

# 5 Port Solenoid Valve Series SY

SV

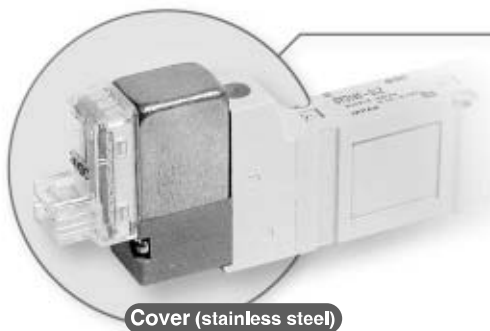
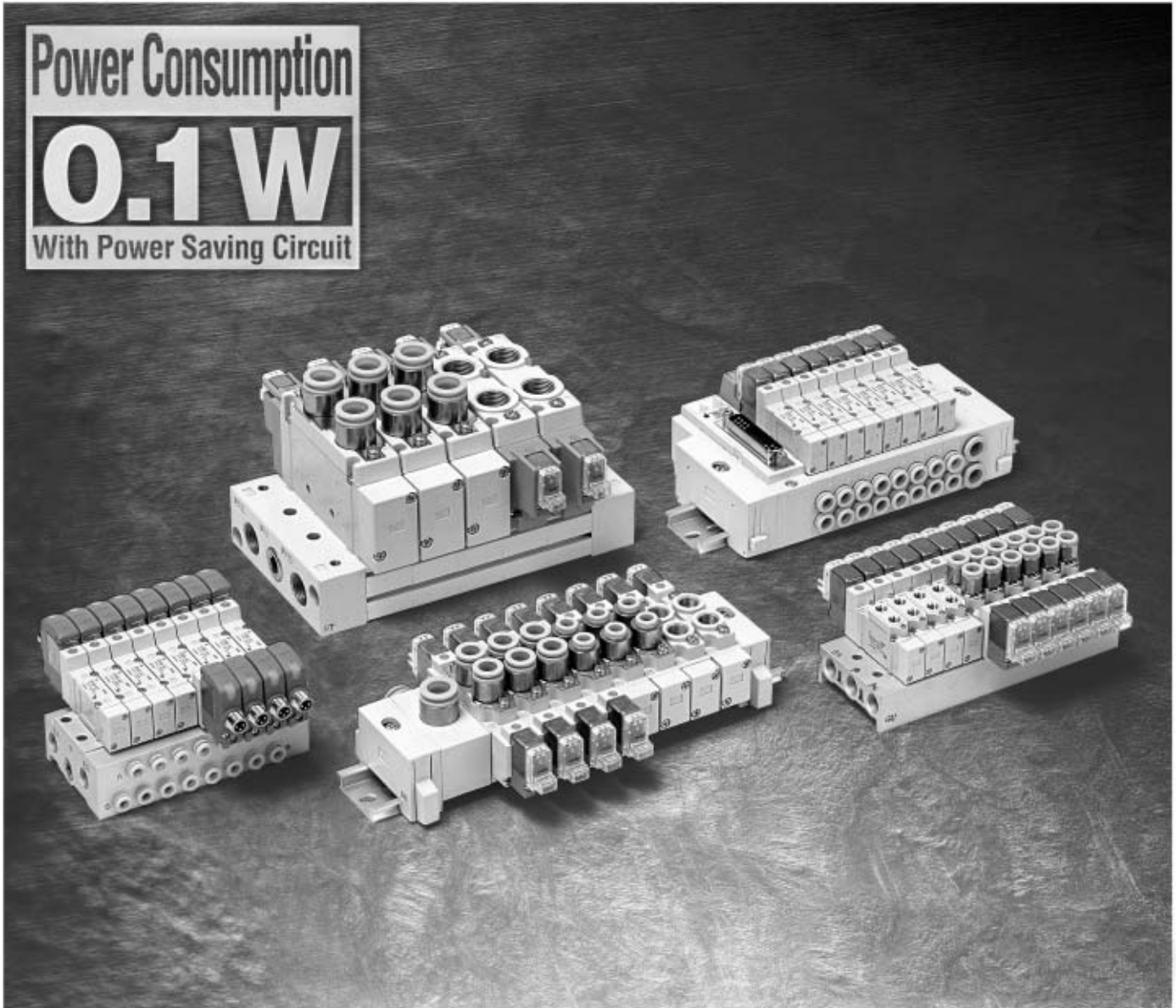
SZ

**SY**

SYJ

SX

Power Consumption  
**0.1 W**  
With Power Saving Circuit



Cover (stainless steel)

## Improved pilot valve

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

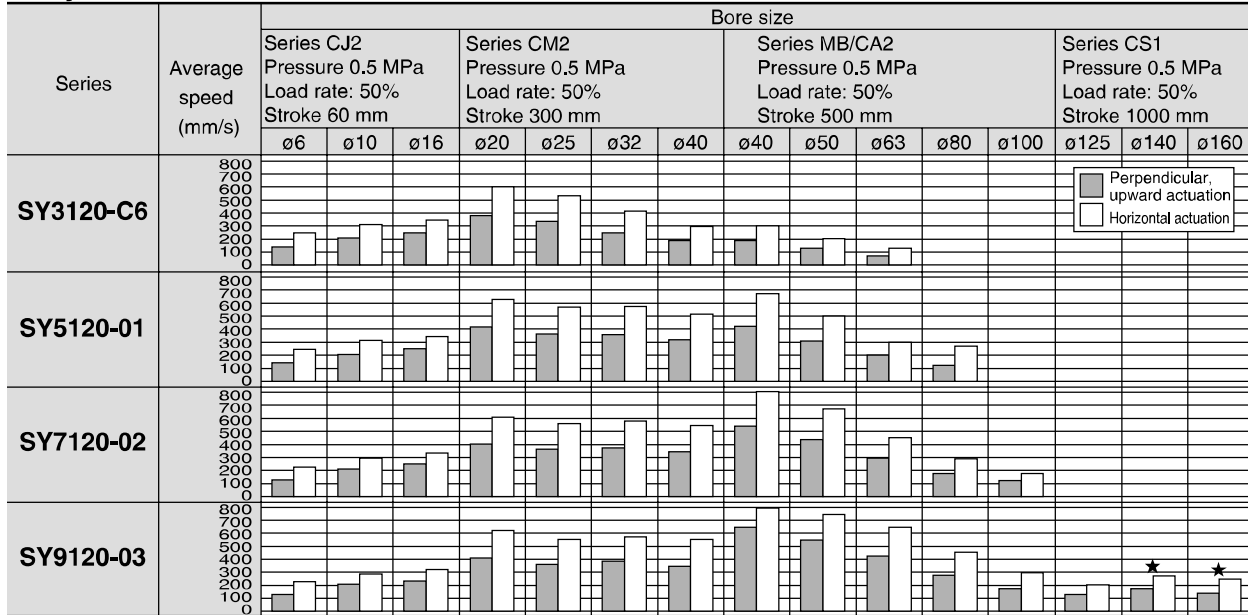
## Flow Characteristics

Series	Flow characteristics		
	C [dm <sup>3</sup> /(s·bar)]	b	Cv
SY3000	1.1	0.28	0.29
SY5000	2.8	0.37	0.90
SY7000	4.5	0.28	1.4
SY9000	10	0.29	2.5

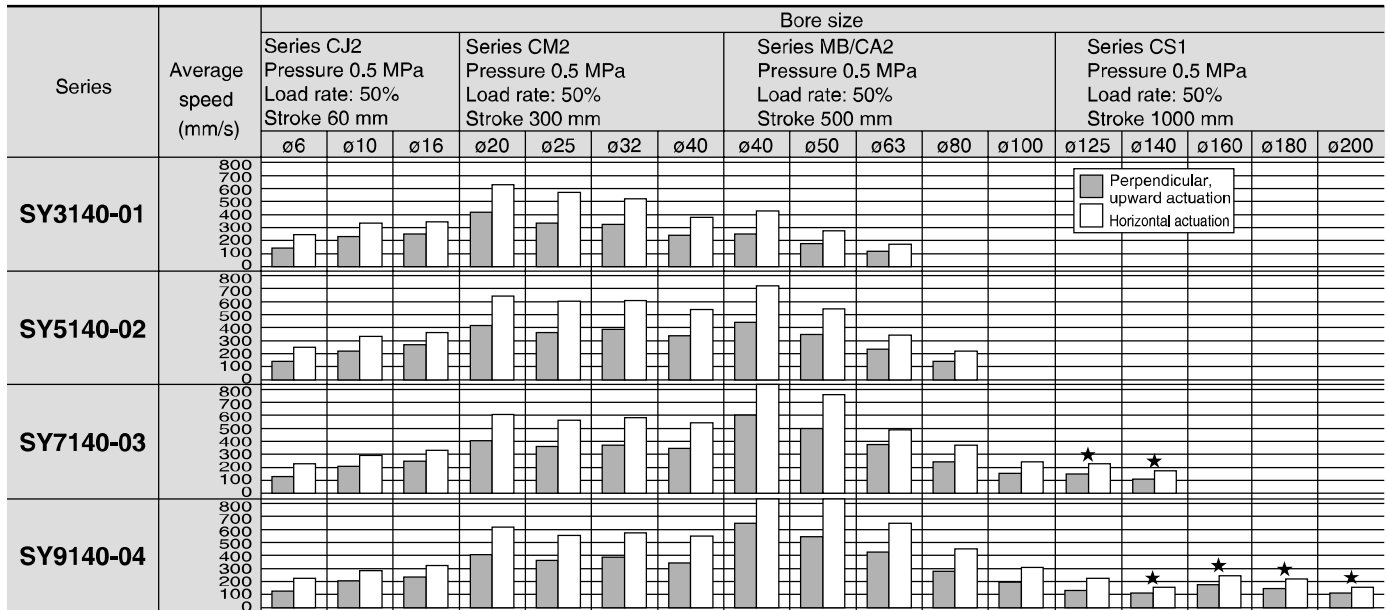
# Cylinder Speed Chart

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%  
 \* The histograms with ★ marked are the case when piping is done by using steel.

## Conditions

Body ported	Series CJ2	Series CM2	Series MB/CA2	Series CS1
SY3120-C6	Tubing bore x Length Speed controller Silencer	T0604 x 1 m AS2051F-06 AN120-M5		—
SY5120-01	Tubing bore x Length Speed controller Silencer	T0604 x 1 m AS3001F-06	T0806 x 1 m AS3001F-08	—
SY7120-02	Tubing bore x Length Speed controller Silencer	T0604 x 1 m AS3001F-06	T1075 x 1 m AS4001F-10	—
SY9120-03	Tubing bore x Length Speed controller Silencer	T0604 x 1 m AS3001F-06	T1075 x 1 m AS4001F-10	T1209 x 1 m AS4001F-12

## Conditions [When using SGP (steel pipe)]

Body ported	Series CS1
SY9120-03	SGP10A x 1 m AS420-03 AN200-02

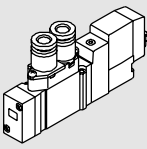
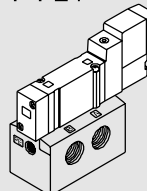
## Conditions

Base mounted	Series CJ2	Series CM2	Series MB/CA2	Series CS1
SY3140-01	Tubing bore x Length Speed controller Silencer	T0604 x 1 m AS3001F-06 AN110-01		—
SY5140-02	Tubing bore x Length Speed controller Silencer	T0604 x 1 m AS3001F-06	T0806 x 1 m AS3001F-08	—
SY7140-03	Tubing bore x Length Speed controller Silencer	T0604 x 1 m AS3001F-06	T1075 x 1 m AS4001F-10	T1209 x 1 m
SY9140-04	Tubing bore x Length Speed controller Silencer	T0604 x 1 m AS3001F-06	T1075 x 1 m AS4001F-10	T1209 x 1 m AS4001F-12

