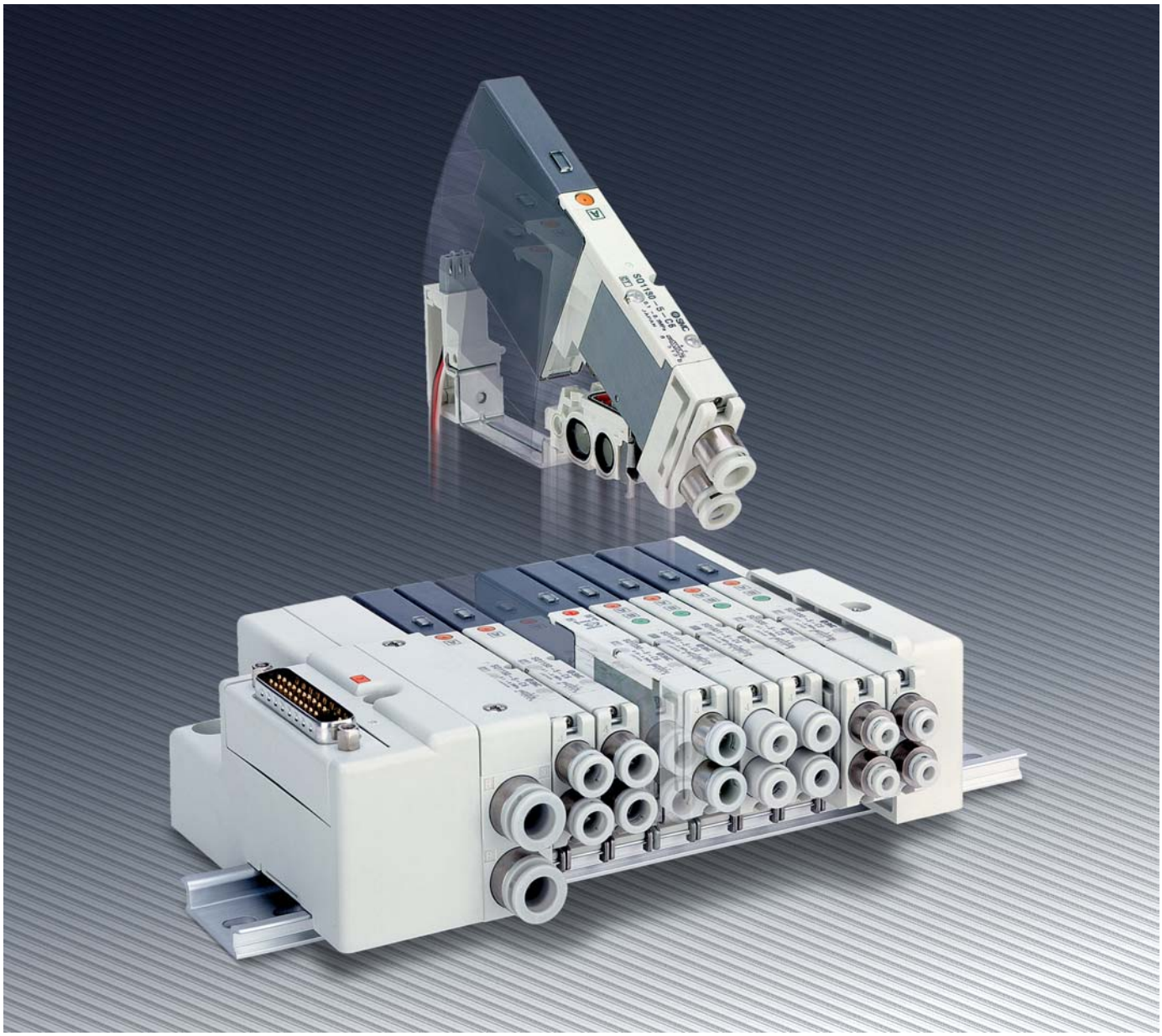
CAT.ES11-79 A

SMC

5 Port Solenoid Valve

Series SQ1000/2000



SQ2000 Plug lead

SQ2000 Plug-in

SQ1000 Plug-in

SQ1000 Plug lead

Low profile compact manifold

Compact with high capacity

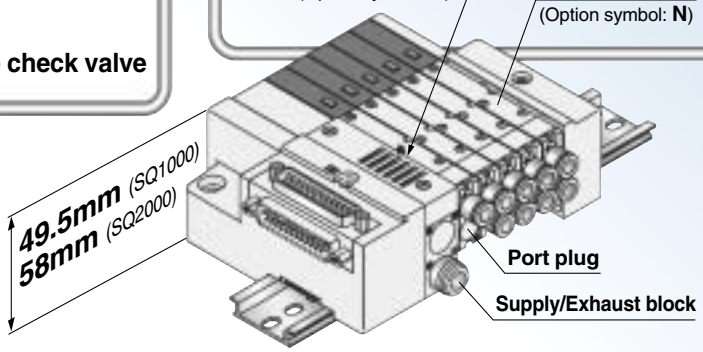
Pressure: 0.5MPa/Load factor: 50%

Base mounted (with sub-plate)	Cv factor		Cylinder speed (mm/s)	Cylinder bore size (mm)												
				Series CJ2			Series CM2				Series MB/CA1					
	Rubber seal	Metal seal		ø6	ø10	ø16	ø20	ø25	ø32	ø40	ø32	ø40	ø50	ø63	ø80	ø100
SQ1000	0.25	0.18	150													
			300						●		●					
			450	●												
			600		●	●										
			750													
SQ2000	0.82	0.65	150													
			300													
			450	●					●	●	●					
			600		●	●										
			750													

Cylinder speeds marked with a ● are controlled by a fixed orifice.

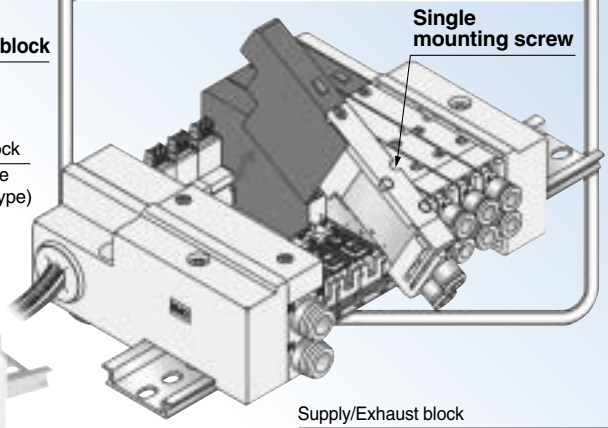
A wide variety of options

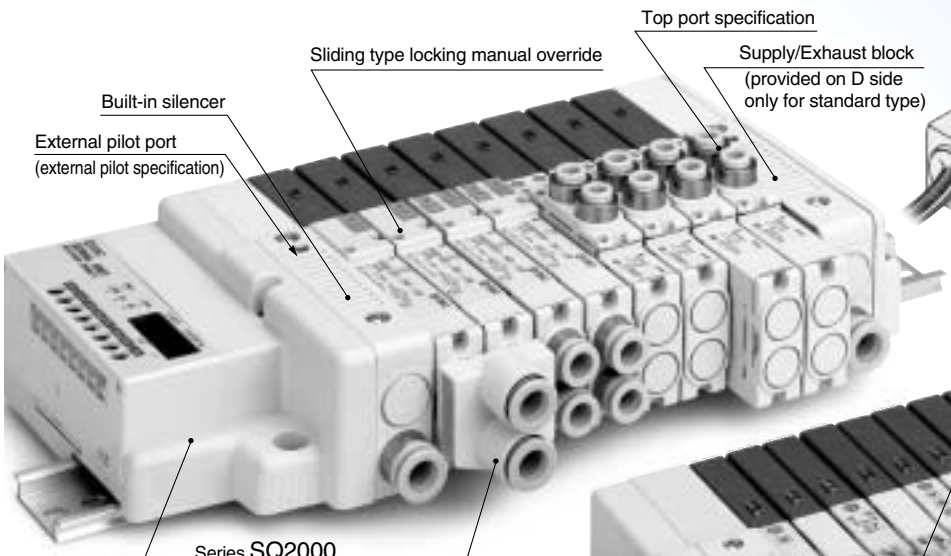
- External pilot specification
- Supply/Exhaust block
- Blanking plate
- Individual supply spacer
- Individual exhaust spacer
- Supply block plate
- Exhaust block plate
- Built-in silencer
- Name plate
- Port plug
- Back pressure check valve

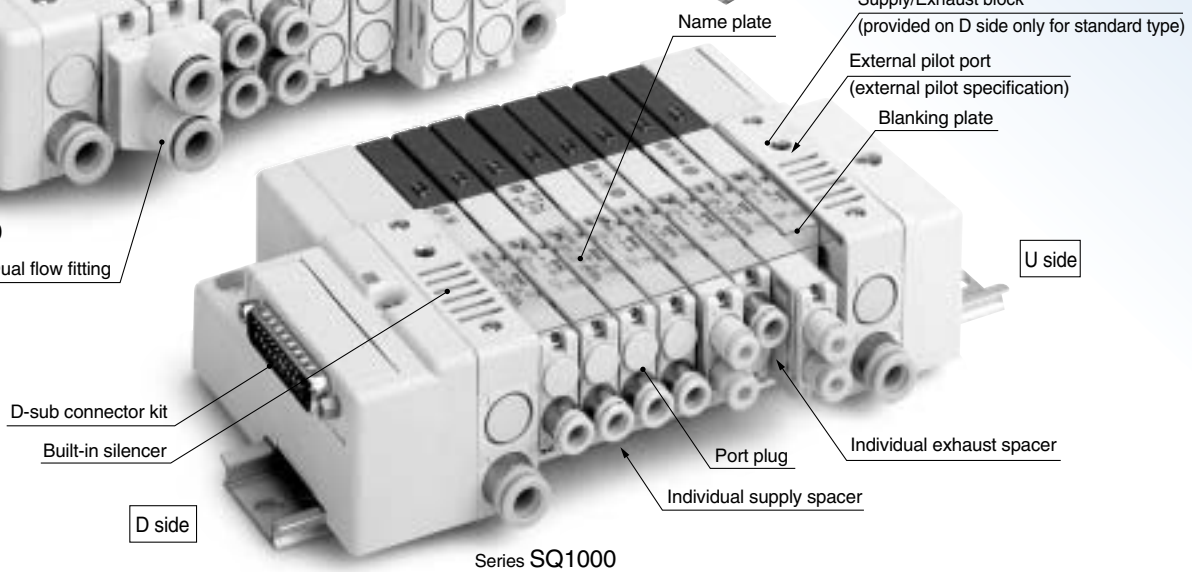


Manifold mounted type

Valve maintenance is simple and labor time is reduced by a single mounting screw.







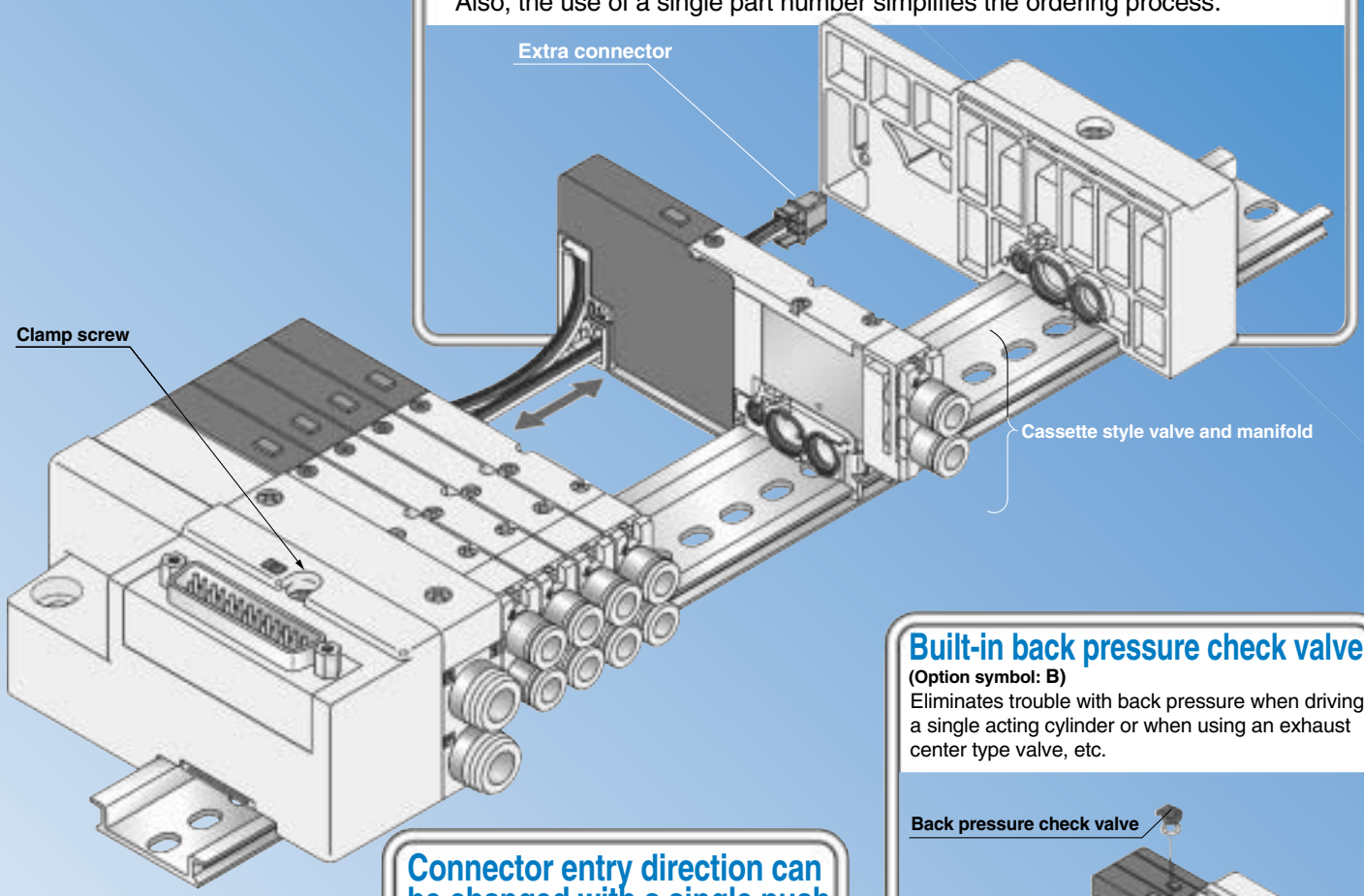
5 Port Metal Seal/Rubber Seal Solenoid Valve
Plug-in Type/Plug Lead Type

Series SQ1000/2000

SMC

Stacking manifold

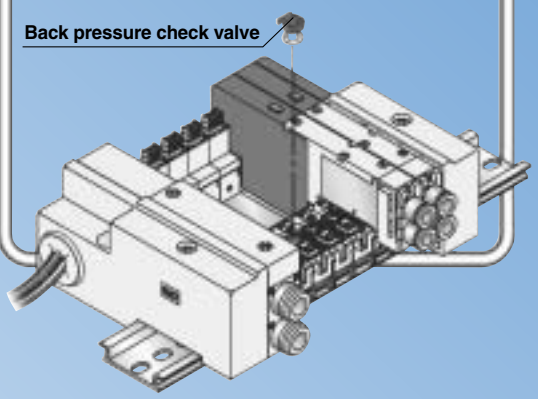
The use of cassette style valves and manifolds makes it easy to increase or decrease the number of stations on a DIN rail. The plug-in type includes two extra valve station connectors. This design makes rewiring unnecessary during manifold expansion.
Also, the use of a single part number simplifies the ordering process.



Built-in back pressure check valve

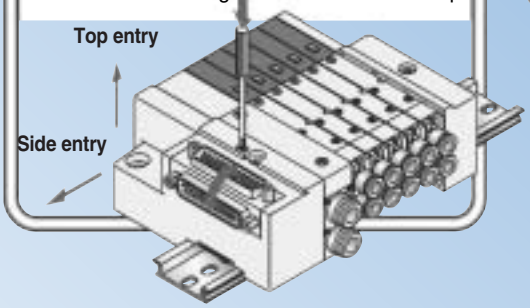
(Option symbol: B)

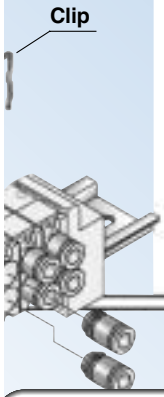
Eliminates trouble with back pressure when driving a single acting cylinder or when using an exhaust center type valve, etc.



Connector entry direction can be changed with a single push

The connector entry direction can be changed from the top to the side by simply pressing the manual release button.
It is not necessary to use the manual release button when switching from the side to the top.





Easy replacement of clip type One-touch fittings

One-touch fittings can be replaced without removing valves.

Outstanding response times and long life

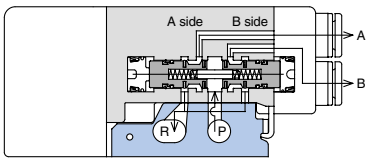
Model	Response time	Life Note)
SQ1000	12ms or less	200 million cycles
SQ2000	20ms or less	

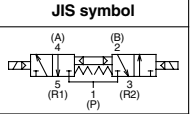
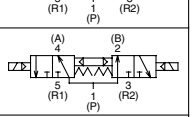
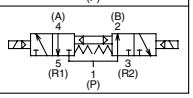
Note) For metal seal, single type, DC specifications, based on SMC life conditions.

∗ For applications which demand high speed, high frequency, long life and a precise response time.

Dual 3 port valves, 4 positions (Rubber seal type only)

- Two 3 port valves built into one body.
- The 3 port valves on the A and B sides can operate independently.
- When used as 3 port valves, only half the number of stations is required.
- Can also be used as a 4 position type valve.
  Exhaust center: **SQ$^{1}_{2}$A31**
  Pressure center: **SQ$^{1}_{2}$B31**



Model	A side	B side	JIS symbol
SQ$^{1}_{2}$A31	N.C. valve	N.C. valve	
SQ$^{1}_{2}$B31	N.O. valve	N.O. valve	
SQ$^{1}_{2}$C31	N.C. valve	N.O. valve	

Series SQ1000
Plug-in Type

How to Order Manifolds

SS5Q13 — 08 | FD2 | D | □

Stations

01	1 station
⋮	⋮
24 Note)	24 stations

Note) The maximum number of stations depends on the type of electrical entries.

Option

Nil	None
02 to 24	Specified DIN rail length Note 1)
B	With back pressure check valve
K	Special wiring specification (except double wiring) Note 2)
N	With labeling plate (side ported only)
R	External pilot specification
S	Built-in silencer/Direct exhaust outlet

Note 1) Specify DIN rail length with "D□" at the end. (Enter the number of stations inside □.) Example: -D08

Note 2) The standard wiring specification is for double wiring. Indicate a wiring specification for single wiring or mixed single and double wiring, or when exceeding the standard maximum number of stations. (Except L kit)

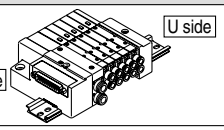
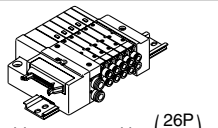
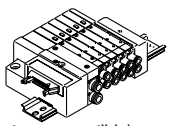
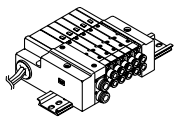
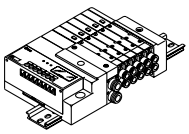
Note 3) For specifying two or more options, enter them in alphabetical order. Example: -BKN

Manifold mounting

D	DIN rail mount type
E Note)	Direct mount type

Note) E type is mounted using two holes in each end plate and a DIN rail that is shorter than the manifold length.

Electrical entry

Kit designation		Lead wire connector entry direction	Cable specification	Standard number of stations	Max. number of stations for special wiring specification	Note 2) Max. number of solenoids
F kit  D-sub connector kit	FD0	D side	D-sub connector (25P) kit, without cable	1 to 12 stations	24 stations	24
	FD1		D-sub connector (25P) kit, with 1.5m cable			
	FD2		D-sub connector (25P) kit, with 3.0m cable			
	FD3		D-sub connector (25P) kit, with 5.0m cable			
P kit  Flat ribbon cable connector kit (26P 20P)	PD0	Note 1) D side	Flat ribbon cable (26P) kit, without cable	1 to 12 stations	24 stations	24
	PD1		Flat ribbon cable (26P) kit, with 1.5m cable			
	PD2		Flat ribbon cable (26P) kit, with 3.0m cable			
	PD3		Flat ribbon cable (26P) kit, with 5.0m cable			
	PDC		Flat ribbon cable (20P) kit, without cable	1 to 9 stations	18 stations	18
J kit  Flat ribbon cable (20P) (PC Wiring System compatible)	JD0	D side	Flat ribbon cable (20P) PC Wiring System compatible	1 to 8 stations	16 stations	16
L kit  Lead wire kit	LD0	D side	Lead wire kit, with 0.6m cable	1 to 12 stations	—	—
	LU0	U side				
	LD1	D side	Lead wire kit, with 1.5m cable			
	LU1	U side				
	LD2	D side	Lead wire kit, with 3.0m cable			
	LU2	U side				
S kit  Serial transmission kit	SDF	D side	NKE Corporation: Uni-wire System compatible	1 to 8 stations	16 stations	16
	SDH		NKE Corporation: Uni-wire H System compatible			
	SDJ1		SUNX Corporation: S-LINK System (16 outputs) compatible			
	SDJ2		SUNX Corporation: S-LINK System (8 outputs) compatible	1 to 4 stations	8 stations	8
	SDQ		Device Net, OMRON Corporation: CompoBus/D compatible	1 to 8 stations	16 stations	16
	SDR1		OMRON Corporation: CompoBus/S (16 outputs) compatible			
	SDR2		OMRON Corporation: CompoBus/S (8 outputs) compatible	1 to 4 stations	8 stations	8
	SDV		Mitsubishi Electric Corporation: CC-LINK System compatible	1 to 8 stations	16 stations	16

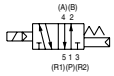
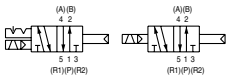
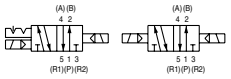
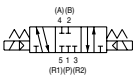
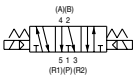
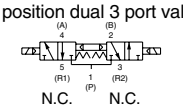
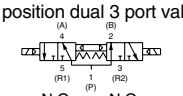
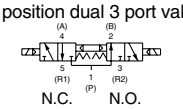
Note 1) Separately order the 20P type cable assembly for the P kit.

Note 2) The maximum number of stations should not be more than the maximum number of solenoids. (The number of solenoids are counted as: 1 for single solenoids and 2 for type 3P and 4P double solenoids.)

How to Order Valves

SQ1 [1] 3 [0] [ ] — [5] [ ] — [C6] [ ] — [ ]

Switching type

1	2 position single 
2	2 position double (latching)  Metal seal / Rubber seal
	2 position double (double solenoid) Note 1)  Metal seal / Rubber seal
3	3 position closed center 
4	3 position exhaust center 
5	3 position pressure center 
Note 2) **A**	4 position dual 3 port valve  N.C. N.C.
Note 2) **B**	4 position dual 3 port valve  N.O. N.O.
Note 2) **C**	4 position dual 3 port valve  N.C. N.O.

Note 1) For double solenoid specification, the function symbol below is "D".

Note 2) Only rubber seal types are applicable.

Seal type

0	Metal seal
1	Rubber seal

Function

Nil	Standard type (1.0WDC)
D	2 position double (double solenoid specification)
K Note 1)	High voltage type (1MPa, 1.0WDC) [only metal seal applicable]
N	Negative COM
Y Note 1)	Low power consumption type (0.5WDC)
R Note 2)	External pilot specification

Note 1) Except double (latching) type.

Note 2) Except dual 3 port valves.

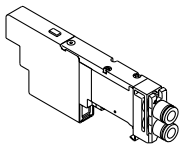
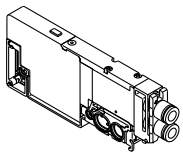
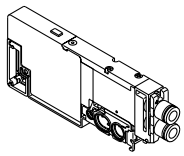
Note 3) For specifying two or more functions, enter symbols in alphabetical order.

Coil voltage

5	24VDC
6	12VDC

Note) Indicator light/Surge voltage suppressor is built-in.

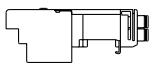
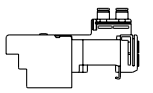
Manifold block specification

Nil	**M**	**MB**
Without manifold block	**With manifold block**	**Manifold block with built-in back pressure check valve**
	 ∗ Lead wire is not included.	 ∗ Lead wire is not included.
• When ordering with manifolds • When only valves are required.	For adding stations	

Port plug mounting port

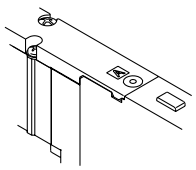
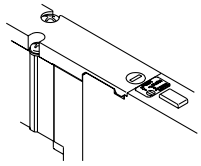
Nil	None
A	A port
B	B port

Cylinder port size

C3	ø3.2 One-touch fitting	Side ported	
C4	ø4 One-touch fitting		
C6	ø6 One-touch fitting		
M5	M5 threads		
L3	ø3.2 One-touch fitting	Note) Top ported	
L4	ø4 One-touch fitting		
L6	ø6 One-touch fitting		
L5	M5 threads		

Note) Can be changed to side ported configuration.

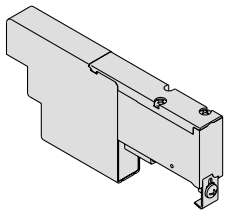
Manual override

Nil	**B** Note)
Non-locking push type (tool required)	Locking type (tool required)
	

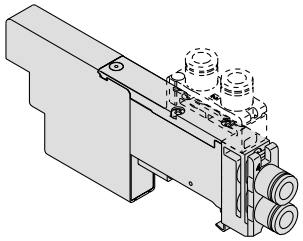
Note) Except double (latching) type.

Manifold Options

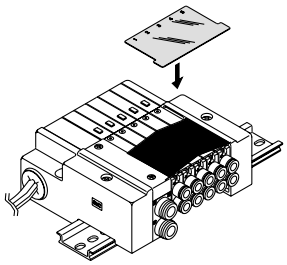
Blanking plate P. 39
SSQ1000-10A-3



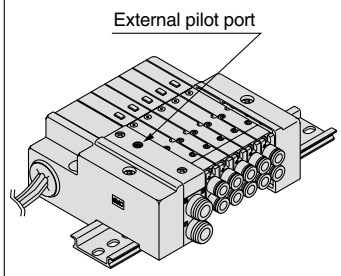
Individual SUP/EXH spacer P. 40
SSQ1000-PR1-3- C6 / L6



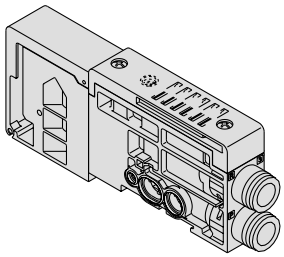
Labeling plate (-N) P. 42
SSQ1000-N3-n



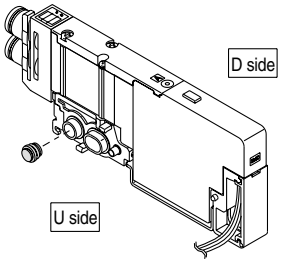
External pilot specification (-R) P. 43



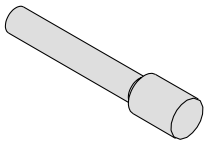
SUP/EXH block P. 39
SSQ1000-PR-3-C8(-S)



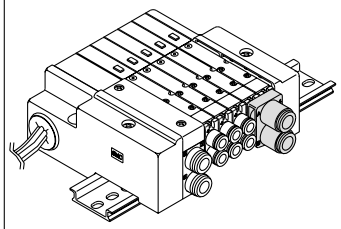
SUP block plate P. 41
SSQ1000-B-P



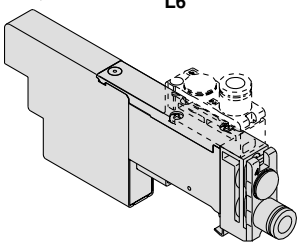
Blanking plug P. 42
KQ2P-23/04/06/08



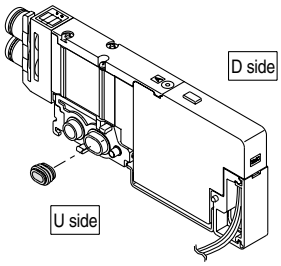
Dual flow fitting P. 43
SSQ1000-52A- C8 / N9



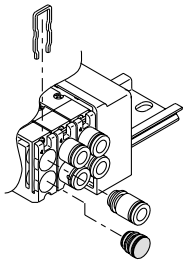
Individual SUP spacer P. 39
SSQ1000-P-3- C6 / L6



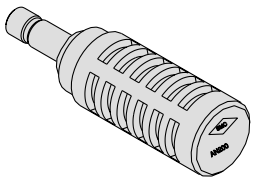
EXH block plate P. 41
SSQ1000-B-R



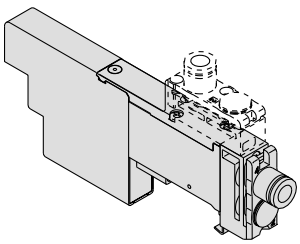
Port plug P. 42
VVQZ100-CP



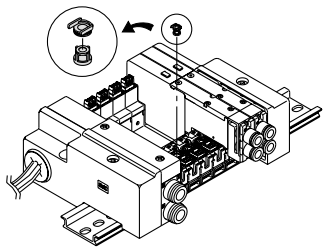
Silencer (for EXH port) P. 43



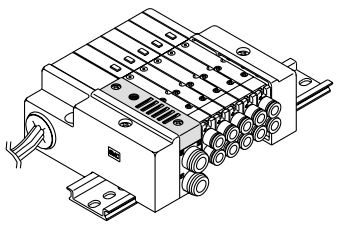
Individual EXH spacer P. 40
SSQ1000-R-3- C6 / L6



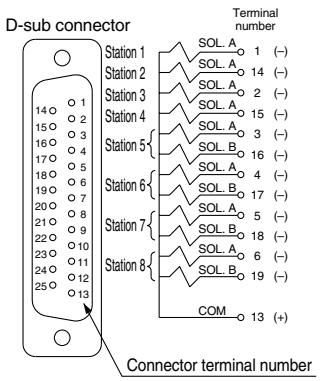
Back pressure check valve (-B) P. 41
SSQ1000-BP



Built-in silencer (-S) P. 42



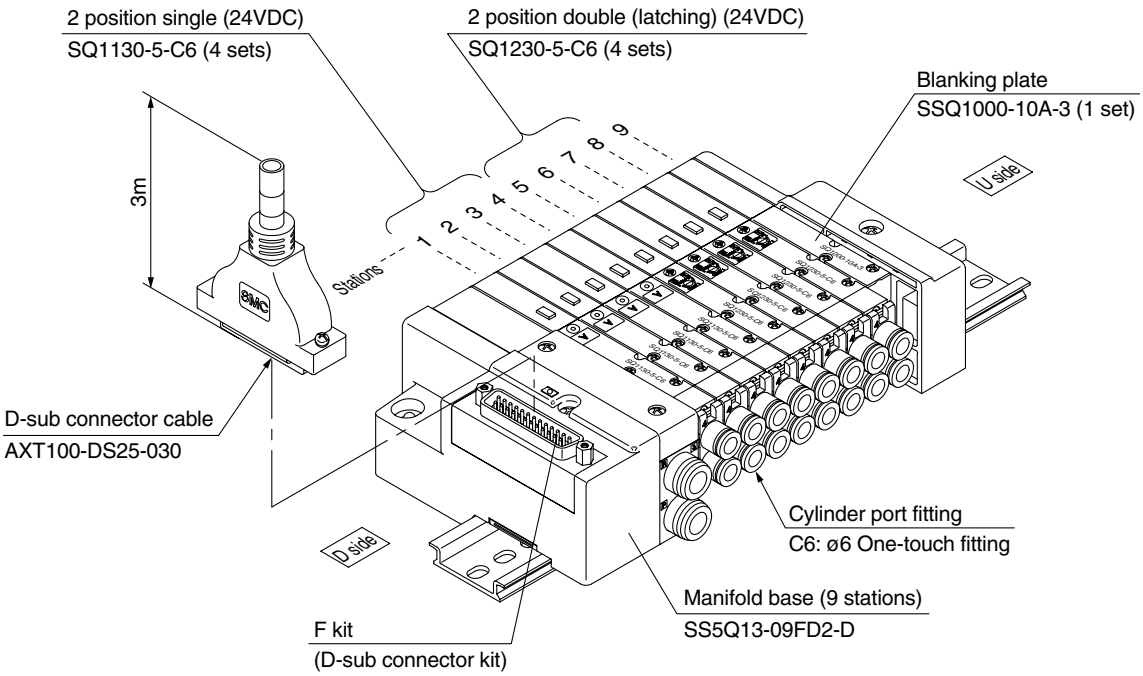
Special wiring specification (-K) P. 49



Although the standard products come with double wiring, mixed single and double wiring is available upon request.

How to Order Manifold Assemblies

Example: D-sub connector kit, with cable (3m)



SS5Q13-09FD2-D ..... 1 set: F kit 9 station manifold base
∗ **SQ1130-5-C6** ..... 4 sets: 2 position single
∗ **SQ1230-5-C6** ..... 4 sets: 2 position double (latching)
∗ **SSQ1000-10A-3** ..... 1 set: Blanking plate

To order valves and options mounted onto the manifold at the factory, list the valve/option with an asterisk (∗) in front of each part number.

Add the valve and option part numbers in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate on a manifold specification sheet.

Valve Specifications

Models

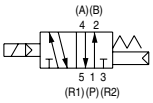
Series		Number of solenoids	Model		Effective area mm² (Cv factor) Note 1)	Response time ms Note 2)		Weight (g)
						Standard: 1W	Low wattage	
SQ1000	2 position	Single	Metal seal	SQ1130	3.2 (0.18)	12 or less	15 or less	80
			Rubber seal	SQ1131	4.5 (0.25)	15 or less	20 or less	80
		Double (latching)	Metal seal	SQ1230	3.2 (0.18)	15 or less	—	80
			Rubber seal	SQ1231	4.5 (0.25)	20 or less	—	80
		Double (double solenoid)	Metal seal	SQ1230D	3.2 (0.18)	10 or less	13 or less	95
			Rubber seal	SQ1231D	4.5 (0.25)	15 or less	20 or less	95
	3 position	Closed center	Metal seal	SQ1330	2.9 (0.16)	20 or less	26 or less	100
			Rubber seal	SQ1331	3.2 (0.18)	25 or less	33 or less	100
		Exhaust center	Metal seal	SQ1430	3.2 (0.18)	20 or less	26 or less	100
			Rubber seal	SQ1431	4.5 (0.25)	25 or less	33 or less	100
		Pressure center	Metal seal	SQ1530	2.9 (0.16)	20 or less	26 or less	100
			Rubber seal	SQ1531	3.2 (0.18)	25 or less	33 or less	100
	4 position	Dual 3 port valve	Rubber seal	SQ1$^{A}_{B}_{C}$31	3.2 (0.18)	25 or less	33 or less	95

Note 1) Values for the cylinder port size of C6.

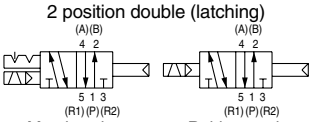
Note 2) Based on JISB8375-1981. (Values with a supply pressure of 0.5MPa and indicator light/surge voltage suppressor. Values fluctuate depending on the pressure and air quality.)

JIS symbols

2 position single

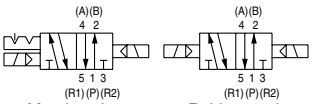


2 position double (latching)



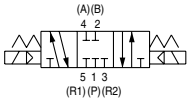
Metal seal Rubber seal

2 position double (double solenoid)

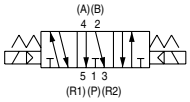


Metal seal Rubber seal

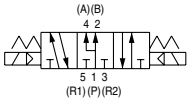
3 position closed center



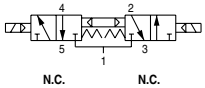
3 position exhaust center



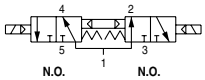
3 position pressure center



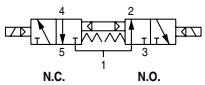
4 position dual 3 port valve (A)



4 position dual 3 port valve (B)



4 position dual 3 port valve (C)



Specifications

Valve specifications	Valve construction		Metal seal	Rubber seal
	Fluid		Air/Inert gas	
	Maximum operating pressure		0.7MPa (High pressure type: 1.0MPa) Note 3)	
	Minimum operating pressure	Single	0.1MPa	0.15MPa
		Double (latching)	0.18MPa	0.18MPa
		Double (double solenoid)	0.1MPa	0.1MPa
		3 position	0.1MPa	0.2MPa
		4 position	—	0.15MPa
	Ambient and fluid temperature		–10 to 50°C Note 1)	
	Lubrication		Not required	
	Pilot valve manual override		Push type/Locking type (tool required)	
	Vibration/Impact resistance Note 2)		30/150 m/s²	
	Enclosure		Dust proof	
Solenoid specifications	Rated coil voltage		12VDC, 24VDC	
	Allowable voltage fluctuation		±10% of rated voltage	
	Coil insulation type		Equivalent to B type	
	Power consumption (Current)	24VDC	1W DC (42mA), 0.5W DC (21mA) Note 4)	
		12VDC	1W DC (83mA), 0.5W DC (42mA) Note 4)	

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

Note 2) Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000Hz. Test was 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 from the 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.

Note 3) Metal seal type only. [Except double (latching) type.]

Note 4) Values for the low wattage (0.5W) specification.

Manifold Specifications

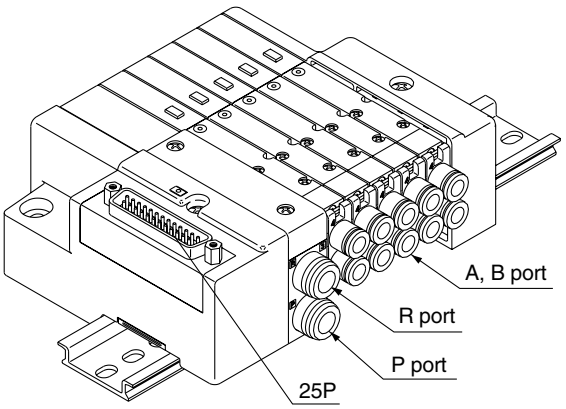
Base model	Configuration: Port size Note 1) P, R	Configuration: Port size Note 1) A, B: Port direction	Configuration: Port size Note 1) A, B: Port size	Applicable solenoid valves	Connection type		Applicable stations Note 3)	5 station weight (g) Note 4)	Additional weight for 1 station (g) Note 4)
SS5Q13-□□-□	C8 (for ø8) Option (Direct outlet with built-in silencer)	Side	C3 (for ø3.2) C4 (for ø4) C6 (for ø6) M5 (M5 threads)	SQ1□30 SQ1□31	F kit: D-sub connector		1 to 12 stations	420	20
					P kit: Flat ribbon cable	26P	1 to 12 stations	420	20
						20P	1 to 9 stations		
		Note 2) Top	L3 (for ø3.2) L4 (for ø4) L6 (for ø6) L5 (M5 threads)		J kit: Flat ribbon cable PC Wiring System compatible		1 to 8 stations	420	20
					L kit: Lead wire		1 to 12 stations	460	35
					S kit: Serial transmission		1 to 8 stations	475	20

Note 1) One-touch fittings in inch sizes are also available. Refer to page 51 for details.

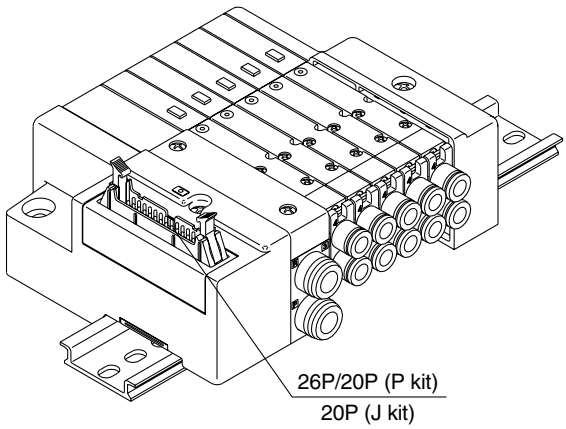
Note 2) Can be changed to side ported configuration.

Note 3) An optional specification for special wiring is available to increase the maximum number of stations. Refer to page 49 for details.

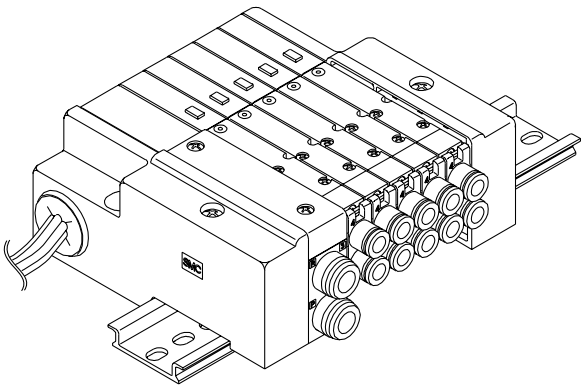
Note 4) Except valves. Refer to page 5 for valve weights.



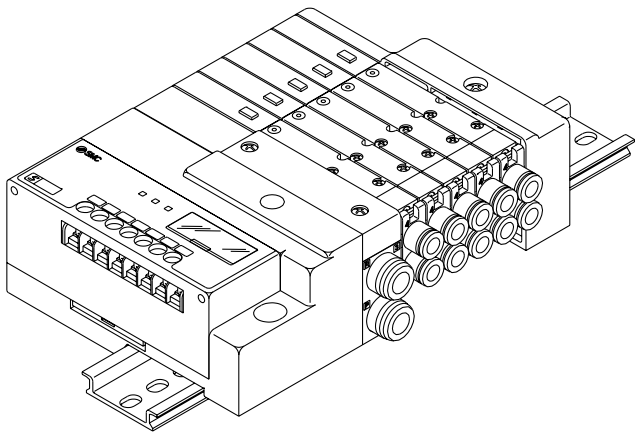
F kit



P kit **J kit**

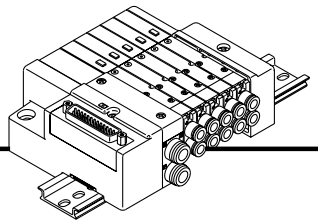


L kit



S kit

F Kit (D-sub Connector)

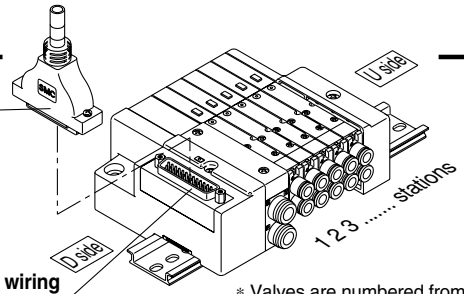


- Simplification and labor savings for wiring work can be achieved by using a D-sub connector for the electrical connection.
- The use of D-sub connectors (25P) conforming to MIL standards provides a wide range of compatibility with conventional connectors.
- Top or side entry for the connector can be changed freely, allowing later changes according to the mounting space.

Manifold specifications

Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ1000	Side, Top	C8	C3, C4, C6, M5	12 stations (24 stations optional)

D-sub connector (25P)



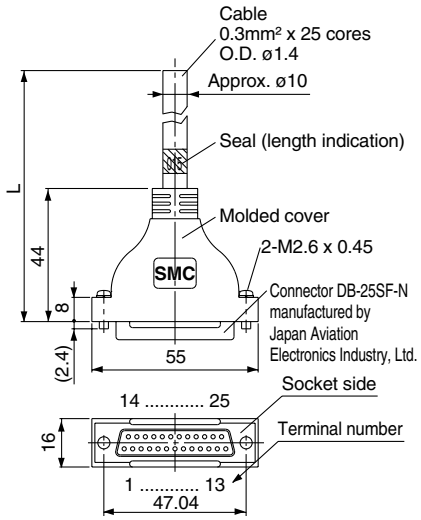
∗ Valves are numbered from the D side.

Cable assembly

Electrical wiring specifications

AXT100-DS25- $^{015}_{030}$ $^{}_{050}$

(D-sub connector cable assemblies can be ordered with manifolds. Refer to manifold ordering.)



Lead wire colors for D-sub connector cable assembly terminal numbers

Terminal no.	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black
16	Blue	White
17	Purple	None
18	Gray	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	None

D-sub connector cable assemblies (optional)

Cable length (L)	Part no.	Note
1.5m	AXT100-DS25-015	Cable 0.3mm² x 25 cores
3m	AXT100-DS25-030	
5m	AXT100-DS25-050	

∗ When using a conventional connector, use a type 25P female connector conforming to MIL-C-24308.

∗ Cannot be used for transfer wiring.

Electrical characteristics

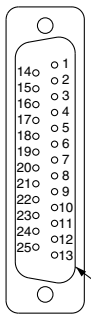
Item	Characteristic
Conductor resistance Ω/km, 20°C	65 or less
Withstand pressure V, 1 minute, AC	1000
Insulation resistance MΩ/km, 20°C	5 or less

Note) The minimum bending radius for D-sub connector cables is 20mm.

Connector manufacturer examples

- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Hirose Electric Company

D-sub connector

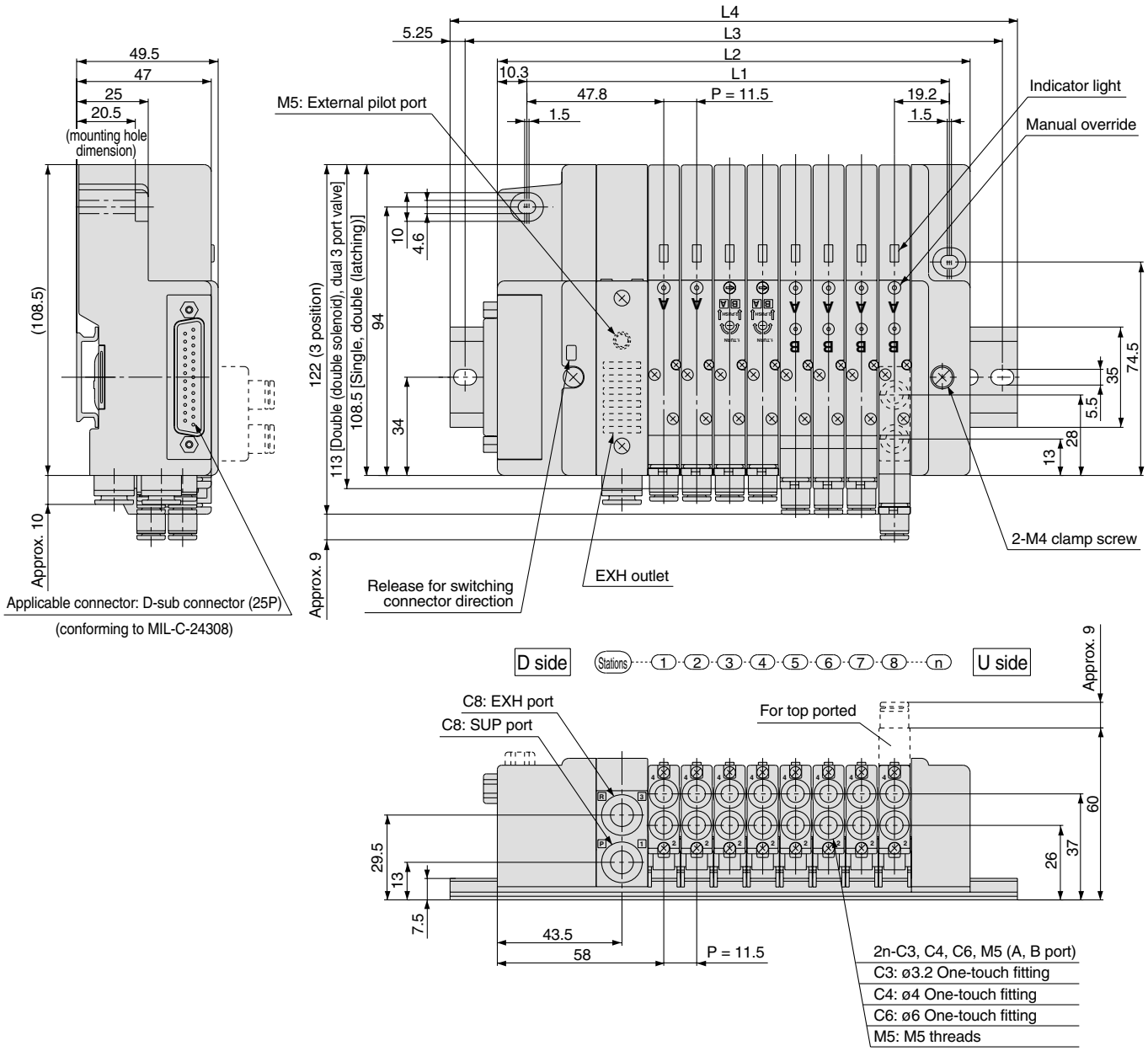


As the standard electrical wiring specification for 12 stations or less, double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
Mixed single and double wiring is available as an option.
Refer to page 49 for details.

