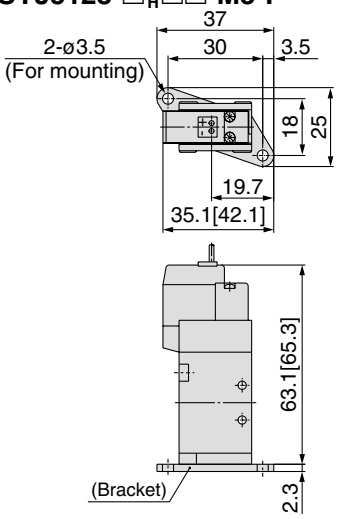
2 position single

∗ [ ]: AC

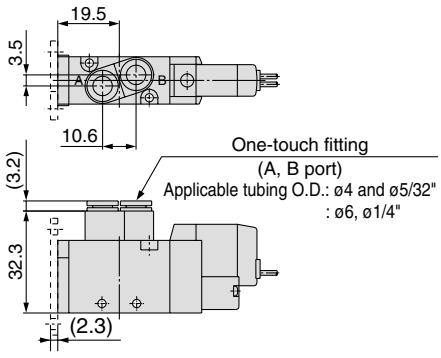
Grommet (G), (H):10- SYJ5123-□$^{G}_{H}$□□-M5



With bracket
10-SYJ5123-□$^{G}_{H}$□□-M5-F



Built-in One-touch Fitting:
10-SYJ5123-□$^{G}_{H}$□□-$^{C4,N3}_{C6,N7}$(-F)

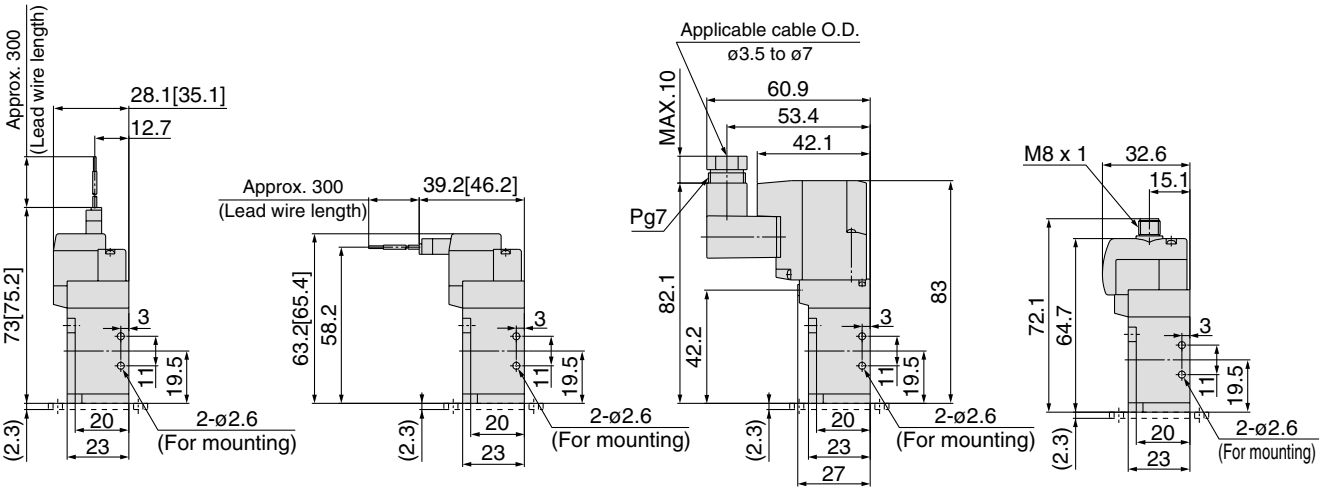


L plug connector (L): 10-SYJ5123-□L□□-M5(-F)

M plug connector (M): 10-SYJ5123-□M□□-M5(-F)

DIN Terminal (D): 10-SYJ5123-□D□□-M5(-F)

M8 connector (WO): 10-SYJ5123-□WO□□-M5(-F)

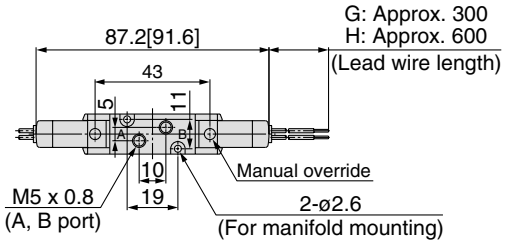


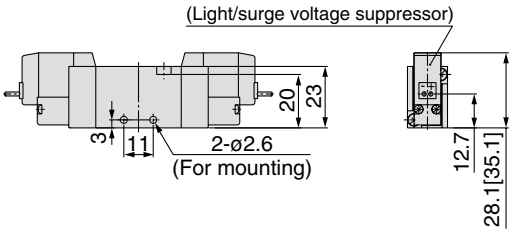
∗ Refer to page 563 for dimensions with connector cable.

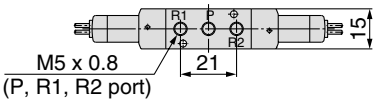
2 position double

∗ [ ]: AC

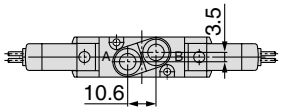
Grommet (G), (H): 10-SYJ5223-□$^{G}_{H}$□□-M5

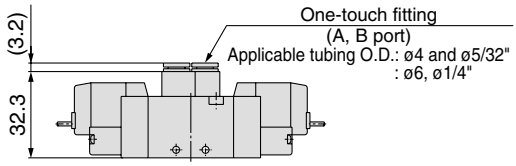




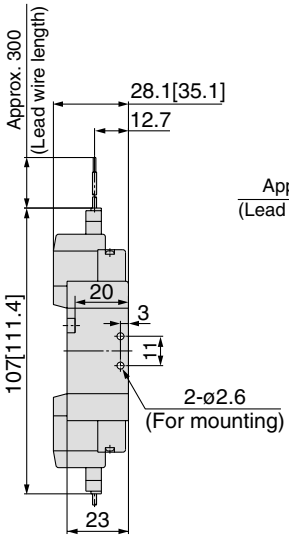


Built-in One-touch fitting
10-SYJ5223-□$^{G}_{H}$□□-$^{C4,N3}_{C6,N7}$

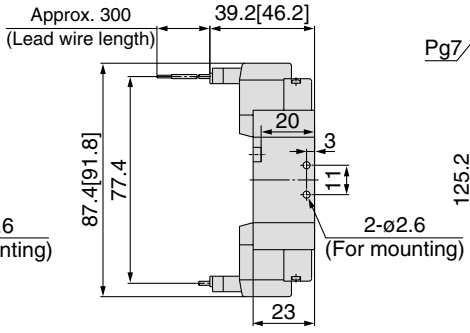




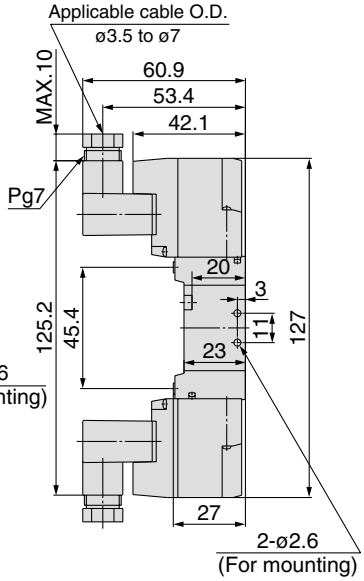
L plug connector (L): 10-SYJ5223-□L□□-M5



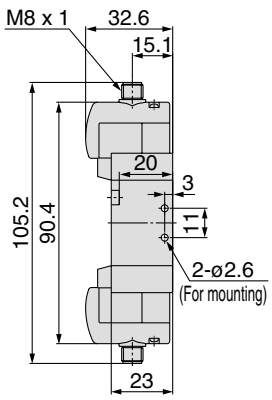
M plug connector (M): 10-SYJ5223-□M□□-M5



DIN Terminal (D): 10-SYJ5223-□D□□-M5



M8 connector (WO): 10-SYJ5223-□WO□□-M5

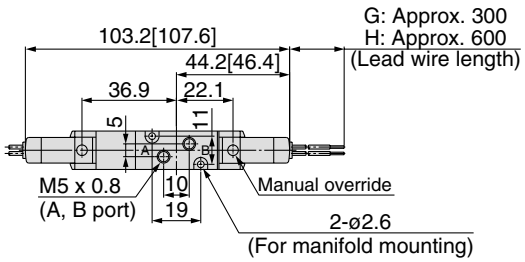


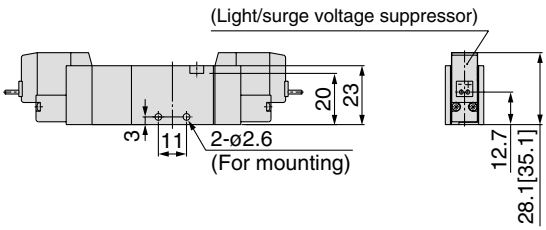
∗ Refer to page 563 for dimensions with connector cable.

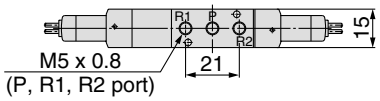
3 position closed center / exhaust center / pressure center

∗ [ ]: AC

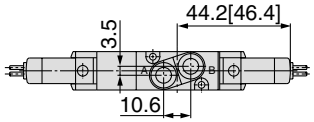
Grommet (G), (H): 10-SYJ5$^{3}_{4}_{5}$23-□$^{G}_{H}$□□-M5

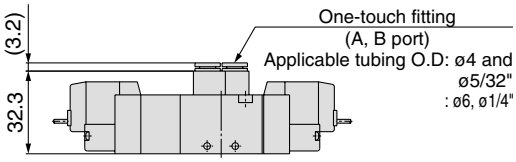




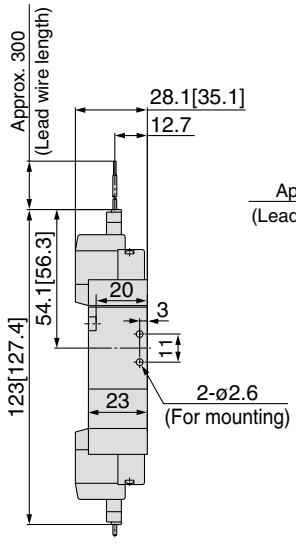


Built-in One-touch fitting: 10-SYJ5$^{3}_{4}_{5}$23-□$^{G}_{H}$□□-$^{C4,N3}_{C6,N7}$

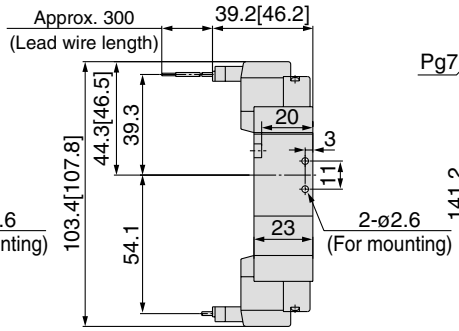




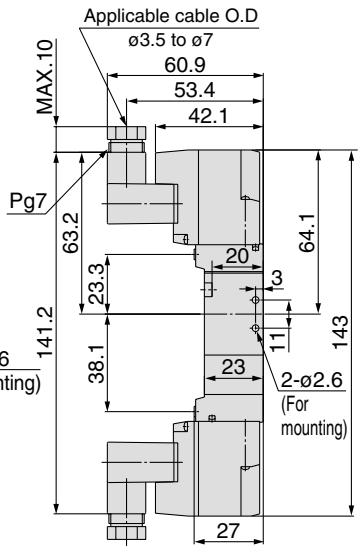
L plug connector (L): 10-SYJ5$^{3}_{4}_{5}$23-□L□□-M5



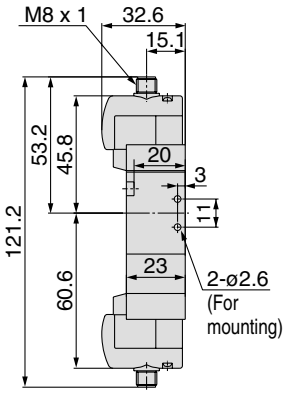
M plug connector (M): 10-SYJ5$^{3}_{4}_{5}$23-□M□□-M5



DIN Terminal (D): 10-SYJ5$^{3}_{4}_{5}$23-□D□□-M5



M8 connector (WO): 10-SYJ5$^{3}_{4}_{5}$23-□WO□□-M5

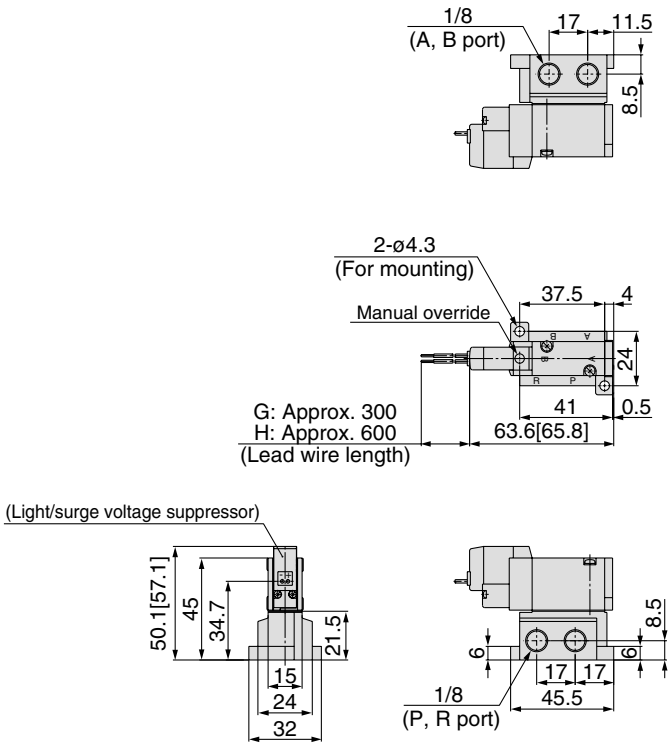


∗ Refer to page 563 for dimensions with connector cable.

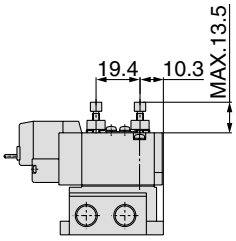
2 position single

∗ [ ]: AC

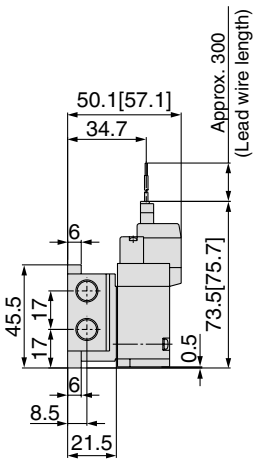
Grommet (G), (H): 10-SYJ5143-□$^{G}_{H}$□□-01□



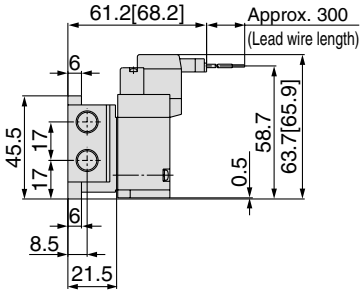
Built-in speed controller: 10-SYJ5153-□$^{G}_{H}$□□-01□



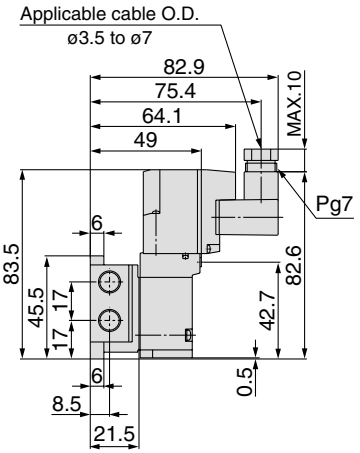
L plug connector (L): 10-SYJ5143-□L□□-01□



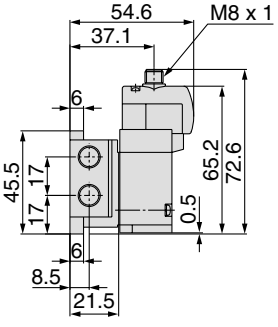
M plug connector (M): 10-SYJ5143-□M□□-01□



DIN Terminal (D): 10-SYJ5143-□D□□-01□



M8 connector (WO): 10-SYJ5143-□WO□□-01□

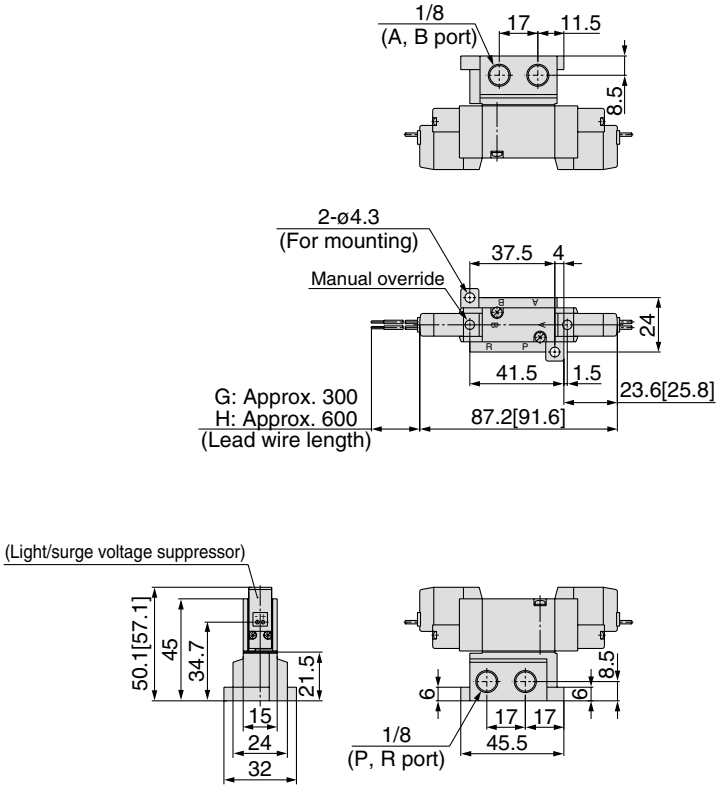


∗ Refer to page 563 for dimensions with connector cable.

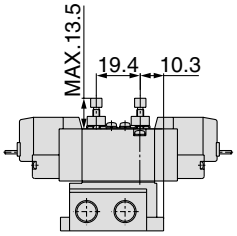
2 position double

∗ [ ]: AC

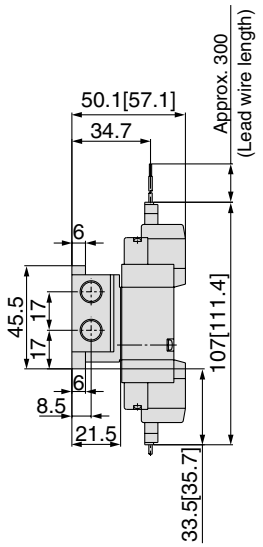
Grommet (G), (H): 10-SYJ5243-□$^{G}_{H}$□□-01□



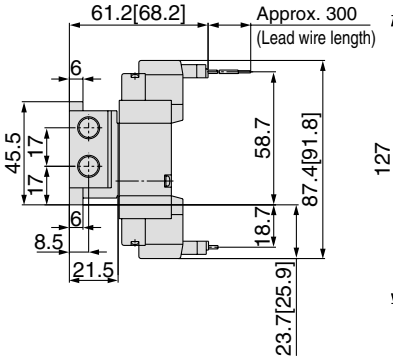
Built-in speed controller: 10-SYJ5253-□$^{G}_{H}$□□-01□



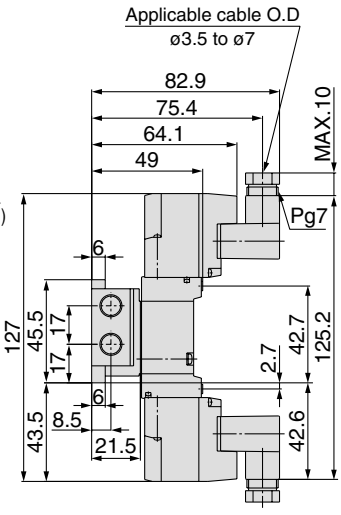
L plug connector (L): 10-SYJ5243-□L□□-01□



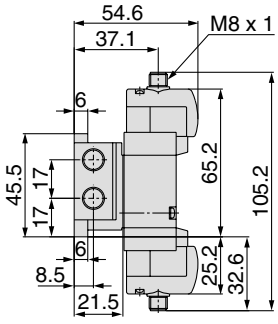
M plug connector (M): 10-SYJ5243-□M□□-01□



DIN Terminal (D): 10-SYJ5243-□D□□-01□



M8 connector (WO): 10-SYJ5243-□WO□□-01□

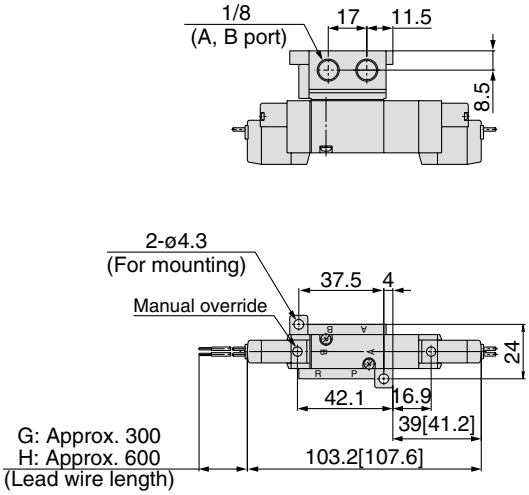


∗ Refer to page 563 for dimensions with connector cable.

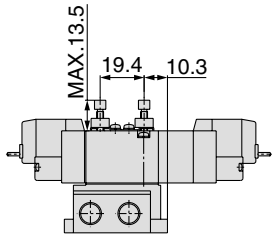
3 position closed center / Exhaust center / Pressure center

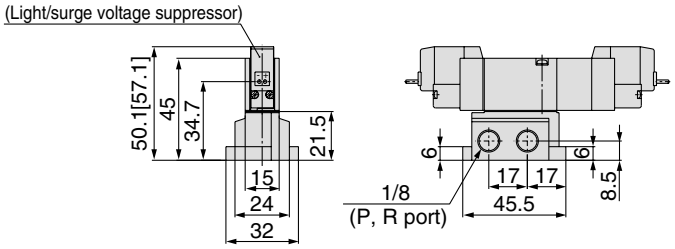
∗ [ ]: AC

Grommet (G), (H): 10-SYJ5$^{3}_{4}_{5}$43-□$^{G}_{H}$□□-01□

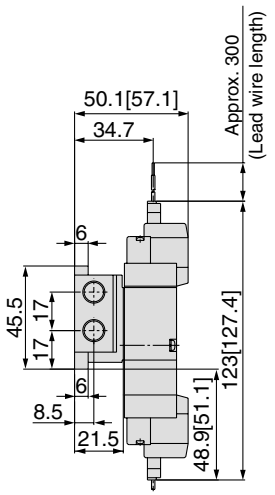


Built-in speed controller: 10-SYJ5$^{3}_{4}_{5}$53-□$^{G}_{H}$□□-01□

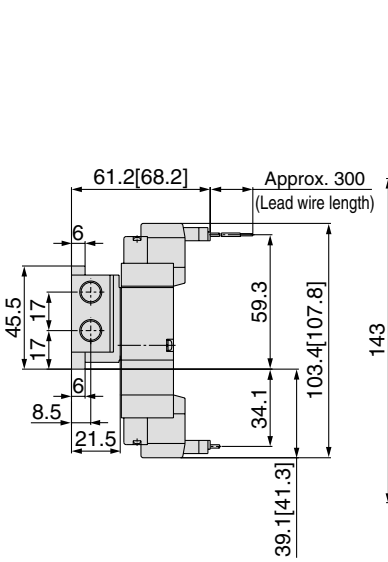




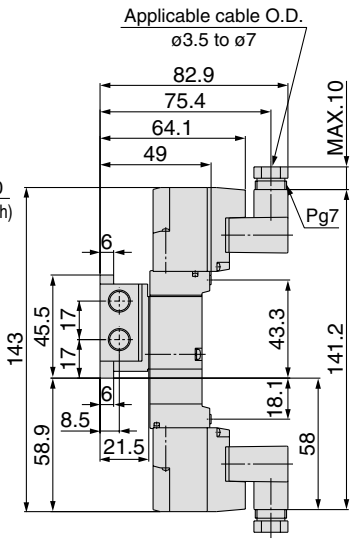
L plug connector (L): 10-SYJ5$^{3}_{4}_{5}$43-□L□□-01□



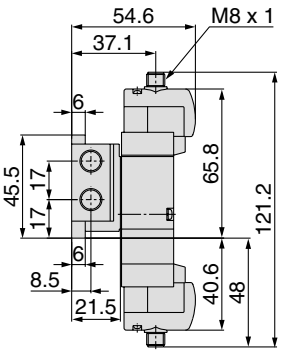
M plug connector (M): 10-SYJ5$^{3}_{4}_{5}$43-□M□□-01□



DIN Terminal (D): 10-SYJ5$^{3}_{4}_{5}$43-□D□□-01□



M8 connector (WO): 10-SYJ5$^{3}_{4}_{5}$43-□WO□□-01□



∗ Refer to page 563 for dimensions with connector cable.

