



**SHINYEONG**  
MECHATRONICS

**SV series**

**Wide range of port sizes and body sizes (M5~Rc(PT)3/4)**

Various products small through large

**Superior flow features and high reliability**

Highly polished spool of one molding seal type

**Low power consumption and simple maintenance**

Lowered power consumption design (1.8W DC) and non-lubrication of all lines

**Various kinds of wire distributing type**

Lead wire, DIN terminal, Plug connector type

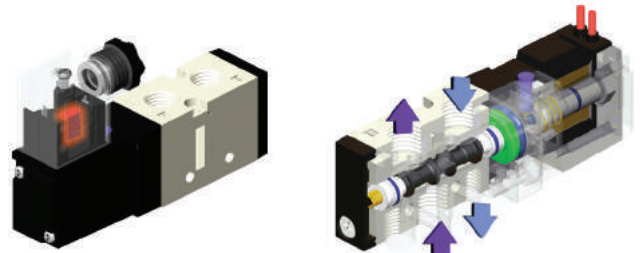
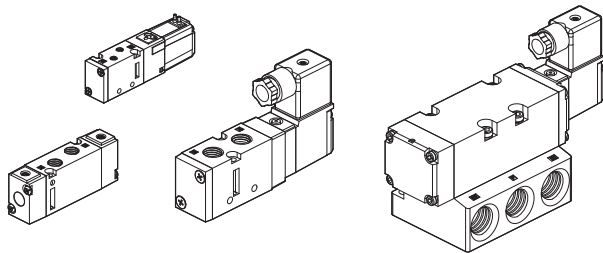
**All air system**

All of 3, 5-port air pilot valves available



# SV series

**3,5-port Solenoid Valve /Pilot Type**



Wide range of port sizes and body sizes (M5~Rc(PT)3/4): Various products small through large

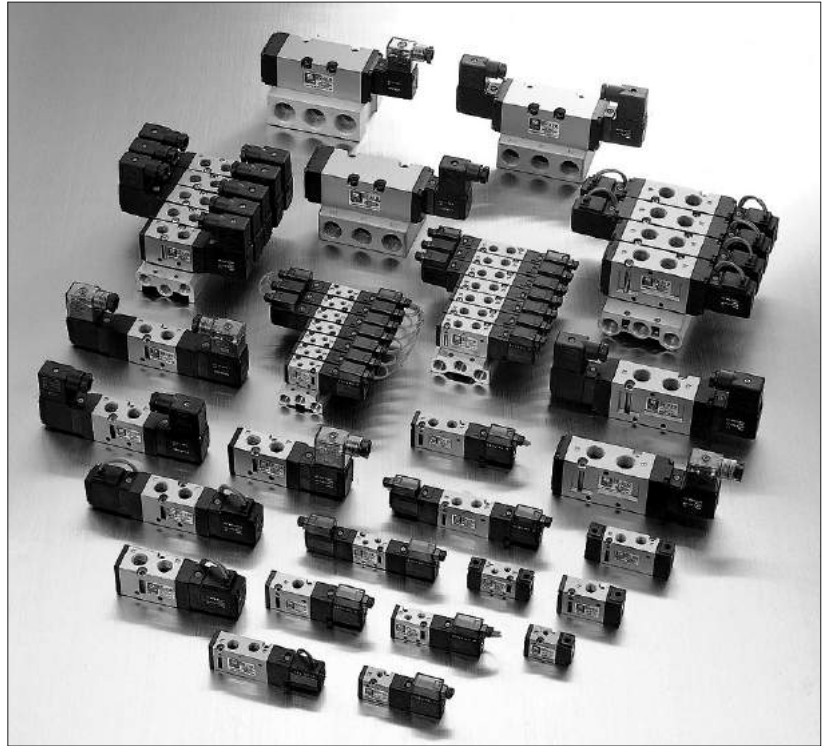
Super flow features and high reliability: Highly polished spool of one molding seal type



**신영제어기주식회사**  
SHINYEONG MECHATRONICS CO.,LTD.

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*SV50 series*



*SV100 series*



*SV200 series*



*SV300 series*



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## PRECAUTION

Be sure to read before handling.

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by a label of Caution, Warning, or Danger.

To ensure safety, be sure to observe ISO4414<sup>1)</sup>, KS B 6376<sup>2)</sup> and other safety regulations.

 <b>Caution</b>	Operator error could result in injury or equipment damage.
 <b>Warning</b>	Operator error could result in serious injury or loss of life.
 <b>Danger</b>	In extreme conditions, this could result in serious injury or loss of life.

1) ISO 4414: Pneumatic Fluid Power-Recommendations for the application of equipment to transmission and control systems.

2) KS B 6376: General Rules for Pneumatic System

### **Caution**

#### **1. The pneumatic equipment shall be selected by pneumatic system designers or professionals.**

The person who decides specifications has a responsibility for the performance and safety.

#### **2. Only trained person should operate pneumatically operated machinery and equipment.**

Compressed air can be dangerous if an operator is unfamiliar with it.

Assembly, handling or repair of pneumatic systems should be performed by a trained and experienced operator.

#### **3. Don't remove components until safety is confirmed.**

1) Inspection of machinery and equipment should only be performed after confirmation of safe locked-out control positions.

2) When equipment is to be removed, confirm the safety process as mentioned above. Cut the supply pressure for this equipment and exhaust all residual compressed air in the system.

3) When restarting, take measures to prevent shooting-out of cylinder piston rod, etc.

#### **4. Take care if the product is to be used in any of the following conditions.**

##### **Please feel free to contact us if you have any questions.**

1) Conditions and environments beyond the given Specifications, or if product is used outdoors.

2) Installation on equipment in conjunction with food and beverages, medical equipment, vehicles, nuclear energy, railway, airplane, emergency stop circuits, press clutches, brake equipment or safety equipment.

3) An application requiring special safety.



## PRECAUTION: Valve ①

Be sure to read before handling.

### Air Supply

#### **Warning**

##### 1. Use clean air

Use clean air which doesn't contain chemicals, synthetic oils containing organic solvents, salts or corrosive gases etc., because this can cause damage or malfunction.

#### **Caution**

1. Filtration to 5µm is recommended.
2. Large quantity of drainage may cause incorrect operation of pneumatic products as well as environmental contamination. Please control drainage. You can use the filter with auto drainage in case of difficulty.
3. Please install a mist separator when there is a large amount of carbon powder from the compressor.

### Environment

#### **Warning**

1. Keep away from corrosive gas, chemical solutions, sea water, rain and steam.
2. Avoid using in an explosive atmosphere.
3. Don't use in locations subject to vibration or impact.
4. Avoid direct sunlight.
5. Shield radiated heat generated by nearby heat sources.
6. Use a protective cover when installed in a place where a drop of water or oil will splash momentarily.
7. Please install a silencer on the exhaust port in a dusty place.

### Lubrication

#### **Caution**

1. No further lubrication is required because valves are prelubricated.
2. Please use turbine oil ( ISO VG32 or equivalent to ) if lubricant is required. Once lubrication is applied, it must be continued because the original lubricant may be eliminated.

### Valve Operation

#### **Warning**

##### 1. Actuator drive

Take appropriate measures to prevent potential danger caused by actuator operation when an actuator is to be driven using a solenoid valve.

##### 2. Intermediate stopping

Accurate stop of the piston in a predetermined position is not possible due to the compressibility of air when a 3-position closed center valve is used to stop a cylinder at an intermediate position.

Furthermore, it may not be possible to hold a stopped position for an extended length of time since valves and cylinders are not guaranteed for zero air leakage.

##### 3. Effect of back pressure

You need to be careful when using valves on a manifold because actuator malfunction due to back pressure may occur. Your special attention should be taken when using a 3-position exhaust center valve or driving a single acting cylinder. Implement countermeasures such as the use of an individual exhaust spacer assembly when there is a danger of back pressure.

##### 4. Since valves are subjected to air leakage, they cannot be used for applications such as holding pressure.

##### 5. Can't be used as an emergency shutoff valve, etc.

##### 6. Release of residual pressure

Provide residual pressure release function for maintenance purposes. Special consideration should be given to the release of residual pressure between the valve and cylinder in case of a 3-position closed center type valve.

### Installation

#### **Caution**

##### 1. Confirm the Specifications.

Don't operate at pressures or temperatures beyond the range of specifications because this can cause damage or malfunction.

#### **Caution**

##### 1. Momentary energization

If a double solenoid valve will be operated with momentary energization, it should be energized for at least 0.1 second.

##### 2. Leakage voltage

- 1) Residual leakage voltage of DC coil must be or less than 2%



## PRECAUTION: Valve ②

Be sure to read before handling.

when switch is OFF.

- When using a C-R element, there might be a chance to increase the leakage voltage.

### 3. Low temperature operation

Avoid ambient temperatures outside the range prescribed in the Specifications. At low temperatures, appropriate measures should be taken to avoid solidification of freezing of drainage and moisture, etc.

### 4. Operation for air blowing

You should use external pilot type or direct solenoid operated type when using solenoid valves for air blowing. Also, supply compressed air within the pressure range prescribed in the specifications, especially for an external pilot type.

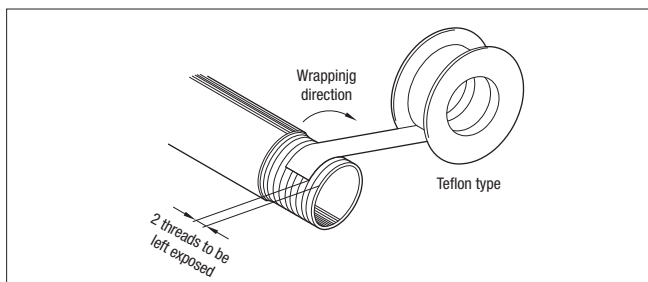
### 5. Mounting

In case of a single solenoid valve, the mounting orientation is unrestricted. Double solenoid or 3-position valves should be mounted so that the spool is horizontal. Mount valves so that the spool is at a right angle to the direction of vibration in a place where vibration or shock exists.

### Piping

#### ! Caution

- Before piping is connected, remove chips, cutting oil and other debris from inside the pipe.
- When using the Teflon tape, ensure that about 1.5~2 threads are left.



- When using 3-position closed center type, make sure piping leakage does not occur between valve and cylinder.

### 4. Clamping torque

Port size	Appropriate clamping torque N·m (kgf·cm)
M5	1.5~2 (15~20)
Rc(PT) 1/8	7~9 (70~90)
Rc(PT) 1/4	12~14 (120~140)
Rc(PT) 3/8	22~24 (220~240)
Rc(PT) 1/2	28~30 (280~300)
Rc(PT) 3/4	28~30 (280~300)
Rc(PT) 1	36~38 (360~380)

### Low temperature operation

#### ! Caution

Avoid ambient temperatures outside the range prescribed in the Specifications. At low temperatures, appropriate measures should be taken to avoid solidification of freezing of drainage and moisture, etc.

### Maintenance

#### ! Warning

- When equipment is removed, first confirm that measures are in place to prevent dripping of work pieces and run-away of equipment, etc. Then cut the supply pressure and power, and exhaust all compressed air from the system using its residual pressure release function.

When the equipment is to be started again after remounting or replacement, first confirm that measures are in place to prevent lurching of actuators, etc., and then confirm that the equipment is operating normally.

- Although don't use frequently, operate the valve regularly to prevent malfunction.

#### ! Caution

### 1. Drainage removal

Remove drainage regularly from air filter.

### Using 3-port valve

#### ! Caution

If you block one side of valve port (A, B) with plug, you can use the valve as 3-port valve with N.O. (Normally Open) or N.C. (Normally Closed) type.

It is convenient when you need 3-port valve in the manifold blocks.

Plug position		B port	A port
Configuration		N.C.	N.O.
Solenoid	Single		
	Double		

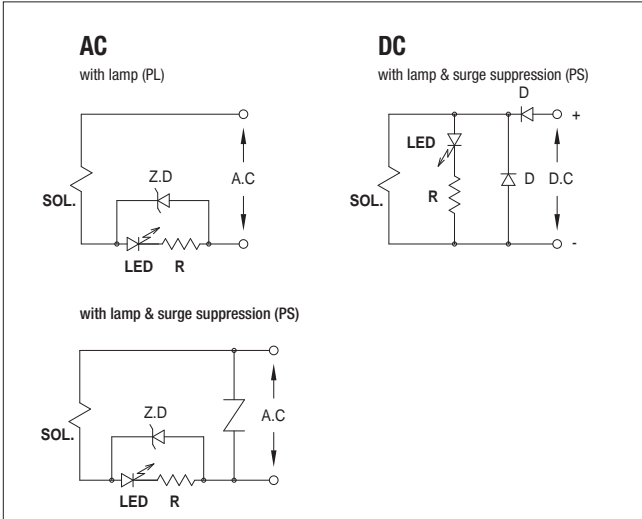


# PRECAUTION: SV series

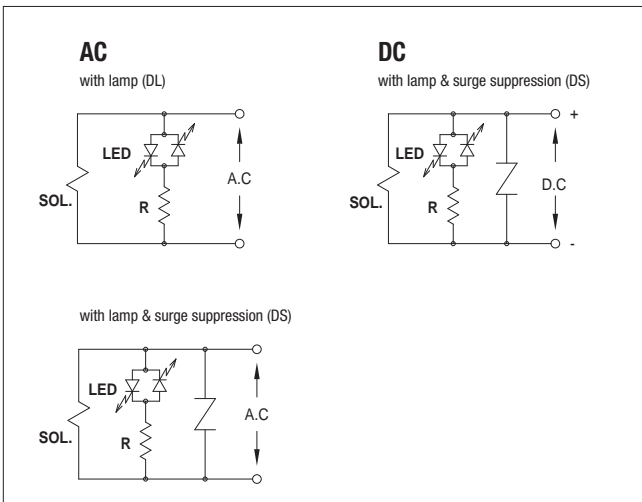
Be sure to read before handling.

## Lamp and surge voltage suppression

Plug connector type (For SV 50, 100 series)



DIN terminal type (For all SV series)



## Caution

1. Do not make a megger test between lead wires.
2. 12 and 24 VDC solenoids will not shortout even with wrong polarity. However, solenoids with surge suppression will not operate.
3. Single solenoid  
If circuit current leakage is experienced, the valve may not turn off. Ensure that current leakage is below the maximum allowable leak rate.
4. Double solenoid  
Do not apply power to both solenoids simultaneously. The valves may be put into a neutral state.

## Power supply time

### Warning

When using a double solenoid type with momentary power source, make sure the power supply time more than 0.1 second.

## Classification by the existence of noise suppressor

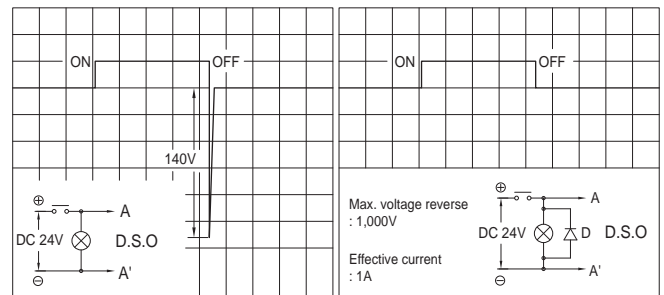
### Warning

Solenoid with noise suppressor is eligible for interface of CPU, PC, and micom etc. because it has a element suppressing the max. voltage reverse.

1. Surge wave with diode (only for DC)  
(Max. voltage reverse of diode 1,000V)

● Standard

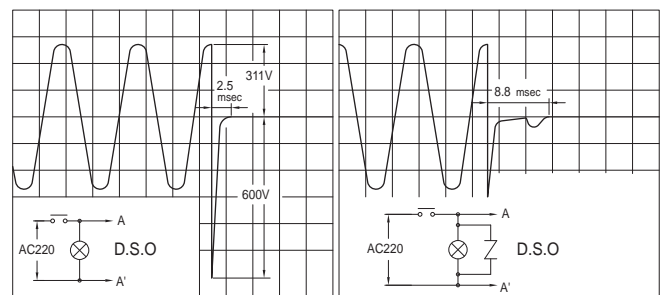
● with Diode



2. Surge wave with varistor

● Standard

● with Varistor



## Leakage voltage

### Warning

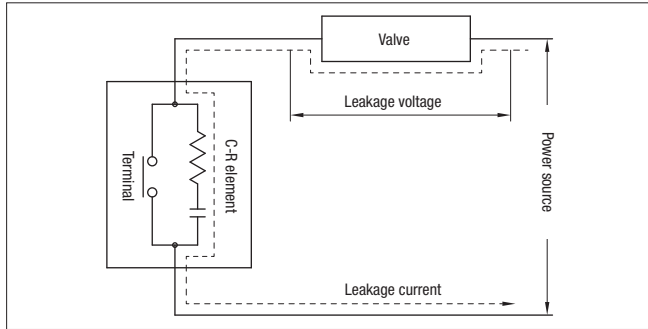
1. For the leakage current, residual leakage voltage of AC coil must be less than 20% of the rated voltage, and that of DC coil must be less than 3% when switch is off.



# PRECAUTION: SV series

Be sure to read before handling.

2. When using a C-R element, there might be a chance to increase the leakage voltage.



※ There is a built-in protection circuit in static relay.

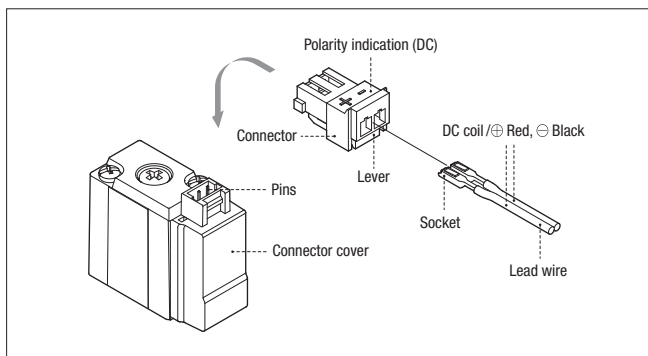
## Plug Connector



### 1. Attaching and removing connector

Hold connector between thumb and forefinger and push connector onto pins. Push until lever claw engages pins.

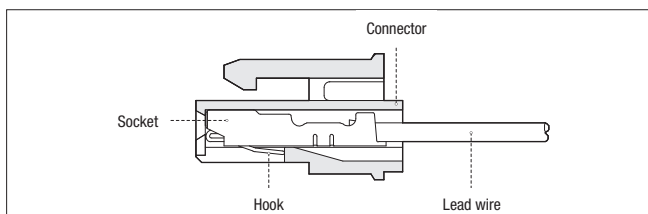
To remove connector, squeeze lever and connector between thumb and forefinger and pull connector off pins.



### 2. Mounting and dismounting socket from connect

Push socket with lead wire into connector until socket hook is engaged. Lightly pull lead wire to ensure proper engagement.

To remove lead wire and socket, pull out lead wire, While pushing down hook with a small tool, pull out lead wire.



## DIN Terminal



### 1. Wiring

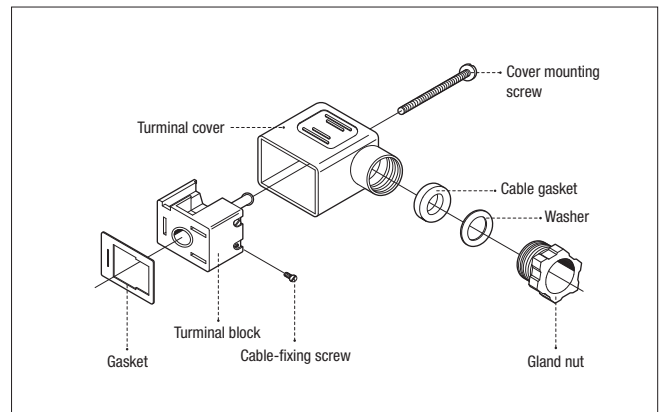
Unloosen cover mounting screw and separate terminal block from terminal cover with a small tool. Insert lead wire into terminal block through gland nut and fix cable-fixing screws tightly.

