3 Port Solenoid Valve
Series SYJ300/500/700


Cover (stainless steel)

Improved pilot valve

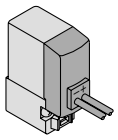
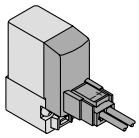
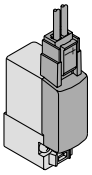
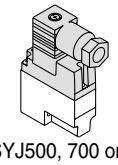
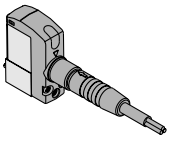
Pilot valve cover is stronger using stainless steel.
Mounting thread is also reinforced from size M1.7 to M2.

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

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

Series Variations

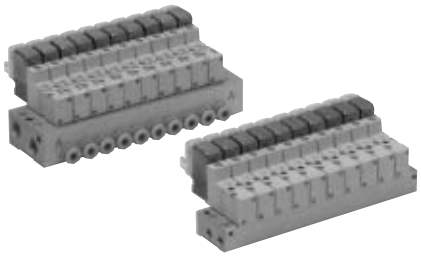
	Series	Port size	Sonic conductance C [dm³/(s·bar)]	Type of actuation	Voltage	Electrical entry	Option: With light/surge voltage suppressor	Manual override
Body Ported	***SYJ300***  P. 4-4-4	M3 x 0.5	Effective area 0.9 mm² [2 → 3 (A → R)]	• N.C. • N.O.	**For DC** ■ 24 VDC, 12 VDC, 6 VDC, 5 VDC, 3 VDC **For 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. 4-4-18	M5 x 0.8	0.66 [2 → 3 (A → R)]					
	SYJ700  P. 4-4-37	1/8	2.5 [2 → 3 (A → R)]					
Base Mounted	***SYJ300***  P. 4-4-4	M5 x 0.8	0.36 [2 → 3 (A → R)]					
	SYJ500  P. 4-4-18	1/8	1.2 [2 → 3 (A → R)]					
	SYJ700  P. 4-4-37	1/8, 1/4	2.7 [2 → 3 (A → R)]					

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

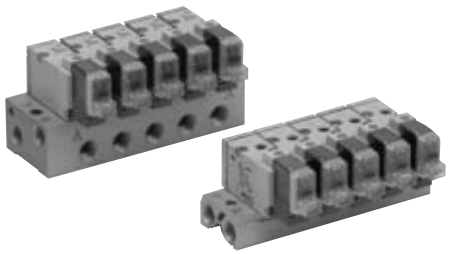
Manifold Variations

	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***	Top	M5 x 0.8	● Note 1)	—	—	—	—	—	—	—	—
			1/8	● Note 2)	—	—	—	—	—	—	—	—
	SYJ500	Top	1/8	—	●	—	—	—	—	—	—	—
	SYJ700	Top	1/8	—	—	● Note 1)	—	—	—	—	—	—
			1/4	—	—	●	—	—	—	—	—	—
Base Mounted	***SYJ300***	Side	M5 x 0.8	● Note 1)	—	—	—	—	—	—	—	—
			1/8	—	●	—	●	—	—	●	—	—
	SYJ500	Bottom	1/8	—	●	●	—	—	—	—	—	—
		Side		—	●	●	●	●	—	●	●	—
	SYJ700	Bottom	1/8	—	—	● Note 1)	—	—	—	—	—	—
			1/4	—	—	●	—	—	—	—	—	—
		Side	1/4	—	—	●	—	●	●	—	●	●

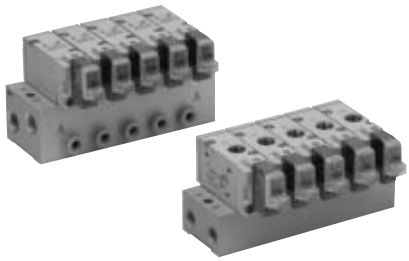
Note 1) Only for internal pilot
Note 2) Only for external pilot



Series SYJ300



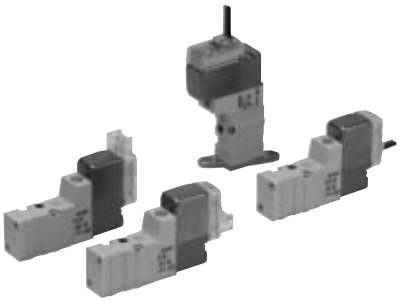
Series SYJ500



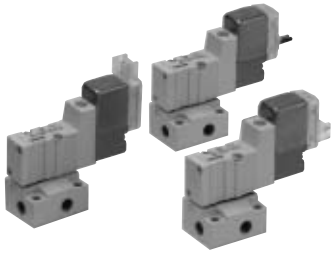
Series SYJ700

3 Port Pilot Operated Solenoid Valve Rubber Seal

Series SYJ300



Body ported



Base mounted

Specifications

Fluid		Air
Operating pressure range MPa	Internal pilot	0.15 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (No freezing. Refer to page 4-18-4.)
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		Dustproof (∗ M8 connector conforms to IP65.)

∗ Based on IEC529

Note 1) Based on dynamic performance test, JIS B 8374-1981. (Coil temperature: 20°C, at rated voltage, without surge voltage suppressor.)

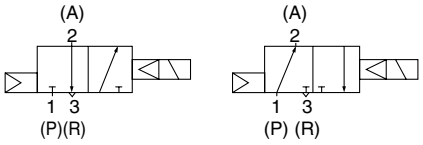
Note 2) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Value in the initial state)

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

JIS Symbol

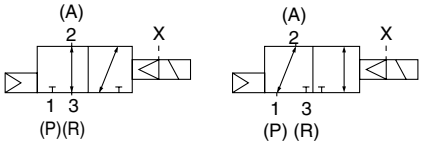
Internal pilot

SYJ31$^{2}_{4}$ SYJ32$^{2}_{4}$



External pilot

SYJ31$^{2}_{4}$R SYJ32$^{2}_{4}$R



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 indicator light: 0.4)
		With power saving circuit	0.1 (With indicator light only)
Apparent power (VA)	AC	100 V	1.4 (With indicator light: 1.5)
		110 V [115 V]	1.6 (With indicator light: 1.7) [1.7 (With indicator light: 1.8)]
		200 V	2.3 (With indicator light: 2.4)
		220 V [230 V]	2.5 (With indicator light: 2.6) [2.7 (With indicator light: 2.8)]
Surge voltage suppressor			Diode (varistor 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.

Made to Order **Made to Order Specifications**
(For details, refer to pages 4-4-54 to 55.)

Flow Characteristics/Weight

Valve model		Type of actuation	Port size	Flow characteristics						Effective area (mm^2)	Weight (g) Note)		
				1 → 2 (P → A)			2 → 3 (A → R)						
				C [dm^3/(s bar)]	b	Cv	C [dm^3/(s bar)]	b	Cv		Grommet	L/M plug connector	M8 connector
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.

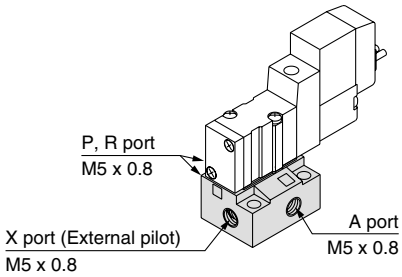
External Pilot

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 4-4-10.
Note 2) External pilot type body ported valves (SYJ3□2R) can only be used on the manifold.

How to Order

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

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

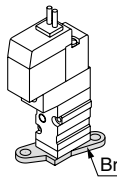
AC (50/60 Hz)

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

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

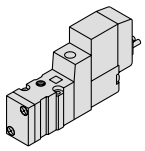
Bracket

Nil: Without bracket
F: With bracket



∗ Bracket is mounted.
∗ External pilot type is not available.

3 port



(For manifold type 20, 20R)

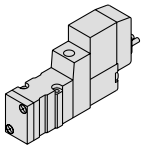
Type of actuation

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 type, manifold type 41, S41, 42, S42, 42R, S42R)

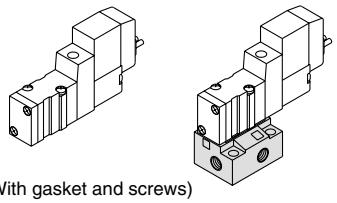
Coil specifications

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

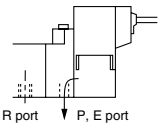
Nil: Without sub-plate **M5:** M5 port With sub-plate



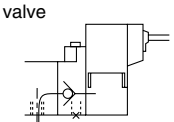
(With gasket and screws)

Body option

Nil: Individual pilot exhaust type



M: Common exhaust for the pilot and main valve

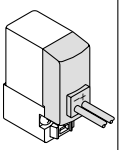
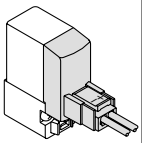
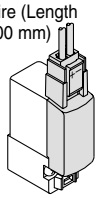
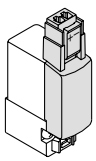
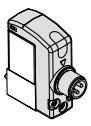
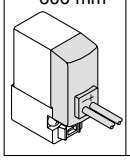
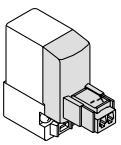
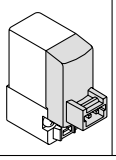
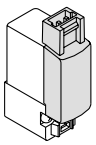


Pilot valve exhaust is centralized to main valve.

R: External pilot type∗

∗ SYJ3□2R is only for manifold use.

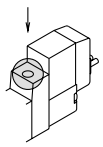
Electrical entry

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	
				

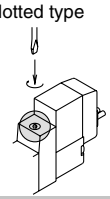
∗ "LN," "MN" type: with 2 sockets.
∗ For connector cable of M8 connector, refer to page 4-4-60.

Manual override

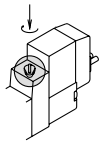
Nil: Non-locking push type



D: Push-turn locking slotted type

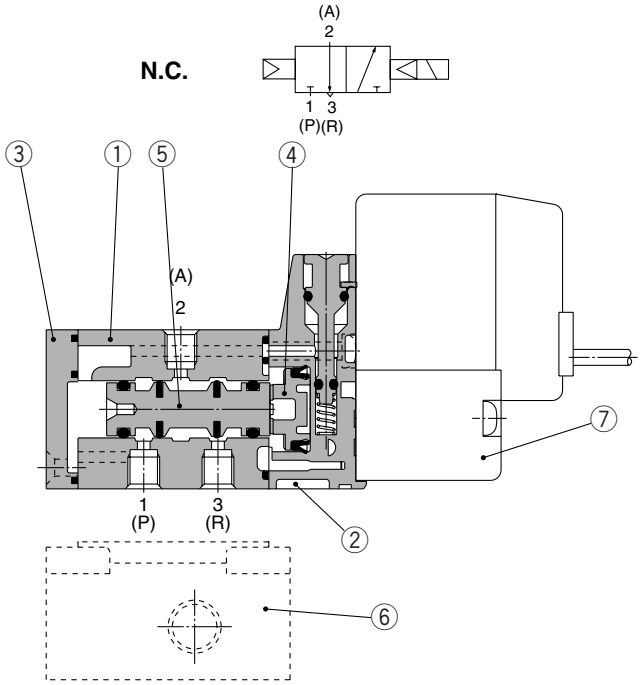


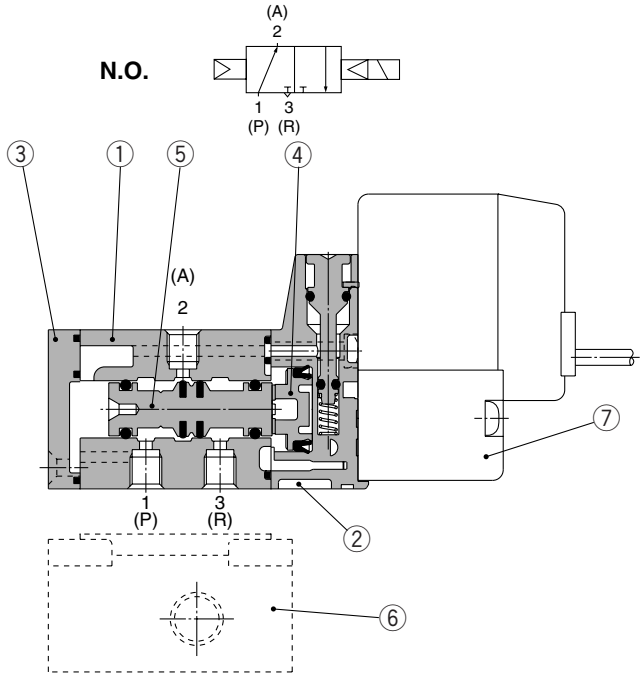
E: Push-turn locking lever type



Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 4-4-11.)

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, HNBR	—

Replacement Parts

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

How to Order Pilot Valve Assembly

V111 □ — 5 G □

Coil specifications

Nil	Standard: DC specifications
A	Standard: AC specifications
T	With power saving circuit (24, 12 VDC only)

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

Rated voltage

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

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

Light/Surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage 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

∗ For connector cable of M8 connector, refer to page 4-4-60.

How to Order Connector Assembly for L/M Plug Connector

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

Lead wire length

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

How to Order M8 Connector Cable

V100-49-1- □

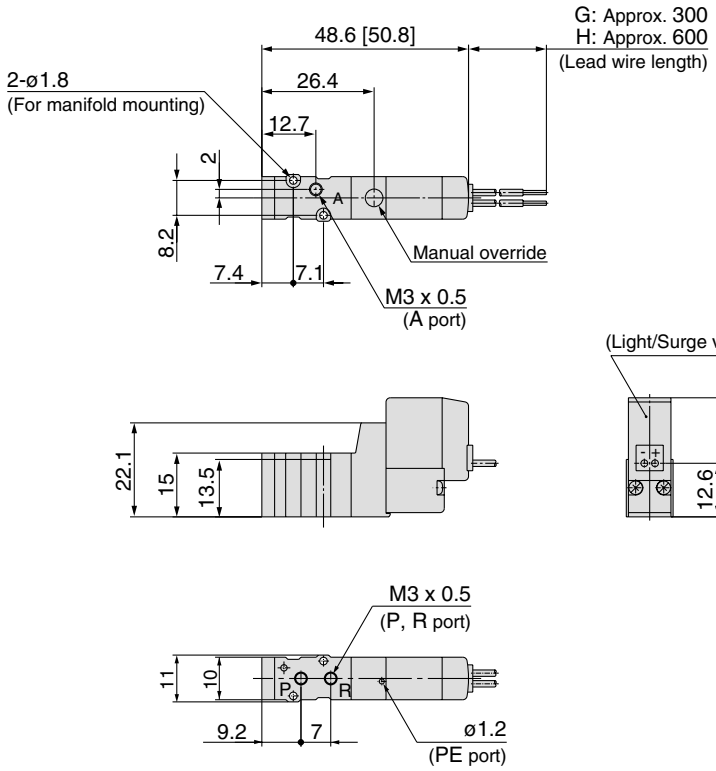
Cable length

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

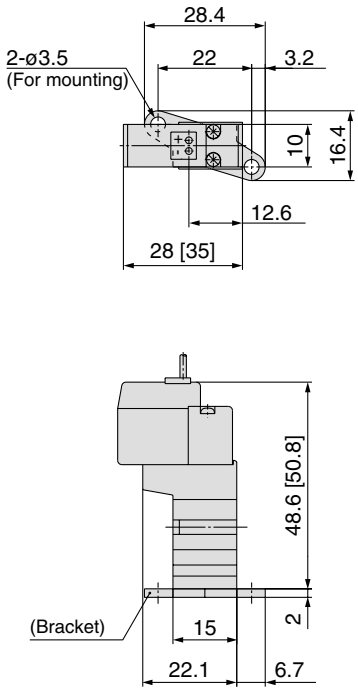
Body Ported

* [ ] for AC

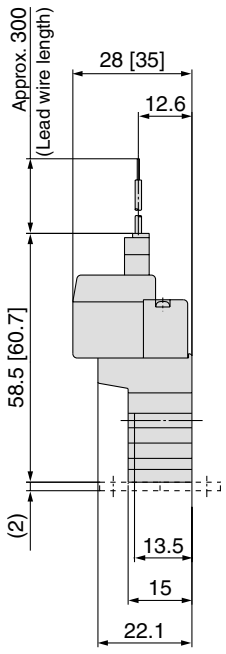
Grommet (G), (H): SYJ3□2-□$^{G}_{H}$□□-M3



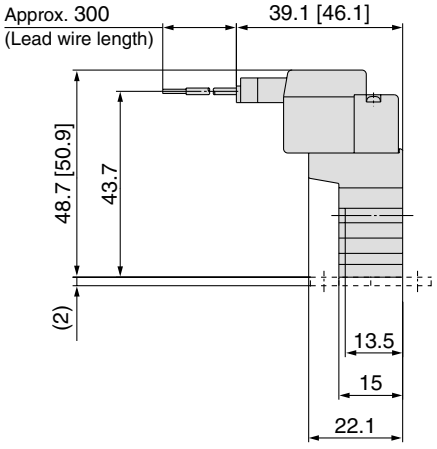
With bracket: SYJ3□2-□$^{G}_{H}$□□-M3-F



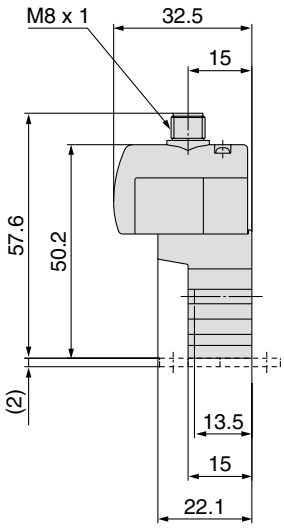
L plug connector (L): SYJ3□2-□L□□-M3



M plug connector (M): SYJ3□2-□M□□-M3



M8 connector (WO): SYJ3□2-□WO□□-M3

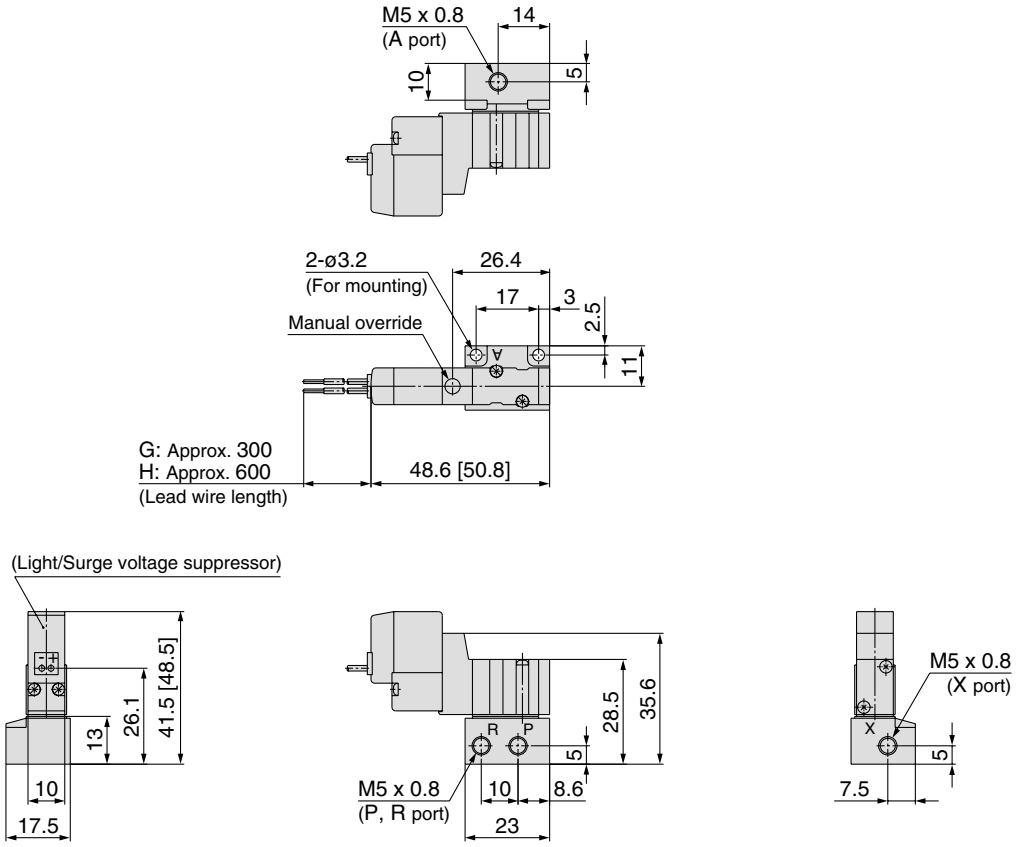


* Refer to page 4-4-61 for dimensions with connector cable.

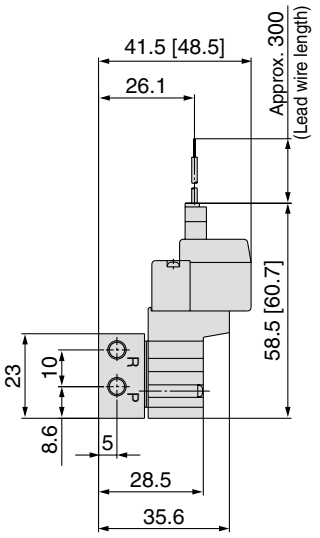
Base Mounted (With sub-plate)

＊[ ] for AC

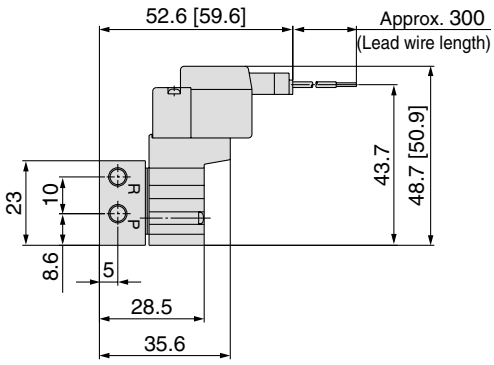
Grommet (G), (H): SYJ3□4-□$^{G}_{H}$□□-M5



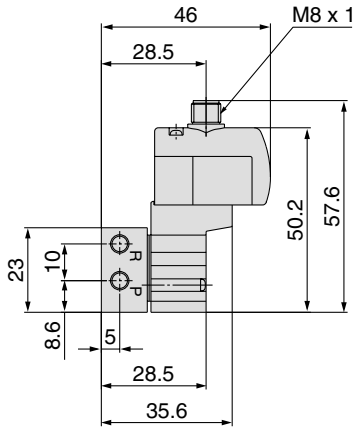
L plug connector (L): SYJ3□4-□L□□-M5



M plug connector (M): SYJ3□4-□M□□-M5

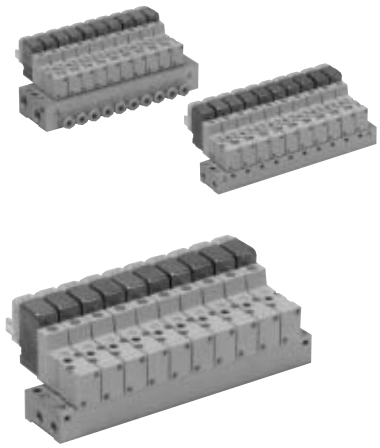


M8 connector (WO): SYJ3□4-□WO□□-M5



＊ Refer to page 4-4-61 for dimensions with connector cable.

Series SYJ300
Manifold Specifications



Manifold Specifications

Model		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 1 → 2 (P → A)			Flow characteristics 2 → 3 (A → R)			Effective area (mm^2)
			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.

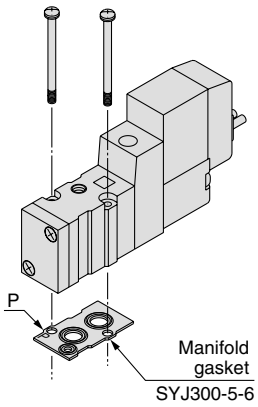
Example:

- **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

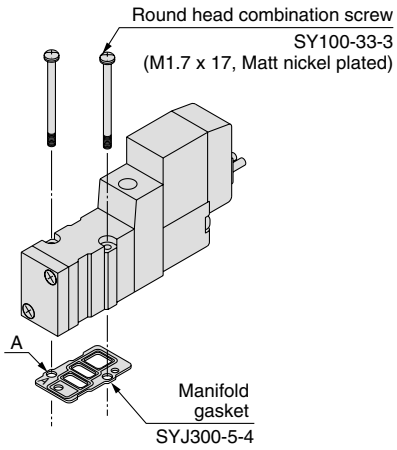
Body ported
(Type SYJ3□2(R))



Applicable base

SS3YJ3-20 SS3YJ3-20R	Manifold base

Base mounted
(Type SYJ3□4(R))

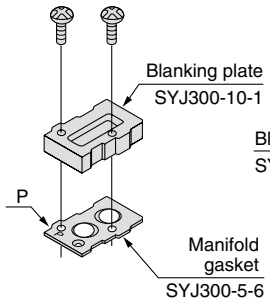


Applicable base
Sub-plate

SS3YJ3-41 SS3YJ3-S41 SS3YJ3-42 SS3YJ3-S42 SS3YJ3-42R SS3YJ3-S42R	Manifold base

Blanking Plate Assembly

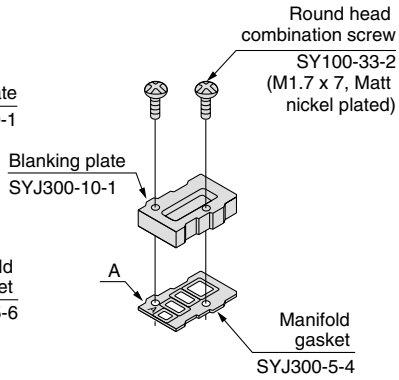
Part no.: SYJ300-10-1A



Applicable base

SS3YJ3-20 SS3YJ3-20R	Manifold base

Part no.: SYJ300-10-2A



Applicable base
Sub-plate

SS3YJ3-41 SS3YJ3-S41 SS3YJ3-42 SS3YJ3-S42 SS3YJ3-42R SS3YJ3-S42R	Manifold base

⚠ Caution

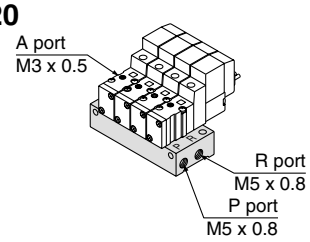
Mounting Screw Tightening Torques

M1.7: 0.12 N·m

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

Manifold for Internal Pilot Type

Type 20



How to Order

SS3YJ3–20– 05 –

Stations

02	2 stations
:	:
20	20 stations

Bracket

Nil	Without bracket
F	With bracket

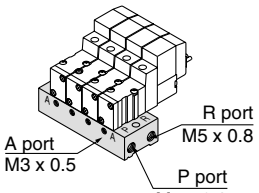
Applicable solenoid valve
SYJ312-□□□□-M3
SYJ312M-□□□□-M3
SYJ322-□□□□-M3
SYJ322M-□□□□-M3

Applicable blanking plate assembly
SYJ300-10-1A

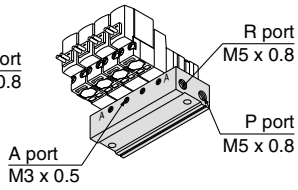
Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

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

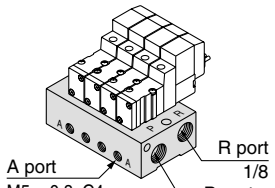
Applicable solenoid valve
SYJ314-□□□□
SYJ314M-□□□□
SYJ324-□□□□
SYJ324M-□□□□

Applicable blanking plate assembly
SYJ300-10-2A

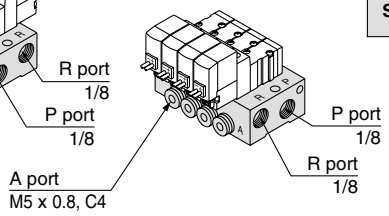
Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

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

Applicable solenoid valve
SYJ314-□□□□
SYJ314M-□□□□
SYJ324-□□□□
SYJ324M-□□□□

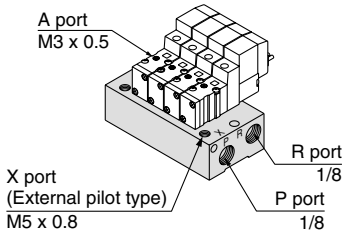
Applicable blanking plate assembly
SYJ300-10-2A

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

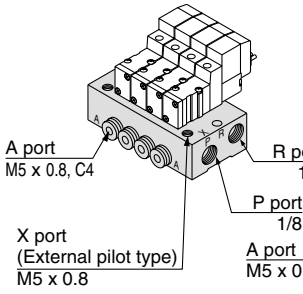
Applicable solenoid valve
SYJ312R-□□□□
SYJ322R-□□□□

Applicable blanking plate assembly
SYJ300-10-1A

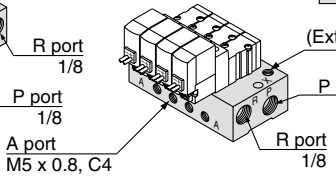
Note) For more than 10 stations, supply/exhaust air to/from both sides of P port and R port.

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

Applicable solenoid valve
SYJ314R-□□□□
SYJ324R-□□□□

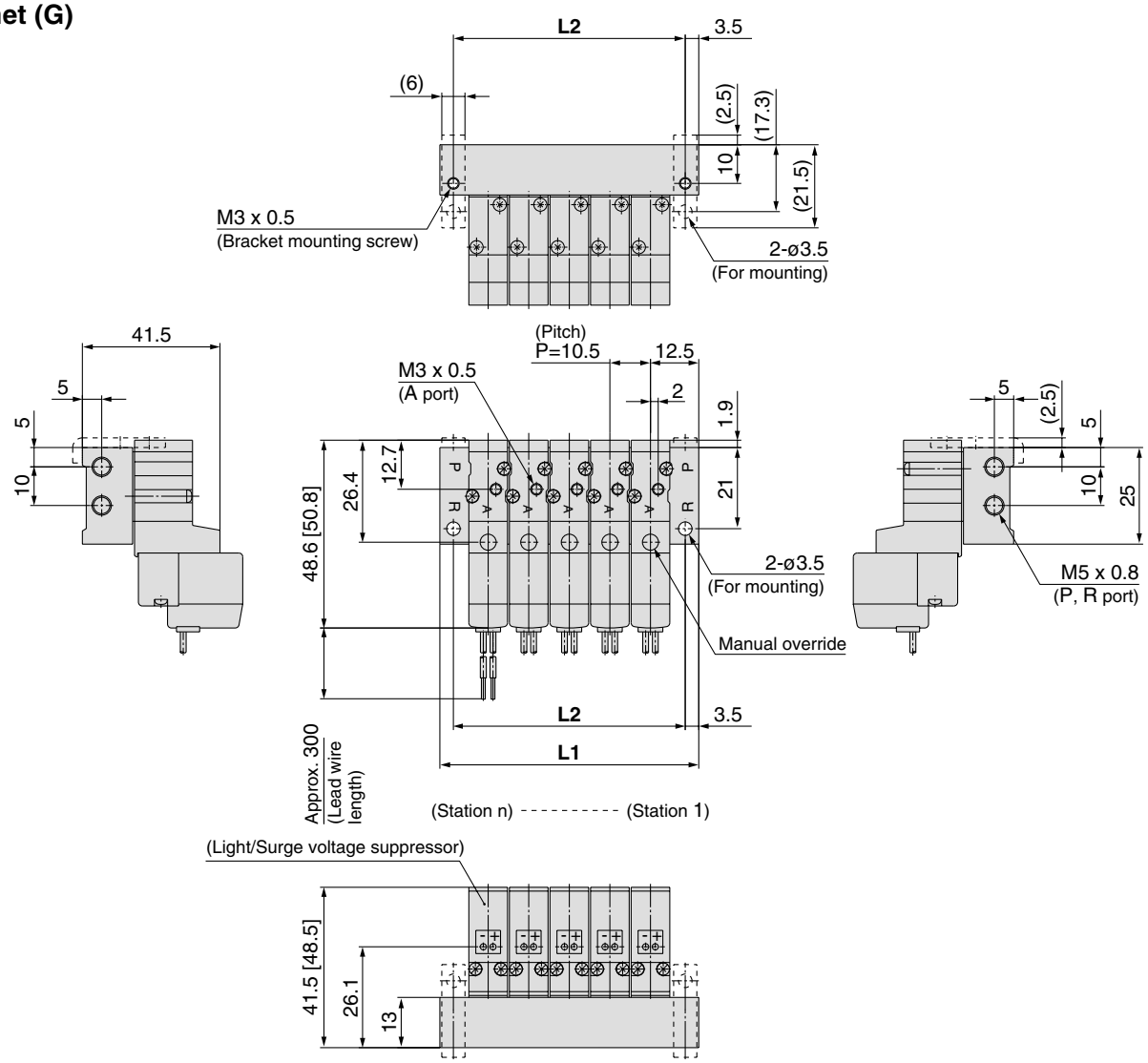
Applicable blanking plate assembly
SYJ300-10-2A

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

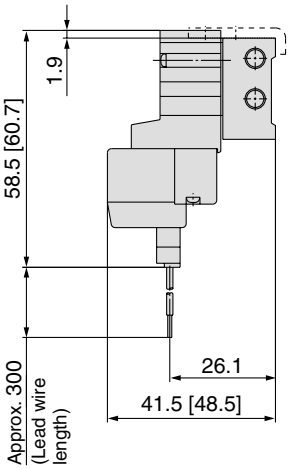
Type 20 Manifold: Top Ported/SS3YJ3-20-Stations-00□ (-F)

∗ [ ] for AC

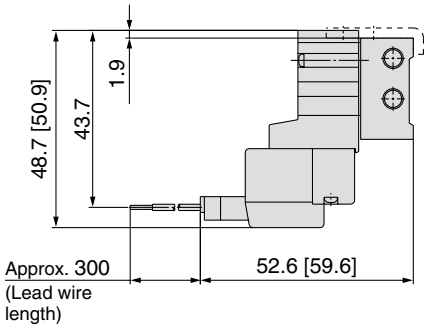
Grommet (G)



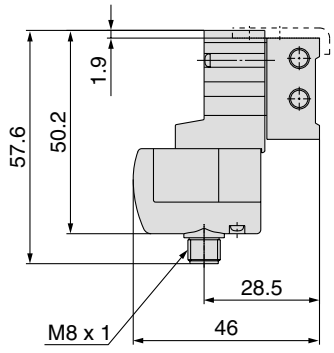
L plug connector (L)



M plug connector (M)



M8 connector (WO)



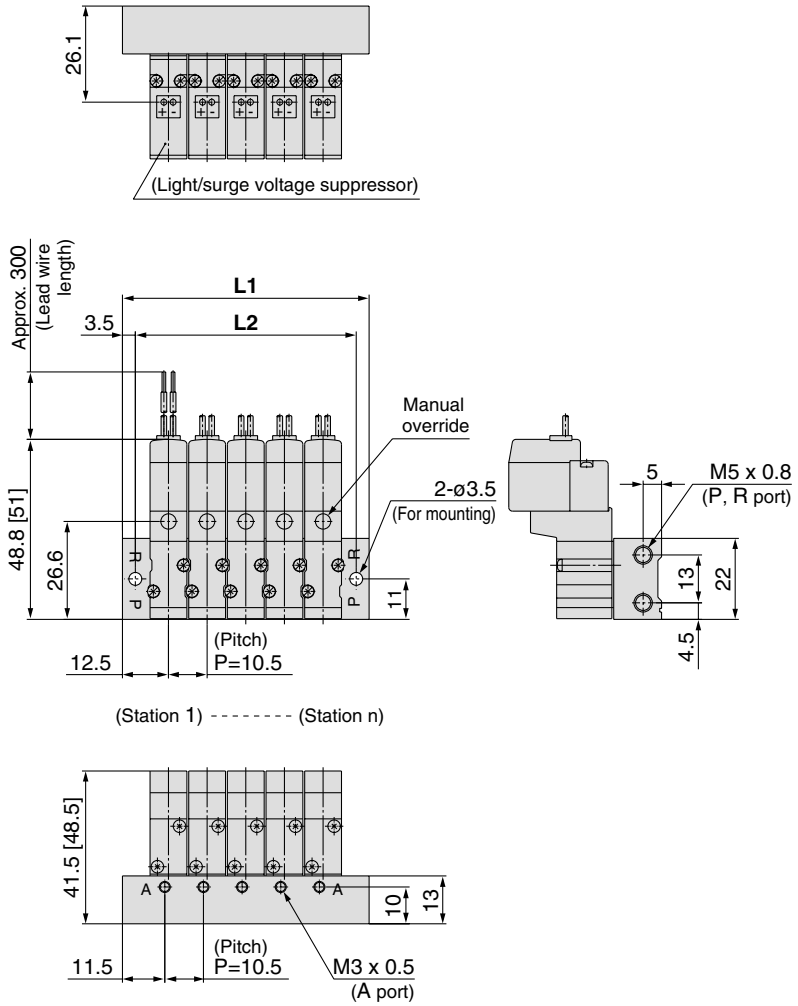
∗ Refer to page 4-4-61 for dimensions with connector cable.

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

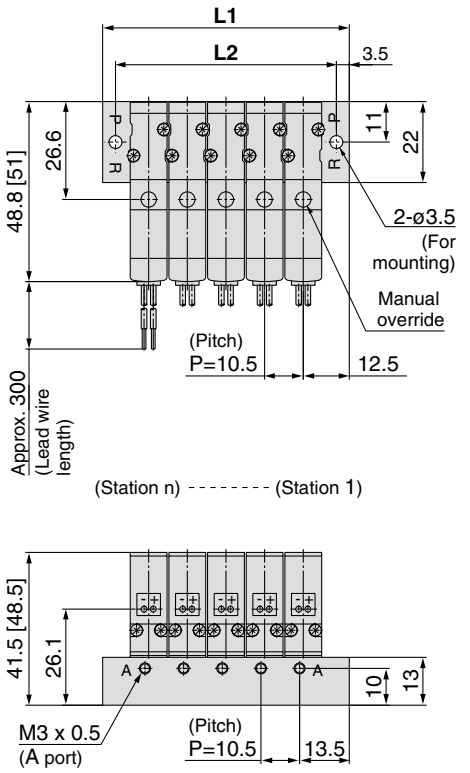
Grommet (G)



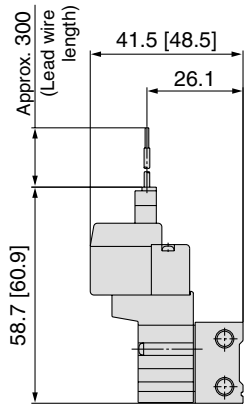
Type 41 Manifold: Side Ported

(Pilot valve is on the A port side) /

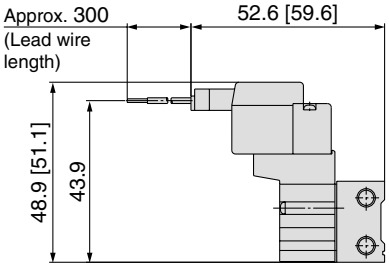
SS3YJ3-S41-Stations-M3



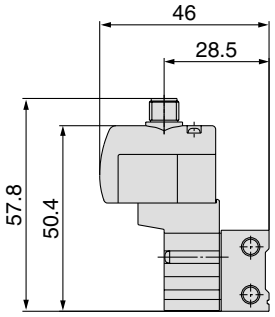
L plug connector (L)



M plug connector (M)



M8 connector (WO)



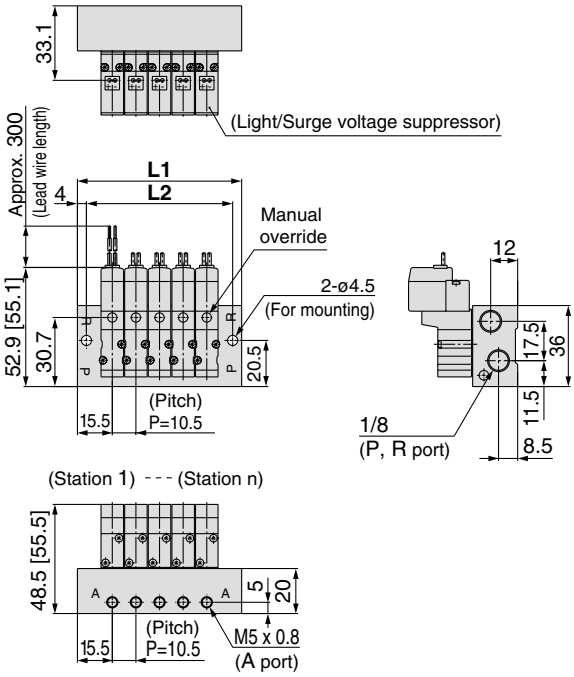
＊ Refer to page 4-4-61 for dimensions with connector cable.

