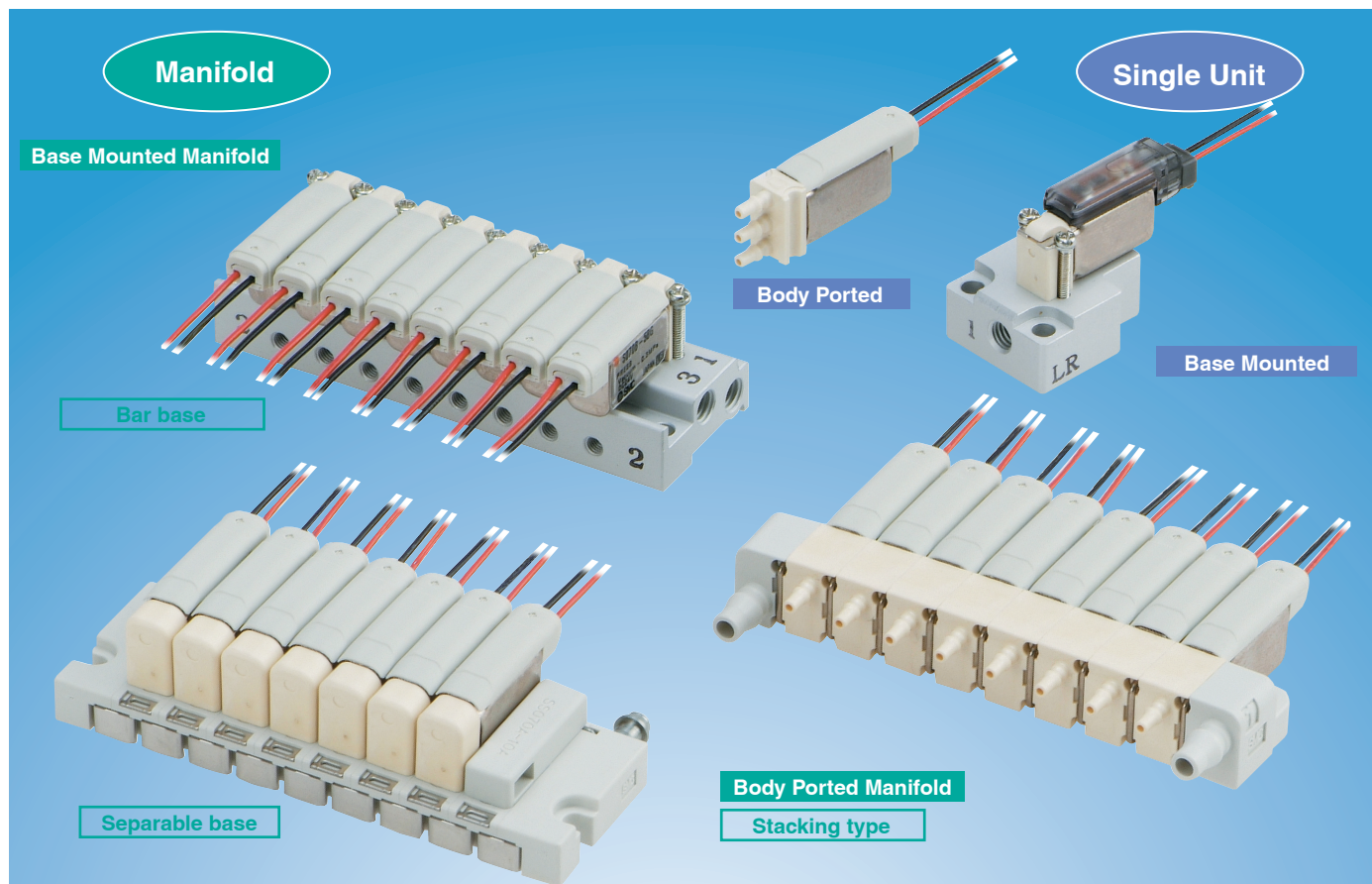


3 Port Solenoid Valve

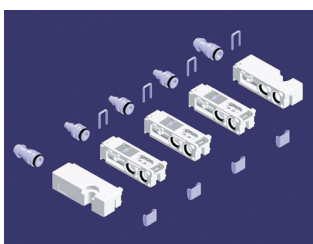
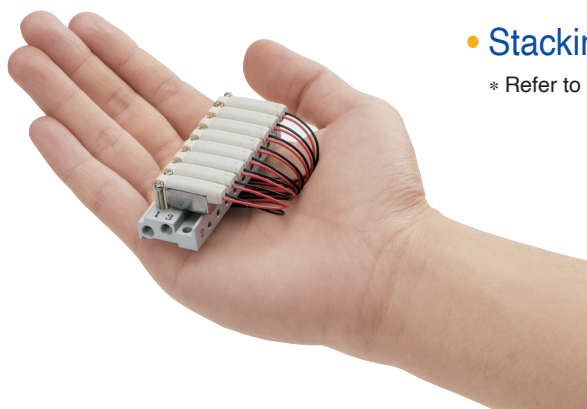


Rubber Seal

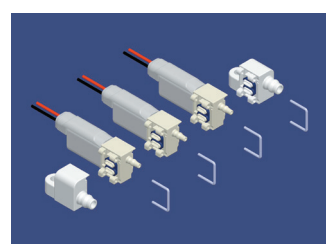


- Valve width **7 mm**
- Weight **5 g** (single unit valve)
- Power consumption **0.35 W** (Standard),
0.1 W * (With power saving circuit)
- Operation noise **38 dB (A)** or less
- Sonic conductance: C **0.060** [dm³/(s·bar)]
- Stacking type manifold

* Refer to page 20 for details.



Separable base



Stacking type

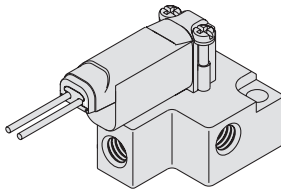
S070 Series

Compact Direct Operated 3 Port Solenoid Valve

S070 Series

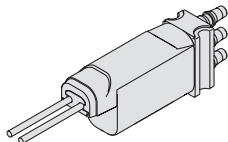


How to Order Valve



Base Mounted

Body Ported



Body type

Symbol	Body type
B	Base mounted type with screws

Sub-plate/Port size of sub-plate

Symbol	Sub-plate
Nil	Without sub-plate
M3	With sub-plate
M5	

S070 B - 5 B G -

S070 C - 5 B G - 32

Body type

Symbol	Body type
C	Body ported

Port size

Symbol	Connection	Applicable tubing
32	Barb fitting	ø3.18/ø2

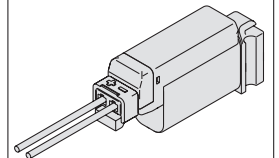
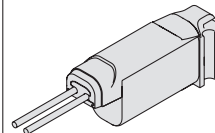
Coil voltage

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

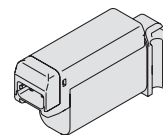
Electrical entry

G – Grommet

C – Plug lead with light/surge voltage suppressor and connector with lead wire (L=150m)



CO – Plug lead without connector and with light/surge voltage suppressor



Power consumption – Pressure specification – Flow rate

Symbol	Power consumption (W)	Maximum operating pressure (MPa)	Cv factor
A	0.35	0.1	0.016
B		0.3	0.011
C		0.3	0.016
D	0.5	0.5	0.011
E (Note)		0.1	0.011
F (Note)		0.3	0.006



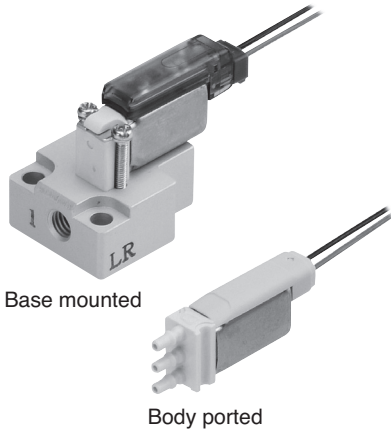
Note) An option only applicable to 24 VDC plug lead type.



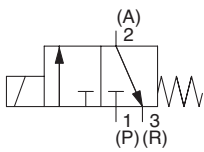
Made to Order

Symbol	Specifications
X26	Grommet type, Special lead wire length
X50	Universal type
X62	Normally open type

Compact Direct Operated 3 Port Solenoid Valve **S070 Series**



JIS symbol



Specifications

Valve construction	Poppet
Fluid	Air / Low vacuum (1.33×10^2 Pa)
Maximum operating pressure	0.3 MPa (0.35 W, 0.1 W), 0.5 MPa (0.5 W)
Proof pressure	1 MPa
Ambient and fluid temperature ^{Note 1)}	-10 to 50°C
Lubrication	Not required
Impact/Vibration resistance ^{Note 2)}	30/150 m/s ²
Enclosure	IP40
Weight	5 g (single unit valve)
Mounting orientation	Free



Note 1) Use dry air and prevent condensation at low temperatures.

Note 2) Vibration resistance: No malfunction resulted in 45 to 2000 Hz, a one-sweep test performed in the axial and right angle directions of the main valve and armature for both energized and de-energized states.

Impact resistance: No malfunction resulted in an impact test using a drop impact tester. The test was performed one time each in the axial and right angle directions of the main valve and armature, for both energized and de-energized states.

With the 0.1 W specification, the vibration and impact resistance is 10/50 m/s² or less.

Note 3) With the low vacuum specification, the operating pressure range is 1.33×10^2 Pa to the maximum operating pressure.

Solenoid specifications

Power consumption ^{Note 1)}	0.35 W (standard), 0.5 W (high pressure), 0.1 W (power saving)
Rated coil voltage	3, 5, 6, 12, 24 VDC
Allowable voltage fluctuation ^{Note 2)}	±10% of the rated voltage
Coil insulation type	Equivalent to class B



Note 1) With a light/surge voltage suppressor and power saving circuit, the light consumes a power equivalent to 2 mA. With the 0.1 W DC specification 0.35 W DC at inrush (20 ms) and 0.1 W DC at holding.

