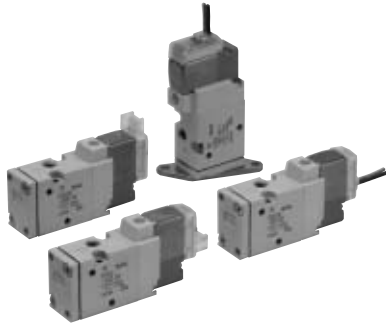
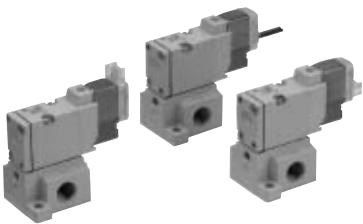


# 3 Port Pilot Operated Solenoid Valve Rubber Seal

## Series SYJ500



Body ported



Base mounted

### Specifications

Fluid		Air
Operating pressure range MPa	Internal pilot	0.15 to 0.7
Ambient and fluid temperature (°C)		-10 to 50 (No freezing. Refer to page 4-18-4.)
Response time ms (at 0.5 MPa) <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		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 8374-1981. (Coil temperature: 20°C, at rated voltage, without surge voltage suppressor.)

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

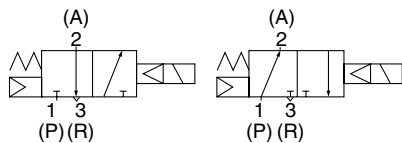
Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve and armature when pilot signal is ON and OFF. (Value in the initial state)

### JIS Symbol

Internal pilot

SYJ51<sub>2</sub><sup>2</sup>

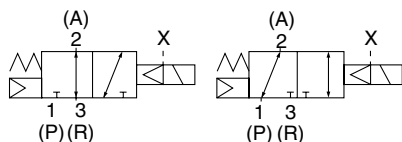
SYJ52<sub>2</sub><sup>2</sup>



External pilot

SYJ51<sub>2</sub><sup>2</sup>R

SYJ52<sub>2</sub><sup>2</sup>R



### Solenoid Specifications

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



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

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




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

# 3 Port Pilot Operated Solenoid Valve Rubber Seal Series SYJ500

## Flow Characteristics/Weight

Valve model		Type of actuation	Port size	Flow 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	SYJ512	N.C.	M5 x 0.8	0.53	0.45	0.14	0.47	0.39	0.12	46	47	68	51
	SYJ522	N.O.		0.66	0.45	0.18	0.66	0.45	0.18				
Base mounted (with sub-plate)	SYJ514	N.C.	1/8	1.2	0.41	0.32	1.1	0.46	0.32	60 (46)	61 (47)	82 (68)	65 (51)
	SYJ524	N.O.		1.3	0.37	0.33	1.2	0.48	0.34				

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

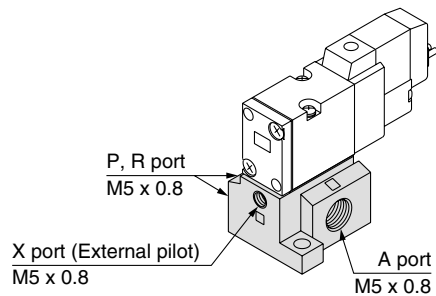
## External Pilot

### SYJ500R

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

### Specifications

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



Note 1) For manifold base, refer to page 4-4-24.

Note 2) External pilot type body ported valves (SYJ5□2R) can only be used on the manifold. For body ported models with the external pilot option, please refer to page 4-4-55.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

## How to Order

### Rated voltage

**DC**

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

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

**AC (50/60 Hz)**

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

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

### Light/Surge voltage suppressor

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

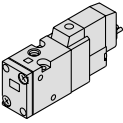
Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

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

### Electrical entry for D

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

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



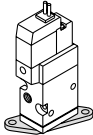
3 port  
(For manifold type 20, 21R)

### Type of actuation

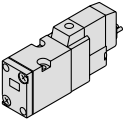
1	Normally closed
2	Normally open

### Bracket

Nil	Without bracket
F	With bracket



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



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

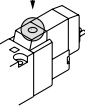
### Coil specifications

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

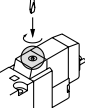
\* Power saving circuit is not available in the case of "D", "DO", "W□" type.