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

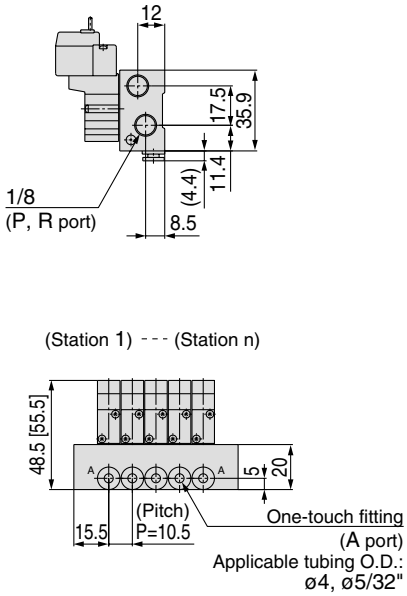
Type 42 Manifold: Side Ported/SS3YJ3-42-Stations-M5, C4 N3 □

∗ [ ] for AC

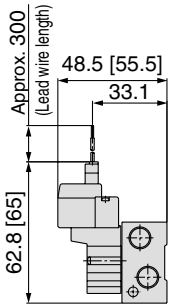
Grommet (G)
For M5



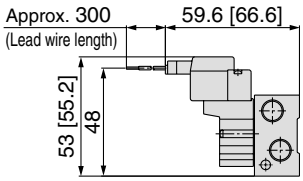
For C4 N3 □ (Built-in One-touch fitting)



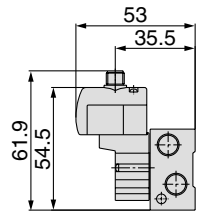
L plug connector (L)



M plug connector (M)



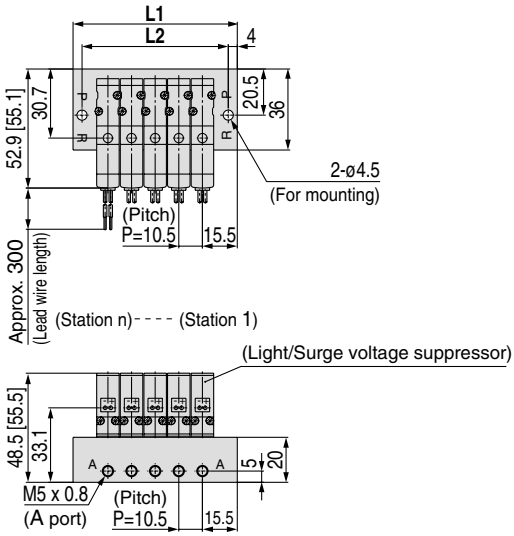
M8 connector (WO)



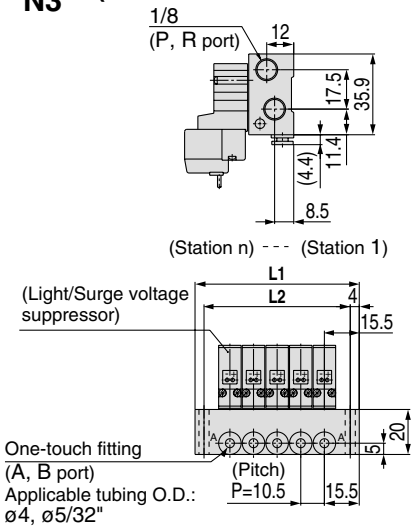
∗ Refer to page 4-4-61 for dimensions with connector cable.

Type 42 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)

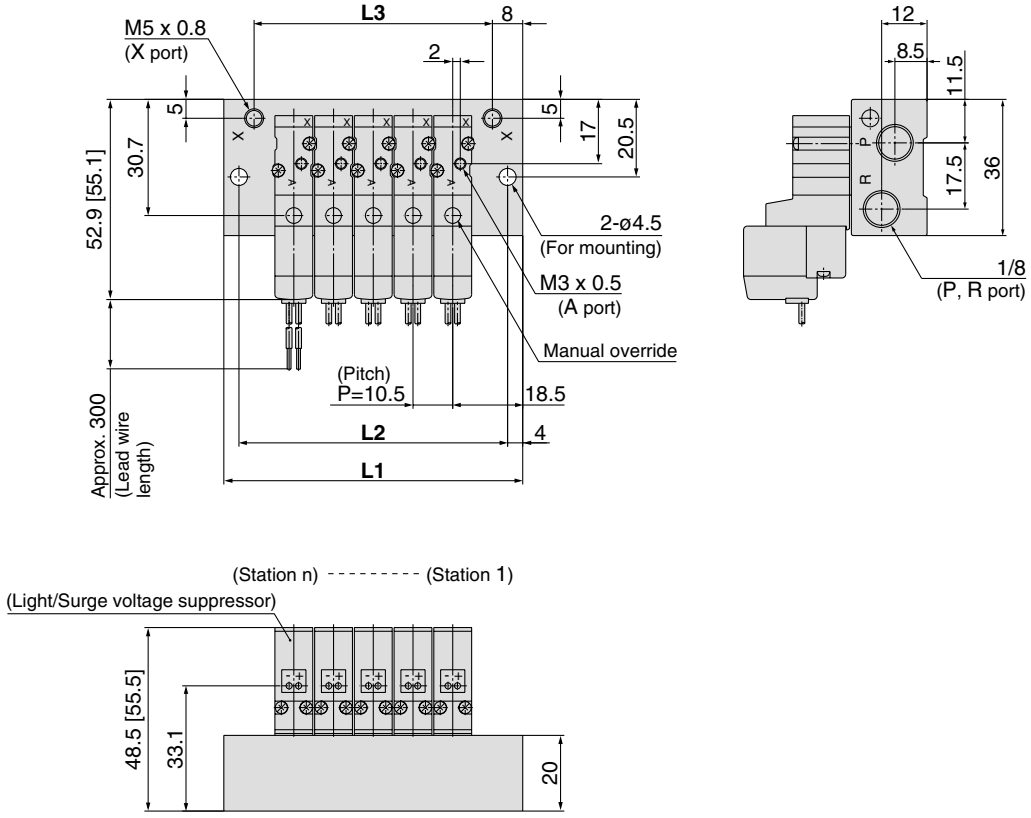


Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	41.5	52	62.5	73	83.5	94	104.5	115	125.5	136	146.5	157	167.5	178	188.5	199	209.5	220	230.5
L2	33.5	44	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212	222.5

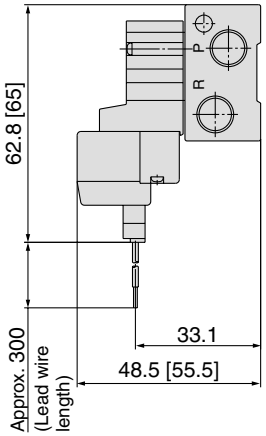
Type 20R Manifold: Top Ported (External Pilot Type)/SS3YJ3-20R-Stations-00□

＊[ ] for AC

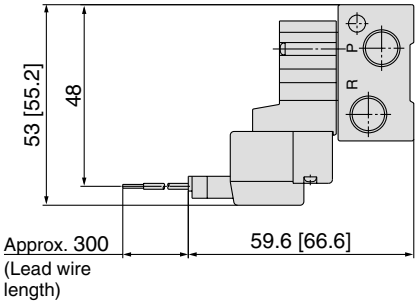
Grommet (G)



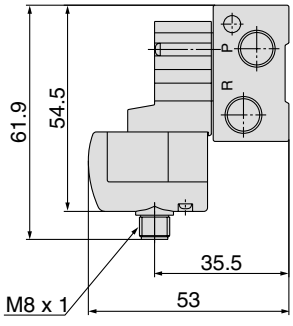
L plug connector (L)



M plug connector (M)



M8 connector (WO)



＊ Refer to page 4-4-61 for dimensions with connector cable.

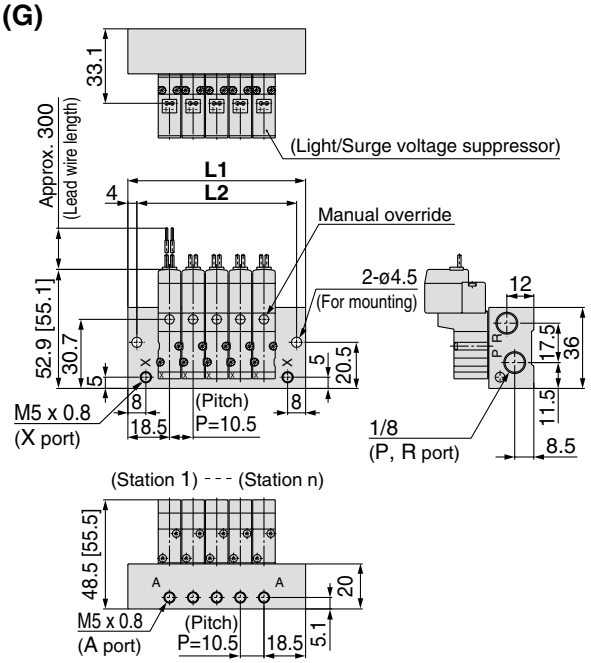
Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	47.5	58	68.5	79	89.5	100	110.5	121	131.5	142	152.5	163	173.5	184	194.5	205	215.5	226	236.5
L2	39.5	50	60.5	71	81.5	92	102.5	113	123.5	134	144.5	155	165.5	176	186.5	197	207.5	218	228.5
L3	31.5	42	52.5	63	73.5	84	94.5	105	115.5	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□

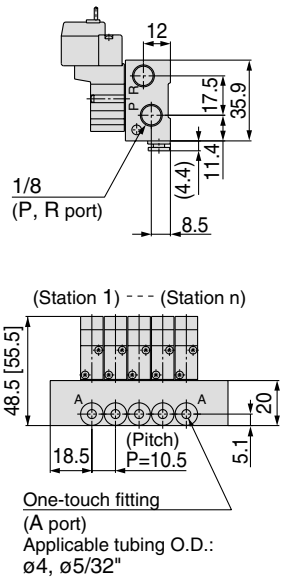
∗ [ ] for AC

Grommet (G)

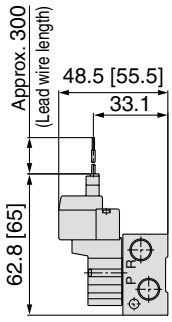
For M5



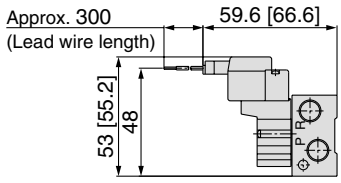
For C4 N3□ (Built-in One-touch fitting)



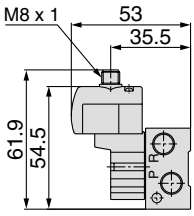
L plug connector (L)



M plug connector (M)



M8 connector (WO)

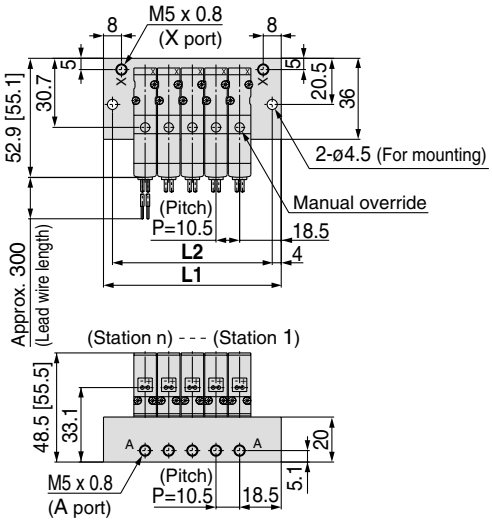


∗ Refer to page 4-4-61 for dimensions with connector cable.

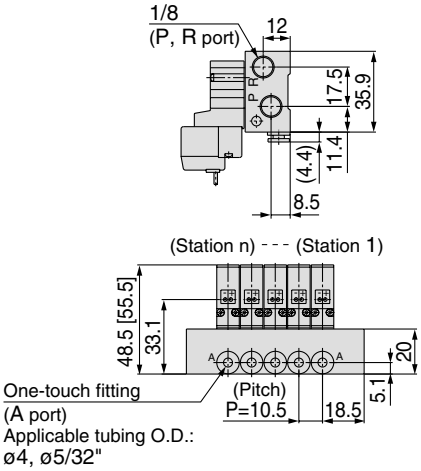
Type S42R Manifold: Side Ported (Pilot valve is on the A port side)/SS3YJ3-S42R-Stations-M5, C4 N3□

Grommet (G)

For M5



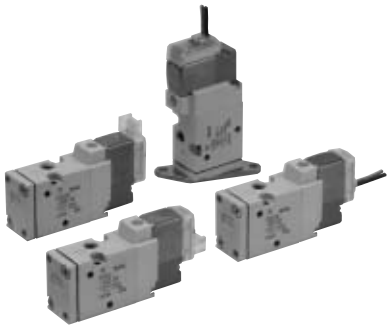
For C4 N3□ (Built-in One-touch fitting)



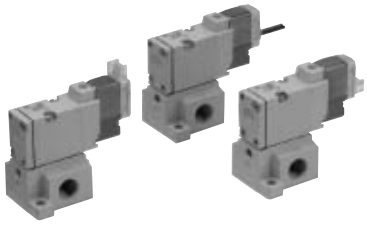
Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	47.5	58	68.5	79	89.5	100	110.5	121	131.5	142	152.5	163	173.5	184	194.5	205	215.5	226	236.5
L2	39.5	50	60.5	71	81.5	92	102.5	113	123.5	134	144.5	155	165.5	176	186.5	197	207.5	218	228.5

3 Port Pilot Operated Solenoid Valve Rubber Seal

Series SYJ500



Body ported



Base mounted

Specifications

Fluid		Air
Operating pressure range MPa	Internal pilot	0.15 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (No freezing. Refer to page 4-18-4.)
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		Dustproof (∗ DIN terminal, M8 connector conforms to IP65.)

∗ Based on IEC529

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 with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Value in the initial state)

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

Solenoid Specifications

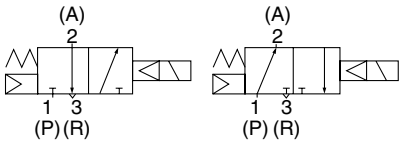
Electrical entry			Grommet (G), (H), L plug connector (L), M plug connector (M), DIN terminal (D), M8 connector (W)
Coil rated voltage (V)	DC		24, 12, 6, 5, 3
	AC 50/60 Hz		100, 110, 200, 220
Allowable voltage fluctuation			±10% of rated voltage
Power consumption (W)	DC	Standard	0.35 (With indicator light: 0.4 (DIN terminal with indicator light: 0.45))
		With power saving circuit	0.1 (With indicator light only)
Apparent power (VA)	AC	100 V	1.4 (With indicator light: 1.5)
		110 V [115 V]	1.6 (With indicator light: 1.7) [1.7 (With indicator light: 1.8)]
		200 V	2.3 (With indicator light: 2.4)
		220 V [230 V]	2.5 (With indicator light: 2.6) [2.7 (With indicator light: 2.8)]
Surge voltage suppressor			Diode (DIN terminal, varistor when non-polar types)
Indicator light			LED (Neon bulb 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.

JIS Symbol

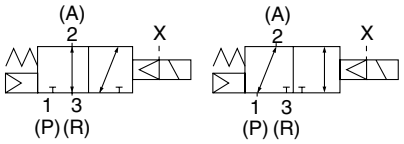
Internal pilot

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



External pilot

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



Made to Order Specifications
(For details, refer to pages 4-4-54 to 55.)

Flow Characteristics/Weight

Valve model		Type of actuation	Port size	Flow characteristics						Weight (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 1 g for AC. ( ): Without sub-plate.

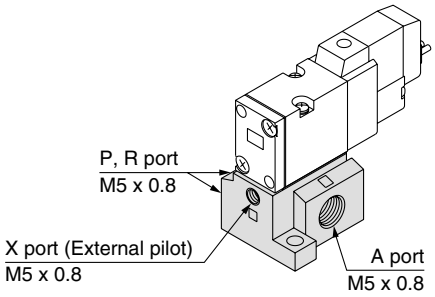
External Pilot

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 4-4-24.
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 4-4-55.

How to Order

Rated voltage

DC

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

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

AC (50/60 Hz)

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

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

Light/Surge voltage suppressor

Electrical entry for G, H, L, 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.

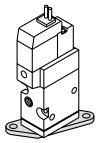
Electrical entry for D

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

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

Bracket

Nil: Without bracket
F: With bracket

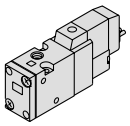


* Bracket is mounted.
* External pilot type is not available.

Type of actuation

1	Normally closed
2	Normally open

3 port

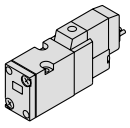


(For manifold type 20, 21R)

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

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

3 port



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

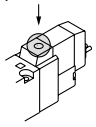
Coil specifications

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

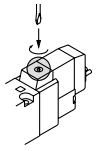
* Power saving circuit is not available in the case of "D", "DO", "W□" type.

Manual override

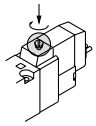
Nil: Non-locking push type



D: Push-turn locking slotted type

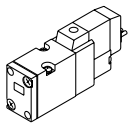


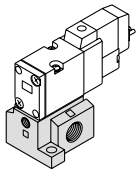
E: Push-turn locking lever type



Port size

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





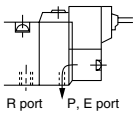
(With gasket and screws)

Thread type

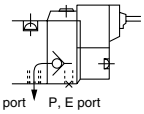
Nil	Rc
F	G
N	NPT
T	NPTF

Body option

Nil: Individual pilot exhaust type



M: Common exhaust for the pilot and main valve

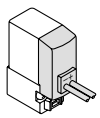
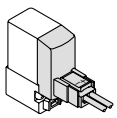
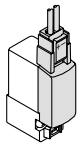
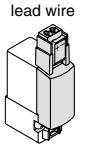
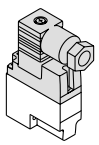
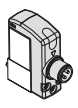
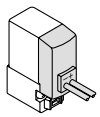
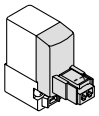
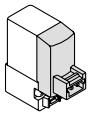
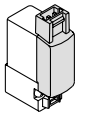
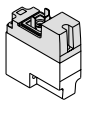


R: External pilot type*

* SYJ5□2R is only for manifold use.

Electrical entry

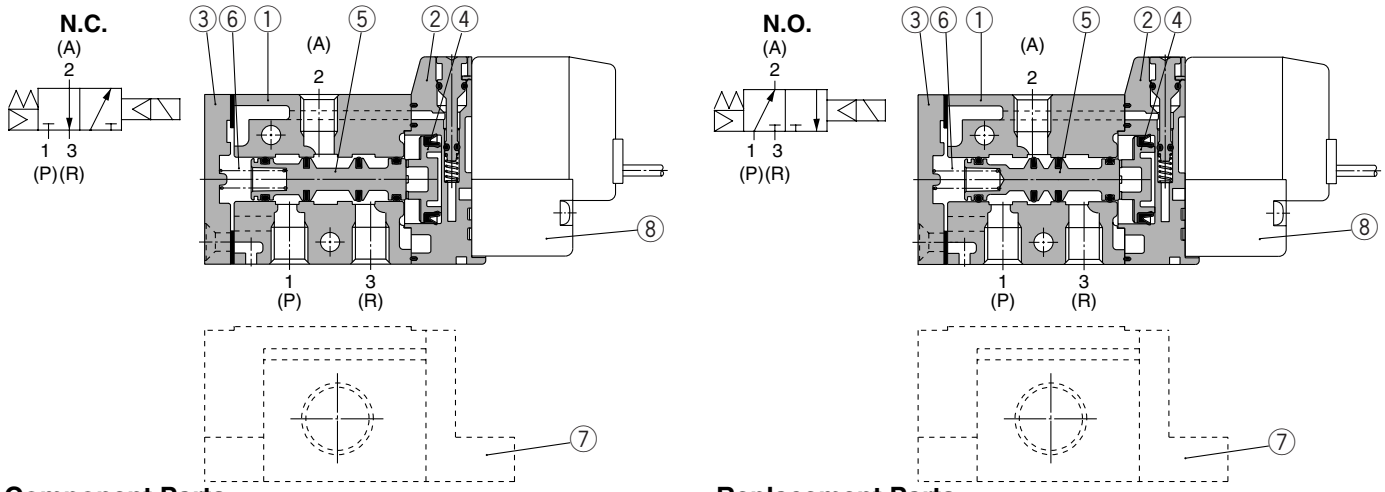
24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm	**L:** With lead wire (Length 300 mm)	**M:** With lead wire (Length 300 mm)	**D:** With connector	**WO:**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

Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 4-4-25.)

* "LN", "MN" type: with 2 sockets.
* DIN terminal "Type Y" conforming to DIN43650C standard is also available. For details, refer to page 4-4-54.
* For connector cable of M8 connector, refer to page 4-4-60.

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	SYJ500-9-1	Zinc die-casted
⑧	Pilot valve	V111(T)-□□□□	

How to Order Pilot Valve Assembly

V111 □ — **5** **G** □

Coil specifications

Nil	Standard: DC specifications
A	Standard: AC specifications
T	With power saving circuit (24, 12 VDC only)

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

Rated voltage

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

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

Light/Surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage 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

∗ For connector cable of M8 connector, refer to page 4-4-60.

V115 — **5** **D** □

Rated voltage

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

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

Light/Surge voltage suppressor

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

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

Electrical entry

D	DIN terminal	With connector
DO		Without connector

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

How to Order Connector Assemby for L/M Plug Connector

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

Lead wire length

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

How to Order M8 Connector Cable

V100-49-1- □

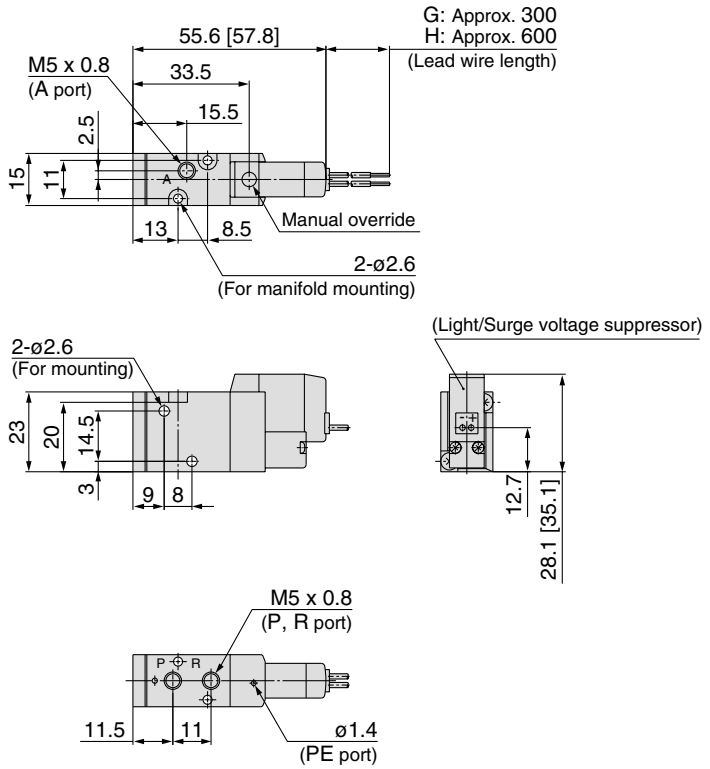
Cable length

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

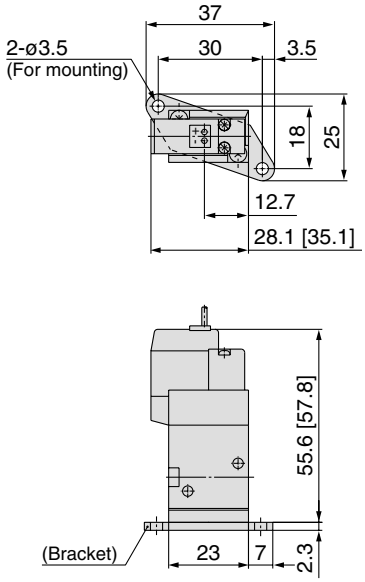
Body Ported

∗ [ ] for AC

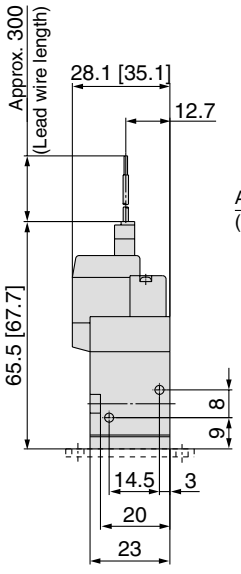
Grommet (G), (H): SYJ5□2-□$^{G}_{H}$□□-M5



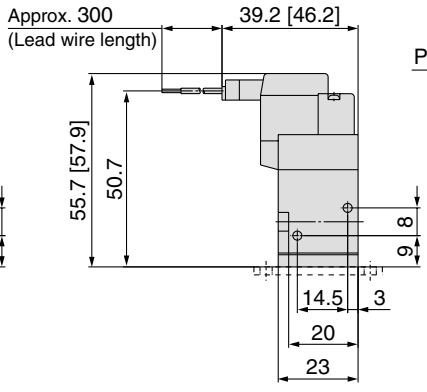
With bracket: SYJ5□2-□$^{G}_{H}$□□-M5-F



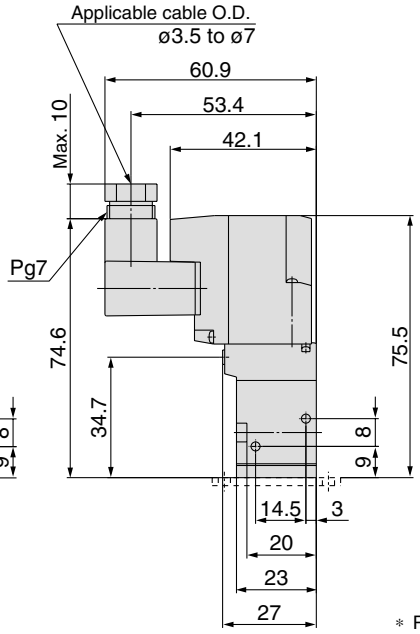
L plug connector (L): SYJ5□2-□L□□-M5 (-F)



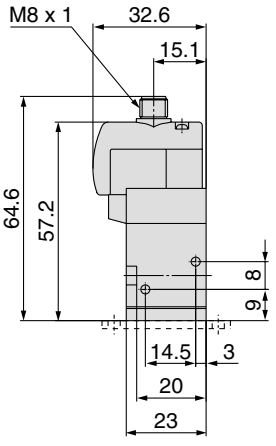
M plug connector (M): SYJ5□2-□M□□-M5 (-F)



DIN terminal (D): SYJ5□2-□D□□-M5 (-F)



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

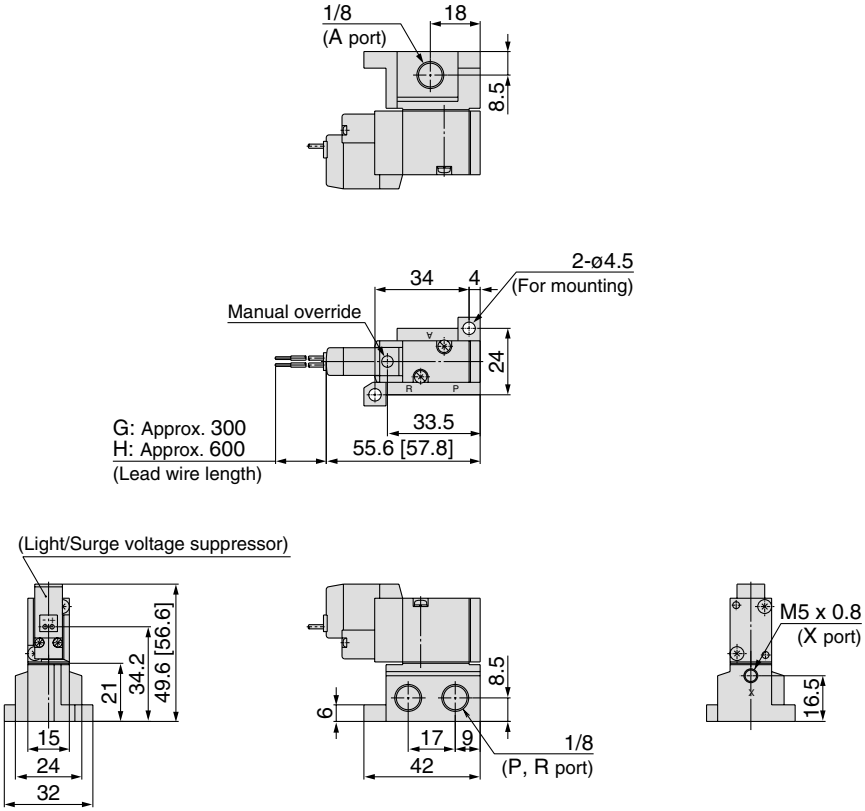


∗ Refer page 4-4-61 for dimensions with connector cable.

Base Mounted (With sub-plate)

∗ [ ] for AC

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

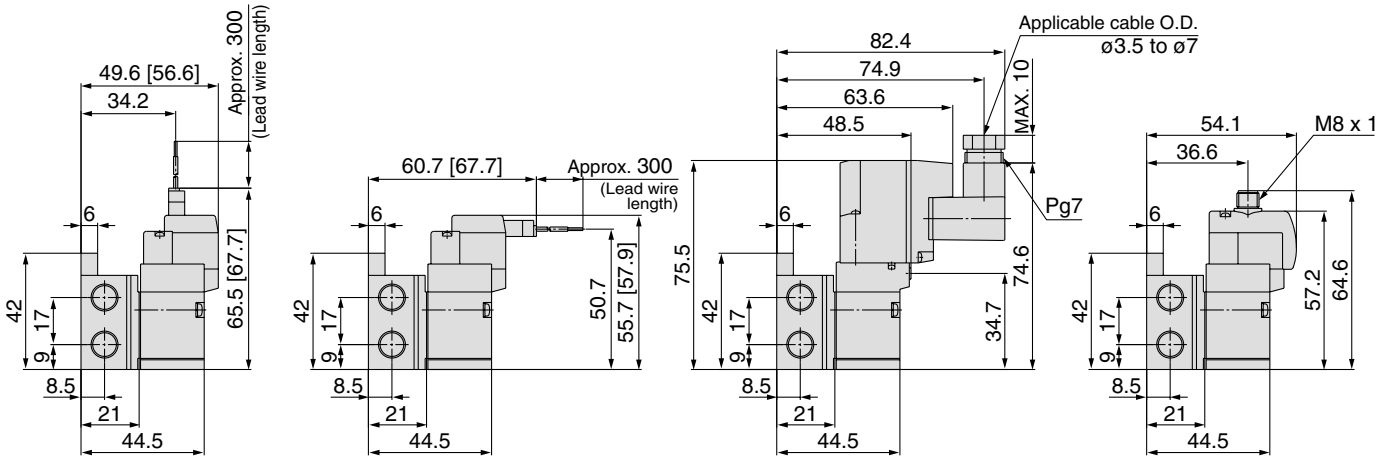


L plug connector (L): SYJ5□4-□L□□-01□

M plug connector (M): SYJ5□4-□M□□-01□

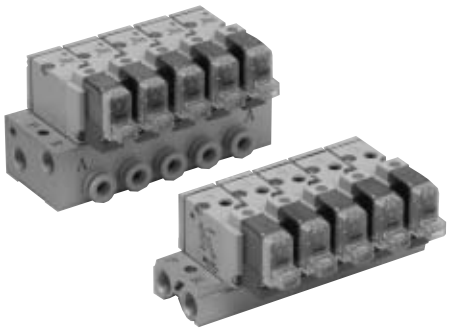
DIN terminal (D): SYJ5□4-□D□□-01□

M8 connector (WO): SYJ5□4-□WO□□-01□



∗ Refe page 4-4-61 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.

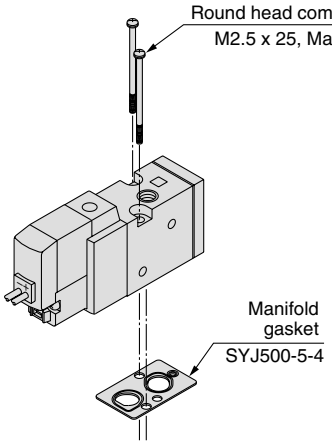
Example:

- **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

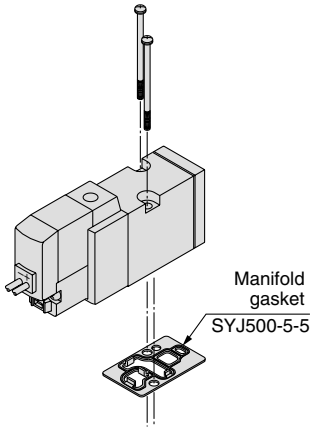
Body ported (Type SYJ5□2(R))



Applicable base

SS3YJ5-21R	Manifold base
SS3YJ5-20	
Manifold base	

Base mounted (Type SYJ5□4(R))

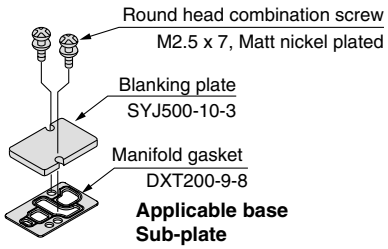


Applicable base
Sub-plate

SS3YJ5-40	Manifold base
SS3YJ5-41	
SS3YJ5-40R	
SS3YJ5-41R	

Blanking Plate Assembly

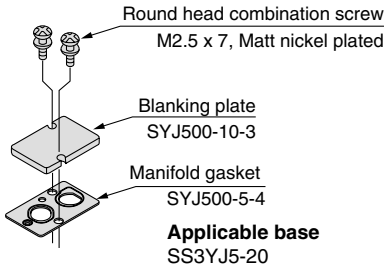
Part no.: SYJ500-10-3A



Applicable base
Sub-plate

SS3YJ5-40	Manifold base
SS3YJ5-41	
SS3YJ5-40R	
SS3YJ5-41R	

Part no.: SYJ500-10-1A



Applicable base
SS3YJ5-20
SS3YJ5-21R

⚠ Caution

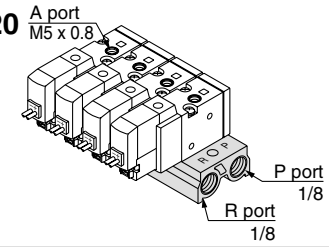
Mounting screw tightening torques

M2.5: 0.45 N·m

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

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

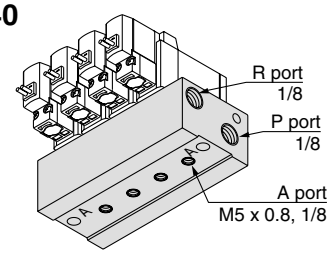
Bracket	
Nil	Without bracket
F	With bracket

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

Applicable solenoid valve
SYJ512-□□□□-M5
SYJ512M-□□□□-M5
SYJ522-□□□□-M5
SYJ522M-□□□□-M5

Applicable blanking plate assembly
SYJ500-10-1A

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

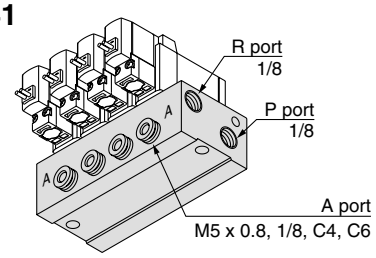
P, R port thread type	
Nil	Rc
F	G
N	NPT
T	NPTF

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

Applicable solenoid valve
SYJ514-□□□□
SYJ514M-□□□□
SYJ524-□□□□
SYJ524M-□□□□

Applicable blanking plate assembly
SYJ500-10-3A

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

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

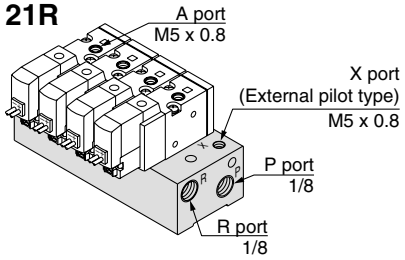
Applicable solenoid valve
SYJ514-□□□□
SYJ514M-□□□□
SYJ524-□□□□
SYJ524M-□□□□

Applicable blanking plate assembly
SYJ500-10-3A

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

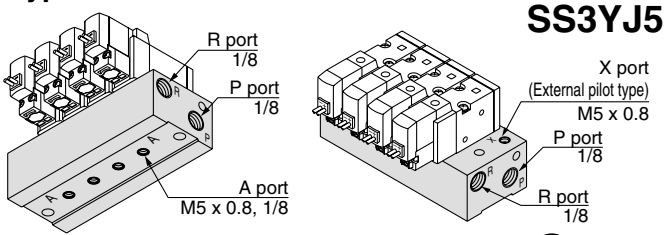
P, R port thread type	
Nil	Rc
00F	G
00N	NPT
00T	NPTF

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

Applicable solenoid valve
SYJ512R-□□□□-M5
SYJ522R-□□□□-M5

Applicable blanking plate assembly
SYJ500-10-1A

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

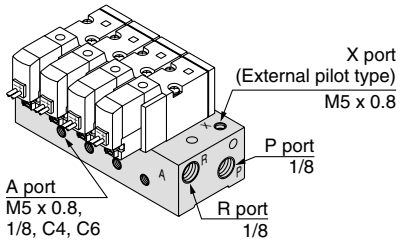
P, R port thread type	
Nil	Rc
F	G
N	NPT
T	NPTF

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

Applicable solenoid valve
SYJ514R-□□□□
SYJ524R-□□□□

Applicable blanking plate assembly
SYJ500-10-3A

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

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

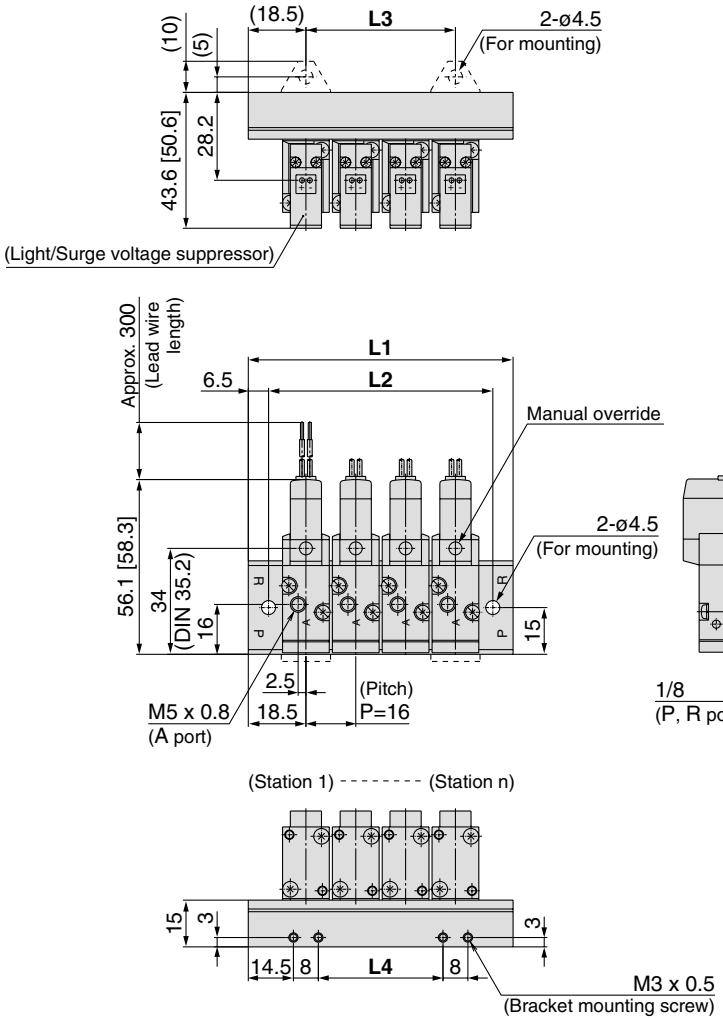
Applicable solenoid valve
SYJ514R-□□□□
SYJ524R-□□□□

Applicable blanking plate assembly
SYJ500-10-3A

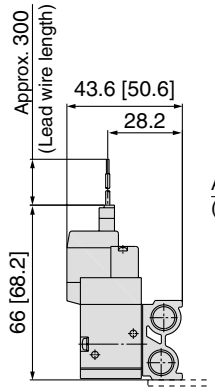
Type 20 Manifold: Top Ported/SS3YJ5-20-Stations-00□(-F)

∗ [ ] for AC

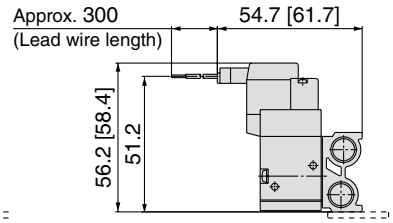
Grommet (G)



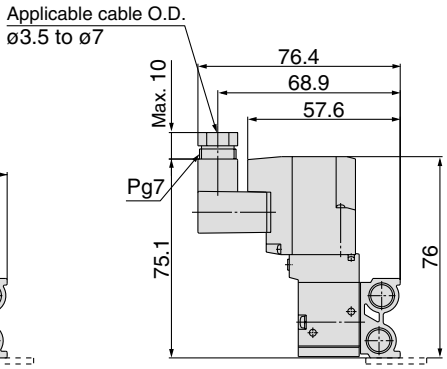
L plug connector (L)



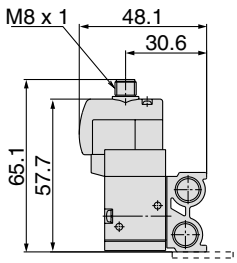
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



∗ Refer to page 4-4-61 for dimensions with connector cable.

