




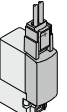




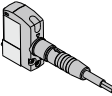


# Series 10-SYJ300/500/700

Rubber Seal  
3 Port Solenoid Valve

## Variations

	Series	Port size	Sonic conductance C [dm <sup>3</sup> /(s·bar)]	Actuation type	Voltage	Electrical entry	Option	Manual override
							Light/Surge voltage suppressor	
Body ported	<b>10-SYJ300</b>  P.604	M3 x 0.5	Effective area 0.9 mm <sup>2</sup> { 2→3 (A→R) }	● N.C. ● N.O.	For DC ■ 24 VDC 12 VDC 6 VDC 5 VDC 3 VDC	Grommet 	For DC ■ With surge voltage suppressor ■ With light/surge voltage suppressor	
	<b>10-SYJ500</b>  P.615	M5 x 0.8	0.66 { 2→3 (A→R) }			L plug connector 		
	<b>10-SYJ700</b>  P.627	1/8	2.5 { 2→3 (A→R) }			M plug connector 		
Base mounted	<b>10-SYJ300</b>  P.604	M5 x 0.8	0.36 { 2→3 (A→R) }		For AC ■ 100 VAC 50/60 Hz 110 VAC 50/60 Hz 200 VAC 50/60 Hz 220 VAC 50/60 Hz	 (SYJ500, 700 only)	For AC (Note) ■ With light/surge voltage suppressor	■ Push-turn locking slotted type ■ Push-turn locking lever type
	<b>10-SYJ500</b>  P.615	1/8	1.2 { 2→3 (A→R) }					
	<b>10-SYJ700</b>  P.627	1/8, 1/4	2.7 { 2→3 (A→R) }			M8 connector 		

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

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

Fittings & Tubing

Flow Control Equipment

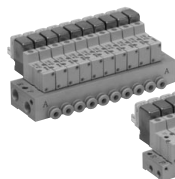
Pressure Switches/Pressure Sensors

## 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	10-SYJ300 P.609	Top	M5 x 0.8	● <sup>(Note)</sup>	—	—	—	—	—	—	—	—
	10-SYJ500 P.620	Top	1/8	—	●	—	—	—	—	—	—	—
	10-SYJ700 P.632	Top	1/8	—	—	● <sup>(Note)</sup>	—	—	—	—	—	—
			1/4	—	—	●	—	—	—	—	—	—
Base mounted	10-SYJ300 P.609	Side	M5 x 0.8	● <sup>(Note)</sup>	—	—	—	—	—	—	—	—
			1/8	—	●	—	●	—	—	●	—	—
	10-SYJ500 P.620	Bottom	1/8	—	●	●	—	—	—	—	—	—
		Side		—	●	●	●	●	—	●	●	—
	10-SYJ700 P.632	Bottom	1/8	—	—	● <sup>(Note)</sup>	—	—	—	—	—	—
			1/4	—	—	●	—	—	—	—	—	—
			1/4	—	—	●	—	●	●	—	●	●

Note) Only for internal pilot

**Base mounted**



**Series 10-SYJ300**

**Body ported**



**Base mounted**



**Series 10-SYJ500**

**Body ported**



**Base mounted**



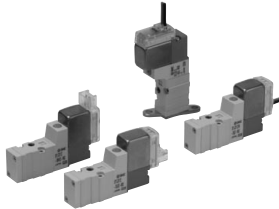
**Series 10-SYJ700**

**Body ported**

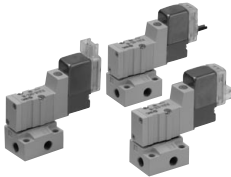


# Series 10-SYJ300

Rubber Seal  
3 Port Pilot Solenoid Valve



Body ported

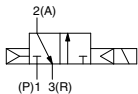


Base mounted

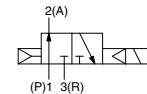
## Symbol

Internal pilot

10-SYJ31 $\frac{1}{2}$ M



10-SYJ32 $\frac{1}{2}$ M



**Made to Order**  
(For details, refer to page 640.)

## Specifications

Fluid		Air
Operating pressure range (MPa)	Internal pilot	0.15 to 0.7
Ambient and fluid temperature (°C)		-10 to 50 (No freezing. )
Response time ms (at 0.5 MPa) <sup>Note 1)</sup>		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		Main/Pilot valve common exhaust
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance (m/s <sup>2</sup> ) <sup>Note 2)</sup>		150/30
Enclosure		Dust proof (* M8 connector conforms to IP65.)

\* Based on IEC60529

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

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

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

## 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 <sup>50/60</sup> Hz	100, 110, 200, 220
Allowable voltage fluctuation		±10% of rated voltage *
Power consumption (W)	DC	Standard 0.35 (With light: 0.4) With power saving circuit 0.1 (With light only) * [Starting 0.4, Holding 0.1]
	AC	100 V 0.78 (With light: 0.81) 110 V 0.86 (With light: 0.89) [115 V 0.94 (With light: 0.97)] 200 V 1.18 (With light: 1.22) 220 V 1.30 (With light: 1.34) [230 V 1.42 (With light: 1.46)]
Surge voltage suppressor		Diode (Varistor when non-polar types)
Indicator light		LED

\* Common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.

\* For 115 VAC and 230 VAC, the allowable voltage is -15% to +5% of rated voltage.

\* For details, refer to page 643.

## Flow Rate Characteristics/Weight

Valve model		Actuation type	Port size	Flow rate characteristics						Effective area (mm <sup>2</sup> )	Weight (g) <sup>(Note)</sup>		
				1→2 (P→A)			2→3 (A→R)				Grommet	L/M plug connector	M8 connector
				C [dm <sup>3</sup> /(s bar)]	b	Cv	C [dm <sup>3</sup> /(s bar)]	b	Cv				
Body ported	10-SYJ312M	N.C.	M3 x 0.5	—	—	—	—	—	—	0.9	32	33	37
	10-SYJ322M	N.O.		—	—	—	—	—	—				
Base mounted (with sub-plate)	10-SYJ314M	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-SYJ324M		N.O.	0.36	0.31	0.089	0.36	0.31				

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

# How to Order

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



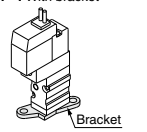
## Light/Surge voltage suppressor

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

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

## Bracket

**Nil:** Without bracket  
**F :** With bracket



- \* Bracket is mounted.
- \* Brackets cannot be retrofitted.
- \* External pilot type is not available.

## Rated voltage

DC		CE-compliant
<b>5</b>	24 VDC	●
<b>6</b>	12 VDC	●
<b>V</b>	6 VDC	●
<b>S</b>	5 VDC	●
<b>R</b>	3 VDC	●

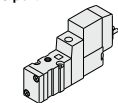
AC (50/60 Hz)		CE-compliant
<b>1</b>	100 VAC	—
<b>2</b>	200 VAC	—
<b>3</b>	110 VAC [115 VAC]	—
<b>4</b>	220 VAC [230 VAC]	—

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

## Actuation type

<b>1</b>	Normally closed
<b>2</b>	Normally open

3 port

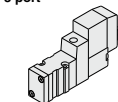


(For type 20 manifold)

**Body ported**

**Base mounted**

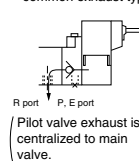
3 port



(For sub-plate type, type 41, S41, 42, S42 manifold)

## Body option

**M:** Main/Pilot valve common exhaust type



## Coil type

<b>Nil</b>	Standard
<b>T</b>	With power saving circuit (24, 12 VDC only)

- \* Power saving circuit is not available for W□ type.

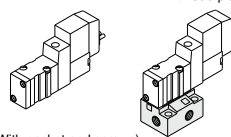
## Electrical entry

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

- \* LN, MN type: With 2 sockets.
- \* Refer to page 642 for the lead wire length of L and M plug connectors.
- \* Refer to page 645 for the connector assembly with cover for L and M plug connectors.
- \* For connector cable of M8 connector, refer to page 646.
- \* M8 connector conforming to IEC60947-5-2 is also available. Refer to page 640 for details.
- Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 646.

## Port size

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



(With gasket and screws)

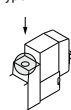
## CE-compliant

<b>Nil</b>	—
<b>Q</b>	CE-compliant

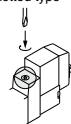
Note) CE-compliant:  
For DC only.

## Manual override

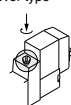
**Nil:** Non-locking push type



**D:** Push-turn locking slotted type

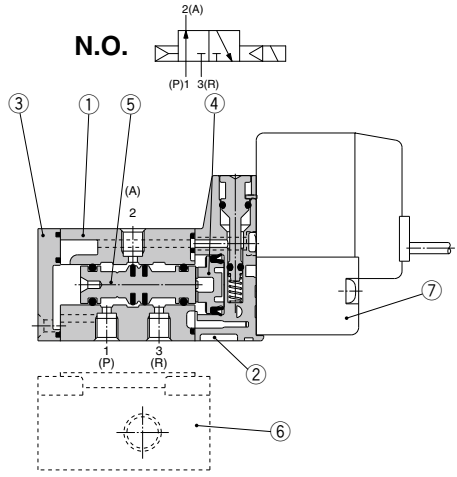
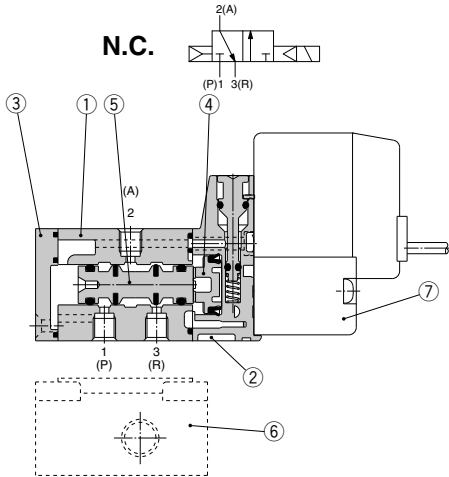


**E:** Push-turn locking lever type



Note) When placing an order for body ported solenoid valves as a single unit, the mounting screws for the manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 610.)

## Construction



### Component Parts

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

### Replacement Parts

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

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

## How to Order Pilot Valve Assembly

V111□—5G□□

### Coil type

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

\* Power saving circuit is not available for 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□, only DC voltage is available.  
\* CE-compliant: For DC only.

### Light/Surge voltage suppressor

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

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

### Electrical entry

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

\* For connector cable of M8 connector, refer to page 646.  
Note 1) Enter the cable length symbols in □.  
Please be sure to fill in the blank referring to page 646.