Lead wire colors for D-sub connector assemblies (AXT100-DS25- $^{015}_{030}$ $^{}_{050}$ **)**

		Terminal no.	Polarity (+)	Polarity (–)	Lead wire color	Dot marking
Station 1	SOL. A	1	(–)	(+)	Black	None
	SOL. B	14	(–)	(+)	Yellow	Black
Station 2	SOL. A	2	(–)	(+)	Brown	None
	SOL. B	15	(–)	(+)	Pink	Black
Station 3	SOL. A	3	(–)	(+)	Red	None
	SOL. B	16	(–)	(+)	Blue	White
Station 4	SOL. A	4	(–)	(+)	Orange	None
	SOL. B	17	(–)	(+)	Purple	None
Station 5	SOL. A	5	(–)	(+)	Yellow	None
	SOL. B	18	(–)	(+)	Gray	None
Station 6	SOL. A	6	(–)	(+)	Pink	None
	SOL. B	19	(–)	(+)	Orange	Black
Station 7	SOL. A	7	(–)	(+)	Blue	None
	SOL. B	20	(–)	(+)	Red	White
Station 8	SOL. A	8	(–)	(+)	Purple	White
	SOL. B	21	(–)	(+)	Brown	White
Station 9	SOL. A	9	(–)	(+)	Gray	Black
	SOL. B	22	(–)	(+)	Pink	Red
Station 10	SOL. A	10	(–)	(+)	White	Black
	SOL. B	23	(–)	(+)	Gray	Red
Station 11	SOL. A	11	(–)	(+)	White	Red
	SOL. B	24	(–)	(+)	Black	White
Station 12	SOL. A	12	(–)	(+)	Yellow	Red
	SOL. B	25	(–)	(+)	White	None
	COM.	13	(+)	(–) Note)	Orange	Red
			Positive COM spec.	Negative COM spec.		

Note) When using the negative COM specification, use valves for negative COM.

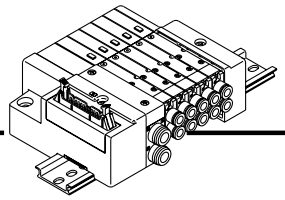


Dimensions

Formulas: L1 = 11.5n + 55.5, L2 = 11.5n + 73 n: Stations (maximum 24 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	67	78.5	90	101.5	113	124.5	136	147.5	159	170.5	182	193.5	205	216.5	228	239.5	251	262.5	274	285.5	297	308.5	320	331.5
L2	84.5	96	107.5	119	130.5	142	153.5	165	176.5	188	199.5	211	222.5	234	245.5	257	268.5	280	291.5	303	314.5	326	337.5	349
L3	112.5	125	137.5	150	150	162.5	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	300	312.5	325	337.5	350	362.5	375
L4	123	135.5	148	160.5	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	310.5	323	335.5	348	360.5	373	385.5

P Kit (Flat Ribbon Cable Kit)

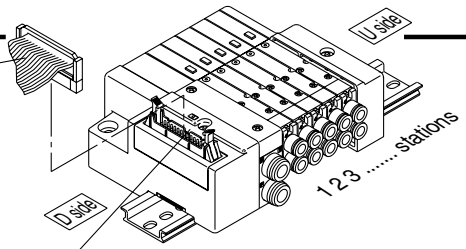


- Simplification and labor savings for wiring work can be achieved by using a flat ribbon cable for the electrical connection.
- The use of flat ribbon cable connectors (26P, 20P) conforming to MIL standards provides a wide range of compatibility with conventional connectors.
- Top or side entry for the connector can be changed freely, allowing later changes according to the mounting space.

Manifold specifications

Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ1000	Side, Top	C8	C3, C4, C6, M5	12 stations (24 stations optional)

Flat ribbon cable (26P, 20P)

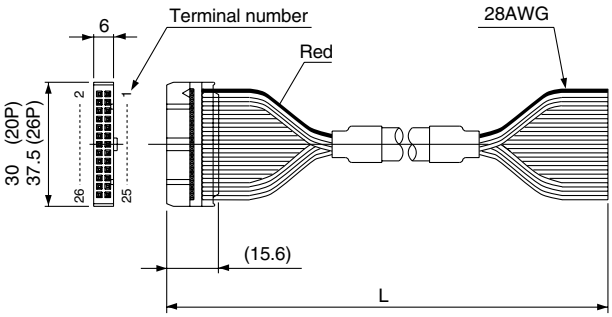


∗ Valves are numbered from the D side.

Cable assembly

AXT100-FC $\begin{matrix}20\\26\end{matrix}$**-** $\begin{matrix}1\\2\\3\end{matrix}$

Type 26P flat ribbon cable connector assemblies can be ordered with manifolds. Refer to manifold ordering.



Flat ribbon cable connector assemblies (optional)

Cable length (L)	Part no.	
	26P	20P
1.5m	AXT100-FC26-1	AXT100-FC20-1
3m	AXT100-FC26-2	AXT100-FC20-2
5m	AXT100-FC26-3	AXT100-FC20-3

∗ When using a conventional connector, use a type 26P connector conforming to MIL-C-83503 or a type 20P with strain relief.

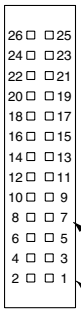
∗ Cannot be used for transfer wiring.

Connector manufacturer examples

- Hirose Electric Company
- Sumitomo/3-M Limited
- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co. Ltd.

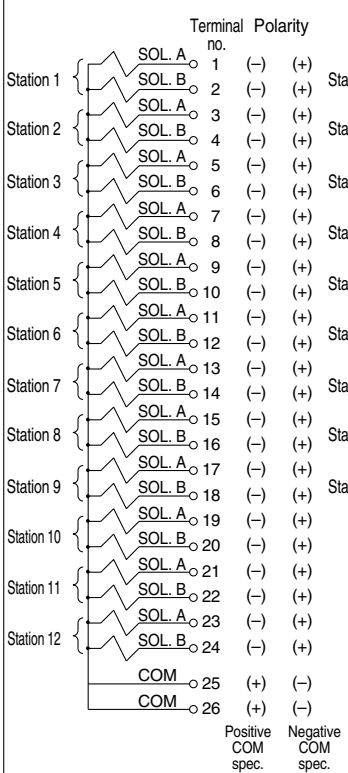
Electrical wiring specifications

Flat ribbon cable connector

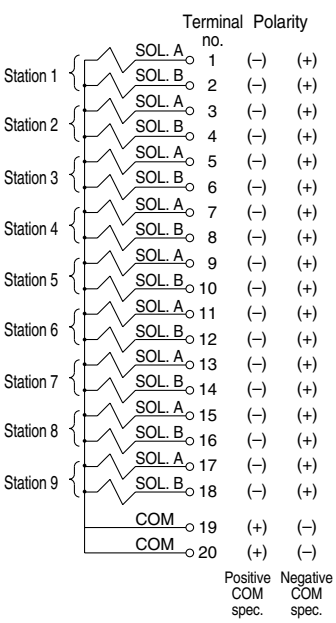


As the standard electrical wiring specification for 12 stations or less, double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
Mixed single and double wiring is available as an option.
Refer to page 49 for details.

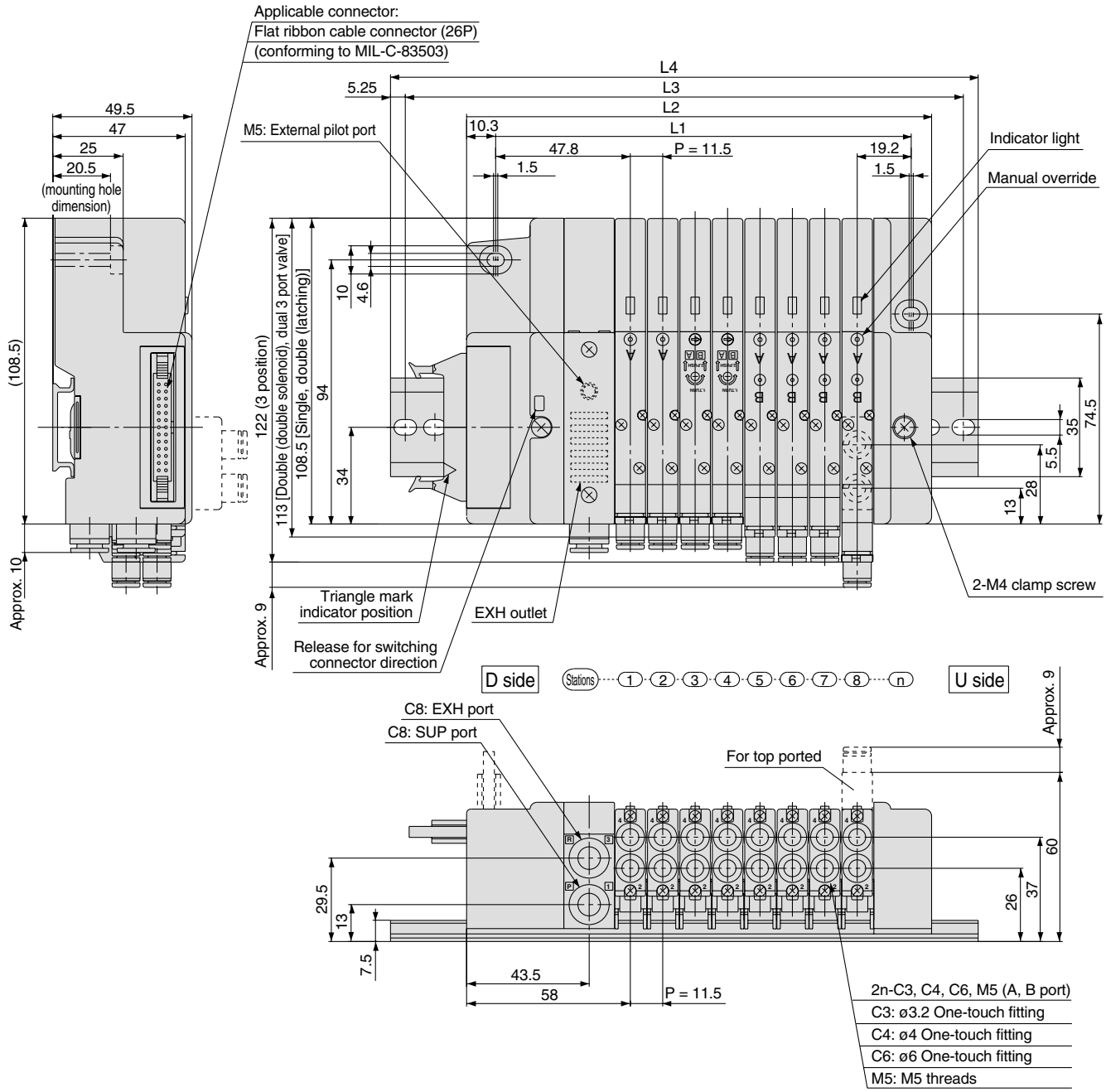
<26P>



<20P>



Note) When using the negative COM specification, use valves for negative COM.

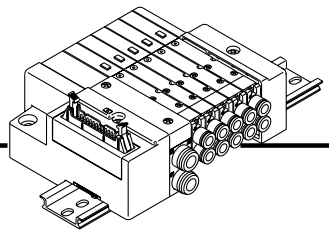


Dimensions

Formulas: L1 = 11.5n + 55.5, L2 = 11.5n + 73 n: Stations (maximum 24 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	67	78.5	90	101.5	113	124.5	136	147.5	159	170.5	182	193.5	205	216.5	228	239.5	251	262.5	274	285.5	297	308.5	320	331.5
L2	84.5	96	107.5	119	130.5	142	153.5	165	176.5	188	199.5	211	222.5	234	245.5	257	268.5	280	291.5	303	314.5	326	337.5	349
L3	112.5	125	137.5	150	150	162.5	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	300	312.5	325	337.5	350	362.5	375
L4	123	135.5	148	160.5	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	310.5	323	335.5	348	360.5	373	385.5

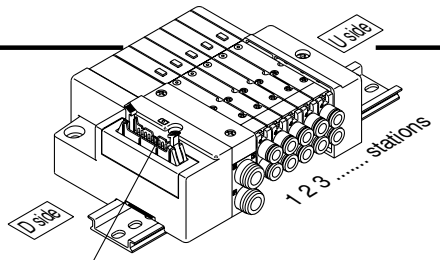
J Kit (PC Wiring System Compatible Flat Ribbon Cable Kit)



- Compatible with the PC Wiring System.
- The use of flat ribbon cable connectors (20P) conforming to MIL standards provides a wide range of compatibility with conventional connectors.
- Top or side entry for the connector can be changed freely, allowing later changes according to the mounting space.

Manifold specifications

Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ1000	Side, Top	C8	C3, C4, C6, M5	8 stations (16 stations optional)

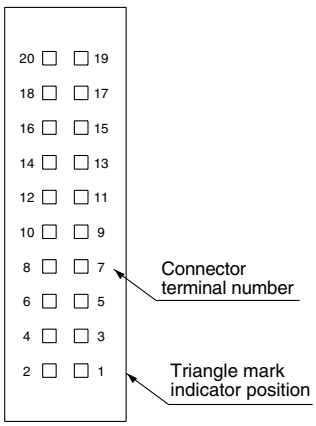


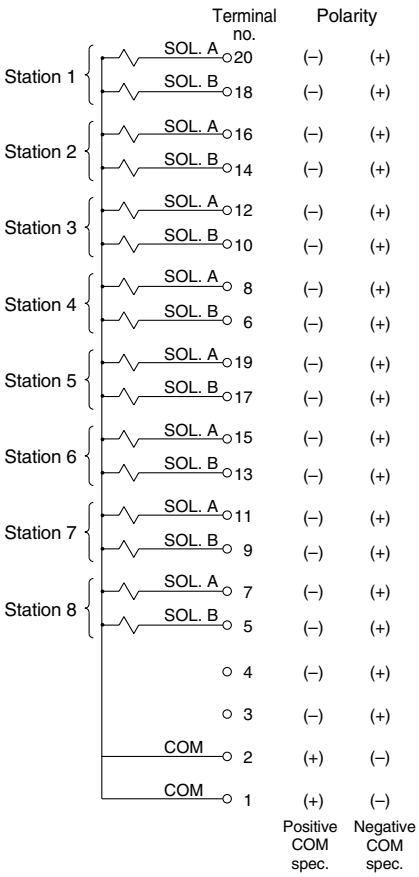
∗ Valves are numbered from the D side.

Electrical wiring specifications

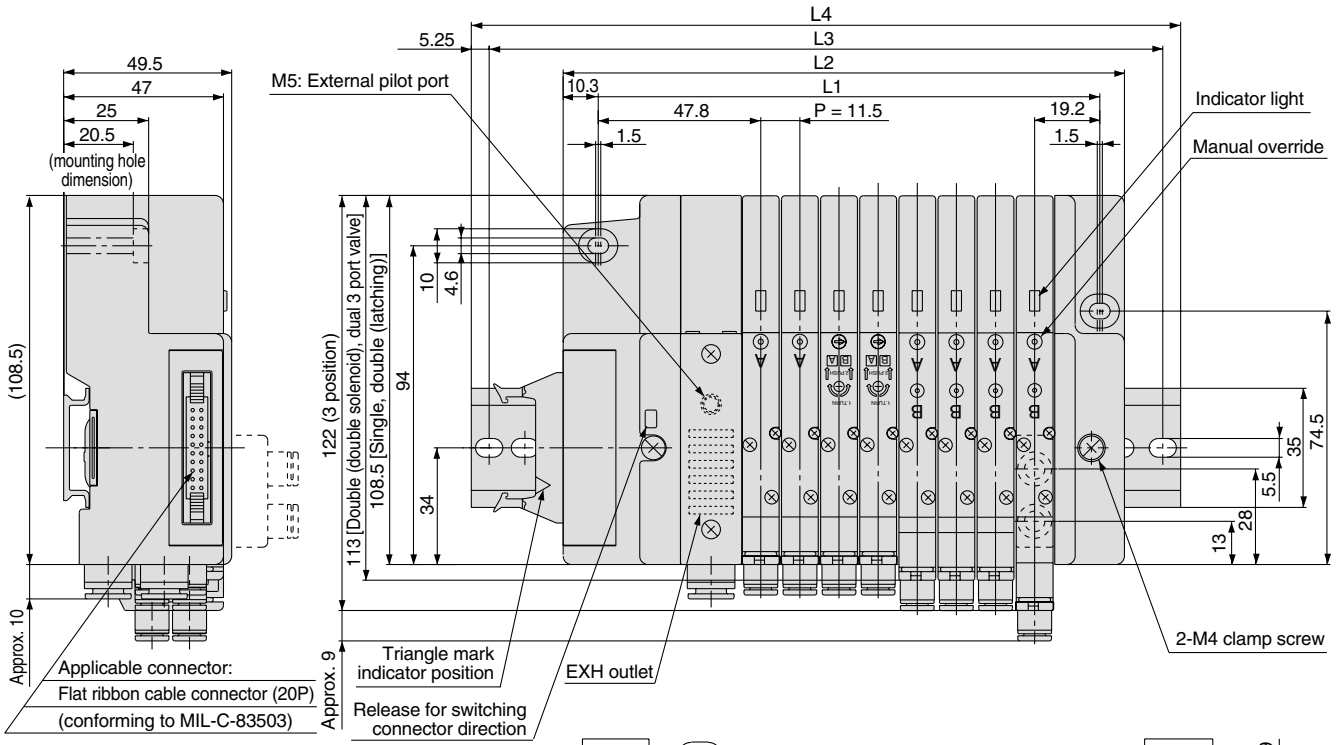
Double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
Mixed single and double wiring is available as an option.
Refer to page 49 for details.

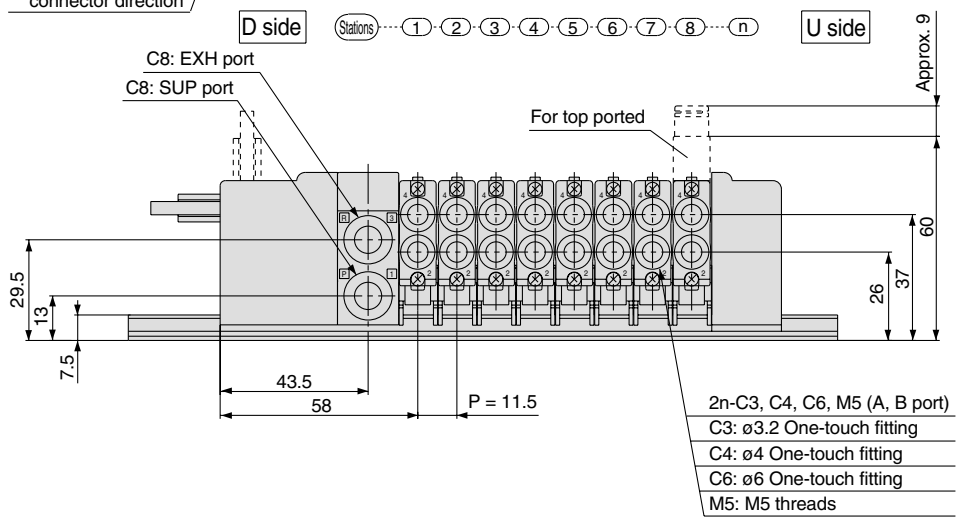
Flat ribbon cable connector





Note) When using the negative COM specification, use valves for negative COM.
For details on the PC Wiring System, refer to catalog "PC Wiring System" (CAT. ES02-20).

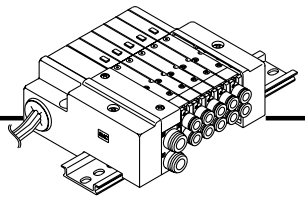




Dimensions Formulas: L1 = 11.5n + 55.5, L2 = 11.5n + 73 n: Stations (maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	67	78.5	90	101.5	113	124.5	136	147.5	159	170.5	182	193.5	205	216.5	228	239.5
L2	84.5	96	107.5	119	130.5	142	153.5	165	176.5	188	199.5	211	222.5	234	245.5	257
L3	112.5	125	137.5	150	150	162.5	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5
L4	123	135.5	148	160.5	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298

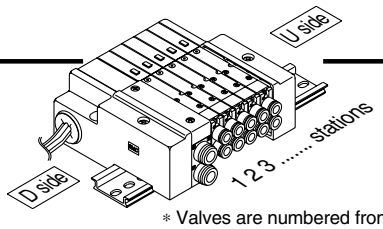
L Kit (Lead Wire Kit)



• Direct electrical entry type

Manifold specifications

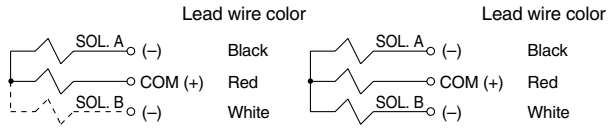
Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ1000	Side, Top	C8	C3, C4, C6, M5	12 stations

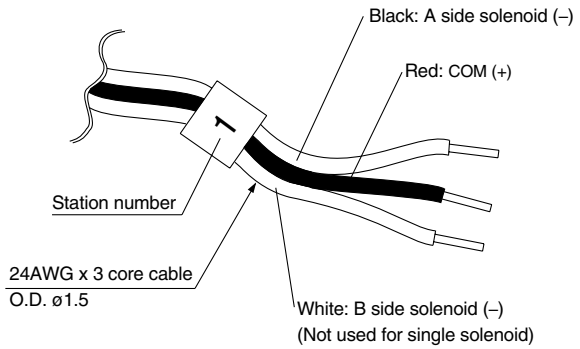


∗ Valves are numbered from the D side.

• Wiring Specifications/Positive COM Specifications

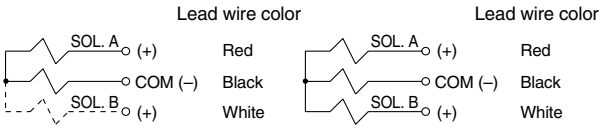
Three lead wires are included per station regardless of valves used. Among the three lead wires, the red wire is for COM.

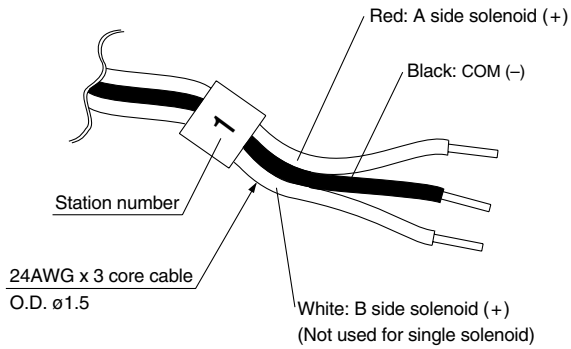




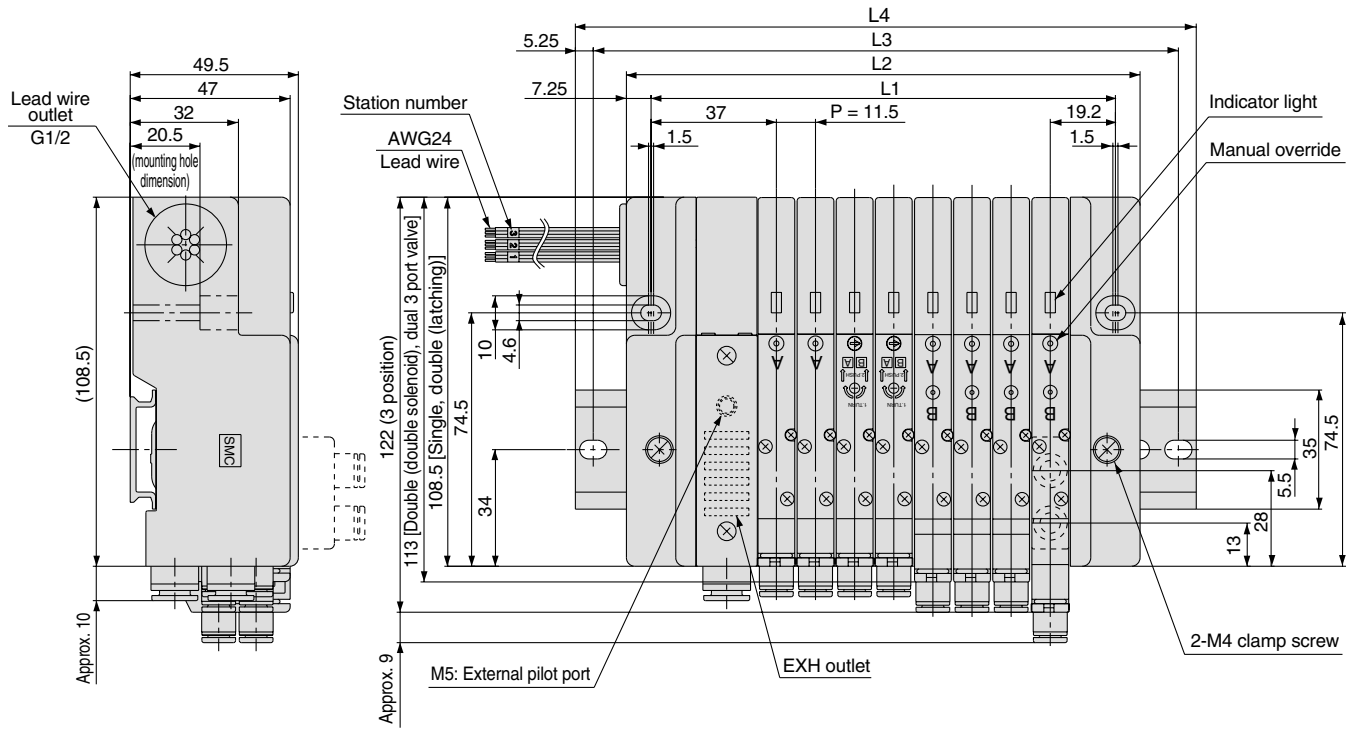
• Wiring Specifications/Negative COM Specifications (optional)

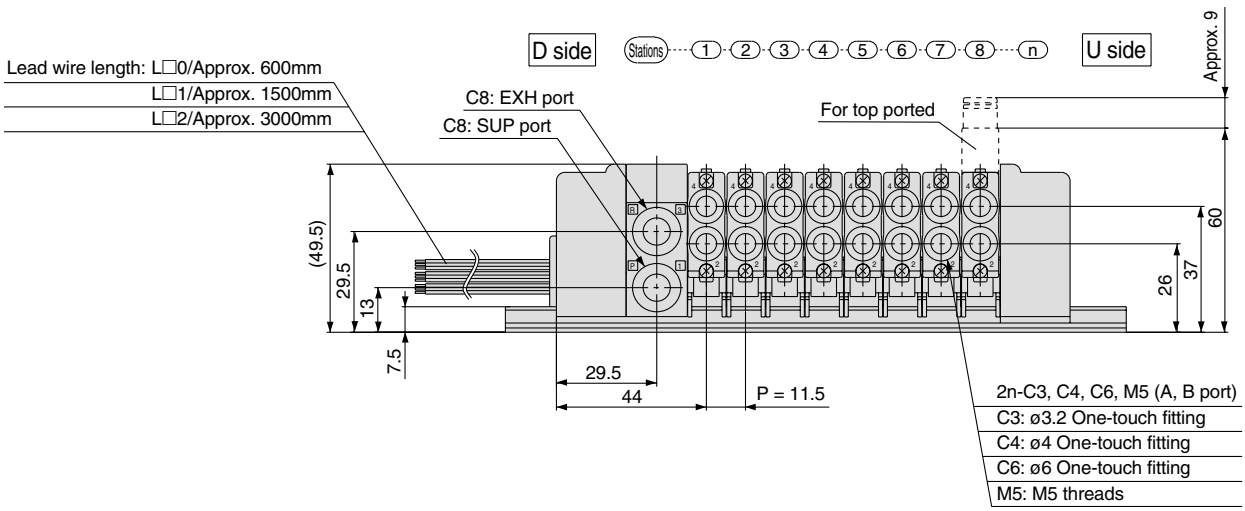
Three lead wires are included per station regardless of valves used. Among the three lead wires, the black wire is for COM.





Note) When using the negative COM specification, use valves for negative COM.



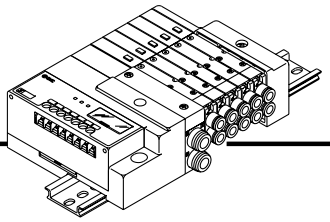


Dimensions

Formulas: L1 = 11.5n + 44.5, L2 = 11.5n + 59
n: Stations (maximum 12 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12
L1	56	67.5	79	90.5	102	113.5	125	136.5	148	159.5	171	182.5
L2	70.5	82	93.5	105	116.5	128	139.5	151	162.5	174	185.5	197
L3	100	112.5	125	125	137.5	150	162.5	175	187.5	200	212.5	225
L4	110.5	123	135.5	135.5	148	160.5	173	185.5	198	210.5	223	235.5

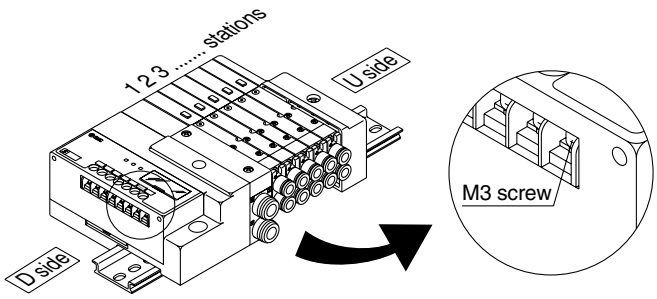
S Kit (Serial Transmission Kit)



- Simplification and labor savings for wiring work can be achieved by using a serial transmission unit.
- The maximum number of stations is 8 (16 optional).
  For type J2 and R2 only, the maximum number of stations is 4 (8 optional).

Manifold specifications

Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ1000	Side, Top	C8	C3, C4, C6, M5	8 stations



- **Valves are numbered from the D side.**
- **Double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.**
  Mixed single and double wiring is available as an option.

Item	Specification
External power supply	24VDC, +10%, –5%
Current consumption (inside unit)	0.1A or less

• Corresponding SI unit output numbers and solenoid coils

<Wiring example 1>

SI unit output number 0 1 2 3 4 5 6 7 8 9

	A	B	A	B	A	None	A	None	A	B
SI unit	Double		Double		Single		Single		Single	
Station	1		2		3		4		5	

Double wiring (standard)

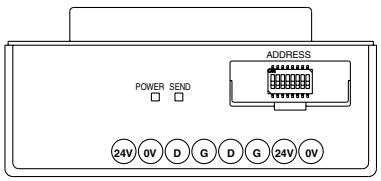
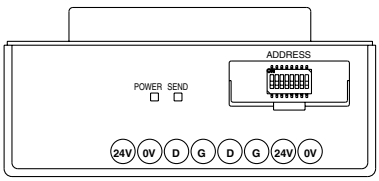
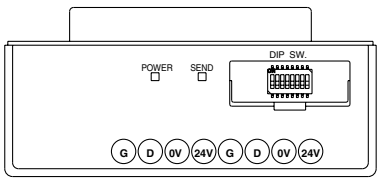
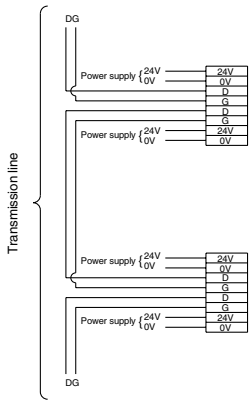
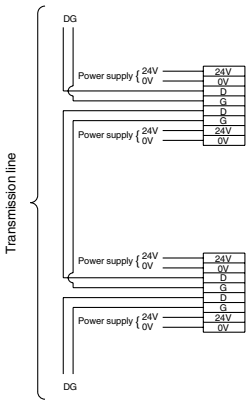
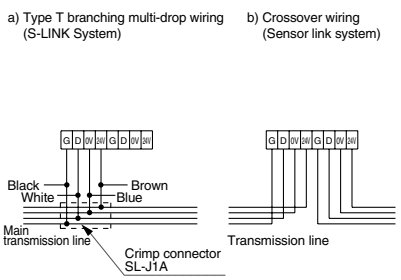
<Wiring example 2>

∗ Mixed wiring is optional. Specify the wiring specification on a manifold specification sheet. Refer to page 49 for details.

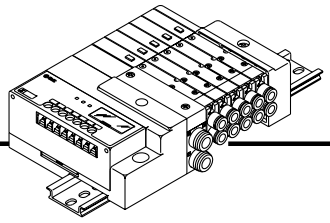
SI unit output number 0 1 2 3 4 5 6 7

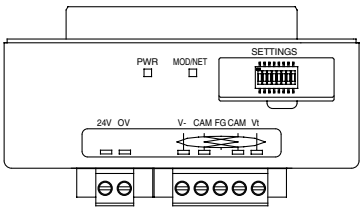
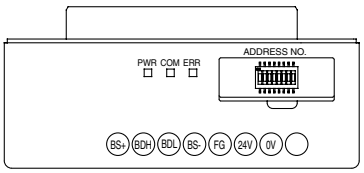
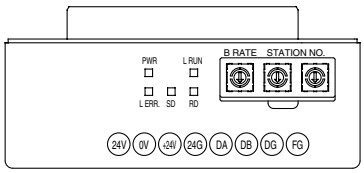
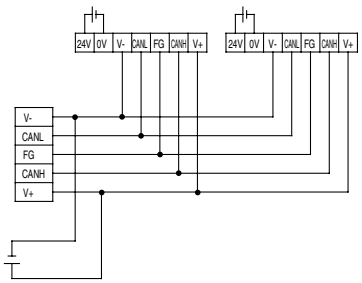
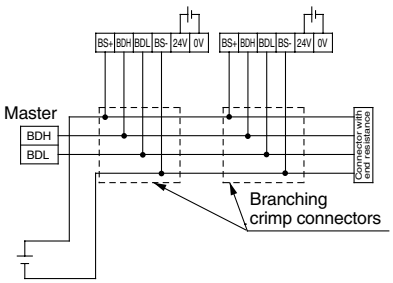
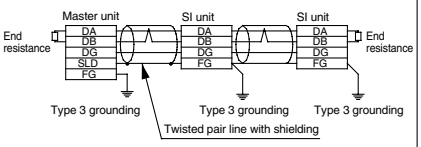
	A	B	A	B	A		A		A	B
SI unit	Double		Double		Single		Single		Double	
Station	1		2		3		4		5	

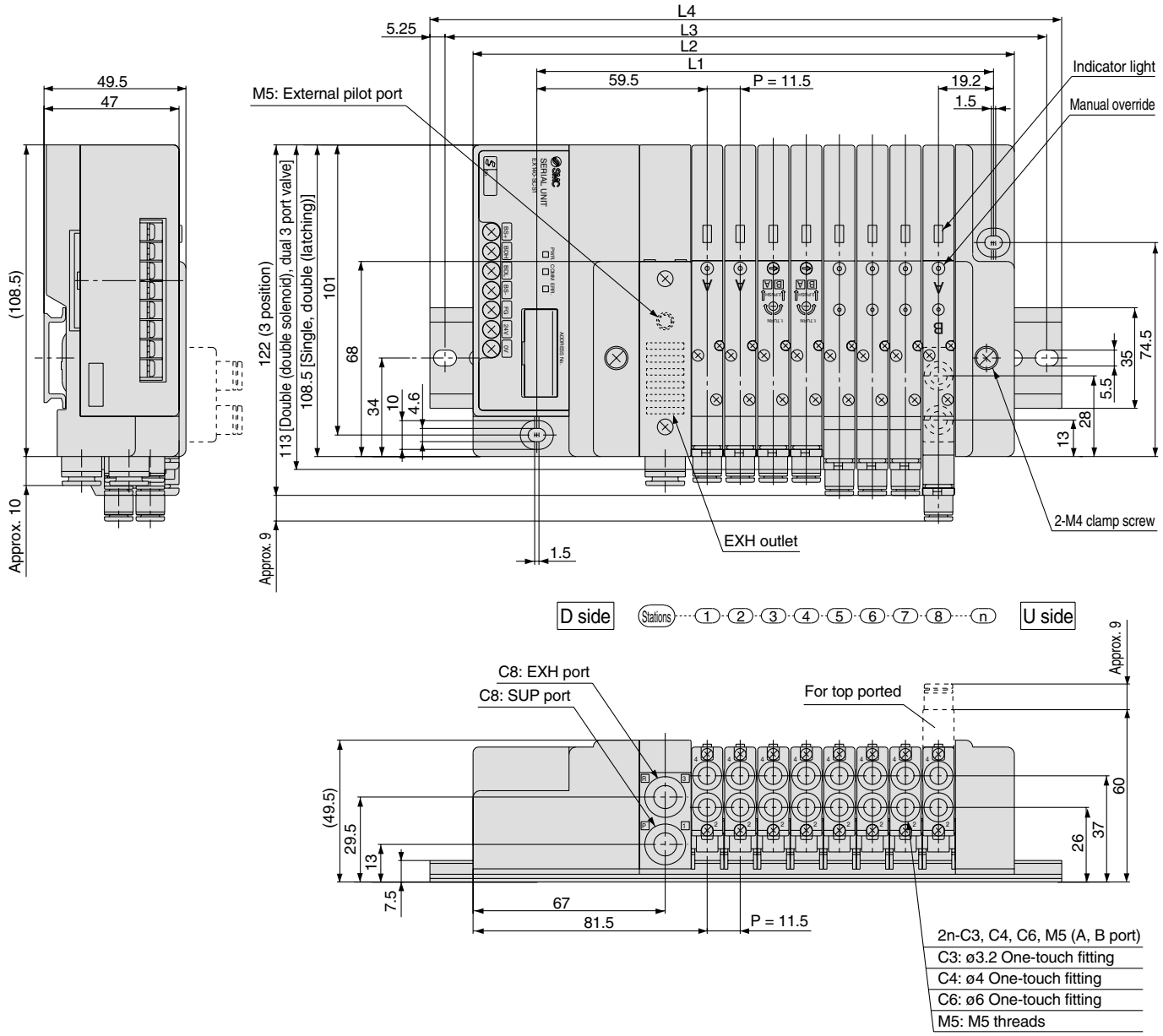
Mixed single and double wiring (optional)

	Type SDF **NKE Corporation** **Uni-wire System**	**Type SDH** **NKE Corporation** **Uni-wire H System**	**Type SDJ1, SDJ2** **SUNX Corporation** **S-LINK System**
Terminal block LED description			
	LED description / Detail POWER: Light ON with power input (Light ON when normal, flickers when voltage is low) SEND: Transmission indicator Normal: Blinks, Abnormal: Light OFF or ON	LED description / Detail POWER: Light ON with power input (Light ON when normal, flickers when voltage is low) SEND: Transmission indicator Normal: Blinks, Abnormal: Light OFF or ON	LED description / Detail POWER: Light ON with power input SEND: Transmission indicator Normal: Blinks, Abnormal: Blinks slowly
Cable wiring			 Dedicated S-LINK flat ribbon cable SL-RCM□00 is used in the examples above.
Note	• Uni-wire System Send unit: SD-120 • 16 outputs	• Uni-wire H System Send unit: SD-H2 • 16 outputs	• S-LINK System S-LINK controller: SL-CU1 • 16 outputs (Type SDJ1) 8 outputs (Type SDJ2)

S Kit (Serial Transmission Kit)



	Type SDQ DeviceNet	Type SDR1, SDR2 OMRON Corporation CompoBus/S	Type SDV Mitsubishi Electric Corporation CC-LINK System
Terminal block LED description			
	LED description / Detail POWER: Green light ON with circuit power input MOD/NET: Light OFF: When the unit is not online or circuit power is OFF MOD/NET: Green light ON continuously: When the unit is online and in operation MOD/NET: Red light blinks: When a reversible abnormal transmission occurs MOD/NET: Red light ON continuously: When irreversible abnormal transmission occurs or the same line is unable to go online	**LED description / Detail** POWER: Light ON with transmission power input, light Off without it COMM: Light ON with normal transmission, light OFF with abnormal or standby transmission ERR.: Light ON with abnormal transmission, light Off with normal or standby transmission	**LED description / Detail** POWER: Light On with transmission power input, light Off without it L RUN: Light ON when receiving normal data SD: Light ON when sending data RDL: Light ON when receiving data ERR.: Light ON with transmission error/setting error, light blinks with changes in the transmission speed setting
Cable wiring			
Note	• DeviceNet • OMRON Corporation CompoBus/D System Master unit: C200HW-DRM21 • 16 outputs	• CompoBus/S System Master unit: C200HW-SRM21 Master unit: CQM1-SRM21 • 16 outputs (Type SDR1) 8 outputs (Type SDR2)	• CC-LINK System Master unit: AJ61BT11 Master unit: A1SJ61BT11 Master unit: AJ61QBT11 Master unit: A1SJ61QBT11 • 16 outputs



Dimensions

Formulas: L1 = 11.5n + 67, L2 = 11.5n + 96.5 n: Stations (maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	78.5	90	101.5	113	124.5	136	147.5	159	170.5	182	193.5	205	216.5	228	239.5	251
L2	108	119.5	131	142.5	154	165.5	177	188.5	200	211.5	223	234.5	246	257.5	269	280.5
L3	137.5	150	162.5	162.5	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	300
L4	148	160.5	173	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	310.5

Series SQ2000
Plug-in Type

How to Order Manifolds

SS5Q23 — 08 | FD2 — D | □

Stations

01	1 station
⋮	⋮
16 Note)	16 stations

Note) The maximum number of stations depends on the type of electrical entries.

Option

Nil	None
02 to 24	Specified DIN rail length Note 1)
B	With back pressure check valve
K	Special wiring specification (except double wiring) Note 2)
N	With labeling plate (side ported only)
R	External pilot specification
S	Built-in silencer/Direct exhaust outlet

Note 1) Specify DIN rail length with "D□" at the end. (Enter the number of stations inside □.) Example: -D08

Note 2) The standard wiring specification is for double wiring. Indicate a wiring specification for single wiring or mixed single and double wiring, or when exceeding the standard maximum number of stations. (Except L kit)

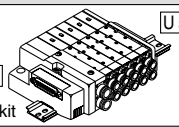
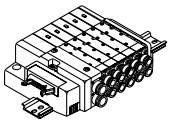
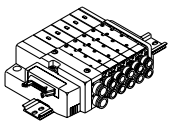
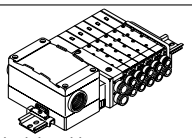
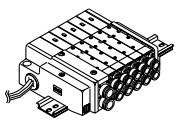
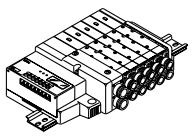
Note 3) For specifying two or more options, enter them in alphabetical order. Example: -BKN

Manifold mounting

D	DIN rail mount type
E Note)	Direct mount type

Note) E type is mounted using two holes in each end plate and a DIN rail that is shorter than the manifold length.

Electrical entry

Kit description		Lead wire connector entry direction	Cable specification	Standard number of stations	Max. number of stations for special wiring specification	Max. number of solenoids Note 2)
F kit  D-sub connector kit	**FD0**	D side	D-sub connector (25P) kit, without cable	1 to 12 stations	16 stations	24
	FD1		D-sub connector (25P) kit, with 1.5m cable			
	FD2		D-sub connector (25P) kit, with 3.0m cable			
	FD3		D-sub connector (25P) kit, with 5.0m cable			
P kit  Flat ribbon cable connector kit (26P, 20P)	**PD0**	Note 1) D side	Flat ribbon cable (26P) kit, without cable	1 to 12 stations	16 stations	24
	PD1		Flat ribbon cable (26P) kit, with 1.5m cable			
	PD2		Flat ribbon cable (26P) kit, with 3.0m cable			
	PD3		Flat ribbon cable (26P) kit, with 5.0m cable			
	PDC		Flat ribbon cable (20P) kit, without cable	1 to 9 stations		18
J kit  Flat ribbon cable (20P) (PC Wiring System compatible)	**JD0**	D side	Flat ribbon cable (20P) PC Wiring System compatible	1 to 8 stations	16 stations	16
T kit  Terminal block box kit	**TD0**	D side	Terminal block box kit	1 to 10 stations	16 stations	16
L kit  Lead wire kit	**LD0**	D side	Lead wire kit, with 0.6m cable	1 to 12 stations	—	—
	LU0	U side				
	LD1	D side	Lead wire kit, with 1.5m cable			
	LU1	U side				
	LD2	D side	Lead wire kit, with 3.0m cable			
	LU2	U side				
S kit  Serial transmission kit	**SDF**	D side	NKE Corporation: Uni-wire System compatible	1 to 8 stations	16 stations	16
	SDH		NKE Corporation: Uni-wire H System compatible			
	SDJ1		SUNX Corporation: S-LINK System (16 outputs) compatible			
	SDJ2		SUNX Corporation: S-LINK System (8 outputs) compatible	1 to 4 stations	8 stations	8
	SDQ		Device Net, OMRON Corporation: CompoBus/D compatible	1 to 8 stations	16 stations	16
	SDR1		OMRON Corporation: CompoBus/S (16 outputs) compatible			
	SDR2		OMRON Corporation: CompoBus/S (8 outputs) compatible	1 to 4 stations	8 stations	8
	SDV		Mitsubishi Electric Corporation: CC-LINK System compatible	1 to 8 stations	16 stations	16

Note 1) Separately order the 20P type cable assembly for the P kit.

Note 2) The maximum number of stations should not be more than the maximum number of solenoids. (The number of solenoids are counted as: 1 for single solenoids and 2 for type 3P and 4P double solenoids.

How to Order Valves

SQ2 [1] 3 [0] [ ] — [5] [ ] — [C6] — [ ] — [ ]

Switching type

1	2 position single
2	2 position double (latching) — Metal seal / Rubber seal
	2 position double (double solenoid) Note 1) — Metal seal / Rubber seal
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
Note 2) A	4 position dual 3 port valve — N.C. N.C.
Note 2) B	4 position dual 3 port valve — N.O. N.O.
Note 2) C	4 position dual 3 port valve — N.C. N.O.

Note 1) For double solenoid specification, the function symbol below is "D".

Note 2) Only rubber seal types are applicable.

