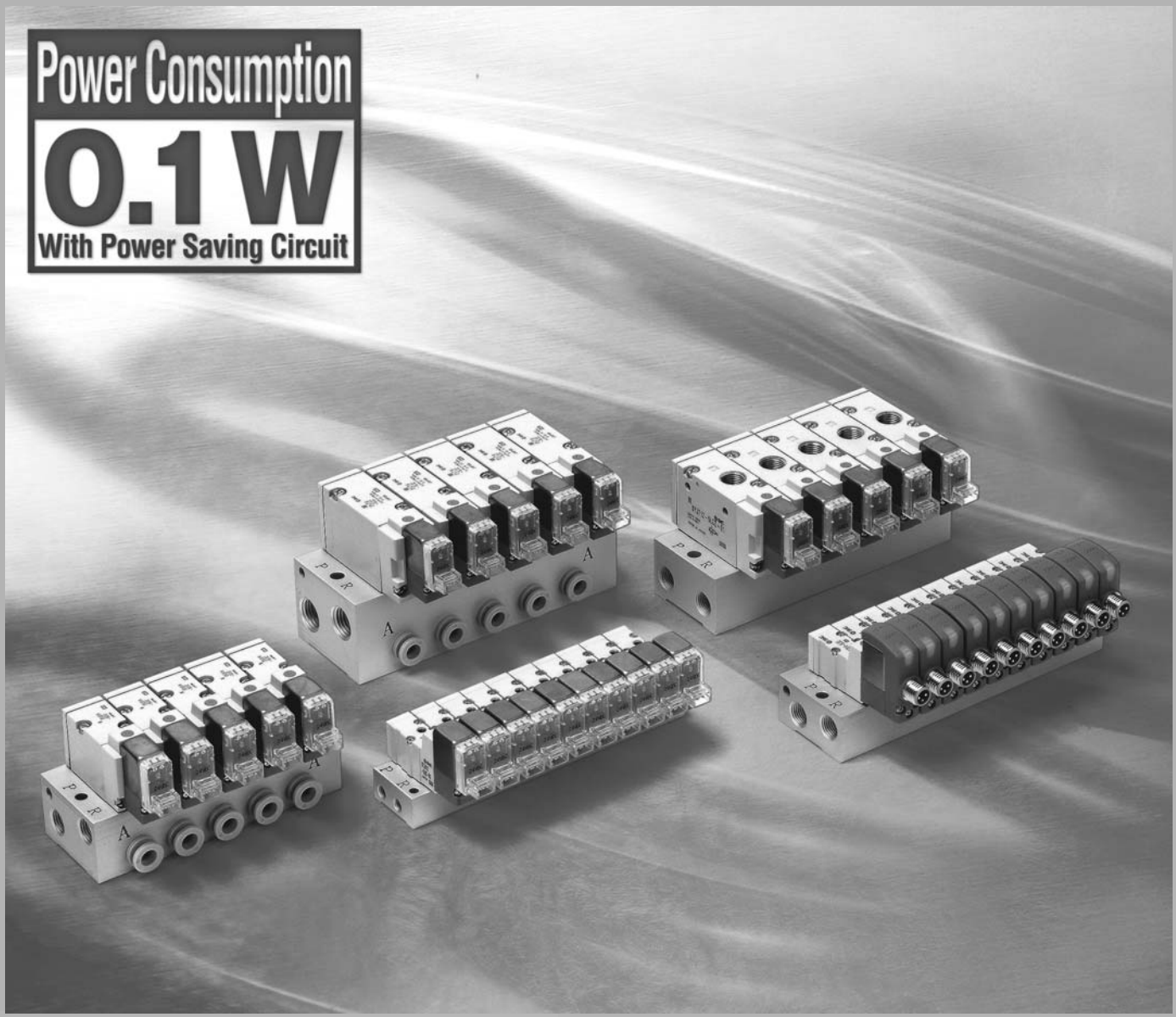
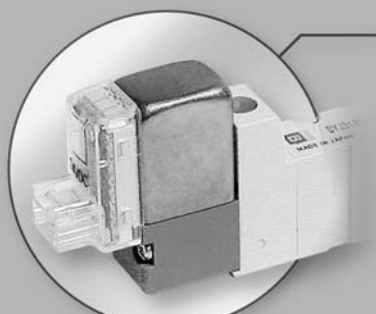
3 Port Solenoid Valve

Series SYJ300/500/700

Rubber Seal

CE [Option]





Cover (stainless steel)

Improved pilot valve

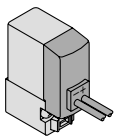
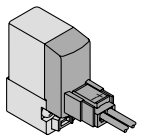
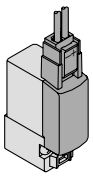
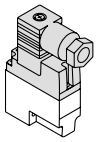
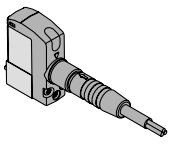
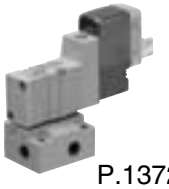
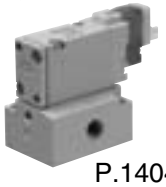
Pilot valve cover is stronger using stainless steel.
Mounting thread is also reinforced from size M1.7 to M2.

●Flow Characteristics

Series	Flow characteristics		
	C [dm³/(s·bar)]	b	Cv
SYJ300	0.36	0.31	0.089
SYJ500	1.2	0.41	0.32
SYJ700	2.7	0.38	0.72

Rubber Seal
3 Port Solenoid Valve
Series SYJ300/500/700

Variations

	Series	Port size	Sonic conductance C [dm³/(s·bar)]	Type of actuation	Voltage	Electrical entry	Option: Light/surge voltage suppressor	Manual override
Body ported	**SYJ300**  P.1372	M3 x 0.5	Effective area 0.9 mm² [2→3] [(A→R)]	●N.C. ●N.O.	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  (SYJ500, 700 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
	SYJ500  P.1386	M5 x 0.8	0.66 [2→3] [(A→R)]					
	SYJ700  P.1404	1/8	2.5 [2→3] [(A→R)]					
Base mounted	**SYJ300**  P.1372	M5 x 0.8	0.36 [2→3] [(A→R)]					
	SYJ500  P.1386	1/8	1.2 [2→3] [(A→R)]					
	SYJ700  P.1404	1/8, 1/4	2.7 [2→3] [(A→R)]					

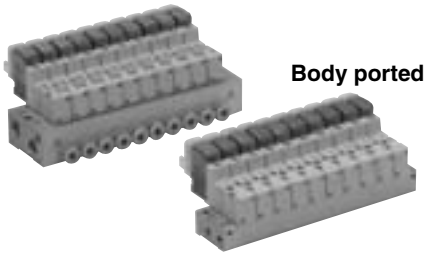
Note) All AC voltage models have built-in surge voltage suppressor.

Manifold Variations

	Valve series	A port location	P, R ports size	A port size								
				M3	M5	1/8	With one-touch fitting					
							Applicable tubing O.D.					
							ø4	ø6	ø8	N3	N7	N9
Body ported	SYJ300 P.1378	Top	M5 x 0.8	● Note 1)	—	—	—	—	—	—	—	—
			1/8	● Note 2)	—	—	—	—	—	—	—	—
	SYJ500 P.1392	Top	1/8	—	●	—	—	—	—	—	—	—
	SYJ700 P.1410	Top	1/8	—	—	● Note 1)	—	—	—	—	—	—
			1/4	—	—	●	—	—	—	—	—	—
Base mounted	SYJ300 P.1378	Side	M5 x 0.8	● Note 1)	—	—	—	—	—	—	—	—
			1/8	—	●	—	●	—	—	●	—	—
	SYJ500 P.1392	Bottom	1/8	—	●	●	—	—	—	—	—	—
		Side		—	●	●	●	●	—	●	●	—
	SYJ700 P.1410	Bottom	1/8	—	—	● Note 1)	—	—	—	—	—	—
			1/4	—	—	●	—	—	—	—	—	—
		Side	1/4	—	—	●	—	●	●	—	●	●

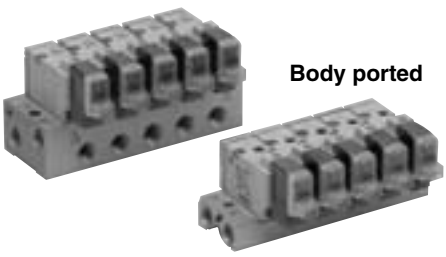
Note 1) Only for internal pilot
Note 2) Only for external pilot

Base mounted **Body ported**



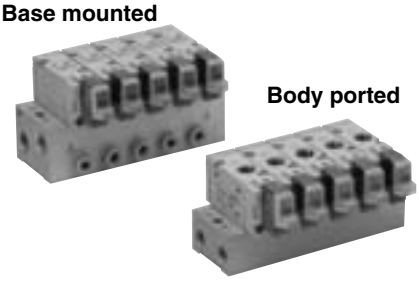
Series SYJ300

Base mounted **Body ported**



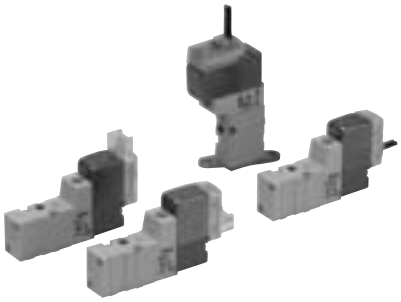
Series SYJ500

Base mounted **Body ported**

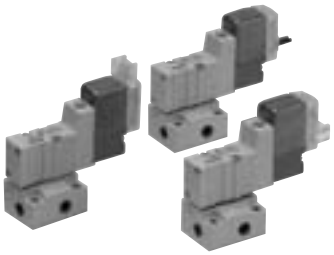


Series SYJ700

Rubber Seal
3 Port Pilot Solenoid Valve
Series SYJ300



Body ported

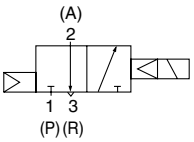


Base mounted

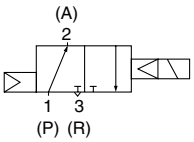
JIS Symbol

Internal pilot

SYJ31$^{2}_{4}$

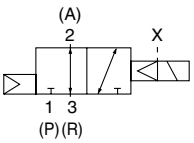


SYJ32$^{2}_{4}$

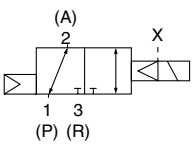


External pilot

SYJ31$^{2}_{4}$R



SYJ32$^{2}_{4}$R



Made to Order
(For details, refer to pages 1422 to 1423.)

Specifications

Fluid		Air
Operating pressure range (MPa)	**Internal pilot**	0.15 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (No freezing.)
Response time ms (at 0.5 MPa) Note 1)		15 or less
Max. operating frequency (Hz)		10
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 (∗ M8 connector conforms to IP65.)

∗ Based on IEC60529

Note 1) Based on dynamic performance test, JIS B 8374-1981. (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 at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (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
	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 (varistor when non-polar types)
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.

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

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

T type: 24 VDC: –8% to +10%
12 VDC: –6% to +10%

Flow Characteristics/Mass

Valve model		Type of actuation	Port size	Flow characteristics						Effective area (mm^2)	Mass (g) Note)		
				1→2 (P→A)			2→3 (A→R)				Grommet	L/M plug connector	M8 connector
				C [dm^3/(s bar)]	b	Cv	C [dm^3/(s bar)]	b	Cv				
Body ported	**SYJ312**	N.C.	M3 x 0.5	—	—	—	—	—	—	0.9	32	33	37
	SYJ322	N.O.		—	—	—	—	—	—				
Base mounted (with sub-plate)	**SYJ314**	N.C.	M5 x 0.8	0.41	0.18	0.086	0.35	0.33	0.086	—	53 (32)	54 (33)	58 (37)
	SYJ324	N.O.		0.36	0.31	0.089	0.36	0.31	0.089				

Note) Value for DC. Add 1 g for AC. ( ): Without sub-plate.

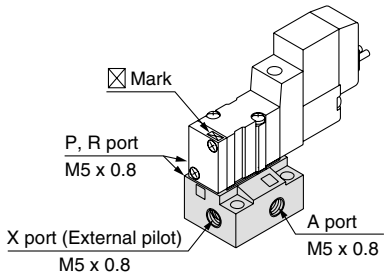
External Pilot

SYJ300R

Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port.
It can be used in the vacuum (up to –100 kPa) or low pressure line with 0.15 MPa or less.

Specifications

Applicable model	Base mounted **(SYJ314R, SYJ324R)**	
Operating pressure range MPa	Main pressure	–100 kPa to 0.7
	External pilot pressure	0.15 to 0.7



Note 1) For manifold base, refer to page 1378.
Note 2) External pilot type body ported valves (SYJ3□2R) can only be used on the manifold.

Series SYJ300

How to Order

Note) CE compliant: For DC only. **[Option]**

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 type R, U, DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

Rated voltage

DC

		CE compliant
5	24 VDC	●
6	12 VDC	●
V	6 VDC	●
S	5 VDC	●
R	3 VDC	●

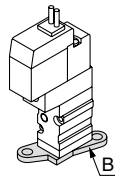
AC (50/60 Hz)

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

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

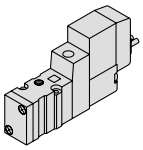
Bracket

Nil: Without bracket
F : With bracket



∗ Bracket is mounted.
∗ Brackets cannot be retrofitted.
∗ External pilot type is not available.

3 port



(For manifold type 20, 20R)

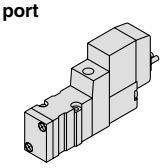
Type of actuation

1	Normally closed
2	Normally open

Body ported **SYJ3 1 2 □ □ – 5 M □ □ – M3 – □ – □**

Base mounted **SYJ3 1 4 □ □ – 5 M □ □ – □ – □**

3 port



For sub-plate style, manifold type 41, S41, 42, S42, 42R, S42R

CE complaint

Nil	—
Q	CE complaint

Note) CE compliant: For DC only.

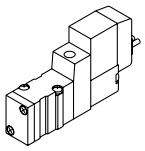
Coil specifications

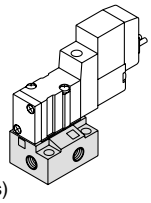
Nil	Standard
T	With power saving circuit (24, 12 VDC only)

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

Port size

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

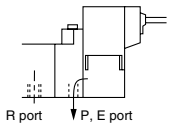




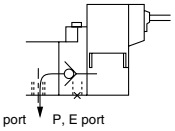
(With gasket and screws)

Body option

Nil: Individual pilot exhaust type



M: Common exhaust for the pilot and main valve



Pilot valve exhaust is centralized to main valve.

R: External pilot type∗

∗ SYJ3□2R is only for manifold use.

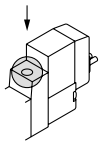
Electrical entry

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)

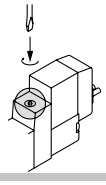
∗ LN, MN type: with 2 sockets.
∗ Refer to page 1425 for the lead wire length of L and M plug connectors.
∗ Refer to page 1428 for the connector assembly with cover for L and M plug connectors.
∗ For connector cable of M8 connector, refer to page 1429.
∗ A M8 connector conforming to IEC60947-5-2 is also available. Refer to page 1422 for details.
Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 1429.

Manual override

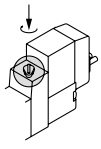
Nil: Non-locking push type



D: Push-turn locking slotted type



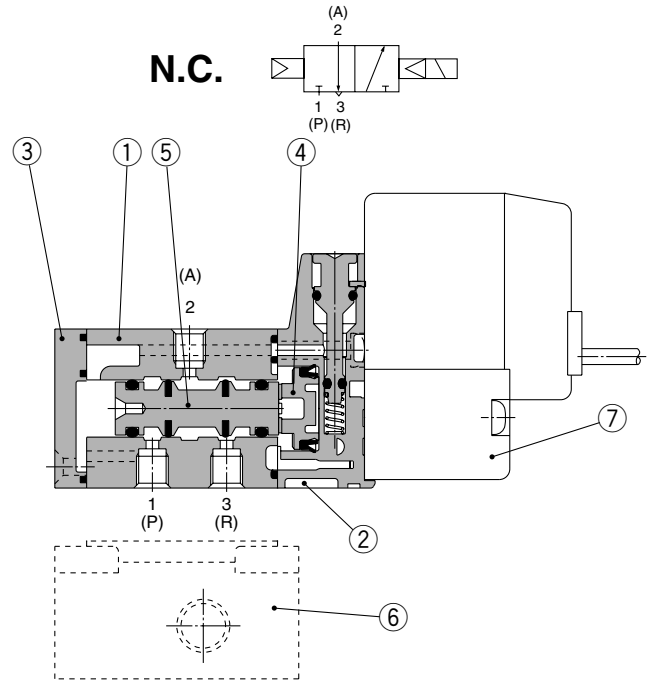
E: Push-turn locking lever type

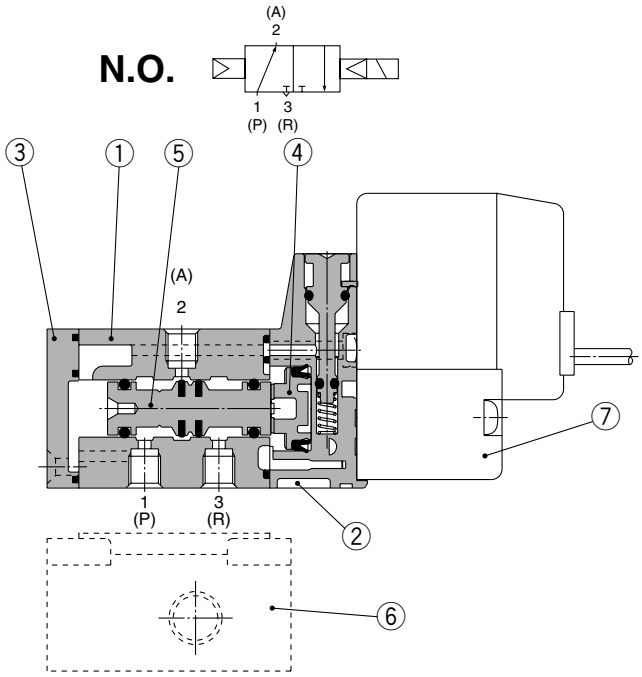


Note) When placing an order for body ported solenoid valve as a single unit, mounting screws for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 1379.)

SMC

Construction





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**	Aluminum, H-NBR	–

Replacement Parts

No.	Description	Part no.	Note
6	**Sub-plate** Note)	SYJ300-9-1(-Q)	Zinc die-casted
7	**Pilot valve**	V111(T)-□□□□	

Note) Add suffix "-Q" for the CE-compliant product.

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.
∗ CE-compliant: For DC only.

Light/surge voltage suppressor

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

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

Electrical entry

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

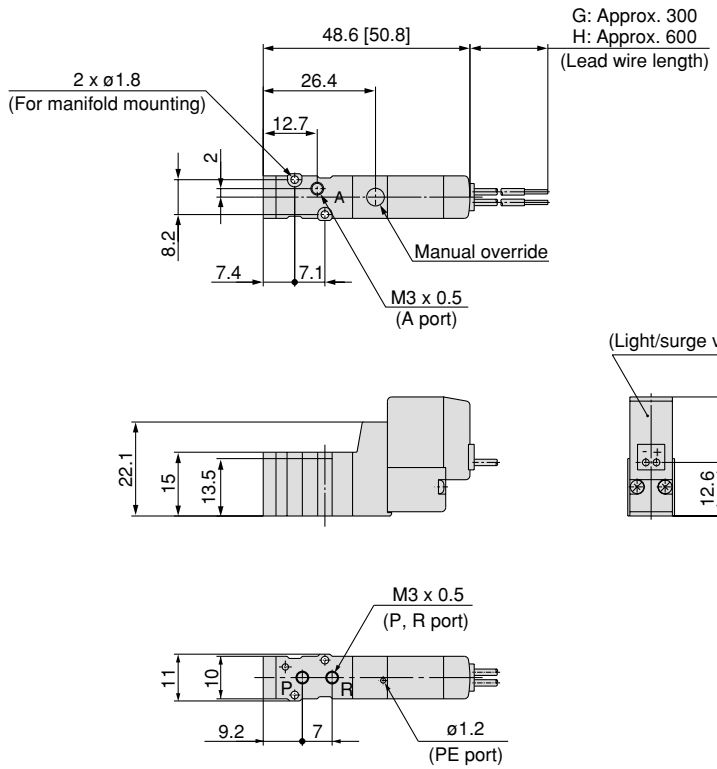
∗ For connector cable of M8 connector, refer to page 1429.
Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 1429.

Since V111 is CE-compliant as standard, the suffix "-Q" is not necessary.

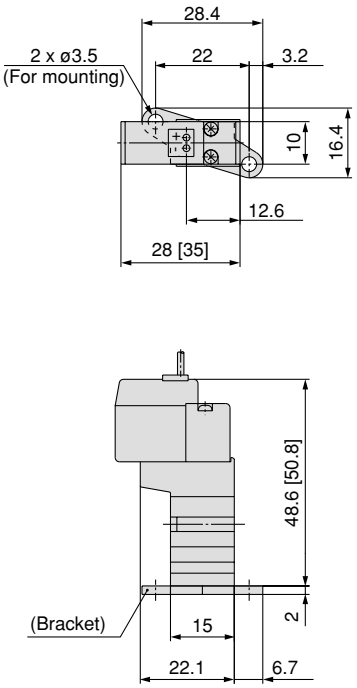
Body Ported

＊[ ] for AC

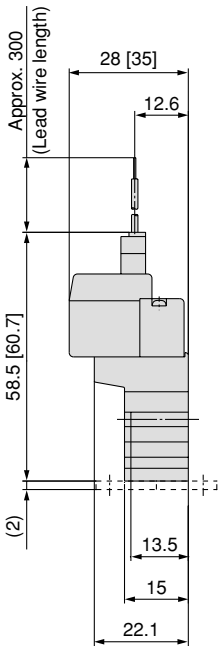
Grommet (G), (H): SYJ3□2-□$^{G}_{H}$□□-M3



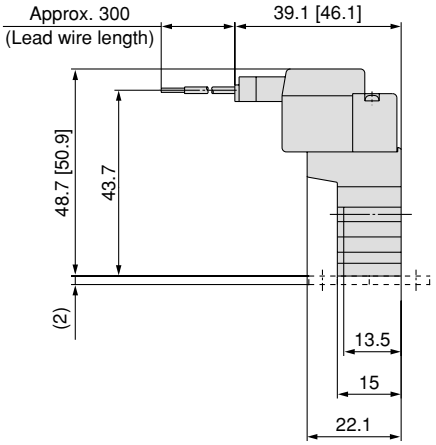
With bracket: SYJ3□2-□$^{G}_{H}$□□-M3-F



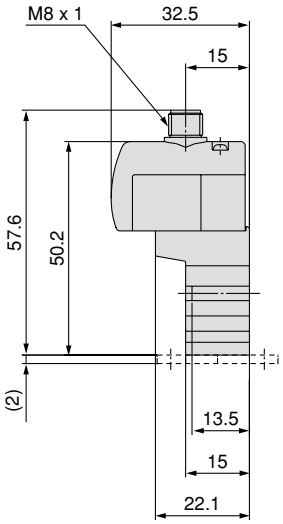
L plug connector (L): SYJ3□2-□L□□-M3



M plug connector (M): SYJ3□2-□M□□-M3



M8 connector (WO): SYJ3□2-□WO□□-M3

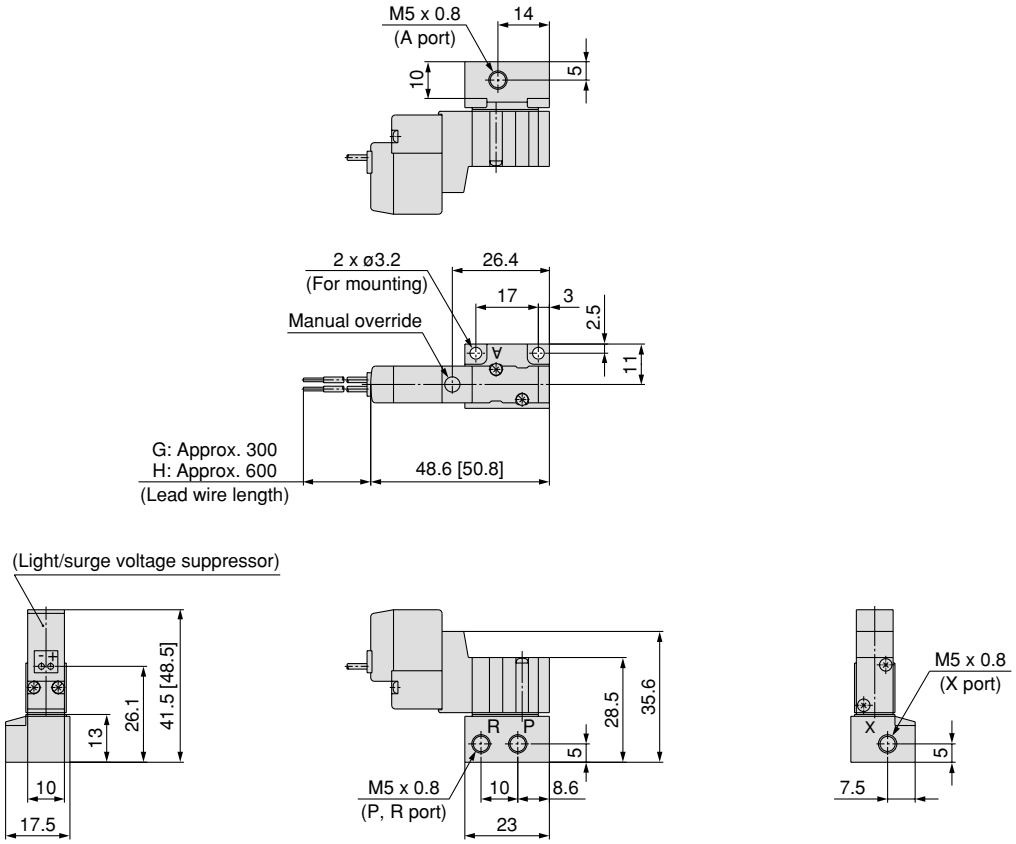


＊ Refer to page 1429 for dimensions with connector cable.