### Manual override

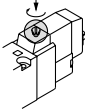
Nil: Non-locking push type



D: Push-turn locking slotted type

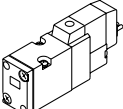
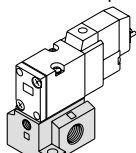


E: Push-turn locking lever type



### Port size

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

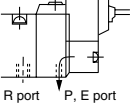
(With gasket and screws)

### Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

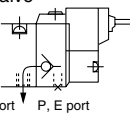
### Body option

Nil: Individual pilot exhaust type




R port    P, E port

M: Common exhaust for the pilot and main valve



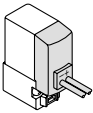
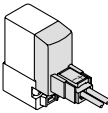
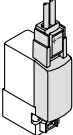
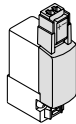
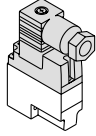

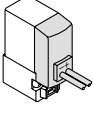
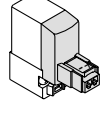
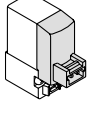
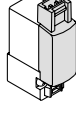

R port    P, E port

R: External pilot type\*



\* SYJ5□2R is only for manifold use.

### Electrical entry

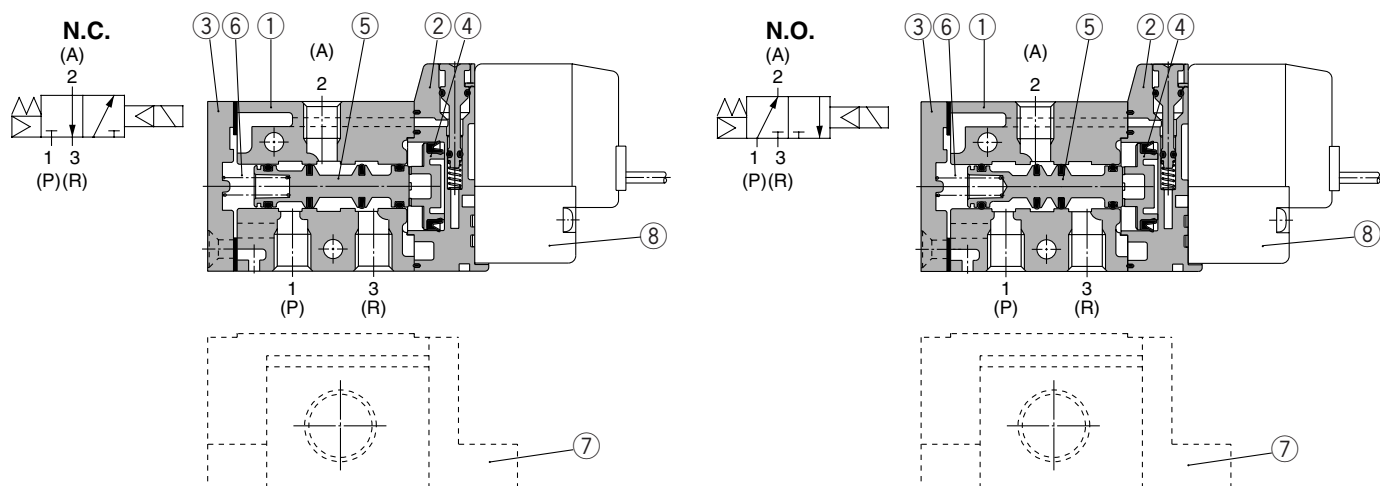
24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC				24, 12 VDC/100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector		DIN terminal	M8 connector
<b>G:</b> Lead wire length 300 mm 	<b>L:</b> With lead wire (Length 300 mm) 	<b>M:</b> With lead wire (Length 300 mm) 	<b>MN:</b> Without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

