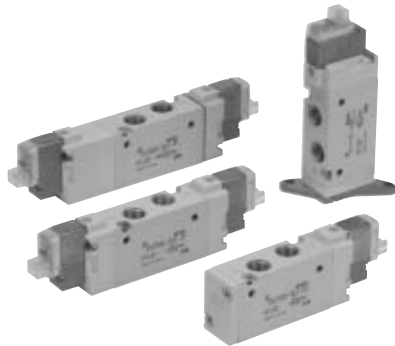




# 5 Port Solenoid Valve Rubber Seal

# Series SYJ7000



Body ported



Base mounted

## Specifications

Fluid	Air	
Operating pressure range MPa	2 position single	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Ambient and fluid temperature (°C)	-10 to 50 (No freezing. Refer to page 1-7-4.)	
Response time (ms) <sup>Note 1</sup> (at 0.5 MPa)	2 position single, double	30 or less
	3 position	60 or less
Max. operating frequency (Hz)	2 position single, double	5
	3 position	3
Manual override (Manual operation)	Non-locking push type, push-turn locking slotted type, push-turn locking lever type	
Pilot exhaust method	Individual exhaust for the pilot valve, common exhaust for the pilot and main valve	
Lubrication	Not required	
Mounting orientation	Unrestricted	
Shock/Vibration resistance (m/s <sup>2</sup> ) <sup>Note 2</sup>	150/30	
Enclosure	Dustproof (* DIN terminal, M8 connector conforms to IP65.)	



\* Based on IEC529

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

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

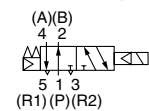
Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve and armature when pilot signal is ON and OFF. (Value in the initial state)

## Solenoid Specifications

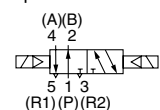
### JIS Symbol

Body ported

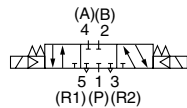
2 position single



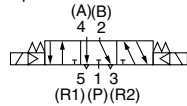
2 position double



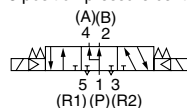
3 position closed center



3 position exhaust center

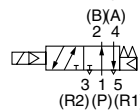


3 position pressure center

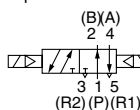


Base mounted

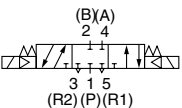
2 position single solenoid



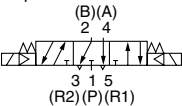
2 position double solenoid



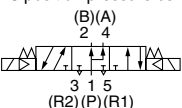
3 position closed center



3 position exhaust center



3 position pressure center



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



\* In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.

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



**Made to Order Specifications**  
(For details, refer to pages 1-5-72 to 73.)

### Flow Characteristics/Weight

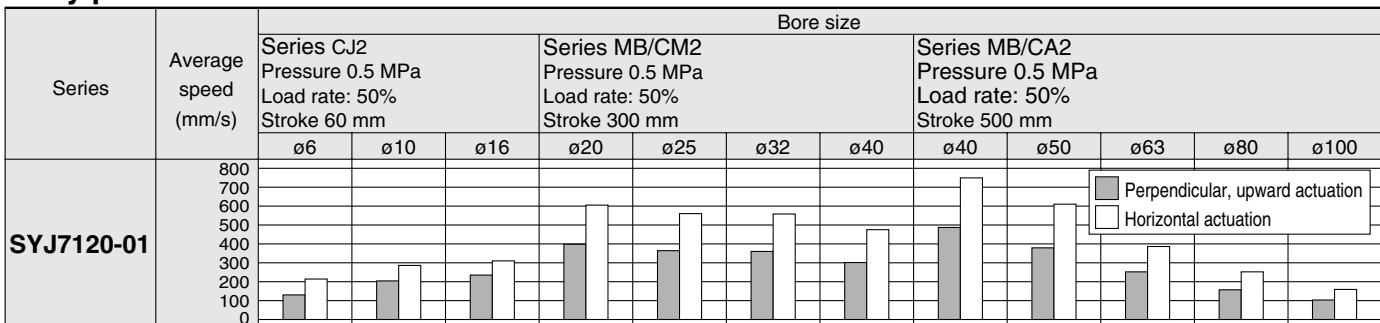
Valve model	Type of actuation		Port size		Flow characteristics <small>Note 1)</small>						Weight (g) <small>Note 2, 3)</small>				
			1,5,3 (P,EA,EB)	4,2 (A,B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grommet	L/M plug connector	DIN terminal	M8 connector	
					C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3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