Manifold standard



Manifold specifications

Model		Type 20	Type 40	Type 41	Type 42	Type 43
Manifold type		Single base / B mount				
P (SUP) / R (EXH)		Common SUP / Common EXH				
Valve stations		2 to 20 stations				
A, B port piping specifications	Location	Valve	Base	Base		
	Direction	Top	Bottom	Side		
Port size	P, R port	1/8			1/4	1/8
	A, B port	M5 x 0.8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	M5 x 0.8		1/8, C6 (One-touch fitting for ø6)	C4 (One-touch fitting for ø4)

Flow characteristics

Manifold model			Port size		Flow characteristics					
					1→4/2 (P→A/B)			4/2→5/3(A/B→R)		
			1(P), 5/3(R) port	2(B), 4(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported for internal pilot	10- SS5YJ5-20	10-SYJ5□23	1/8	M5 x 0.8	0.46	0.39	0.12	0.75	0.32	0.19
			1/8	C4	0.62	0.33	0.16	0.83	0.27	0.20
			1/8	C6	0.79	0.36	0.21	0.91	0.36	0.24
Base mounted for internal pilot	10-SS5YJ5-40	10-SYJ5□43	1/8	M5 x 0.8	0.55	0.35	0.15	0.64	0.26	0.16
	10-SS5YJ5-41		1/8	M5 x 0.8	0.59	0.35	0.16	0.68	0.23	0.17
	10-SS5YJ5-42-01		1/4	1/8	0.74	0.22	0.18	0.82	0.31	0.21
	10-SS5YJ5-42-C6		1/4	C6	0.71	0.24	0.17	0.8	0.29	0.20
	10-SS5YJ5-43		1/8	C4	0.55	0.29	0.14	0.74	0.32	0.19

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold (Example)

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model number.

Example
10-SS5YJ5-20-03 ····· 1 set (Manifold base)
∗ **10-SYJ5123-5G-M5** ····· 2 sets (Valve)
∗ **SYJ5000-21-4A** ····· 1 set (Blanking plate assembly)

10-SS5YJ5-43-03-C4 ····· 1 set (Manifold base)
∗ **10-SYJ5143-5LZ** ····· 1 set (Valve)
∗ **10-SYJ5243-5LZ** ····· 1 set (Valve)
∗ **SYJ5000-21-4A** ····· 1 set (Blanking plate assembly)

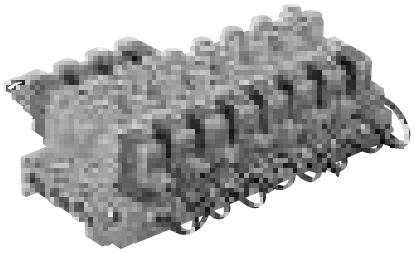
The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

∗ Use manifold specification sheet.

Flat ribbon cable manifold

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

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



Flat ribbon cable manifold specifications

Model		Type 20P	Type 41P	Type 43P
Manifold type		Single base / B mount		
P(SUP) / R(EXH)		Common SUP / Common EXH		
Valve stations		3 to 12 stations		
A, B port piping specifications	Location	Valve	Base	
	Direction	Top	Side	
Port size	P, R port	1/8	1/8	
	A, B port	M5 x 0.8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	M5 x 0.8	C4 (One-touch fitting for ø4)
Applicable 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) The withstand voltage specification for the wiring section conforms to JIS C0704, Grade 1 or its equivalent.

Flow characteristics

Manifold			Port size		Flow characteristics					
					1→4/2 (P→A/B)			4/2→5/3 (A/B→R)		
			1(P), 5/3(R) port	2(B), 4(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported for internal pilot	**10-SS5YJ5-20P**	**10-SYJ5□23**	1/8	M5 x 0.8	0.46	0.39	0.12	0.75	0.32	0.19
			1/8	C4	0.62	0.33	0.16	0.83	0.27	0.20
			1/8	C6	0.79	0.36	0.21	0.91	0.36	0.24
Base mounted for internal pilot	**10-SS5YJ5-41P**	**10-SYJ5□43**	1/8	M5 x 0.8	0.59	0.35	0.16	0.68	0.23	0.17
	10-SS5YJ5-43P		1/8	C4	0.55	0.29	0.14	0.74	0.32	0.19

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifolds (Example)

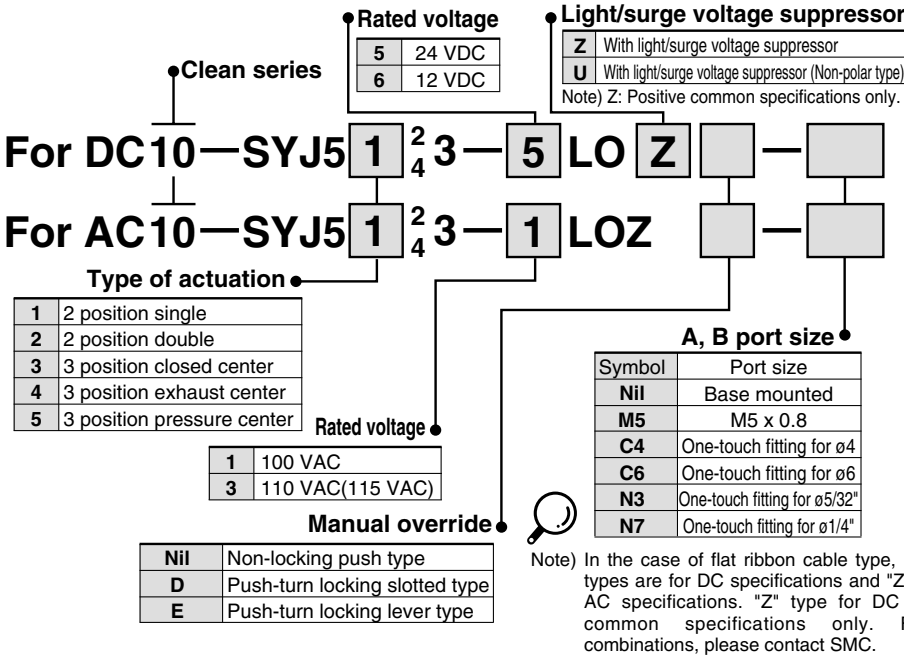
Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model number.

Example
- **10-SS5YJ5-41P-07-C4** ····· 1 set (Manifold base)
- ∗ **10-SYJ5143-5LOU** ····· 3 sets (Valve)
- ∗ **10-SYJ5243-5LOU** ····· 3 sets (Valve)
- ∗ **SYJ5000-21-3A** ····· 1 set (Blanking plate assembly)
- ∗ **SY3000-37-28A** ····· 3 sets (Connector assembly)
- ∗ **SY3000-37-29A** ····· 3 sets (Connector assembly)

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

∗ Use manifold specification sheet.

How to Order Valves



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

How to Order Connector Assembly

12, 24 VDC

Single solenoid	SY3000-37-28A
Double solenoid 3 position type	SY3000-37-29A
For single solenoid, individual SUP/EXH spacer	SY3000-37-3A
For double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-4A
For 3 port adaptor plate	SY3000-37-3A

For 100 VAC

For single solenoid	SY3000-37-46A
Double solenoid 3 position type	SY3000-37-47A
For single solenoid, individual SUP/EXH spacer	SY3000-37-32A
For double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-33A
3 port adaptor plate	SY3000-37-32A

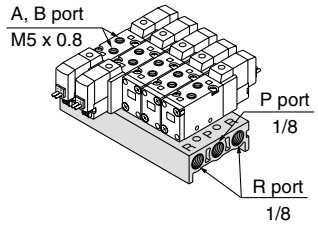
For 100 VAC (115 VAC)

For single solenoid	SY3000-37-54A
Double solenoid 3 position type	SY3000-37-55A
For single solenoid, individual SUP/EXH spacer	SY3000-37-35A
For double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-36A
For 3 port adaptor plate	SY3000-37-35A

Common SUP / Common EXH

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 20 (5 port / Body ported)



How to Order

10—SS5YJ5—20— 05 —

- Clean series
- Number of stations

02	2 stations
:	:
20	20 stations

- P, R port thread type

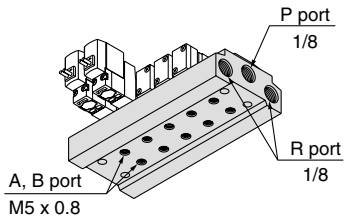
Nil	Rc
00F	G
00N	NPT
00T	NPTF

Applicable solenoid valve
10-SYJ5□23-□□□□-M5 C4 C6

Applicable blanking plate assembly
SYJ5000-21-4A

Applicable individual EXH spacer assembly
SYJ5000-17-1A

Type 40 (5 port / Base mounted)



How to Order

10—SS5YJ5—40— 05 —M5

- Clean series
- Number of stations

02	2 stations
:	:
20	20 stations

- P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

- A, B port size

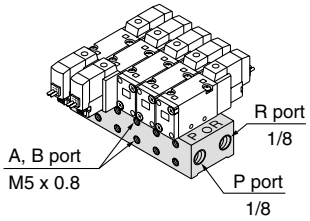
M5	M5 x 0.8

Applicable solenoid valve
10-SYJ5□43-□□□□
10-SYJ5□53-□□□□

Applicable blanking plate assembly
SYJ5000-21-4A

Applicable individual EXH spacer assembly
SYJ5000-17-1A

Type 41 (5 port / base mounted)



How to Order

10—SS5YJ5—41— 05 —M5

- Clean series
- Number of stations

02	2 stations
:	:
20	20 stations

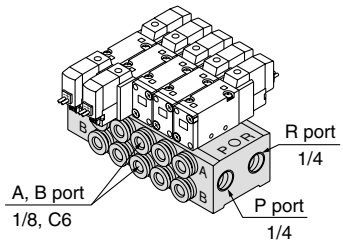
- P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

- A, B port size

M5	M5 x 0.8

Type 42 (5 port / base mounted)



How to Order

10—SS5YJ5—42— 05 — C6

- Clean series
- Number of stations

02	2 stations
:	:
20	20 stations

- A, B port size

01	1/8
C6	One-touch fitting for ø6
N7	One-touch fitting for ø1/4"

- Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

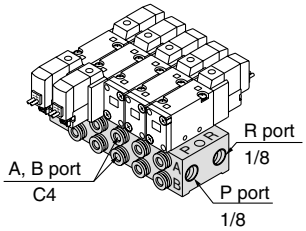
Applicable solenoid valve
10-SYJ5□43-□□□□
10-SYJ5□53-□□□□

Applicable blanking plate assembly
SYJ5000-21-4A

Applicable individual EXH spacer assembly
SYJ5000-17-1A

Applicable individual SUP spacer assembly
SYJ5000-16-2A

Type 43 (5 port / base mounted)



How to Order

10—SS5YJ5—43— 05 —C4

- Clean series
- Manifold stations

02	2 stations
:	:
20	20 stations

- A, B port size

C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

- P, R port thread type

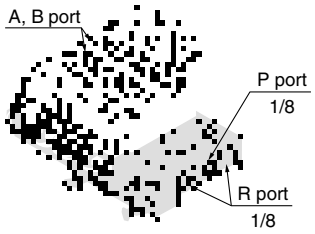
Nil	Rc
F	G
N	NPT
T	NPTF

Flat ribbon cable manifold

Common SUP / Common EXH

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 20P (5 port / body ported)



How to Order

10—SS5YJ5—20P— 05 —

- Clean series
- Number of stations

03	3 stations
:	:
12	12 stations

- P, R port thread type

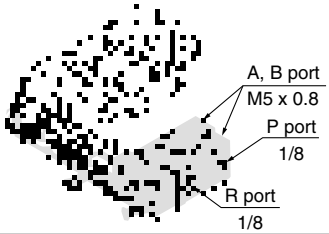
Nil	Rc
00F	G
00N	NPT
00T	NPTF

Applicable solenoid valve
Refer to page 526.

Applicable blanking plate assembly
SYJ5000-21-3A

Applicable connector assembly
Refer to page 526.

Type 41P (5 port / base mounted)



How to Order

10—SS5YJ5—41P— 05 —M5

- Clean series
- Number of stations

03	3 stations
:	:
12	12 stations

- P, R port size

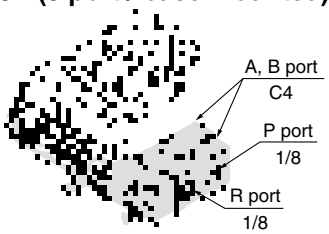
Nil	Rc
F	G
N	NPT
T	NPTF

Applicable solenoid valve
Refer to page 526.

Applicable blanking plate assembly
SYJ5000-21-3A

Applicable connector assembly
Refer to page 526.

Type 43P (5 port / base mounted)



How to Order

10—SS5YJ5—43P— 05 — C4

- Clean series
- Number of stations

03	3 stations
:	:
12	12 stations

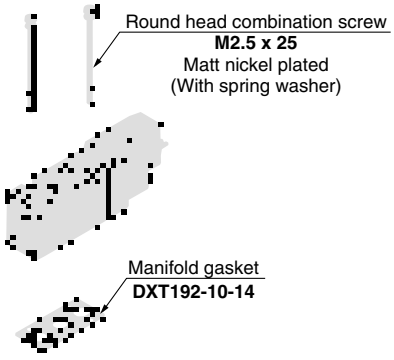
- A, B port size

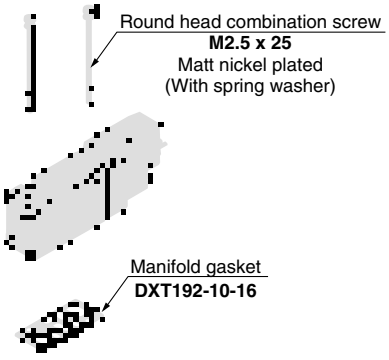
C4	One-touch fitting for ø4
N3	One-touch fitting for ø5/32"

- P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

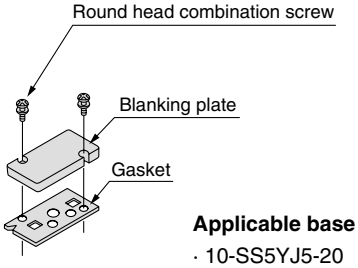
<Manifold option>
Combinations of solenoid valve, manifold gasket and manifold base





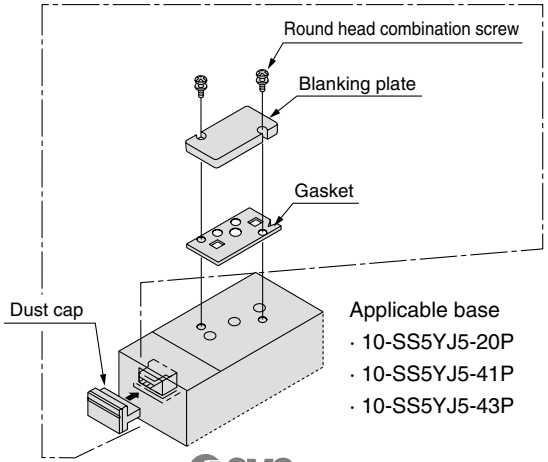
Blanking plate assembly

SYJ5000-21-4A



Applicable base
- 10-SS5YJ5-20
- 10-SS5YJ5-40
- 10-SS5YJ5-41
- 10-SS5YJ5-42
- 10-SS5YJ5-43

SYJ5000-21-3A



Applicable base
- 10-SS5YJ5-20P
- 10-SS5YJ5-41P
- 10-SS5YJ5-43P

⚠ Caution

Mounting screw tightening torque

M2.5: 0.45N·m

Use caution to the assembly orientation for solenoid valve, gasket, and optional parts.

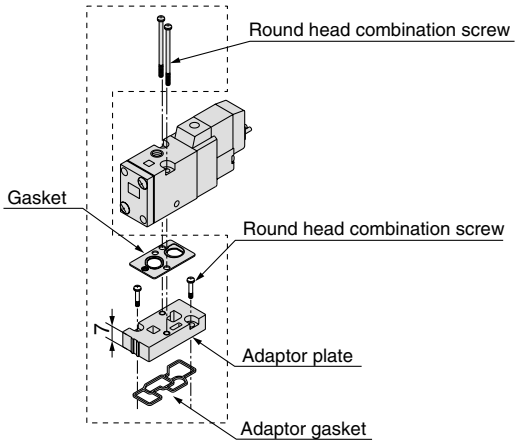
SMC

<Manifold option>
Mix installation of the 10-SYJ500 and the 10-SYJ5000 valves on the same manifold

- Use of an adapter plate makes it possible to mount Series 10-SYJ500 on the manifold bases of series 10-SYJ5000.
- When mounting the 10-SYJ500 valve on the 10-SYJ5000 manifold, the 10-SYJ500 solenoid must be positioned on the same side of the manifold as a single solenoid of 10-SYJ5000.
- For base mounted style, the A port of the 3 port valve flows out the B port of manifold base.

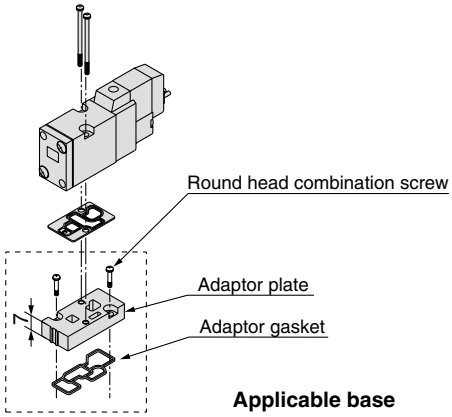
Adaptor plate assembly

SYJ500-3-2A



Applicable base
· 10-SS5YJ5-20

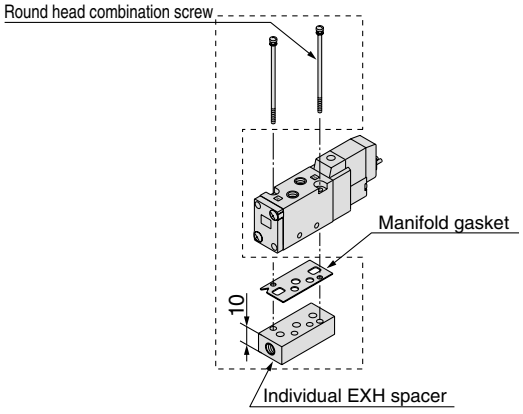
SYJ500-3-1A



Applicable base
· 10-SS5YJ5-40
· 10-SS5YJ5-41
· 10-SS5YJ5-42
· 10-SS5YJ5-43

Individual EXH spacer assembly

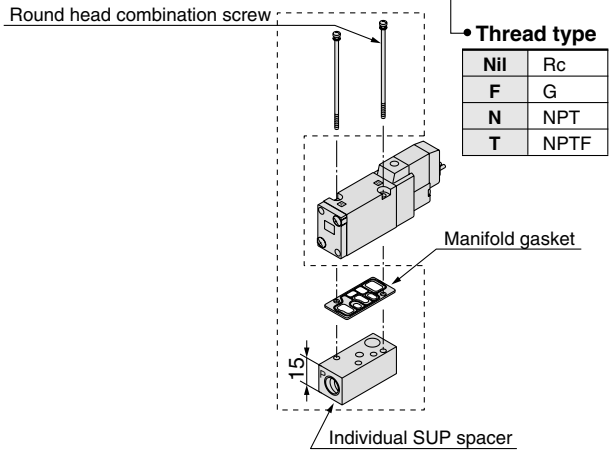
SYJ5000-17-1A



Applicable base
· 10-SS5YJ5-20
· 10-SS5YJ5-40
· 10-SS5YJ5-41
· 10-SS5YJ5-42
· 10-SS5YJ5-43

Individual SUP spacer assembly

SYJ5000-16-2 □ A



Nil	Rc
F	G
N	NPT
T	NPTF

Applicable base
· 10-SS5YJ5-41
· 10-SS5YJ5-42
· 10-SS5YJ5-43

⚠ Caution

Mounting screw tightening torque

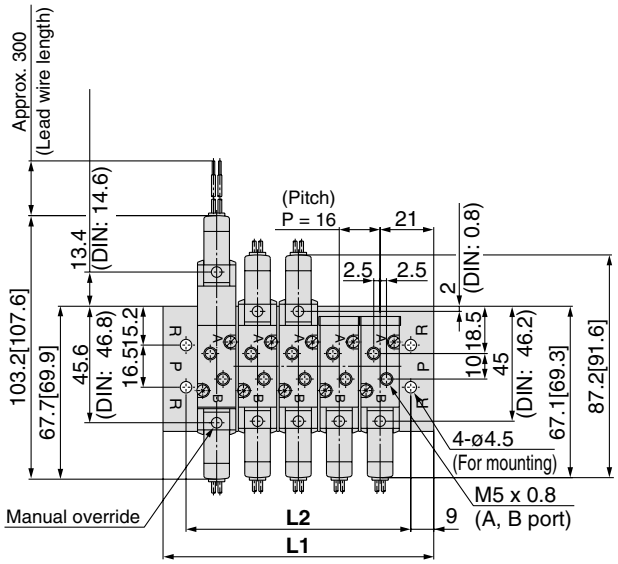
M2.5: 0.45N·m

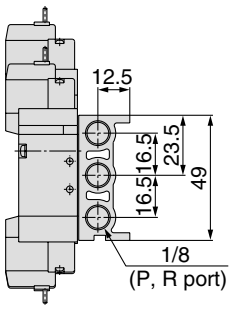
Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.