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

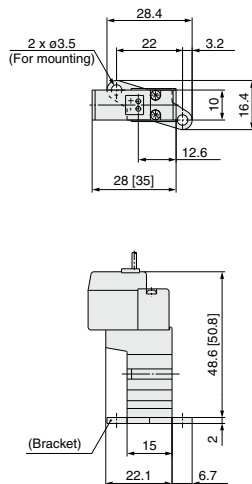
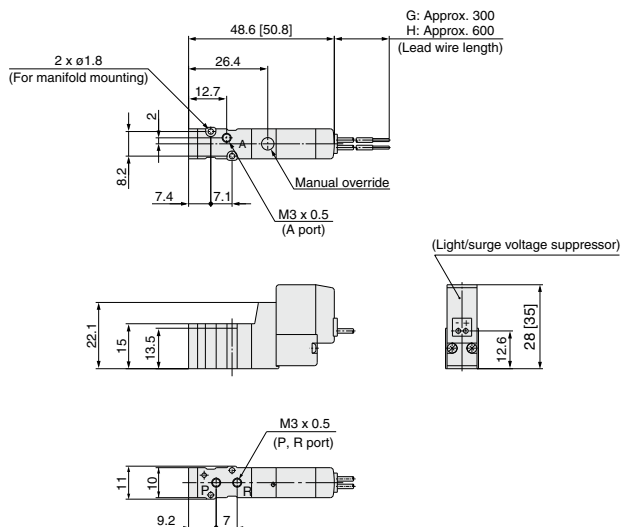
## Body Ported

\* [ ] for AC

Grommet (G), (H): 10-SYJ3□2M-□<sup>G</sup><sub>H</sub>□□-M3

With bracket:

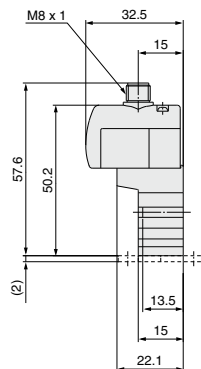
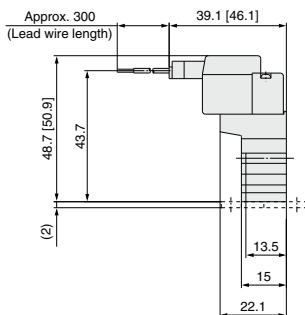
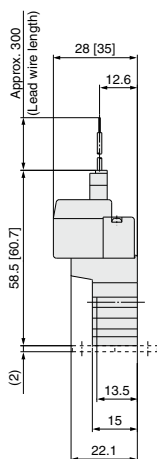
10-SYJ3□2M-□<sup>G</sup><sub>H</sub>□□-M3-F



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

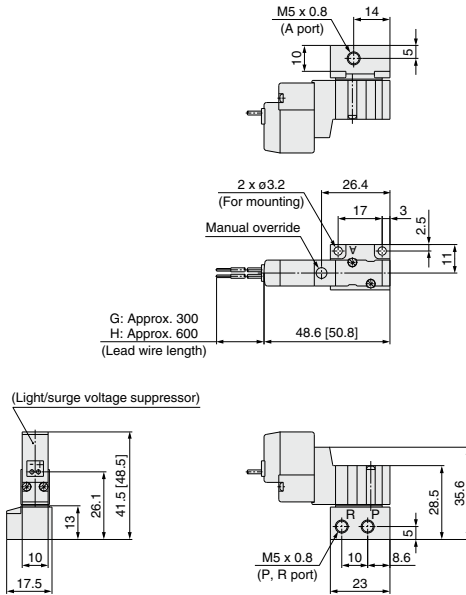


\* Refer to page 646 for dimensions with connector cable.

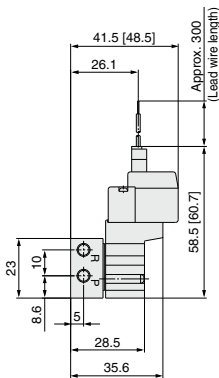
# Base Mounted (With Sub-plate)

\* [ ] for AC

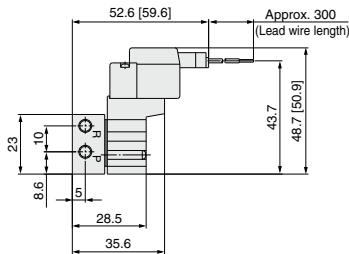
Grommet (G), (H): 10-SYJ3□4M-□<sup>G</sup>□□-M5



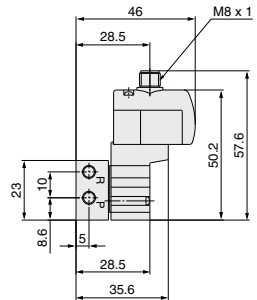
**L plug connector (L):**  
10-SYJ3□4M-□L□□-M5



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

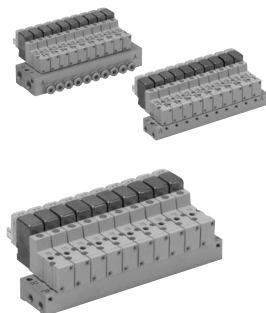


**M8 connector (WO):**  
10-SYJ3□4M-□WO□□-M5



\* Refer to page 646 for dimensions with connector cable.

# Series 10-SYJ300 Manifold Specifications



## 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	M5 x 0.8	1/8
	A port	M3 x 0.5	M3 x 0.5	M5 x 0.8 C4 (ø4 One-touch fitting)

## Flow Rate Characteristics

Manifold			Port size		Flow rate characteristics						Effective area (mm²)
					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 10-SS3YJ3-20	10-SYJ3□2M	M5 x 0.8	M3 x 0.5	—	—	—	—	—	—	0.9
	Type 10-SS3YJ3-41 S41	10-SYJ3□4M	M5 x 0.8	M3 x 0.5	—	—	—	—	—	—	1.5
Base mounted for internal pilot	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	—
	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	—
	C4			0.35	0.17	0.082	0.35	0.26	0.086	—	

Note) The values are for individually operated 2 position type manifold bases.

## How to Order Manifold (Example)

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

(Example)

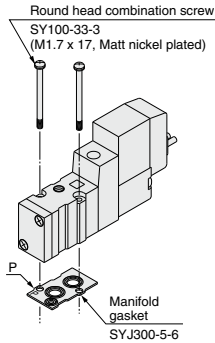
10-SS3YJ3-20-03 ..... 1 set (manifold base)      10-SS3YJ3-42-03-C4 ..... 1 set (manifold base)  
 \* 10-SYJ312M-5LZ-M3 ..... 2 sets (valve)      \* 10-SYJ314M-5G ..... 2 sets (valve)  
 \* SYJ300-10-7A ..... 1 set (blanking plate assembly)      \* SYJ300-10-7A ..... 1 set (blanking plate assembly)

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



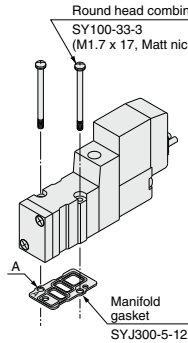
## Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

### Body ported (Type 10-SYJ3□2M(-Q))



**Applicable base**  
10-SS3YJ3-20(-Q)  
Manifold base

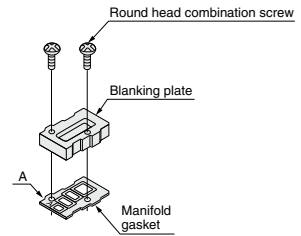
### Base mounted (Type 10-SYJ3□4M(-Q))



**Applicable base**  
**Sub-plate**  
10-SS3YJ3-41(-Q)  
10-SS3YJ3-S41(-Q)  
10-SS3YJ3-42(-Q)  
10-SS3YJ3-S42(-Q) } Manifold base

## Blanking Plate Assembly

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



**Applicable base**  
**Sub-plate**  
10-SS3YJ3-20(-Q)  
10-SS3YJ3-41(-Q)  
10-SS3YJ3-S41(-Q)  
10-SS3YJ3-42(-Q)  
10-SS3YJ3-S42(-Q) } Manifold base

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

### **Caution**

**Mounting screw tightening torque**

**M1.7: 0.12 N·m**

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

Directional  
Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation  
Equipment

Modular F. R.

Pressure Control  
Equipment

Fittings & Tubing

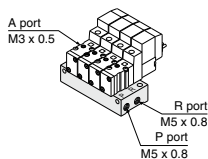
Flow Control  
Equipment

Pressure Switches/  
Pressure Sensors

# Manifold for Internal Pilot Type

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

## 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

#### CE-compliant

Nil	—
Q	CE-compliant

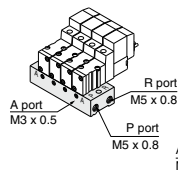
**Applicable solenoid valve**  
10-SYJ312M-□□□□-M3(-Q)  
10-SYJ322M-□□□□-M3(-Q)

**Applicable blanking plate assembly**  
Refer to page 610.

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

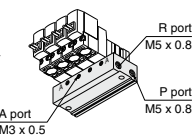
## Type 41

### Type 41



### Type S41

(Pilot valve is on the A port side.)



### How to Order

**10 - SS3YJ3 - 41 - 05 - M3 -**

#### Clean series

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

Stations	
02	2 stations
:	:
20	20 stations

#### CE-compliant

Nil	—
Q	CE-compliant

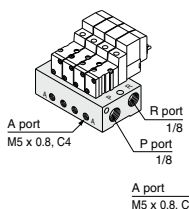
**Applicable solenoid valve**  
10-SYJ314M-□□□□(-Q)  
10-SYJ324M-□□□□(-Q)

**Applicable blanking plate assembly**  
Refer to page 610.

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

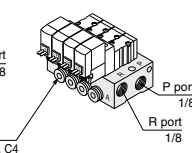
## Type 42

### Type 42



### Type S42

(Pilot valve is on the A port side.)



### How to Order

**10 - SS3YJ3 - 42 - 05 - M5 -**

#### Clean series

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

#### P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

#### CE-compliant

Nil	—
Q	CE-compliant

**Applicable solenoid valve**  
10-SYJ314M-□□□□(-Q)  
10-SYJ324M-□□□□(-Q)

**Applicable blanking plate assembly**  
Refer to page 610.

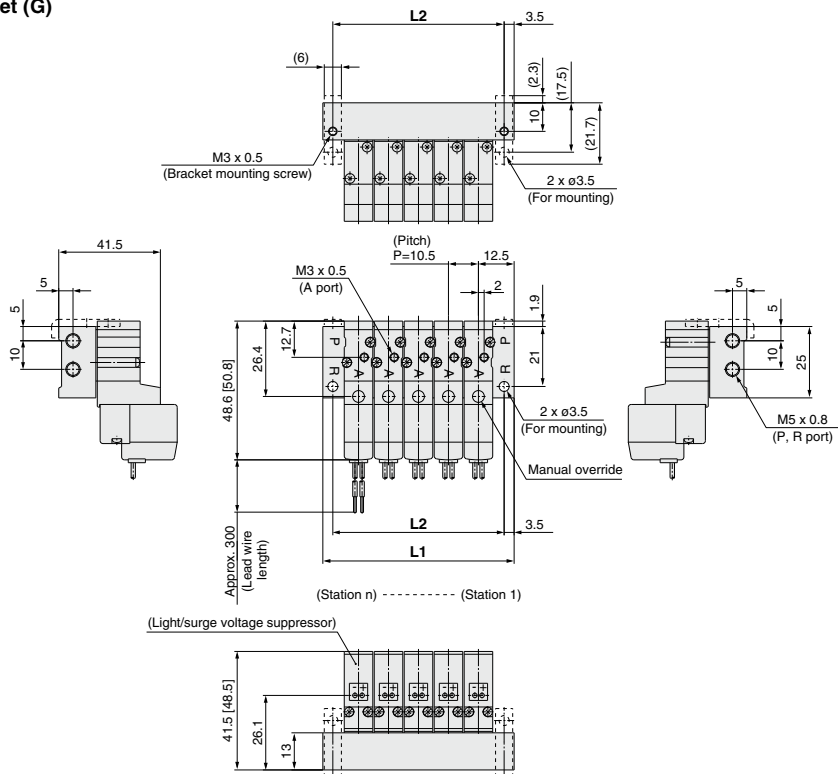
A port size	
M5	M5 x 0.8
C4	ø4 One-touch fitting
N3	ø5/32" One-touch fitting

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

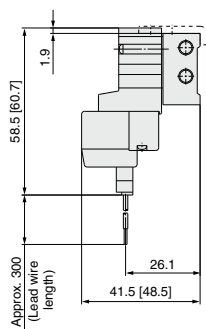
**Type 20 Manifold: Top Ported/10-SS3YJ3-20- Stations -00 (-F)**

\* [ ] for AC

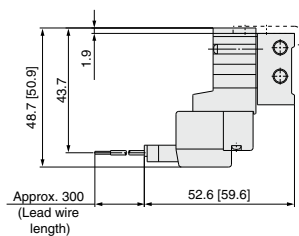
**Grommet (G)**



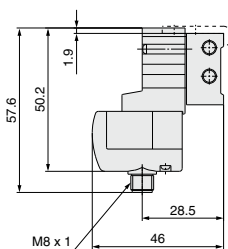
**L plug connector (L)**



**M plug connector (M)**



### M8 connector (WO)



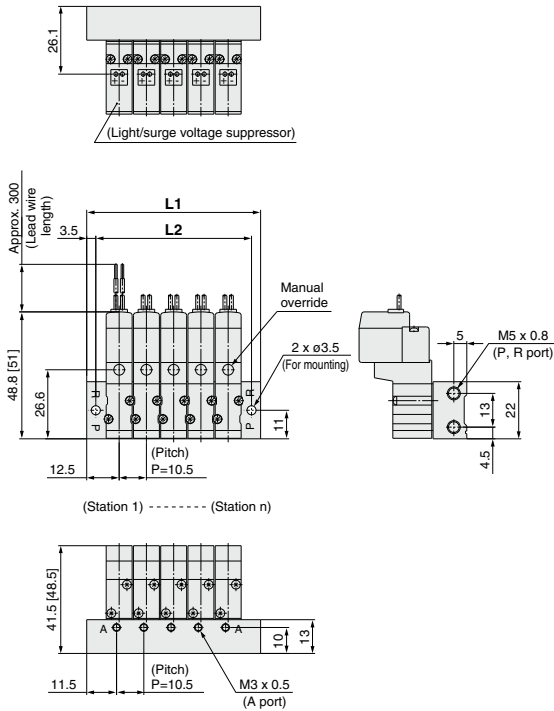
\* Refer to page 646 for dimensions with connector cable.