## Conditions [When using SGP (steel pipe)]


Base mounted	Series CS1
SY7140-03	SGP10A x 1 m AS420-03 AN300-03
SY9140-04	SGP15A x 1 m AS420-04 AN400-04

# Series Variations

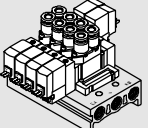
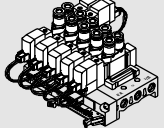
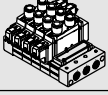
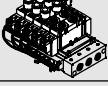
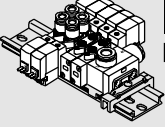


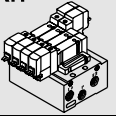
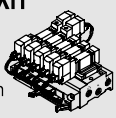


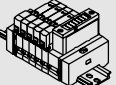


	Series	Sonic conductance C [dm <sup>3</sup> /(s·bar)]  { 4/2→5/3 (A/B→EA/EB)}	Type of actuation					Voltage		Electrical entry					Note 1) Light/Surge voltage suppressor
			2 position		3 position			DC 24 V 12 V 6 V 5 V 3 V	AC 100 V 50/60 Hz 110 V 50/60 Hz 200 V 50/60 Hz 220 V 50/60 Hz	Grommet	L plug connector	M plug connector	DIN terminal	M8 Connector	
			Single	Double	Closed center	Exhaust center	Pressure center								
<b>Body Ported</b>	P. 1-4-6 	SY3□20	0.65	●	●	●	●	●	●	●	●	—	●	●	
		SY5□20	2.4	●	●	●	●	●	●	●	●	●	●	●	
		SY7□20	3.3	●	●	●	●	●	●	●	●	●	●	●	
		SY9□20	8.6	●	●	●	●	●	●	●	●	●	●	●	
<b>Base Mounted</b>	P. 1-4-24 	SY3□40	1.1	●	●	●	●	●	●	●	●	—	●	●	
		SY5□40	2.8	●	●	●	●	●	●	●	●	●	●	●	
		SY7□40	4.5	●	●	●	●	●	●	●	●	●	●	●	
		SY9□40	10	●	●	●	●	●	●	●	●	●	●	●	

- SV
- SZ
- SY
- SYJ
- SX

	Series	Manual override			P, EA, EB port size					A, B port size							Valve option														
		Non-locking push type	Push-turn locking slotted type	Push-turn locking lever type	Bracket	M5	1/8	1/4	3/8	1/2	M5	1/8	1/4	3/8	1/2	One-touch fitting							Exhaust throttle	Oil resistant, Other than designated turbine oil.	Vacuum specifications	Low pressure specifications	External pilot	Enclosure IP65	Interface regulator		
																C4	C6	C8	C10	C12	N3	N7								N9	N11
<b>Body Ported</b>	SY3□20	●	●	●	●	●	—	—	—	●	—	—	—	—	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	SY5□20	●	●	●	●	—	●	—	—	—	●	—	—	—	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	
	SY7□20	●	●	●	●	—	●	●	—	—	—	●	—	—	—	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	
	SY9□20	●	●	●	—	—	—	●	—	—	—	●	●	—	—	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	
<b>Base Mounted</b>	SY3□40	●	●	●	—	—	●	—	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	SY5□40	●	●	●	—	—	●	—	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	SY7□40	●	●	●	—	—	●	●	—	—	—	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	SY9□40	●	●	●	—	—	—	●	●	—	—	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

 Note 1) All AC voltage models have built-in surge voltage suppressor.  
 Note 2) Body ported external pilot style (made to order) is not available for DIN terminal.  
 Note 3) Only available for DIN terminal and M8 connector.

# Manifold Variations

Manifold variations			Valve series	Wiring									
				5 port	Connection							Common specifications	
					Individual wiring	Flat ribbon cable (26 pins)	Flat ribbon cable (20 pins) connector box	Plug-in type D-sub connector (25 pins)	Plug-in type flat ribbon cable (26, 20, 10 pins)	Plug-in type terminal block (9, 18 pins)	PC wiring system	Serial transmission unit	Positive common
Body Ported	<b>Bar stock type Individual wiring</b> ■ Direct piping to the main unit of a valve. Combination of different fittings is possible. 	Type <b>20</b> P.1-4-42	SY3 □ 20	●	—	—	—	—	—	—	—	—	—
			SY5 □ 20	—	●	—	—	—	—	—	—	—	—
			SY7 □ 20	—	—	—	—	—	—	—	—	—	—
	<b>Bar stock type Flat ribbon cable</b> ■ A 26 pins MIL connector permits One-touch wiring of external cables in a bundle. 	Type <b>20P</b> P.1-4-52	SY3 □ 20	—	●	—	—	—	—	—	—	●	—
			SY5 □ 20	—	—	—	—	—	—	—	—	—	—
		SY7 □ 20	—	—	—	—	—	—	—	—	—	—	
Base Mounted	<b>Stacking type Individual wiring</b> ■ Manifold stations can be increased. 	Type <b>23</b> P.1-4-43	SY9 □ 20	●	—	—	—	—	—	—	—	—	
		<b>Stacking type Flat ribbon cable</b> ■ Manifold stations can be increased. 	Type <b>23P</b> P.1-4-58	SY9 □ 20	—	●	—	—	—	—	—	—	●
					—	—	—	—	—	—	—	—	—
	<b>Cassette type Individual wiring</b> ■ Size and weight reduced by eliminating the manifold base 		Type <b>60</b> P.1-4-64	SY3 □ 60	●	—	—	—	—	—	—	—	—
			SY5 □ 60	●	—	—	—	—	—	—	—	—	
		SY7 □ 60	●	—	—	—	—	—	—	—	—		
Base Mounted	<b>Compact bar stock type Individual wiring</b> ■ The base mounting facilitates maintenance after valves are changed. 	Type <b>41</b> P.1-4-74	SY3 □ 40	●	—	—	—	—	—	—	—	—	
			SY5 □ 40	—	●	—	—	—	—	—	—	—	
	<b>Compact bar stock type Flat ribbon cable</b> ■ A 26 pins MIL connector permits one-touch wiring of external cables in a bundle. 	Type <b>41P</b> P.1-4-100	SY3 □ 40	—	●	—	—	—	—	—	—	●	
			SY5 □ 40	—	—	—	—	—	—	—	—	—	
	<b>Bar stock type/Common external EXH Individual wiring</b> ■ The base mounting facilitates maintenance after valves are changed. ■ Vacuum/low pressure combination system is possible. 	Type <b>42</b> P.1-4-74	SY3 □ 40	●	—	—	—	—	—	—	—	—	
			SY5 □ 40	—	●	—	—	—	—	—	—	—	
			SY7 □ 40	—	—	—	—	—	—	—	—	—	
	<b>Bar stock type/Common external EXH Flat ribbon cable</b> ■ A 26 pins MIL connector permits one-touch wiring of external cables in a bundle. ■ Vacuum/low pressure combination system is possible. 	Type <b>42P</b> P.1-4-100	SY3 □ 40	—	●	—	—	—	—	—	—	●	
			SY5 □ 40	—	—	—	—	—	—	—	—	—	
			SY7 □ 40	—	—	—	—	—	—	—	—	—	
	<b>Stacking type Individual wiring</b> ■ Manifold stations can be increased. 	Type <b>43</b> P.1-4-94	SY9 □ 40	●	—	—	—	—	—	—	—	—	
		<b>Stacking type Flat ribbon cable</b> ■ Manifold stations can be increased. 	Type <b>43P</b> P.1-4-108	SY9 □ 40	—	●	—	—	—	—	—	—	●
					—	—	—	—	—	—	—	—	—
	<b>Stacking type/DIN rail mounted Individual wiring</b> ■ Stations can be increased on the DIN rail. Integral mounting of other electric parts is possible, too. 		Type <b>45</b> P.1-4-120	SY3 □ 40	●	—	—	—	—	—	—	—	—
			SY5 □ 40	—	●	—	—	—	—	—	—	—	
<b>Stacking type/DIN rail mounted Connector box</b> ■ Stations can be increased on the DIN rail. The provided connector box permits one-touch connection of electric cables. 	Type <b>45<sup>A</sup><sub>NA</sub></b> P.1-4-132	SY3 □ 40	—	—	●	—	—	●	—	●	●		
		SY5 □ 40	—	—	—	●	—	—	●	—	—		
<b>Stacking type/DIN rail mounted Plug-in</b> ■ Stations can be increased on the DIN rail. ■ A variety of centralized wiring methods are possible. 	Type <b>45</b> P.1-4-140	SY3 □ 40	—	—	—	●	●	●	●	●	●		
		SY5 □ 40	—	—	—	—	●	●	●	●	●		

● Standard ● Option ▲ Made-to-order (Refer to page "Made to Order").

# Manifold Variations

Manifold option								A, B port size							Valve option																																
Blanking plate	Individual SUP spacer	Individual EXH spacer	SUP block disk	EXH block disk	Label for block disk	Silencer for One-touch fitting	Built-in silencer	M5	1/8	1/4	3/8	One-touch fitting								Mixed mounting <small>SY3000 SY5000</small>	Oil resistant (Other than designated turbine oil)	Vacuum specifications	Low pressure specifications	Different pressure	External pilot	Exhaust throttle	Bundle wiring	Mixed fitting sizes	IP65 enclosure	Interface regulator																	
												C4	C6	C8	C10	C12	N3	N7	N9												N11																
●	●	●	—	—	—	—	—	●	—	—	—	●	●	—	—	—	●	●	—	—	—	▲	—	—	●	—	—	—	—	—	—	—	●	—	—	—	—	—	—	—	—	●	—	—	—	—	—
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- SV
- SZ
- SY
- SYJ
- SX

(Note) When using DIN terminal or M8 connector.

There is no DIN terminal available for SY3000.



# Series SY3000/5000/7000/9000 Body Ported Valve Single Unit

## How to Order

**SY 5 1 20** **5 L** **01**

• **Bracket**

**Nil:** Without bracket  
**F1:** With foot bracket (2 position single only)  
**F2:** With side bracket

\* SY9000 has no bracket.

• **Series**

3	SY3000
5	SY5000
7	SY7000
9	SY9000

• **Type of actuation**

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

• **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" or "W□" type.

• **Rated voltage**

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

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

\* 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**

**Thread piping**

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
01	1/8	SY5000
02	1/4	SY7000
02	1/4	SY9000
03	3/8	

• **One-touch fitting (Metric size)**

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	SY7000
C8	One-touch fitting for ø8	
C10	One-touch fitting for ø10	SY9000
C8	One-touch fitting for ø8	
C10	One-touch fitting for ø10	
C12	One-touch fitting for ø12	

• **One-touch fitting (Inch size)**

Symbol	Port size	Applicable series
N3	One-touch fitting for ø 5/32"	SY3000
N7	One-touch fitting for ø 1/4"	
N3	One-touch fitting for ø 5/32"	SY5000
N7	One-touch fitting for ø 1/4"	
N9	One-touch fitting for ø 5/16"	SY7000
N9	One-touch fitting for ø 5/16"	
N11	One-touch fitting for ø 3/8"	SY9000
N9	One-touch fitting for ø 5/16"	
N11	One-touch fitting for ø 3/8"	

• **Electrical entry**

24, 12, 6, 5, 3 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) 	MN: Without lead wire 	DO: Without connector 
H: Lead wire length 600 mm 	LN: Without lead wire 	LO: Without connector 	MO: Without connector 	

• **24, 12, 6, 5, 3 VDC**

**M8 connector**

WO: Without connector cable

\* "LN", "MN" type: with 2 sockets.  
\* For DIN terminal of SY3000 series, refer to page 1-4-207.  
\* DIN terminal type "Y" conforming to DIN 43650C is available, too. For details, refer to page 1-4-201.  
\* For connector cable of M8 connector, refer to page 1-4-209.