Flow specifications/Response time

Power consumption	Maximum operating pressure	Flow characteristics				Response time ms ^{Note 2, 3)}	
		C[dm ³ /(s·bar)]	b	Cv	Flow rate [l/min], ANR ^{Note 4)}	ON	OFF
0.5 W DC	0.5 MPa	0.042	0.27	0.011	9.6	3 or less	3 or less
	0.3 MPa	0.060	0.28	0.016	10.9	5 or less	3 or less
0.35 W DC	0.3 MPa	0.042	0.27	0.011	7.6	3 or less	3 or less
	0.1 MPa	0.060	0.28	0.016	6.9	5 or less	3 or less
0.1 W DC (at holding) with power saving circuit ^{Note 1)}	0.3 MPa	0.021	0.27	0.006	3.8	3 or less	6 or less
	0.1 MPa	0.042	0.28	0.011	4.8	5 or less	6 or less



Note 1) With the 0.1 W DC specification, keep the vibration/impact within 10/50 m/s².

0.35 W DC at inrush (20 ms) and 0.1 W DC at holding.

Note 2) The response time is the value at the rated voltage and maximum operating pressure, ambient and fluid temperature (approx. 25°C)

Note 3) If the product is used in the following conditions or environment, switching of the valve may be significantly delayed compared to the above values.

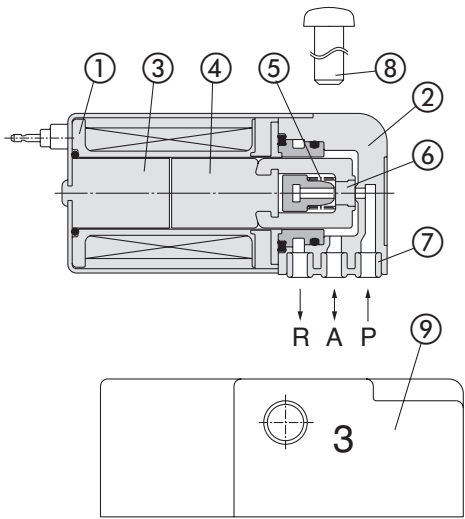
1. The first response time when the valve is not used for a long period of time.
2. When using at low supply pressure (0.1 MPa or less)
3. When using in an environment where the ambient and fluid temperature is low (10°C or less)

Series S070

Construction

Component Parts


Number	Description	Material
1	Solenoid coil	—
2	Body	Resin
3	Core	Stainless steel
4	Armature assembly	Stainless steel, resin
5	Return spring	Stainless steel
6	Poppet	FKM
7	Interface gasket	HNBR
8	Round head combination screw	Carbon steel
9	Sub-plate	Aluminum



* The above figure is an example of S070B-□□□G base piping type (mounted with screws).

Replacement Parts


Plug connector assembly (for plug lead)

S070-14A- 

• Lead wire length

Nil	150 mm
3	300 mm
6	600 mm
10	1000 mm

⑨ Sub-plate

S070-S-  **M3**

• Port size

M3	M3 female thread
M5	M5 female thread

⑦ Interface gasket (10 pcs.)

Valve model	Gasket No.
S070A	S070A-80A-1
S070B	S070B-80A-1
S070M	S070M-80A-1



⑧ Mounting screw (20 pcs.)

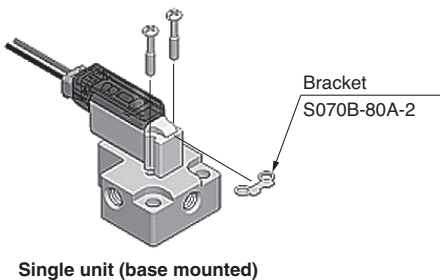
Valve model	Mounting screw No.
S070B	AXT632-106A-1
S070C	AXT632-106A-2



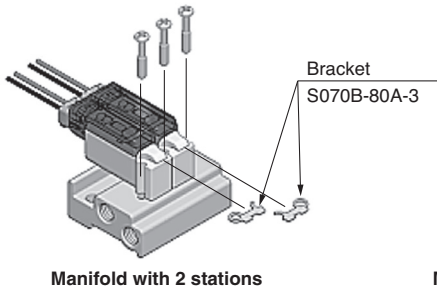
Bracket/S070B (10 pcs.)

Valve model	Bracket no.	Note
S070B, SS073B	S070B-80A-2	For sub-plates and manifolds (more than 3 stations)
SS073B	S070B-80A-3	For manifolds (2 stations only)

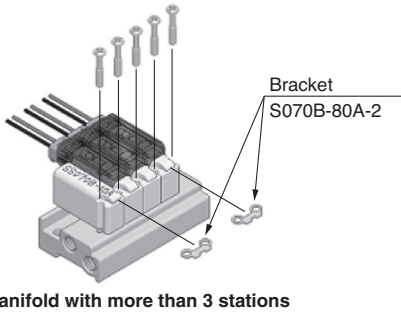
* This is used when mounting a valve on the sub-plate and manifold.



Single unit (base mounted)