Type 20: Top ported / 10-SS5YJ5-20-Station-00□

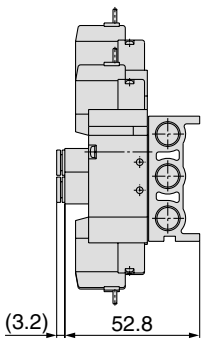
∗ [ ]: AC

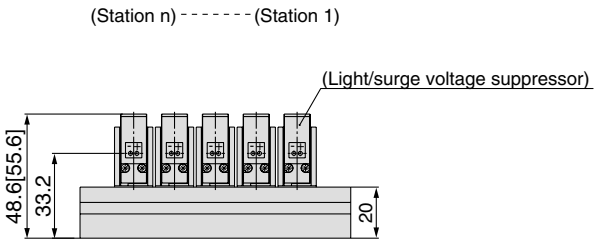
Grommet (G)



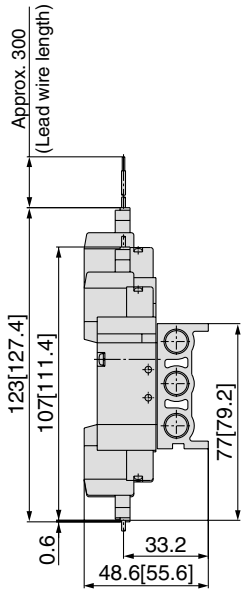


Built-in One-touch fitting

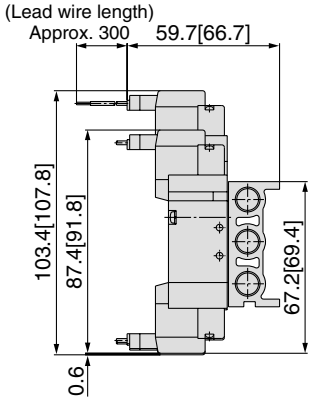




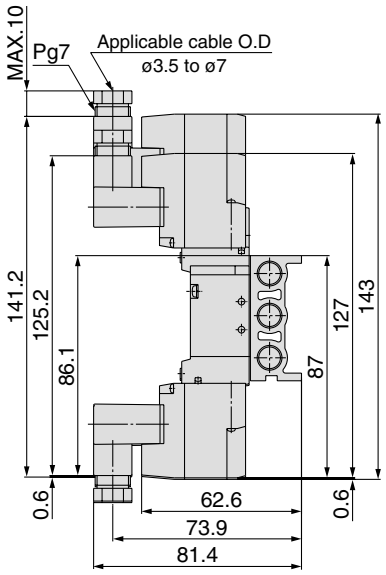
L plug connector (L)



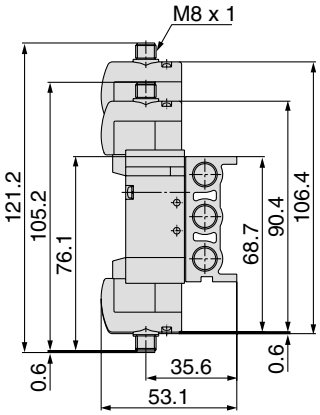
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)





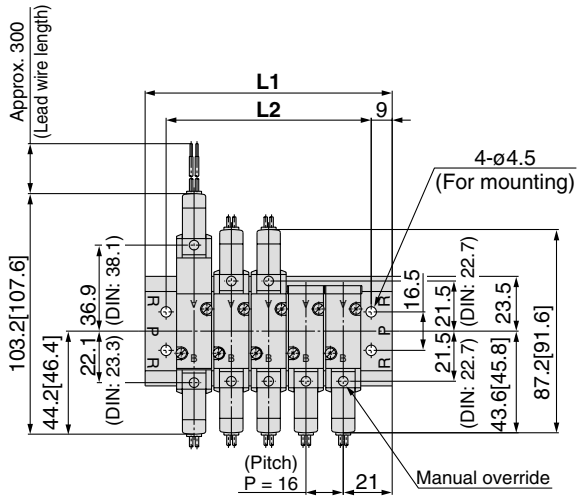
∗ Refer to page 563 for dimensions with connector cable.

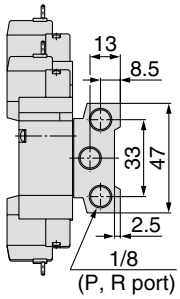
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330	346
L2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328

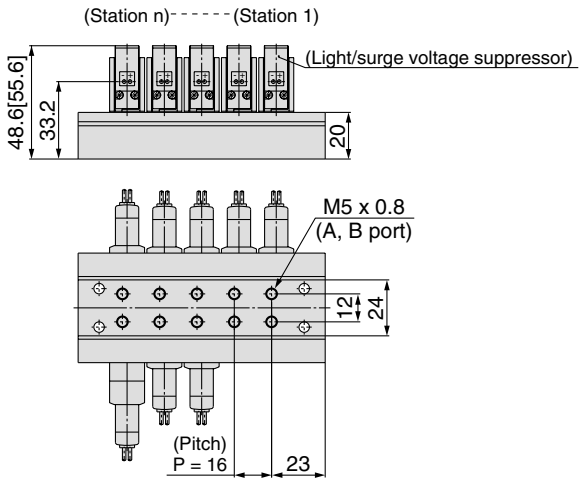
Type 40: Bottom ported / 10-SS5YJ5-40-Stations-M5□

∗ [ ]: AC

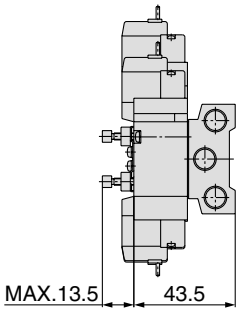
Grommet (G)



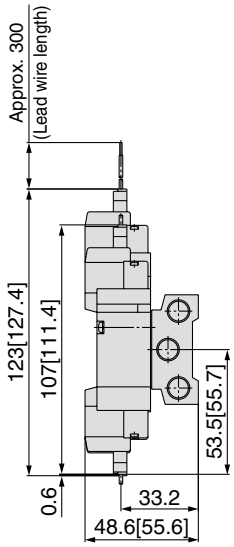




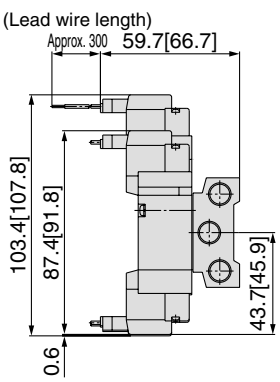
Built-in speed controller



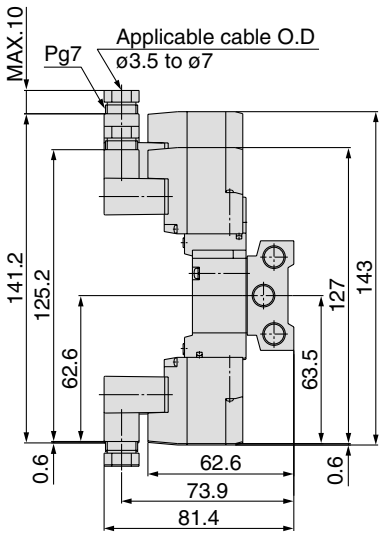
L plug connector (L)



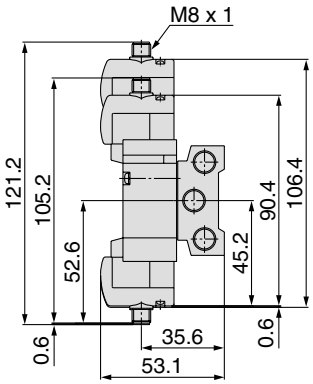
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



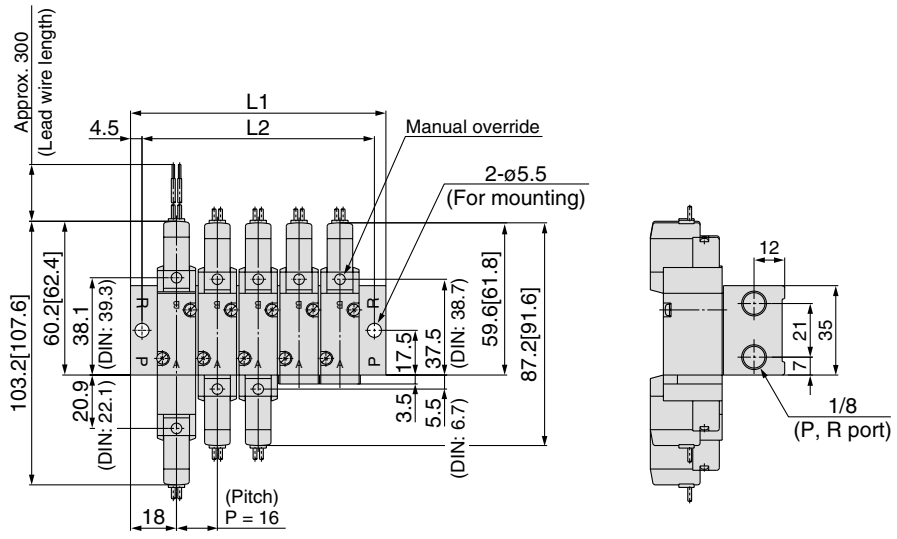
∗ Refer to page 563 for dimensions with connector cable.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330	346
L2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328

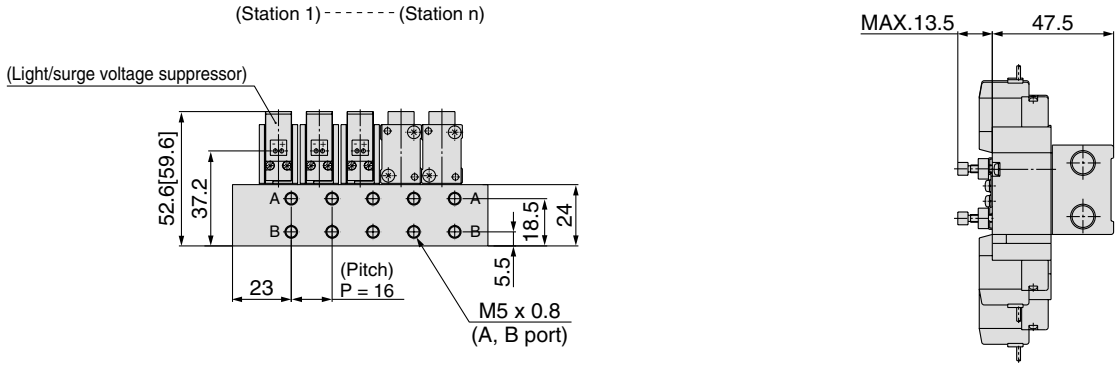
Type 41: Side ported / 10-SS5YJ5-41-Stations-M5□

∗ [ ]: AC

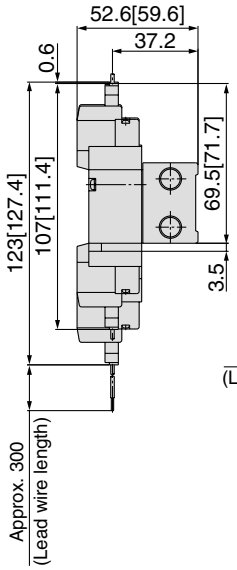
Grommet (G)



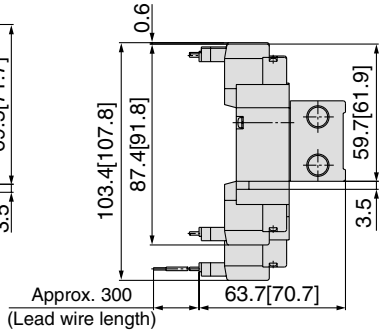
Built-in speed controller



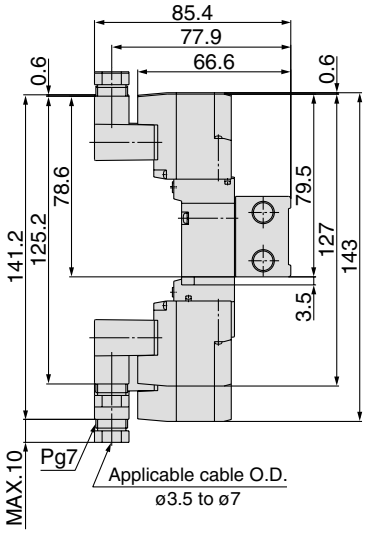
L plug connector (L)



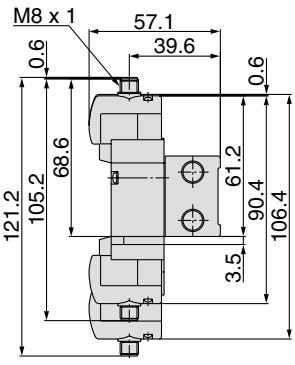
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



∗ Refer to page 563 for dimensions with connector cable.

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	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331

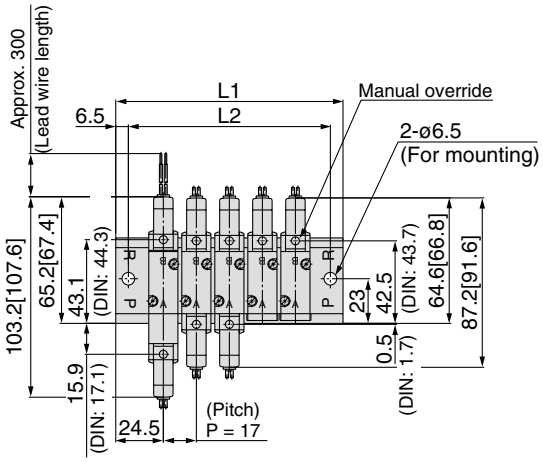
Type 42: Side ported / 10-SS5YJ5-42-Stations-01, C6/N7□

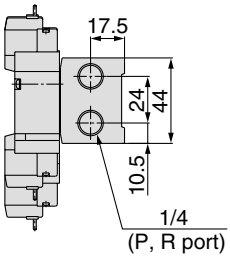
∗ [ ]: AC

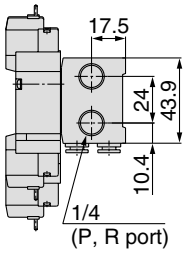
Grommet (G)

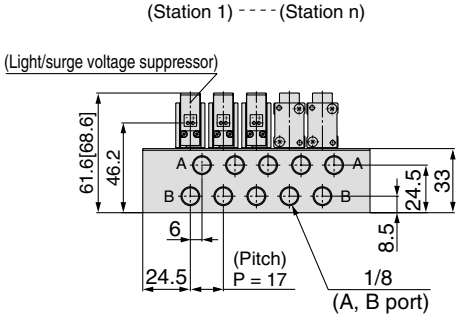
01□

C6/N7□(With built-in One-touch fitting)

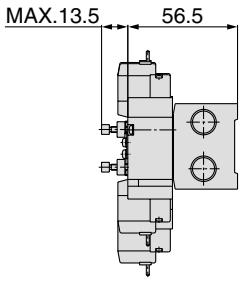


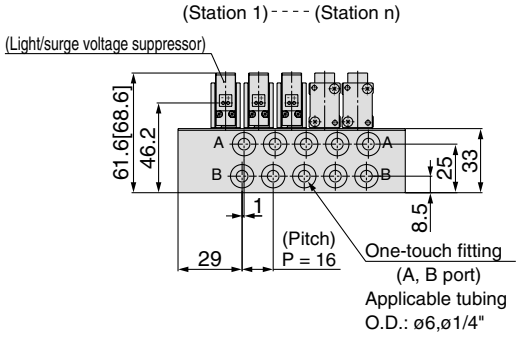






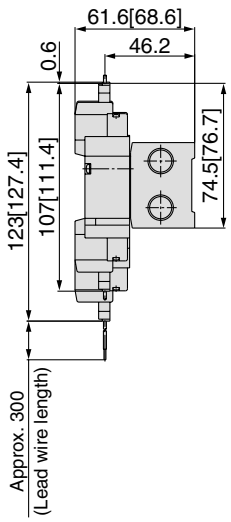
Built-in speed controller



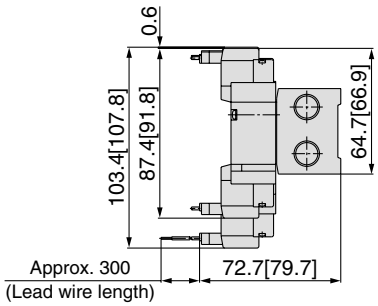


∗ Other dimensions are the same as the grommet type.

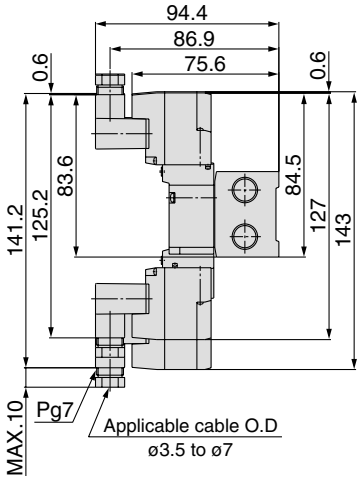
L plug connector (L)



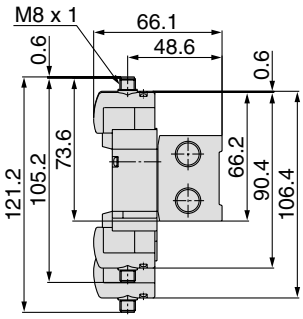
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



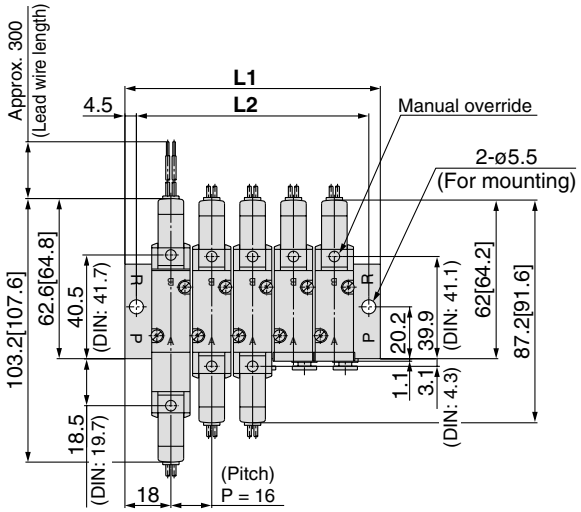
∗ Refer to page 563 for dimensions with connector cable.

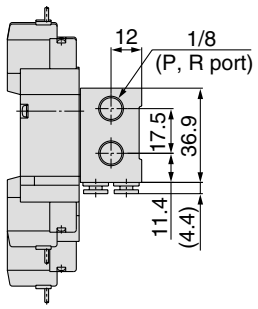
A, B port size	Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
1/8	**L1**	66	83	100	117	134	151	168	185	202	219	236	253	270	287	304	321	338	355	372
	L2	53	70	87	104	121	138	155	172	189	206	223	240	257	274	291	308	325	342	359
C6/N7	**L1**	65	81	97	113	129	145	161	177	193	209	225	241	257	273	289	305	321	337	353
	L2	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340

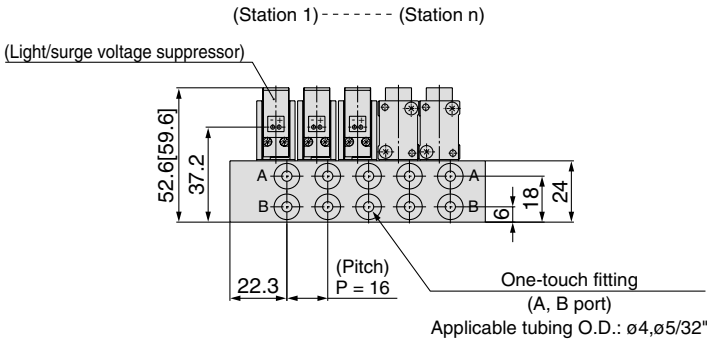
Type 43: Side ported / 10-SS5YJ5-43-Stations-$^{C4}_{N3}$□

∗ [ ]: AC

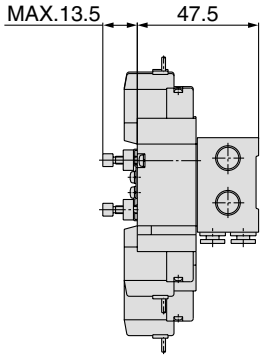
Grommet (G)



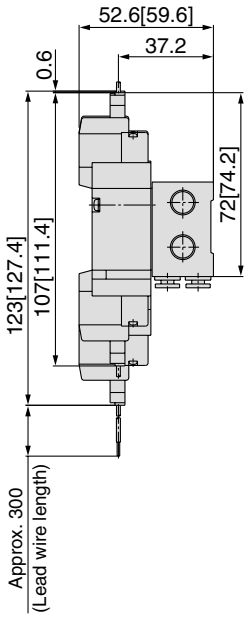




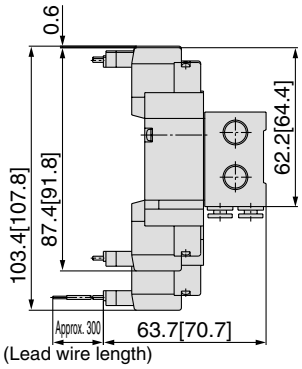
Built-in speed controller



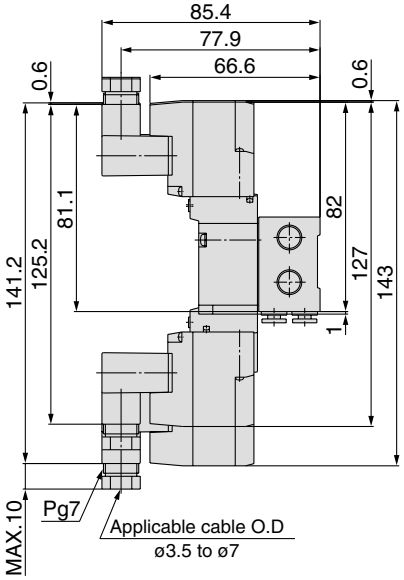
L plug connector (L)



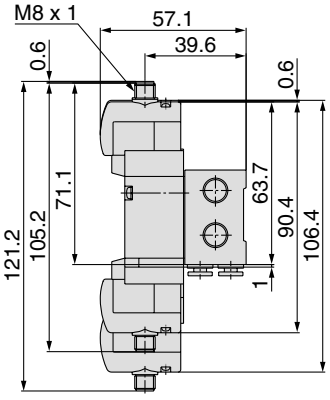
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



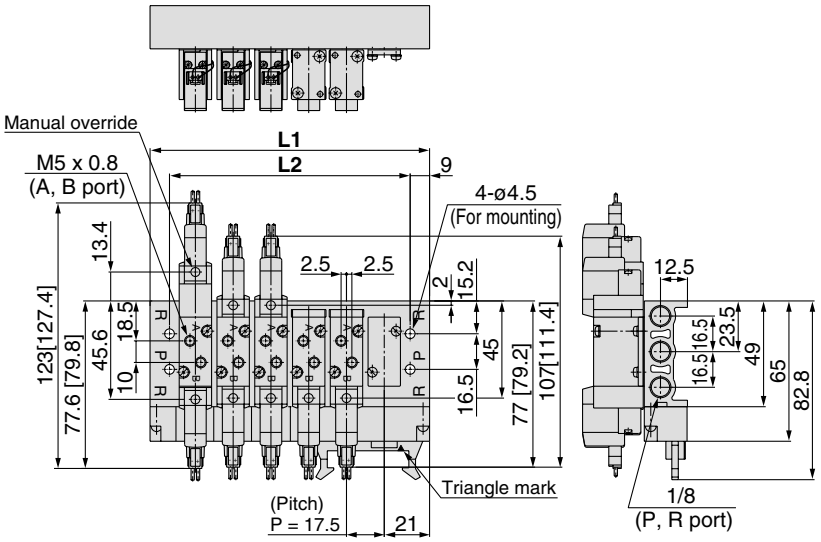
∗ Refer to page 563 for dimensions with connector cable.