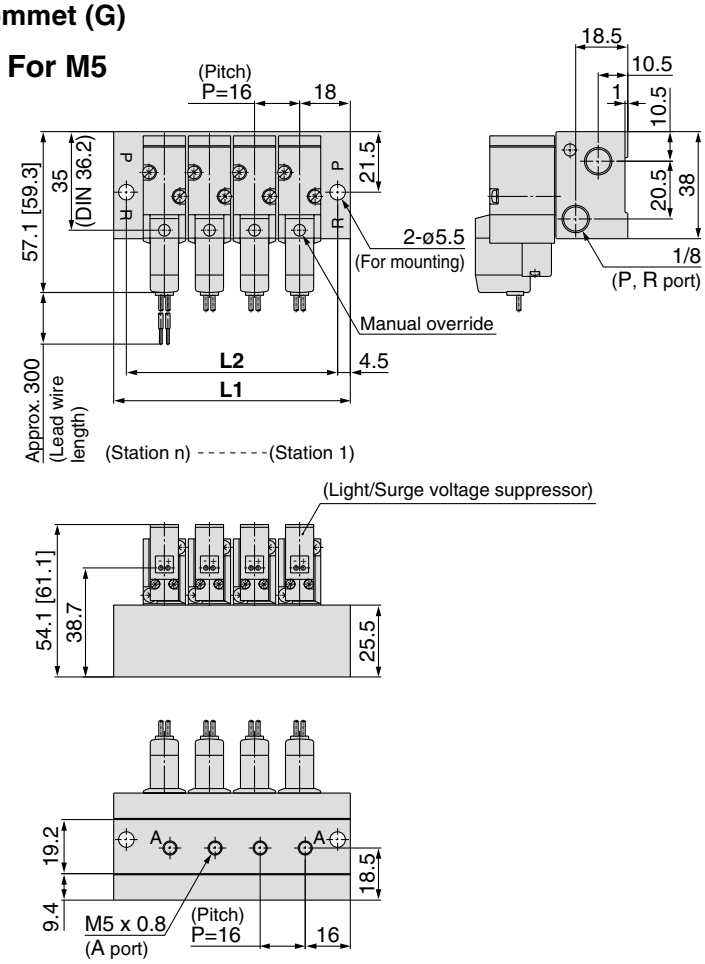
Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	53	69	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309	325	341
L2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328
L3	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
L4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

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

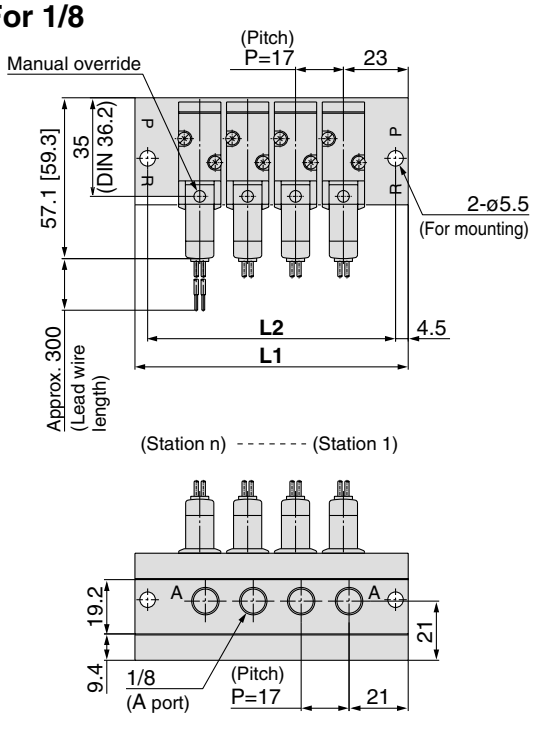
∗ [ ] for AC

Grommet (G)

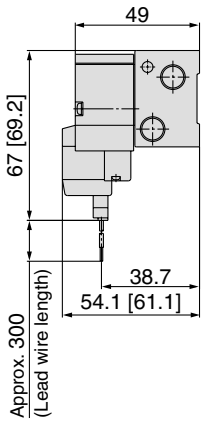
For M5



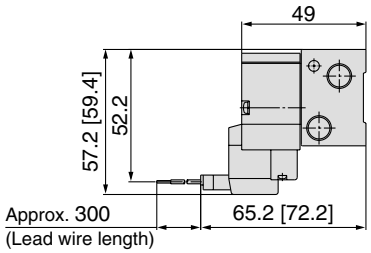
For 1/8



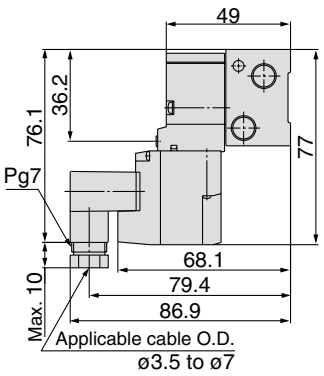
L plug connector (L)



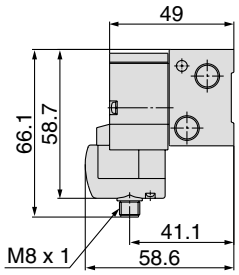
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



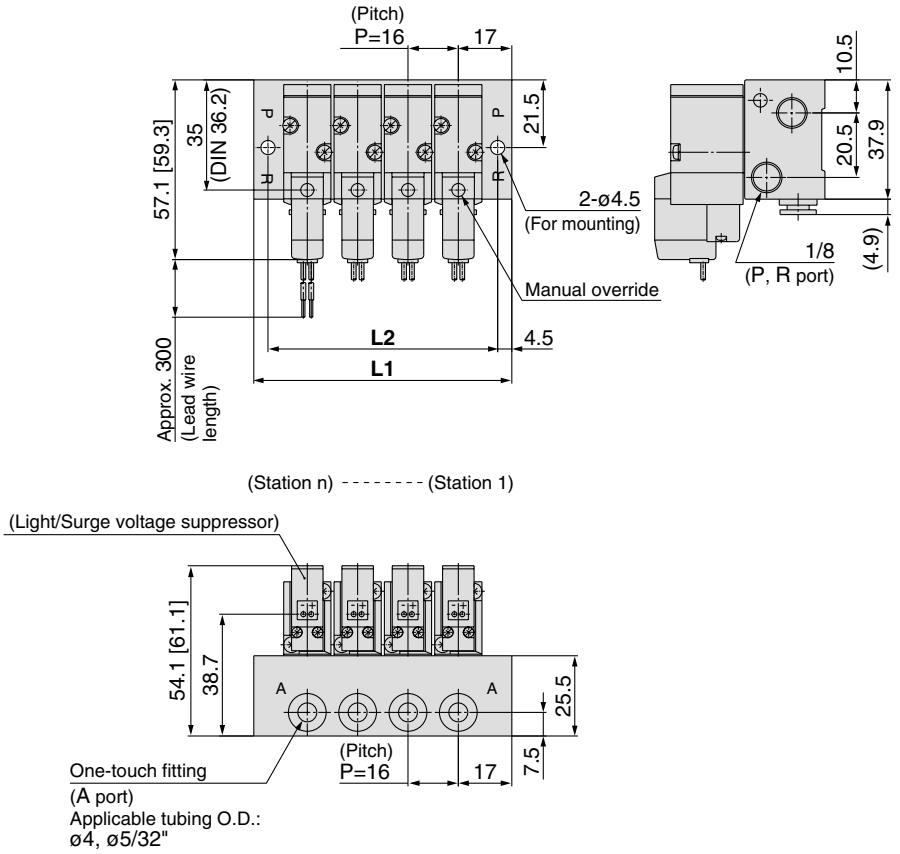
∗ Refer to page 4-4-61 for dimensions with connector cable.

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

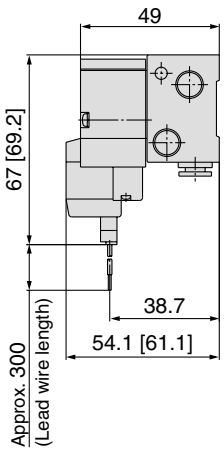
Type 41 Manifold: Side Ported/SS3YJ5-41-Stations-C4, N3 C6, N7□

∗ [ ] for AC

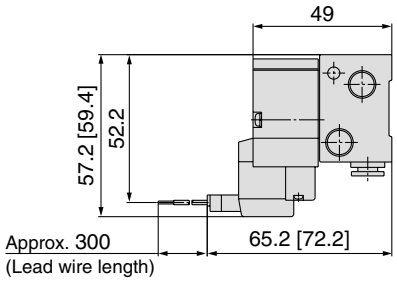
Grommet (G)



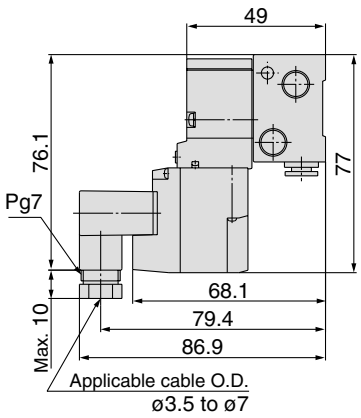
L plug connector (L)



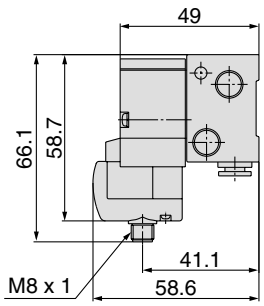
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



∗ Refer to page 4-4-61 for dimensions with connector cable.

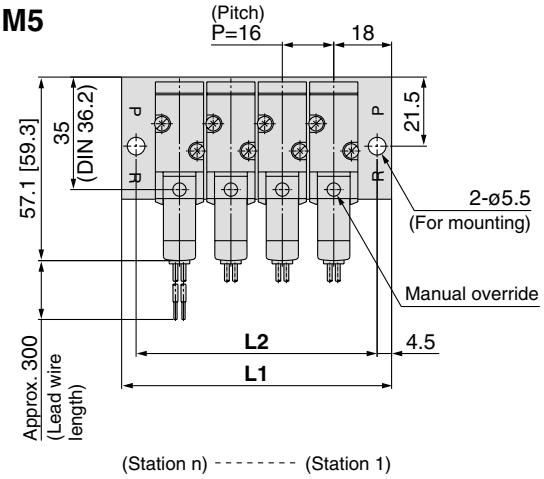
Port size	Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
One-touch fitting	**L1**	50	66	82	98	114	130	146	162	178	194	210	226	242	258	274	290	306	322	338
	L2	41	57	73	89	105	121	137	153	169	185	201	217	233	249	265	281	297	313	329

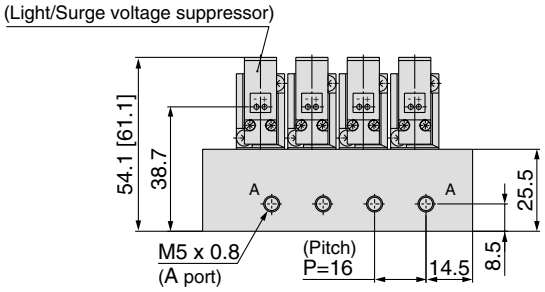
Type 41 Manifold: Side Ported/SS3YJ5-41-Stations-M5, 01 □

* [ ] for AC

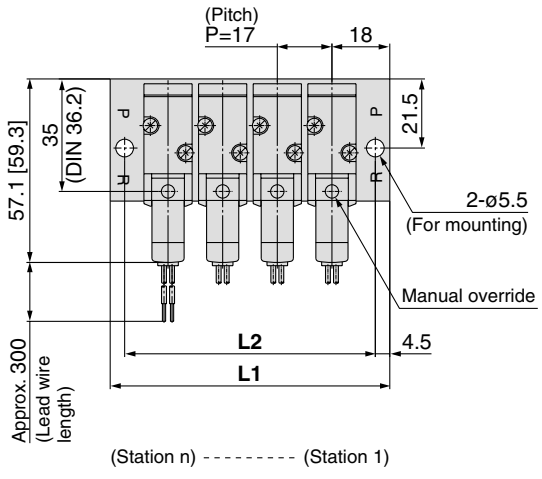
Grommet (G)

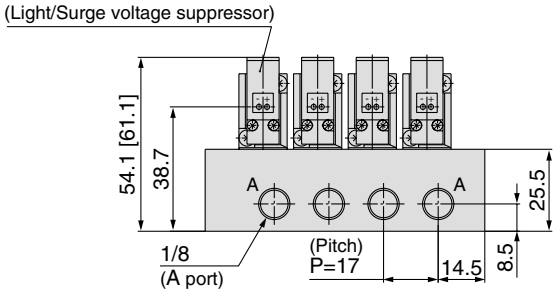
For M5





For 1/8



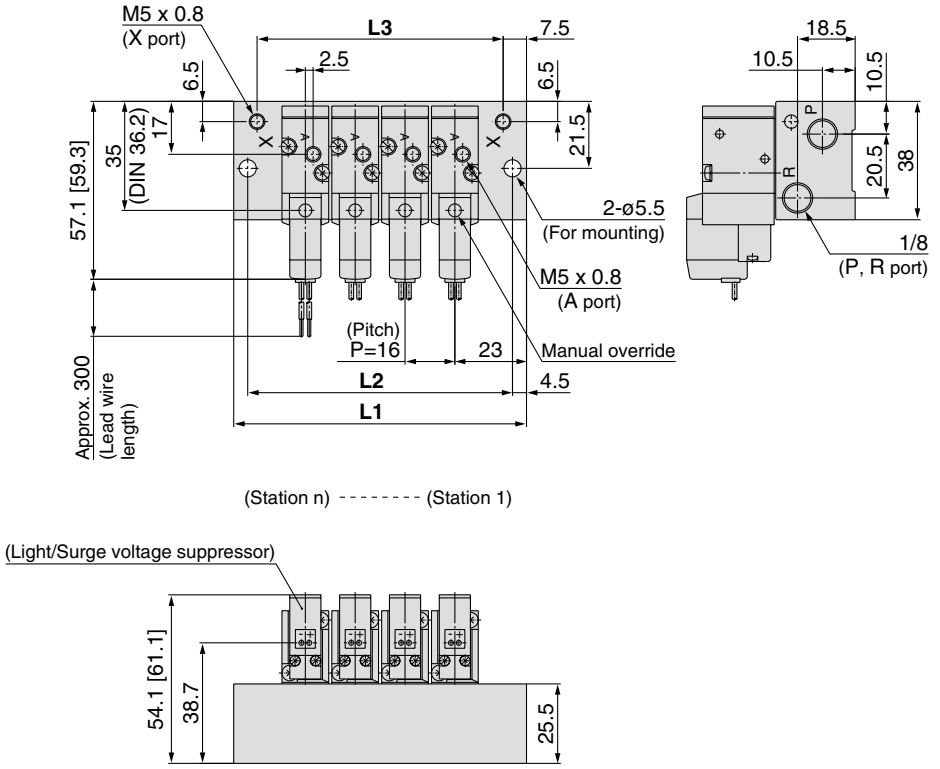


Port size	Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
M5	**L1**	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
	L2	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331
1/8	**L1**	53	70	87	104	121	138	155	172	189	206	223	240	257	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

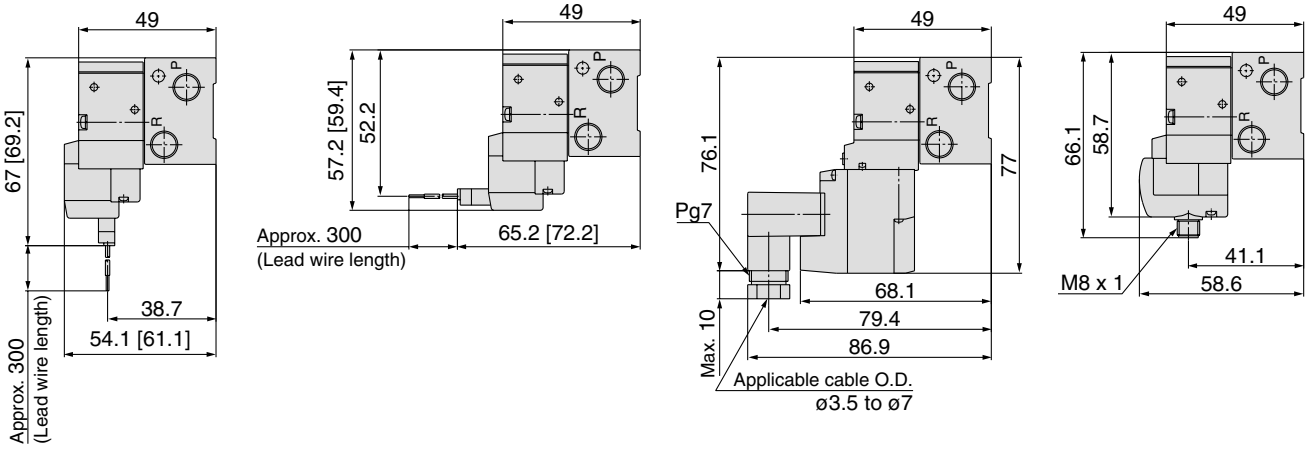
Type 21R Manifold: Top Ported (External Pilot Type)/SS3YJ5-21R-Stations-00□

∗ [ ] for AC

Grommet (G)



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



∗ Refer to page 4-4-61 for dimensions with connector cable.

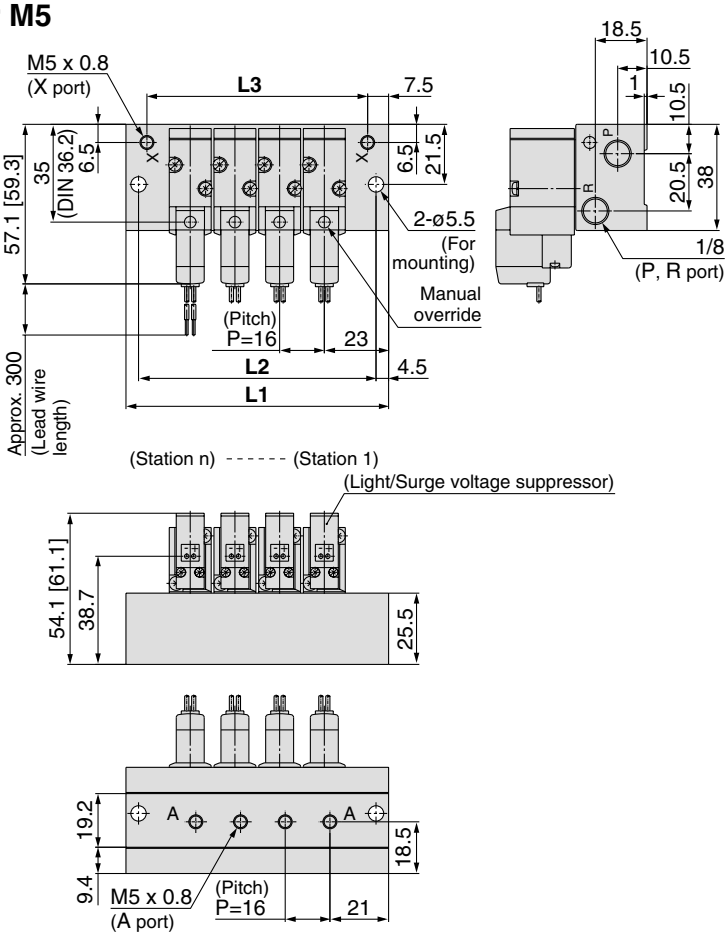
Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	62	78	94	110	126	142	158	174	190	206	222	238	254	270	286	302	318	334	350
L2	53	69	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309	325	341
L3	47	63	79	95	111	127	143	159	175	191	207	223	239	255	271	287	303	319	335

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

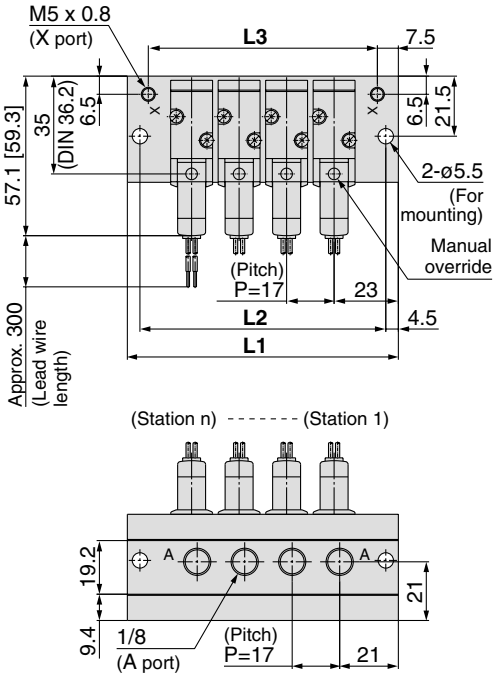
∗ [ ] for AC

Grommet (G)

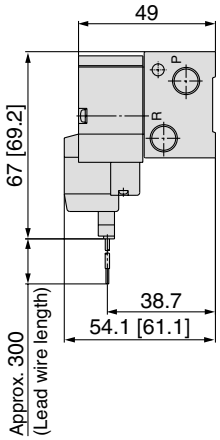
For M5



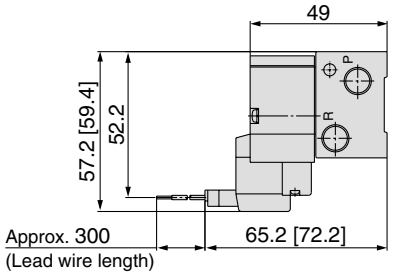
For 1/8



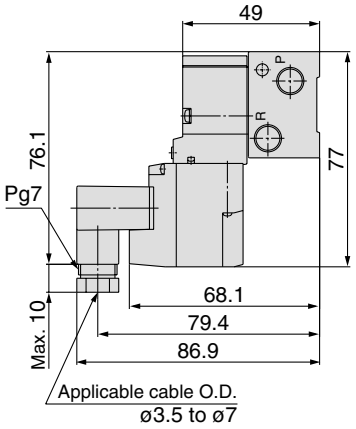
L plug connector (L)



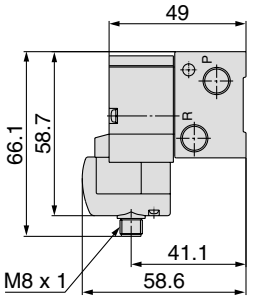
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



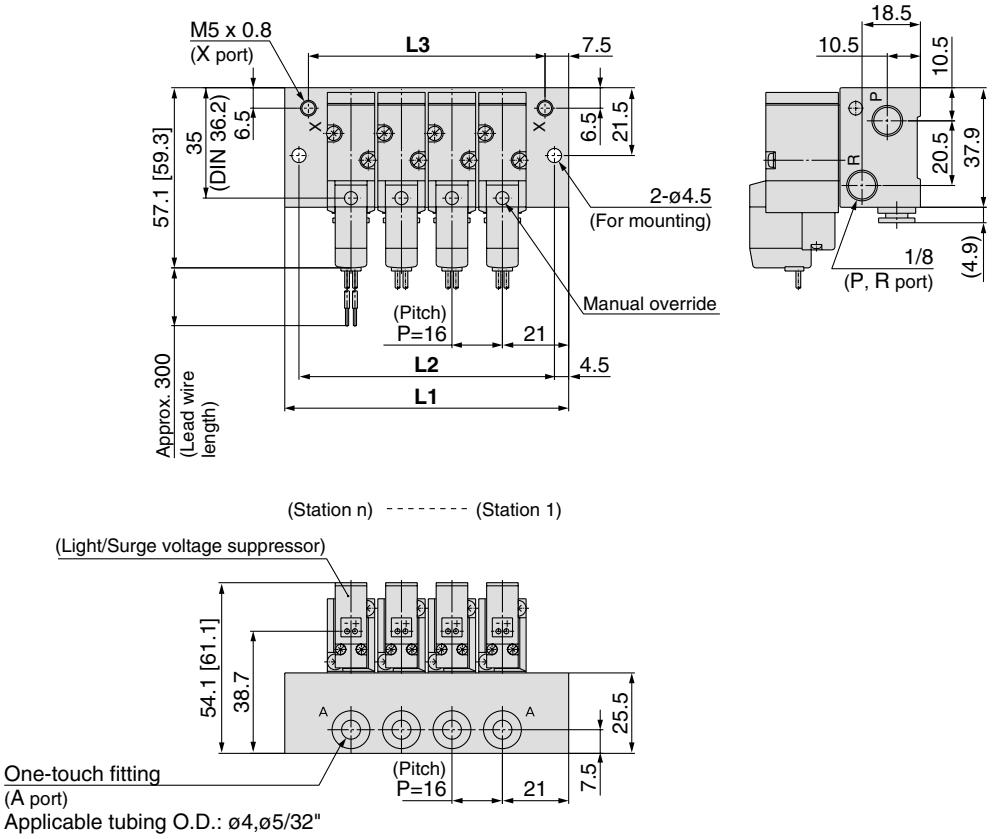
∗ Refer to page 4-4-61 for dimensions with connector cable.

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

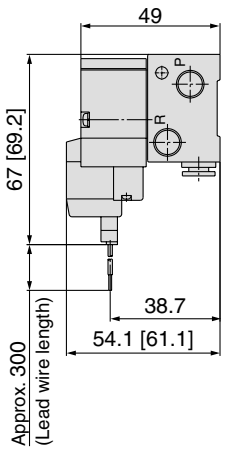
Type 41R Manifold: Side Ported (External Pilot Type)/SS3YJ5-41R-Stations-C4, N3 C6, N7□

∗ [ ] for AC

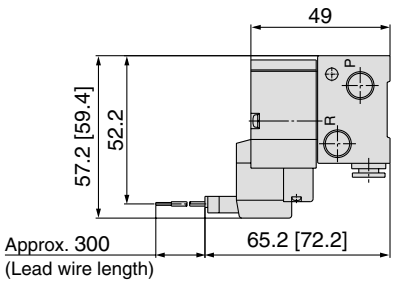
Grommet (G)



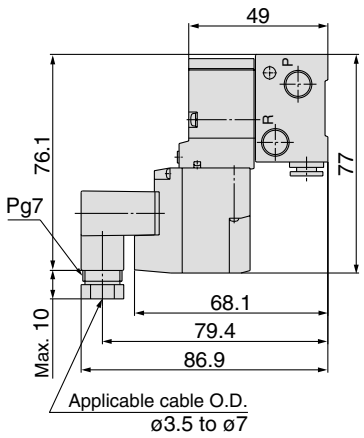
L plug connector (L)



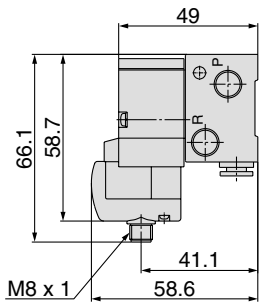
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



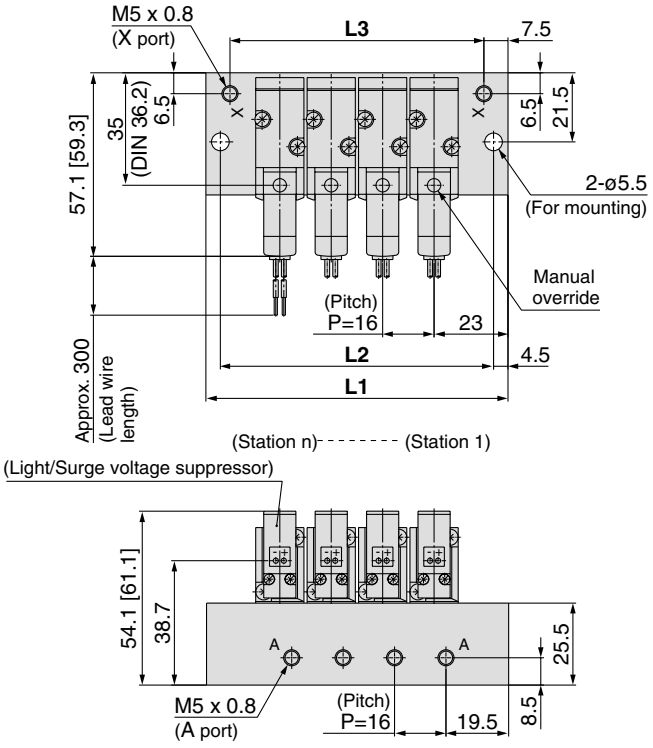
∗ Refer to page 4-4-61 for dimensions with connector cable.

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

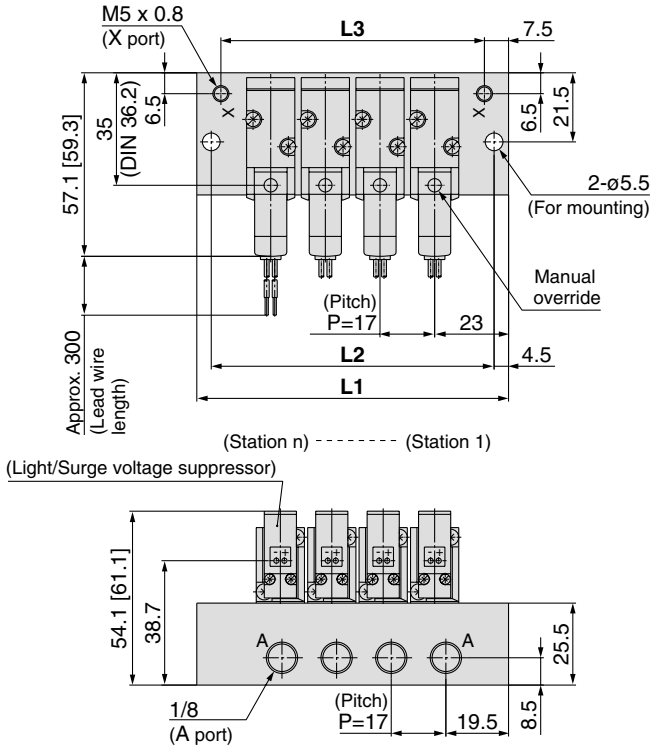
Type 41R Manifold: Side Ported (External Pilot Type)/SS3YJ5-41R-Stations-M5, 01□

* [ ] for AC

For M5



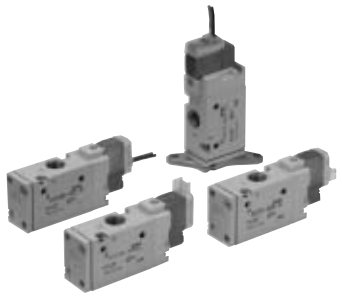
For 1/8



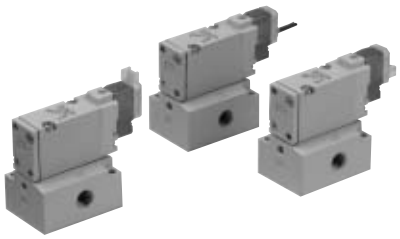
Port size	Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
M5	**L1**	62	78	94	110	126	142	158	174	190	206	222	238	254	270	286	302	318	334	350
	L2	53	69	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309	325	341
	L3	47	63	79	95	111	127	143	159	175	191	207	223	239	255	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

3 Port Pilot Operated Solenoid Valve Rubber Seal

Series SYJ700



Body ported

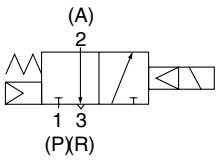


Base mounted

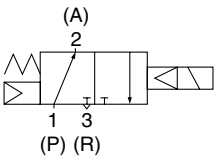
JIS Symbol

Internal pilot

SYJ71$^{2}_{4}$

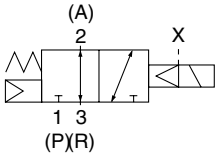


SYJ72$^{2}_{4}$

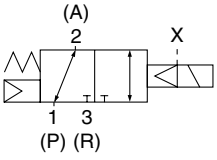


External pilot

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. Refer to page 4-18-4.)
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/s^2) Note 2)		150/30
Enclosure		Dustproof (∗ DIN terminal, M8 connector conforms to IP65)

∗ Based on IEC529

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 with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Value in the initial state)

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

Solenoid Specifications

Electrical entry			Grommet (G), (H), L plug connector (L), M plug connector (M), DIN terminal (D), M8 connector (W)
Coil rated voltage (V)	DC		24, 12, 6, 5, 3
	AC 50/60 Hz		100, 110, 200, 220
Allowable voltage fluctuation			±10% of rated voltage
Power consumption (W)	DC	Standard	0.35 (With indicator light: 0.4 (DIN terminal with indicator light: 0.45))
		With power saving circuit	0.1 (With indicator light only)
Apparent power (VA)	AC	100 V	1.4 (With indicator light: 1.5)
		110 V [115 V]	1.6 (With indicator light: 1.7) [1.7 (With indicator light: 1.8)]
		200 V	2.3 (With indicator light: 2.4)
		220 V [230 V]	2.5 (With indicator light: 2.6) [2.7 (With indicator light: 2.8)]
Surge voltage suppressor			Diode (DIN terminal, varistor when non-polar types)
Indicator light			LED (Neon bulb 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.

Made to Order **Made to Order Specifications**
(For details, refer to pages 4-4-54 to 55.)

Flow Characteristics/Weight

Valve model		Type of actuation	Port size	Flow characteristics						Weight (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.

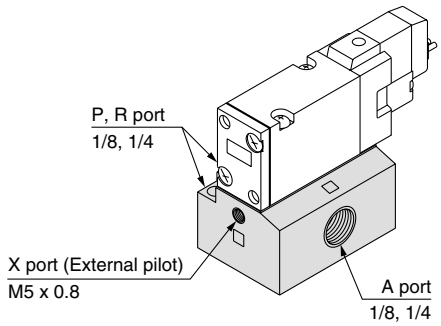
External Pilot

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 4-4-42.
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 4-4-55.

How to Order

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 and DO is only available with 12 and 24 VDC.

AC (50/60 Hz)

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

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

Type of actuation

1	Normally closed
2	Normally open

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.

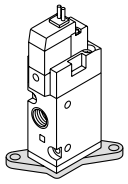
Electrical entry for D

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

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

Bracket

Nil: Without bracket
F: With bracket

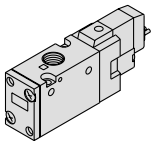


∗ Bracket is mounted.
∗ External pilot type is not available.

Thread type

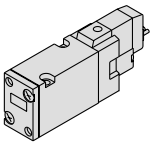
Nil	Rc
F	G
N	NPT
T	NPTF

3 port



(For manifold type 20, 21R)

3 port



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

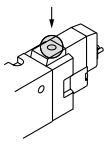
Coil specifications

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

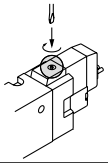
∗ Power saving circuit is not available in the case of "D", "DO", "W□" type.

Manual override

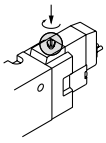
Nil: Non-locking push type



D: Push-turn locking slotted type



E: Push-turn locking lever type

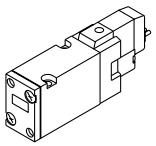


Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

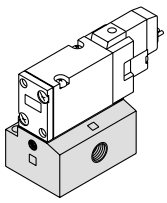
Port size

Nil: Without sub-plate

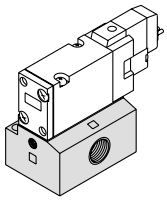


(With gasket and screws)

01: 1/8 port With sub-plate

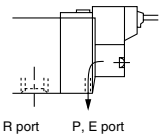


02: 1/4 port With sub-plate

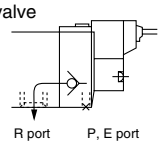


Body option

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.

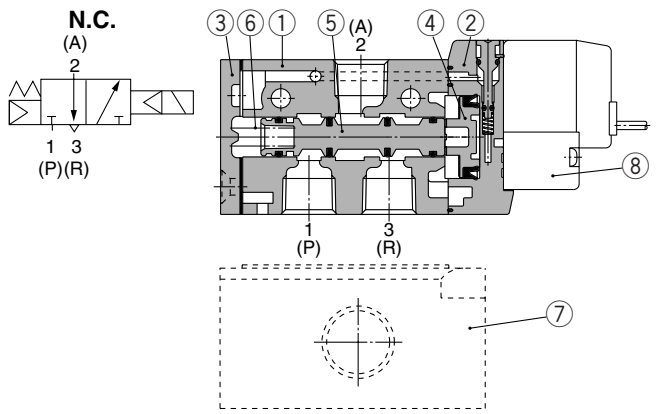
Electrical entry

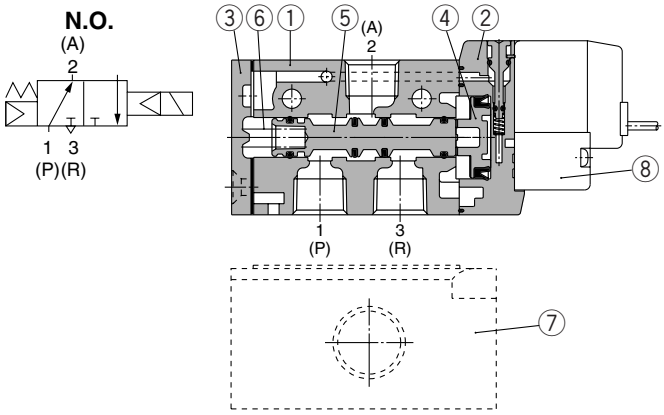
24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC			24, 12 VDC/100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm	**L:** With lead wire (Length 300 mm)	**M:** With lead wire (Length 300 mm)	**D:** With connector	**WO:** Without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

Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 4-4-43.)

∗ "LN", "MN" type: with 2 sockets.
∗ DIN terminal "Type Y" conforming to DIN43650C standard is also available. For details, refer to page 4-4-54.
∗ For connector cable of M8 connector, refer to page 4-4-60.

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	SYJ700-9-1	1/8	Aluminum die-casted
		SYJ700-9-2	1/4	
⑧	Pilot valve	V111(T)-□□□□		

How to Order Pilot Valve Assembly

V111 □ — 5 G □

Coil specifications

Nil	Standard: DC specifications
A	Standard: AC specifications
T	With power saving circuit (24, 12 VDC only)

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

Light/Surge voltage suppressor

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

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

Rated voltage

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC
1	100 VAC 50/60 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.

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

∗ For connector cable of M8 connector, refer to page 4-4-60.