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

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

# 3 Port Pilot Operated Solenoid Valve Rubber Seal Series SYJ500

## Construction



### Component Parts

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

### Replacement Parts

No.	Description	Part no.	Note
⑦	Sub-plate	SYJ500-9-1	Zinc die-casted
⑧	Pilot valve	V111(T)-□□□□	—

### How to Order Pilot Valve Assembly

V111 □ — 5 G □

#### Coil specifications

<b>Nil</b>	Standard: DC specifications
<b>A</b>	Standard: AC specifications
<b>T</b>	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

<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-in to the rectifier circuit.  
\* For "R" and "U", DC voltage is only available.  
\* Power saving circuit is only available in the "Z" type.

#### Electrical entry

<b>G</b>	Grommet, 300 mm lead wire
<b>H</b>	Grommet, 600 mm lead wire
<b>L</b>	L plug connector
<b>LN</b>	L plug connector
<b>LO</b>	L plug connector
<b>M</b>	M plug connector
<b>MN</b>	M plug connector
<b>MO</b>	M plug connector
<b>WO</b>	M8 connector

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

V115 — 5 D □

#### Rated voltage

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

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

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

#### Light/Surge voltage suppressor

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

#### Electrical entry

<b>D</b>	DIN terminal
<b>DO</b>	DIN terminal

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

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

For DC: SY100-30-4A-□

For 100 VAC: SY100-30-1A-□

For 200 VAC: SY100-30-2A-□

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

Without lead wire: SY100-30-A

#### 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

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

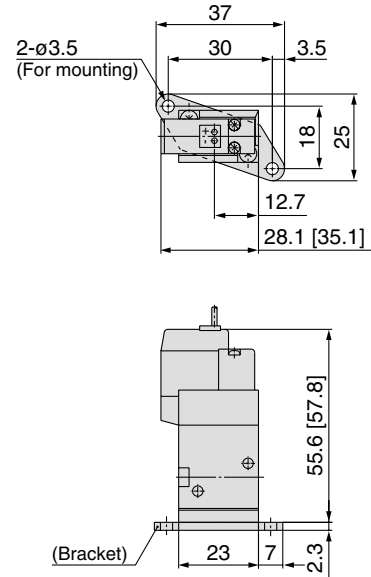
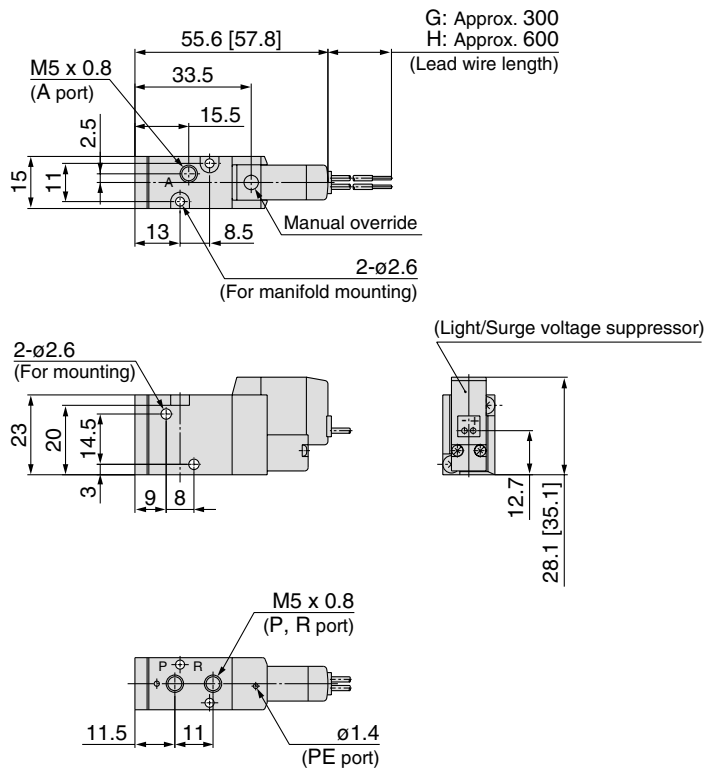
# Series SYJ500