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

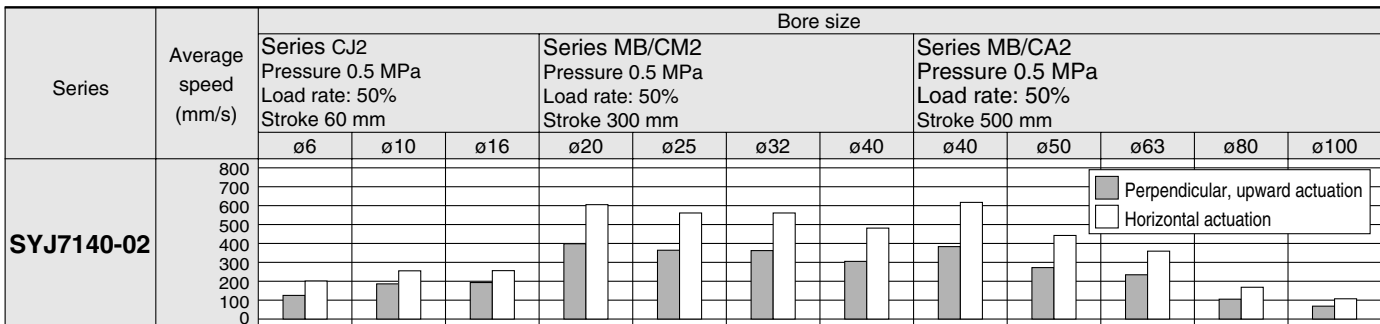
SV  
SZ  
SY  
SYJ  
SX

### Cylinder Speed Chart

#### Body ported



#### Base mounted



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

### Conditions

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

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

## How to Order

### Type of actuation

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

### Light/Surge voltage suppressor

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

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

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

#### Electrical entry for D

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

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

### Rated voltage

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

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

### Thread type

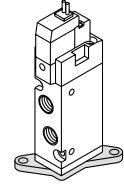
Nil	Rc
F	G
N	NPT
T	NPTF

### A, B port size

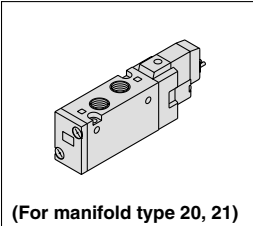
01	1/8
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"

### Bracket

Nil: Without bracket  
 F: With bracket

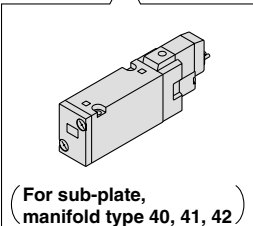


Note) Do not remove the factory installed bracket from models with the bracket option. Removal of the bracket will cause the valve to leak.



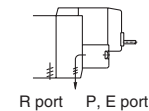
**Body ported** SYJ7 **1** **2** **0** **5** **M** **01**

**Base mounted** SYJ7 **2** **4** **0** **5** **M**

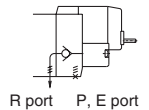


### Body option

0: Pilot valve individual exhaust for the pilot valve



3: Common exhaust type for main and pilot valve



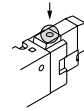
### Coil specifications

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

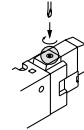
\* Power saving circuit is not available in the case of "D", "DO" or "W□" type.

### Manual override

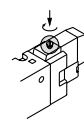
Nil: Non-locking push type



D: Push-turn locking slotted type



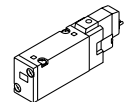
E: Push-turn locking lever type



Nil	Rc
F	G
N	NPT
T	NPTF

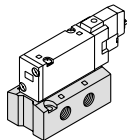
### Port size

Nil: Without sub-plate

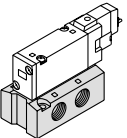


(With gasket and screws)

01: 1/8 With sub-plate



02: 1/4 With sub-plate



Note) R1, R2 port: 1/4

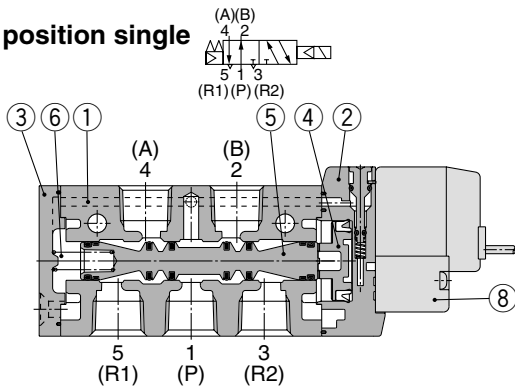
### Electrical entry

24, 12, 6, 5, 3 VDC 100, 110, 200, 220 VAC				24, 12 VDC 100, 110, 200, 220 VAC		24, 12, 6, 5, 3 VDC	
Grommet	L plug connector	M plug connector		DIN terminal	M8 connector		
<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>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>LO:</b> Without connector	<b>MO:</b> Without connector	<b>DO:</b> Without connector			

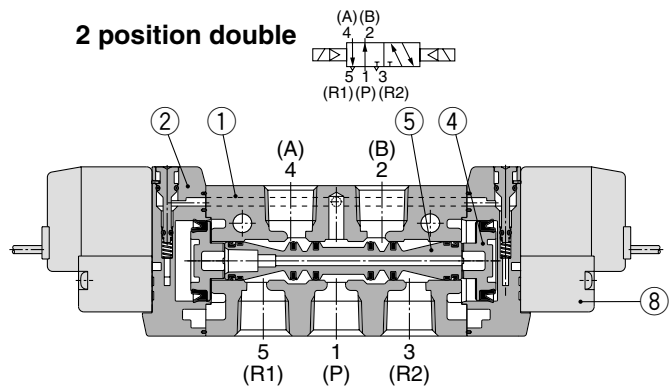
\* "LN", "MN" type: with 2 sockets.  
 \* DIN terminal "Type Y" conforming to DIN 43650C is also available. For details, refer to page 1-5-73.  
 \* For connector cable of M8 connector, refer to page 1-5-78.

## Construction

### 2 position single

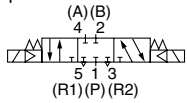


### 2 position double

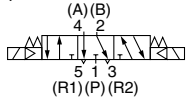


### 3 position closed center/exhaust center/pressure center

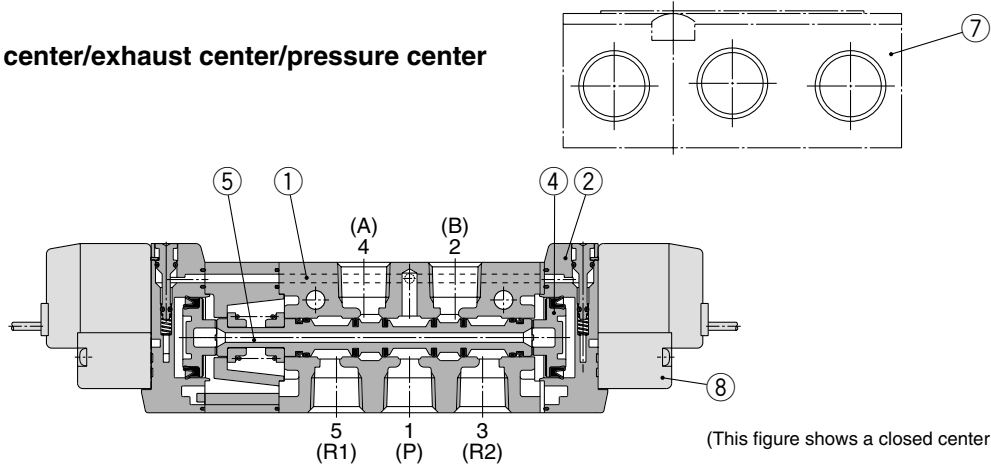
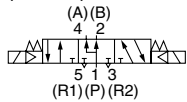
#### 3 position closed center