V115 — 5 D □

Rated voltage

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

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

Light/Surge voltage suppressor

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

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

Electrical entry

D	DIN terminal	With connector
DO		Without connector

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

How to Order Connector Assembly for L/M Plug Connector

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

How to Order M8 Connector Cable

V100-49-1- □

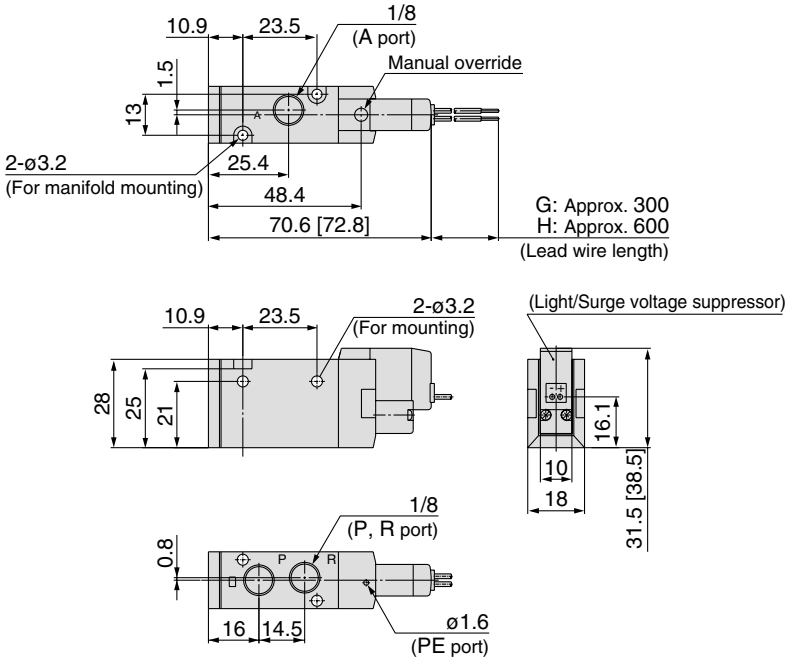
Cable length

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

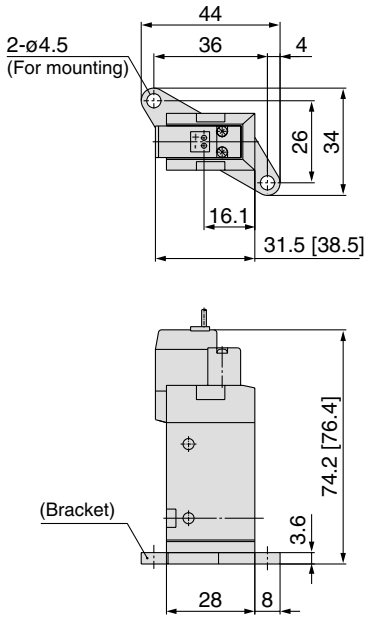
Body Ported

∗ [ ] for AC

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



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

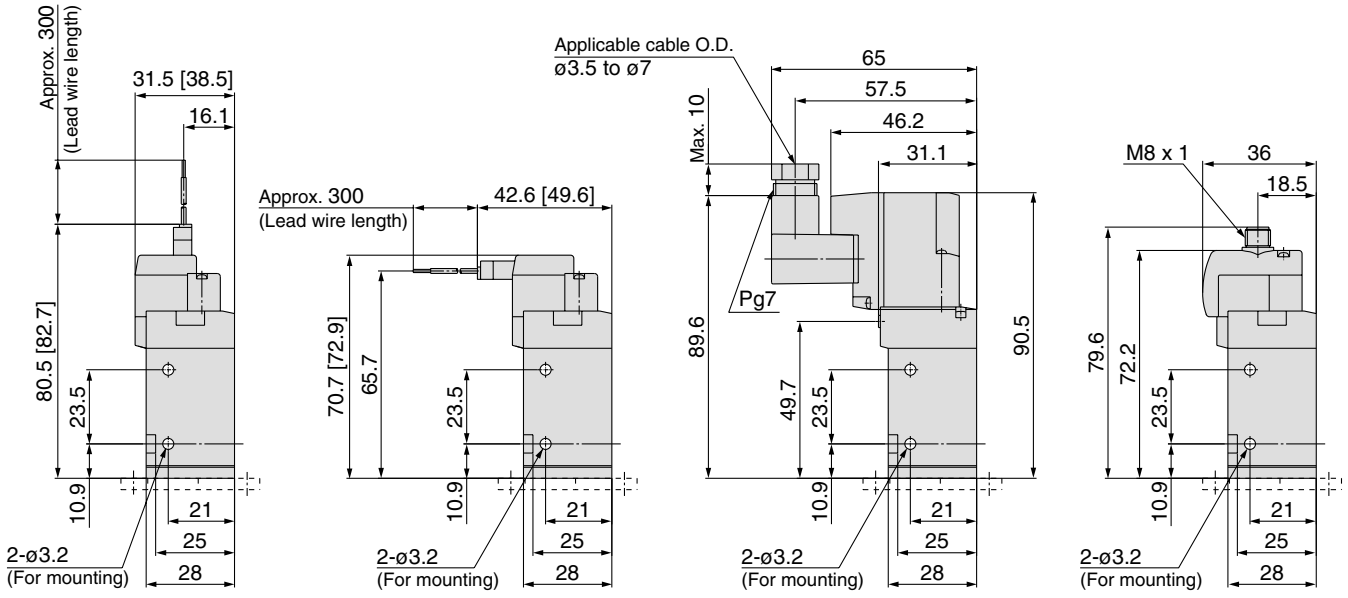


L plug connector (L): SYJ7□2-□L□□-01□ (-F)

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

DIN terminal (D): SYJ7□2-□D□□-01□ (-F)

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

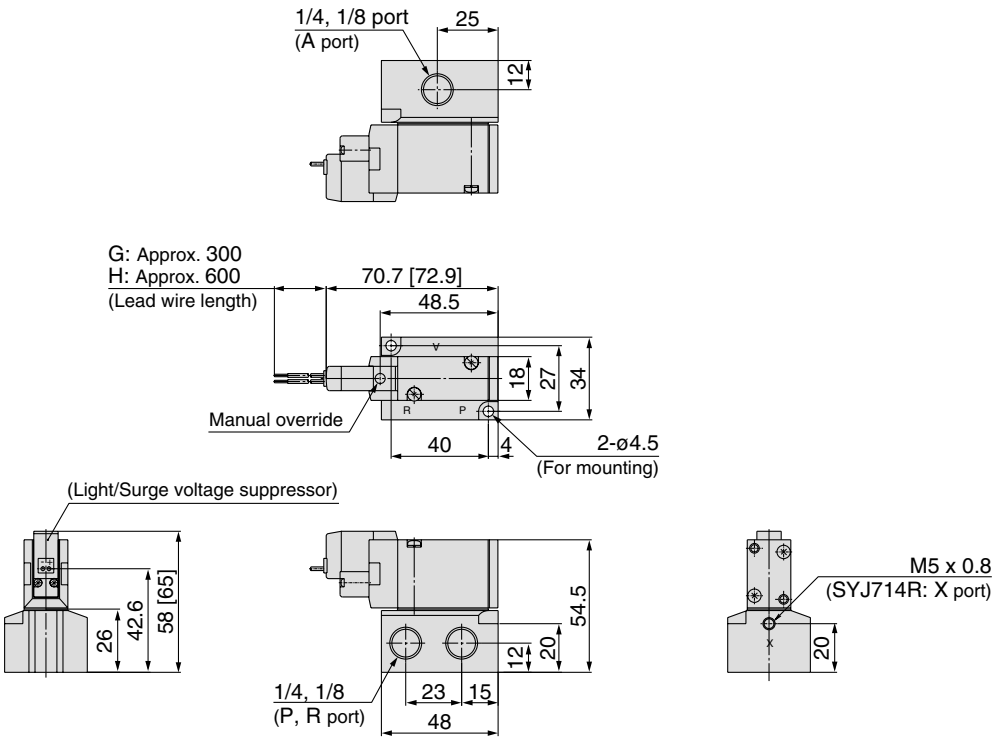


∗ Refer to page 4-4-61 for dimensions with connector cable.

Base Mounted (With Sub-plate)

∗ [ ] for AC

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

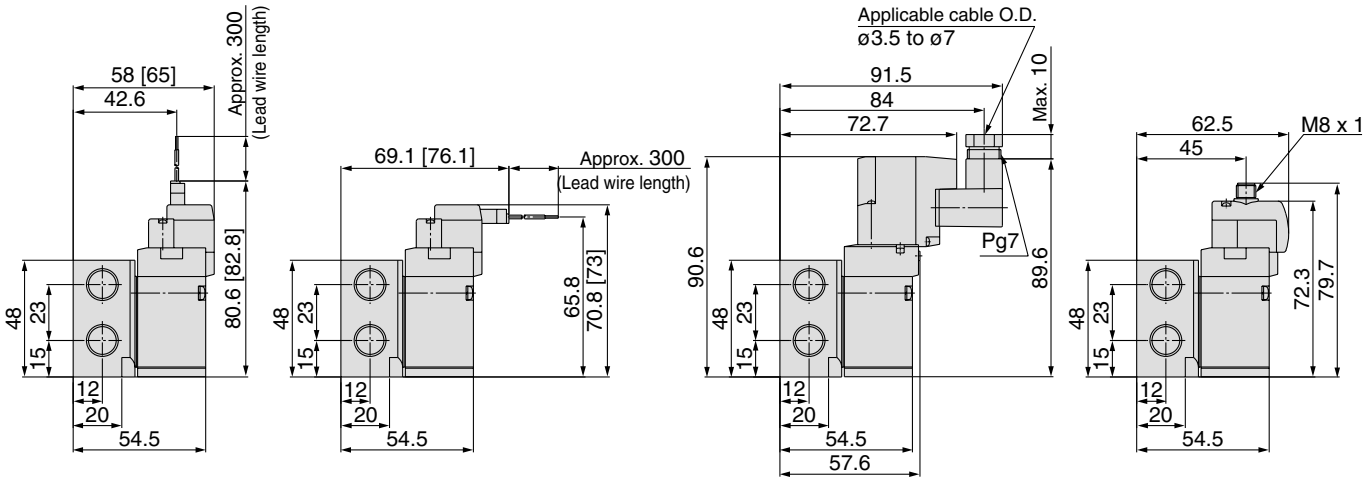


L plug connector (L): SYJ7□4-□L□□-$^{01}_{02}$□

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

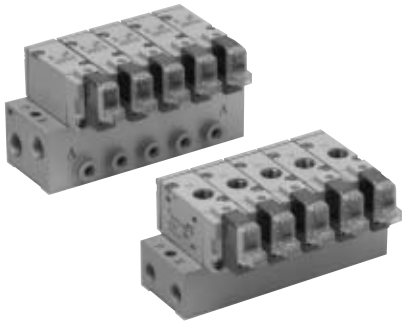
DIN terminal (D): SYJ7□4-□D□□-$^{01}_{02}$□

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



∗ Refer to page 4-4-61 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.

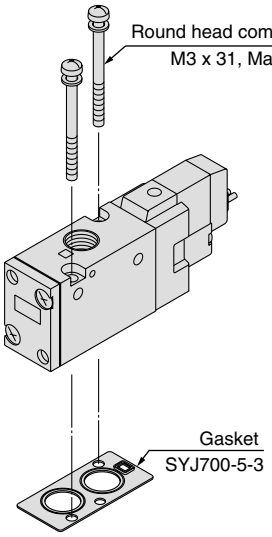
Example:

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

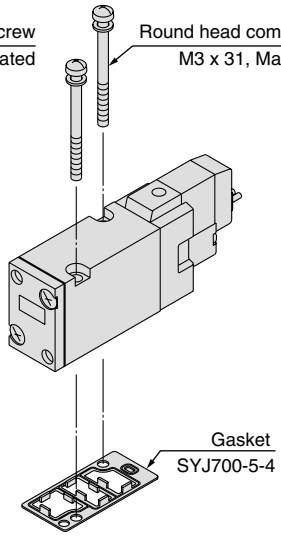
Body ported (Type SYJ7□2)



Applicable base

SS3YJ7-20	Manifold base
SS3YJ7-21	
SS3YJ7-21R	

Base mounted (Type SYJ7□4)

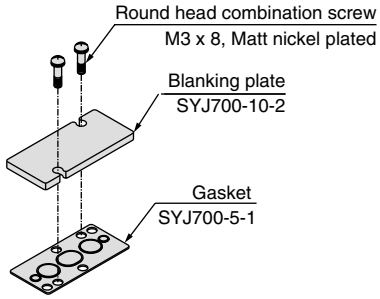


Applicable base
Sub-plate

SS3YJ7-40	Manifold base
SS3YJ7-41	
SS3YJ7-42	
SS3YJ7-41R	
SS3YJ7-42R	

Blanking Plate Assembly

Part no.: SYJ700-10-2A
(In common for body ported type and base mounted type)



⚠ Caution

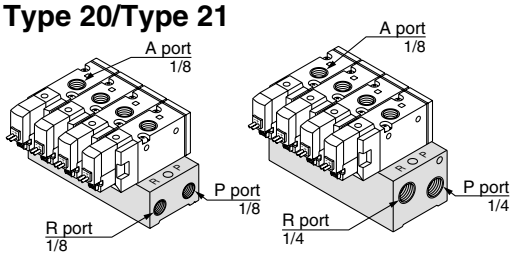
Mounting screw tightening torques

M3: 0.8 N·m

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

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 stations
:	:
20	20 stations

P, R port thread type

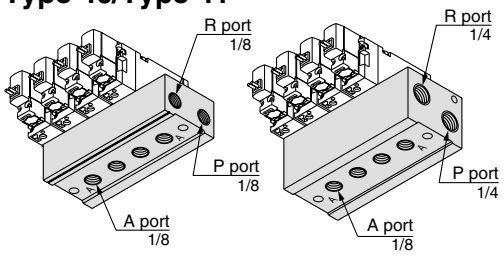
Nil	Rc
00F	G
00N	NPT
00T	NPTF

Applicable solenoid valve
SYJ712-□□□□-01
SYJ712M-□□□□-01
SYJ722-□□□□-01
SYJ722M-□□□□-01

Applicable blanking plate assembly
SYJ700-10-2A

Note) If there are more than 6 stations for type 20, or more than 9 stations for 21 type, 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

A port size

01	1/8

P, R port thread type

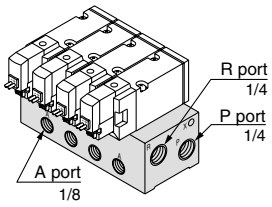
Nil	Rc
F	G
N	NPT
T	NPTF

Applicable solenoid valve
SYJ714-□□□□
SYJ714M-□□□□
SYJ724-□□□□
SYJ724M-□□□□

Applicable blanking plate assembly
SYJ700-10-2A

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

Applicable solenoid valve
SYJ714-□□□□
SYJ714M-□□□□
SYJ724-□□□□
SYJ724M-□□□□

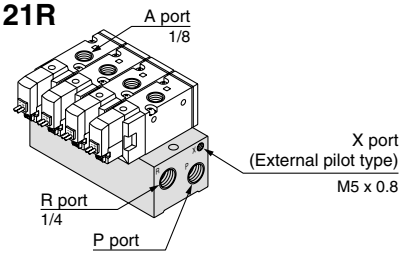
Applicable blanking plate assembly
SYJ700-10-2A

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

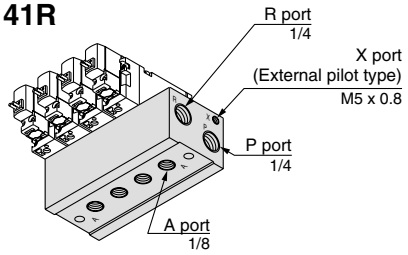
Nil	Rc
00F	G
00N	NPT
00T	NPTF

Applicable solenoid valve
SYJ712R-□□□□-01
SYJ722R-□□□□-01

Applicable blanking plate assembly
SYJ700-10-2A

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

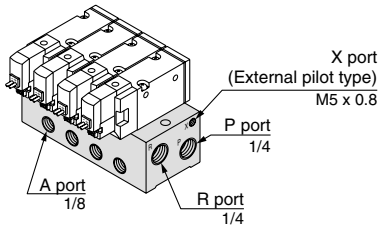
Nil	Rc
F	G
N	NPT
T	NPTF

Applicable solenoid valve
SYJ714R-□□□□
SYJ724R-□□□□

Applicable blanking plate assembly
SYJ700-10-2A

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

Applicable solenoid valve
SYJ714R-□□□□
SYJ724R-□□□□

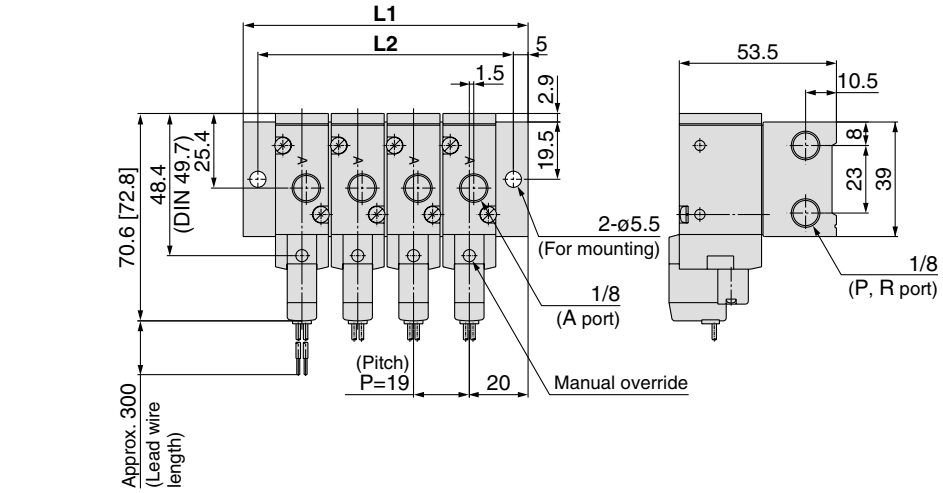
Applicable blanking plate assembly
SYJ700-10-2A

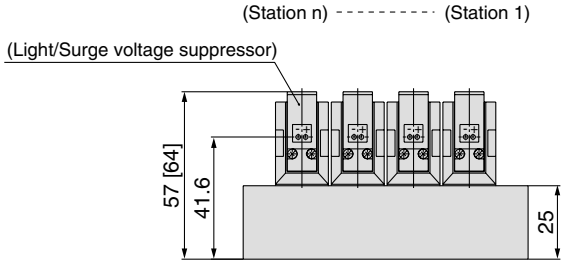
Note) For more than 9 stations, supply/exhaust air to/from both sides of P and R port.

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

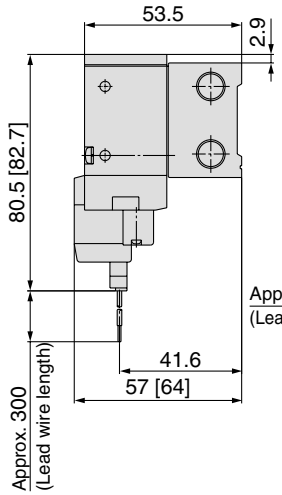
∗ [ ] for AC

Grommet (G)

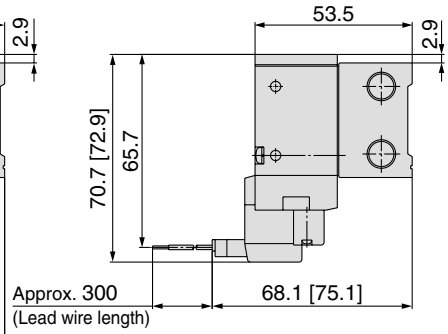




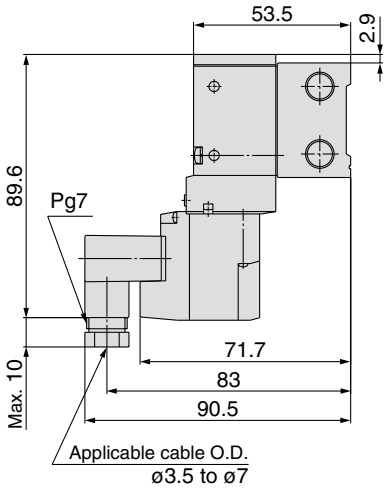
L plug connector (L)



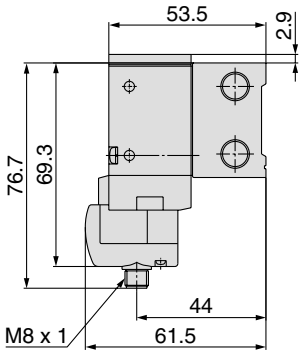
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



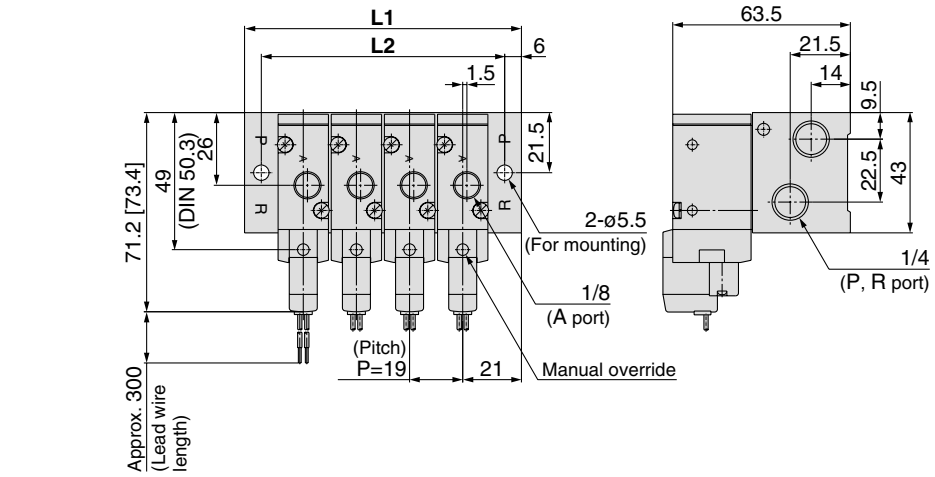
∗ Refer to page 4-4-61 for dimensions with connector cable.

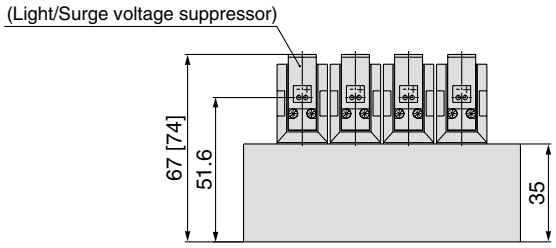
Station n	Station 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Station 20
L1	59	78	97	116	135	154	173	192	211	230	249	268	287	306	325	344	363	382	401
L2	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

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

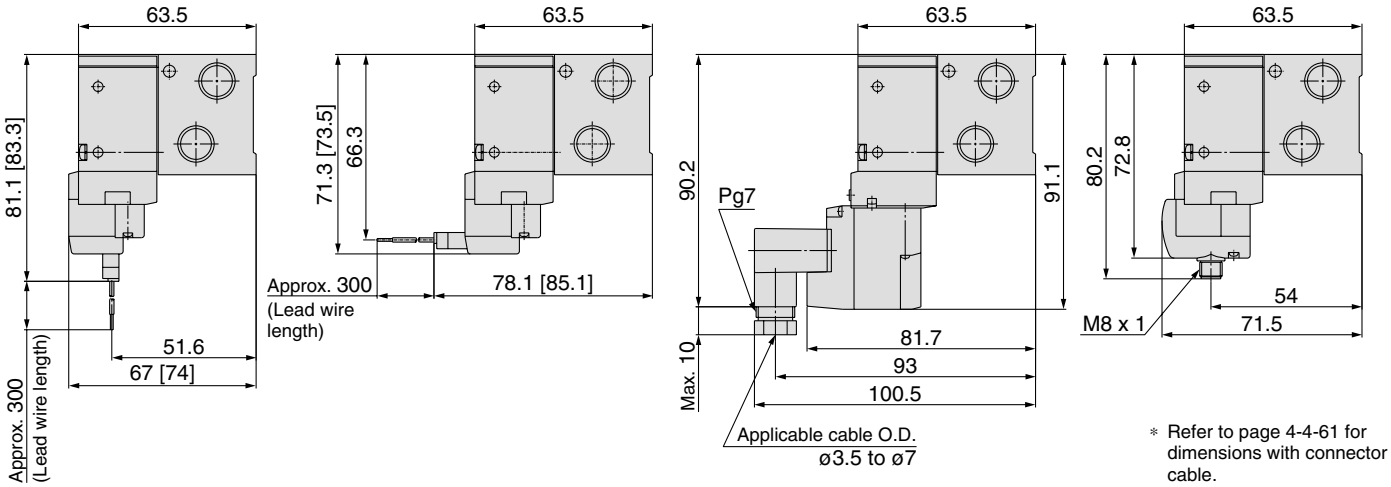
∗ [ ] for AC

Grommet (G)





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



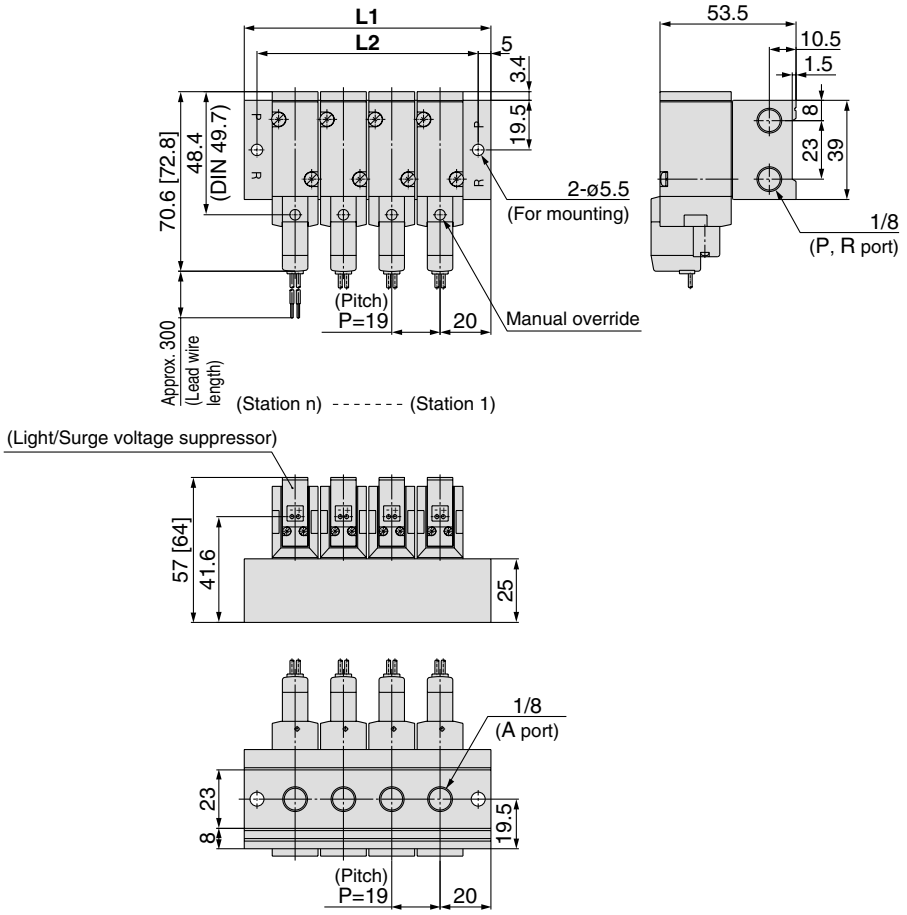
∗ Refer to page 4-4-61 for dimensions with connector cable.

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

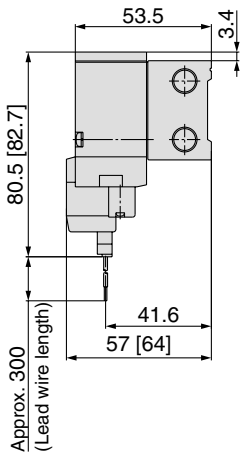
Type 40 Manifold: Bottom Ported/SS3YJ7-40-Stations-01□

∗ [ ] for AC

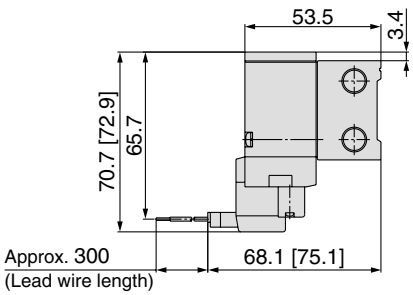
Grommet (G)



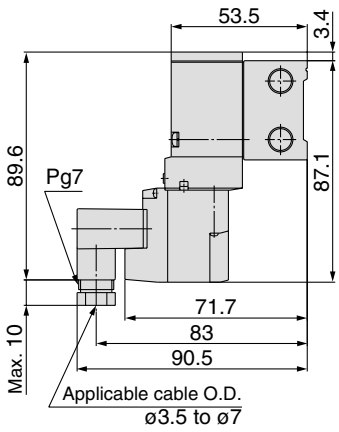
L plug connector (L)



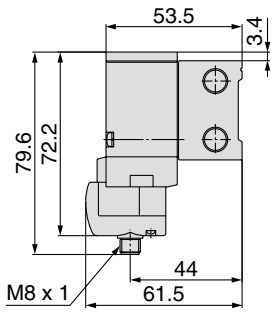
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



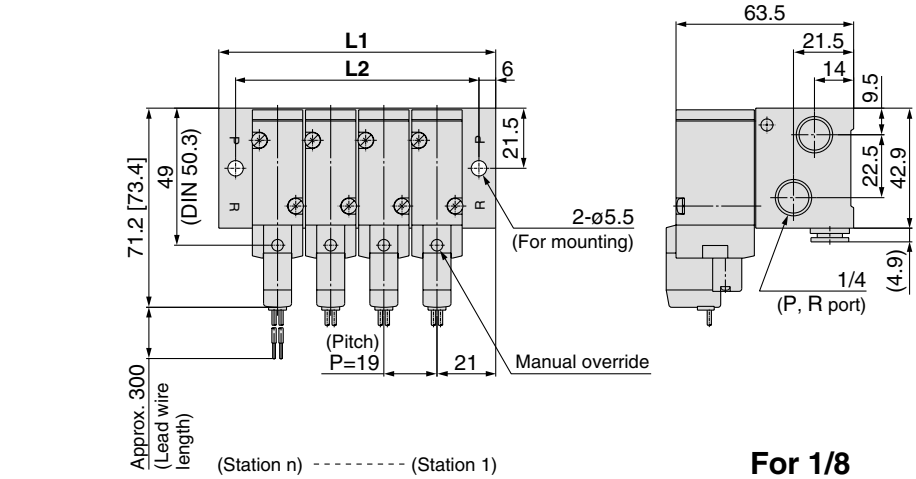
∗ Refer to page 4-4-61 for dimensions with connector cable.

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

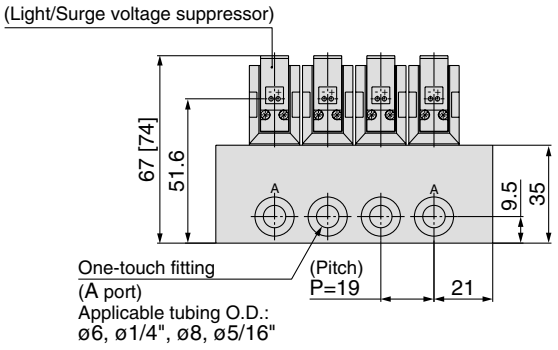
Type 42 Manifold: Side Ported/SS3YJ7-42-Stations-01, C6 C8, N7 N9 □

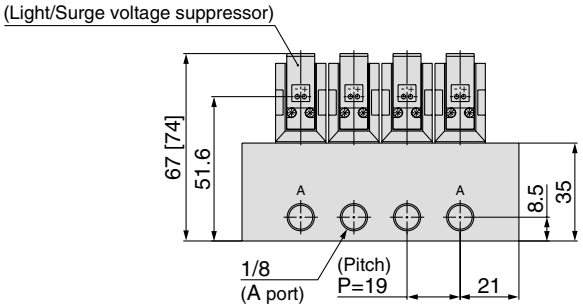
∗ [ ] for AC

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

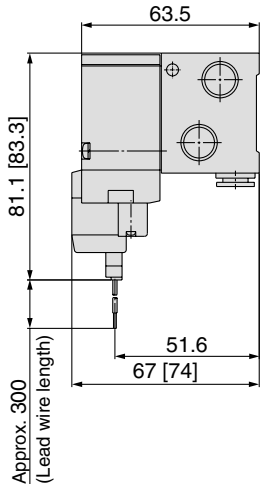


For 1/8

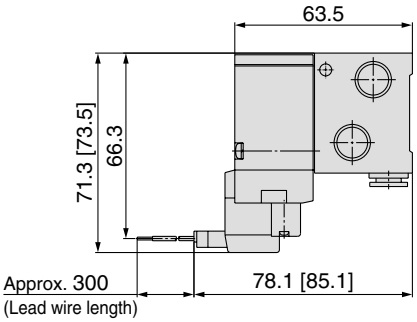




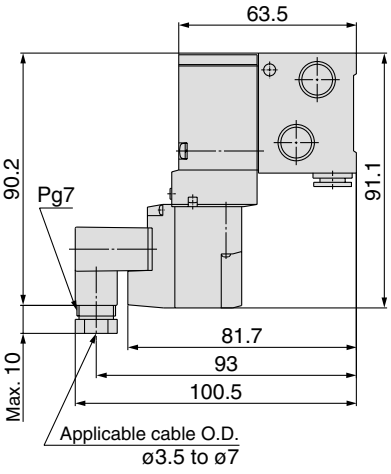
L plug connector (L)



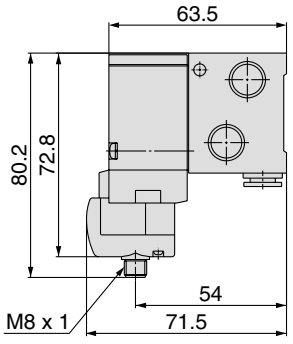
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



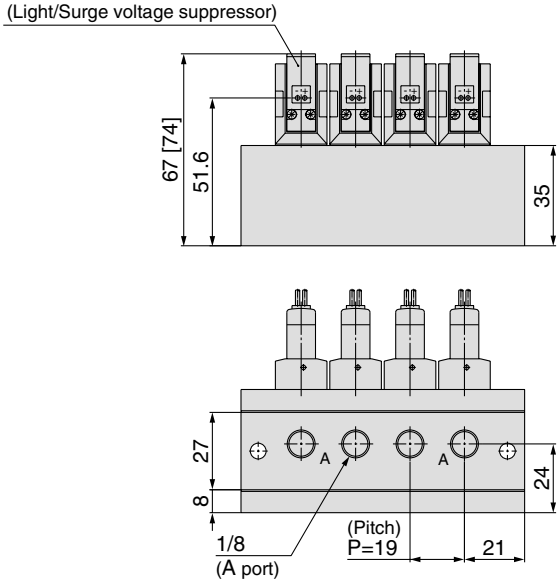
∗ Refer to page 4-4-61 for dimensions with connector cable.

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: Bottom Ported/SS3YJ7-41-Stations-01□

∗[ ] for AC

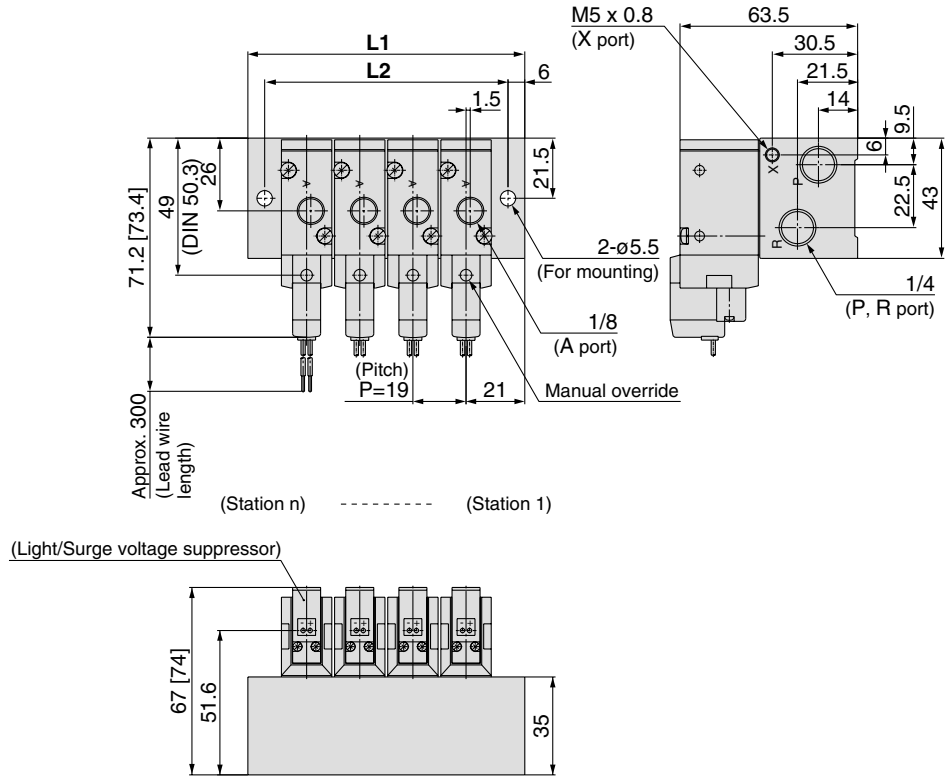
Grommet (G)



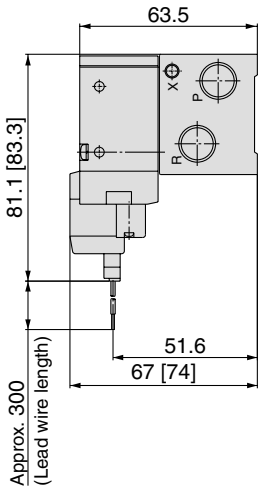
Type 21R Manifold: Top Ported (External Pilot Type)/SS3YJ7-21R-Stations(-00□)

∗ [ ] for AC

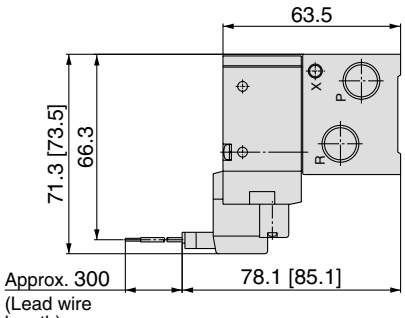
Grommet (G)



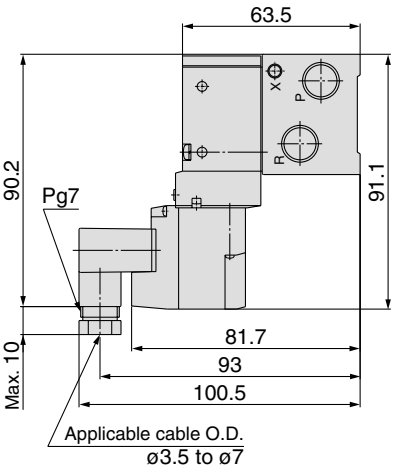
L plug connector (L)



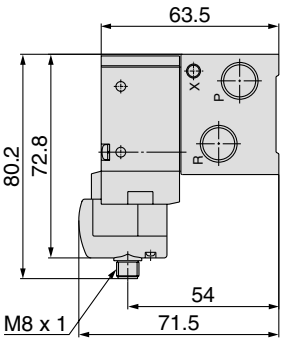
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



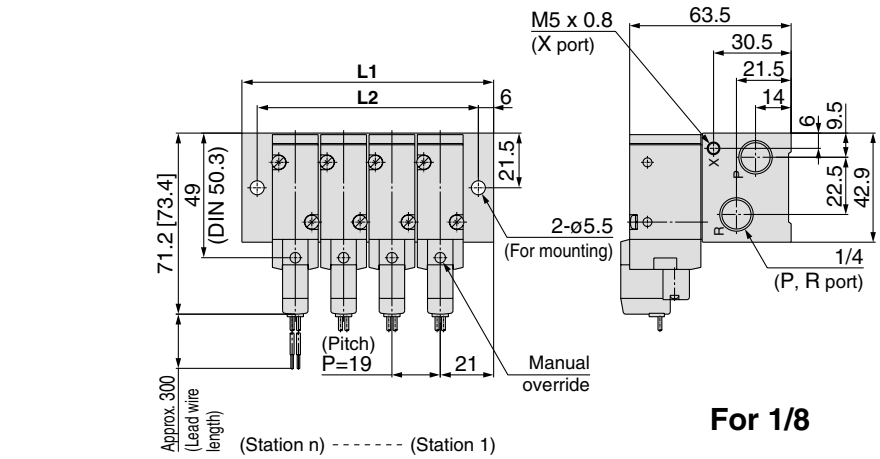
∗ Refer to page 4-4-61 for dimensions with connector cable.