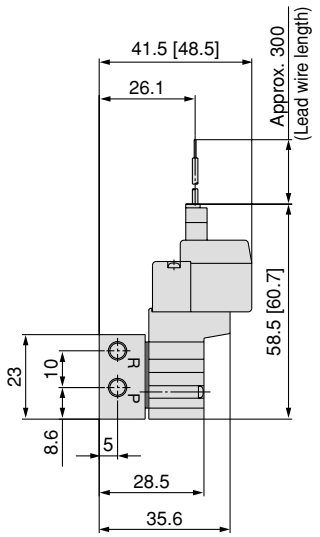
Base Mounted (With Sub-plate)

∗ [ ] for AC

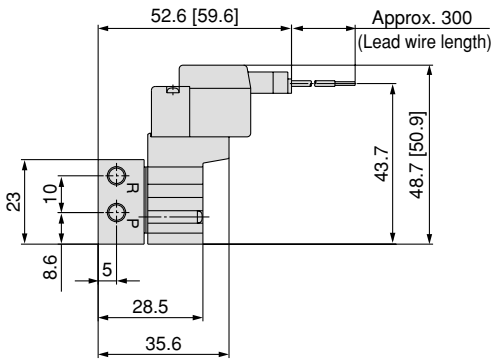
Grommet (G), (H): SYJ3□4-□$^{G}_{H}$□□-M5



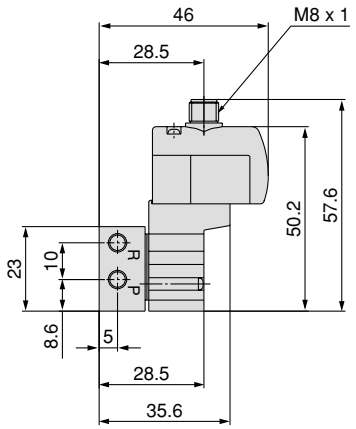
L plug connector (L): SYJ3□4-□L□□-M5



M plug connector (M): SYJ3□4-□M□□-M5

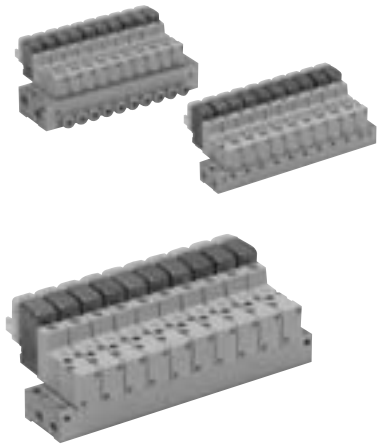


M8 connector (WO): SYJ3□4-□WO□□-M5



∗ Refer to page 1429 for dimensions with connector cable.

Series SYJ300
Manifold Specifications



Manifold Specifications

Model				
	For internal pilot	**Type 20**	**Type 41, S41**	**Type 42, S42**
	For external pilot	**Type 20R**	—	**Type 42R, S42R**
Manifold type		Single base/B mount		
P (SUP), R (EXH)		Common SUP/Common EXH		
Valve stations		2 to 20 stations		
A port Porting specifications	**Location**	Valve	Base	
	Direction	Top	Side	
Port size	**P, R port**	M5 x 0.8 1/8	M5 x 0.8	1/8
	A port	M3 x 0.5	M3 x 0.5	M5 x 0.8 C4 (One-touch fitting ø4)
	X port Note)	M5 x 0.8	—	M5 x 0.8

Note) Only for external pilot

Flow Characteristics

Manifold			Port size		Flow characteristics						Effective area (mm^2)
					1→2 (P→A)			2→3 (A→R)			
			1(P), 3(R) Port	2(A) Port	C [dm^3/(s·bar)]	b	Cv	C [dm^3/(s·bar)]	b	Cv	
Body ported for internal pilot	**Type SS3YJ3-20**	**SYJ3□2**	M5 x 0.8	M3 x 0.5	–	–	–	–	–	–	0.9
Base mounted for internal pilot	**Type SS3YJ3- 41 S41**	**SYJ3□4**	M5 x 0.8	M3 x 0.5	–	–	–	–	–	–	1.5
	Type SS3YJ3-42-M5	**SYJ3□4**	1/8	M5 x 0.8	0.31	0.17	0.075	0.32	0.11	0.072	–
	Type SS3YJ3-42-C4			C4	0.33	0.36	0.086	0.33	0.2	0.082	–
	Type SS3YJ3-S42-M5	**SYJ3□4**	1/8	M5 x 0.8	0.32	0.3	0.079	0.33	0.35	0.086	–
	Type SS3YJ3-S42-C4			C4	0.35	0.17	0.082	0.35	0.26	0.086	–
Body ported for external pilot	**Type SS3YJ3-20R**	**SYJ3□2R**	1/8	M3 x 0.5	–	–	–	–	–	–	0.9
Base mounted for external pilot	**Type SS3YJ3-42R-M5**	**SYJ3□4R**	1/8	M5 x 0.8	0.31	0.17	0.075	0.32	0.11	0.072	–
	Type SS3YJ3-42R-C4			C4	0.33	0.36	0.086	0.33	0.20	0.082	–
	Type SS3YJ3-S42R-M5	**SYJ3□4R**	1/8	M5 x 0.8	0.32	0.30	0.079	0.33	0.35	0.086	–
	Type SS3YJ3-S42R-C4			C4	0.35	0.17	0.082	0.35	0.26	0.086	–

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

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.

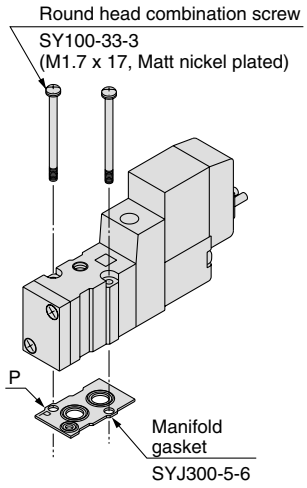
(Example)

SS3YJ3-20-03 ····· **1 set (manifold base)**
✻SYJ312-5LZ-M3 ····· **2 sets (valve)**
✻SYJ300-10-1A ····· **1 set (blanking plate assembly)**
SS3YJ3-42R-03-C4 ···· **1 set (manifold base)**
SYJ314R-5G ····· **2 sets (valve)**
SYJ300-10-2A ····· **1 set (blanking plate assembly)**

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

Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

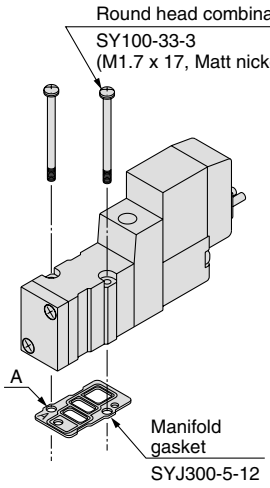
Body ported (Type SYJ3□2(R)(-Q))



Applicable base

SS3YJ3-20(-Q)	Manifold base
SS3YJ3-20R(-Q)	

Base mounted (Type SYJ3□4(R)(-Q))

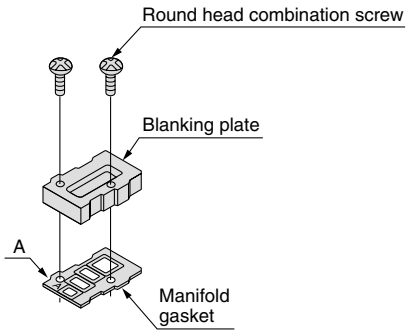


Applicable base
Sub-plate

SS3YJ3-41(-Q)	Manifold base
SS3YJ3-S41(-Q)	
SS3YJ3-42(-Q)	
SS3YJ3-S42(-Q)	
SS3YJ3-42R(-Q)	
SS3YJ3-S42R(-Q)	

Blanking Plate Assembly

Part no.: SYJ300-10-7A(-Q)



Applicable base
Sub-plate

SS3YJ3-20(-Q)	Manifold base
SS3YJ3-20R(-Q)	
SS3YJ3-41(-Q)	
SS3YJ3-S41(-Q)	
SS3YJ3-42(-Q)	
SS3YJ3-S42(-Q)	
SS3YJ3-42R(-Q)	
SS3YJ3-S42R(-Q)	

Note) Add suffix "-Q" for the CE-compliant product.

⚠ Caution

Mounting screw tightening torques

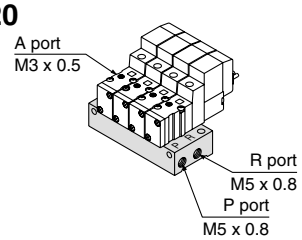
M1.7: 0.12 N·m

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

Manifold for Internal Pilot Type

Note) CE compliant: For DC only. **[Option]**

Type 20



How to Order

SS3YJ3 – 20 – 05 – □ – □

Stations

02	2 stations
:	:
20	20 stations

Bracket

Nil	Without bracket
F	With bracket

CE complaint

Nil	—
Q	CE complaint

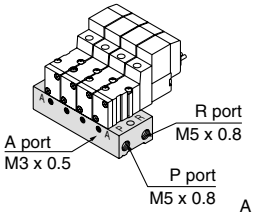
Applicable solenoid valve
SYJ312-□□□□-M3(-Q)
SYJ312M-□□□□-M3(-Q)
SYJ322-□□□□-M3(-Q)
SYJ322M-□□□□-M3(-Q)

Applicable blanking plate assembly
Refer to page 1379.

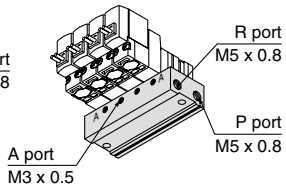
Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 41

Type 41



Type S41
(Pilot valve is on the A port side.)



How to Order

SS3YJ3 – □ 41 – 05 – M3 – □

Valve mounting direction

Nil	Pilot valve is opposite the A port side.
S	Pilot valve is on the A port side.

Stations

02	2 stations
:	:
20	20 stations

CE complaint

Nil	—
Q	CE complaint

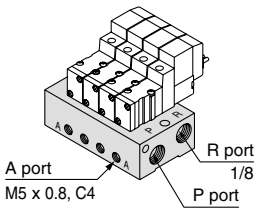
Applicable solenoid valve
SYJ314-□□□□(-Q)
SYJ314M-□□□□(-Q)
SYJ324-□□□□(-Q)
SYJ324M-□□□□(-Q)

Applicable blanking plate assembly
Refer to page 1379.

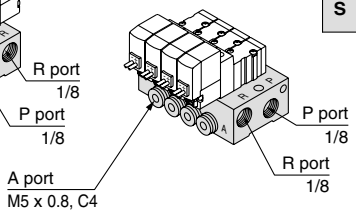
Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 42

Type 42



Type S42
(Pilot valve is on the A port side.)



How to Order

SS3YJ3 – □ 42 – 05 – M5 □ – □

Valve mounting direction

Nil	Pilot valve is opposite the A port side.
S	Pilot valve is on the A port side.

Stations

02	2 stations
:	:
20	20 stations

A port size

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

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

CE complaint

Nil	—
Q	CE complaint

Applicable solenoid valve
SYJ314-□□□□(-Q)
SYJ314M-□□□□(-Q)
SYJ324-□□□□(-Q)
SYJ324M-□□□□(-Q)

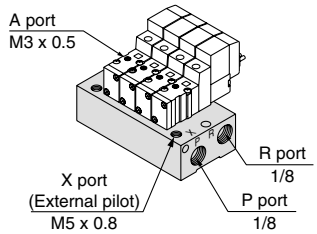
Applicable blanking plate assembly
Refer to page 1379.

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

Manifold for External Pilot Type

Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port.
It can be used in the vacuum (up to –100 kPa) or low pressure line with 0.15 MPa or less.

Type 20R



How to Order

SS3YJ3 – 20R – 05 – □ – □

Stations

02	2 stations
:	:
20	20 stations

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

CE complaint

Nil	—
Q	CE complaint

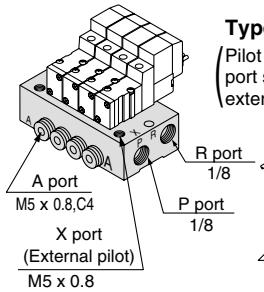
Applicable solenoid valve
SYJ312R-□□□□-M3(-Q)
SYJ322R-□□□□-M3(-Q)

Applicable blanking plate assembly
Refer to page 1379.

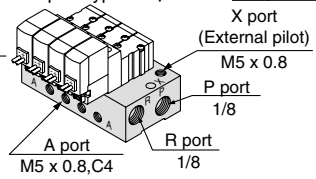
Note) For more than 10 stations, supply/exhaust air to/from both sides of P port and R port.

Type 42R

Type 42R
(External pilot type)



Type S42R
(Pilot valve is on the A port side and is of the external pilot type.)



How to Order

SS3YJ3 – □ 42R – 05 – M5 □ – □

Valve mounting direction

Nil	Pilot valve is opposite the A port side.
S	Pilot valve is on the A port side.

Stations

02	2 stations
:	:
20	20 stations

A port size

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

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

CE complaint

Nil	—
Q	CE complaint

Applicable solenoid valve
SYJ314R-□□□□(-Q)
SYJ324R-□□□□(-Q)

Applicable blanking plate assembly
Refer to page 1379.

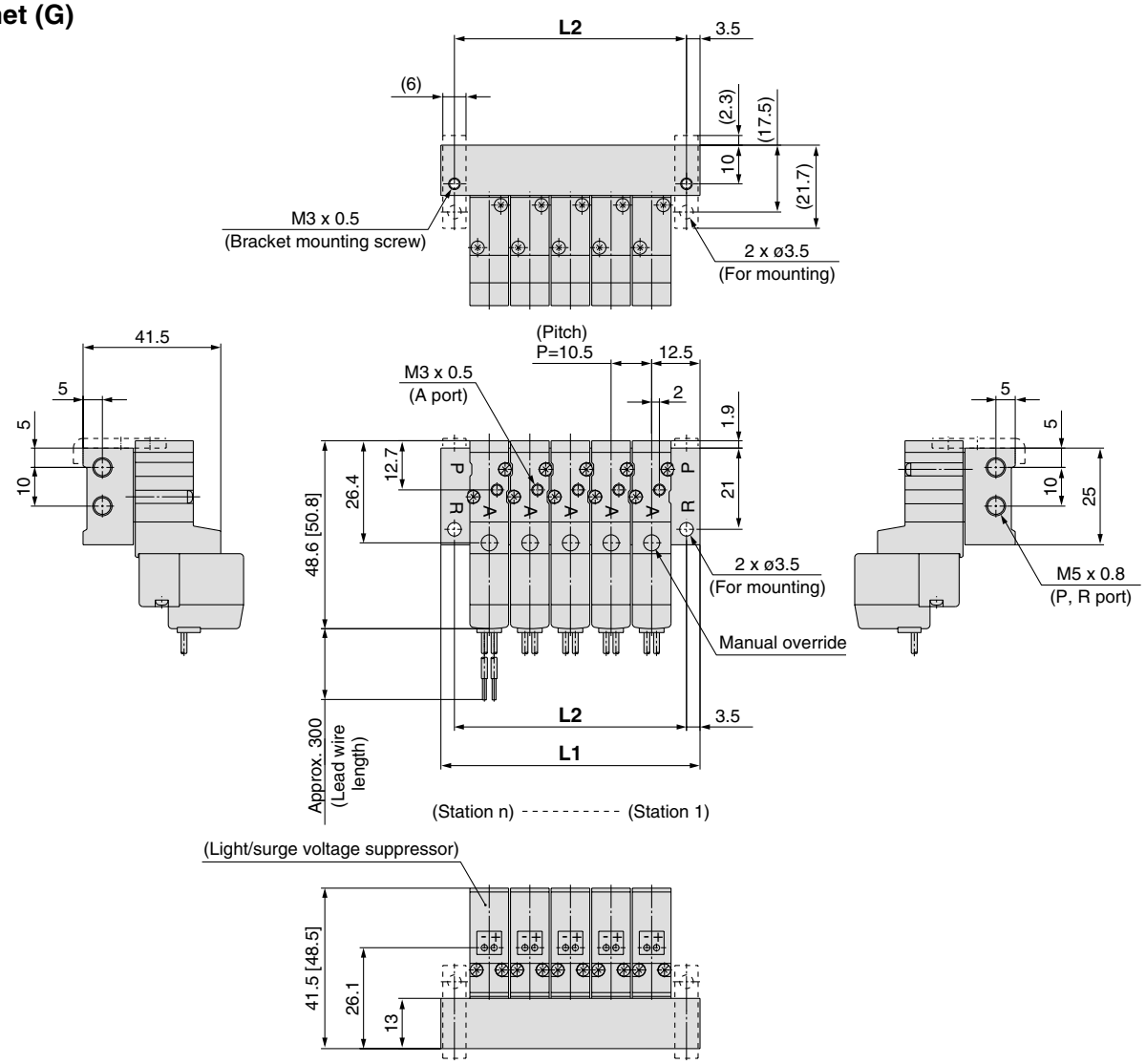
Note) For more than 8 stations, supply/exhaust air to/from both sides of P port and R port.

SMC

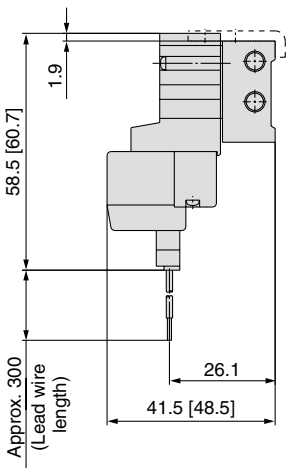
Type 20 Manifold: Top Ported/SS3YJ3-20-[Stations]-00□ (-F)

∗ [ ] for AC

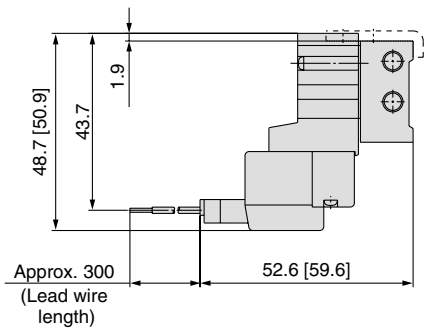
Grommet (G)



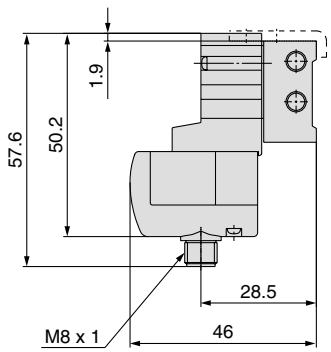
L plug connector (L)



M plug connector (M)



M8 connector (WO)



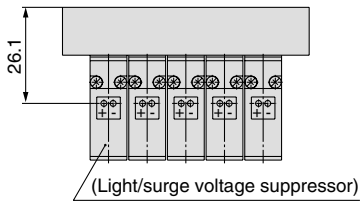
∗ Refer to page 1429 for dimensions with connector cable.

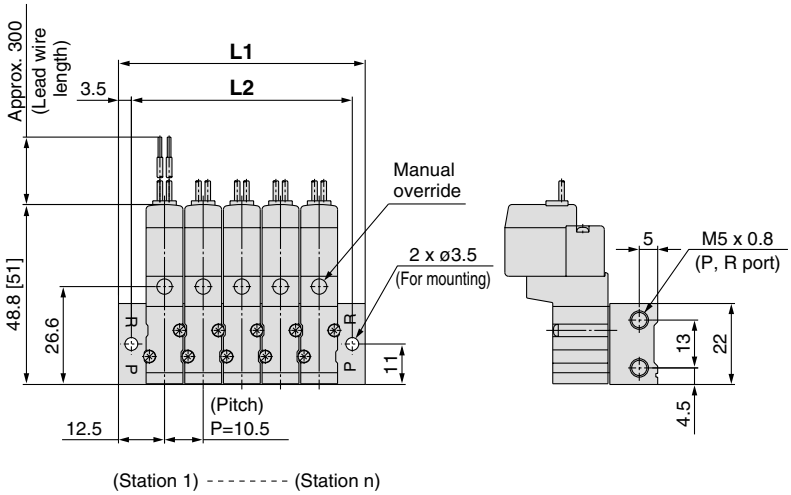
Station n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5	193	203.5	214	224.5
L2	28.5	39	49.5	60	70.5	81	91.5	102	112.5	123	133.5	144	154.5	165	175.5	186	196.5	207	217.5

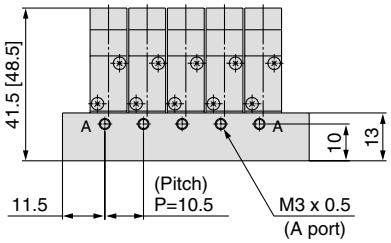
Type 41 Manifold: Side Ported/SS3YJ3-41-Stations-M3

＊[ ] for AC

Grommet (G)



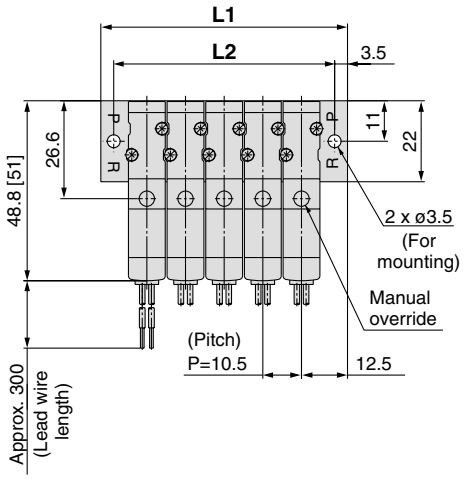


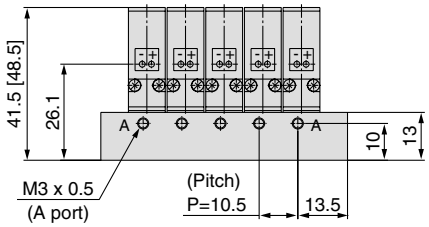


Type S41 Manifold: Side Ported

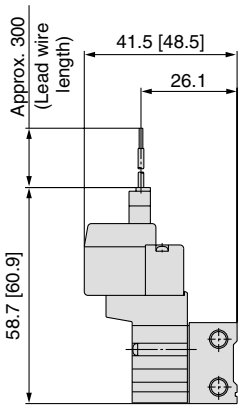
(Pilot valve is on the A port side) /

SS3YJ3-S41-Stations-M3

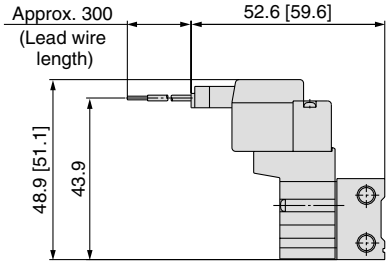




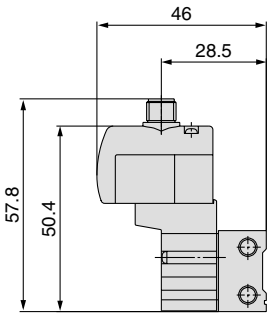
L plug connector (L)



M plug connector (M)



M8 connector (WO)



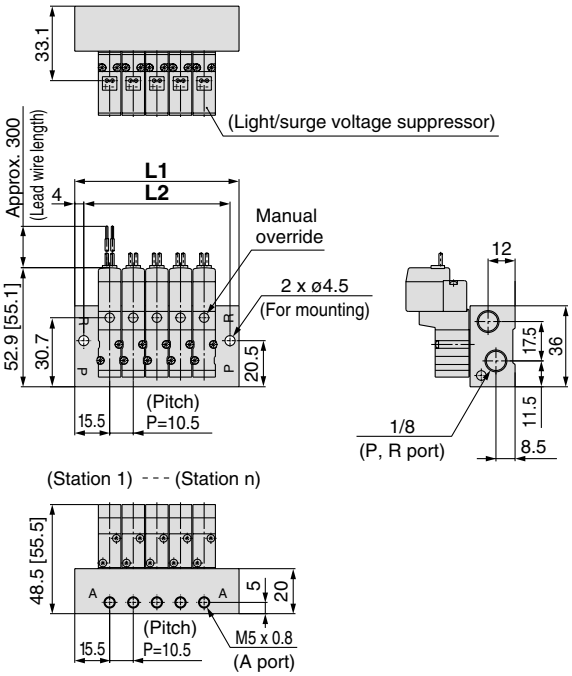
＊ Refer to page 1429 for dimensions with connector cable.

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

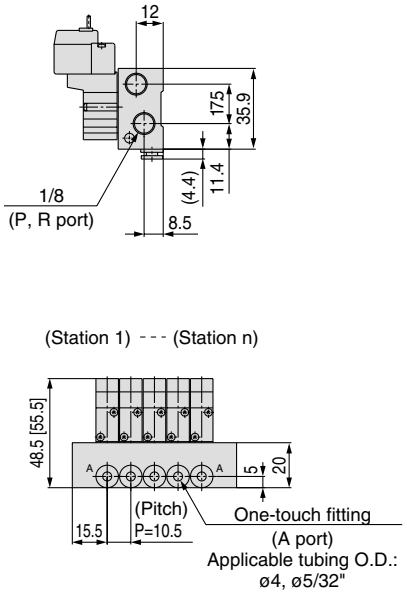
Type 42 Manifold: Side Ported/SS3YJ3-42-Stations-M5, C4 N3 □

＊[ ] for AC

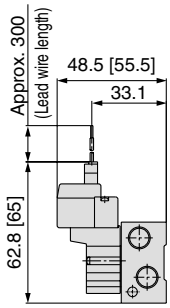
Grommet (G)
For M5



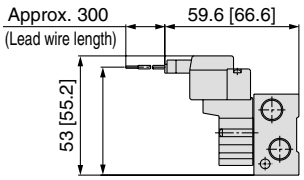
For C4 N3 □ (Built-in one-touch fitting)



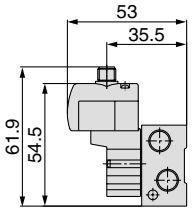
L plug connector (L)



M plug connector (M)



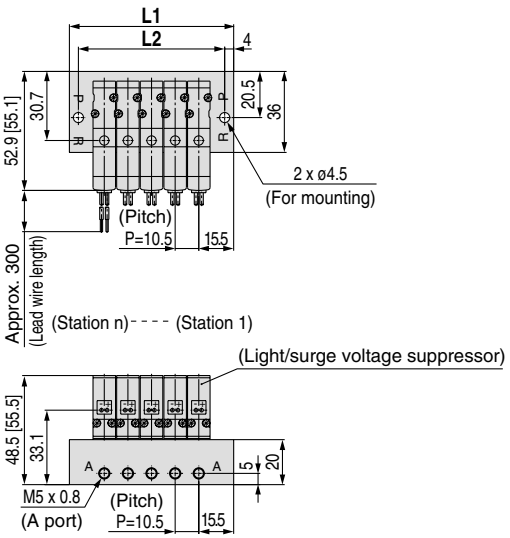
M8 connector (WO)



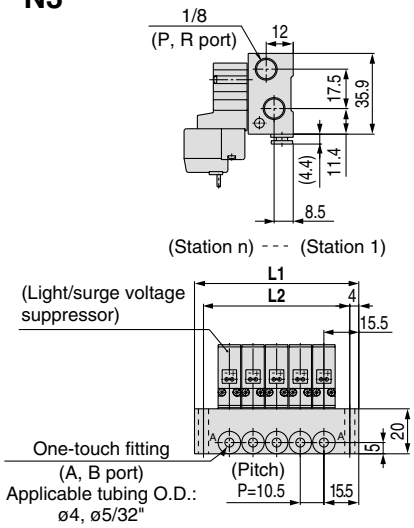
＊ Refer to page 1429 for dimensions with connector cable.