• **Manual override**

<b>Nil:</b> Non-locking push type 	<b>D:</b> Push-turn locking slotted type 	<b>E:</b> Push-turn locking lever type 
---------------------------------------	--	--

• **Light/Surge voltage suppressor**

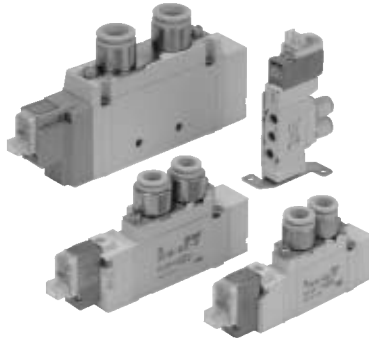
Electrical entry for G, H, L, M, W		Electrical entry for D	
Nil	Without light/surge voltage suppressor	Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor	S	With surge voltage suppressor
Z	With light/surge voltage suppressor	Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)		
U	With light/surge voltage suppressor (Non-polar type)		

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

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

Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to catalog on page 1-4-61.)

## Specifications



Series		SY3000	SY5000	SY7000	SY9000
Fluid		Air			
Internal pilot	2 position single	0.15 to 0.7			
Operating pressure range (MPa)	2 position double	0.1 to 0.7			
	3 position	0.2 to 0.7			
Ambient and fluid temperature (°C)		-10 to 50 (No freezing. Refer to page 1-7-5.)			
Max. operating frequency (Hz)	2 position single, double	10	5	5	5
	3 position	3	3	3	3
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type			
Pilot exhaust method		Common exhaust type for main and pilot valve			
Lubrication		Not required			
Mounting orientation		Unrestricted			
Impact/Vibration resistance (m/s <sup>2</sup> ) <sup>Note)</sup>		150/30			
Enclosure		Dustproof (* DIN terminal, M8 connector conforms to IP65)			



\* Based on IEC529)

Note) 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. (Values at the initial period)

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

SV

SZ

SY

SYJ

SX



**Made to Order Specifications**  
(For details, refer to pages 1-4-188 to 202.)

## Solenoid Specifications

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



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

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

## Response Time



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

### SY3000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	12 or less	15 or less	12 or less
2 position double	10 or less	13 or less	10 or less
3 position	15 or less	20 or less	16 or less

### SY7000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	31 or less	38 or less	33 or less
2 position double	27 or less	30 or less	28 or less
3 position	50 or less	56 or less	50 or less

### SY5000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	19 or less	26 or less	19 or less
2 position double	18 or less	22 or less	18 or less
3 position	32 or less	38 or less	32 or less

### SY9000

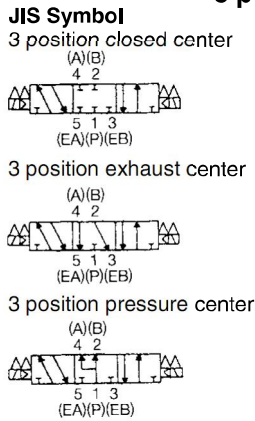
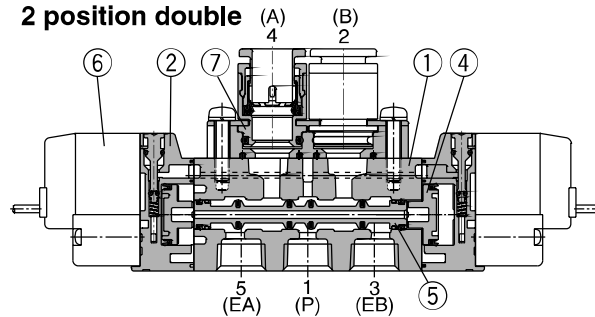
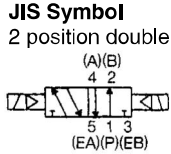
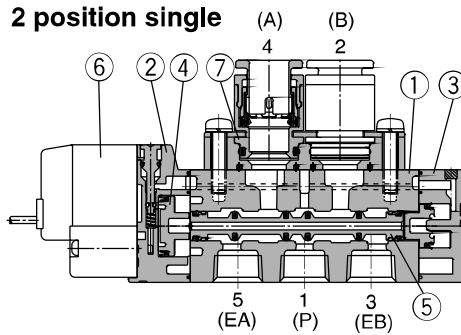
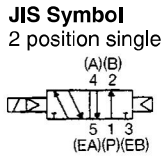
Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	35 or less	41 or less	35 or less
2 position double	35 or less	41 or less	35 or less
3 position	62 or less	64 or less	62 or less



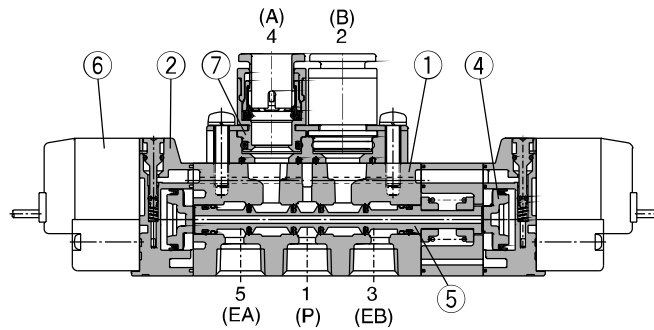


**Construction**

**Series SY**



**3 position closed center/exhaust center/pressure center**



(This figure shows a closed center type.)

**Component Parts**

No.	Description	Material	Note
①	Body	Aluminum die-casted (SY3000: Zinc die-casted)	White
②	Adapter plate	Resin	White (SY9000: Gray)
③	End plate	Resin	White
④	Piston	Resin	—
⑤	Spool valve assembly	Aluminum, HNBR	—

**Replacement Parts**

No.	Description	Part no.
⑥	Pilot valve assembly	Refer to "How to Order Pilot Valve Assembly" on page 1-4-10.
⑦	M5 port block assembly	Refer to "How to Order Port Block Assembly" on page 1-4-11.

**Bracket Assembly Part No.**

Description	part no.
Bracket (For F1)	SX <sup>3</sup> 000-16-2A (with mounting screw)
Bracket (For F2)	SX <sup>3</sup> 000-16-1A (with mounting screw)

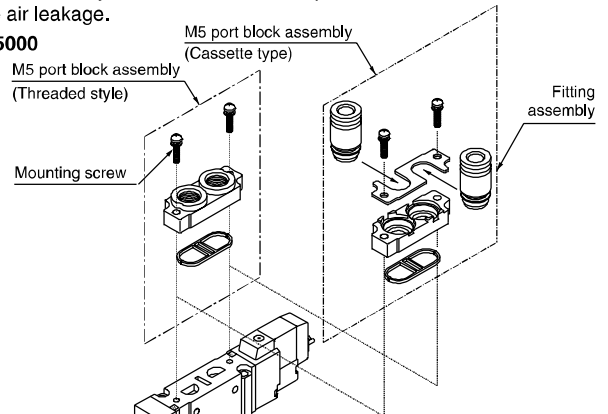
\* SY9000 has no bracket.

- SV
- SZ
- SY
- SYJ
- SX

**How to Change Port Block Assembly**

If using body port type, both A and B port sizes can be changed by replacing the port block assembly mounted on the body. When changing this block assembly, the correct screw torque must be achieved to avoid possible air leakage.

**For SY5000**



**Caution**

**Mounting screw tightening torques**

- SY3000 (M2): 0.12 N·m
- SY<sup>5</sup>000 (M3): 0.6 N·m
- SY9000 (M4): 1.4 N·m

\* Refer to "How to Order Port Block Assembly" on page 1-4-11 for part no.

## How to Order Pilot Valve Assembly

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

V111  —  5  G

### Coil specifications

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

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

### Rated voltage

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

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

### Light/Surge voltage suppressor

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

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

### Electrical entry

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

Note) For connector cable of M8 connector, refer to page 1-4-209.

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
30	3000 mm
50	5000 mm

## DIN terminal type

V115 —  5  D

### Rated voltage

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

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

### 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 V111 (G, H, L, M) to V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

## How to Order M8 Connector Cable

### Straight type

V100-49-1-

### Cable length

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

## How to Order Port Block Assembly

SY   000—6A—   

Series

3	SY3000
5	SY5000
7	SY7000
9	SY9000

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

A, B port size

Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
01	1/8	SY5000
02	1/4	SY7000
02	1/4	SY9000
03	3/8	

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	SY7000
C8	One-touch fitting for ø8	
C10	One-touch fitting for ø10	SY9000
C8	One-touch fitting for ø8	
C10	One-touch fitting for ø10	
C12	One-touch fitting for ø12	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø 5/32"	SY3000
N7	One-touch fitting for ø 1/4"	
N3	One-touch fitting for ø 5/32"	SY5000
N7	One-touch fitting for ø 1/4"	
N9	One-touch fitting for ø 5/16"	SY7000
N9	One-touch fitting for ø 5/16"	
N11	One-touch fitting for ø 3/8"	SY9000
N9	One-touch fitting for ø 5/16"	
N11	One-touch fitting for ø 3/8"	

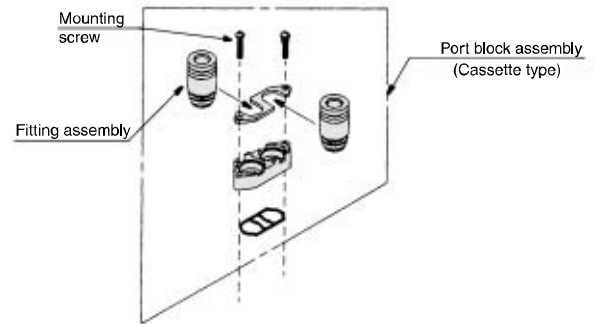
\* Only replacement of the fittings assembly is possible.

Metric size

SY3000	One-touch fitting for ø4	VVQ1000-50A-C4
	One-touch fitting for ø6	VVQ1000-50A-C6
SY5000	One-touch fitting for ø4	VVQ1000-51A-C4
	One-touch fitting for ø6	VVQ1000-51A-C6
	One-touch fitting for ø8	VVQ1000-51A-C8
SY7000	One-touch fitting for ø8	VVQ2000-51A-C8
	One-touch fitting for ø10	VVQ2000-51A-C10
SY9000	One-touch fitting for ø8	VVQ4000-50B-C8
	One-touch fitting for ø10	VVQ4000-50B-C10
	One-touch fitting for ø12	VVQ4000-50B-C12

Inch size

SY3000	One-touch fitting for ø 5/32"	VVQ1000-50A-N3
	One-touch fitting for ø 1/4"	VVQ1000-50A-N7
SY5000	One-touch fitting for ø 5/32"	VVQ1000-51A-N3
	One-touch fitting for ø 1/4"	VVQ1000-51A-N7
	One-touch fitting for ø 5/16"	VVQ1000-51A-N9
SY7000	One-touch fitting for ø 5/16"	VVQ2000-51A-N9
	One-touch fitting for ø 3/8"	VVQ2000-51A-N11
SY9000	One-touch fitting for ø 5/16"	VVQ4000-50B-N9
	One-touch fitting for ø 3/8"	VVQ4000-50B-N11