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

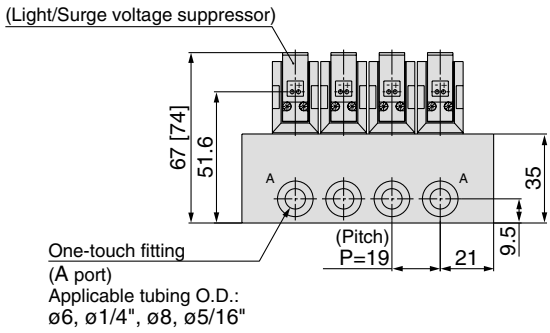
Type 42R Manifold: Side Ported/SS3YJ7-42R-Stations-01, C6 C8, N7 N9 □

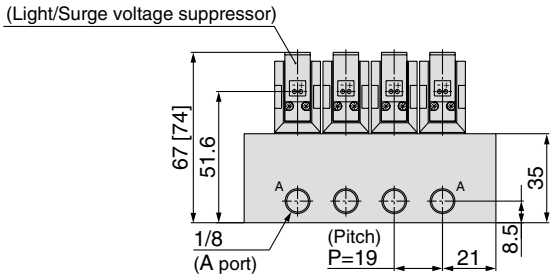
∗ [ ] for AC

Grommet (G)

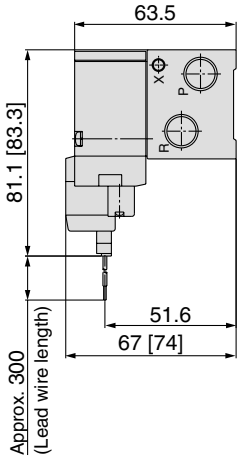


For 1/8

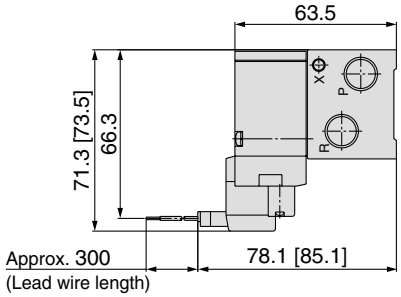




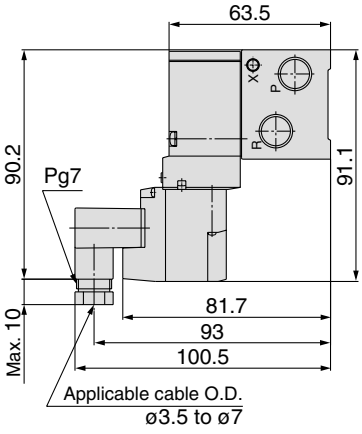
L plug connector (L)



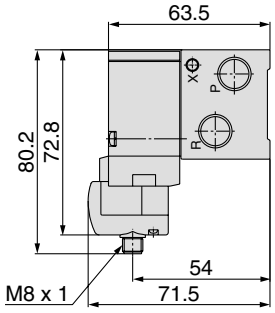
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



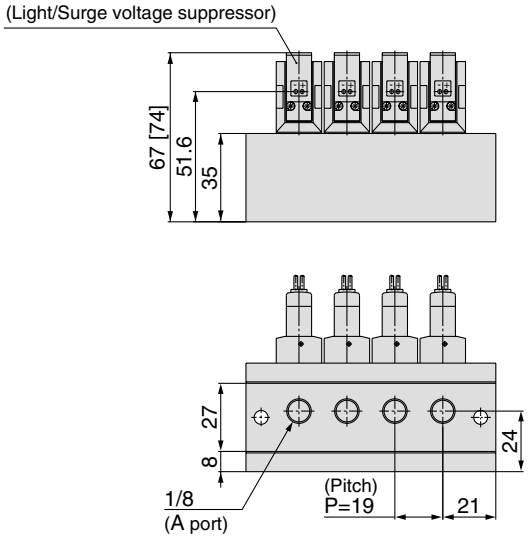
∗ Refer to page 4-4-61 for dimensions with connector cable.

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)



Made to Order

Series SYJ500/700
Made to Order Specifications: DIN Terminal Conformed to DIN 43650C

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

How to Order Valves

Rated voltage

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

Light/Surge voltage suppressor

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

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

Bracket

Nil	Without bracket
F	(With bracket)

* Bracket is not mounted.
* External pilot type does not exist.

Series

5	SYJ500
7	SYJ700

Type of actuation

1	Normally closed
2	Normally open

Port size

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

3 port (For manifold type 20, 21R)

Body ported SYJ 5 1 2 □ — 5 Y □ □ — M5 □

Base mounted SYJ 5 1 4 □ — 5 Y □ □ — 01 □

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

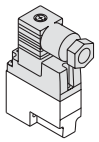
Body option

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

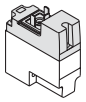
* SYJ5□2R is only for manifold use.

Electrical entry

Y: With connector



YO: Without connector



Port size

Nil	Without sub-plate
01	1/8 port With sub-plate
02	1/4 port With sub-plate (SYJ700 only)

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Manual override

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

How to Order Pilot Valve Assembly

V115 — 5 Y □

Rated voltage

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

Light/Surge voltage suppressor

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

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

Electrical entry

Y	DIN terminal	With connector
YO		Without connector

DIN Terminal Part No.

Without indicator light	SY100-82-1

With indicator light

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

⚠ Caution

1. Use caution in wiring because it won't meet the IP65 (enclosure) standard if you use the other cord than prescribed heavy-duty cord of size (ø3.5 to ø7.5). Also be sure to tighten the ground nut and holding screw with the prescribed torque range. For how to use DIN terminal (wiring procedures, procedures for changing electrical entries, precautions, applicable cable, circuit diagram), refer to page 4-4-59.
2. Type D, DIN terminal with 9.4 mm pitch between terminals is not interchangeable.
3. DIN terminal except D type has the "N" indication in the end of voltage symbol. In case of DIN terminal without light, "N" is not indicated. Please refer to the name plate to distinguish.
4. Dimensions are completely the same as D type terminal.
5. When exchanging the pilot valve assembly only, "V115-□D" is interchangeable with "V115-□Y". Do not replace V111 (G, H, L, M, W) to V115-□D/□Y (DIN terminal), and vice versa.

Series SYJ300/500/700
Made to Order Specifications:

Please contact SMC for detailed specifications, delivery and pricing.

Body Ported External Pilot

Applicable solenoid valve series SYJ5□2, SYJ7□2

SYJ $\frac{5}{7}$ □ 2 □ – □ □ □ □ – □ – □ –X20

● **Entry is the same as standard products.**

Operating Pressure Range MPa

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

Dimensions

SYJ500: 8 mm
SYJ700: 8 mm } **longer in total length.**

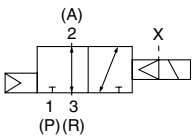
External Pilot Port

Series	Port size
SYJ500/700	M5 x 0.8

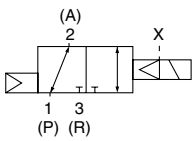
JIS Symbol

Body ported

N.C.



N.O.



Specific Product Precautions 1

Be sure to read before handling.

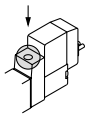
Manual Override Operation

⚠ Warning

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

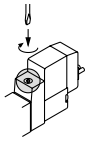
■ **Non-locking push type [Standard]**

Press in the direction of the arrow

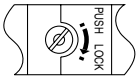


■ **Push-turn slotted locking type [Type D]**

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

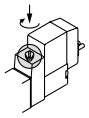


⚠ Caution

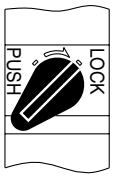
When operating the locking type D with a screw driver, turn it gently using a watchmakers' screwdriver.
[Torque: Less than 0.1 N·m]

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

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



Locked position



⚠ Caution

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

Solenoid Valve for 200 V, 220 VAC Specifications

⚠ Warning

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

Common Exhaust Type for Main and Pilot Valve

⚠ Caution

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

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

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

Bracket

⚠ Caution

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

Specific Product Precautions 2

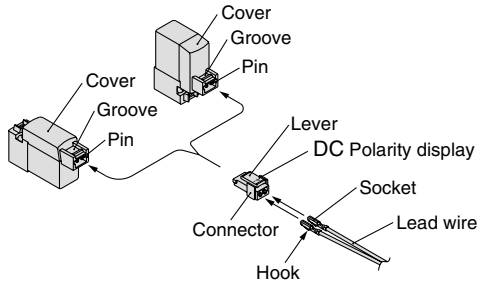
Be sure to read before handling.

How to Use Plug Connector

⚠ Caution

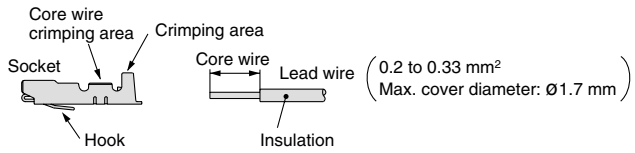
1. Attaching and detaching connectors

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



2. Crimping of lead wires and sockets

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



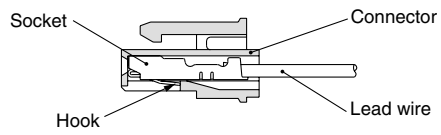
3. Attaching and detaching sockets with lead wires

• 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 the 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**

Specific Product Precautions 3

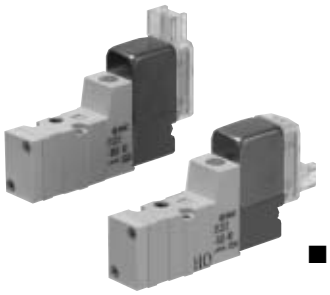
Be sure to read before handling.

Surge Voltage Suppressor

⚠ Caution

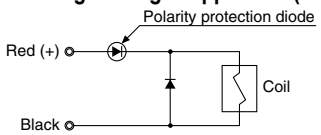
<For DC>

Grommet, L/M Plug Connector Type

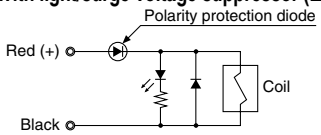


■ Standard type (with polarity)

With surge voltage suppressor (□S)

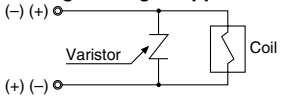


With light/surge voltage suppressor (□Z)

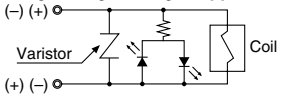


■ Non-polar type

With surge voltage suppressor (□R)



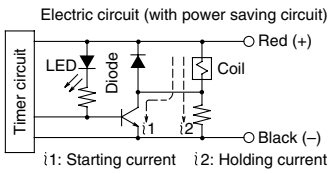
With light/surge voltage suppressor (□U)



- Connect the standard type in accordance with the +, – polarity indication. (The non-polar type can be used with the connections made either way.)
- Since voltage specifications other than standard 24 V and 12 VDC do not have diodes for polarity protection, be careful not to make errors in the polarity.
- When wiring is done at the factory, positive (+) is red and negative (–) is black.

■ With power saving circuit

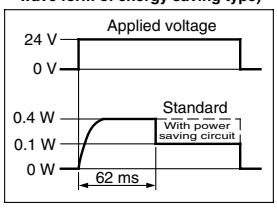
Power consumption is decreased by 1/4 by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 62 ms at 24 VDC.)



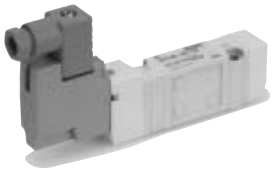
Working Principle

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

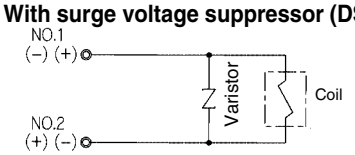
(In the case of SYJ$^{3}_{5}_{7}$□□T, the electric wave form of energy saving type)



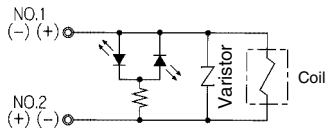
DIN Terminal Type



With surge voltage suppressor (DS)

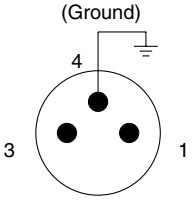


With light/surge voltage suppressor (DZ)



DIN terminal has no polarity.

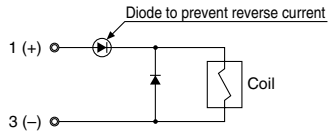
M8 Connector Type



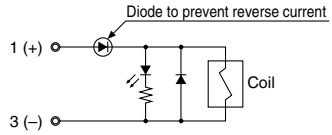
Solenoid valve side pin wiring diagram

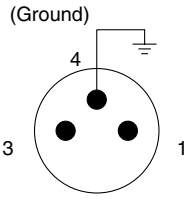
■ Standard type (with polarity)

With light/surge voltage suppressor (□S)



With light/surge voltage suppressor (□Z)

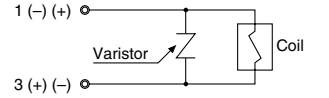




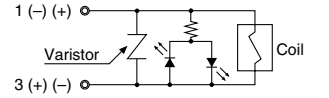
Solenoid valve side pin wiring diagram

■ Non-polar type

With surge voltage suppressor (□R)



With light/surge voltage suppressor (□U)



- In the case of standard type, connect + to 1 and – to 3 according the polarity.
- For DC voltages other than 12 V and 24 V, incorrect wiring will case damage to the surge suppressor circuit.

Specific Product Precautions 4

Be sure to read before handling.

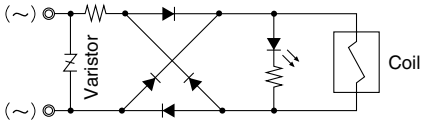
Surge Voltage Suppressor

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

⚠ Caution

Grommet, L/M Plug Connector Type

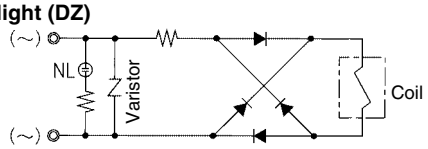
With indicator light (□Z)



Note) Surge voltage suppressor other than diode 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

With indicator light (DZ)



NL: Neon bulb

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

How to Use DIN Terminal

⚠ Caution

Connection

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

⚠ Caution

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

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.

How to Use DIN Terminal

⚠ Caution

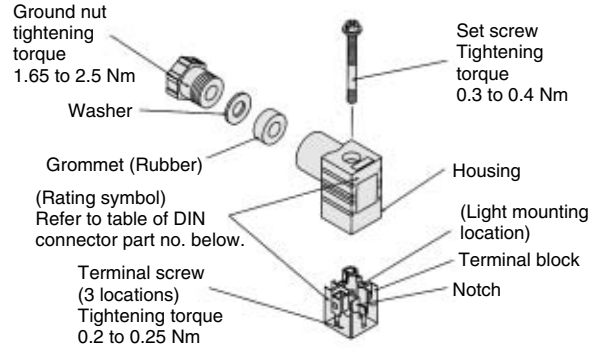
Precautions

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 Nm
SYJ500	M2.5	0.45 Nm
SYJ700	M3	0.8 Nm

DIN Terminal Part No.

⚠ Caution

Without indicator light	SY100-61-1

With indicator light

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

Circuit Diagram with Indicator Light

Note) Refer to page 4-4-54 for DIN terminal (Y) conforming to DIN 43650C.

Specific Product Precautions 5

Be sure to read before handling.

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.

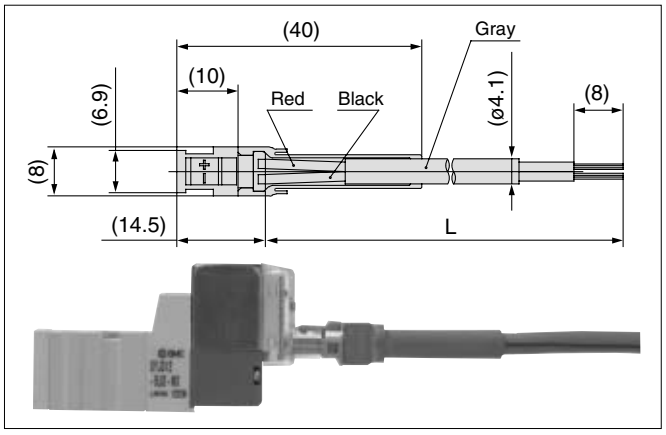
How to Order

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.

M8 Connector

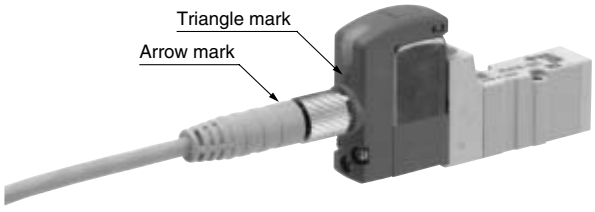
⚠Caution

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)

⚠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.

Specific Product Precautions 6

Be sure to read before handling.

M8 Connector

■ **Connector cable**

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

How to Order

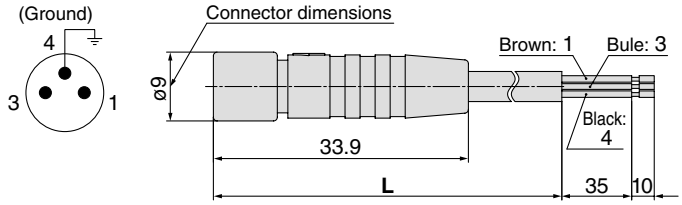
1. To order solenoid valve and connector cable at the same time. (Connector cable will be included in the shipment of the solenoid valve.)

SYJ$\begin{matrix}3\\5\\7\end{matrix}$□□□−□□□□−□□

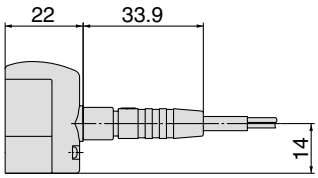
•Electrical entry
W1: Cable length 300 mm
W2: Cable length 500 mm
W3: Cable length 1000 mm
W4: Cable length 2000 mm
W7: Cable length 5000 mm

Ex. 1) Cable length: 300 mm
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



How to Calculate the Flow Rate

⚠Caution

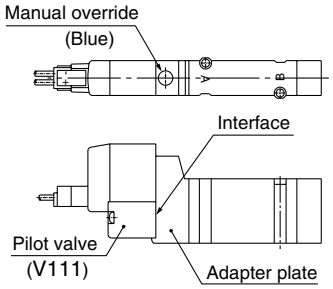
Refer to pages 4-1-32 to 35: How to calculate the flow rate.

Replacement of Pilot Valve

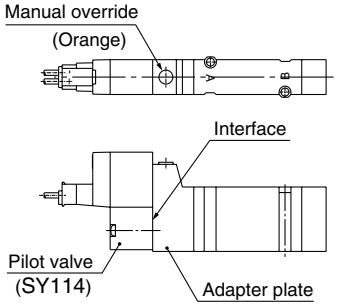
⚠Caution

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

New type

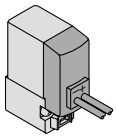
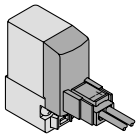
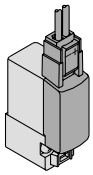
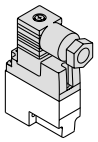
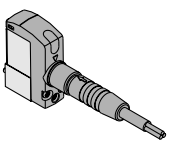


Conventional type



Series 10-SYJ300/500/700 Rubber seal 3 port solenoid valve

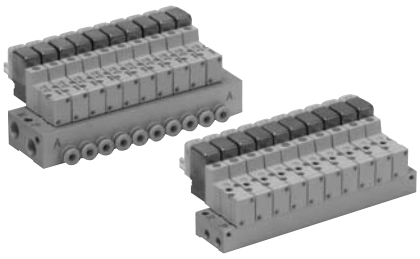
Variations

	Series	Port size	Sonic conductance C[dm³/(s·bar)]	Type of actuation	Voltage	Electrical entry	Option: Light/Surge voltage suppressor	Manual override
Body ported	**10-SYJ300**  P.659	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 suppresser ■With light/surge voltage suppresser **For AC** Note) ■With light/surge voltage suppresser	■Non-locking push type ■Push-turn locking slotted type ■Push-turn locking lever type
	10-SYJ500  P.671	M5 x 0.8	0.66 { 2→3 } {(A→R)}					
	10-SYJ700  P.684	1/8	2.5 { 2→3 } {(A→R)}					
Base mounted	**10-SYJ300**  P.659	M5 x 0.8	0.36 { 2→3 } {(A→R)}					
	10-SYJ500  P.671	1/8	1.2 { 2→3 } {(A→R)}					
	10-SYJ700  P.684	1/8·1/4	2.7 { 2→3 } {(A→R)}					

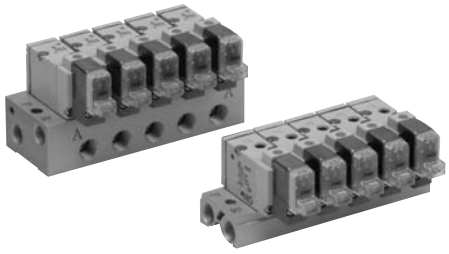
Note) All standard AC voltage models have built-in surge voltage suppressor.

Manifold variations

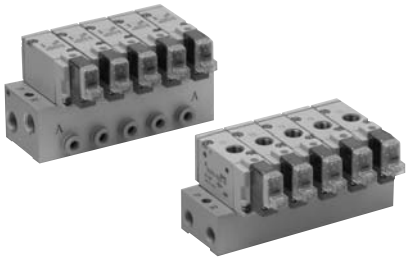
	Valve series	A port location	P, R port size	A port size								
				M3	M5	1/8	With one-touch fitting					
							Applicable tubing O.D.					
							ø4	ø6	ø8	N3	N7	N9
Body ported	**10-SYJ300**	Top	M5 x 0.8	●	—	—	—	—	—	—	—	—
	10-SYJ500	Top	1/8	—	●	—	—	—	—	—	—	—
	10-SYJ700	Top	1/8	—	—	●	—	—	—	—	—	—
			1/4	—	—	●	—	—	—	—	—	—
Base mounted	**10-SYJ300**	Side	M5 x 0.8	●	—	—	—	—	—	—	—	—
			1/8	—	●	—	●	—	—	●	—	—
	10-SYJ500	Bottom	1/8	—	●	●	—	—	—	—	—	—
		Side		—	●	●	●	●	—	●	●	—
	10-SYJ700	Bottom	1/8	—	—	●	—	—	—	—	—	—
			1/4	—	—	●	—	—	—	—	—	—
		Side	1/4	—	—	●	—	●	●	—	●	●



Series 10-SYJ300

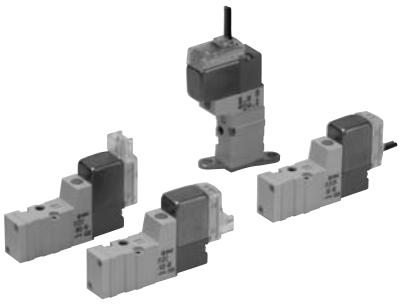


Series 10-SYJ500

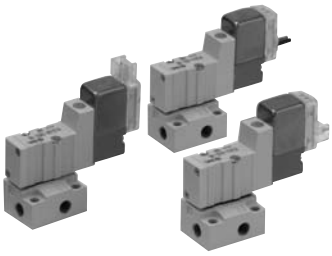


Series 10-SYJ700

Series 10-SYJ300 Rubber seal
3 Port / Pilot operated solenoid valve



Body ported

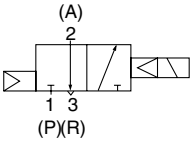


Base mounted

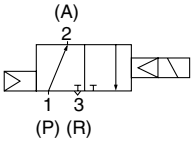
JIS symbol

Internal pilot

10-SYJ31$^{2}_{4}$



10-SYJ32$^{2}_{4}$



Made to Order Made to Order Specifications
(For details, refer to page 698.)

Specifications

Fluid		Air
Operating pressure range (MPa)	**Internal pilot**	0.15 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (No freezing. Refer to page 714.)
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		Common exhaust for the main and pilot valve
Lubrication		Not required
Mounting orientation		Unrestricted
Impact / Vibration resistance (m/s^2) Note 2)		150/30
Enclosure		Dust tight (∗ M8 connector conforms to IP65.)

∗ Based on IEC60529

Note 1) Based on dynamic performance test, JIS B 8375-1981. (With coil temperature of 20°C, at rated voltage and 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. (Initial value)

Vibration resistance: No malfunction occurred in one sweep between 45 and 2000Hz. Test was performed in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states. (Initial value)

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 indicator light: 0.4)
		With power saving circuit	0.1 (With indicator light type only)
Apparent ∗ power (VA)	**AC**	**100V**	0.78 (With indicator light: 0.81)
		110V [115V]	0.86 (With indicator light: 0.89) [0.94 (With indicator light: 0.97)]
		200V	1.18 (With indicator light: 1.22)
		220V [230V]	1.30 (With indicator light: 1.34) [1.42 (With indicator light: 1.46)]
Surge voltage suppressor			Diode (varistor for non-polar type)
Indicator light			LED

∗ 110VAC and 115VAC are common, as are 220VAC and 230VAC.

∗ For 115VAC and 230VAC, the allowable voltage is –15% to +5% of rated voltage. Since S, Z and T types (with power saving circuit) have a voltage drop due to internal circuit, observe the following allowable voltage fluctuation range.

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

Flow characteristics / Weight

Valve model		Type of actuation	Port size	Flow characteristics						Effective area (mm^2)	Weight (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	**10-SYJ312**	N.C.	M3 x 0.5	—	—	—	—	—	—	0.9	32	33	37
	10-SYJ322	N.O.		—	—	—	—	—	—				
Base mounted (with sub-plate)	**10-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)
	10-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.

How to Order

Light/Surge voltage suppressor

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

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

Rated voltage

For DC

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

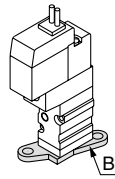
AC (50/60Hz)

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

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

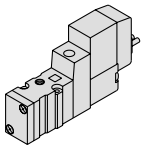
Brackets

Nil: Without bracket
F: With bracket



∗ Bracket is mounted.
∗ Bracket cannot be retrofitted.

3 port



(For type 20 manifold)

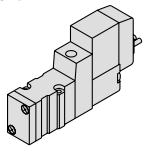
Type of actuation

1	Normally closed
2	Normally open

Body ported 10 — SYJ3 1 2M □ — 5 M □ □ — M3 □

Base mounted 10 — SYJ3 1 4M □ — 5 M □ □ □

3 port



(For sub-plate type, types 41, S41, 42 and S42 manifolds)

Clean series

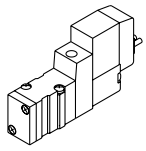
Coil specifications

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

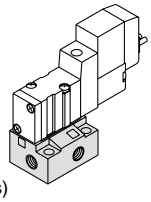
∗ Power saving circuit is not available in the case of "W□" type.

Port size

Nil: Without sub-plate



M5: M5 port with sub-plate



(With gasket and screws)

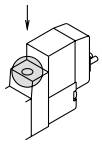
Electrical entry

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

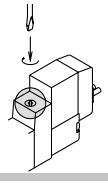
∗ "LN", "MN" types: with 2 sockets.
∗ For connector cable of M8 connector, refer to page 703.
Note 1) Be sure to enter a symbol of the cable length in □ with reference to page 704.

Manual override

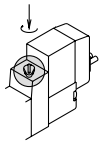
Nil: Non-locking push type



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 bolt for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 666.)

How to Order Pilot Valve Assembly

10—V111 □ — 5 G □

Clean series

Coil specifications

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

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

Rated voltage

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

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

Light/surge voltage suppressor

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

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

Electrical entry

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

Note 1) Be sure to enter a symbol of the cable length in □ with reference to page 704.

* For connector cable of M8 connector, refer to page 703.

How to Order Connector Assembly for L/M Plug Connector

For DC : **SY100-30-4A-** □

For 100 VAC : **SY100-30-1A-** □

For 200 VAC : **SY100-30-2A-** □

For other voltages of AC : **SY100-30-3A-** □

Without lead wire : **SY100-30-A**
(with connector and 2 of sockets only)

Lead wire length

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

How to Order M8 Connector Cable

V100-49-1- □

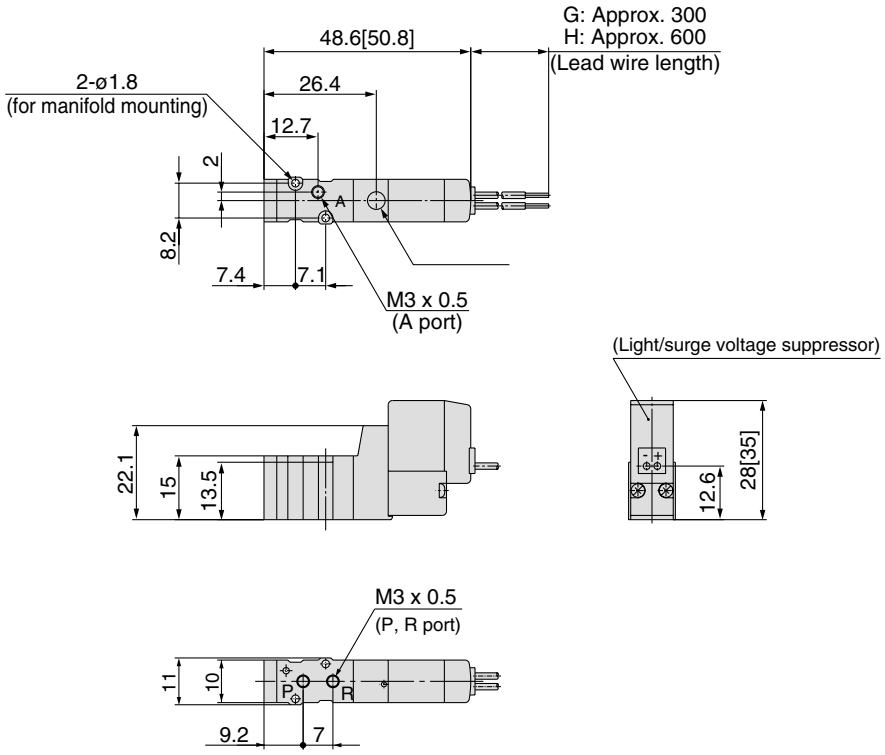
Cable length

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

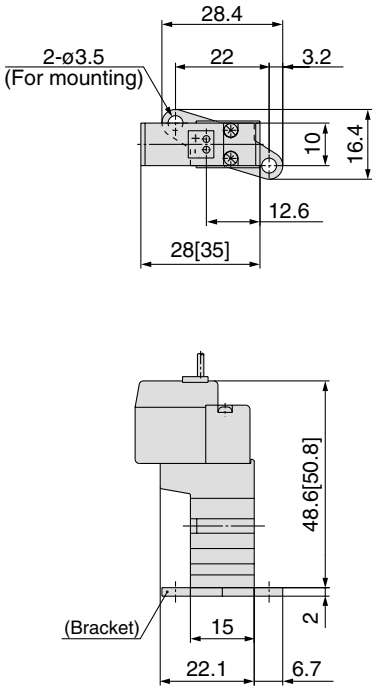
Body ported

* [ ]: AC

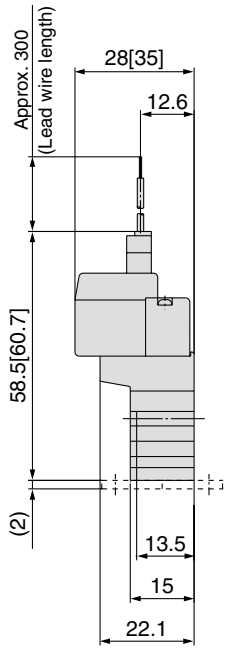
Grommet (G), (H): 10-SYJ3□2M-□$^{G}_{H}$□□-M3



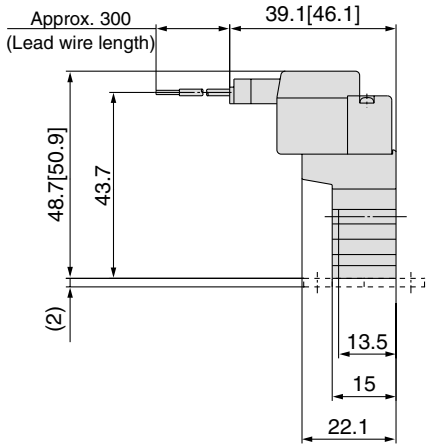
With bracket: 10-SYJ3□2M-□$^{G}_{H}$□□-M3-F



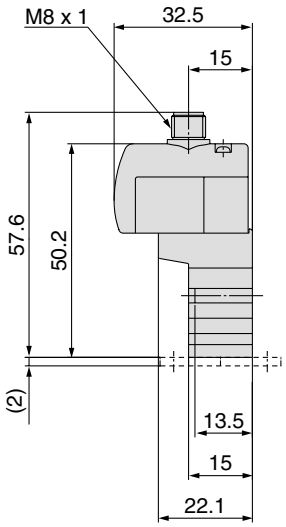
L plug connector (L): 10-SYJ3□2M-□L□□-M3



M plug connector (M): 10-SYJ3□2M-□M□□-M3



M8 connector (WO): 10-SYJ3□2M-□WO□□-M3

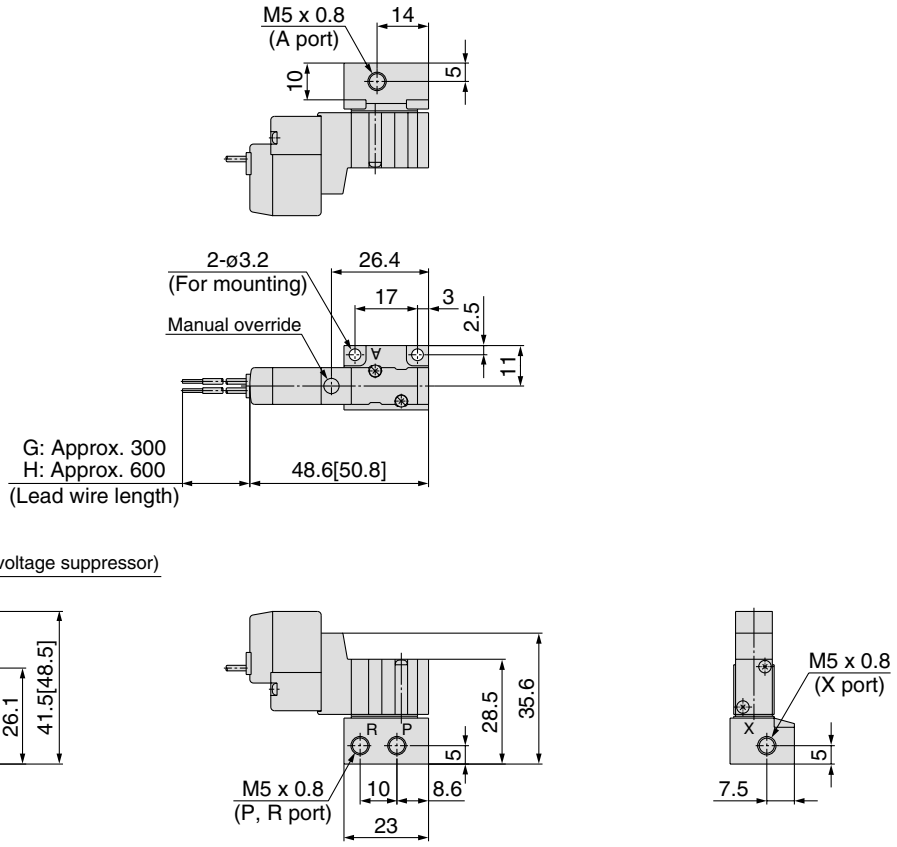


* Refer to page 704 for dimensions with connector cable.

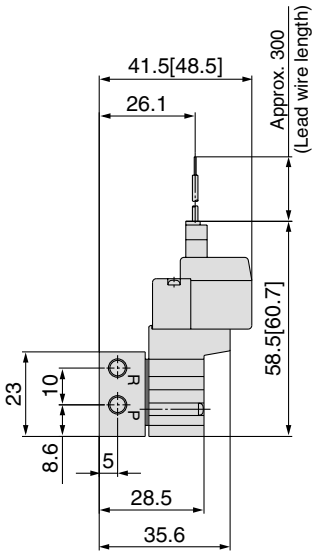
Base mounted (With sub-plate)

∗ [ ]: AC

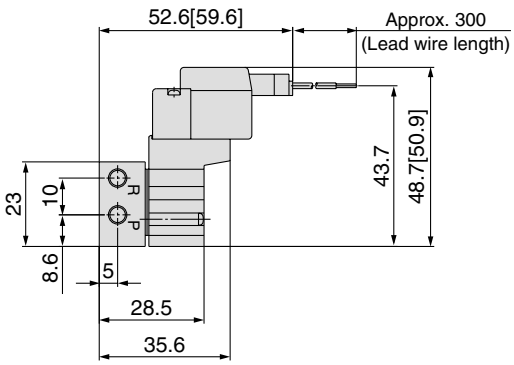
Grommet (G), (H): 10-SYJ3□4M-□$^{G}_{H}$□□-M5



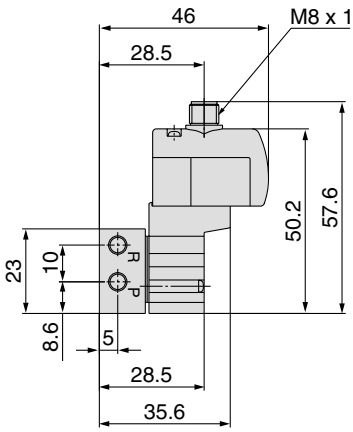
L plug connector (L): 10-SYJ3□4M-□L□□-M5



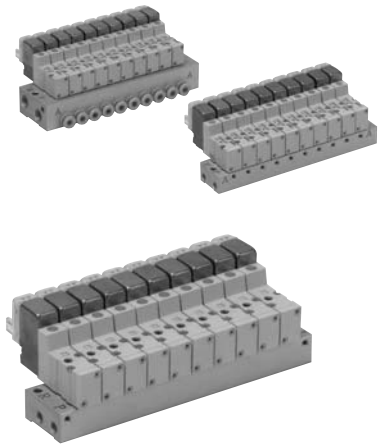
M plug connector (M): 10-SYJ3□4M-□M□□-M5



M8 connector (WO): 10-SYJ3□4M-□WO□□-M5



∗ Refer to page 704 for dimensions with connector cable.



Manifold specifications

Model	For internal pilot	Type 20	Type 41, S41	Type 42, S42
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 for ø4)

Flow characteristics

Manifold			Port size		Flow characteristics 1→2(P→A)			Flow characteristics 2→3(A→R)			Effective area (mm^2)
			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 10-SS3YJ3-20**	**10-SYJ3□2M**	M5 x 0.8	M3 x 0.5	—	—	—	—	—	—	0.9
Base mounted for internal pilot	**Type 10-SS3YJ3-41/S41**	**10-SYJ3□4M**	M5 x 0.8	M3 x 0.5	—	—	—	—	—	—	1.5
	Type 10-SS3YJ3-42-M5	**10-SYJ3□4M**	1/8	M5 x 0.8	0.31	0.17	0.075	0.32	0.11	0.072	—
	Type 10-SS3YJ3-42-C4			C4	0.33	0.36	0.086	0.33	0.2	0.082	—
	Type 10-SS3YJ3-S42-M5	**10-SYJ3□4M**	1/8	M5 x 0.8	0.32	0.3	0.079	0.33	0.35	0.086	—
	Type 10-SS3YJ3-S42-C4			C4	0.35	0.17	0.082	0.35	0.26	0.086	—

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

How to Order Manifold (Example)

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

Example

10-SS3YJ3-20-03 ····· 1 set (Manifold base)

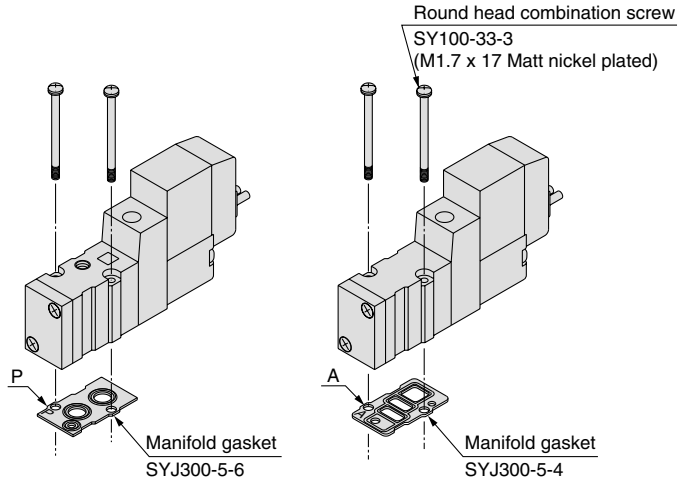
* **10-SYJ312M-5LZ-M3** ··· 2 sets (Valve)

* **SYJ300-10-1A** ····· 1 set (Blanking plate assembly)

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

<Manifold option> Combinations of solenoid valve, manifold gasket and manifold base

Body ported (10-SYJ3□2M) **Base mounted (10-SYJ3□4M)**



Applicable base

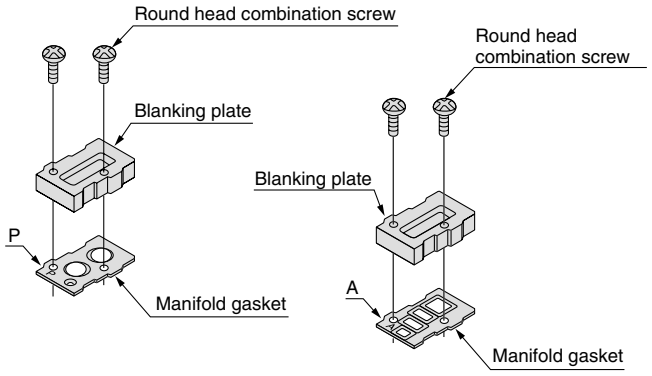
10-SS3YJ3-20 — Manifold base

Applicable base sub-plate

10-SS3YJ3-41
10-SS3YJ3-S41
10-SS3YJ3-42
10-SS3YJ3-S42
— Manifold base

Blanking plate assembly

Part no.: SYJ300-10-1A **Part no.: SYJ300-10-2A**



Applicable base

10-SS3YJ3-20 — Manifold base

Applicable base sub-plate

10-SS3YJ3-41
10-SS3YJ3-S41
10-SS3YJ3-42
10-SS3YJ3-S42
— Manifold base

⚠Caution

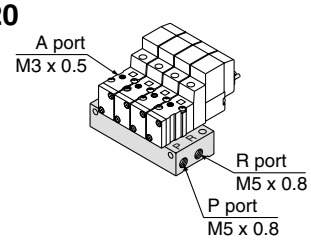
Mounting screw tightening torque

M1.7: 0.12N·m

Use caution to the assembly orientation of solenoid valve, gasket and optional parts.