Type S42 Manifold: Side Ported (Pilot valve is on the A port side) / SS3YJ3-S42-Stations-M5, C4 N3 □

Grommet (G)
For M5



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

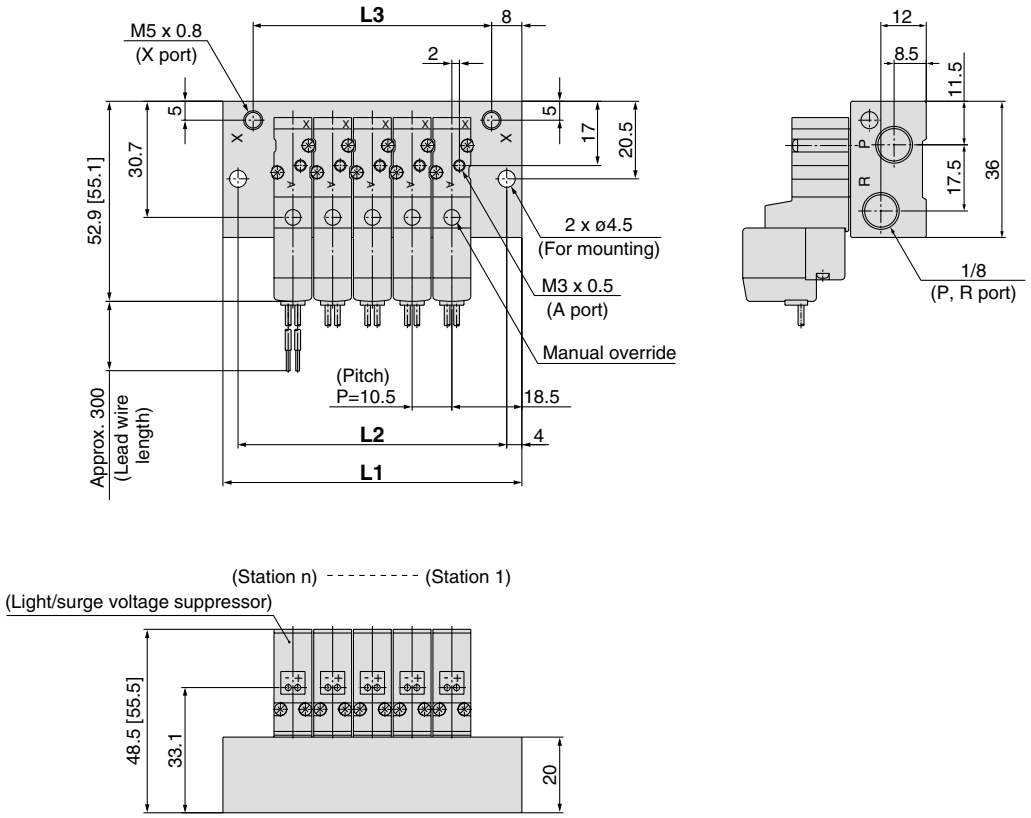


Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	41.5	52	62.5	73	83.5	94	104.5	115	125.5	136	146.5	157	167.5	178	188.5	199	209.5	220	230.5
L2	33.5	44	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212	222.5

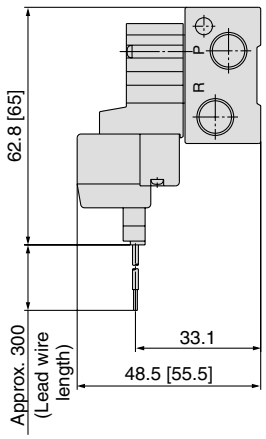
Type 20R Manifold: Top Ported (External Pilot Type)/SS3YJ3-20R-Stations-00□

∗ [ ] for AC

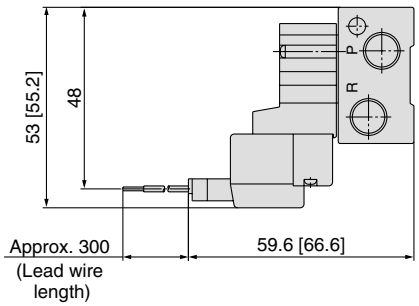
Grommet (G)



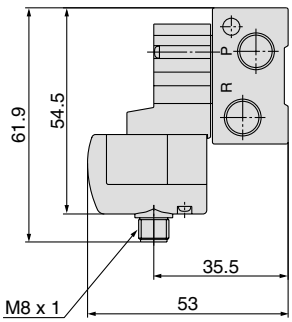
L plug connector (L)



M plug connector (M)



M8 connector (WO)



∗ Refer to page 1429 for dimensions with connector cable.

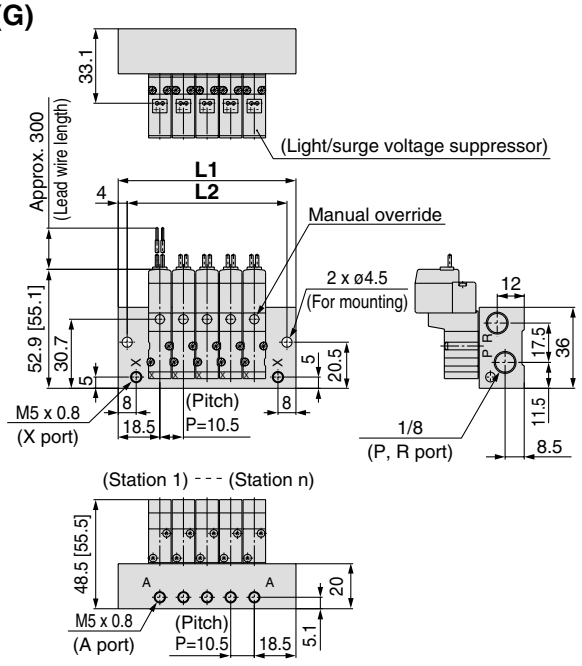
Station n	Station 2	3	4	5	5	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	47.5	58	68.5	79	89.5	100	110.5	121	131.5	142	152.5	163	173.5	184	194.5	205	215.5	226	236.5
L2	39.5	50	60.5	71	81.5	92	102.5	113	123.5	134	144.5	155	165.5	176	186.5	197	207.5	218	228.5
L3	31.5	42	52.5	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5

Type 42R Manifold: Side Ported (External Pilot Type)/SS3YJ3-42R-Stations-M5, C4 N3 □

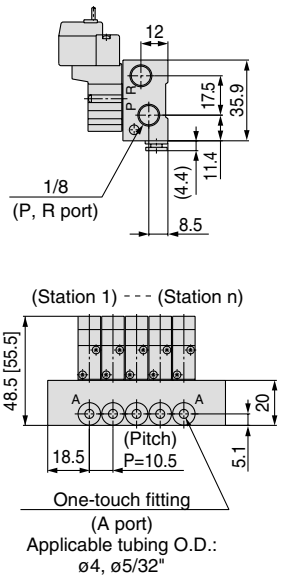
∗ [ ] for AC

Grommet (G)

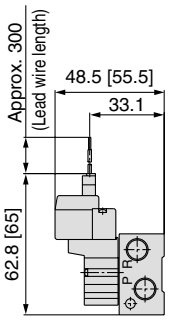
For M5



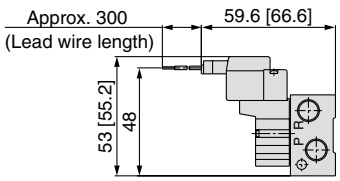
For C4 N3 □ (Built-in one-touch fitting)



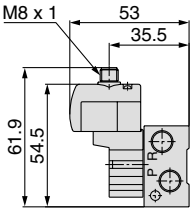
L plug connector (L)



M plug connector (M)



M8 connector (WO)

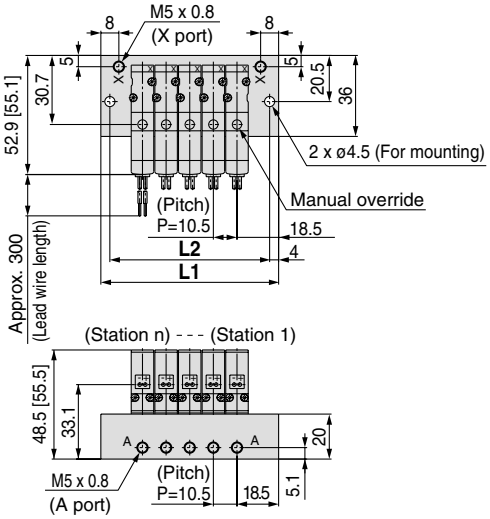


∗ Refer to page 1429 for dimensions with connector cable.

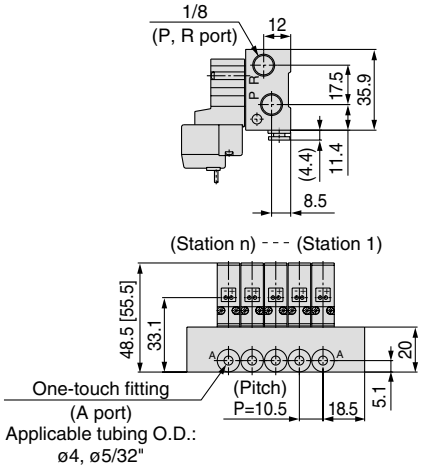
Type S42R Manifold: Side Ported (Pilot valve is on the A port side) / SS3YJ3-S42R-Stations-M5, C4 N3 □

Grommet (G)

For M5

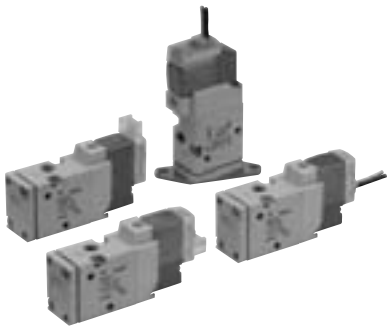


For C4 N3 □ (Built-in one-touch fitting)

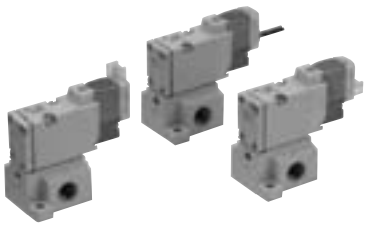


Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	47.5	58	68.5	79	89.5	100	110.5	121	131.5	142	152.5	163	173.5	184	194.5	205	215.5	226	236.5
L2	39.5	50	60.5	71	81.5	92	102.5	113	123.5	134	144.5	155	165.5	176	186.5	197	207.5	218	228.5

Rubber Seal
3 Port Pilot Solenoid Valve
Series SYJ500



Body ported

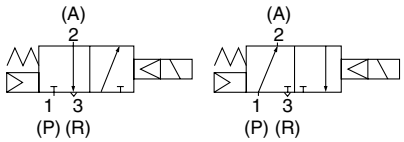


Base mounted

JIS Symbol

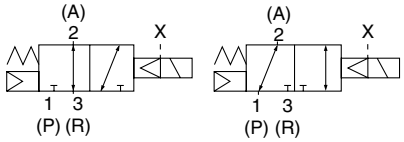
Internal pilot

SYJ51$^{2}_{4}$ **SYJ52$^{2}_{4}$**



External pilot

SYJ51$^{2}_{4}$R **SYJ52$^{2}_{4}$R**



Made to Order
(For details, refer to pages 1422 to 1423.)

Specifications

Fluid		Air
Operating pressure range (MPa)	**Internal pilot**	0.15 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (No freezing.)
Response time ms (at 0.5 MPa) Note 1)		25 or less
Max. operating frequency (Hz)		5
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 8374-1981. (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 at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Value in the initial state)

Solenoid Specifications

Electrical entry			Grommet (G), (H), L plug connector (L), M plug connector (M), DIN terminal (D), (Y), M8 connector (W)	
			G, H, L, M, W	D, Y
Coil rated voltage (V)	**DC**		24, 12, 6, 5, 3	24, 12
	AC 50/60 Hz		100, 110, 200, 220	
Allowable voltage fluctuation			±10% of rated voltage ∗	
Power consumption (W)	**DC**	**Standard**	0.35 (With 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%

Flow Characteristics/Mass

Valve model		Type of actuation	Port size	Flow characteristics						Mass (g) Note)			
				1→2 (P→A)			2→3 (A→R)			Grommet	L/M plug connector	DIN terminal	M8 connector
				C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv				
Body ported	**SYJ512**	N.C.	M5 x 0.8	0.53	0.45	0.14	0.47	0.39	0.12	46	47	68	51
	SYJ522	N.O.		0.66	0.45	0.18	0.66	0.45	0.18				
Base mounted (with sub-plate)	**SYJ514**	N.C.	1/8	1.2	0.41	0.32	1.1	0.46	0.32	60 (46)	61 (47)	82 (68)	65 (51)
	SYJ524	N.O.		1.3	0.37	0.33	1.2	0.48	0.34				

Note) Value for DC. Add 3 g for AC. ( ): Without sub-plate.

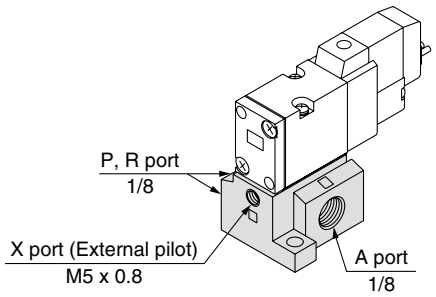
External Pilot

SYJ500R

Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port.
It can be used in the vacuum (up to –100 kPa) or low pressure line with 0.15 MPa or less.

Specifications

Applicable model	Base mounted **(SYJ514R, SYJ524R)**	
Operating pressure range MPa	Main pressure	–100 kPa to 0.7
	External pilot pressure	0.15 to 0.7



Note 1) For manifold base, refer to page 1392.
Note 2) External pilot type body ported valves (SYJ5□2R) can only be used on the manifold.
For body ported models with the external pilot option, please refer to page 1423.

How to Order

Note) AC-type models that are CE compliant have DIN terminals only.

[Option]

Rated voltage

DC

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

∗ DC specifications of type D, Y, DO and YO 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.
Note) AC-type models that are CE compliant have DIN terminals only.

Light/surge voltage suppressor

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

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

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

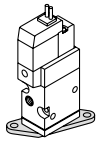
Electrical entry for D, Y

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

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

Bracket

Nil: Without bracket
F : With bracket



∗ Bracket is not mounted.
∗ External pilot type is compatible with the Made-to-Order specifications (-X20).

Made to Order

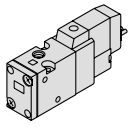
Nil	—
X20	Body ported external pilot

(Refer to page 1423.)

Type of actuation

1	Normally closed
2	Normally open

3 port

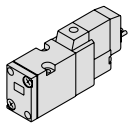


(For manifold type 20, 21R)

Body ported SYJ5 1 2 □ □ – 5 M □ □ – M5 – □ – □ – □

Base mounted SYJ5 1 4 □ □ – 5 M □ □ – 01 □ – □

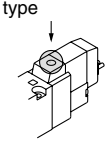
3 port



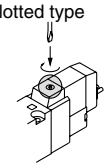
For sub-plate style, manifold type 40, 40R, 41, 41R

Manual override

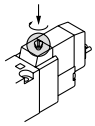
Nil: Non-locking push type



D: Push-turn locking slotted type

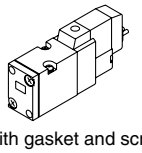


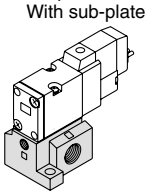
E: Push-turn locking lever type



Port size

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





(With gasket and screws)

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Coil specifications

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

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

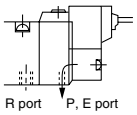
CE complaint

Nil	—
Q	CE complaint

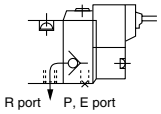
Note) AC-type models that are CE compliant have DIN terminals only.

Body option

Nil: Individual pilot exhaust type



M: Common exhaust for the pilot and main valve



R: External pilot type∗

∗ SYJ5□2R is only for manifold use.

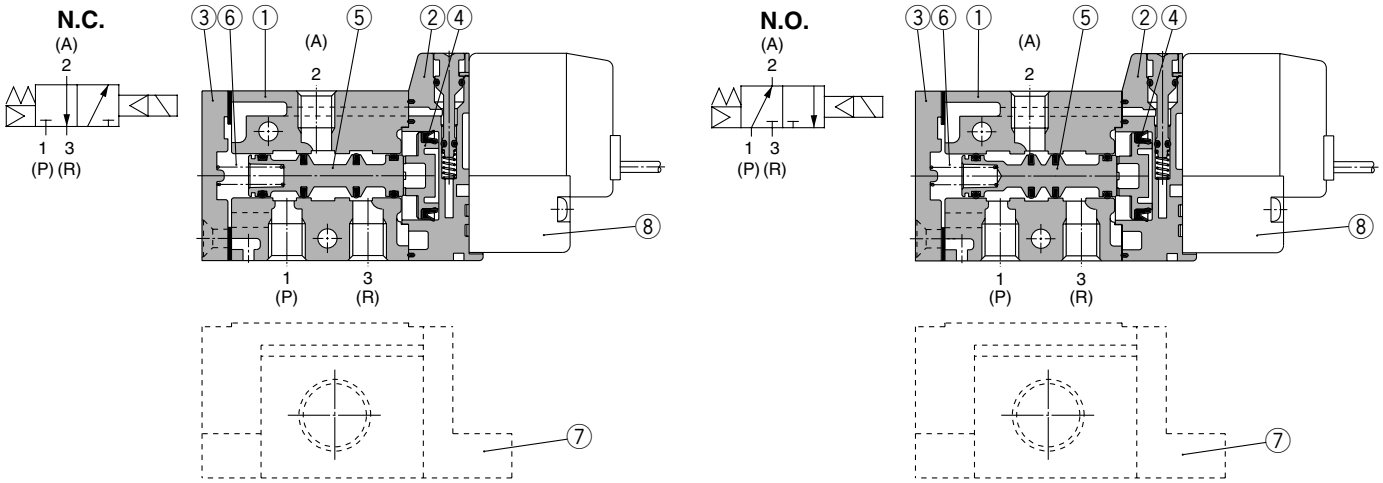
Electrical entry

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 **Y:** 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 **YO:** Without connector	**W□:** With connector cable Note 1)
CE compliant DC: ●	●		●	●	●
CE compliant AC: —	—		—	●	—

Note) When placing an order for body ported solenoid valve as a single unit, mounting screws for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 1393.)
∗ LN, MN type: with 2 sockets.
∗ Refer to page 1425 for the lead wire length of L and M plug connectors.
∗ Refer to page 1428 for the connector assembly with cover for L and M plug connectors.
∗ DIN terminal type "Y" which conforms to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 1427.
∗ For connector cable of M8 connector, refer to page 1429.
∗ A M8 connector conforming to IEC60947-5-2 is also available. Refer to page 1422 for details.
Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 1429.

SMC

Construction



Component Parts

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

Replacement Parts

No.	Description	Part no.	Note
7	**Sub-plate** Note)	SYJ500-9-1(-Q)	Aluminum die-cast
8	**Pilot valve**	V111(T)-□□□□	
—	**Bracket assembly**	SYJ5000-13-3A	

Note) Add suffix "-Q" for the CE-compliant product.

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.
∗ CE-compliant: For DC only.

Light/surge voltage suppressor

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

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

Electrical entry

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

∗ For connector cable of M8 connector, refer to page 1429.
Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 1429.

V115 — 5 D □

Light/surge voltage suppressor

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

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

Electrical entry

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

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

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]

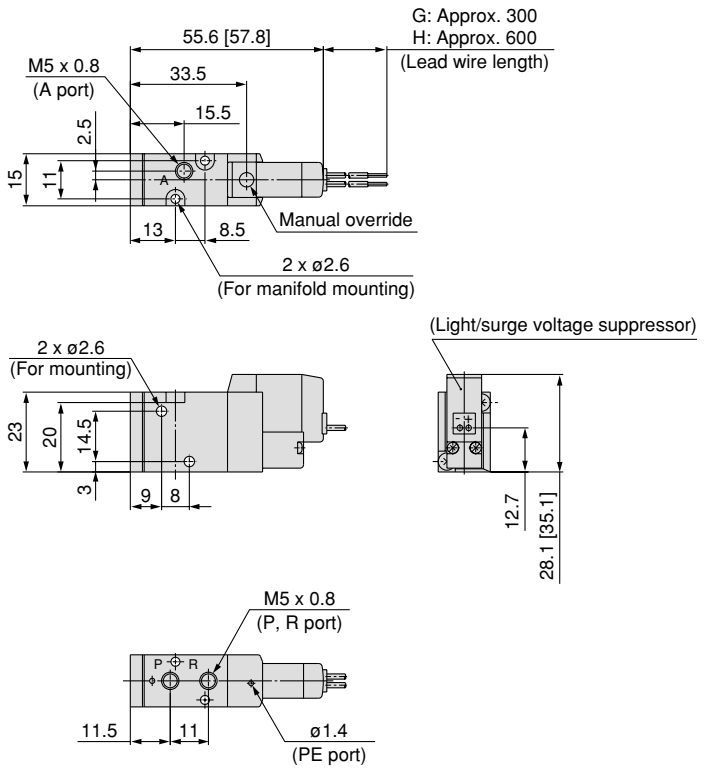
∗ DC specifications of type D and DO is only available with 12 and 24 VDC.
∗ Power saving circuit is not available in the case of D or DO type.

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

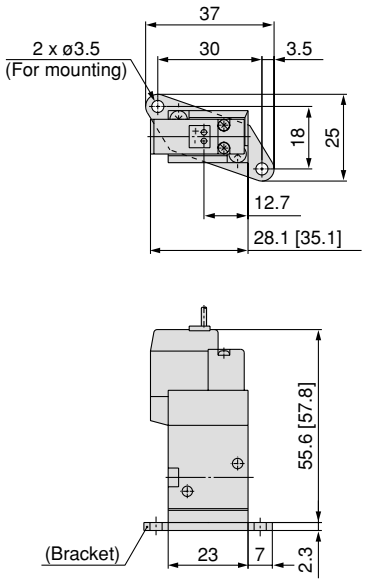
Body Ported

∗ [ ] for AC

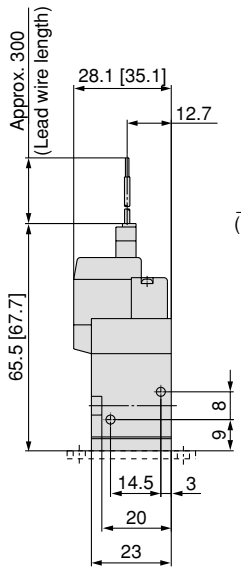
Grommet (G), (H): SYJ5□2-□$^{G}_{H}$□□-M5



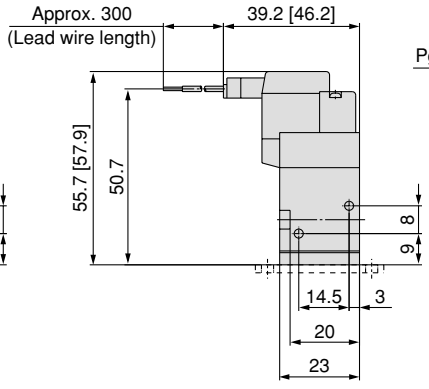
With bracket: SYJ5□2-□$^{G}_{H}$□□-M5-F



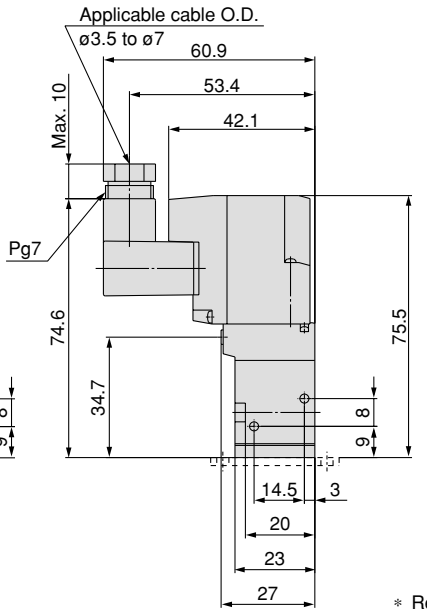
L plug connector (L): SYJ5□2-□L□□-M5 (-F)



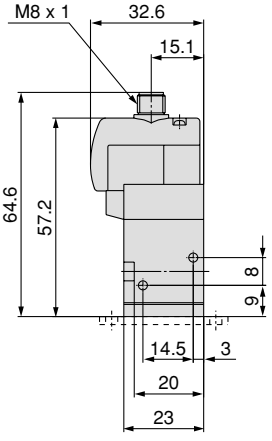
M plug connector (M): SYJ5□2-□M□□-M5 (-F)



DIN terminal (D,Y): SYJ5□2-□$^{D}_{Y}$□□-M5 (-F)



M8 connector (WO): SYJ5□2-□WO□□-M5 (-F)

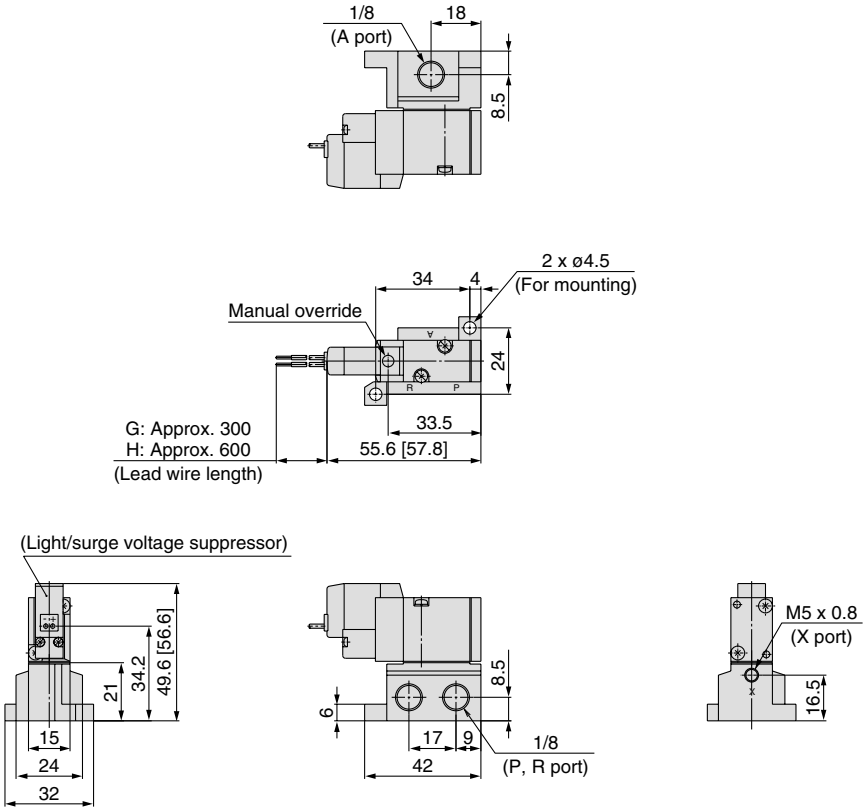


∗ Refer to page 1429 for dimensions with connector cable.