## Body Ported



Grommet (G), (H): SYJ5□2-□<sup>G</sup>□□-M5

With bracket:  
SYJ5□2-□<sup>G</sup>□□-M5-F

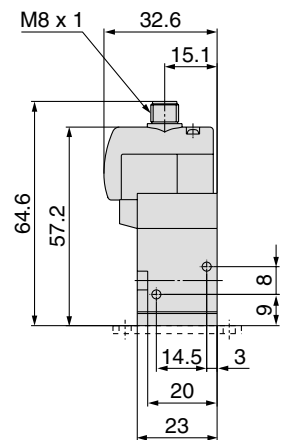
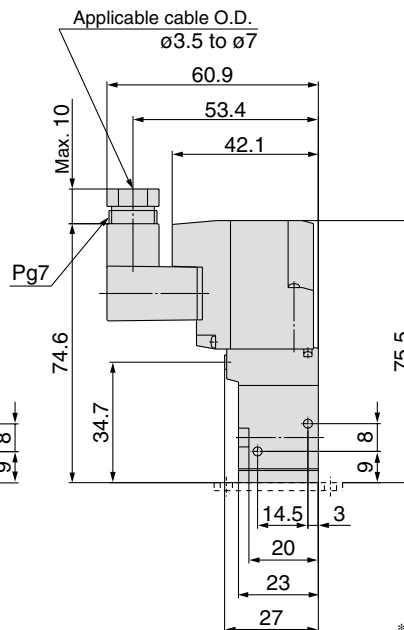
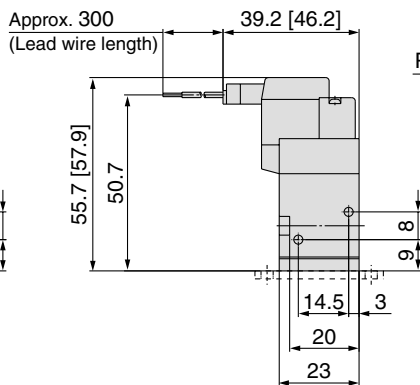
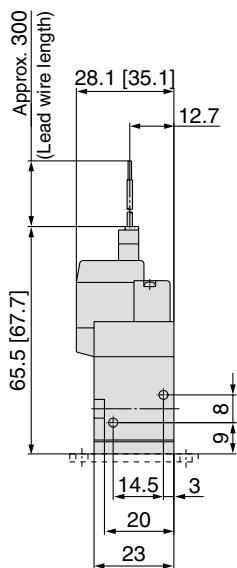


L plug connector (L):  
SYJ5□2-□L□□-M5 (-F)

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

DIN terminal (D):  
SYJ5□2-□D□□-M5 (-F)