How to Order Manifolds

Type 20



How to Order

10–SS3YJ3–20– 05 –

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

02	2 stations
:	:
20	20 stations

- **Bracket**

Nil	Without bracket
F	With bracket

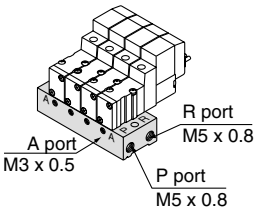
Applicable solenoid valve
10-SYJ312M-□□□□-M3
10-SYJ322M-□□□□-M3

Applicable blanking plate assembly
SYJ300-10-1A

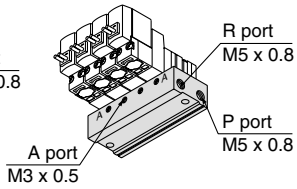
Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 41

Type 41



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



How to Order

10–SS3YJ3– 41– 05 –M3

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

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

- **Stations**

02	2 stations
:	:
20	20 stations

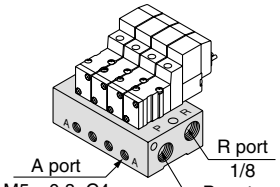
Applicable solenoid valve
10-SYJ314M-□□□□
10-SYJ324M-□□□□

Applicable blanking plate assembly
SYJ300-10-2A

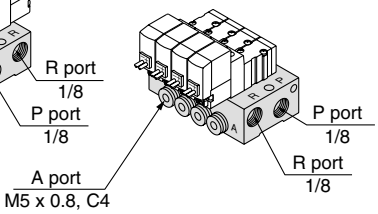
Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 42

Type 42



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



How to Order

10–SS3YJ3– 42– 05 – M5 –

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

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

- **Stations**

02	2 stations
:	:
20	20 stations

- **A port size**

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

- **P, R port thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

Applicable solenoid valve
10-SYJ314M-□□□□
10-SYJ324M-□□□□

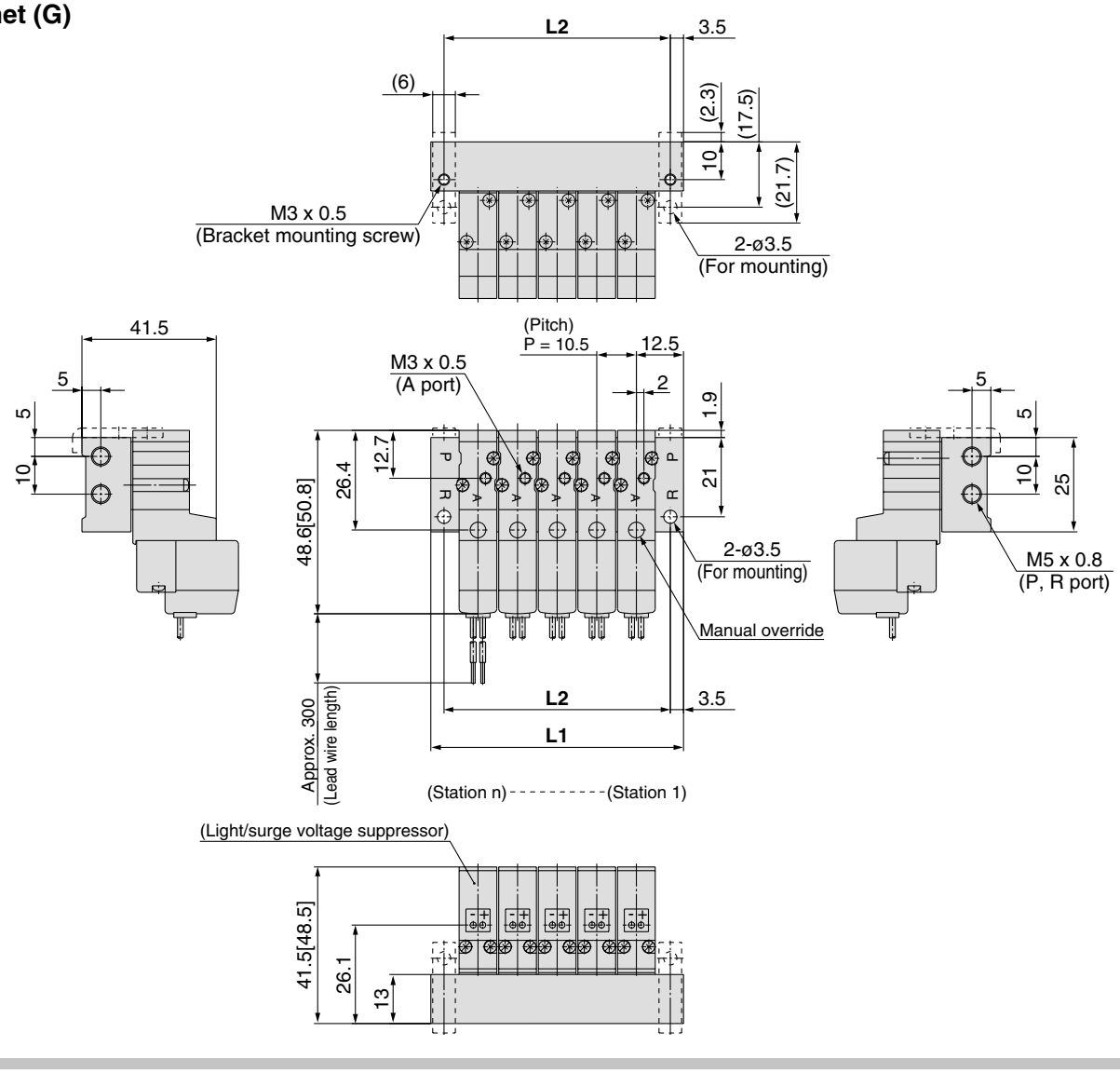
Applicable blanking plate assembly
SYJ300-10-2A

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

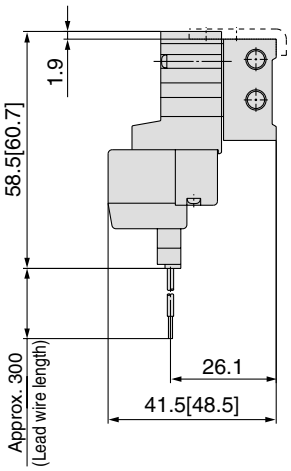
Type 20 manifold: Top ported / 10-SS3YJ3-20-Station-00□(-F)

∗ [ ]: AC

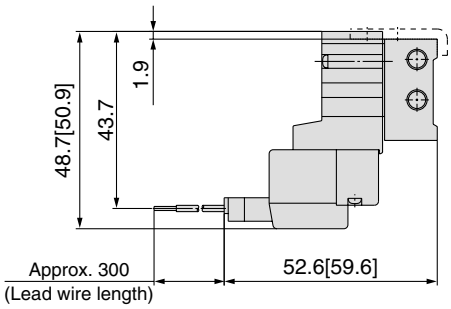
Grommet (G)



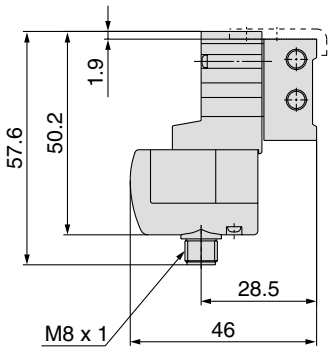
L plug connector (L)



M plug connector (M)



M8 connector (WO)



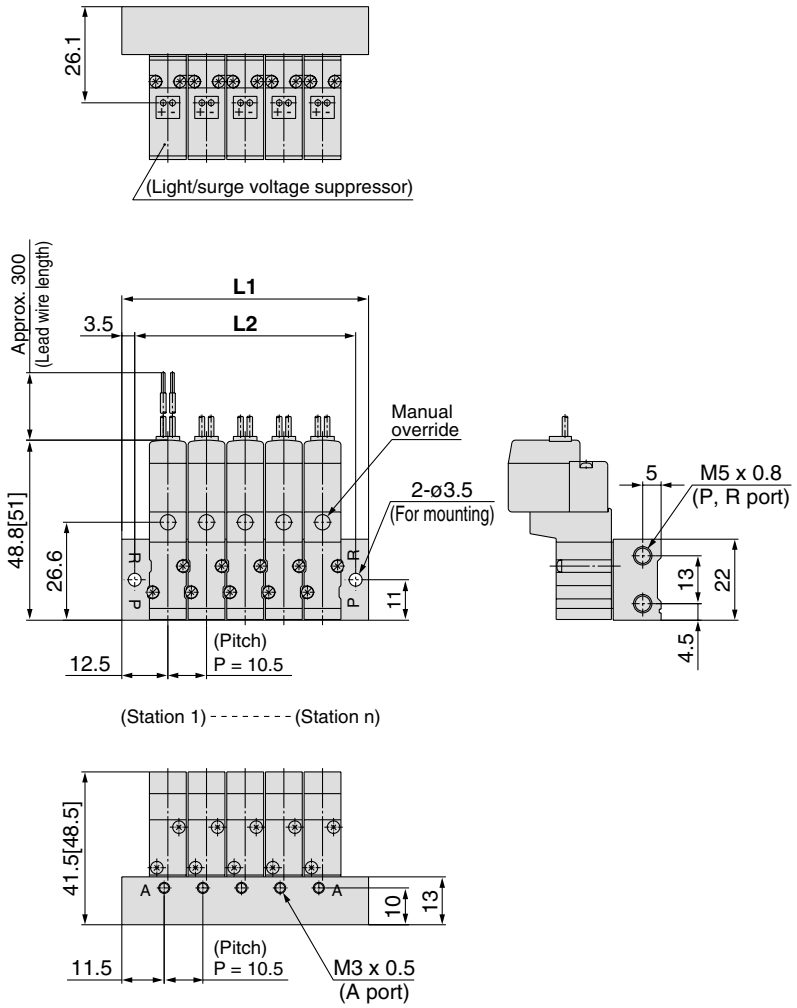
∗ Refer to page 704 for dimensions with connector cable.

Stations 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 / 10-SS3YJ3-41-Station-M3

Note) [ ]: AC

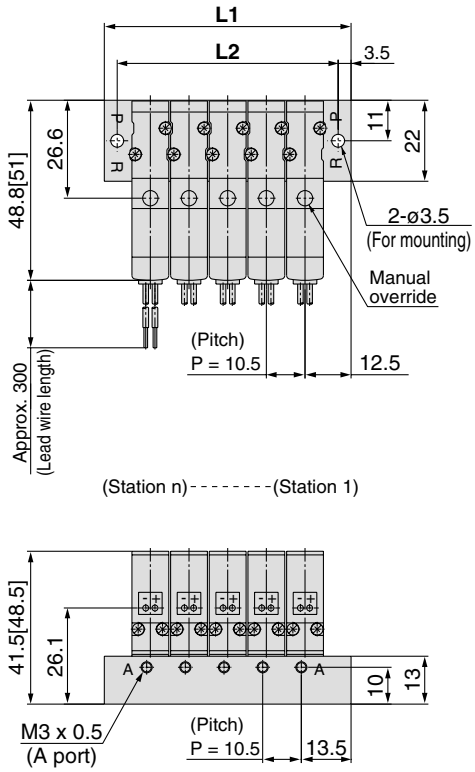
Grommet (G)



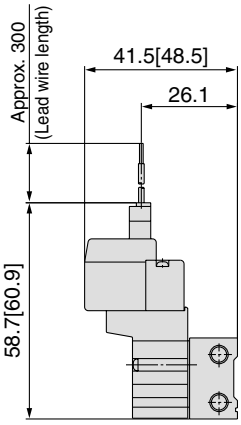
Type S41 manifold: Side ported

(Pilot valve is on the same side of A port.)

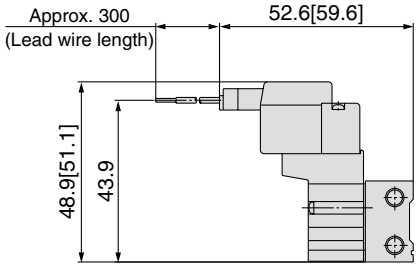
10-SS3YJ3-S41-Stations-M3



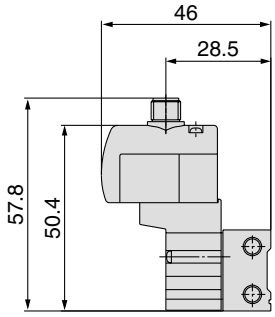
L plug connector (L)



M plug connector (M)



M8 connector (WO)



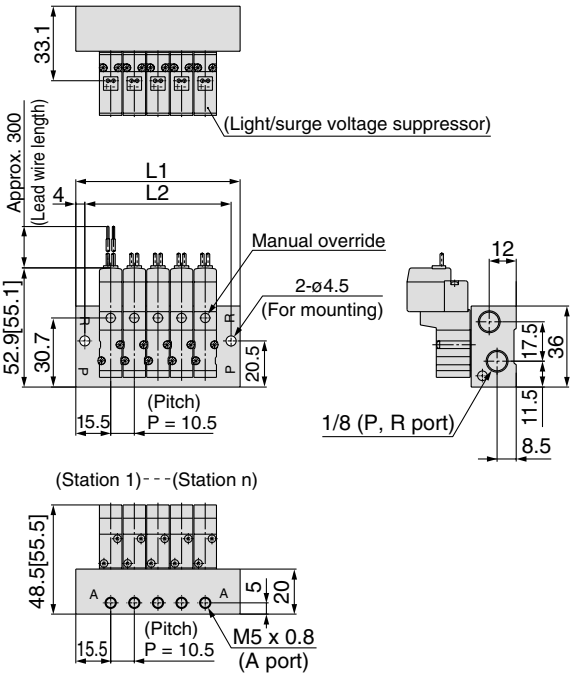
∗ Refer to page 704 for dimensions with connector cable.

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

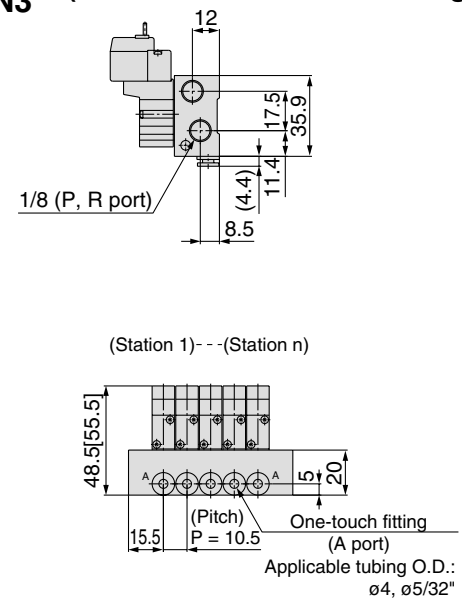
Type 42 manifold: Side ported / 10-SS3YJ3-42-[Station]-M5, C4 N3 □

∗ [ ]: AC

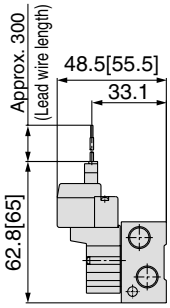
Grommet (G)
M5



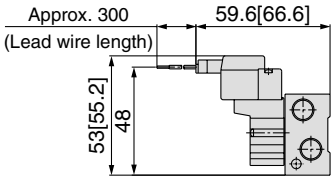
C4 N3 □ (With built-in one-touch fitting)



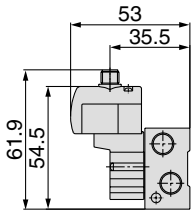
L plug connector (L)



M plug connector (M)



M8 connector (WO)

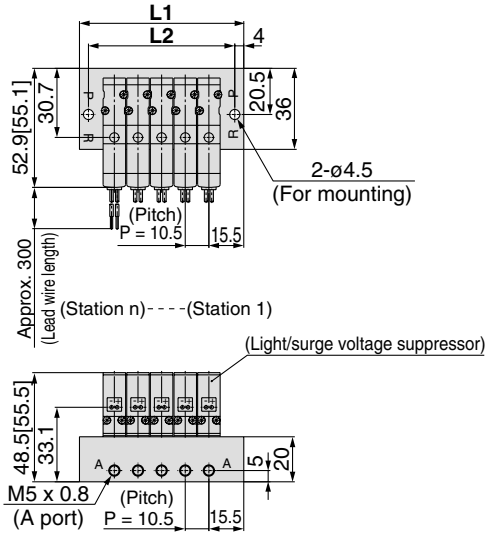


∗ Refer to page 704 for dimensions with connector cable.

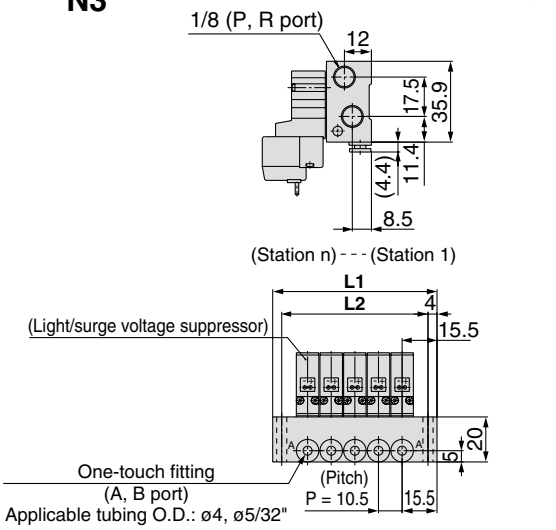
Type S42 manifold: Side ported (Pilot valve is on the same side of A port.)

M5 10-SS3YJ3-S42-[Stations]-M5, C4 N3 □

Grommet (G)
M5



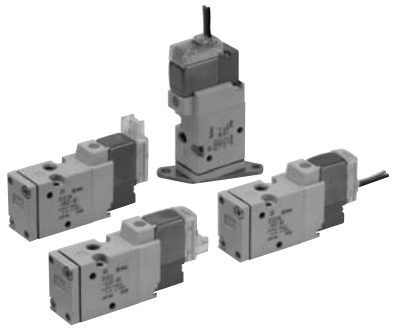
C4 N3 □ (With built-in one-touch fitting)



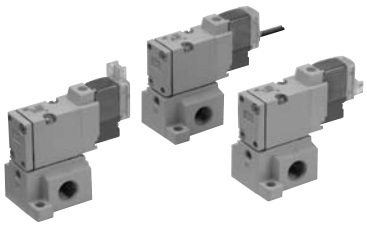
Stations n	2 Stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 Stations
L1	41.5	52	62.5	73	83.5	94	104.5	115	125.5	136	146.5	157	167.5	178	188.5	199	209.5	220	230.5
L2	33.5	44	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212	222.5

Series 10-SYJ500

Rubber seal
3 port / Pilot operated solenoid valve



Body ported



Base mounted

Specifications

Fluid		Air
Operating pressure range (MPa)	**Internal pilot**	0.15 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (No freezing. Refer to page 714.)
Response time ms (0.5MPa) 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		Common exhaust type for main and pilot valves
Lubrication		Not required
Mounting orientation		Unrestricted
Impact / Vibration resistance m/s² Note 2)		150/30
Enclosure		Dust tight (∗ DIN terminal, M8 connector conforms to IP65.)

∗ Based on IEC60529

Note 1) Based on dynamic performance test, JIS B 8374-1981. (With coil temperature of 20°C, at rated voltage and 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. (Initial value)

Vibration resistance: No malfunction occurred in one sweep between 45 and 2000Hz. Test was performed in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states. (Initial value)

Solenoid specifications

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

∗ 110VAC and 115VAC are common, as are 220VAC and 230VAC.

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

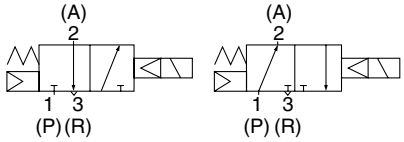
∗ Since S, Z and T types (with a power saving circuit) have a voltage drop due to internal circuit, observe the following allowable voltage fluctuation range.

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

JIS Symbol

Internal pilot

10-SYJ51$^{2}_{4}$M **10-SYJ52$^{2}_{4}$M**



Made to Order Made to Order Specifications
(Refer to page 698 for details.)

Flow characteristics / Weight

Valve model		Type of actuation	Port size	Flow characteristics						Weight (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	10-SYJ512M	N.C.	M5 x 0.8	0.53	0.45	0.14	0.47	0.39	0.12	46	47	68	51
	10-SYJ522M	N.O.		0.66	0.45	0.18	0.66	0.45	0.18				
Base mounted (With sub-plate)	10-SYJ514M	N.C.	1/8	1.2	0.41	0.32	1.1	0.46	0.32	60(46)	61(47)	82(68)	65(51)
	10-SYJ524M	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.

How to Order

Rated voltage

For DC

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

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

AC specifications (50/60Hz)

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

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

Light/surge voltage suppressor

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

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

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

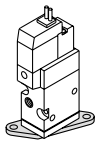
Electrical entry for D

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

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

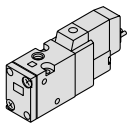
Bracket

Nil: Without bracket
F: With bracket



∗ Brackets are not installed.

3 port



(For type 20 manifold)

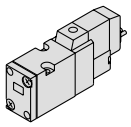
Type of actuation

1	Normally closed
2	Normally open

Body ported 10 — SYJ5 [1] 2M [ ] — 5 [M] [ ] [ ] — M5 — [ ]

Base mounted 10 — SYJ5 [1] 4M [ ] — 5 [M] [ ] [ ] — 01 [ ]

3 port



(For sub-plate type, Type 40, 41 manifolds)

Clean series

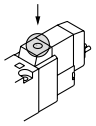
Coil specifications

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

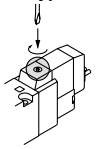
∗ Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Manual override

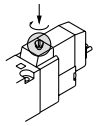
Nil: Non-locking push type



D: Push-turn locking slotted type

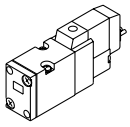


E: Push-turn locking lever type

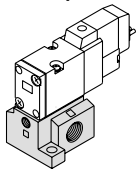


Port size

Nil: Without sub-plate



01: With 1/8 port sub-plate



(With gasket and screws)

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Electrical entry

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

Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary.
(For details, refer to catalog in page 678.)

∗ "LN", "MN" types: with 2 sockets.
∗ DIN terminal type "Y" conforming to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 698.
∗ For connector cable of M8 connector, refer to page 703.
Note 1) Be sure to enter a symbol of the cable length with reference to page 704.

How to Order Pilot Valve Assembly

10—V111 □ — 5 G □

Coil specifications

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

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

Rated voltage

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

* For type "W□", DCvoltage is only available.

Light/surge voltage suppressor

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

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

Electrical entry

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

* For connector cable of M8 connector, refer to page 703.

Note 1) Be sure to enter a symbol of the cable length with reference to page 704.

10—V115— 5 D □

Rated voltage

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

* DC specifications of types "D" and "DO" is only available with 12 and 24 VDC.
* Power saving circuit is not available in the case of "D", "DO" type.

Light/surge voltage suppressor

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

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

Electrical entry

D	DIN terminal	With connector
DO		Without connector

Note) Do not replace 10-V111 (G, H, L, M, W) with 10-V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

How to Order L/M Plug Connector Assembly

For DC : **SY100-30-4A-** □

For 100 VAC : **SY100-30-1A-** □

For 200 VAC : **SY100-30-2A-** □

For other voltages of AC : **SY100-30-3A-** □

Without lead wire (with connector and 2 of sockets only) : **SY100-30-A**

Lead wire length

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

How to Order M8 Connector Cable

V100-49-1- □

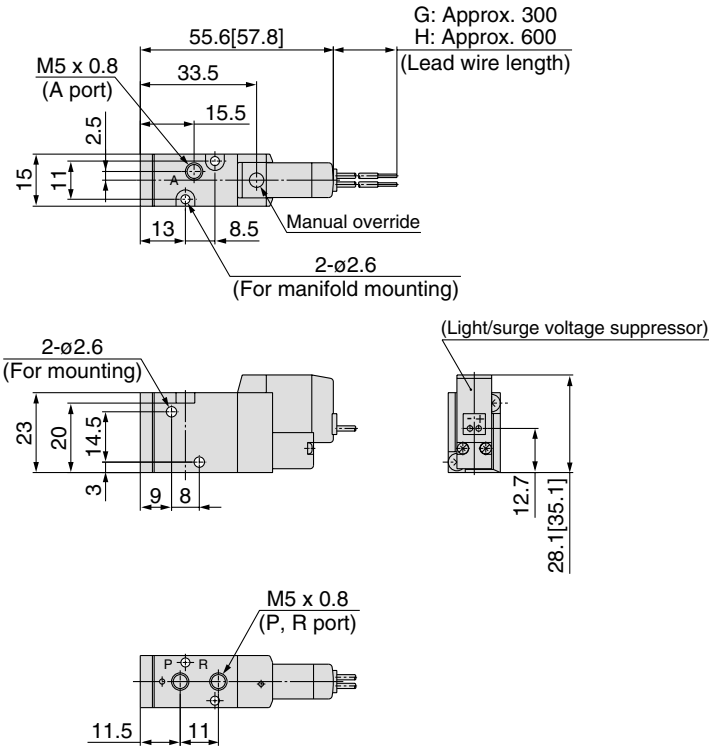
Cable length

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

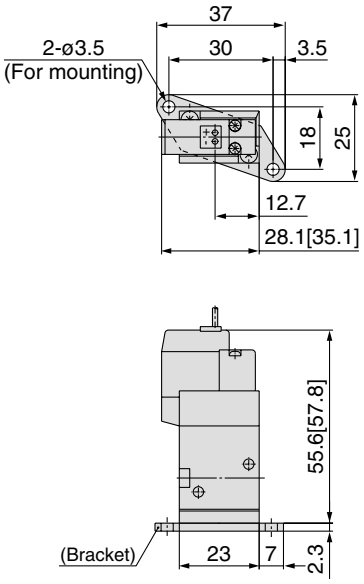
Body ported

＊ [ ]: AC

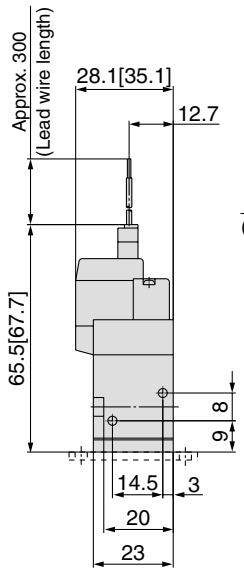
Grommet (G), (H): 10-SYJ5□2M-□$^{G}_{H}$□□-M5



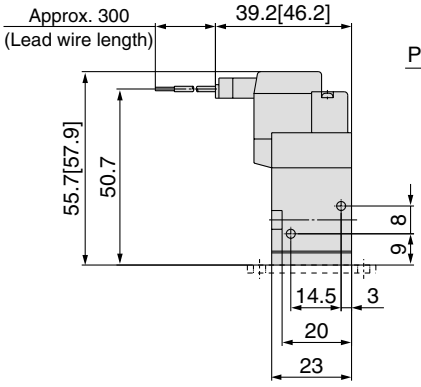
With bracket: 10-SYJ5□2M-□$^{G}_{H}$□□-M5-F



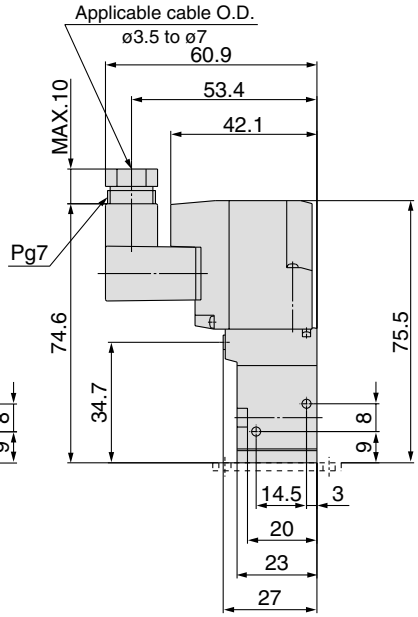
L plug connector (L): 10-SYJ5□2M-□L□□-M5 (-F)



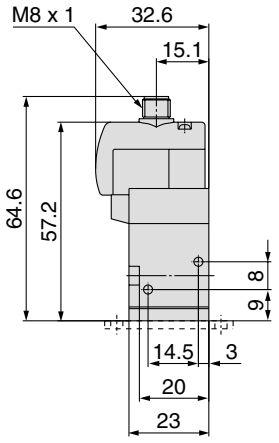
M plug connector (M): 10-SYJ5□2M-□M□□-M5 (-F)



DIN Terminal (D): 10-SYJ5□2M-□D□□-M5 (-F)



M8 connector (WO): 10-SYJ5□2M-□WO□□-M5 (-F)

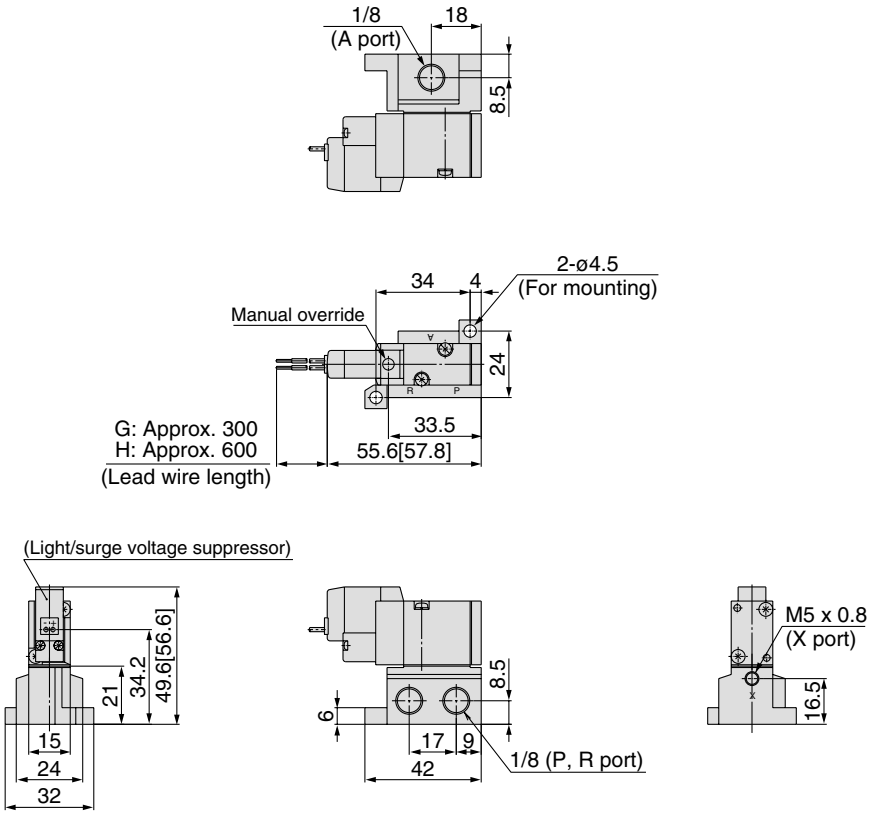


＊ Refer to page 704 for dimensions with connector cable.

Base mounted (With sub-plate)

∗ [ ]: AC

Grommet (G), (H): 10-SYJ5□4M-□$^{G}_{H}$□□-01□

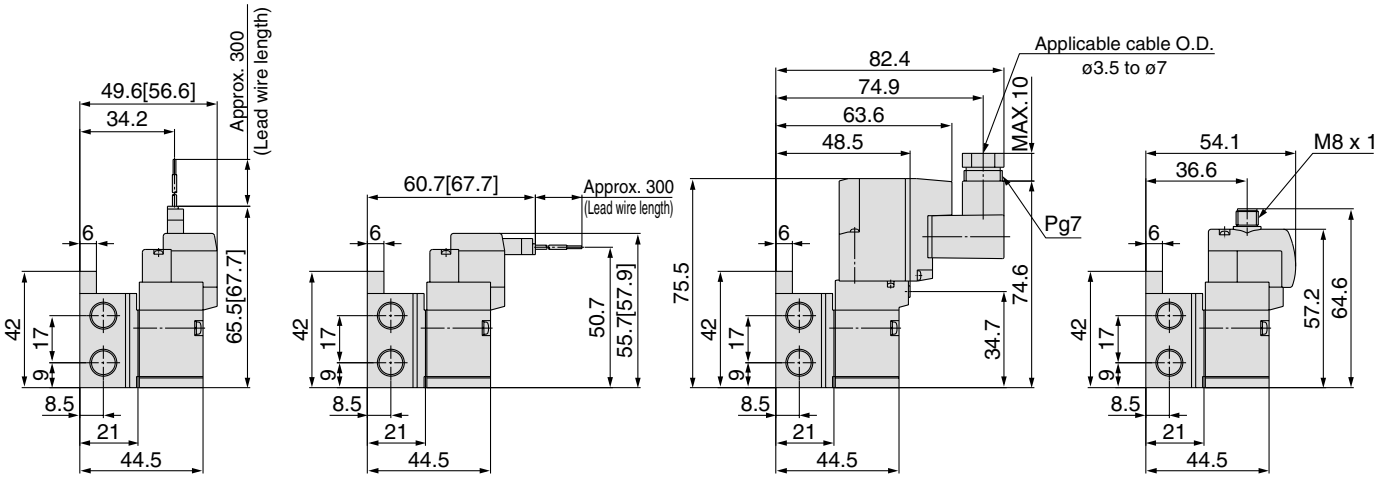


L plug connector (L): 10-SYJ5□4M-□L□□-01□

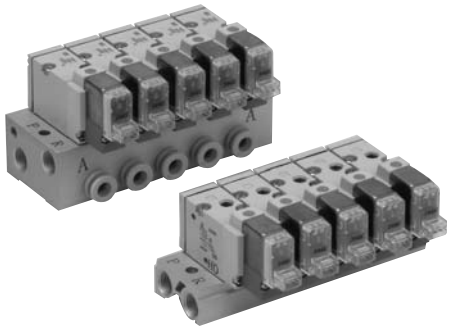
M plug connector (M): 10-SYJ5□4M-□M□□-01□

DIN terminal (D): 10-SYJ5□4M-□D□□-01□

M8 connector (WO): 10-SYJ5□4M-□WO□□-01□



∗ Refer to page 704 for dimensions with connector cable.



Manifold specifications

Model	For internal pilot	Type 20	Type 40	Type 41
Manifold type		Single base type / B mount		
P(SUP) / R(EXH)		Common SUP / Common EXH		
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)

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	**10-SS3YJ5-20**	**10-SYJ5□2M**	1/8	M5 x 0.8	0.47	0.43	0.13	0.74	0.32	0.19
Base mounted for internal pilot	**10-SS3YJ5-40-M5**	**10-SYJ5□4M**	1/8	M5 x 0.8	0.71	0.52	0.21	0.81	0.28	0.20
	10-SS3YJ5-40-01		1/8	1/8	0.98	0.36	0.25	0.92	0.24	0.22
	10-SS3YJ5-41-M5		1/8	M5 x 0.8	0.71	0.49	0.20	0.80	0.23	0.19
	10-SS3YJ5-41-01		1/8	1/8	1.0	0.37	0.26	0.96	0.25	0.24
	10-SS3YJ5-41-C4		1/8	C4	0.68	0.35	0.17	1.0	0.25	0.24
	10-SS3YJ5-41-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)

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

(Example)

10-SS3YJ5-20-03 ·····1 set (Manifold base)

* **10-SYJ512M-5LZ-M5** ··· 2 sets (Valve)

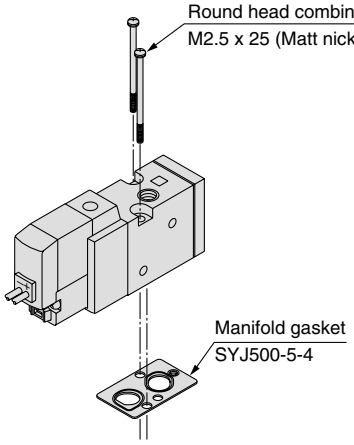
* **SYJ500-10-1A**·····1 set (Blanking plate assembly.)

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

<Manifold option>

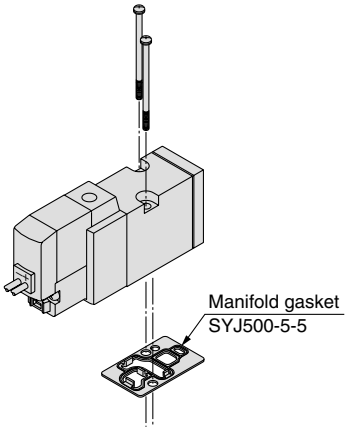
Combinations of solenoid valve, manifold gasket and manifold base

Body ported (10-SYJ5□2M)



Applicable base
10-SS3YJ5-20
Manifold base

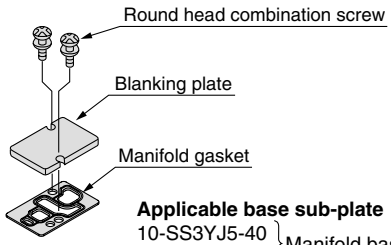
Base mounted (10-SYJ5□4M)



Applicable base sub-plate
10-SS3YJ5-40
10-SS3YJ5-41
} Manifold base

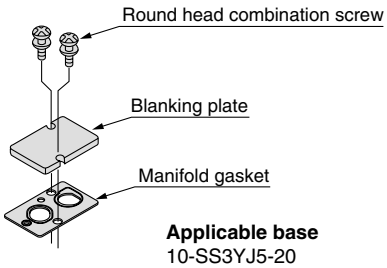
Blanking plate assembly

Part no.: SYJ500-10-3A



Applicable base sub-plate
10-SS3YJ5-40
10-SS3YJ5-41
} Manifold base

Part no.: SYJ500-10-1A



Applicable base
10-SS3YJ5-20

⚠ Caution

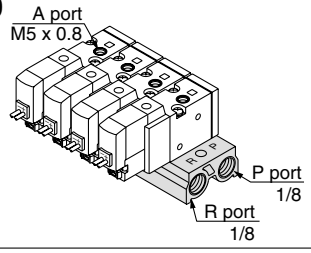
Mounting screw tightening torque

M2.5: 0.45N·m

Use caution to the assembly orientation of solenoid valve (blanking plate) and manifold gasket.