Base Mounted (With Sub-plate)

∗ [ ] for AC

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

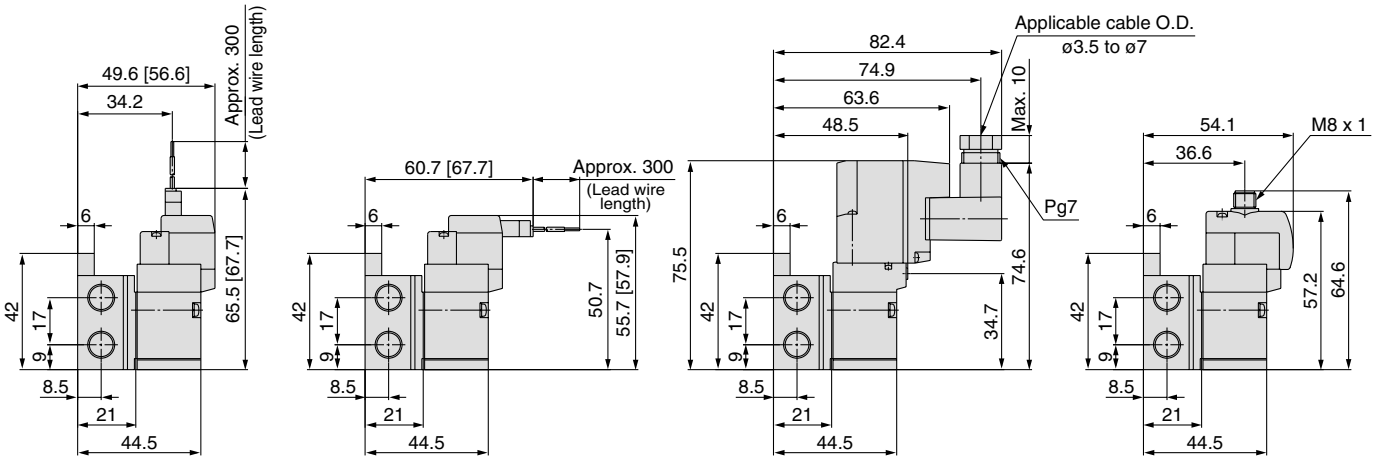


L plug connector (L): SYJ5□4-□L□□-01□

M plug connector (M): SYJ5□4-□M□□-01□

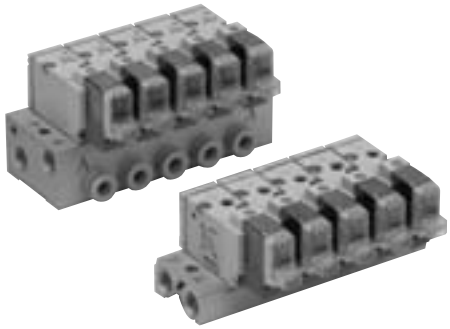
DIN terminal (D, Y): SYJ5□4-□$^{D}_{Y}$□□-01□

M8 connector (WO): SYJ5□4-□WO□□-01□



∗ Refer to page 1429 for dimensions with connector cable.

Series SYJ500
Manifold Specifications



Manifold Specifications

Model	For internal pilot	Type 20	Type 40	Type 41
	For external pilot	Type 21R	Type 40R	Type 41R
Manifold type		Single base/B mount		
P (SUP), R (EXH)		Common SUP, common EXH		
Valve stations		2 to 20 stations		
A port Porting specifications	Location	Valve	Base	
	Direction	Top	Bottom	Side
Port size	P, R port	1/8	1/8	1/8
	A port	M5 x 0.8	M5 x 0.8 1/8	M5 x 0.8, 1/8, C4 (One-touch fitting for ø4), C6 (One-touch fitting for ø6)
	X port Note)	M5 x 0.8	M5 x 0.8	M5 x 0.8

Note) Only for external pilot

Flow Characteristics

Manifold			Port size		Flow characteristics					
					1→2 (P→A)			2→3 (A→R)		
			1(P), 3(R) port	2(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported for internal pilot	Type SS3YJ5-20	SYJ5□2	1/8	M5 x 0.8	0.47	0.43	0.13	0.74	0.32	0.19
Base mounted for internal pilot	Type SS3YJ5-40-M5	SYJ5□4	1/8	M5 x 0.8	0.71	0.52	0.21	0.81	0.28	0.20
	Type SS3YJ5-40-01		1/8	1/8	0.98	0.36	0.25	0.92	0.24	0.22
	Type SS3YJ5-41-M5		1/8	M5 x 0.8	0.71	0.49	0.20	0.80	0.23	0.19
	Type SS3YJ5-41-01		1/8	1/8	1.0	0.37	0.26	0.96	0.25	0.24
	Type SS3YJ5-41-C4		1/8	C4	0.68	0.35	0.17	1.0	0.25	0.24
	Type SS3YJ5-41-C6		1/8	C6	1.0	0.27	0.25	1.0	0.30	0.26
Body ported for external pilot	Type SS3YJ5-21R	SYJ5□2R	1/8	M5 x 0.8	0.47	0.43	0.13	0.74	0.32	0.19
Base mounted for external pilot	Type SS3YJ5-40R-M5	SYJ5□4R	1/8	M5 x 0.8	0.71	0.52	0.21	0.81	0.28	0.20
	Type SS3YJ5-40R-01		1/8	1/8	0.98	0.36	0.25	0.92	0.24	0.22
	Type SS3YJ5-41R-M5		1/8	M5 x 0.8	0.71	0.49	0.20	0.80	0.23	0.19
	Type SS3YJ5-41R-01		1/8	1/8	1.0	0.37	0.26	0.96	0.25	0.24
	Type SS3YJ5-41R-C4		1/8	C4	0.68	0.35	0.17	1.0	0.25	0.24
	Type SS3YJ5-41R-C6		1/8	C6	1.0	0.27	0.25	1.0	0.30	0.26

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.

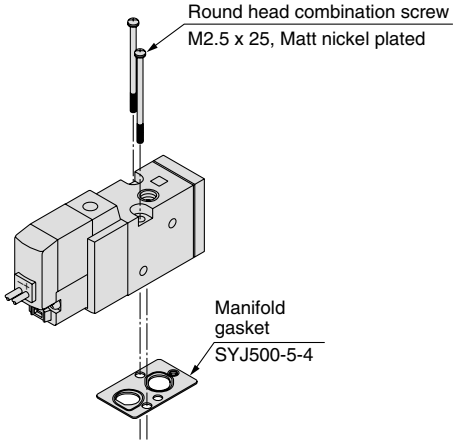
(Example)

SS3YJ5-20-03 ····· **1 set (manifold base)**
✻SYJ512-5LZ-M5 ····· **2 sets (valve)**
✻SYJ500-10-1A ····· **1 set (blanking plate assembly)**
SS3YJ5-41R-03-C6 ···· **1 set (manifold base)**
SYJ514R-5G ····· **2 sets (valve)**
SYJ500-10-3A ····· **1 set (blanking plate assembly)**

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

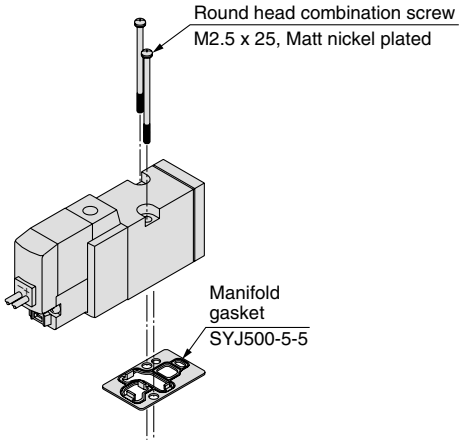
Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

Body ported (Type SYJ5□2(R)(-Q))



Applicable base
Type SS3YJ5-21R(-Q)
Type SS3YJ5-20(-Q)
Manifold base

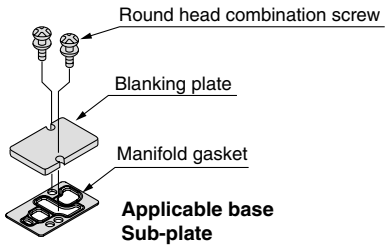
Base mounted (Type SYJ5□4(R)(-Q))



Applicable base
Sub-plate
Type SS3YJ5-40(-Q)
Type SS3YJ5-41(-Q)
Type SS3YJ5-40R(-Q)
Type SS3YJ5-41R(-Q)
} Manifold base

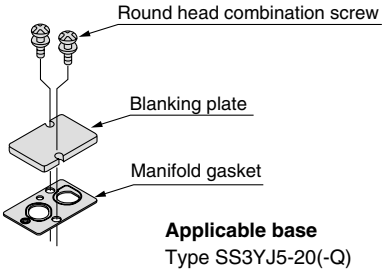
Blanking Plate Assembly

Part no.: SYJ500-10-3A(-Q)



Applicable base
Sub-plate
Type SS3YJ5-40(-Q)
Type SS3YJ5-41(-Q)
Type SS3YJ5-40R(-Q)
Type SS3YJ5-41R(-Q)
} Manifold base

Part no.: SYJ500-10-1A(-Q)



Applicable base
Type SS3YJ5-20(-Q)
Type SS3YJ5-21R(-Q)

Note) Add suffix "-Q" for the CE-compliant product.

⚠ Caution

Mounting screw tightening torques

M2.5: 0.45 N·m

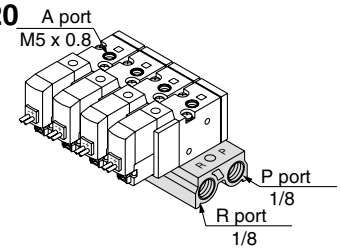
Use caution to the assembly orientation for solenoid valves (blanking plate) and manifold gasket.

Note) AC-type models that are CE compliant have DIN terminals only.

CE [Option]

Manifold for Internal Pilot Type

Type 20



How to Order

SS3YJ5 – 20 – 05 – □ – □ – □

Stations

02	2 Stations
:	:
20	20 Stations

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Bracket

Nil	Without bracket
F	With bracket

CE complaint

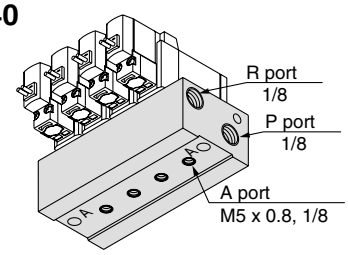
Nil	—
Q	CE complaint

Applicable solenoid valve
SYJ512-□□□□-M5(-Q)
SYJ512M-□□□□-M5(-Q)
SYJ522-□□□□-M5(-Q)
SYJ522M-□□□□-M5(-Q)

Applicable blanking plate assembly
Refer to page 1393.

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

Type 40



How to Order

SS3YJ5 – 40 – 05 M5 – □ – □

Stations

02	2 Stations
:	:
20	20 Stations

A port size

M5	M5 x 0.8
01	1/8

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

CE complaint

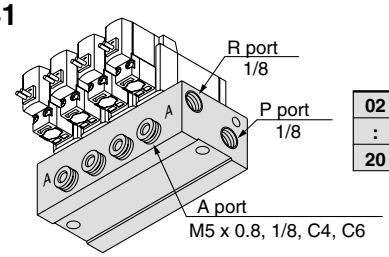
Nil	—
Q	CE complaint

Applicable solenoid valve
SYJ514-□□□□(-Q)
SYJ514M-□□□□(-Q)
SYJ524-□□□□(-Q)
SYJ524M-□□□□(-Q)

Applicable blanking plate assembly
Refer to page 1393.

Note) For more than 9 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 41



How to Order

SS3YJ5 – 41 – 05 – C6 □ – □

Stations

02	2 Stations
:	:
20	20 Stations

A port size

M5	M5 x 0.8
01	1/8
C4	ø4 one-touch fitting
C6	ø6 one-touch fitting
N3	ø5/32" one-touch fitting
N7	ø1/4" one-touch fitting

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

CE complaint

Nil	—
Q	CE complaint

Applicable solenoid valve
SYJ514-□□□□(-Q)
SYJ514M-□□□□(-Q)
SYJ524-□□□□(-Q)
SYJ524M-□□□□(-Q)

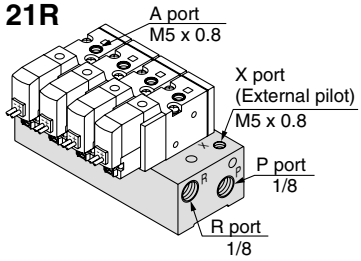
Applicable blanking plate assembly
Refer to page 1393.

Note) For more than 9 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Manifold for External Pilot Type

Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port.
It can be used in the vacuum (up to –100 kPa) or low pressure line with 0.15 MPa or less.

Type 21R



How to Order

SS3YJ5 – 21R – 05 – □ – □

Stations

02	2 Stations
:	:
20	20 Stations

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

CE complaint

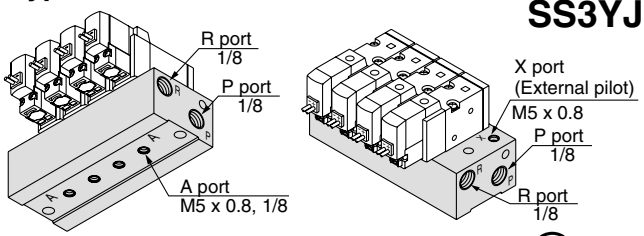
Nil	—
Q	CE complaint

Applicable solenoid valve
SYJ512R-□□□□-M5(-Q)
SYJ522R-□□□□-M5(-Q)

Applicable blanking plate assembly
Refer to page 1393.

Note) For more than 9 stations, supply/exhaust air to/from both sides of P and R port.

Type 40R



How to Order

SS3YJ5 – 40R – 05 – 01 □ – □

Stations

02	2 Stations
:	:
20	20 Stations

A port size

M5	M5 x 0.8
01	1/8

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

CE complaint

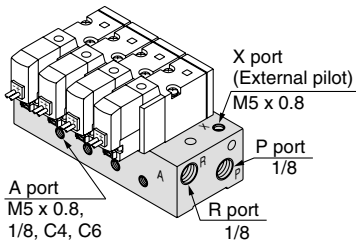
Nil	—
Q	CE complaint

Applicable solenoid valve
SYJ514R-□□□□(-Q)
SYJ524R-□□□□(-Q)

Applicable blanking plate assembly
Refer to page 1393.

Note) For more than 9 stations, supply/exhaust air to/from both sides of P and R port.

Type 41R



How to Order

SS3YJ5 – 41R – 05 – M5 □ – □

Stations

02	2 Stations
:	:
20	20 Stations

A port size

M5	M5 x 0.8
01	1/8
C4	ø4 one-touch fitting
C6	ø6 one-touch fitting
N3	ø5/32" one-touch fitting
N7	ø1/4" one-touch fitting

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

CE complaint

Nil	—
Q	CE complaint

Applicable solenoid valve
SYJ514R-□□□□(-Q)
SYJ524R-□□□□(-Q)

Applicable blanking plate assembly
Refer to page 1393.

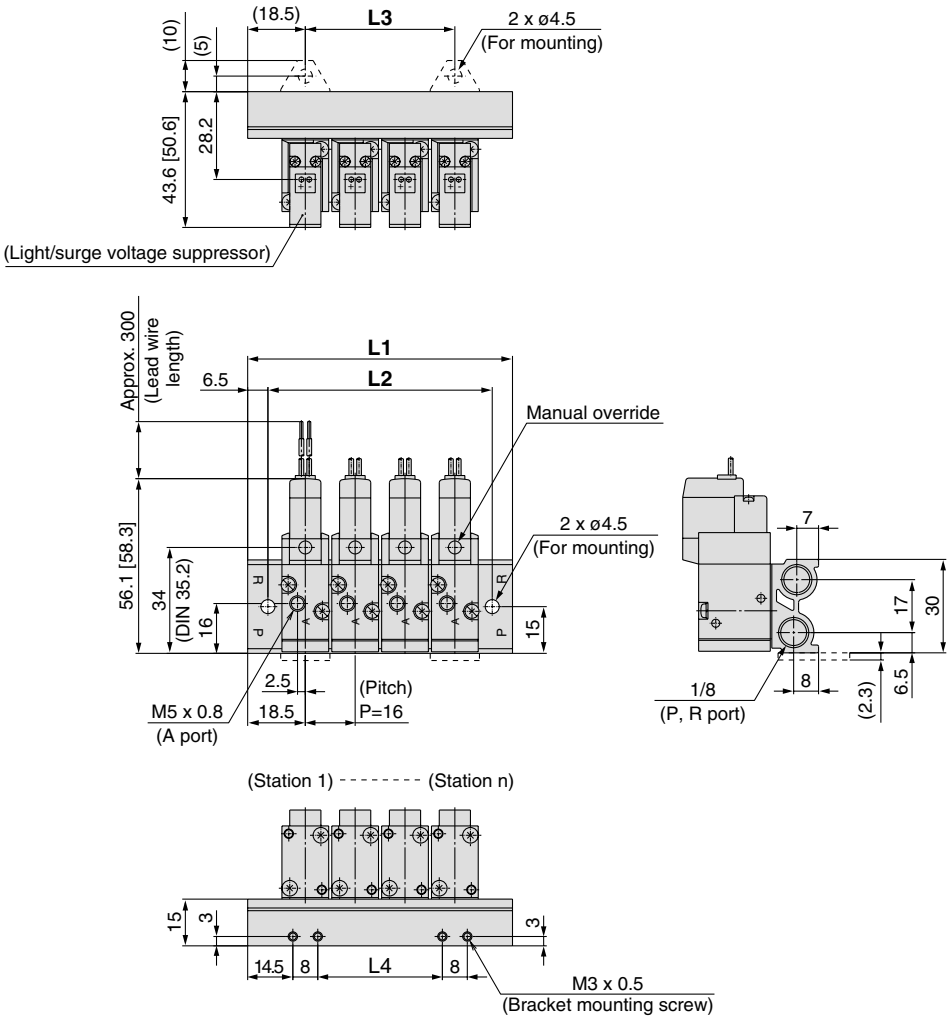
Note) For more than 9 stations, supply/exhaust air to/from both sides of P and R port.

SMC

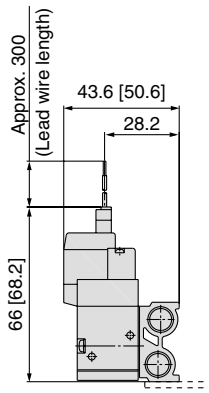
Type 20 Manifold: Top Ported/SS3YJ5-20-[Stations]-00□(-F)

∗ [ ] for AC

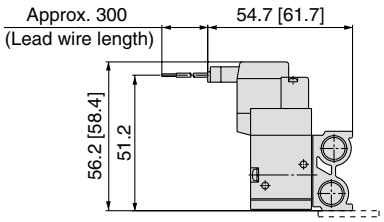
Grommet (G)



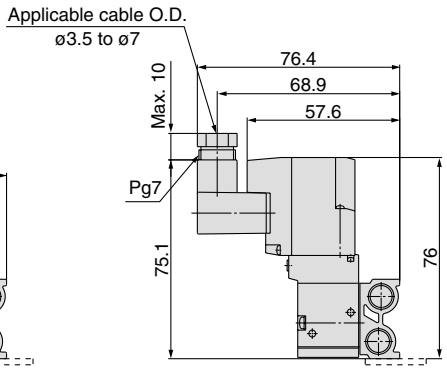
L plug connector (L)



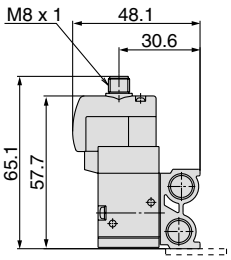
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)



∗ Refer to page 1429 for dimensions with connector cable.

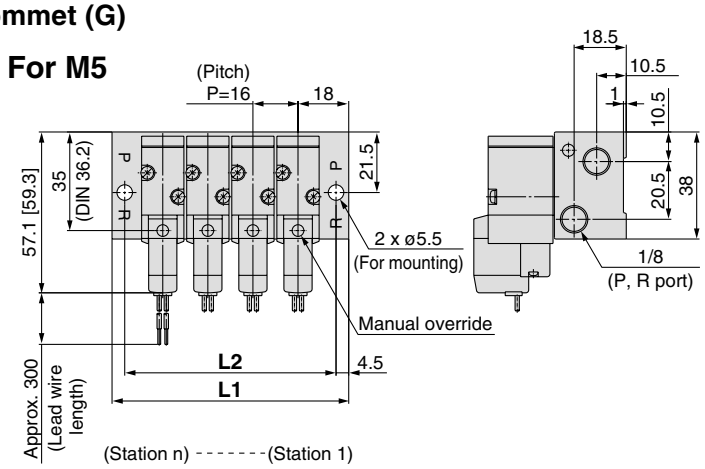
Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	53	69	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309	325	341
L2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328
L3	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
L4	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296

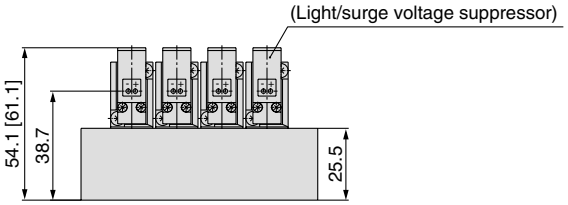
Type 40 Manifold: Top Ported/SS3YJ5-40-Stations-M5, 01□

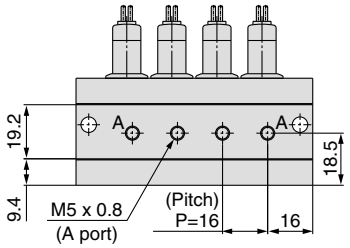
＊[ ] for AC

Grommet (G)

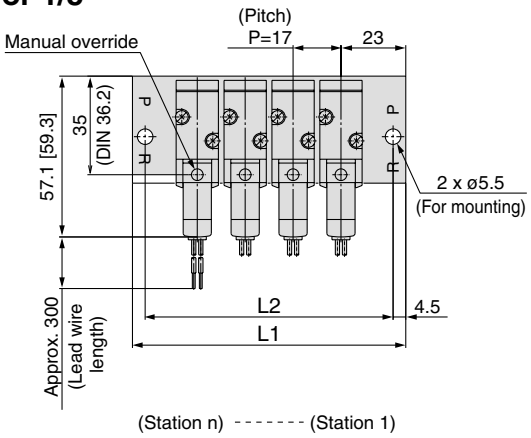
For M5

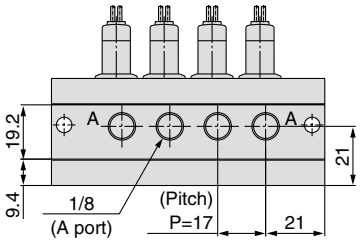




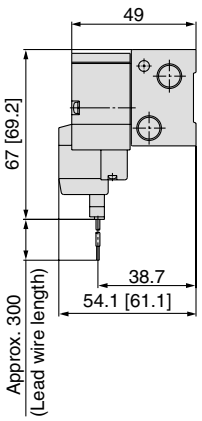


For 1/8

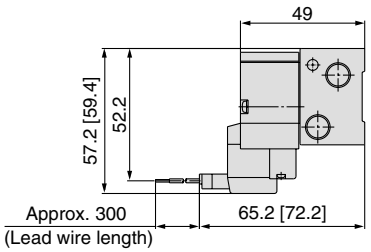




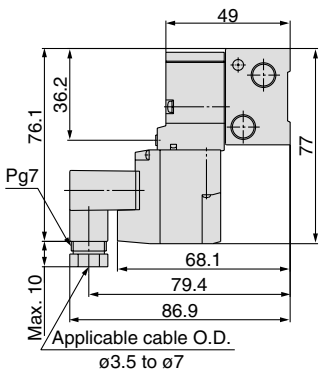
L plug connector (L)



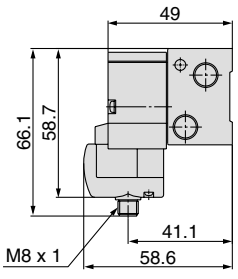
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)



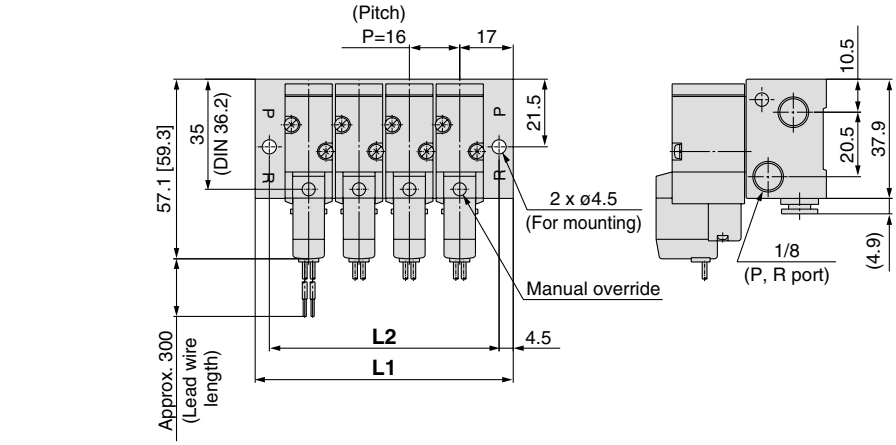
＊ Refer to page 1429 for dimensions with connector cable.

