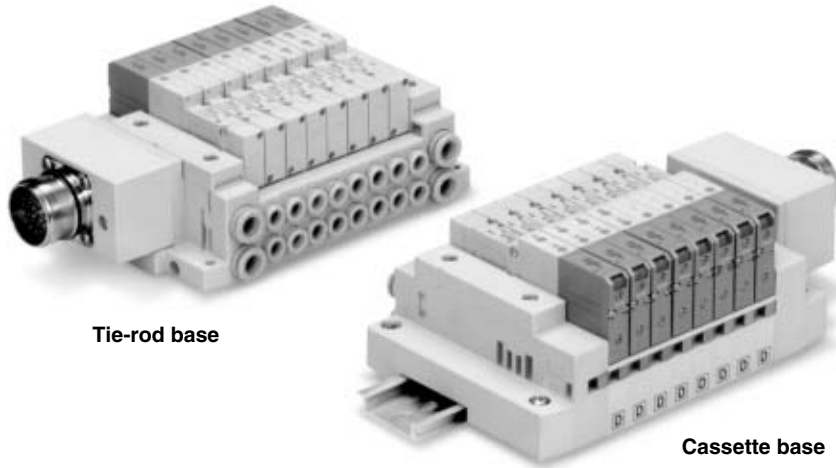


# Circular Connector

IP67 compliant



Applicable series	Cassette base manifold SV1000/SV2000
	Tie-rod base manifold SV1000/SV2000/SV3000/SV4000
• Number of connectors: 26 pins	

SV

SZ

SY

SYJ

SX

# Circular Connector Series SV

## How to Order

**Series**

1	SV1000
2	SV2000
3	SV3000
4	SV4000

**Valve stations**

Symbol	Stations	Note
02	2 stations	(1) Double wiring specifications
⋮	⋮	
12	12 stations	(2) Specified layout (Up to 24 solenoids possible.)
02	2 stations	
⋮	⋮	
20	20 stations	

Note 1) Double wiring specifications: Single, double, 3 position and 4 position solenoid valves can be used at all of the manifold stations. Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate wiring specifications on the manifold specification sheet. (Note that double, 3 and 4 position valves cannot be used where single solenoid wiring has been specified.)

**● Tie-rod base**  
SS5V 1 — W 10CD — 05 U

**● Cassette base**  
SS5V 1 — W 16CD — 05 U

**● Mounting**

Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0*	DIN rail mounting (Without DIN rail)
D3	For 3 stations <small>(When a longer DIN rail is desired than the specified stations. Specify a longer rail than the standard length.)</small>
⋮	⋮
D20	For 20 stations

\* In the case of D0, only DIN rail fittings are attached.

**● Enclosure IP67 specifications**

**Series**

1	SV1000
2	SV2000

**● DIN rail length specified**

Nil	Standard length
3	For 3 stations <small>(Specify a longer rail than the standard length.)</small>
⋮	⋮
20 (Note)	For 20 stations

Note) Able to specify the length for 3 stations up to 18 stations for SV1000, which is available with 18 station at the maximum.

**● A, B port size (Metric)**

Symbol	Specifications	P, E port	Applicable series
C3	One-touch fitting for ø3.2	One-touch fitting for ø8	SV1000
C4	One-touch fitting for ø4		
C6	One-touch fitting for ø6	One-touch fitting for ø10	SV2000
C4	One-touch fitting for ø4		
C6	One-touch fitting for ø6	One-touch fitting for ø12	SV3000
C8	One-touch fitting for ø8		
C10	One-touch fitting for ø10	One-touch fitting for ø12	SV4000
C8	One-touch fitting for ø8		
C10	One-touch fitting for ø10	Rc 3/8	SV4000
C12	One-touch fitting for ø12		
02	Rc 1/4	G 3/8	SV4000
03	Rc 3/8		
02F	G 1/4		
03F	G 3/8	A, B ports mixed	
M	A, B ports mixed		

**● A, B port size (Inch)**

Symbol	Specifications	P, E port	Applicable series
N1	One-touch fitting for ø1/8"	One-touch fitting for ø5/16"	SV1000
N3	One-touch fitting for ø5/32"		
N7	One-touch fitting for ø1/4"	One-touch fitting for ø3/8"	SV2000
N3	One-touch fitting for ø5/32"		
N7	One-touch fitting for ø1/4"	One-touch fitting for ø3/8"	SV3000
N9	One-touch fitting for ø5/16"		
N11	One-touch fitting for ø3/8"	One-touch fitting for ø3/8"	SV4000
N9	One-touch fitting for ø5/16"		
N11	One-touch fitting for ø3/8"	NPT 3/8	SV4000
02N	NPT 1/4		
03N	NPT 3/8		
02T	NPTF 1/4	NPTF 3/8	SV4000
03T	NPTF 3/8		
M	A, B ports mixed		