SV

SZ

**SY**

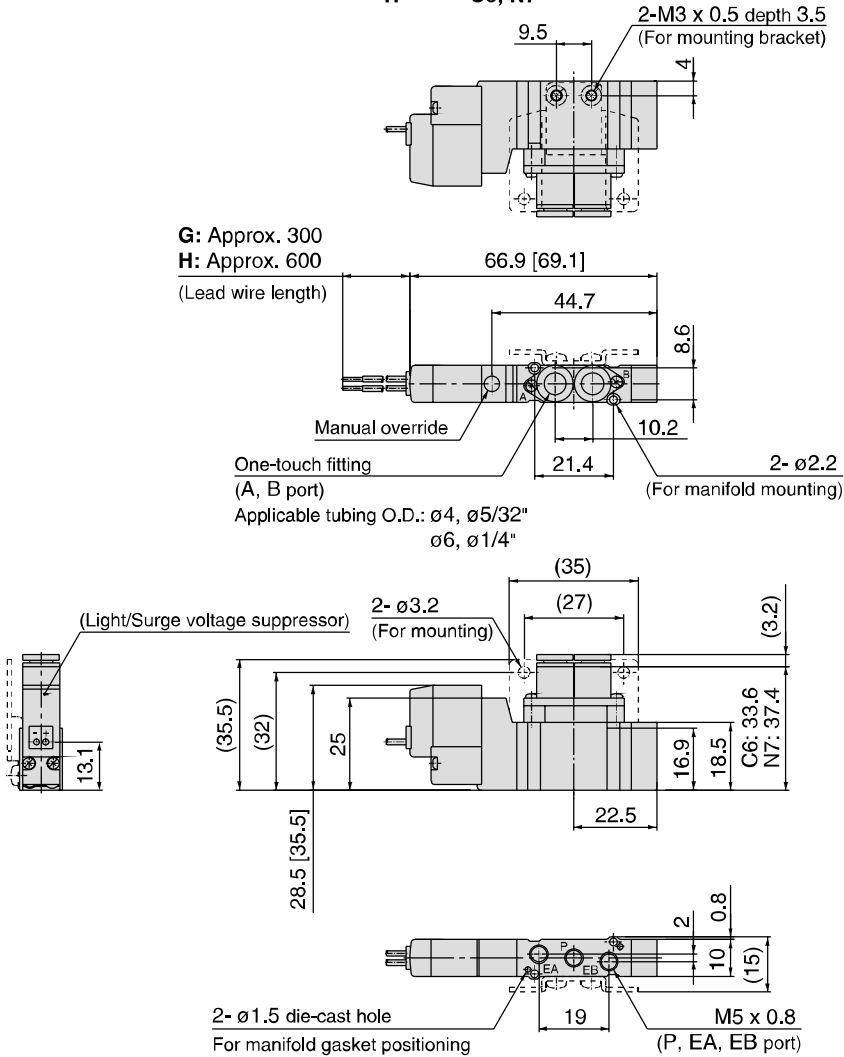
SYJ

SX

## Dimensions: Series SY3000

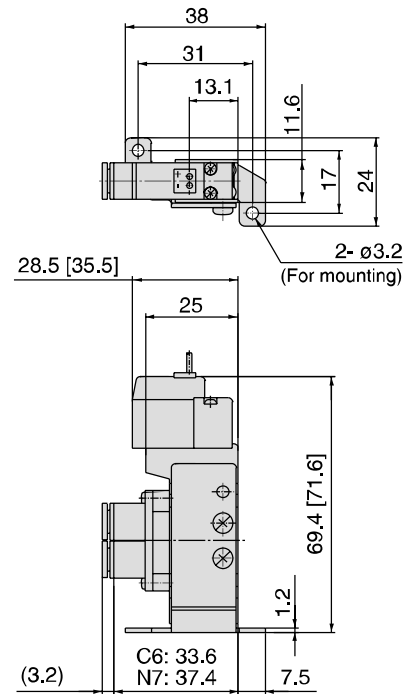
### 2 position single

Grommet (G), (H): SY3120-□<sup>G</sup>□□-C4, N3  
C6, N7(-F2)

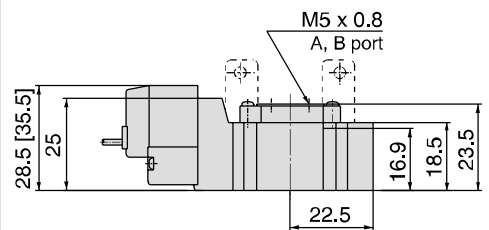


### Foot bracket

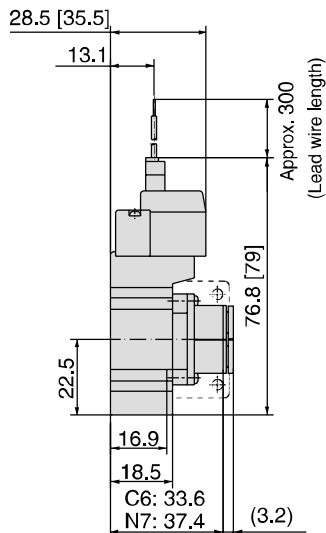
SY3120-□<sup>G</sup>□□-C4, N3  
C6, N7-F1



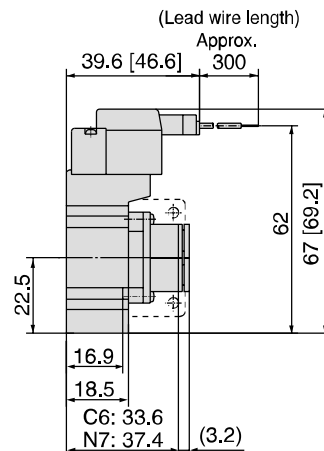
SY3120-□<sup>G</sup>□□-M5(-F2)



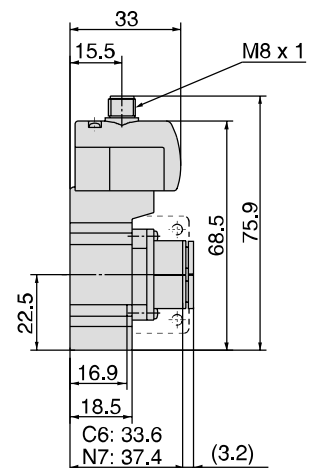
L plug connector (L):  
SY3120-□L□□-C4, N3  
C6, N7(-F2)



M plug connector (M):  
SY3120-□M□□-C4, N3  
C6, N7(-F1)



M8 connector (WO):  
SY3120-□WO□□-C4, N3  
C6, N7(-F1)



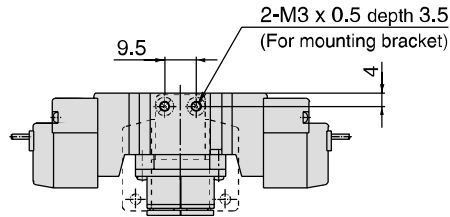
Note) Refer to page 1-4-210 for dimensions of connector types.



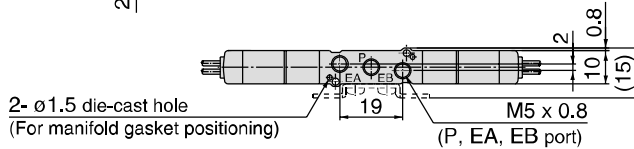
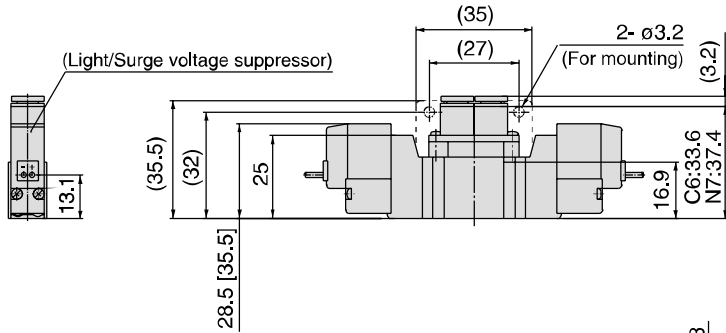
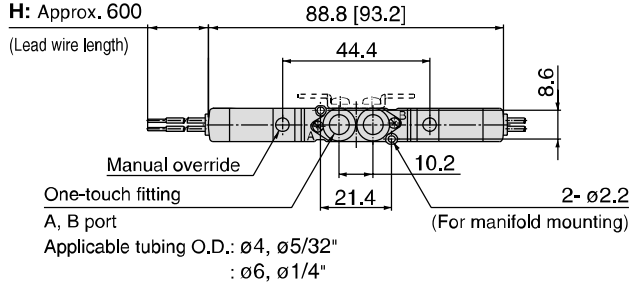
**Dimensions: Series SY3000**

2 position double

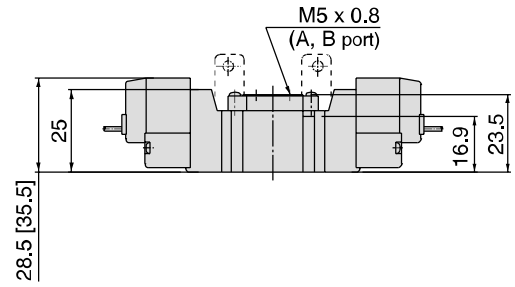
Grommet (G), (H): SY3220-□<sup>G</sup>□□-C<sub>4</sub>, N<sub>3</sub>  
C<sub>6</sub>, N<sub>7</sub>(-F<sub>2</sub>)



G: Approx. 300  
H: Approx. 600



SY3220-□<sup>G</sup>□□-M5(-F<sub>2</sub>)



SV

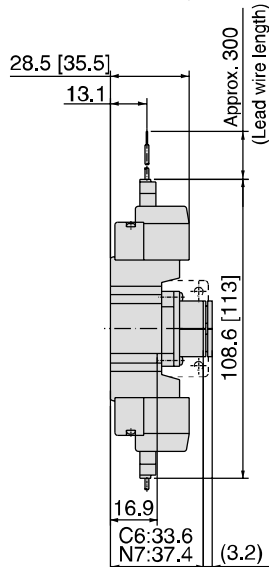
SZ

**SY**

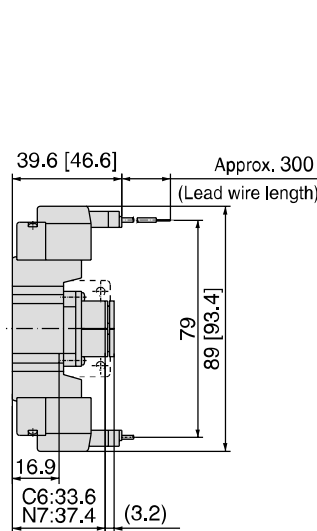
SYJ

SX

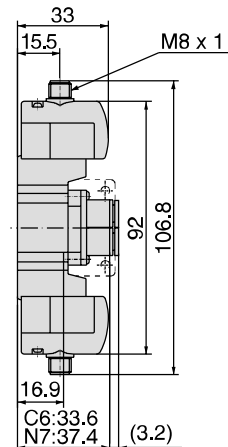
**L plug connector (L):**  
SY3220-□L□□-C<sub>4</sub>, N<sub>3</sub>  
C<sub>6</sub>, N<sub>7</sub>(-F<sub>1</sub>)



**M plug connector (M):**  
SY3220-□M□□-C<sub>4</sub>, N<sub>3</sub>  
C<sub>6</sub>, N<sub>7</sub>(-F<sub>1</sub>)



**M8 connector (WO):**  
SY3220-WO□□-C<sub>4</sub>, N<sub>3</sub>  
C<sub>6</sub>, N<sub>7</sub>(-F<sub>2</sub>)



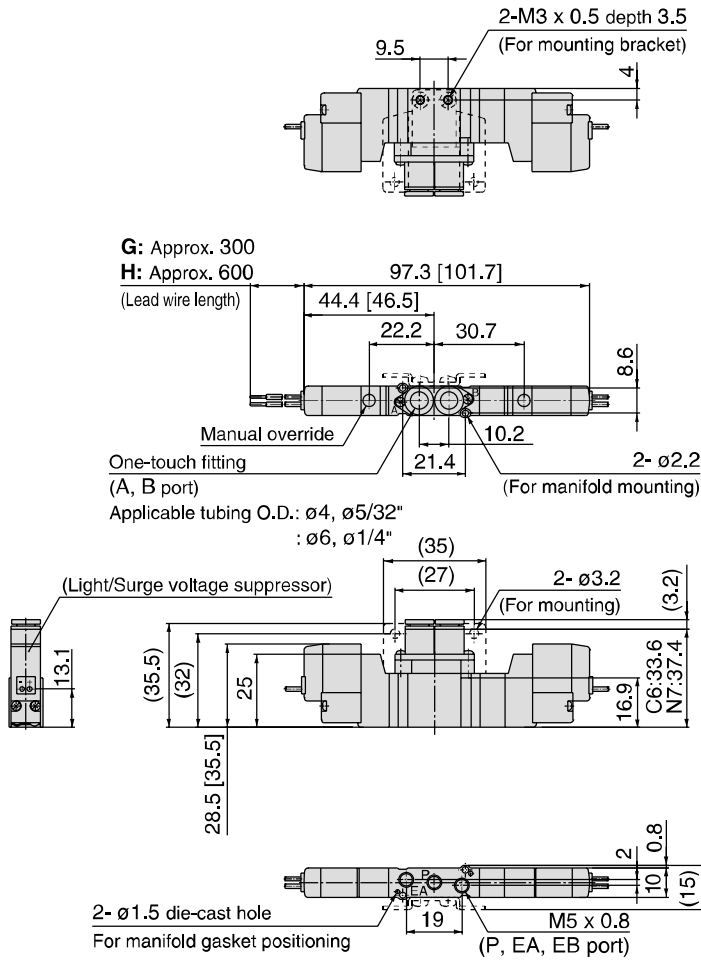
Note) Refer to page 1-4-210 for dimensions of connector types.