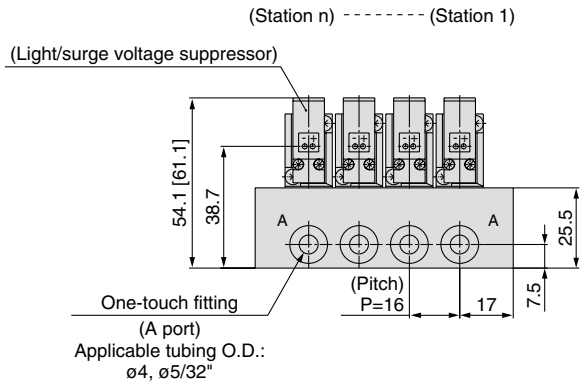
Port size	Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
M5	L1	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
	L2	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331
1/8	L1	63	80	97	114	131	148	165	182	199	216	233	250	267	284	301	318	335	352	369
	L2	54	71	88	105	122	139	156	173	190	207	224	241	258	275	292	309	326	343	360

Type 41 Manifold: Side Ported/SS3YJ5-41-Stations-C4, N3 C6, N7 □

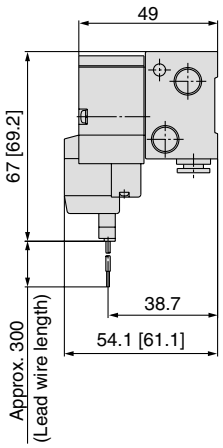
＊[ ] for AC

Grommet (G)

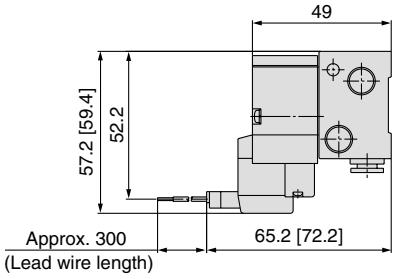




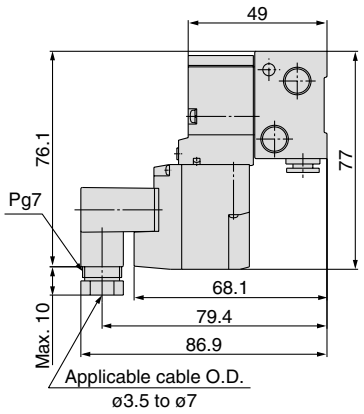
L plug connector (L)



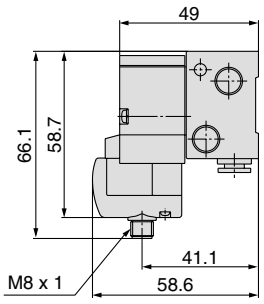
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)



＊ Refer to page 1429 for dimensions with connector cable.

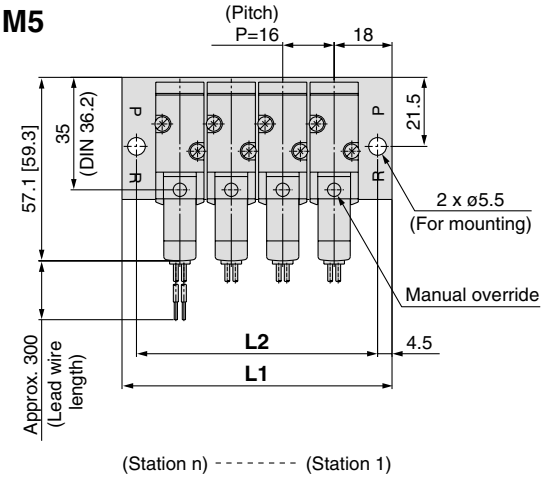
Port size	Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
One-touch fitting	**L1**	50	66	82	98	114	130	146	162	178	194	210	226	242	258	274	290	306	322	338
	L2	41	57	73	89	105	121	137	153	169	185	201	217	233	249	265	281	297	313	329

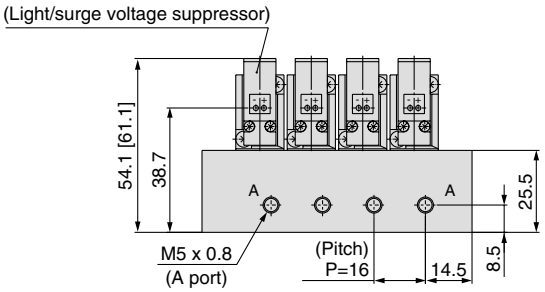
Type 41 Manifold: Side Ported/SS3YJ5-41-Stations-M5, 01□

∗ [ ] for AC

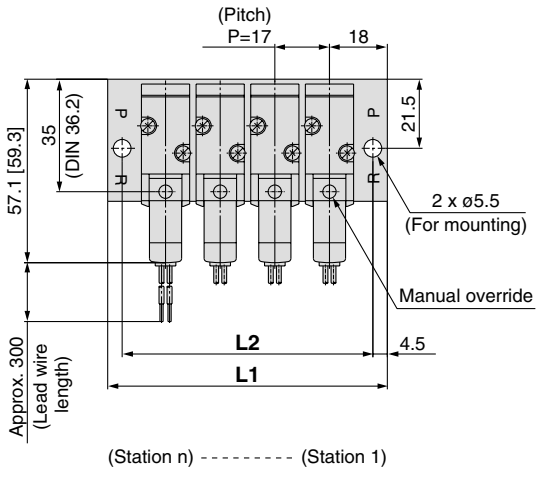
Grommet (G)

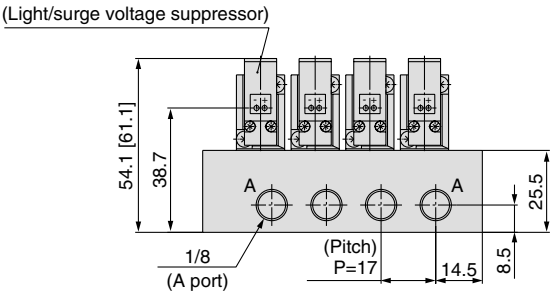
For M5





For 1/8



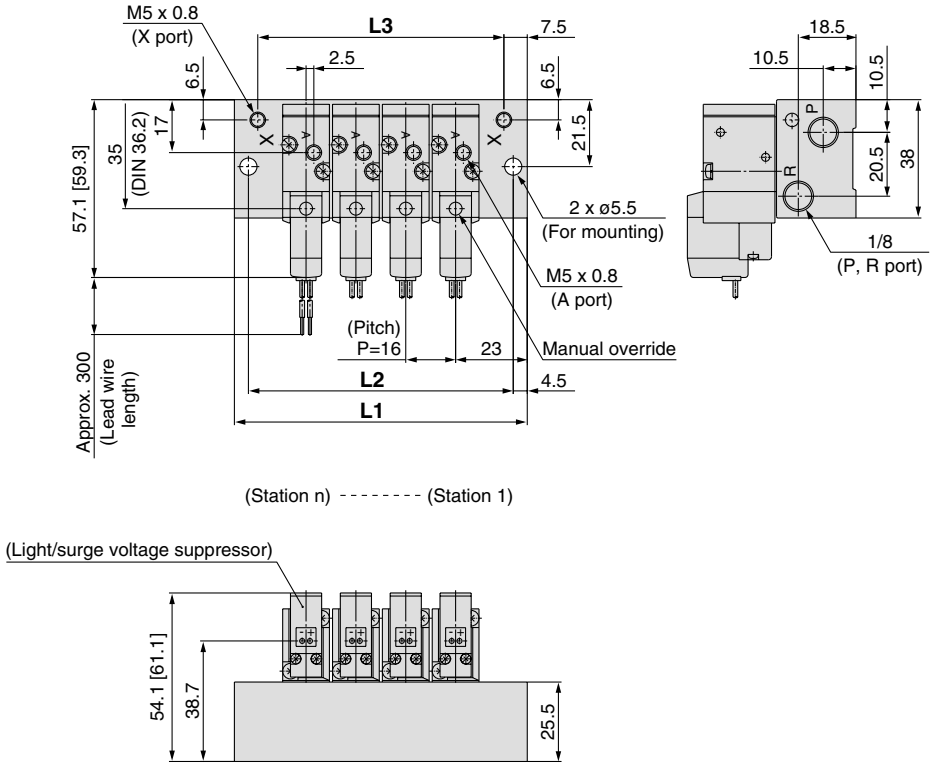


Port size	Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
M5	**L1**	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
	L2	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331
1/8	**L1**	53	70	87	104	121	138	155	172	189	206	223	240	257	274	291	308	325	342	359
	L2	44	61	78	95	112	129	146	163	180	197	214	231	248	265	282	299	316	333	350

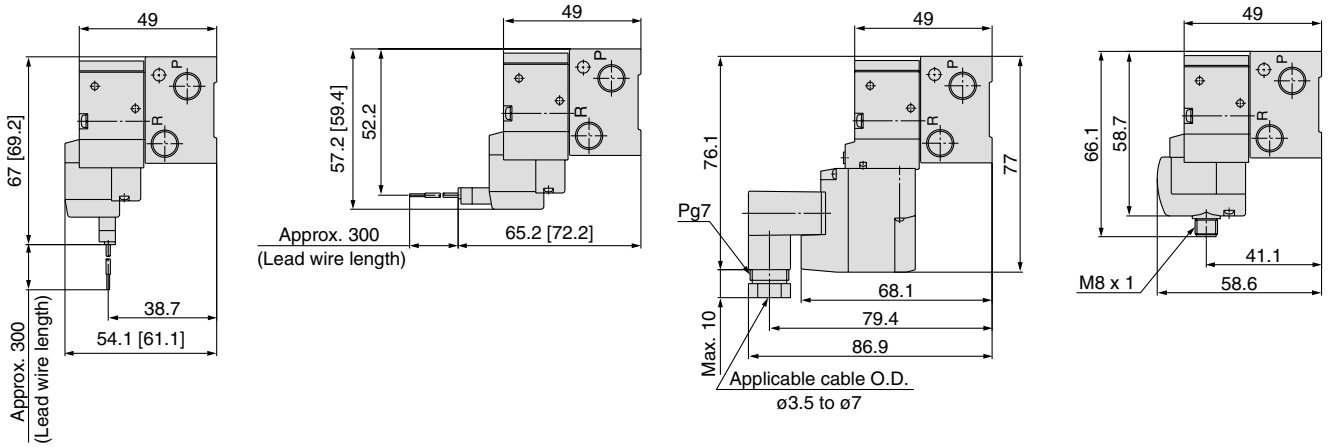
Type 21R Manifold: Top Ported (External Pilot Type)/SS3YJ5-21R-Stations-00□

∗ [ ] for AC

Grommet (G)



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



∗ Refer to page 1429 for dimensions with connector cable.

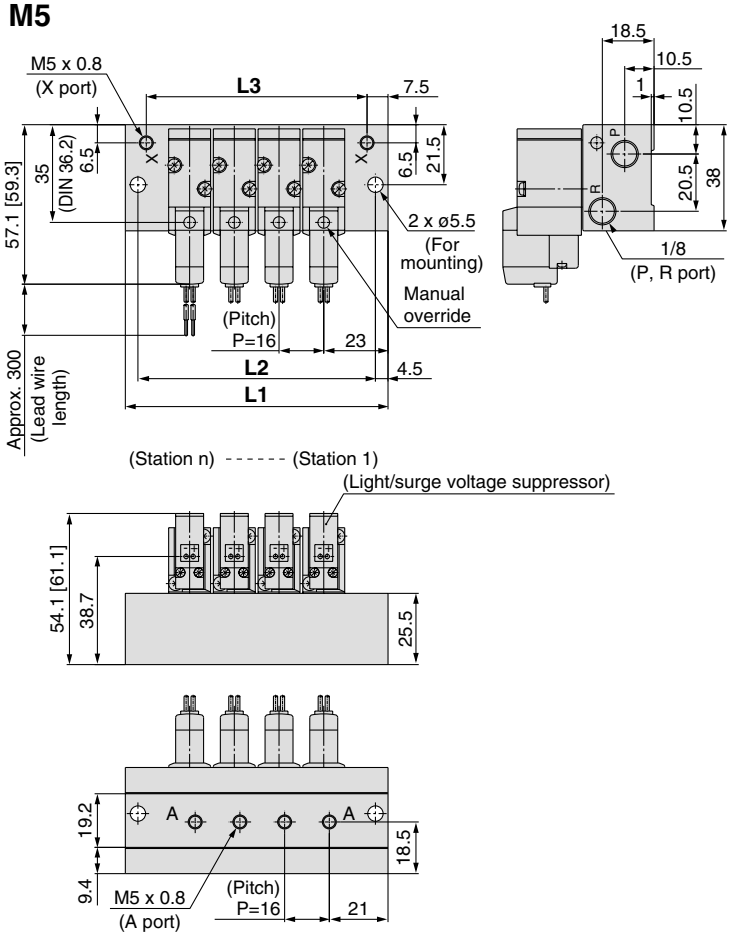
Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	62	78	94	110	126	142	158	174	190	206	222	238	254	270	286	302	318	334	350
L2	53	69	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309	325	341
L3	47	63	79	95	111	127	143	159	175	191	207	223	239	255	271	287	303	319	335

Type 40R Manifold: Bottom Ported (External Pilot Type)/SS3YJ5-40R-Stations-M5, 01□

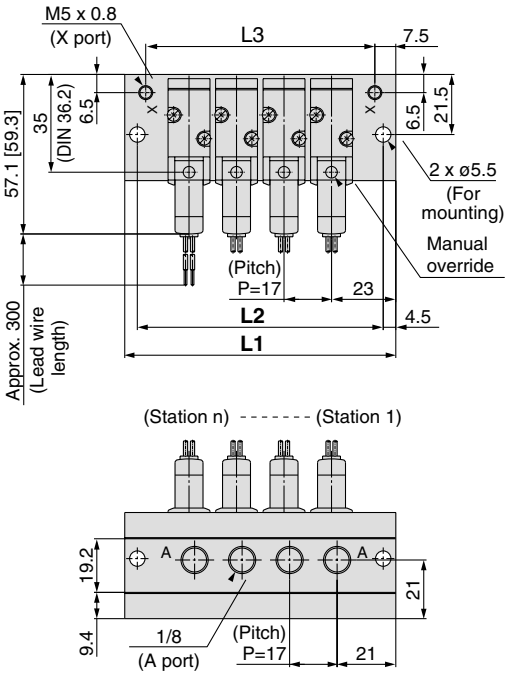
∗ [ ] for AC

Grommet (G)

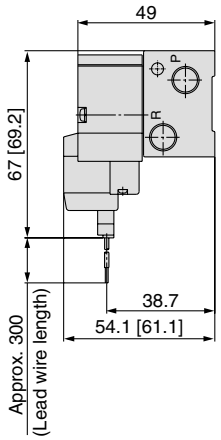
For M5



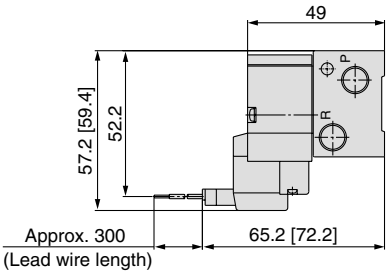
For 1/8



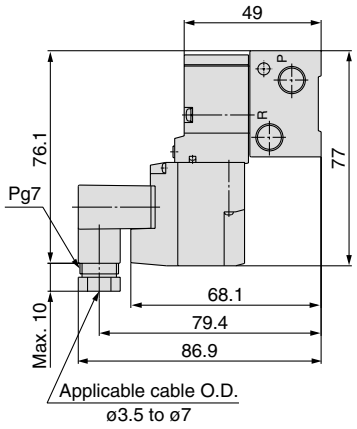
L plug connector (L)



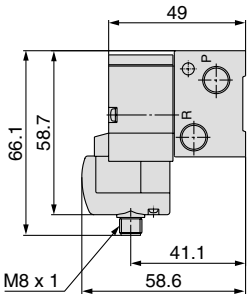
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)



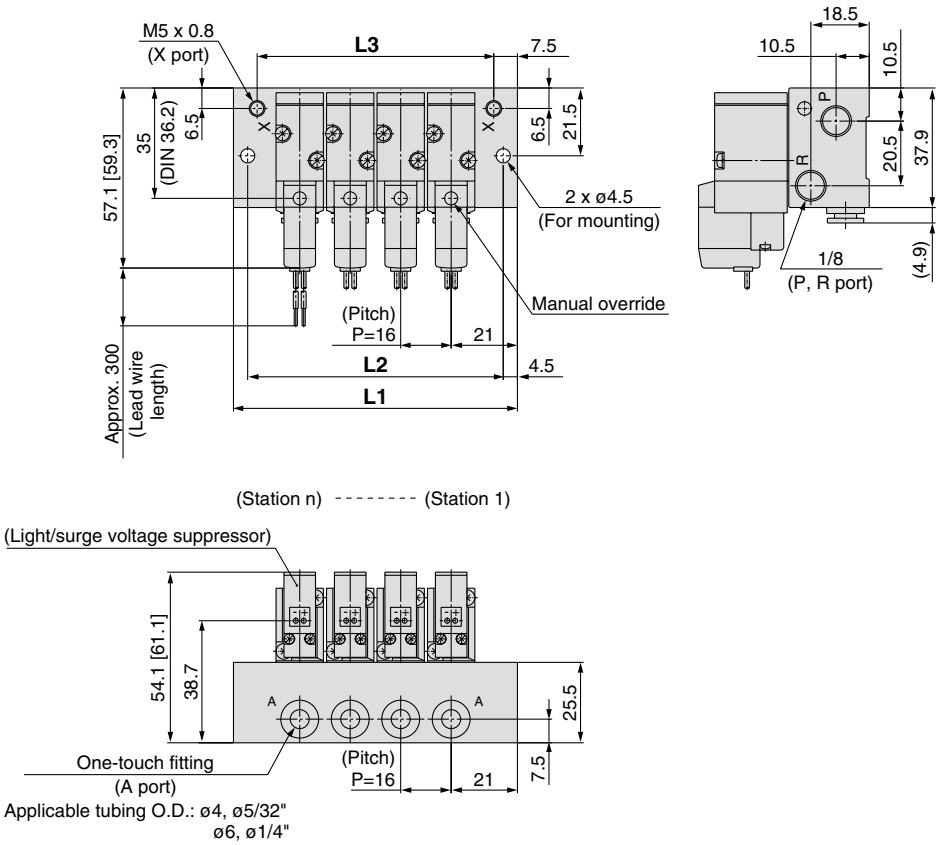
∗ Refer to page 1429 for dimensions with connector cable.

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
M5	L1	62	78	94	110	126	142	158	174	190	206	222	238	254	270	286	302	318	334	350
	L2	53	69	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309	325	341
	L3	47	63	79	95	111	127	143	159	175	191	207	223	239	255	271	287	303	319	335
1/8	L1	63	80	97	114	131	148	165	182	199	216	233	250	267	284	301	318	335	352	369
	L2	54	71	88	105	122	139	156	173	190	207	224	241	258	275	292	309	326	343	360
	L3	48	65	82	99	116	133	150	167	184	201	218	235	252	269	286	303	320	337	354

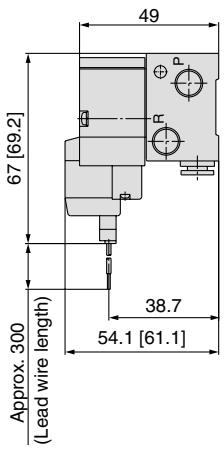
Type 41R Manifold: Side Ported (External Pilot Type)/SS3YJ5-41R-[Stations]-C4, N3 C6, N7 □

＊[ ] for AC

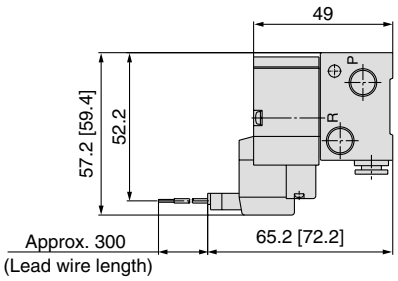
Grommet (G)



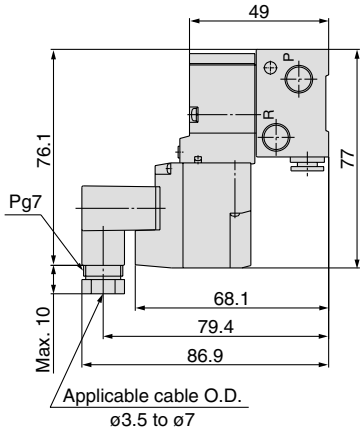
L plug connector (L)



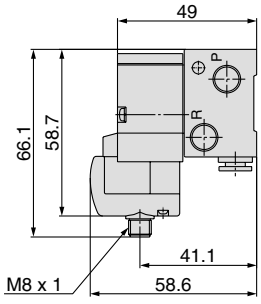
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)



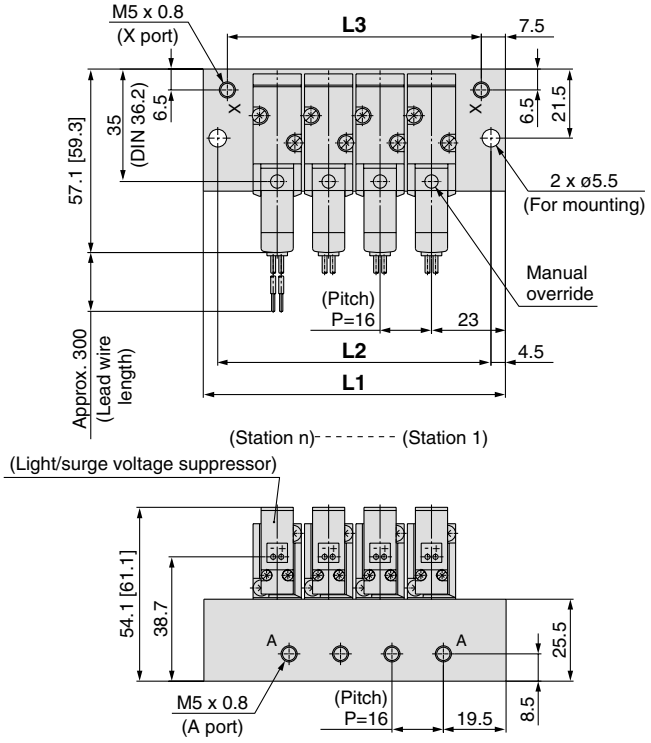
＊ Refer to page 1429 for dimensions with connector cable.

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
One-touch fitting	**L1**	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330	346
	L2	49	65	81	97	113	129	145	161	177	193	209	225	241	257	273	289	305	321	337
	L3	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331

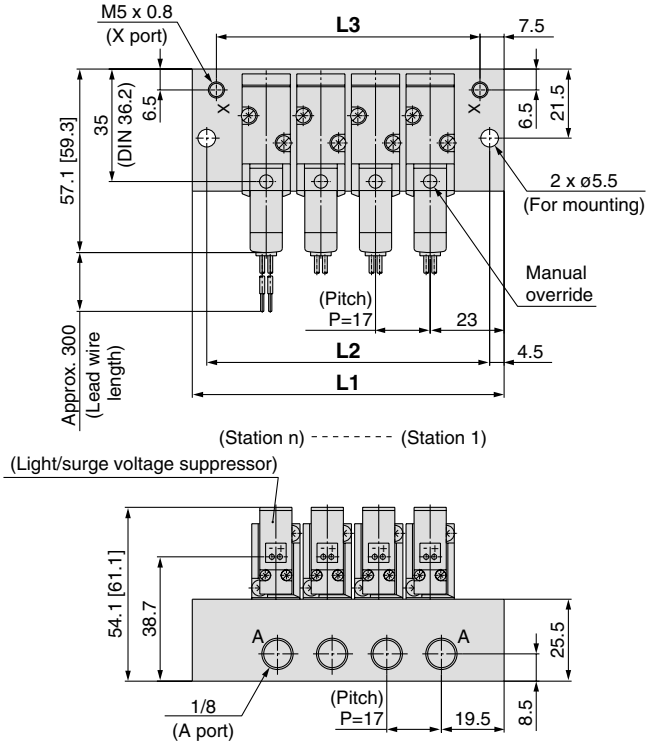
Type 41R Manifold: Side Ported (External Pilot Type)/SS3YJ5-41R-Stations-M5, 01□

* [ ] for AC

For M5

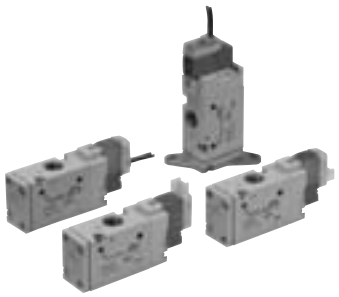


For 1/8

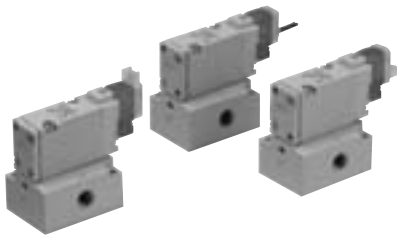


Port size	Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
M5	**L1**	62	78	94	110	126	142	158	174	190	206	222	238	254	270	286	302	318	334	350
	L2	53	69	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309	325	341
	L3	47	63	79	95	111	127	143	159	175	191	207	223	239	255	271	287	303	319	335
1/8	**L1**	63	80	97	114	131	148	165	182	199	216	233	250	267	284	301	318	335	352	369
	L2	54	71	88	105	122	139	156	173	190	207	224	241	258	275	292	309	326	343	360
	L3	48	65	82	99	116	133	150	167	184	201	218	235	252	269	286	303	320	337	354

Rubber Seal
3 Port Pilot Solenoid Valve
Series SYJ700



Body ported

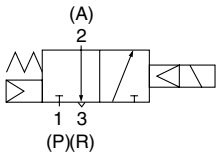


Base mounted

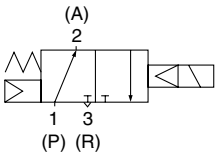
JIS Symbol

Internal pilot

SYJ71$^{2}_{4}$

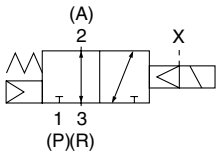


SYJ72$^{2}_{4}$

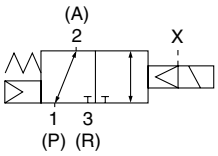


External pilot

SYJ71$^{2}_{4}$R



SYJ72$^{2}_{4}$R



Specifications

Fluid		Air
Operating pressure range (MPa)	**Internal pilot**	0.15 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (No freezing.)
Response time ms (at 0.5 MPa) Note 1)		30 or less
Max. operating frequency (Hz)		5
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: IP65)

∗ Based on IEC60529

Note 1) Based on dynamic performance test, JIS B 8374-1981. (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 at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Value in the initial state)

Solenoid Specifications

Electrical entry			Grommet (G), (H), L plug connector (L), M plug connector (M), DIN terminal (D), (Y), M8 connector (W)	
			G, H, L, M, W	D, Y
Coil rated voltage (V)	**DC**		24, 12, 6, 5, 3	24, 12
	AC 50/60 Hz		100, 110, 200, 220	
Allowable voltage fluctuation			±10% of rated voltage ∗	
Power consumption (W)	**DC**	**Standard**	0.35 (With 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%

Made to Order
(For details, refer to pages 1422 to 1423.)