**● P, E port location**

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 20 stations)

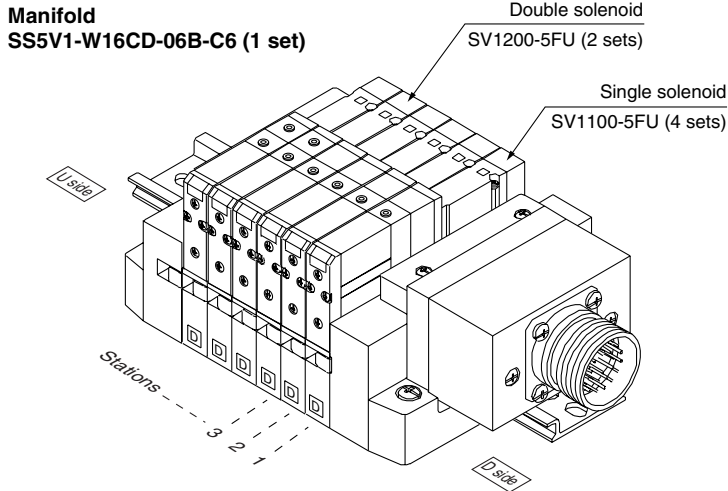
**● SUP/EXH block assembly specifications**

Nil	Internal pilot
S*	Internal pilot/Built-in silencer
R	External pilot
RS*	External pilot/Built-in silencer

Note) When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

## How to Order Valve Manifold Assembly

### Ordering example (SV1000)



SS5V1-W16CD-06B-C6.....1 set (manifold part no.)  
 \* SV1100-5FU.....4 sets (Single solenoid part no.)  
 \* SV1200-5FU.....2 sets (Double solenoid part no.)

- SV
- SZ
- SY
- SYJ
- SX

## How to Order Solenoid Valves

SV 1 1 0 0 [ ] [ ] - 5 F [ ] [ ] [ ]

Series ●

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation ●

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

\* 4 position dual 3 port valves are applicable to Series SV1000 and SV2000 only.

Pilot type ●

Nil	Internal pilot
R	External pilot

\* External pilot specifications is not available for 4 position dual 3 port valves.

Back pressure check valve ●

Nil	None
K	Built-in

\* Built-in back pressure check valve type is applicable to series SV1000 only.  
 \* Back pressure check valve is not available for 3 position closed center and 3 position pressure center.

Note) Available with manifold block for station additions. Refer to pages 1-2-89 and 1-2-93.

● Manual override

Nil: Non-locking push type	D: Push-turn locking slotted type
----------------------------	-----------------------------------

● Light/Surge voltage suppressor

U	With light/surge voltage suppressor
R	With surge voltage suppressor

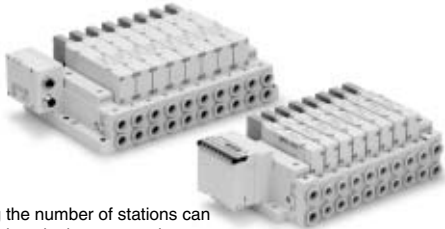
● Rated voltage

5	24 VDC
6	12 VDC

Refer to Precautions 2 on page 1-2-9.

# Valve Manifold Common Specifications Series SV

## Cassette base manifold



- Changing the number of stations can be easily done by lever operation.

## Manifold Specifications

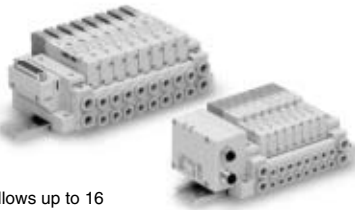
Applicable series		SV1000	SV2000
Manifold type		Stacking type cassette base manifold	
1 (P: SUP)/3, 5 (E: EXH) type		Common SUP, EXH	
Valve stations (maximum)		18 stations	20 stations
Max. number of solenoids		18 points	26 points
Port size	1(P), 3/5(E) port	C8, N9	C10, N11
	4(A), 2(B) port	C3, C4, C6 N1, N3, N7	C4, C6, C8 N3, N7, N9

## Flow Characteristics

Model	Port size		Flow characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2 (P → A/B)			4/2 → 3/5 (A/B → E)		
			C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3</sup> /(s·bar)]	b	Cv
SS5V1-16	C8	C6	0.89	0.22	0.22	0.98	0.21	0.23
SS5V2-16	C10	C8	2.3	0.28	0.50	2.7	0.18	0.56

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

## Tie-rod base manifold



- 34 pins connector allows up to 16 stations with double solenoids.