Seal type

0	Metal seal
1	Rubber seal

Function

Nil	Standard type (1.0W DC)
D	2 position double (double solenoid specification)
N	Negative COM
Y Note 1)	Low power consumption type (0.5W DC)
R Note 2)	External pilot specification

Note 1) Except double (latching) type.

Note 2) Except dual 3 port valves.

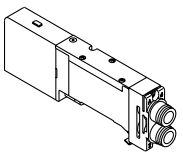
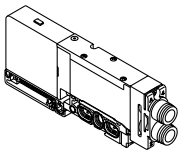
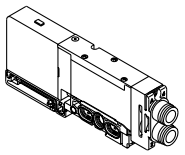
Note 3) For specifying two or more functions, enter symbols in alphabetical order.

Coil voltage

5	24VDC
6	12VDC

Note) Indicator light/surge voltage suppressor is built-in.

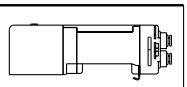
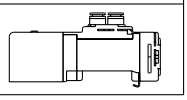
Manifold block specification

Nil	M	MB
Without manifold block	With manifold block	Manifold block with built-in back pressure check valve
	 ∗ Lead wire is not included.	 ∗ Lead wire is not included.
• When ordering with manifolds • When only valves are required.	For adding stations	

Port plug mounting port

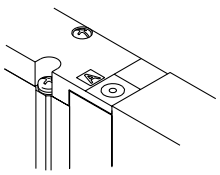
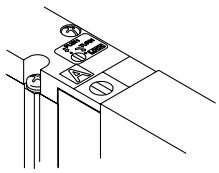
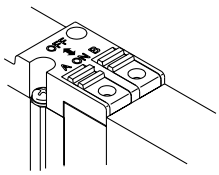
Nil	None
A	A port
B	B port

Cylinder port size

C4	ø4 One-touch fitting	Side ported	
C6	ø6 One-touch fitting		
C8	ø8 One-touch fitting		
L4	ø4 One-touch fitting	Note) Top ported	
L6	ø6 One-touch fitting		
L8	ø8 One-touch fitting		

Note) Can be changed to side ported configuration.

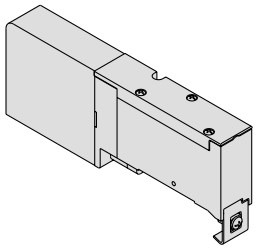
Manual override

Nil	B Note)	D Note)
Non-locking push type (tool required)	Locking type (tool required)	Slide locking type (manual type) ∗ Only side ported type applicable
		

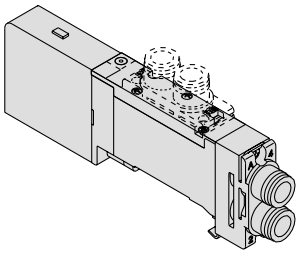
Note) Except double (latching) type.

Manifold Options

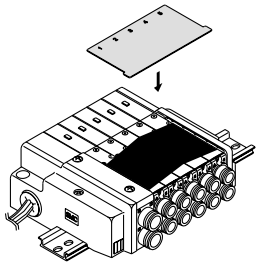
Blanking plate P. 44
SSQ2000-10A-3



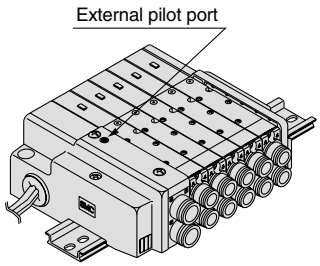
Individual SUP/EXH spacer P. 45
SSQ2000-PR1-3-$^{C8}_{L8}$



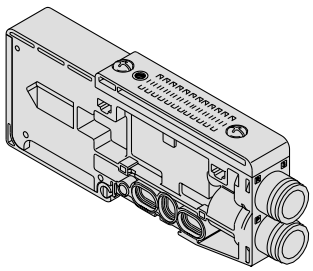
Labeling plate (-N) P. 47
SSQ2000-N3-n



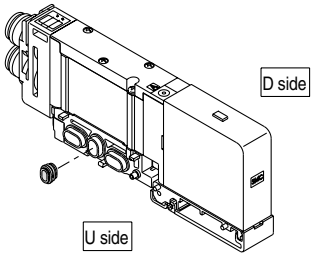
External pilot specification (-R) P. 48



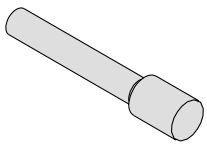
SUP/EXH block P. 44
SSQ2000-PR-3-C10 (-S)



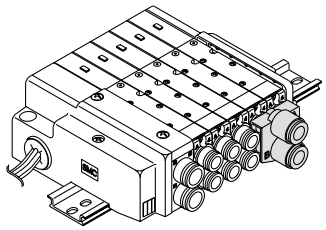
SUP block plate P. 46
SSQ1000-B-R



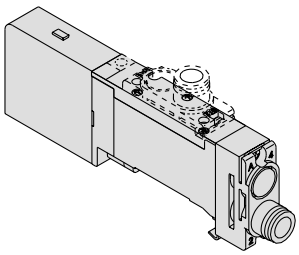
Blanking plug P. 47
KQ2P-04/06/08/10



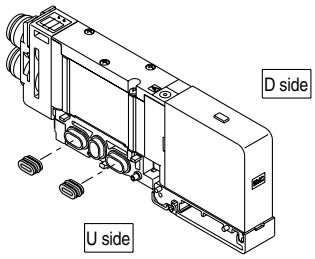
Dual flow fitting P. 48
SSQ2000-52A-$^{C10}_{N11}$



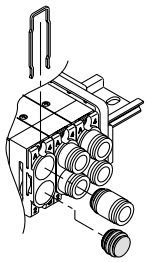
Individual SUP spacer P. 44
SSQ2000-P-3-$^{C8}_{L8}$



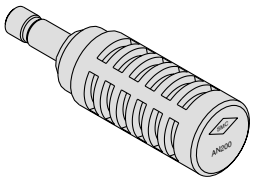
EXH block plate P. 46
SSQ2000-B-R



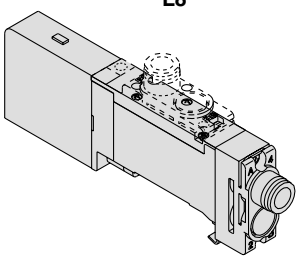
Port plug P. 47
VVQZ2000-CP



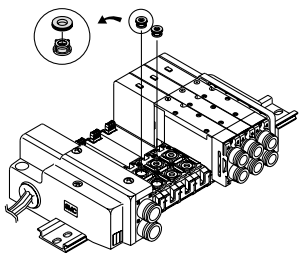
Silencer (for EXH port) P. 48



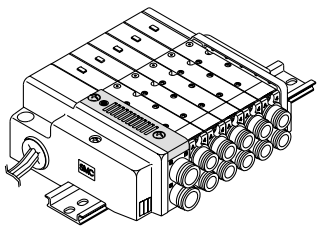
Individual EXH spacer P. 45
SSQ2000-R-3-$^{C8}_{L8}$



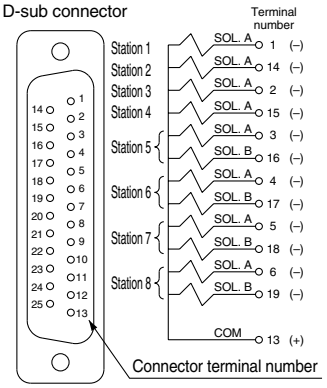
Back pressure check valve (-B) P. 46
SSQ2000-BP



Built-in silencer (-S) P. 47



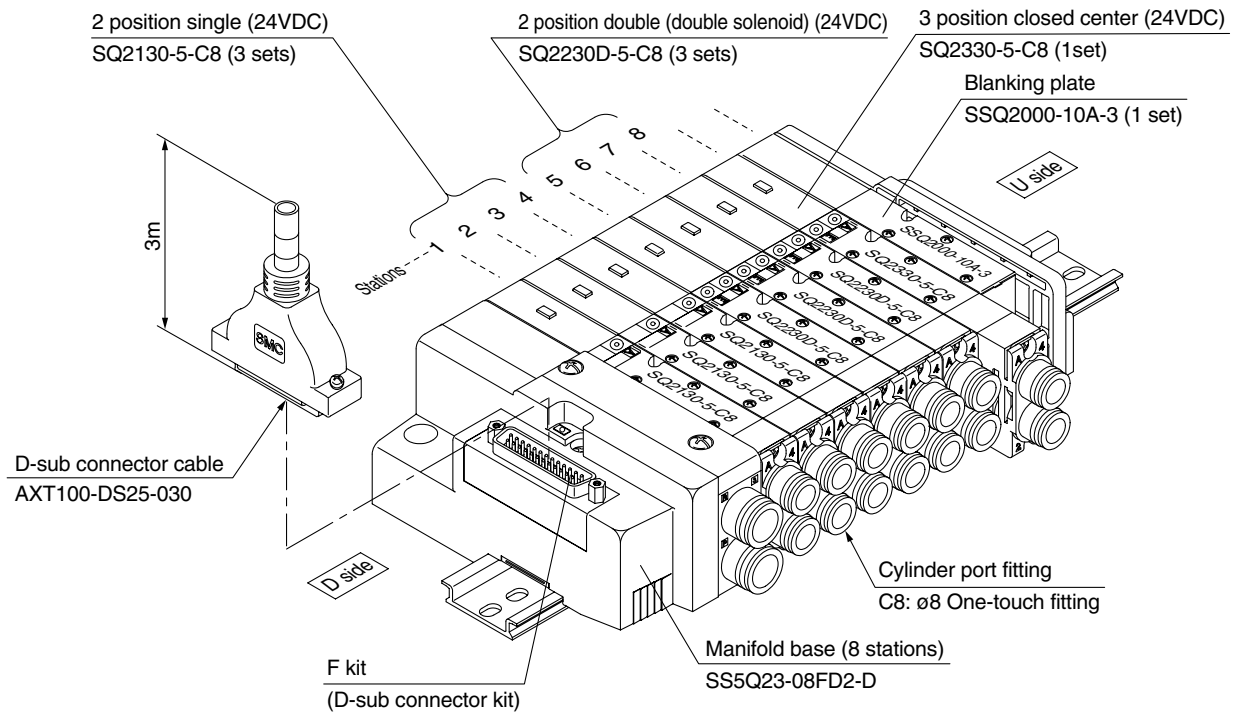
Special wiring specification (-K) P. 49



Although the standard products come with double wiring, mixed single and double wiring is available upon request.

How to Order Manifold Assemblies

Example: D-sub connector kit, with cable (3m)



SS5Q23-08FD2-D ..... 1 set: F kit 8 station manifold base
∗ **SQ2130-5-C8** ..... 3 sets: 2 position single
∗ **SQ2230D-5-C8** ..... 3 sets: 2 position double (double solenoid)
∗ **SQ2330-5-C8** ..... 1 set: 3 position closed center
∗ **SSQ2000-10A-3** ..... 1 set: Blanking plate

To order valves and options mounted onto the manifold at the factory, list the valve/option with an asterisk (∗) in front of each part number.

Add the valve and option part numbers in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate on a manifold specification sheet.

Valve Specifications

Models

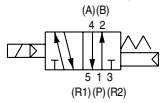
Series		Number of solenoids	Model		Note 1) Effective area mm² (Cv factor)	Response time ms Note 2)		Weight (g)
						Standard: 1W	Low wattage	
SQ2000	2 position	Single	Metal seal	SQ2130	11.7 (0.65)	20 or less	26 or less	145
			Rubber seal	SQ2131	14.8 (0.82)	24 or less	31 or less	140
		Double (latching)	Metal seal	SQ2230	11.7 (0.65)	26 or less	—	145
			Rubber seal	SQ2231	14.8 (0.82)	31 or less	—	140
		Double (double solenoid)	Metal seal	SQ2230D	11.7 (0.65)	15 or less	20 or less	160
			Rubber seal	SQ2231D	14.8 (0.82)	20 or less	26 or less	155
	3 position	Closed center	Metal seal	SQ2330	8.1 (0.45)	34 or less	44 or less	180
			Rubber seal	SQ2331	9.0 (0.5)	34 or less	44 or less	175
		Exhaust center	Metal seal	SQ2430	11.7 (0.65)	34 or less	44 or less	180
			Rubber seal	SQ2431	12.6 (0.7)	34 or less	44 or less	175
		Pressure center	Metal seal	SQ2530	8.1 (0.45)	34 or less	44 or less	180
			Rubber seal	SQ2531	9.0 (0.5)	34 or less	44 or less	175
	4 position	Dual 3 port valve	Rubber seal	SQ2$^{A}_{B}_{C}$31	9.0 (0.5)	34 or less	44 or less	155

Note 1) Values for the top ported cylinder port size of C8. The side ported type will be 10% less.

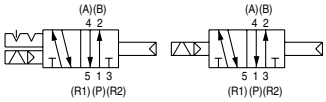
Note 2) Based on JISB8375-1981. (Values with a supply pressure of 0.5MPa and indicator light/surge voltage suppressor. Values fluctuate depending on the pressure and air quality.)

JIS symbols

2 position single

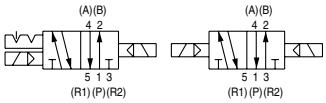


2 position double (latching)



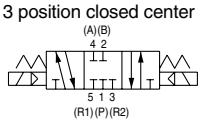
Metal seal Rubber seal

2 position double (double solenoid)

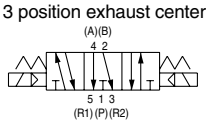


Metal seal Rubber seal

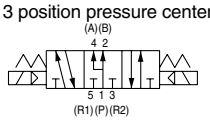
3 position closed center



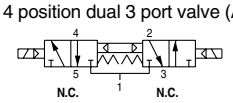
3 position exhaust center



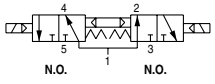
3 position pressure center



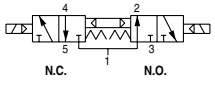
4 position dual 3 port valve (A)



4 position dual 3 port valve (B)



4 position dual 3 port valve (C)



Specifications

Valve specifications	Valve construction		Metal seal	Rubber seal
	Fluid		Air/Inert gas	
	Maximum operating pressure		0.7MPa	
	Minimum operating pressure	Single	0.1MPa	0.15MPa
		Double (latching)	0.18MPa	0.18MPa
		Double (double solenoid)	0.1MPa	0.1MPa
		3 position	0.1MPa	0.2MPa
		4 position	—	0.15MPa
	Ambient and fluid temperature		–10 to 50°C Note 1)	
	Lubrication		Not required	
	Pilot valve manual override		Push type (tool required)/Locking type (tool required)/Slide locking type	
	Vibration/Impact resistance Note 2)		30/150 m/s²	
	Enclosure		Dust proof	
Solenoid specifications	Rated coil voltage		12VDC, 24VDC	
	Allowable voltage fluctuation		±10% of rated voltage	
	Coil insulation type		Equivalent to class B	
	Power consumption (Current)	24VDC	1W DC (42mA), 0.5W DC (21mA) Note 3)	
		12VDC	1W DC (83mA), 0.5W DC (42mA) Note 3)	

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

Note 2) Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000Hz. Test was performed in the axial and right angle directions of the main valve and armature for both energized and de-energized states.

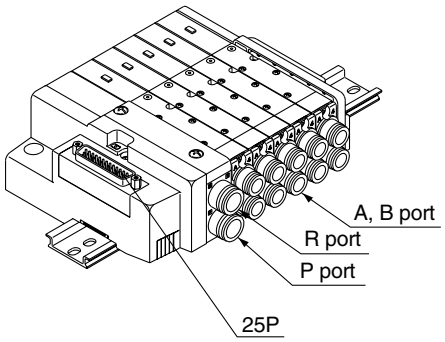
Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed one time each in the axial and right angle directions of the main valve and armature, for both energized and de-energized states.

Note 3) Values for the low wattage (0.5W) specification.

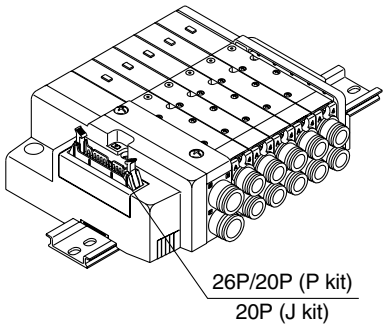
Manifold Specifications

Base model	Configuration			Applicable solenoid valves	Connection type		Note 3) Applicable stations	Note 4) 5 station weight (g)	Note 4) Additional weight for 1 station (g)
	Port size Note 1)								
	P, R	A, B							
		Port direction	Port size						
Series SQ2000 SS5Q23-□□-□	C10 (for ø10) Option Direct outlet with built-in silencer	Side	C4 (for ø4) C6 (for ø6) C8 (for ø8)	SQ2□30 SQ2□31	F kit: D-sub connector		1 to 12 stations	580	35
					P kit: Flat ribbon cable	26P	1 to 12 stations	580	35
						20P	1 to 9 stations		
					J kit: Flat ribbon cable PC Wiring System compatible		1 to 8 stations	580	35
		Note 2) Top	L4 (for ø4) L6 (for ø6) L8 (for ø8)		T kit: Terminal block		1 to 10 stations	1,165	620
					L kit: Lead wire		1 to 12 stations	620	50
					S kit: Serial transmission		1 to 8 stations	650	35

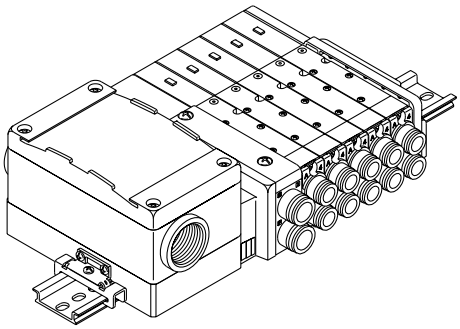
Note 1) One-touch fittings in inch sizes are also available. Refer to page 51 for details.
Note 2) Can be changed to side ported configuration.
Note 3) An optional specification for special wiring is available to increase the maximum number of stations. Refer to page 49 for details.
Note 4) Except valves. Refer to page 23 for valve weights.



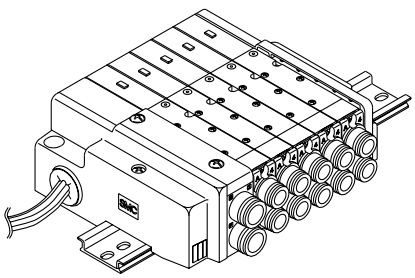
F kit



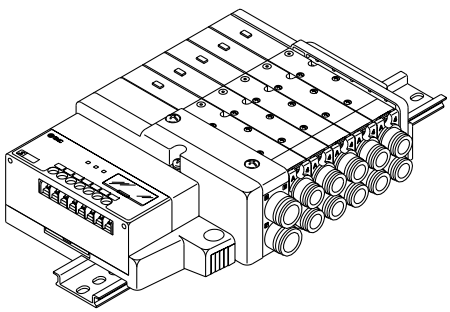
P kit **J kit**



T kit

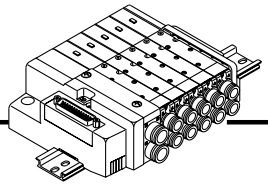


L kit



S kit

F Kit (D-sub Connector)

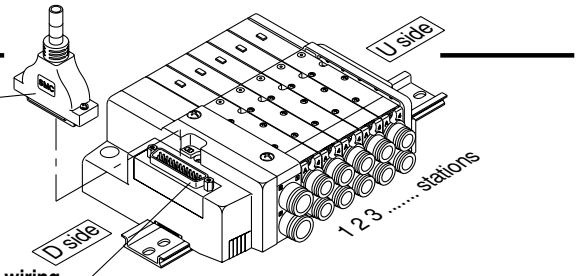


- Simplification and labor savings for wiring work can be achieved by using a D-sub connector for the electrical connection.
- The use of D-sub connectors (25P) conforming to MIL standards provides a wide range of compatibility with conventional connectors.
- Top or side entry for the connector can be changed freely, allowing later changes according to the mounting space.

Manifold specifications

Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ2000	Side, Top	C10	C4, C6, C8	12 stations (16 stations optional)

D-sub connector (25P)

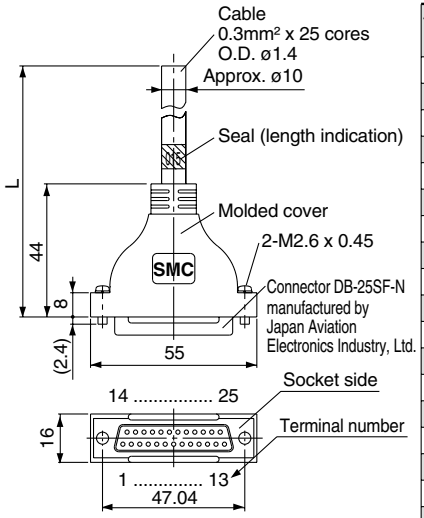


∗ Valves are numbered from the D side.

Cable assembly

AXT100-DS25- 015 / 030 / 050

(D-sub connector cable assemblies can be ordered with manifolds. Refer to manifold ordering.)



Lead wire colors for D-sub connector cable assembly terminal numbers

Terminal no.	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black
16	Blue	White
17	Purple	None
18	Gray	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	None

D-sub connector cable assemblies (optional)

Cable length (L)	Part no.	Note
1.5m	AXT100-DS25-015	Cable 0.3mm² x 25 cores
3m	AXT100-DS25-030	
5m	AXT100-DS25-050	

∗ When using a conventional connector, use a type 25P female connector conforming to MIL-C-24308.

∗ Cannot be used for transfer wiring.

Electrical characteristics

Item	Characteristic
Conductor resistance Ω/km, 20°C	65 or less
Withstand pressure V, 1 minute, AC	1000
Insulation resistance MΩ/km, 20°C	5 or less

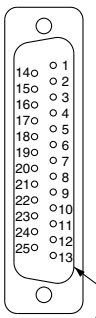
Note) The minimum bending radius for D-sub connector cables is 20mm.

Connector manufacturer examples

- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Hirose Electric Company

Electrical wiring specifications

D-sub connector

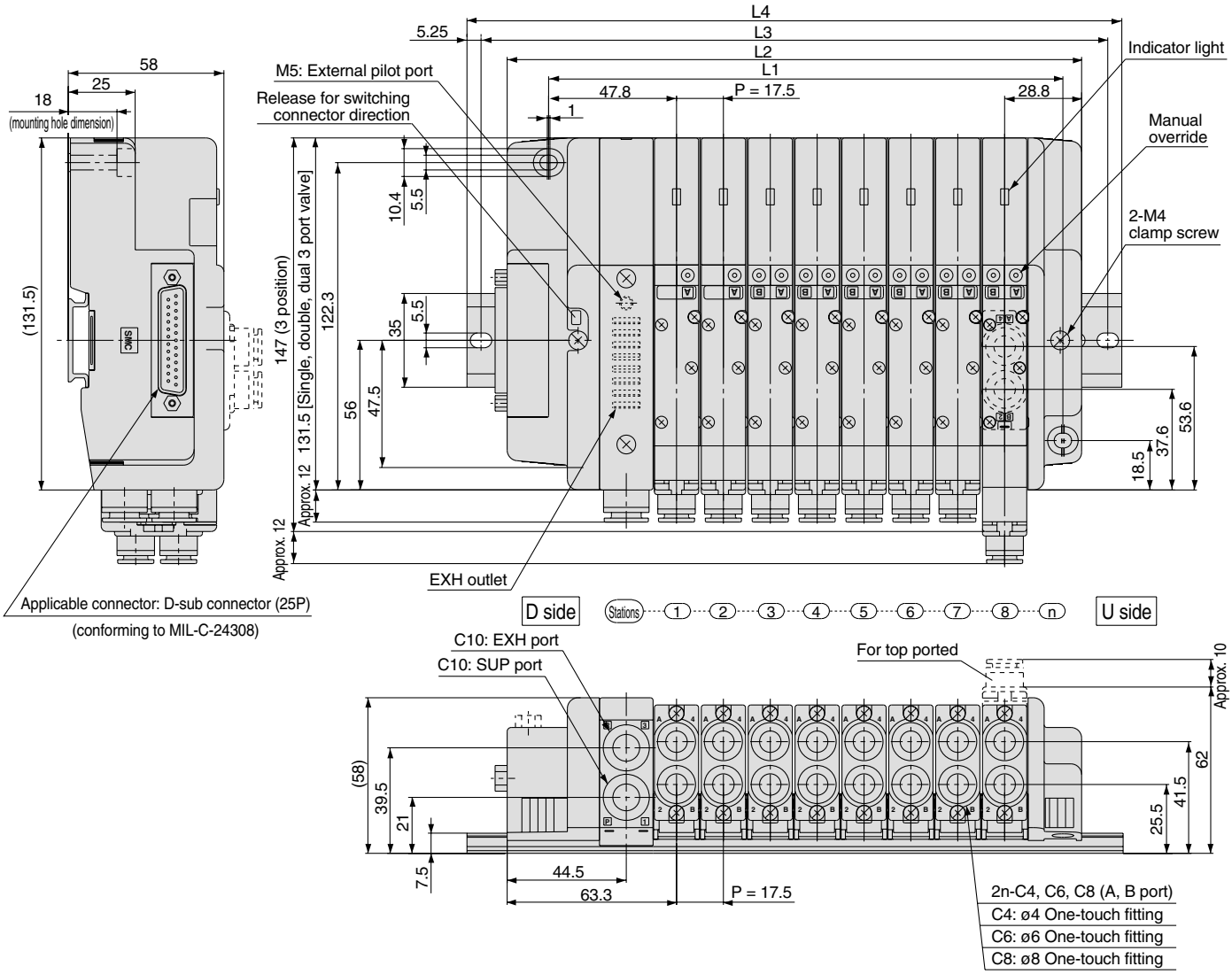


As the standard electrical wiring specification for 12 stations or less, double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
Mixed single and double wiring is available as an option.
Refer to page 49 for details.

Lead wire colors for D-sub connector assemblies (AXT100-DS25-015/030/050)

		Terminal no.	Polarity		Lead wire color	Dot marking
			Positive COM spec.	Negative COM spec. Note)		
Station 1	SOL. A	1	(–)	(+)	Black	None
	SOL. B	14	(–)	(+)	Yellow	Black
Station 2	SOL. A	2	(–)	(+)	Brown	None
	SOL. B	15	(–)	(+)	Pink	Black
Station 3	SOL. A	3	(–)	(+)	Red	None
	SOL. B	16	(–)	(+)	Blue	White
Station 4	SOL. A	4	(–)	(+)	Orange	None
	SOL. B	17	(–)	(+)	Purple	None
Station 5	SOL. A	5	(–)	(+)	Yellow	None
	SOL. B	18	(–)	(+)	Gray	None
Station 6	SOL. A	6	(–)	(+)	Pink	None
	SOL. B	19	(–)	(+)	Orange	Black
Station 7	SOL. A	7	(–)	(+)	Blue	None
	SOL. B	20	(–)	(+)	Red	White
Station 8	SOL. A	8	(–)	(+)	Purple	White
	SOL. B	21	(–)	(+)	Brown	White
Station 9	SOL. A	9	(–)	(+)	Gray	Black
	SOL. B	22	(–)	(+)	Pink	Red
Station 10	SOL. A	10	(–)	(+)	White	Black
	SOL. B	23	(–)	(+)	Gray	Red
Station 11	SOL. A	11	(–)	(+)	White	Red
	SOL. B	24	(–)	(+)	Black	White
Station 12	SOL. A	12	(–)	(+)	Yellow	Red
	SOL. B	25	(–)	(+)	White	None
	COM	13	(+)	(–)	Orange	Red

Note) When using the negative COM specification, use valves for negative COM.

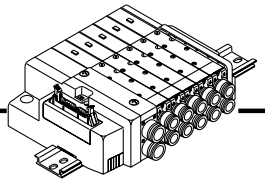


Dimensions

Formulas: L1 = 17.5n + 52, L2 = 17.5n + 74.5 n: Stations (maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	69.5	87	104.5	122	139.5	157	174.5	192	209.5	227	244.5	262	279.5	297	314.5	332
L2	92	109.5	127	144.5	162	179.5	197	214.5	232	249.5	267	284.5	302	319.5	337	354.5
L3	112.5	137.5	150	175	187.5	200	225	237.5	262.5	275	287.5	312.5	325	350	362.5	375
L4	123	148	160.5	185.5	198	210.5	235.5	248	273	285.5	298	323	335.5	360.5	373	385.5

P Kit (Flat Ribbon Cable Kit)

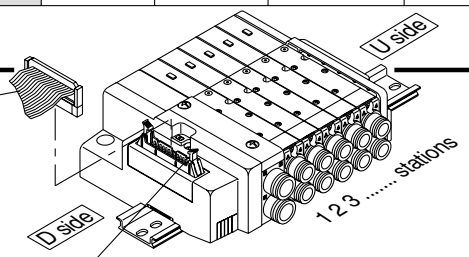


- Simplification and labor savings for wiring work can be achieved by using a flat ribbon cable for the electrical connection.
- The use of flat ribbon cable connectors (26P, 20P) conforming to MIL standards provides a wide range of compatibility with conventional connectors.
- Top or side entry for the connector can be changed freely, allowing later changes according to the mounting space.

Manifold specifications

Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ2000	Side, Top	C10	C4, C6, C8	12 stations (16 stations optional)

Flat ribbon cable (26P, 20P)

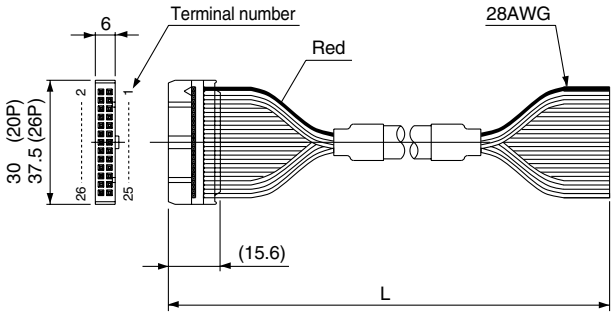


∗ Valves are numbered from the D side.

Cable assembly

AXT100-FC- $\begin{matrix}20\\26\end{matrix}$ **-** $\begin{matrix}1\\2\\3\end{matrix}$

Type 26P flat ribbon cable connector assemblies can be ordered with manifolds. Refer to manifold ordering.



Flat ribbon cable connector assemblies (optional)

Cable length (L)	Part no.	
	26P	20P
1.5m	AXT100-FC26-1	AXT100-FC20-1
3m	AXT100-FC26-2	AXT100-FC20-2
5m	AXT100-FC26-3	AXT100-FC20-3

∗ When using a conventional connector, use a type 26P connector conforming to MIL-C-83503 or a type 20P with strain relief.

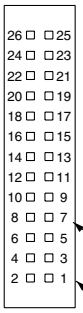
∗ Cannot be used for transfer wiring.

Connector manufacturer examples

- Hirose Electric Company
- Sumitomo/3-M Limited
- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co. Ltd.

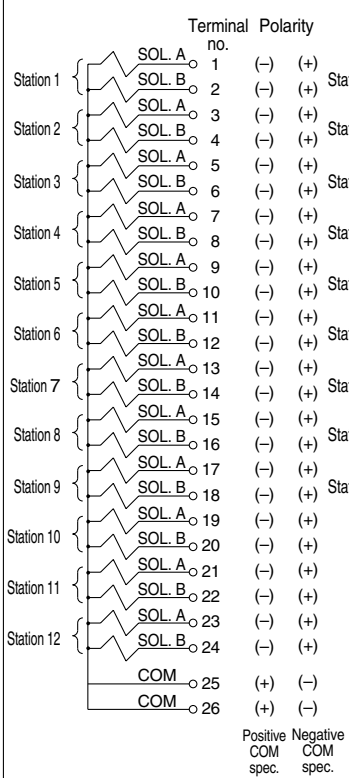
Electrical wiring specifications

Flat ribbon cable connector

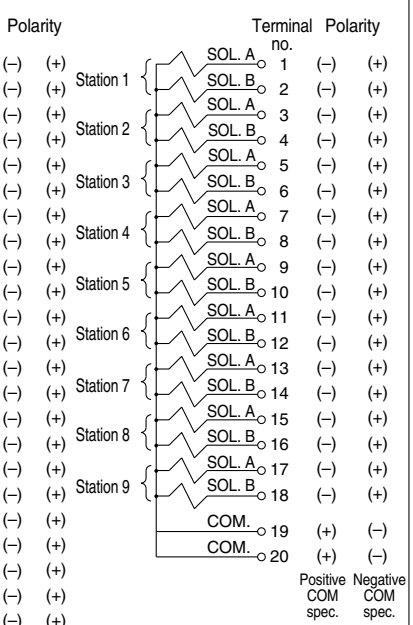


As the standard electrical wiring specification for 12 stations or less, double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
Mixed single and double wiring is available as an option.
Refer to page 49 for details.

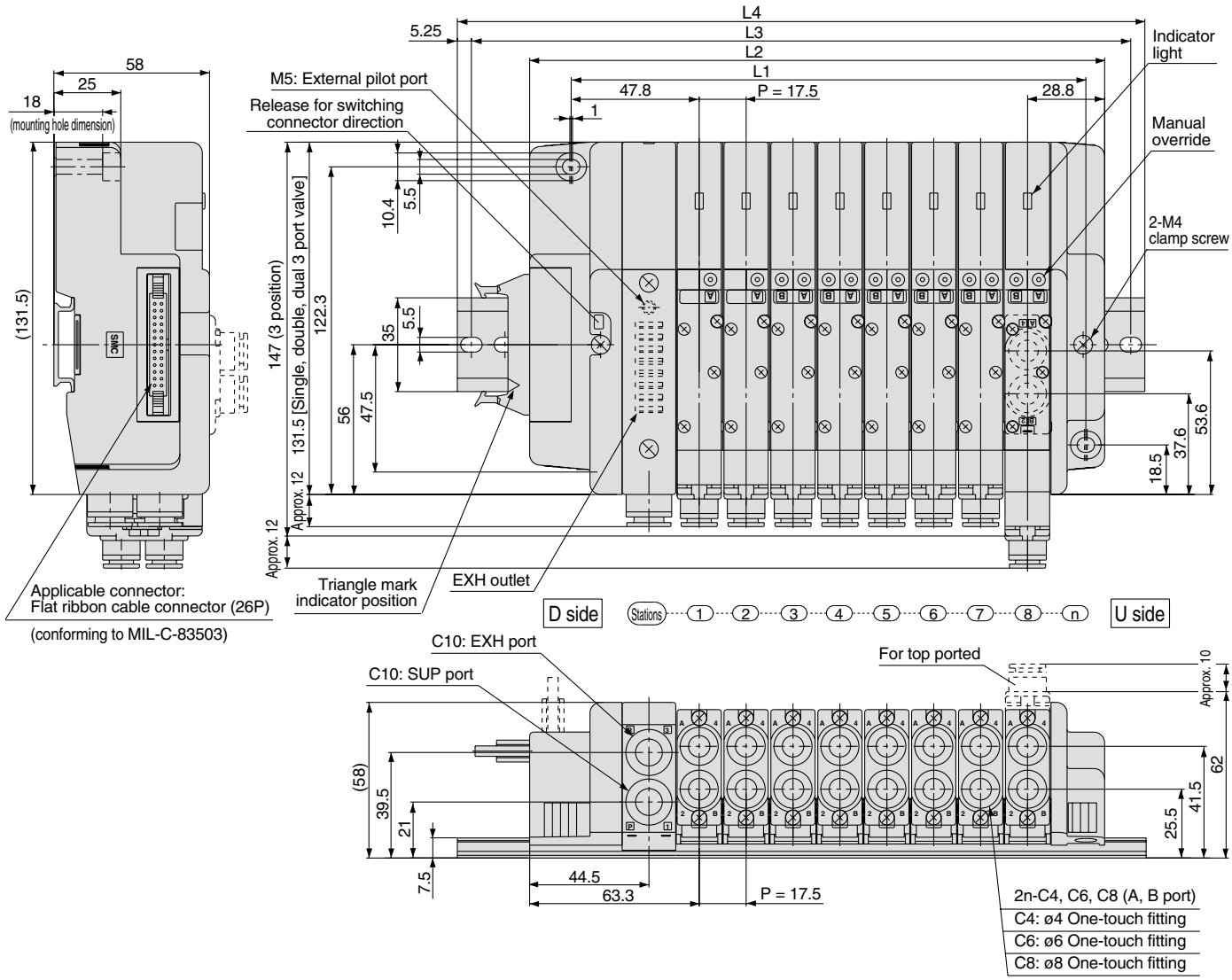
<26P>



<20P>



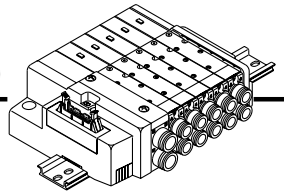
Note) When using the negative COM specification, use valves for negative COM.



Dimensions Formulas: L1 = 17.5n + 52, L2 = 17.5n + 74.5 n: Stations (maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	69.5	87	104.5	122	139.5	157	174.5	192	209.5	227	244.5	262	279.5	297	314.5	332
L2	92	109.5	127	144.5	162	179.5	197	214.5	232	249.5	267	284.5	302	319.5	337	354.5
L3	112.5	137.5	150	175	187.5	200	225	237.5	262.5	275	287.5	312.5	325	350	362.5	375
L4	123	148	160.5	185.5	198	210.5	235.5	248	273	285.5	298	323	335.5	360.5	373	385.5

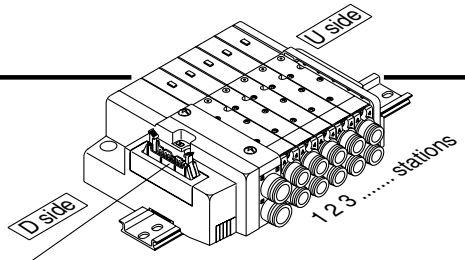
J Kit (PC Wiring System Compatible Flat Ribbon Cable Kit)



- Compatible with the PC Wiring System.
- The use of flat ribbon cable connectors (20P) conforming to MIL standards provides a wide range of compatibility with conventional connectors.
- Top or side entry for the connector can be changed freely, allowing later changes according to the mounting space.

Manifold specifications

Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ2000	Side, Top	C10	C4, C6, C8	8 stations (16 stations optional)

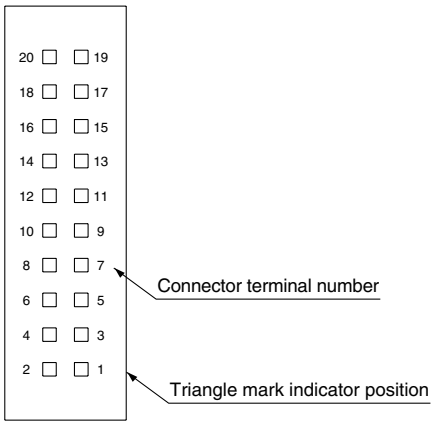


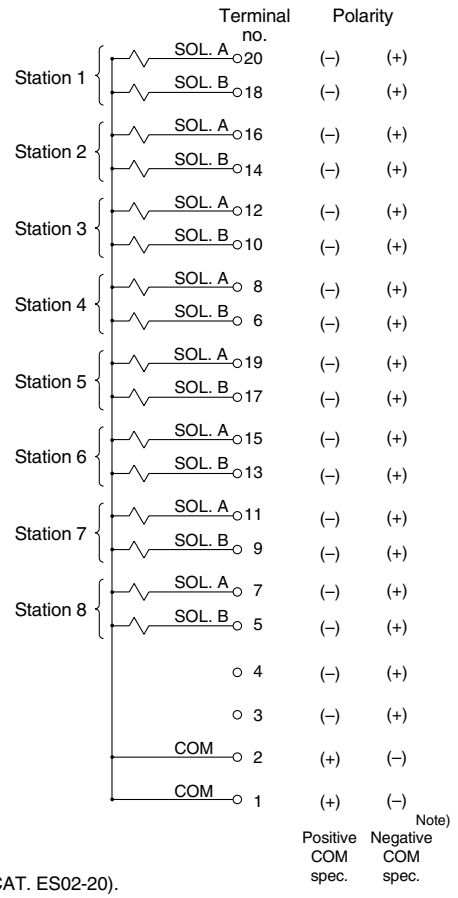
∗ Valves are numbered from the D side.

Electrical wiring specifications

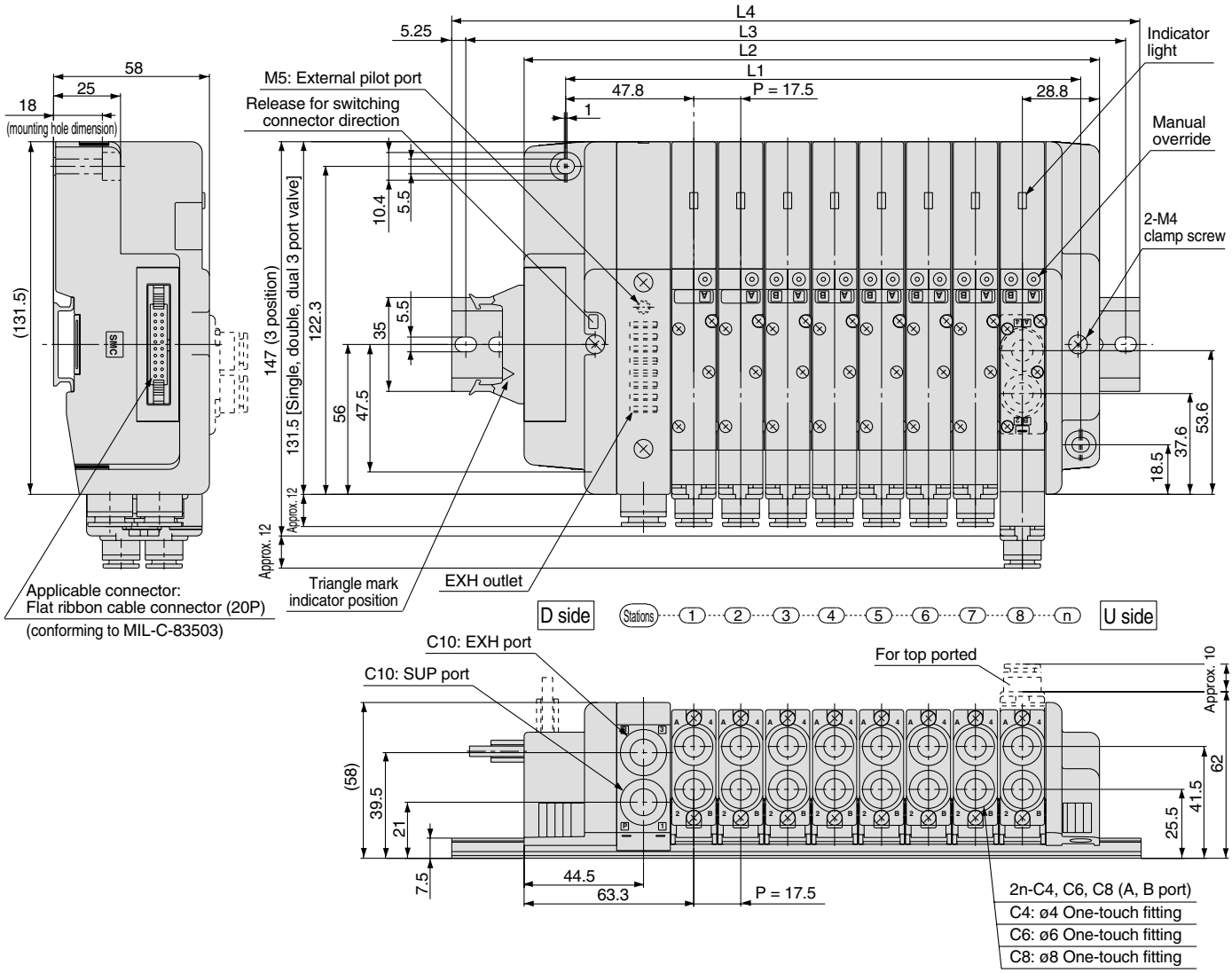
Double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
Mixed single and double wiring is available as an option.
Refer to page 49 for details.

Flat ribbon cable connector





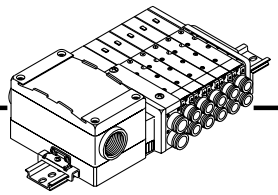
Note) When using the negative COM specification, use valves for negative COM.
For details on the PC Wiring System, refer to catalog "PC Wiring System" (CAT. ES02-20).



Dimensions Formulas: L1 = 17.5n + 52, L2 = 17.5n + 74.5 n: Stations (maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	69.5	87	104.5	122	139.5	157	174.5	192	209.5	227	244.5	262	279.5	297	314.5	332
L2	92	109.5	127	144.5	162	179.5	197	214.5	232	249.5	267	284.5	302	319.5	337	354.5
L3	112.5	137.5	150	175	187.5	200	225	237.5	262.5	275	287.5	312.5	325	350	362.5	375
L4	123	148	160.5	185.5	198	210.5	235.5	248	273	285.5	298	323	335.5	360.5	373	385.5

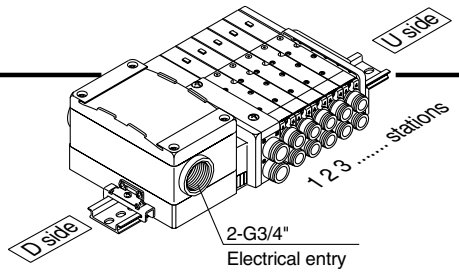
T Kit (Terminal Block Box Kit)



- A compact terminal block is installed inside the box. G3/4" female threads prepared for the electrical entry enables a conduit tube bracket to be connected.
- The maximum number of stations is 10 (16 optional).

Manifold specifications

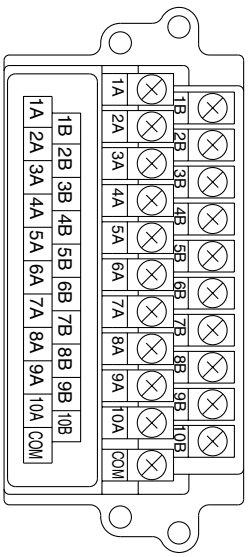
Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ2000	Side, Top	C10	C4, C6, C8	10 stations (16 stations optional)

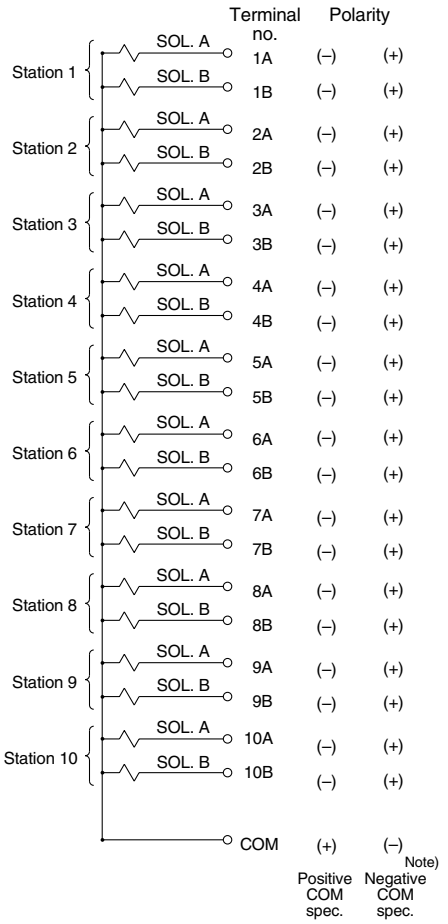


∗ Valves are numbered from the D side.