Flow Characteristics/Mass

Valve model		Type of actuation	Port size	Flow characteristics						Mass (g) Note)			
				1→2 (P→A)			2→3 (A→R)			Grommet	L/M plug connector	DIN terminal	M8 connector
				C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv				
Body ported	**SYJ712**	N.C.	1/8	2.8	0.43	0.77	2.5	0.51	0.76	75	76	97	80
	SYJ722	N.O.		2.7	0.38	0.72	2.4	0.42	0.69				
Base mounted (with sub-plate)	**SYJ714**	N.C.	1/8	2.9	0.32	0.71	2.7	0.34	0.69	135 (75)	136 (76)	157 (97)	140 (80)
	SYJ724	N.O.		2.8	0.21	0.70	2.3	0.45	0.63				
	SYJ714	N.C.	1/4	3.0	0.31	0.74	2.6	0.33	0.66				
	SYJ724	N.O.		2.7	0.31	0.68	2.3	0.48	0.64				

Note) Value for DC. Add 3 g for AC. ( ): Without sub-plate.

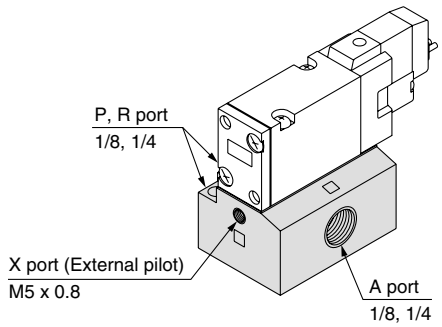
External Pilot

SYJ700R

Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port.
It can be used in the vacuum (up to –100 kPa) or low pressure line with 0.15 MPa or less.

Specifications

Applicable model	Base mounted **(SYJ714R, SYJ724R)**	
Operating pressure range MPa	Main pressure	–100 kPa to 0.7
	External pilot pressure	0.15 to 0.7



Note 1) For manifold base, refer to page 1410.
Note 2) External pilot type body ported valves (SYJ7□2R) can only be used on the manifold.
For body ported models with the external pilot option, please refer to page 1423.

How to Order

Note) AC-type models that are CE compliant have DIN terminals only.

CE [Option]

Body ported SYJ7 **1** **2** □ □ – **5** **M** □ □ – **01** □ – □ – □ – □

Base mounted SYJ7 **1** **4** □ □ – **5** **M** □ □ – **01** □ – □

Rated voltage

DC

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

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

AC (50/60 Hz)

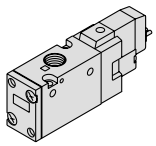
1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

∗ For type W□, DC voltage is only available.
Note) AC-type models that are CE compliant have DIN terminals only.

Type of actuation

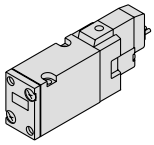
1	Normally closed
2	Normally open

3 port



(For manifold type 20, 21R)

3 port



For sub-plate style, mainfold type 40, 41, 41R, 42, 42R

Light/surge voltage suppressor

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

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

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

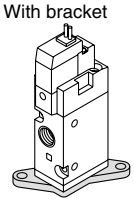
Electrical entry for D, Y

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

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

Bracket

Nil: Without bracket
F : With bracket



∗ Bracket is not mounted.
∗ External pilot type is compatible with the Made-to-Order specifications (-X20).

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Made to Order

Nil	–
X20	Body ported external pilot

(Refer to page 1423.)

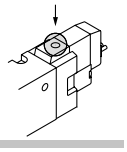
Coil specifications

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

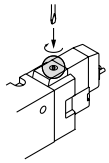
∗ Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

Manual override

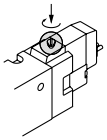
Nil: Non-locking push type



D: Push-turn locking slotted type



E: Push-turn locking lever type



Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

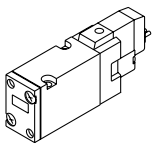
CE complaint

Nil	—
Q	CE complaint

Note) AC-type models that are CE compliant have DIN terminals only.

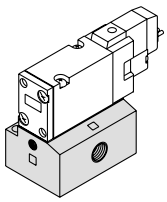
Port size

Nil: Without sub-plate

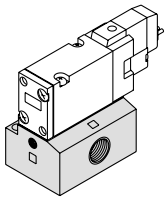


(With gasket and screws)

01: 1/8 port With sub-plate

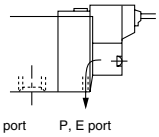


02: 1/4 port With sub-plate

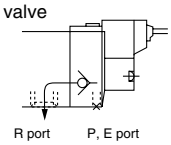


Body option

Nil: Individual pilot exhaust type



M: Common exhaust for the pilot and main valve

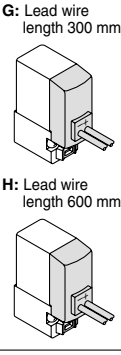


R: External pilot type∗

∗ SYJ7□2R is only for manifold use.

Electrical entry

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

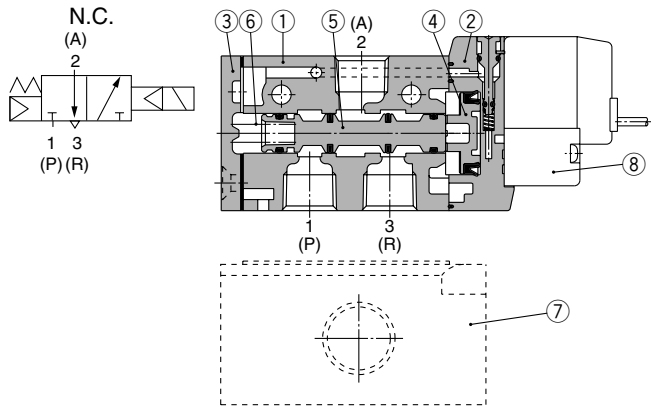


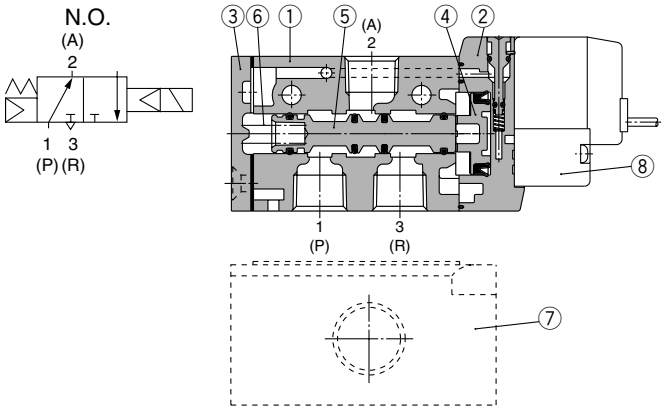
CE compliant						
	DC	●	●	●	●	●
	AC	—	—	—	●	—

Note) When placing an order for body ported solenoid valve as a single unit, mounting screws for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 1411.)
∗ LN, MN type: with 2 sockets.
∗ Refer to page 1425 for the lead wire length of L and M plug connectors.
∗ Refer to page 1428 for the connector assembly with cover for L and M plug connectors.
∗ DIN terminal type "Y" which conforms to EN-175301-803C (former DIN4365C) is also available. For details, refer to page 1427.
∗ For connector cable of M8 connector, refer to page 1429.
∗ A M8 connector conforming to IEC60947-5-2 is also available. Refer to page 1422 for details.
Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 1429.

SMC

Construction





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**	—	—
6	**Spool spring**	Stainless steel	—

Replacement Parts

No.	Description	Part no.	Note	
7	**Sub-plate** Note)	SYJ700-9-1(-Q)	1/8	Aluminum die-casted
		SYJ700-9-2(-Q)	1/4	
8	**Pilot valve**	V111(T)-□□□□		
—	**Bracket assembly**	SYJ700-19-1A		

Note) Add suffix "-Q" for the CE-compliant product.

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.
∗ CE-compliant: For DC only.

Light/surge voltage suppressor

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

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

Electrical entry

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

∗ For connector cable of M8 connector, refer to page 1429.
Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 1429.

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

Electrical entry

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

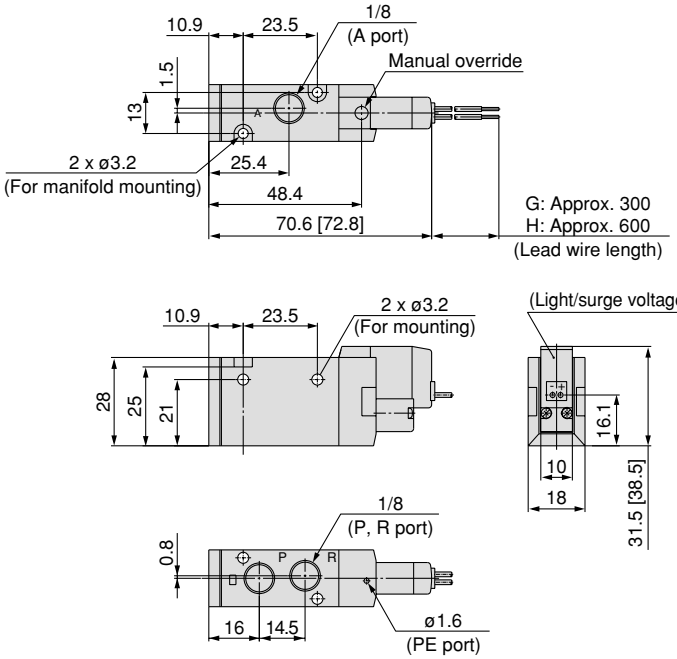
∗ Do not replace V111 (G, H, L, M, W) to V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

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

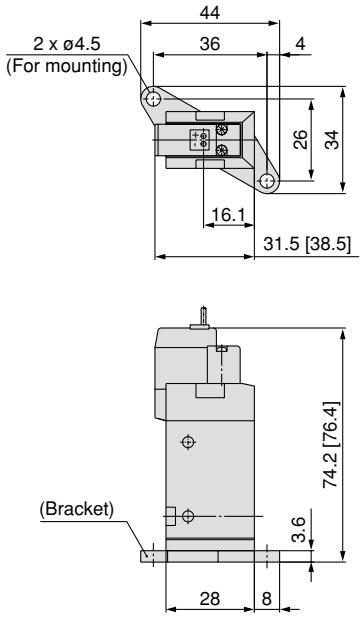
Body Ported

∗ [ ] for AC

Grommet (G), (H): SYJ7□2-□$^{G}_{H}$□□-01□



With bracket: SYJ7□2-□$^{G}_{H}$□□-01□-F

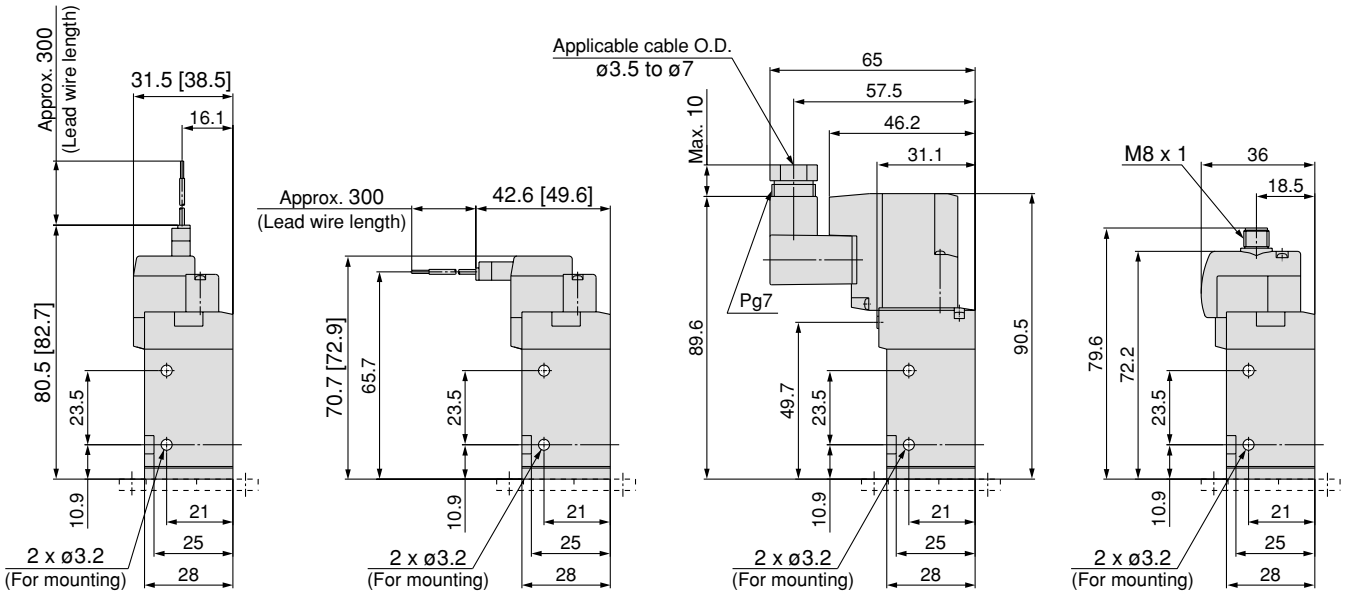


L plug connector (L): SYJ7□2-□L□□-01□ (-F)

M plug connector (M): SYJ7□2-□M□□-01□ (-F)

DIN terminal (D, Y): SYJ7□2-□$^{D}_{Y}$□□-01□ (-F)

M8 connector (WO): SYJ7□2-□WO□□-01□ (-F)

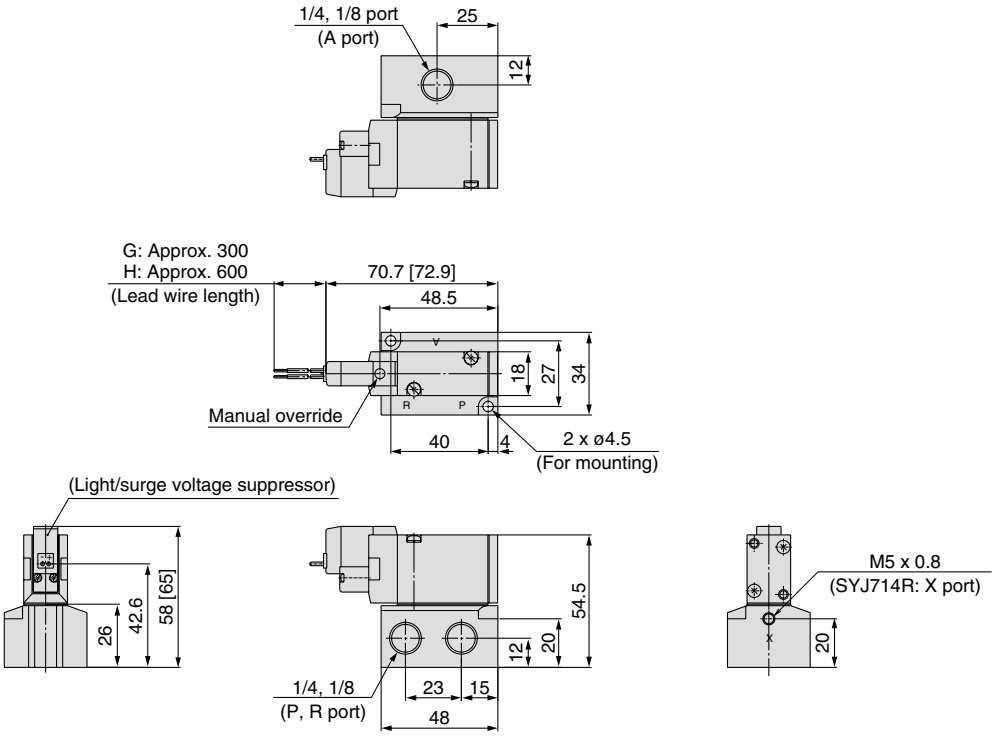


∗ Refer to page 1429 for dimensions with connector cable.

Base Mounted (With Sub-plate)

∗ [ ] for AC

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

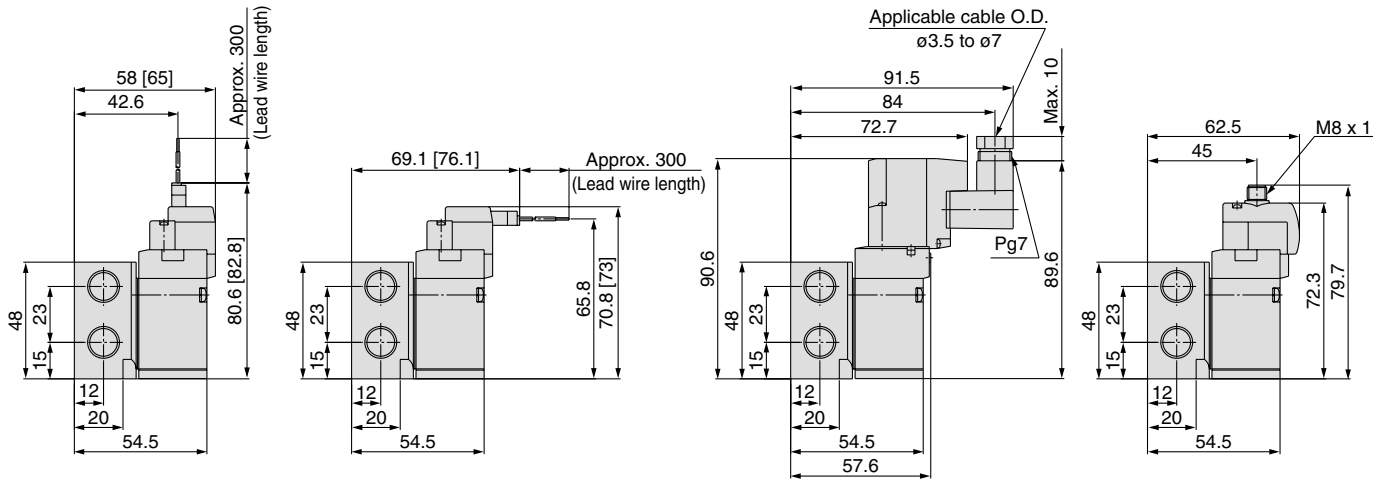


L plug connector (L): SYJ7□4-□L□□-$^{01}_{02}$□

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

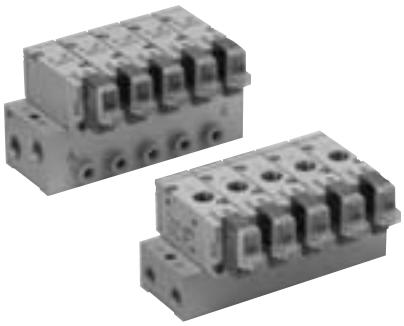
DIN terminal (D, Y): SYJ7□4-□$^{D}_{Y}$□□-$^{01}_{02}$□

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



∗ Refer to page 1429 for dimensions with connector cable.

Series SYJ700
Manifold Specifications



Manifold Specifications

Model	For internal pilot	Type 20	Type 21	Type 40	Type 41	Type 42
	For external pilot	—	Type 21R	—	Type 41R	Type 42R
Manifold type		Single base/B mount				
P (SUP), R (EXH)		Common SUP, common EXH				
Valve stations		2 to 20 stations				
A port Porting specifications	Location	Valve	Valve	Base	Base	Base
	Direction	Top	Top	Bottom	Bottom	Side
Port size	P, R port	1/8	1/4	1/8	1/4	1/4
	A port	1/8	1/8	1/8	1/8	1/8 C6 (ø6 one-touch fitting) C8 (ø8 one-touch fitting)
	X port Note)	—	M3 x 0.8	—	M5 x 0.8	M5 x 0.8

Note) Only for external pilot

Flow Characteristics

Manifold			Port size		Flow characteristics					
					1→2 (P→A)			2→3 (A→R)		
			1(P), 3(R) port	2(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported for internal pilot	Type SS3YJ7-20	SYJ7□2	1/8	1/8	2.2	0.34	0.55	2.3	0.27	0.59
	Type SS3YJ7-21		1/4	1/8	2.2	0.39	0.59	2.4	0.32	0.62
Base mounted for internal pilot	Type SS3YJ7-40	SYJ7□4	1/8	1/8	2.1	0.35	0.59	2.3	0.27	0.54
	Type SS3YJ7-41		1/4	1/8	2.2	0.35	0.59	2.4	0.36	0.66
	Type SS3YJ7-42-01		1/4	1/8	2.0	0.27	0.47	2.2	0.32	0.56
	Type SS3YJ7-42-C6		1/4	C6	1.6	0.32	0.39	2.2	0.27	0.54
	Type SS3YJ7-42-C8		1/4	C8	2.1	0.24	0.51	2.3	0.31	0.59
Body ported for external pilot	Type SS3YJ7-21R	SYJ7□2R	1/4	1/8	2.2	0.34	0.55	2.4	0.32	0.62
Base mounted for external pilot	Type SS3YJ7-41R	SYJ7□4R	1/4	1/8	2.2	0.35	0.59	2.4	0.36	0.66
	Type SS3YJ7-42R-01		1/4	1/8	2.0	0.27	0.47	2.2	0.32	0.56
	Type SS3YJ7-42R-C6		1/4	C6	1.6	0.32	0.39	2.2	0.27	0.54
	Type SS3YJ7-42R-C8		1/4	C8	2.1	0.24	0.51	2.3	0.31	0.59

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.

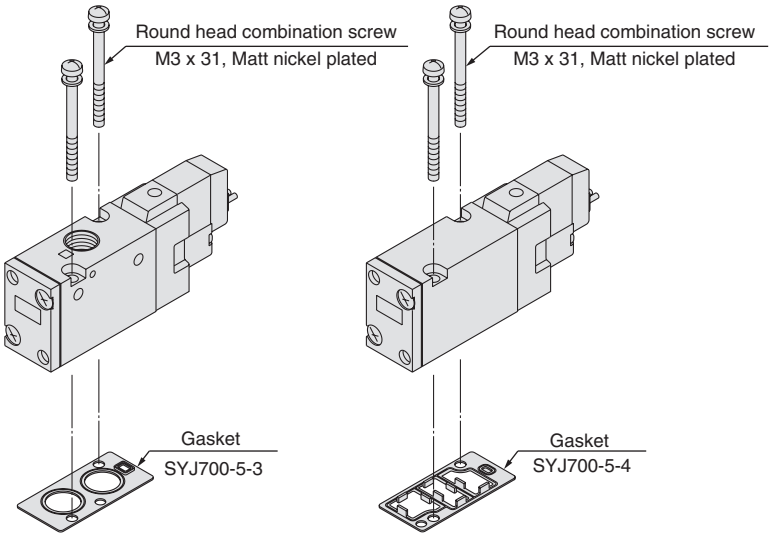
(Example)

SS3YJ7-20-03 ····· **1 set (manifold base)**
SS3YJ7-42R-03-01 ···· **1 set (manifold base)**
✻**SYJ712-5LZ-01** ····· **2 sets (valve)**
✻**SYJ714R-5G** ····· **2 sets (valve)**
✻**SYJ700-10-1A** ····· **1 set (blanking plate assembly)**
✻**SYJ700-10-2A** ····· **1 set (blanking plate assembly)**

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

Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

Body ported (Type SYJ7□2(-Q)) **Base mounted (Type SYJ7□4(-Q))**



Applicable base
Type SS3YJ7-20(-Q)
Type SS3YJ7-21(-Q)
Type SS3YJ7-21R(-Q)
} Manifold base

Applicable base
Sub-plate
Type SS3YJ7-40(-Q)
Type SS3YJ7-41(-Q)
Type SS3YJ7-42(-Q)
Type SS3YJ7-41R(-Q)
Type SS3YJ7-42R(-Q)
} Manifold base

⚠ Caution

Mounting screw tightening torques

M3: 0.8 N·m

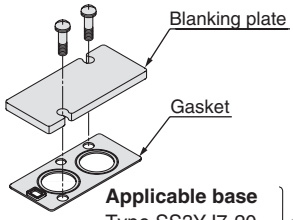
Use caution to the assembly orientation for solenoid valves, gasket and optional parts.

Blanking Plate Assembly

<Standard>

Part no.: SYJ700-10-1A

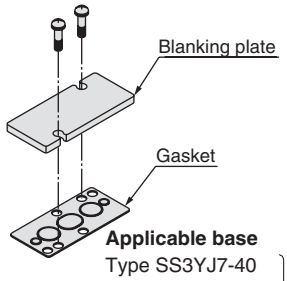
- **Body ported**
- **Base mounted**



Applicable base
Type SS3YJ7-20
Type SS3YJ7-21
Type SS3YJ7-21R
} Manifold base

Part no.: SYJ700-10-2A

- **Base mounted**

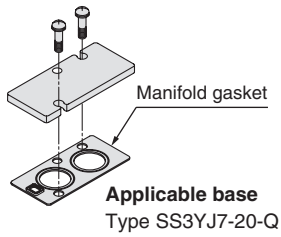


Applicable base
Type SS3YJ7-40
Type SS3YJ7-41
Type SS3YJ7-42
Type SS3YJ7-41R
Type SS3YJ7-42R
} Manifold base

Note) It can be mounted on a body ported manifold base. However, when mounting a blanking part to a valve, place an order for a separate gasket (SYJ700-5-3) when placing an order for the valve. When using the SYJ700-10-1A, a gasket for this blanking plate assembly can be used as a gasket for the valve as well.