## Manifold Specifications

Applicable series		SV1000	SV2000	SV3000	SV4000
Manifold type		Tie-rod base manifold			
1 (P: SUP)/3, 5 (E: EXH) type		Common SUP, EXH			
Valve stations (maximum)		20 stations			
Max. number of solenoids		32 points			
Port size	1(P), 3/5(E) port	C8, N9	C10, N11	C12, N11	C12, N11, 03
	4(A), 2(B) port	C3, C4, C6 N1, N3, N7	C4, C6, C8 N3, N7, N9	C6, C8, C10 N7, N9, N11	C8, C10, C12 N9, N11, 02, 03

## Flow Characteristics

Model	Port size		Flow characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2(P → A/B)			4/2 → 3/5(A/B → E)		
			C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3</sup> /(s·bar)]	b	Cv
SS5V1-10	C8	C6	0.98	0.26	0.24	1.1	0.35	0.28
SS5V2-10	C10	C8	2.1	0.20	0.46	2.4	0.18	0.48
SS5V3-10	C12	C10	4.2	0.22	0.91	4.3	0.21	0.93
SS5V4-10	C12	C12	6.2	0.19	1.3	7.0	0.18	1.6

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

## Enclosure of Manifold Variations (Common for cassette base and tie-rod base)

Series	Enclosure (Based on IEC529)
Series EX500 Decentralized serial wiring	IP67 *
Series EX250 Serial wiring with input/output onit	IP67
Series EX120 Dedicated output serial wiring	Dusttight (IP40)
For circular connector	IP67
D-sub connector	Dusttight (IP40)
Flat ribbon cable	Dusttight (IP40)

\* Enclosure of a gateway unit and input manifold is IP65.

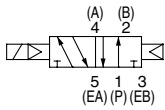
**Series SV Solenoid Valve Specifications**



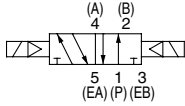
**Made to Order Specifications**  
(For details, refer to page 1-2-108.)

**JIS Symbol**

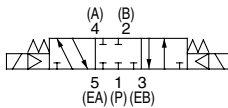
2 position single solenoid



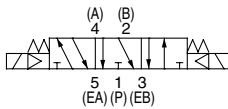
2 position double solenoid



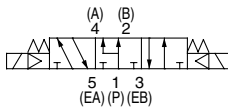
3 position closed center



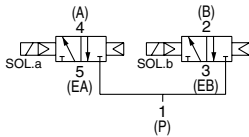
3 position exhaust center



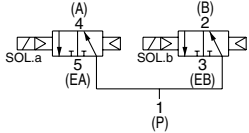
3 position pressure center



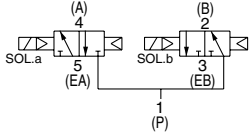
4 position dual 3 port valve: N.C./N.C.



4 position dual 3 port valve: N.O./N.O.



4 position dual 3 port valve: N.C./N.O.



Fluid	Air	
Internal pilot Operating pressure range (MPa)	2 position single	0.15 to 0.7
	4 position dual 3 port valve	
	3 position	
External pilot Operating pressure range (MPa)	Operating pressure range	-100 kPa to 0.7
	2 position single, double	
	3 position	
Ambient and fluid temperature (°C)	-10 to 50 (No freezing. Refer to page 1-7-4.)	
Max. operating frequency (Hz)	2 position single, double	5
	4 position dual 3 port valve	
	3 position	3
Manual override	Non-locking push type	
	Push-turn locking slotted type	
Pilot exhaust method	Internal pilot	Common exhaust type for main and pilot valve
	External pilot	
Lubrication	Not required	
Mounting orientation	Unrestricted	
Impact/Vibration resistance (ms <sup>2</sup> )	150/30	
Enclosure	IP67 (Based on IEC529)	
Coil rated voltage	24 VDC, 12 VDC	
Allowable voltage fluctuation	±10% of rated voltage	
Power consumption	0.6 (With indicator light: 0.65)	
Surge voltage suppressor	Zener diode	
Indicator light	LED	