Station	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- Stations -M3**

\* [ ] for AC

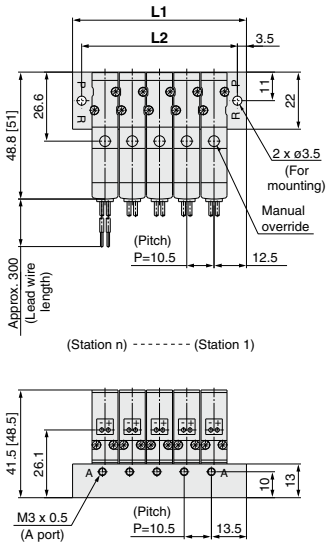
**Grommet (G)**



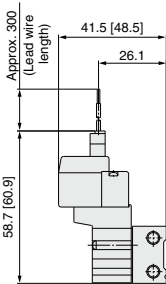
**Type S41 Manifold: Side Ported**

(Pilot valve is on the A port side)

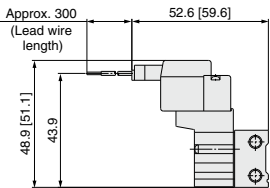
**10-SS3YJ3-S41- Stations -M3**



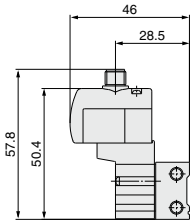
**L plug connector (L)**



**M plug connector (M)**



**M8 connector (WO)**



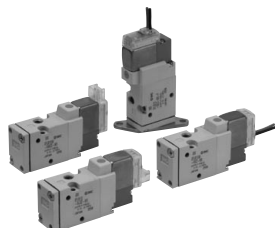
\* Refer to page 646 for dimensions with connector cable.

Station	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

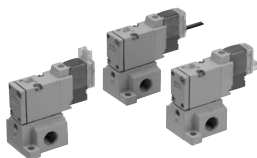


# Series 10-SYJ500

Rubber Seal  
3 Port Pilot 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.)
Response time ms (at 0.5 MPa) <sup>Note 1)</sup>		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		Main/Pilot valve common exhaust
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance (m/s <sup>2</sup> ) <sup>Note 2)</sup>		150/30
Enclosure		Dust proof (* DIN terminal, M8 connector conforms to IP65.)

\* Based on IEC60529

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

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

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

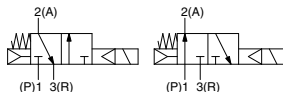
## Solenoid Specifications

### Symbol

Internal pilot

10-SYJ51<sup>1</sup>/<sub>2</sub>M

10-SYJ52<sup>2</sup>/<sub>2</sub>M



**Made to Order**  
(For details, refer to page 640.)

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

\* Common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.

\* For 115 VAC and 230 VAC, the allowable voltage is -15% to +5% of rated voltage.

\* For details, refer to page 643.

## Flow Rate Characteristics/Weight

Valve model		Actuation type	Port size	Flow rate characteristics						Weight (g) <sup>Note)</sup>			
				1→2 (P→A)			2→3 (A→R)			Grommet	L/M plug connector	DIN terminal	M8 connector
				C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3</sup> /(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.

[Option]

**Rated voltage •**

<b>DC</b>	
<b>5</b>	24 VDC
<b>6</b>	12 VDC
<b>V</b>	6 VDC
<b>S</b>	5 VDC
<b>R</b>	3 VDC

\* DC specifications of type D, Y, DO and YO are only available with 12 and 24 VDC.

**AC (50/60 Hz)**

<b>1</b>	100 VAC
<b>2</b>	200 VAC
<b>3</b>	110 VAC [115 VAC]
<b>4</b>	220 VAC [230 VAC]

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

**Actuation type**

<b>1</b>	Normally closed
<b>2</b>	Normally open

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

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

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

**Electrical entry for D, Y**

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

\* DOZ and YOZ are not available.  
\* For AC voltage valves there is no "S" option. It is already built into the rectifier circuit.

**Bracket**

**Nil:** Without bracket  
**F :** With bracket

\* Bracket is not mounted.

**Body ported**

**Base mounted**

**Clean series**

**Coil type •**

<b>Nil</b>	Standard
<b>T</b>	With power saving circuit (24, 12 VDC only)

\* Power saving circuit is not available for D, Y, DO, YO or W□ types.

**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

**Thread type**

<b>Nil</b>	Rc
<b>F</b>	G
<b>N</b>	NPT
<b>T</b>	NPTF

**CE-compliant •**

<b>Nil</b>	—
<b>Q</b>	CE-compliant

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

**Body option •**

**M:** Main/Pilot valve common exhaust type

**Electrical entry**

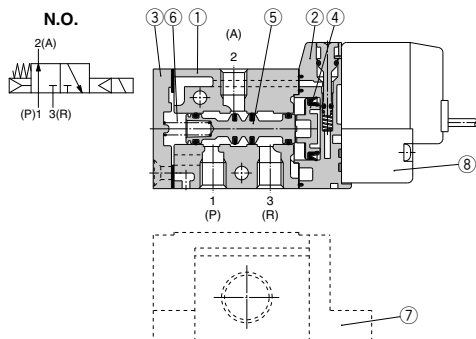
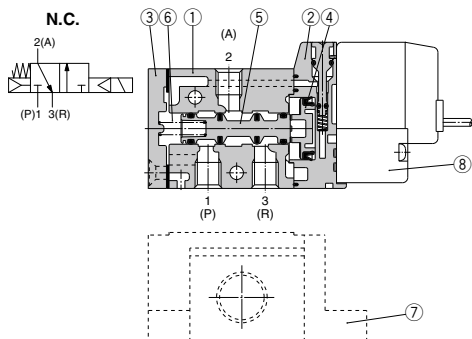
24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC				24, 12 VDC/100, 110, 200, 220 VAC		24, 12, 6, 5, 3 VDC	
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector			
<b>G:</b> Lead wire length 300 mm	<b>L:</b> With lead wire (Length 300 mm)	<b>M:</b> With lead wire (Length 300 mm)	<b>D:</b> With connector	<b>WO:</b> Without connector cable			
<b>H:</b> Lead wire length 600 mm	<b>LN:</b> Without lead wire	<b>MO:</b> Without connector	<b>YO:</b> Without connector	<b>W□:</b> With connector cable (Note 1)			
	<b>LO:</b> Without connector						
<b>CE-compliant</b>	<b>DC</b>	<b>AC</b>					

Note) When placing an order for body ported solenoid valves as a single unit, the mounting screws for the manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 621.)

\* LN, MN type: With 2 sockets.  
\* Refer to page 642 for the lead wire length of L and M plug connectors.  
\* Refer to page 645 for the connector assembly with cover for L and M plug connectors.

\* DIN terminal type "Y" which conforms to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 644.  
\* For connector cable of M8 connector, refer to page 646.  
\* M8 connector conforming to IEC60947-5-2 is also available. Refer to page 640 for details.  
Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 646.

## Construction



### Component Parts

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

### Replacement Parts

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

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

## How to Order Pilot Valve Assembly

**V111** □ — **5** **G** □

### Coil type

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

\* Power saving circuit is not available for 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□, only DC voltage is available.  
\* CE-compliant: For DC only.

### Light/Surge voltage suppressor

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

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

### Electrical entry

G	Grommet, 300 mm lead wire
H	Grommet, 600 mm lead wire
L	With lead wire
LN	Without lead wire
LO	Without connector
M	With lead wire
MN	Without lead wire
MO	Without connector
WO	Without connector cable
W□	With connector cable <sup>(Note 1)</sup>

\* For connector cable of M8 connector, refer to page 646.

Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 646.

**V115** — **5** **D** □

### Light/Surge voltage suppressor

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

\* DOZ and YOZ are not available.  
\* For AC voltage valves there is no "S" option. It is already built into the rectifier circuit.

### Electrical entry

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

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

### Rated voltage

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

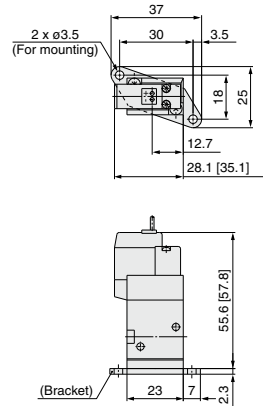
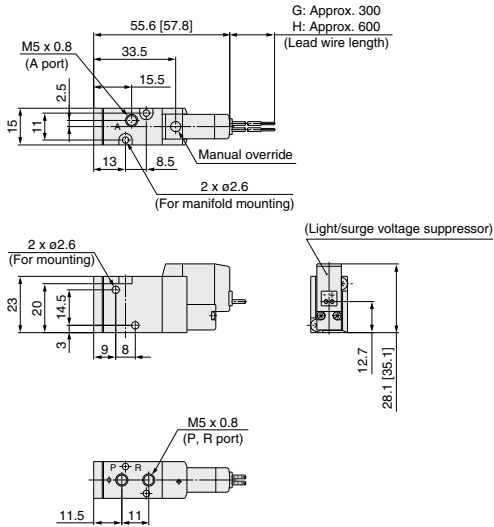
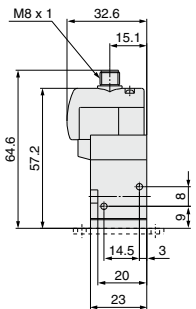
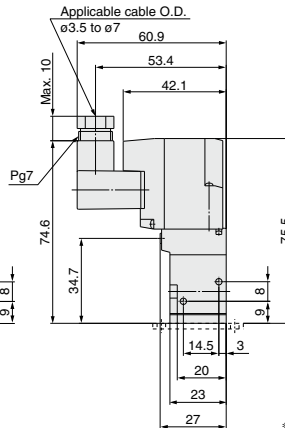
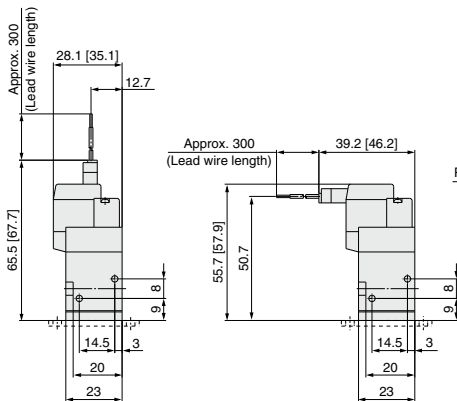
\* DC specifications of type D and DO are only available with 12 and 24 VDC.  
\* Power saving circuit is not available for D or DO types.

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



## Body Ported

\* [ ] for AC

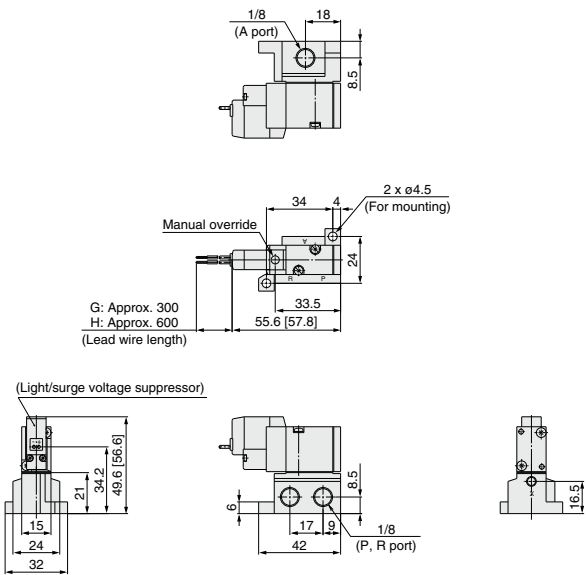
**Grommet (G), (H): 10-SYJ5□2M-□<sup>G</sup><sub>H</sub>□□-M5**
**With bracket:**
**10-SYJ5□2M-□<sup>G</sup><sub>H</sub>□□-M5-F**

**L plug connector (L):**  
**10-SYJ5□2M-□L□□-M5 (-F)**
**M plug connector (M):**  
**10-SYJ5□2M-□M□□-M5 (-F)**
**DIN terminal (D,Y):**  
**10-SYJ5□2M-□D□□-M5 (-F)**
**M8 connector (WO):**  
**10-SYJ5□2M-□WO□□-M5 (-F)**


\* Refer to page 646 for dimensions with connector cable.