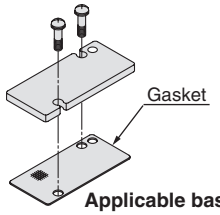
<CE-complaint>

Part no.: SYJ700-10-2A-1-Q



Applicable base
Type SS3YJ7-20-Q
Type SS3YJ7-21-Q
Type SS3YJ7-21R-Q
} Manifold base

Part no.: SYJ700-10-2A-2-Q



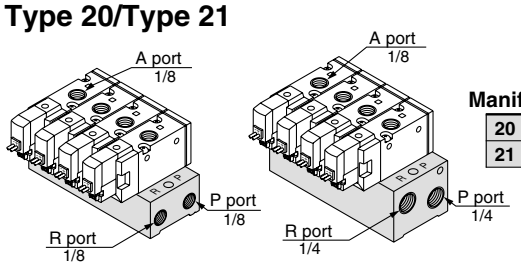
Applicable base
Type SS3YJ7-40-Q
Type SS3YJ7-41-Q
Type SS3YJ7-42-Q
Type SS3YJ7-41R-Q
Type SS3YJ7-42R-Q
} Manifold base

Note) AC-type models that are CE compliant have DIN terminals only.

[Option]

Manifold for Internal Pilot Type

Type 20/Type 21



How to Order

SS3YJ7 – 20 – 05 – □ – □

Manifold type

20	Type 20
21	Type 21

Stations

02	2 staitions
:	:
20	20 staitions

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

CE complaint

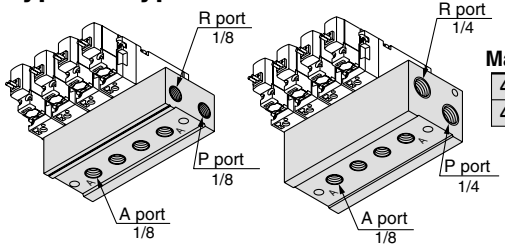
Nil	—
Q	CE complaint

Applicable solenoid valve
SYJ712-□□□□-01(-Q)
SYJ712M-□□□□-01(-Q)
SYJ722-□□□□-01(-Q)
SYJ722M-□□□□-01(-Q)

Applicable blanking plate assembly
Refer to page 1411.

Note) If there are more than 6 stations for type 20, or more than 9 stations for type 21, supply air to both sides of P port and exhaust air from both sides of R port.

Type 40/Type 41



How to Order

SS3YJ7 – 40 – 05 – 01 □ – □

Manifold type

40	Type 40
41	Type 41

Stations

02	2 stations
:	:
20	20 stations

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

A port size

01	1/8

CE complaint

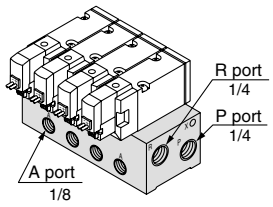
Nil	—
Q	CE complaint

Applicable solenoid valve
SYJ714-□□□□(-Q)
SYJ714M-□□□□(-Q)
SYJ724-□□□□(-Q)
SYJ724M-□□□□(-Q)

Applicable blanking plate assembly
Refer to page 1411.

Note) If there are more than 6 stations for type 40, or more than 9 stations for 41 type, supply air to both sides of P port and exhaust air from both sides of R port.

Type 42



How to Order

SS3YJ7 – 42 – 05 – C6 □ – □

Stations

02	2 stations
:	:
20	20 stations

A port size

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

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

CE complaint

Nil	—
Q	CE complaint

Applicable solenoid valve
SYJ714-□□□□(-Q)
SYJ714M-□□□□(-Q)
SYJ724-□□□□(-Q)
SYJ724M-□□□□(-Q)

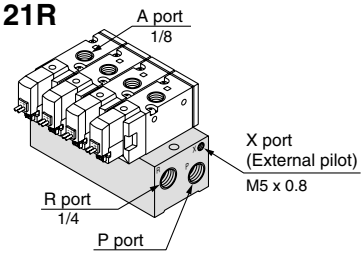
Applicable blanking plate assembly
Refer to page 1411.

Note) For more than 9 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Manifold for External Pilot Type

Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port.
It can be used in the vacuum (up to –100 kPa) or low pressure line with 0.15 MPa or less.

Type 21R



How to Order

SS3YJ7 – 21R – 05 – □ – □

Stations

02	2 stations
:	:
20	20 stations

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

CE complaint

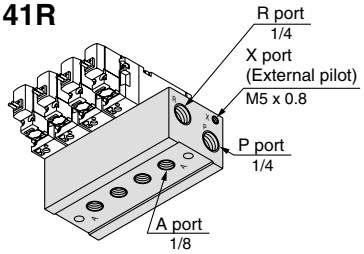
Nil	—
Q	CE complaint

Applicable solenoid valve
SYJ712R-□□□□-01(-Q)
SYJ722R-□□□□-01(-Q)

Applicable blanking plate assembly
Refer to page 1411.

Note) For more than 9 stations, supply/exhaust air to/from both sides of P and R port.

Type 41R



How to Order

SS3YJ7 – 41R – 05 – 01 □ – □

Stations

02	2 stations
:	:
20	20 stations

A port size

01	1/8

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

CE complaint

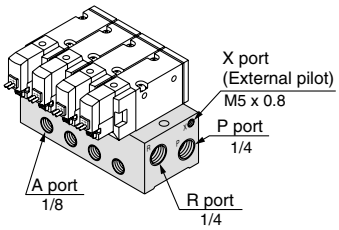
Nil	—
Q	CE complaint

Applicable solenoid valve
SYJ714R-□□□□(-Q)
SYJ724R-□□□□(-Q)

Applicable blanking plate assembly
Refer to page 1411.

Note) For more than 9 stations, supply/exhaust air to/from both sides of P and R port.

Type 42R



How to Order

SS3YJ7 – 42R – 05 – 01 □ – □

Stations

02	2 stations
:	:
20	20 stations

A port size

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

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

CE complaint

Nil	—
Q	CE complaint

Applicable solenoid valve
SYJ714R-□□□□(-Q)
SYJ724R-□□□□(-Q)

Applicable blanking plate assembly
Refer to page 1411.

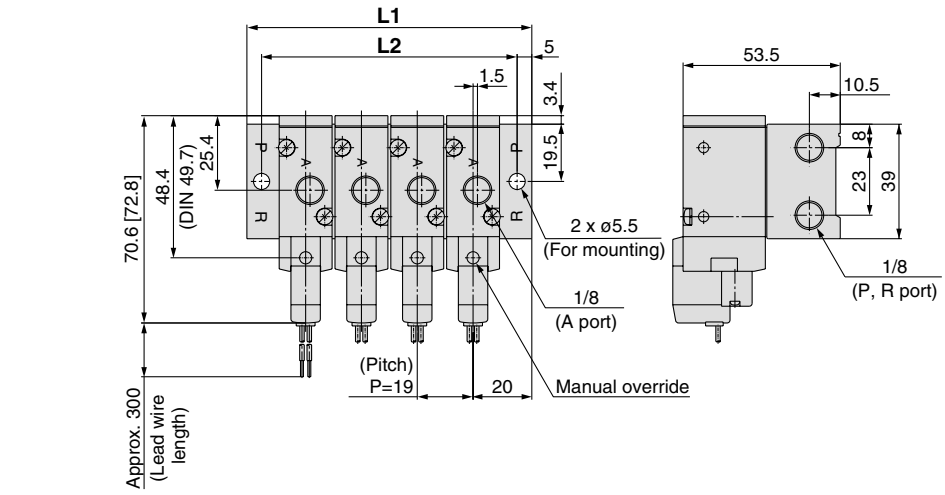
Note) For more than 9 stations, supply/exhaust air to/from both sides of P and R port.

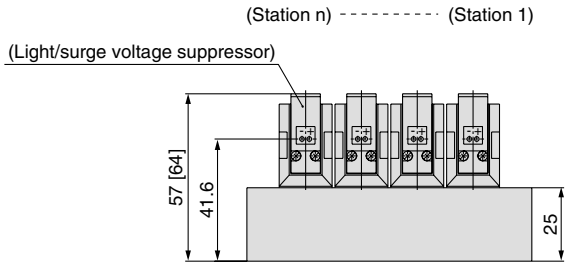
SMC

Type 20 Manifold: Top Ported/SS3YJ7-20-Stations (-00□)

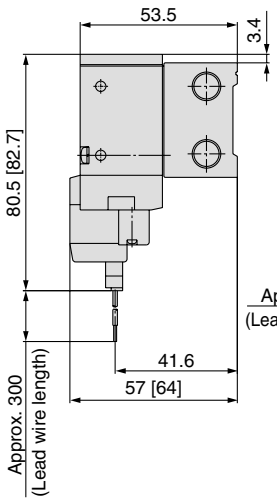
∗ [ ] for AC

Grommet (G)

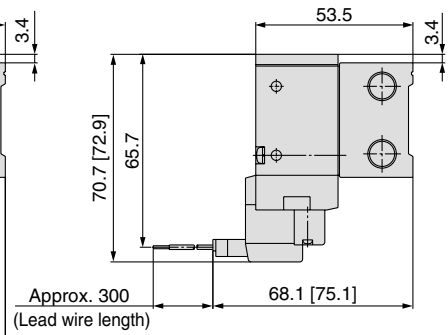




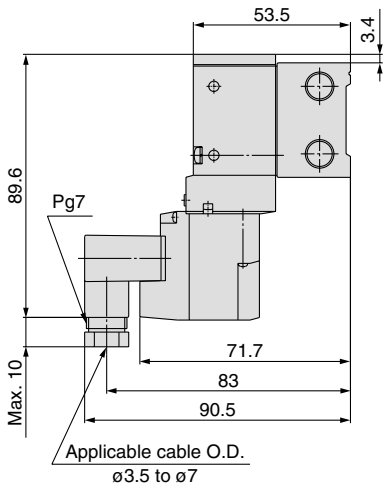
L plug connector (L)



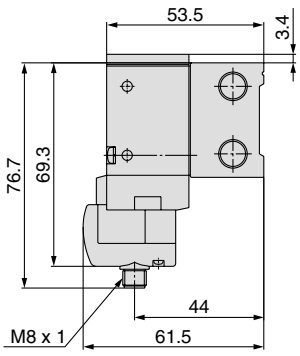
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)



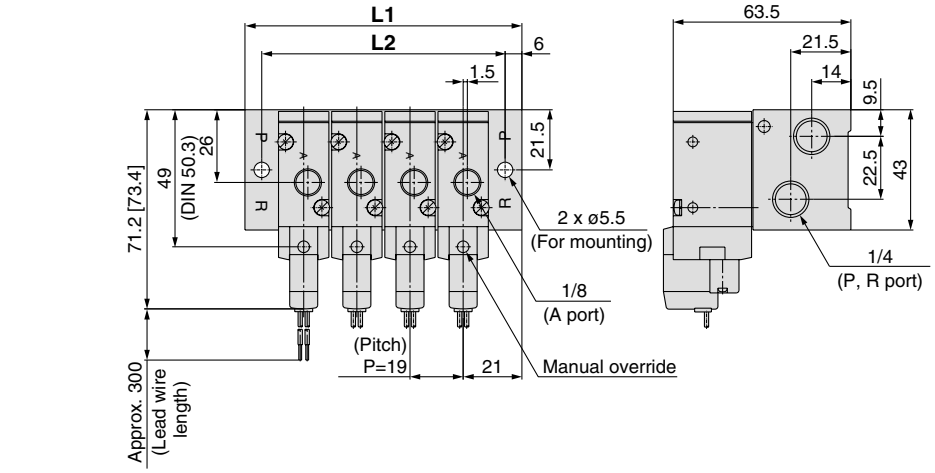
∗ Refer to page 1429 for dimensions with connector cable.

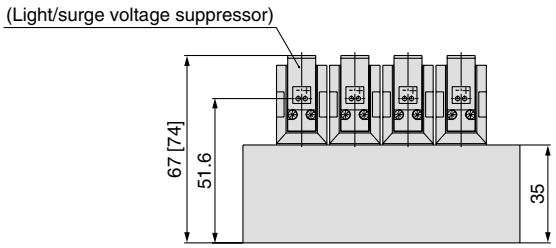
Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	59	78	97	116	135	154	173	192	211	230	249	268	287	306	325	344	363	382	401
L2	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

Type 21 Manifold: Top Ported/SS3YJ7-21-Stations (-00□)

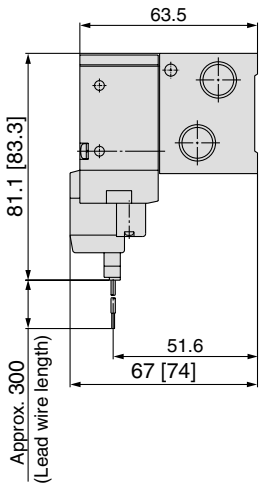
∗ [ ] for AC

Grommet (G)

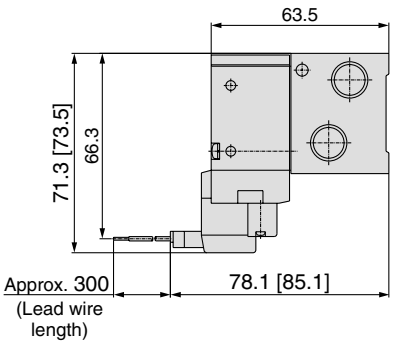




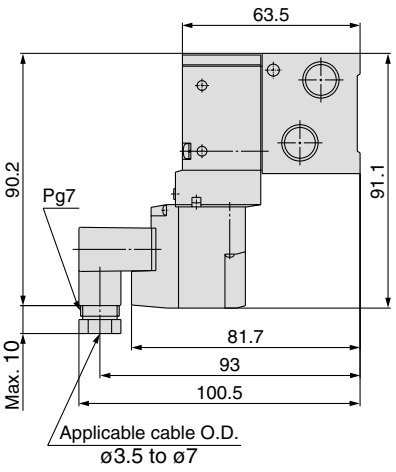
L plug connector (L)



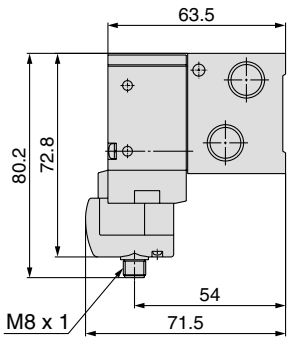
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)



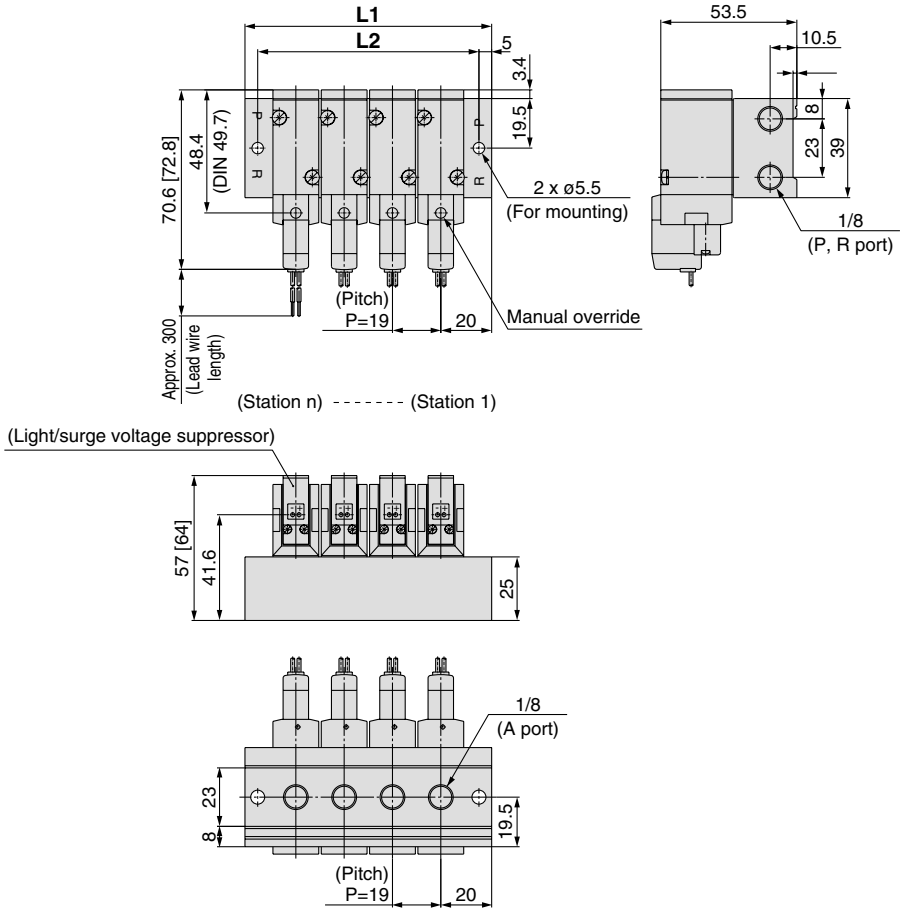
∗ Refer to page 1429 for dimensions with connector cable.

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

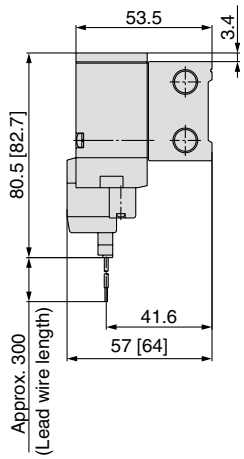
Type 40 Manifold: Top Ported/SS3YJ7-40-Stations-01□

∗ [ ] for AC

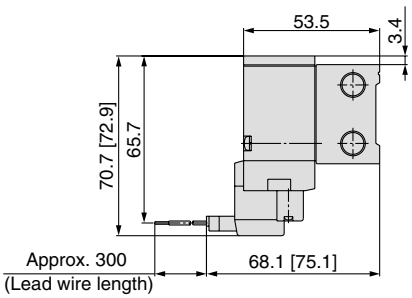
Grommet (G)



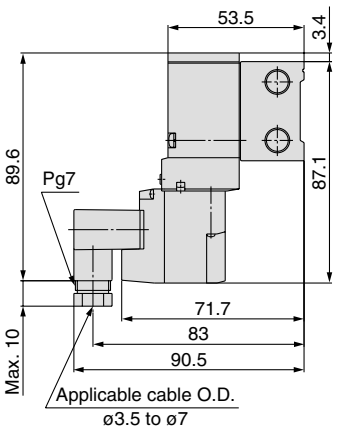
L plug connector (L)



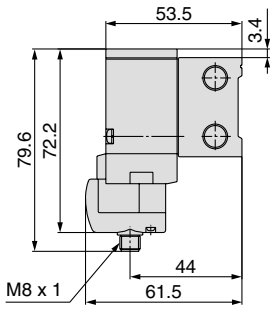
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)



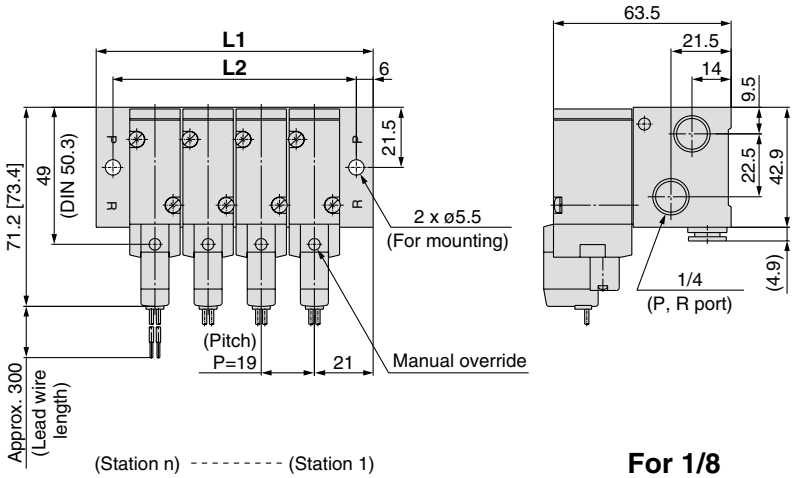
∗ Refer to page 1429 for dimensions with connector cable.

Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	59	78	97	116	135	154	173	192	211	230	249	268	287	306	325	344	363	382	401
L2	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

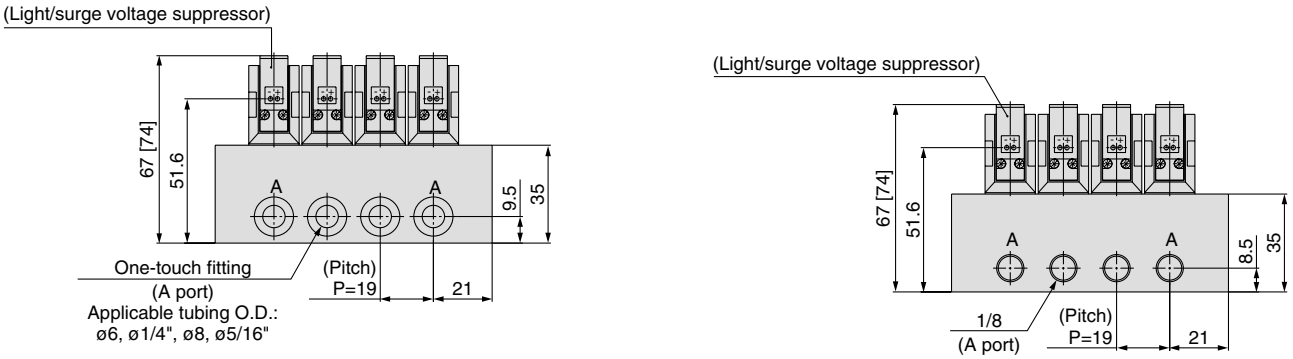
Type 42 Manifold: Top Ported/SS3YJ7-42-Stations-01, C6 C8, N7 N9 □

* [ ] for AC

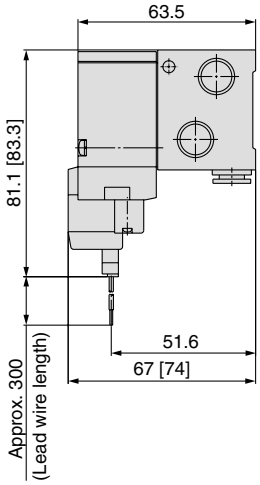
Grommet (G)
For C6, N7 C8, N9 □ (Built-in one-touch fitting)



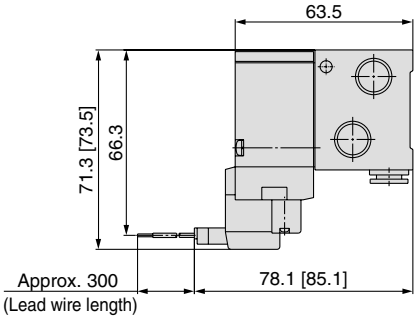
For 1/8



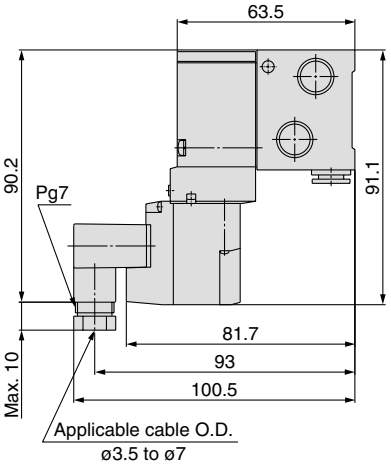
L plug connector (L)



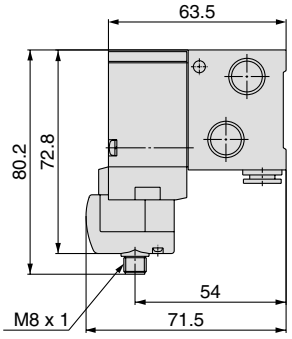
M plug connector (M)



DIN terminal (D, Y)



M8 connector (WO)



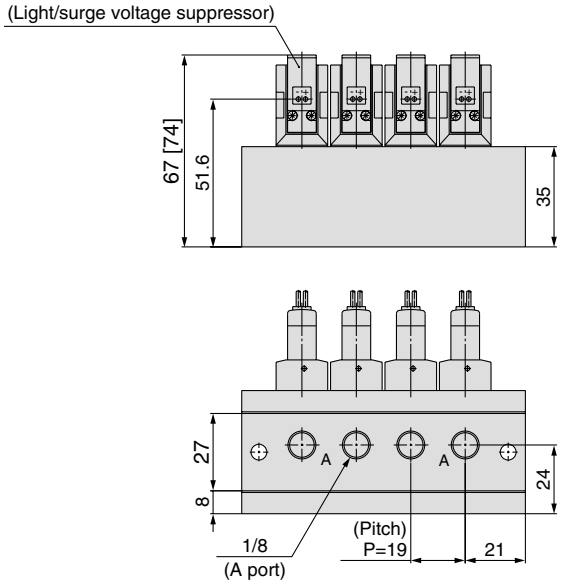
* Refer to page 1429 for dimensions with connector cable.