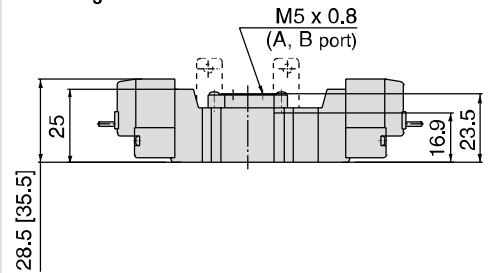
**Dimensions: Series SY3000**

3 position closed center/exhaust center/pressure center

Grommet (G), (H): SY3<sup>3</sup>/<sub>4</sub>20-□G□□-C<sub>4</sub>, N<sub>3</sub>/C<sub>6</sub>, N<sub>7</sub>(-F2)

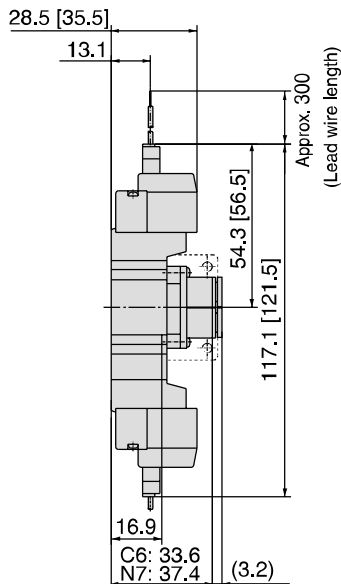


SY3<sup>3</sup>/<sub>4</sub>20-□H□□-M5(-F2)



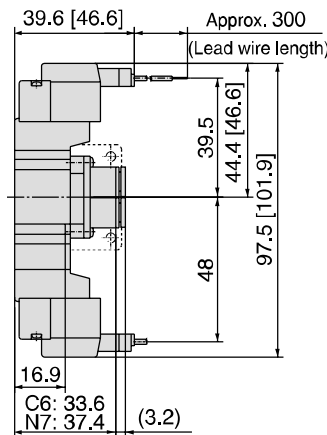
**L plug connector (L):**

SY3<sup>3</sup>/<sub>4</sub>20-□L□□-C<sub>4</sub>, N<sub>3</sub>/C<sub>6</sub>, N<sub>7</sub>(-F2)



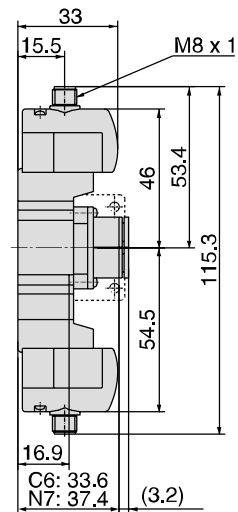
**M plug connector (M):**

SY3220-□M□□-C<sub>4</sub>, N<sub>3</sub>/C<sub>6</sub>, N<sub>7</sub>(-F2)



**M8 connector (WO):**

SY3<sup>3</sup>/<sub>4</sub>20-□WO□□-C<sub>4</sub>, N<sub>3</sub>/C<sub>6</sub>, N<sub>7</sub>(-F2)



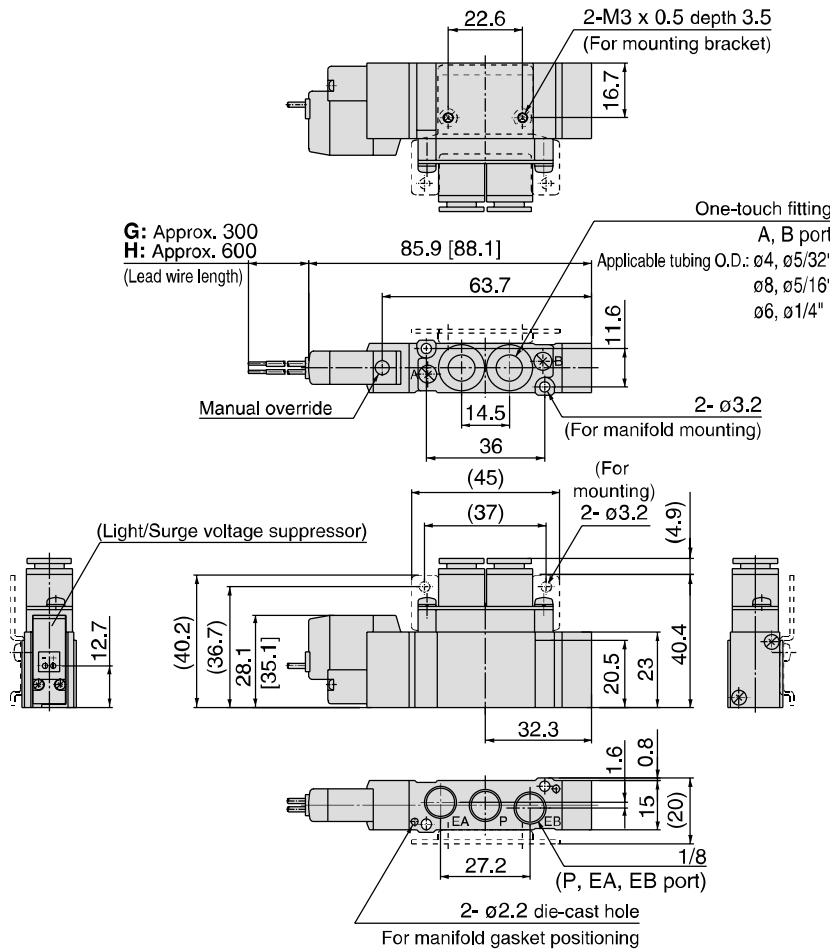
Note) Refer to page 1-4-210 for dimensions of connector types.



**Dimensions: Series SY5000**

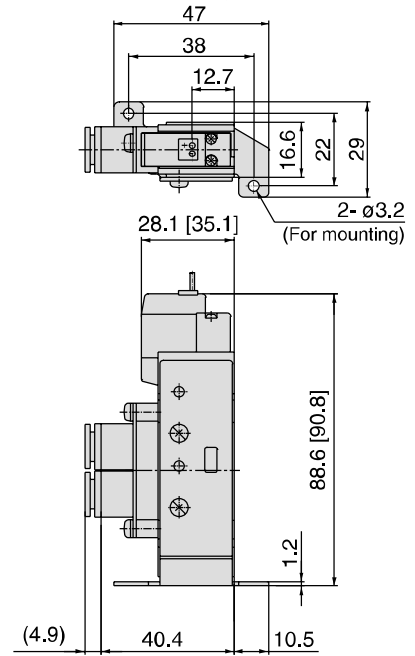
**2 position single**

Grommet (G), (H): SY5120-□<sup>G</sup>□□□-<sup>C4, N3</sup><sub>C6, N7</sub>□□(-F<sub>2</sub>)  
<sup>C8, N9</sup>



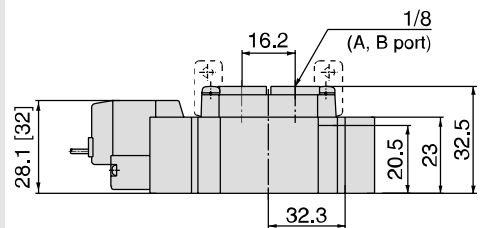
**Foot bracket**

SY5120-□<sup>G</sup>□□□-<sup>C4, N3</sup><sub>C6, N7</sub>□□(-F<sub>1</sub>)  
<sup>C8, N9</sup>



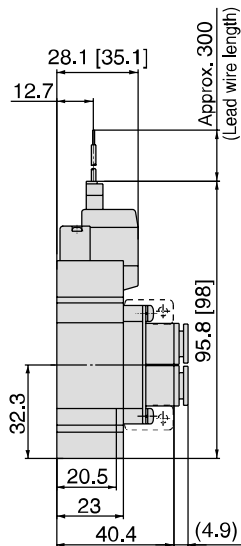
- SV
- SZ
- SY**
- SYJ
- SX

SY5120-□<sup>G</sup>□□□-01□(-F<sub>2</sub>)  
<sup>H</sup>



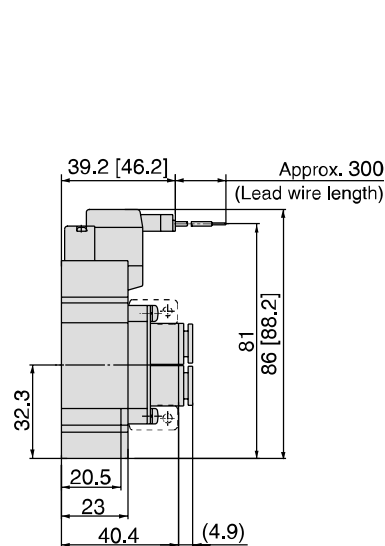
**L plug connector: L**

SY5120-□L□□□-<sup>C4, N3</sup><sub>C6, N7</sub>□□(-F<sub>2</sub>)  
<sup>C8, N9</sup>



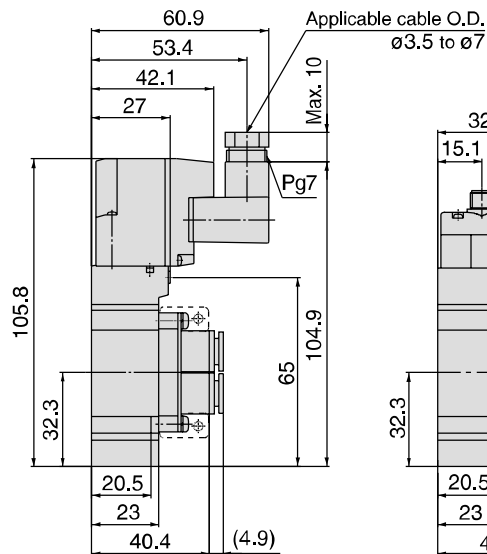
**M plug connector: M**

SY5120-□M□□□-<sup>C4, N3</sup><sub>C6, N7</sub>□□(-F<sub>2</sub>)  
<sup>C8, N9</sup>



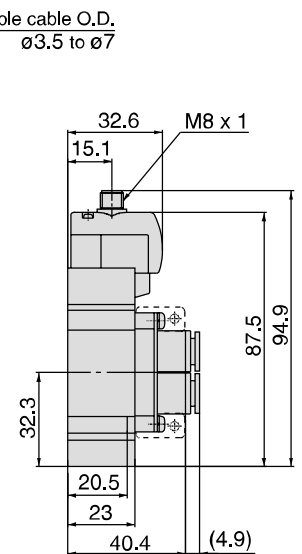
**DIN terminal (D):**

SY5120-□D□□□-<sup>C4, N3</sup><sub>C6, N7</sub>□□(-F<sub>2</sub>)  
<sup>C8, N9</sup>