**SV**

**SZ**

**SY**

**SYJ**

**SX**



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)

**Response Time**

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)			
	SV1000	SV2000	SV3000	SV4000
2 position single	11 or less	25 or less	28 or less	40 or less
2 position double	10 or less	17 or less	26 or less	40 or less
3 position	18 or less	29 or less	32 or less	82 or less
4 position dual 3 port valve	15 or less	33 or less	—	—



Note) Based on dynamic performance test, JIS B 8375-1981.  
(Coil temperature: 20°C, at rated voltage)

**Weight**

Series	Type of actuation	Weight (g)
SV1000	Single solenoid	66
	Double solenoid	71
	3 position	73
	4 position dual 3 port	71
SV2000	Single solenoid	74
	Double solenoid	78
	3 position	83
	4 position dual 3 port	78
SV3000	Single solenoid	99
	Double solenoid	102
	3 position	110
SV4000	Single solenoid	186
	Double solenoid	190
	3 position	211

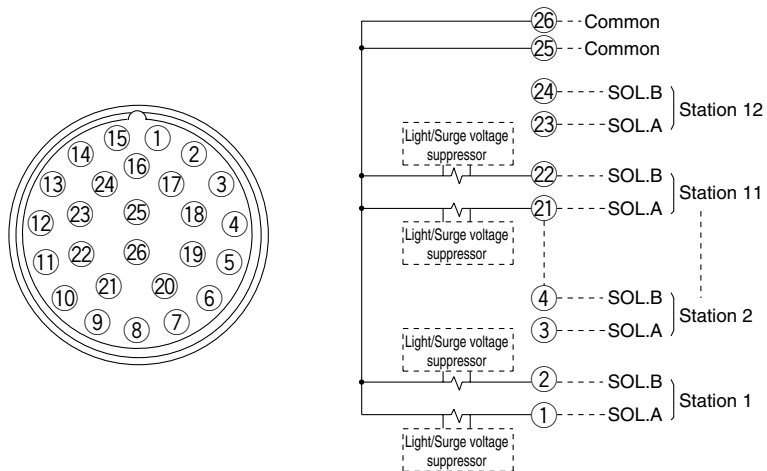


Note) Weight of solenoid valve only.

# Series SV

## Manifold Electrical Wiring

### 10C/16C Circular Connector Type (26 pins)



- This circuit has double wiring specifications for up to 12 stations. Since the usable number of solenoids differs depending on the manifold type, refer to the table below. In the case of single solenoids, connect to SOL. A. Furthermore, when wiring is specified on a manifold specification sheet, connections are made without skipping any connectors, and connections are made without skipping any connectors, and signals A for single and A, B for double are in order 1 → 2 → 3 → 4, etc.
- Stations are counted from D side (connector side) as the 1st.
- Since solenoid valves do not have polarity, either the +COM or -COM can be used.