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

Type 41 Manifold: Top Ported/SS3YJ7-41-Stations-01□

∗[ ] for AC

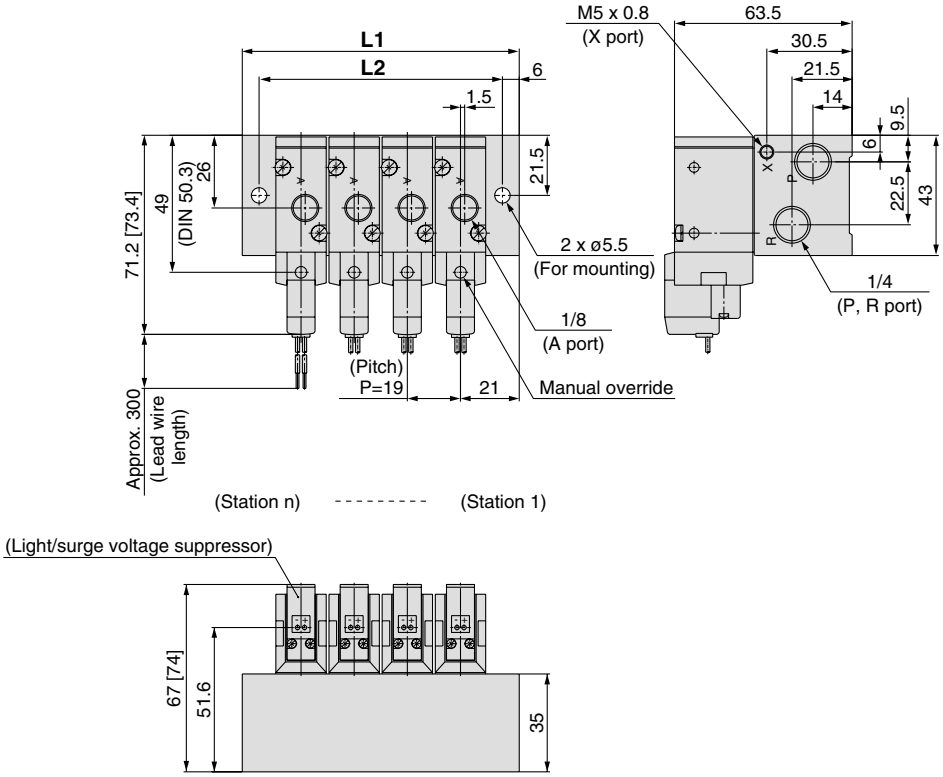
Grommet (G)



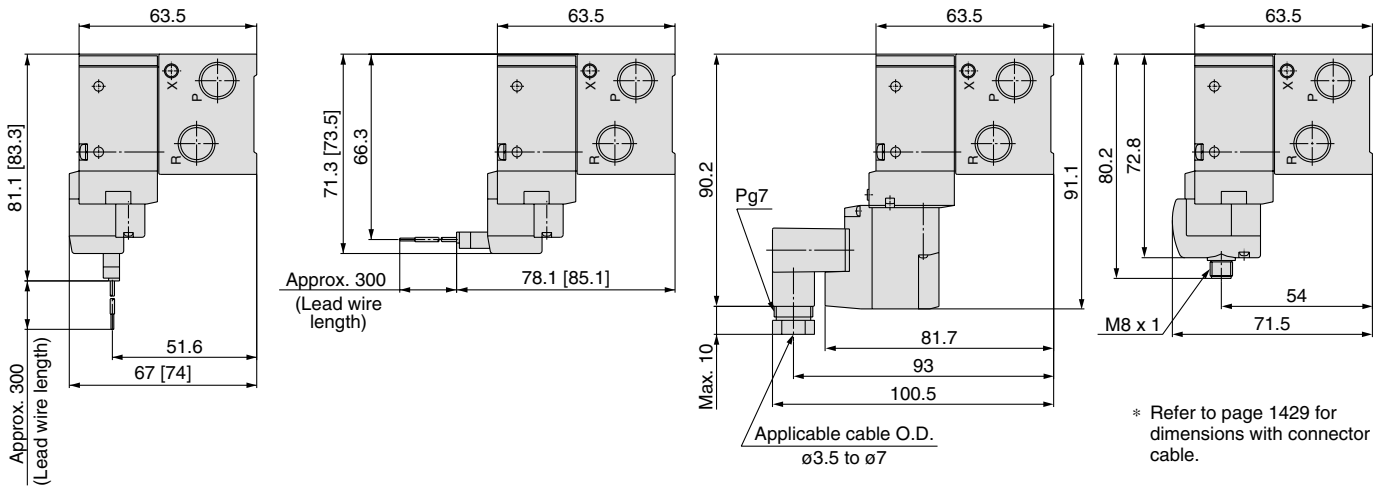
Type 21R Manifold: Top Ported (External Pilot Type)/SS3YJ7-21R-Stations(-00□)

∗ [ ] for AC

Grommet (G)



L plug connector (L) M plug connector (M) DIN terminal (D) M8 connector (WO)



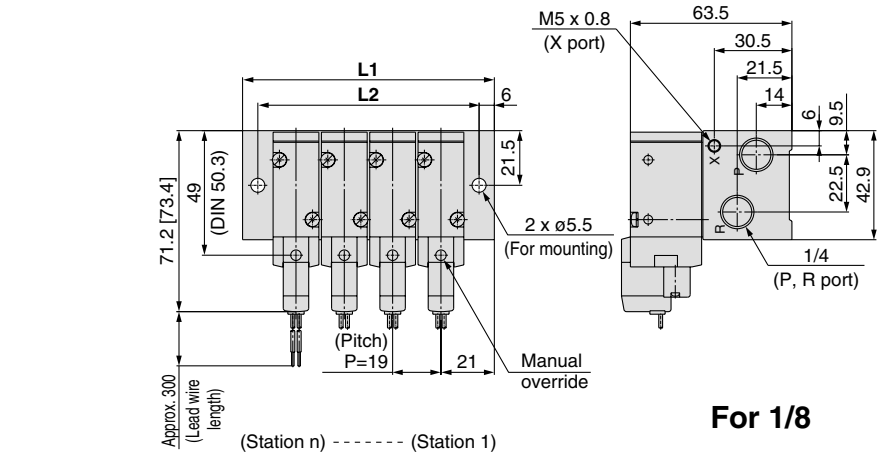
∗ Refer to page 1429 for dimensions with connector cable.

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

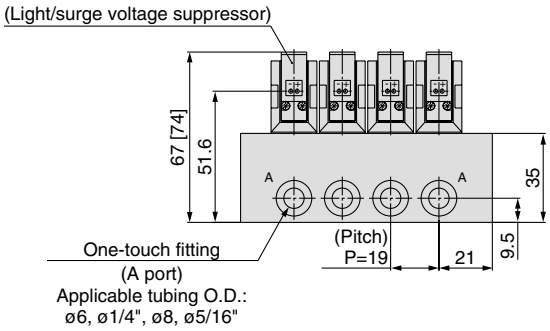
Type 42R Manifold: Side Ported/SS3YJ7-42R-Stations-01, C6 C8, N7 N9□

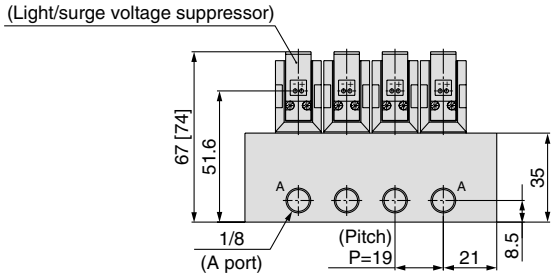
∗ [ ] for AC

Grommet (G)

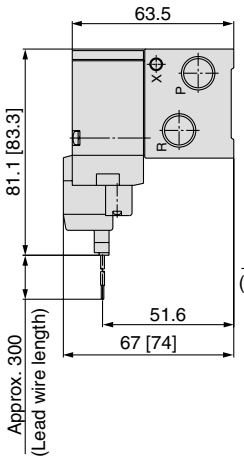


For 1/8

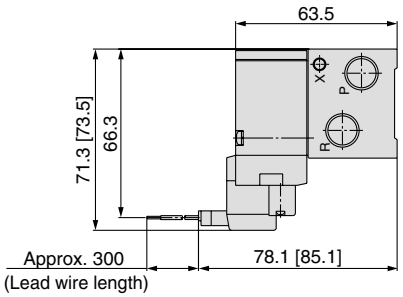




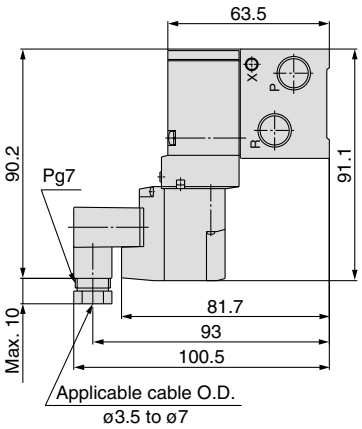
L plug connector (L)



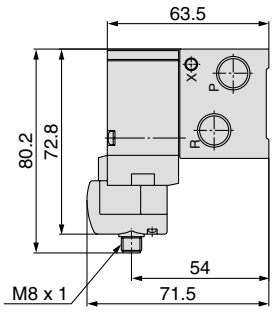
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



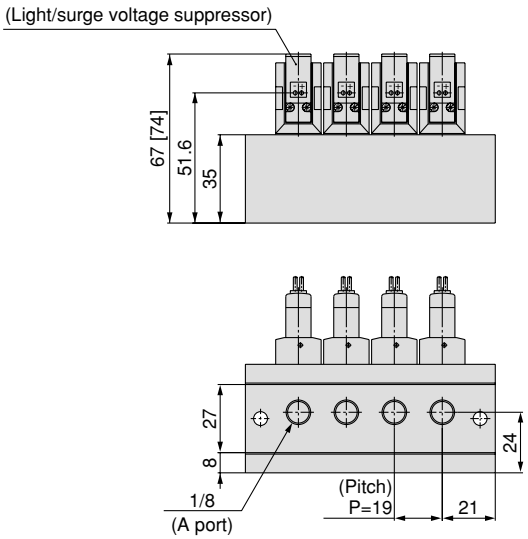
∗ Refer to page 1429 for dimensions with connector cable.

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

Type 41R Manifold: Bottom Ported (External Pilot Type)/SS3YJ7-41R-Stations-01□

∗ [ ] for AC

Grommet (G)



M8 Connector Conforming to IEC60947-5-2

Series SYJ300/500/700

Made to Order

Made to Order

CE [Option]

How to Order Valve

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)

Bracket

Nil	Without bracket
F	With bracket

Rated voltage

DC

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

Type of actuation

1	Normally closed
2	Normally open

Port size

M5	M5 x 0.8
01	1/8 (SYJ700 only)

Made to Order

Nil	—
X20	Body ported external pilot(Refer to page 1423.)

∗ X20 for Series SYJ300 is not available.

Series

3	SYJ300
5	SYJ500
7	SYJ700

3 port (Manifold types 20, 20R, 21R)

Body ported SYJ 5 1 2 □ – 5 WAO □ □ – M5 – □ – □ – □

Base mounted SYJ 5 1 4 □ – 5 WAO □ □ – 01 □ – □

3 port Sub-plate type, manifold types 40, 40R, 41, 41R, S41, 42, S42, 42R, S42R

Body option

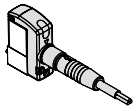
Nil	Pilot valve individual exhaust
M	Common exhaust type for main and pilot valve
R	External pilot∗

∗ SYJ3□2R, SYJ5□2R, SYJ7□2R are only for manifold use.

Electrical entry

WAO: Without connector

WA□: With connector Note)



Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 1429.

CE complaint

Nil	—
Q	CE complaint

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Port size

Nil	Without sub-plate	
M5	M5 port With sub-plate	SYJ300
01	1/8 port With sub-plate	SYJ500 SYJ700
02	1/4 port With sub-plate	SYJ700

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

V111 – 5 WAO □

Rated voltage

DC

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

Light/surge voltage suppressor

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

Electrical entry

WAO	M8 connector	Without connector
WA□		With connector Note)

Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 1429.

Since V111 is CE-compliant as standard, the suffix "-Q" is not necessary.

SMC

Series SYJ500/700
Made to Order

For detailed specifications, delivery and pricing, please contact SMC.

Made to Order

Note) AC-type models that are CE compliant have DIN terminals only.

CE [Option]

Body Ported External Pilot

How to Order Applicable solenoid valve series/SYJ5□2R, SYJ7□2R

SYJ 5/7 □ 2R □ – □□□□ – □ – □ – X20 – □

- Entry is the same as standard products.
- CE compliant

Nil	—
Q	CE compliant

Note) AC-type models that are CE compliant have DIN terminals only.

Operating Pressure Range MPa

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

Dimensions
SYJ500: 8 mm longer in total length
SYJ700: 8 mm longer in total length

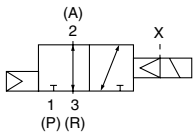
External Pilot Port

Series	Port size
SYJ500, SYJ700	M5 x 0.8

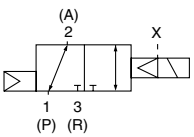
JIS Symbol

Body ported

N.C.



N.O.



Series SYJ300/500/700
Specific Product Precautions 1

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

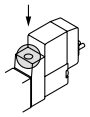
Manual Override Operation

⚠ Warning

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

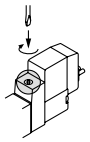
■ Non-locking push type [Standard]

Press in the direction of the arrow

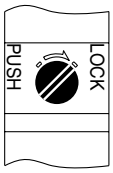


■ Push-turn slotted locking type [Type D]

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

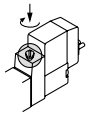


⚠ Caution

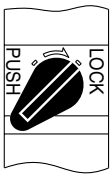
When operating the locking type D with a screw driver, turn it gently using a watchmakers screw driver.
[Torque: Less than 0.1 N·m]

■ 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, 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, 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.

Bracket

⚠ Caution

For bracket attached styles of SYJ300, do not use it without bracket.

Series SYJ300/500/700
Specific Product Precautions 2

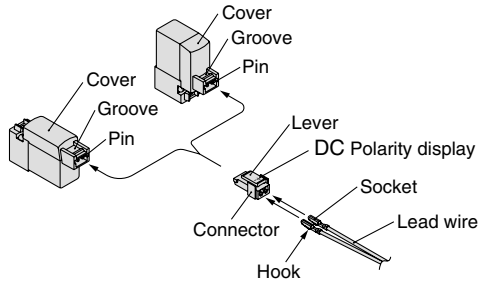
Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

How to Use Plug Connector

⚠ Caution

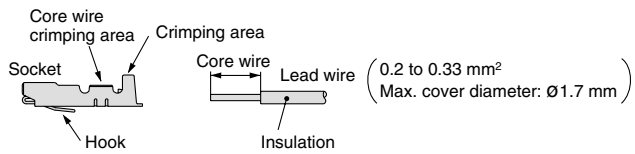
1. Attaching and detaching connectors

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



2. Crimping of lead wires and sockets

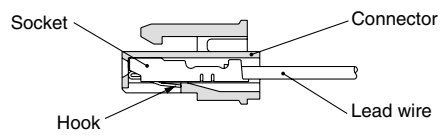
Strip 3.2 to 3.7 mm at the end of the lead wires, insert the ends of the core wires evenly into the sockets, and then crimp with a crimping tool. When this is done, take care that the coverings of the lead wires do not enter the core wire crimping area.
Use an exclusive crimping tool for crimping.
(Contact 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**
SYJ312-5LO-M3	SYJ312-1LO-M3
SY100-30-4A-20	SY100-30-1A-20

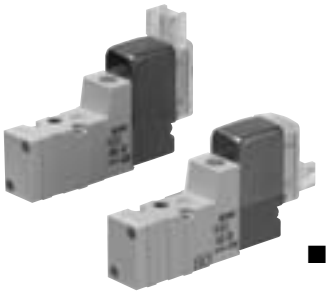
Series SYJ300/500/700
Specific Product Precautions 3

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Surge Voltage Suppressor

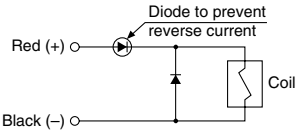
⚠ Caution

<For DC>
Grommet, L/M Plug Connector

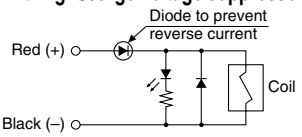


■ **Standard type (with polarity)**

Surge voltage suppressor (□S)

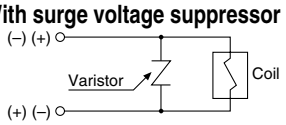


With light/surge voltage suppressor (□Z)

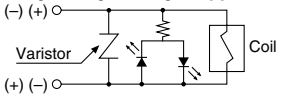


■ **Non-polar type**

With surge voltage suppressor (□R)



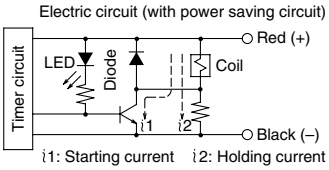
With light/surge voltage suppressor (□U)



- 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 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.)

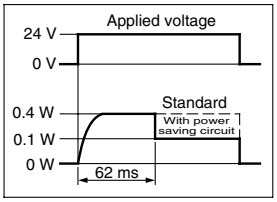


Operating Principle

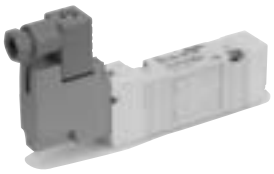
With the above circuit, the current consumption when holding is reduced to save energy. Please refer to the electric wave data to the right.

- 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.)

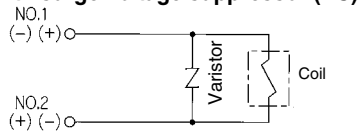
(In the case of SYJ$^{3}_{5}$□□T, the electric wave form of energy saving type)



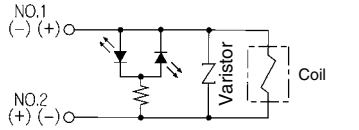
DIN Terminal



With surge voltage suppressor (DS)



With light/surge voltage suppressor (DZ)

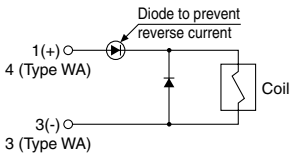


DIN terminal has no polarity.

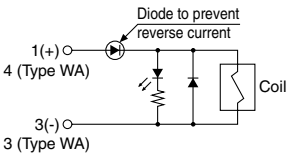
M8 Connector

■ **Standard type (with polarity)**

With light/surge voltage suppressor (□S)

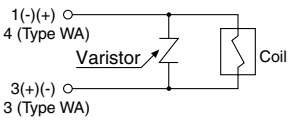


With light/surge voltage suppressor (□Z)

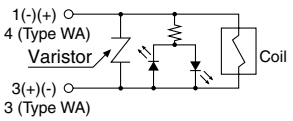


■ **Non-polar type**

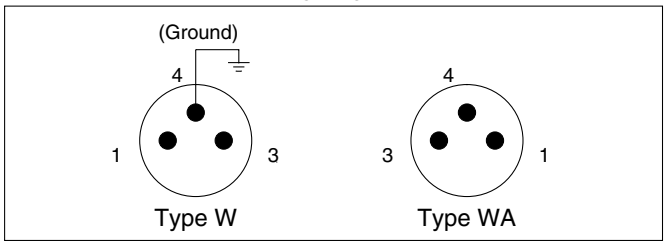
With surge voltage suppressor (□R)



With light/surge voltage suppressor (□U)



Solenoid valve side pin wiring diagram



- For the standard type, connect + to 1 and – to 3 for Type W according to polarity, while + to 4 and – to 3 for Type WA.
- Please be careful not to reverse the polarity, since a diode to prevent the reversed current is not provided for DC voltages other than 24 and 12 VDC.
- Please use caution regarding the allowable voltage fluctuation because there is about a 1 volt drop for a valve with polarity protection. (For details, refer to the solenoid specifications for the individual valve.)
- The WA-type valve cannot be grounded.

Series SYJ300/500/700
Specific Product Precautions 4

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

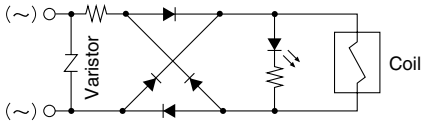
Surge Voltage Suppressor

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

⚠ Caution

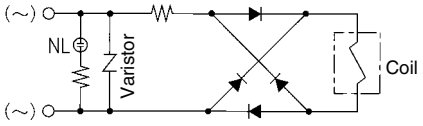
Grommet, L/M Plug Connector

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.

DIN Terminal Type Y

A type Y DIN connector is a DIN connector conforming to the 8-mm standard pitch between DIN terminals.

⚠ Caution

- Since a type D DIN connector has a 9.4-mm pitch between DIN terminals, it is not interchangeable.
- Type D DIN connectors have the "N" indication at the end of rated voltage symbol. (For DIN connectors without lights, "N" is not indicated. Please refer to the name plate to distinguish.)
- Dimensions are the same as type D DIN connector.
- When replacing only the pilot valve assembly, V115-□D is interchangeable with V115-□Y. Do not replace V111 (G, H, L, M, W) to V115-□Y (DIN terminal), or vice versa.

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.

How to Use DIN Terminal

⚠ Caution

4. Secure the cord by fastening the ground nut.

⚠ Caution

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

Changing the entry direction

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

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

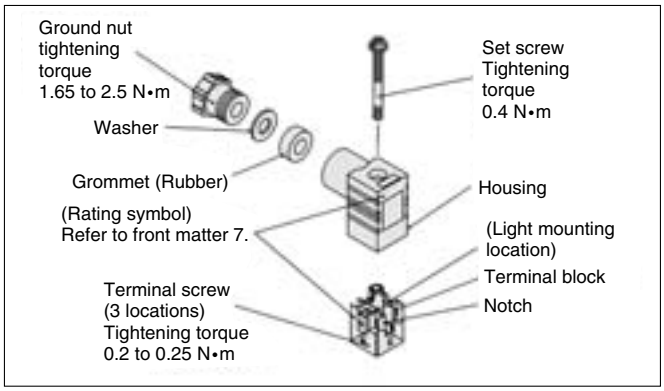
Precautions

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

Compatible cable

Cord O.D.: ø3.5 to ø7

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



Solenoid Valve Mounting

⚠ Caution

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

Model	Thread size	Tightening torque
SYJ300	M1.7	0.12 N•m
SYJ500	M2.5	0.45 N•m
SYJ700	M3	0.8 N•m

Series SYJ300/500/700
Specific Product Precautions 5

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

DIN Connector Part No.

⚠Caution

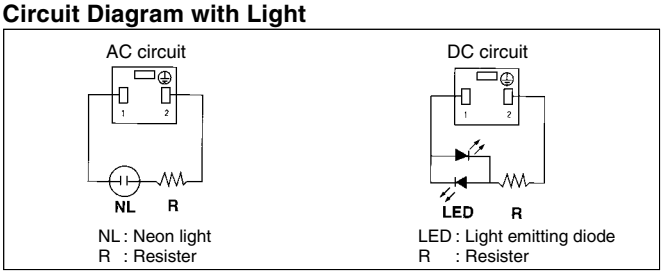
<Type D>

Without light	SY100-61-1	
With light		
Rated voltage	Voltage symbol	Part no.
24 VDC	24 V	SY100-61-3-05
12 VDC	12 V	SY100-61-3-06
100 VAC	100 V	SY100-61-2-01
200 VAC	200 V	SY100-61-2-02
110 VAC	110 V	SY100-61-2-03
220 VAC	220 V	SY100-61-2-04

<Type Y>

Without light	SY100-82-1	
With light		
Rated voltage	Voltage symbol	Part no.
DC24 V	24 VN	SY100-82-3-05
DC12 V	12 VN	SY100-82-3-06
100 VAC	100 VN	SY100-82-2-01
200 VAC	200 VN	SY100-82-2-02
110 VAC(115 VAC)	110 VN	SY100-82-2-03
220 VAC(230 VAC)	220 VN	SY100-82-2-04

Circuit Diagram with Light



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.

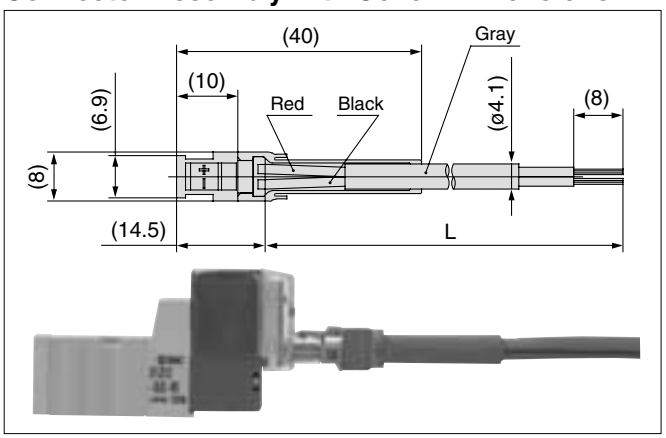
How to Order

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
SYJ312-5LOZ-M3
SY100-68-A-20

Ex. 2) Lead wire length of 300 mm (standard)
SYJ312-5LPZ-M3
Symbol for connector assembly with cover

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

Series SYJ300/500/700
Specific Product Precautions 6

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

M8 Connector

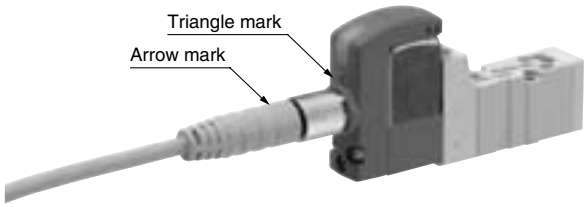
⚠Caution

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 SYJ300 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 N•m)
3. The excessive stress on the cable connector will not be able to satisfy the IP65 rating. Please use caution and do not apply a stress of 30 N or greater.

⚠ Caution

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

• Connector cable mounting



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

■ Connector cable

• Connector cable for M8 can be ordered as follows:

How to Order

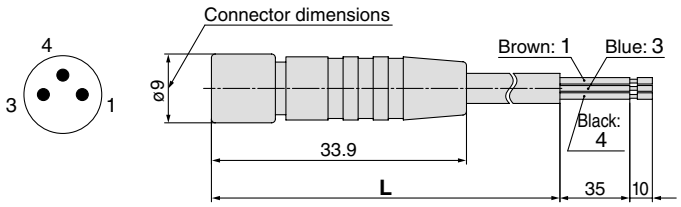
1. **To order solenoid valve and connector cable at the same time.**
   (Connector cable will be included in the shipment of the solenoid valve.)

SYJ 3 5 7 □□□ – □□□□ – □□

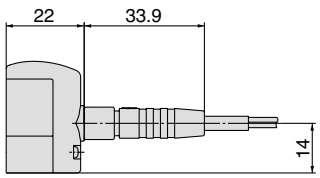
Electrical entry
W1, WA1: Cable length 300 mm
W2, WA2: Cable length 500 mm
W3, WA3: Cable length 1000 mm
W4, WA4: Cable length 2000 mm
W7, WA7: Cable length 5000 mm

Ex. 1) Cable length: 300 mm
SYJ312-5W1ZE-M3
•Symbol for electrical entry

2. **To order connector cable only**



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



Series SYJ300/500/700
Specific Product Precautions 7

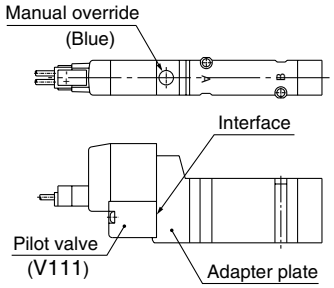
Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

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