How to Order Manifolds

Type 20



How to Order

10–SS3YJ5–20– 05 – – –

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

02	2 stations
:	:
20	20 stations

- **P, R port thread type**

Nil	Rc
00F	G
00N	NPT
00T	NPTF

- **Bracket**

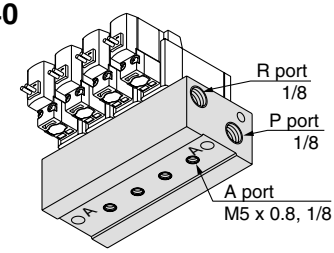
Nil	Without bracket
F	With bracket

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

Applicable solenoid valve
10-SYJ512M-□□□□-M5
10-SYJ522M-□□□□-M5

Applicable blanking plate assembly
SYJ500-10-1A

Type 40



How to Order

10–SS3YJ5–40– 05 – M5 –

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

02	2 stations
:	:
20	20 stations

- **A port size**

M5	M5 x 0.8
01	1/8

- **P, R port thread type**

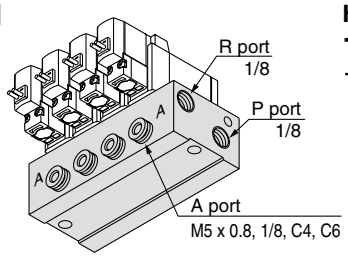
Nil	Rc
F	G
N	NPT
T	NPTF

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

Applicable solenoid valve
10-SYJ514M-□□□□
10-SYJ524M-□□□□

Applicable blanking plate assembly
SYJ500-10-3A

Type 41



How to Order

10–SS3YJ5–41– 05 – C6 –

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

02	2 stations
:	:
20	20 stations

- **A port size**

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

- **P, R port thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

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

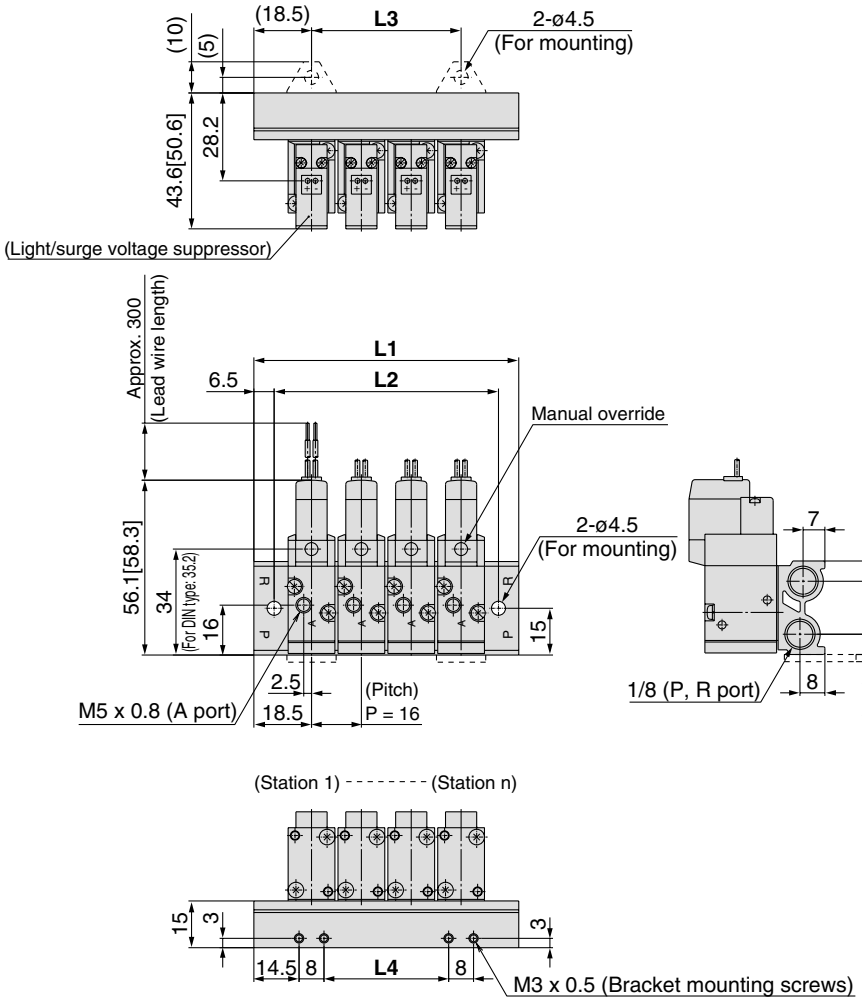
Applicable solenoid valve
10-SYJ514M-□□□□
10-SYJ524M-□□□□

Applicable blanking plate assembly
SYJ500-10-3A

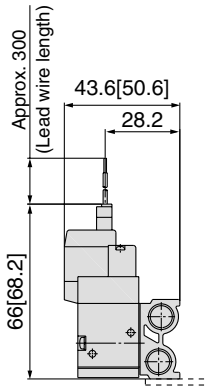
Type 20 manifold: Top ported / 10-SS3YJ5-20-[Stations]-00□(-F)

∗ [ ]: AC

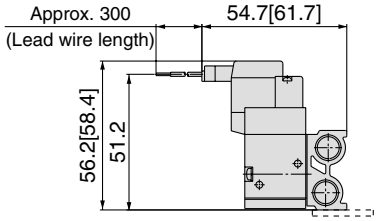
Grommet (G)



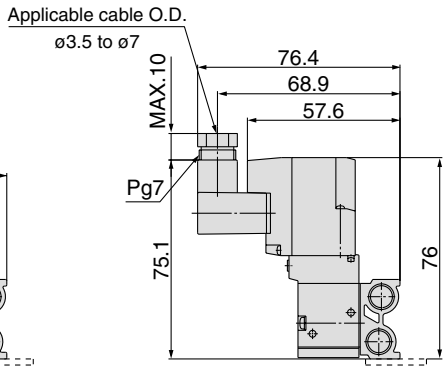
L plug connector (L)



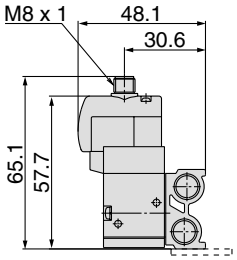
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



∗ Refer to page 704 for dimensions with connector cable.

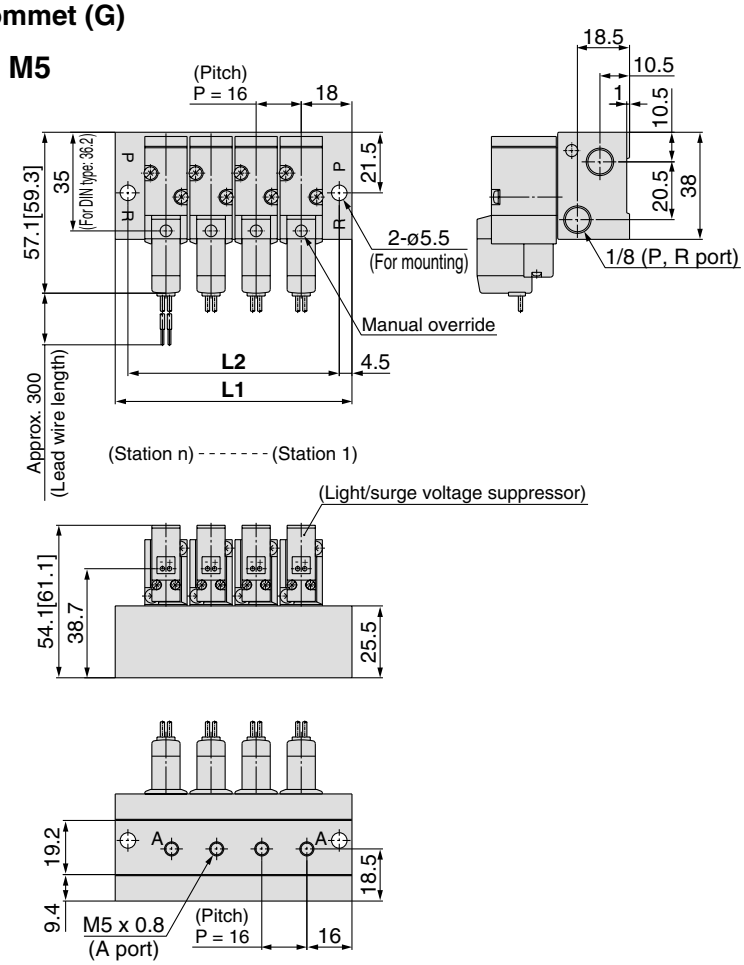
Stations n	2 Stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 Stations
L1	53	69	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309	325	341
L2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328
L3	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304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

Type 40 manifold: Bottom ported / 10-SS3YJ5-40-Stations-M5, 01□

∗ [ ]: AC

Grommet (G)

M5



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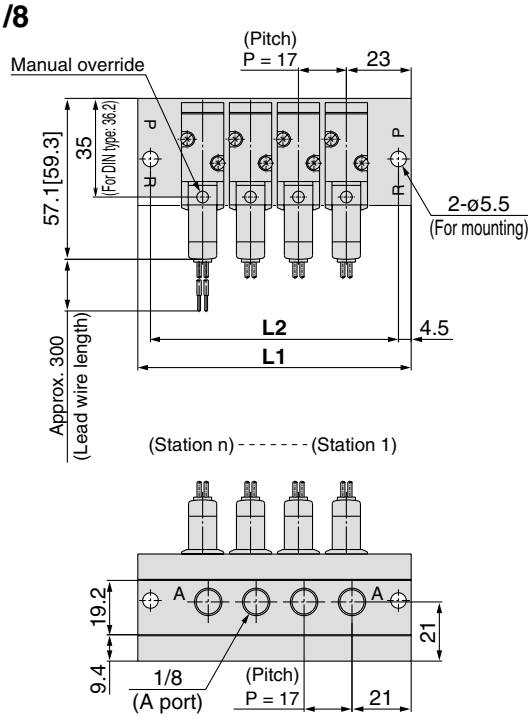
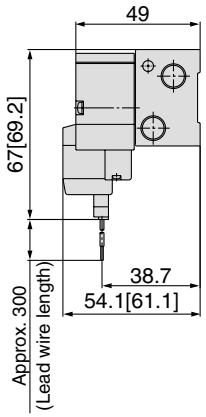
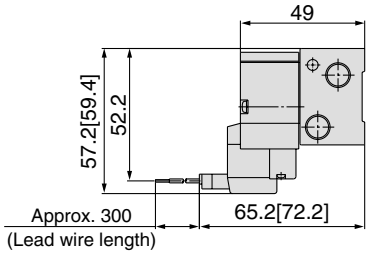


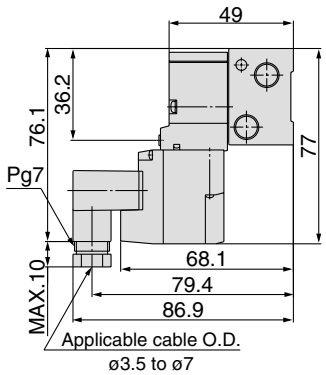
L plug connector (L)



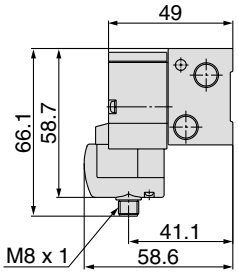
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



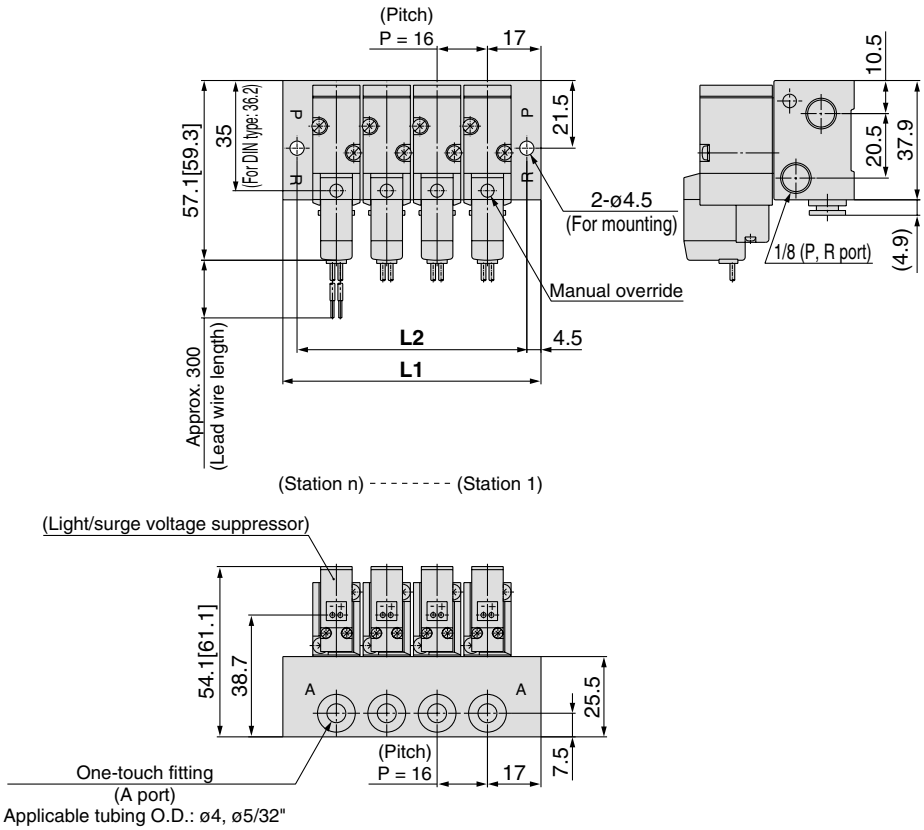
∗ Refer to page 704 for dimensions with connector cable.

Port size	Stations n	2 Stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 Stations
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

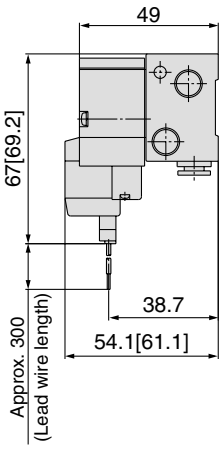
Type 41manifold: Side ported / 10-SS3YJ5-41- Station - C4,N3 C6,N7 □

∗ [ ]: AC

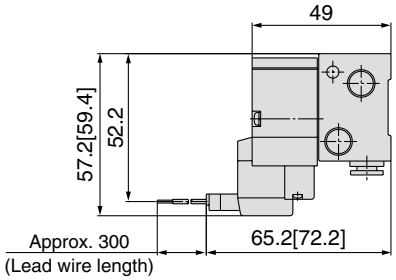
Grommet (G)



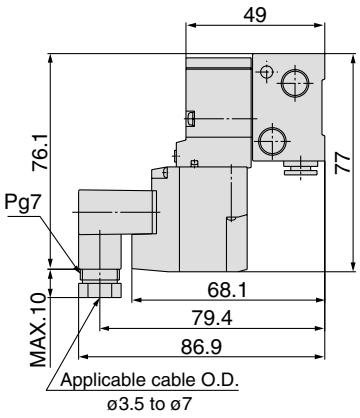
L plug connector (L)



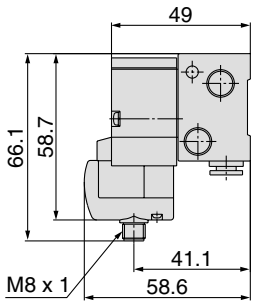
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



∗ Refer to page 704 for dimensions with connector cable.

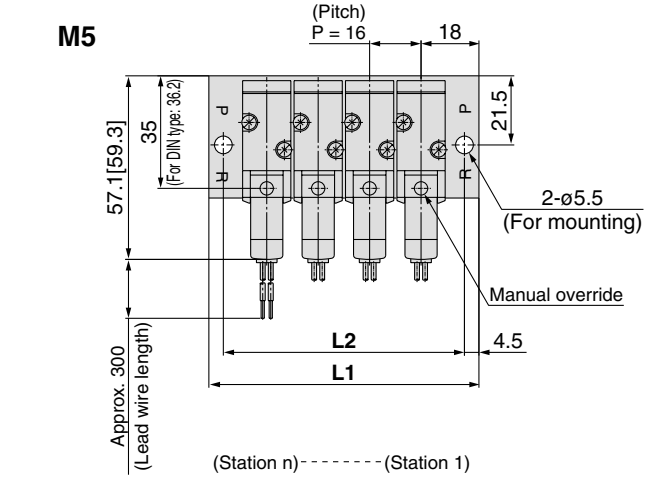
Port size	Stations n	2 Stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 Stations
One-touch fitting	**L1**	50	66	82	98	114	130	146	162	178	194	210	226	242	258	274	290	306	322	338
	L2	41	57	73	89	105	121	137	153	169	185	201	217	233	249	265	281	297	313	329

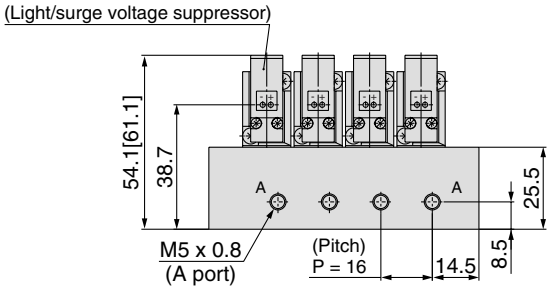
Type 41 manifold: Side ported / 10-SS3YJ5-41-Stations-M5, 01□

∗ [ ]: AC

Grommet (G)

M5





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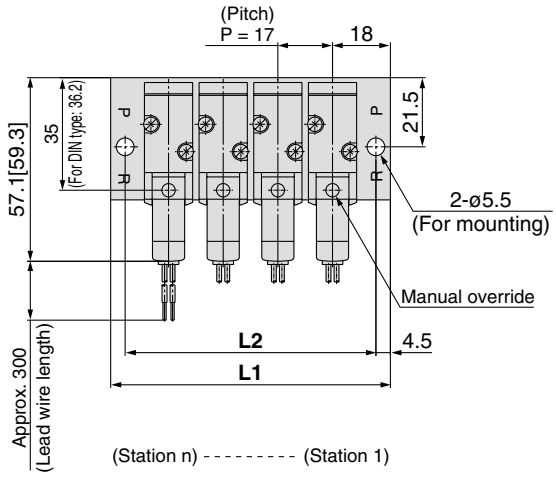
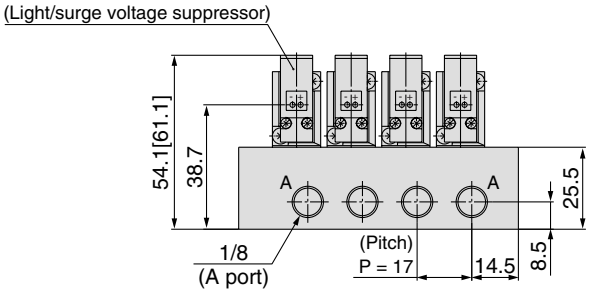
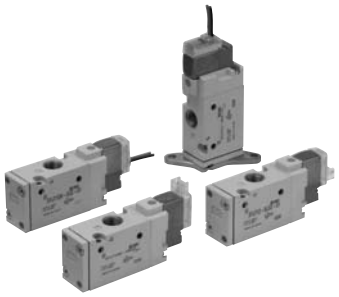




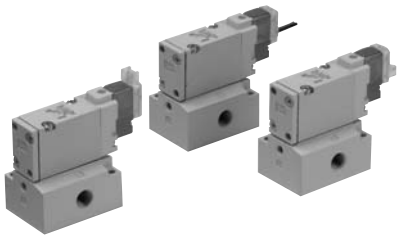
Port size	Stations n	2 Stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 Stations
M5	**L1**	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
	L2	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331
1/8	**L1**	53	70	87	104	121	138	155	172	189	206	223	240	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

Series 10-SYJ700

Rubber seal
3 port / Pilot operated solenoid valve



Body ported



Base mounted

Specifications

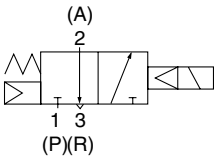
Fluid		Air
Operating pressure range (MPa)	**Internal pilot**	0.15 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (No freezing. Refer to page 714.)
Response time ms (0.5MPa) Note 1)		30 or less
Max. operating frequency (Hz)		5
Manual override (Manual operation)		Non-locking push type, Push-turn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

∗ Based on IEC60529
Note 1) Based on dynamic performance test, JIS B 8375-1981. (With coil temperature of 20°C, at rated voltage and 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. (Initial value)
Vibration resistance: No malfunction occurred in one sweep between 45 and 2000Hz. Test was performed in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states. (Initial value)

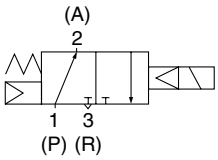
JIS Symbol

Internal pilot

10-SYJ71$^{2}_{4}$M



10-SYJ72$^{2}_{4}$M



Solenoid specifications

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

∗ 110VAC and 115VAC are common, as are 220VAC and 230VAC.
∗ For 115 VAC and 230 VAC, the allowable voltage fluctuation is –15% to +5% of rated voltage.
∗ Since S, Z and T types (with a power saving circuit) have a voltage drop due to internal circuit, do not exceed the following allowable voltage fluctuation range.

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

Made to Order Made to Order Specifications
(Refer to page 698 for details.)

Flow characteristics / Weight

Valve model		Type of actuation	Port size	Flow characteristics						Weight (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	**10-SYJ712M**	N.C.	1/8	2.8	0.43	0.77	2.5	0.51	0.76	75	76	97	80
	10-SYJ722M	N.O.		2.7	0.38	0.72	2.4	0.42	0.69				
Base mounted (With sub-plate)	**10-SYJ714M**	N.C.	1/8	2.9	0.32	0.71	2.7	0.34	0.69	135(75)	136(76)	157(97)	140(80)
	10-SYJ724M	N.O.		2.8	0.21	0.70	2.3	0.45	0.63				
	10-SYJ714M	N.C.	1/4	3.0	0.31	0.74	2.6	0.33	0.66				
	10-SYJ724M	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.

How to Order

Rated voltage

For DC

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

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

Light/surge voltage suppressor

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

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

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

Electrical entry for D

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

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

Type of actuation

1	Normally closed
2	Normally open

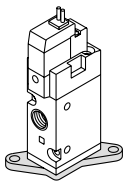
AC specifications (50/60Hz)

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

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

Bracket

Nil: Without bracket
F: With bracket

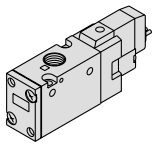


∗ Brackets are not installed.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

3 port

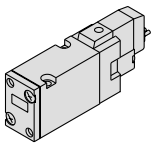


(For type 20 manifold)

Body ported **10—SYJ7 1 2M □ — 5 M □ □ — 01 □ □**

Base mounted **10—SYJ7 1 4M □ — 5 M □ □ — 01 □**

3 port



(For sub-plate type, types 40, 41 and 42 manifolds)

Clean series

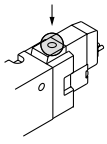
Coil specifications

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

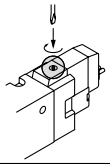
∗ Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Manual override

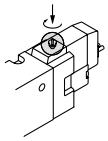
Nil: Non-locking push type



D: Push-turn locking slotted type



E: Push-turn locking lever type

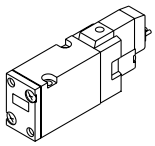


Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

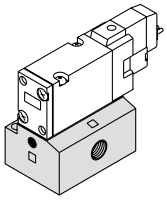
Port size

Nil: Without sub-plate

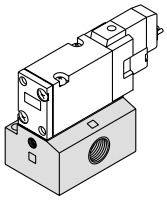


(With gasket and screws)

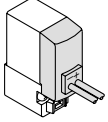
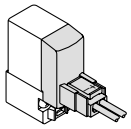
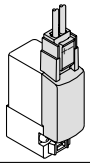
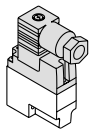
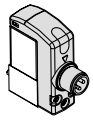
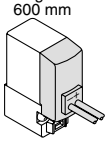
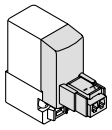
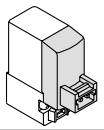
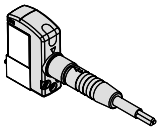
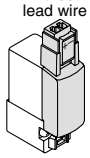
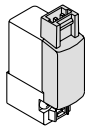
01: With 1/8 sub-plate



02: With 1/4 sub-plate



Electrical entry

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

Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to catalog in page 691.)

∗ "LN", "MN" types : with 2 sockets.
∗ DIN terminal type "Y" conforming to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 698.
∗ For connector cable of M8 connector, refer to page 703.
Note 1) Be sure to enter a symbol of the cable length in □ with reference to page 704.

How to Order Pilot Valve Assembly

10—V111 □ — 5 G □

Clean series

Coil specifications

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

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

Rated voltage

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

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

Light/surge voltage suppressor

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

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

Electrical entry

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

* For connector cable of M8 connector, refer to page 703.

Note 1) Be sure to enter a symbol of the cable length in □ with reference to page 704.

How to Order L/M Plug Connector Assembly

For DC : **SY100-30-4A-** □

For 100 VAC : **SY100-30-1A-** □

For 200 VAC : **SY100-30-2A-** □

For other voltages of AC : **SY100-30-3A-** □

Without lead wire (With connector and 2 of sockets only) : **SY100-30-A**

Lead wire length

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

How to Order M8 Connector Cable

V100-49-1- □

Cable length

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

10—V115—5 D □

Clean series

Rated voltage

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

* DC specifications of type "D" and "DO" is only available with 12 and 24 V DC.
* Power saving circuit is not available in the case of "D", "DO" type.

Light/surge voltage suppressor

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

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

Electrical entry

D	DIN terminal	With connector
DO		Without connector

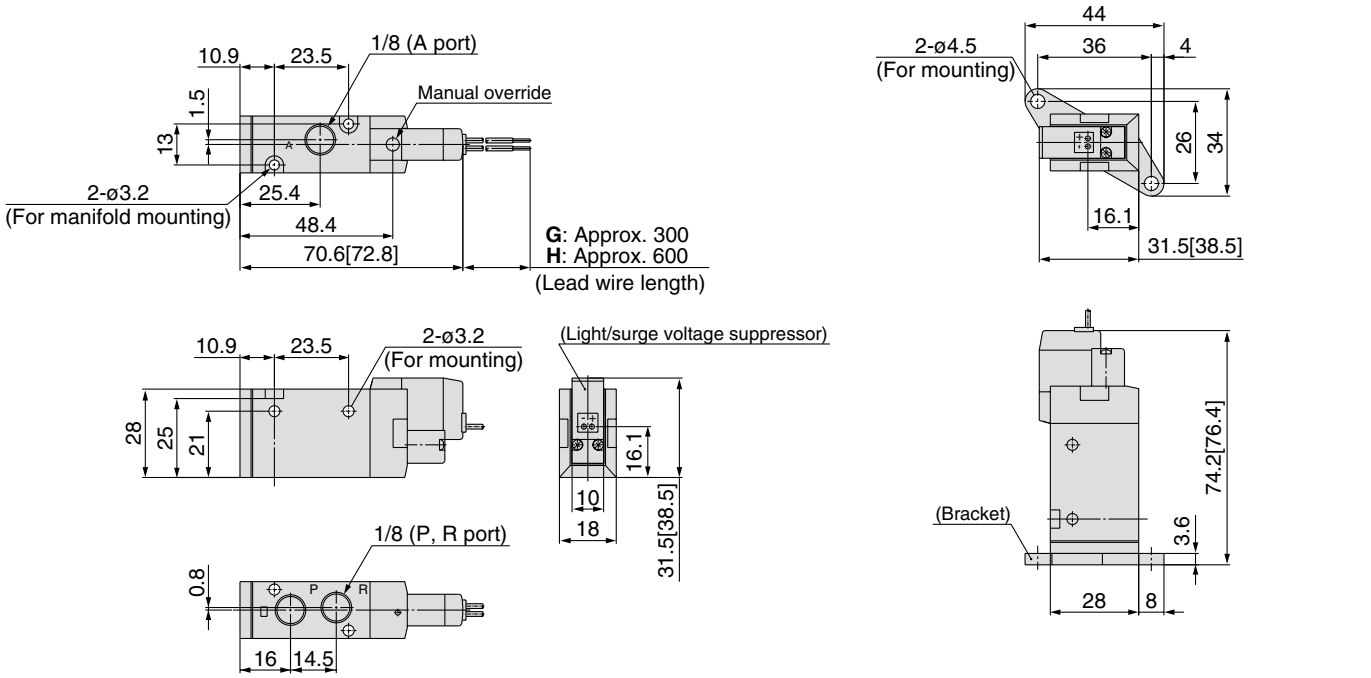
Note) Do not replace 10-V111 (G, H, L, M, W) with 10-V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

Body ported

∗ [ ]: AC

Grommet (G), (H): 10-SYJ7□4M-□$^{G}_{H}$□□-01□

With bracket: 10-SYJ7□2M-□$^{G}_{H}$□□-01□-F

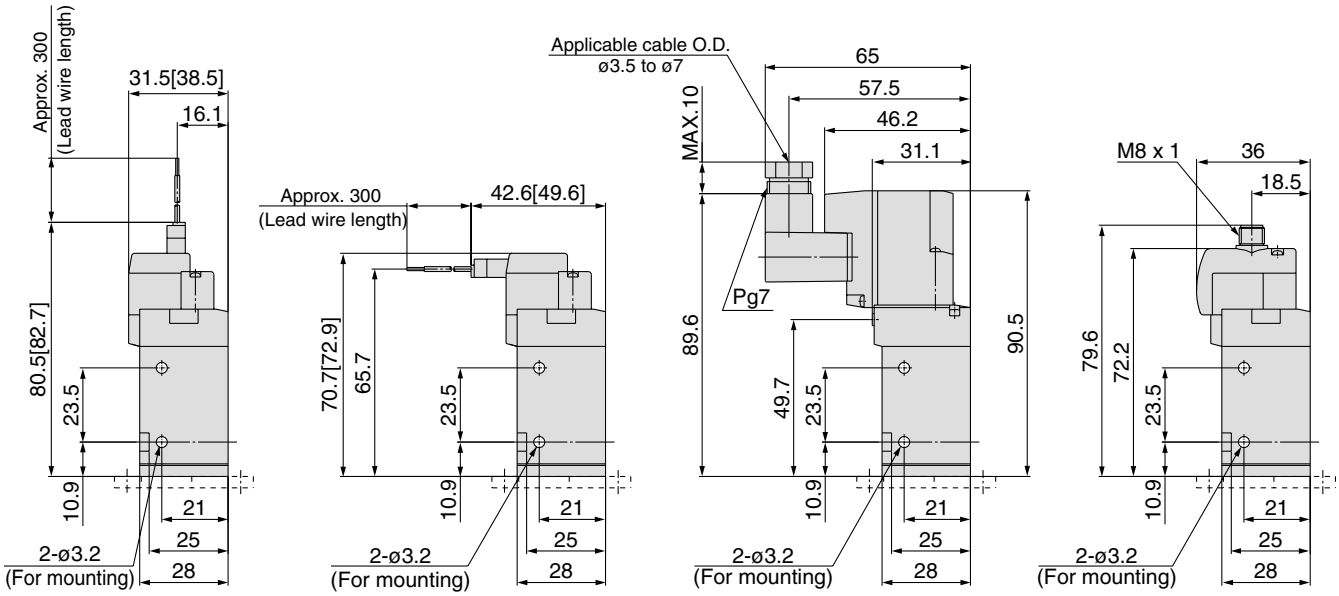


L plug connector (L):
10-SYJ7□2M-□L□□-01□ (-F)

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

DIN terminal (D):
10-SYJ7□2M-□D□□-01□ (-F)

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

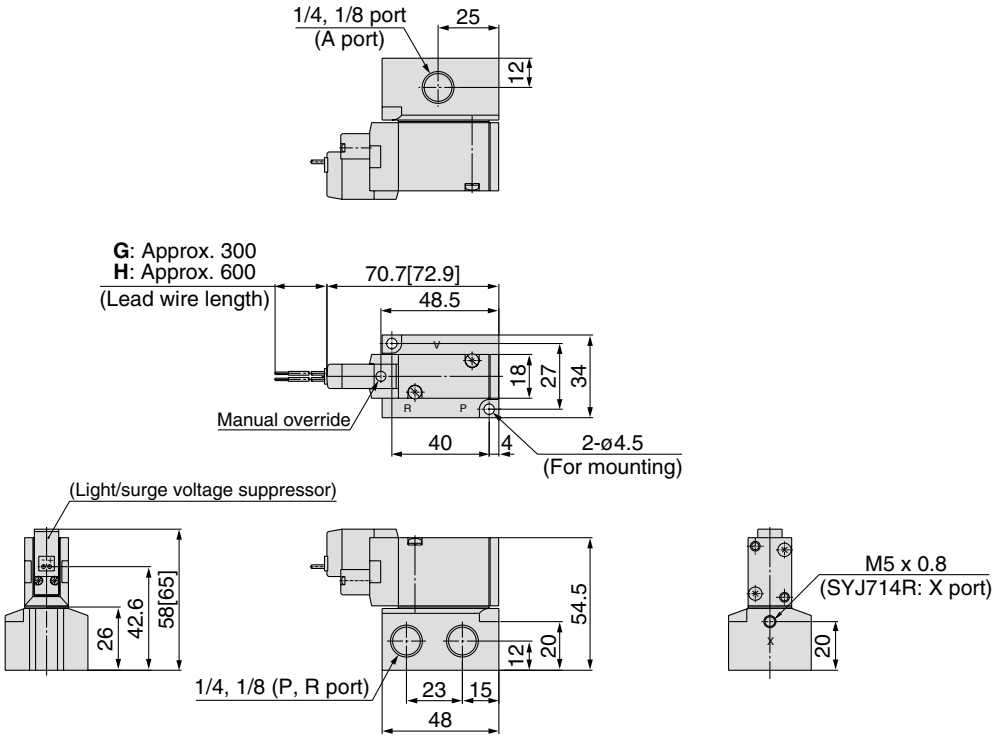


∗ Refer to page 704 for dimensions with connector cable.

Base mounted (With sub-plate)

∗ [ ]: AC

Grommet (G), (H): 10-SYJ7□4M-□$^{G}_{H}$□□-$^{01}_{02}$□

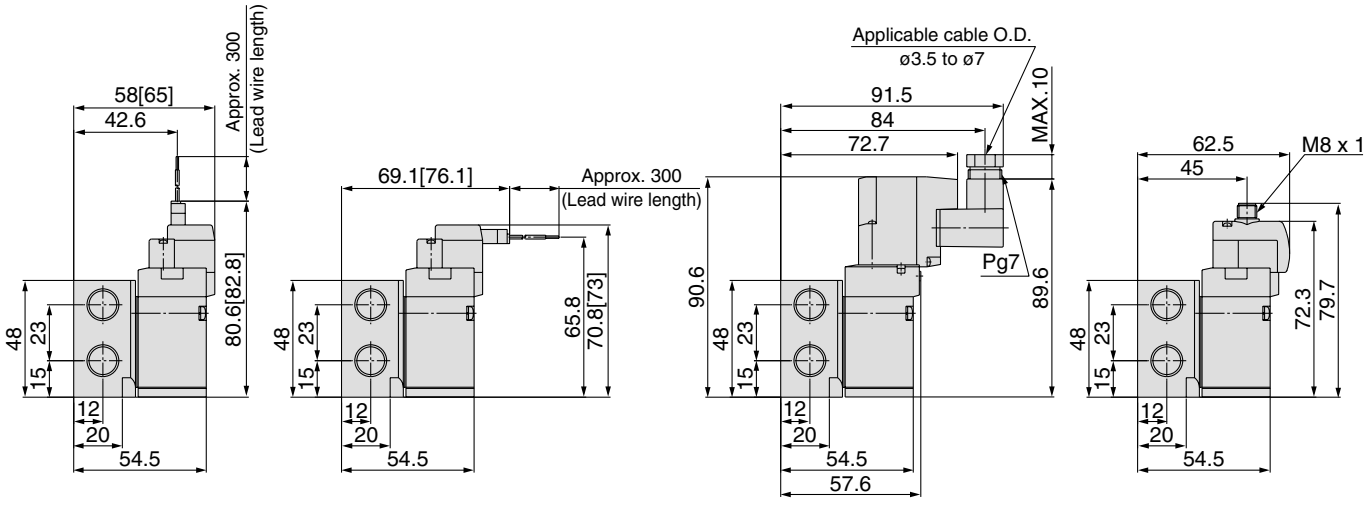


L plug connector (L): 10-SYJ7□4M-□L□□-$^{01}_{02}$□

M plug connector (M): 10-SYJ7□4M-□M□□-$^{01}_{02}$□

DIN terminal (D): 10-SYJ7□4M-□D□□-$^{01}_{02}$□

M8 connector (WO): 10-SYJ7□4M-□WO□□-$^{01}_{02}$□



∗ Refer to page 704 for dimensions with connector cable.

Manifold specifications

Model	For internal pilot	Type 20	Type 21	Type 40	Type 41	Type 42
Manifold type		Single base type / B mount				
P(SUP) / R(EXH)		Common SUP / Common EXH				
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 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)

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	**10-SS3YJ7-20**	**10-SYJ7□2M**	1/8	1/8	2.2	0.34	0.55	2.3	0.27	0.59
	10-SS3YJ7-21		1/4	1/8	2.2	0.39	0.59	2.4	0.32	0.62
Base mounted for internal pilot	**10-SS3YJ7-40**	**10-SYJ7□4M**	1/8	1/8	2.1	0.35	0.59	2.3	0.27	0.54
	10-SS3YJ7-41		1/4	1/8	2.2	0.35	0.59	2.4	0.36	0.66
	10-SS3YJ7-42-01		1/4	1/8	2.0	0.27	0.47	2.2	0.32	0.56
	10-SS3YJ7-42-C6		1/4	C6	1.6	0.32	0.39	2.2	0.27	0.54
	10-SS3YJ7-42-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)

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

(Example)

10-SS3YJ7-20-03 ····· 1 set (Manifold base)

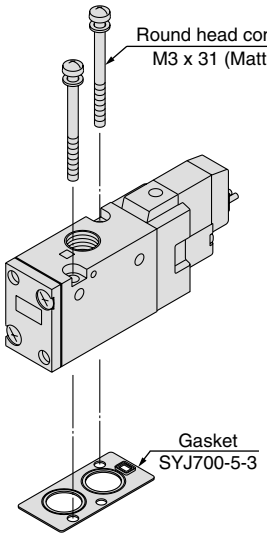
＊ **10-SYJ712M-5LZ-01** ···· 2 sets (Valve)

＊ **SYJ700-10-1A** ····· 1 set (Blanking plate assembly)

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

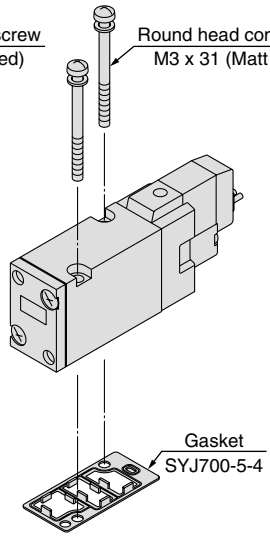
<Manifold option>
Combinations of solenoid valve, manifold gasket and manifold base

Body ported (10-SYJ7□2M)



Applicable base
10-SS3YJ7-20
10-SS3YJ7-21
} Manifold base

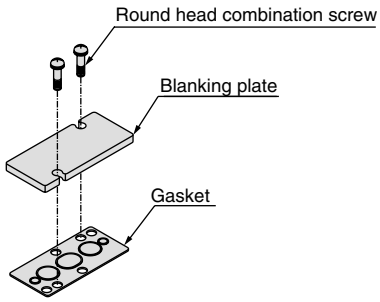
Base mounted (10-SYJ7□4M)



Applicable base sub-plate
10-SS3YJ7-40
10-SS3YJ7-41
10-SS3YJ7-42
} Manifold base

Blanking plate assembly

Part no.: SYJ700-10-2A
(For both body ported type and base mounted type)



⚠ Caution

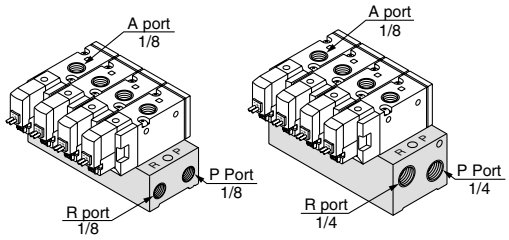
Mounting screw tightening torque

M3: 0.8N·m

Use caution to the assembly orientation of solenoid valve, gasket and optional parts.