Manifold with 2 stations



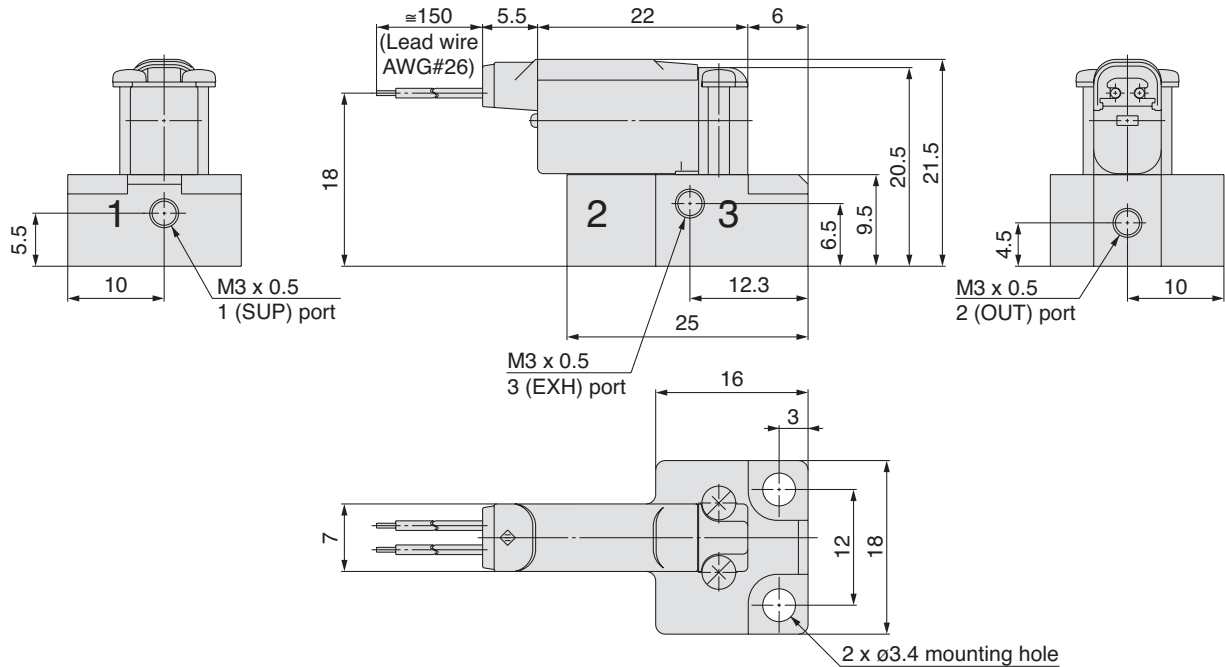
Manifold with more than 3 stations

Dimensions

Base mounted with sub-plate

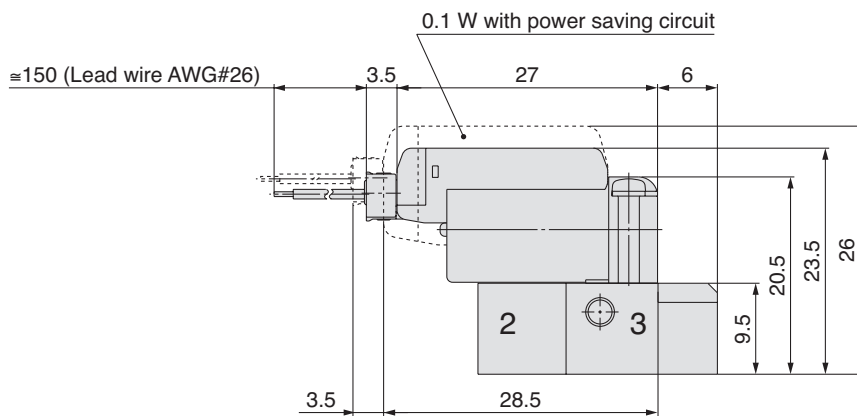
S070B-□□G-M3

Grommet type



S070B-□□C-M3

Plug lead type



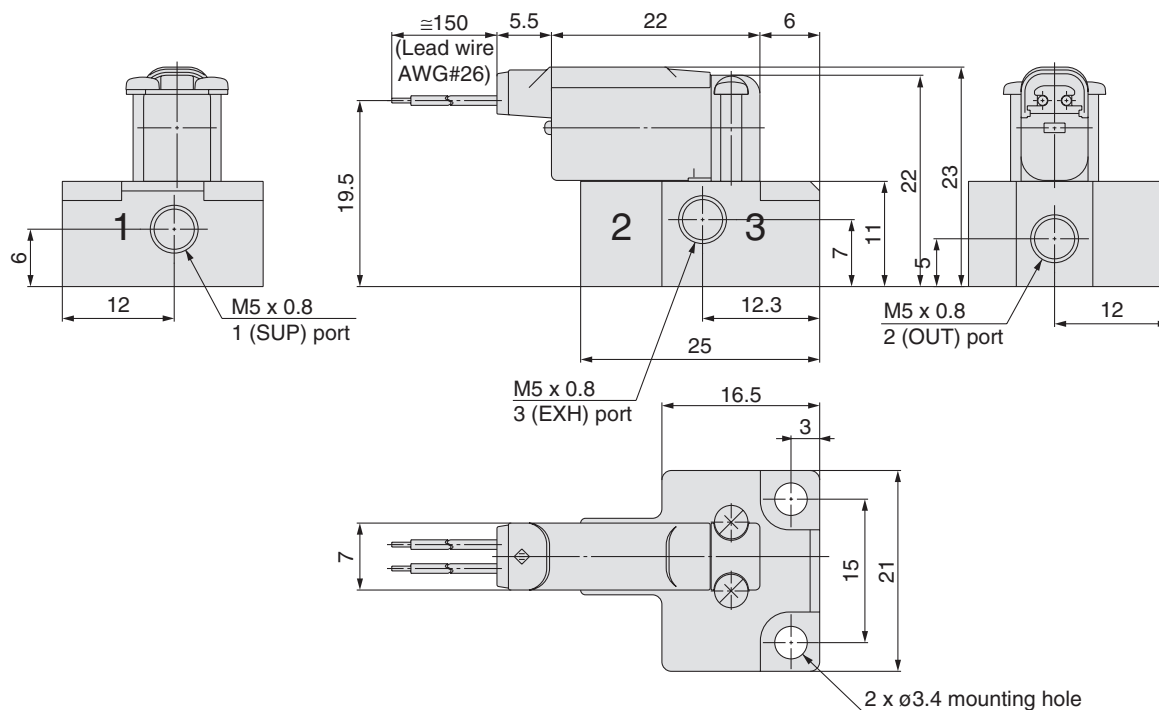
Series S070

Dimensions

Base mounted with sub-plate

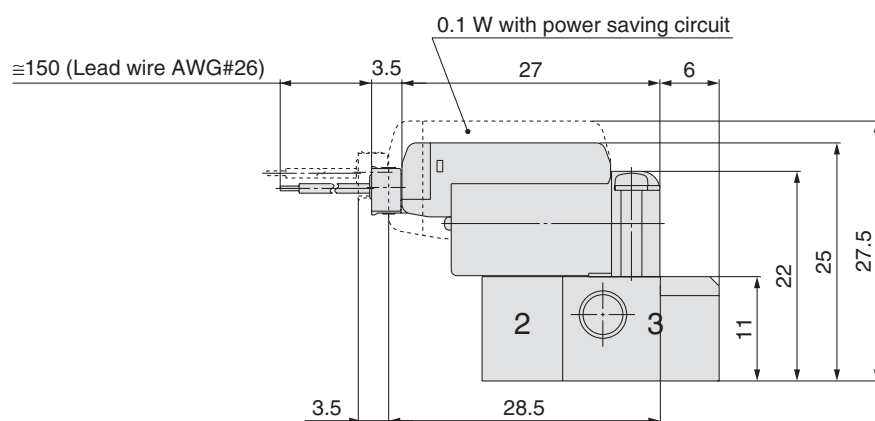
S070B-□□G-M5

Grommet type



S070B-□□C-M5

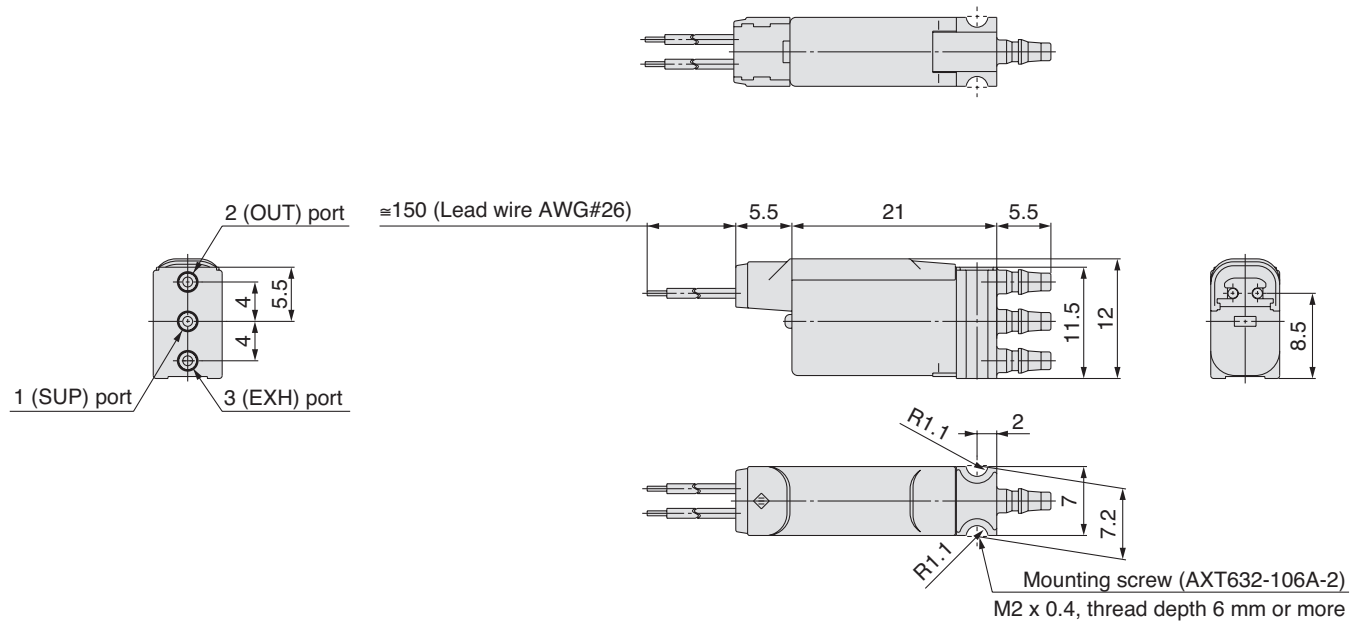
Plug lead type



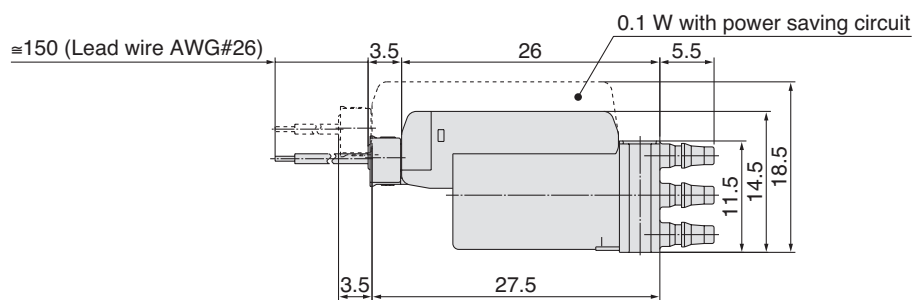
Dimensions

Body ported

S070C-□□G-32
Grommet type



S070C-□□C-32
Plug lead type



3 Port Solenoid Valve

Series S070/Base Mounted Manifold

Separable Base Type

How to Order Manifold

Base Mounted Manifold Stacking Base

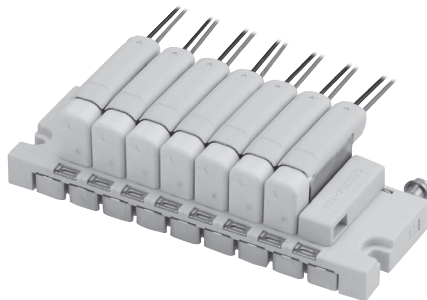
SS07 3 A01-08 C

Ports
3 3 port

Port size

Symbol	SUP/EXH port (Applicable tubing)	OUT port Applicable tubing
A01	Barb fittings (ø6/ø4)	Barb fittings ø3.18/ø2
A02		ø4/ø2.5
A03		ø2/ø1.2

Note) The outside and inside diameters of the "applicable tubing" are indicated for the barb fitting.



Stations

02	2 stations
03	3 stations
...	...
20	20 stations

Note) Maximum of 20 stations

Electrical entry

C	Grommet/Plug lead
---	-------------------

How to Order Manifold Assembly

Enter the part numbers of the valves and options to be mounted below the manifold base part number.

<Example>

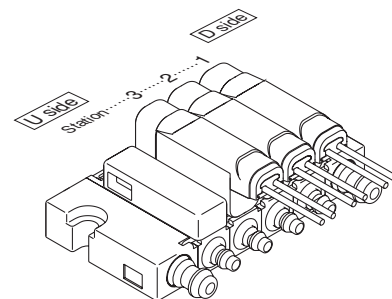
SS073A01-04C 1 set ——— Manifold
Base no.

***S070A-5BG** 3 set ——— Valve no.

***SS070A-10A** 1 set ——— Blanking plate
assembly no.

→ Prefix the symbol "*" to the solenoid valve part number.

Write sequentially from the 1st station on the D side.