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



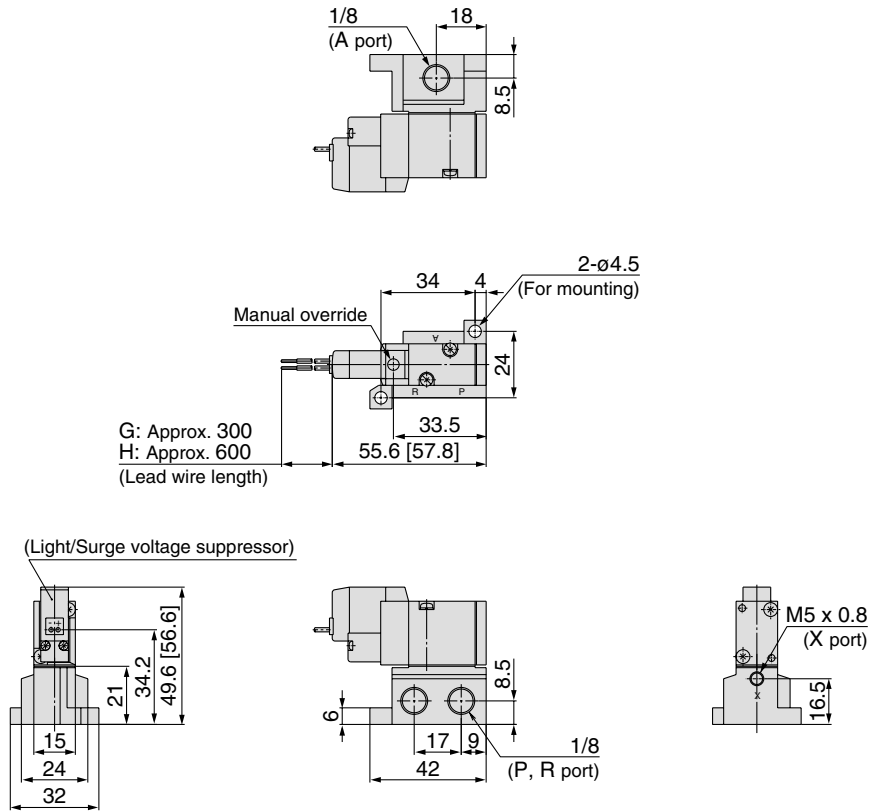
\* Refer page 4-4-61 for dimensions with connector cable.

# 3 Port Pilot Operated Solenoid Valve Rubber Seal Series SYJ500

## Base Mounted (With sub-plate)



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

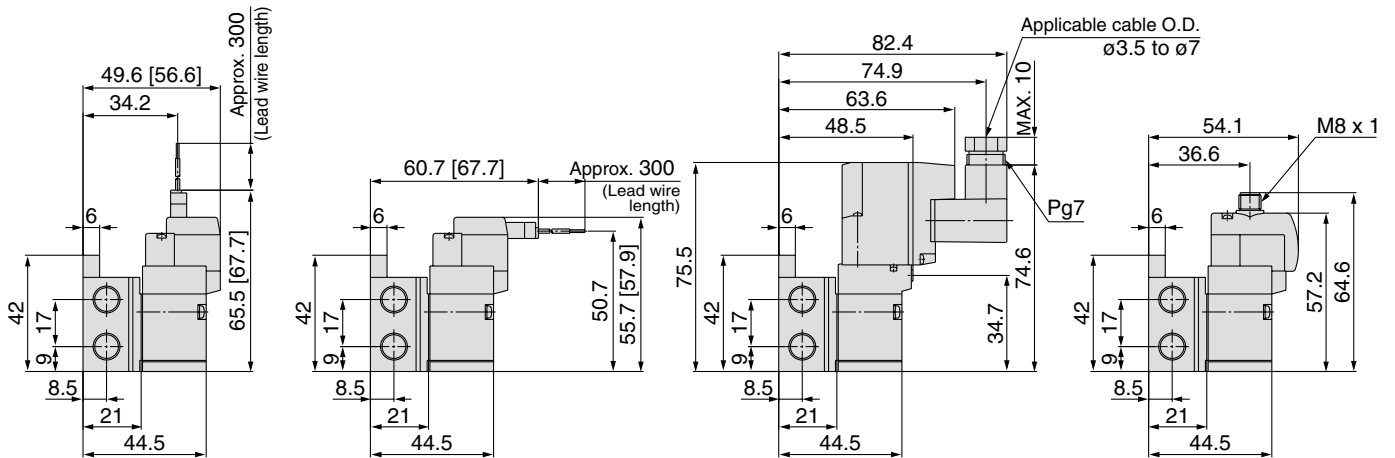


**L plug connector (L):**  
SYJ5□4-□L□□-01□

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

**DIN terminal (D):**  
SYJ5□4-□D□□-01□

**M8 connector (WO):**  
SYJ5□4-□WO□□-01□



\* Refe page 4-4-61 for dimensions with connector cable.

V100

SY

**SYJ**

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN