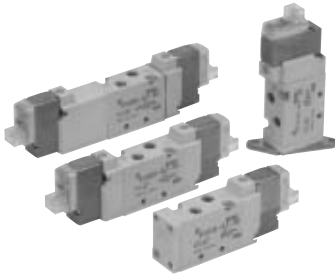


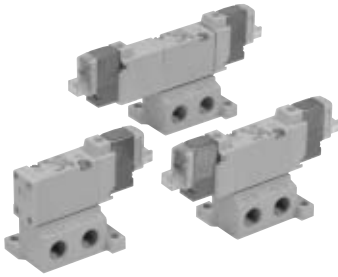
5 Port Solenoid Valve Rubber Seal

Series SYJ5000

Specifications



Body ported



Base mounted

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) (at 0.5 MPa)	2 position single, double	25 or less
	3 position	40 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 ²)	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)

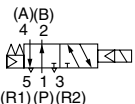
Note 2) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Value in the initial state)

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)

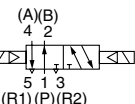
Solenoid Specifications

JIS Symbol

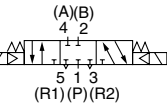
Body ported
2 position single



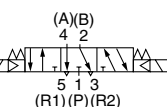
2 position double



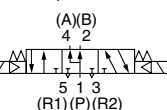
3 position closed center



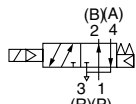
3 position exhaust center



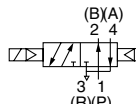
3 position pressure center



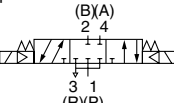
Base mounted (with sub-plate)
2 position single



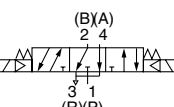
2 position double



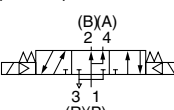
3 position closed center



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 With power saving circuit	
	AC	0.35 (With light: 0.4 (DIN terminal with indicator light: 0.45))	
Apparent power VA*	AC	100V	0.1 (With indicator light only)
		110V	1.4 (With indicator light: 1.5)
		[115V]	1.6 (With indicator light: 1.7)
		200V	[1.7 (With indicator light: 1.8)]
		220V	2.3 (With indicator light: 2.4)
[230V]	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.

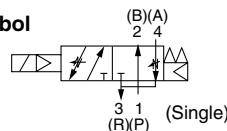
* For 115 VAC and 230 VAC, the allowable voltage is -15% to +5% of rated voltage.

Built-in Speed Controller

SYJ5□5□

- Built-in exhaust flow controls enable simple cylinder speed adjustments.
- When mounted on the manifold, the common exhaust discharges the pilot and main valve exhaust through a common EXH port to enable simple exhausting.

JIS Symbol

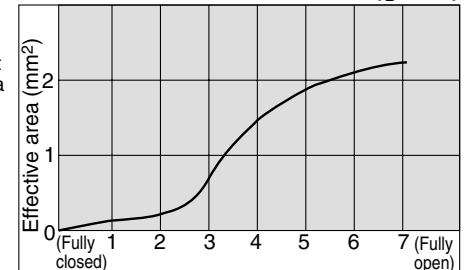


How to order valve with built-in speed controller

SYJ5□5□□□□□□□□□□□□□□

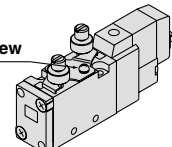
- Type of actuation
- Body option
- Rated voltage
- Lead wire
- Manual override
- Light/Surge voltage suppressor
- Port size

Throttle Valve Characteristics (A_B → R)



- When using SYJ5□53 model the speed controller must be opened more than 1 complete rotation from fully closed in order to function properly.
- Adjust the speed controller with a torque of 0.3 N·m or less.

Plate fixing screw



Note) Do not loosen plate fixing screw.



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 ^{Note 1)}						Weight (g) ^{Note 2, 3)}															
				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 ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv																
Body ported	SYJ5□20-□-M5	2 position	Single	M5 x 0.8	M5 x 0.8	0.47	0.41	0.13	0.47	0.41	0.13	46	47	68	51										
			Double													64	66	108	74						
		3 position	Closed center													0.49	0.44	0.13	0.44	0.40	0.12	75	77	119	85
			Exhaust center													0.46	0.37	0.12	0.47 [0.39]	0.43 [0.35]	0.13 [0.10]				
			Pressure center													0.49 [0.39]	0.51 [0.38]	0.14 [0.10]	0.45	0.42	0.12				
	SYJ5□20-□-C4	2 position	Single	M5 x 0.8	C4 (One-touch fitting for ø4)	0.69	0.39	0.18	0.44	0.39	0.12	53	54	75	58										
			Double													71	73	115	81						
		3 position	Closed center													0.69	0.40	0.19	0.43	0.40	0.12	82	84	126	72
			Exhaust center													0.56	0.40	0.15	0.41 [0.41]	0.37 [0.37]	0.10 [0.11]				
			Pressure center													0.57 [0.41]	0.4 [0.37]	0.15 [0.10]	0.41	0.37	0.10				
SYJ5□20-□-C6	2 position	Single	M5 x 0.8	C6 (One-touch fitting for ø6)	0.70	0.36	0.19	0.47	0.40	0.12	53	54	75	58											
		Double													71	73	115	81							
	3 position	Closed center													0.72	0.37	0.19	0.44	0.34	0.12	82	84	126	92	
		Exhaust center													0.67	0.54	0.19	0.41 [0.41]	0.38 [0.38]	0.11 [0.11]					
		Pressure center													0.82 [0.44]	0.41 [0.39]	0.23 [0.12]	0.41	0.36	0.11					
Base mounted	SYJ5□40-□-01	2 position	Single	1/8	1/8	0.79	0.21	0.19	0.83	0.32	0.21	80 (49)	81 (47)	102 (68)	51										
			Double													98 (64)	100 (66)	142 (108)	74						
		3 position	Closed center													0.80	0.28	0.18	0.86	0.34	0.20	109 (75)	111 (77)	153 (119)	85
			Exhaust center													0.71	0.26	0.18	1.1 [0.60]	0.24 [0.44]	0.26 [0.18]				
			Pressure center													0.99 [0.47]	0.29 [0.38]	0.24 [0.12]	0.72	0.38	0.18				

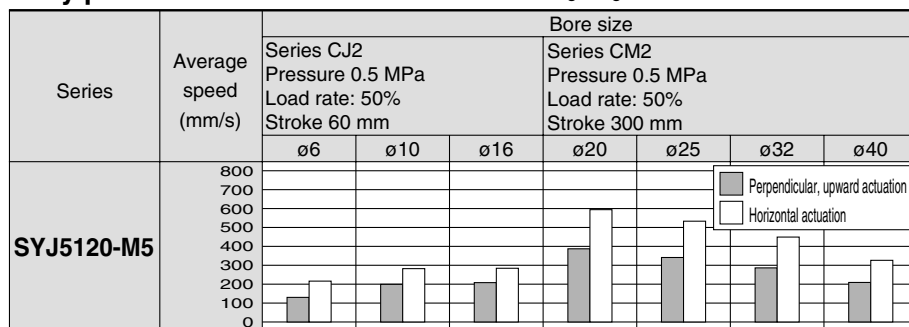
Note 1) []: Denotes normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2
 Note 2) (): Without sub-plate.
 Note 3) For DC voltages. For AC voltages add 3 g to the weight of the single solenoid and 6 g to the weight of the double solenoid and 3 position types.

SV
SZ
SY
SYJ
SX

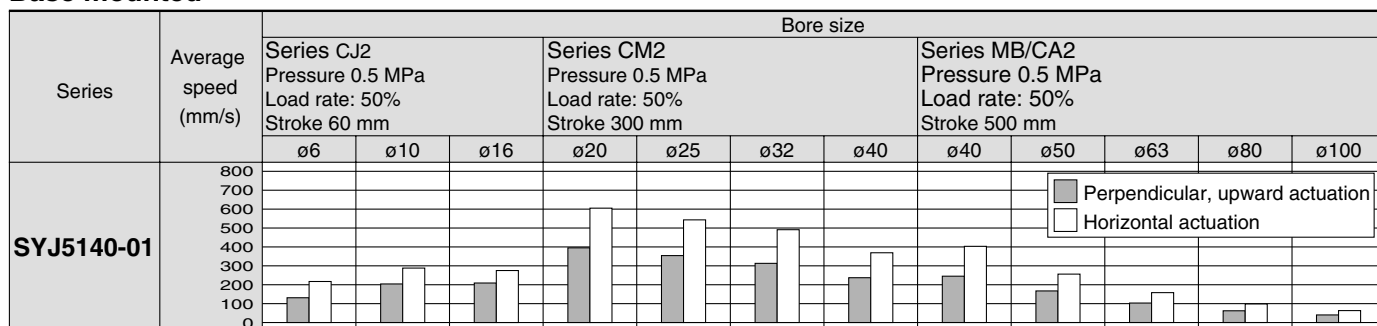
Cylinder Speed Chart

Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

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
SYJ5120-M5	Tubing bore x Length	ø4 x 1 m	ø6 x 1 m	ø8 x 1 m
	Speed controller	AS1301F-04	AS3301F-06	AS3301F-08
	Silencer	AN120-M5	AN110-01	

	Base mounted	Series CJ2	Series CM2	Series MB/CA2
SYJ5140-01	Tubing bore x Length	ø4 x 1 m	ø6 x 1 m	
	Speed controller	AS2301F-04	AS3001F-06	
	Silencer	AN101-01	AN101-01	

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)

- * "DOZ" is not available.
- * 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		

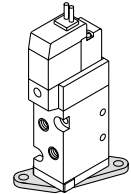
- * DC specifications of type "D" and "DO" is only available with 12 and 24 VDC.
- * For type "W□", DC voltage is only available.

A, B port size

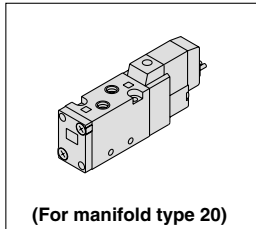
M5	M5 x 0.8
C4	One-touch fitting for Ø4
C6	One-touch fitting for Ø6
N3	One-touch fitting for Ø5/32"
N7	One-touch fitting for Ø1/4"

Bracket

Nil: Without bracket
F: With bracket



Note) The mounting bracket is supplied unattached.

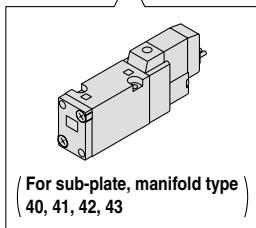


Body ported

SYJ5 1 2 0 □ 5 L □ □ M5 □

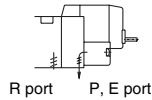
Base mounted

SYJ5 2 4 0 □ 5 L □ □ □ □

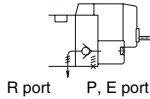


Body option

0: Pilot valve individual exhaust for the pilot valve



3: Common exhaust type for main and pilot valve



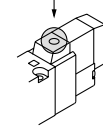
Coil specifications

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

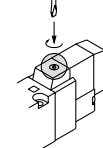
- * Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Manual override

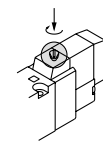
Nil: Non-locking push type



D: Push-turn locking slotted type



E: Push-turn locking lever type

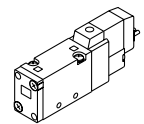


Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

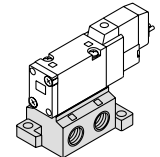
Port size

Nil: Without sub-plate



(With gasket and screws)

O1: 1/8 With sub-plate



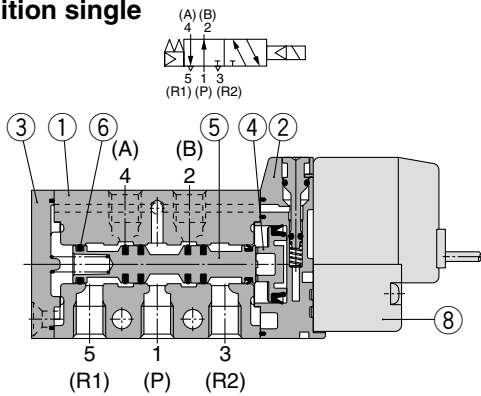
Electrical entry

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

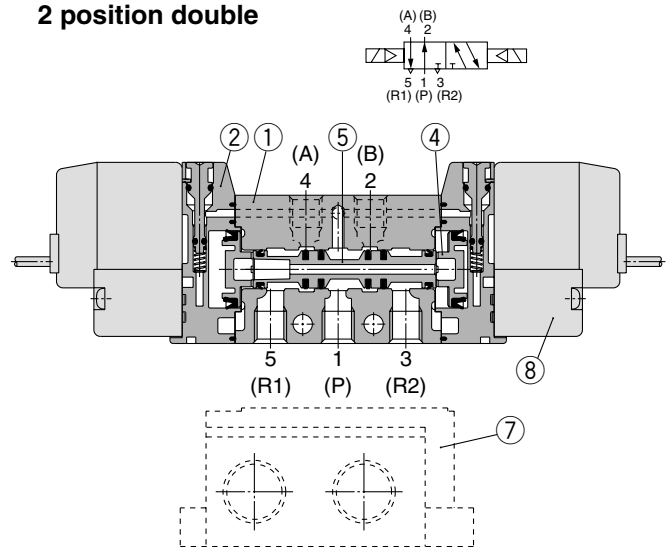
- * LN, MN type: with 2 sockets.
- * DIN terminal "Type Y" conforming to DIN43650C standard is also available. (For details, refer to catalog in page 1-5-73.)
- * For connector cable of M8 connector, refer to page 1-5-78.

Construction

2 position single

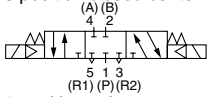


2 position double

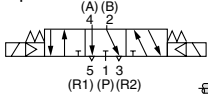


3 position closed center/exhaust center/pressure center

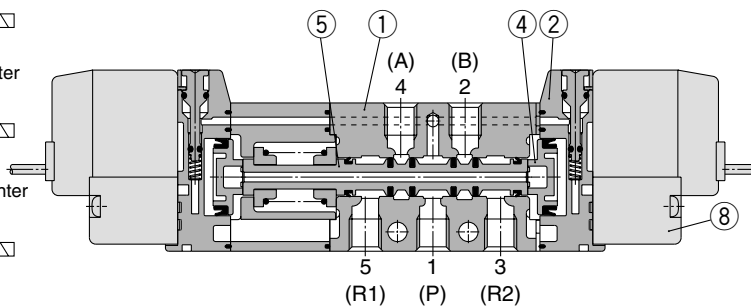
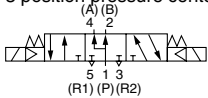
3 position closed center



3 position exhaust center



3 position pressure center



(This figure shows a closed center type.)

Component Parts

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

Replacement Parts

No.	Description	Part no.	Note
⑦	Sub-plate	SYJ5000-22-1	Aluminum die-casted
⑧	Pilot valve	V111(T)-□□□	—

SV

SZ

SY

SYJ

SX

Series SYJ5000

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		Without lead wire
LO		Without connector
M	M plug connector	With lead wire
MN		Without lead wire
MO		Without connector
WO	M8 connector Without connector cable	

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

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

V115 — 5 D

Rated voltage

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

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

Light/Surge voltage suppressor

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

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

Electrical entry

D	DIN terminal	With connector
DO	terminal	Without connector

Note) Do not replace SV111 (G, H, L, M, W) to SV115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

How to Order M8 Connector Cable

V100-49-1-

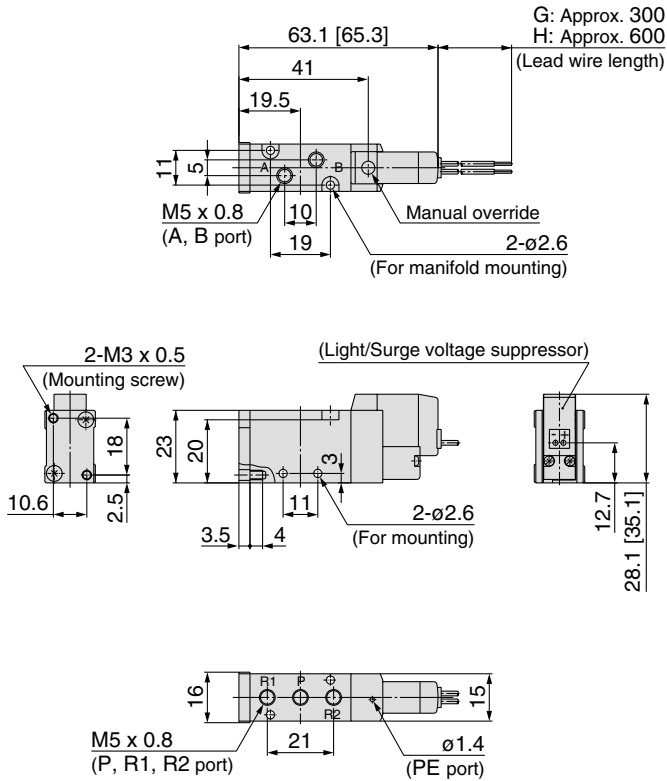
Cable length

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

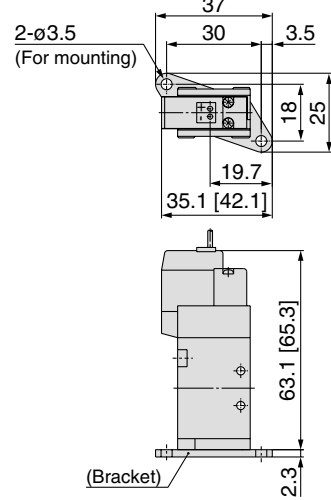


2 Position Single

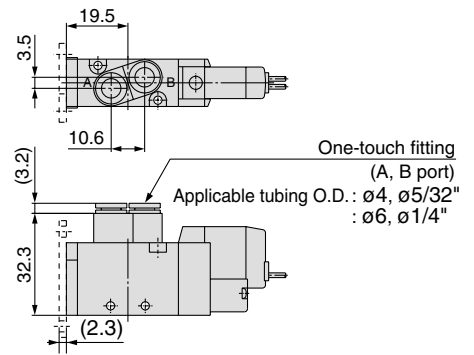
Grommet (G), (H): SYJ5120-□^G_H□□-M5



**With bracket
SYJ5120-□^G_H□□-M5-F**



**Built-in One-touch fitting:
SYJ5120-□^G_H□□-C₄, N₃
C₆, N₇ (-F)**

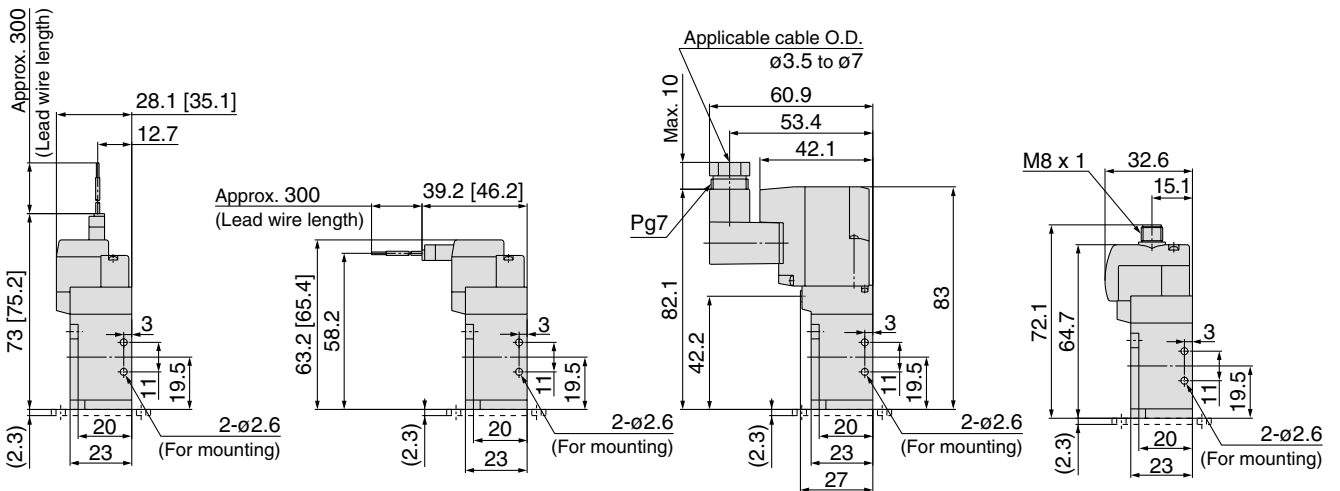


**L plug connector (L):
SYJ5120-□L□□-M5(-F)**

**M plug connector (M):
SYJ5120-□M□□-M5(-F)**

**DIN terminal (D):
SYJ5120-□D□□-M5(-F)**

**M8 connector (WO):
SYJ5120-□WO□□-M5(-F)**



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

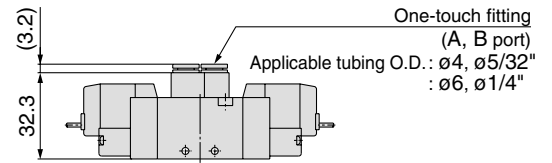
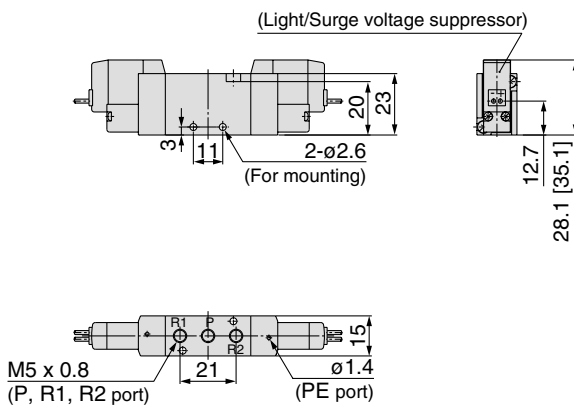
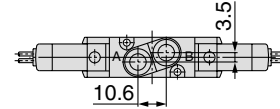
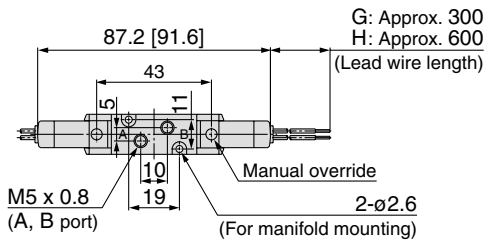
Series SYJ5000

2 Position Double



Grommet (G), (H): SYJ5220-□^G_H□□-M5

Built-in One-touch fitting:
SYJ5220-□^G_H□□-^{C4, N3}_{C6, N7}

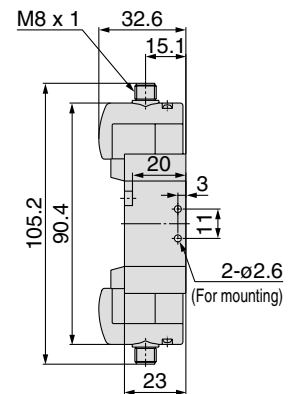
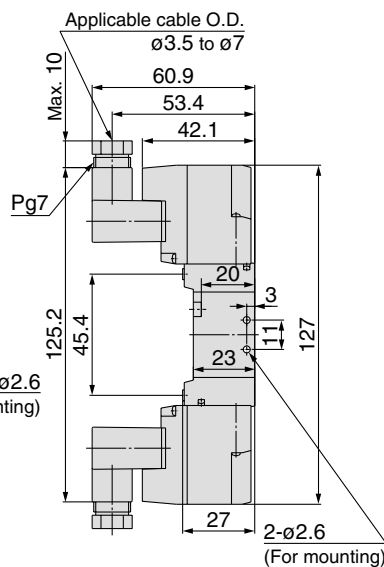
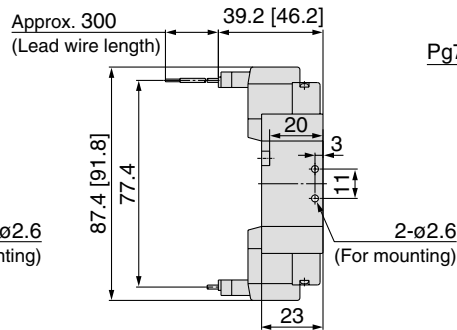
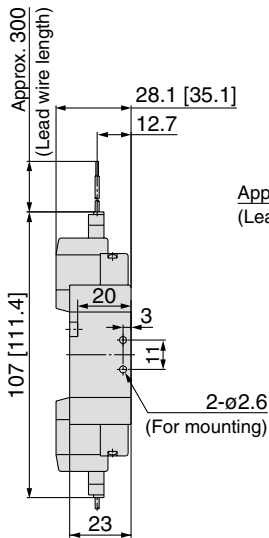


L plug connector (L):
SYJ5220-□L□□-M5

M plug connector (M):
SYJ5220-□M□□-M5

DIN terminal (D):
SYJ5220-□D□□-M5

M8 connector (WO):
SYJ5220-□WO□□-M5



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

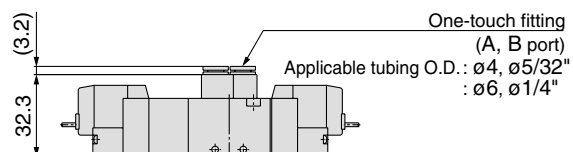
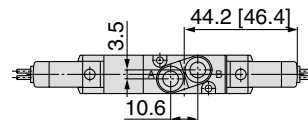
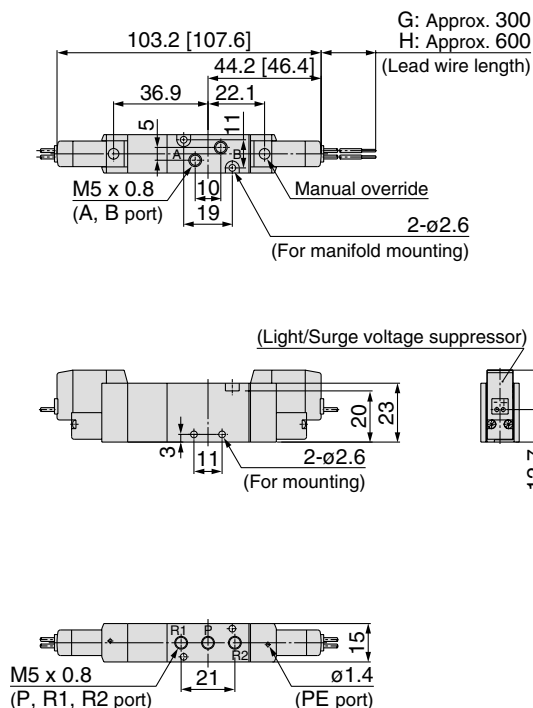
3 Position Closed Center/Exhaust Center/Pressure Center



Grommet (G), (H): SYJ5³/₄20-□^G□□-M5

Built-in One-touch fitting:

SYJ5³/₄20-□^G□□-C4, N3
C6, N7



SV

SZ

SY

SYJ

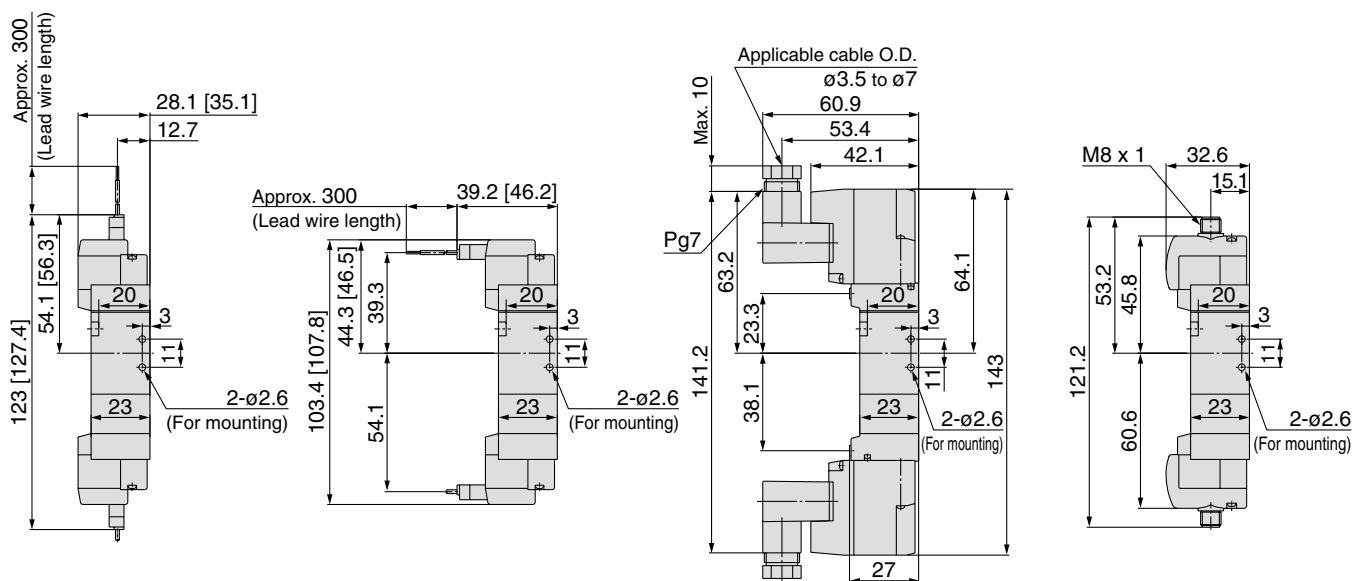
SX

L plug connector (L):
SYJ5³/₄20-□L□□-M5

M plug connector (M):
SYJ5³/₄20-□M□□-M5

DIN terminal (D):
SYJ5³/₄20-□D□□-M5

M8 connector (WO):
SYJ5³/₄20-□WO□□-M5



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

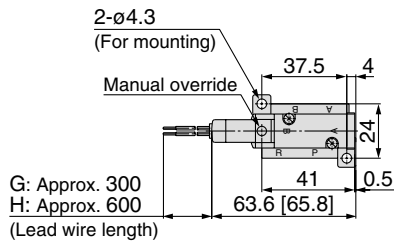
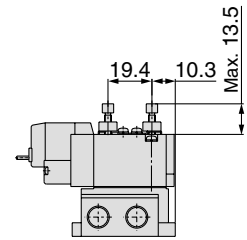
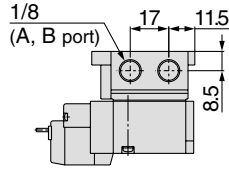
Series SYJ5000

2 Position Single

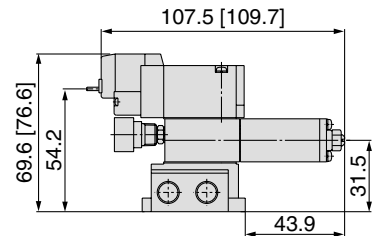


Grommet (G), (H): SYJ5140-□_H□□-01□

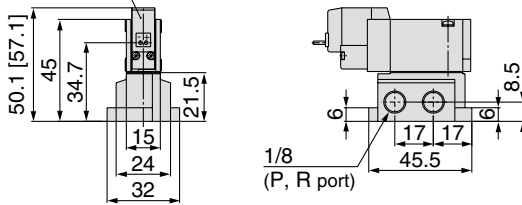
Built-in speed controller:
SYJ5150-□_H□□-01□



With interface regulator



(Light/Surge voltage suppressor)