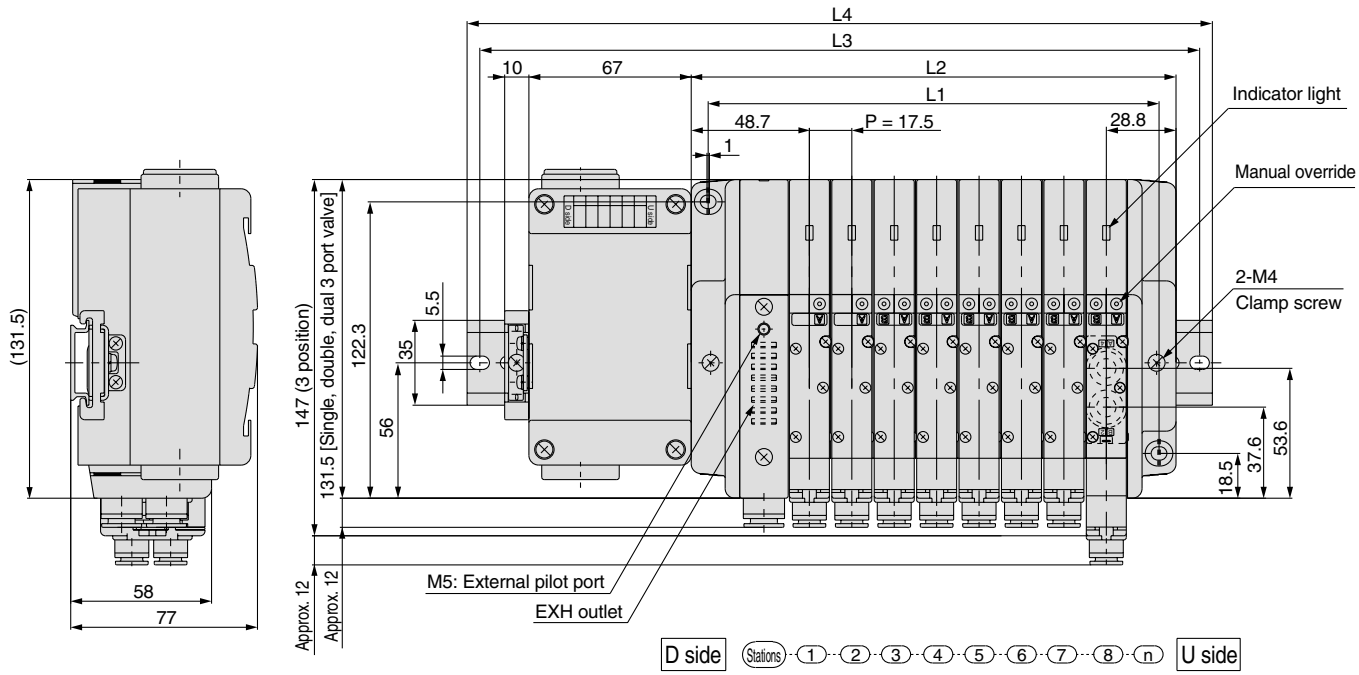
Electrical wiring specifications

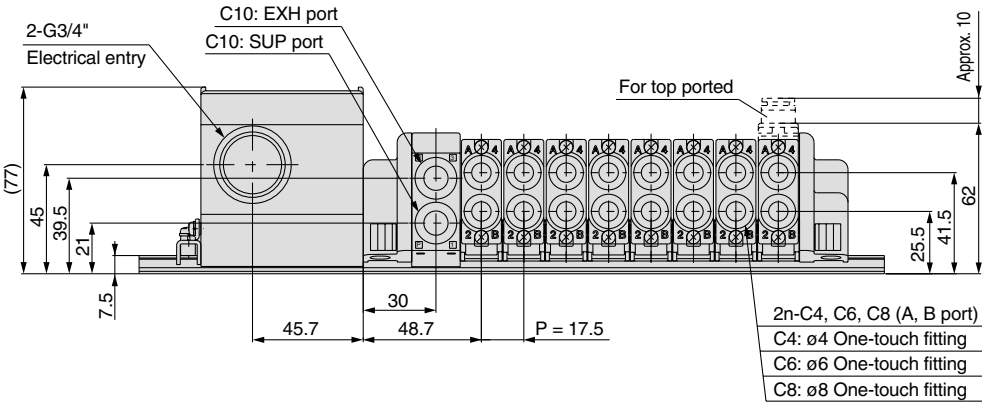
As the standard electrical wiring specification for 10 stations or less, double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
Mixed single and double wiring is available as an option.
Refer to page 49 for details.





Note) When using the negative COM specification, use valves for negative COM.



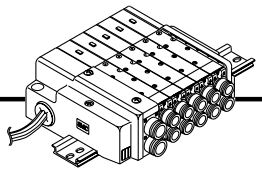


Dimensions

Formulas: L1 = 17.5n + 46, L2 = 17.5n + 60 n: Stations (maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	63.5	81	98.5	116	133.5	151	168.5	186	203.5	221	238.5	256	273.5	291	308.5	326
L2	77.5	95	112.5	130	147.5	165	182.5	200	217.5	235	252.5	270	287.5	305	322.5	340
L3	175	200	212.5	237.5	250	262.5	287.5	300	325	337.5	350	375	387.5	412.5	425	437.5
L4	185.5	210.5	223	248	260.5	273	298	310.5	335.5	348	360.5	385.5	398	423	435.5	448

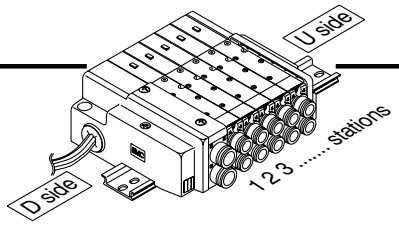
L Kit (Lead Wire Kit)



• Direct electrical entry type

Manifold specifications

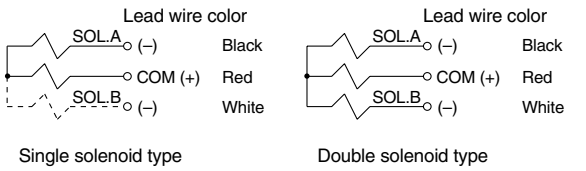
Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ2000	Side, Top	C10	C4, C6, C8	12 stations

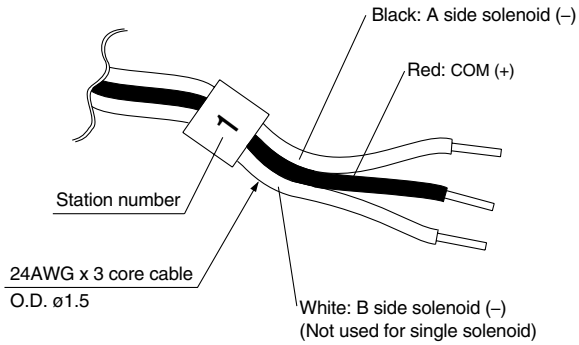


∗ Valves are numbered from the D side.

• Wiring Specifications/Positive COM Specifications

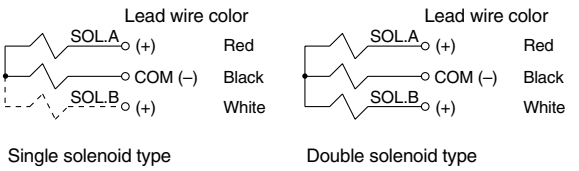
Three lead wires are included per station regardless of valves used. Among the three lead wires, the red wire is for COM.

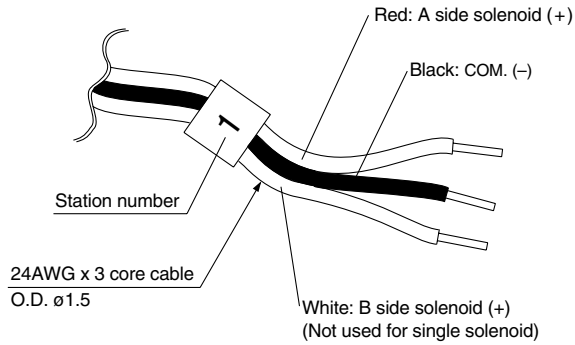




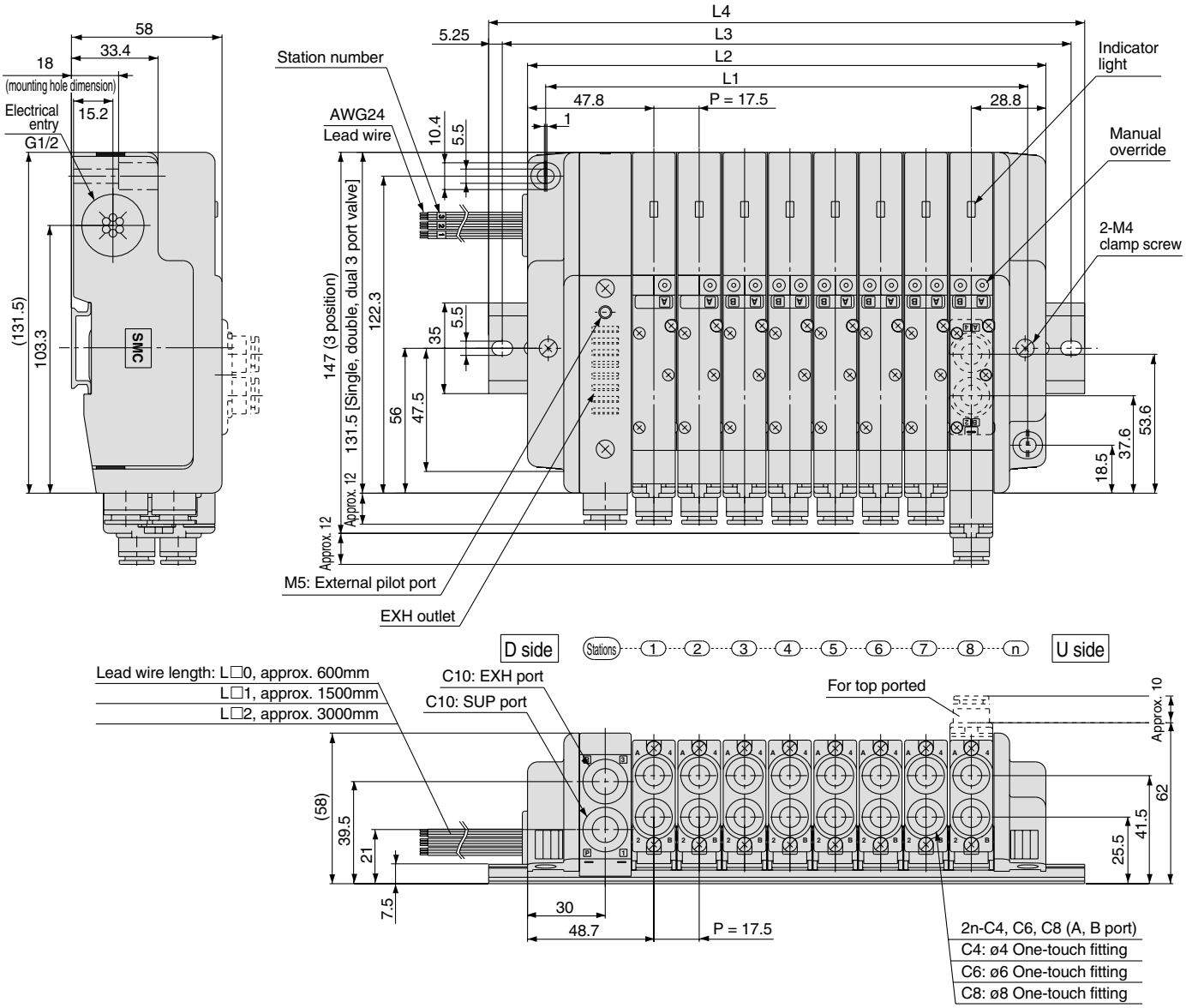
• Wiring Specifications/Negative COM Specifications (optional)

Three lead wires are included per station regardless of valves used. Among the three lead wires, the black wire is for COM.





Note) When using the negative COM specification, use valves for negative COM.

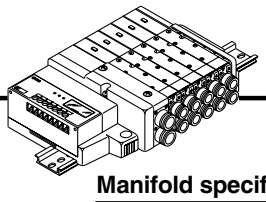


Dimensions

Formulas: L1 = 17.5n + 46, L2 = 17.5n + 60
n: Stations (maximum 12 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12
L1	63.5	81	98.5	116	133.5	151	168.5	186	203.5	221	238.5	256
L2	77.5	95	112.5	130	147.5	165	182.5	200	217.5	235	252.5	270
L3	100	125	137.5	150	175	187.5	212.5	225	237.5	262.5	275	300
L4	110.5	135.5	148	160.5	185.5	198	223	235.5	248	273	285.5	310.5

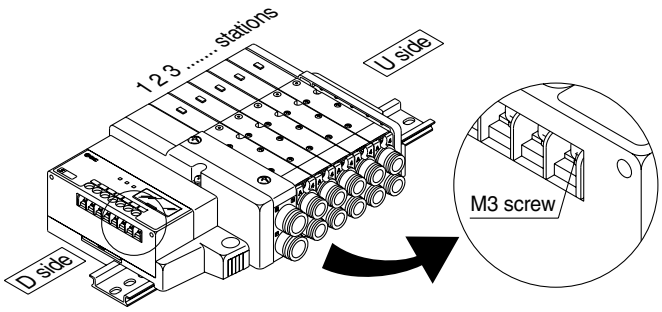
S Kit (Serial Transmission Kit)



- Simplification, space savings and labor savings for wiring work can be achieved by using a serial transmission system.
- The maximum number of stations is 8 (16 optional). For type J2 and R2 only, the maximum number of stations is 4 (8 optional).

Manifold specifications

Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ2000	Side, Top	C10	C4, C6, C8	8 stations



- **Valves are numbered from the D side.**
- **Double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.**
  Mixed single and double wiring is available as an option.

Item	Specification
External power supply	24VDC, +10%, –5%
Current consumption (inside unit)	0.1A or less

• Corresponding SI unit output numbers and solenoid coils

<Wiring example 1>

SI unit output number: 0 1 2 3 4 5 6 7 8 9

	A	B	A	B	A	None	A	None	A	B
SI unit	Double		Double		Single		Single		Single	
Station	1		2		3		4		5	

Double wiring (standard)

<Wiring example 2>

∗ Mixed wiring is optional. Specify the wiring specification on a manifold specification sheet. Refer to page 49 for details.

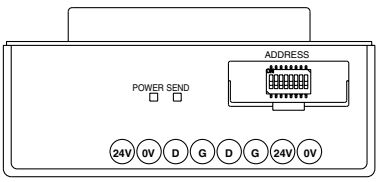
SI unit output number: 0 1 2 3 4 5 6 7

	A	B	A	B	A	A	A	B
SI unit	Double		Double		Single	Single	Double	
Station	1		2		3	4	5	

Mixed single and double wiring (optional)

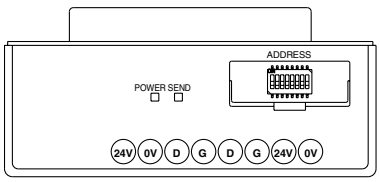
Terminal block LED description

Type SDF
NKE Corporation
Uni-wire System



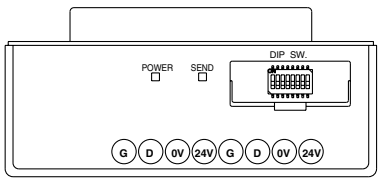
LED description	Detail
POWER	Light ON with power input (Light ON when normal, flickers when voltage is low)
SEND	Transmission indicator Normal: Blinks, Abnormal: Light OFF or ON

Type SDH
NKE Corporation
Uni-wire H System



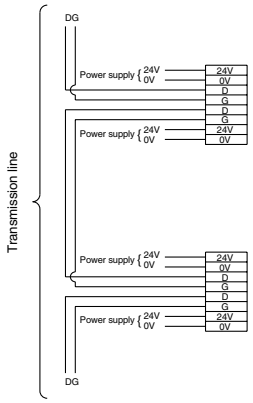
LED description	Detail
POWER	Light ON with power input (Light ON when normal, flickers when voltage is low)
SEND	Transmission indicator Normal: Blinks, Abnormal: Light OFF or ON

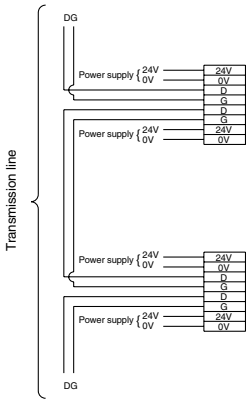
Type SDJ1, SDJ2
SUNX Corporation
S-LINK System



LED description	Detail
POWER	Light ON with power input
SEND	Transmission indicator Normal: Blinks, Abnormal: Blinks slowly

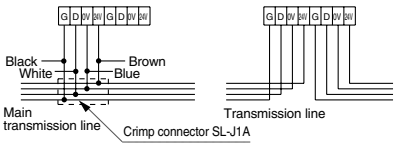
Cable wiring





a) Type T branching multi-drop wiring (S-LINK System)

b) Crossover wiring (Sensor link system)



Dedicated S-LINK flat ribbon cable SL-RCM□00 is used in the examples above.

Note

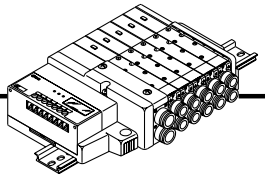
- Uni-wire System
  Send unit: SD-120
- 16 outputs

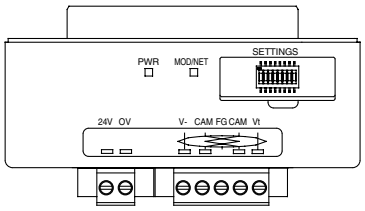
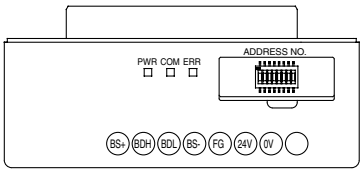
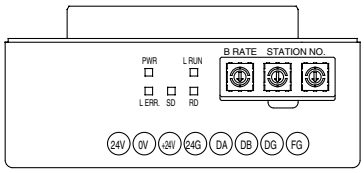
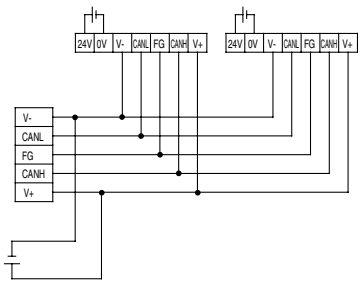
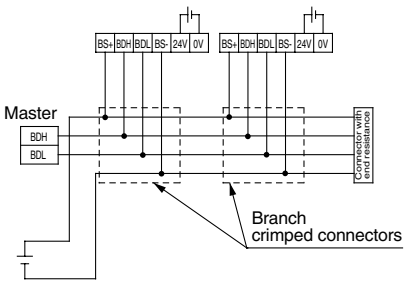
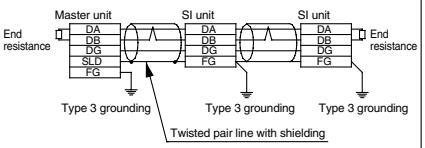
Uni-wire H System
Send unit: SD-H2

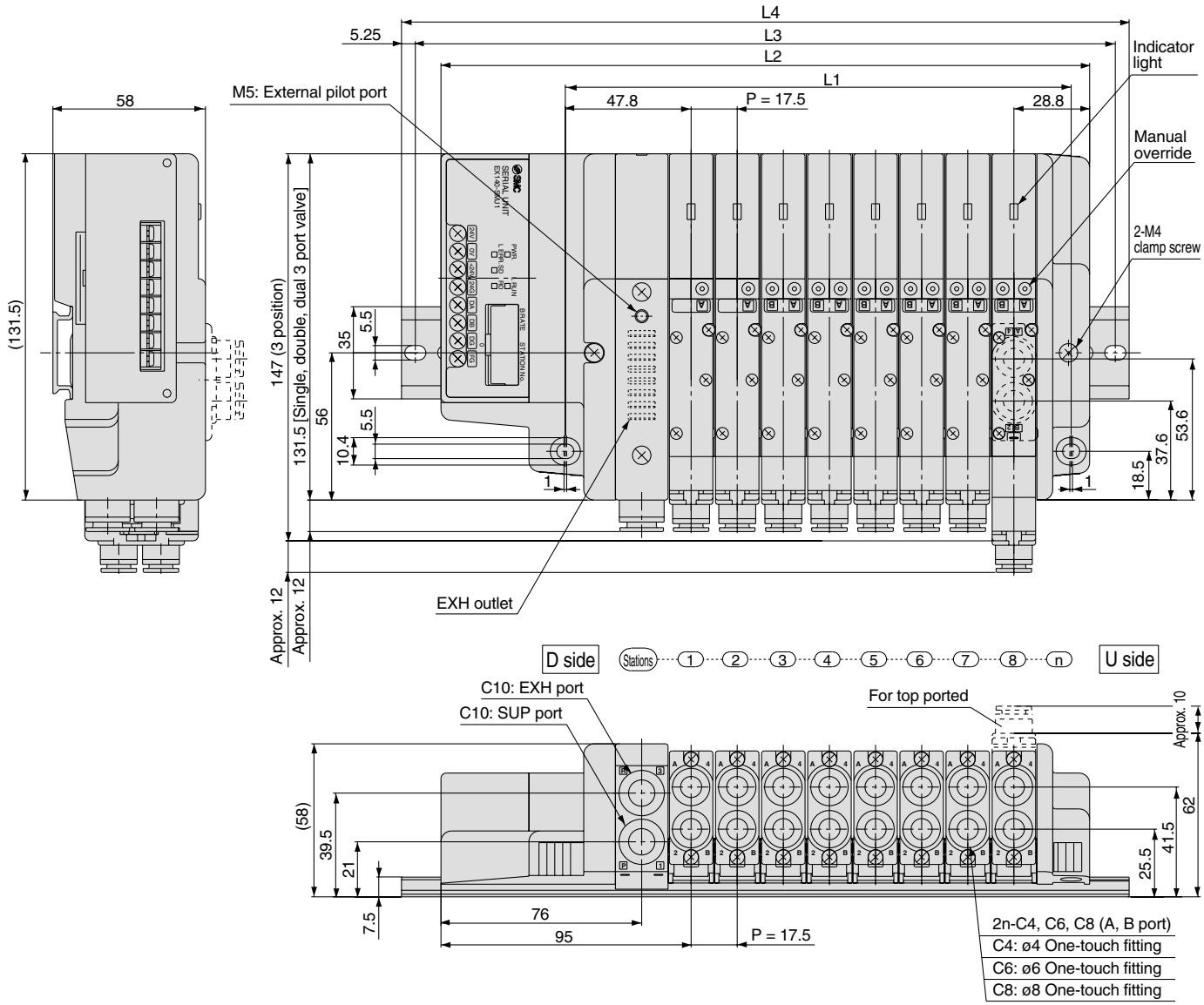
- 16 outputs

- S-LINK System
  S-LINK controller: SL-CU1
- 16 outputs (Type SDJ1)
  8 outputs (Type SDJ2)

S Kit (Serial Transmission Kit)



	Type SDQ DeviceNet	Type SDR1, SDR2 OMRON Corporation CompoBus/S	Type SDV Mitsubishi Electric Corporation CC-LINK System
Terminal block LED description			
	LED description / Detail POWER: Green light ON with circuit power input MOD/NET: Light OFF: When the unit is not online or circuit power is OFF MOD/NET: Green light ON continuously: When the unit is online and in operation MOD/NET: Red light blinks: When a reversible abnormal transmission occurs MOD/NET: Red light ON continuously: When irreversible abnormal transmission occurs or the same line is unable to go online	**LED description / Detail** POWER: Light ON with transmission power input, light Off without it COMM: Light ON with normal transmission, light OFF with abnormal or standby transmission ERR.: Light ON with abnormal transmission, light Off with normal or standby transmission	**LED description / Detail** POWER: Light ON with transmission power input, light Off without it L RUN: Light ON when receiving normal data SD: Light ON when sending data RD: Light ON when receiving data L ERR.: Light ON with transmission error/setting error, light blinks with changes in the station no. or transmission speed setting
Cable wiring			
Note	• DeviceNet • OMRON Corporation CompoBus/D System Master unit: C200HW-DRM21 • 16 outputs	• CompoBus/S System Master unit: C200HW-SRM21 Master unit: CQM1-SRM21 • 16 outputs (Type SDR1) 8 outputs (Type SDR2)	• CC-LINK System Master unit: AJ61BT11 Master unit: A1SJ61BT11 Master unit: AJ61QBT11 Master unit: A1SJ61QBT11 • 16 outputs



Dimensions Formulas: L1 = 17.5n + 52, L2 = 17.5n + 106 n: Stations (maximum 16 stations)

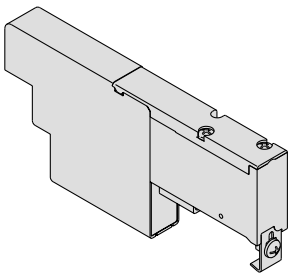
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	69.5	87	104.5	122	139.5	157	174.5	192	209.5	227	244.5	262	279.5	297	314.5	332
L2	123.5	141	158.5	176	193.5	211	228.5	246	263.5	281	298.5	316	333.5	351	368.5	386
L3	150	162.5	187.5	200	225	237.5	250	275	287.5	312.5	325	337.5	362.5	375	400	412.5
L4	160.5	173	198	210.5	235.5	248	260.5	285.5	298	323	335.5	348	373	385.5	410.5	423

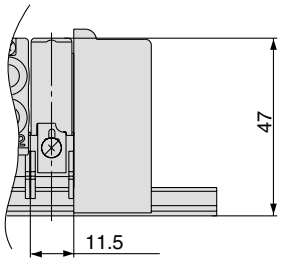
Optional Manifold Parts for SQ1000

Blanking plate

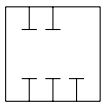
SSQ1000-10A-3

This is mounted on a manifold block when a valve is removed for maintenance or when installation of an additional valve is planned for the future, etc.





JIS symbol



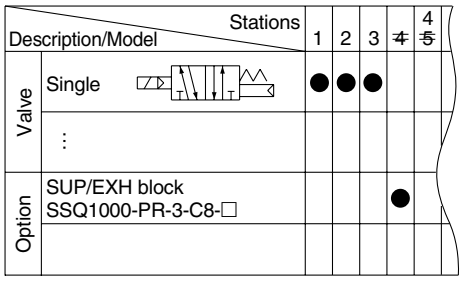
SUP/EXH block

SSQ1000-PR-3-C8-□

Option

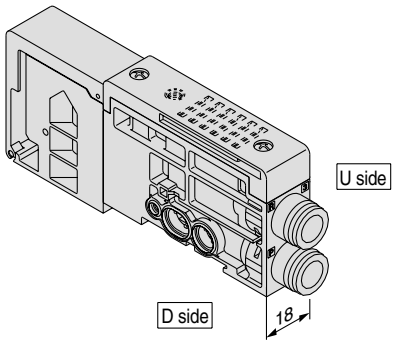
Nil	Standard
R	External pilot specification
S	Built-in silencer

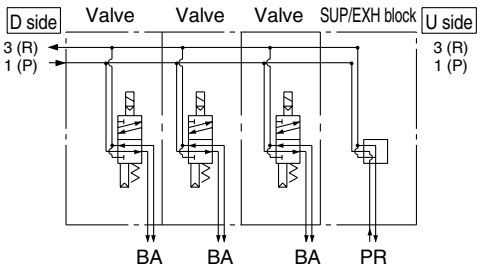
Note) When specifying both options, indicate "RS".
∗ Specify the spacer mounting position on a manifold specification sheet.



For standard type manifolds, the SUP/EXH block is mounted on the D side. It is added to the manifold to increase SUP/EXH capacity.

∗ The number of SUP/EXH blocks that can be added is limited to two sets, one between manifold stations and another on the U side of the manifold due to the length of the internal lead wire.
∗ SUP/EXH blocks are not included in the number of manifold stations.





Individual SUP spacer

SSQ1000-P-3-C6

Port direction

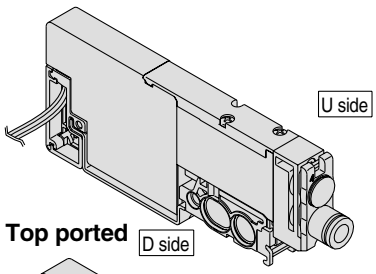
C6	Side ported
L6	Top ported

This is used as a supply port for different pressures when using different pressures in the same manifold (for one station). Both sides of the station which is used with supply pressure from the individual SUP spacer are shut off.

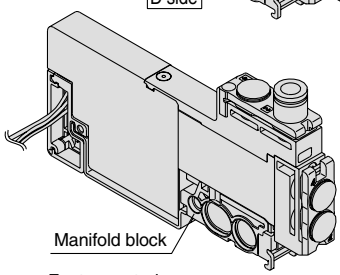
(See examples.)

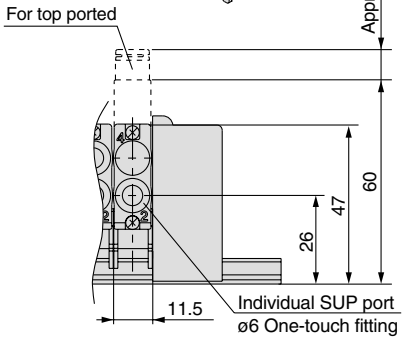
∗ Specify the spacer mounting position and SUP passage shut off positions on a manifold specification sheet. Two shut off positions are required per unit.
(Two pieces of SUP block plate that shut off the supply pressure are included with the individual SUP spacer, therefore, it is not necessary to order them separately.)
∗ Electrical wiring is also connected to the manifold station with the individual SUP spacer.
∗ By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later (from the individual SUP spacer to the individual EXH spacer).
∗ The number of spacers is not limited when ordered with the manifold. However, when adding individual SUP spacers later, it is limited to two units, one between manifold stations and another on the U side due to the length of the internal lead wire.
∗ Part number with manifold block:
SSQ1000-P-3-$\frac{C6}{L6}$-M

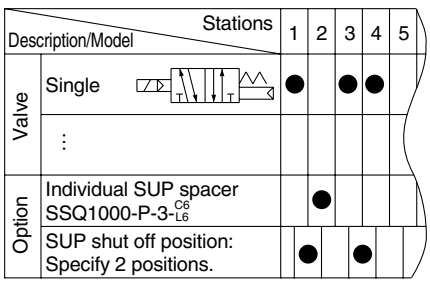
Side ported

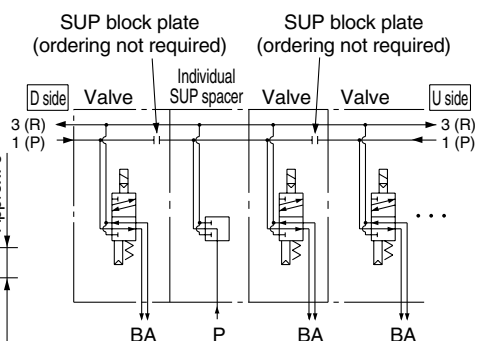


Top ported









Individual EXH spacer

SSQ1000-R-3-C6

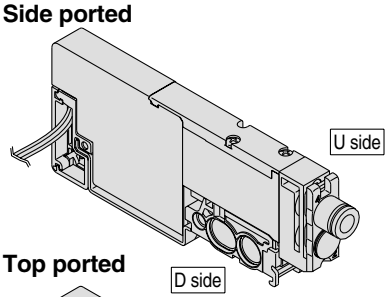
Port direction

C6	Side ported
L6	Top ported

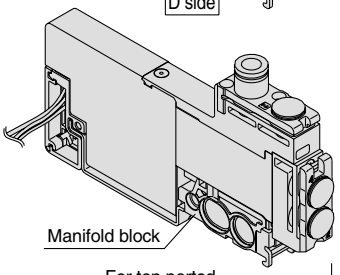
This is used to exhaust an individual valve when the exhaust from a valve interferes with other stations in the circuit (used for one station).
Both sides of the station which is to be individually exhausted are shut off. (See examples.)

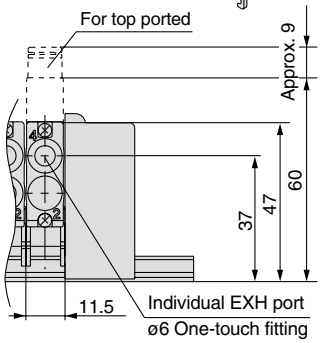
* Specify the spacer mounting position and EXH passage shut off positions on a manifold specification sheet. Two shut off positions are required per unit.
  (Two pieces of EXH block plate that shut off the exhaust are included with the individual EXH spacer, therefore, it is not necessary to order them separately.)
* Electrical wiring is also connected to the manifold station with the individual EXH spacer.
* By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later (from the individual EXH spacer to the individual SUP spacer).
* The number of spacers is not limited when ordered with the manifold. However, when adding individual EXH spacers later, it is limited to two units, one between manifold stations and another on the U side due to the length of the internal lead wire .
* Part number with manifold block:
  SSQ1000-R-3-$\frac{C6}{L6}$-M

Side ported

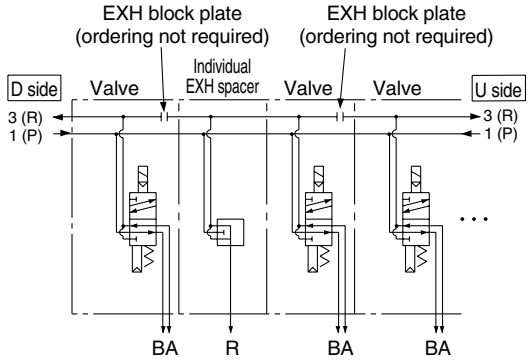


Top ported





Description/Model	Stations	1	2	3	4	5
Valve	Single	●		●	●	
	⋮					
Option	Individual EXH spacer SSQ1000-R-3-$\frac{C6}{L6}$		●			
	EXH shut off position: Specify 2 positions.	●		●		



Individual SUP/EXH spacer

SSQ1000-PR1-3-C6

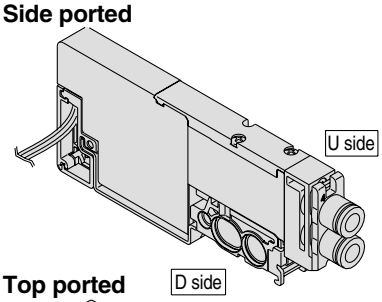
Port direction

C6	Side ported
L6	Top ported

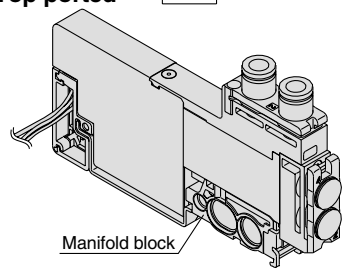
This has both functions of the individual SUP and EXH spacers above.
(See examples.)

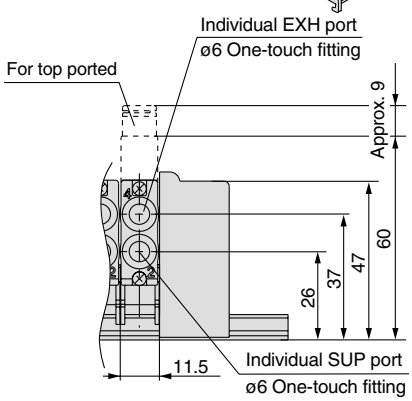
* Specify the spacer mounting position and SUP and EXH passage shut off positions on a manifold specification sheet. Two shut off positions each for SUP and EXH are required per unit.
  (Two pieces each of block plate that shut off the SUP and EXH passages are included with the individual SUP/EXH spacer.)
* Electrical wiring is also connected to the manifold station with the individual EXH spacer.
* By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later.
* The number of spacers is not limited when ordered with the manifold. However, when adding individual SUP/EXH spacers later, it is limited to two units, one between manifold stations and another on the U side due to the length of the internal lead wire.
* Part number with manifold block:
  SSQ1000-PR1-3-$\frac{C6}{L6}$-M

Side ported

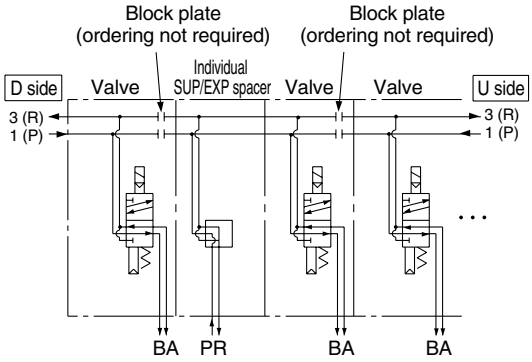


Top ported





Description/Model	Stations	1	2	3	4	5
Valve	Single	●		●	●	
	⋮					
Option	Individual SUP/EXH spacer SSQ1000-PR1-3-$\frac{C6}{L6}$		●			
	SUP shut off position: Specify 2 positions.	●		●		
	EXH shut off position: Specify 2 positions.	●		●		



Optional Manifold Parts for SQ1000

SUP block plate

SSQ1000-B-P

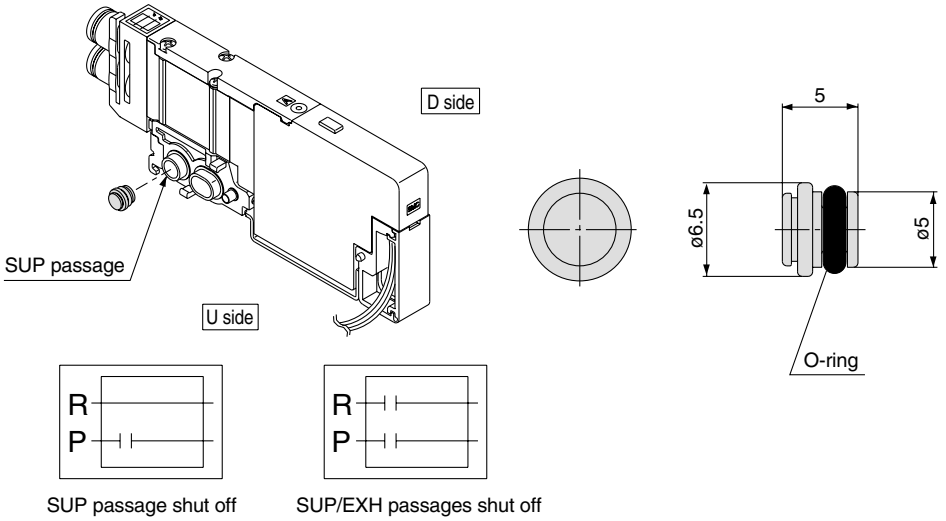
When supplying two different pressures, high and low, to one manifold, this is used between stations with different pressures. Also, it is used with an individual SUP spacer to shut off the air supply.

* Specify the mounting station on a manifold specification sheet.

<Shut off label>

When a SUP passage is shut off with a SUP block plate, a label is attached for external confirmation of the shut off position (one label each).

* Shut off labels are applied when SUP block plates are ordered with manifolds.



SUP passage shut off SUP/EXH passages shut off

EXH block plate

SSQ1000-B-R

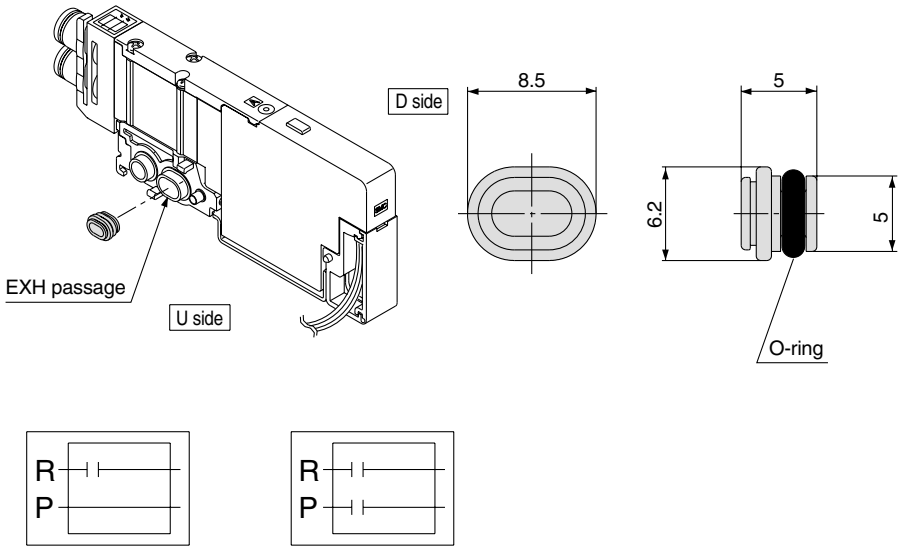
When the exhaust from a valve interferes with other stations in the circuit, this is used between stations to separate exhausts. Also, it is used with an individual EXH spacer to shut off the exhaust of individual valves.

* Specify the mounting station on a manifold specification sheet.

<Shut off label>

When an EXH passage is shut off with an EXH block plate, a label is attached for external confirmation of the shut off position (one label each).

* Shut off labels are applied when EXH block plates are ordered with manifolds.



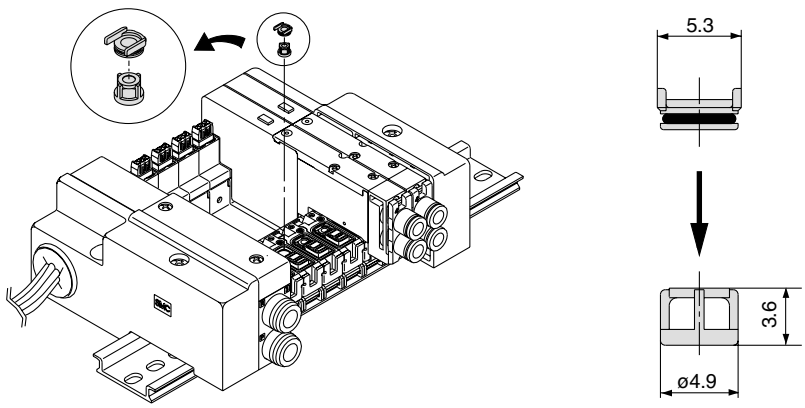
EXH passage shut off SUP/EXH passages shut off

Back pressure check valve [-B]

SSQ1000-BP

This prevents cylinder malfunction caused by the exhaust from other valves. It is inserted into the R (EXH) port of the valve that is affected. It is especially effective when using single acting cylinders or exhaust center type solenoid valves.

* When installing back pressure check valves only on the stations required, enter the part number and specify the mounting stations on a manifold specification sheet.
* When installing back pressure check valves on all of the stations, indicate "-B" at the end of the manifold part number.



⚠Caution

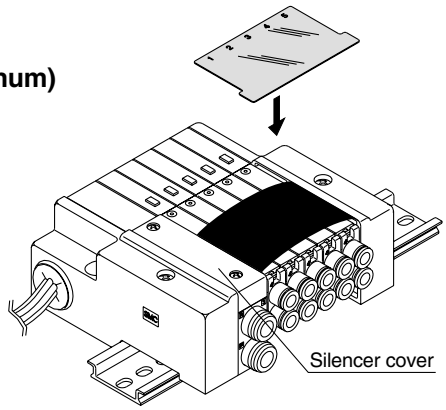
1. Although the back pressure check valve is an assembly part with a check valve mechanism, a small amount of air leakage is allowed. Therefore, take care not to restrict the exhaust air from the exhaust port.
2. The effective area of valves is about 20% less when the back pressure check valve is installed.
3. Since 4 port specification valves (R1 and R2 are common) are used, back pressure cannot be prevented with dual 3 port valves.

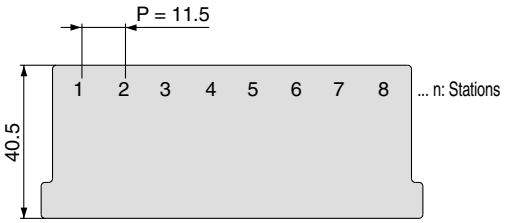
Labeling plate [-N]

SSQ1000-N3- Stations (1 to maximum)

A clear resin plate for applying solenoid valve function description labels, etc.
To install, bend the plate slightly as shown and insert into the slots on the end plate side. Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to install it.

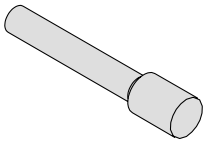
* When ordering with manifolds, add "-N" at the end of the manifold number.



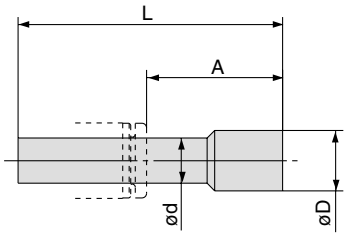


Blanking plug (for One-touch fitting)

KQ2P- 23 04 06 08



This is inserted into the cylinder port and SUP and EXH ports that are not used.
Available in 10 piece units.



Dimensions

Applicable fitting size ød	Model	A	L	D
3.2	KQ2P-23	16	31.5	3.2
4	KQ2P-04	16	32	6
6	KQ2P-06	18	35	8
8	KQ2P-08	20.5	39	10

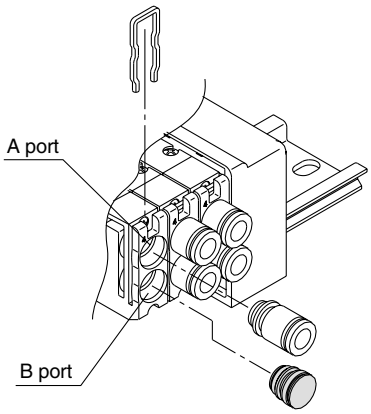
Port plug

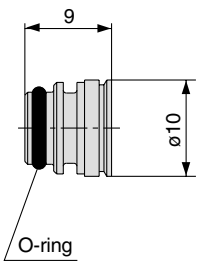
VVQZ100-CP

This is used to close the cylinder ports when changing a 5 port valve to a 3 port valve.

* Add "A" or "B" at the end of the valve part number when ordering with valves.

Example) SQ1131-5-C6-A (N.O. specification)
• A port plug
Example) SQ1131-5-C6-B (N.C. specification)
• B port plug
Example) SQ1131-5-C6-B-M
(B port plug with manifold block)



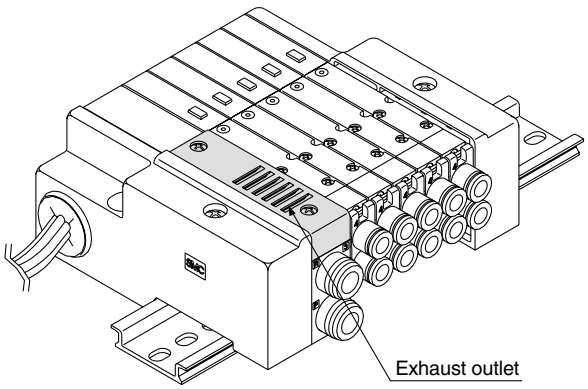


Direct exhaust outlet with built-in silencer [-S]

The exhaust outlet is placed on the top side of the manifold end plate. The built-in silencer provides highly effective noise reduction. (Noise reduction of 30dB)

Note) Note that when excessive drainage occurs in the air supply, the drainage will be released along with the exhaust.

* Add "-S" at the end of the manifold part number when ordering with manifolds.
* Refer to page 134 for handling precautions and the replacement of elements.