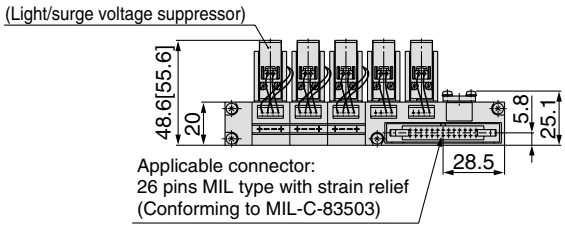
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
L2	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331

Flat ribbon cable manifold

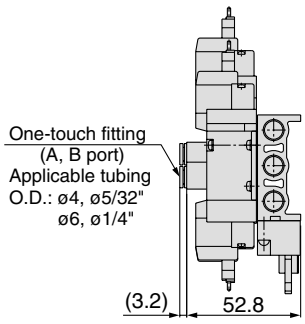
* [ ]: AC

10-SS5YJ5-20P-Stations-00□



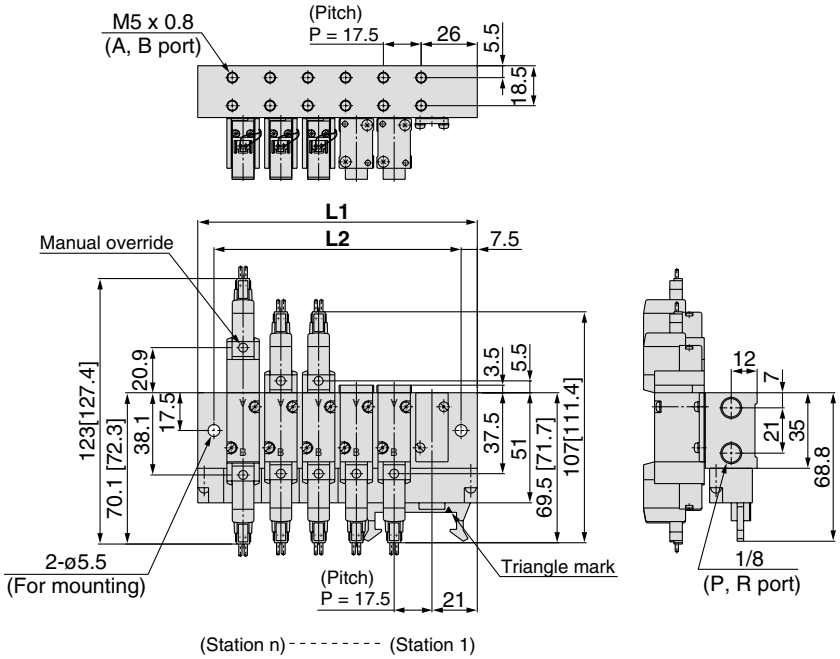


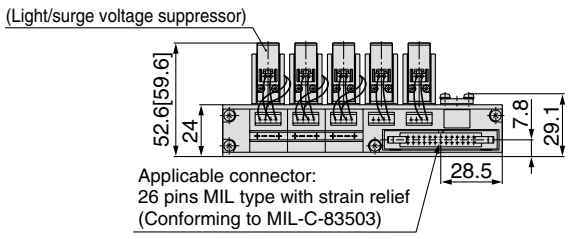
C4, N3
C6, N7
(With built-in One-touch fitting)



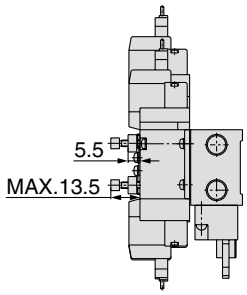
Stations n	3 stations	4	5	6	7	8	9	10	11	12 stations
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L2	59	76.5	94	111.5	129	146.5	164	181.5	199	216.5

10-SS5YJ5-41P-Stations-M5□





Built-in speed controller

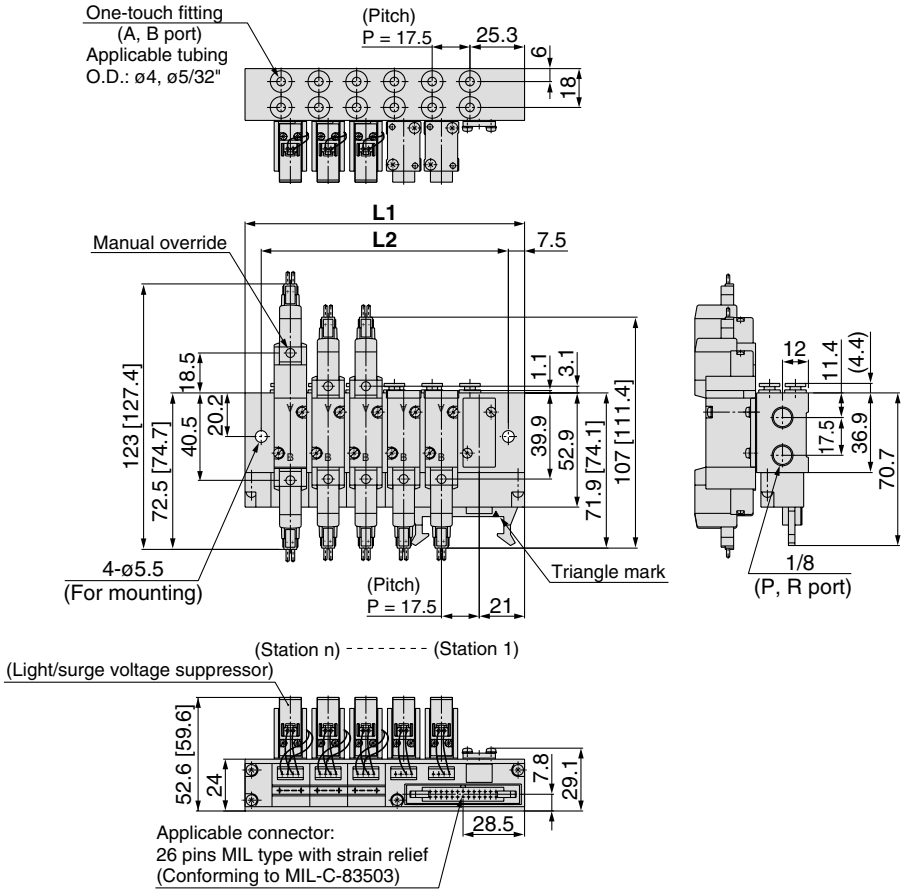


Stations n	3 stations	4	5	6	7	8	9	10	11	12 stations
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L2	62	79.5	97	114.5	132	149.5	167	184.5	202	219.5

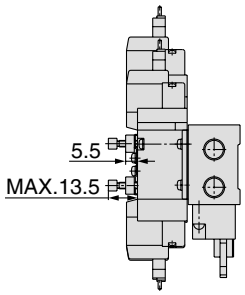
Flat ribbon cable manifold

∗ [ ]: AC

10-SS5YJ5-43P-Stations-$^{C4}_{N3}$□

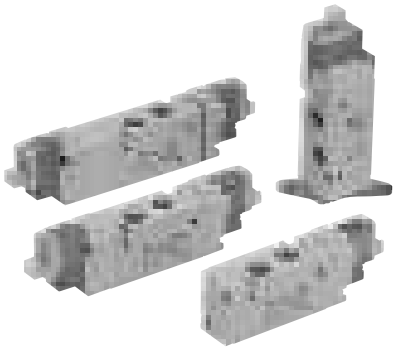


Built-in speed controller

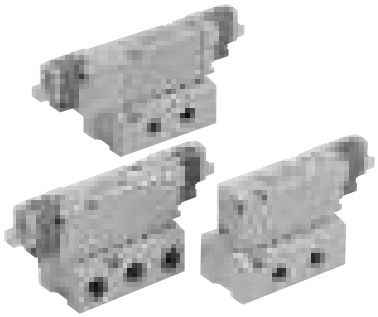


Stations n	3 stations	4	5	6	7	8	9	10	11	12 stations
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L2	62	79.5	97	114.5	132	149.5	167	184.5	202	219.5

Series 10-SYJ7000 Rubber seal 5 port solenoid valve



Body ported



Base mounted

Specifications

Fluid		Air
Operating pressure range (MPa)	**2 position single**	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (with no freezing. Refer to page 714.)
Response time ms (0.5MPa) Note 1)	**2 position single, double**	30 or less
	3 position	60 or less
Max. operating frequency (Hz)	**2 position single, double**	5
	3 position	3
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type
Pilot exhaust method		Common exhaust for the pilot and main valve
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance m/s² Note 2)		150/30
Enclosure		Dustproof (∗DIN terminal, M8 connector conforms to IP65.)

∗ Based on IEC60529

Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature : 20°C, at rated voltage, without surge voltage suppressor)

Note 2) 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. (Value in the initial state)
Vibration resistance: No malfunction occurred in one sweep between 45 and 2000Hz. Test was performed 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. (Value in the initial state)

Solenoid specifications

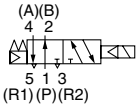
Electrical entry			Grommet (G), (H) L plug connector (L) M plug connector (M) DIN terminal (D) M8 connector (W)	
			G, H, L, M, W	D
Coil rated voltage V	**DC**		24, 12, 6, 5, 3	24, 12
	AC 50/60Hz		100, 110, 200, 220	
Allowable voltage fluctuation			±10% of rated voltage ∗	
Power consumption (W)	**DC**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

∗ In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.
∗ For 115 and 230 VAC, the allowable voltage fluctuation is -15% to +5% of rated voltage.
∗ For the allowable voltage fluctuation for S, Z and T types (with power saving circuit), please observe the following range because they have voltage drop due to internal circuit.
S and Z types 24 VDC: –7% to +10%
12 VDC: –4% to +10%
T type 24 VDC: –8% to +10%
12 VDC: –6% to +10%

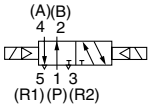
JIS Symbol

Body ported

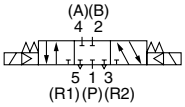
2 position single



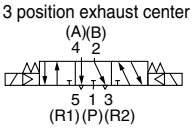
2 position double



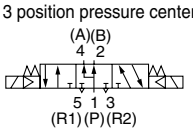
3 position closed center



3 position exhaust center

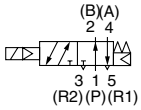


3 position pressure center

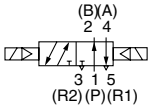


Base mounted

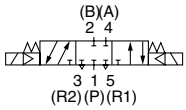
2 position single solenoid



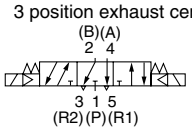
2 position double solenoid



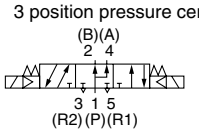
3 position closed center



3 position exhaust center



3 position pressure center



Made to Order Made to order specifications (Refer to page 557 for details.)

Flow characteristics / Weight

Valve model		Type of actuation		Port size		Flow characteristics[Note 1]						Weight (g)[Note 2, 3]			
				1,5,3 (P,EA,EB)	4,2 (A,B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grommet	L/M plug connector	DIN terminal	M8 connector
						C[dm³/(s·bar)]	b	Cv	C[dm³/(s·bar)]	b	Cv				
Body ported	10-SYJ7□23-□-01	2 position	Single	1/8	1/8	2.2	0.36	0.58	2.4	0.34	0.63	85	86	107	90
			Double									98	100	142	108
		3 position	Closed center			1.8	0.37	0.45	2.0	0.35	0.49	108	110	152	118
			Exhaust center			1.2	0.50	0.34	3.0[1.3]	0.35[0.52]	0.73[0.39]				
			Pressure center			3.0[0.83]	0.37[0.50]	0.78[0.25]	1.8	0.37	0.45				
	10-SYJ7□23-□-C6	2 position	Single	1/8	C6 (One-touch fitting for ø6)	1.6	0.33	0.4	2.2	0.32	0.53	96	97	98	101
			Double									109	111	153	119
		3 position	Closed center			1.4	0.27	0.35	1.9	0.33	0.49	119	121	163	129
			Exhaust center			1.1	0.37	0.27	2.5[1.3]	0.32[0.54]	0.61[0.38]				
			Pressure center			1.8[0.78]	0.36[0.40]	0.45[0.22]	1.6	0.30	0.39				
	10-SYJ7□23-□-C8	2 position	Single	1/8	C8 (One-touch fitting for ø8)	2.0	0.39	0.52	2.3	0.34	0.61	96	97	98	101
			Double									109	111	153	119
		3 position	Closed center			1.7	0.35	0.42	2.0	0.29	0.49	119	121	163	129
			Exhaust center			1.2	0.38	0.33	2.6[1.3]	0.35[0.49]	0.67[0.38]				
			Pressure center			1.9[0.86]	0.57[0.46]	0.59[0.25]	1.7	0.39	0.42				
Base mounted	10-SYJ7□43-□-01	2 position	Single	1/8	1/8	2.3	0.45	0.57	2.8	0.37	0.71	165(85)	166(86)	187(107)	170(90)
			Double									178(98)	180(100)	222(142)	188(108)
		3 position	Closed center			1.9	0.36	0.48	2.1	0.46	0.57	188(108)	190(110)	232(152)	198(118)
			Exhaust center			1.2	0.48	0.35	3.4[1.3]	0.36[0.57]	0.86[0.41]				
			Pressure center			3.3[0.85]	0.43[0.54]	0.78[0.25]	2.1	0.45	0.56				
	10-SYJ7□43-□-02	2 position	Single	1/4	1/4	2.3	0.41	0.61	2.9	0.35	0.74	165(85)	166(86)	187(107)	170(90)
			Double									178(98)	180(100)	222(142)	188(108)
		3 position	Closed center			1.9	0.46	0.50	2.2	0.44	0.60	188(108)	190(110)	232(152)	198(118)
			Exhaust center			1.3	0.45	0.35	3.7[1.4]	0.27[0.56]	0.87[0.43]				
			Pressure center			3.6[0.83]	0.23[0.55]	0.84[0.25]	2.1	0.47	0.58				

Note 1) [ ] denotes normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2
Note 2) ( ): Without sub-plate
Note 3) For DC voltages. For AC voltages add 3g to the weight of the single solenoid and 6g to the weight of the double solenoid and 3 position types.

How to Order

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Light/Surge voltage suppressor

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

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

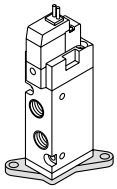
Electrical entry for D

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

Bracket

Nil: Without bracket
F: With bracket



Note) Do not remove the factory installed bracket from models with the bracket option. Removal of the bracket will cause the valve to leak. Brackets cannot be retrofitted.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Rated voltage

DC specifications

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

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

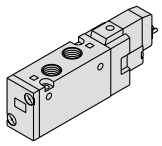
AC specifications (50/60Hz)

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

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

A, B port size

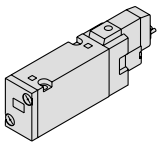
01	1/8
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"



(For manifold type 20, 21)

Body ported 10—SYJ7 1 23 □ — 5 M □ □ — 01 □ —

Base mounted 10—SYJ7 2 43 □ — 5 M □ □ — □ □



(Sub-plate, 40, 41, 42 manifold)

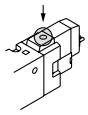
Coil specifications

Nil	Standard
T	With power saving circuit <For 24 and 12 VDC only>

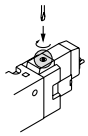
∗ Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Manual override

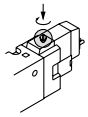
Nil: Non-locking push type



D: Push-turn locking slotted type



E: Push-turn locking lever type

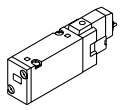


Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

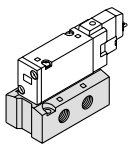
Port size

Nil: Without sub-plate

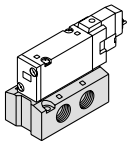


(With gasket and screws)

01: 1/8 with sub-plate Note)



02: 1/4 with sub-plate



Note) R1, R2 ports : 1/4

Electrical entry

24, 12, 6, 5, 3 VDC / 100, 110, 200, 220 VAC				24, 12 VDC, 100, 110, 200, 220 VAC	24, 12 VDC, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector		DIN terminal	M8 connector
G: Lead wire length 300 mm	**L**: With lead wire (length 300 mm)	**M**: With lead wire (length 300 mm)	**MN**: Without lead wire	**D**: With connector	**WO**: Without connector
H: Lead wire length 600 mm	**LN**: Without lead wire	**LO**: Without connector	**MO**: Without connector	**DO**: Without connector	**W□**: With connector cable Note 1)

Note 1) Be sure to enter a symbol of the cable length with reference to page 562.

∗ "LN", "MN" type : with 2 sockets.
∗ DIN terminal type "Y" conforming to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 557.
∗ For connector cable of M8 connector, refer to page 562.

How to Order Pilot Valve Assembly

10—V111 □ — 5 G □

Clean series

Coil specifications

Nil	Standard
T	With power saving circuit <24 and 12 VDC only>

∗ Power saving circuit is not available in the case of "W□" type.

Rated voltage

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

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

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

∗ For connector cable of M8 connector, refer to page 562.

Note 1) Be sure to enter a symbol of the cable length with reference to page 562.

10—V115 — 5 D □

Clean series

Rated voltage

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

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		Without connector

Note) Do not replace 10-V111 (G, H, L, M, W) to 10-V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

How to Order L/M Plug Connector Assembly

For DC: **SY100-30-4A-□**

For 100 VAC: **SY100-30-1A-□**

For 200 VAC: **SY100-30-2A-□**

For other voltages of AC: **SY100-30-3A-□**

Without lead wire (With connector and 2 of sockets only): **SY100-30-A**

Lead wire length

Nil	300mm
6	600mm
10	1000mm
15	1500mm
20	2000mm
25	2500mm
30	3000mm
50	5000mm

How to Order M8 Connector Cable

V100-49-1-□

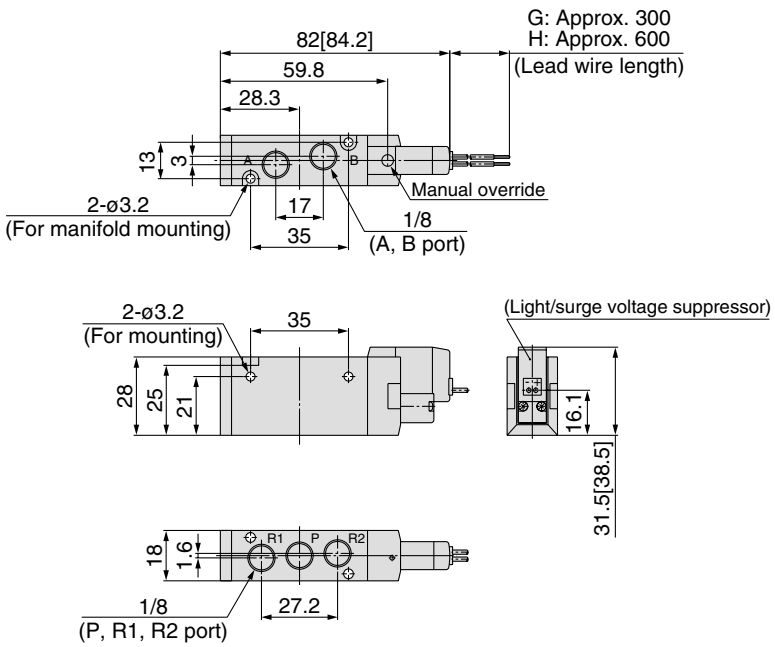
Cable length

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

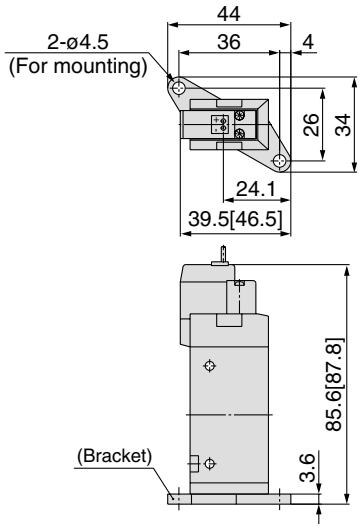
2 position single

∗ [ ]: AC

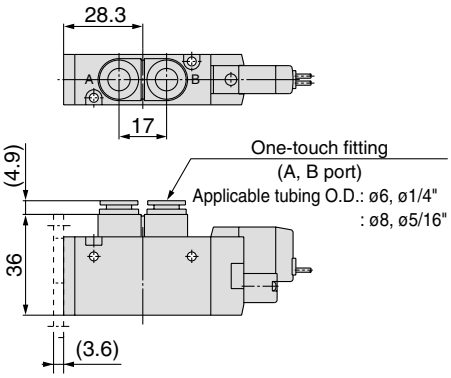
Grommet (G), (H): 10- SYJ7123-□$^{G}_{H}$□□-01□



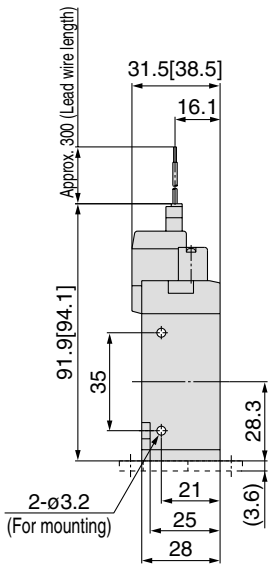
With bracket
10-SYJ7123-□$^{G}_{H}$□□-01□-F



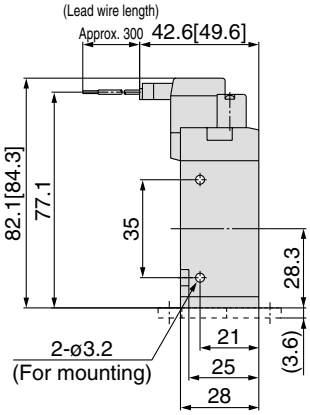
Built-in One-touch fitting:
10-SYJ7123-□$^{G}_{H}$□□-$^{C6, N7}_{C8, N9}$□ (-F)



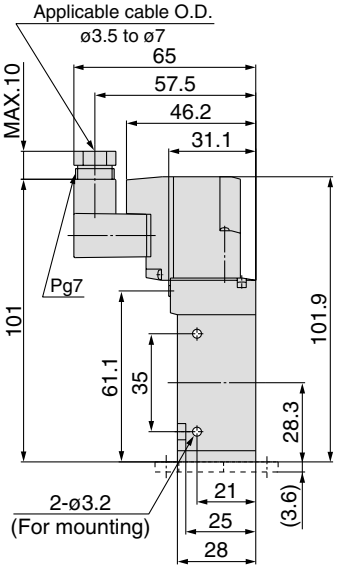
L plug connector (L)
10-SYJ7123-□L□□-01□ (-F)



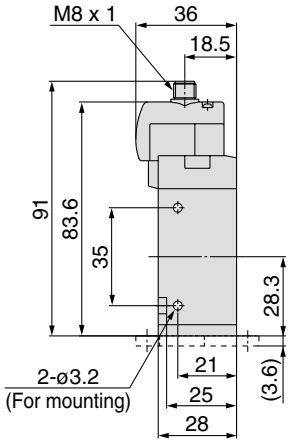
M plug connector (M)
10-SYJ7123-□M□□-01□ (-F)



DIN Terminal (D):
10-SYJ7123-□D□□-01□ (-F)



M8 connector (WO):
10-SYJ7123-□WO□□-01□ (-F)

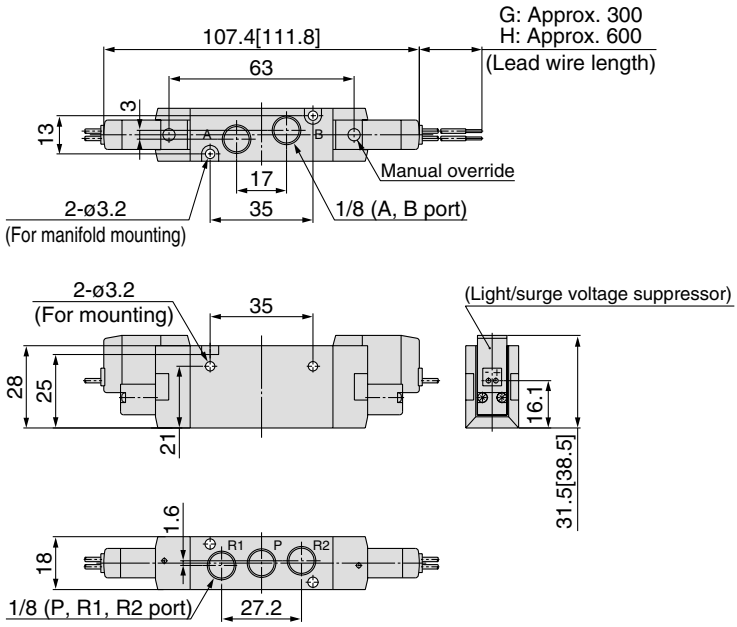


∗ Refer to page 563 for dimensions with connector cable.

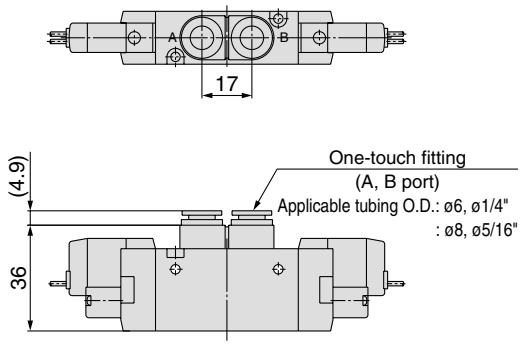
2 position double

∗ [ ]: AC

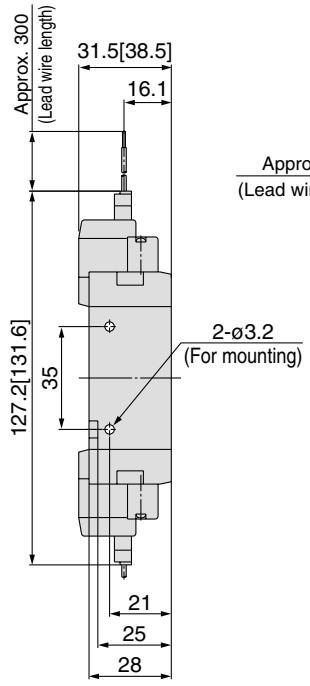
Grommet (G), (H): 10-SYJ7223-□$^{G}_{H}$□□-01□



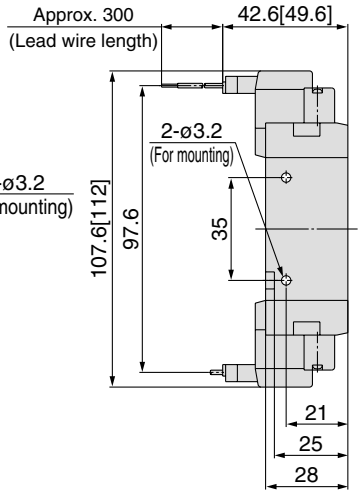
Built-in One-touch fitting: 10-SYJ7223-□$^{G}_{H}$□□-$^{C6, N7}_{C8, N9}$□



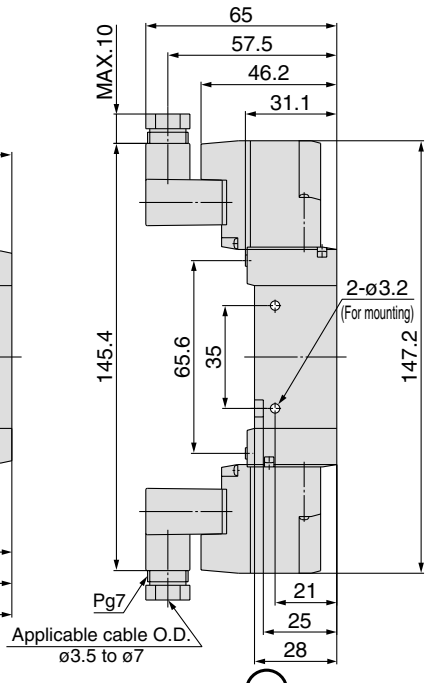
L plug connector (L): 10-SYJ7223-□L□□-01□



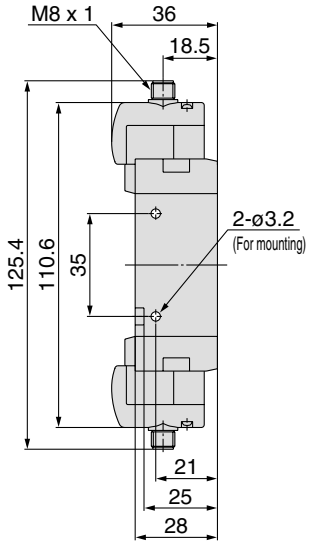
M plug connector (M): 10-SYJ7223-□M□□-01□



DIN Terminal (D): 10-SYJ7223-□D□□-01□



M8 connector (WO): 10-SYJ7223-□WO□□-01□



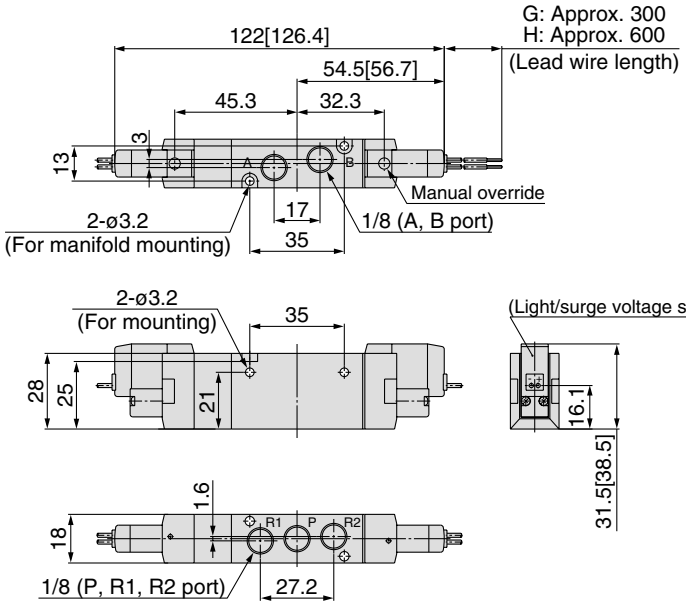


∗ Refer to page 563 for dimensions with connector cable.

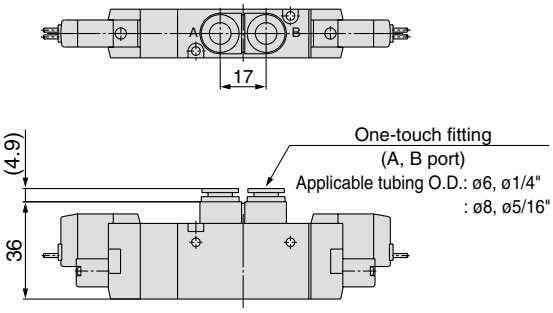
3 position closed center / Exhaust center / Pressure center

∗ [ ]: AC

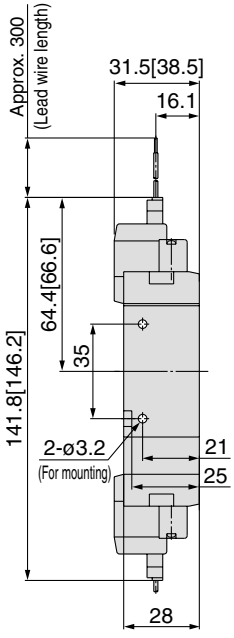
Grommet (G), (H): 10-SYJ7$^{3}_{5}$^{4}23-□$^{G}_{H}$□□-01□



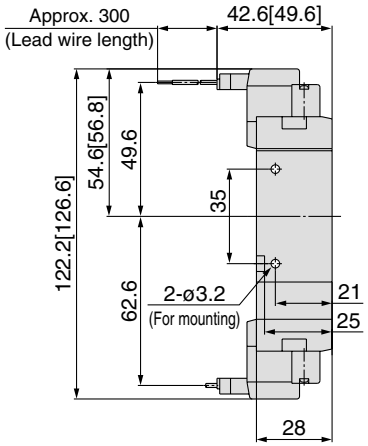
Built-in One-touch fitting: 10-SYJ7$^{3}_{5}$^{4}23-□$^{G}_{H}$□□-$^{C6, N7}_{C8, N9}$□



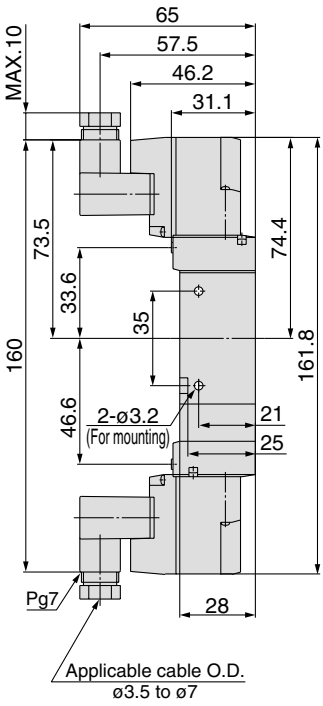
L plug connector (L): 10-SYJ7$^{3}_{5}$^{4}23-□L□□-01□



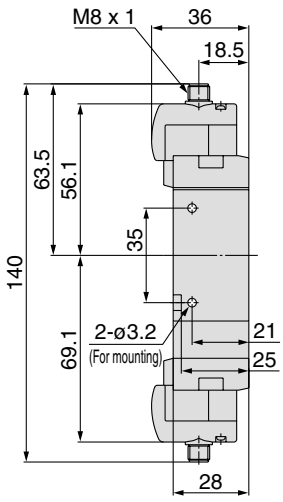
M plug connector (M): 10-SYJ7$^{3}_{5}$^{4}23-□M□□-01□



DIN Terminal (D): 10-SYJ7$^{3}_{5}$^{4}23-□D□□-01□



M8 connector (WO): 10-SYJ7$^{3}_{5}$^{4}23-□WO□□-01□

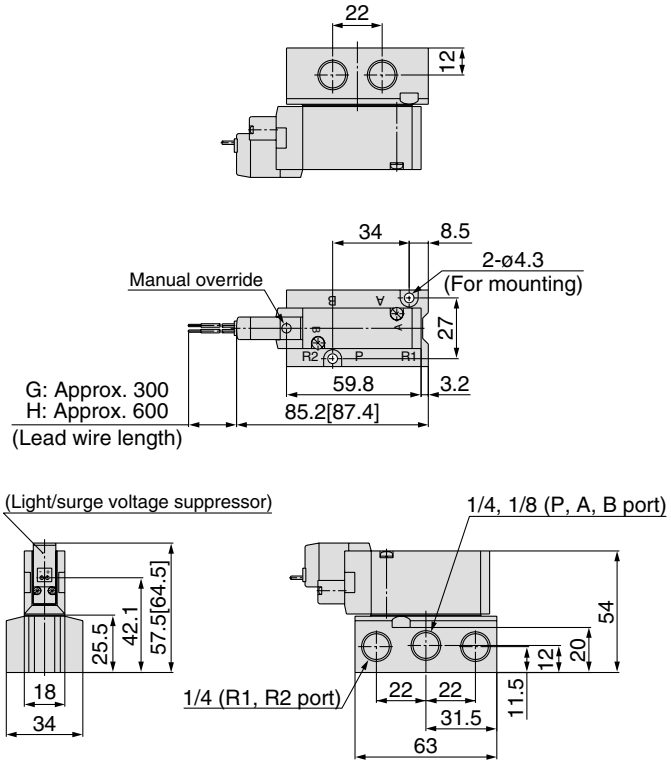


∗ Refer to page 563 for dimensions with connector cable.

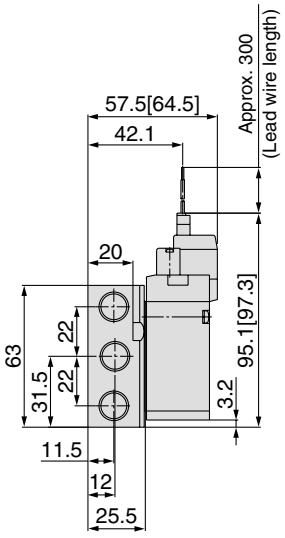
2 position single

∗ [ ]: AC

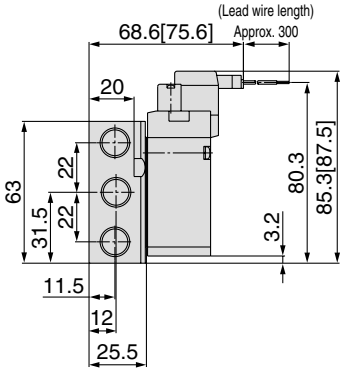
Grommet (G), (H): 10- SYJ7143-□$^{G}_{H}$□□-$^{01}_{02}$□



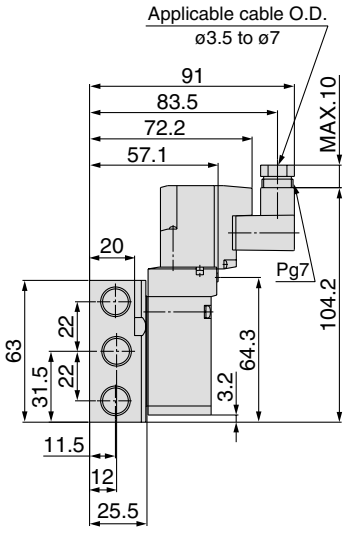
L plug connector (L): 10-SYJ7143-□L□□-$^{01}_{02}$□



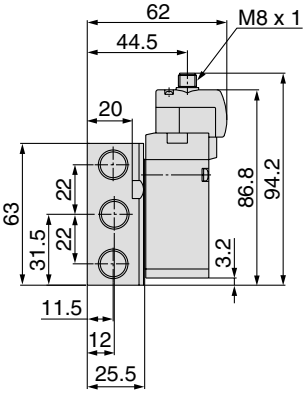
M plug connector (M): 10-SYJ7143-□M□□-$^{01}_{02}$□



DIN Terminal (D): 10-SYJ7143-□D□□-$^{01}_{02}$□



M8 connector (WO): 10-SYJ7143-□WO□□-$^{01}_{02}$□

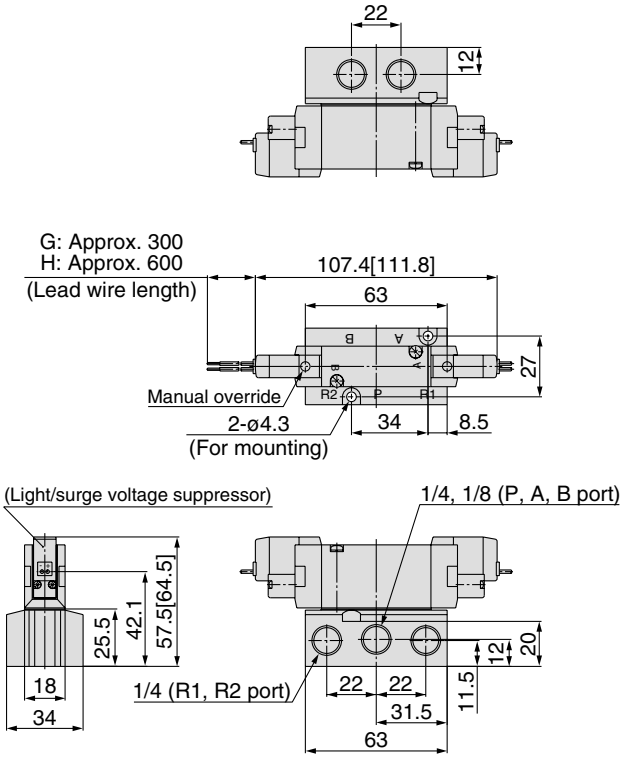


∗ Refer to page 563 for dimensions with connector cable.

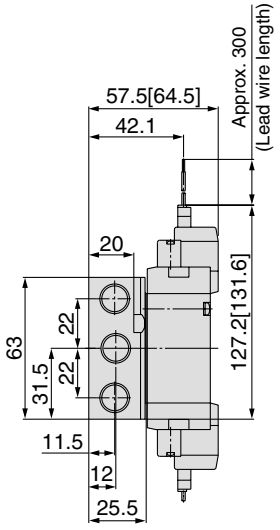
2 position double

∗ [ ]: AC

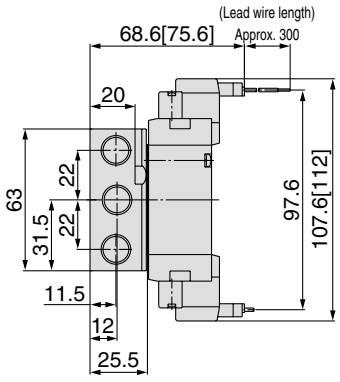
Grommet (G), (H): 10-SYJ7243-□$^{G}_{H}$□□-$^{01}_{02}$□



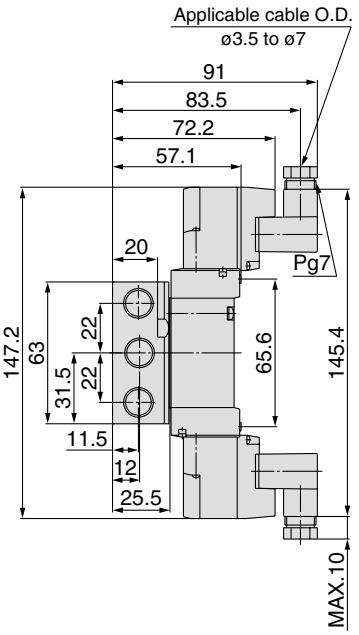
L plug connector (L): 10-SYJ7243-□L□□-$^{01}_{02}$□



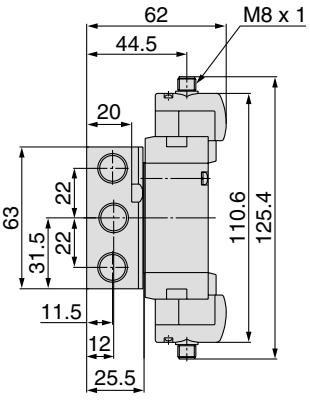
M plug connector (M): 10-SYJ7243-□M□□-$^{01}_{02}$□



DIN Terminal (D): 10-SYJ7243-□D□□-$^{01}_{02}$□



M8 connector (WO): 10-SYJ7243-□WO□□-$^{01}_{02}$□

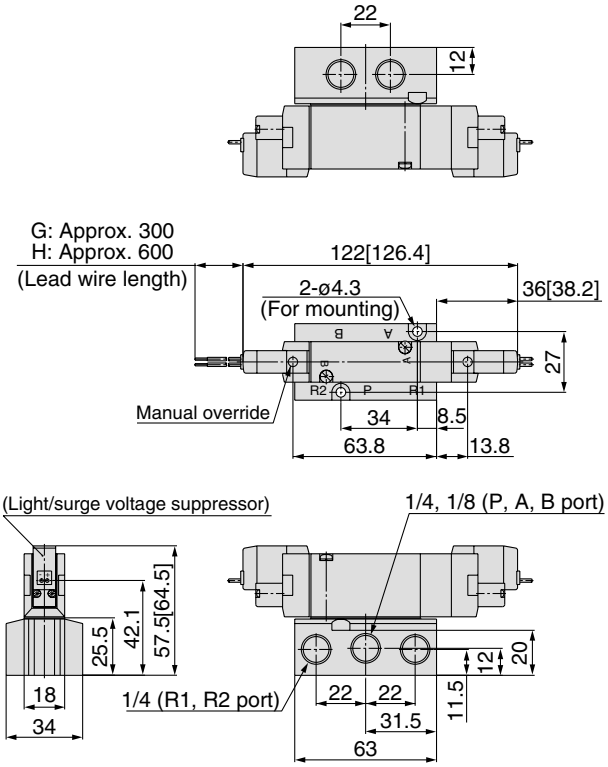


∗ Refer to page 563 for dimensions with connector cable.

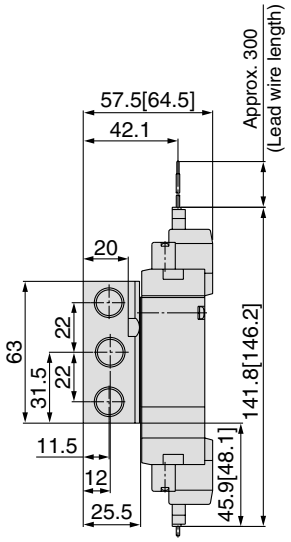
3 position closed center / Exhaust center / Pressure center

∗ [ ]: AC

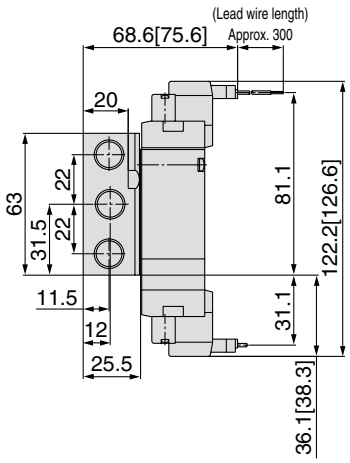
Grommet (G), (H): 10-SYJ7$^{3}_{4}_{5}$43-□$^{G}_{H}$□□-$^{01}_{02}$□



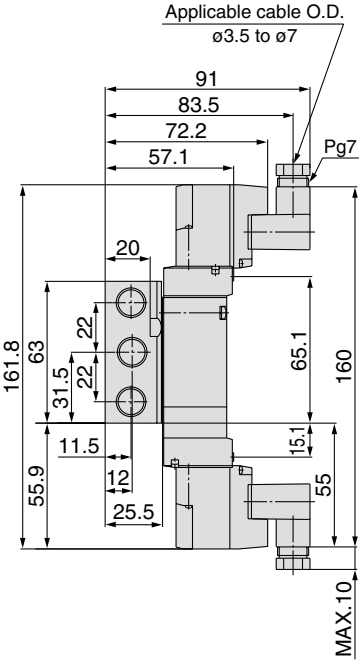
L plug connector (L): 10-SYJ7$^{3}_{4}_{5}$43-□L□□-$^{01}_{02}$□



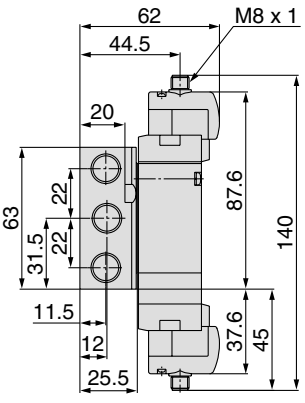
M plug connector (M): 10-SYJ7$^{3}_{4}_{5}$43-□M□□-$^{01}_{02}$□



DIN Terminal (D): 10-SYJ7$^{3}_{4}_{5}$43-□D□□-$^{01}_{02}$□

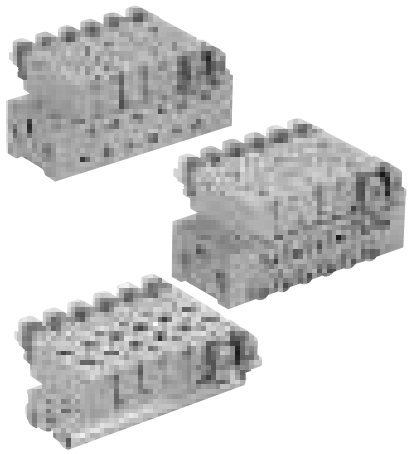


M8 connector (WO): 10-SYJ7$^{3}_{4}_{5}$43-□WO□□-$^{01}_{02}$□



∗ Refer to page 563 for dimensions with connector cable.