**M8 connector (WO):**

SY5120-□WO□□□-<sup>C4, N3</sup><sub>C6, N7</sub>□□(-F<sub>2</sub>)  
<sup>C8, N9</sup>



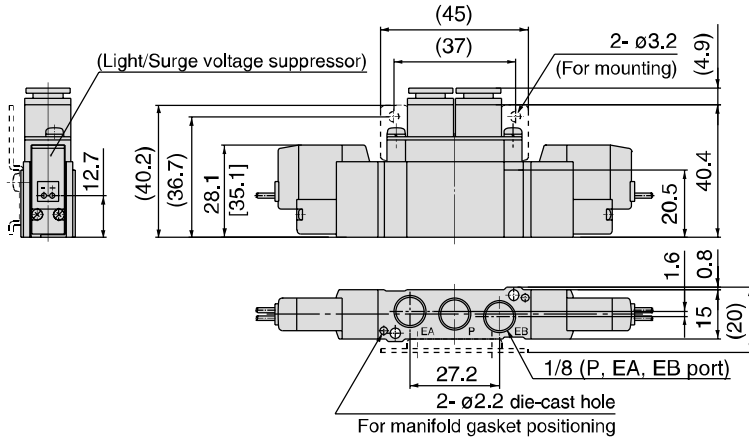
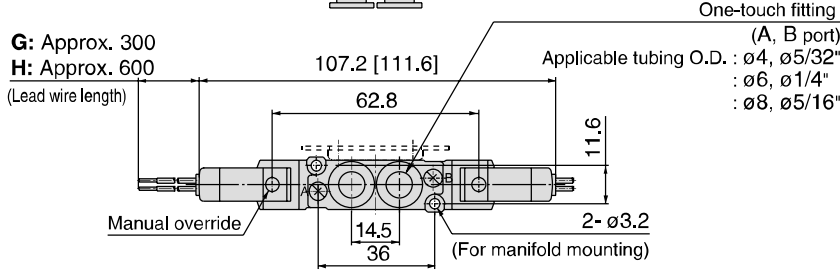
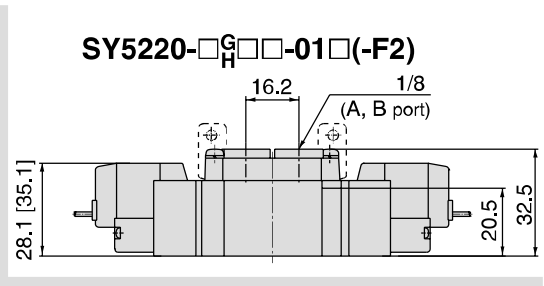
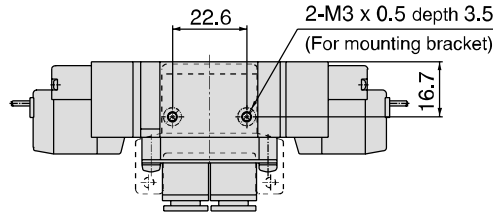
Note) Refer to page 1-4-210 for dimensions of connector types.

Dimensions: Series SY5000



2 position double

Grommet (G), (H): SY5220-□<sup>G</sup>□□-<sup>C4, N3</sup><sub>C6, N7</sub>□□(-F2)  
<sup>C8, N9</sup>



L plug connector: L

SY5220-□L□□-<sup>C4, N3</sup><sub>C6, N7</sub>□□(-F2)  
<sup>C8, N9</sup>

M plug connector: M

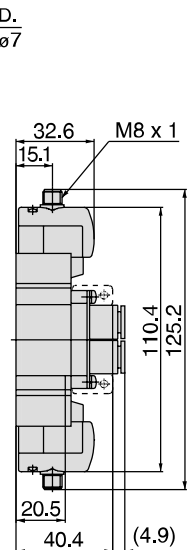
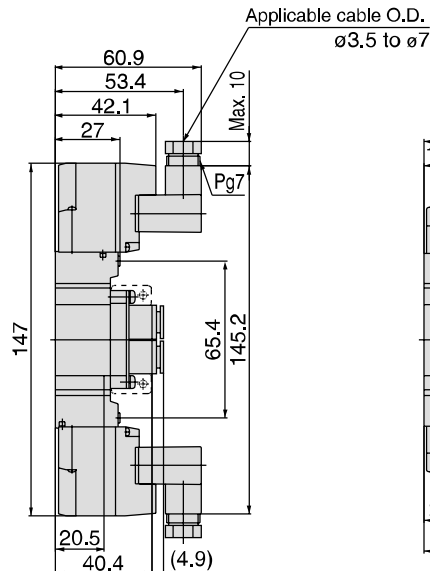
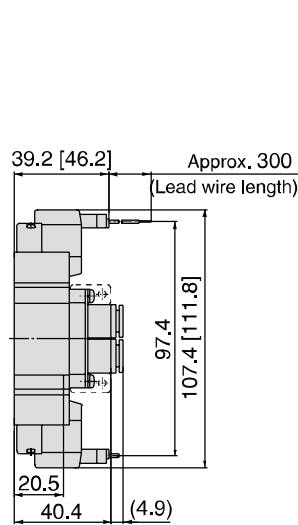
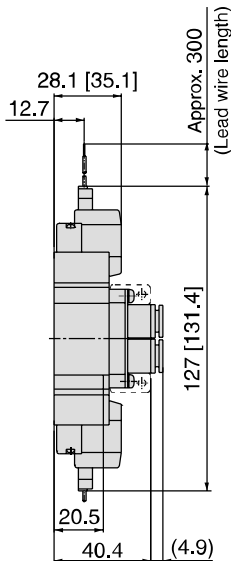
SY5220-□M□□-<sup>C4, N3</sup><sub>C6, N7</sub>□□(-F2)  
<sup>C8, N9</sup>

DIN terminal (D):

SY5220-□D□□-<sup>C4, N3</sup><sub>C6, N7</sub>□□(-F2)  
<sup>C8, N9</sup>

M8 connector (WO):

SY5220-□WO□□-<sup>C4, N3</sup><sub>C6, N7</sub>□□(-F2)  
<sup>C8, N9</sup>



Note) Refer to page 1-4-210 for dimensions of connector types.

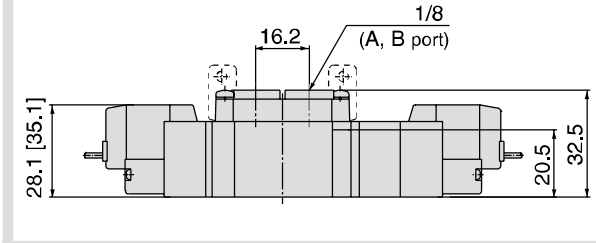
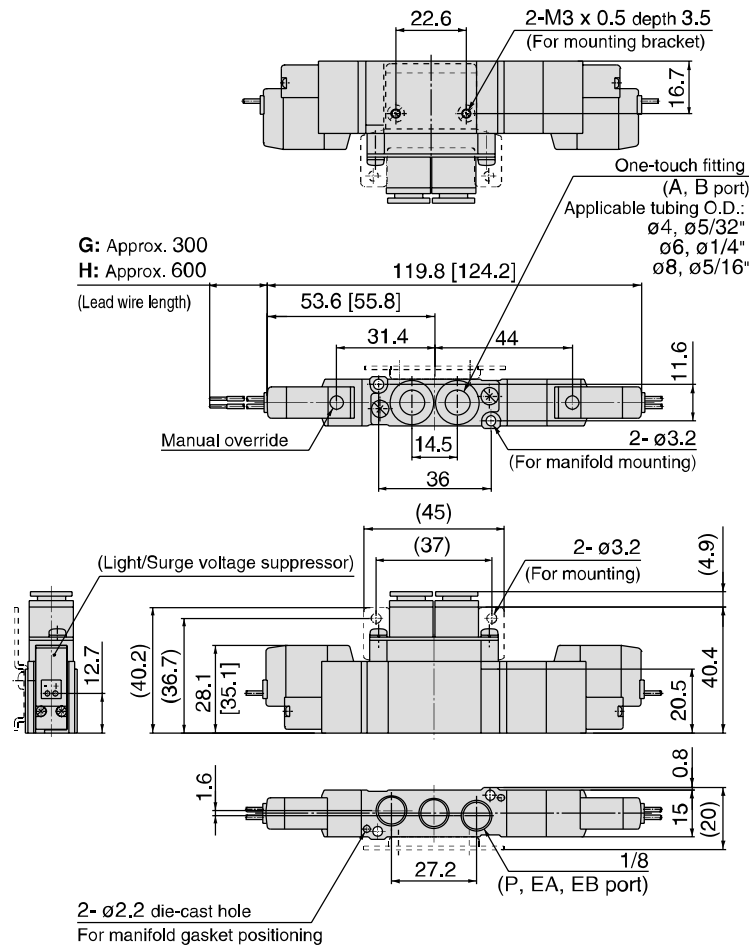




**Dimensions: Series SY5000**

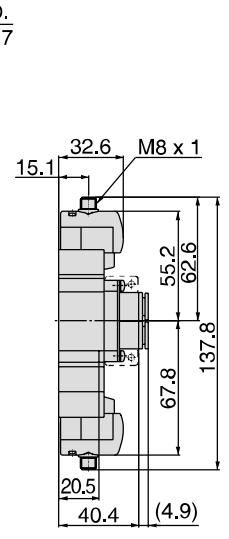
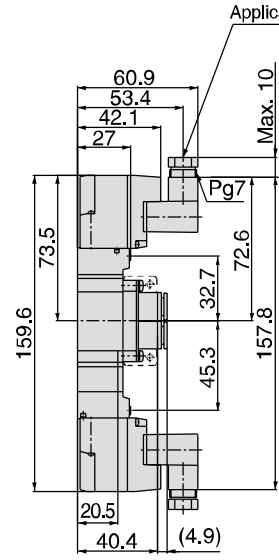
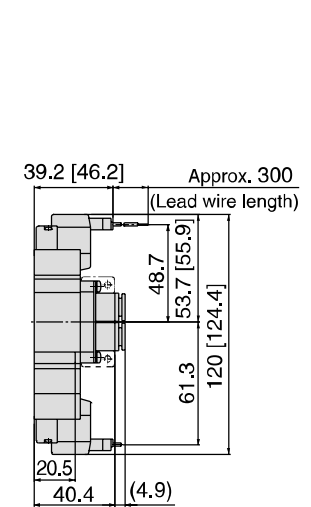
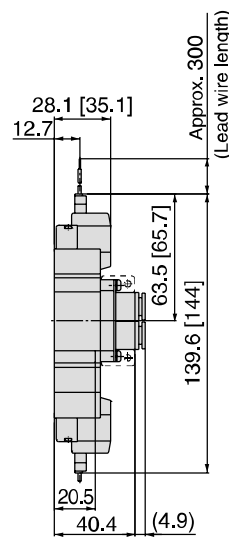
**3 position closed center/exhaust center/pressure center  
Grommet (G), (H): SY5<sup>3</sup><sub>5</sub><sup>4</sup>20-□□□□-<sup>C4, N3</sup><sub>C6, N7</sub>□□□□(-F2)  
<sup>C8, N9</sup>**

**SY5<sup>3</sup><sub>5</sub><sup>4</sup>20-□<sup>3</sup><sub>5</sub>□□□□-01□□(-F2)**



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

**L plug connector: L**      **M plug connector: M**      **DIN terminal (D):**      **M8 connector (WO):**  
 SY5<sup>3</sup><sub>5</sub><sup>4</sup>20-□□□□-<sup>C4, N3</sup><sub>C6, N7</sub>□□□□(-F2)    SY5<sup>3</sup><sub>5</sub><sup>4</sup>20-□M□□□□-<sup>C4, N3</sup><sub>C6, N7</sub>□□□□(-F2)    SY5<sup>3</sup><sub>5</sub><sup>4</sup>20-□D□□□□-<sup>C4, N3</sup><sub>C6, N7</sub>□□□□(-F2)    SY5<sup>3</sup><sub>5</sub><sup>4</sup>20-□WO□□□□-<sup>C4, N3</sup><sub>C6, N7</sub>□□□□(-F2)  
<sup>C8, N9</sup>      <sup>C8, N9</sup>      <sup>C8, N9</sup>      <sup>C8, N9</sup>



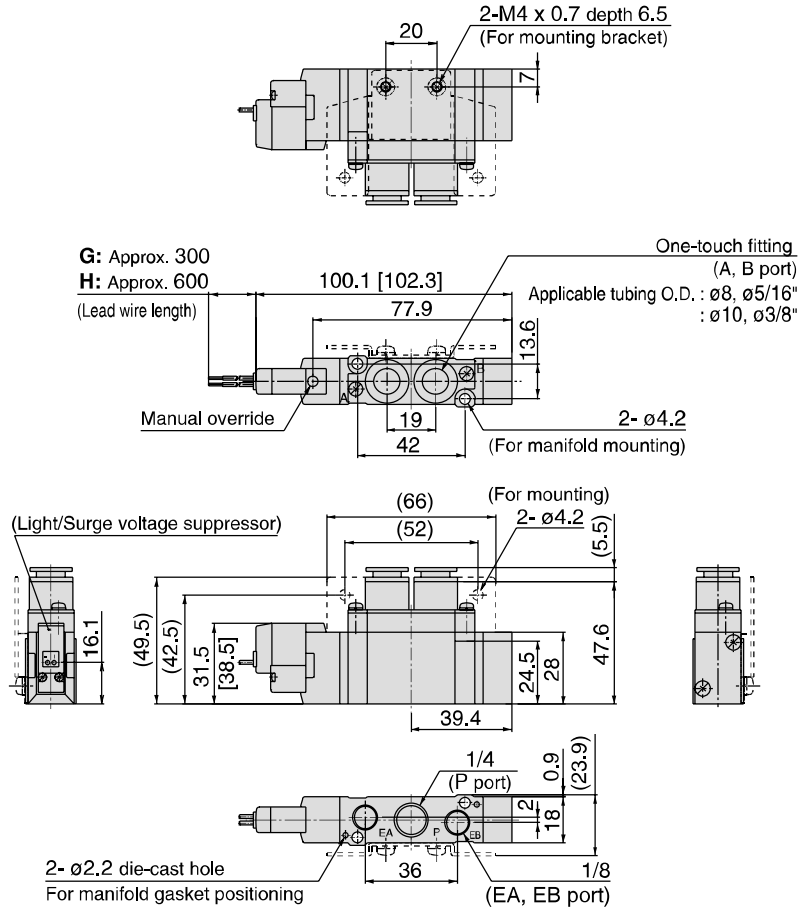
Note) Refer to page 1-4-210 for dimensions of connector types.

Dimensions: Series SY7000

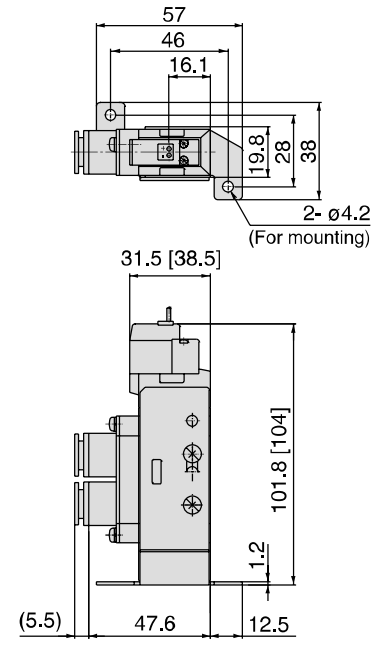


2 position single

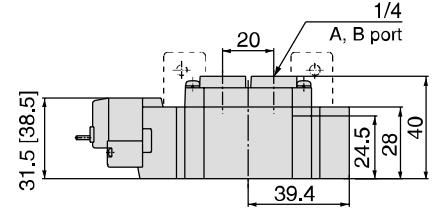
Grommet (G), (H): SY7120-□G□□-C8, N9□□(-F2)  
 C10, N11□□(-F2)



SY7120-□G□□-C8, N9□□(-F1)  
 C10, N11□□(-F1)



SY7120-□G□□-02□(-F2)



L plug connector (L):

SY7120-□L□□-C8, N9□□(-F1)  
 C10, N11□□(-F2)

M plug connector (M):

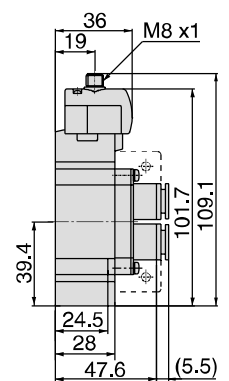
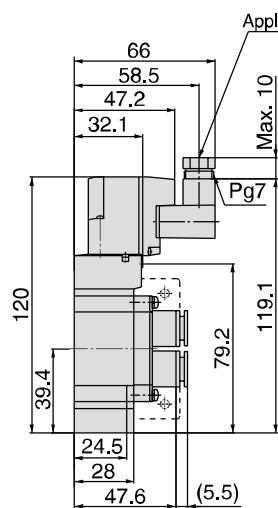
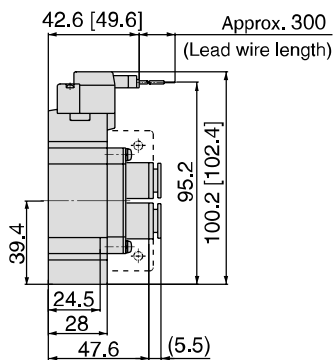
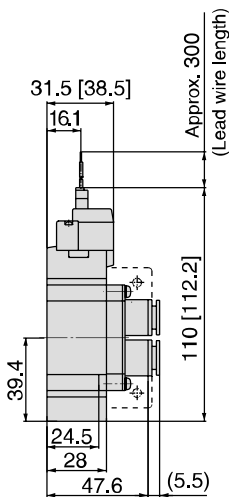
SY7120-□M□□-C8, N9□□(-F1)  
 C10, N11□□(-F2)

DIN terminal (D):

SY7120-□D□□-C8, N9□□(-F1)  
 C10, N11□□(-F2)

M8 connector (WO):

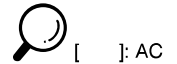
SY7120-□WO□□-C8, N9□□(-F1)  
 C10, N11□□(-F2)



Note) Refer to page 1-4-210 for dimensions of connector types.



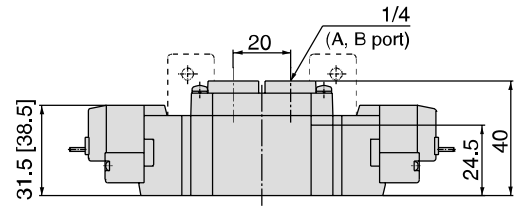
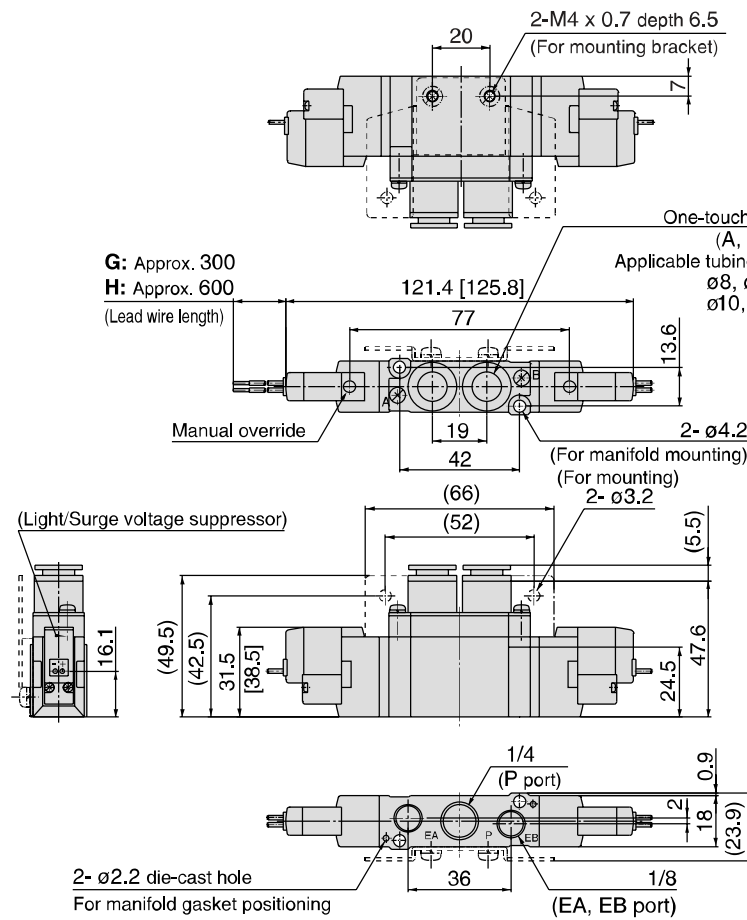
Dimensions: Series SY7000



2 position double

Grommet (G), (H): SY7220-□<sup>G</sup>□□-C8, N9 □(-F2)  
C10, N11

SY7220-□<sup>G</sup>□□-02□(-F2)



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

L plug connector (L):

SY7220-□L□□-C8, N9 □(-F2)  
C10, N11

M plug connector (M):

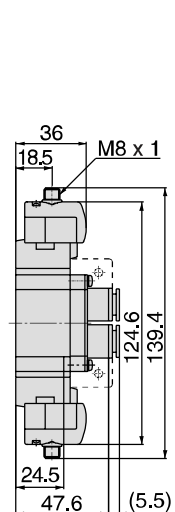
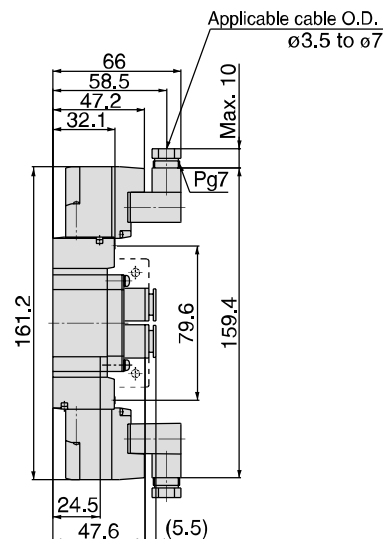
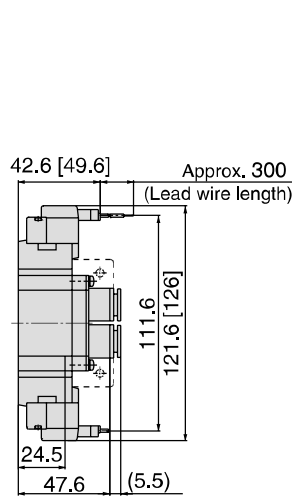
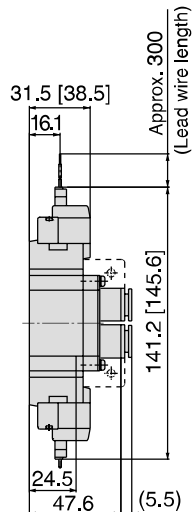
SY7220-□M□□-C8, N9 □(-F2)  
C10, N11

DIN terminal (D):

SY7220-□D□□-C8, N9 □(-F2)  
C10, N11

M8 connector (WO):