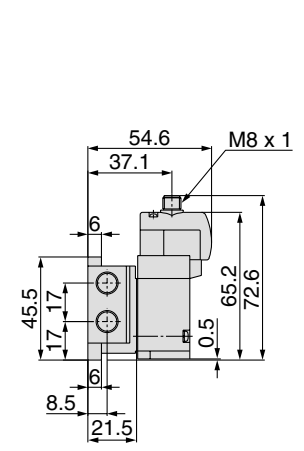
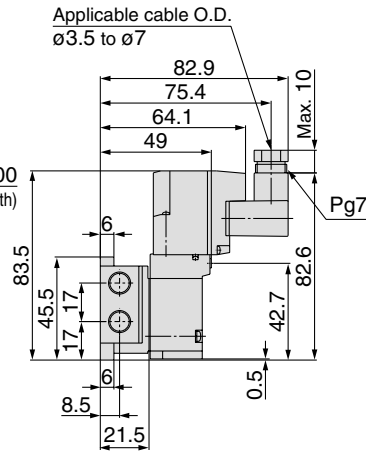
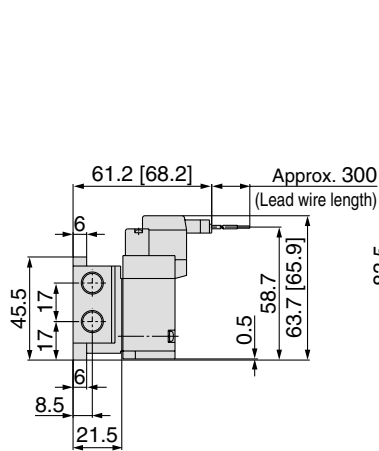
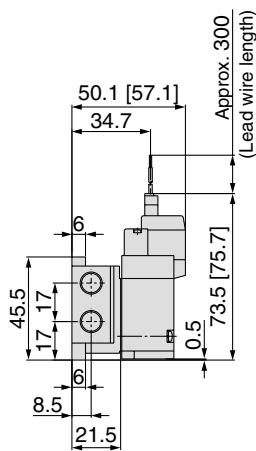


L plug connector (L):
SYJ5140-□L□□-01□

M plug connector (M):
SYJ5140-□M□□-01□

DIN terminal (D):
SYJ5140-□D□□-01□

M8 connector (WO):
SYJ5140-□WO□□-01□



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

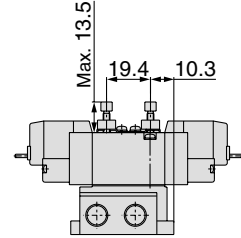
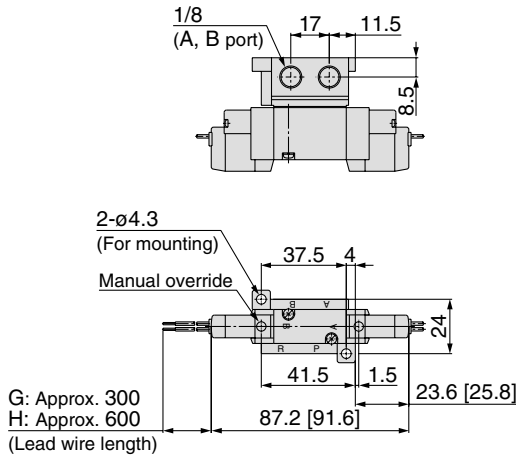
5 Port Solenoid Valve Rubber Seal Series SYJ5000

2 Position Double

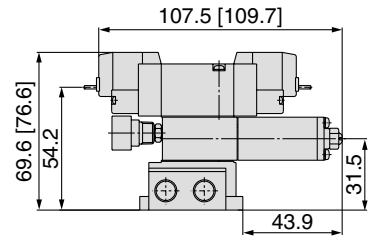


Grommet (G), (H): SYJ5240-□^G□□-01□

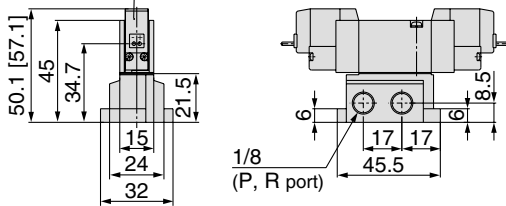
Built-in speed controller:
SYJ5250-□^G□□-01□



With interface regulator



(Light/Surge voltage suppressor)

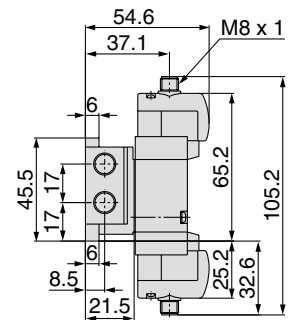
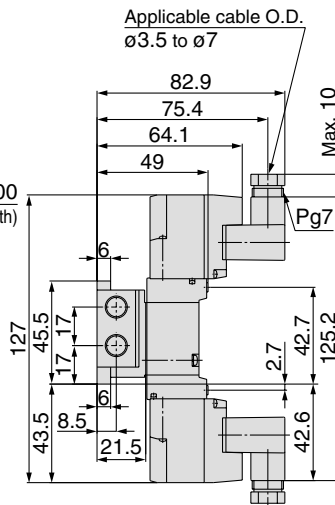
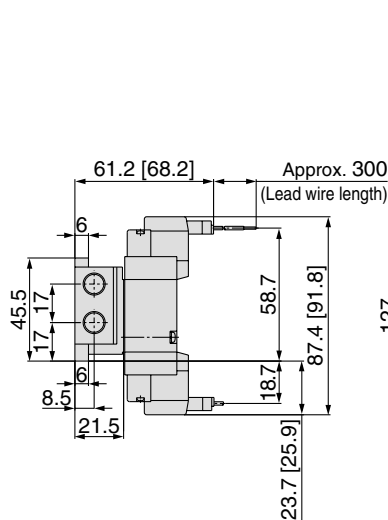
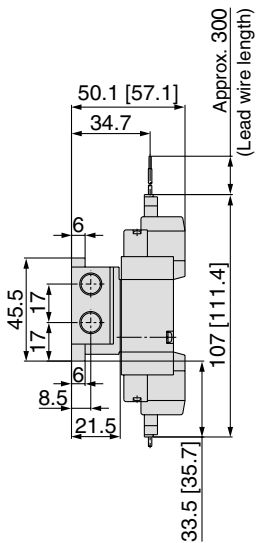