### Base Mounted (With Sub-plate)

\* [ ] for AC

**Grommet (G), (H): 10-SYJ5□4M-□<sub>H</sub><sup>G</sup>□□-01□**



**L plug connector (L):**

10-SYJ5□4M-□L□□-01□

**M plug connector (M):**

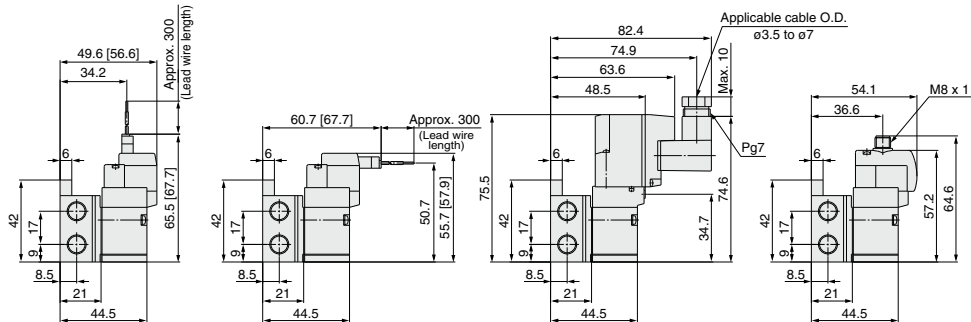
10-SYJ5□4M-□M□□-01□

**DIN terminal (D, Y):**

10-SYJ5□4M-□<sup>D</sup><sub>y</sub>□□-01□

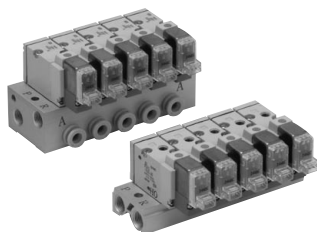
**M8 connector (WO):**

10-SYJ5□4M-□WO□□-01□



\* Refer to page 646 for dimensions with connector cable.

# Series 10-SYJ500 Manifold Specifications



## Manifold Specifications

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

## Flow Rate Characteristics

Manifold			Port size		Flow rate characteristics					
					1→2 (P→A)			2→3 (A→R)		
			1(P), 3(R) port	2(A) port	C [dm <sup>3</sup> /(sbar)]	b	Cv	C [dm <sup>3</sup> /(sbar)]	b	Cv
Body ported for internal pilot	Type 10-SS3YJ5-20	10-SYJ5□2M	1/8	M5 x 0.8	0.47	0.43	0.13	0.74	0.32	0.19
	Type 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
	Type 10-SS3YJ5-40-01		1/8	1/8	0.98	0.36	0.25	0.92	0.24	0.22
	Type 10-SS3YJ5-41-M5		1/8	M5 x 0.8	0.71	0.49	0.20	0.80	0.23	0.19
	Type 10-SS3YJ5-41-01		1/8	1/8	1.0	0.37	0.26	0.96	0.25	0.24
	Type 10-SS3YJ5-41-C4		1/8	C4	0.68	0.35	0.17	1.0	0.25	0.24
	Type 10-SS3YJ5-41-C6		1/8	C6	1.0	0.27	0.25	1.0	0.30	0.26

Note) The values are for individually operated 2 position type manifold bases.

## How to Order Manifold (Example)

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

(Example)

10-SS3YJ5-20-03 ..... 1 set (manifold base)      10-SS3YJ5-41-03-C6 ..... 1 set (manifold base)

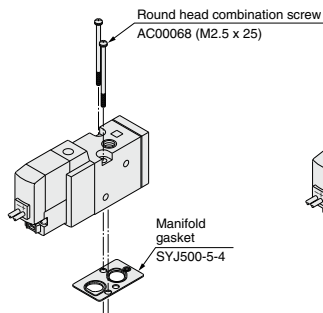
\* 10-SYJ512M-5LZ-M5 ..... 2 sets (valve)      \* 10-SYJ514M-5G ..... 2 sets (valve)

\* SYJ500-10-1A ..... 1 set (blanking plate assembly)      \* SYJ500-10-3A ..... 1 set (blanking plate assembly)

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

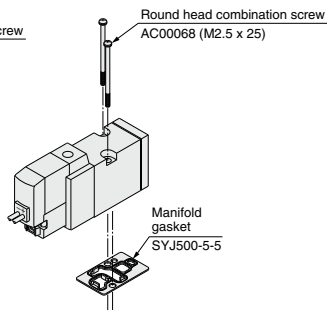
## Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

### Body ported (Type 10-SYJ5□2M(-Q))



**Applicable base**  
Type 10-SS3YJ5-20(-Q)  
Manifold base

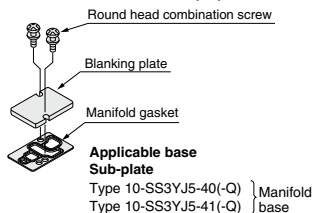
### Base mounted (Type 10-SYJ5□4M(-Q))



**Applicable base Sub-plate**  
Type 10-SS3YJ5-40(-Q) } Manifold  
Type 10-SS3YJ5-41(-Q) } base

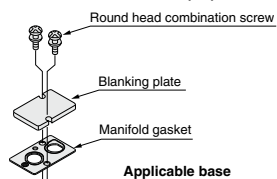
## Blanking Plate Assembly

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



**Applicable base Sub-plate**  
Type 10-SS3YJ5-40(-Q) } Manifold  
Type 10-SS3YJ5-41(-Q) } base

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



**Applicable base**  
Type 10-SS3YJ5-20(-Q)

## Caution

**Mounting screw tightening torque**

**M2.5: 0.45 N·m**

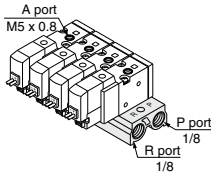
**Use caution to the assembly orientation for solenoid valves (blanking plate) and manifold gasket.**

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

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

## Manifold for Internal Pilot Type

### Type 20



#### How to Order

**10-SS3YJ5-20-05** - [ ] - [ ] - [ ]

Clean series

Stations	
02	2 Stations
:	:
20	20 Stations

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

Bracket	
Nll	Without bracket
F	With bracket

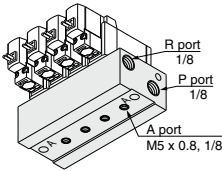
CE-compliant	
Nll	—
Q	CE-compliant

Applicable solenoid valve  
10-SYJ512M-□□□□-M5(-Q)  
10-SYJ522M-□□□□-M5(-Q)

Applicable blanking plate assembly  
Refer to page 621.

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

### Type 40



#### How to Order

**10-SS3YJ5-40-05M5** - [ ] - [ ] - [ ]

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	
Nll	Rc
F	G
N	NPT
T	NPTF

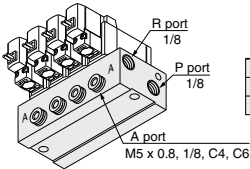
CE-compliant	
Nll	—
Q	CE-compliant

Applicable solenoid valve  
10-SYJ514M-□□□□(-Q)  
10-SYJ524M-□□□□(-Q)

Applicable blanking plate assembly  
Refer to page 621.

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

### Type 41



#### How to Order

**10-SS3YJ5-41-05C6** - [ ] - [ ] - [ ]

Clean series

Stations	
02	2 Stations
:	:
20	20 Stations

A port size	
M5	M5 x 0.8
01	1/8
C4	e4 One-touch fitting
C6	e6 One-touch fitting
N3	e5/32" One-touch fitting
N7	e1/4" One-touch fitting

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

CE-compliant	
Nll	—
Q	CE-compliant

Applicable solenoid valve  
10-SYJ514M-□□□□(-Q)  
10-SYJ524M-□□□□(-Q)

Applicable blanking plate assembly  
Refer to page 621.

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

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

Fittings & Tubing

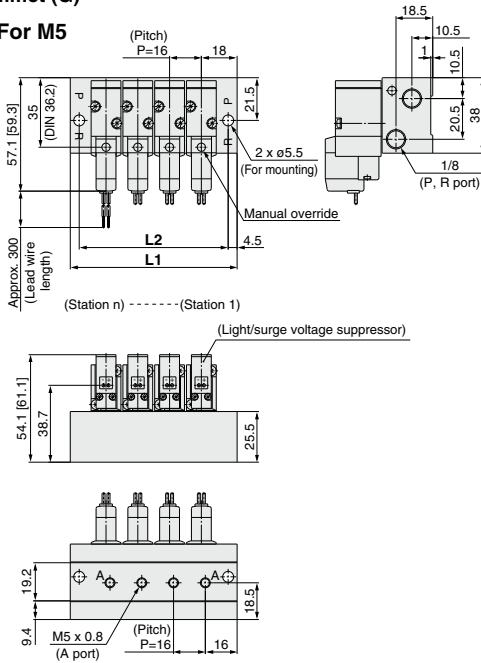
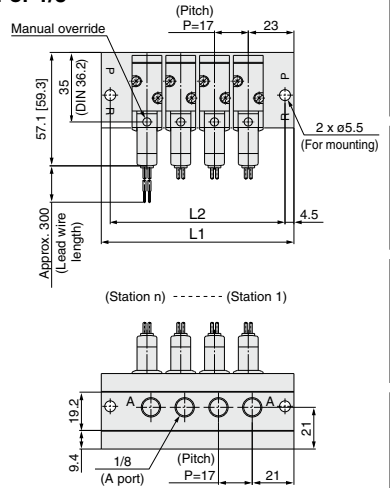
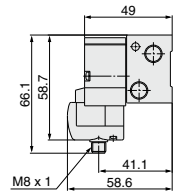
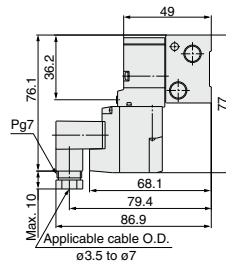
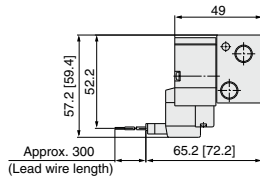
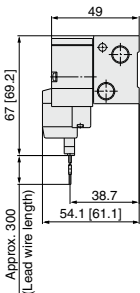
Flow Control Equipment

Pressure Switches/Pressure Sensors



**Type 40 Manifold: Bottom Ported/10-SS3YJ5-40- Stations -M5, 01□**

\* [ ] for AC

**Grommet (G)**
**For M5**

**For 1/8**

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


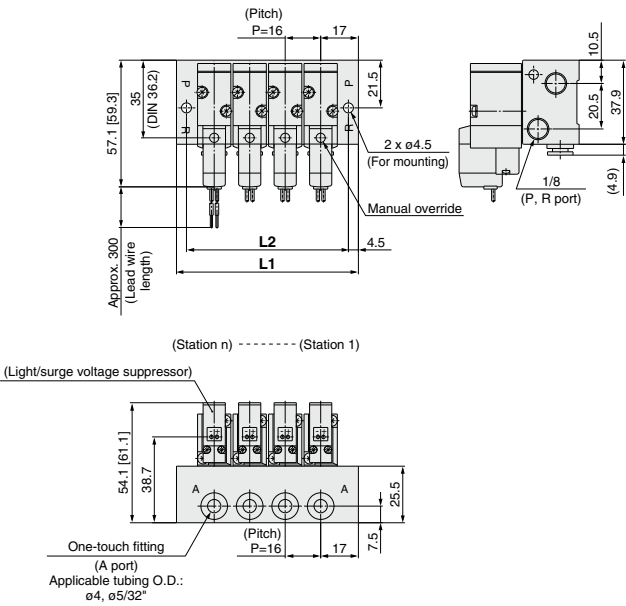
\* Refer to page 646 for dimensions with connector cable.