Manifold standard



Manifold specifications

Model		Type 20	Type 21	Type 40	Type 41	Type 42
Manifold type		Single base / B mount				
P (SUP) / R (EXH)		Common SUP / Common EXH				
Valve stations		2 to 15 stations	2 to 20 stations			
A, B port porting specifications	**Location**	Valve		Base	Base	
	Direction	Top		Bottom	Side	
Port size	**P, R port**	1/8	1/4			
	A, B port	1/8 C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)		1/8		C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)

Flow characteristics

Manifold			Port size		Flow characteristics					
					1→4/2 (P→A/B)			4/2→5/3 (A/B→R)		
			1(P), 5/3(R) port	2(B), 4(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported for internal pilot	**10-SS5YJ7-20**	**10-SYJ7□23**	1/8	1/8	2.2	0.35	0.57	2.3	0.26	0.55
			1/8	C6	1.4	0.32	0.37	2.0	0.25	0.49
			1/8	C8	1.7	0.38	0.45	2.1	0.25	0.51
	10-SS5YJ7-21		1/4	1/8	2.1	0.36	0.55	2.3	0.26	0.54
			1/4	C6	1.4	0.32	0.36	2.1	0.24	0.50
			1/4	C8	1.8	0.37	0.50	2.1	0.20	0.50
Base mounted for internal pilot	**10-SS5YJ7-40**	**10-SYJ7□43**	1/4	1/8	2.1	0.28	0.51	2.5	0.23	0.59
	10-SS5YJ7-41		1/4	1/8	2.0	0.30	0.50	2.2	0.30	0.55
	10-SS5YJ7-42-C6		1/4	C6	1.5	0.32	0.38	2.2	0.23	0.52
	10-SS5YJ7-42-C8		1/4	C8	1.9	0.24	0.46	2.2	0.26	0.53

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model number.

Example
- ● **10-SS5YJ7-20-03** ····· 1 set (Manifold base)
- ∗ **10-SYJ7123-5G-01** ····· 2 sets (Valve)
- ∗ **SYJ7000-21-1A** ····· 1 set (Blanking plate assembly)
- ● **10- SS5YJ7-41-03-01** ·· 1 set (Manifold base)
- ∗ **10- SYJ7143-5LZ** ····· 1 set (Valve)
- ∗ **10- SYJ7243-5LZ** ····· 1 set (Valve)
- ∗ **SYJ7000-21-1A** ····· 1 set (Blanking plate assembly)

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

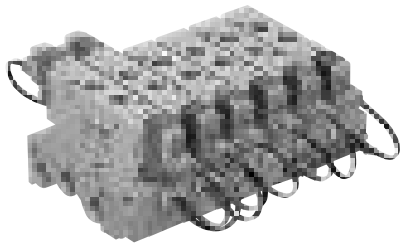
∗ Use manifold specification sheet.

Flat ribbon cable manifold

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

- **Clean appearance**

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



Flat ribbon cable manifold specifications

Model		Type 21P
Manifold type		Single base / B mount
P(SUP) / R(EXH)		Common SUP / Common EXH
Valve stations		3 to 12 stations
A, B port porting specifications		Valve
Port size	P, R port	1/4
	A, B port	1/8, C6, C8
Applicable flat ribbon cable connector		Socket: 26 pins MIL type with strain relief (Conforming to MIL-C-83503) (MIL-C-83503 compliant)
Internal wiring		In common between +COM and –COM (Z type: +COM only)
Rated voltage		24, 12 VDC

Note) The value is for manifold base and individually operated 2 position type.
Note 2) The withstand voltage specification for the wiring unit section is JIS C0704, Grade 1 or its equivalent.

Flow characteristics

Manifold			Port size		Flow characteristics					
					1→4/2 (P→A/B)			4/2→5/3 (A/B→R)		
			1(P), 5/3(R) port	2(B), 4(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported for internal pilot	10-SS5YJ7-21P-01	10-SYJ7□23	1/4	1/8	2.1	0.36	0.55	2.3	0.26	0.54
	10-SS5YJ7-21P-C6		1/4	C6	1.4	0.32	0.36	2.1	0.24	0.50
	10-SS5YJ7-21P-C8		1/4	C8	1.8	0.37	0.50	2.1	0.20	0.50

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold (Example)

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model number.

(Example) ● 10-SS5YJ7-21P-07 ···· 1 set (Manifold base)
* 10-SYJ7123-5LOU-C8 ·····3 sets (Valve)
* 10-SYJ7223-5LOU-C8 ·····3 sets (Valve)
* SYJ7000-21-3A ····· 1 set (Blanking plate assembly)
* SY3000-37-3A ····· 3 sets (Connector assembly)
* SY3000-37-4A ····· 3 sets (Connector assembly)

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

* Use manifold specification sheet.

How to Order Valve

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

For DC10—SYJ7 1 23 — 5 LO Z □ — 01

For AC10—SYJ7 1 23 — 1 LOZ □ — 01

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

A, B port size

Symbol	Port size
01	1/8
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"

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

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

How to Order Connector Assembly

12V, 24 VDC

For single solenoid	SY3000-37-3A
For double solenoid 3 position type	SY3000-37-4A
For single solenoid, individual SUP/EXH spacer	SY3000-37-3A
For double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-6A
3 port adaptor plate	SY3000-37-3A

100 VAC

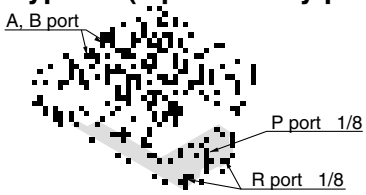
For single solenoid	SY3000-37-32A
For double solenoid 3 position type	SY3000-37-33A
For single solenoid, individual SUP/EXH spacer	SY3000-37-15A
For double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-34A
3 port adaptor plate	SY3000-37-32A

100 VAC (115 VAC)

For single solenoid	SY3000-37-35A
For double solenoid 3 position type	SY3000-37-36A
For single solenoid, individual SUP/EXH spacer	SY3000-37-19A
For double solenoid, 3 position individual SUP/EXH spacer	SY3000-37-37A
3 port adaptor plate	SY3000-37-35A

Manifold standard
Common SUP / Common EXH

Type 20 (5 port / Body ported)



How to Order

10–SS5YJ7–20– 05 –

Stations

02	2 stations
:	:
15	15 stations

P,R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

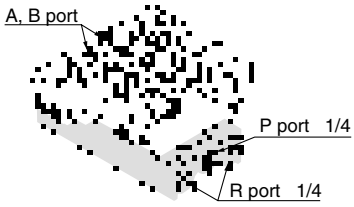
Note) For more than 6 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Applicable solenoid valve
10-SYJ7□23-□□□□-C6 / C8 (01)

Applicable blanking plate assembly
SYJ7000-21-1A

Applicable individual EXH spacer assembly
SYJ7000-17-1A

Type 21 (5 port / Body ported)



How to Order

10–SS5YJ7–21– 05 –

Stations

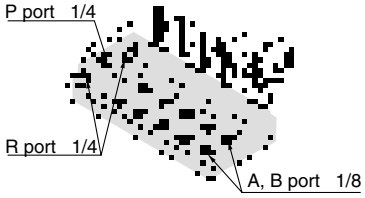
02	2 stations
:	:
20	20 stations

P,R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 40 (5 port / Base mounted)



How to Order

10–SS5YJ7–40– 05 – 01

Stations

02	2 stations
:	:
20	20 stations

A, B port size

01	1/8

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

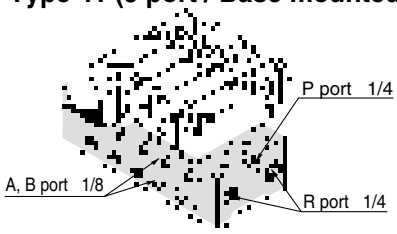
Applicable solenoid valve
10-SYJ7□43-□□□□

Applicable blanking plate assembly
SYJ7000-21-1A

Applicable individual EXH spacer assembly
SYJ7000-17-2A

Applicable individual SUP spacer assembly
SYJ7000-16-2A

Type 41 (5 port / Base mounted)



How to Order

10–SS5YJ7–41– 05 – 01

Stations

02	2 stations
:	:
20	20 stations

A, B port size

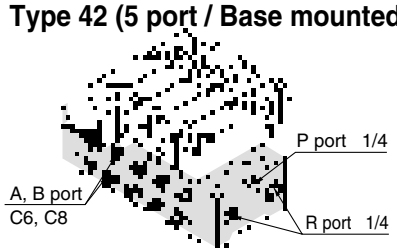
01	1/8

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 42 (5 port / Base mounted)



How to Order

10–SS5YJ7– 42– 05 – C6

Stations

02	2 stations
:	:
20	20 stations

A, B port size

C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"

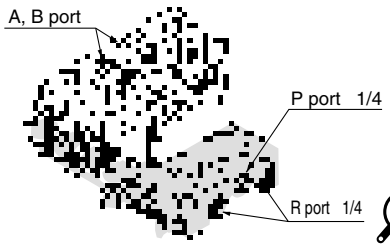
Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Flat ribbon cable manifold
Common SUP / Common EXH

Type 21P (5 port / Body ported)



How to Order

10-SS5YJ7-21P - 05 -

Stations

03	3 stations
:	:
12	12 stations

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

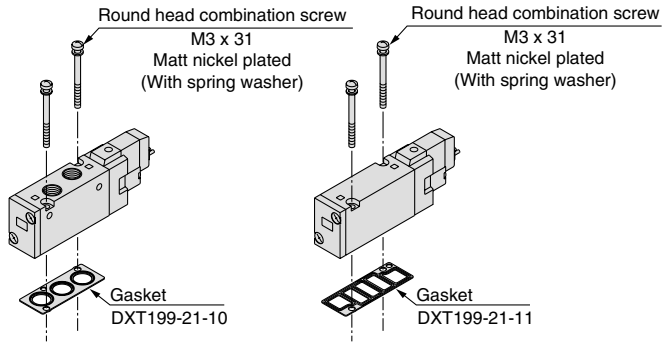
Applicable solenoid valve
Refer to page 548.

Applicable blanking plate assembly
SYJ7000-21-3A

Applicable connector assembly
Refer to page 548.

<Manifold option>

Combinations of solenoid valve, manifold gasket and manifold base



Applicable base
· 10-SS5YJ7-20
· 10-SS5YJ7-21

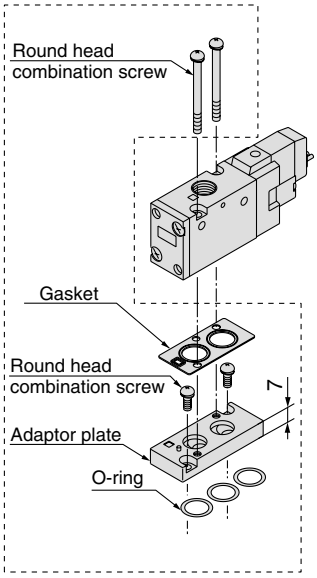
Applicable base
· Sub-plate
· 10-SS5YJ7-40
· 10-SS5YJ7-41
· 10-SS5YJ7-42

Mix installation of 10-SYJ700 and 10-SYJ7000 valves on the same manifold

- Use of an adapter plate makes it possible to mount series 10-SYJ700 on the manifold bases of series 10-SYJ7000.
- When mounting the 10-SYJ700 valve on the 10-SYJ7000 manifold, the 10-SYJ700 solenoid must be positioned on the same side of a single solenoid of the 10-SYJ7000.
- For base mounted style, the A port of the 3 port valve become the B port of manifold base.

Adaptor plate assembly SYJ700-3-1A

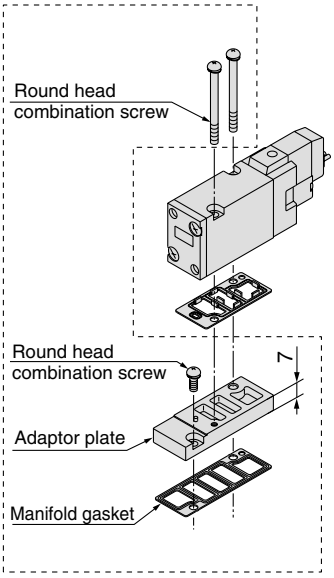
Series 10-SYJ700 body ported type



Applicable base
· 10-SS5YJ7-20
· 10-SS5YJ7-21

Adaptor plate assembly SYJ700-3-2A

Series 10-SYJ700 base mounted type



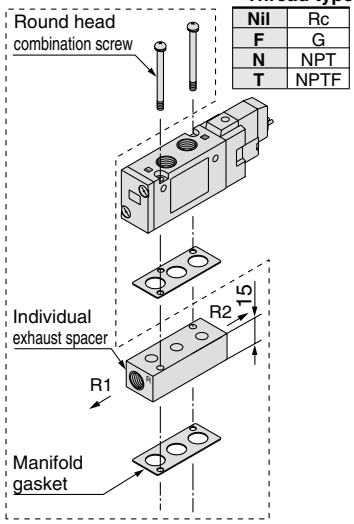
Applicable base
· 10-SS5YJ7-40
· 10-SS5YJ7-41
· 10-SS5YJ7-42

Individual EXH spacer assembly

SYJ7000-17-1 □ A

• **Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

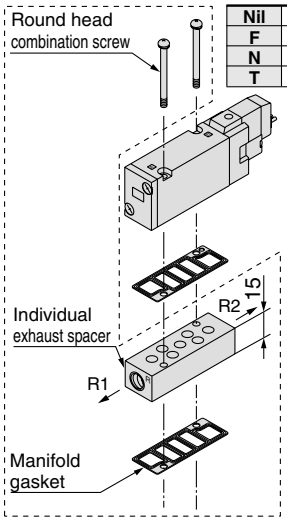


Applicable base
· 10-SS5YJ7-20
· 10-SS5YJ7-21

SYJ7000-17-2 □ A

• **Thread type**

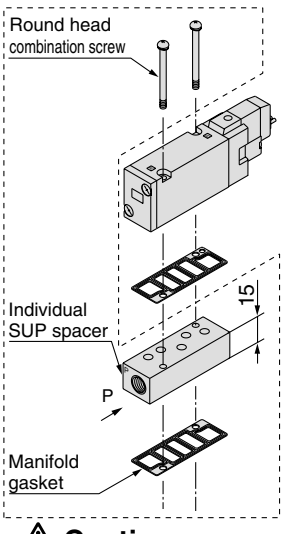
Nil	Rc
F	G
N	NPT
T	NPTF



Applicable base
· 10-SS5YJ7-40
· 10-SS5YJ7-41
· 10-SS5YJ7-42

Individual SUP spacer assembly

SYJ7000-16-2 □ A



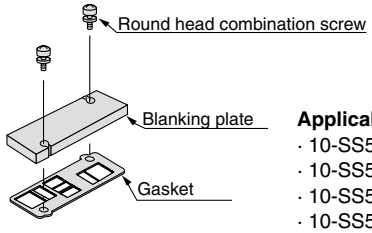
• **Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

Applicable base
· 10-SS5YJ7-40
· 10-SS5YJ7-41
· 10-SS5YJ7-42

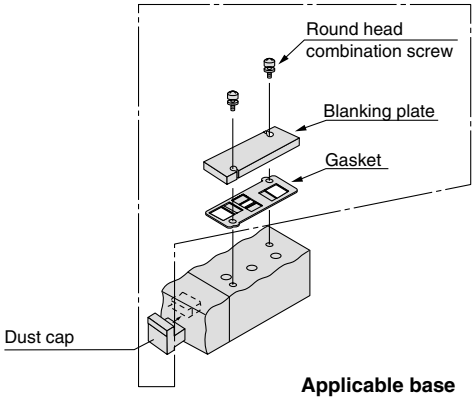
Blanking plate assembly

SYJ7000-21-1A



Applicable base
· 10-SS5YJ7-20
· 10-SS5YJ7-21
· 10-SS5YJ7-40
· 10-SS5YJ7-41
· 10-SS5YJ7-42

SYJ7000-21-3A



Applicable base
· 10-SS5YJ7-21P

⚠ Caution

Mounting screw tightening torque	Use caution to the assembly orientation of solenoid valves, gasket, and optional parts.

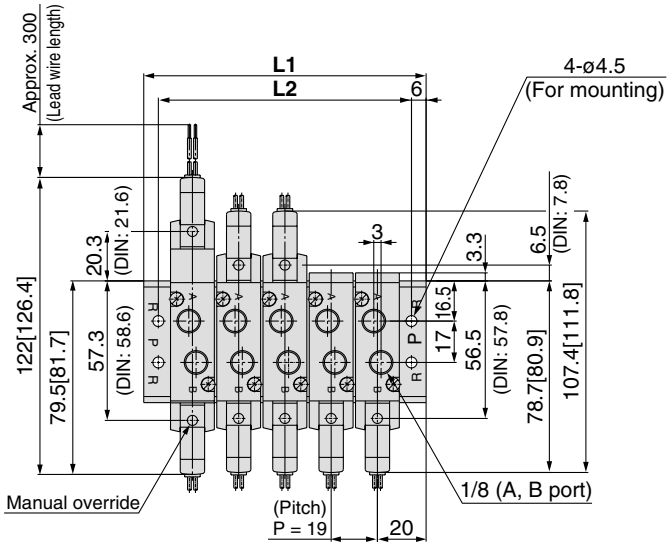
M3: 0.8N·m

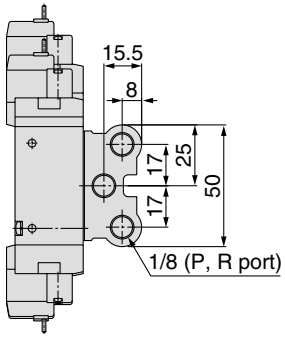
SMC

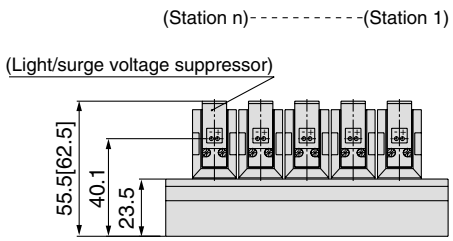
Type 20: Top ported / 10-SS5YJ7-20-Stations-00□

∗ [ ]: AC

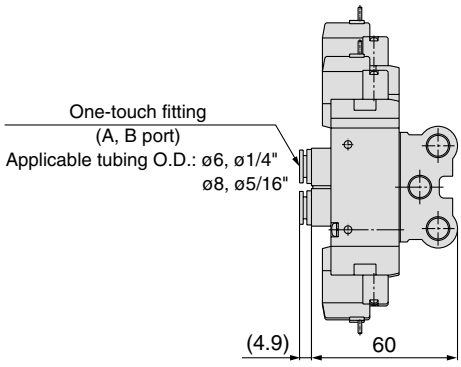
Grommet (G)



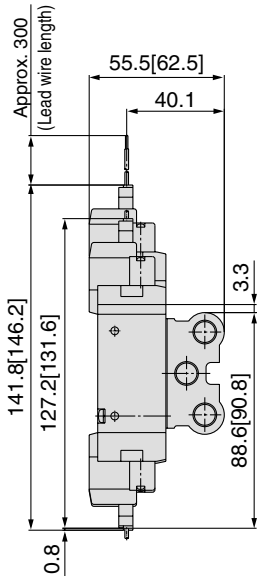




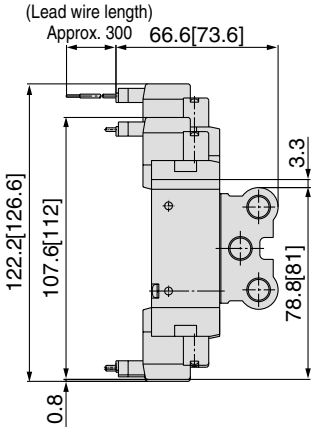
Built-in One-touch fitting



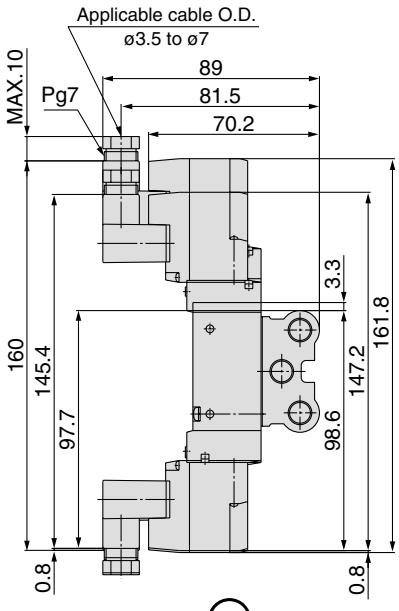
L plug connector (L)



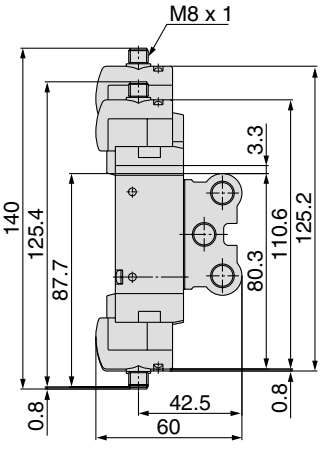
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



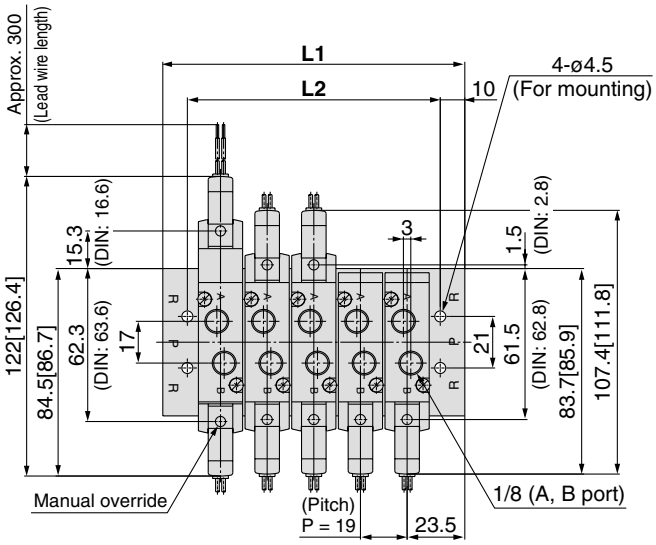
∗ Refer to page 563 for dimensions with connector cable.