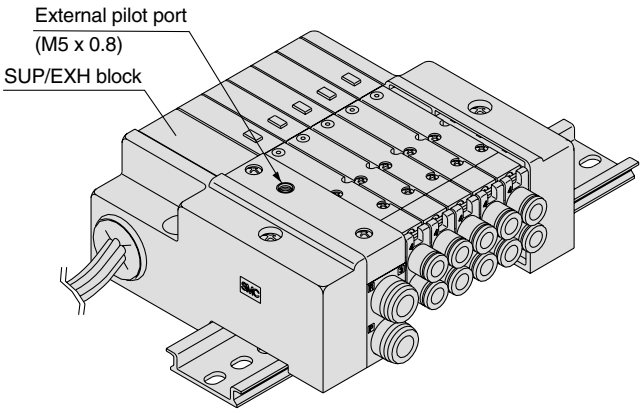
Optional Manifold Parts for SQ1000

External pilot specification [-R]

This can be used when the air pressure is 0.1 to 0.2 MPa lower than the minimum operating pressure of the solenoid valves or used for vacuum specifications.
Add "R" to the part numbers of manifolds and valves to indicate the external pilot specification.
An M5 port will be installed on the top side of the manifold's SUP/EXH block.

• Example for valve part number
SQ1130 R -5-C6
External pilot specification

• Example for manifold part number
∗ Indicate "R" for an option.
SS5Q13-08FD1-DR
External pilot specification



Note 1) Not applicable for 4 position dual 3 port valves.
Note 2) Indicate "RY" for low power consumption types.
Note 3) Valves with the external pilot specification have a the pilot EXH with individual exhaust specification and EXH can be pressurized. However, the pressure supplied from EXH should be 0.4MPa or lower.

Duplex fitting

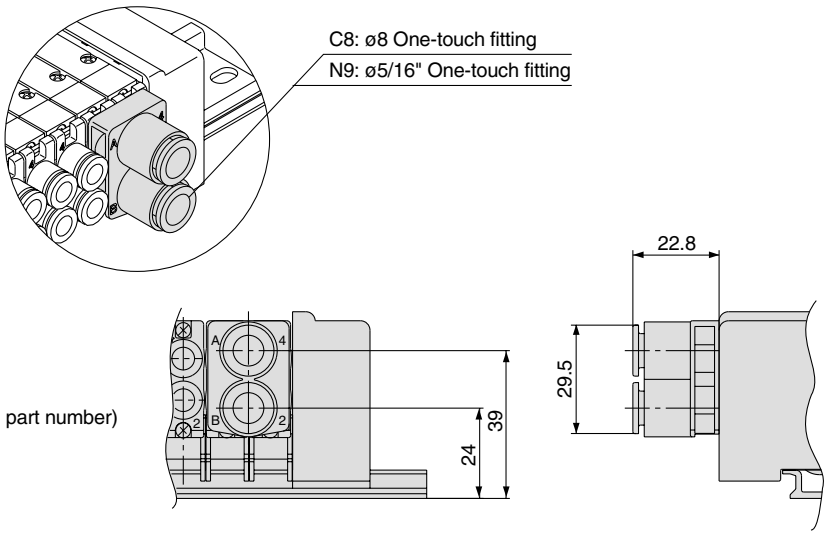
SSQ1000-52A-C8
Bore size

C8	ø8
N9	ø5/16"

To drive a large bore cylinder, two valve stations are operated simultaneously to double the air flow. This fitting is used on the cylinder ports in this situation. Available sizes are ø8 and ø5/16" One-touch fittings.

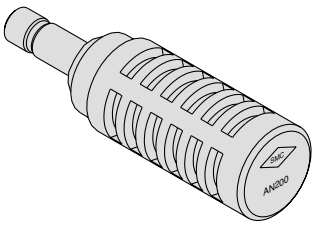
∗ When ordering with valves, specify the valve number without One-touch fitting and list the duplex fitting part number.

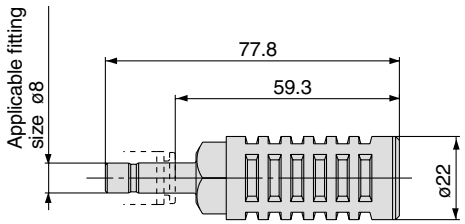
Example) Valve part number (without One-touch fitting part number)
SQ1131-5-C0 ····· 2 sets
∗SSQ1000-52A-C8/N9 ····· 1 set



Silencer (for EXH port)

This is inserted into the centralized type EXH port (One-touch fitting).





Specifications

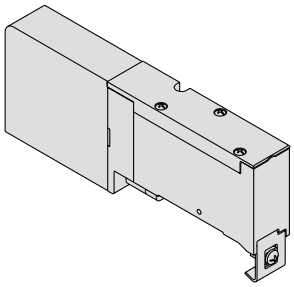
Series	Model	Effective area mm² (Cv factor)	Noise reduction dB
SQ1000	AN200-KM8	20 (1.1)	30

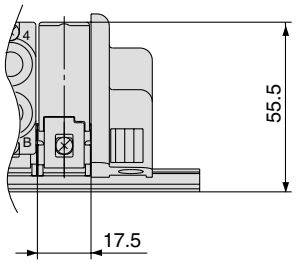
Optional Manifold Parts for SQ2000

Blanking plate

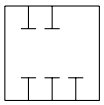
SSQ2000-10A-3

This is mounted on a manifold block when a valve is removed for maintenance or when installation of an additional valve is planned for the future, etc.





JIS symbol



SUP/EXH block

SSQ2000-PR-3-C10-□

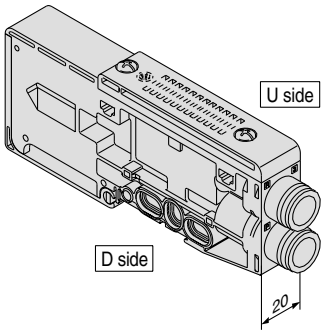
Option

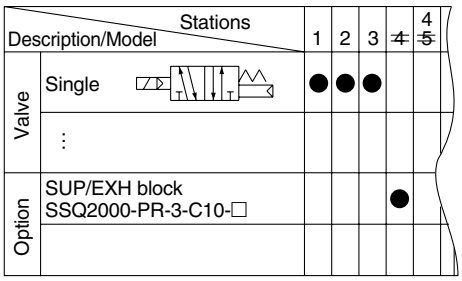
Nil	Standard
R	External pilot specification
S	Built-in silencer

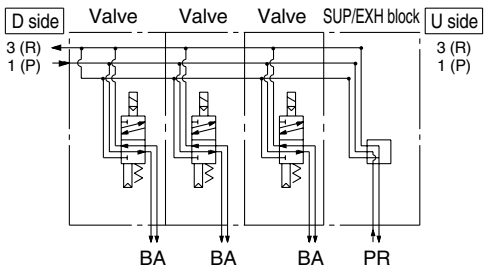
Note) When specifying both options, indicate "RS".
∗ Specify the spacer mounting position on a manifold specification sheet.

For standard type manifolds, the SUP/EXH block is mounted on the D side. It is added to the manifold to increase SUP/EXH capacity.

∗ The number of SUP/EXH blocks that can be added is limited to two sets, one between manifold stations and another on the U side of the manifold due to the length of the internal lead wire.
∗ SUP/EXH blocks are not included in the number of manifold stations.







Individual SUP spacer

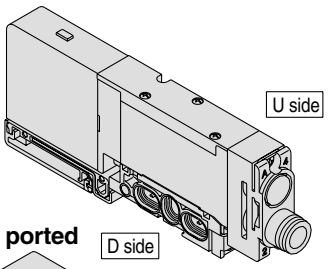
SSQ2000-P-3-C8

Port direction

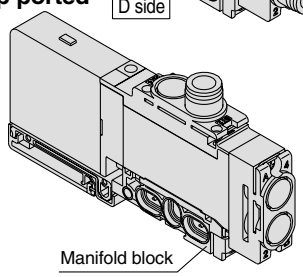
C8	Side ported
L8	Top ported

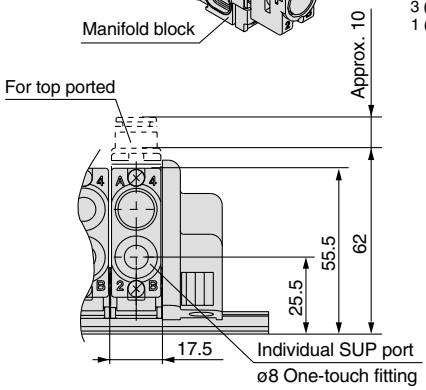
This is used as a supply port for different pressures when using different pressures in the same manifold (for one station).
Both sides of the station which is used with supply pressure from the individual SUP spacer are shut off. (See examples.)
∗ Specify the spacer mounting position and SUP passage shut off positions on a manifold specification sheet. Two shut off positions are required per unit. (Two pieces of SUP block plate that shut off the supply pressure are included with the individual SUP spacer, therefore, it is not necessary to order them separately.)
∗ Electrical wiring is also connected to the manifold station with the individual SUP spacer.
∗ By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later (from individual SUP spacer to individual EXH spacer).
∗ The number of spacers is not limited when ordered with the manifold. However, when adding individual SUP spacers later, it is limited to two units, one between manifold stations and another on the U side due to the length of the internal lead wire.
∗ Part number with manifold block:
SSQ2000-P-3-C8/L8-M□

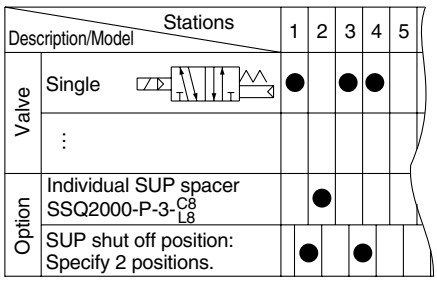
Side ported

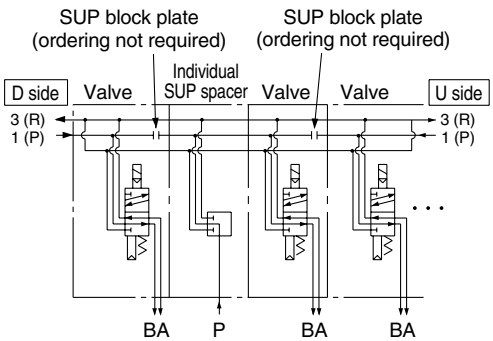


Top ported









Manifold Option Parts for SQ2000

Individual EXH spacer

SSQ2000-R-3-C8

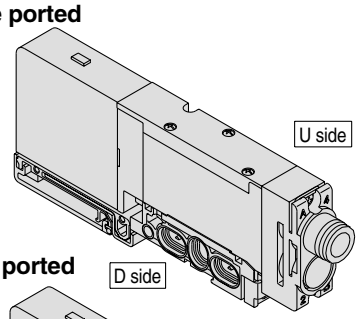
Port direction

C8	Side ported
L8	Top ported

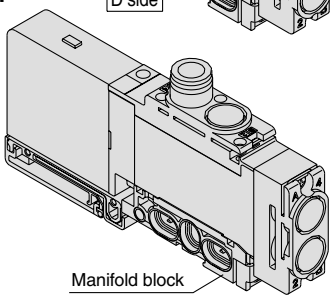
This is used to exhaust an individual valve when the exhaust from a valve interferes with other stations in the circuit (used for one station).
Both sides of the station which is to be individually exhausted are shut off. (See examples.)

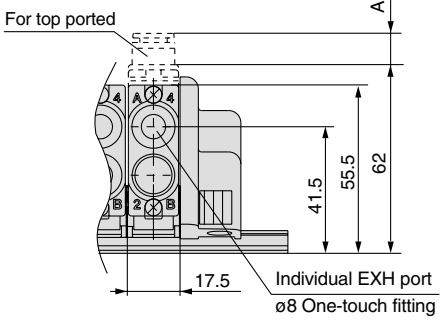
* Specify the spacer mounting position and EXH passage shut off positions on a manifold specification sheet.
  Two shut off positions are required per unit.
  (Four pieces of EXH block plate that shut off the exhaust are included with the individual EXH spacer, therefore, it is not necessary to order them separately.)
* Electrical wiring is also connected to the manifold station with the individual EXH spacer.
* By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later (from the individual EXH spacer to the individual SUP spacer).
* The number of spacers is not limited when ordered with the manifold. However, when adding individual EXH spacers later, it is limited to two units, one between manifold stations and another on the U side due to the length of the internal lead wire .
* Part number with manifold block:
  SSQ2000-R-3-$\frac{C8}{L8}$-M

Side ported

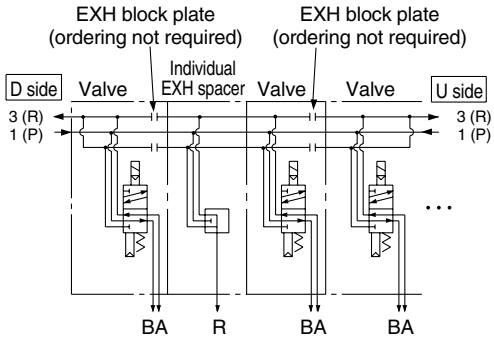


Top ported





Description/Model \ Stations	1	2	3	4	5
Valve: Single	●		●	●	
Valve: ⋮					
Option: Individual EXH spacer SSQ2000-R-3-$\frac{C8}{L8}$		●			
Option: EXH shut off position: Specify 2 positions.	●		●		



Individual SUP/EXH spacer

SSQ2000-PR1-3-C8

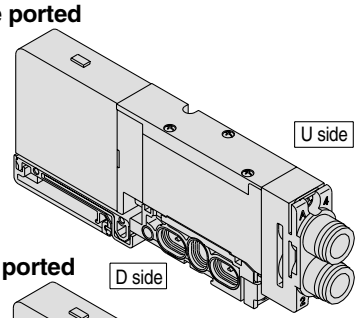
Port direction

C8	Side ported
L8	Top ported

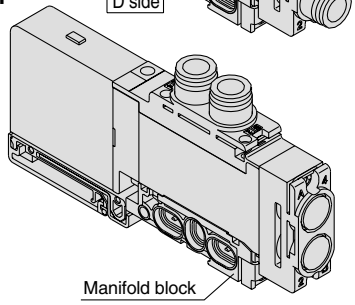
This has both functions of the individual SUP and EXH spacers above.
(See examples.)

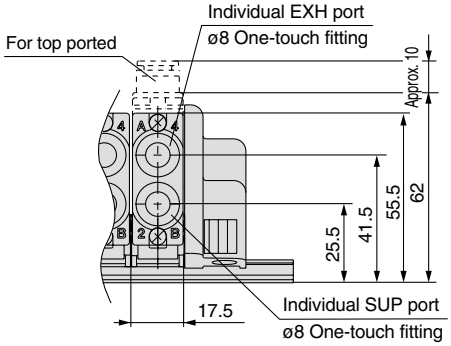
* Specify the spacer mounting position and SUP and EXH passage shut off positions on a manifold specification sheet. Two shut off positions each for SUP and EXH are required per unit.
  [Block plates that shut off the SUP and EXH passages are included with the individual SUP/EXH spacer (2 pcs. of SUP block plate and 4 pcs. of EXH block plate).]
* Electrical wiring is also connected to the manifold station with the individual EXH spacer.
* By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later.
* The number of spacers is not limited when ordered with the manifold. However, when adding individual SUP/EXH spacers later, it is limited to two units, one between manifold stations and another on the U side due to the length of the internal lead wire.
* Part number with manifold block:
  SSQ2000-PR1-3-$\frac{C8}{L8}$-M

Side ported

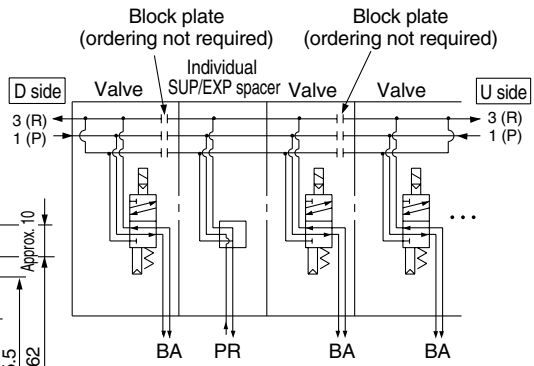


Top ported





Description/Model \ Stations	1	2	3	4	5
Valve: Single	●		●	●	
Valve: ⋮					
Option: Individual SUP/EXH spacer SSQ2000-PR1-3-$\frac{C8}{L8}$		●			
Option: SUP shut off position: Specify 2 positions.	●		●		
Option: EXH shut off position: Specify 2 positions.	●		●		



SUP block plate

SSQ1000-B-R

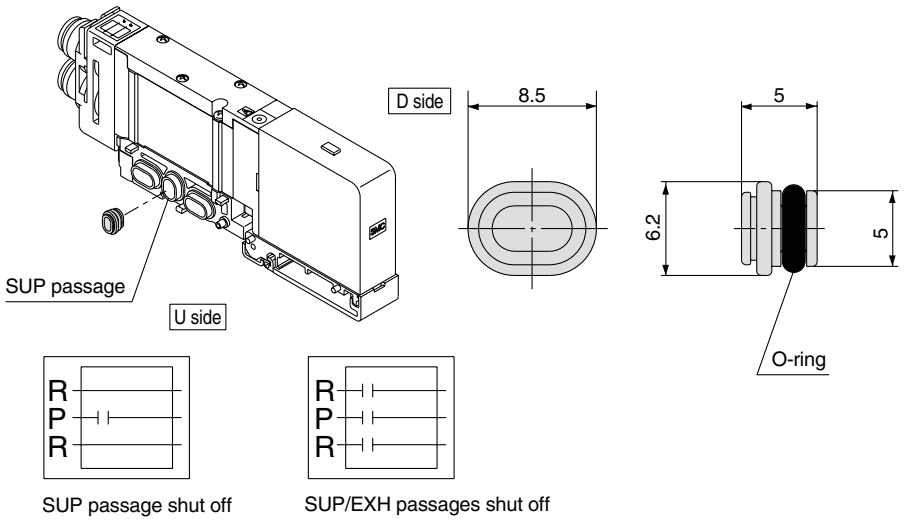
When supplying two different pressures, high and low, to one manifold, this is used between stations with different pressures. Also, it is used with an individual SUP spacer to shut off the air supply.

* Specify the mounting station on a manifold specification sheet.

<Shut off label>

When a SUP passage is shut off with a SUP block plate, a label is attached for external confirmation of the shut off position (one label each).

* Shut off labels are applied when SUP block plates are ordered with manifolds.



SUP passage shut off　　SUP/EXH passages shut off

EXH block plate

SSQ2000-B-R

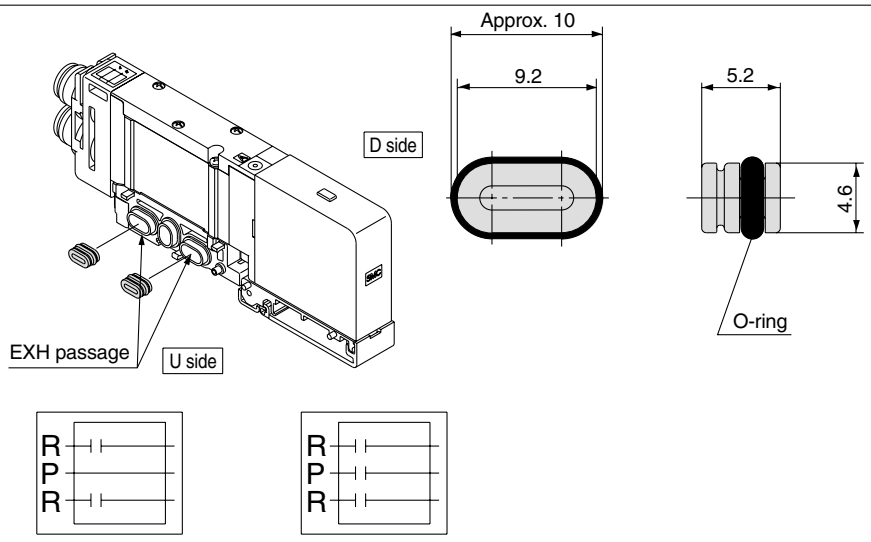
When the exhaust from a valve interferes with other stations in the circuit, this is used between stations to separate exhausts. Also, it is used with an individual EXH spacer to shut off the exhaust of individual valves.

* Specify the mounting station on a manifold specification sheet.

<Shut off label>

When an EXH passage is shut off with an EXH block plate, a label is attached for external confirmation of the shut off position (one label each).

* Shut off labels are applied when EXH block plates are ordered with manifolds.



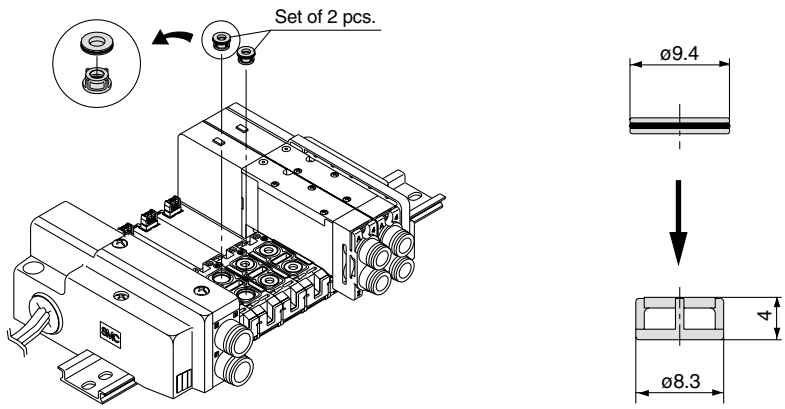
EXH passage shut off　　SUP/EXH passages shut off

Back pressure check valve [-B]

SSQ2000-BP

This prevents cylinder malfunction caused by the exhaust from other valves. It is inserted into the R (EXH) port of the valve that is affected. It is especially effective when using single acting cylinders or exhaust center type solenoid valves.

* When installing back pressure check valves only on the stations required, enter the part number and specify the mounting stations on a manifold specification sheet.
* When installing back pressure check valves on all of the stations, indicate "-B" at the end of the manifold part number.



⚠ Caution

1. Although the back pressure check valve is an assembly part with a check valve mechanism, a small amount of air leakage is allowed. Therefore, take care not to restrict the exhaust air from the exhaust port.
2. The effective area of valves is about 20% less when the back pressure check valve is installed.

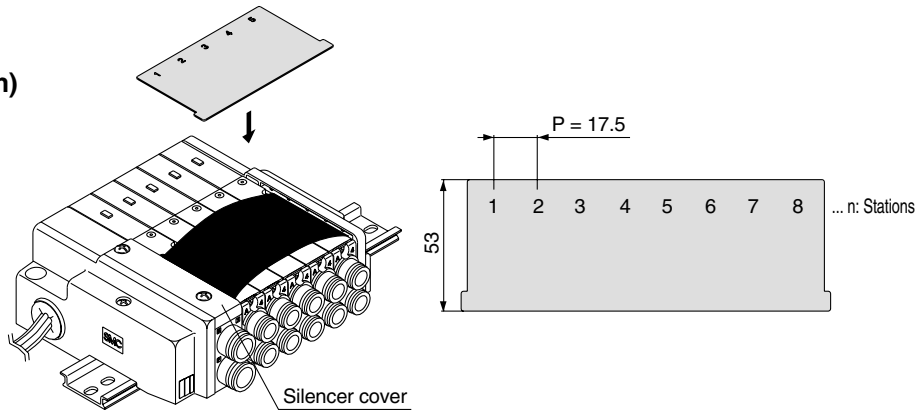
Manifold Option Parts for SQ2000

Labeling plate [-N]

SSQ2000-N3- Stations (1 to maximum)

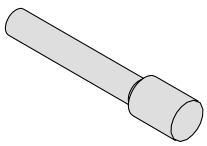
A clear resin plate for applying solenoid valve function description labels, etc.
To install, bend the plate slightly as shown and insert into the slots on the end plate side. Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to install it.

* When ordering with manifolds, add "-N" at the end of the manifold number.

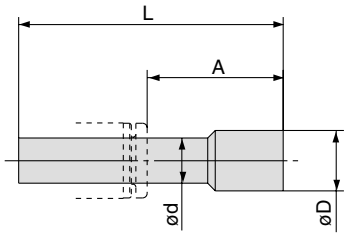


Blanking plug (for One-touch fitting)

KQ2P- 04 / 06 / 08 / 10



This is inserted into the cylinder port and SUP and EXH ports that are not used.
Available in 10 piece units.



Dimensions

Applicable fitting size ød	Model	A	L	D
4	KQ2P-04	16	32	6
6	KQ2P-06	18	35	8
8	KQ2P-08	20.5	39	10
10	KQ2P-10	22	43	12

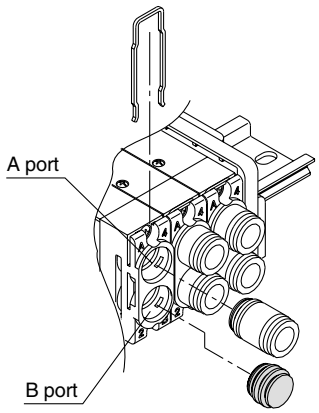
Port plug

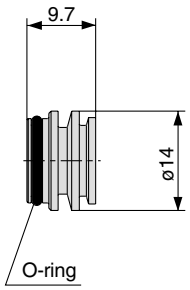
VVQZ2000-CP

This is used to close the cylinder ports when changing a 5 port valve to a 3 port valve.

* Add "A" or "B" at the end of the valve part number when ordering with valves.

Example) SQ2131-5-C8-A (N.O. specification)
• A port plug
Example) SQ2131-5-C8-B (N.C. specification)
• B port plug
Example) SQ2131-5-C8-B-M
(B port plug with manifold block)



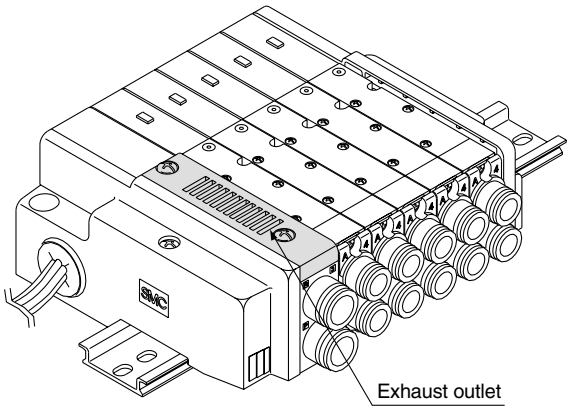


Direct exhaust outlet with built-in silencer [-S]

The exhaust outlet is placed on the top side of the manifold end plate. The built-in silencer provides highly effective noise reduction. (Noise reduction of 30dB)

Note) Note that when excessive drainage occurs in the air supply, the drainage will be released along with the exhaust.

* Add "-S" at the end of the manifold part number when ordering with manifolds.
* Refer to page 134 for handling precautions and the replacement of elements.

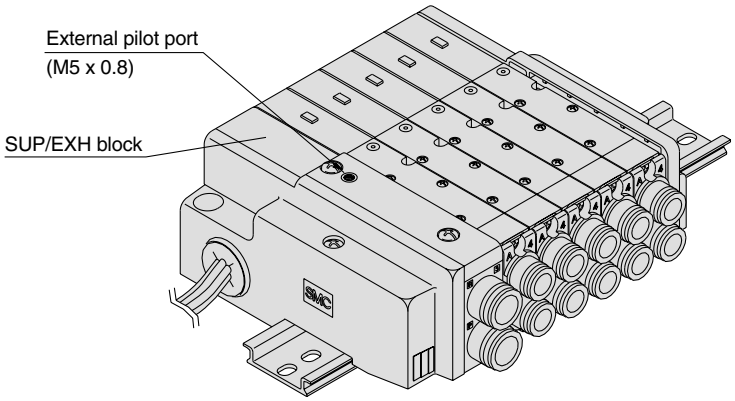


External pilot specification [-R]

This can be used when the air pressure is 0.1 to 0.2 MPa lower than the minimum operating pressure of the solenoid valves or used for vacuum specifications.
Add "R" to the part numbers of manifolds and valves to indicate the external pilot specification.
An M5 port will be installed on the top side of the manifold's SUP/EXH block.

• Example for valve part number
SQ2130 R -5-C6
External pilot specification

• Example for manifold part number
∗ Indicate "R" for an option.
SS5Q23-08FD1-DR
External pilot specification



Note 1) Not applicable for dual 3 port valves.
Note 2) Indicate "RY" for low power consumption types.
Note 3) Valves with the external pilot specification have a pilot EXH with individual exhaust specification and EXH can be pressurized. However, the pressure supplied from EXH should be 0.4MPa or lower.

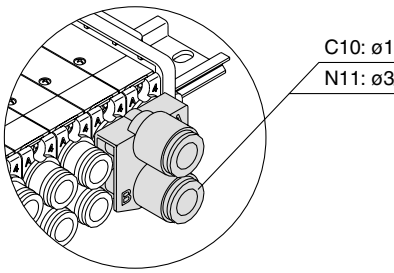
Dual flow fitting

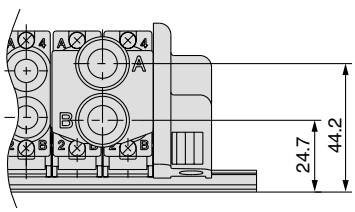
SSQ2000-52A- C10
•Bore size

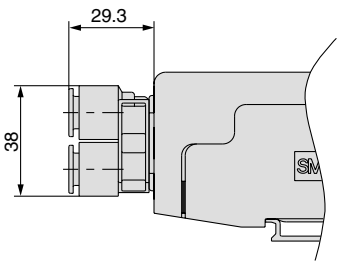
C10	ø10
N11	ø3/8"

To drive a large bore cylinder, two valve stations are operated simultaneously to double the air flow. This fitting is used on the cylinder ports in this situation. Available sizes are ø10 and ø3/8" One-touch fittings.
∗ When ordering with valves, specify the valve number without One-touch fitting and list the dual flow fitting part number.

Example) Valve part number
(without One-touch fitting)
SQ2131-5- C0 ····· 2 sets
∗SSQ2000- 52A- C10/N11 ····· 1 set

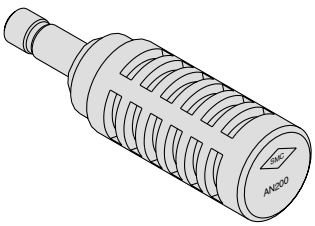


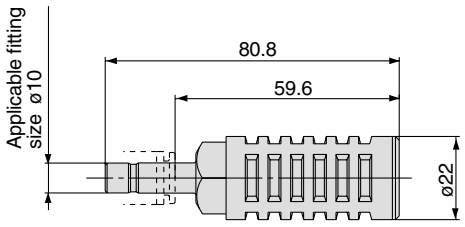




Silencer (for EXH port)

This is inserted into the centralized type EXH port (One-touch fitting).





Specifications

Series	Model	Effective area mm² (Cv factor)	Noise reduction dB
SQ2000	AN200-KM10	26 (1.4)	30

Manifold Options for SQ1000/SQ2000

Special wiring specifications

The standard internal wiring of F kit, P kit, J kit, T kit, and S kit is double wiring (connected to SOL. A and SOL. B) regardless of the valve and option types. Mixed single and double wiring is available as an option.

1. How to order

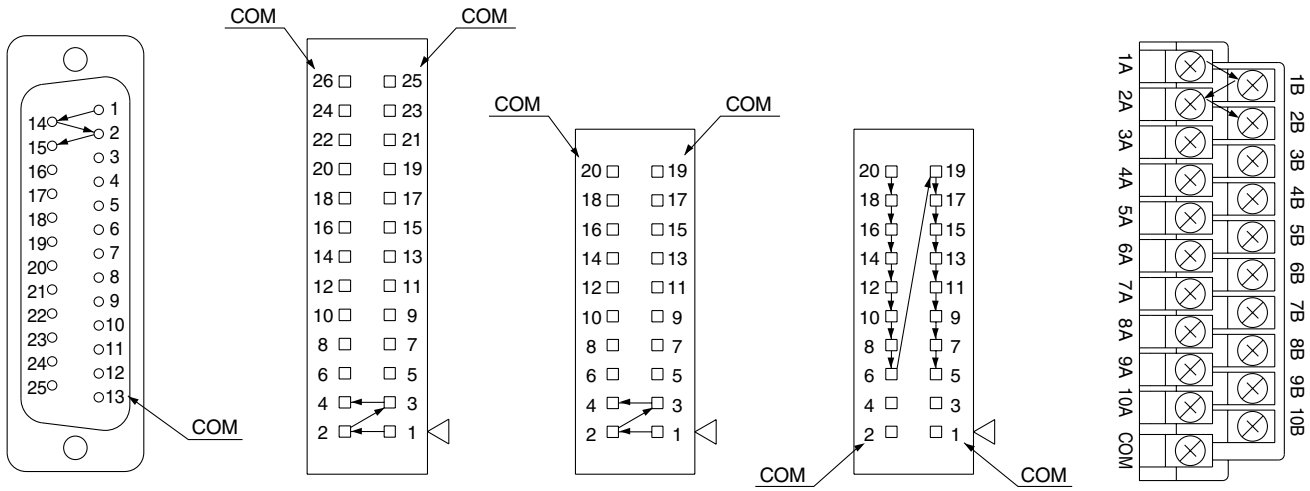
Indicate option symbol "**-K**" in the manifold part number and be sure to specify station positions for single or double wiring on a manifold specification sheet. Also, specify wiring for spare connectors. (Up to two spare connectors are included depending on the remaining number of connector pins. When the wiring for the spare connectors is not specified, they will be wired according to "Spare Connector Wiring" on page 52.

Example) **SS5Q13-09 FD0 -DKS**

• Other option symbols: Enter in alphabetical order.

2. Wiring specifications

Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without skipping any terminal numbers.



F kit
D-sub connector
(for 25P)

P kit
Flat ribbon cable connector
(for 26P)

P kit
Flat ribbon cable connector
(for 20P)

J kit
Flat ribbon cable connector (20P)
PC Wiring System compatible

T kit
Terminal block
(SQ2000 only)

Refer to pages 15 and 35 for S kit (serial transmission kit).

3. Maximum stations

The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. Determine the number of stations so that the total number of solenoids is no more than the maximum points in the table below.

Kit	F kit (D-sub connector)	P kit (Flat ribbon cable connector)		J kit Flat ribbon cable connector PC Wiring System compatible	T kit (Terminal block) SQ2000 only*	S kit (Serial)
Type	FD□ 25P	PD□ 26P	PDC 20P	JD0 20P	TD0	SD□
Max . points	24 points	24 points	18 points	16 points	20 points	16 points

Note) Maximum stations ..... SQ1000: 24 stations
SQ2000: 16 stations

Applicable DIN rail mounting

Each manifold can be mounted on a DIN rail.
Indicate the symbol "-D" for ordering DIN rail mount type manifolds.
The standard DIN rail provided is approximately 30mm longer than the overall length of the manifold with a specified number of stations.
The following options are also available.

• DIN rail length longer than the standard type (for stations to be added later, etc.)

In the manifold part number, specify "-D" for the manifold mounting symbol and add the number of required stations after the symbol.

Example) **SS5Q13- 08FD0 - D09BNK**

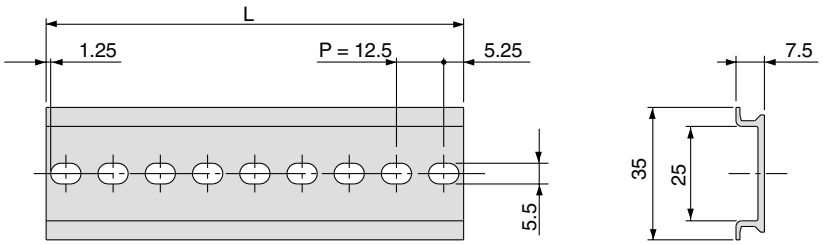
- 8 station manifold
- Option symbols (in alphabetical order)
- DIN rail for 9 stations

• Ordering DIN rail only

DIN rail part number

AXT100- DR - n

Note) For "n", enter a number from the "No." line in the table below.
Refer to the dimensions drawing of each kit for dimension L.



Dimension L

L = 12.5 x n + 10.5

No.	1	2	3	4	5	6	7	8	9	10
Dimension L	23	35.5	48	60.5	73	85.5	98	110.5	123	135.5

No.	11	12	13	14	15	16	17	18	19	20
Dimension L	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5

No.	21	22	23	24	25	26	27	28	29	30
Dimension L	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5

No.	31	32	33	34	35	36	37	38	39	40
Dimension L	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

Manifold Options for SQ1000/SQ2000

Negative COM specifications

The following valve part numbers are for negative COM specifications. Manifold part numbers are the same as the standard except for the L kit.
Also, negative COM specifications are not available for the S kit.

• How to order negative COM valves (example)

SQ1130 N -5-C6

N: Negative COM specification

• How to order negative COM manifolds (example)

SS5Q13-08 LD1 N -D N

- 08: Stations
- LD1: Kit type
- N: **Negative COM specification**
- D: DIN rail mount type
- N: Option

One-touch fittings in inch sizes

For One-touch fittings in inch sizes, use the following part numbers. Also, the color of the release button is orange.

• How to order valves (example)

SQ1130- 5 - □ N7

Port position | **Cylinder port size**

Nil	Side
L	Top

Symbol		N1	N3	N7	N9
Applicable tube O.D. inch		ø1/8"	ø5/32"	ø1/4"	ø5/16"
A/B port	SQ1000	●	●	●	—
	SQ2000	—	●	●	●

• How to order manifolds (example)

Add "00T" at the end of the part number.

SS5Q13-08 FD0-DN- 00T

00T: P/R port in inch size
- SQ1000: ø5/16" (N9)
- SQ2000: ø3/8" (N11)

How to Add Manifold Stations for SQ1000/SQ2000

1. Using spare connector to add stations

As shown in the table below, wiring specifications for spare connectors are based on to the remaining number of connector pins (remaining number of pins against the maximum number of solenoids for each kit).
The following procedures are for using spare connectors to add stations.

• Spare connector wiring

Remaining connector pins	4 pins or more	3 pins	2 pins	1 pin	0 pin
Spare connector wiring	2 for double wiring	1 for double wiring (on the low no. station side) 1 for single wiring	1 for double wiring	1 for single wiring	None

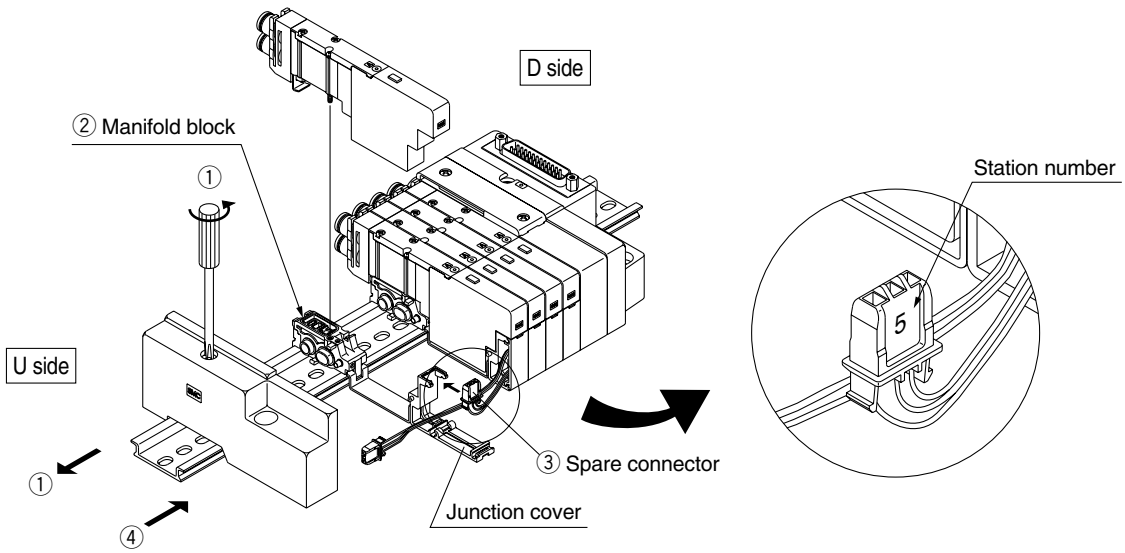
What to prepare

• Valves with manifold block (refer to pages 2 and 20) or manifold block (refer to page 53)

Steps for adding stations

① Loosen the clamp screw on the U side end plate and open the manifold.
↓
② Mount the manifold block to be added.
↓
③ Open the junction cover and attach the spare connector. Match the station position of the added station and
↓ the spare connector station number.
④ Press on the end plate to eliminate any space between the manifold blocks and tighten the clamp screw.
(Proper tightening torque: 0.8 to 1.0N·m)

Note 1) Order a manifold block with lead wire for the L kit because a spare connector is not included with the kit. (Refer to page 53.)
Note 2) Do not let the lead wires get caught between manifolds, or when closing the junction cover.



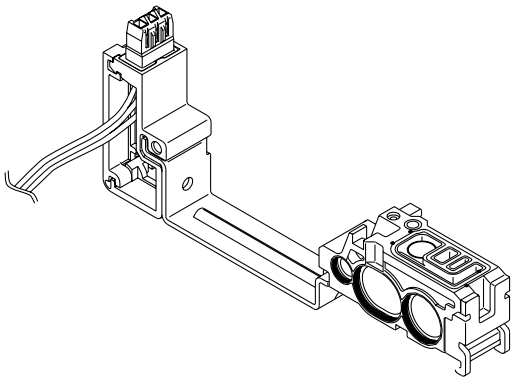
How to Add Manifold Stations for SQ1000/SQ2000

2. Adding stations without required spare connectors

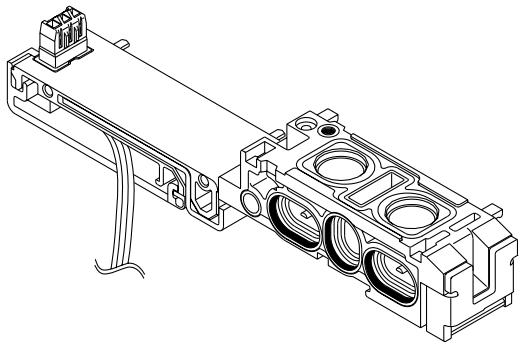
Spare connectors for 2 stations are initially included. However, to add 3 or more stations, order manifold blocks with lead wire in the tables below.

To order manifold blocks with lead wire

SQ1000



SQ2000



SSQ1000 — 1A — 3 — FS 03 — ☐

Lead wire type

F0	Without lead wire (for using spare connectors to add stations)
FS	F kit (D-sub connector kit) Single wiring
FW	F kit (D-sub connector kit) Double wiring
PS	P, J kit (Flat ribbon cable kit) Single wiring
PW	P, J kit (Flat ribbon cable kit) Double wiring
L0	L kit (Lead wire kit) Lead wire length 0.6m
L1	L kit (Lead wire kit) Lead wire length 1.5m
L2	L kit (Lead wire kit) Lead wire length 3.0m
SS	S kit (Serial transmission kit) Single wiring
SW	S kit (Serial transmission kit) Double wiring

Applicable stations

01	1 station
⋮	⋮
24	24 stations

Note 1) No symbol required for "F0".

Note 2) Specify from "01" to "16" for S kit.

Option

Nil	None
B	Back pressure check valve
R	External pilot specification

Note) Enter "-BR" for both specifications.

SSQ2000 — 1A — 3 — FS 03 — ☐

Lead wire type

F0	Without lead wire (for using spare connectors to add stations)
FS	F kit (D-sub connector kit) Single wiring
FW	F kit (D-sub connector kit) Double wiring
PS	P, J kit (Flat ribbon cable kit) Single wiring
PW	P, J kit (Flat ribbon cable kit) Double wiring
TS	T kit (Terminal block kit) Single wiring
TW	T kit (Terminal block kit) Double wiring
L0	L kit (Lead wire kit) Lead wire length 0.6m
L1	L kit (Lead wire kit) Lead wire length 1.5m
L2	L kit (Lead wire kit) Lead wire length 3.0m
SS	S kit (Serial transmission kit) Single wiring
SW	S kit (Serial transmission kit) Double wiring

Applicable stations

01	1 station
⋮	⋮
16	16 stations

Note) No symbol required for "F0".

Option

Nil	None
B	Back pressure check valve
R	External pilot specification

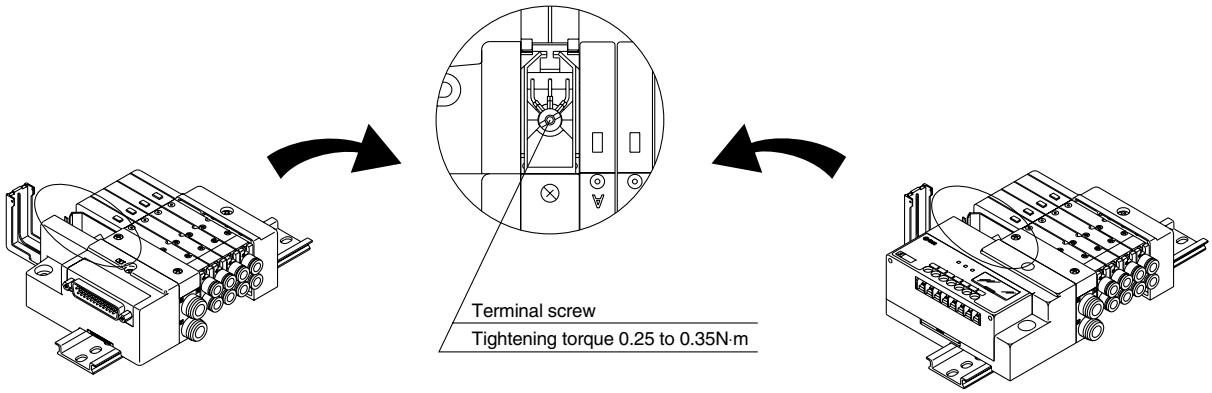
Note) Enter "-BR" for both specifications.

3. Connection method (Refer to page 52 regarding the procedures for adding stations to a manifold block.)

Connect lead wire assemblies included with manifold blocks as follows.

① Connecting common terminals

Connect the round terminal of the red lead wire to the common terminal inside the junction cover.