Port size	Station	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/10-SS3YJ5-41- Stations ☐ C4, N3 ☐ C6, N7

\* [ ] for AC

Grommet (G)

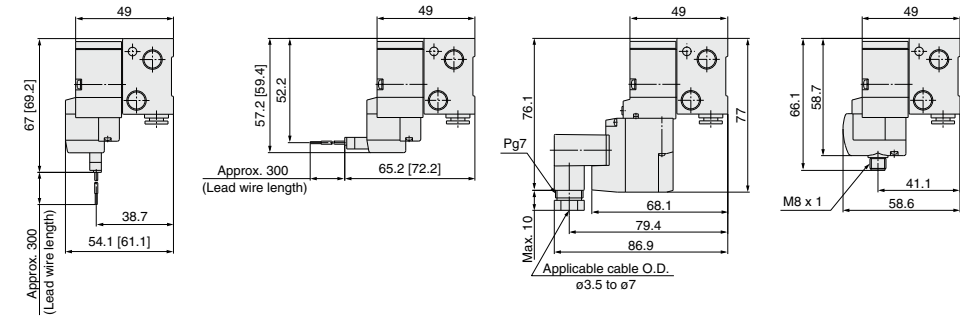


L plug connector (L)

M plug connector (M)

DIN terminal (D, Y)

M8 connector (WO)



\* Refer to page 646 for dimensions with connector cable.

Port size	Station	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

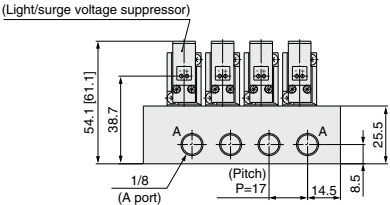
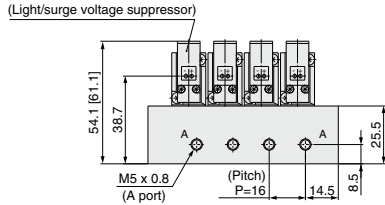
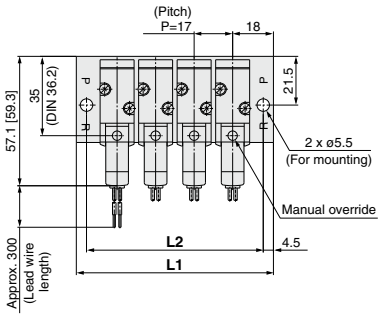
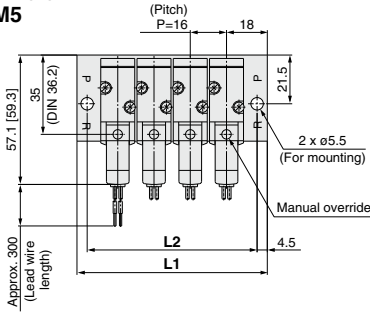


Type 41 Manifold: Side Ported/10-SS3YJ5-41- Stations -M5, 01 □

\* [ ] for AC

Grommet (G)  
For M5

For 1/8



Port size	Station	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

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

Fittings & Tubing

Flow Control Equipment

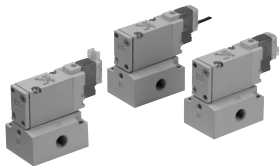
Pressure Switches/Pressure Sensors

# Series 10-SYJ700

Rubber Seal  
3 Port Pilot Solenoid Valve



Body ported

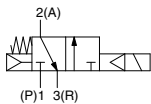


Base mounted

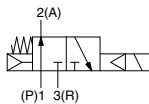
## Symbol

Internal pilot

10-SYJ71<sub>2</sub>M



10-SYJ72<sub>2</sub>M



**Made to Order**  
(For details, refer to page 640.)

## Specifications

Fluid		Air
Operating pressure range (MPa)	Internal pilot	0.15 to 0.7
Ambient and fluid temperature (°C)		-10 to 50 (No freezing.)
Response time ms (at 0.5 MPa) <sup>Note 1)</sup>		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		Main/Pilot valve common exhaust
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance (m/s <sup>2</sup> ) <sup>Note 2)</sup>		150/30
Enclosure		Dust proof (* DIN terminal, M8 connector: IP65)

\* Based on IEC60529

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

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

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

## Solenoid Specifications

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

\* Common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.

\* For 115 VAC and 230 VAC, the allowable voltage is -15% to +5% of rated voltage.

\* For details, refer to page 643.

## Flow Rate Characteristics/Weight

Valve model	Type of actuation	Port size	Flow rate characteristics						Weight (g) <sup>Note)</sup>			
			1→2 (P→A)			2→3 (A→R)			Grommet	L/M plug connector	DIN terminal	M8 connector
			C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3</sup> /(s·bar)]	b	Cv				
Body ported	10-SYJ712M	N.C.	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.	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.	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.

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



## 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, Y, DO and YO are only available with 12 and 24 VDC.

### AC (50/60 Hz)

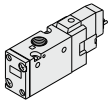
1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

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

### Actuation type

1	Normally closed
2	Normally open

3 port

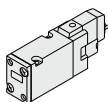


(For type 20 manifold)

**Body ported**

**Base mounted**

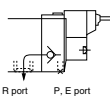
3 port



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

### Body option

M: Main/Pilot valve common exhaust type



R port P, E port

### 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 into the rectifier circuit.  
\* For type "R" and "U", only DC voltage is available.  
\* Power saving circuit is only available for the "Z" type.

#### Electrical entry for D, Y

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

\* DOZ and YOZ are not available.  
\* For AC voltage valves there is no "S" option. It is already built into the rectifier circuit.

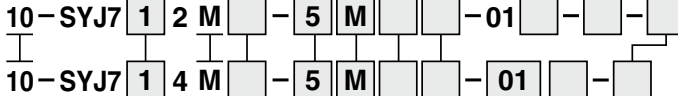
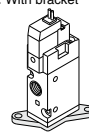
### Bracket

Nil	Without bracket
F	With bracket

\* Bracket is not mounted.

### Thread type

Nil	Rc
F	G
N	NPT
T	NPTF



### Clean series

#### Coil type

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

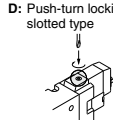
\* Power saving circuit is not available for D, Y, DO, YO or W□ types.

### Manual override

Nil: Non-locking push type



E: Push-turn locking lever type



D: Push-turn locking slotted type

### CE-compliant

Nil	—
Q	CE-compliant

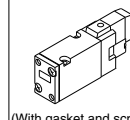
Note) AC-type models that are CE-compliant have DIN terminals only.

### Thread type

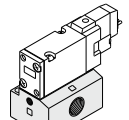
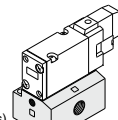
Nil	Rc
F	G
N	NPT
T	NPTF

### Port size

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



(With gasket and screws)



### Electrical entry

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

Note) When placing an order for body ported solenoid valves as a single unit, the mounting screws for the manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 633.)

- \* LN, MN type: With 2 sockets.
- \* Refer to page 642 for the lead wire length of L and M plug connectors.
- \* Refer to page 645 for the connector assembly with cover for L and M plug connectors.

\* DIN terminal type "Y" which conforms to EN-175301-803C (former DIN4365C) is also available. For details, refer to page 644.

\* For connector cable of M8 connector, refer to page 646.  
\* M8 connector conforming to IEC60947-5-2 is also available. Refer to page 640 for details.

Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 646.

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

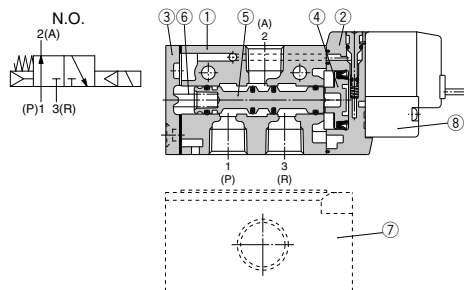
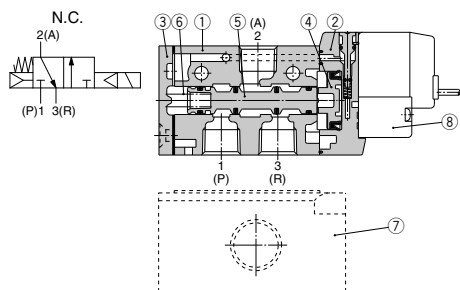
Pressure Control Equipment

Fittings & Tubing

Flow Control Equipment

Pressure Switches/Pressure Sensors

## 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 <sup>Note)</sup>	SYJ700-9-1(-Q)	1/8 Aluminum die-casted
8	Pilot valve	SYJ700-9-2(-Q)	1/4 Aluminum die-casted
—	Bracket assembly	SYJ700-19-1A	—

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

## How to Order Pilot Valve Assembly

V111    — 5 G   

### Coil type

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

\* Power saving circuit is not available for 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□, only DC voltage is available.  
\* CE-compliant: For DC only.

### Light/Surge voltage suppressor

NII	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 into the rectifier circuit.  
\* For "R" and "U", only DC voltage is available.  
\* Power saving circuit is only available for the "Z" type.

### Electrical entry

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

\* For connector cable of M8 connector, refer to page 646.

Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 646.

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 are only available with 12 and 24 VDC.

\* Power saving circuit is not available for D, Y, DO and YO types.

### Light/Surge voltage suppressor

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

\* DOZ and YOZ are not available.  
\* For AC voltage valves there is no "S" option. It is already built into the rectifier circuit.

### Electrical entry

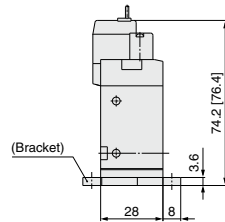
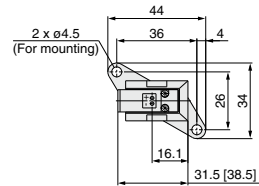
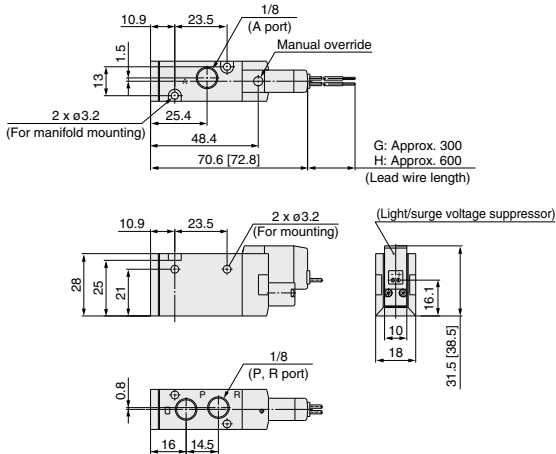
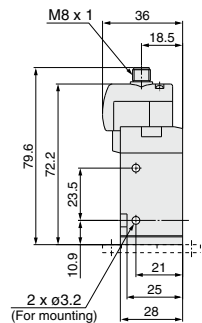
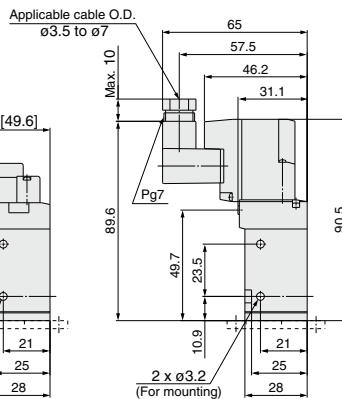
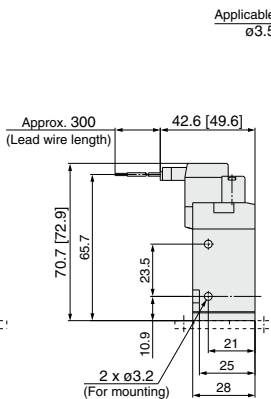
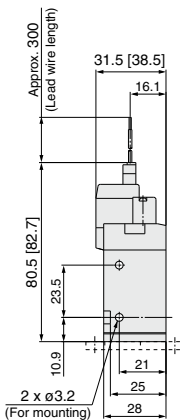
D	DIN terminal	With connector
DO	(Type D)	Without connector
Y	DIN terminal	With connector
YO	(Type Y)	Without connector

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

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

## Body Ported

\* [ ] for AC

**Grommet (G), (H): 10-SYJ7□2M-□<sup>G</sup>□□-01□**
**With bracket:**
**10-SYJ7□2M-□<sup>G</sup>□□-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, Y):**
**10-SYJ7□2M-□Y□□-01□ (-F)**
**M8 connector (WO):**
**10-SYJ7□2M-□WO□□-01□ (-F)**


\* Refer to page 646 for dimensions with connector cable.