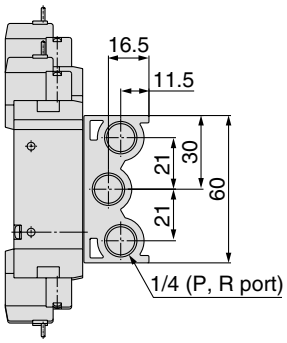
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15 stations
L1	59	78	97	116	135	154	173	192	211	230	249	268	287	306
L2	47	66	85	104	123	142	161	180	199	218	237	256	275	294

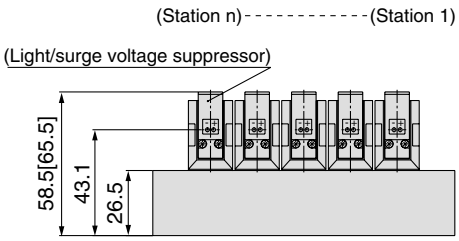
Type 21: Top ported / 10-SS5YJ7-21-Stations(-00)

∗ [ ]: AC

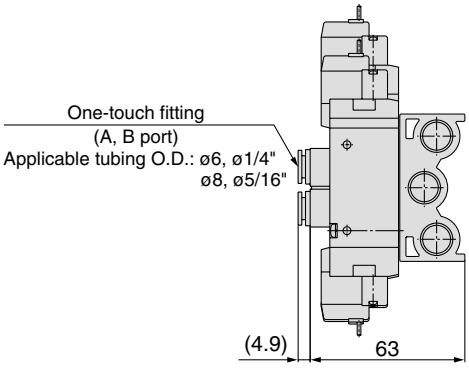
Grommet (G)



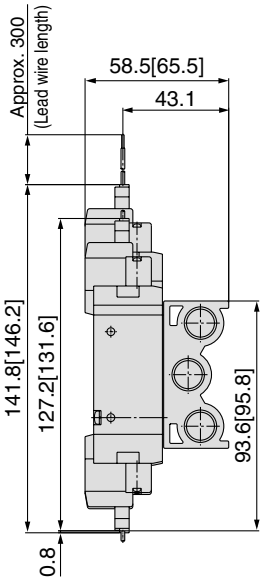




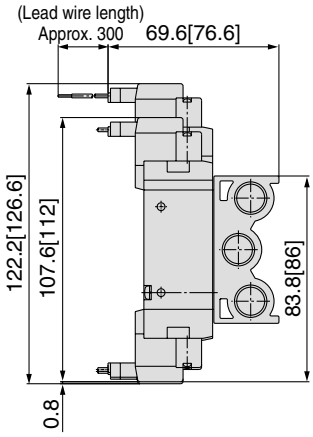
Built-in One-touch fitting



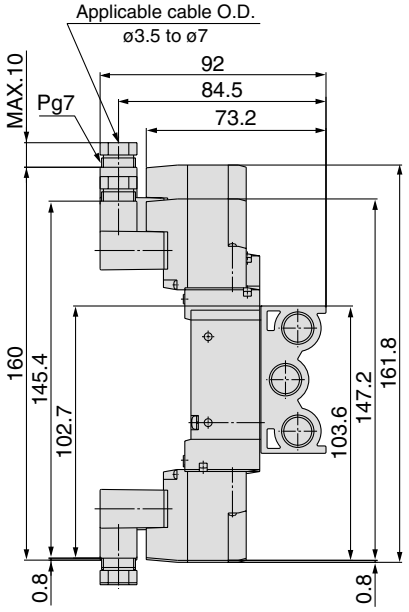
L plug connector (L)



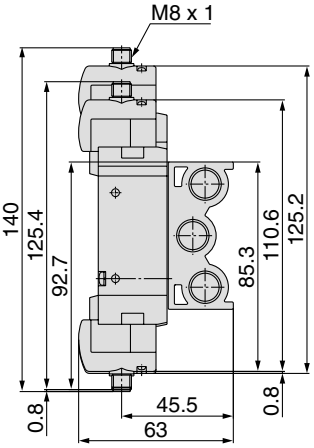
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



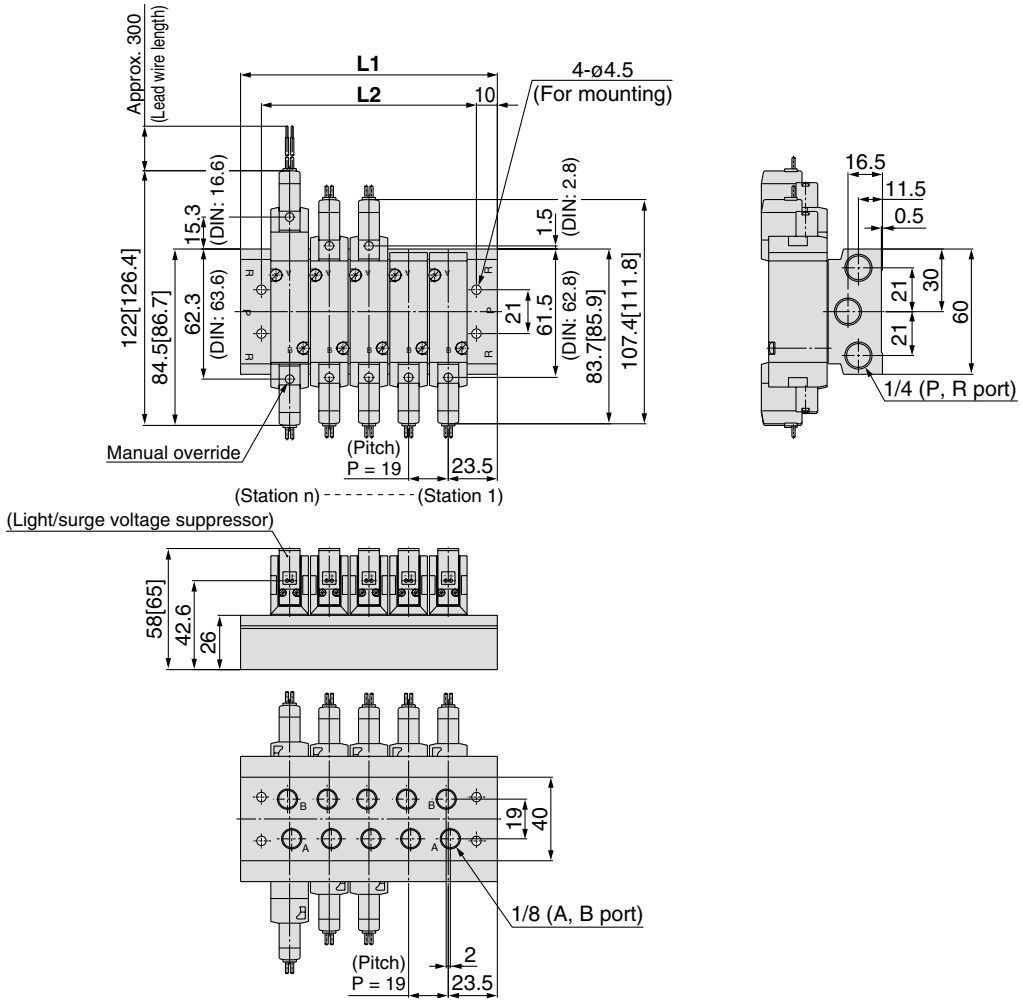
∗ Refer to page 563 for dimensions with connector cable.

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

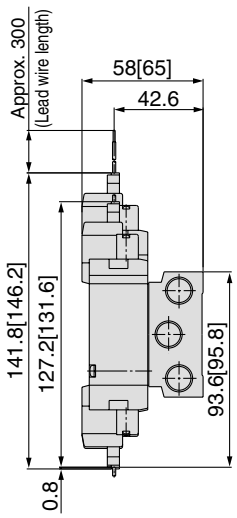
Type 40: Bottom ported / 10-SS5YJ7-40-Stations-01□

∗ [ ]: AC

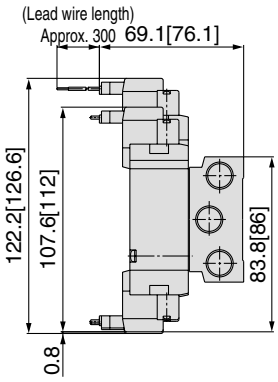
Grommet (G)



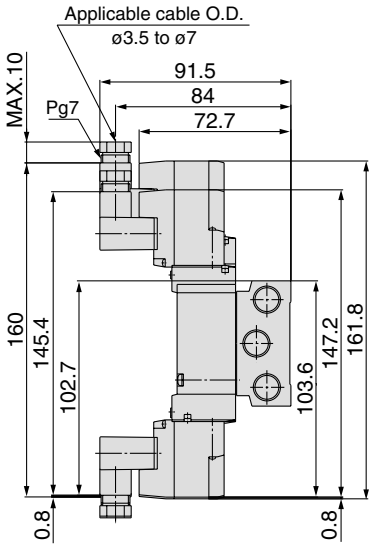
L plug connector (L)



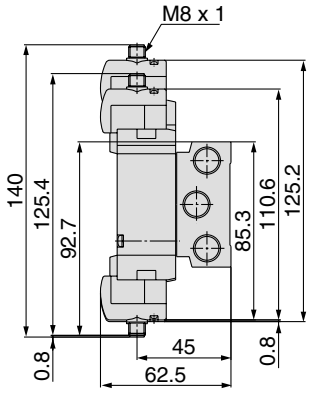
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



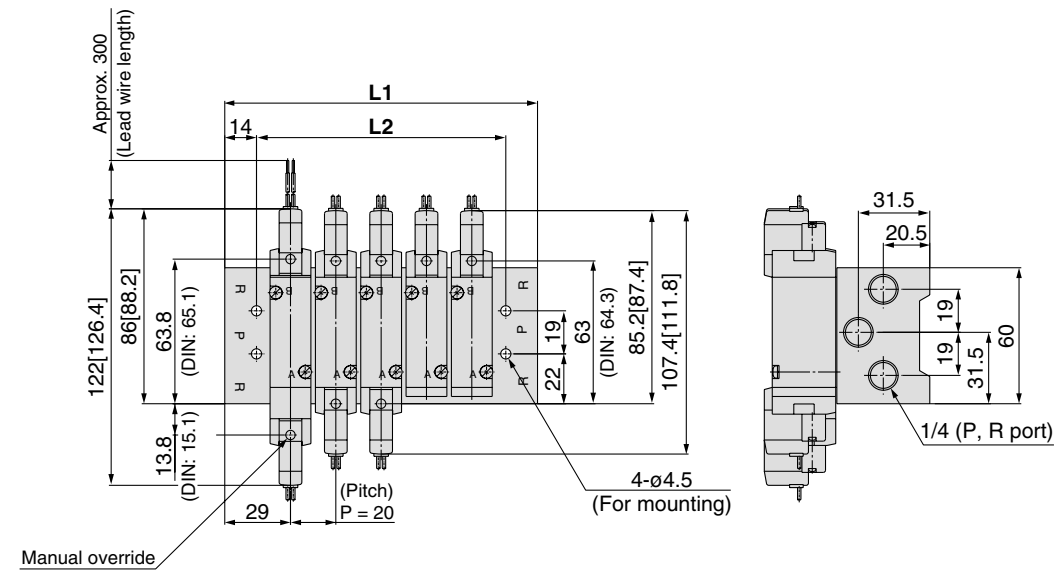
∗ Refer to page 563 for dimensions with connector cable.

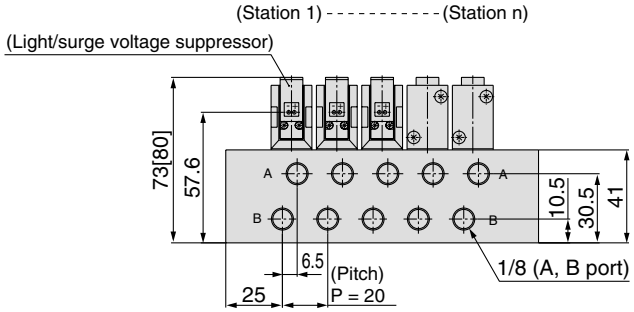
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	66	85	104	123	142	161	180	199	218	237	256	275	294	313	332	351	370	389	408
L2	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388

Type 41: Side ported / 10-SS5YJ7-41-Stations-01□

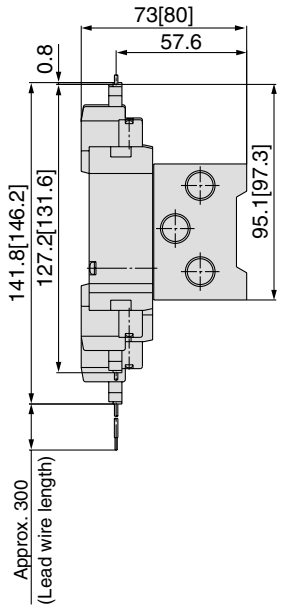
∗ [ ]: AC

Grommet (G)

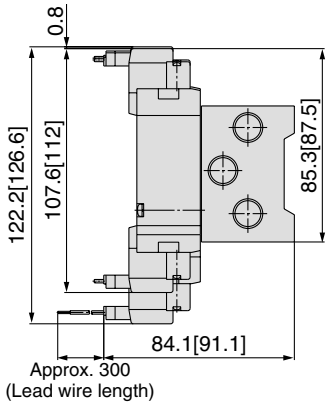




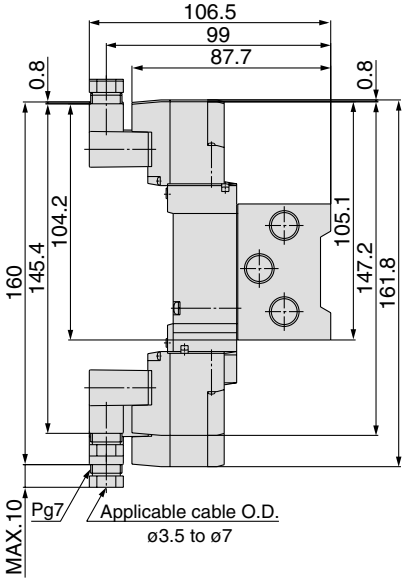
L plug connector (L)



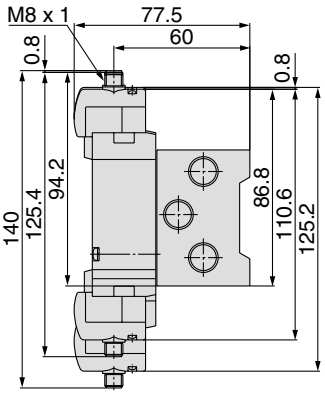
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



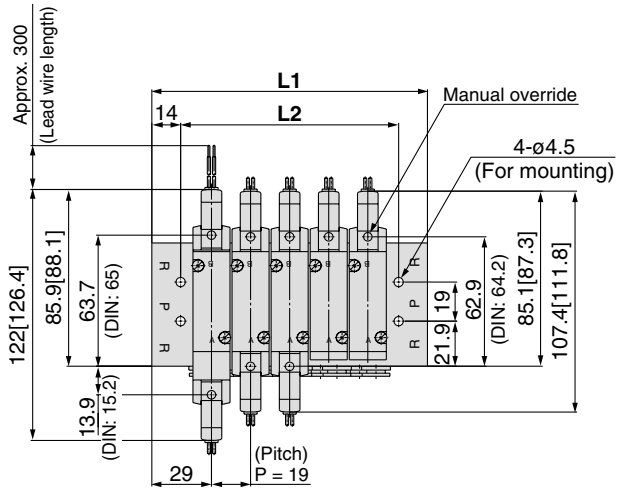
∗ Refer to page 563 for dimensions with connector cable.

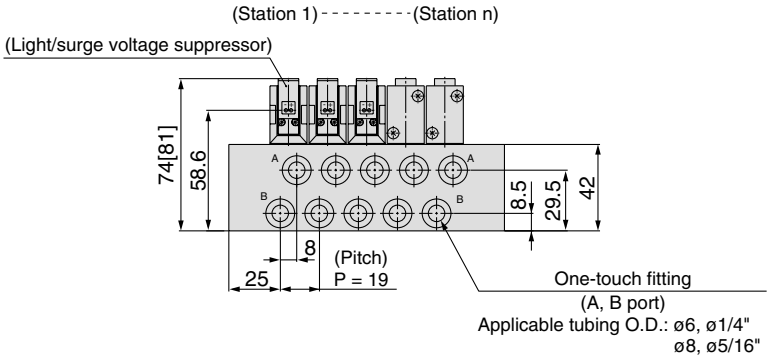
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	78	98	118	138	158	178	198	218	238	258	278	298	318	338	358	378	398	418	438
L2	50	70	90	110	130	150	170	190	210	230	250	270	290	310	330	350	370	390	410

Type 42: Side ported / 10-SS5YJ7-42-Stations-C6,N7 C8,N9

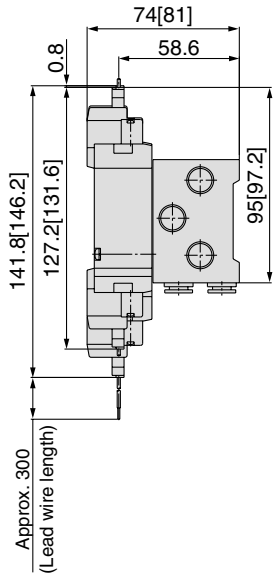
∗ [ ]: AC

Grommet (G)

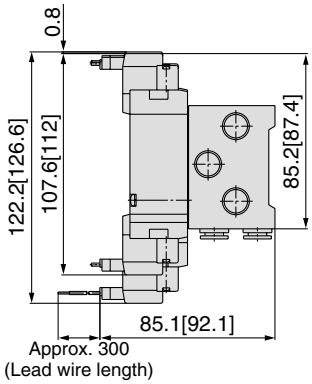




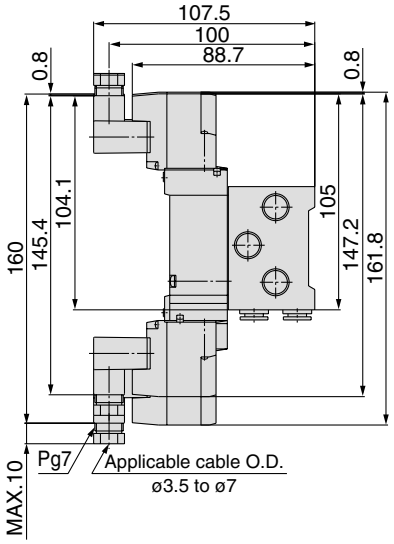
L plug connector (L)



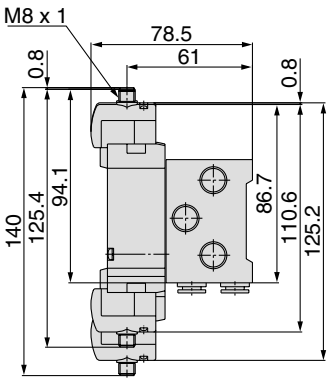
M plug connector (M)



DIN Terminal (D)



M8 connector (WO)



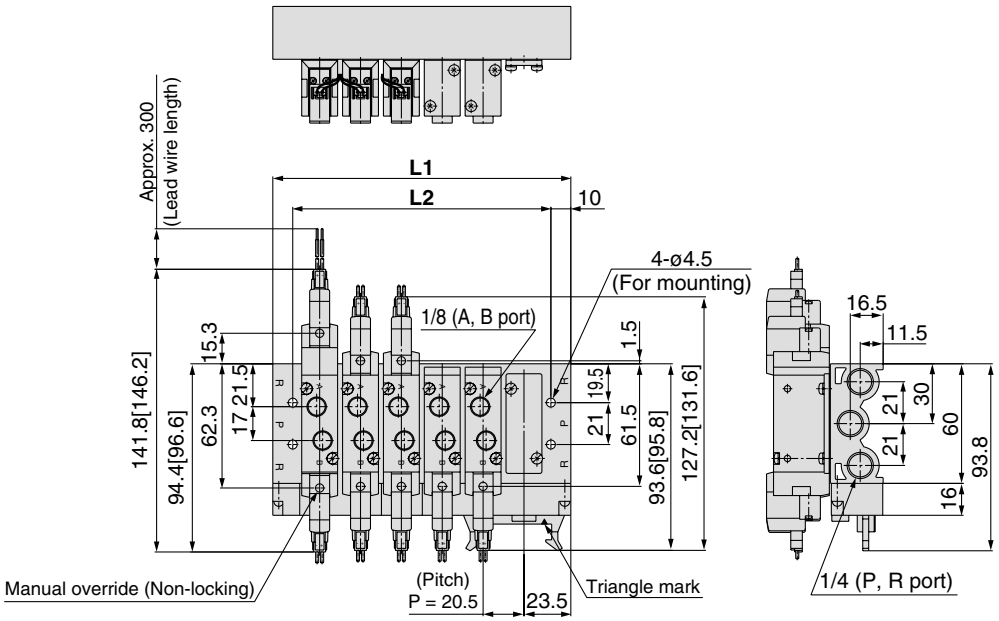
∗ Refer to page 563 for dimensions with connector cable.

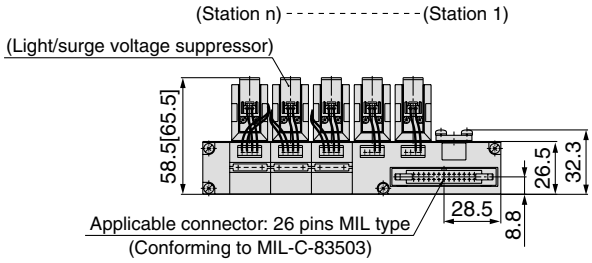
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	77	96	115	134	153	172	191	210	229	248	267	286	305	324	343	362	381	400	419
L2	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

Flat ribbon cable manifold

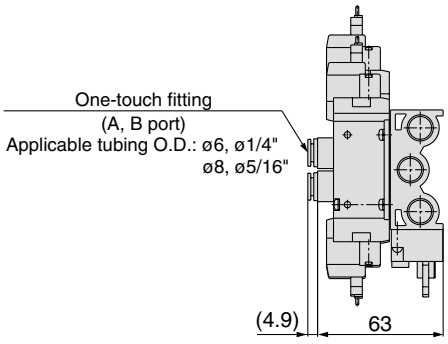
∗ [ ]: AC

10-SS5YJ7-21P-Stations(-00)





With built-in One-touch fitting



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

Series 10-SYJ5000/7000

Made to order specifications
DIN terminal connector conforming to EN-175301-803C (former DIN 43650C) standard

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

How to Order Valves

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Light/surge voltage suppressor

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

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

Bracket

Nil	Without bracket
F	With bracket

Note) Do not remove the factory installed bracket from models with the bracket option. Removal of the bracket will cause air leakage.

Rated voltage

DC specifications

5	24 VDC
6	12 VDC

AC specifications (50/60Hz)

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

A, B port size

M5	M5 x 0.8
01	1/8 (10- SYJ7000 only)
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
N3	One-touch fitting for ø5/32"
N7	One-touch fitting for ø1/4

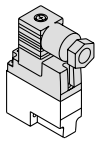
Body ported	10—SYJ	5	1	23—	5	Y			—	M5	—	—
Base mounted	10—SYJ	5	2	43—	5	Y			—			

Series

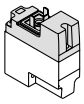
5	10-SYJ5000
7	10-SYJ7000

Electrical entry

Y: With connector



YO: Without connector



Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Port size

Nil	Without sub-plate	
1	1/8	10-SYJ5000
		10-SYJ7000
2	1/4	10-SYJ7000

Manual override

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

How to Order Pilot Valve Assembly

10—V115— 5 Y □

Rated voltage

DC specifications

5	24 VDC
6	12 VDC

AC specifications (50/60Hz)

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 suppresser
Z	With light/surge voltage suppresser

* "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 terminal	With connector
YO		Without connector

DIN connector part no.

Without light	SY100-82-1

With light

Rated voltage	Voltage symbol	Part 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

1. Use caution in wiring because it won't meet the IP65 (enclosure) standard if you use the other cord than prescribed cabtire cable of size (ø3.5 to ø7).
   Also be sure to 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 560.
2. D type DIN connector with 9.4 mm pitch between terminals is not interchangeable.
3. DIN connector except D type has the "N" indication in the end of voltage symbol. In case of DIN connector without light, "N" is not indicated. Please refer to the name plate to distinguish.
4. Dimensions are completely the same as D type connector.
5. When exchanging the pilot valve assembly only, "10-V115-□D" is interchangeable with "10-V115-□Y". Do not replace 10-V114 (G, H, L, M, W) to 10-V115-□D/□Y (DIN terminal), and vice versa.

Series 10-SYJ3000/5000/7000 Specific Product Precautions 1

Be sure to read before handling.

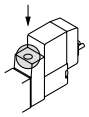
Manual override operation

⚠Warning

When the manual override is operated, connected equipment will be actuated. Confirm safety before operating.