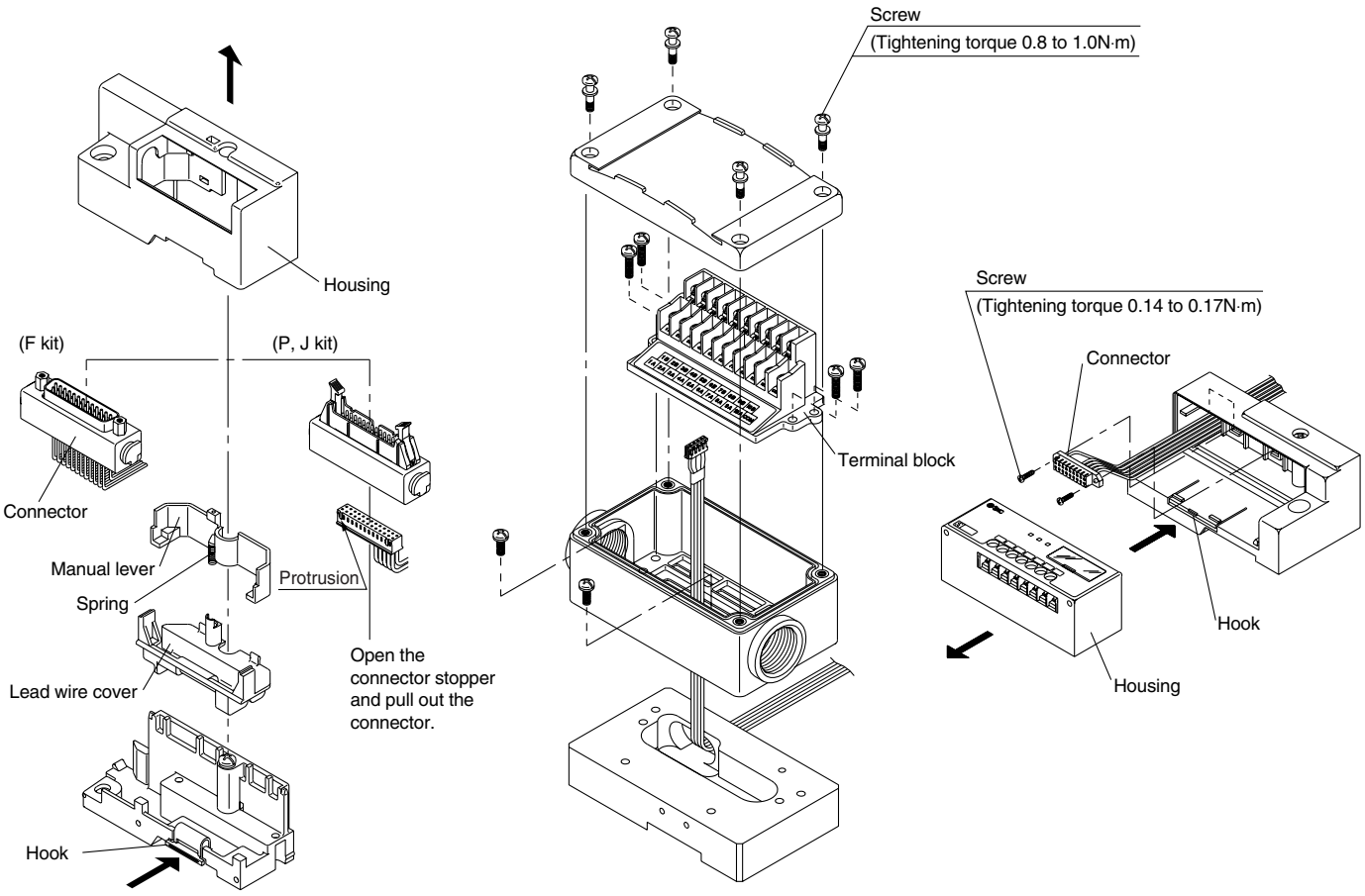


F, P, J kit **T, S kit**

② Pulling out the connectors

Pull out the connector to connect the lead wire.

- For F, P, and J kits, pull out and remove the housing while pressing down hard on the hook with a flat head screw driver, etc. Remove the manual lever and lead wire cover, and pull out the connector.
- For T kits, remove the screws and pull out the terminal block.
- For S kits, remove the screws and pull out the connector.



F, P, J kit **T kit** **S kit**

How to Add Manifold Stations for SQ1000/SQ2000

③ Connect the black and white lead wire pins to the positions shown below in accordance with each kit.

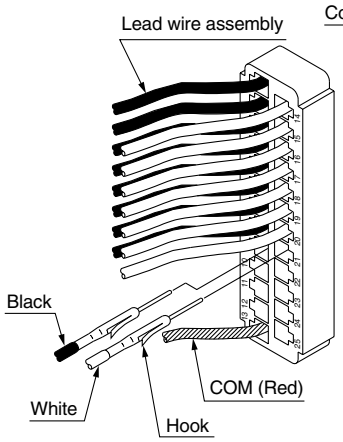
⚠Caution

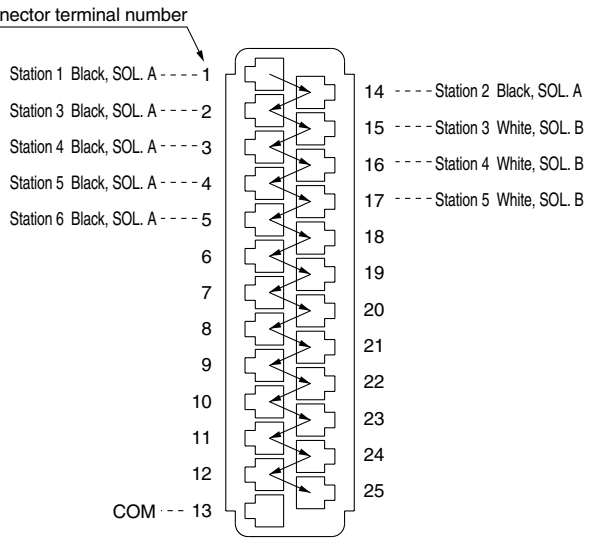
1) After inserting the pin, confirm that the pin hook is locked by lightly pulling the lead wire.

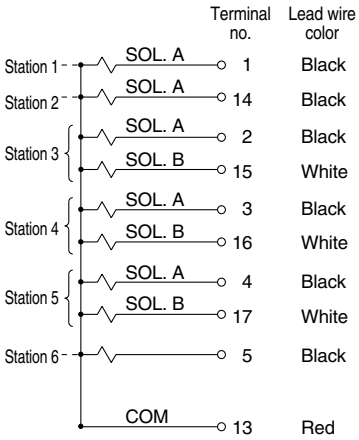
2) Do not pull the lead wire forcefully when connecting. Also, take care that lead wires do not get caught between manifolds or when closing the junction cover.

Wiring (F kit: D-sub connector kit)

Procedure) Based on the manifold specification, station 1 of SOL. A (black wire) will be terminal number 1 of the D-sub connector, and for station 2 and thereafter, connect black wires to white wires in the order shown by the arrows in the drawing below.







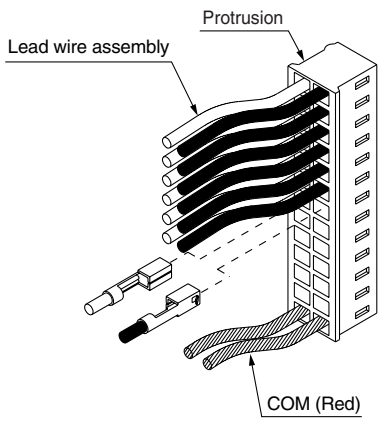
Manifold specification example

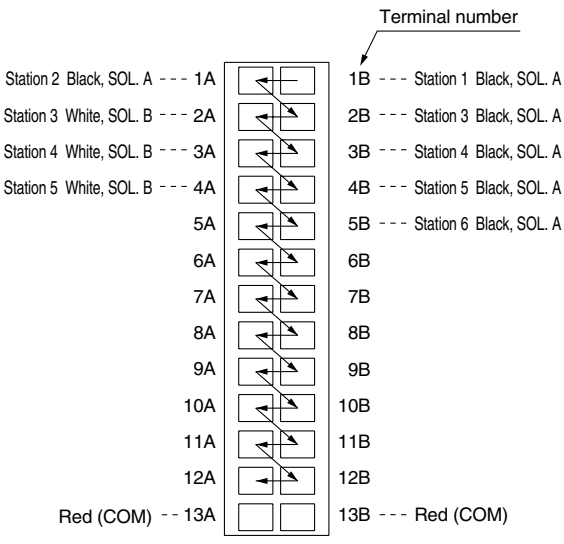
Stations	1	2	3	4	5	6
Single wiring	○	○				○
Double wiring			○	○	○	

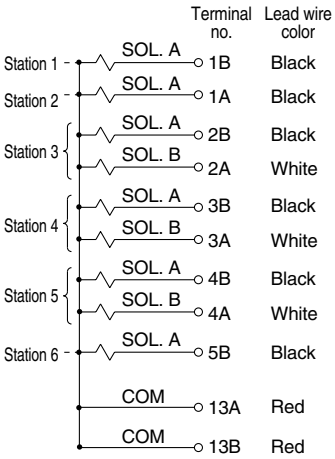
∗ The drawing above shows connections based on the manifold specification example in the table to the left.

Wiring (P kit: Flat ribbon cable kit)

Procedure) Based on the manifold specification, station 1 of SOL. A (black wire) will be terminal number 1B of the flat ribbon cable connector, and for station 2 and thereafter, connect black wires to white wires in the order shown by the arrows in the table below.







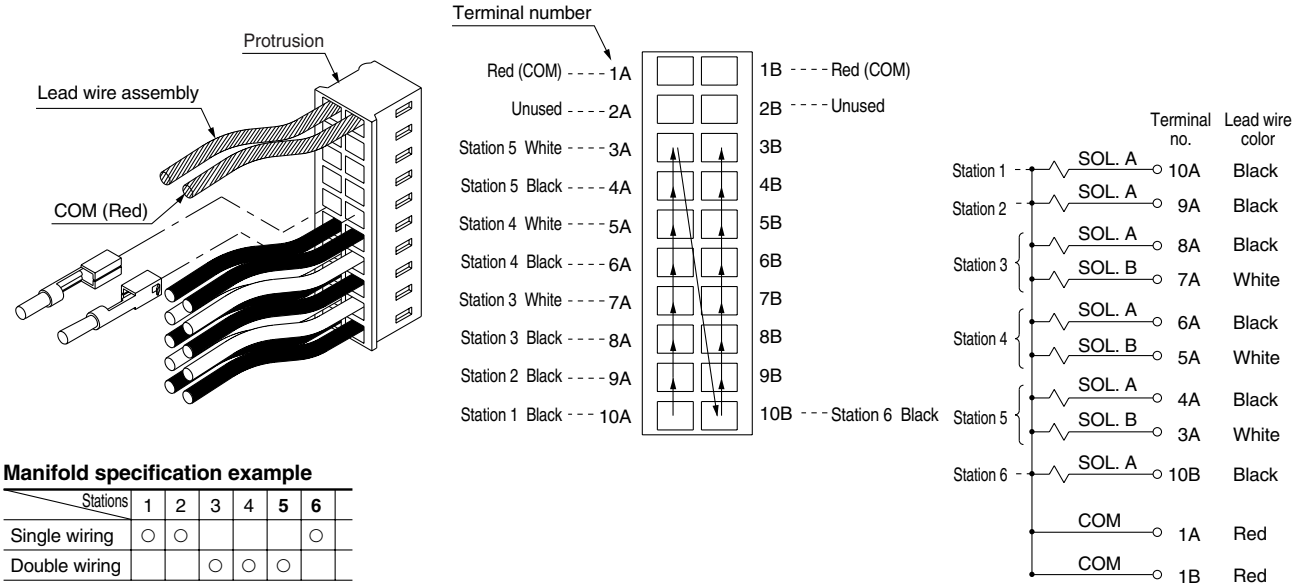
Manifold specification example

Stations	1	2	3	4	5	6
Single wiring	○	○				○
Double wiring			○	○	○	

∗ The drawing above shows connections for type 26P flat ribbon cable connector based on the manifold specification example in the table to the left. For type 20P, the connection will be the same as above except that COM changes to 10A and 10B.

Wiring (J kit: Flat ribbon cable, PC Wiring System compatible)

Procedure) Based on the manifold specification, station 1 of SOL. A (black wire) will be terminal number 10A of the flat ribbon cable connector, and for station 2 and thereafter, connect black wires to white wires in the order shown by the arrows in the drawing below.

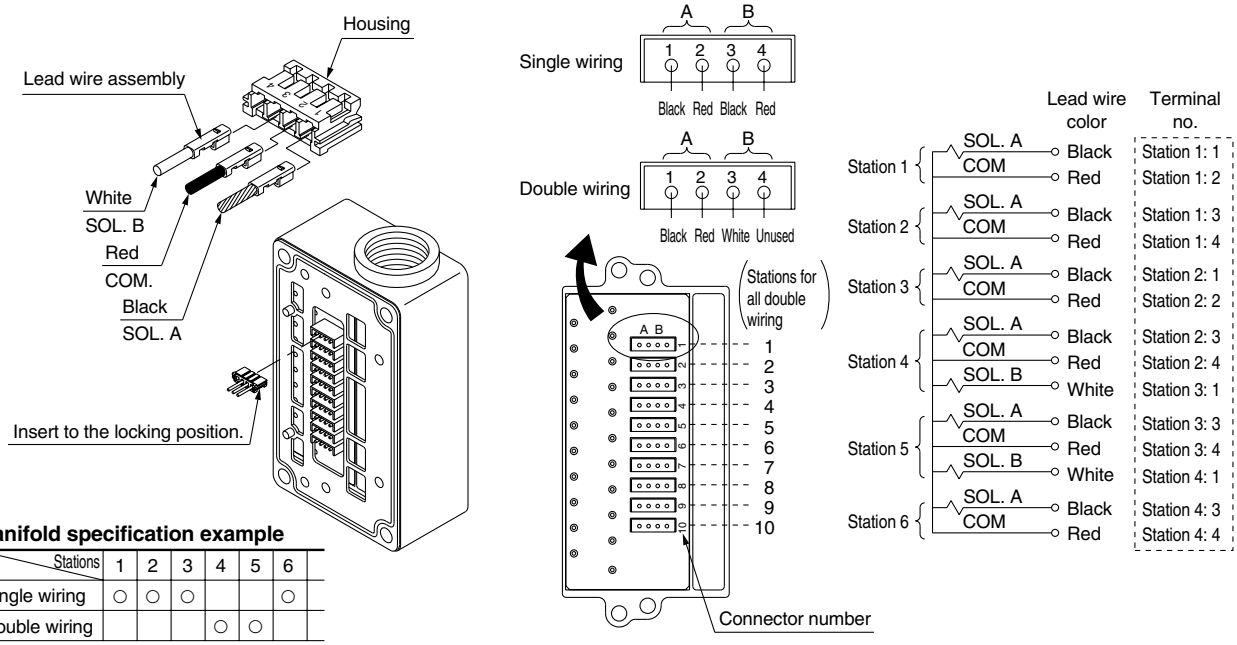


Manifold specification example

Stations	1	2	3	4	5	6
Single wiring	○	○				○
Double wiring			○	○	○	

Wiring (T kit: Terminal block kit)

Procedure) Based on the manifold specification, connect to the housing according to the wiring example below.



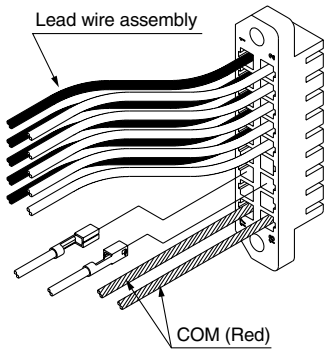
Manifold specification example

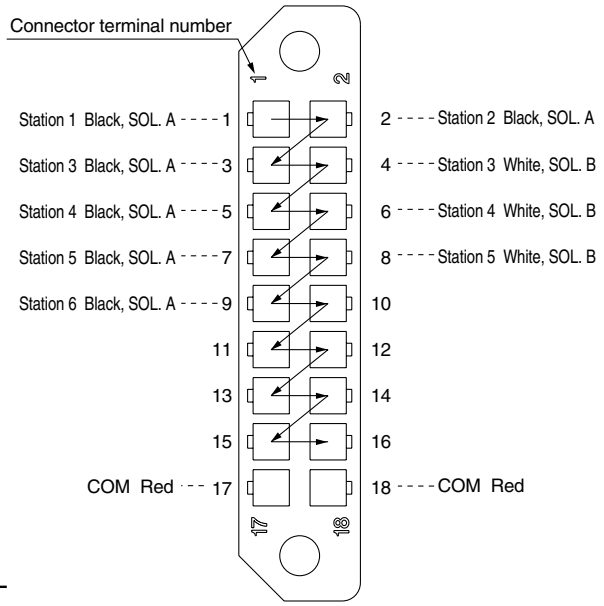
Stations	1	2	3	4	5	6
Single wiring	○	○	○			○
Double wiring				○	○	

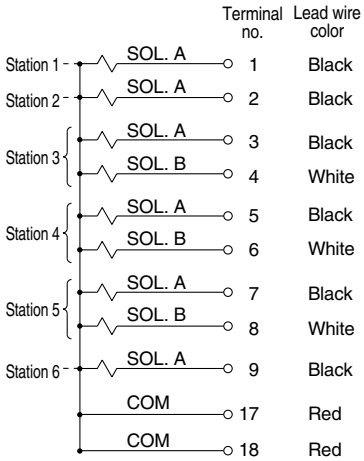
How to Add Manifold Stations for SQ1000/SQ2000

Wiring (S kit: Serial transmission kit)

Procedure) Based on the manifold specification, station 1 of SOL. A (black wire) will be terminal number 1 of the serial connector, and for station 2 and thereafter, connect black wires to white wires in the order shown by the arrows in the drawing below.







Manifold specification example

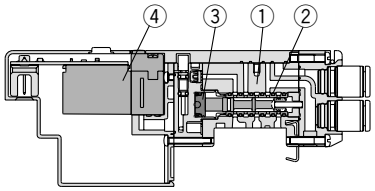
Stations	1	2	3	4	5	6
Single wiring	○	○				○
Double wiring			○	○	○	

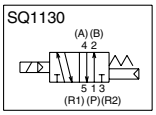
∗ The drawing above shows connections based on the manifold specification example in the table to the left.

Construction/Series SQ1000 Plug-in Type Main Parts and Pilot Valve Assemblies

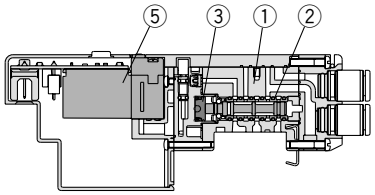
Metal seal type

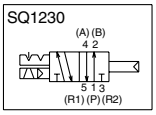
Single: SQ1130



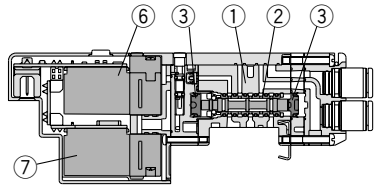


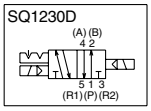
Double (latching): SQ1230



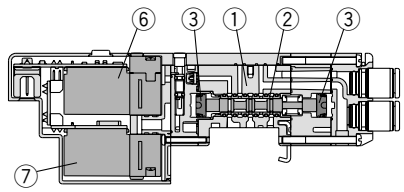


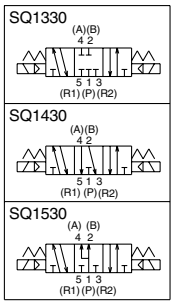
Double (double solenoid): SQ1230D





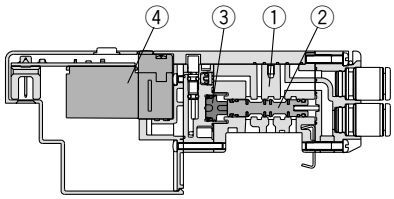
3 position: SQ1$^{3}_{4}$30$_{5}$

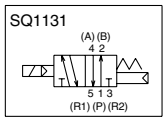




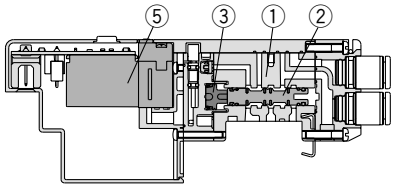
Rubber seal type

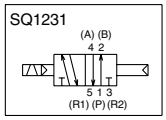
Single: SQ1131



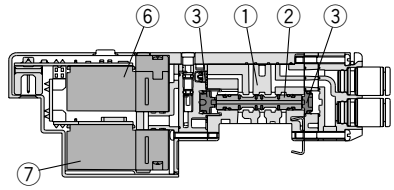


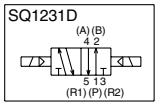
Double (latching): SQ1231



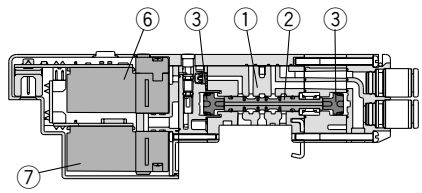


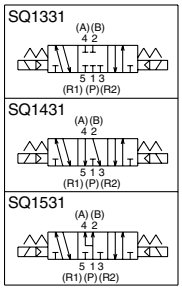
Double (double solenoid): SQ1231D



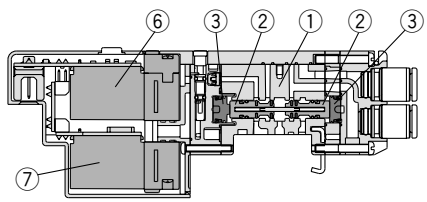


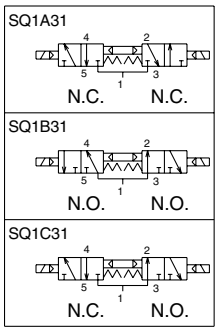
3 position: SQ1$^{3}_{4}$31$_{5}$





Dual 3 port valve: SQ1$^{A}_{B}$31$_{C}$





Parts list

No.	Description	Material
1	Body	Die-cast zinc
2	Spool sleeve	Stainless steel (metal seal)
	Spool	Aluminum (rubber seal)
3	Piston	Resin

Pilot valve assemblies Note)

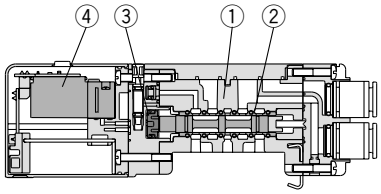
No.	Type	**SQ1□3□**
4	For single	VQ110S$^{(K)}_{(Y)}$-$^{5}_{6}$(N)J11(B)-1
5	For double (latching)	VQ110SL-$^{5}_{6}$J12-1 Negative COM: VQ110SN-$^{5}_{6}$J12-1
6	For double (double solenoid) on A side	VQ110S$^{(K)}_{(Y)}$-$^{5}_{6}$(N)J13(B)-1
	For 3P, dual 3 port on A side	
7	For double (double solenoid) on B side	VQ111S$^{(K)}_{(Y)}$-$^{5}_{6}$(N)J14-1
	For 3P, dual 3 port on B side	

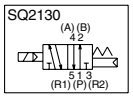
Note) Nil: Standard
B: Locking type manual override
N: Negative COM specification
Y: Low power consumption specification

Construction/Series SQ2000 Plug-in Type Main Parts and Pilot Valve Assemblies

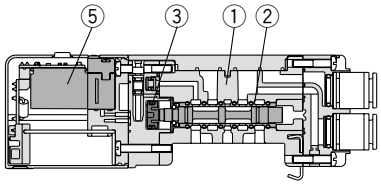
Metal seal type

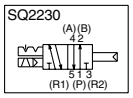
Single: SQ2130



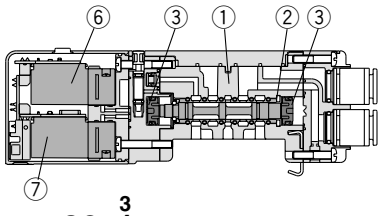


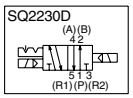
Double (latching): SQ2230



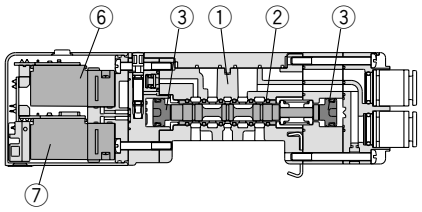


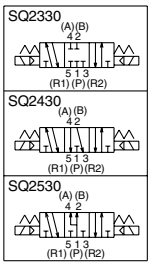
Double (double solenoid): SQ2230D





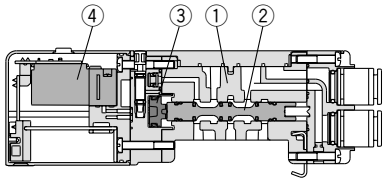
3 position: SQ2$\frac{3}{4}_{5}$30

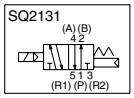




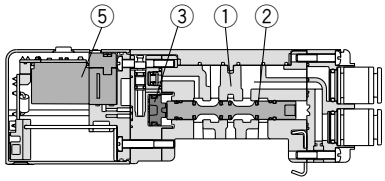
Rubber seal type

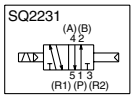
Single: SQ2131



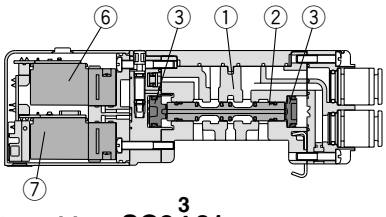


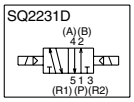
Double (latching): SQ2231



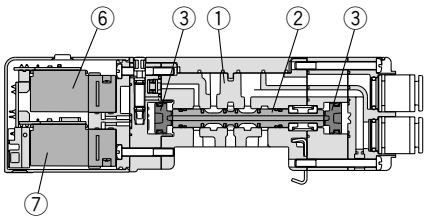


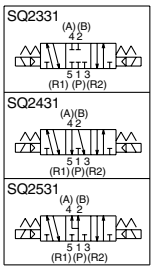
Double (double solenoid): SQ2231D



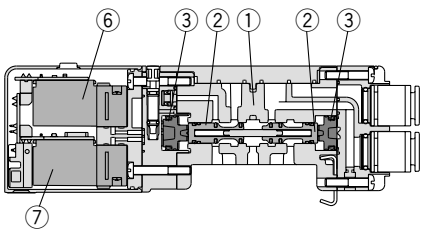


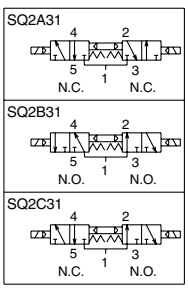
3 position: SQ2$\frac{3}{4}_{5}$31





Dual 3 port valve: SQ2$\frac{A}{B}_{C}$31





Parts list

No.	Description	Material
1	Body	Die-cast aluminum
2	Spool sleeve	Stainless steel (metal seal)
	Spool	Aluminum (rubber seal)
3	Piston	Resin

Pilot valve assemblies Note)

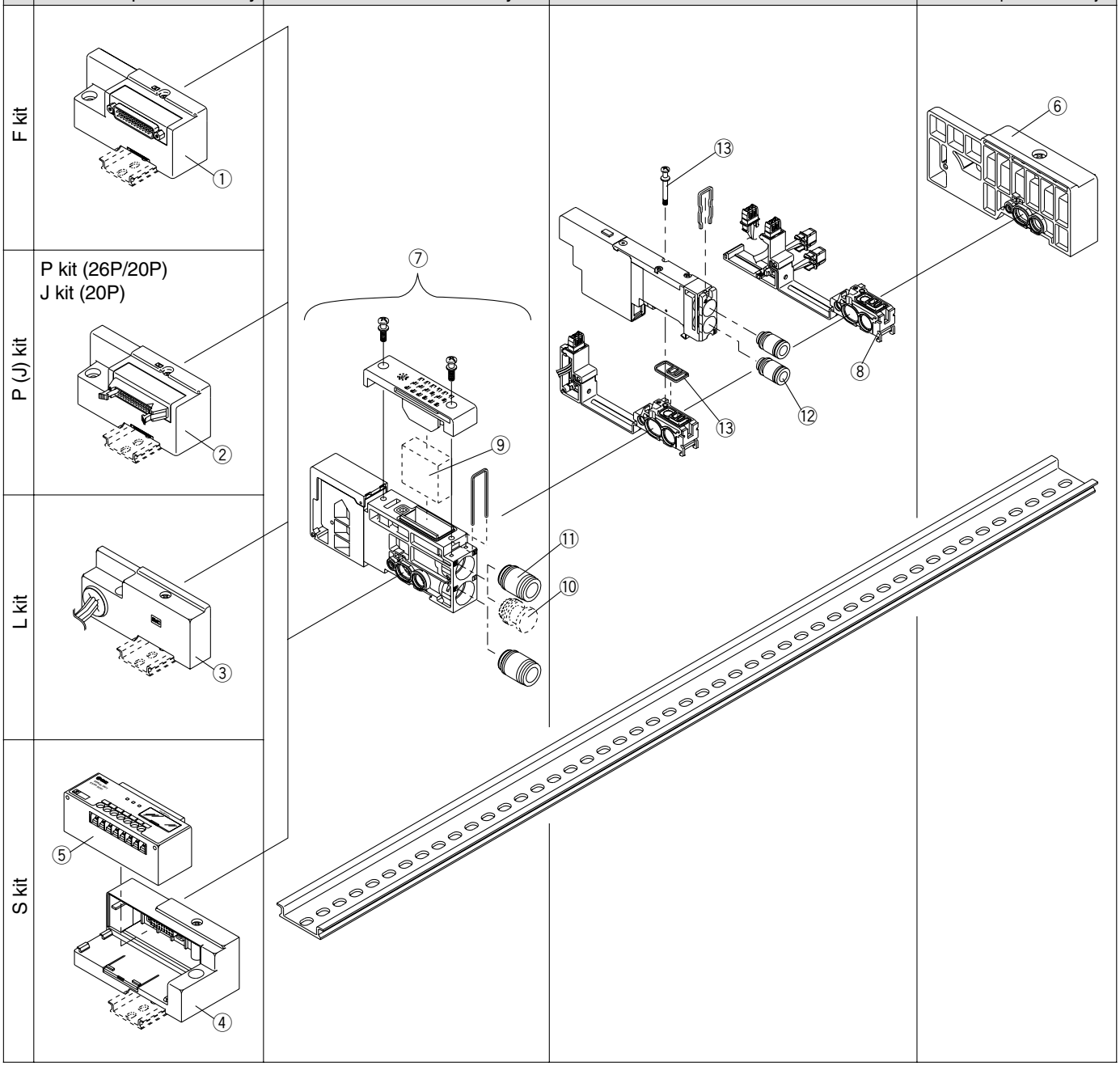
No.	Type	SQ2□3□
4	For single	VQ111S(Y)-$\frac{5}{6}$(N)J31-1
5	For double (latching)	VQ110SL-$\frac{5}{6}$J32-1 Negative COM: VQ110SN-$\frac{5}{6}$J32-1
6	For double (double solenoid) on A side	VQ111S(Y)-$\frac{5}{6}$(N)J23-1
	For 3P, dual 3 port on A side	
7	For double (double solenoid) on B side	VQ111S(Y)-$\frac{5}{6}$(N)J34-1
	For 3P, dual 3 port on B side	

Note) Nil: Standard
N: Negative COM specification
Y: Low power consumption specification

Exploded View of Manifold/SQ1000 (Plug-in Type Manifold) SS5Q13

(F, P, J, L, S kit)

	D side end plate assembly	SUP/EXH block assembly	Valve and manifold block assemblies	U side end plate assembly
F kit				
P (J) kit	P kit (26P/20P) J kit (20P)			
L kit				
S kit				



Manifold Spare Parts

Refer to pages 52 through 57 of "How to Add Manifold Stations" regarding the mounting of each spare part.

<①②③④ D side end plate assemblies>

SSQ1000 – 3A – 3 □ – F0

Manifold mounting

Nil	DIN rail mount type
E	Direct mount type

Electrical entry

F0	F kit	①
P0	P kit (26P)	②
PC0	P kit (20P)	
J0	J kit (20P)	
Nil	L kit	③
S0	S kit	④

<⑤ SI units>

Applicable manifold	Part no.	Description
SDF kit	EX140-SUW1	NKE Corporation: Uni-wire System compatible (16 outputs)
SDH kit	EX140-SUH1	NKE Corporation: Uni-wire H System compatible (16 outputs)
SDJ1 kit	EX140-SSL1	SUNX Corporation: S-LINK System compatible (16 outputs)
SDJ2 kit	EX140-SSL2	SUNX Corporation: S-LINK System compatible (8 outputs)
SDQ kit	EX140-SDN1	DeviceNet compatible (16 outputs)
SDR1 kit	EX140-SCS1	OMRON Corporation: CompoBus/S compatible (16 outputs)
SDR2 kit	EX140-SCS2	OMRON Corporation: CompoBus/S compatible (8 outputs)
SDV kit	EX140-SMJ1	Mitsubishi Electric Corporation: CC-LINK System compatible (16 outputs)

<⑥ U side end plate assemblies>

(For F, P, J, S kit)

SSQ1000 – 2A – 3 □ – 1

(For L kit)

SSQ1000 – 2A – 3 □ – 2

Manifold mounting

Nil	DIN rail mount type
E	Direct mount type

<⑦ SUP/EXH block assemblies>

SSQ1000 – PR – 3 – C8 – □

Bore size

C8	ø8 One-touch fitting
N9	ø5/16" One-touch fitting

Option

Nil	Centralized exhaust
R	For external pilot
S	For direct exhaust outlet with built-in silencer

Note) Enter "-RS" for both options.

<⑧ Manifold block assemblies>

SSQ1000 – 1A – 3 – F0 01 – □ ⑬ Includes gaskets.

Lead wire type

F0	Without lead wire
FS	F kit: D-sub connector kit Single wiring
FW	F kit: D-sub connector kit Double wiring
PS	P kit: Flat ribbon cable kit Single wiring
	J kit: PC Wiring System compatible Single wiring
PW	P kit: Flat ribbon cable kit Double wiring
	J kit: PC Wiring System compatible Double wiring
L0	L kit: Lead wire kit Lead wire length 0.6m
L1	L kit: Lead wire kit Lead wire length 1.5m
L2	L kit: Lead wire kit Lead wire length 3m
SS	S kit: Serial transmission kit Single wiring
SW	S kit: Serial transmission kit Double wiring

Option

Nil	None
B	Back pressure check valve
R	External pilot specification

Note) Enter "-BR" for both options.

Applicable stations

(For F, P, J, S kit)

01	Station 1
⋮	⋮
24	Station 24

Note 1) No symbol required for "F0".

Note 2) Specify from "01" to "16" for S kit.

<⑨ Elements>

SSQ1000 – SE

Note) Part number for a 10 piece set of elements.
Refer to page 134 for replacement procedures.

<⑩ Port plugs>

VVQZ2000 – CP

<⑪ Fitting assemblies>

(For P, R port)

VVQ1000 – 51A – C8

Bore size

C6	ø6 One-touch fitting
C8	ø8 One-touch fitting
N7	ø1/4" One-touch fitting
N9	ø5/16" One-touch fitting

Note) Available in units of 10 pieces.

<⑫ Fitting assemblies>

(For cylinder port)

VVQ1000 – 50A – C3

Bore size

C3	ø3.2 One-touch fitting
C4	ø4 One-touch fitting
C6	ø6 One-touch fitting
M5	M5 threads
N1	ø1/8" One-touch fitting
N3	ø5/32" One-touch fitting
N7	ø1/4" One-touch fitting

Note) Available in units of 10 pieces.

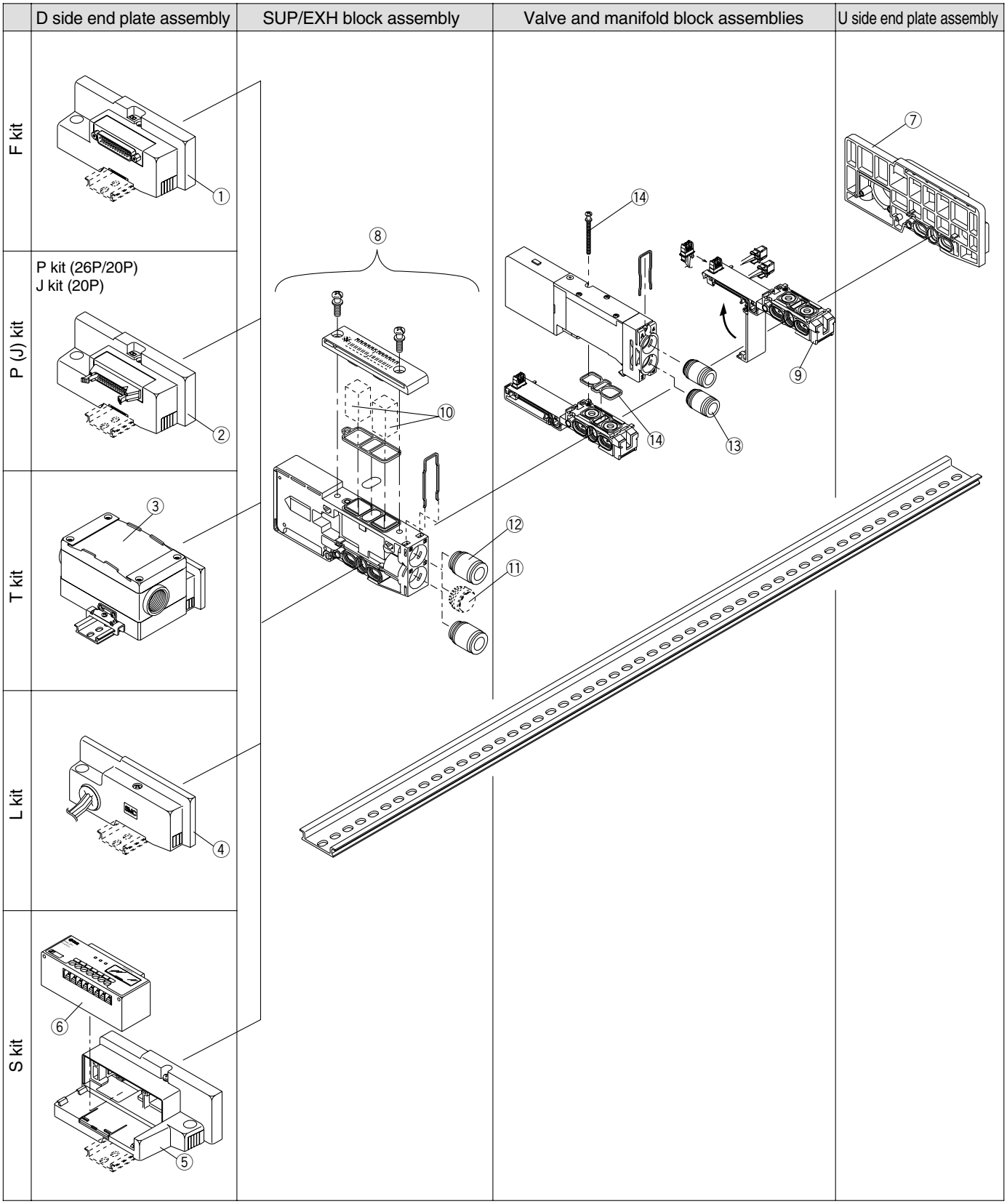
<⑬ Gasket and screw assemblies>

SQ1000 – GS

Note) Part number for 10 pieces each of gaskets and screws.

Exploded View of Manifold/SQ2000 (Plug-in Type Manifold) SS5Q23

(F, P, J, T, L, S kit)



Manifold Spare Parts

Refer to pages 52 through 57 of "How to Add Manifold Stations" regarding the mounting of each spare part.

<①②③④⑤ D side end plate assemblies>

SSQ2000 – 3A – 3 □ – F0

Manifold mounting

Nil	DIN rail mount type
E	Direct mount type

Electrical entry

F0	F kit	①
P0	P kit (26P)	②
PC0	P kit (20P)	
J0	J kit (20P)	
T0	T kit	③
Nil	L kit	④
S0	S kit	⑤

<⑥ SI units>

Applicable manifold	Part no.	Description
SDF kit	EX140-SUW1	NKE Corporation: Uni-wire System compatible (16 outputs)
SDH kit	EX140-SUH1	NKE Corporation: Uni-wire H System compatible (16 outputs)
SDJ1 kit	EX140-SSL1	SUNX Corporation: S-LINK System compatible (16 outputs)
SDJ2 kit	EX140-SSL2	SUNX Corporation: S-LINK System compatible (8 outputs)
SDQ kit	EX140-SDN1	DeviceNet compatible (16 outputs)
SDR1 kit	EX140-SCS1	OMRON Corporation: CompoBus/S compatible (16 outputs)
SDR2 kit	EX140-SCS2	OMRON Corporation: CompoBus/S compatible (8 outputs)
SDV kit	EX140-SMJ1	Mitsubishi Electric Corporation: CC-LINK System compatible (16 outputs)

<⑦ U side end plate assemblies>

(For F, P, J, T, S kit)

SSQ2000 – 2A – 3 □ – 1

(For L kit)

SSQ2000 – 2A – 3 □ – 2

Manifold mounting

Nil	DIN rail mount type
E	Direct mount type

<⑧ SUP/EXH block assemblies>

SSQ2000 – PR – 3 – C8 – □

Bore size

C8	ø8 One-touch fitting
C10	ø10 One-touch fitting
N9	ø5/16" One-touch fitting
N11	ø3/8" One-touch fitting

Option

Nil	Centralized exhaust
R	For external pilot
S	For direct exhaust outlet with built-in silencer

Note) Enter "-RS" for both options.

<⑨ Manifold block assemblies>

SSQ2000 – 1A – 3 – F0 01 – □ ⑬ Includes gaskets.

Lead wire type

F0	Without lead wire
FS	F kit: D-sub connector kit Single wiring
FW	F kit: D-sub connector kit Double wiring
PS	P kit: Flat ribbon cable kit Single wiring
	J kit: PC Wiring System compatible Single wiring
PW	P kit: Flat ribbon cable kit Double wiring
	J kit: PC Wiring System compatible Double wiring
TS	T kit: Terminal block kit Single wiring
TW	T kit: Terminal block kit Double wiring
L0	L kit: Lead wire kit Lead wire length 0.6m
L1	L kit: Lead wire kit Lead wire length 1.5m
L2	L kit: Lead wire kit Lead wire length 3m
SS	S kit: Serial transmission kit Single wiring
SW	S kit: Serial transmission kit Double wiring

Option

Nil	None
B	Back pressure check valve
R	External pilot specification

Note) Enter "-BR" for both options.

Applicable stations

01	Station 1
⋮	⋮
16	Station 16

Note 1) No symbol required for "F0".

<⑩ Elements>

SSQ2000 – SE

Note) Part number for a 10 piece set of elements.
Refer to page 134 for replacement procedures.

<⑪ Port plugs>

VVQZ3000 – CP

<⑫ Fitting assemblies>

(For P, R port)

VVQ2000 – 51A – C8

Bore size

C8	ø8 One-touch fitting
C10	ø10 One-touch fitting
N9	ø5/16" One-touch fitting
N11	ø3/8" One-touch fitting

Note) Available in units of 10 pieces.

<⑬ Fitting assemblies>

(For cylinder port)

VVQ1000 – 51A – C4

Bore size

C4	ø4 One-touch fitting
C6	ø6 One-touch fitting
C8	ø8 One-touch fitting
N3	ø5/32" One-touch fitting
N7	ø1/4" One-touch fitting
N9	ø5/16" One-touch fitting
01	Rc 1/8 threads

Note) Available in units of 10 pieces.

<⑭ Gasket and screw assemblies>

SQ2000 – GS

Note) Part number for 10 pieces each of gaskets and screws.

Series SQ1000

Plug Lead Type

How to Order Manifolds

SS5Q14 — 08 FD2 — D □

Stations

01	1 station
⋮	⋮
24 Note)	24 stations

Note) The maximum number of stations depends on the type of electrical entries.

Option

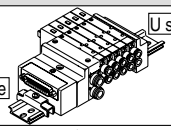
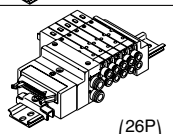
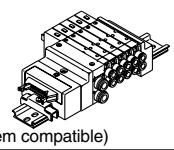
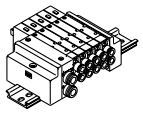
Nil	None
02 to 24	Specified DIN rail length Note 1)
B	With back pressure check valve
K	Special wiring specification (except double wiring) Note 2)
N	With labeling plate (side ported only)
R	External pilot specification
S	Built-in silencer/Direct exhaust outlet

Note 1) Specify DIN rail length with "D□" at the end. (Enter the number of stations inside □.) Example: -D08

Note 2) The standard wiring specification is for double wiring. Indicate a wiring specification for single wiring or mixed single and double wiring, or when exceeding the standard maximum number of stations. (Except C kit)

Note 3) For specifying two or more options, enter them in alphabetical order. Example: -BKN

Electrical entry

Kit description		Lead wire connector entry direction	Cable specification	Standard number of stations	Max. number of stations for special wiring specification	Note 2) Max. number of solenoids
F kit  D-sub connector kit	**FD0**	D side	D-sub connector (25P) kit, without cable	1 to 12 stations	24 stations	24
	FD1		D-sub connector (25P) kit, with 1.5m cable			
	FD2		D-sub connector (25P) kit, with 3.0m cable			
	FD3		D-sub connector (25P) kit, with 5.0m cable			
P kit  Flat ribbon cable connector kit (26P 20P)	**PD0**	Note 1) D side	Flat ribbon cable (26P) kit, without cable	1 to 12 stations	24 stations	24
	PD1		Flat ribbon cable (26P) kit, with 1.5m cable			
	PD2		Flat ribbon cable (26P) kit, with 3.0m cable			
	PD3		Flat ribbon cable (26P) kit, with 5.0m cable			
	PDC		Flat ribbon cable (20P) kit, without cable	1 to 9 stations	18 stations	18
J kit  Flat ribbon cable (20P) (PC Wiring System compatible)	**JD0**	D side	Flat ribbon cable (20P) PC Wiring System compatible	1 to 8 stations	16 stations	16
C kit  Connector kit	**C**	—	Connector kit	1 to 24 stations	—	—

Note 1) Separately order the 20P type cable assembly for the P kit.

Note 2) The maximum number of stations should not be more than the maximum number of solenoids. (The number of solenoids are counted as: 1 for single solenoids and 2 for type 3P and 4P double solenoids.

How to Order Valves

SQ1 [1] 4 [0] [ ] — [5] [L] [ ] — [C6] [ ] [ ]

Switching type

1	2 position single
2	2 position double (latching) — Metal seal / Rubber seal
2	2 position double (double solenoid) Note 1) — Metal seal / Rubber seal
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
Note 2) A	4 position dual 3 port valve — N.C. N.C.
Note 2) B	4 position dual 3 port valve — N.O. N.O.
Note 2) C	4 position dual 3 port valve — N.C. N.O.

Note 1) For double solenoid specification, the function symbol below is "D".

Note 2) Only rubber seal types are applicable.

Seal type

0	Metal seal
1	Rubber seal

Function

Nil	Standard type (1.0W DC)
D	2 position double (double solenoid specification)
K Note 1)	High voltage type (1.0MPa, 1.0W DC) [only metal seal applicable]
N	Negative COM
Y Note 1)	Low power consumption type (0.5W DC)
R Note 2)	External pilot specification

Note 1) Except double (latching) type.

Note 2) Except dual 3 port valves.

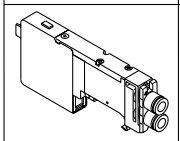
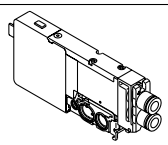
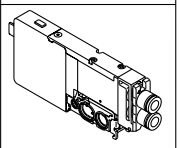
Note 3) For specifying two or more functions, enter symbols in alphabetical order.

Coil voltage

5	24VDC
6	12VDC

Note) Indicator light/surge voltage suppressor is built-in.

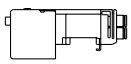
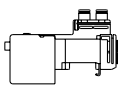
Manifold block specification

Nil	M	MB
Without manifold block	With manifold block	Manifold block with built-in back pressure check valve
	 ∗ Lead wire is not included.	 ∗ Lead wire is not included.
• When ordering with manifolds • When only valves are required.	For adding stations	

Port plug mounting port

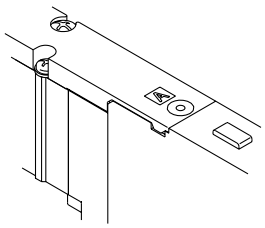
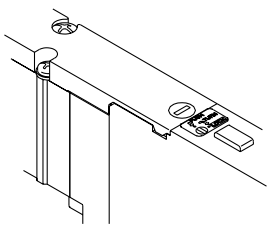
Nil	None
A	A port
B	B port

Cylinder port size

C3	ø3.2 One-touch fitting	Side ported	
C4	ø4 One-touch fitting		
C6	ø6 One-touch fitting		
M5	M5 threads		
L3	ø3.2 One-touch fitting	Note) Top ported	
L4	ø4 One-touch fitting		
L6	ø6 One-touch fitting		
L5	M5 threads		

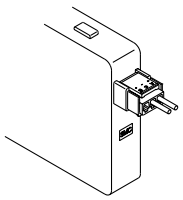
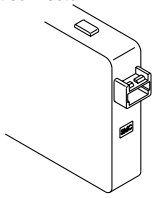
Note) Can be changed to side ported configuration.