How to Order Valve

S070 A-5 B G

Body type

Symbol	Body type
A	Base mounted with clips

Electrical entry

G	Grommet
C	Plug lead with light/surge voltage suppressor
CO	Plug lead without connector and with light/surge voltage suppressor

Coil voltage

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

Power consumption – Pressure specification – Flow rate

Symbol	Power consumption (W)	Maximum operating pressure (MPa)	Cv factor
A	0.35	0.1	0.016
B		0.3	0.011
C	0.5	0.3	0.016
D		0.5	0.011
E Note)	0.1 (with power saving circuit)	0.1	0.011
F Note)		0.3	0.006

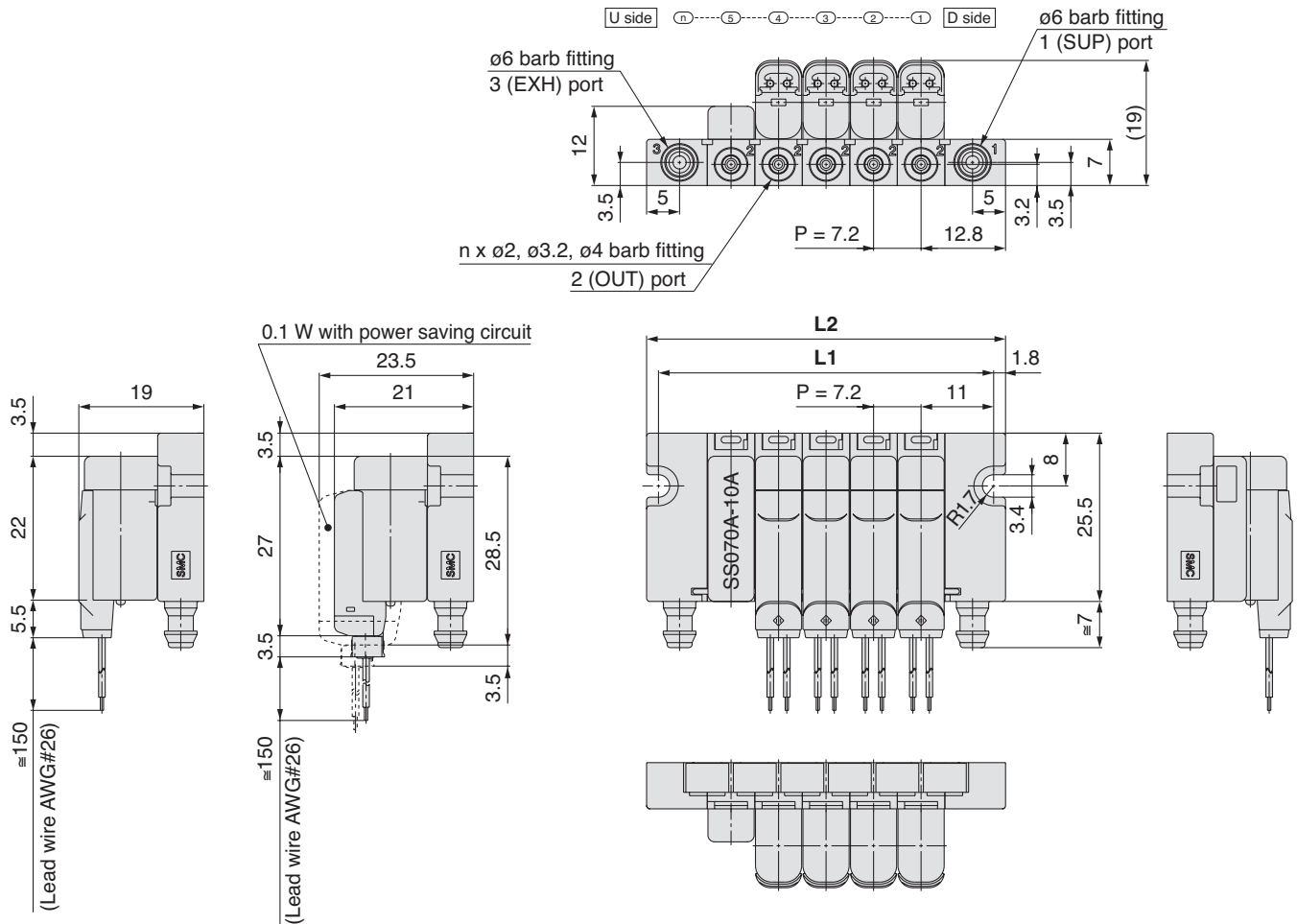
Note) Semi-standard, only applicable to 24 VDC plug lead type.

Compact Direct Operated 3 Port Solenoid Valve **S070 Series**

Dimensions

Base mounted manifold / Separable base

SS073A⁰¹₀₂ - Stations C



Dimensions

Formulas: $L1 = n \times 7.2 + 14.8$, $L2 = n \times 7.2 + 18.4$, n: Stations (maximum 20 stations)

L	n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1		29.2	36.4	43.6	50.8	58	65.2	72.4	79.6	86.8	94	101.2	108.4	115.6	122.8	130	137.2	144.4	151.6	158.8
L2		32.8	40	47.2	54.4	61.6	68.8	76	83.2	90.4	97.6	104.8	112	119.2	126.4	133.6	140.8	148	155.2	162.4

3 Port Solenoid Valve

Series S070/Base Mounted Manifold

Bar Base Specification

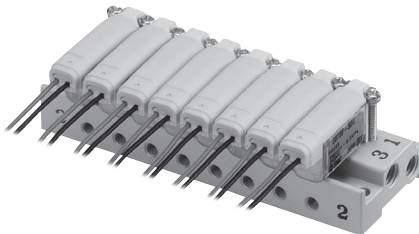
How to Order Manifold

Base Mounted Manifold Bar Base

SS07 3 B01-08 C

Ports
3 3 port

Symbol	SUP/EXH port (Applicable tubing)	OUT port	
		Applicable tubing	
B01	M5 female thread	M3 female thread	—



Stations

02	2 stations
03	3 stations
...	...
20	20 stations

Note) Maximum of 20 stations

Electrical entry

C	Grommet/Plug lead
----------	-------------------

How to Order Manifold Assembly

Enter the part numbers of the valves and options to be mounted below the manifold base part number.

<Example>

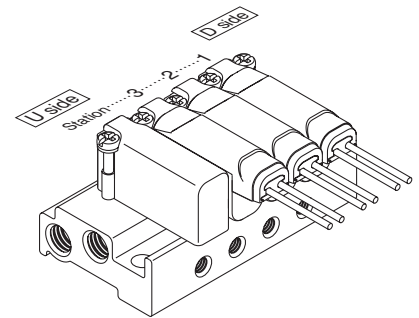
SS073B01-04C 1 set ——— Manifold
Base no.

***S070B-5BG** 3 set ——— Valve no.

***SS070B-10A** 1 set — Blanking plate
assembly no.

→ Prefix the symbol "*" to the solenoid valve part number.

Write sequentially from the 1st station on the D side.



How to Order Valve

S070 B-5 B G

Body type

Symbol	Body type
B	Base mounted with screws

Electrical entry

G	Grommet
C	Plug lead with light/surge voltage suppressor
CO	Plug lead without connector and with light/surge voltage suppressor

Coil voltage

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

Power consumption – Pressure specification – Flow rate

Symbol	Power consumption (W)	Maximum operating pressure (MPa)	Cv factor
A	0.35	0.1	0.016
B		0.3	0.011
C		0.3	0.016
D	0.5	0.5	0.011
E Note)		0.1	0.011
F Note)		0.3	0.006

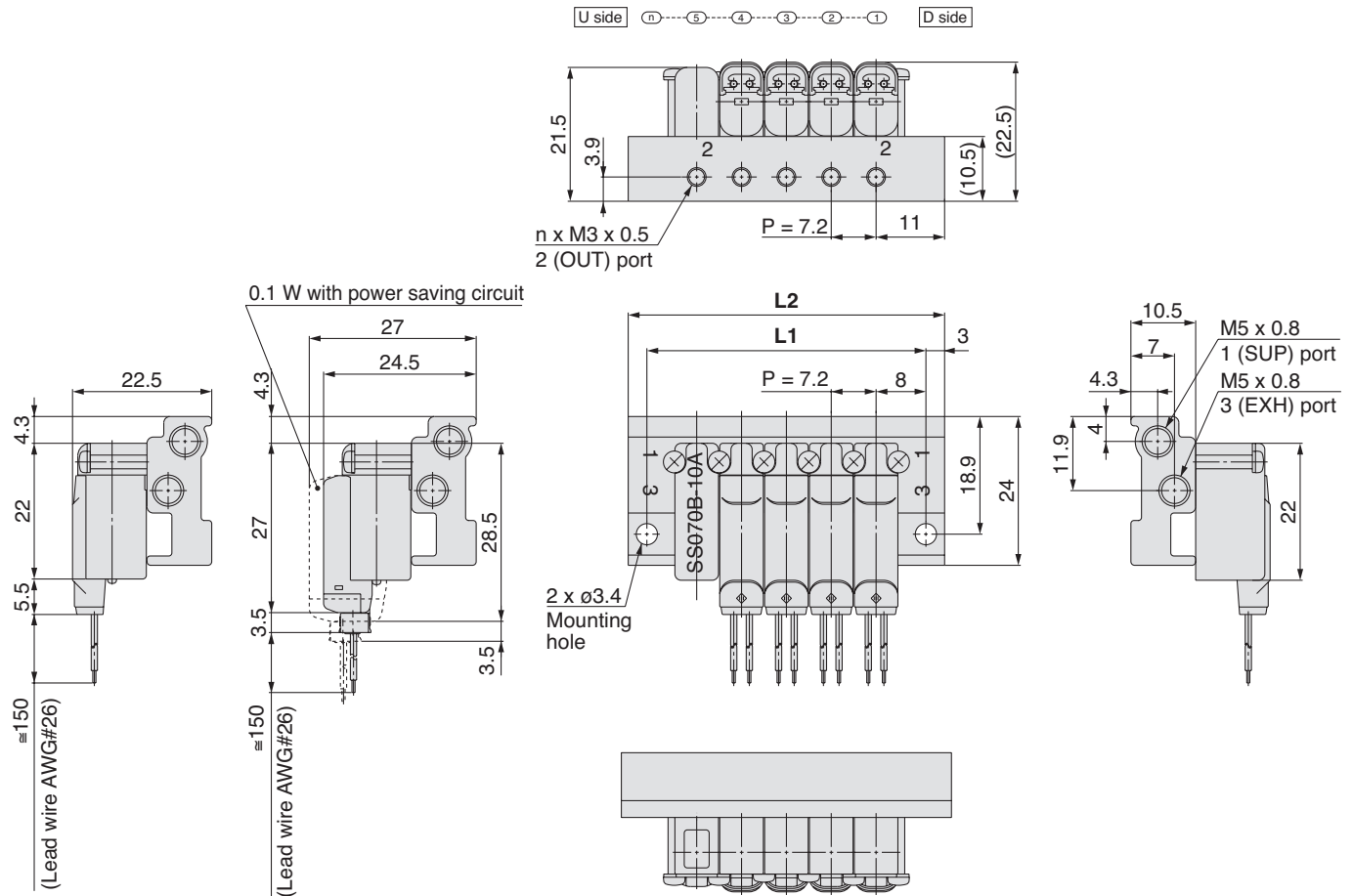
Note) An option only applicable to 24 VDC plug lead type.