■Non-locking push type (Standard)

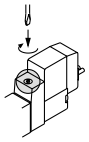
Press in the direction of the arrow.



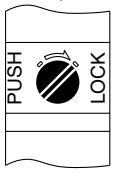
■Push-turn locking slotted [Type D]

While pressing, turn in the direction of the arrow.

If it is not turned, it can be operated in the same way as the non-locking type.



Locked position



⚠Caution

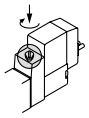
When handling the locking type D with a screwdriver, turn it gently using a watchmaker's screwdriver.

[Torque: 0.1 N·m or less]

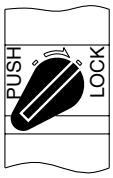
■Push-turn locking lever [Type E]

While pressing, turn in the direction of the arrow.

If it is turned, it can be operated in the same way as the non-locking type.



Locked position



⚠Caution

When locking the manual override on the push-turn locking types (D, E), be sure to push it down before turning.

Turning without first pushing it down can cause damage to the manual override and trouble such as air leakage, etc.

Solenoid valve for 200/220 VAC specifications

⚠Warning

Solenoid valves with grommet and L/M type plug connector AC specificatinos have a built-in rectifier circuit in the pilot section to operate the DC coil.

With 200/220 VAC specification pilot valves, this built-in rectifier generates heat when energized. The surface may become hot depending on the energized condition. Therefore, do not touch the solenoid valves.

Series 10-SYJ3000, 5000, 7000 Mixed installation of 3 port and 5 port valves on the same manifold.

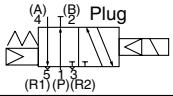
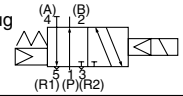
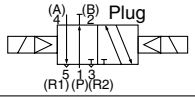
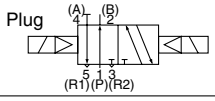
⚠Caution

Series 10-SYJ3000/5000/7000 and Series 10-SYJ300/500/700 can be mounted on the same manifold. How to mount on the same manifold is shown on the following pages.

10-SYJ3000, 10-SYJ300 ····· Page 507
10-SYJ5000, 10-SYJ500 ····· Page 529
10-SYJ7000, 10-SYJ700 ····· Page 550

If 4 or 5 port valve is used as a 3 port valve

Series 10-SY 3000/5000/7000 may be used as a N.C. or N.O. 3 port valve by plugging one of the A, B ports. Be sure not to plug the exhaust ports (R). Can be used when a double solenoide, 3 port valve is required.

Plug position		B port	A port
Type of actuation		N.C.	N.O.
Number of solenoids	Single		
	Double		

(JIS Symbols above: Series 10-SYJ5000)

SMC

Series 10-SYJ3000/5000/7000
Specific Product Precautions 2

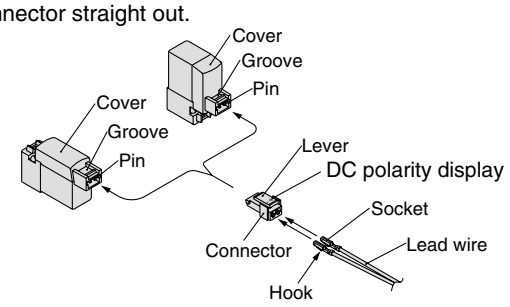
Be sure to read before handling.

How to use plug connector

⚠Caution

1. Attaching and detaching connectors

- To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.
- To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.



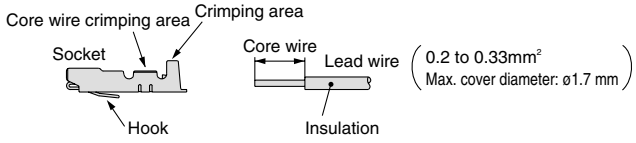
2. Crimping of lead wires and sockets

Strip 3.2 to 3.7 mm at the end of the lead wires, insert the ends of the core wires evenly into the sockets, and then crimp with a crimping tool.

When this is done, take care that the coverings of the lead wires do not enter the core wire crimping area.

Use an exclusive crimping tool for crimping.

(For special crimping tools, please contact SMC.)



3. Attaching and detaching sockets with lead wires

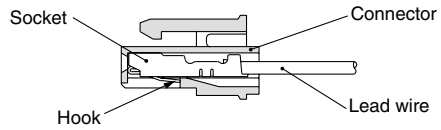
- **Attaching**

  Insert the sockets into the square holes of the connector (⊕ and ⊖ indication), and continue to push the sockets all the way in until they lock by hooking into the seats in the connector. (When they are pushed in, their hooks open and they are locked automatically.) Then confirm that they are locked by pulling lightly on the lead wires.

- **Detaching**

  To detach a socket from a connector, pull out the lead wire while pressing the socket's hook with a stick having a thin tip (approx. 1 mm).

  If the socket will be used again, first spread the hook outward.



Plug connector lead wire length

⚠Caution

Standard length is 300 mm, but the following lengths are also available.

How to Order Connector Assembly

For DC: **SY100 – 30 – 4A –** □

For 100 VAC: **SY100 – 30 – 1A –** □

For 200 VAC: **SY100 – 30 – 2A –** □

For other voltages of AC: **SY100 – 30 – 3A –** □

Without lead wire: **SY100 – 30 – A**
(with connector and 2 of sockets only)

● **Lead wire length**

Nil	300mm
6	600mm
10	1000mm
15	1500mm
20	2000mm
25	2500mm
30	3000mm
50	5000mm

How to Order

Specify the connector assembly part number together with the part number for the plug connector's solenoid valve without connector.

<Example> Lead wire length 2000 mm

(For DC) **For AC**

10-SYJ3123-5LO-M3 **10-SYJ3123-1LO-M3**

SY100-30-4A-20 **SY100-30-1A-20**

Series 10-SYJ3000/5000/7000
Specific Product Precautions 3

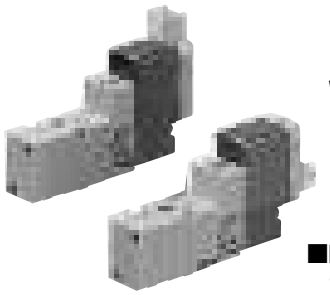
Be sure to read before handling.

Surge voltage suppressor

⚠Caution

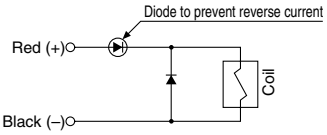
(For DC)

Grommet, L/M plug connector type

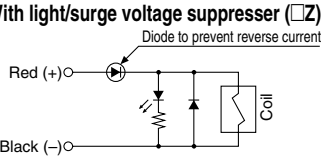


■Standard type (with polarity)

With surge voltage suppresser (□S)

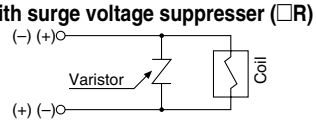


With light/surge voltage suppresser (□Z)

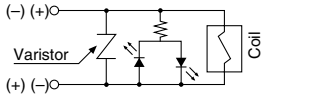


■Non-polar type

With surge voltage suppresser (□R)



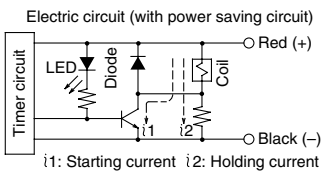
With light/surge voltage suppresser (□U)



- Connect the standard type in accordance with the +, – polarity indication.
  (The non-polar type can be used with the connections made either way.)
- Since voltage specifications other than standard 24 and 12 VDC do not have diodes for polarity protection, be careful not to make errors in the polarity.
- Be careful about the allowable voltage fluctuation since the valves with a diode to prevent reverse current has about a 1V voltage drop. (Refer to the solenoid specifications of each valve for details.)
- When wiring is done at the factory, positive (+) is red and negative (–) is black.

■With power saving circuit

Power consumption is decreased by 1/4 by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 62 ms at 24 VDC.)

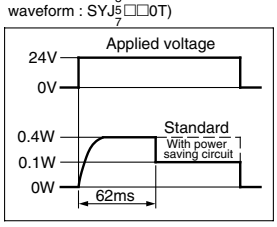


Working principle

With the above circuit, the current consumption when holding is reduced to save energy. Please refer to the electric wave data to the right.

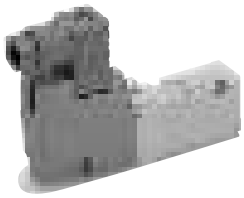
- When a power saving circuit is installed, a diode to prevent reverse current is not provided. Therefore, use caution not to connect in reverse.

(Energy saving type's electrical power waveform : SYJ$^{3}_{7}$□□0T)

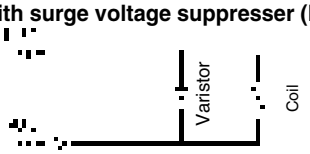


- Be careful about the allowable voltage fluctuation since voltage drop of about 0.5V occurs due to a transistor. (Refer to the solenoid specifications of each valve for details.)

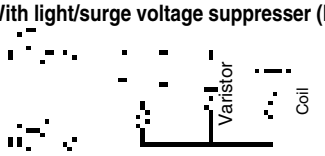
DIN terminal



With surge voltage suppresser (DS)

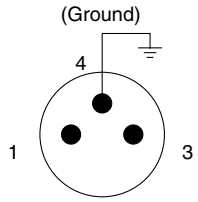


With light/surge voltage suppresser (DZ)



DIN terminal has no polarity.

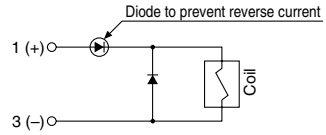
M8 connector type



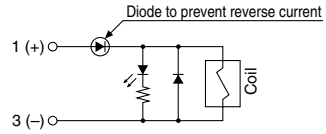
Solenoid valve side Pin wiring diagram

■Standard type (with polarity)

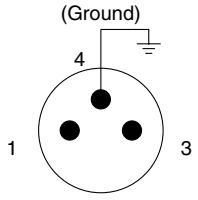
With surge voltage suppresser (□S)



With light/surge voltage suppresser(□Z)

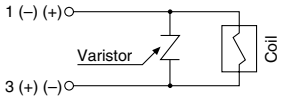


■Non-polar type

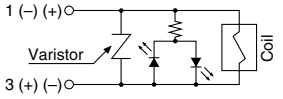


Solenoid valve side Pin wiring diagram

With surge voltage suppresser (□R)



With light/surge voltage suppresser (□U)



- In the case of standard type, connect + to 1 and – to 3 according to the polarity.
- For DC voltages other than standard 12/24 VDC, use caution not to mistake the polarity because a diode to prevent reverse current is not provided.
- Be careful about the allowable voltage fluctuation since the valves with a diode to prevent reverse current has about a 1V voltage drop. (Refer to the solenoid specifications of each valve for details.)

Series 10-SYJ3000/5000/7000
Specific Product Precautions 4

Be sure to read before handling.

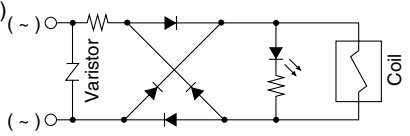
Surge voltage suppressor

<For AC>

(There is no "S" type because the generation of surge voltage is prevented by a rectifier.)

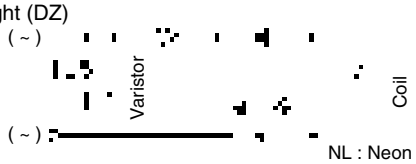
Grommet, L/M plug connector

With indicator light (□Z)



DIN terminal

With indicator light (DZ)



Note) Surge voltage suppressor of varistor has residual voltage corresponding to the protective element and rated voltage. Therefore, protect the controller side from the surge. The residual voltage of the diode is approximately 1 V.

How to use DIN Terminal

⚠Caution

Connection

1. Loosen the holding screw and pull the connector out of the solenoid valve terminal block.
2. After removing the holding screw, insert a flat head screwdriver, etc. into the notch on the bottom of the terminal block and pry it open, separating the terminal block and the housing.
3. Loosen the terminal screws (slotted screws) on the terminal block, insert the cores of the lead wires into the terminals according to the connection method, and fasten them securely with the terminal screws.
4. Secure the cord by fastening the ground nut.

⚠Caution

When making connections, note that using other than the supported size (ø3.5 to ø7) cabtire cable will not satisfy IP65 (enclosure) standards.

Also, be sure to tighten the ground nut and holding screw within their specified torque ranges.

⚠Caution

Changing the entry direction

After separating the terminal block and housing, the cord entry can be changed by attaching the housing in the desired direction (4 directions at 90° intervals).

* When equipped with an indicator light, be careful not to damage the light with the cord's lead wires.

Precautions

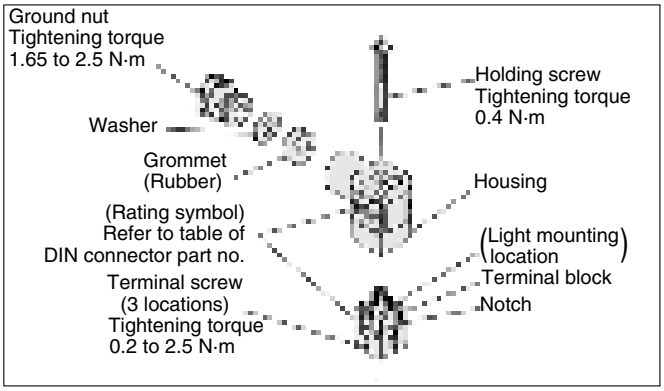
Plug in and pull out the connector vertically without tilting to one side.

Compatible cable

Cord O.D.: ø3.5 to ø7

(Reference) 0.5 mm², 2 core or 3 core, equivalent to JIS C 3306

How to use DIN Terminal

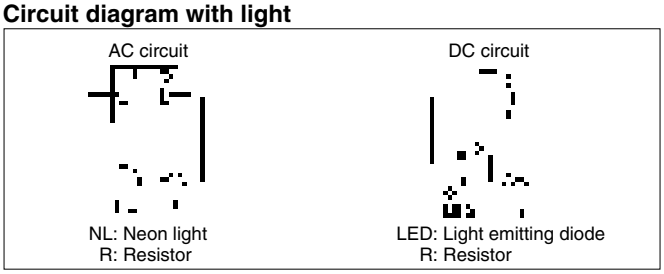


DIN connector part no.

⚠Caution

Without light	SY100-61-1	
With light		
Rated voltage	Voltage symbol	Part no.
24 VDC	24V	SY100-61-3-05
12 VDC	12V	SY100-61-3-06
100 VAC	100V	SY100-61-2-01
200 VAC	200V	SY100-61-2-02
110 VAC	110V	SY100-61-2-03
220 VAC	220V	SY100-61-2-04

Circuit diagram with light



Note) Refer to page 557 for DIN connector (Y) conforming to EN-175301-803C (former DIN 43650C).

Series 10-SYJ3000/5000/7000
Specific Product Precautions 5

Be sure to read before handling.

Connector assembly with cover

⚠ Caution

Connector assembly with dustproof protective cover

- Effective to prevent short circuit failure due to the entry of foreign matter into the connector
- Chloroprene rubber for electrical use, which provides outstanding weather resistance and electrical insulation, is used for the cover material. However, do not allow contact with cutting oil, etc.
- Simple and unencumbered appearance by adopting round-shaped cord.

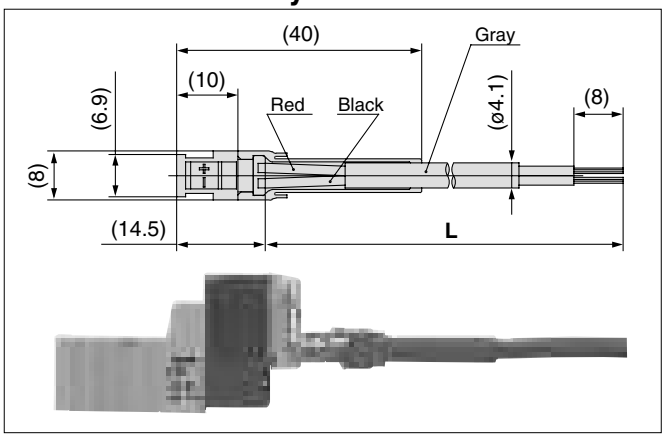
How to Order

SY100−68−A−□

Lead wire length

Nil	300mm
6	600mm
10	1000mm
15	1500mm
20	2000mm
25	2500mm
30	3000mm
50	5000mm

Connector assembly with cover: Dimensions



How to Order

Enter the part number for a plug connector solenoid valve without connector together with the part number for a connector assembly with cover.

<Example 1> Lead wire length 2000 mm
10-SYJ3123-5LOZ-M3
SY100-68-A-20

<Example 2> Lead wire length 300mm (Standard)
10-SYJ3123-5LPZ-M3

Symbol for connector assembly with cover

∗ In this case, the part number for the connector assembly with cover is not required.

M8 connector

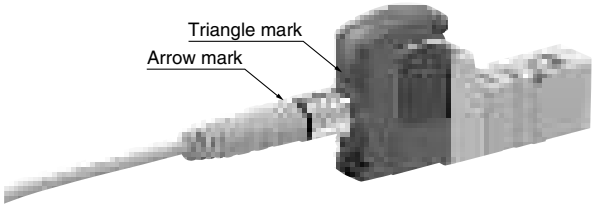
⚠ Caution

1. M8 connector types have an IP65 (enclosure) rating, offering protection from dust and water. However please note that these products are not intended for use in water.
   Select a SMC connector cable (V100-49-1-□) or a FA sensor type connector, with M8 threaded 3 pin specifications conforming to Nippon Electric Control Equipment Association Standard, NECA4202 (IEC60947-5-2). Make sure the connector O.D. is 10.5 mm or less when used with the Series 10-SY3000 manifold. If more than 10.5mm, it cannot be mounted due to the size.
2. Do not use a tool to mount the connector, as this may cause damage. Only tighten by hand. (0.4 to 0.6N)
3. Do not apply excessive power greater than 30N to the connector cable, otherwise IP65 cannot be satisfied.

⚠ Caution

Failure to meet IP65 performance may result if using alternative connectors than shown above, or when insufficiently tightened.

・Connector cable mounting



Note) Connector cable should be mounted in the correct direction. Make sure that the arrow symbol on the connector is facing the triangle symbol on the valve when using SMC connector cable (V100-49-1-□).
Be careful not to squeeze it in the wrong direction, as problems such as pin damage may occur.

MConnector cable

・Connector cable for M8 can be ordered as follows:

How to Order

1. To order solenoid valve and connector cable at the same time. (Connector cable will be included in the shipment of the solenoid valve.)

10−SYJ$\frac{3}{5}\frac{}{7}$□□3−□□□□−□□

Electrical entry
W1: Cable length 300 mm
W2: Cable length 500 mm
W3: Cable length 1000 mm
W4: Cable length 2000 mm
W7: Cable length 5000 mm

(Example 1) Cable length 300 mm
10-SYJ3123-5W1ZE-M3

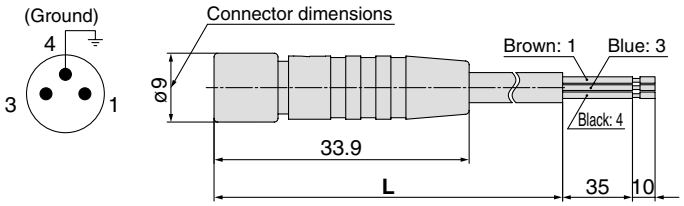
Symbol for electrical entry

Series 10-SYJ3000/5000/7000
Specific Product Precautions 6

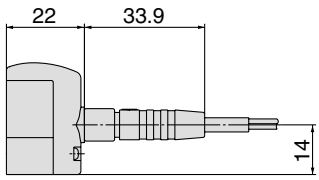
Be sure to read before handling.

M8 connector

2. To order connector cable only



Cable length (L)	Part no.
300mm	V100-49-1-1
500mm	V100-49-1-2
1000mm	V100-49-1-3
2000mm	V100-49-1-4
5000mm	V100-49-1-7



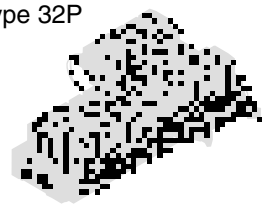
Flat ribbon cable manifold

⚠ Caution

Type 21P



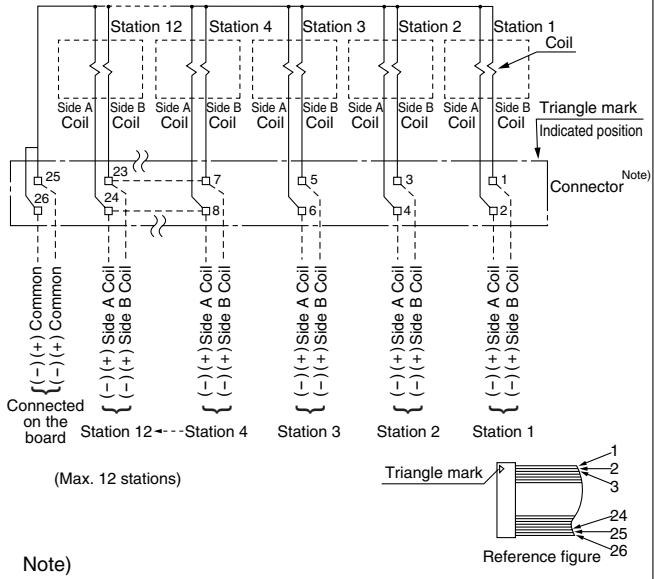
Type 32P



- In the manifold valves, the wiring to the individual valves is provided on a printed circuit board, and the connection to the external wires is consolidated through the use of a flat cable.
- A single MIL flat cable connects the entire manifold to your power source. This greatly reduces installation time and provides clean appearance.

Flat ribbon cable manifold

Internal wiring of manifold



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

- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid B side.
- The maximum number of stations that can be accommodated is 12. Please contact SMC for more stations.
- Only non-polar valves are available for the DC flat ribbon cable manifold, therefore negative COM or positive COM wiring of the manifold is possible. The valve dose not switch with negative COM if a Z type is used. Be sure to use positive COM.

Bracket

⚠ Caution

For 10-SYJ3000 (Single) or 10-SYJ7000 with bracket, do not use it without bracket.

Replacement of solenoid valve

⚠ Caution

Mount it so that there is no slippage or deformation in gaskets, and tighten with the tightening torque as shown below.

Model	Thread size	Tightening torque
10-SYJ3000	M1.7	0.12N·m
10-SYJ5000	M2.5	0.45N·m
10-SYJ7000	M3	0.8N·m

Series 10-SYJ3000/5000/7000
Specific Product Precautions 7

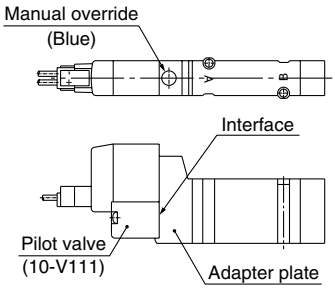
Be sure to read before handling.

Replacement of pilot valve

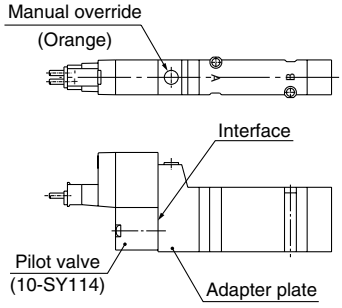
⚠ Caution

Pilot valves in this series are improved to provide excellent energy saving results. However, following this improvement, these new valves are no longer compatible with the conventional pilot valve used at the interface. Please consult with SMC when you need to exchange these pilot valves, in the case of manual override (marked in orange) of the adapter plate.

New type



Conventional type



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