#### 3 position exhaust center



#### 3 position pressure center



- SV
- SZ
- SY
- SYJ
- SX

## Component Parts

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

## Replacement Parts

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

## How to Order Pilot Valve Assembly

V111 — 5 G

### Coil specifications

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

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

### Rated voltage

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

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

### Light/Surge voltage suppressor

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

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

### Electrical entry

G	Grommet (300 mm lead wire)	
H	Grommet (600 mm lead wire)	
L	L plug connector	With lead wire
LN	L plug connector	Without lead wire
LO	L plug connector	Without connector
M	M plug connector	With lead wire
MN	M plug connector	Without lead wire
MO	M plug connector	Without connector
WO	M8 connector	Without connector cable

\* For connector cable of M8 connector, refer to page 1-5-78.

V115 — 5 D

### Rated voltage

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

### Light/Surge voltage suppressor

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

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


### Electrical entry


D	DIN terminal	With connector
DO	DIN terminal	Without connector


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


# Series SYJ7000

## How to Order Connector Assembly for L/M Plug Connector

For DC : **SY100-30-4A-** 

For 100 VAC : **SY100-30-1A-** 

For 200 VAC : **SY100-30-2A-** 


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

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

Lead wire length ●

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

## How to Order M8 Connector Cable

V100-49-1- 

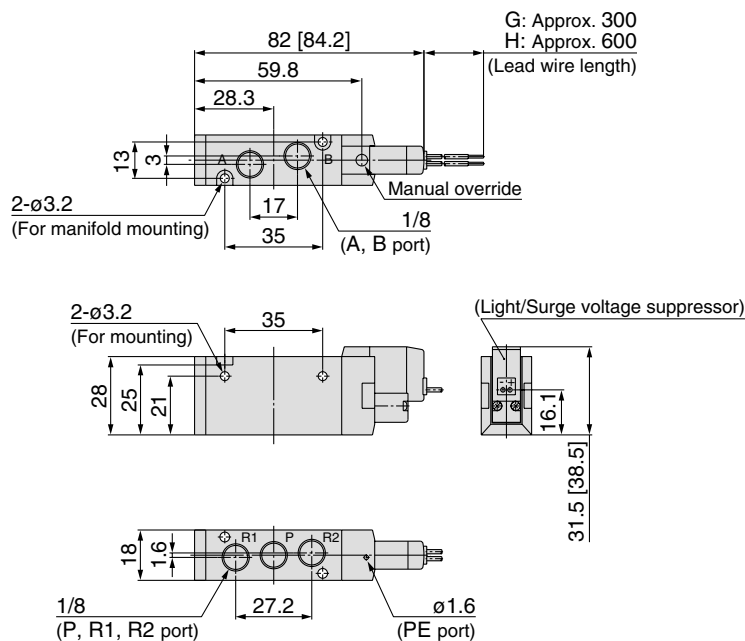
● Cable length

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

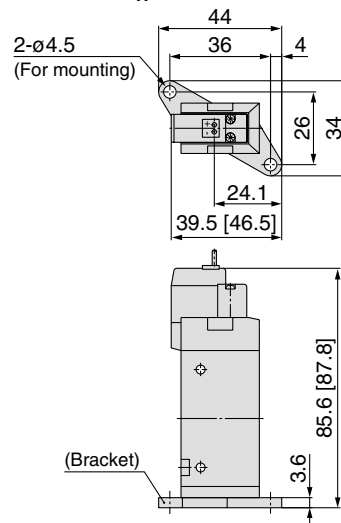


## 2 Position Single

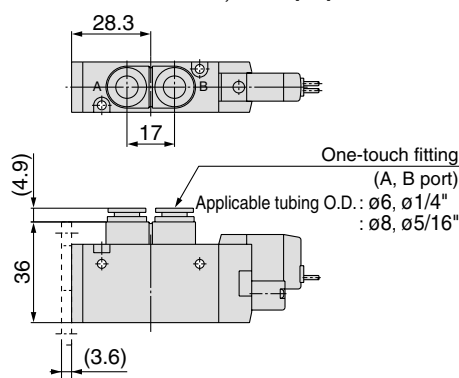
Grommet (G), (H): SYJ7120-□<sup>G</sup>□□□-01□



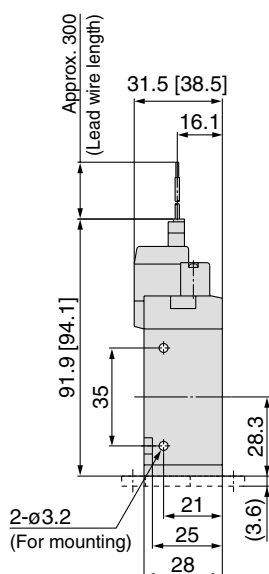
With bracket:  
SYJ7120-□<sup>G</sup>□□□-01□-F