Manual override

Nil	B Note)
Non-locking push type (tool required)	Locking type (tool required)
	

Note) Except double (latching) type.

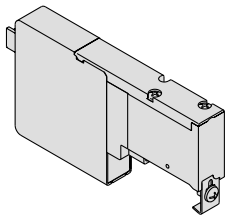
Electrical entry

L	LO
Plug connector type With 300mm lead wire	Plug connector type Without connector
	
	Note) For F, P, J kit manifolds

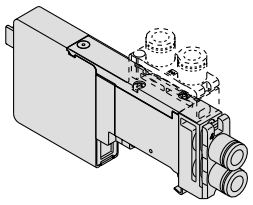
Note) Indicate "LO" when ordering centralized wiring type manifolds, F, P, and J kits, since the lead wire will be attached to the manifold side.

Manifold Options

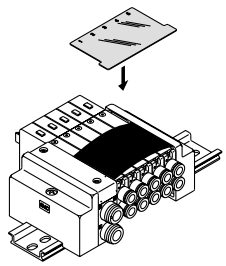
Blanking plate P. 93
SSQ1000-10A-4



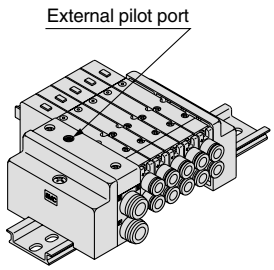
Individual SUP/EXH spacer P. 94
SSQ1000-PR1-4-$^{C6}_{L6}$



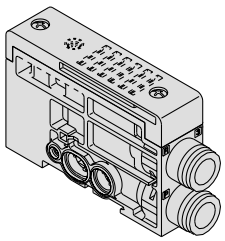
Labeling plate (-N) P. 96
SSQ1000-N3-n



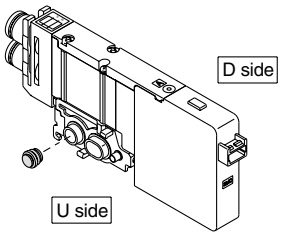
External pilot specification (-R) P. 97



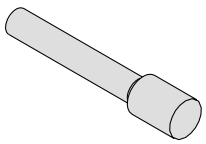
SUP/EXH block P. 93
SSQ1000-PR-4-C8(-S)



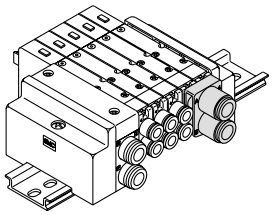
SUP block plate P. 95
SSQ1000-B-P



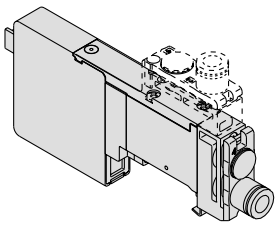
Blanking plug P. 96
KQ2P-23/04/06/08



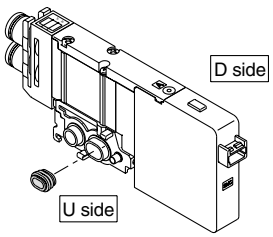
Dual flow fitting P. 97
SSQ1000-52A-$^{C8}_{N9}$



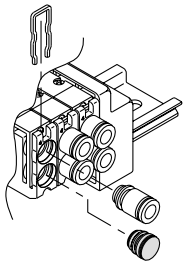
Individual SUP spacer P. 93
SSQ1000-P-4-$^{C6}_{L6}$



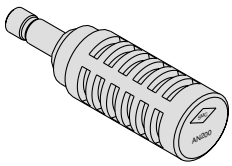
EXH block plate P. 95
SSQ1000-B-R



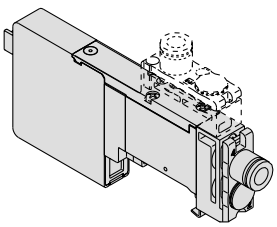
Port plug P. 96
VVQZ100-CP



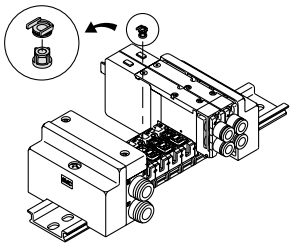
Silencer (for EXH port) P. 97



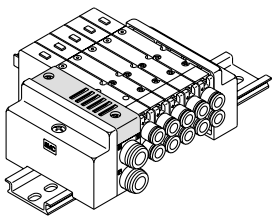
Individual EXH spacer P. 94
SSQ1000-R-4-$^{C6}_{L6}$



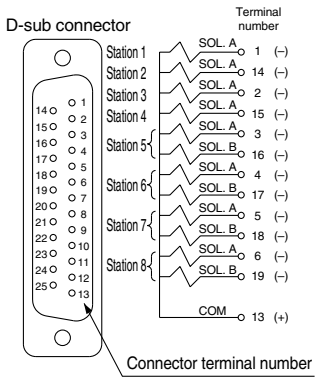
Back pressure check valve (-B) P. 95
SSQ1000-BP



Built-in silencer (-S) P. 96



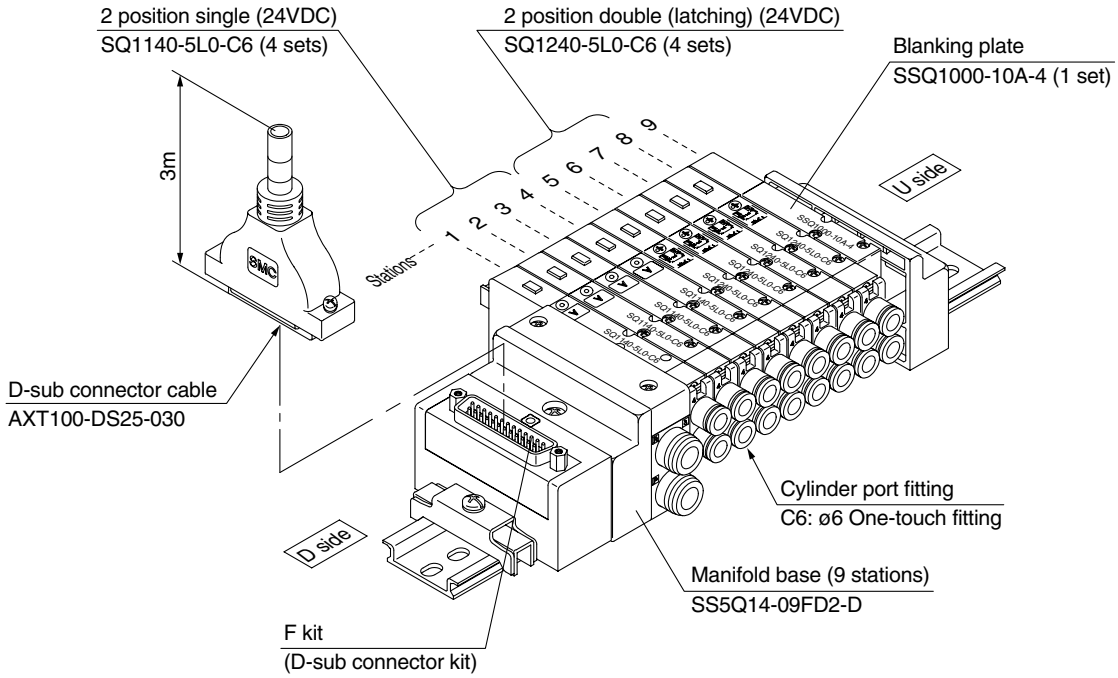
Special wiring specification (-K) P. 103



Although the standard products come with double wiring, mixed single and double wiring is available upon request.

How to Order Manifold Assemblies

Example: D-sub connector kit, with cable (3m)



SS5Q14-09FD2-D ..... 1 set: F kit 9 station manifold base
∗ **SQ1140-5L0-C6** ..... 4 sets: 2 position single
∗ **SQ1240-5L0-C6** ..... 4 sets: 2 position double (latching)
∗ **SSQ1000-10A-4** ..... 1 set: Blanking plate

To order valves and options mounted onto the manifold at the factory, list the valve/option with an asterisk (∗) in front of each part number.

Add the valve and option part numbers in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate on a manifold specification sheet.

Valve Specifications

Models

Series		Number of solenoids	Model		Note 1) Effective area mm² (Cv factor)	Response time ms Note 2)		Weight (g)
						Standard: 1W	Low wattage	
SQ1000	2 position	Single	Metal seal	SQ1140	3.2 (0.18)	12 or less	15 or less	80
			Rubber seal	SQ1141	4.5 (0.25)	15 or less	20 or less	80
		Double (latching)	Metal seal	SQ1240	3.2 (0.18)	15 or less	—	80
			Rubber seal	SQ1241	4.5 (0.25)	20 or less	—	80
		Double (double solenoid)	Metal seal	SQ1240D	3.2 (0.18)	10 or less	13 or less	95
			Rubber seal	SQ1241D	4.5 (0.25)	15 or less	20 or less	95
	3 position	Closed center	Metal seal	SQ1340	2.9 (0.16)	20 or less	26 or less	100
			Rubber seal	SQ1341	3.2 (0.18)	25 or less	33 or less	100
		Exhaust center	Metal seal	SQ1440	3.2 (0.18)	20 or less	26 or less	100
			Rubber seal	SQ1441	4.5 (0.25)	25 or less	33 or less	100
		Pressure center	Metal seal	SQ1540	2.9 (0.16)	20 or less	26 or less	100
			Rubber seal	SQ1541	3.2 (0.18)	25 or less	33 or less	100
	4 position	Dual 3 port valve	Rubber seal	SQ1$^{A}_{B}_{C}$41	3.2 (0.18)	25 or less	33 or less	95

Note 1) Values for the cylinder port size of C6.

Note 2) Based on JISB8375-1981. (Values with a supply pressure of 0.5MPa and indicator light/surge voltage suppressor. Values fluctuate depending on the pressure and air quality.)

Specifications

Valve specifications	Valve construction		Metal seal	Rubber seal
	Fluid		Air/Inert gas	
	Maximum operating pressure		0.7MPa (High pressure type: 1.0MPa) Note 3)	
	Minimum operating pressure	Single	0.1MPa	0.15MPa
		Double (latching)	0.18MPa	0.18MPa
		Double (double solenoid)	0.1MPa	0.1MPa
		3 position	0.1MPa	0.2MPa
		4 position	—	0.15MPa
	Ambient and fluid temperature		–10 to 50°C Note 1)	
	Lubrication		Not required	
	Pilot valve manual override		Push type/Locking type (tool required)	
	Vibration/Impact resistance Note 2)		30/150 m/s²	
	Enclosure		Dust proof	
Solenoid specifications	Rated coil voltage		12VDC, 24VDC	
	Allowable voltage fluctuation		±10% of rated voltage	
	Coil insulation type		Equivalent to class B	
	Power consumption (Current)	24VDC	1W DC (42mA), 0.5W DC (21mA) Note 4)	
		12VDC	1W DC (83mA), 0.5W DC (42mA) Note 4)	

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

Note 2) Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000Hz. Test was performed in the axial and right angle directions of the main valve and armature for both energized and de-energized states.

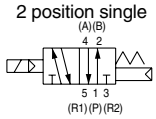
Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed one time each in the axial and right angle directions of the main valve and armature, for both energized and de-energized states.

Note 3) Metal seal type only. [Except double (latching) type.]

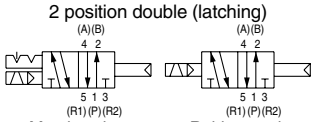
Note 4) Values for the low wattage (0.5W) specification.

JIS symbols

2 position single

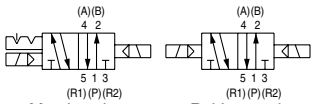


2 position double (latching)



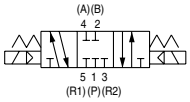
Metal seal Rubber seal

2 position double (double solenoid)

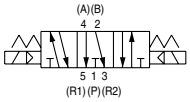


Metal seal Rubber seal

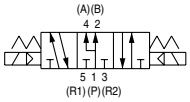
3 position closed center



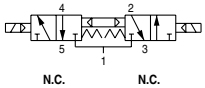
3 position exhaust center



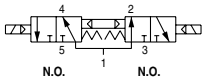
3 position pressure center



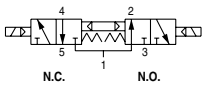
4 position dual 3 port valve (A)



4 position dual 3 port valve (B)



4 position dual 3 port valve (c)



Manifold Specifications

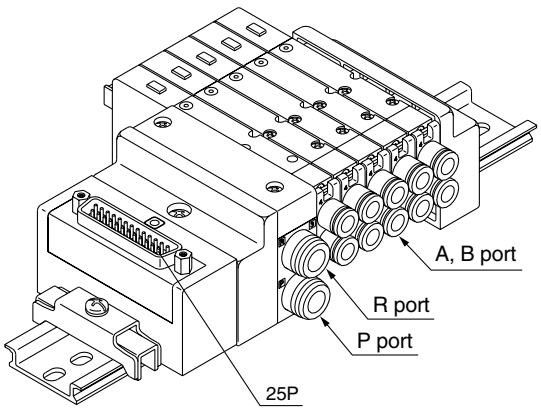
Base model	Configuration			Applicable solenoid valves	Connection type		Note 3) Applicable stations	Note 4) 5 station weight (g)	Note 4) Additional weight for 1 station (g)
	Port size Note 1)								
	P, R	A, B							
		Port direction	Port size						
SS5Q14-□□-□	C8 (for ø8) Option (Direct outlet with built-in silencer)	Side	C3 (for ø3.2) C4 (for ø4) C6 (for ø6) M5 (M5 threads)	SQ1□40 SQ1□41	F kit: D-sub connector		1 to 12 stations	420	20
					P kit: Flat ribbon cable	26P	1 to 12 stations	420	20
						20P	1 to 9 stations		
		Note 2) Top	L3 (for ø3.2) L4 (for ø4) L6 (for ø6) L5 (M5 threads)		J kit: Flat ribbon cable PC Wiring System compatible		1 to 8 stations	420	20
					C kit: Connector kit		1 to 12 stations	460	35

Note 1) One-touch fittings in inch sizes are also available. Refer to page 105 for details.

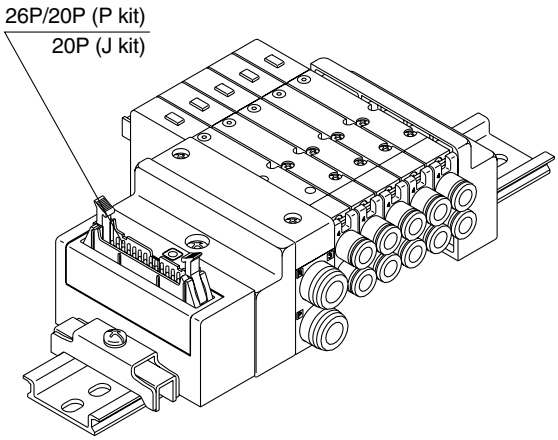
Note 2) Can be changed to side ported configuration.

Note 3) An optional specification for special wiring is available to increase the maximum number of stations. Refer to page 103 for details.

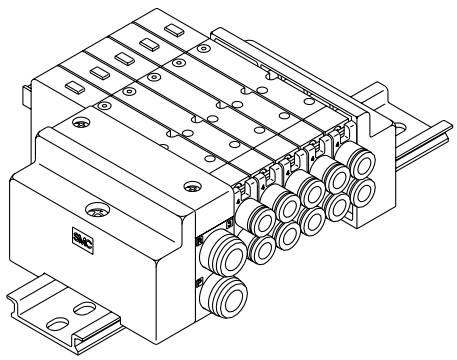
Note 4) Except valves. Refer to page 69 for valve weights.



F kit

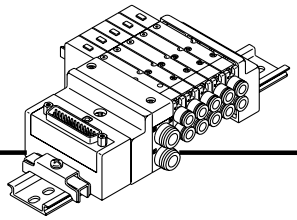


P kit **J kit**



C kit

F Kit (D-sub Connector)

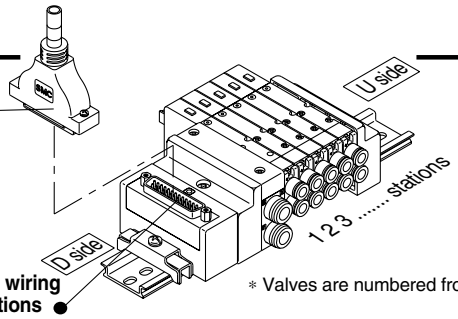


- Simplification and labor savings for wiring work can be achieved by using a D-sub connector for the electrical connection.
- The use of D-sub connectors (25P) conforming to MIL standards provides a wide range of compatibility with conventional connectors.
- Top or side entry for the connector can be changed freely, allowing later changes according to the mounting space.

Manifold specifications

Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ1000	Side, Top	C8	C3, C4, C6, M5	12 stations (24 stations optional)

D-sub connector (25P)



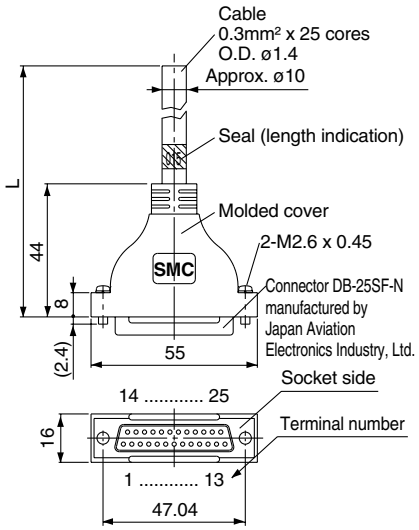
∗ Valves are numbered from the D side.

Cable assembly ●

Electrical wiring specifications ●

AXT100-DS25- 015 / 030 / 050

(D-sub connector cable assemblies can be ordered with manifolds. Refer to manifold ordering.)



Lead wire colors for D-sub connector cable assembly terminal numbers

Terminal no.	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black
16	Blue	White
17	Purple	None
18	Gray	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	None

D-sub connector cable assemblies (optional)

Cable length (L)	Part no.	Note
1.5m	AXT100-DS25-015	Cable 0.3mm² x 25 cores
3m	AXT100-DS25-030	
5m	AXT100-DS25-050	

∗ When using a conventional connector, use a type 25P female connector conforming to MIL-C-24308.

∗ Cannot be used for transfer wiring.

Electrical characteristics

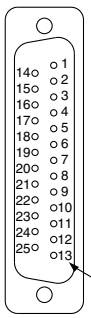
Item	Characteristic
Conductor resistance Ω/km, 20°C	65 or less
Withstand pressure V, 1 minute, AC	1000
Insulation resistance MΩ/km, 20°C	5 or less

Note) The minimum bending radius for D-sub connector cables is 20mm.

Connector manufacturer examples

- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Hirose Electric Company

D-sub connector

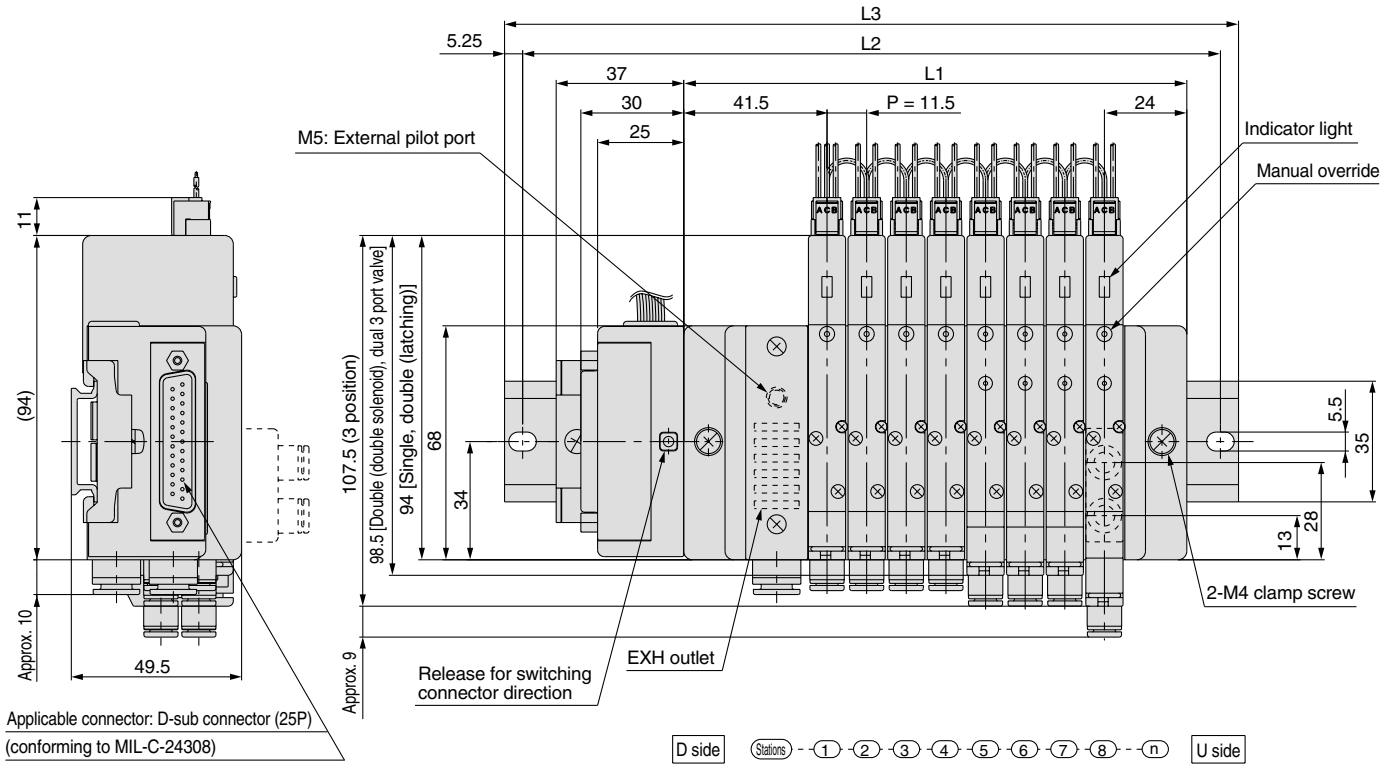


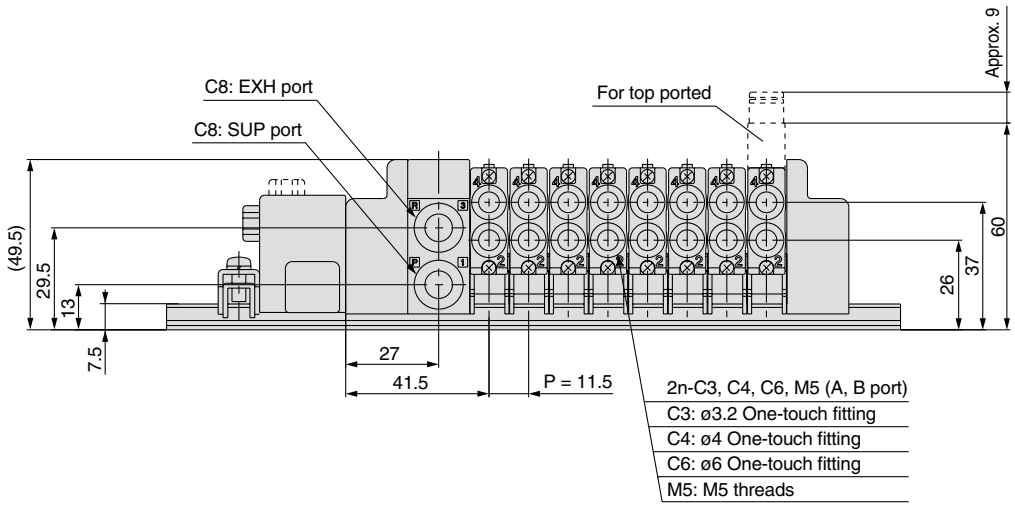
As the standard electrical wiring specification for 12 stations or less, double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
Mixed single and double wiring is available as an option.
Refer to page 103 for details.

Lead wire colors for D-sub connector assemblies
AXT100-DS25- 015 / 030 / 050

		Terminal no.	Polarity (–)	Polarity (+)	Lead wire color	Dot marking
Station 1	SOL. A	1	(–)	(+)	Black	None
	SOL. B	14	(–)	(+)	Yellow	Black
Station 2	SOL. A	2	(–)	(+)	Brown	None
	SOL. B	15	(–)	(+)	Pink	Black
Station 3	SOL. A	3	(–)	(+)	Red	None
	SOL. B	16	(–)	(+)	Blue	White
Station 4	SOL. A	4	(–)	(+)	Orange	None
	SOL. B	17	(–)	(+)	Purple	None
Station 5	SOL. A	5	(–)	(+)	Yellow	None
	SOL. B	18	(–)	(+)	Gray	None
Station 6	SOL. A	6	(–)	(+)	Pink	None
	SOL. B	19	(–)	(+)	Orange	Black
Station 7	SOL. A	7	(–)	(+)	Blue	None
	SOL. B	20	(–)	(+)	Red	White
Station 8	SOL. A	8	(–)	(+)	Purple	White
	SOL. B	21	(–)	(+)	Brown	White
Station 9	SOL. A	9	(–)	(+)	Gray	Black
	SOL. B	22	(–)	(+)	Pink	Red
Station 10	SOL. A	10	(–)	(+)	White	Black
	SOL. B	23	(–)	(+)	Gray	Red
Station 11	SOL. A	11	(–)	(+)	White	Red
	SOL. B	24	(–)	(+)	Black	White
Station 12	SOL. A	12	(–)	(+)	Yellow	Red
	SOL. B	25	(–)	(+)	White	None
	COM	13	(+)	(–) Note)	Orange	Red
			Positive COM spec.	Negative COM spec.		

Note) When using the negative COM specification, use valves for negative COM.



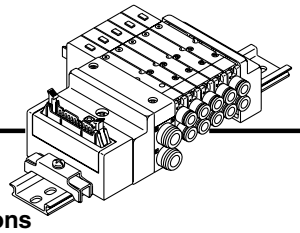


Dimensions

Formula: L1 = 11.5n + 54 n: Stations (maximum 24 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	65.5	77	88.5	100	111.5	123	134.5	146	157.5	169	180.5	192	203.5	215	226.5	238	249.5	261	272.5	284	295.5	307	318.5	330
L2	125	137.5	150	162.5	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300	312.5	325	337.5	350	362.5	375	375	387.5
L3	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5	385.5	398

P Kit (Flat Ribbon Cable Kit)

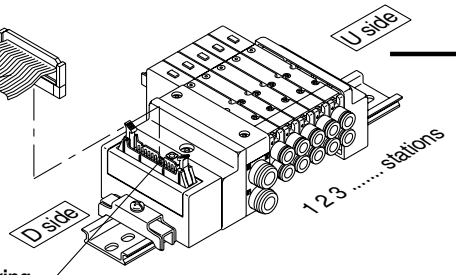


- Simplification and labor savings for wiring work can be achieved by using a MIL type for the electrical connection.
- The use of flat ribbon cable connectors (26P, 20P) conforming to MIL standards provides a wide range of compatibility with conventional connectors.
- Top or side entry for the connector can be changed freely, allowing later changes according to the mounting space.

Manifold specifications

Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ1000	Side, Top	C8	C3, C4, C6, M5	12 stations (24 stations optional)

Flat ribbon cable (26P, 20P)

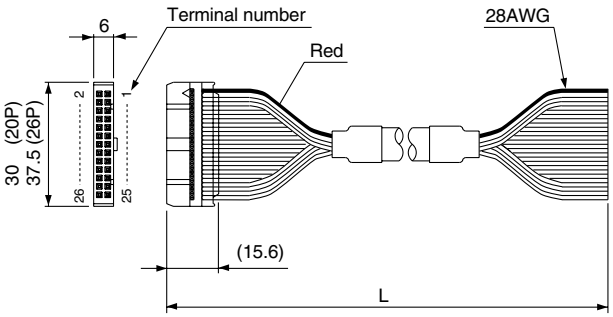


∗ Valves are numbered from the D side.

Cable assembly

AXT100-FC- $\frac{20}{26}$ **-** $\frac{1}{2}$ $\frac{}{3}$

Type 26P flat ribbon cable connector assemblies can be ordered with manifolds. Refer to manifold ordering.



Flat ribbon cable connector assemblies (optional)

Cable length (L)	Part no.	
	26P	20P
1.5m	AXT100-FC26-1	AXT100-FC20-1
3m	AXT100-FC26-2	AXT100-FC20-2
5m	AXT100-FC26-3	AXT100-FC20-3

∗ When using a conventional connector, use a type 26P connector conforming to MIL-C-83503 or a type 20P with strain relief.

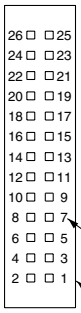
∗ Cannot be used for transfer wiring.

Connector manufacturer examples

- Hirose Electric Company
- Sumitomo/3-M Limited
- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co. Ltd.

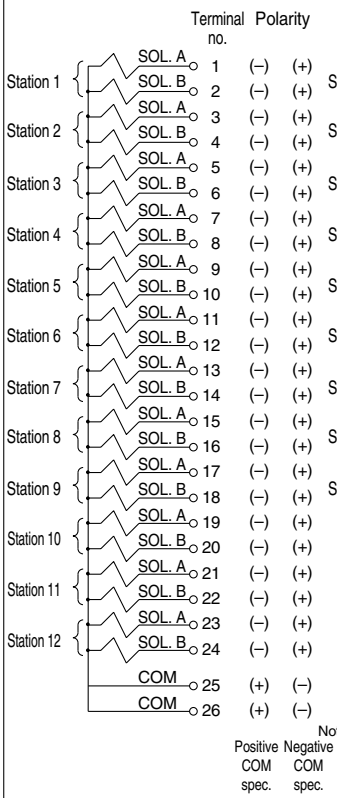
Electrical wiring specifications

Flat ribbon cable connector

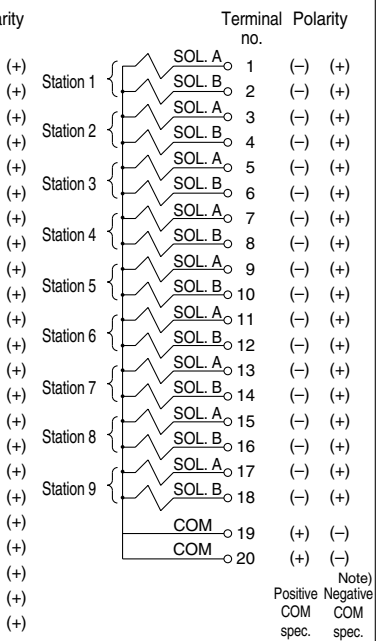


As the standard electrical wiring specification for 12 stations or less, double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
Mixed single and double wiring is available as an option.
Refer to page 103 for details.

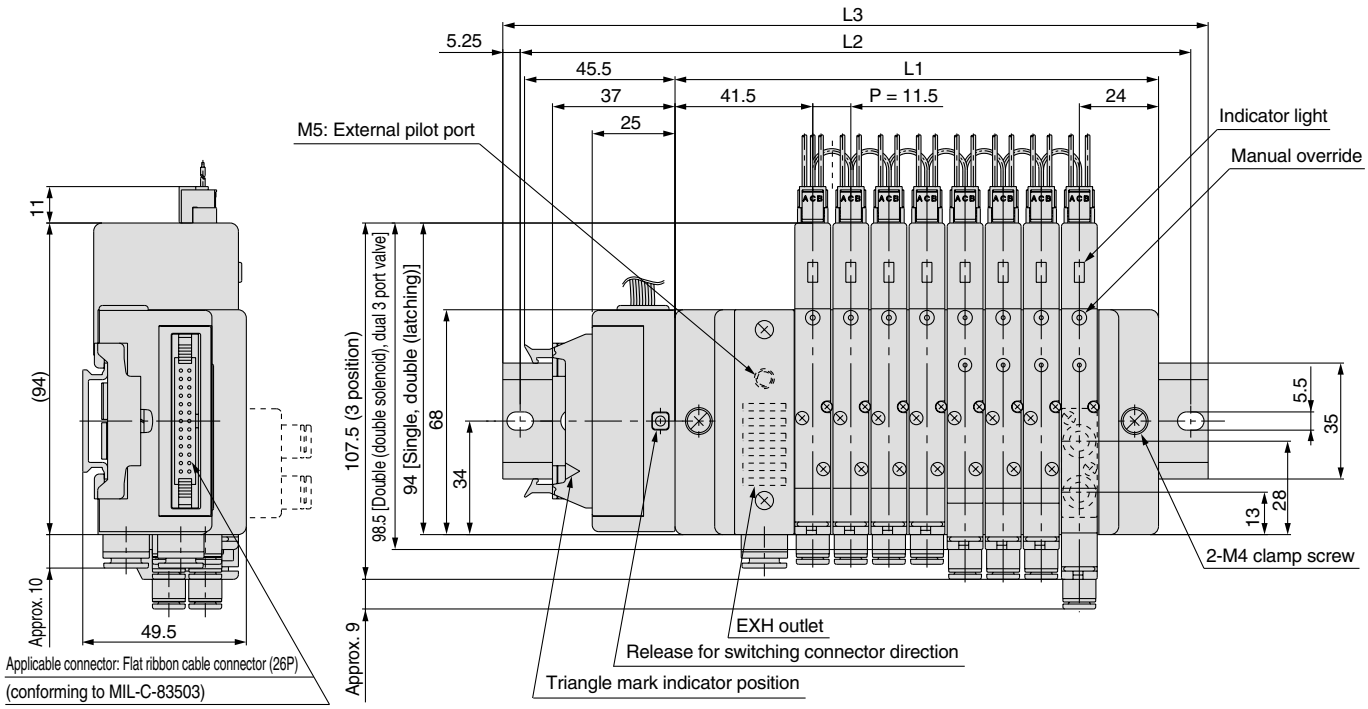
<26P>

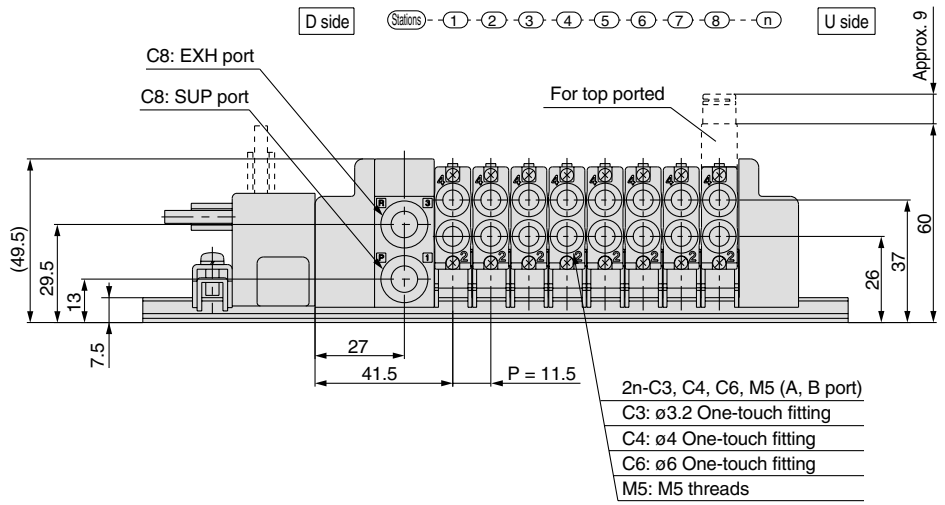


<20P>



Note) When using the negative COM specification, use valves for negative COM.



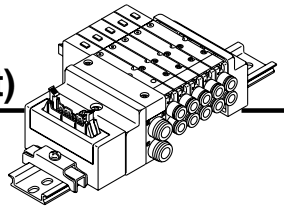


Dimensions

Formula: L1 = 11.5n + 54 n: Stations (maximum 24 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	65.5	77	88.5	100	111.5	123	134.5	146	157.5	169	180.5	192	203.5	215	226.5	238	249.5	261	272.5	284	295.5	307	318.5	330
L2	125	137.5	150	162.5	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300	312.5	325	337.5	350	362.5	375	375	387.5
L3	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5	385.5	398

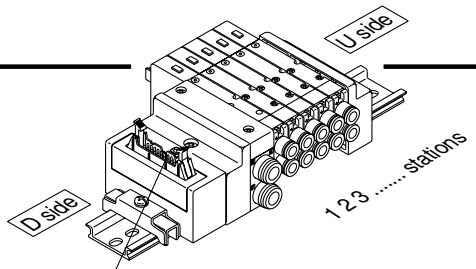
J Kit (PC Wiring System Compatible Flat Ribbon Cable Kit)



- Compatible with the PC Wiring System.
- The use of flat ribbon cable connectors (20P) conforming to MIL standards provides a wide range of compatibility with conventional connectors.
- Top or side entry for the connector can be changed freely, allowing later changes according to the mounting space.

Manifold specifications

Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ1000	Side, Top	C8	C3, C4, C6, M5	8 stations (16 stations optional)

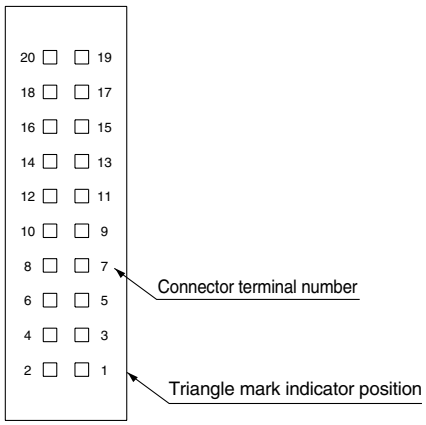


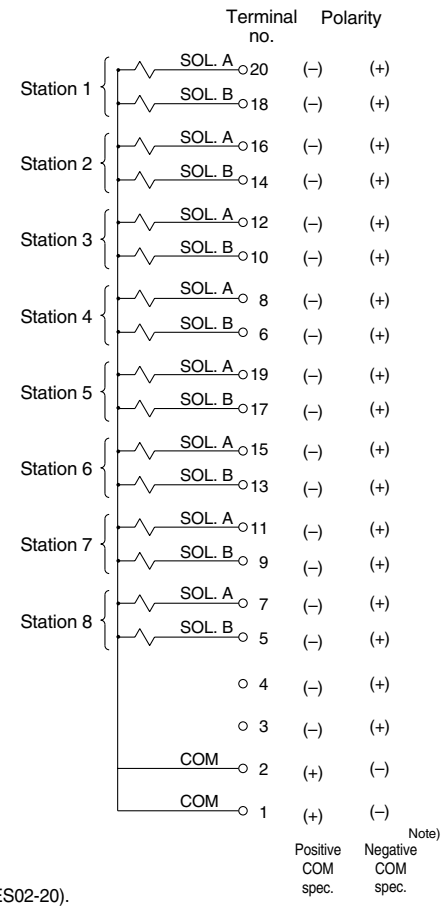
Electrical wiring specifications

∗ Valves are numbered from the D side.

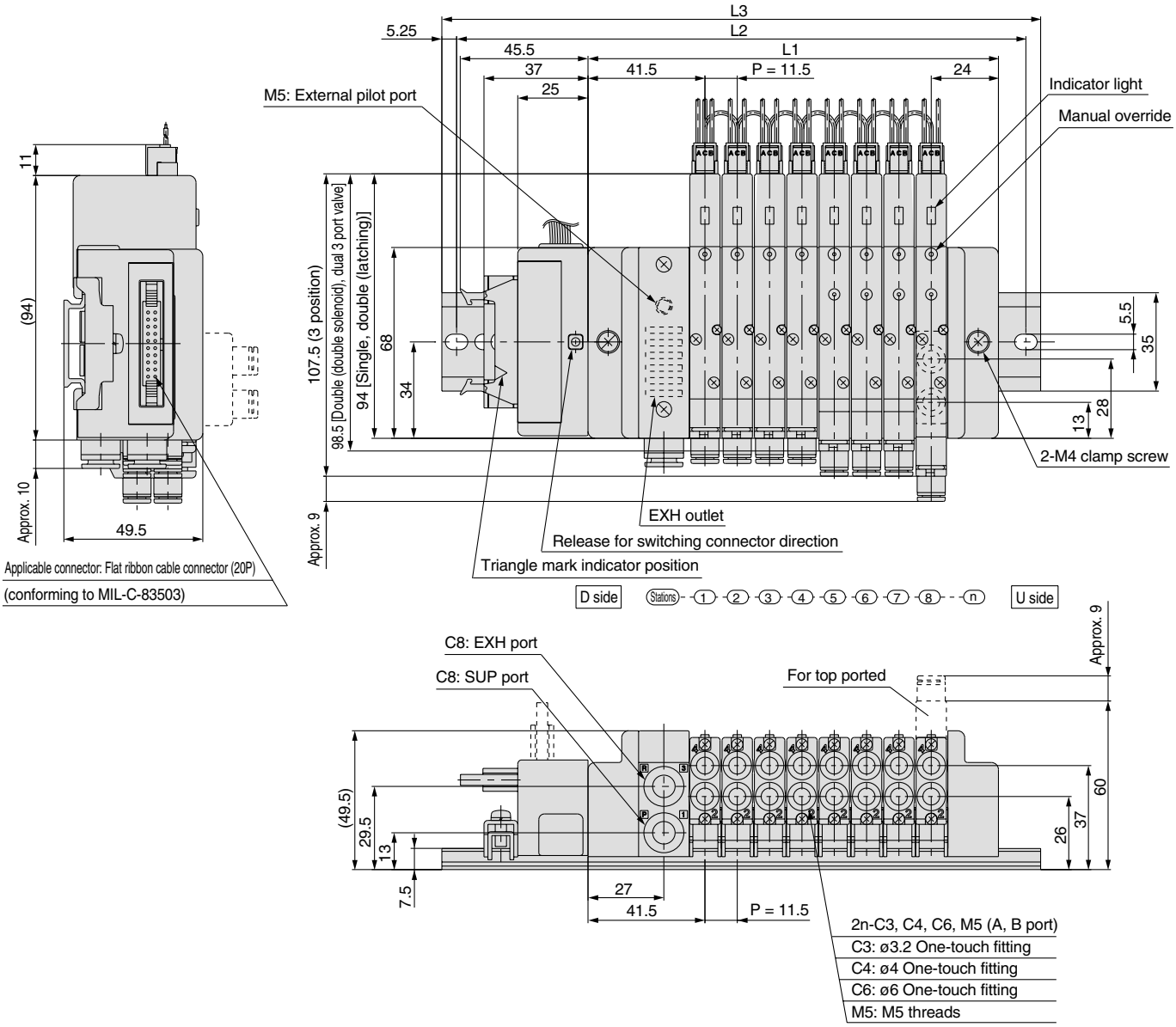
Double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
Mixed single and double wiring is available as an option.
Refer to page 109 for details.

Flat ribbon cable connector





Note) When using the negative COM specification, use valves for negative COM.
For details on the PC Wiring System, refer to catalog "PC Wiring System" (CAT. ES02-20).

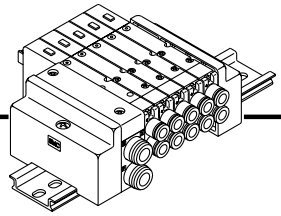


Dimensions

Formula: L1 = 11.5n + 54 n: Stations (maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	65.5	77	88.5	100	111.5	123	134.5	146	157.5	169	180.5	192	203.5	215	226.5	238
L2	125	137.5	150	162.5	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300
L3	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5

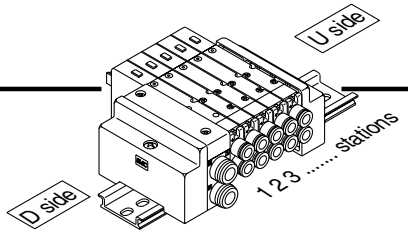
C Kit (Connector Kit)



• This is the standard type with lead wires for each valve.

Manifold specifications

Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ1000	Side, Top	C8	C3, C4, C6, M5	24 stations

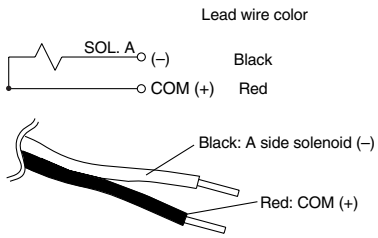


∗ Valves are numbered from the D side.

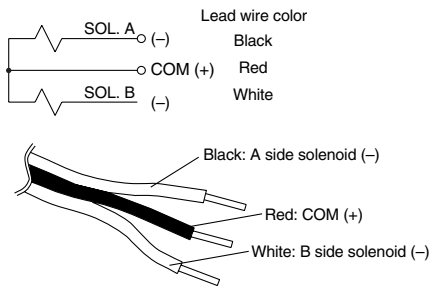
• Wiring Specifications/Positive COM Specifications

Since lead wires are connected to the valves as shown below, connect each wire to the power supply.

Single Solenoid Type



Double Solenoid Type



• Lead wire length of plug connectors
The lead wire length of the valves with lead wire is 300mm. When ordering a lead wire length of 600mm or longer, list the part numbers for the valve without connector and the connector assembly.
Example) For lead wire length of 1000mm:
SQ1140-5LO-C6 ..... 3 pcs.
AXT661-14AL-10 ..... 3 pcs.

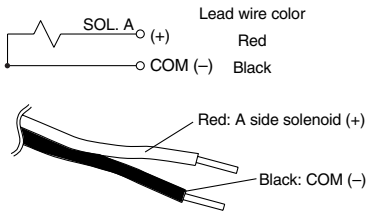
Connector assembly part nos.

Lead wire length	Single solenoid	Double solenoid
Socket only (3 pcs.)	AXT661-12AL	
300mm	AXT661-14AL	AXT661-13AL
600mm	AXT661-14AL-6	AXT661-13AL-6
1000mm	AXT661-14AL-10	AXT661-13AL-10
2000mm	AXT661-14AL-20	AXT661-13AL-20
3000mm	AXT661-14AL-30	AXT661-13AL-30

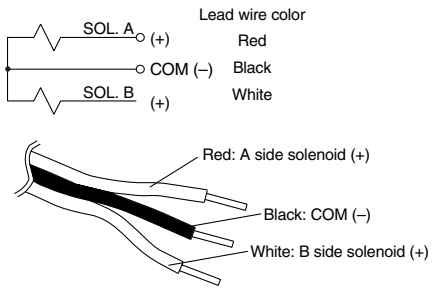
• Wiring Specifications/Negative COM Specifications (optional)

Since lead wires are connected to the valves as shown below, connect each wire to the power supply.