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

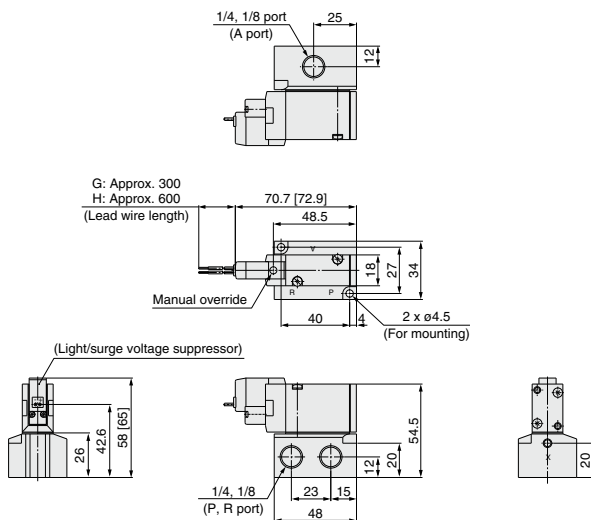
Fittings &amp; Tubing

Flow Control Equipment

Pressure Switches/Pressure Sensors

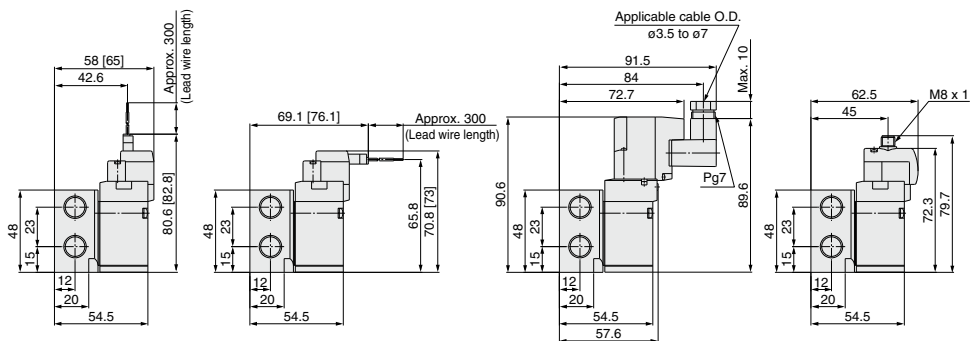
# Base Mounted (With Sub-plate)

\* [ ] for AC

Grommet (G), (H): 10-SYJ7□4M-□<sup>G</sup><sub>H</sub>□□□<sup>01</sup><sub>02</sub>□

**L plug connector (L):**  
10-SYJ7□4M-□L□□□<sup>01</sup><sub>02</sub>□

**M plug connector (M):**  
10-SYJ7□4M-□M□□□<sup>01</sup><sub>02</sub>□

**DIN terminal (D, Y):**  
10-SYJ7□4M-□<sup>D</sup><sub>Y</sub>□□□<sup>01</sup><sub>02</sub>□

**M8 connector (WO):**  
10-SYJ7□4M-□WO□□□<sup>01</sup><sub>02</sub>□


\* Refer to page 646 for dimensions with connector cable.

# Series 10-SYJ700 Manifold Specifications



## Manifold Specifications



Model	For internal pilot	Type 20	Type 21	Type 40	Type 41	Type 42
<b>Manifold type</b>		Single base/B mount				
<b>P (SUP), R (EXH)</b>		Common SUP, common EXH				
<b>Valve stations</b>		2 to 20 stations				
<b>A port Porting specifications</b>	<b>Location</b>	Valve	Valve	Base	Base	Base
	<b>Direction</b>	Top	Top	Bottom	Bottom	Side
<b>Port size</b>	<b>P, R port</b>	1/8	1/4	1/8	1/4	1/4
	<b>A port</b>	1/8	1/8	1/8	1/8	1/8 C6 (ø8 One-touch fitting) C8 (ø8 One-touch fitting)

## Flow Rate Characteristics

Manifold			Port size		Flow rate characteristics					
					1→2 (P→A)			2→3 (A→R)		
			1(P), 3(R) port	2(A) port	C [dm <sup>3</sup> /(sbar)]	b	Cv	C [dm <sup>3</sup> /(sbar)]	b	Cv
Body ported for internal pilot	Type 10-SS3YJ7-20	10-SYJ7□2M	1/8	1/8	2.2	0.34	0.55	2.3	0.27	0.59
	Type 10-SS3YJ7-21		1/4	1/8	2.2	0.39	0.59	2.4	0.32	0.62
	Type 10-SS3YJ7-40		1/8	1/8	2.1	0.35	0.59	2.3	0.27	0.54
Base mounted for internal pilot	Type 10-SS3YJ7-41	10-SYJ7□4M	1/4	1/8	2.2	0.35	0.59	2.4	0.36	0.66
	Type 10-SS3YJ7-42-01		1/4	1/8	2.0	0.27	0.47	2.2	0.32	0.56
	Type 10-SS3YJ7-42-C6		1/4	C6	1.6	0.32	0.39	2.2	0.27	0.54
	Type 10-SS3YJ7-42-C8		1/4	C8	2.1	0.24	0.51	2.3	0.31	0.59

Note) The values are for individually operated 2 position type manifold bases.

## How to Order Manifold (Example)

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

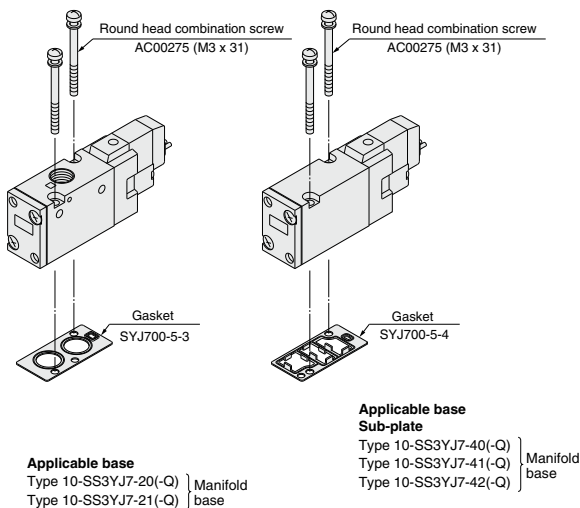
(Example)

10-SS3YJ7-20-03 ..... 1 set (manifold base)      10-SS3YJ7-42-03-01 ..... 1 set (manifold base)  
 \* 10-SYJ712M-SLZ-01 ..... 2 sets (valve)      \* 10-SYJ714M-5G ..... 2 sets (valve)  
 \* SYJ700-10-1A ..... 1 set (blanking plate assembly)      \* SYJ700-10-2A ..... 1 set (blanking plate assembly)

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

## Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

Body ported (Type 10-SYJ7□2M(-Q))    Base mounted (Type 10-SYJ7□4M(-Q))



### **Caution**

**Mounting screw tightening torque**

**M3: 0.8 N-m**

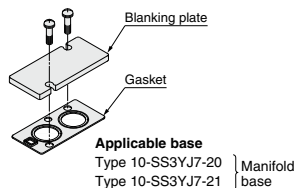
**Use caution to the assembly orientation for solenoid valves, gasket and optional parts.**

## Blanking Plate Assembly

<Standard>

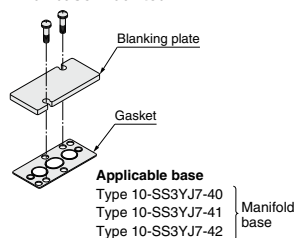
**Part no.: SYJ700-10-1A**

- For body ported
- For base mounted



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

- For base mounted

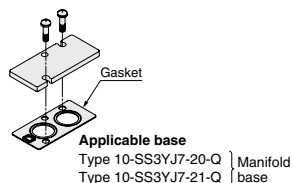


(Note) It can be mounted on a body ported manifold base. However, when mounting a blanking part to a valve, place an order for a separate gasket (SYJ700-5-3) when placing an order for the valve.

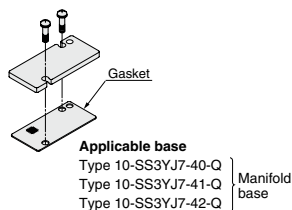
When using the SYJ700-10-1A, a gasket for this blanking plate assembly can be used as a gasket for the valve as well.

<CE-compliant>

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



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

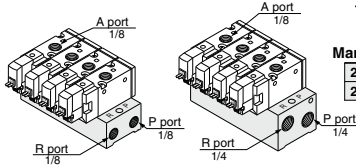




Note) AC-type models that are CE-compliant have DIN terminals only.

## Manifold for Internal Pilot Type

### Type 20/Type 21



#### How to Order

**10 - SS3YJ7 - 20 - 05 -**

↓ Clean series

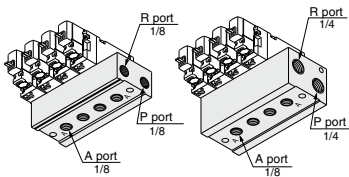
Manifold type	Stations	P, R port thread type	CE-compliant
20 Type 20	02 2 stations	Nil Rc	Nil —
21 Type 21	: :	00F G	Q CE-compliant
	20 20 stations	00N NPT	
		00T NPTF	

Applicable solenoid valve  
10-SYJ712M-□□□□-01(-Q)  
10-SYJ722M-□□□□-01(-Q)

Applicable blanking plate assembly  
Refer to page 633.

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

### Type 40/Type 41



#### How to Order

**10 - SS3YJ7 - 40 - 05 - 01 -**

↓ Clean series

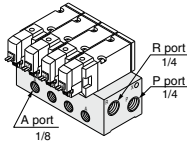
Manifold type	Stations	A port size	P, R port thread type	CE-compliant
40 Type 40	02 2 stations	01 1/8	Nil Rc	Nil —
41 Type 41	: :		F G	Q CE-compliant
	20 20 stations		N NPT	
			T NPTF	

Applicable solenoid valve  
10-SYJ714M-□□□□(-Q)  
10-SYJ724M-□□□□(-Q)

Applicable blanking plate assembly  
Refer to page 633.

Note) If there are more than 6 stations for type 40, or 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	A port size	P, R port thread type	CE-compliant
02 2 stations	01 1/8	Nil Rc	Nil —
: :	C6 e6 One-touch fitting	F G	Q CE-compliant
20 20 stations	C8 e8 One-touch fitting	N NPT	
	N7 e1/4" One-touch fitting	T NPTF	
	N9 e5/16" One-touch fitting		

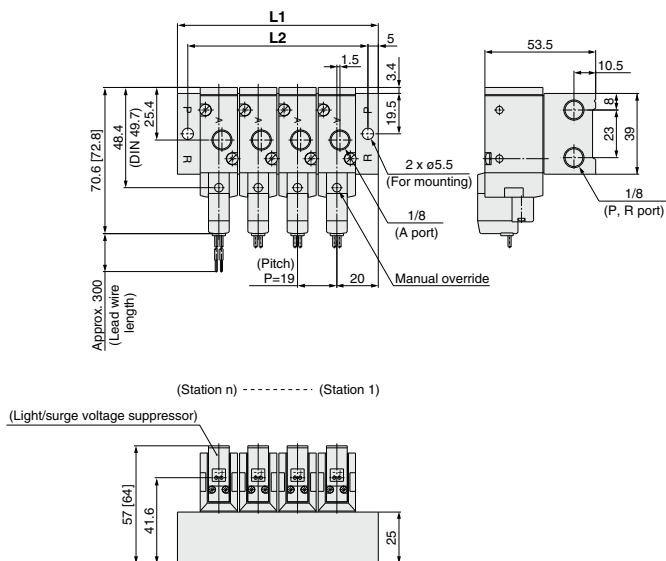
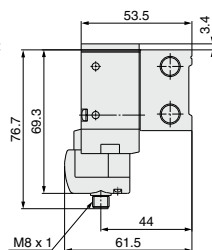
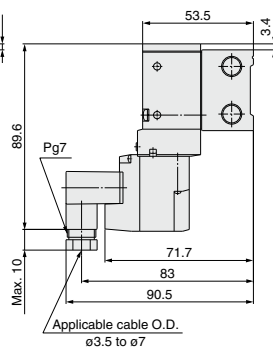
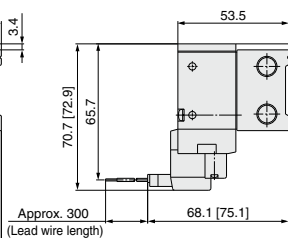
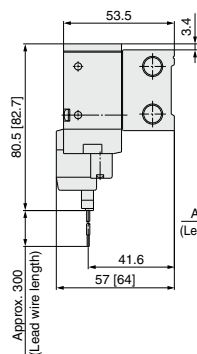
Applicable solenoid valve  
10-SYJ714M-□□□□(-Q)  
10-SYJ724M-□□□□(-Q)

Applicable blanking plate assembly  
Refer to page 633.

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□)**

\* [ ] for AC

**Grommet (G)**

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


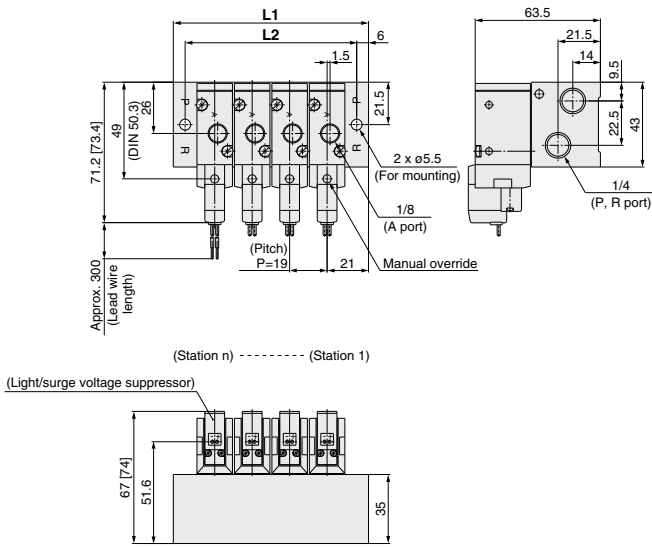
\* Refer to page 646 for dimensions with connector cable.

Station	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/10-SS3YJ7-21- Stations (-00□)

\* [ ] for AC

Grommet (G)

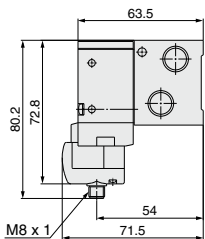
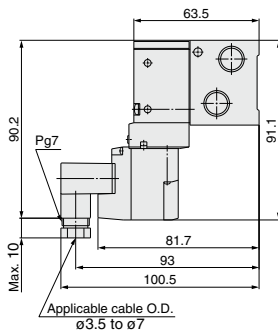
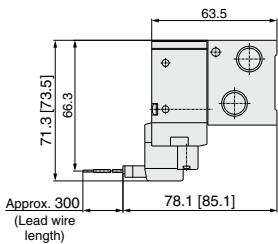
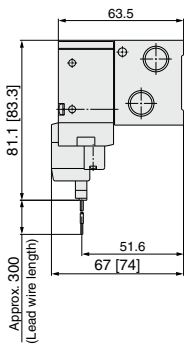


L plug connector (L)

M plug connector (M)

DIN terminal (D, Y)

M8 connector (WO)



Station	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

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

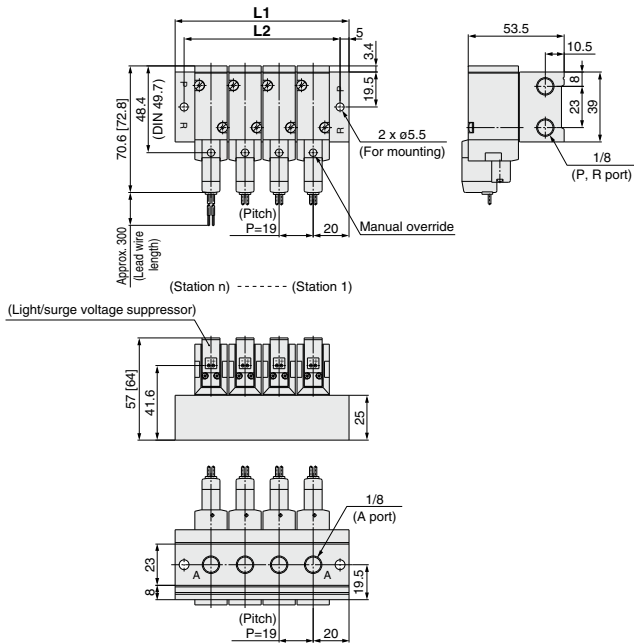
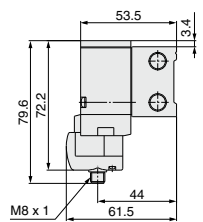
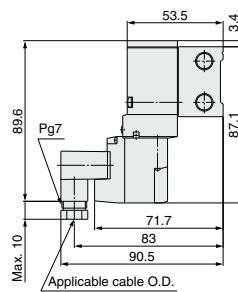
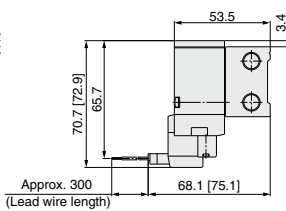
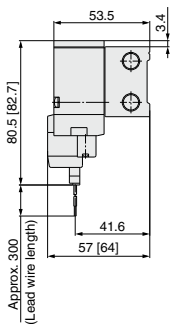
Fittings & Tubing

Flow Control Equipment

Pressure Switches/Pressure Sensors

**Type 40 Manifold: Bottom Ported/10-SS3YJ7-40- Stations -01**

\* [ ] for AC

**Grommet (G)**

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


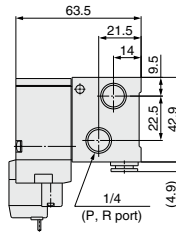
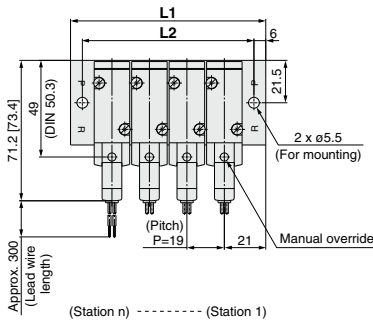
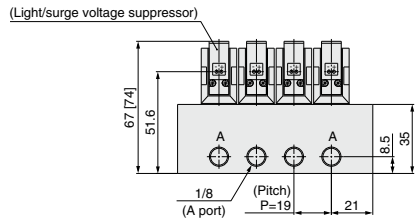
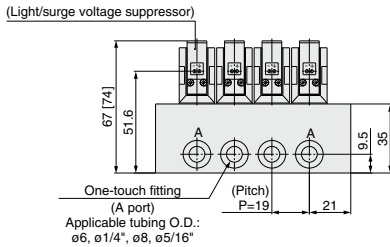
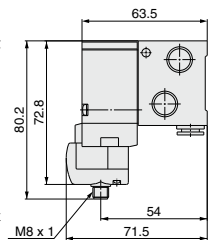
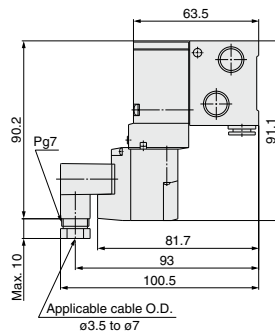
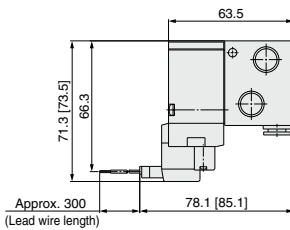
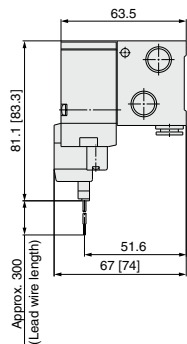
\* Refer to page 646 for dimensions with connector cable.

Station	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/10-SS3YJ7-42- Stations -01,** <sup>C6 N7</sup>  
<sup>C8 N9</sup> ☐

\* [ ] for AC

**Grommet (G)**

For <sup>C6 N7</sup>  
<sup>C8 N9</sup> ☐ (Built-in One-touch fitting)

**For 1/8**

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


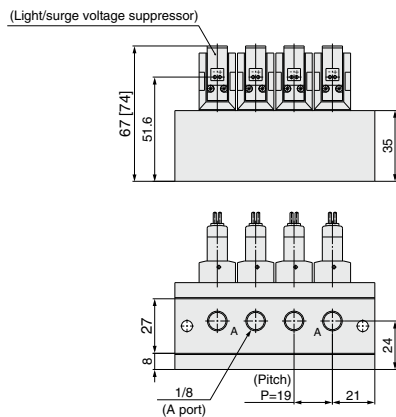
\* Refer to page 646 for dimensions with connector cable.

Station	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/10-SS3YJ7-41- Stations -01** □

\* [ ] for AC

**Grommet (G)**



\* Other dimensions are the same as type 42.  
For dimensions, refer to page 638.

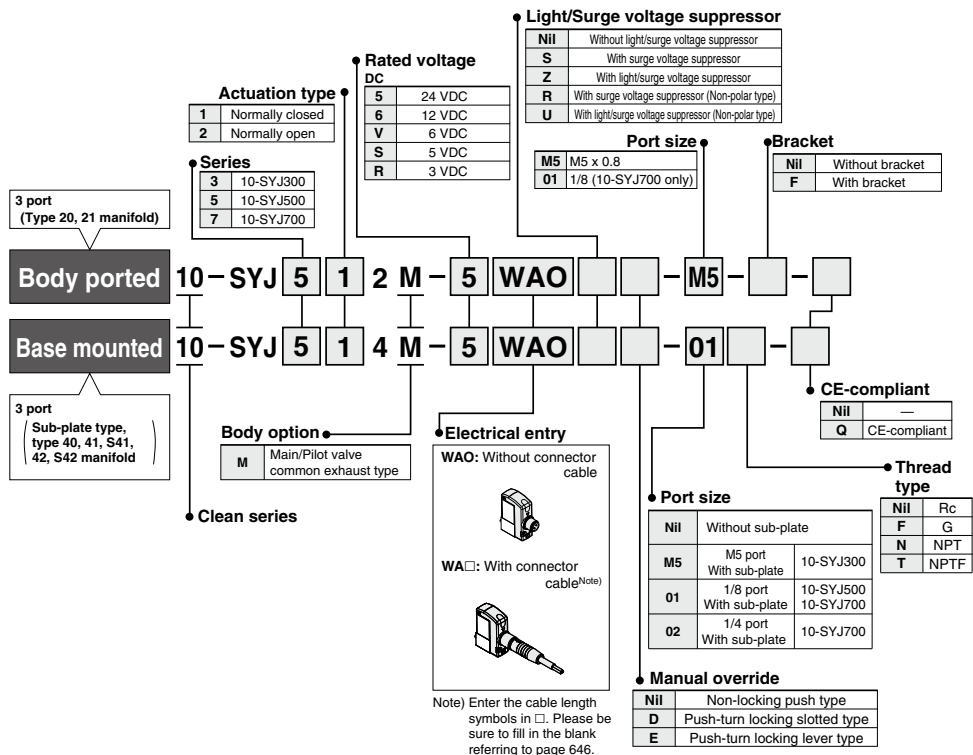
# M8 Connector Conforming to IEC60947-5-2

## Series 10-SYJ300/500/700

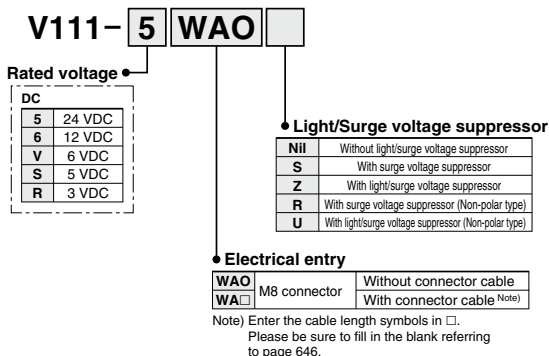
### Made to Order



#### How to Order Valve



#### How to Order Pilot Valve Assembly



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



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

Be sure to read this before handling.

Refer to page 1382 for Safety Instructions and pages 677 to 683 for 3/4/5 Port Solenoid Valve Precautions.

## Manual Override Operation

### Warning

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

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

Press in the direction of the arrow.



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

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



Locked position



### Caution

When operating the locking type D with a screw driver, turn it gently using a watchmakers screw driver.

[Torque: Less than 0.1 N·m]

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

While pressing the lever down, turn it in the direction of the arrow. If it does not turn, 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 the lock down before turning it. Turning without first pushing it down can cause damage to the manual override and trouble such as air leakage, etc.

## Solenoid Valve for 200, 220 VAC Specifications

### Warning

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

With 200, 220 VAC specification pilot valves, this built-in rectifier generates heat when energized. The surface may become hot depending on the energization state; therefore, do not touch the solenoid valves.

## Main/Pilot Valve Common Exhaust Type

### 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 type of the 10-SYJ300 series, do not use it without bracket.





# Series 10-SYJ300/500/700

## Specific Product Precautions 2

Be sure to read this before handling.

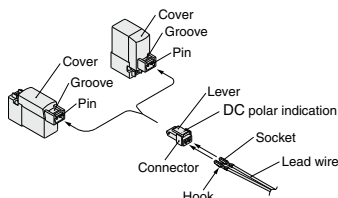
Refer to page 1382 for Safety Instructions and pages 677 to 683 for 3/4/5 Port Solenoid Valve Precautions.

### How to Use Plug Connector

#### Caution

##### 1. Attaching and detaching connectors

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

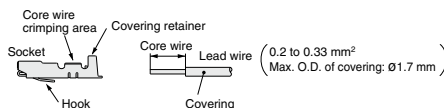


##### 2. Crimping connection of lead wire and socket

Strip 3.2 to 3.7 mm at the end of the lead wires, insert the end of the core wires evenly into the sockets, and then crimp it 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 the dedicated crimping tools.)



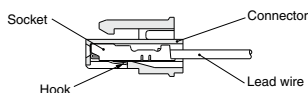
##### 3. Attaching and detaching sockets with lead wires

###### • 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, the 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 thin tipped stick (approx. 1 mm). If the socket is to 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

	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.

Example) Lead wire length 2000 mm

For DC

10-SYJ312-5LO-M3

SY100-30-4A-20

For AC

10-SYJ312-1LO-M3

SY100-30-1A-20

Directional Control Valves

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Rotary Actuators

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Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

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Flow Control Equipment

Pressure Switches/Pressure Sensors



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

Be sure to read this before handling.

Refer to page 1382 for Safety Instructions and pages 677 to 683 for 3/4/5 Port Solenoid Valve Precautions.

## Surge Voltage Suppressor

### Caution

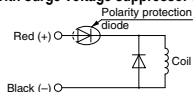
<For DC>

Grommet, L/M Plug Connector

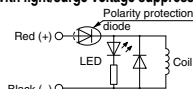


#### ■ Polar type (Standard)

With surge voltage suppressor (□S)

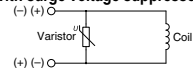


With light/surge voltage suppressor (□Z)

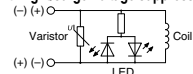


#### ■ Non-polar type

With surge voltage suppressor (□R)



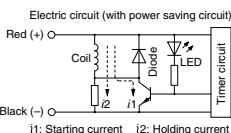
With light/surge voltage suppressor (□U)



- Connect the polar 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 polar type 24 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

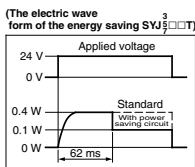
Power consumption is decreased by 1/4 by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 62 ms at 24 VDC.)



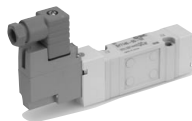
#### Operating Principle

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

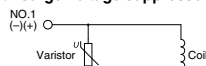
- Please be careful not to reverse the polarity, since a diode to prevent the reversed current is not provided for the power saving circuit.



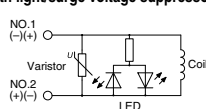
#### DIN Terminal



With surge voltage suppressor (DS)



With light/surge voltage suppressor (DZ)

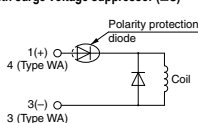


DIN terminal has no polarity.

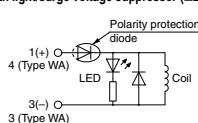
#### M8 Connector

##### ■ Polar type (Standard)

With surge voltage suppressor (□S)

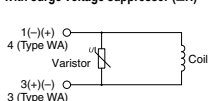


With light/surge voltage suppressor (□Z)

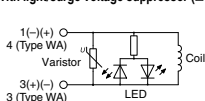


##### ■ Non-polar type

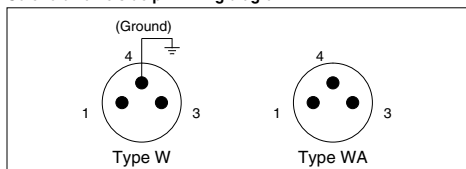
With surge voltage suppressor (□R)



With light/surge voltage suppressor (□U)



#### Solenoid valve side pin wiring diagram



- For wiring of the polar type, connect + to 1 and - to 3 for type W, and + to 4 and - to 3 for type WA.
- Please be careful not to reverse the polarity, since a diode to prevent the reversed current is not provided for DC voltages other than 24 and 12 VDC.
- The WA-type valve cannot be grounded.



# Series 10-SYJ300/500/700

## Specific Product Precautions 4

Be sure to read this before handling.

Refer to page 1382 for Safety Instructions and pages 677 to 683 for 3/4/5 Port Solenoid Valve Precautions.

### Surge Voltage Suppressor

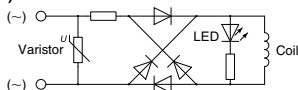
<For AC>

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

### Caution

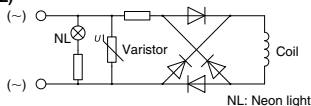
#### Grommet, L/M Plug Connector

With light (□Z)



#### DIN Terminal

With light (DZ)



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

### How to Use DIN Terminal

### Caution

#### Connection

- Loosen the holding screw and pull the connector out of the solenoid valve terminal block.
- 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.
- 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.
- Secure the cord by fastening the gland 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 gland nut and holding screw within their specified torque ranges.

### Changing the entry direction

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

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

### Precautions

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

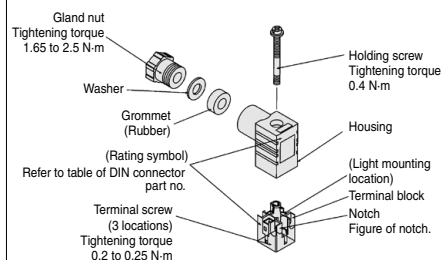
### How to Use DIN Terminal

### Caution

#### Compatible cable

Cord O.D.: ø3.5 to ø7

(Reference) 0.5mm<sup>2</sup>, 2-core or 3-core, equivalent to JIS C 3306



#### Type "Y"

DIN connector type Y is a DIN connector that confirms to the DIN pitch 8-mm standard.

- D type DIN connector with 9.4 mm pitch between terminals is not interchangeable.
- To distinguish from the D type DIN connector, "N" is listed at the end of voltage symbol. (For connector parts without lights, "N" is not indicated. Please refer to the name plate to distinguish.)
- Dimensions are completely the same as D type DIN connector.
- When exchanging the pilot valve assembly only, "V115-□D" is interchangeable with "V115-□Y". Do not replace V111 (G, L, M) to V115-□D/□Y (DIN terminal), and vice versa.

### Solenoid Valve Mounting

### Caution

Mount 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	0.12 N-m
10-SYJ500	M2.5	0.45 N-m
10-SYJ700	M3	0.8 N-m

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# Series 10-SYJ300/500/700 Specific Product Precautions 5

Be sure to read this before handling.

Refer to page 1382 for Safety Instructions and pages 677 to 683 for 3/4/5 Port Solenoid Valve Precautions.

## DIN Connector Part No.

### ⚠ Caution

#### <Type D>

Without light	SY100-61-1
---------------	------------

#### With light

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

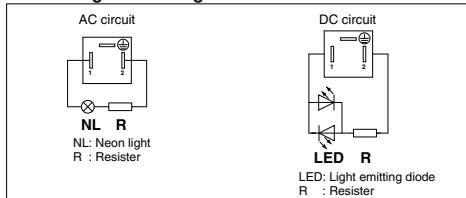
#### <Type Y>

Without light	SY100-82-1
---------------	------------

#### With light

Rated voltage	Voltage symbol	Part no.
24 VDC	24 VN	SY100-82-3-05
12 VDC	12 VN	SY100-82-3-06
100 VAC	100 VN	SY100-82-2-01
200 VAC	200 VN	SY100-82-2-02
110 VAC (115 VAC)	110 VN	SY100-82-2-03
220 VAC (230 VAC)	220 VN	SY100-82-2-04

### Circuit Diagram with Light



## 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.

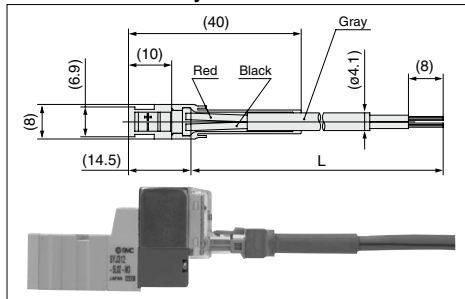
### How to Order

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.

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

Example 2) Lead wire length of 300 mm (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.



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

Be sure to read this before handling.

Refer to page 1382 for Safety Instructions and pages 677 to 683 for 3/4/5 Port Solenoid Valve Precautions.

## M8 Connector

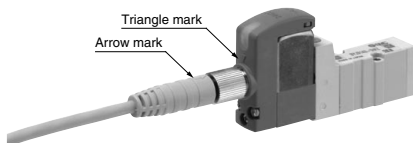
### ⚠ Caution

1. M8 connectors have an IP65 (enclosure) rating, offering protection from dust and water. However please note that these products are not intended for use in water. Select a SMC connector cable (V100-49-1-□) or a FA sensor type connector, with M8 threaded 3 pin specifications conforming to Nippon Electric Control Equipment Industries Association Standard, NECA4202 (IEC60947-5-2). Make sure the connector O.D. is 10.5 mm or less when used with the 10-SYJ300 series manifold. If more than 10.5 mm, it cannot be mounted due to the size.
2. Do not use a tool to mount the connector, as this may cause damage. Only tighten by hand. (0.4 to 0.6 N-m)
3. Excessive stress on the cable connector will cause a loss of the IP65 rating. Please use caution and do not apply a stress of 30 N or greater.

### ⚠ Caution

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

#### • Connector cable mounting



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

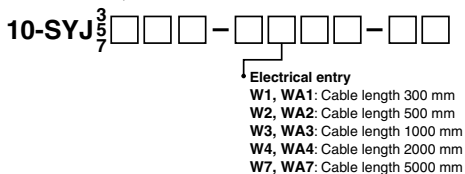
#### ■ Connector cable

- Connector cable for M8 can be ordered as follows:

#### How to Order

1. To order a solenoid valve and connector cable at the same time.

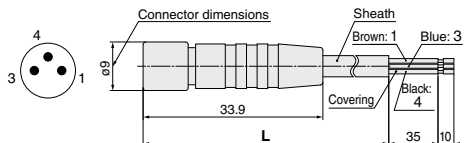
(Connector cable will be included in the shipment of the solenoid valve.)



Example 1) Cable length: 300 mm  
10-SYJ312-5W1ZE-M3

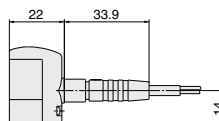
→ Symbol for electrical entry

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

Sheath O.D.	ø3.4 mm
Cover diameter	ø1.16 mm
Conductor area	0.16 mm <sup>2</sup>



Directional  
Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation  
Equipment

Modular F. R.

Pressure Control  
Equipment

Fittings & Tubing

Flow Control  
Equipment

Pressure Switches/  
Pressure Sensors



# Series 10-SYJ300/500/700 Specific Product Precautions 7

Be sure to read this before handling.

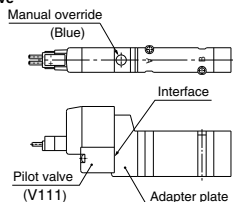
Refer to page 1382 for Safety Instructions and pages 677 to 683 for 3/4/5 Port Solenoid Valve Precautions.

## Replacement of Pilot Valve

### Caution

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

#### New valve



#### Existing valve