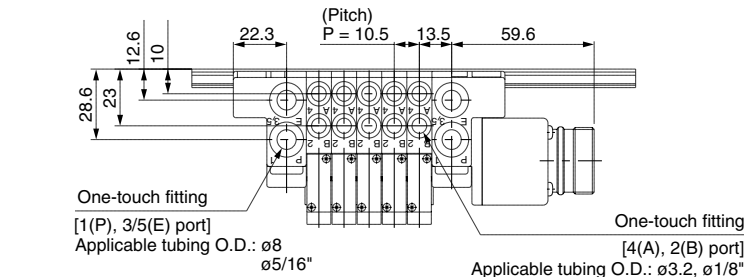
#### Usable No. of Solenoids

Model	Max. no. of solenoids
Tie-rod base type 10	24
Cassette base type 16	18
	24

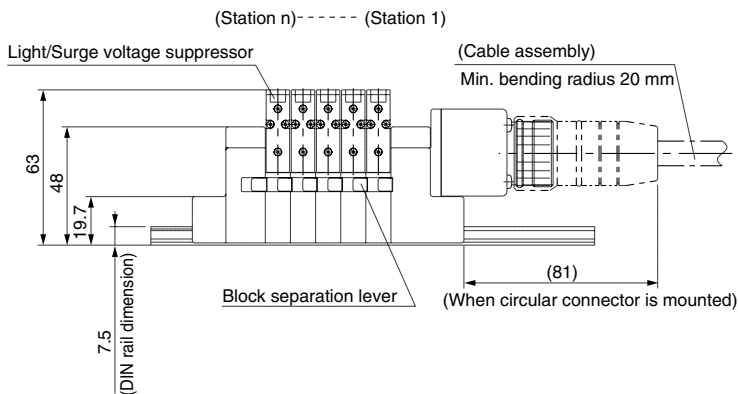
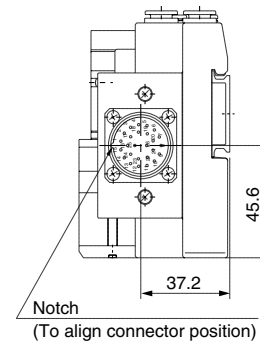
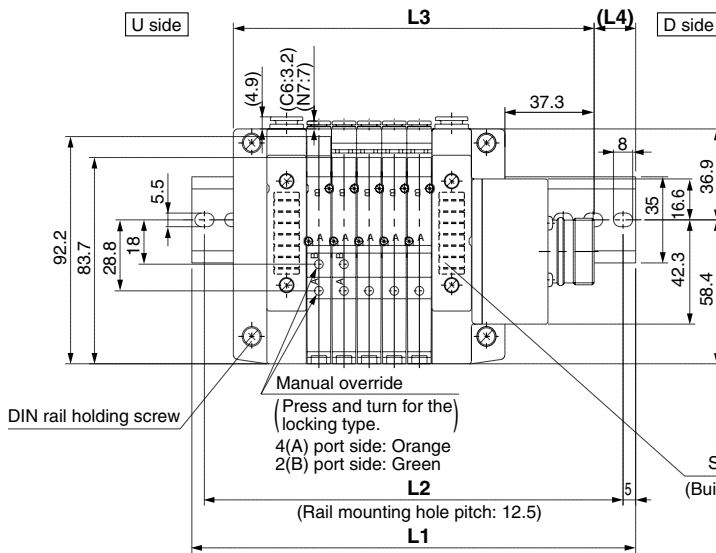
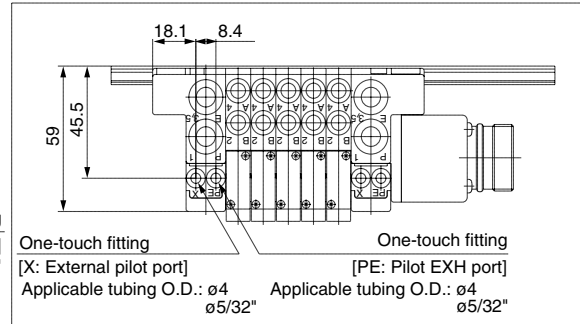
## Dimensions: Series SV1000 for Circular Connector

● **Cassette base manifold: SS5V1-W16CD-** Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$  (S, R, RS)-  $\begin{matrix} \text{C3, N1} \\ \text{C4, N3} \\ \text{C6, N7} \end{matrix}$

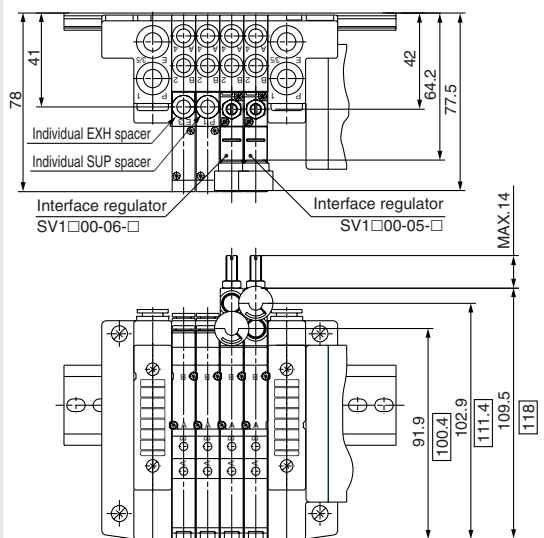
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



### With External Pilot Specifications



### With option



□ Dimensions are the ones for SV1300-□□-□.

### L Dimension

L	n: Stations																	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
L1	148	160.5	173	185.5	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5	310.5	
L2	137.5	150	162.5	175	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300	300	
L3	119.3	129.8	140.3	150.8	161.3	171.8	182.3	192.8	203.3	213.8	224.3	234.8	245.3	255.8	266.3	276.8	287.3	
L4	14.5	15.5	16.5	17.5	12	13	14	15	16	17	12	13	14	15	16	17	11.5	