### 2. Outside diameter of applicable lead wire

O.D. of applicable lead wire:  $\varnothing 6 \sim \varnothing 7$

(Ref.) 2 or 3 strands of 0.75mm<sup>2</sup> equivalent to KSC 3304

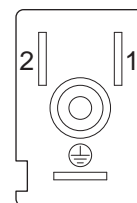
※ You can change the way lead wire is coming out by turning the cover 180° in Terminal Block.



Outside diameter of cord:  
 $\varnothing 4 \sim \varnothing 6$



Outside diameter of cord:  
 $\varnothing 6 \sim \varnothing 7$

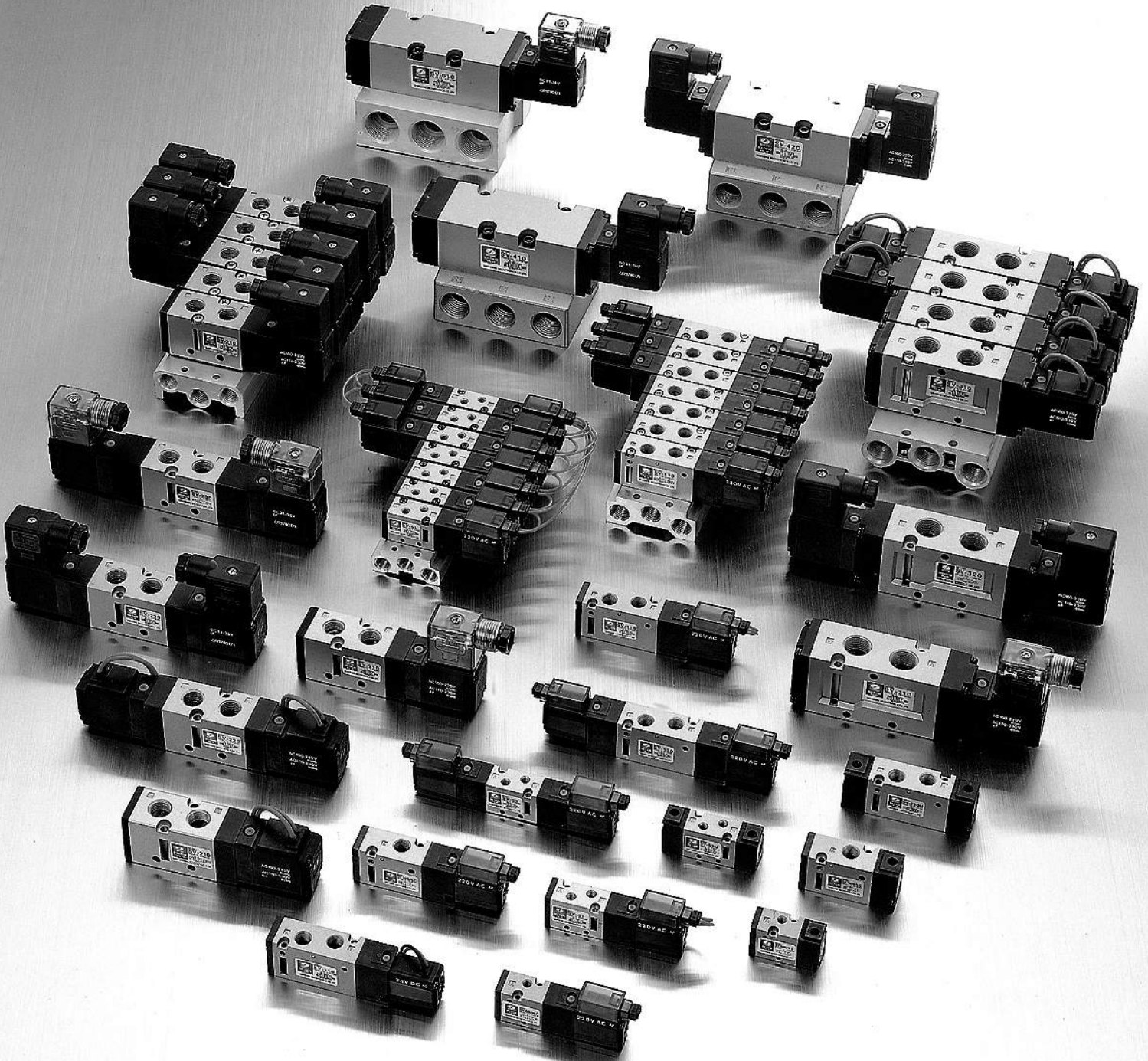


※ Solenoid terminal order is shown as above. 1 indicates + of power supply and 2 indicates - of that.



# SV series

3,5-port Solenoid Valve/Pilot Type



## How to Select Solenoid Valve

Selection of actuator	Selection of valve series from cylinder driving speed chart	Use of manifold	Number of solenoid position	Choice of voltage & electrical entry	Decision on model
<ul style="list-style-type: none"> <li>• Cylinder I.D. (inside diameter)</li> <li>• Driving speed</li> <li>• Load factor</li> </ul>	<ul style="list-style-type: none"> <li>• High frequency</li> <li>• Long life</li> <li>• Stability of response</li> <li>• Non-lubrication</li> </ul>	<ul style="list-style-type: none"> <li>• Maintenance</li> <li>• Location</li> <li>• Easiness of operation</li> </ul>	<ul style="list-style-type: none"> <li>• Performance of machine</li> <li>• Safety</li> </ul>	<ul style="list-style-type: none"> <li>• Applicable voltage</li> <li>• Lead wire type</li> <li>• Plug connector type</li> <li>• DIN terminal type</li> </ul>	SV ②①①-②①

※ Refer to max. driving speed chart for details

## Driving speed Chart of Cylinder

※ This chart only be used as a reference because cylinder speed will vary depending on the connecting pipe work.

	Series	Port size	Cylinder speed (mm / s)	Inside diameter of cylinder (mm)																
				Effective area	Ø10	Ø20	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125	Ø140	Ø160	Ø180	Ø200	Ø250	Ø300	
Body Ported	SV50	M5	-																	
		3.6 mm <sup>2</sup> (Cv 0.2)	-																	
			-																	
	SV100	Rc(PT) 1/8	250																	
			500																	
		9.5 mm <sup>2</sup> (Cv 0.53)	750																	
	SV200	Rc(PT) 1/4	250																	
			500																	
		18 mm <sup>2</sup> (Cv 1.0)	750																	
	SV300	Rc(PT) 3/8	250																	
500																				
45 mm <sup>2</sup> (Cv 2.5)		750																		
Base Mounted	SV400	Rc(PT) 1/2	250																	
			500																	
		80 mm <sup>2</sup> (Cv 4.44)	750																	
	SV600	Rc(PT) 3/4	250																	
			500																	
		90 mm <sup>2</sup> (Cv 5.0)	750																	

# SV50 series

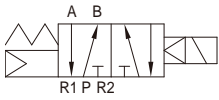
5-port Pilot Type/Elastic Seal

Body Ported

## 5-PORT / 2-POSITION

SV51

(Port size: M5)



SV52

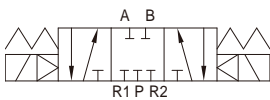
(Port size: M5)



## 5-PORT / 3-POSITION

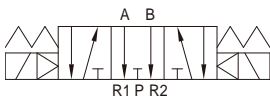
SV53

(Closed center)



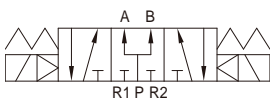
SV54

(Exhaust center)



SV55

(Pressure center)



## SPECIFICATIONS

MODEL	SV51	SV52	SV53	SV54	SV55
Fluid	Air or Inert Gases				
Pressure range (kgf/cm <sup>2</sup> )	0.15~0.7 (1.5~7.1)	0.1~0.7 (1.0~7.1)	0.2~0.7 (2.0~7.1)		
Effective area (mm <sup>2</sup> (Cv))	3.6 (0.2)		3.2 (0.18)		
Ambient and media temp.	Max. 50°C				
Response time (5kgf/cm <sup>2</sup> )	20 ms or less		35 ms or less		
Max. Cycles/Second	10 C/S		3 C/S		
Lubrication	Not required				
Manual override operation	Non-locking push type				
Shock/Vibration resistance	30G / 5G (8.3~2,000 Hz)				
Protective structure	Dust-proof				
Coil rated voltage	AC 50 / 60 Hz 110V, 220V DC 12V, 24V				
Allowable voltage tolerance	-15%~+10% of rated voltage				
Coil insulation	Class B or equivalent (130°C)				
Apparent power	AC	Starting	4.5 VA (50 Hz), 4.2 VA (60 Hz)		
		Holding	3.0 VA (50 Hz), 2.6 VA (60 Hz)		
Power consumption	DC	1.7W			
Weight (kg)	0.07	0.11	0.12	0.12	0.12
Surge suppressor	AC: Varistor, DC: Diode				
Indicator lamp	LED				

- Width 15.5 mm
- Large flow capacity - (Cv0.2)  
Effective area 3.6 mm<sup>2</sup>
- Low power consumption - 1.7W (DC)
- Various electrical entries

## HOW TO ORDER

SV 5 1 - 2 L

• PORT SIZE (M5)

• CONFIGURATION

1	Single solenoid
2	Double solenoid
3	Closed center
4	Exhaust center
5	Pressure center

• COIL RATED VOLTAGE

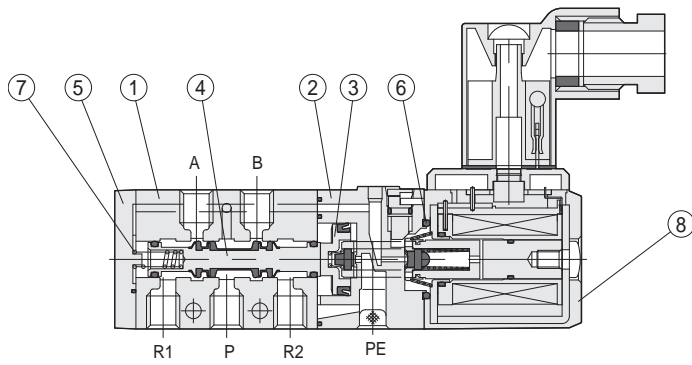
1	AC 110V
2	AC 220V
3	DC 12V
4	DC 24V

• ELECTRICAL ENTRY

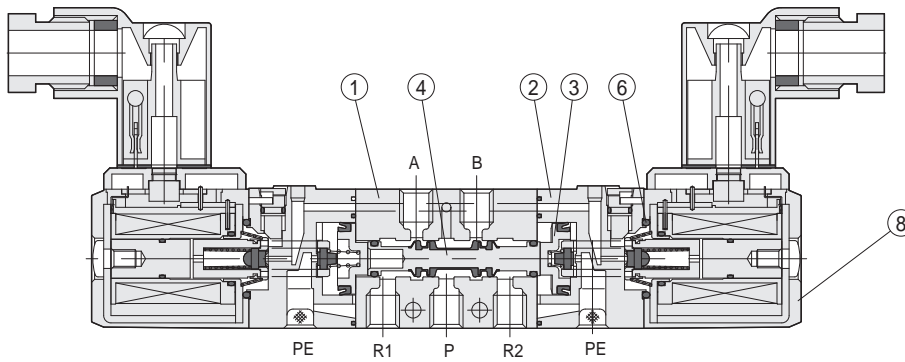
L	Without sub-base
PL	Plug connector with lamp
PS	Plug connector with lamp & surge suppressor
D	DIN terminal
DL	DIN terminal with lamp
DS	DIN terminal with lamp & surge suppressor

※ Only PS types are available for plug connector for DC.

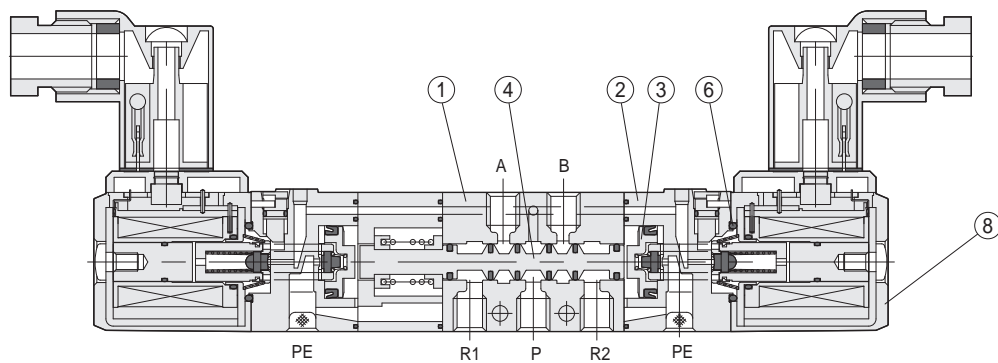
2-position Single Solenoid



2-position Double Solenoid



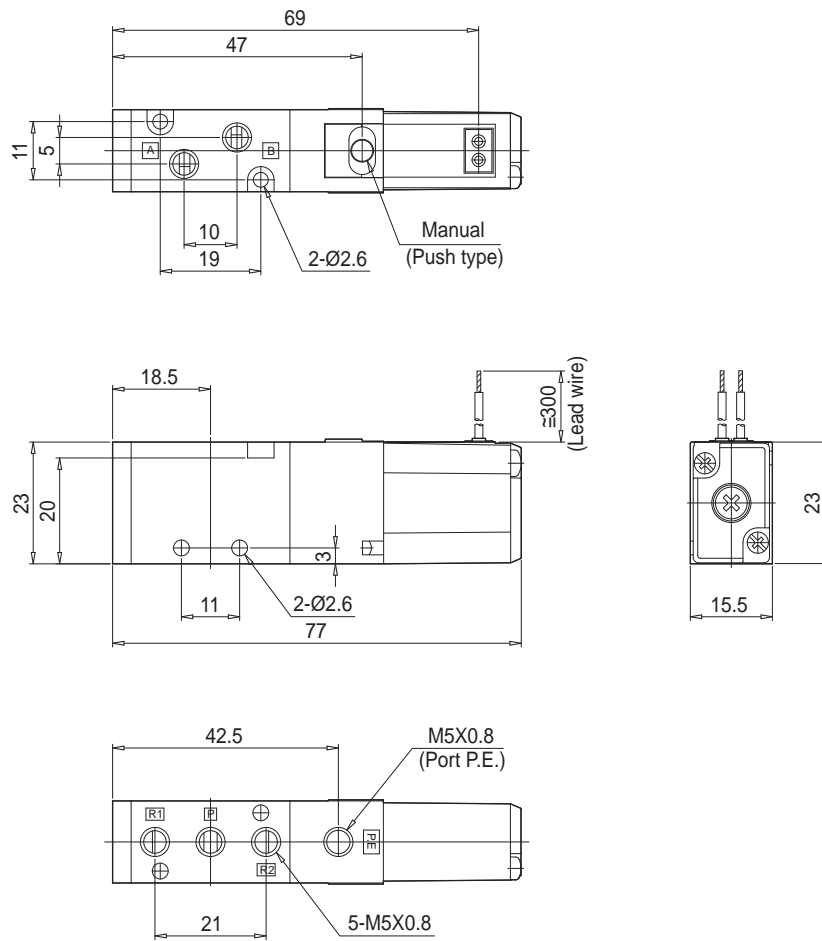
3-position Double Solenoid



No.	Description	Material	No.	Description	Material
①	BODY	ADC-12	⑤	END COVER	PLASTIC
②	PISTON PLATE	POLYACETAL	⑥	O-RING	NBR
③	PISTON	POLYACETAL	⑦	SPRING	SUS
④	SPOOL	AI-NBR	⑧	COIL ASS'Y	

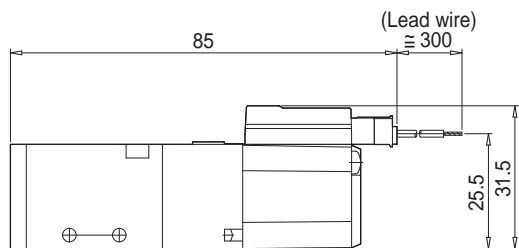
**SV51-□L**

Lead Wire (L)



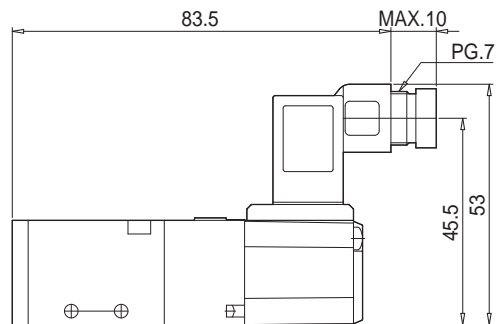
**SV51-□PL/PS**

Plug Connector (PL, PS)



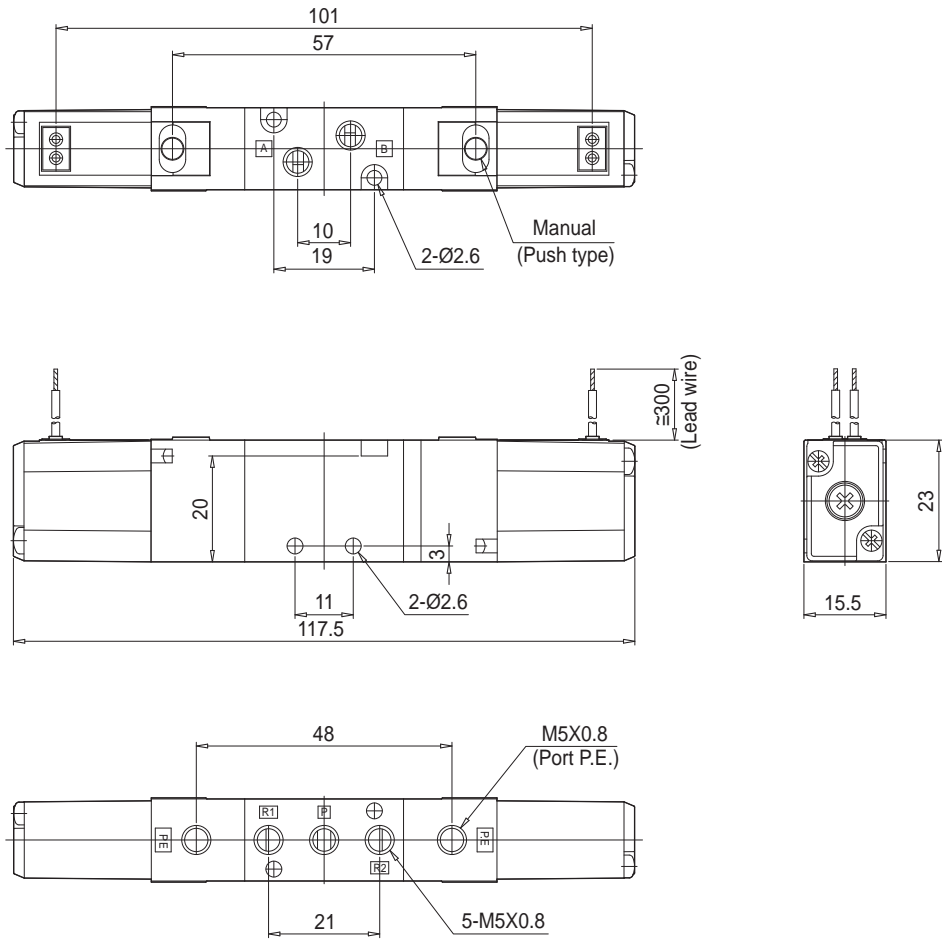
**SV51-□D/DL/DS**

DIN Terminal (D, DL, DS)



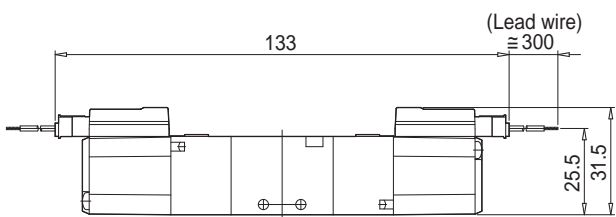
**SV52-□L**

Lead Wire (L)



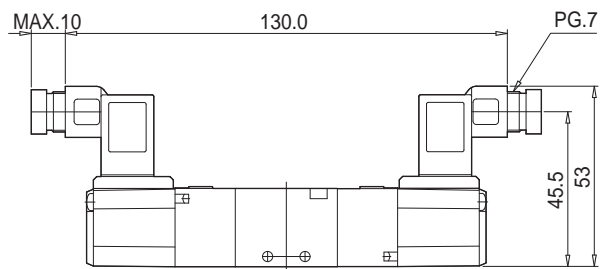
**SV52-□PL/PS**

Plug Connector (PL, PS)



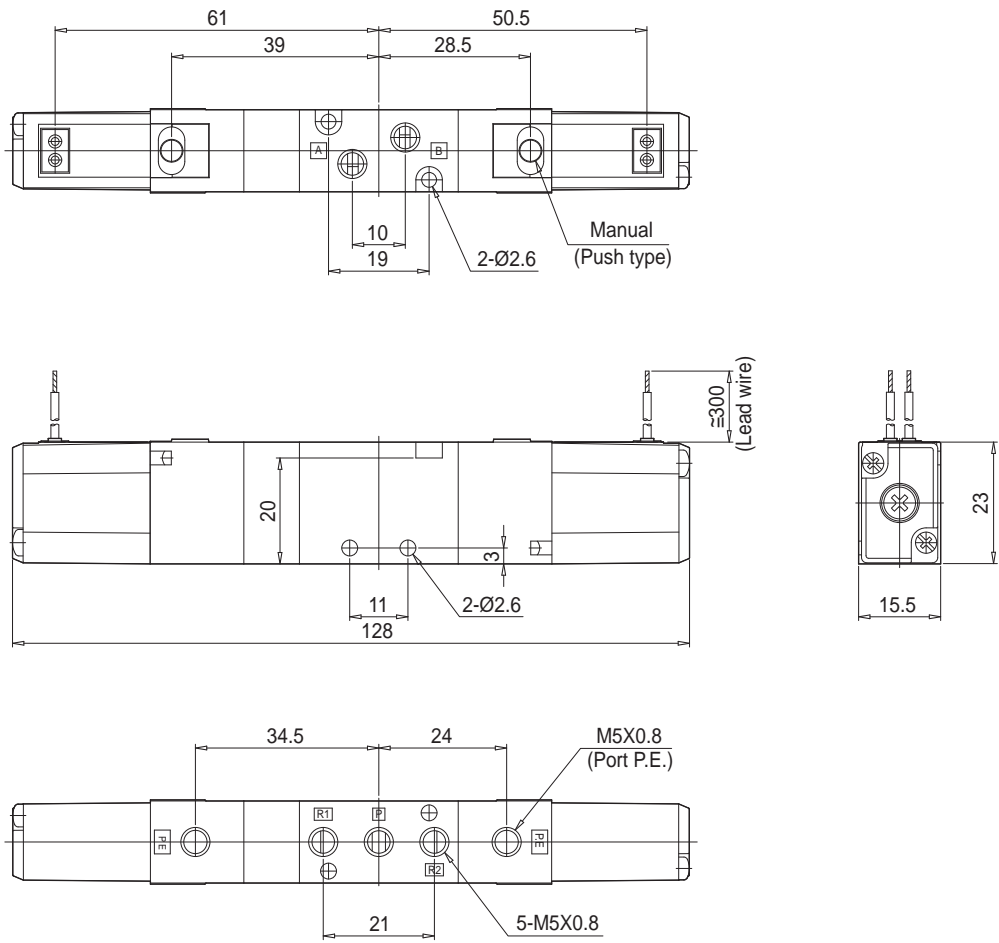
**SV52-□D/DL/DS**

DIN Terminal (D, DL, DS)



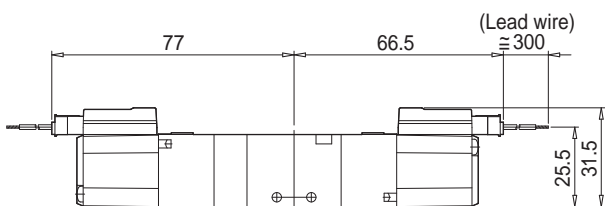
**SV53/54/55-□L**

Lead Wire (L)



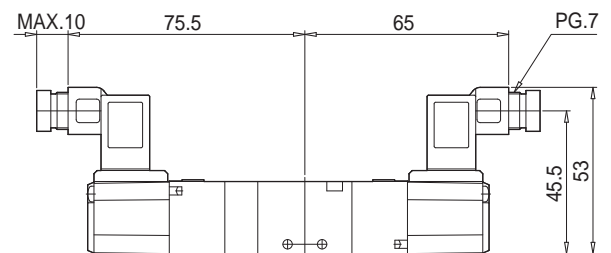
**SV53/54/55-□PL/PS**

Plug Connector (PL, PS)



**SV53/54/55-□D/DL/DS**

DIN Terminal (D, DL, DS)



# SV100 series

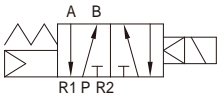
5-port Pilot Type / Elastic Seal

Body Ported

## 5-PORT / 2-POSITION

(Port size: PT 1/8)

### SV110



(Port size: PT 1/8)

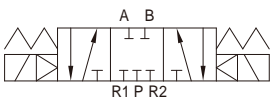
### SV120



## 5-PORT / 3-POSITION

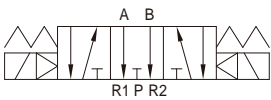
(Closed center)

### SV130



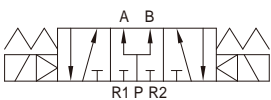
(Exhaust center)

### SV140



(Pressure center)

### SV150



## SPECIFICATIONS

MODEL	SV110	SV120	SV130	SV140	SV150
Fluid	Air or Inert Gases				
Pressure range (kgf/cm <sup>2</sup> )	0.15~0.7 (1.5~7.1)	0.1~0.7 (1.0~7.1)	0.2~0.7 (2.0~7.1)		
Effective area (mm <sup>2</sup> (Cv))	9.5 (0.53)		8.5 (0.49)		
Ambient and media temp.	Max. 50°C				
Response time (5kgf/cm <sup>2</sup> )	20 ms or less		35 ms or less		
Max. Cycles/Second	10 C/S		3 C/S		
Lubrication	Not required				
Manual override operation	Non-locking push type				
Shock/Vibration resistance	30G / 5G (8.3~2,000 Hz)				
Protective structure	Dust-proof				
Coil rated voltage	AC 50 / 60 Hz 110V, 220V DC 12V, 24V				
Allowable voltage tolerance	-15%~+10% of rated voltage				
Coil insulation	Class B or equivalent (130°C)				
Apparent power	AC	Starting	4.5 VA (50 Hz), 4.2 VA (60 Hz)		
		Holding	3.0 VA (50 Hz), 2.6 VA (60 Hz)		
Power consumption	DC	1.7W			
Weight (kg)	0.1	0.15	0.16	0.16	0.16
Surge suppressor	AC: Varistor, DC: Diode				
Indicator lamp	LED				

- Width 18 mm
- Large flow capacity - (Cv0.53)  
Effective area 9.5 mm<sup>2</sup>
- Low power consumption - 1.7W (DC)
- Various electrical entries

## HOW TO ORDER

SV 1 1 0 - 2 L

- PORT SIZE RC(PT) 1/8

### CONFIGURATION

1	Single solenoid
2	Double solenoid
3	Closed center
4	Exhaust center
5	Pressure center

### COIL RATED VOLTAGE

1	AC 110V
2	AC 220V
3	DC 12V
4	DC 24V

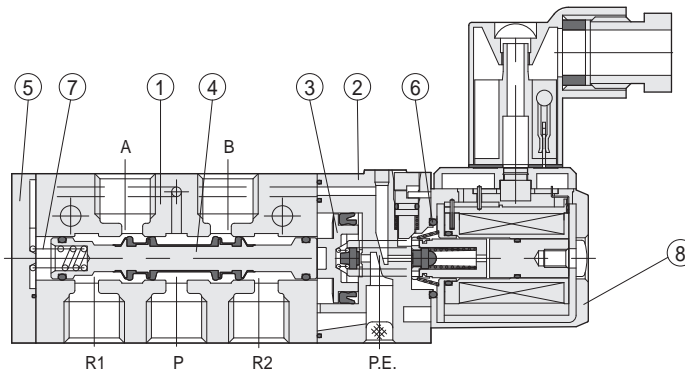
### ELECTRICAL ENTRY

L	Without sub-base
PL	Plug connector with lamp
PS	Plug connector with lamp & surge suppressor
D	DIN terminal
DL	DIN terminal with lamp
DS	DIN terminal with lamp & surge suppressor

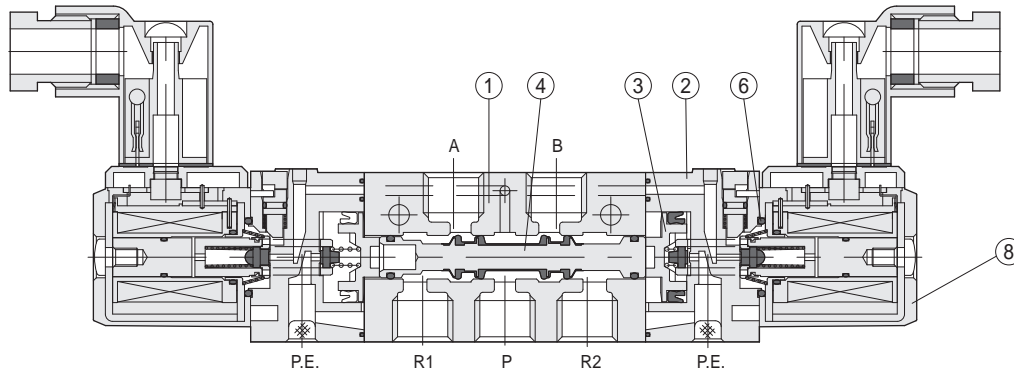
※ Only PS types are available for plug connector for DC.



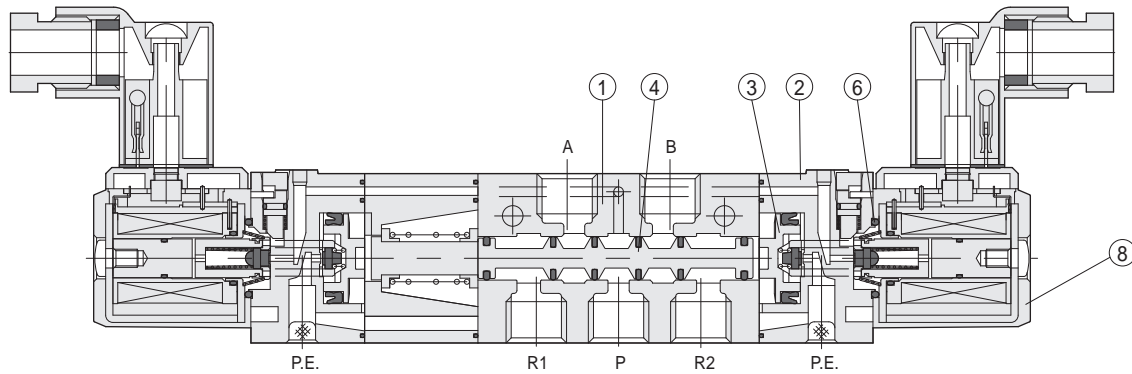
2-position Single Solenoid



2-position Double Solenoid



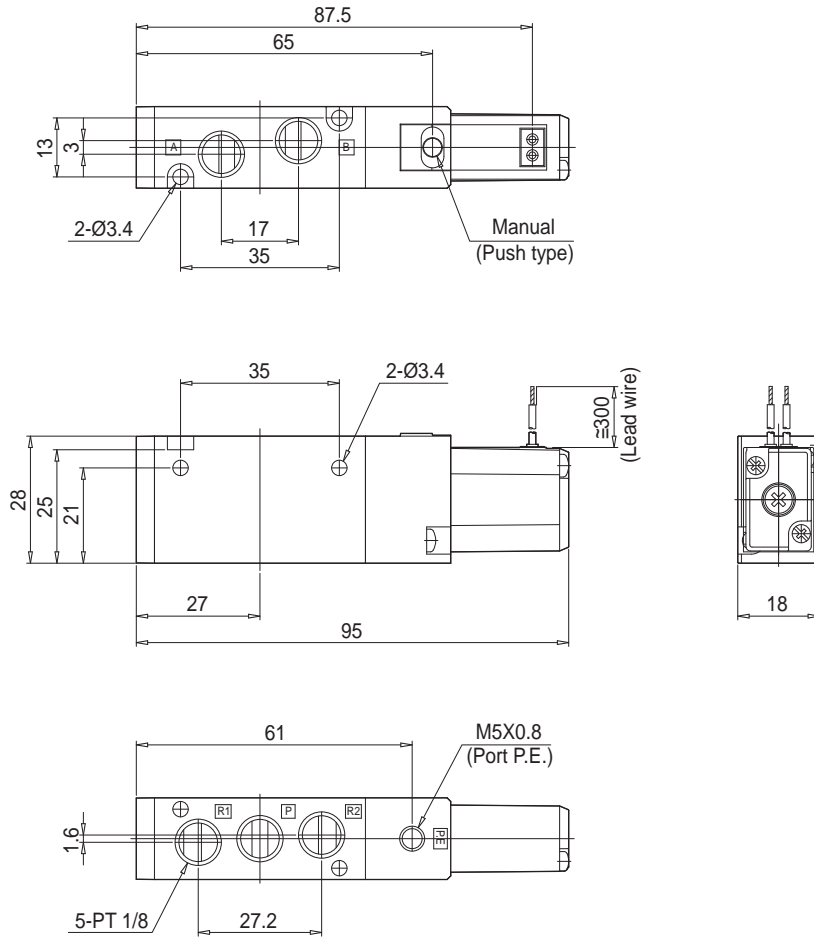
3-position Double Solenoid



No.	Description	Material	No.	Description	Material
①	BODY	ADC-12	⑤	END COVER	PLASTIC
②	PISTON PLATE	POLYACETAL	⑥	O-RING	NBR
③	PISTON	POLYACETAL	⑦	SPRING	SUS
④	SPOOL	AI-NBR	⑧	COIL ASS'Y	

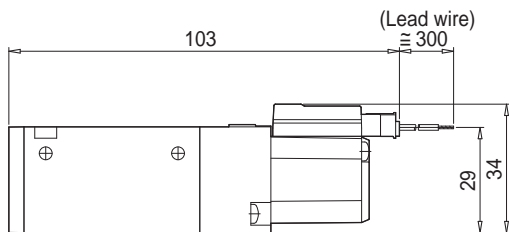
**SV110-□L**

Lead Wire (L)



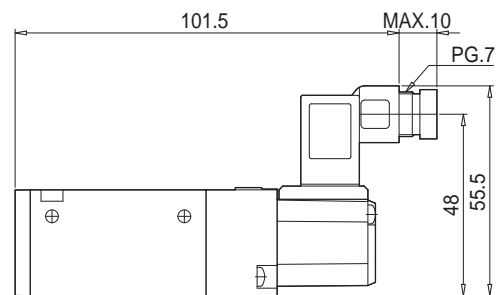
**SV110-□PL/PS**

Plug Connector (PL, PS)



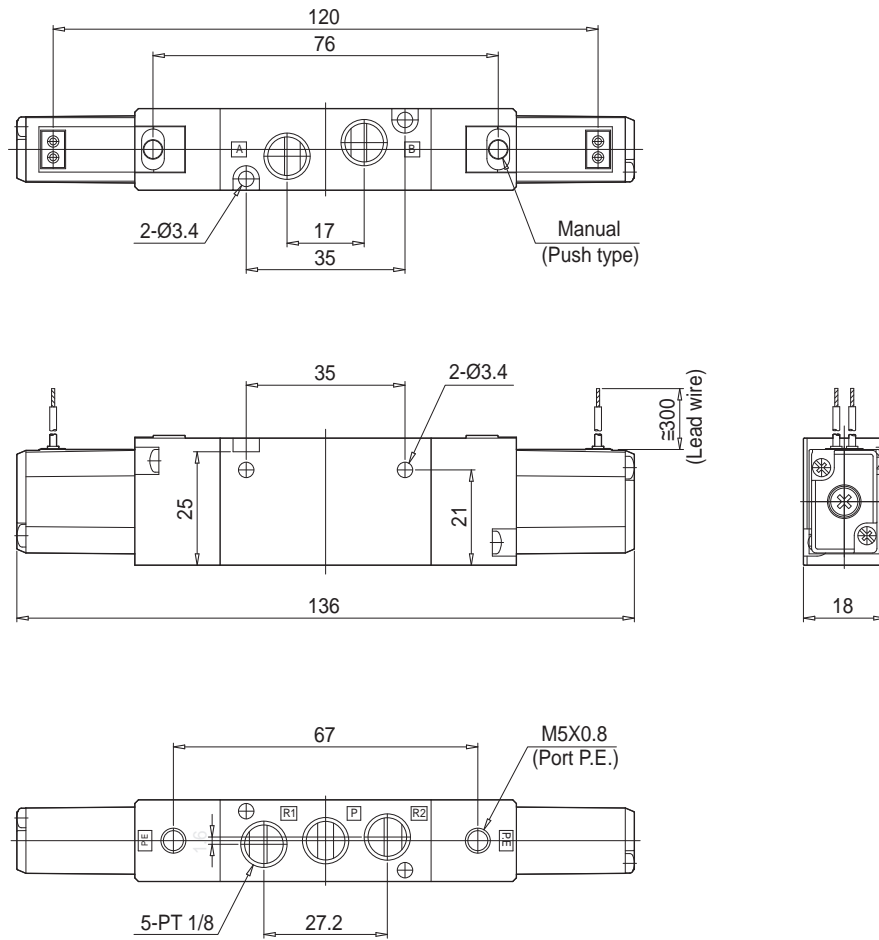
**SV110-□D/DL/DS**

DIN Terminal (D, DL, DS)



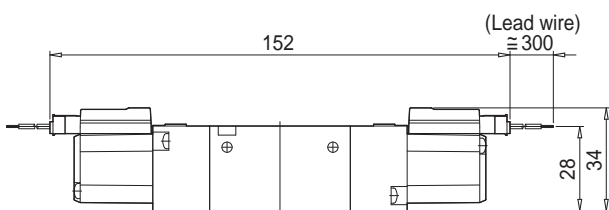
**SV120-□L**

Lead Wire (L)



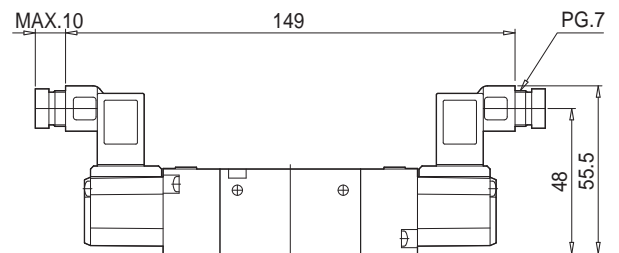
**SV120-□PL/PS**

Plug Connector (PL, PS)



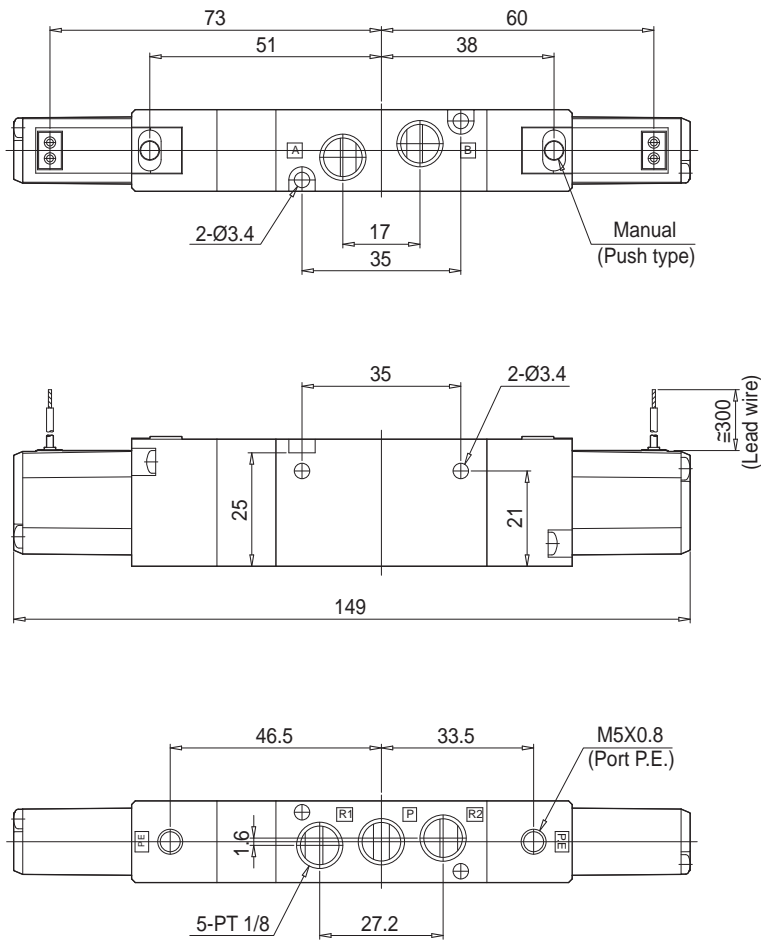
**SV120-□D/DL/DS**

DIN Terminal (D, DL, DS)



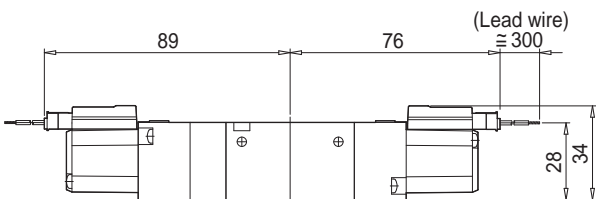
**SV130/140/150-□L**

Lead Wire (L)



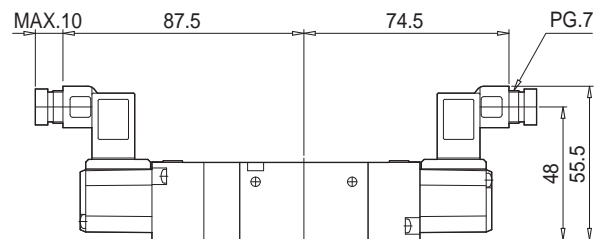
**SV130/140/150-□PL/PS**

Plug Connector (PL, PS)



**SV130/140/150-□D/DL/DS**

DIN Terminal (D, DL, DS)



# SV200 series

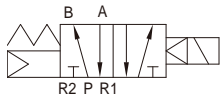
5-port Pilot Type/Elastic Seal

Body Ported

## 5-PORT / 2-POSITION

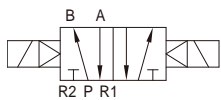
SV210

( P-A-B: PT 1/4  
R1-R2: PT 1/8 )



SV220

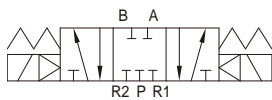
( P-A-B: PT 1/4  
R1-R2: PT 1/8 )



## 5-PORT / 3-POSITION

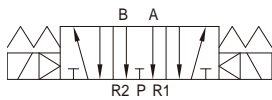
SV230

(Closed center)



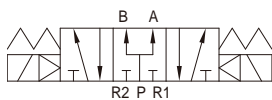
SV240

(Exhaust center)

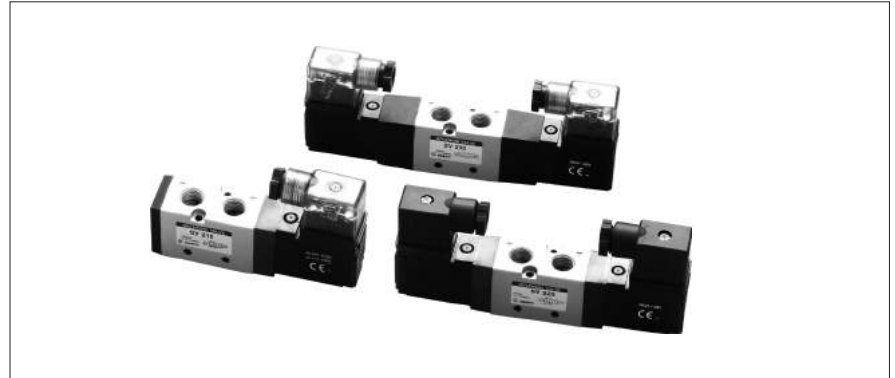


SV250

(Pressure center)



- Width 26 mm
- Large flow capacity - (Cv1.0)  
Effective area 18 mm<sup>2</sup>
- Low power consumption - 1.8W (DC)
- Various electrical entries



## SPECIFICATIONS

MODEL	SV210	SV220	SV230	SV240	SV250
Fluid	Air or Inert Gases				
Pressure range (kgf/cm <sup>2</sup> )	0.15~0.9 (1.5~9.2)	0.1~0.9 (1~9.2)	0.15~0.9 (1.5~9.2)		
Effective area (mm <sup>2</sup> (Cv))	18 (1.0)	18 (1.0)	14.4 (0.8)	14.4 (0.8)	14.4 (0.8)
Ambient and media temp.	Max. 50°C				
Response time (5kgf/cm <sup>2</sup> )	30 ms or less		50 ms or less		
Max. Cycles/Second	5 C/S		3 C/S		
Lubrication	Not required				
Manual override operation	Non-locking push type				
Shock/Vibration resistance	30G / 5G (8.3~2,000 Hz)				
Protective structure	Dust-proof				
Coil rated voltage	AC 50 / 60 Hz 110V, 220V DC 12V, 24V				
Allowable voltage tolerance	-15%~+10% of rated voltage				
Coil insulation	Class B or equivalent (130°C)				
Value of temp. elevated	45°C or less (at rated voltage)				
Apparent power	AC	Starting	5.6 VA (50 Hz), 5.0 VA (60 Hz)		
		Holding	4.5 VA (50 Hz), 3.8 VA (60 Hz)		
Power consumption	DC	1.8W			
Weight (kg)	0.07	0.11	0.12	0.12	0.12
Surge suppressor	AC: Varistor, DC: Diode				
Indicator lamp	LED				

## HOW TO ORDER

SV 2 1 0 - 1 L

• PORT SIZE RC(PT) 1/4

### CONFIGURATION

1	Single solenoid
2	Double solenoid
3	Closed center
4	Exhaust center
5	Pressure center

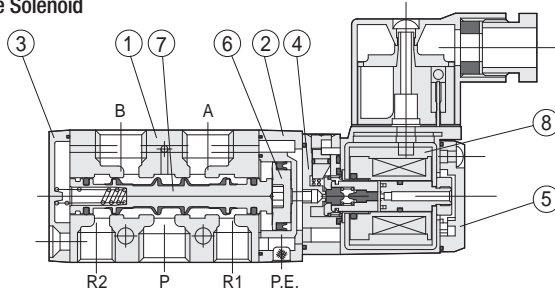
### COIL RATED VOLTAGE

1	AC 110V
2	AC 220V
3	DC 12V
4	DC 24V

### ELECTRICAL ENTRY

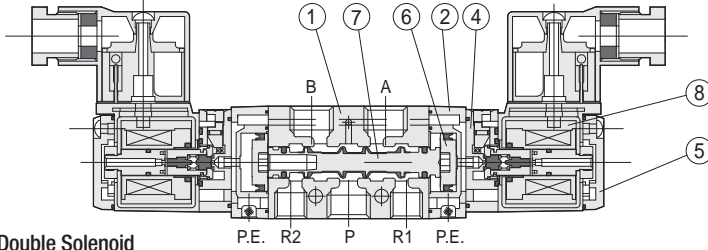
L	Lead wire
D	DIN terminal
DL	DIN terminal with lamp
DS	DIN terminal with lamp & surge suppressor

2-position Single Solenoid

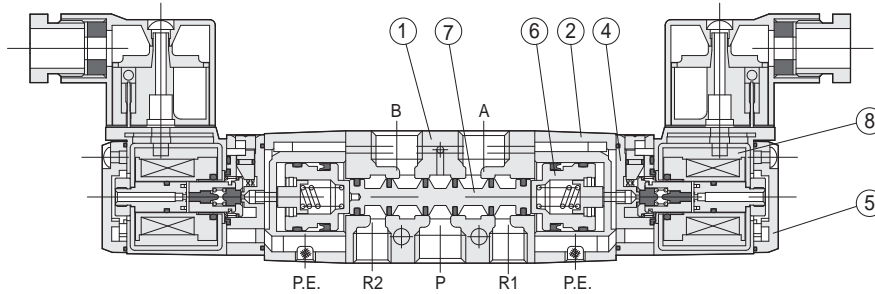


No.	Description	Material
①	BODY	ADC-12
②	ADAPTER	ADC-12
③	END COVER	ADC-12
④	PILOT BODY	POLYACETAL
⑤	PILOT COVER	POLYACETAL
⑥	PISTON	POLYACETAL
⑦	SPOOL	AI-NBR
⑧	COIL ASS'Y	

2-position Double Solenoid



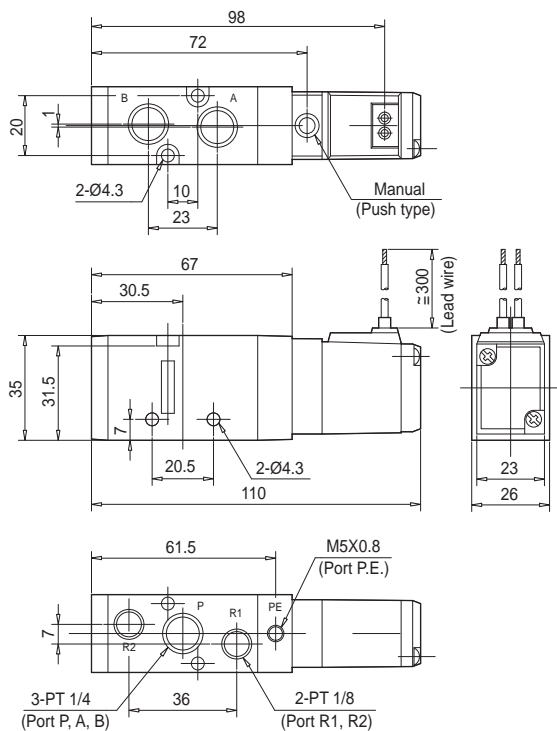
3-position Double Solenoid



■ DIMENSIONS / 2-POSITION SINGLE

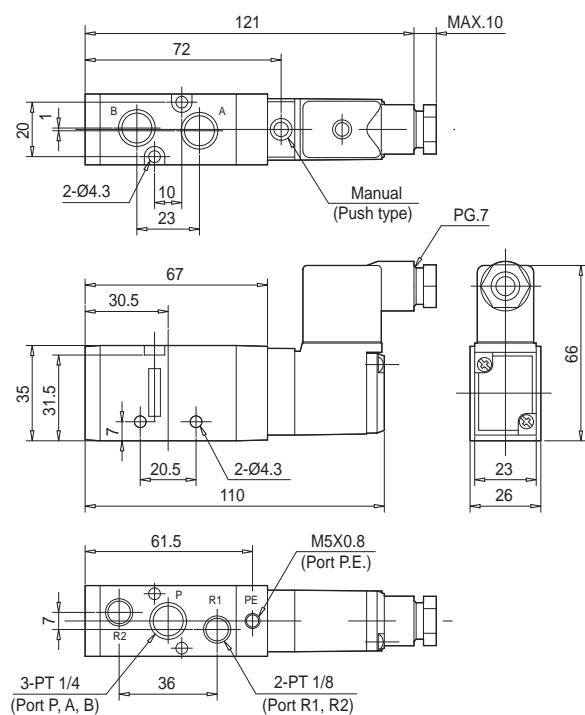
SV210-□L

Lead Wire (L)



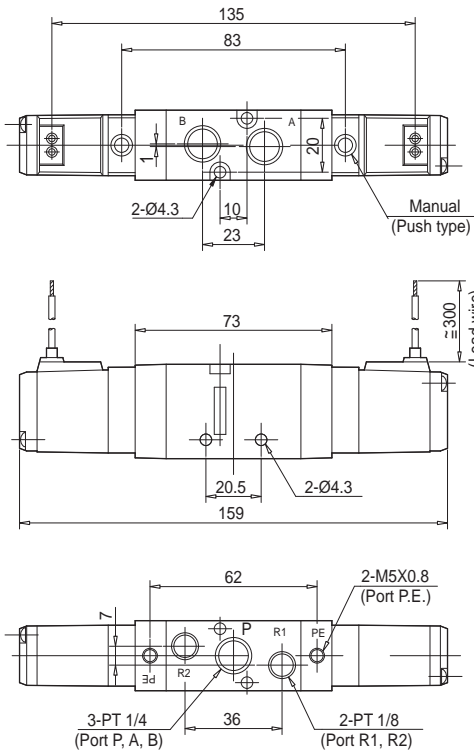
SV210-□D/DL/DS

DIN Terminal (D, DL, DS)



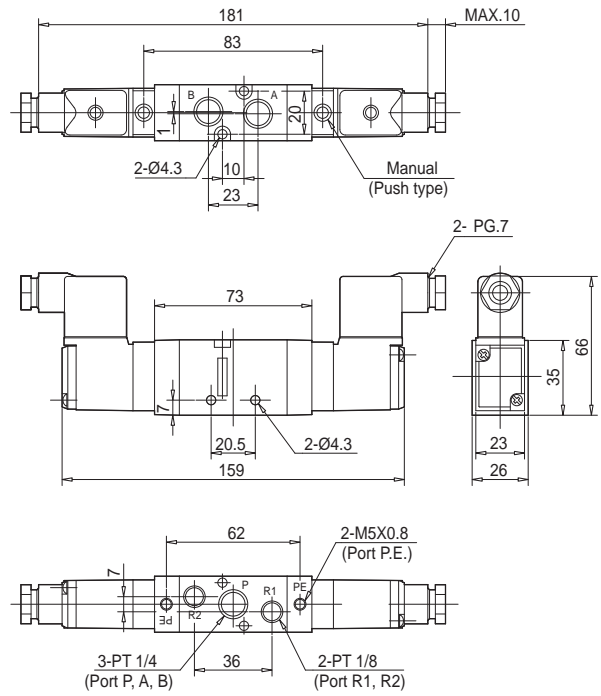
**SV220-□ L**

Lead Wire (L)



**SV220-□ D/DL/DS**

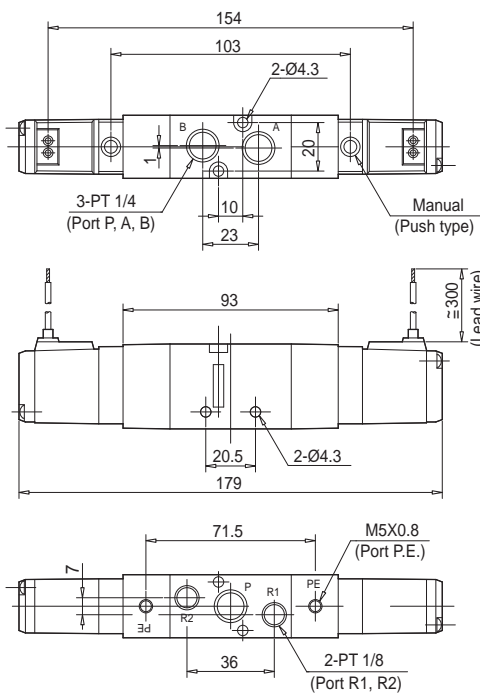
DIN Terminal (D, DL, DS)



**■ DIMENSIONS /3-POSITION CLOSED CENTER, EXHAUST CENTER, PRESSURE CENTER**

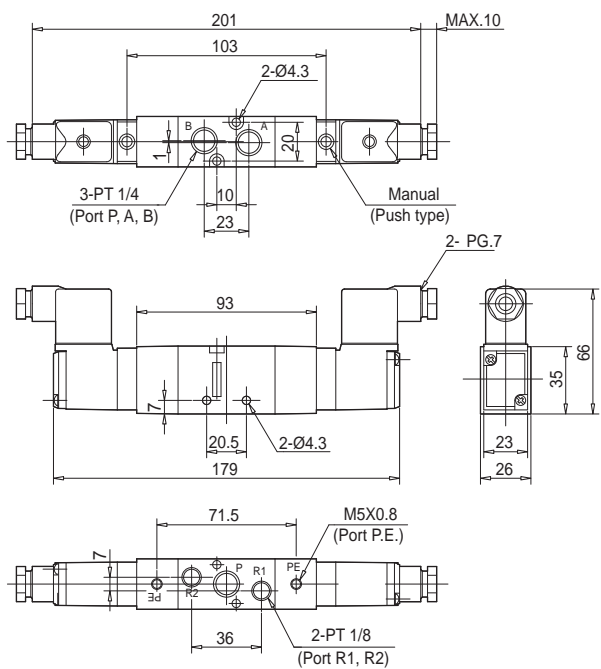
**SV230/240/250-□ L**

Lead Wire (L)



**SV230/240/250-□ D/DL/DS**

DIN Terminal (D, DL, DS)



# SV300 series

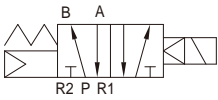
5-port Pilot Type / Elastic Seal

Body Ported

## 5-PORT / 2-POSITION

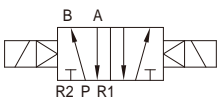
(Port size: PT 3/8)

SV310



(Port size: PT 3/8)

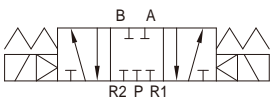
SV320



## 5-PORT / 3-POSITION

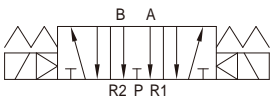
(Closed center)

SV330



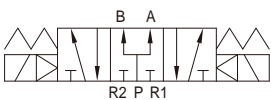
(Exhaust center)

SV340



(Pressure center)

SV350



## SPECIFICATIONS

MODEL	SV310	SV320	SV330	SV340	SV350
Fluid	Air or Inert Gases				
Pressure range (kgf/cm <sup>2</sup> )	0.15~0.9 (1.5~9.2)	0.1~0.9 (1~9.2)	0.15~0.9 (1.5~9.2)		
Effective area (mm <sup>2</sup> (Cv))	45 (2.5)	45 (2.5)	36 (2.0)	36 (2.0)	36 (2.0)
Ambient and media temp.	Max. 50°C				
Response time (5kgf/cm <sup>2</sup> )	30 ms or less		50 ms or less		
Max. Cycles/Second	5 C/S		3 C/S		
Lubrication	Not required				
Manual override operation	Non-locking push type				
Shock/Vibration resistance	30G / 5G (8.3~2,000 Hz)				
Protective structure	Dust-proof				
Coil rated voltage	AC 50 / 60 Hz 110V, 220V DC 12V, 24V				
Allowable voltage tolerance	-15%~+10% of rated voltage				
Coil insulation	Class B or equivalent (130°C)				
Value of temp. elevated	45°C or less (at rated voltage)				
Apparent power	AC	Starting	5.6 VA (50 Hz), 5.0 VA (60 Hz)		
		Holding	4.5 VA (50 Hz), 3.8 VA (60 Hz)		
Power consumption	DC	1.8W			
Weight (kg)	0.35	0.45	0.55	0.55	0.55
Surge suppressor	AC, DC: Varistor				
Indicator lamp	LED				

- Width 32 mm
- Large flow capacity - (Cv2.5)  
Effective area 9.5 mm<sup>2</sup>
- Low power consumption - 1.8W (DC)
- Various electrical entries

## HOW TO ORDER

SV 3 1 0 - 2 L

• PORT SIZE RC(PT) 3/8

• CONFIGURATION

1	Single solenoid
2	Double solenoid
3	Closed center
4	Exhaust center
5	Pressure center

• COIL RATED VOLTAGE

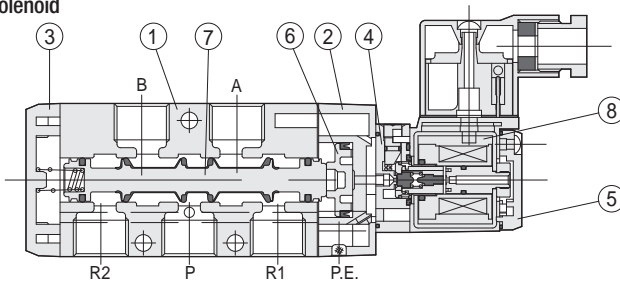
1	AC 110V
2	AC 220V
3	DC 12V
4	DC 24V

• ELECTRICAL ENTRY

L	Lead wire
D	DIN terminal
DL	DIN terminal with lamp
DS	DIN terminal with lamp & surge suppressor

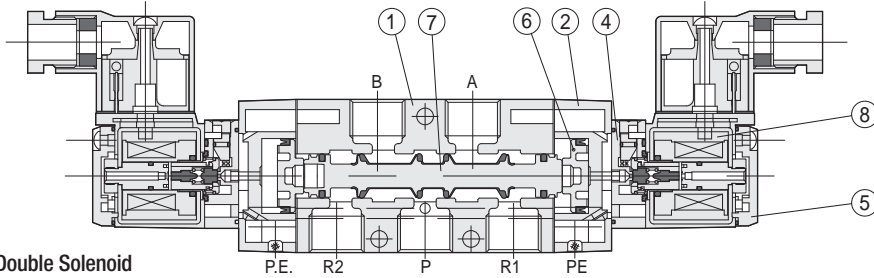


2-position Single Solenoid

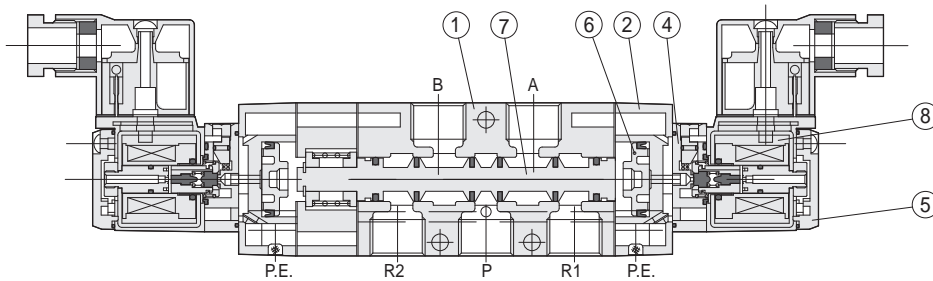


No.	Description	Material
①	BODY	ADC-12
②	ADAPTER	ADC-12
③	END COVER	ADC-12
④	PILOT BODY	POLYACETAL
⑤	PILOT COVER	POLYACETAL
⑥	PISTON	POLYACETAL
⑦	SPOOL	AI-NBR
⑧	COIL ASS'Y	

2-position Double Solenoid



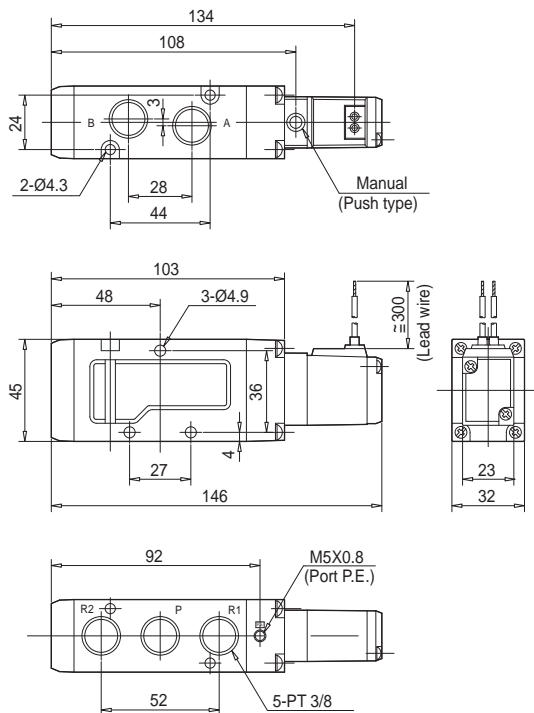
3-position Double Solenoid



DIMENSIONS / 2-POSITION SINGLE

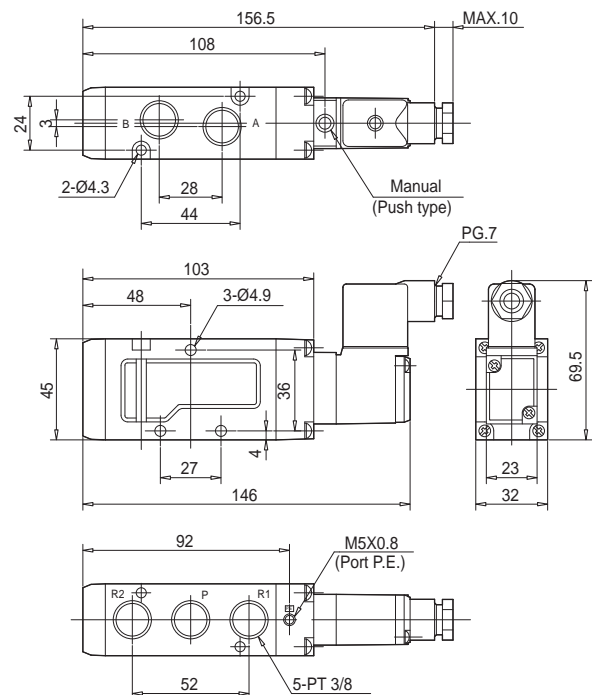
SV310-□L

Lead Wire (L)



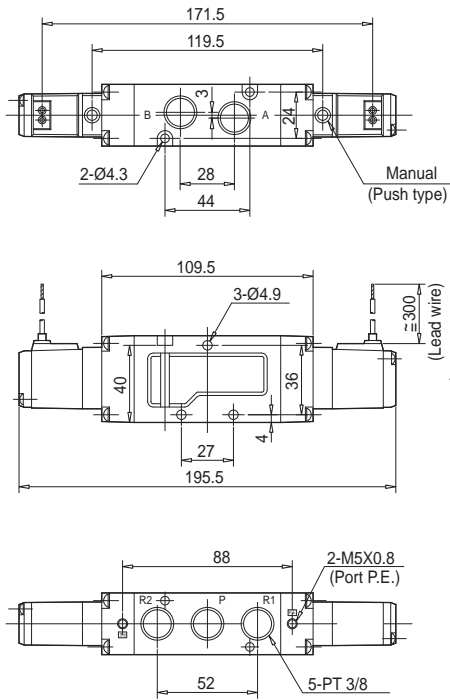
SV310-□D/DL/DS

DIN Terminal (D, DL, DS)



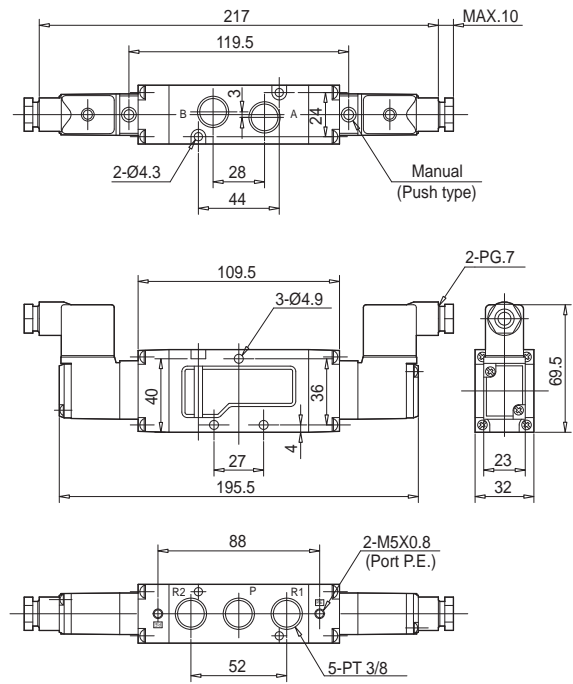
**SV320-□L**

Lead Wire (L)



**SV320-□D/DL/DS**

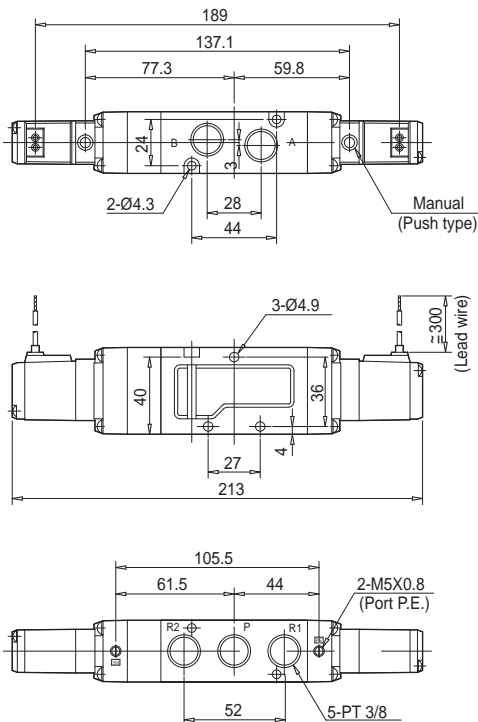
DIN Terminal (D, DL, DS)



**■ DIMENSIONS /3-POSITION CLOSED CENTER, EXHAUST CENTER, PRESSURE CENTER**

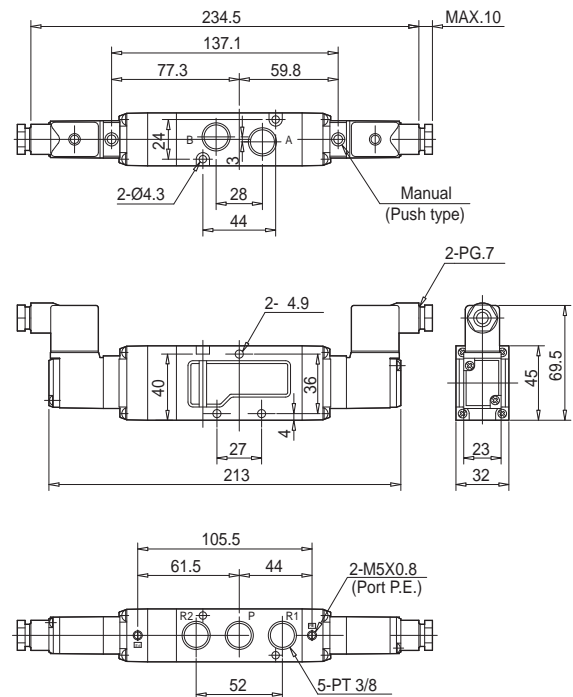
**SV330/340/350-□L**

Lead Wire (L)



**SV330/340/350-□D/DL/DS**

DIN Terminal (D, DL, DS)



# SV400 series

5-port Pilot Type/Elastic Seal

Base Mounted

## 5-PORT / 2-POSITION

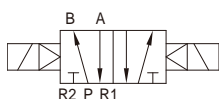
(Port size: PT1/2)

### SV410



(Port size: PT1/2)

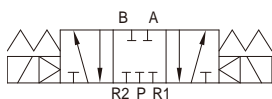
### SV420



## 5-PORT / 3-POSITION

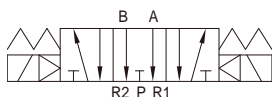
(Closed center)

### SV430



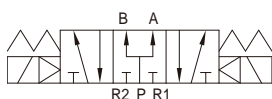
(Exhaust center)

### SV440



(Pressure center)

### SV450



## SPECIFICATIONS

MODEL	SV410	SV420	SV430	SV440	SV450
Fluid	Air or Inert Gases				
Pressure range (kgf/cm <sup>2</sup> )	0.15~0.9 (1.5~9.2)	0.1~0.9 (1~9.2)	0.2~0.9 (2~9.2)		
Effective area (mm <sup>2</sup> (Cv))	80 (4.44)		70 (3.89)		
Ambient and media temp.	Max. 50°C				
Response time (5kgf/cm <sup>2</sup> )	40 ms or less		60 ms or less		
Max. Cycles/Second	5 C/S		3 C/S		
Lubrication	Not required				
Manual override operation	Non-locking push type				
Shock/Vibration resistance	30G / 5G (8.3~2,000 Hz)				
Protective structure	Dust-proof				
Coil rated voltage	AC 50 / 60 Hz 110V, 220V DC 12V, 24V				
Allowable voltage tolerance	-15%~+10% of rated voltage				
Coil insulation	Class B or equivalent (130°C)				
Apparent power	AC	Starting	5.6 VA (50 Hz), 5.0 VA (60 Hz)		
		Holding	4.5 VA (50 Hz), 3.8 VA (60 Hz)		
Power consumption	DC	1.8W			
Weight (kg)	0.83	0.87	0.88	0.88	0.88
Surge suppressor	AC, DC: Varistor				
Indicator lamp	LED				

- Compact size and large flow capacity
- Effective area 80 mm<sup>2</sup> (Cv4.44)
- Low power consumption / 1.8W (DC)
- Various electrical entries

## HOW TO ORDER

SV 4 1 0 - 2 L

• PORT SIZE RC(PT) 1/2

### CONFIGURATION

1	Single solenoid
2	Double solenoid
3	Closed center
4	Exhaust center
5	Pressure center

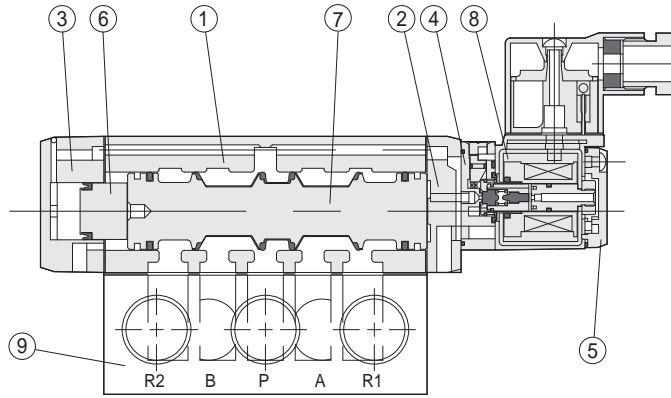
### COIL RATED VOLTAGE

1	AC 110V
2	AC 220V
3	DC 12V
4	DC 24V

### ELECTRICAL ENTRY

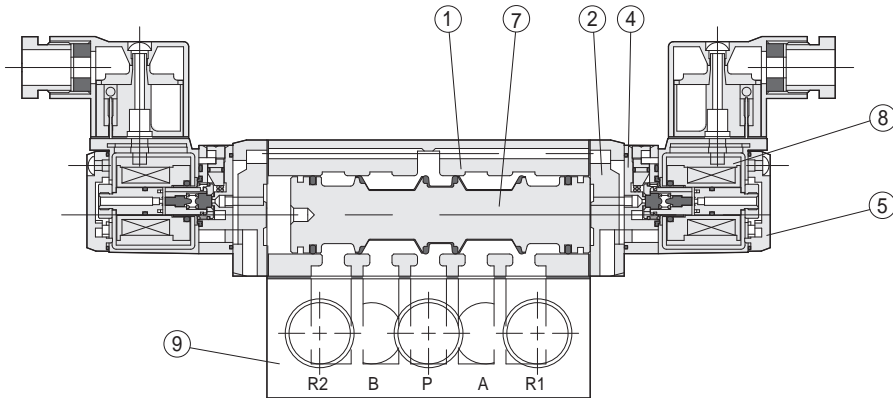
L	Lead wire
D	DIN terminal
DL	DIN terminal with lamp
DS	DIN terminal with lamp & surge suppressor

2-position Single Solenoid



No.	Description	Material
①	BODY	ADC-12
②	ADAPTER	ADC-12
③	END COVER	ADC-12
④	PILOT BODY	POLYACETAL
⑤	PILOT COVER	POLYACETAL
⑥	PISTON	POLYACETAL
⑦	SPOOL	AI-NBR
⑧	COIL ASS'Y	
⑨	BASE	ADC-12

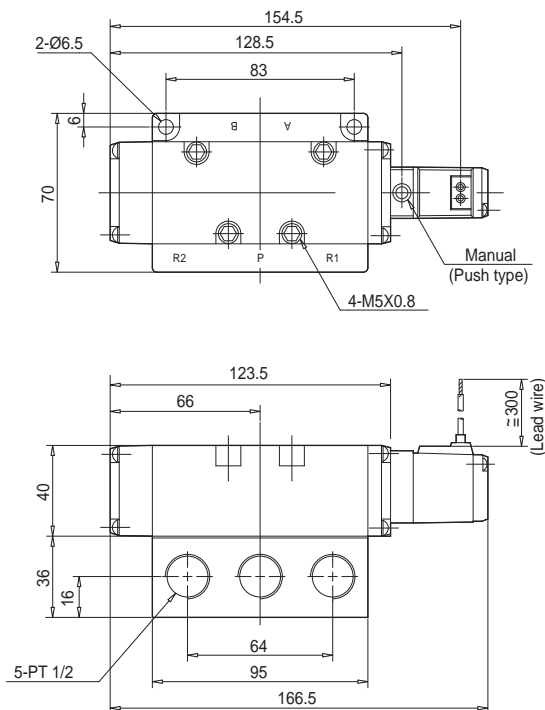
2-position Double Solenoid



DIMENSIONS / 2-POSITION SINGLE

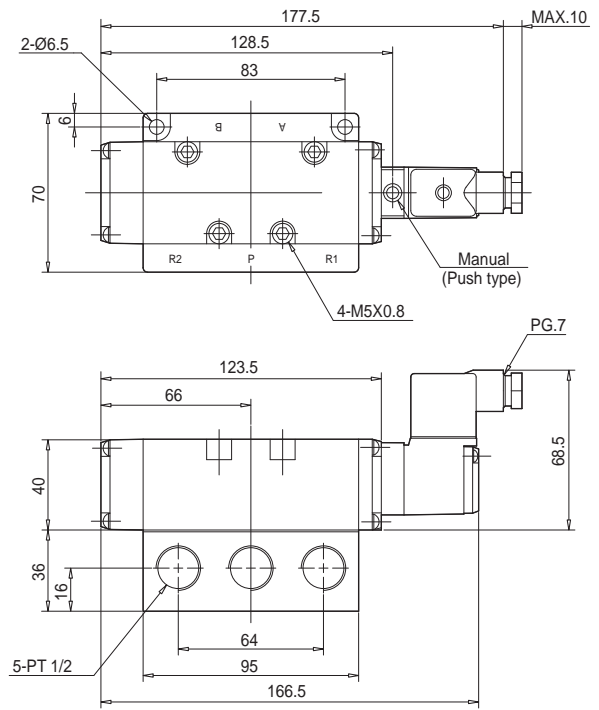
SV410-□L

Lead Wire (L)



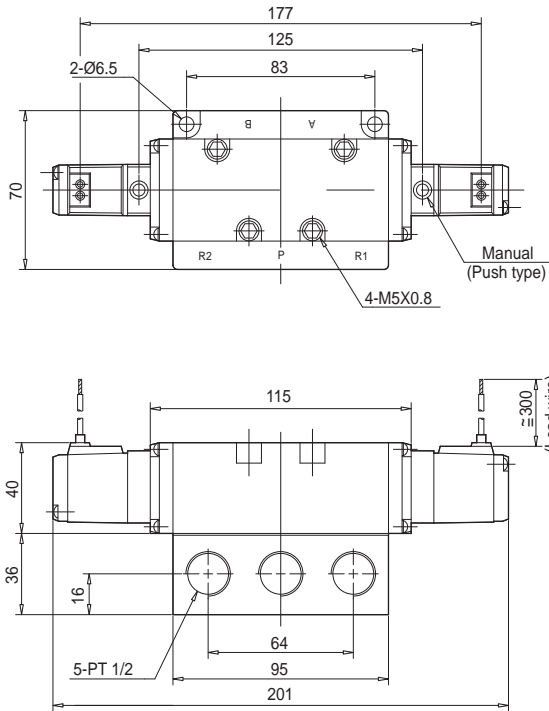
SV410-□D/DL/DS

DIN Terminal (D, DL, DS)



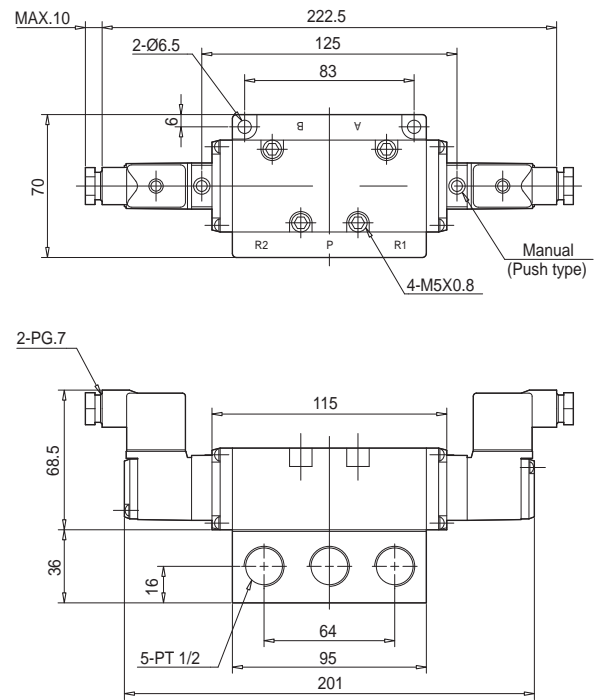
**SV420-□ L**

Lead Wire (L)



**SV420-□ D/DL/DS**

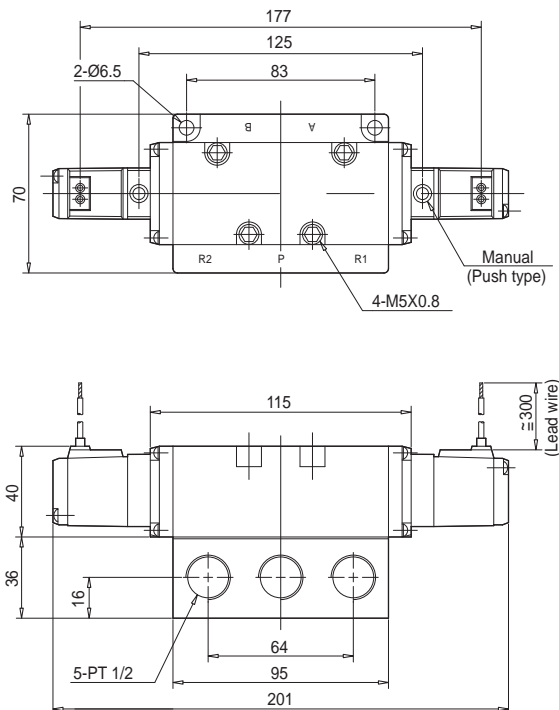
DIN Terminal (D, DL, DS)



■ DIMENSIONS / 3-POSITION CLOSED CENTER, EXHAUST CENTER, PRESSURE CENTER

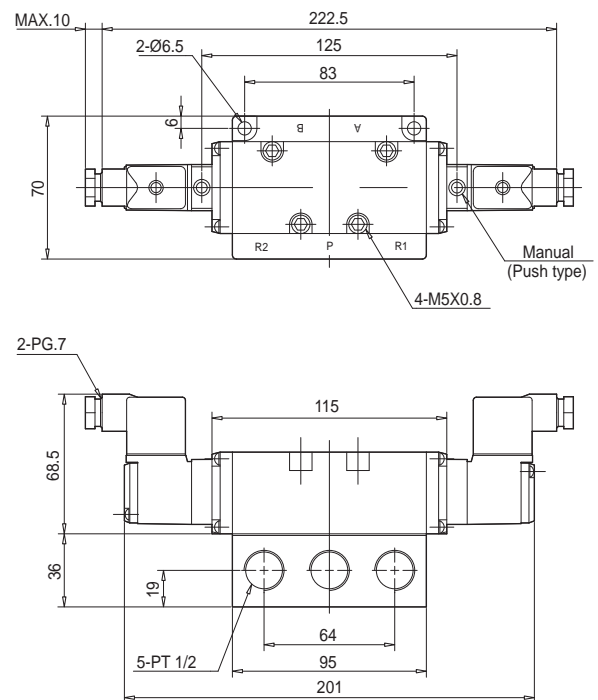
**SV430/440/450-□ L**

Lead Wire (L)



**SV430/440/450-□ D/DL/DS**

DIN Terminal (D, DL, DS)



# SV600 series

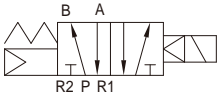
5-port Pilot Type /Elastic Seal

Base Mounted

## 5-PORT /2-POSITION

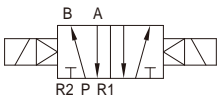
(Port size: PT3/4)

SV610



(Port size: PT3/4)

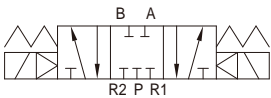
SV620



## 5-PORT /3-POSITION

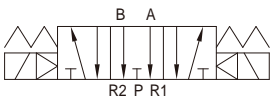
(Closed center)

SV630



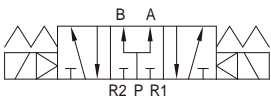
(Exhaust center)

SV640



(Pressure center)

SV650



## SPECIFICATIONS

MODEL	SV610	SV620	SV630	SV640	SV650
Fluid	Air or Inert Gases				
Pressure range (kgf/cm <sup>2</sup> )	0.15~0.9 (1.5~9.2)	0.1~0.9 (1~9.2)	0.2~0.9 (2~9.2)		
Effective area (mm <sup>2</sup> (Cv))	90 (5.0)		70 (3.89)		
Ambient and media temp.	Max. 50°C				
Response time (5kgf/cm <sup>2</sup> )	40 ms or less		60 ms or less		
Max. Cycles/Second	5 C/S		3 C/S		
Lubrication	Not required				
Manual override operation	Non-locking push type				
Shock/Vibration resistance	30G / 5G (8.3~2,000 Hz)				
Protective structure	Dust-proof				
Coil rated voltage	AC 50 / 60 Hz 110V, 220V DC 12V, 24V				
Allowable voltage tolerance	-15%~+10% of rated voltage				
Coil insulation	Class B or equivalent (130°C)				
Apparent power	AC	Starting	5.6 VA (50 Hz), 5.0 VA (60 Hz)		
		Holding	4.5 VA (50 Hz), 3.8 VA (60 Hz)		
Power consumption	DC	1.8W			
Weight (kg)	1.17	1.2	1.22	1.22	1.22
Surge suppressor	AC, DC: Varistor				
Indicator lamp	LED				

- Compact size and large flow capacity
- Effective area 90 mm<sup>2</sup> (Cv5.0)
- Low power consumption - 1.8W (DC)
- Various electrical entries

## HOW TO ORDER

SV 6 1 0 - 1 L

• PORT SIZE RC(PT) 3/4

• CONFIGURATION

1	Single solenoid
2	Double solenoid
3	Closed center
4	Exhaust center
5	Pressure center

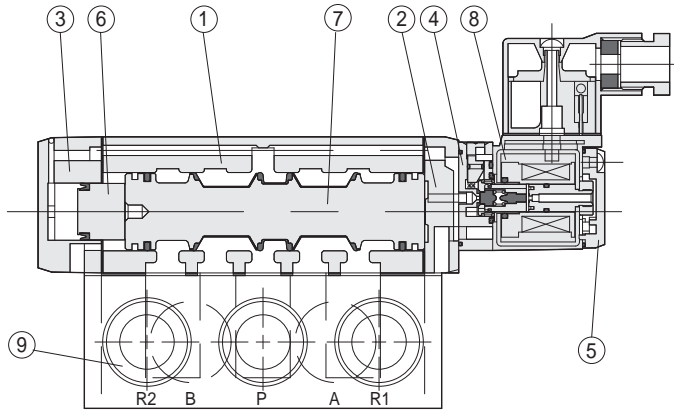
• COIL RATED VOLTAGE

1	AC 110V
2	AC 220V
3	DC 12V
4	DC 24V

• ELECTRICAL ENTRY

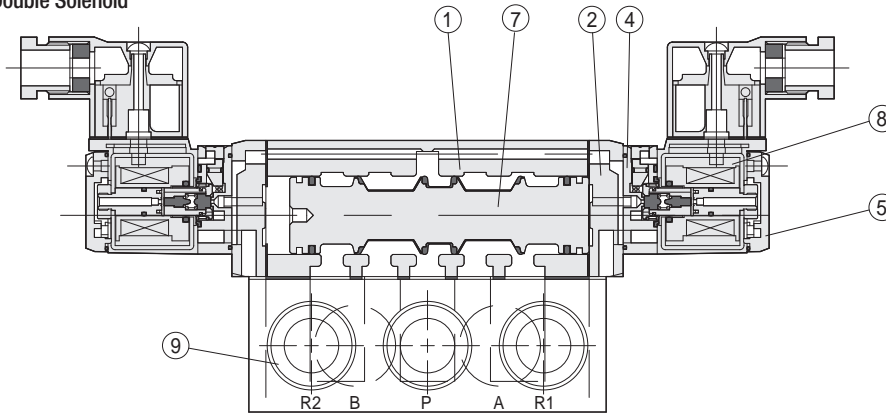
L	Lead wire
D	DIN terminal
DL	DIN terminal with lamp
DS	DIN terminal with lamp & surge suppressor

2-position Single Solenoid



No.	Description	Material
①	BODY	ADC-12
②	ADAPTER	ADC-12
③	END COVER	ADC-12
④	PILOT BODY	POLYACETAL
⑤	PILOT COVER	POLYACETAL
⑥	PISTON	POLYACETAL
⑦	SPOOL	AI-NBR
⑧	COIL ASS'Y	
⑨	BASE	ADC-12

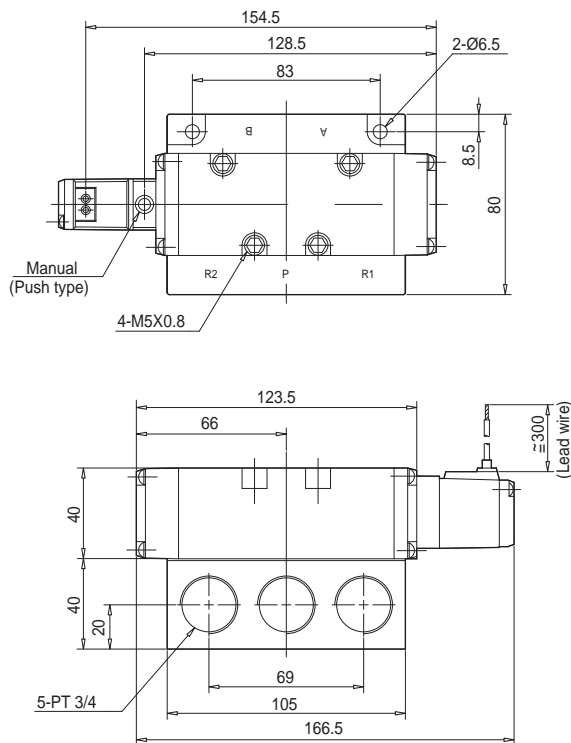
2-position Double Solenoid



DIMENSIONS / 2-POSITION SINGLE

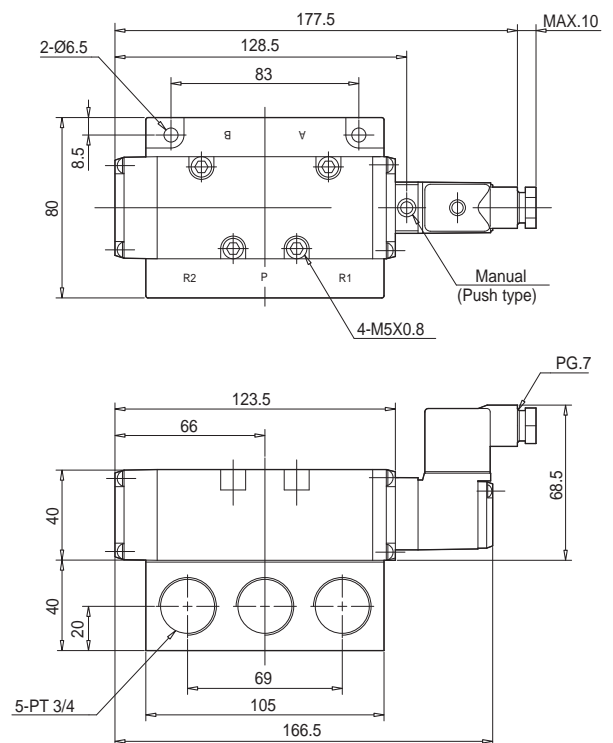
SV610-□ L

Lead Wire (L)



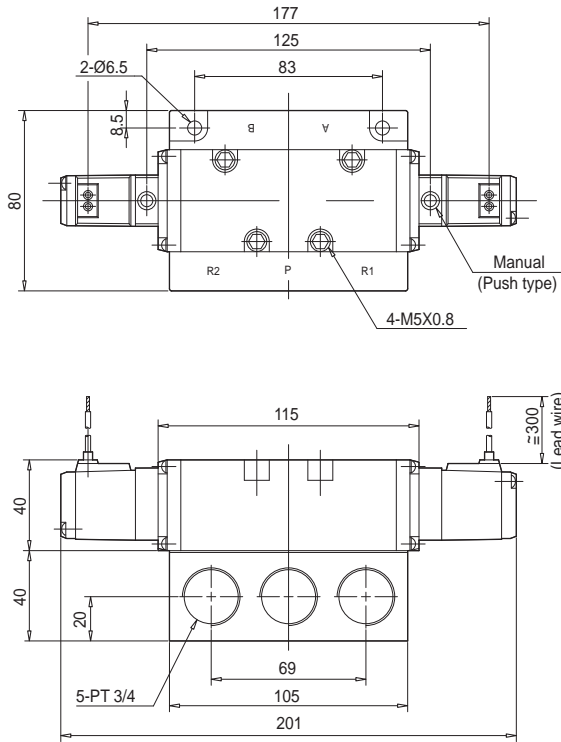
SV610-□ D/DL/DS

DIN Terminal (D, DL, DS)



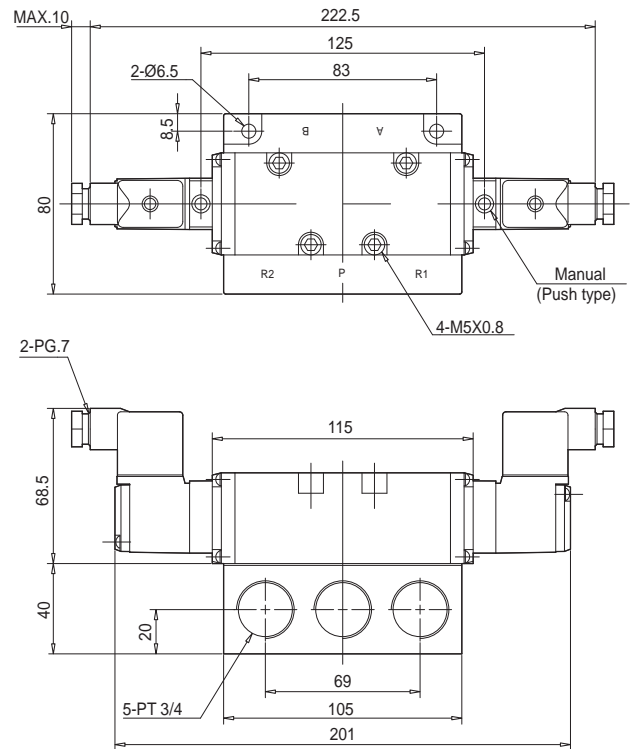
**SV620-□L**

Lead Wire (L)



**SV620-□D/DL/DS**

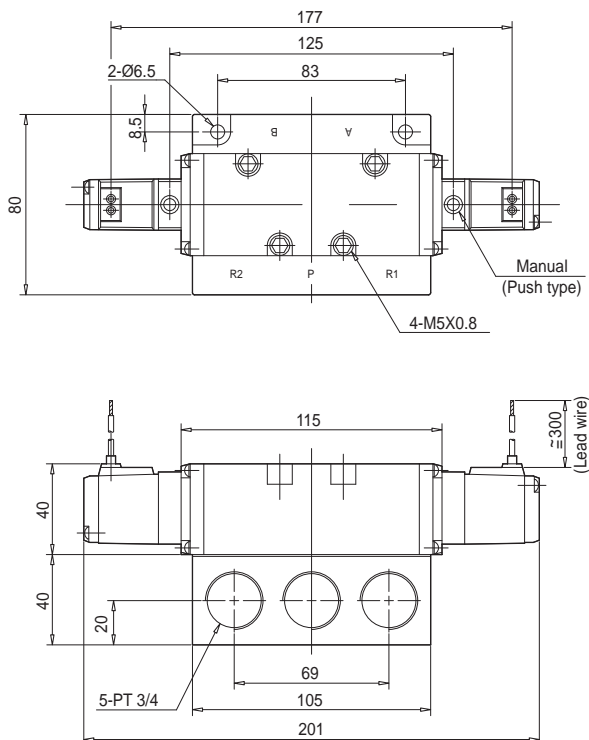
DIN Terminal (D, DL, DS)



**DIMENSIONS / 3-POSITION CLOSED CENTER, EXHAUST CENTER, PRESSURE CENTER**

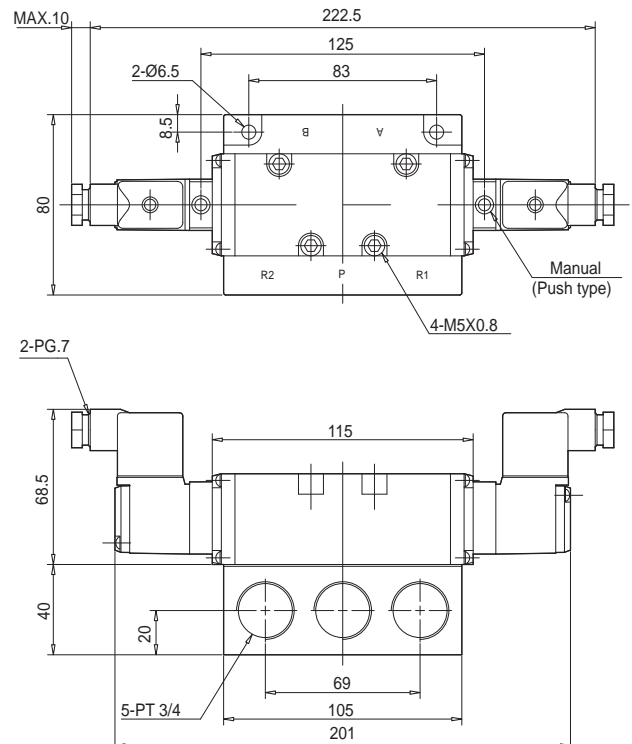
**SV630/640/650-□L**

Lead Wire (L)



**SV630/640/650-□D/DL/DS**

DIN Terminal (D, DL, DS)





# 5-port Air Operated Valve

5-port Pilot Type/Elastic Seal

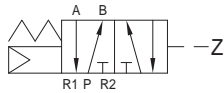
SV50M, SV100M



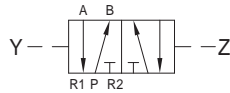
## SPECIFICATIONS

MODEL	SV51M	SV52M	SV110M	SV120M
Fluid	Air or Inert Gases			
Pressure range (MPa (kgf/cm <sup>2</sup> ))	0.15~0.7 (1.5~7)	0.1~0.7 (1~7)	0.15~0.7 (1.5~7)	0.1~0.7 (1~7)
Effective area (mm <sup>2</sup> (Cv))	3.6 (0.2)		9.5 (0.53)	
Ambient and media temp.	Max. 50°C			
Max. Cycles/Second	5 C/S		3 C/S	
Lubrication	Not required			
Protective structure	Dust-proof			

SV51M, 110M



SV52M, 120M



※ Port size: SV50M-Port P, A, B, R1, R2 = M5 / SV100M-Port P, A, B, R1, R2 = PT 1/8

## HOW TO ORDER

SV 1 2 0 M

### PORT SIZE

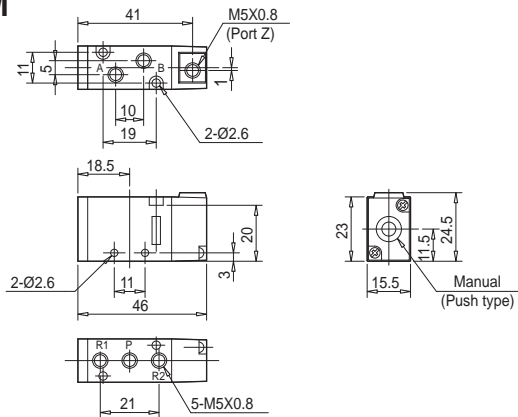
5	M5
1	PT 1/8

### CONFIGURATION

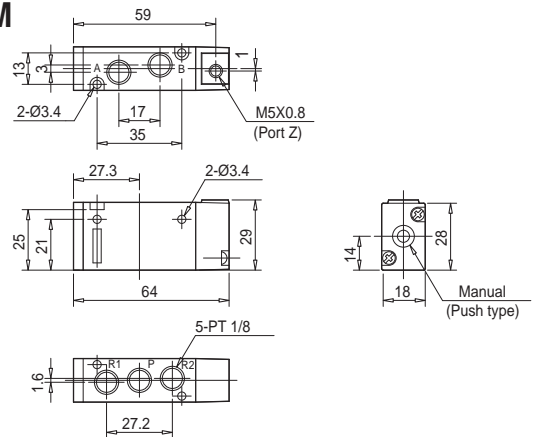
1	Single
2	Double

### AIR OPERATED VALVE

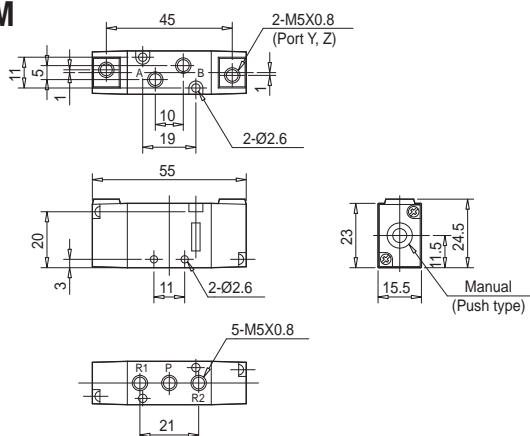
SV51M



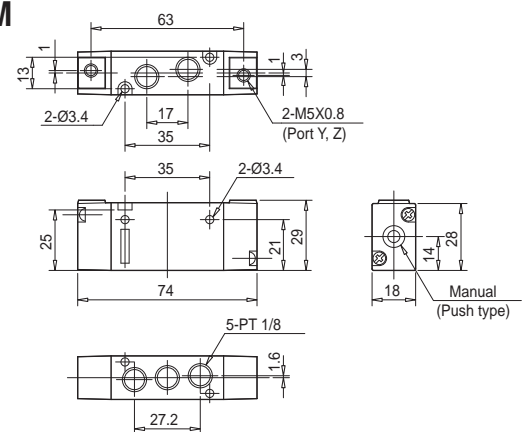
SV110M



SV52M



SV120M



# 5-port Air Operated Valve

5-port Pilot Type /Elastic Seal

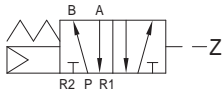
SV200M, SV300M



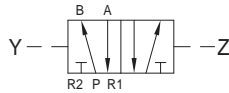
## SPECIFICATIONS

MODEL	SV210M	SV220M	SV310M	SV320M
Fluid	Air or Inert Gases			
Pressure range (MPa (kgf/cm <sup>2</sup> ))	0.15~0.9 (1.5~9.2)	0.1~0.9 (1~9.2)	0.15~0.9 (1.5~9.2)	0.1~0.9 (1~9.2)
Effective area (mm <sup>2</sup> (Cv))	18 (1.0)		42 (2.5)	
Ambient and media temp.	Max. 50°C			
Max. Cycles/Second	5 C/S			
Lubrication	Not required			
Protective structure	Dust-proof			

SV210M, 310M



SV220M, 320M



※ Port size: SV200M-Port P, A, B, R1, R2 = PT 1/4 / SV300M-Port P, A, B, R1, R2 = PT 3/8

## HOW TO ORDER

SV **2** **2** **0** **M**

### PORT SIZE

2	PT 1/4
3	PT 3/8

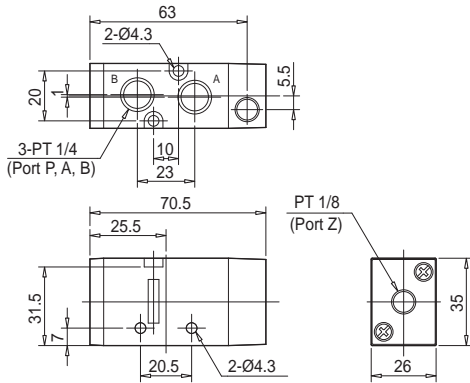
### CONFIGURATION

1	Single
2	Double

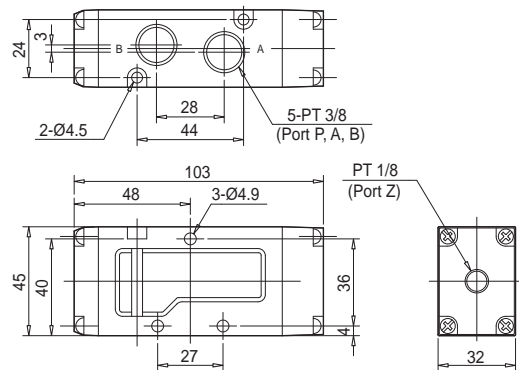
### AIR OPERATED VALVE

3-position double master types are available to your order.

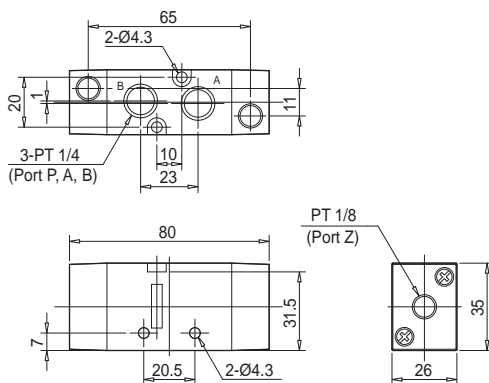
## SV210M



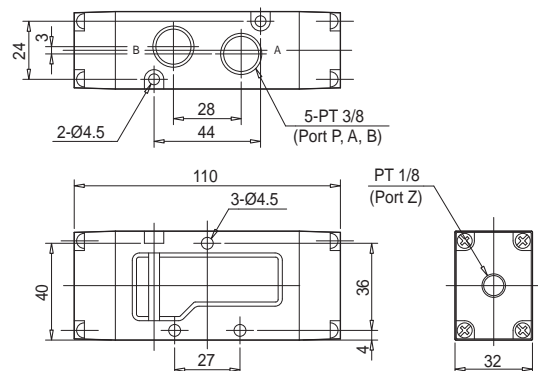
## SV310M



## SV220M



## SV320M



# 5-port Air Operated Valve

5-port Pilot Type/Elastic Seal

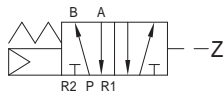
SV400M, SV600M



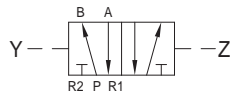
## SPECIFICATIONS

MODEL	SV410M	SV420M	SV610M	SV620M
Fluid	Air or Inert Gases			
Pressure range (MPa (kgf/cm <sup>2</sup> ))	0.15~0.9 (1.5~9.2)	0.1~0.9 (1~9.2)	0.15~0.9 (1.5~9.2)	0.1~0.9 (1~9.2)
Effective area (mm <sup>2</sup> (Cv))	80 (4.44)		90 (5.0)	
Ambient and media temp.	Max. 50°C			
Max. Cycles/Second	5 C/S			
Lubrication	Not required			
Protective structure	Dust-proof			

SV410M, 610M



SV420M, 620M



※ Port size: SV400M-Port P, A, B, R1, R2 = PT 1/2 / SV600M-Port P, A, B, R1, R2 = PT 3/4

## HOW TO ORDER

SV 4 1 0 M

### PORT SIZE

4	PT 1/2
6	PT 3/4

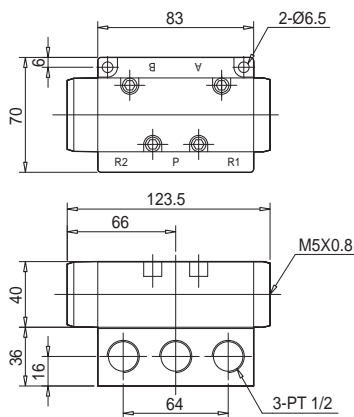
### CONFIGURATION

1	Single
2	Double

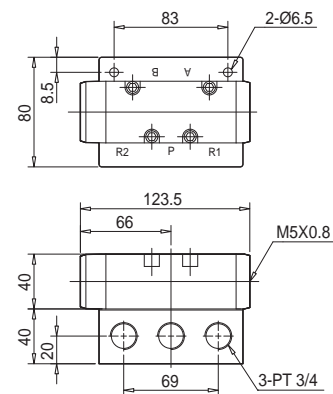
### AIR OPERATED VALVE

3-position double master types are available to your order.

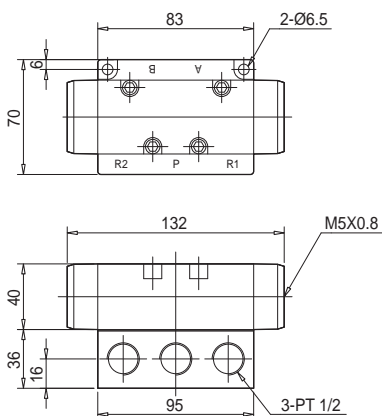
SV410M



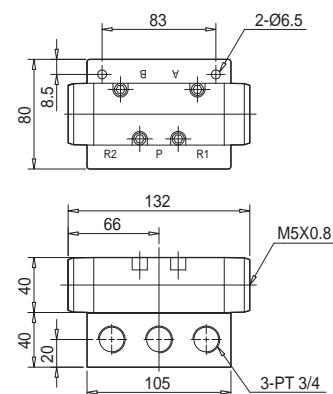
SV610M



SV420M



SV620M



# 3-port Valve

Solenoid Operated Valve / Air Operated Valve

Elastic Seal



## SPECIFICATIONS

MODEL	SV59	SV190	SV59M	SV190M
Fluid	Air or Inert Gases			
Pressure range (MPa (kgf/cm <sup>2</sup> ))	0.15~0.7 (1.5~7.1)			
Effective area (mm <sup>2</sup> (Cv))	3.6 (0.2)	6 (0.33)	3.6 (0.2)	6 (0.33)
Ambient and media temp.	Max. 50°C			
Max. Cycles/Second	5 C/S		3 C/S	
Lubrication	Not required			
Surge suppressor	AC: Varistor, DC: Diode			
Indicator lamp	LED			

## HOW TO ORDER

SV **1** **9** **0** **M** - **2** **L** - **NC**

### PORT SIZE

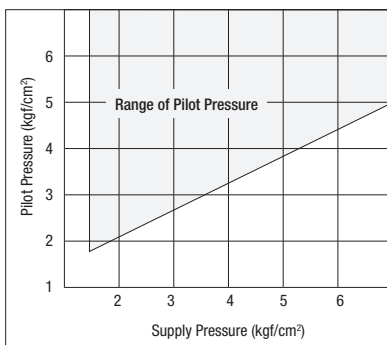
5	M5
1	PT 1/8

### 3-PORT VALVE

### EXISTENCE OF SOLENOID

M	Air operated valve
Blank	Solenoid valve

### PILOT PRESSURE OF AIR OPERATED VALVE



### FUNCTION

N.C.	Normally closed type
N.O.	Normally open type

### ELECTRICAL ENTRY

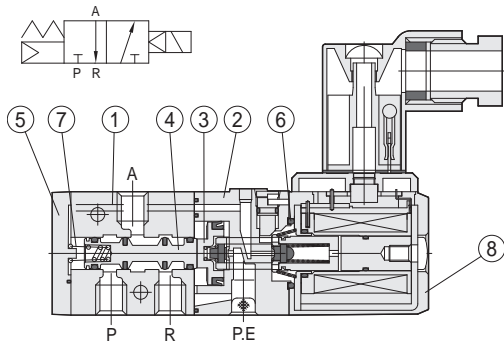
L	Lead wire
PL	Plug connector with lamp
PS	Plug connector with lamp & surge suppressor
Blank	Master valve

※ Only PS types are available for plug connector for DC.

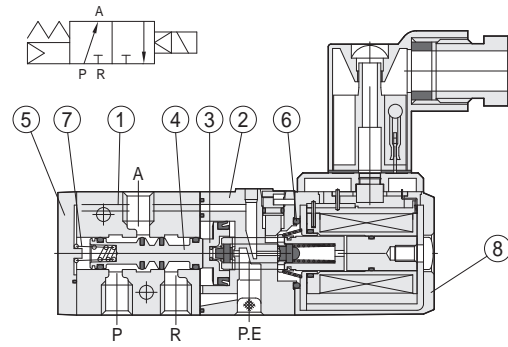
### COIL RATED VOLTAGE

1	AC 110V
2	AC 220V
3	DC 12V
4	DC 24V
Blank	Air operated valve

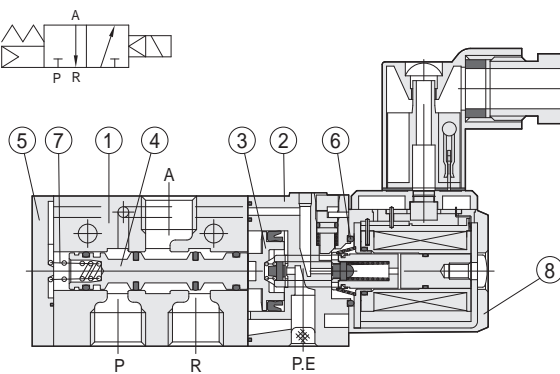
SV59/N.C.



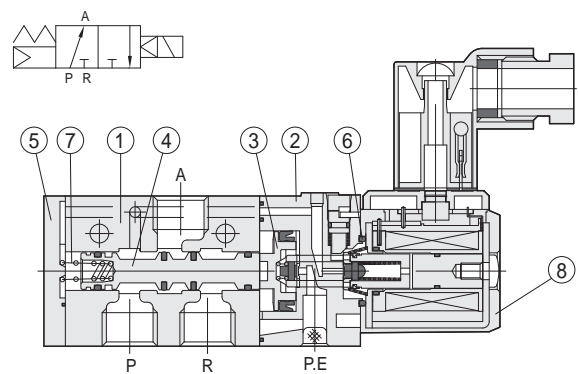
SV59/N.O.



SV190/N.C.



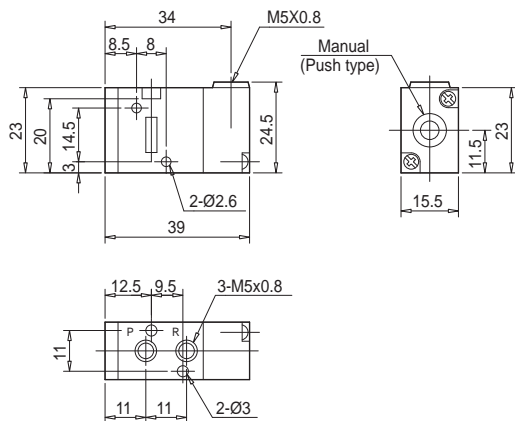
SV190/N.O.



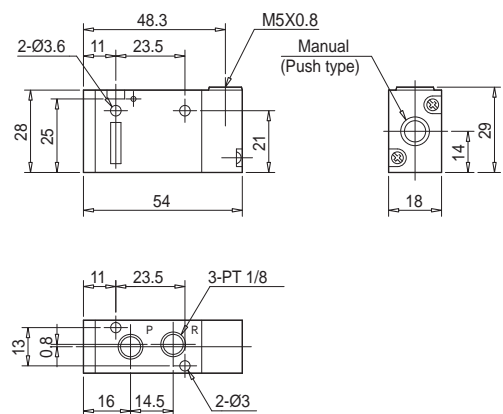
No.	Description	Material	No.	Description	Material
①	BODY	ADC-12	⑤	END COVER	PLASTIC
②	PISTON PLATE	POLYACETAL	⑥	O-RING	NBR
③	PISTON	POLYACETAL	⑦	SPRING	SUS
④	SPOOL	AI-NBR	⑧	COIL ASS'Y	

DIMENSIONS / AIR OPERATED VALVE

SV59M

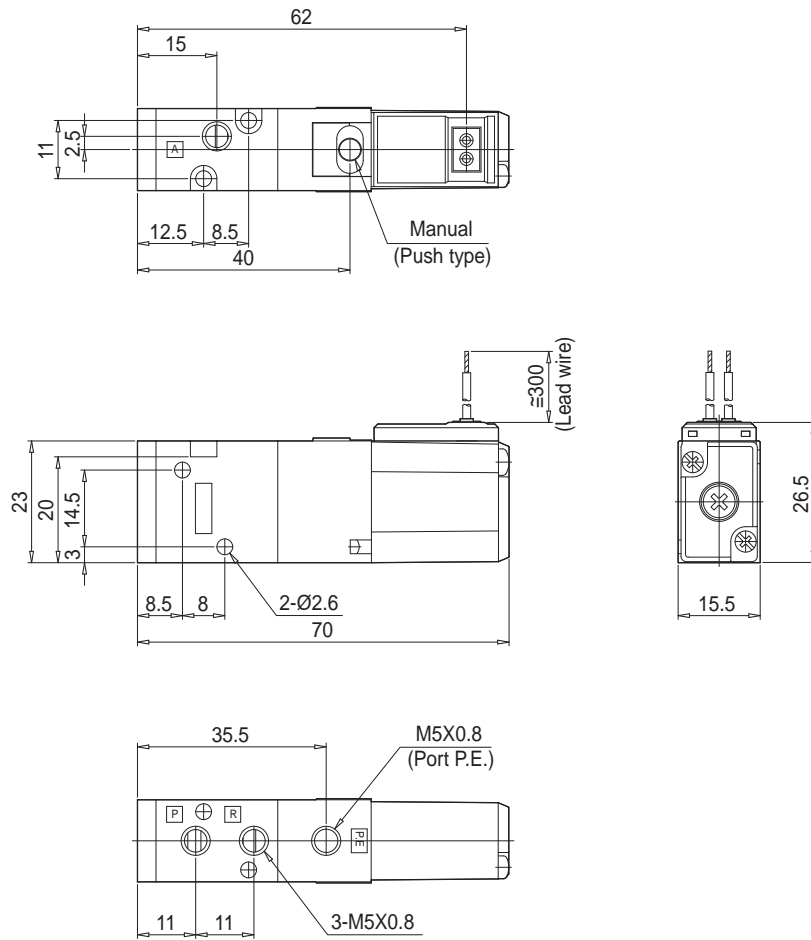


SV190M



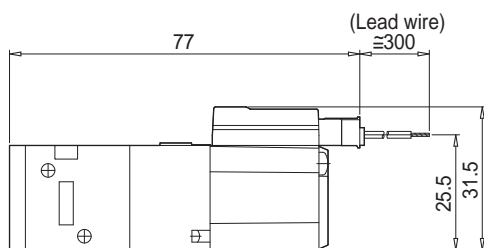
**SV59-□L**

Lead Wire (L)