Compact Direct Operated 3 Port Solenoid Valve **S070 Series**

Dimensions

Base mounted manifold / Bar base

SS073B01- Stations C



Dimensions

Formulas: $L1 = n \times 7.2 + 8.8$, $L2 = n \times 7.2 + 14.8$, n: Stations (maximum 20 stations)

L	n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1		23.2	30.4	37.6	44.8	52	59.2	66.4	73.6	80.8	88	95.2	102.4	109.6	116.8	124	131.2	138.4	145.6	152.8
L2		29.2	36.4	43.6	50.8	58	65.2	72.4	79.6	86.8	94	101.2	108.4	115.6	122.8	130	137.2	144.4	151.6	158.8

3 Port Solenoid Valve

Series S070/Body Ported Manifold

Stacking Type Specifications

How to Order Manifold

Body Ported Manifold Stacking type

SS07 3 M01-08 C

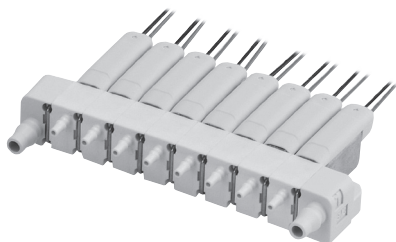
Ports

3 3 port

Port size

Symbol	SUP/EXH port (Applicable tubing)	OUT port Applicable tubing
M01	Barb fittings (ø6/ø4)	Barb fittings ø3.18/ø2
M02		ø4/ø2.5

Note) The outside and inside diameters of the "applicable tubing" are indicated for the barb fitting.



Stations

02	2 stations
03	3 stations
⋮	⋮
20	20 stations

Note) Maximum of 20 stations

Electrical entry

C Grommet/Plug lead

How to Order Manifold Assembly

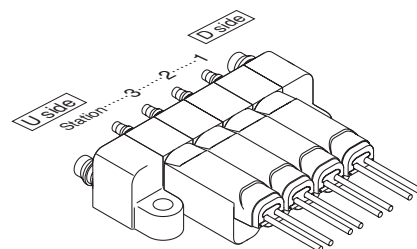
Enter the part numbers of the valves and options to be mounted below the manifold base part number.

<Example>

SS073M01-04C 1 set ——— Manifold Base no.
***S070M-5BG-32** 4 set ——— Valve no.

→ Prefix the symbol "*" to the solenoid valve part number.

Write sequentially from the 1st station on the D side.



How to Order Valve

S070 M-5 B G-32

Body type

Symbol	Body type
M	Body ported stacking manifold type

Coil voltage

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

Port size

Symbol	Connection	Applicable tubing
32	Barb fitting	ø3.18/ø2
40		ø4/ø2.5

Electrical entry

G	Grommet
C	Plug lead with light/surge voltage suppressor
CO	Plug lead without connector and with light/surge voltage suppressor

Power consumption – Pressure specification – Flow rate

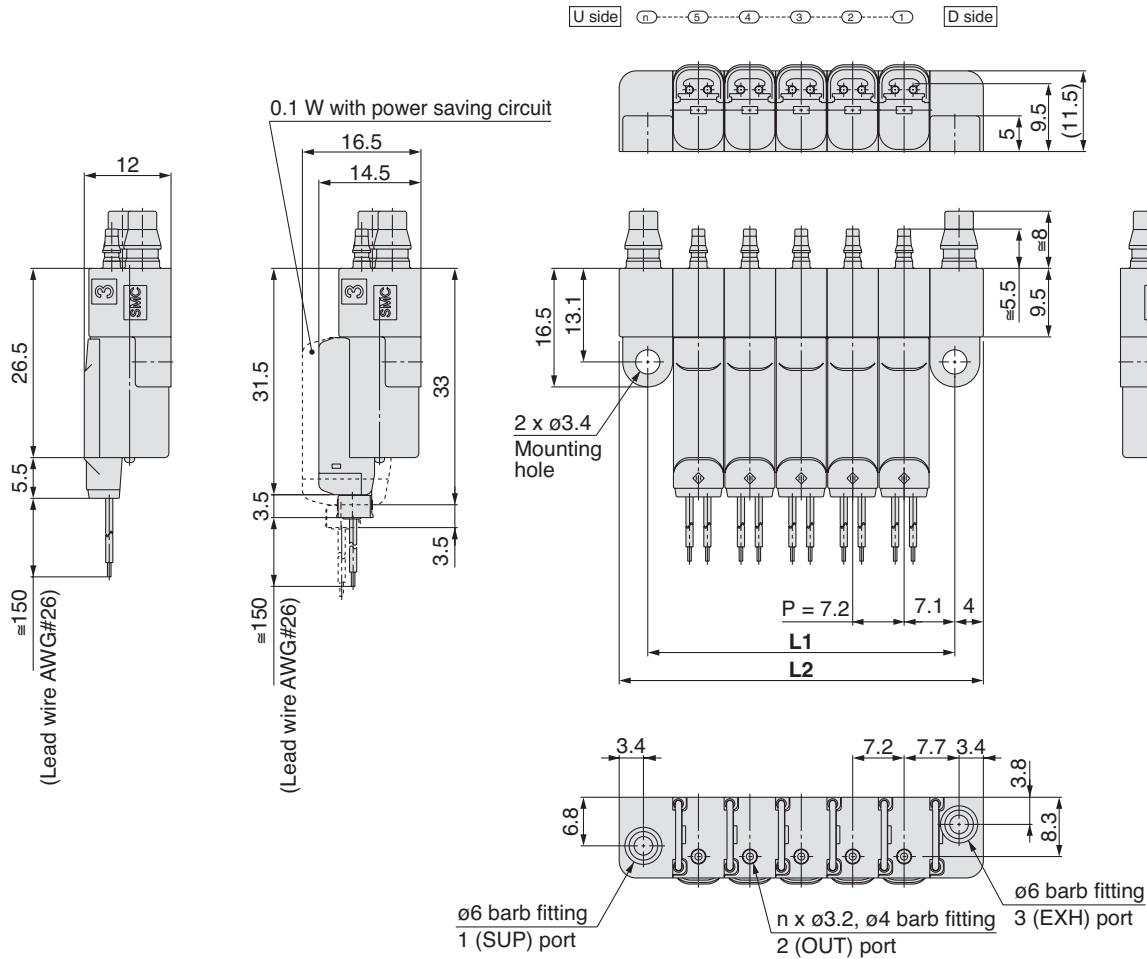
Symbol	Power consumption (W)	Maximum operating pressure (MPa)	Cv factor
A	0.35	0.1	0.016
B		0.3	0.011
C	0.5	0.3	0.016
D		0.5	0.011
E Note)	0.1 (with power saving circuit)	0.1	0.011
F Note)		0.3	0.006

Note) An option only applicable to 24 VDC plug lead type.

Dimensions

Body ported stacking type manifold

SS073M⁰¹₀₂ - Stations C



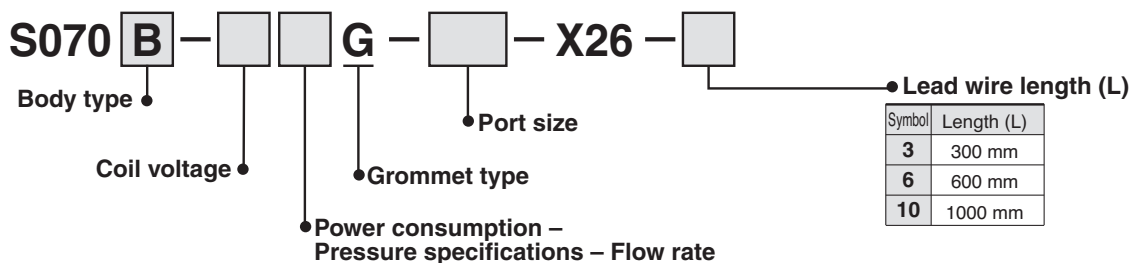
Dimensions

Formulas: $L1 = n \times 7.2 + 7$, $L2 = n \times 7.2 + 15$, n: Stations (maximum 20 stations)

L	n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1		21.4	28.6	35.8	43	50.2	57.4	64.6	71.8	79	86.2	93.4	100.6	107.8	115	122.2	129.4	136.6	143.8	151
L2		29.4	36.6	43.8	51	58.2	65.4	72.6	79.8	87	94.2	101.4	108.6	115.8	123	130.2	137.4	144.6	151.8	159

1 Grommet Type: Special Lead Wire Length

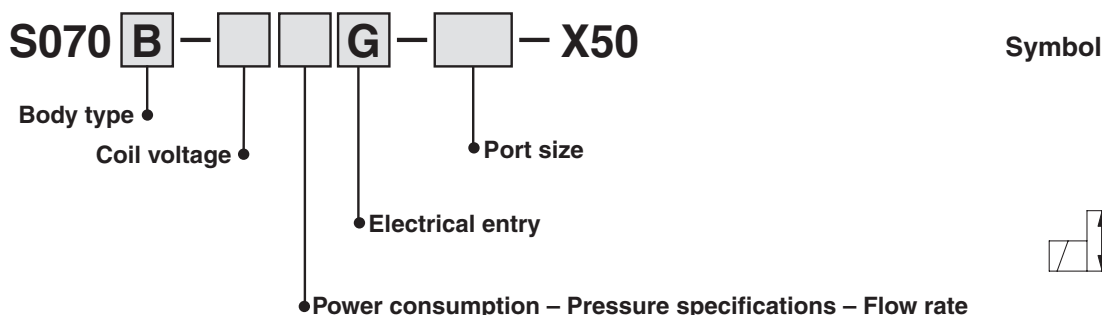
X26



* Refer to pages 2, 8, 10 and 12 for body type, coil voltage, power consumption-pressure specifications, and port size.