L plug connector (L):
SYJ5240-□L□□-01□

M plug connector (M):
SYJ5240-□M□□-01□

DIN terminal (D):
SYJ5240-□D□□-01□

M8 connector (WO):
SYJ5240-□WO□□-01□



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

SV

SZ

SY

SYJ

SX

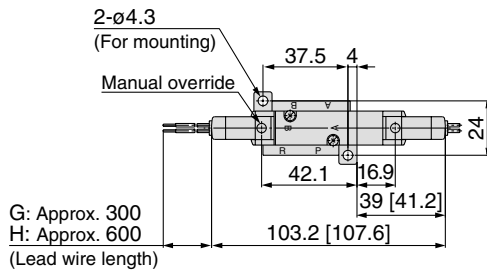
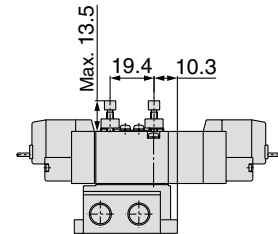
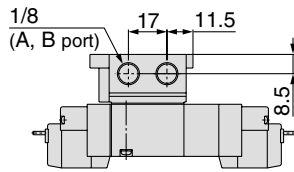
Series SYJ5000

3 Position Closed Center/Exhaust Center/Pressure Center

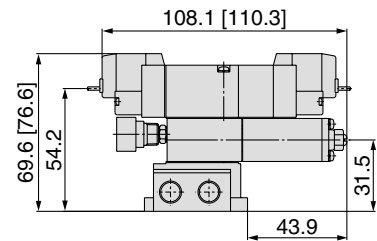


Grommet (G), (H): SYJ5³/₄40-□^G_H□□-01□

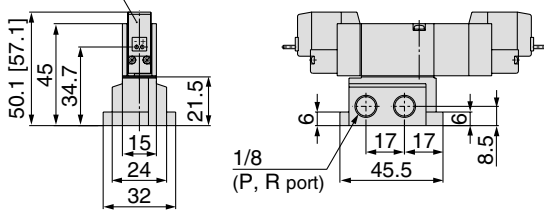
Built-in speed controller:
SYJ5³/₄50-□^G_H□□-01□



With interface regulator



(Light/Surge voltage suppressor)

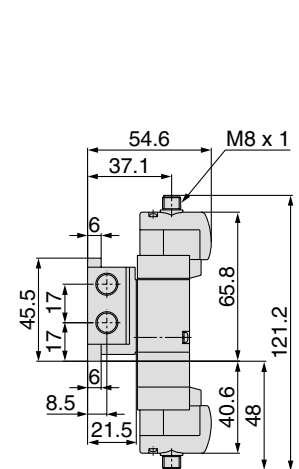
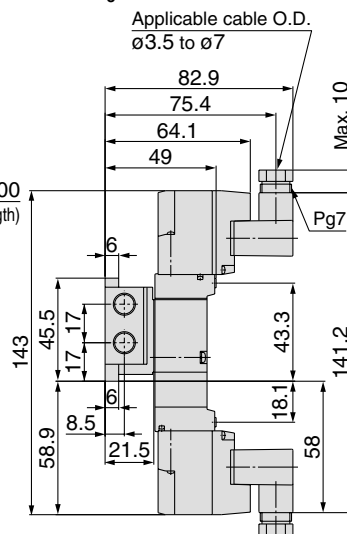
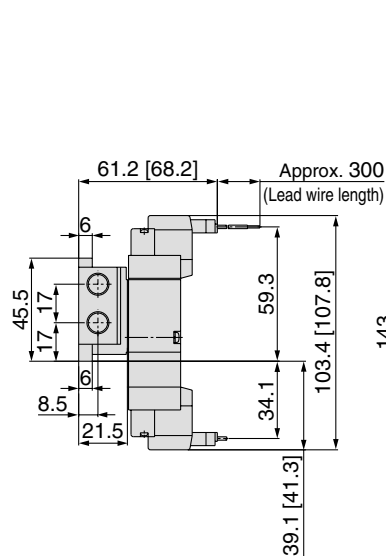
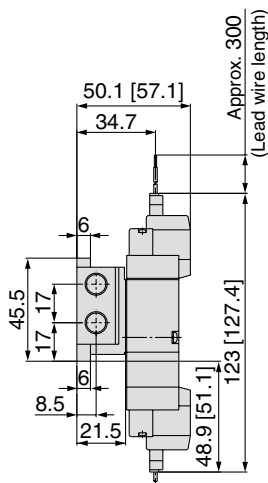


L plug connector (L):
SYJ5³/₄40-□L□□-01□

M plug connector (M):
SYJ5³/₄40-□M□□-01□

DIN terminal (D):
SYJ5³/₄40-□D□□-01□

M8 connector (WO):
SYJ5³/₄40-□WO□□-01□



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