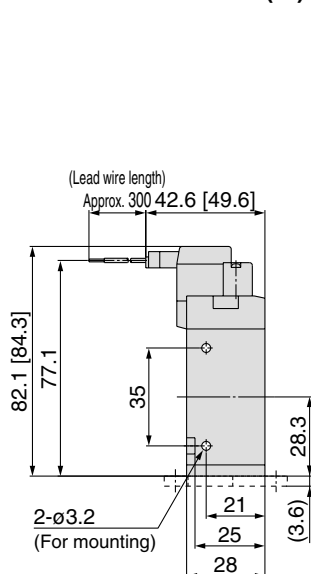
Built-in One-touch fitting:  
SYJ7120-□<sup>G</sup>□□□-C6, N7-C8, N9□ (-F)



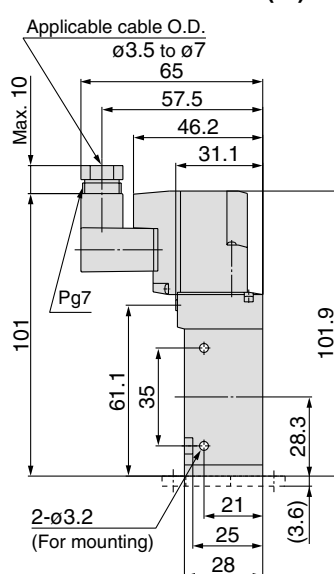
L plug connector (L):  
SYJ7120-□L□□-01□ (-F)



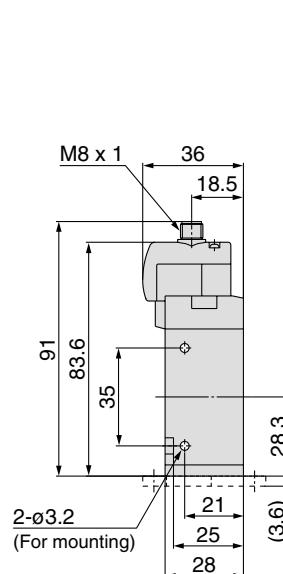
M plug connector (M):  
SYJ7120-□M□□-01□ (-F)



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



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



Refer to page 1-5-79 for dimensions with connector cable.

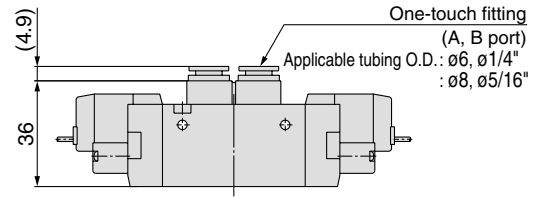
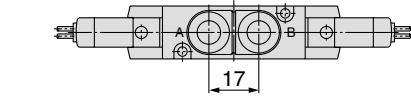
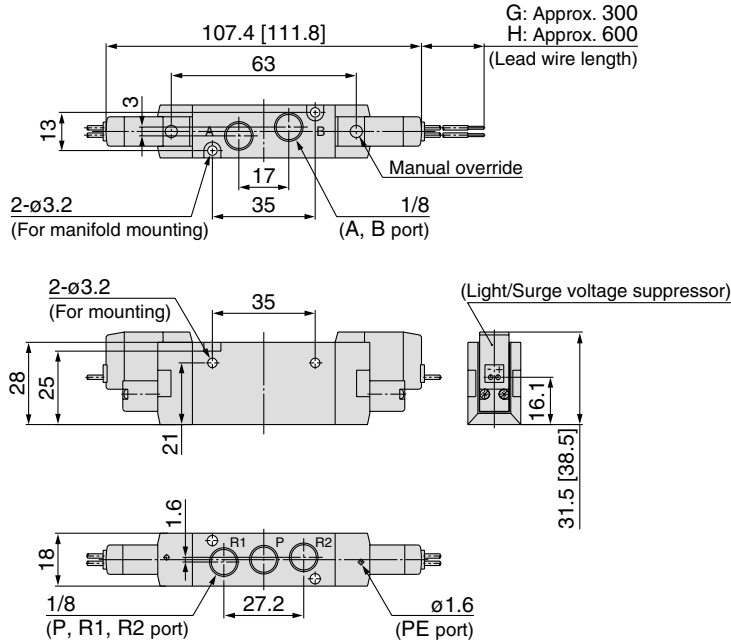
# Series SYJ7000

## 2 Position Double



Grommet (G), (H): SYJ7220-□<sup>G</sup>□□□-01□

Built-in One-touch fitting:  
SYJ7220-□<sup>G</sup>□□□-<sup>C8, N7</sup>□□□□

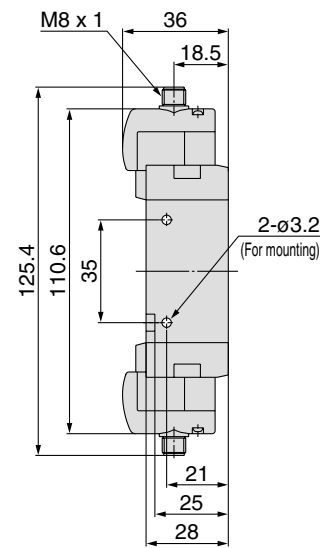
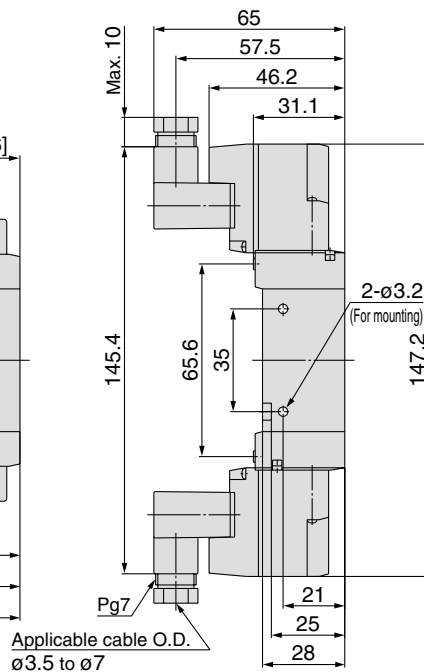
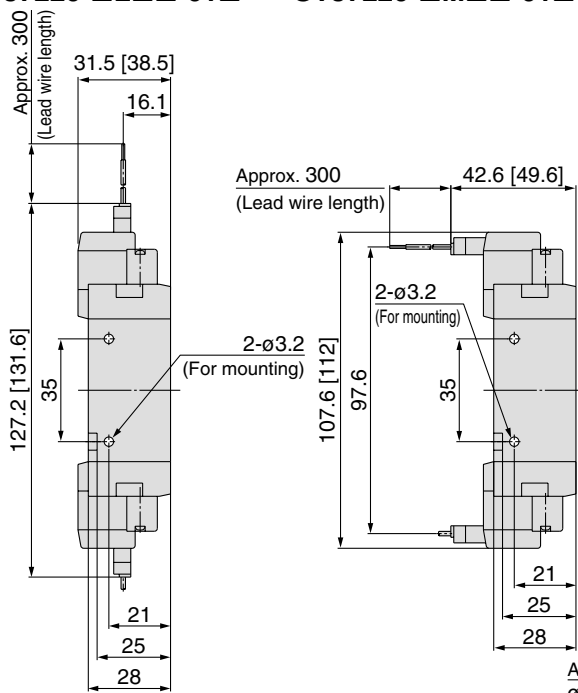


L plug connector (L):  
SYJ7220-□L□□□-01□

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

DIN terminal (D):  
SYJ7220-□D□□□-01□

M8 connector (WO):  
SYJ7220-□WO□□□-01□



Refer to page 1-5-79 for dimensions with connector cable.

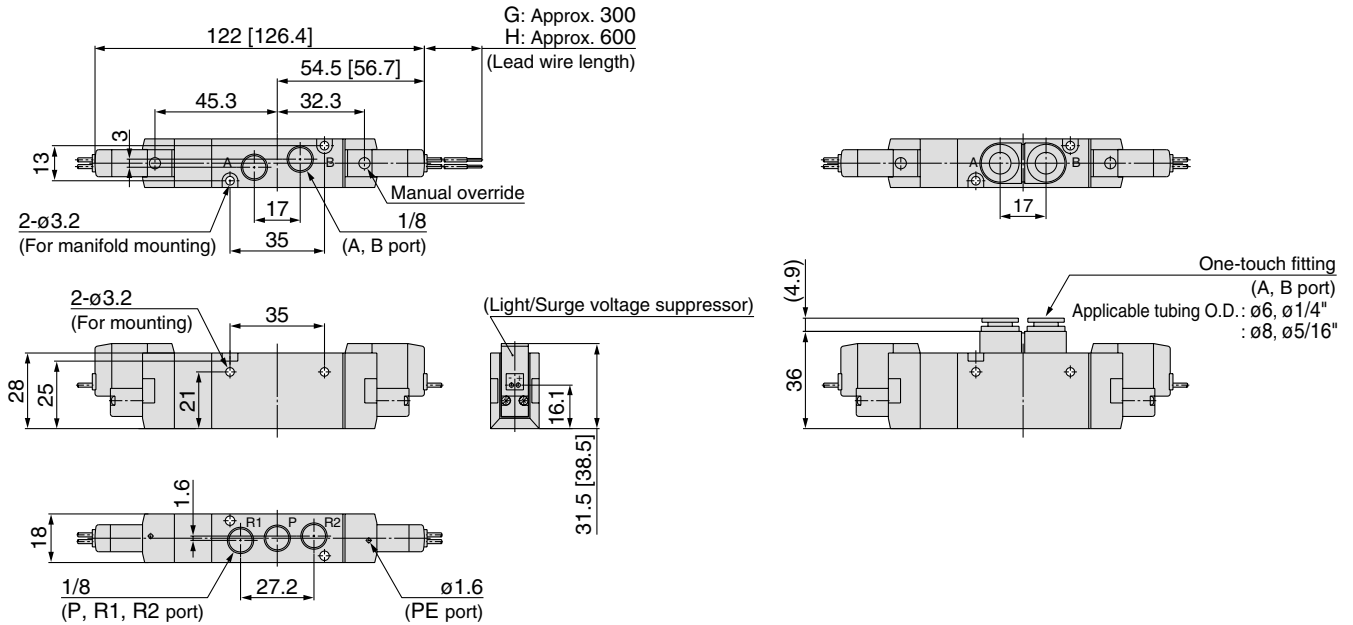
# 5 Port Solenoid Valve Rubber Seal Series SYJ7000

## 3 Position Closed Center/Exhaust Center/Pressure Center



Grommet (G), (H): SYJ7<sup>3</sup>/<sub>5</sub>20-□<sup>G</sup>□□-01□

Built-in One-touch fitting:  
SYJ7<sup>3</sup>/<sub>5</sub>20-□<sup>G</sup>□□-<sup>C6, N7</sup>□<sup>C8, N9</sup>□



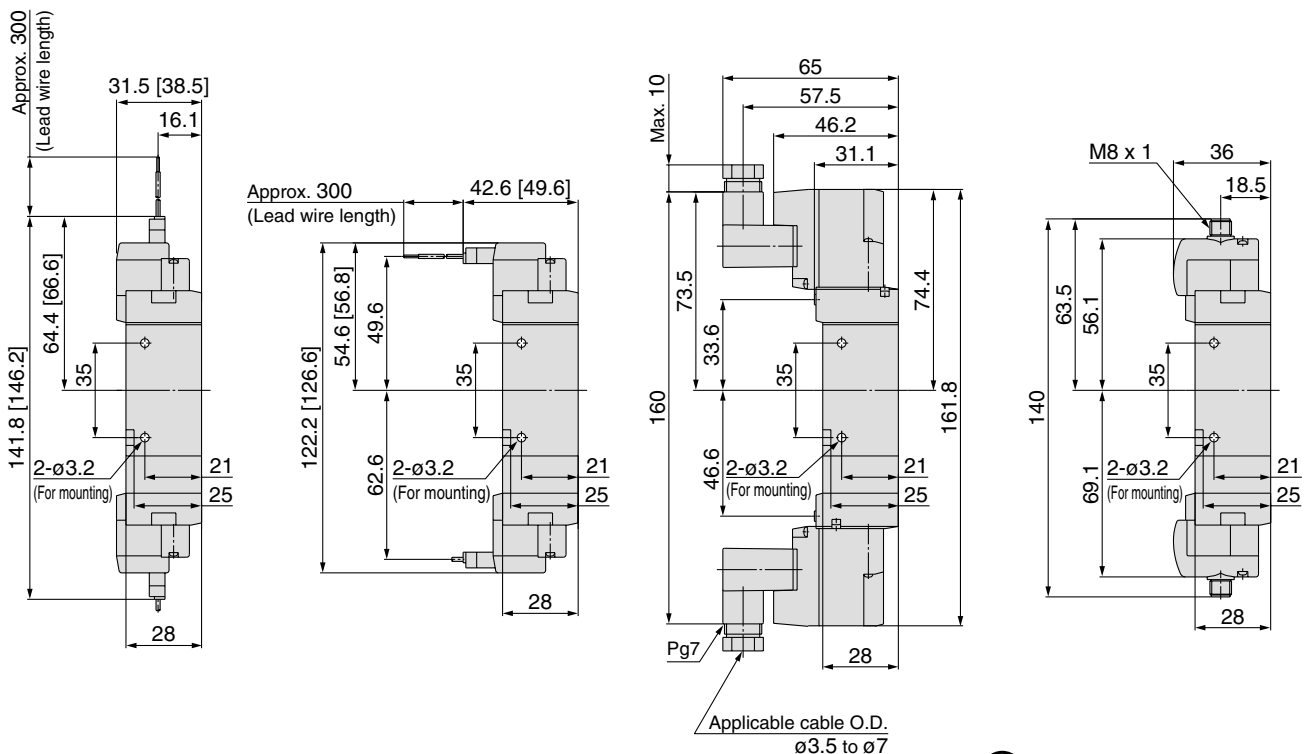
- SV
- SZ
- SY
- SYJ**
- SX

**L plug connector (L):**  
SYJ7<sup>3</sup>/<sub>5</sub>20-□L□□-01□

**M plug connector (M):**  
SYJ7<sup>3</sup>/<sub>5</sub>20-□M□□-01□

**DIN terminal (D):**  
SYJ7<sup>3</sup>/<sub>5</sub>20-□D□□-01□

**M8 connector (WO):**  
SYJ7<sup>3</sup>/<sub>5</sub>20-□WO□□-01□



Refer to page 1-5-79 for dimensions with connector cable.