2 Universal Specifications

X50

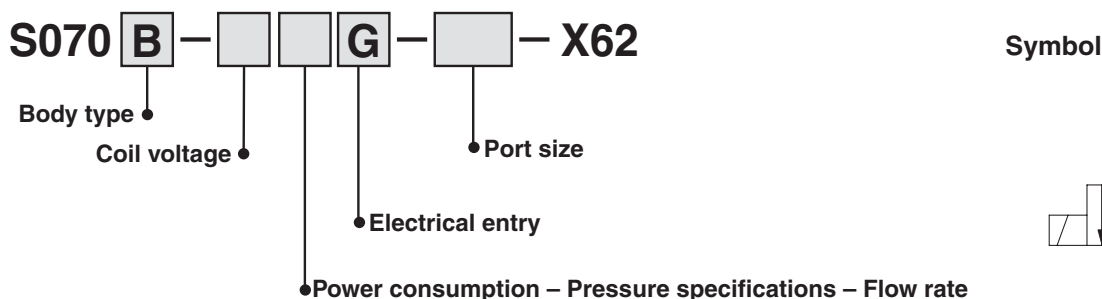


Symbol	Power consumption	Operating pressure range	Flow characteristics			
			C (dm ³ /(s·bar))	b	CV	[L/min], ANR ^{Note 1}
A	0.35 WDC	0 to 0.1 MPa	0.042	0.27	0.011	4.8
B		0 to 0.3 MPa	0.021	0.27	0.006	3.8
C	0.5 WDC	0 to 0.3 MPa	0.042	0.27	0.011	7.6
D		0 to 0.5 MPa	0.021	0.27	0.006	4.7

* Refer to pages 2, 8, 10 and 12 for body type, coil voltage, electrical entry, and port size.

3 Normally Open Specifications

X62



Symbol	Power consumption	Max. operating pressure (3 port pressure)	Flow characteristics			
			C (dm ³ /(s·bar))	b	CV	[L/min], ANR ^{Note 1}
A	0.35 WDC	0 to 0.1 MPa	0.042	0.27	0.011	4.8
B		0 to 0.3 MPa	0.021	0.27	0.006	3.8
C	0.5 WDC	0 to 0.3 MPa	0.042	0.27	0.011	7.6
D		0 to 0.5 MPa	0.021	0.27	0.006	4.7

Note 1) When used in the vacuum release, use with 1-port vacuum, and 3-port vacuum release pressure.

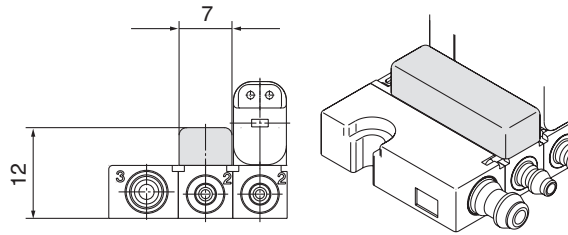
* Refer to pages 2, 8, 10 and 12 for body type, coil voltage, electrical entry, and port size.

Manifold Options

Blanking plate assembly (for SS073A)

SS070A-10A (for separable base)

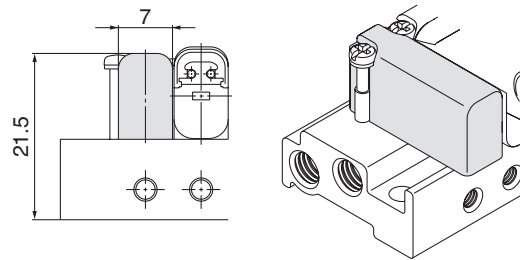
This assembly is mounted on a manifold block where the valve is removed for maintenance or a replacement valve is going to be mounted.



Blanking plate assembly (for SS073B)

SS070B-10A (for bar base)

This assembly is mounted on a manifold block where the valve is removed for maintenance or a replacement valve is going to be mounted.

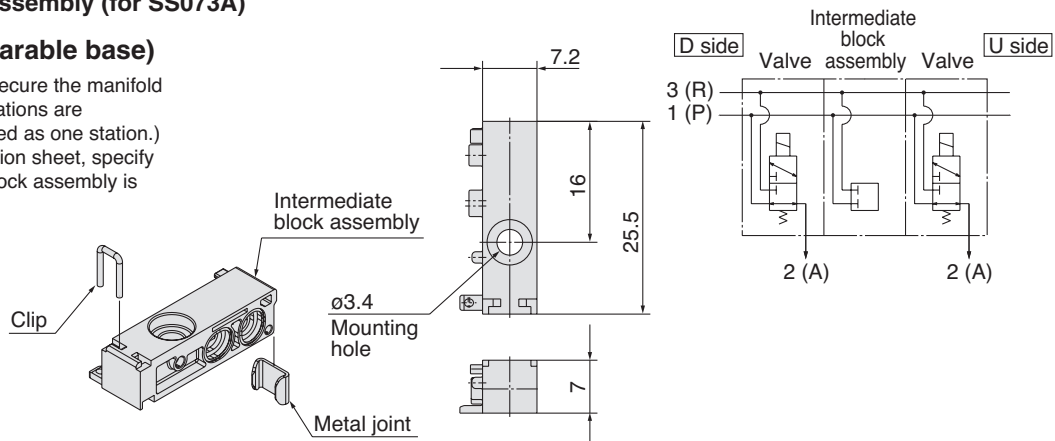


Intermediate block assembly (for SS073A)

SS070A-B (for separable base)

This assembly is used to secure the manifold when a large number of stations are manifolded. (Accommodated as one station.)

* In the manifold specification sheet, specify the position where the block assembly is mounted.

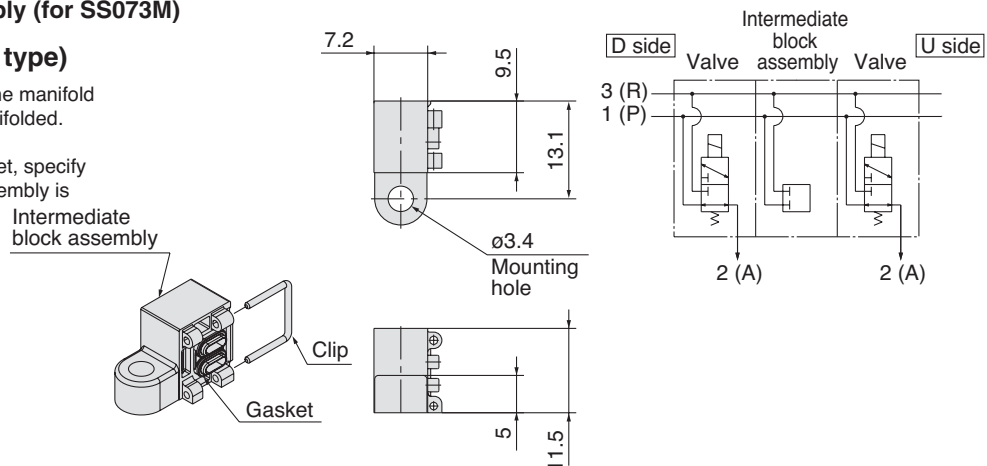


Intermediate block assembly (for SS073M)

SS070M-B (for stacking type)

This assembly is used to secure the manifold when 20 or more stations are manifolded. (Accommodated as one station.)

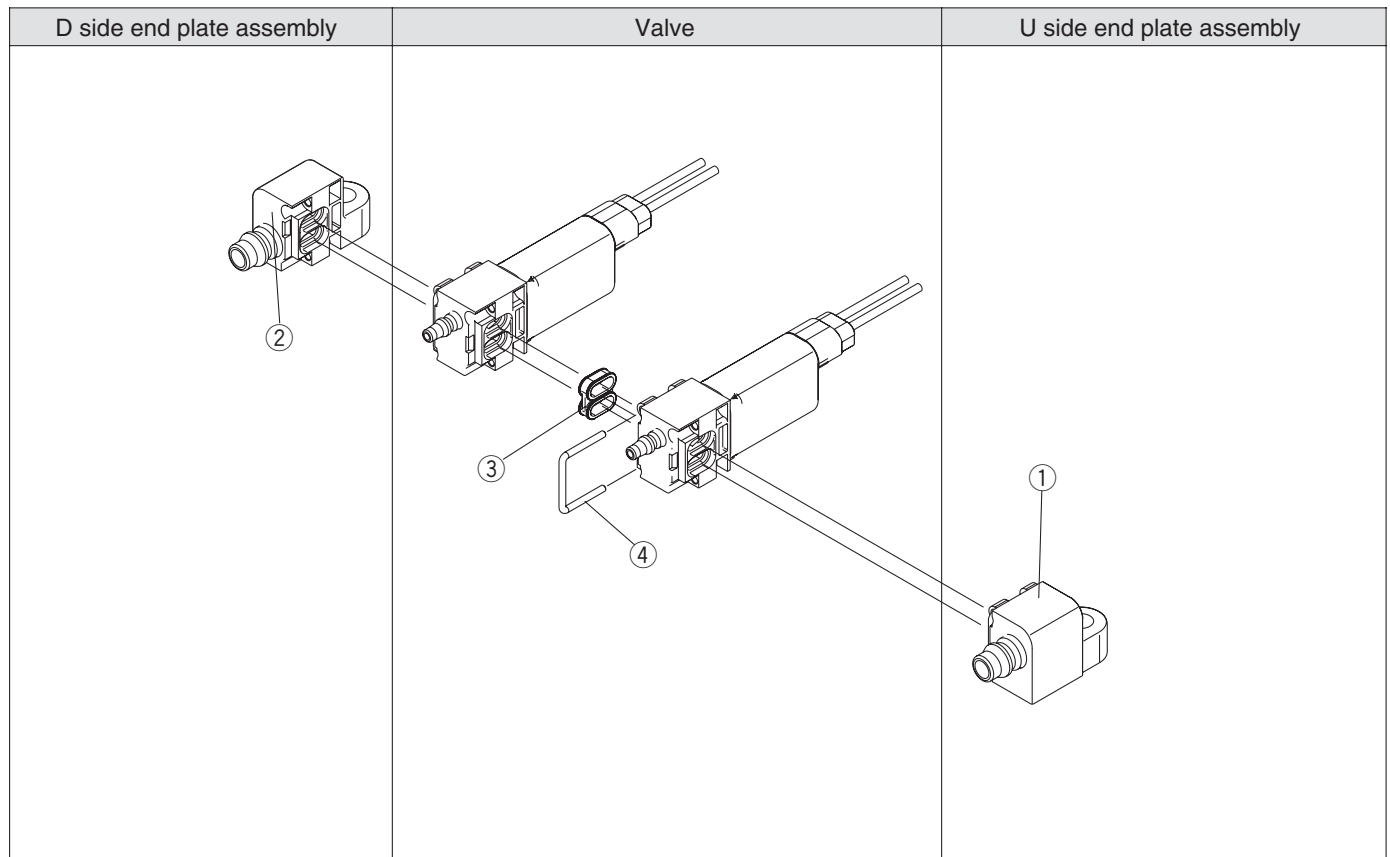
* In the manifold specification sheet, specify the position where the block assembly is mounted.