SY7220-□WO□□-C8, N9 □(-F2)  
C10, N11



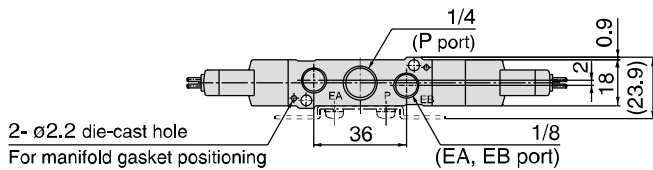
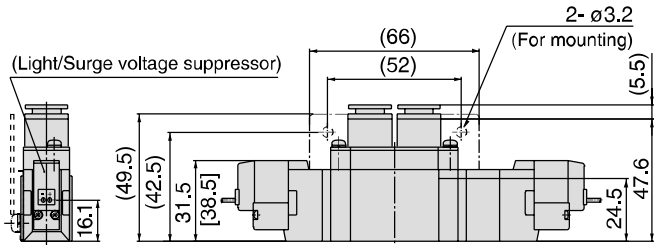
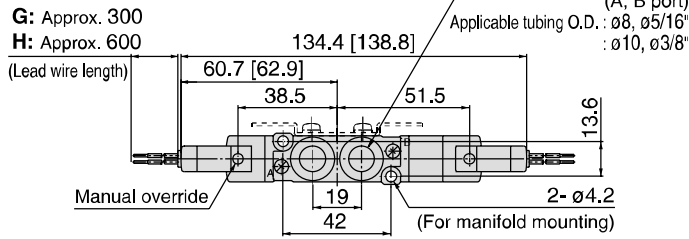
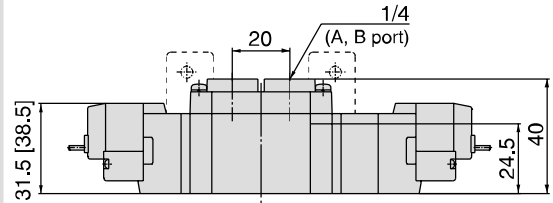
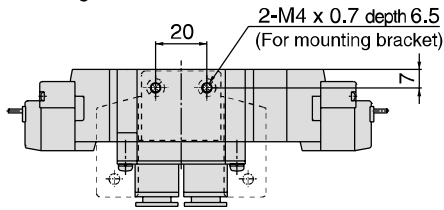
Note) Refer to page 1-4-210 for dimensions of connector types.

**Dimensions: Series SY7000**

**3 position closed center/exhaust center/pressure center**

**Grommet (G), (H): SY7<sup>3</sup>/<sub>5</sub>20-□G□□-C8, N9  
C10, N11□(-F2)**

**SY7<sup>3</sup>/<sub>5</sub>20-□G□□-02□(-F2)**



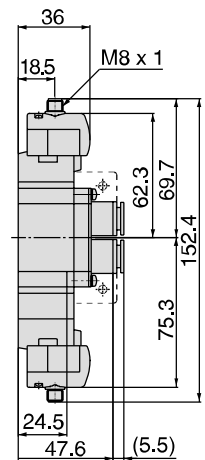
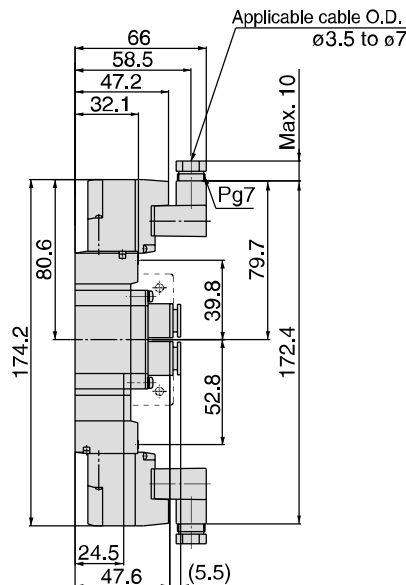
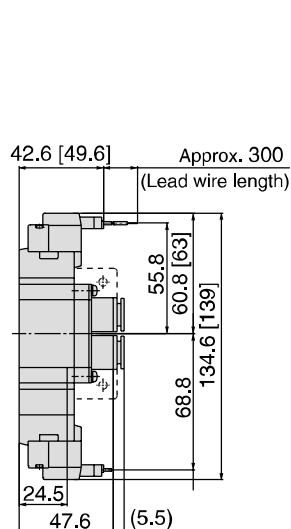
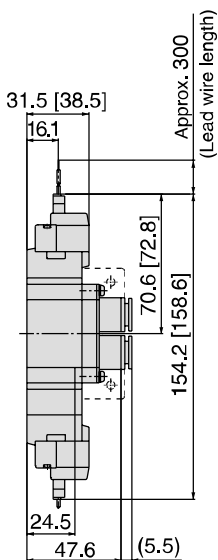
**L plug connector (L):**

**M plug connector (M):**

**DIN terminal (D):**

**M8 connector (WO):**

**SY7<sup>3</sup>/<sub>5</sub>20-□L□□-C8, N9  
C10, N11□(-F2)** **SY7<sup>3</sup>/<sub>5</sub>20-□M□□-C8, N9  
C10, N11□(-F2)** **SY7<sup>3</sup>/<sub>5</sub>20-□D□□-C8, N9  
C10, N11□(-F2)** **SY7<sup>3</sup>/<sub>5</sub>20-□WO□□-C8, N9  
C10, N11□(-F2)**



Note) Refer to page 1-4-210 for dimensions of connector types.

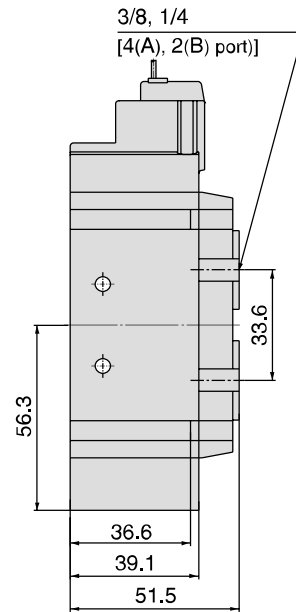
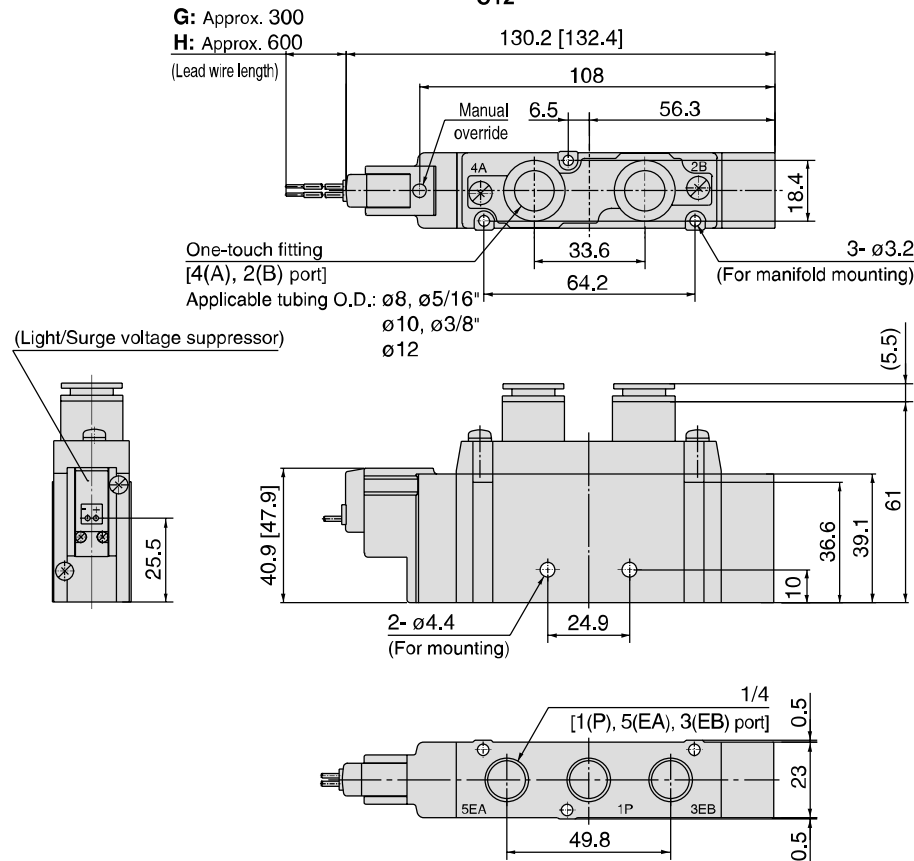


**Dimensions: Series SY9000**

**2 position single**

**Grommet (G), (H): SY9120-□<sup>G</sup>□□□<sup>C8, N9</sup>-□□□<sup>C10, N11</sup>□□<sup>C12</sup>**

**SY9120-□<sup>G</sup>□□□<sup>C8, N9</sup>-□□□<sup>C10, N11</sup>□□<sup>C12</sup>**



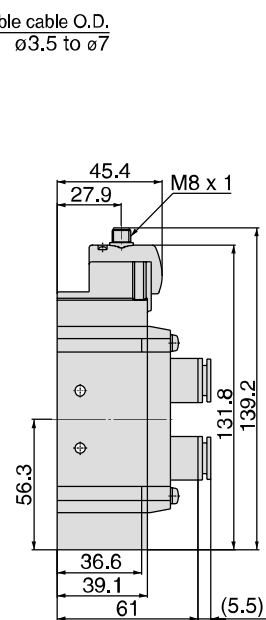
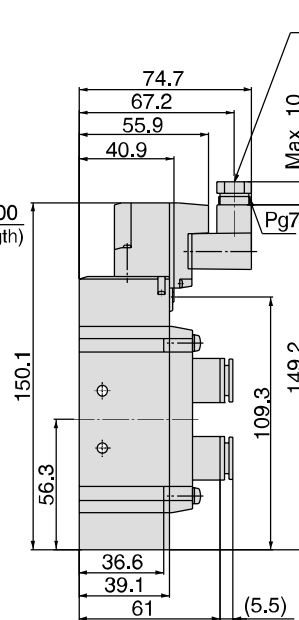
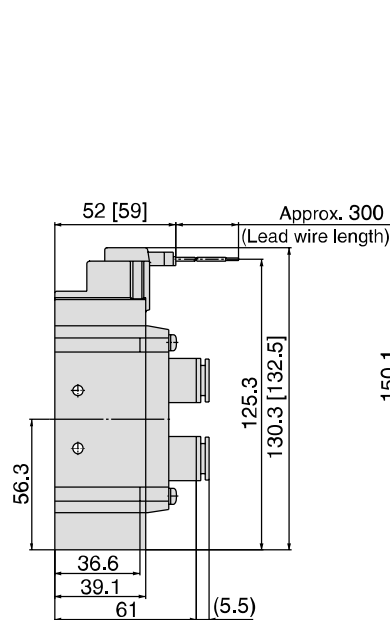
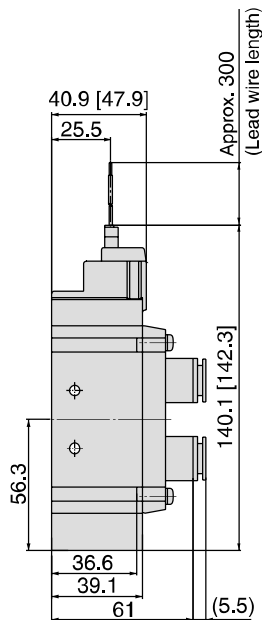
- SV
- SZ
- SY
- SYJ
- SX

**L plug connector (L):**  
**SY9120-□<sup>L</sup>□□□<sup>C8, N9</sup>-□□□<sup>C10, N11</sup>□□<sup>C12</sup>**

**M plug connector (M):**  
**SY9120-□<sup>M</sup>□□□<sup>C8, N9</sup>-□□□<sup>C10, N11</sup>□□<sup>C12</sup>**

**DIN terminal (D):**  
**SY9120-□<sup>D</sup>□□□<sup>C8, N9</sup>-□□□<sup>C10, N11</sup>□□<sup>C12</sup>**

**M8 connector (WO):**  
**SY9120-□<sup>WO</sup>□□□<sup>C8, N9</sup>-□□□<sup>C10, N11</sup>□□<sup>C12</sup>**



Note) Refer to page 1-4-210 for dimensions of connector types.