How to Order Manifolds

Type 20/21



How to Order

10–SS3YJ7–20–05–

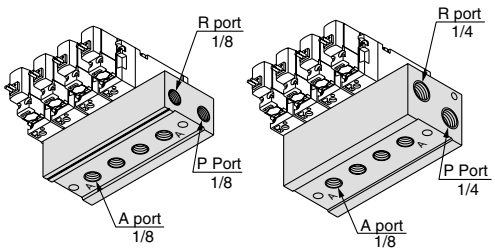
- Clean series
- Manifold type: 20 Type 20; 21 Type 21
- Stations: 02 2 stations; : :; 20 20 stations
- P, R port thread: Nil Rc; 00F G; 00N NPT; 00T NPTF

Applicable solenoid valve
10-SYJ712M-□□□□-01
10-SYJ722M-□□□□-01

Applicable blanking plate assembly
SYJ700-10-2A

Note) For more than 6 stations for type 20 and 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 40/41



How to Order

10–SS3YJ7–40–05–01

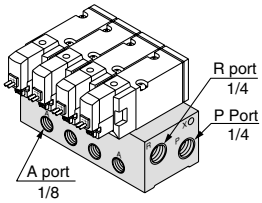
- Clean series
- Manifold: 40 Type 40; 41 Type 41
- Stations: 02 2 stations; : :; 20 20 stations
- A port size: 01 1/8
- P, R port thread: Nil Rc; F G; N NPT; T NPTF

Applicable solenoid valve
10-SYJ714M-□□□□
10-SYJ724M-□□□□

Applicable blanking plate assembly
SYJ700-10-2A

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

Type 42



How to Order

10–SS3YJ7–42–05–C6

- Clean series
- Stations: 02 2 stations; : :; 20 20 stations
- A port size: 01 Rc1/8; C6 One-touch fitting for ø6; C8 One-touch fitting for ø8; N7 One-touch fitting for ø1/4"; N9 One-touch fitting for ø5/16"
- P, R port thread: Nil Rc; F G; N NPT; T NPTF

Applicable solenoid valve
10-SYJ714M-□□□□
10-SYJ724M-□□□□

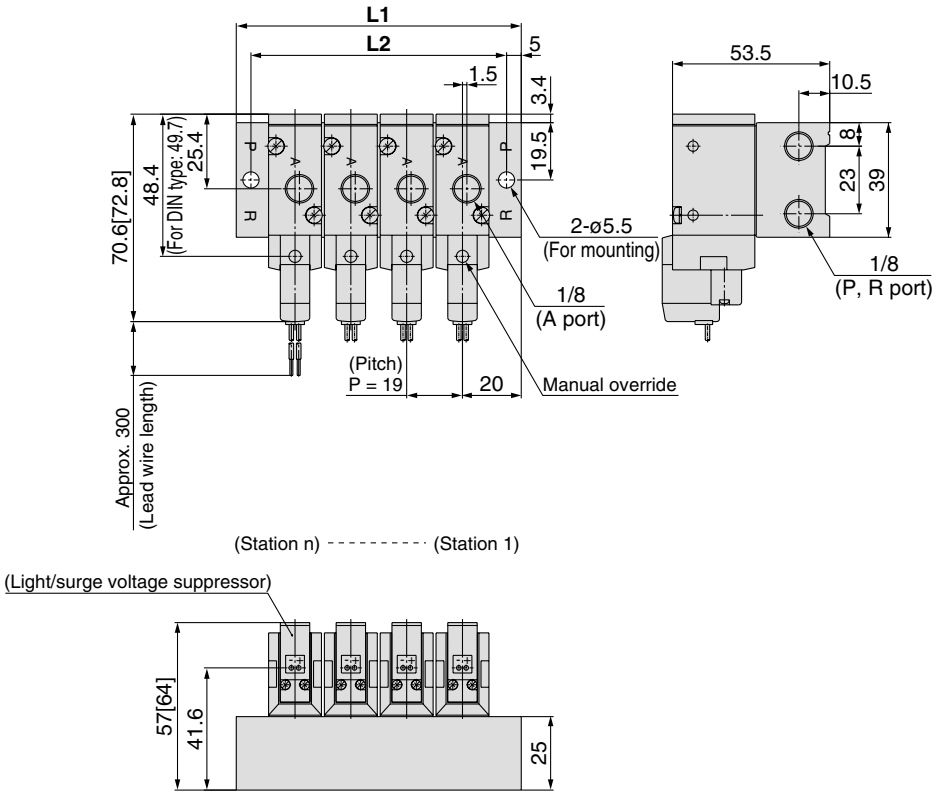
Applicable blanking plate assembly
SYJ700-10-2A

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

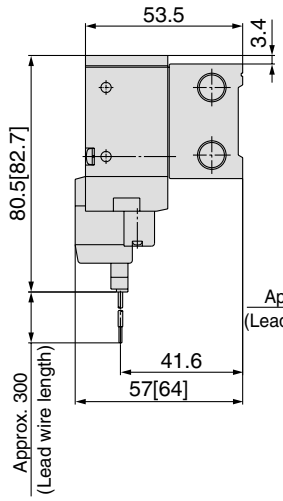
Type 20 manifold: Top ported / 10-SS3YJ7-20-Stations(-00□)

∗ [ ]: AC

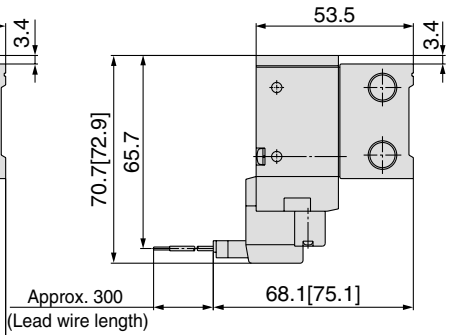
Grommet (G)



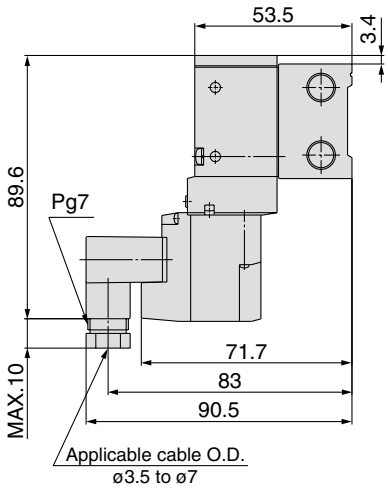
L plug connector (L)



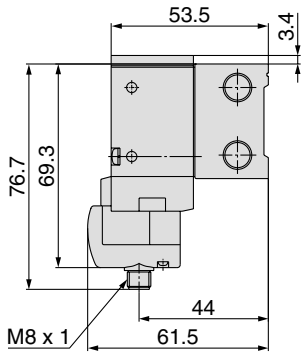
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



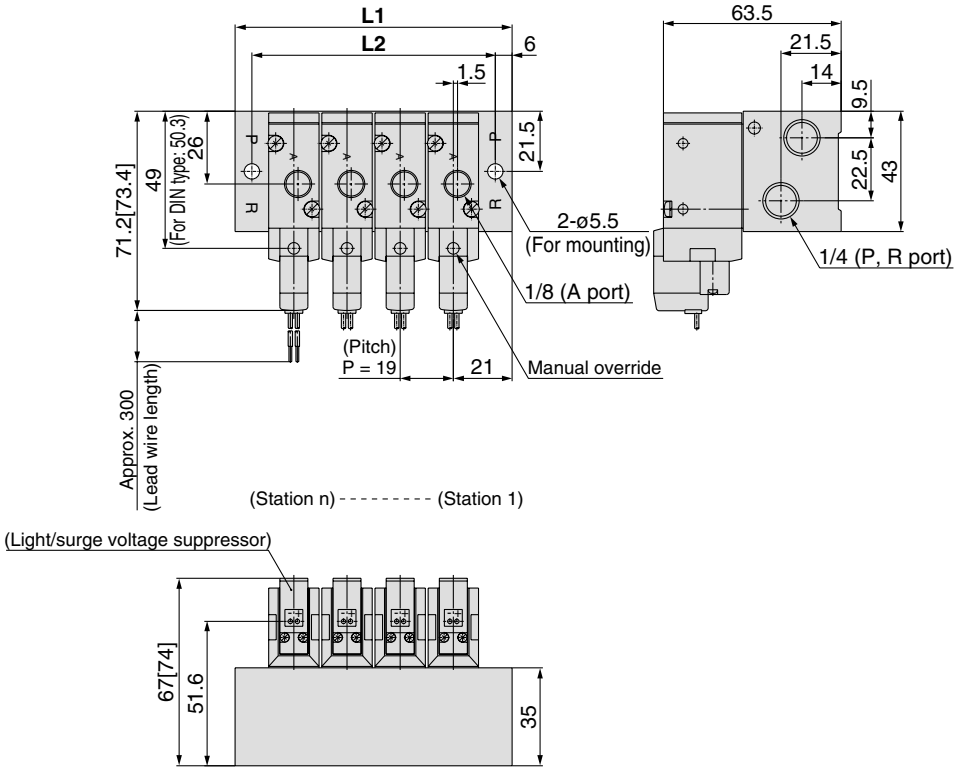
∗ Refer to page 704 for dimensions with connector cable.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	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

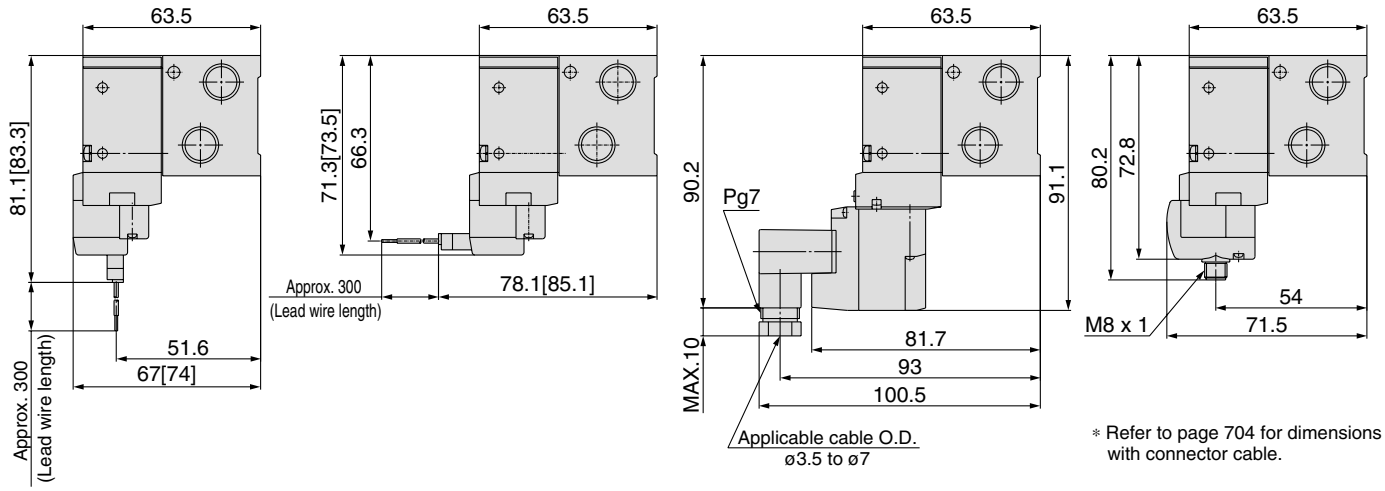
Type 21 manifold: Top ported / 10-SS3YJ7-21-Stations(-00□)

*[ ]: AC

Grommet (G)



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



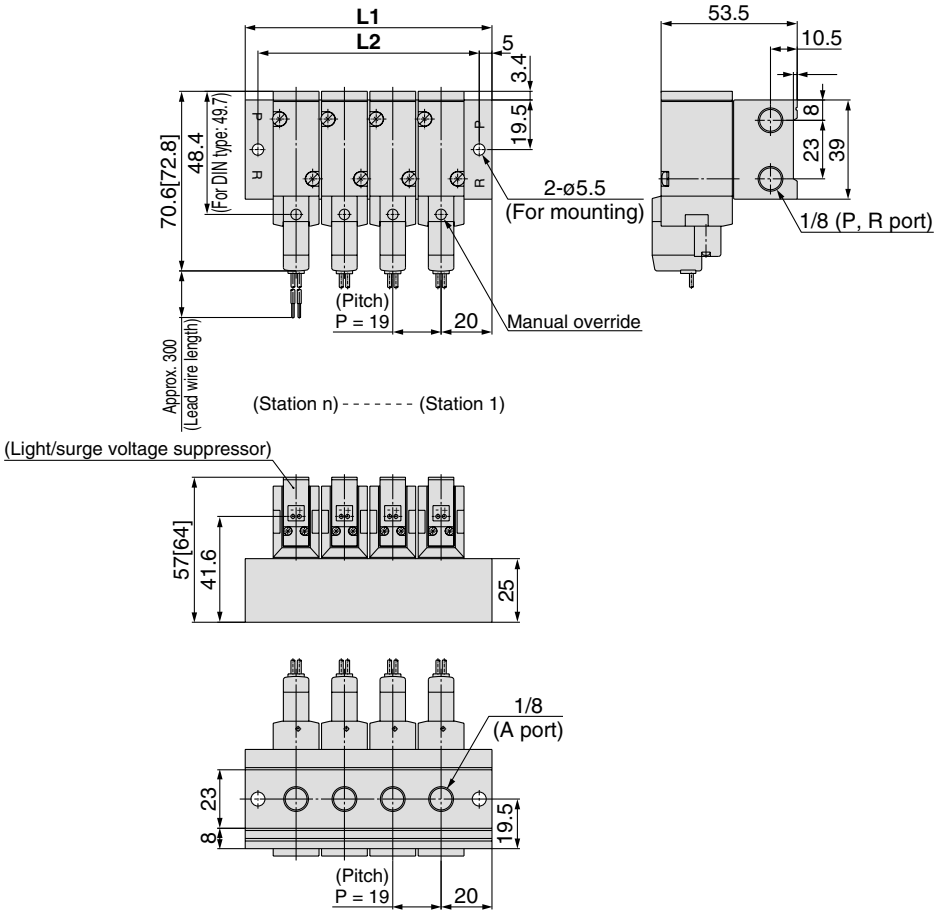
∗ Refer to page 704 for dimensions with connector cable.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	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

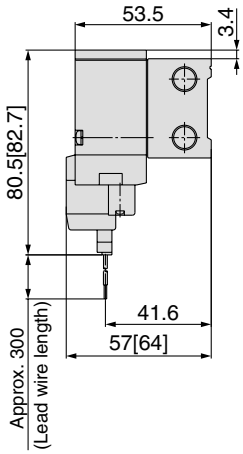
Type 40 manifold: Bottom ported / 10-SS3YJ7-40-Stations - 01□

∗ [ ]: AC

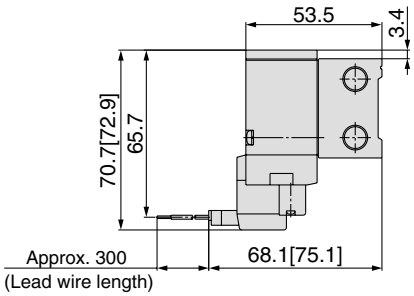
Grommet (G)



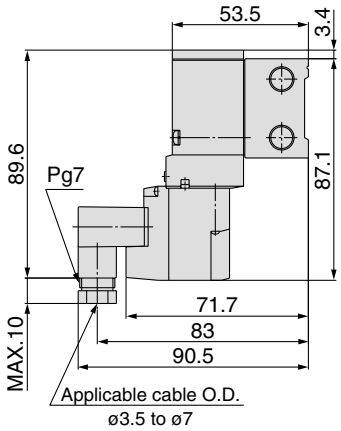
L plug connector (L)



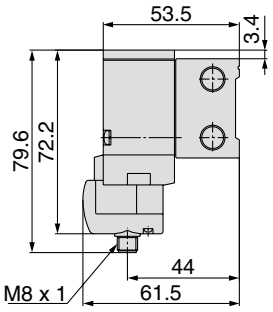
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



∗ Refer to page 704 for dimensions with connector cable.

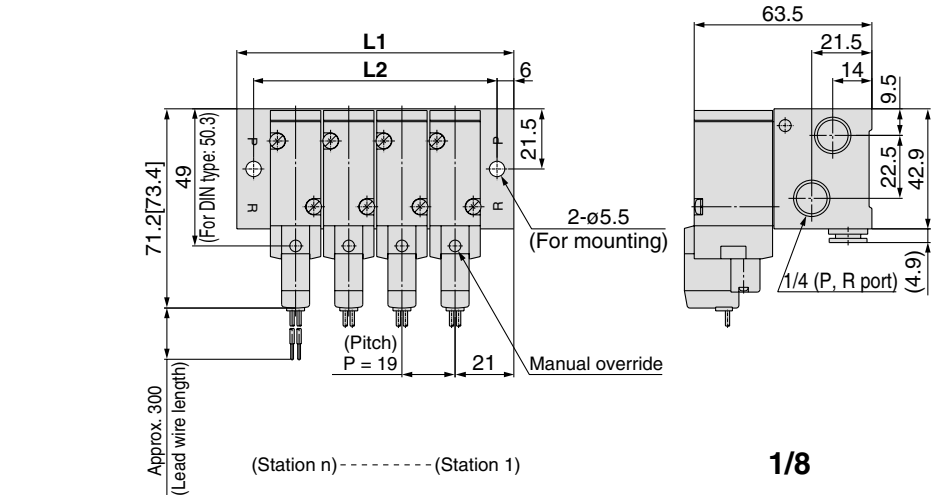
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	59	78	97	116	135	154	173	192	211	230	249	268	287	306	325	344	363	382	401
L2	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

Type 42 manifold: Side ported / 10-SS3YJ7-42-Stations-01, C6, N7, C8, N9 □

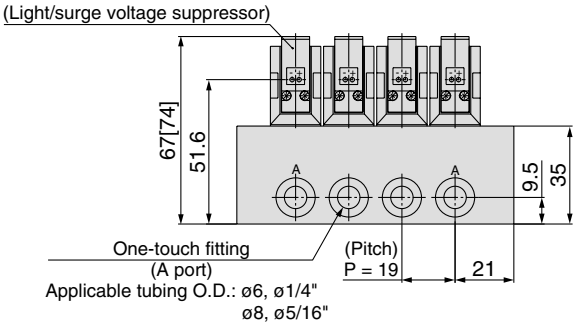
Note) [ ]: AC

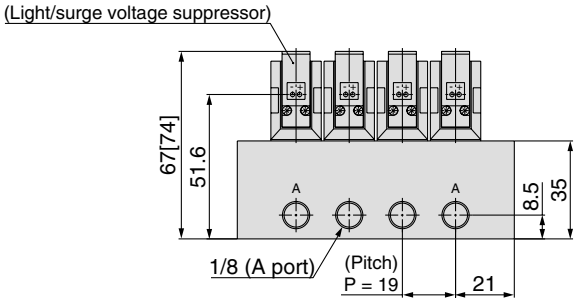
Grommet (G)

C6, N7, C8, N9 □ (With built-in one-touch fitting)

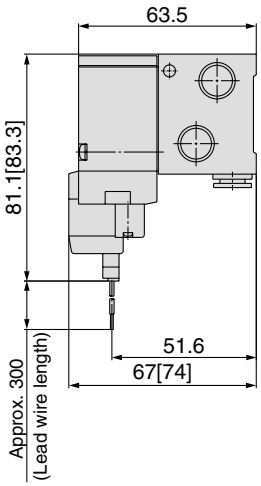


1/8

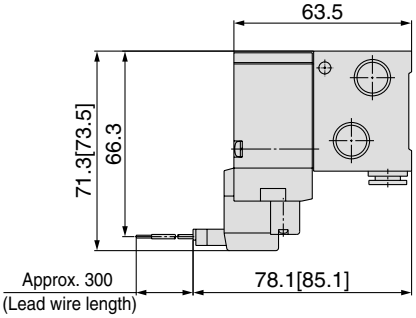




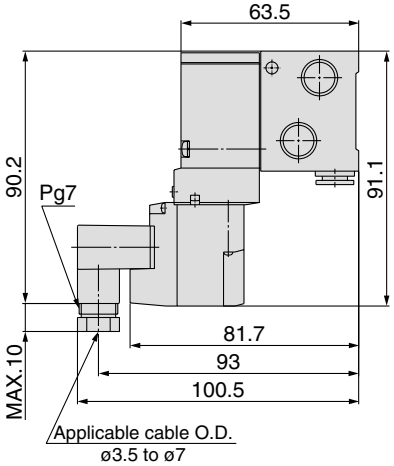
L plug connector (L)



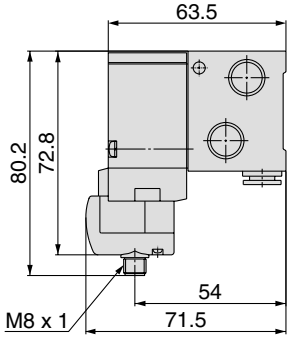
M plug connector (M)



DIN terminal (D)



M8 connector (WO)



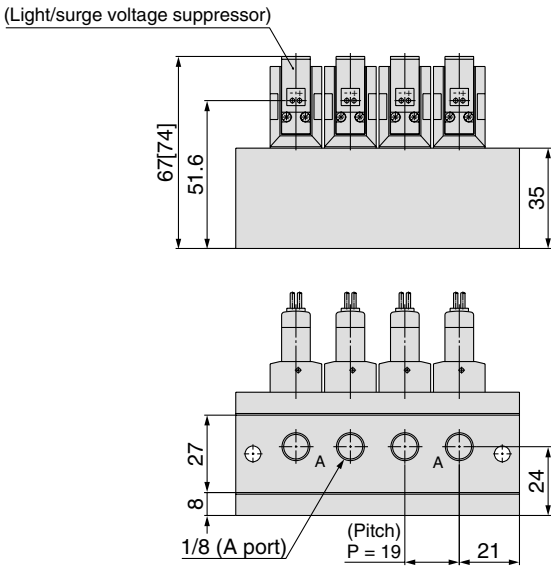
∗ Refer to page 704 for dimensions with connector cable.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	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: Bottom ported / 10-SS3YJ7-41-Stations-01□

∗ [ ]: AC

Grommet (G)



Series 10-SYJ500/700

Made to Order Specifications
DIN connector conforming to EN-175301-803C (former DIN 43650C)

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

How to Order Valves

Rated voltage

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

Light/surge voltage suppressor

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

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

Bracket

Nil	Without bracket
F	With bracket

Note) Mounting brackets are supplied unattached.

Series

5	10-SYJ500
7	10-SYJ700

Type of actuation

1	Normally closed
2	Normally open

Port size

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

3 port (For type 20 manifold)

Body ported: 10—SYJ 5 1 2M— 5 Y □ □ —M5— □

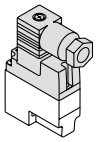
Base mounted: 10—SYJ 5 1 4M— 5 Y □ □ —01 □

Clean series

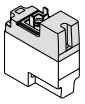
3 port (For sub-plate type, types 40 and 41 manifolds)

Electrical entry

Y: With connector



YO: Without connector



Port size

Nil	Without sub-plate
01	1/8 port with sub-plate
02	1/4 port with sub-plate (SYJ700 only)

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Manual override

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

How to Order Pilot Valve Assembly

10—V115— 5 Y □

Clean series

Rated voltage

DC	
5	24 VDC
6	12 VDC

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

Light/surge voltage suppressor

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

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

Electrical entry

Y	DIN terminal	With connector
YO		Without connector

DIN connector part no.

Without indicator light	SY100-82-1

With indicator light

Rated voltage	Voltage symbol	Part no.
24 VDC	24VN	SY100-82-3-05
12 VDC	12VN	SY100-82-3-06
100 VAC	100VN	SY100-82-3-01
200 VAC	200VN	SY100-82-3-02
110 [115] VAC	110VN	SY100-82-3-03
220 [230] VAC	220VN	SY100-82-3-04

⚠ Caution

1. Use caution in wiring because it won't meet the IP65 (enclosure) standard if you use the other cord than prescribed cabtire cable of size (ø3.5 to ø7). Also be sure to tighten the ground nut and holding screw with the prescribed torque range. For how to use DIN terminal (wiring procedures, procedures for changing electrical entries, precautions, applicable cable circuit diagram), refer to page 702.
2. Type D, DIN terminal with 9.4 mm pitch between terminals is not interchangeable.
3. DIN terminal except type D has the "N" indication in the end of voltage symbol. In case of DIN terminal without indicator light, "N" is not indicated. Please refer to the name plate to distinguish.
4. Dimensions are completely the same as type D connector.
5. When exchanging the pilot valve assembly only, "10-V115-□D" is interchangeable with "10-V115-□Y". Do not replace 10-V111 (G, H, L, M, W) with 10-V115-□D/□Y (DIN terminal), and vice versa.

Series 10-*SYJ300/500/700*
Specific Product Precautions 1

Be sure to read before handling.

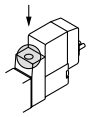
Manual override operation

⚠ Warning

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

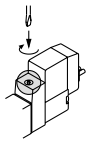
■Non-locking push type (Standard)

Press in the direction of the arrow.

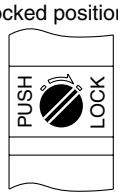


■Push-turn locking slotted type [Type D]

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



Locked position



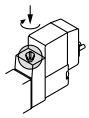
⚠ Caution

When operating the locking type D with a screwdriver, turn it gently using a watchmaker's screwdriver.

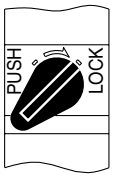
[Torque: 0.1 N·m or less]

■Push-turn locking lever type [Type E]

While pressing, turn in the direction of the arrow. If it is not turned, it can be operated in the same way as the non-locking push 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 other trouble such as air leakage, etc.

Solenoid valve for 200/220 VAC specification

⚠ Warning

Solenoid valves with grommet and L/M plug connector AC specifications have a built-in rectifier circuit in the pilot section to operate the DC coil.

For 200/220 VAC specification pilot valves, the built-in rectifier generates heat when energized, and the surface may become hot depending on the energized condition. Therefore, do not touch the solenoid valves.

Bracket

⚠ Caution

For the 10-SYJ300 with bracket, do not use it without bracket.

Series 10-*SYJ300/500/700*
Specific Product Precautions 2

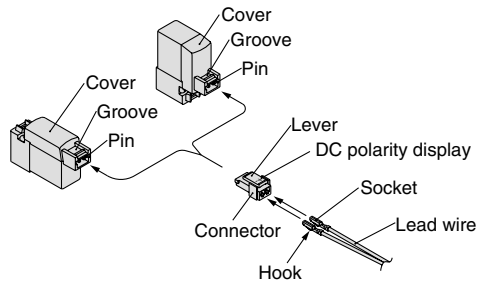
Be sure to read before handling.

How to Use Plug Connector

⚠ Caution

1. Attaching and detaching connectors

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



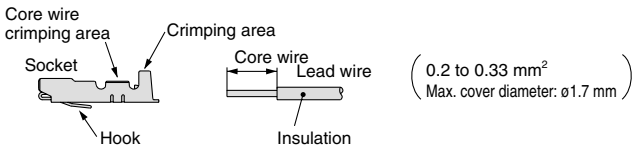
2. Crimping of lead wires and sockets

Strip approximately 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.

Take care that the coverings of the lead wires do not enter the core wire crimping area.

Use an exclusive crimping tool for crimping.

(For exclusive crimping tools, please contact SMC.)



3. Attaching and detaching a socket with lead wire

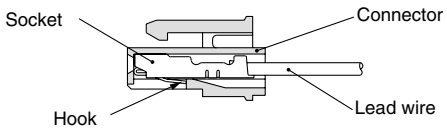
- **Attaching**

  Insert a socket into the square hole of the connector (with ⊕ and ⊖ indication), and continue to push the socket all the way in until they lock by hooking into the seat in the connector. (When it is pushed in, their hook opens and it is locked automatically.) Then confirm that it is locked by pulling lightly on the lead wire.

- **Detaching**

  To detach a socket from a connector, pull out the lead wire while pressing the socket's hook with a stick having a thin tip (approx. 1 mm).

  If the socket will be used again, first spread the hook outward.



Plug connector lead wire length

⚠ Caution

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

How to Order Connector Assembly

For DC: **SY100 − 30 − 4A**

For 100 VAC: **SY100 − 30 − 1A**

For 200 VAC: **SY100 − 30 − 2A**

For other voltages of AC: **SY100 − 30 − 3A**

Without lead wire: **SY100 − 30 − A**
(With connector and 2 of sockets only)

Lead wire length

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

How to Order

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

<Example> Lead wire length 2000 mm

For DC
10-SYJ312M-5LO-M3
SY100-30-4A-20

For AC
10-SYJ312M-1LO-M3
SY100-30-1A-20

Series 10-*SYJ300/500/700*
Specific Product Precautions 3

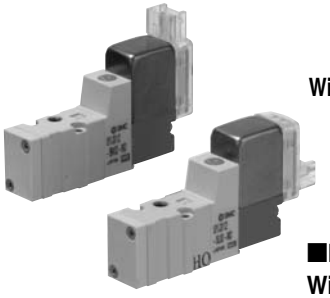
Be sure to read before handling.

Surge voltage suppressor

⚠ Caution

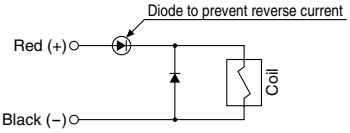
(For DC)

Grommet, L/M plug connector

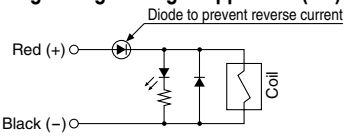


■Standard type (with polarity)

With surge voltage suppresser (□S)

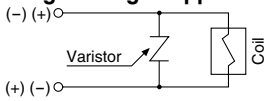


With light/surge voltage suppresser (□Z)

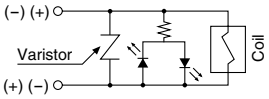


■Non-polar type

With surge voltage suppresser (□R)



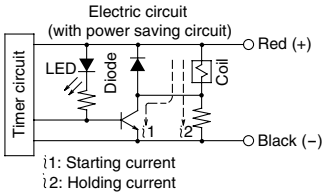
With light/surge voltage suppresser (□U)



- Connect the standard type in accordance with the + (positive) and – (negative) polarity indication.
  (The non-polar type can be used with the connections made either way.)
- Since voltage specifications other than standard 24/12 VDC do not have diodes to prevent reverse current, be careful not to make errors in the polarity.
- Be careful about the allowable voltage fluctuation since valves with diode to prevent reverse current have an approx. 1V voltage drop. (Refer to the solenoid specifications of each valve for details.)
  When wiring is done at the factory, positive (+) is red and negative (–) is black.

■With power saving circuit

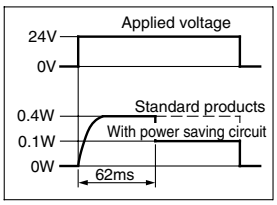
Power consumption is decreased by 1/4 by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 62 ms at 24 VDC.)



Working principle

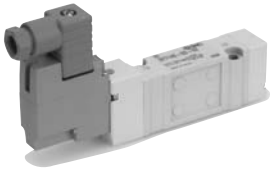
With the above circuit, the current consumption when holding is reduced to save energy. Please refer to the electrical waveform to the right.

(Energy saving type's electrical waveform for SYJ$^{3}_{5}$□□T)

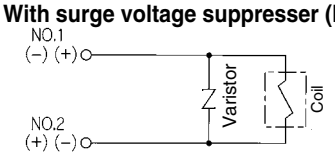


- When a power saving circuit is installed, a diode to prevent reverse current is not provided. Therefore, use caution not to connect in reverse.
- Be careful about the allowable voltage fluctuation since voltage drop of about 0.5V occurs due to a transistor. (Refer to the solenoid specifications of each valve for details.)

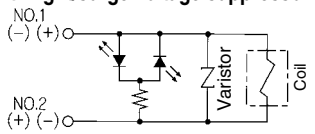
DIN terminal



With surge voltage suppresser (DS)

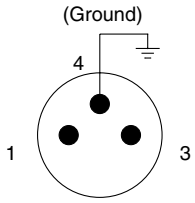


With light/surge voltage suppresser (DZ)



DIN terminal has no polarity.

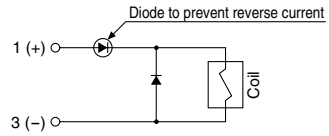
M8 connector type



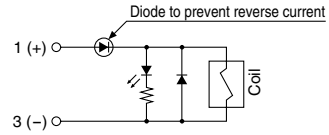
Solenoid valve side pin wiring diagram

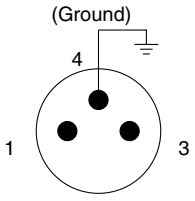
■Standard type (with polarity)

With surge voltage suppresser (□S)



With light/surge voltage suppresser (□Z)

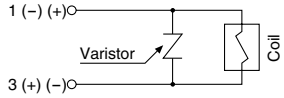




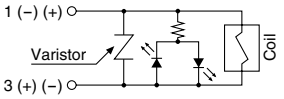
Solenoid valve side pin wiring diagram

■Non-polar type

With surge voltage suppresser (□R)



With light/surge voltage suppresser (□U)



- In the case of standard type, connect + to 1 and - to 3 according to the polarity.
- For DC voltages other than 12 and 24 VDC, do not connect in reverse because a diode to prevent reverse current is not installed.
- Be careful about the allowable voltage fluctuation since valves with diode to prevent reverse current have an approx. 1V voltage drop. (Refer to the solenoid specifications of each valve for details.)

Series 10-*SYJ300/500/700*
Specific Product Precautions 4

Be sure to read before handling.

Surge voltage suppressor

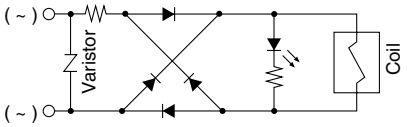
<For AC>

(There is no "S" type because the generation of surge voltage is prevented by a rectifier.

⚠ Caution

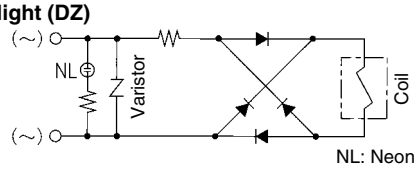
Grommet, L and M plug connector

With indicator light (□Z)



DIN terminal

With indicator light (DZ)



NL: Neon ball

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 1V.
The residual voltage of the diode is approximately 1V.

How to Use DIN Terminal

⚠ Caution

Connection

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

⚠ Caution

When making connections, take note that using other than the supported size (ø3.5 to ø7) cabtire cable 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 an indicator light, be careful not to damage the light with the cord's lead wires.

How to Use DIN Terminal

⚠ Caution

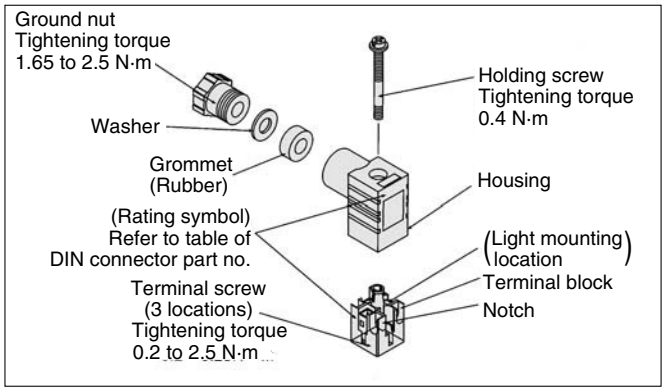
Precautions

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.

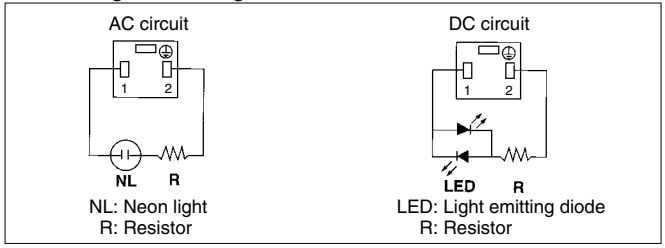
Model	Thread size	Tightening torque
10-SYJ300	M1.7	0.12N·m
10-SYJ500	M2.5	0.45N·m
10-SYJ700	M3	0.8N·m

DIN terminal part no.

⚠ Caution

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

Circuit diagram with light



Note) For DIN connector (Y) conforming to EN-175301-803C(former DIN 43650C), refer to page 698.

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.

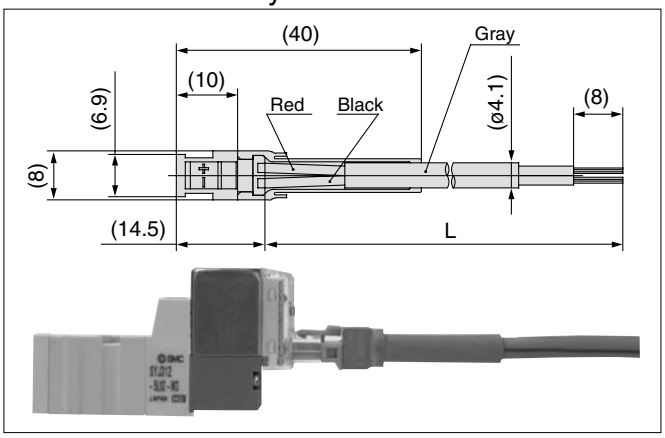
How to Order

SY100-68-A □

Lead wire length

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

Connector assembly with cover: Dimensions



How to Order

Specify the part no. for a solenoid valve without connector together with part no. for a connector assembly with cover.

<Example 1> Lead wire length 2000 mm
10-SYJ312-5LOZ-M3
SY100-68-A-20

<Example 2> Lead wire length 300mm (Standard)
10-SYJ312-5LPZ-M3

Symbol for connector assembly with cover

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

M8 connector

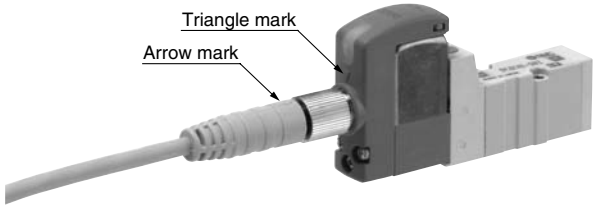
⚠ Caution

1. M8 connector types have an IP65 (enclosure) rating, offering protection from dust and water. However please note that these products are not intended for use in water.
   Select a SMC connector cable (V100-49-1-□) or a FA sensor type connector, with M8 threaded 3 pin specifications confirming to Nippon Electric Control Equipment Association Standard, NECA4202 (IEC60947-5-2). Make sure the connector O.D. is 10.5 mm or less when used with the Series 10-SY300 manifold. If more than 10.5mm, it cannot be mounted due to the size.
2. Do not use a tool to mount the connector, as this may cause damage. Only tighten by hand. (0.4 to 0.6N·m)
3. Do not apply excessive force over 30N to the connector cables because IP65 will not be satisfied.

⚠ Caution

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

- Connector cable mounting



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

Series 10-*SYJ300/500/700*
Specific Product Precautions 6

Be sure to read before handling.

M8 connector

■Connector cable

• Connector cable for M8 can be ordered as follows:

How to Order

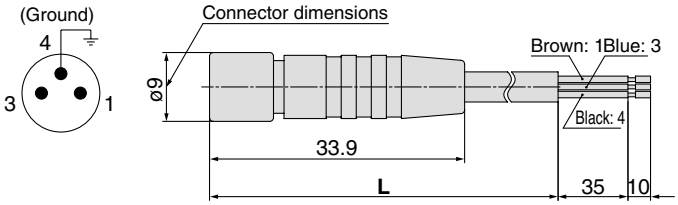
1. To order solenoid valve and connector cable at the same time.
(Connector cable will be included in the shipment of the solenoid valve.)

10 – SYJ$\begin{matrix}3\\5\\7\end{matrix}$□□ M – □□□□ – □□

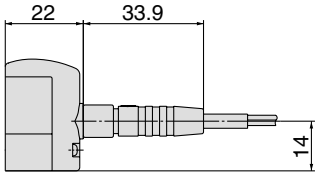
Electrical entry
W1: Cable length 300 mm
W2: Cable length 500 mm
W3: Cable length 1000 mm
W4: Cable length 2000 mm
W7: Cable length 5000 mm

(Example 1) Cable length 300 mm
10-SYJ312M-5W1ZE-M3
└•Symbol for electrical entry

2. To order connector cable only



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

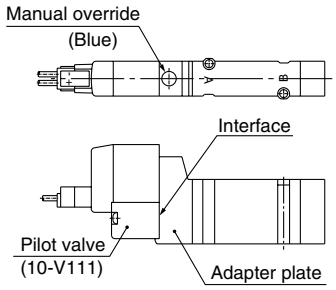


Replacement of pilot valve

⚠ 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 valves used at the interface. Please consult with SMC when you need to exchange these pilot valves, in the case of manual override (marked in orange) of the adapter plate.

New type



Conventional type