Series S070

Exploded View of Stacking Type

Body ported type / SS073M01-□C Exploded view of stacking type



< U End Plate Assembly >

① U end plate assembly No.

SS070M01-2A

< D End Plate Assembly >

② D end plate assembly No.

SS070M01-3A

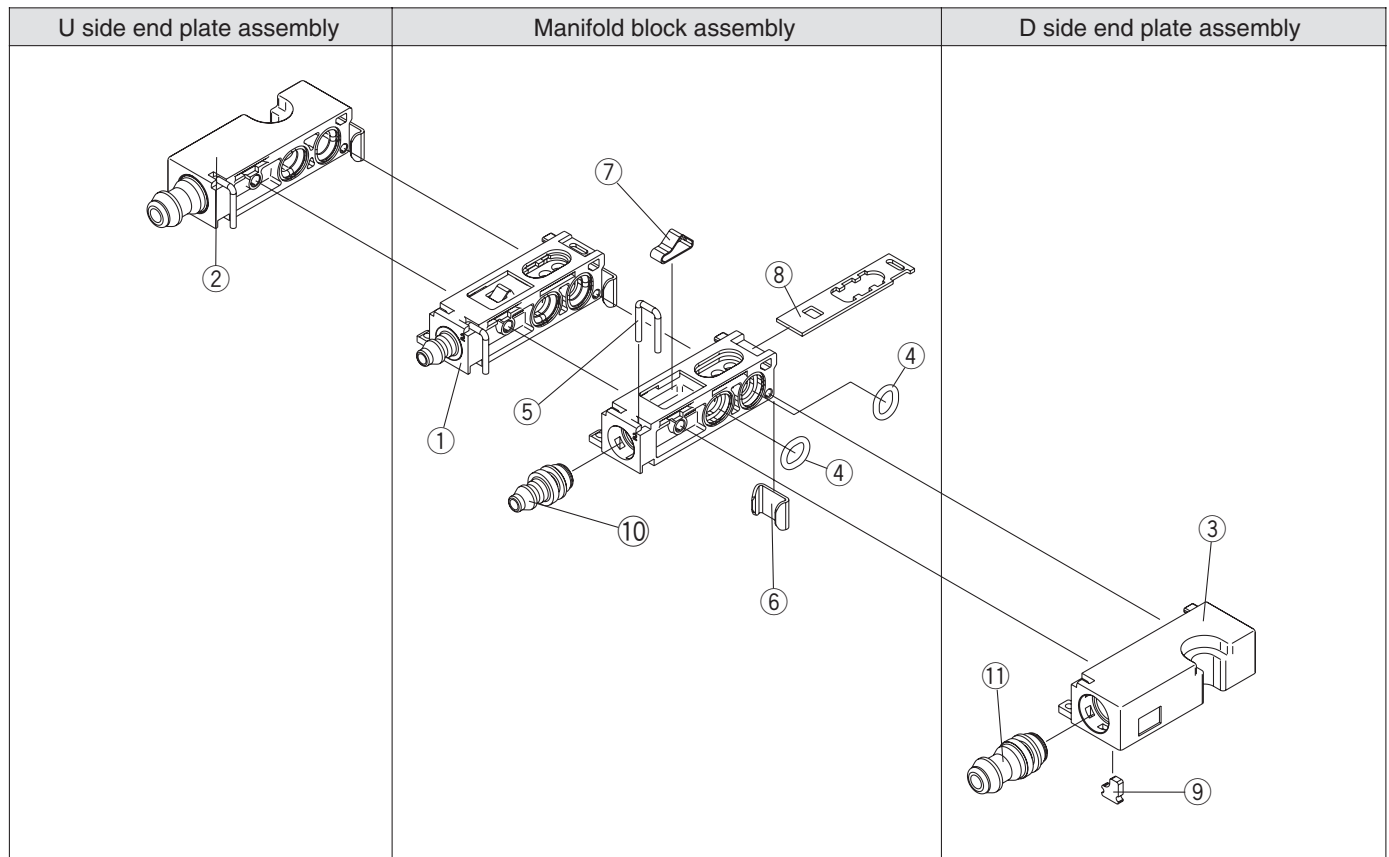
Replacement Parts

No.	No.	Description	Material	Number
③	S070M-80A-1	Gasket	FKM	10
④	SS070M-80A-2	Clip	Stainless steel	10

Series S070

Exploded View of Separable Base

Base mounted / SS073A□-□C Exploded view of separable base



< Manifold Block Assembly >

① Manifold block assembly No.

SS070A 01-1A

● Port size

01	With $\phi 3.18/\phi 2$ barb fitting
02	With $\phi 4/\phi 2.5$ barb fitting
03	With $\phi 2/\phi 1.2$ barb fitting

< Replacement Parts for Manifold Block >

Replacement Parts

No.	No.	Description	Material	Number
④	SS070A-80A-1	O-ring	FKM	10
⑤	SS070A-80A-2	Clip	Stainless steel	10
⑥	SS070A-80A-3	Metal joint	Stainless steel	10
⑦	SS070A-80A-4	Leaf spring	Stainless steel	10
⑧	SS070A-80A-5	Mounting bracket	Stainless steel	10

< U Side End Plate Assembly >

② U side end plate assembly No.

SS070A01-2A

< Replacement Parts for U/D End Plate >

Replacement Parts

No.	No.	Description	Material	Number
⑨	SS070A-80A-6	Stopper plate	Stainless steel	10

< D Side End Plate Assembly >

③ D side end plate assembly No.

SS070A01-3A

< Barb Fitting Assembly >

⑩ Barb fitting assembly (for cylinder port)

SS070-50A-32

● Port size

32	Applicable tube $\phi 3.18/\phi 2$
40	Applicable tube $\phi 4/\phi 2.5$



Note) Order is accepted in 10 units.

⑪ Barb fitting assembly (for 1(P), 3(R) ports)

SS070-51A-60

● Applicable tubing $\phi 6/\phi 4$



Note) Order is accepted in 10 units.



S070 Series

Specific Product Precautions 1

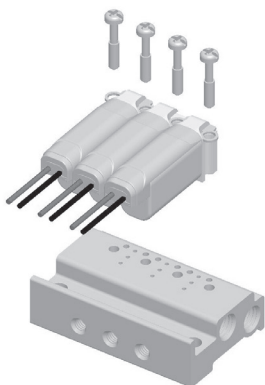
Be sure to read this before handling the products.
Refer to back cover for Safety Instructions.

⚠ Caution

Valve mounting / Removal

1. Base mounted with screws

With the base mounted type fixed with screws, confirm the installation of the gasket mounted on the body interface and fasten the dedicated mounting screws (AXT632-106-1) at an appropriate torque (0.10 to 0.14 Nm). (Fasten equally so that the valve will not tilt.)



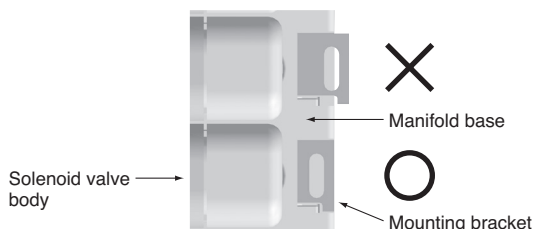
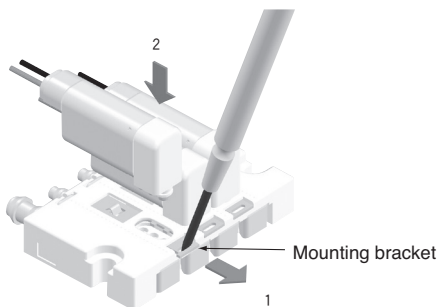
2. Base mounted with clips

1 Hook a flat head watchmakers screwdriver into the hole of the metal bracket and pull it approximately 1 mm in the direction indicated by the arrow. 2 Insert the solenoid valve from above. After confirming that the bottom surface of the solenoid valve contacts the top surface of the manifold, detach the flat head screwdriver from the mounting bracket while holding the solenoid valve body. (Before mounting, confirm the installation of the interface gasket on the solenoid valve body.)

The built-in leaf spring returns the mounting bracket to its original position.

(Then confirm that the end of the mounting bracket is aligned with the side of the manifold block. Refer to the figure below.)

Similarly, to remove the valve, pull the mounting bracket and pull up the solenoid valve vertically. Use caution so that no excessive force is applied to the lead wire in mounting and removal.



⚠ Caution

Screwing in M5/M3 thread

After tightening by hand, tighten an additional 1/4 rotation for M3 and 1/6 rotation for M5. Overtightening may cause bending of the thread or air leakage due to deformation of the gasket. Insufficient screwing may cause loosening of the thread or air leakage.