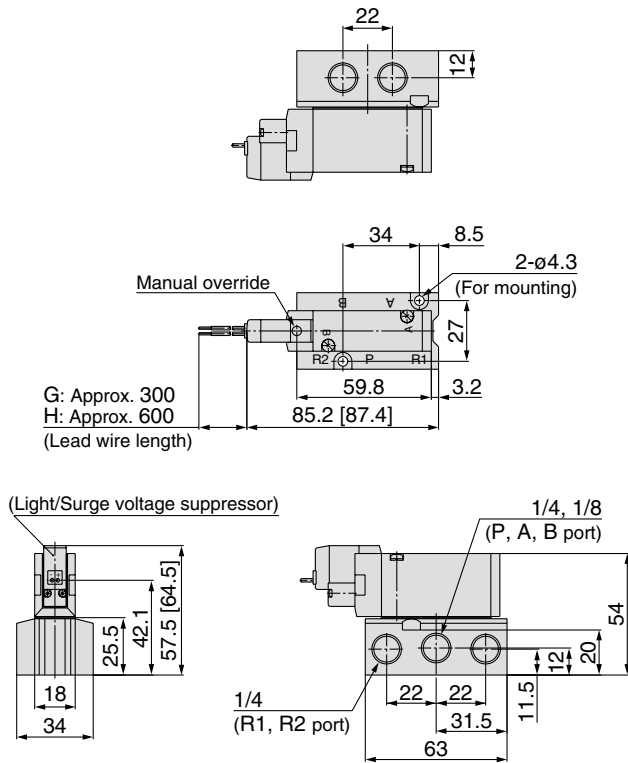


# Series SYJ7000

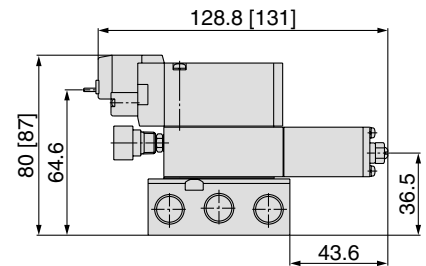
## 2 Position Single



Grommet (G), (H): SYJ7140-□□□□-01□□



With interface regulator

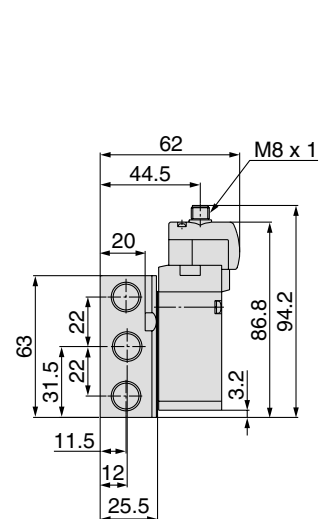
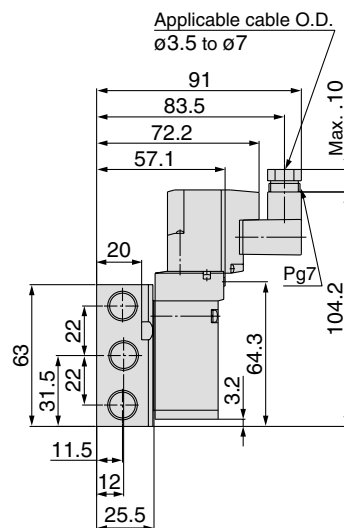
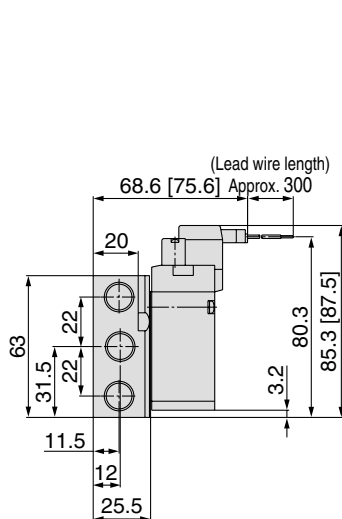
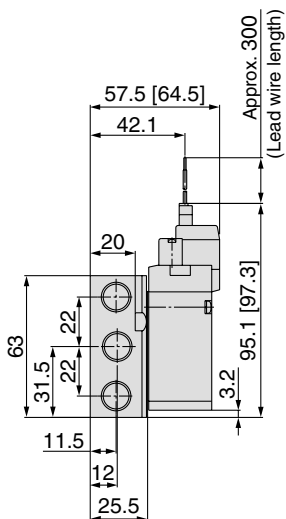


L plug connector (L):  
SYJ7140-□L□□-01□□

M plug connector (M):  
SYJ7140-□M□□-01□□

DIN terminal (D):  
SYJ7140-□D□□-01□□

M8 connector (WO):  
SYJ7140-□WO□□-01□□



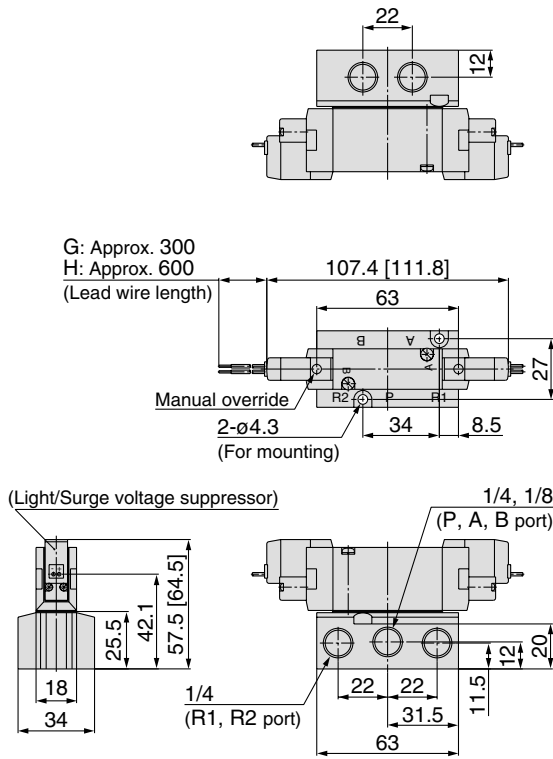
Refer to page 1-5-79 for dimensions with connector cable.

# 5 Port Solenoid Valve Rubber Seal Series SYJ7000

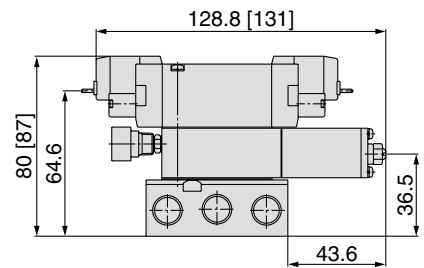


## 2 Position Double

Grommet (G), (H): SYJ7240-□G□□□-01□



With interface regulator

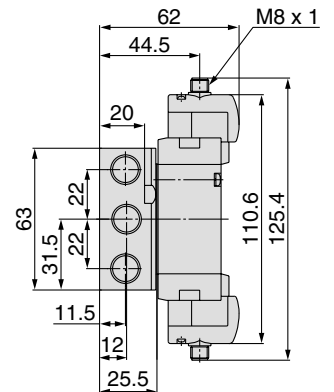
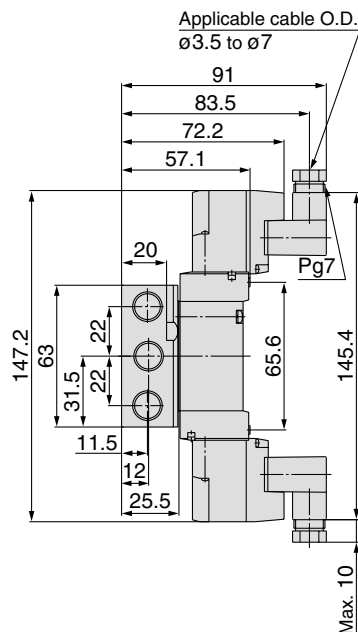
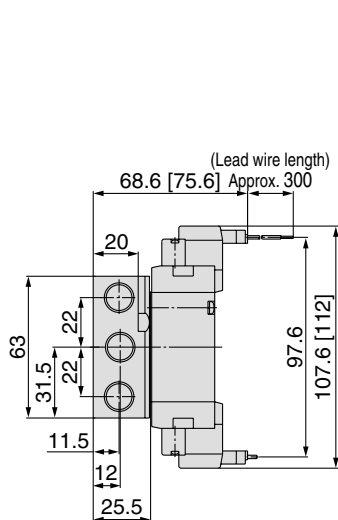
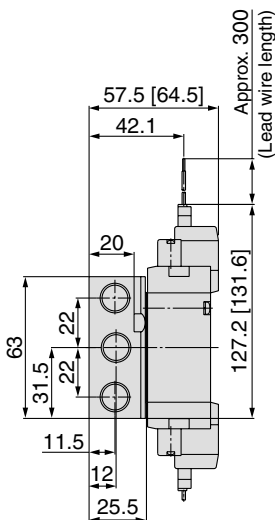


**L plug connector (L):**  
SYJ7240-□L□□□-01□

**M plug connector (M):**  
SYJ7240-□M□□□-01□

**DIN terminal (D):**  
SYJ7240-□D□□□-01□

**M8 connector (WO):**  
SYJ7240-□WO□□□-01□



Refer to page 1-5-79 for dimensions with connector cable.