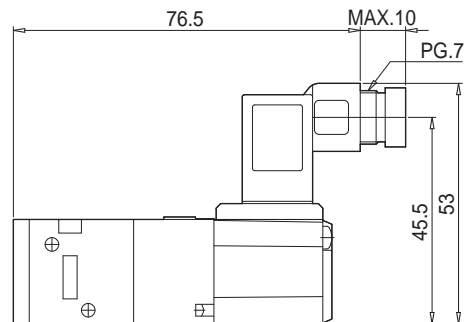
**SV59-□PL/PS**

Plug Connector (PL, PS)



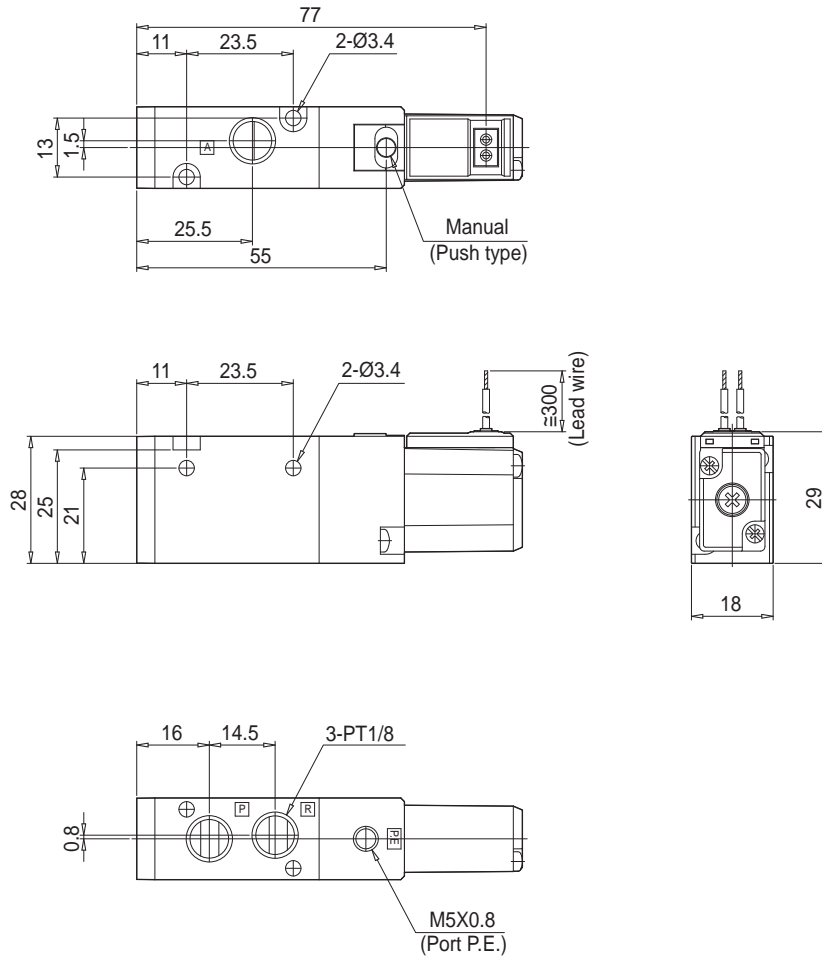
**SV59-□D/DL/DS**

DIN Terminal (D, DL, DS)



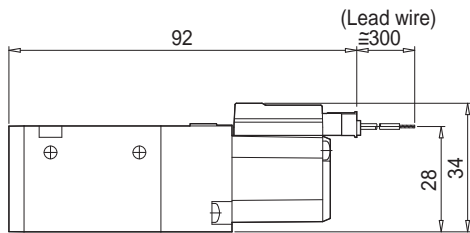
**SV190-□L**

Lead Wire (L)



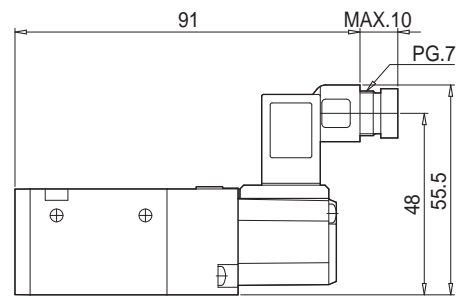
**SV190-□PL/PS**

Plug Connector (PL, PS)



**SV190-□D/DL/DS**

DIN Terminal (D, DL, DS)

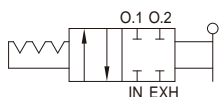


# Hand Valve

SV200H, 300H, 400H

## 3-POSITION

(Closed center)



## ■ SPECIFICATIONS

MODEL	SV200H	SV300H	SV400H
Fluid	Air		
Pressure range (kgf/cm <sup>2</sup> )	0.9 (9.2)		
Effective area (mm <sup>2</sup> )	7.5	20	55
Ambient and fluid temp.	5~60°C		
Operation angle	90°		
Weight (kg)	0.55	0.9	1.6

## ■ BEFORE HANDLING HAND VALVES

1. Before piping is connected, remove chips, cutting oil other debris from inside the pipe.
2. Please install a silencer on the exhaust port when installed in a dusty place.
3. When there is a large amount of carbon powder from the compressor, please install a mist separator.
4. Please use turbine oil(ISO VG32) if a lubricant is required.

## ■ HOW TO ORDER

SV 3 3 0 H

### ● PORT SIZE

1	Rc(PT) 1/4
2	Rc(PT) 3/8
3	Rc(PT) 1/2

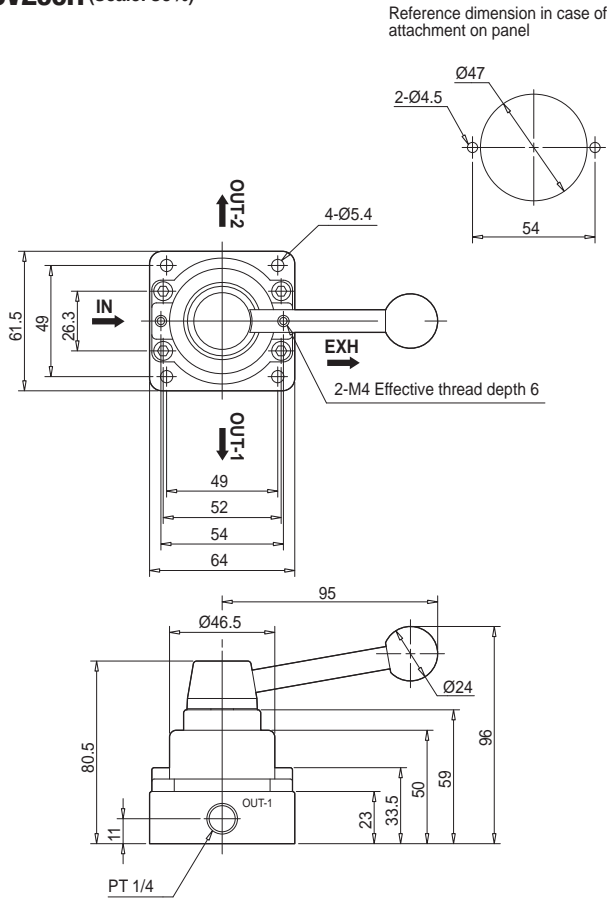
### ● CONFIGURATION

3	Closed center
---	---------------

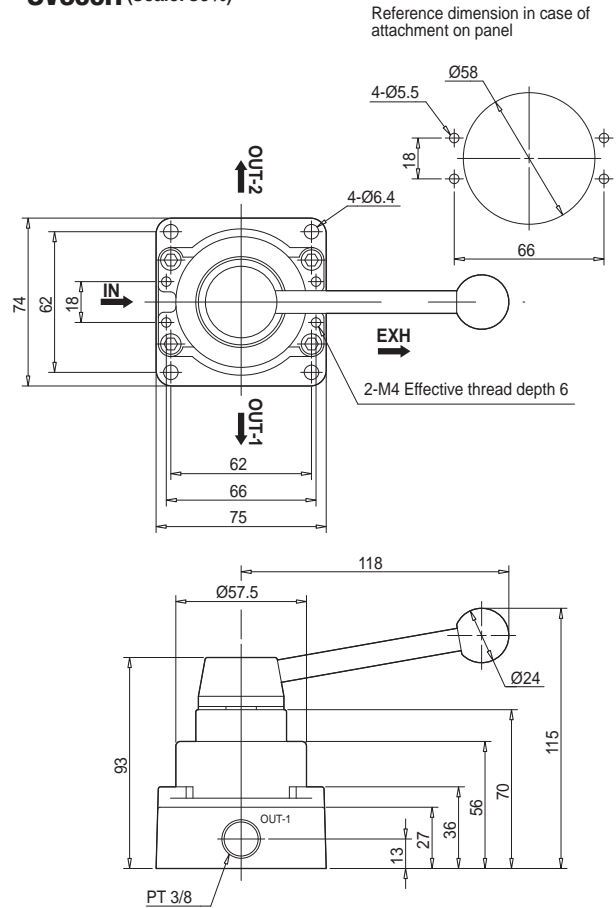
### ● HAND VALVE



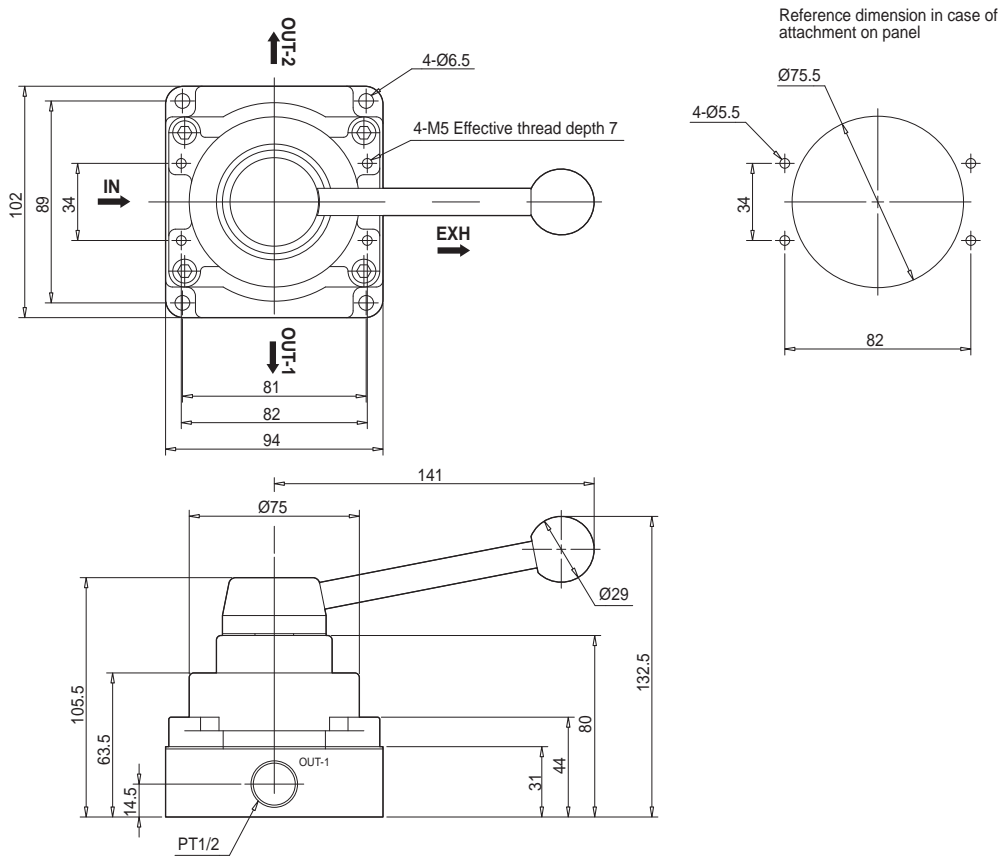
**SV200H (Scale: 30%)**



**SV300H (Scale: 30%)**



**SV400H (Scale: 30%)**



# Manifold Block

## ■ SPECIFICATIONS

Applicable valve	SV50	SV100
Supply & exhaust of port P, R	Common	
Valve stations	20 stations	

## ■ HOW TO ORDER

**MSV 100 - 05**


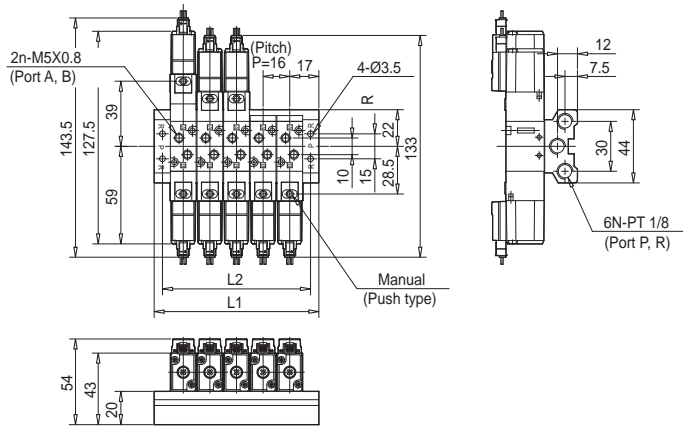
### ● ELECTRICAL ENTRY

	Applicable valve	Size of port P, R
MSV50	SV50	PT 1/8
MSV100	SV100	PT 1/4

### ● STATION

02	2 stations
...	...
20	20 stations


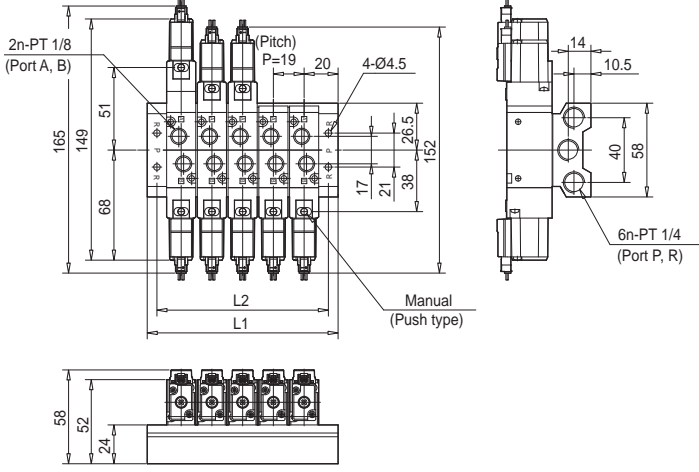
## MSV50-□

Technical drawing details for MSV50:  
 - 2n-M5X0.8 (Port A, B)  
 - Pitch P=16  
 - 4-Ø3.5  
 - Manual (Push type)  
 - 6N-PT 1/8 (Port P, R)

L \ n	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
L1	50	66	82	98	114	130	146	162	178	194	210	226	242	258	274	290	306	322	338
L2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328

## MSV100-□

Technical drawing details for MSV100:  
 - 2n-PT 1/8 (Port A, B)  
 - Pitch P=19  
 - 4-Ø4.5  
 - Manual (Push type)  
 - 6n-PT 1/4 (Port P, R)

L \ n	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
L1	59	78	97	116	135	154	173	192	211	230	249	268	287	306	325	344	363	382	401
L2	47	66	85	104	123	142	161	180	199	218	237	256	275	294	313	332	351	370	389

# Manifold Block

## SPECIFICATIONS

Applicable valve	SV200	SV300
Supply & exhaust of port P, R	Common	
Valve stations	20 stations	10 stations

※ Manifold blocks for SV-400 (N.O. Base), SV-600 (N.O. Base) are available.

## HOW TO ORDER

**MSV 300 - 05**

### ELECTRICAL ENTRY

	Applicable valve	Size of port P, R
MSV200	SV200	PT 1/4
MSV300	SV300	PT 3/8

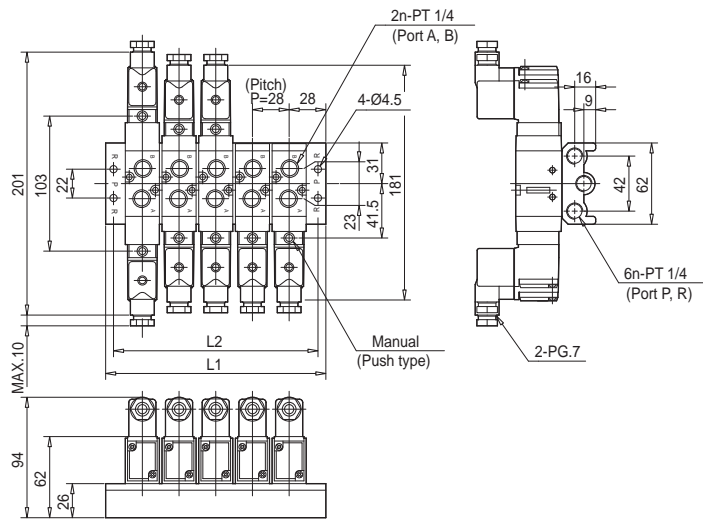
### STATION

02	2 stations
...	...
20	20 stations

**MSV200-□**



※ If there are more than 8 stations, supply from both sides of port P and exhaust from both sides of port R.

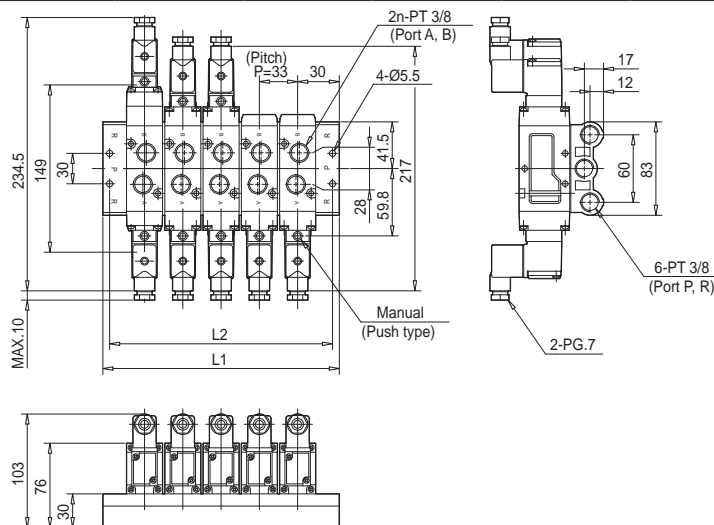


L \ n	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
L1	84	112	140	168	196	224	252	280	308	336	364	392	420	448	476	504	532	560	588
L2	72	100	128	156	184	212	240	268	296	324	352	380	408	436	464	492	520	548	576

**MSV300-□**



※ If there are more than 5 stations, supply from both sides of port P and exhaust from both sides of port R.



L \ n	02	03	04	05	06	07	08	09	10
L1	93	126	159	192	225	258	291	324	357
L2	80	113	146	179	212	245	278	311	344



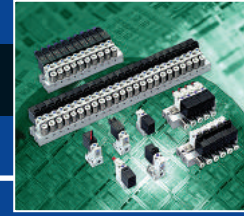
## KV series



### 3, 5-port Solenoid Valve / Pilot Type

- Compact size with large flow capacity
- Exceedingly long life (more than 50 million cycles)
- Fitting attached valve and manifold block
- D-SUB Connector and DIN Rail
- Easy manual operation

## V290 series



### 2, 3-port Solenoid Valve / Direct Poppet Type

- Compact size with large flow capacity
- Low power consumption
- Exceedingly long life
- Filter inserted (P, A port)
- Wiring and distribution adaptively designed

## MC/SC/FC series



### Air Cylinder (Mini, Compact & Standard)

- The best use of space
- Easy to attach auto-switches
- Lowered maintenance cost
- Enhanced Kinetic Energy
- Improved mounting accuracy

## B20, 30, 40 series



### Air Clean Unit

- Newly-designed space-saving air clean unit
- Revolving one-touch type drain cock
- Easy to assemble bracket spacer
- Slim and square-shaped pressure gauge (option)
- Convenient adjustment of oil dripping quantities with scale



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