Applicable Tubing Size

Stacking manifold

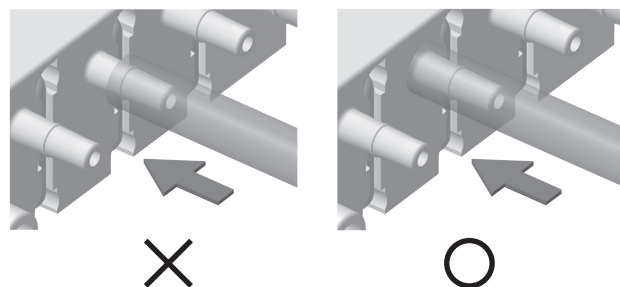
Port	Applicable tubing	Recommended tubing
1 (SUP), 3 (EXH)	ø6/ø4	TS0604/TU0604
2 (OUT)	ø4/ø2.5	TS0425/TU0425
	ø3.18/ø2	TIUB01

Note) In case of a body ported single unit valve, the applicable tubing size is ø3.18/ø2 for all 1 (SUP), 2 (OUT), and 3 (EXH) ports.

If fittings of a brand other than SMC are used, follow the specifications of the fittings to be mounted.

Tubing installation (with barb fitting)

- Using tubing cutters TK-1, 2, or 3, cut the tubing perpendicularly to the tubing axis while allowing for sufficient margin to the required length.
- Insert the tubing and push it all the way to the barb end. If the tubing is not installed securely to the end, problems such as leakage or disconnection of the tubing can occur.
- When the tubing is inserted into the barb fitting, push it in the direction of the tubing axis to prevent excessive lateral loads being applied to the barb fitting.



- To remove the tubing from the barb fitting, use caution so that no excessive lateral load will be applied to the barb fitting. When using a cutter to remove the tubing, sufficient care should be taken so as not to make any flaws on the barb fitting.
- After tubing installation, avoid excessive loads, such as tensile, compressive, or bending strength, being applied to the tubing.



S070 Series

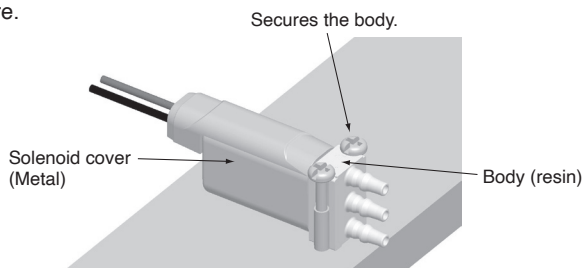
Specific Product Precautions 2

Be sure to read this before handling the products.
Refer to back cover for Safety Instructions.

Caution Mounting

1) Solenoid valve fixing procedure (body ported single unit)

When mounting a body ported type single unit valve, tighten the dedicated mounting screw (AXT632-106A-2) at an appropriate torque (0.05 to 0.07 N·m) to firmly secure the valve body. (Tighten equally so that the valve will not tilt.) If the coil is fixed, the coil joint may break due to application of an excessive load to the tubing body, for example, when the tubing is inserted. With a base mounted type solenoid valve also, use caution to avoid excessive loads on the coil and lead wire.



2) SS073M□□-□□C Mounting

There will be slight variations in the width of manifold blocks due to tolerance (± 0.1 mm) for the SS073M□□-□□C stacking manifold type.

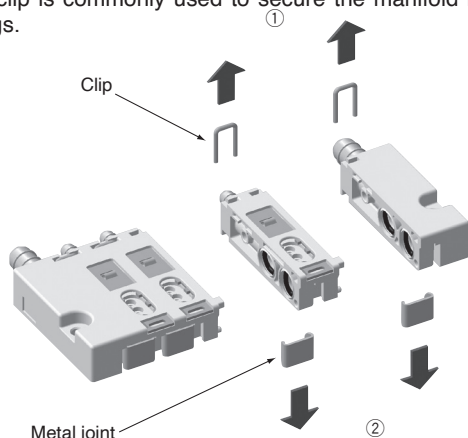
As the manifold is made up of a combination of manifold blocks, there will be an error due to accumulated tolerance between the actual pitch dimensions of the mounting holes used to secure the manifold and the values stated in the catalog. Keep this in mind when increasing the number of stations.

Caution Adding and Removing Manifold Stations

1) Base mounted stacking type

- ① Remove the clip and metal joint from the position where the new station is to be mounted by pulling them in the directions indicated by the arrows.
- ② Place the additional manifold block assembly and mount the metal joint and clip by reversing the assembly order. Securely insert the clip and the metal joint so that they will not protrude from the top and bottom surfaces respectively.

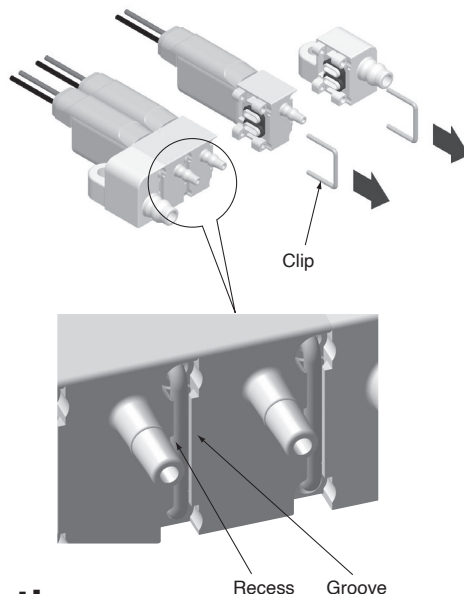
The clip is commonly used to secure the manifold block and fittings.



To remove the station, follow the same procedure for assembly and disassembly.

2) Body ported manifold type

- ① Remove the clip on the position where the station is to be added by pulling it in the direction indicated by the arrow. (Insert a flat head screwdriver in the recess indicated in the figure to remove the clip.)
- ② Place the additional solenoid valve into the separation and insert the clip. Insert the clip until it fits in the groove on the body side.



Caution Vacuum Application

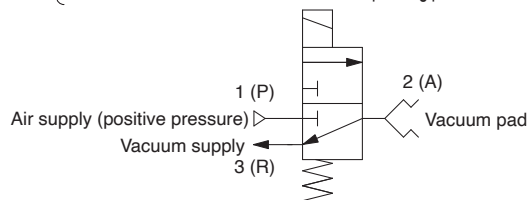
An N.C. type valve pressurized at 1 (SUP) port can be used within the maximum operating pressure differential specified for the product. If the valve is to be used in the following applications, however, care should be taken about the piping ports, maximum operating pressure differential and allowable leakage.

1) Vacuum release application

Use 3 (R) port for vacuum pressure and 1 (P) port for vacuum

- Set the pressure so that the pressure difference between the 3(R) and 1(P) ports does not exceed the maximum operating pressure of the valve.
- When the 3(R) port is used for the vacuum release (atmospheric pressure to positive pressure) and the 1(P) port is used for the vacuum, use the normally open (N.O.) specifications.

Example) When the vacuum is "−80 kPa" and the vacuum release is "0.1 MPa":
 $0.1 \text{ MPa} - (-80 \text{ kPa}) = 0.18 \text{ MPa}$
 A valve with a maximum operating pressure of 0.1 MPa cannot be used.
 Select a valve with a maximum operating pressure of 0.3 MPa.



2) Pressure (vacuum) holding application

This valve permits the air leakage. So, take great care since the valve cannot hold the pressure (vacuum) for an extended period of time.



S070 Series

Specific Product Precautions 3

Be sure to read this before handling the products.
Refer to back cover for Safety Instructions.

⚠ Caution Wiring

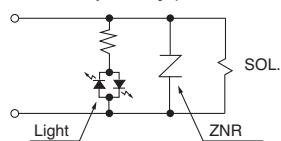
1) Internal wiring

- Grommet

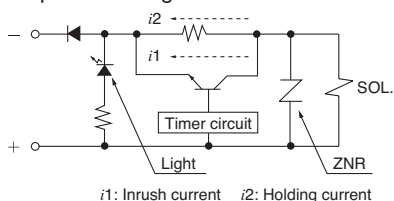
(This solenoid valve has no polarity.)



- With light/surge voltage suppressor
(This solenoid valve has no polarity.)

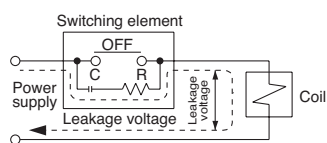


- With 0.1 W power saving circuit



2) Electrical circuit

- (1) Adopt an electrical circuit with no chattering generated at the contact.
- (2) Keep the voltage within the 10% range of the rated voltage. Care should be taken about the voltage drop when the rated voltage is 6 VDC or less or when the response speed is important.
- (3) When using a C-R element (surge voltage suppressor) for protection of the switching element, please keep in mind that leakage voltage will increase due to leakage current flowing through the C-R element.



Keep the residual leakage voltage with 2% of the rated voltage.

- (4) Be sure to confirm the applied voltage. If a wrong voltage is applied, it can lead to malfunction or coil burning.
- (5) In wiring, use caution to avoid application of excessive force to the lead wire. It can cause malfunction or break the coil.




⚠ Caution

Power saving circuit of 0.1 W DC (at holding)

- 1) Keep the vibration and impact within 10/50 m/s².
- 2) Keep the voltage fluctuations within 24 VDC 5%.
- 3) The power consumption is 0.35 W DC at inrush (20 ms) and 0.1 W DC at holding.

Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “Caution,” “Warning” or “Danger.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC) ¹⁾, and other safety regulations.

-  **Danger:** **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
-  **Warning:** **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
-  **Caution:** **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

- 1) ISO 4414: Pneumatic fluid power – General rules and safety requirements for systems and their components.
ISO 4413: Hydraulic fluid power – General rules and safety requirements for systems and their components.
IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots.
etc.

Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Our products cannot be used beyond their specifications.

Our products are not developed, designed, and manufactured to be used under the following conditions or environments.

Use under such conditions or environments is not covered.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, fuel equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogues and operation manuals.
3. Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.

Caution

We develop, design, and manufacture our products to be used for automatic control equipment, and provide them for peaceful use in manufacturing industries.

Use in non-manufacturing industries is not covered.

Products we manufacture and sell cannot be used for the purpose of transactions or certification specified in the Measurement Act.

The new Measurement Act prohibits use of any unit other than SI units in Japan.

Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”. Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first. ²⁾ Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.
- 2) Vacuum pads are excluded from this 1 year warranty.
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Safety Instructions

Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

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Estonia	+372 651 0370	www.smcee.ee	info.ee@smc.com
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