SV

SZ

SY

SYJ

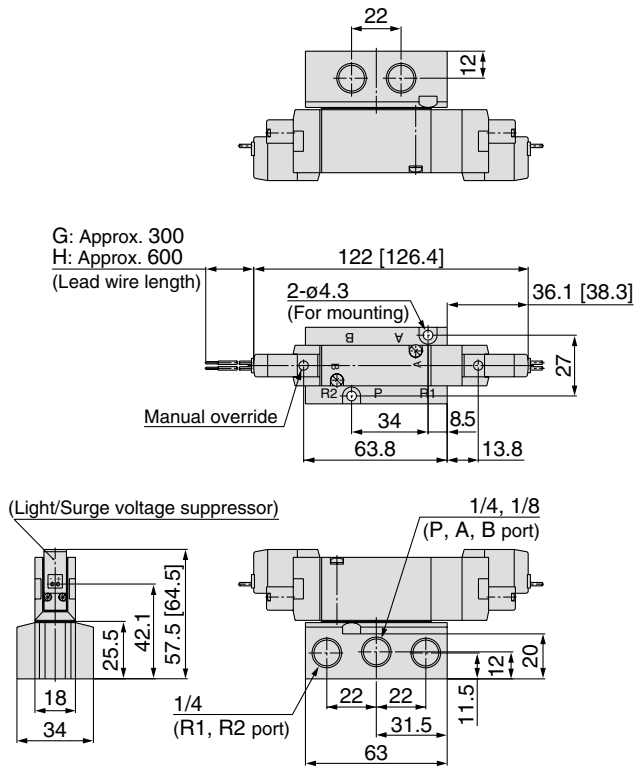
SX

# Series SYJ7000

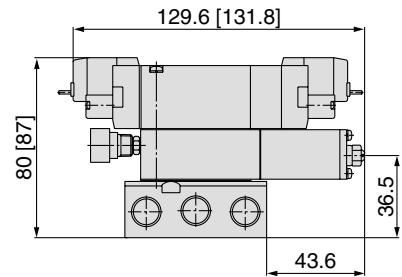
## 3 Position Closed Center/Exhaust Center/Pressure Center



Grommet (G), (H): SYJ7<sup>3</sup>/<sub>5</sub>40-□G□□-01□



With interface regulator

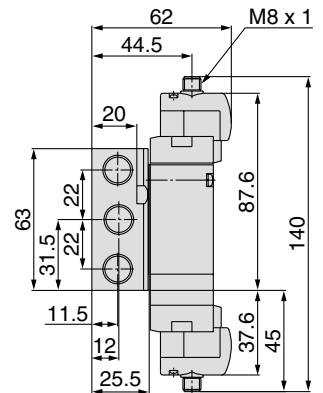
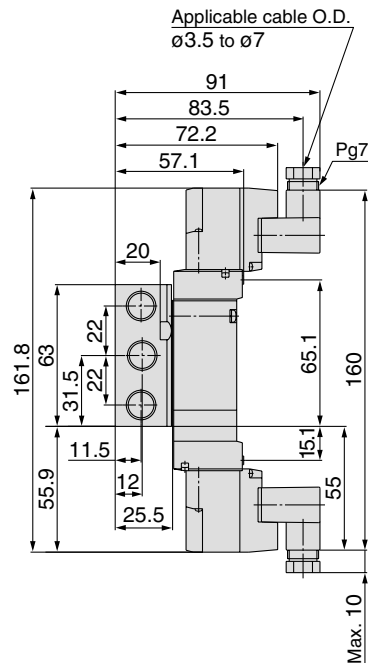
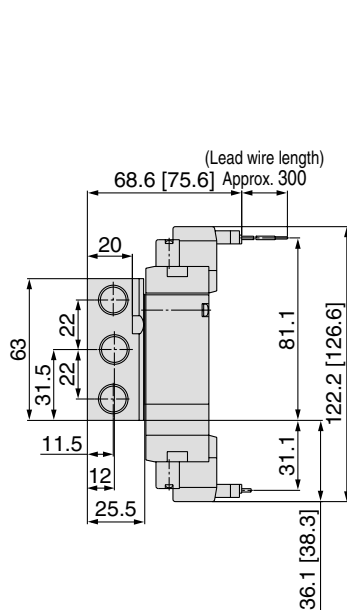
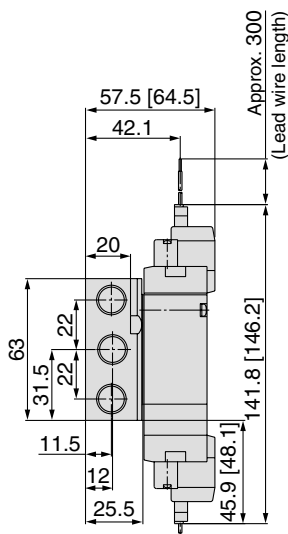


**L plug connector (L):**  
SYJ7<sup>3</sup>/<sub>5</sub>40-□L□□-01□

**M plug connector (M):**  
SYJ7<sup>3</sup>/<sub>5</sub>40-□M□□-01□

**DIN terminal (D):**  
SYJ7<sup>3</sup>/<sub>5</sub>40-□D□□-01□

**M8 connector (WO):**  
SYJ7<sup>3</sup>/<sub>5</sub>40-□WO□□-01□



Refer to page 1-5-79 for dimensions with connector cable.