Single Solenoid Type



Double Solenoid Type

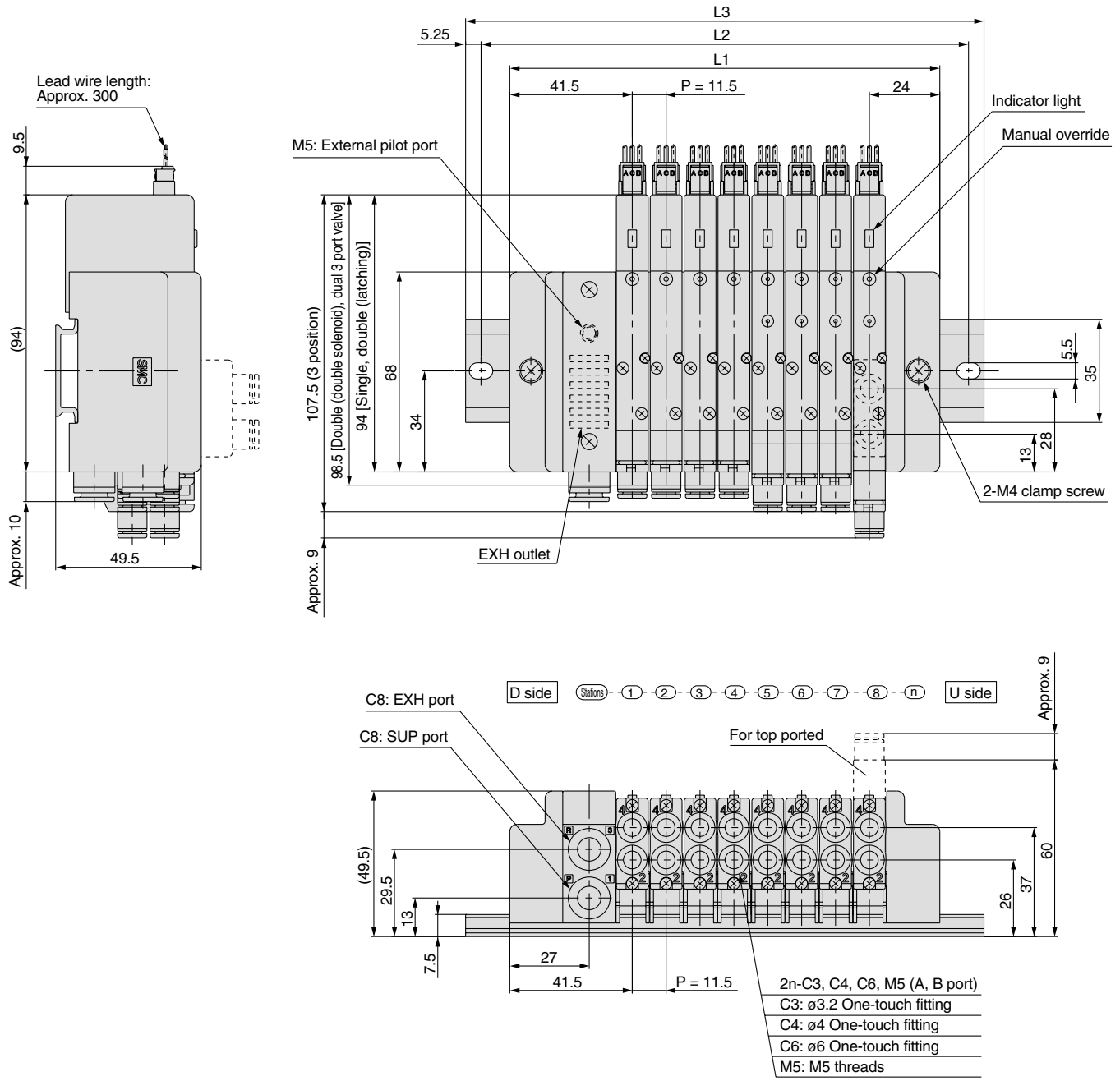


• Lead wire length of plug connectors
The lead wire length of the valves with lead wire is 300mm. When ordering a lead wire length of 600mm or longer, list the part numbers for the valve without connector and the connector assembly.
Example) For lead wire length of 1000mm:
SQ1140-5LO-C6 ..... 3 pcs.
AXT661-14ANL-10 ..... 3 pcs.

Connector assembly part nos.

Lead wire length	Single solenoid	Double solenoid
Socket only (3 pcs.)	AXT661-12AL	
300mm	AXT661-14ANL	AXT661-13ANL
600mm	AXT661-14ANL-6	AXT661-13ANL-6
1000mm	AXT661-14ANL-10	AXT661-13ANL-10
2000mm	AXT661-14ANL-20	AXT661-13ANL-20
3000mm	AXT661-14ANL-30	AXT661-13ANL-30

Note) When using the negative COM specification, use valves for negative COM.



Dimensions

Formula: L1 = 11.5n + 54 n: Stations (maximum 24 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	65.5	77	88.5	100	111.5	123	134.5	146	157.5	169	180.5	192	203.5	215	226.5	238	249.5	261	272.5	284	295.5	307	318.5	330
L2	87.5	100	112.5	125	137.5	150	162.5	175	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	312.5	325	337.5	350	350
L3	98	110.5	123	135.5	148	160.5	173	185.5	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	323	335.5	348	360.5	360.5

Series SQ2000

Plug Lead Type

How to Order Manifolds

SS5Q24 — 08 | FD2 — D | ☐

Stations

01	1 station
⋮	⋮
16 Note)	16 stations

Note) The maximum number of stations depends on the type of electrical entries.

Option

Nil	None
02 to 24	Specified DIN rail length Note 1)
B	With back pressure check valve
K	Special wiring specification (except double wiring) Note 2)
N	With labeling plate (side ported only)
R	External pilot specification
S	Built-in silencer/Direct exhaust outlet

Note 1) Specify DIN rail length with "D☐" at the end. (Enter the number of stations inside ☐.) Example: -D08

Note 2) The standard wiring specification is for double wiring. Indicate a wiring specification for single wiring or mixed single and double wiring, or when exceeding the standard maximum number of stations. (Except C kit)

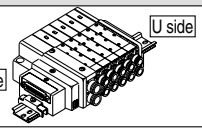
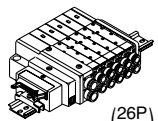
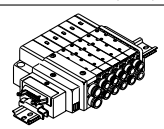
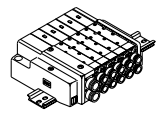
Note 3) For specifying two or more options, enter them in alphabetical order. Example: -BKN

Manifold mounting

D	DIN rail mount type
E Note)	Direct mount type

Note) E type is only available with a C kit. E type is mounted using two holes in each end plate and a DIN rail that is shorter than the manifold length.

Electrical entry

Kit description		Lead wire connector entry direction	Cable specification	Standard number of stations	Max. number of stations for special wiring specification	Note 2) Max. number of solenoids
F kit D-sub connector kit 	**FD0**	D side	D-sub connector (25P) kit, without cable	1 to 12 stations	16 stations	24
	FD1		D-sub connector (25P) kit, with 1.5m cable			
	FD2		D-sub connector (25P) kit, with 3.0m cable			
	FD3		D-sub connector (25P) kit, with 5.0m cable			
P kit Flat ribbon cable connector kit (26P, 20P) 	**PD0**	Note 1) D side	Flat ribbon cable (26P) kit, without cable	1 to 12 stations	16 stations	24
	PD1		Flat ribbon cable (26P) kit, with 1.5m cable			
	PD2		Flat ribbon cable (26P) kit, with 3.0m cable			
	PD3		Flat ribbon cable (26P) kit, with 5.0m cable			
	PDC		Flat ribbon cable (20P) kit, without cable	1 to 9 stations		18
J kit Flat ribbon cable (20P) (PC Wiring System compatible) 	**JD0**	D side	Flat ribbon cable (20P) PC Wiring System compatible	1 to 8 stations	16 stations	16
C kit Connector kit 	**C**	—	Connector kit	1 to 16 stations	—	—

Note 1) Separately order the 20P type cable assembly for the P kit.

Note 2) The maximum number of stations should not be more than the maximum number of solenoids. (The number of solenoids are counted as: 1 for single solenoids and 2 for type 3P and 4P double solenoids.

How to Order Valves

SQ2 [1] 4 [0] [ ] — [5] [L] [ ] — [C6] [ ] [ ]

Switching type

1	2 position single
2	2 position double (latching) — Metal seal / Rubber seal
	2 position double (double solenoid) Note 1) — Metal seal / Rubber seal
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
Note 2) A	4 position dual 3 port valve (N.C. / N.C.)
Note 2) B	4 position dual 3 port valve (N.O. / N.O.)
Note 2) C	4 position dual 3 port valve (N.C. / N.O.)

Note 1) For double solenoid specification, the function symbol below is "D".

Note 2) Only rubber seal types are applicable.

Seal type

0	Metal seal
1	Rubber seal

Function

Nil	Standard type (1.0W DC)
D	2 position double (double solenoid specification)
N	Negative COM
Y Note 1)	Low power consumption type (0.5W DC)
R Note 2)	External pilot specification

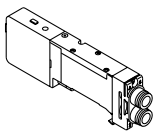
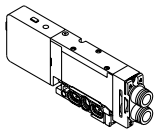
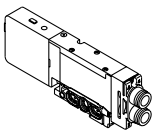
Note 1) Except double (latching) type.
Note 2) Except dual 3 port valves.
Note 3) For specifying two or more functions, enter symbols in alphabetical order.

Coil voltage

5	24VDC
6	12VDC

Note) Indicator light/surge voltage suppressor is built-in.

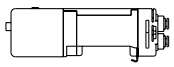
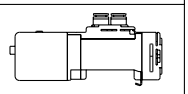
Manifold block specification

Nil	M	MB
Without manifold block	With manifold block	Manifold block with built-in back pressure check valve
	 ∗ Lead wire is not included.	 ∗ Lead wire is not included.
• When ordering with manifolds • When only valves are required.	For adding stations	

Port plug mounting port

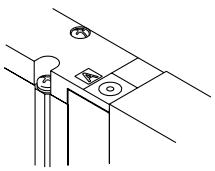
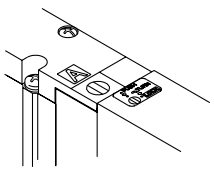
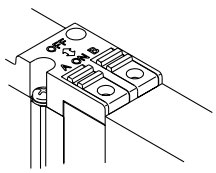
Nil	None
A	A port
B	B port

Cylinder port size

C4	ø4 One-touch fitting	Side ported	
C6	ø6 One-touch fitting		
C8	ø8 One-touch fitting		
L4	ø4 One-touch fitting	Note) Top ported	
L6	ø6 One-touch fitting		
L8	ø8 One-touch fitting		

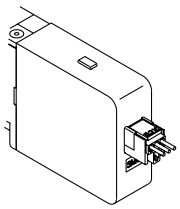
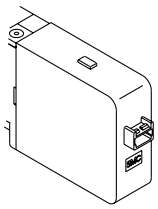
Note) Can be changed to side ported configuration.

Manual override

Nil	B Note)	D Note)
Non-locking push type (tool required)	Locking type (tool required)	Slide locking type (manual type) ∗ Only side ported type applicable
		

Note) Except double (latching) type.

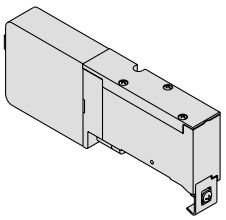
Electrical entry

L	LO
Plug connector type With 300mm lead wire	Plug connector type Without connector
	 Note) For F, P, J kit manifolds

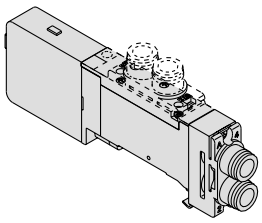
Note) Indicate "LO" when ordering centralized wiring type manifolds, F, P, and J kits, since the lead wire will be attached to the manifold side.

Manifold Options

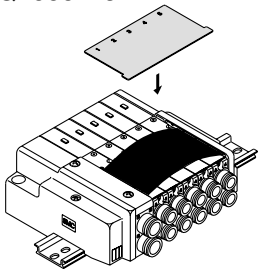
Blanking plate P. 98
SSQ2000-10A-4



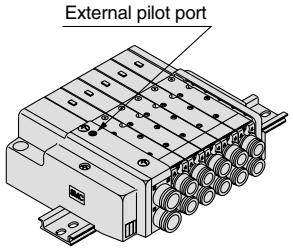
Individual SUP/EXH spacer P. 99
SSQ2000-PR1-4- $^{C8}_{L8}$



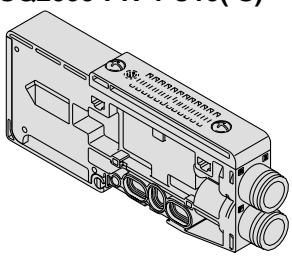
Labeling plate (-N) P. 101
SSQ2000-N3-n



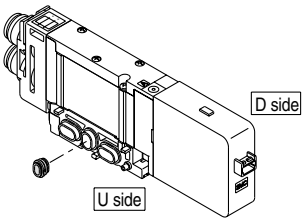
External pilot specification (-R) P. 102



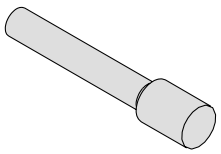
SUP/EXH block P. 98
SSQ2000-PR-4-C10(-S)



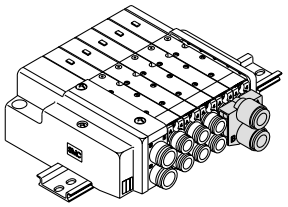
SUP block plate P. 100
SSQ1000-B-R



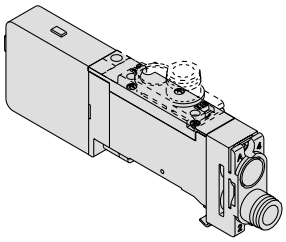
Blanking plug P. 101
KQ2P-04/06/08/10



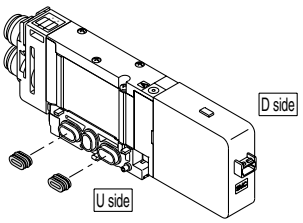
Dual flow fitting P. 102
SSQ2000-52A- $^{C10}_{N11}$



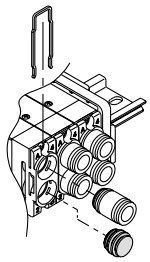
Individual SUP spacer P. 98
SSQ2000-P-4- $^{C8}_{L8}$



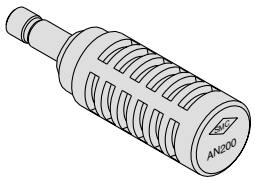
EXH block plate P. 100
SSQ2000-B-R



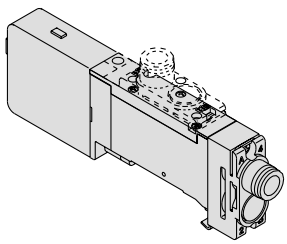
Port plug P. 101
VVQZ2000-CP



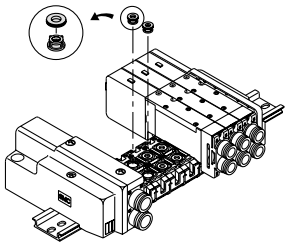
Silencer (for EXH port) P. 102



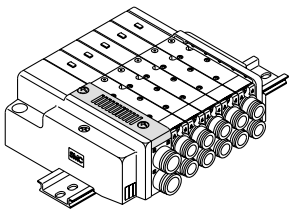
Individual EXH spacer P. 99
SSQ2000-R-4- $^{C8}_{L8}$



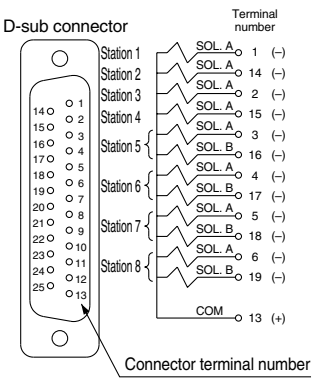
Back pressure check valve (-B) P. 100
SSQ2000-BP



Built-in silencer (-S) P. 101



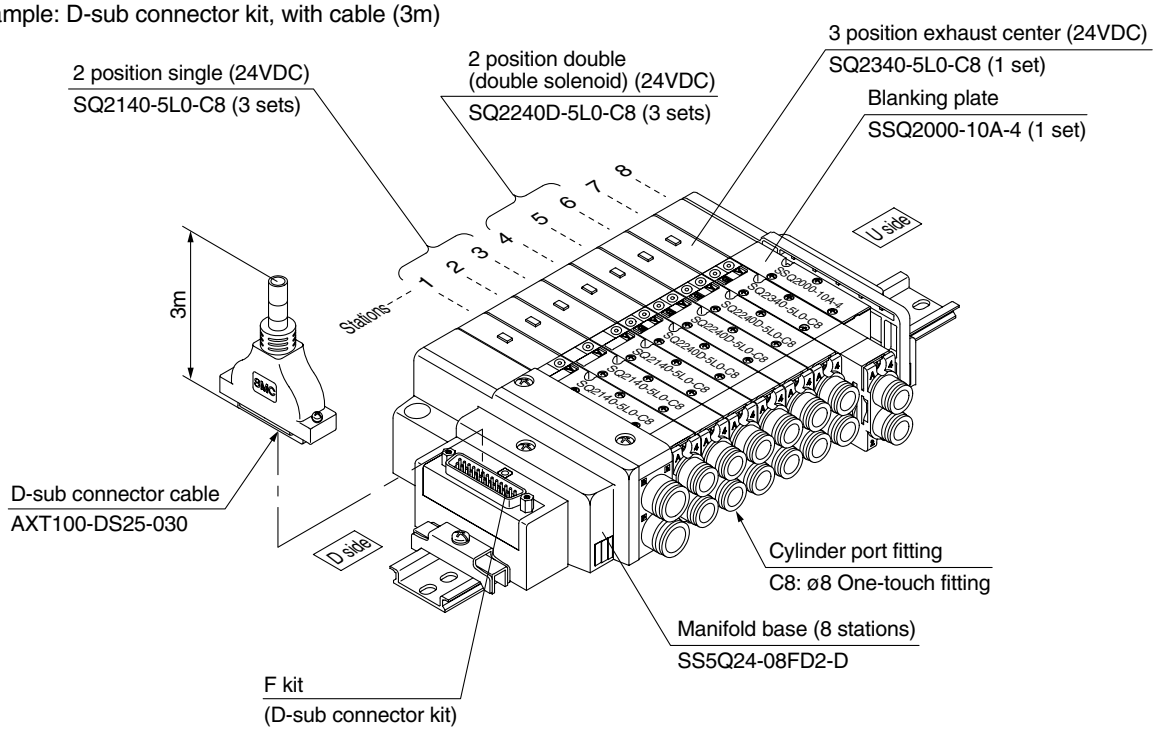
Special wiring specification (-K) P. 103



Although the standard products come with double wiring, mixed single and double wiring is available upon request.

How to Order Manifold Assemblies

Example: D-sub connector kit, with cable (3m)



SS5Q24-08FD2-D ..... 1 set: F kit 8 station manifold base
∗ **SQ2140-5L0-C8** ..... 3 sets: 2 position single
∗ **SQ2240D-5L0-C8** ..... 3 sets: 2 position double (double solenoid)
∗ **SQ2340-5L0-C8** ..... 1 set: 3 position exhaust center
∗ **SSQ2000-10A-4** .....1 set: Blanking plate

To order valves and options mounted onto the manifold at the factory, list the valve/option with an asterisk (∗) in front of each part number.

Add the valve and option part numbers in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate on a manifold specification sheet.

Valve Specifications

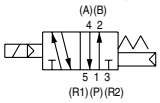
Models

Series		Number of solenoids	Model		Note 1) Effective area mm² (Cv factor)	Response time ms Note 2)		Weight (g)
						Standard: 1W	Low wattage	
SQ2000	2 position	Single	Metal seal	SQ2140	11.7 (0.65)	20 or less	26 or less	145
			Rubber seal	SQ2141	14.8 (0.82)	24 or less	31 or less	140
		Double (latching)	Metal seal	SQ2240	11.7 (0.65)	26 or less	—	145
			Rubber seal	SQ2241	14.8 (0.82)	31 or less	—	140
		Double (double solenoid)	Metal seal	SQ2240D	11.7 (0.65)	15 or less	20 or less	160
			Rubber seal	SQ2241D	14.8 (0.82)	20 or less	26 or less	155
	3 position	Closed center	Metal seal	SQ2340	8.1 (0.45)	34 or less	44 or less	180
			Rubber seal	SQ2341	9.0 (0.5)	34 or less	44 or less	175
		Exhaust center	Metal seal	SQ2440	11.7 (0.65)	34 or less	44 or less	180
			Rubber seal	SQ2441	12.6 (0.7)	34 or less	44 or less	175
		Pressure center	Metal seal	SQ2540	8.1 (0.45)	34 or less	44 or less	180
			Rubber seal	SQ2541	9.0 (0.5)	34 or less	44 or less	175
	4 position	Dual 3 port valve	Rubber seal	SQ2$^{A}_{B}_{C}$41	9.0 (0.5)	34 or less	44 or less	155

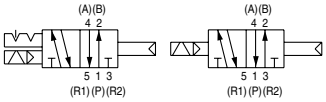
Note 1) Values for the top ported cylinder port size of C8. The side ported type will be about 10% less.
Note 2) Based on JISB8375-1981. (Values with a supply pressure of 0.5MPa and indicator light/surge voltage suppressor. Values fluctuate depending on the pressure and air quality.)

JIS symbols

2 position single

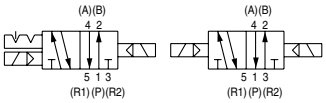


2 position double (latching)



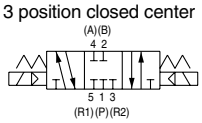
Metal seal Rubber seal

2 position double (double solenoid)

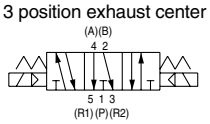


Metal seal Rubber seal

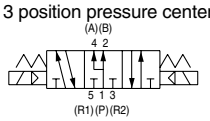
3 position closed center



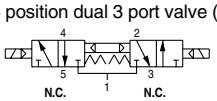
3 position exhaust center



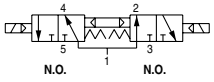
3 position pressure center



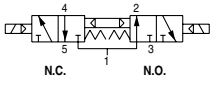
4 position dual 3 port valve (A)



4 position dual 3 port valve (B)



4 position dual 3 port valve (C)



Specifications

Valve specifications	Valve construction		**Metal seal**	**Rubber seal**
	Fluid		Air/Inert gas	
	Maximum operating pressure		0.7MPa	
	Minimum operating pressure	Single	0.1MPa	0.15MPa
		Double (latching)	0.18MPa	0.18MPa
		Double (double solenoid)	0.1MPa	0.1MPa
		3 position	0.1MPa	0.2MPa
		4 position	—	0.15MPa
	Ambient and fluid temperature		–10 to 50°C Note 1)	
	Lubrication		Not required	
	Pilot valve manual override		Push type (tool required)/Locking type (tool required)/Slide locking type	
	Vibration/Impact resistance Note 2)		30/150m/s²	
	Enclosure		Dust proof	
Solenoid specifications	Rated coil voltage		12V, 24VDC	
	Allowable voltage fluctuation		±10% of rated voltage	
	Coil insulation type		Equivalent to class B	
	Power consumption (Current)	24VDC	1W DC (42mA), 0.5W DC (21mA) Note 3)	
		12VDC	1W DC (83mA), 0.5W DC (42mA) Note 3)	

Note 1) Use dry air to prevent condensation at low temperatures.
Note 2) Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000Hz. Test was 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 from the 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.
Note 3) Values for the low wattage (0.5W) specification.

Manifold Specifications

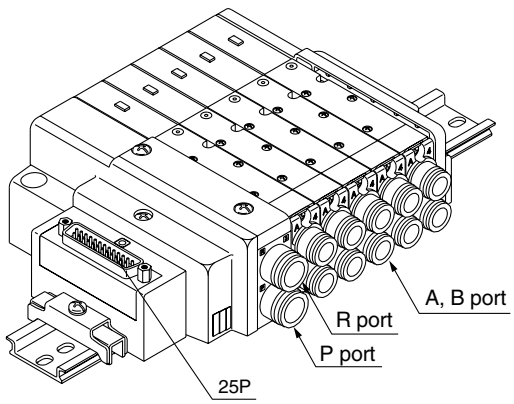
Base model	Configuration			Applicable solenoid valves	Connection type		Note 3) Applicable stations	Note 4) 5 station weight (g)	Note 4) Additional weight for 1 station (g)
	Port size Note 1)								
	P, R	A, B							
		Port direction	Port size						
SS5Q24-□□-□	C10 (for ø10) Option (Direct outlet with built-in silencer)	Side	C4 (for ø4) C6 (for ø6) C8 (for ø8)	SQ2□40 SQ2□41	F kit: D-sub connector		1 to 12 stations	580	35
					P kit: Flat ribbon cable	26P	1 to 12 stations	580	35
						20P	1 to 9 stations		
		Note 2) Top	L4 (for ø4) L6 (for ø6) L8 (for ø8)		J kit: Flat ribbon cable PC Wiring System compatible		1 to 8 stations	580	35
					C kit: Connector kit		1 to 12 stations	620	50

Note 1) One-touch fittings in inch sizes are also available. Refer to page 105 for details.

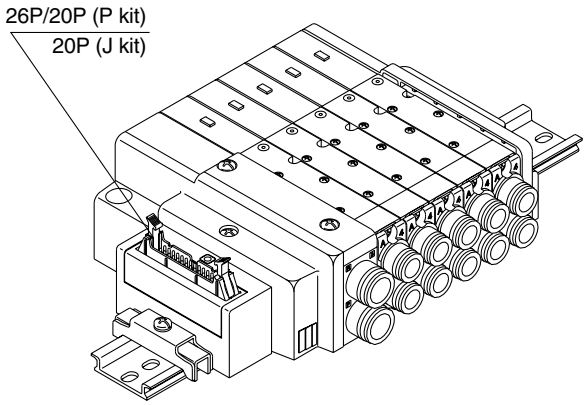
Note 2) Can be changed to side ported configuration.

Note 3) An optional specification for special wiring is available to increase the maximum number of stations. Refer to page 103 for details.

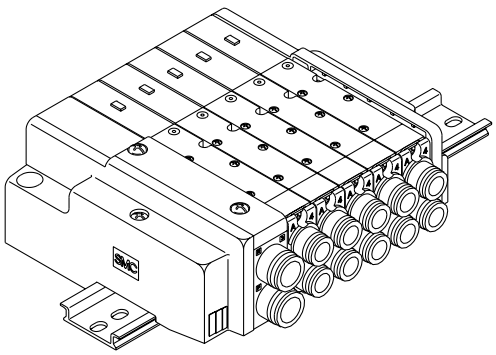
Note 4) Except valves. Refer to page 83 for valve weights.



F kit

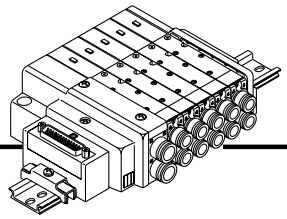


P kit **J kit**



C kit

F Kit (D-sub Connector)

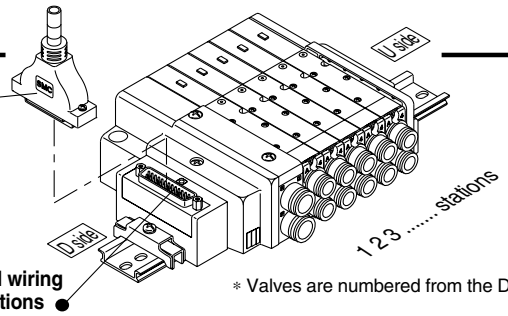


- Simplification and labor savings for wiring work can be achieved by using a D-sub connector for the electrical connection.
- The use of D-sub connectors (25P) conforming to MIL standards provides a wide range of compatibility with conventional connectors.
- Top or side entry for the connector can be changed freely, allowing later changes according to the mounting space.

Manifold specifications

Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ2000	Side, Top	C10	C4, C6, C8	12 stations (16 stations optional)

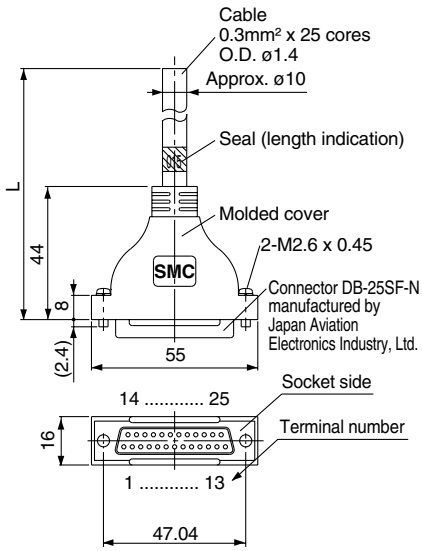
D-sub connector (25P)



∗ Valves are numbered from the D side.

AXT100-DS25- 015 / 030 / 050

(D-sub connector cable assemblies can be ordered with manifolds. Refer to manifold ordering.)



Lead wire colors for D-sub connector cable assembly terminal numbers

Terminal no.	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black
16	Blue	White
17	Purple	None
18	Gray	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	None

D-sub connector cable assemblies (optional)

Cable length (L)	Part no.	Note
1.5m	AXT100-DS25-015	Cable 0.3mm² x 25 cores
3m	AXT100-DS25-030	
5m	AXT100-DS25-050	

∗ When using a conventional connector, use a type 25P female connector conforming to MIL-C-24308.

∗ Cannot be used for transfer wiring.

Electrical characteristics

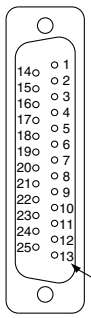
Item	Characteristic
Conductor resistance Ω/km, 20°C	65 or less
Withstand pressure V, 1 minute, AC	1000
Insulation resistance MΩ/km, 20°C	5 or less

Note) The minimum bending radius for D-sub connector cables is 20mm.

Connector manufacturer examples

- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Hirose Electric Company

D-sub connector



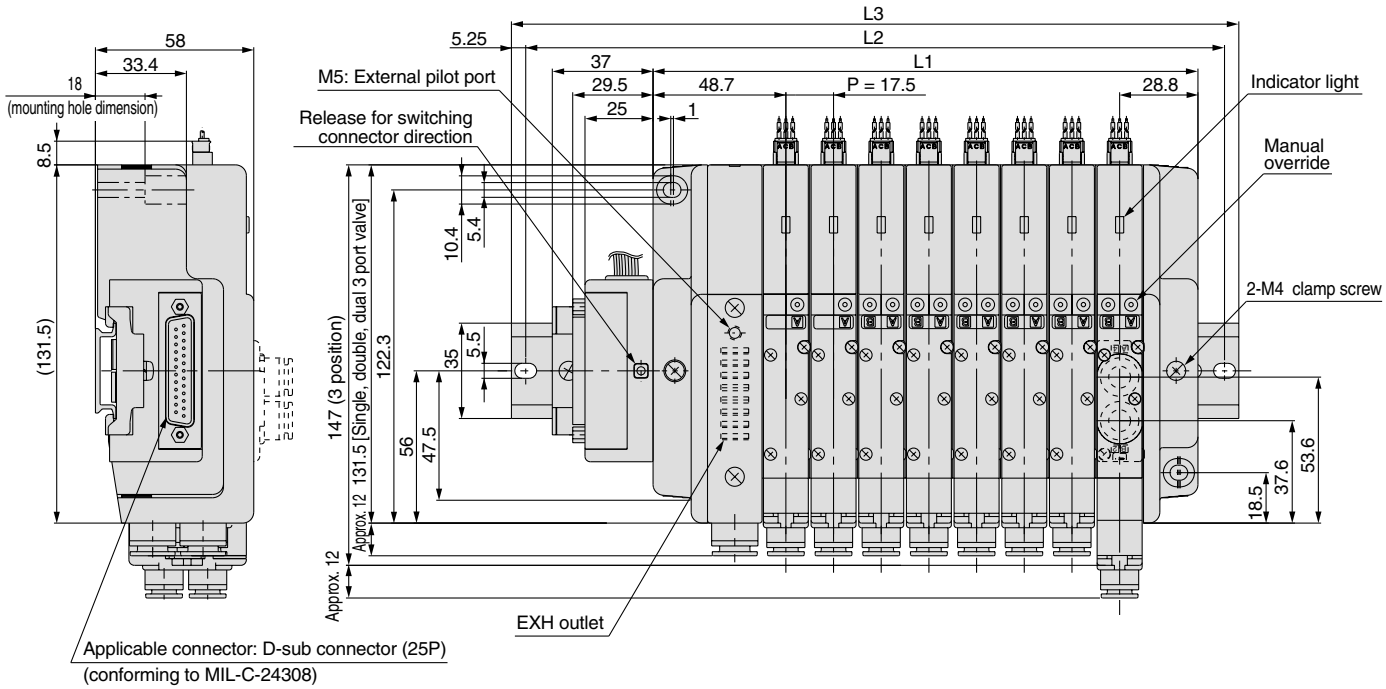
As the standard electrical wiring specification for 12 stations or less, double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
Mixed single and double wiring is available as an option.
Refer to page 109 for details.

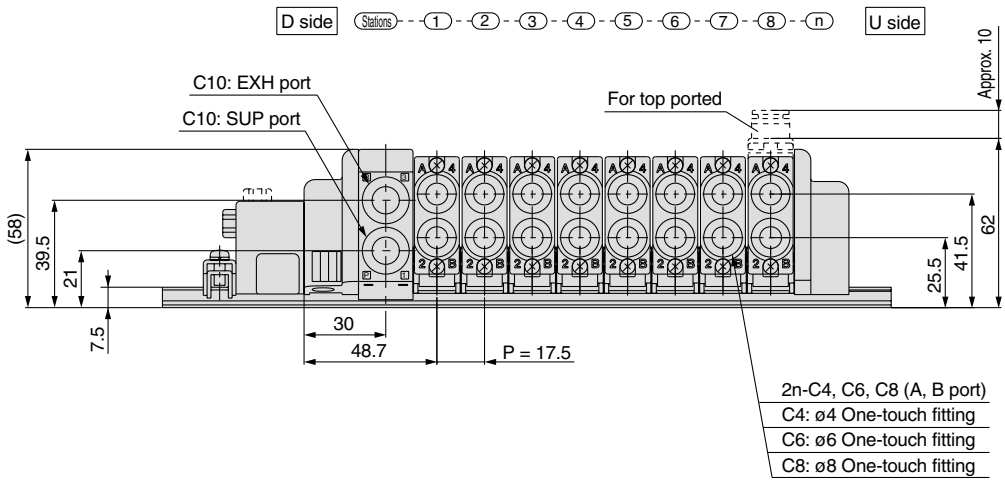
Lead wire colors for D-sub connector assemblies

AXT100-DS25- 015 / 030 / 050

		Terminal no.	Polarity		Lead wire color	Dot marking
Station 1	SOL. A	1	(–)	(+)	Black	None
	SOL. B	14	(–)	(+)	Yellow	Black
Station 2	SOL. A	2	(v)	(+)	Brown	None
	SOL. B	15	(–)	(+)	Pink	Black
Station 3	SOL. A	3	(–)	(+)	Red	None
	SOL. B	16	(–)	(+)	Blue	White
Station 4	SOL. A	4	(–)	(+)	Orange	None
	SOL. B	17	(–)	(+)	Purple	None
Station 5	SOL. A	5	(–)	(+)	Yellow	None
	SOL. B	18	(–)	(+)	Gray	None
Station 6	SOL. A	6	(–)	(+)	Pink	None
	SOL. B	19	(–)	(+)	Orange	Black
Station 7	SOL. A	7	(–)	(+)	Blue	None
	SOL. B	20	(–)	(+)	Red	White
Station 8	SOL. A	8	(–)	(+)	Purple	White
	SOL. B	21	(–)	(+)	Brown	White
Station 9	SOL. A	9	(–)	(+)	Gray	Black
	SOL. B	22	(–)	(+)	Pink	Red
Station 10	SOL. A	10	(–)	(+)	White	Black
	SOL. B	23	(–)	(+)	Gray	Red
Station 11	SOL. A	11	(–)	(+)	White	Red
	SOL. B	24	(–)	(+)	Black	White
Station 12	SOL. A	12	(–)	(+)	Yellow	Red
	SOL. B	25	(–)	(+)	White	None
COM		13	(+)	(–) Note)	Orange	Red
			Positive COM spec.	Negative COM spec.		

Note) When using the negative COM specification, use valves for negative COM.



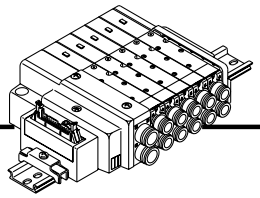


Dimensions

Formula: L1 = 17.5n + 60 n: Stations (maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	77.5	95	112.5	130	147.5	165	182.5	200	217.5	235	252.5	270	287.5	305	322.5	340
L2	137.5	162.5	175	187.5	212.5	225	250	262.5	275	300	312.5	337.5	350	362.5	387.5	400
L3	148	173	185.5	198	223	235.5	260.5	273	285.5	310.5	323	348	360.5	373	398	410.5

P Kit (Flat Ribbon Cable Kit)

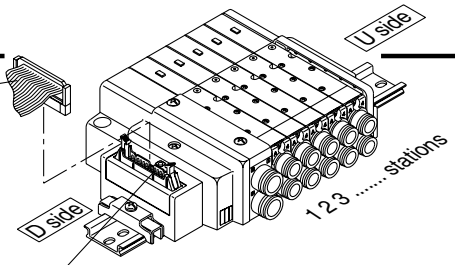


- Simplification and labor savings for wiring work can be achieved by using a MIL type for the electrical connection.
- The use of flat ribbon cable connectors (26P, 20P) conforming to MIL standards provides a wide range of compatibility with conventional connectors.
- Top or side entry for the connector can be changed freely, allowing later changes according to the mounting space.

Manifold specifications

Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ2000	Side, Top	C10	C4, C6, C8	12 stations (16 stations optional)

Flat ribbon cable (26P, 20P)

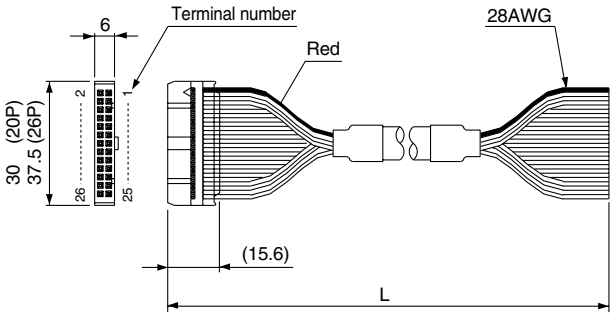


∗ Valves are numbered from the D side.

Cable assembly

AXT100-FC- $\begin{matrix}20\\26\end{matrix}$ **-** $\begin{matrix}1\\2\\3\end{matrix}$

Type 26P flat ribbon cable connector assemblies can be ordered with manifolds. Refer to manifold ordering.



Flat ribbon cable connector assemblies (optional)

Cable length (L)	Part no.	
	26P	20P
1.5m	AXT100-FC26-1	AXT100-FC20-1
3m	AXT100-FC26-2	AXT100-FC20-2
5m	AXT100-FC26-3	AXT100-FC20-3

∗ When using a conventional connector, use a type 26P connector conforming to MIL-C-83503 or a type 20P with strain relief.

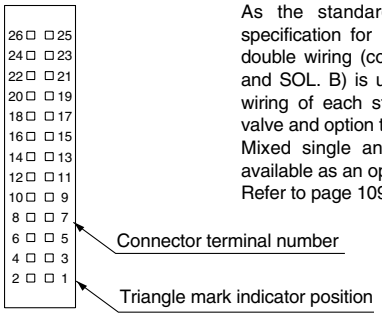
∗ Cannot be used for transfer wiring.

Connector manufacturer examples

- Hirose Electric Company
- Sumitomo/3-M Limited
- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co. Ltd.

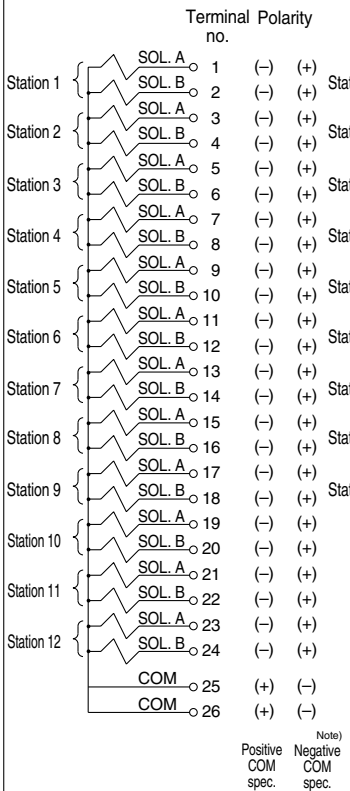
Electrical wiring specifications

Flat ribbon cable connector

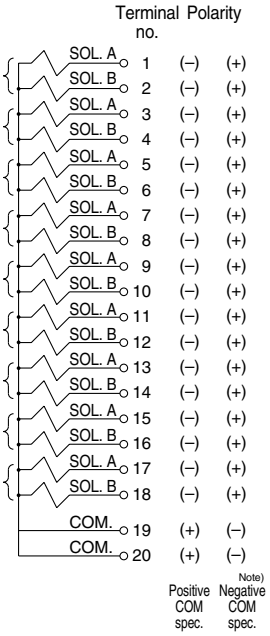


As the standard electrical wiring specification for 12 stations or less, double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
Mixed single and double wiring is available as an option.
Refer to page 109 for details.

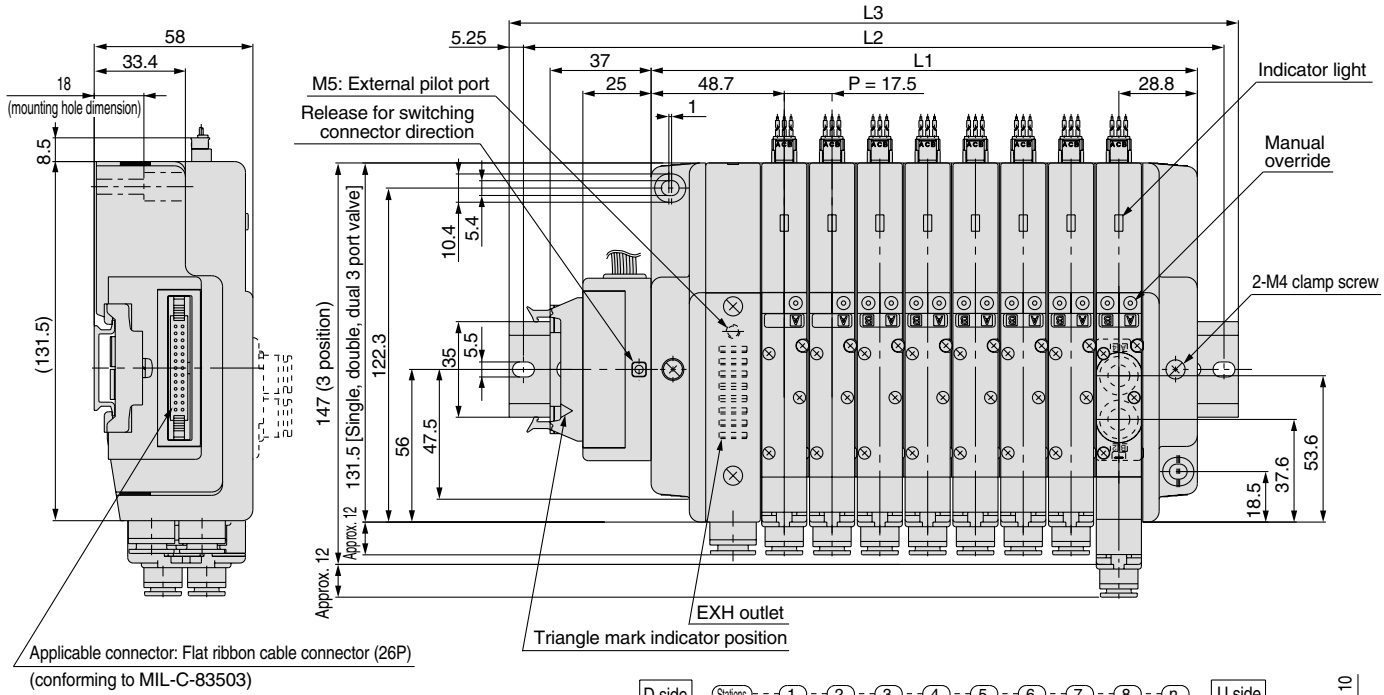
<26P>

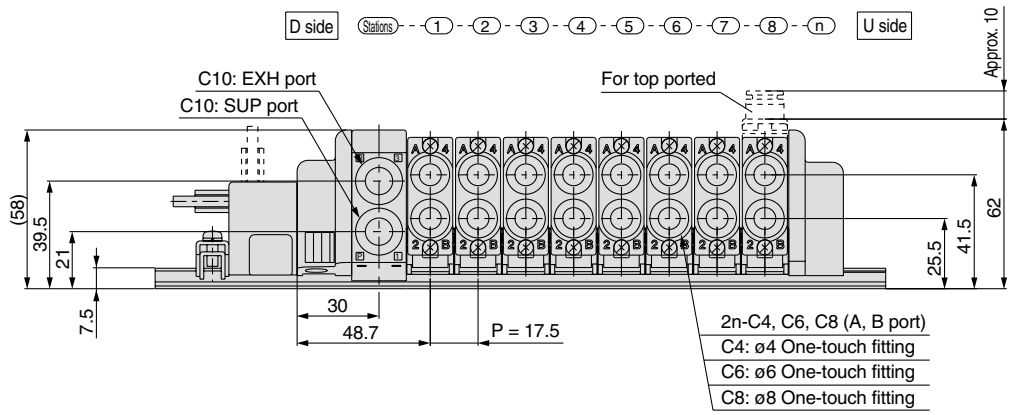


<20P>



Note) When using the negative COM specification, use valves for negative COM.



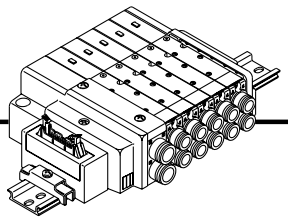


Dimensions

Formula: L1 = 17.5n + 60 n: Stations (maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	77.5	95	112.5	130	147.5	165	182.5	200	217.5	235	252.5	270	287.5	305	322.5	340
L2	137.5	162.5	175	187.5	212.5	225	250	262.5	275	300	312.5	337.5	350	362.5	387.5	400
L3	148	173	185.5	198	223	235.5	260.5	273	285.5	310.5	323	348	360.5	373	398	410.5

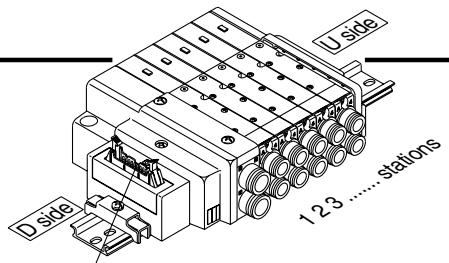
J Kit (PC Wiring System Compatible Flat Ribbon Cable Kit)



- Compatible with the PC Wiring System.
- The use of flat ribbon cable connectors (20P) conforming to MIL standards provides a wide range of compatibility with conventional connectors.
- Top or side entry for the connector can be changed freely, allowing later changes according to the mounting space.

Manifold specifications

Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ2000	Side, Top	C10	C4, C6, C8	8 stations (16 stations optional)

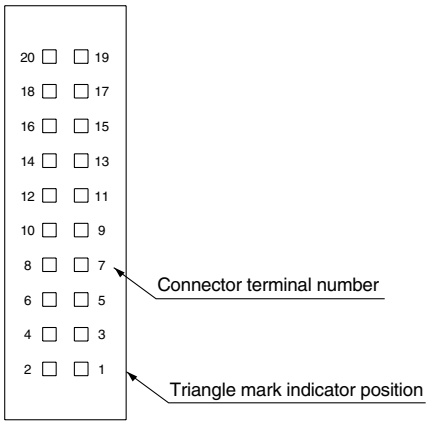


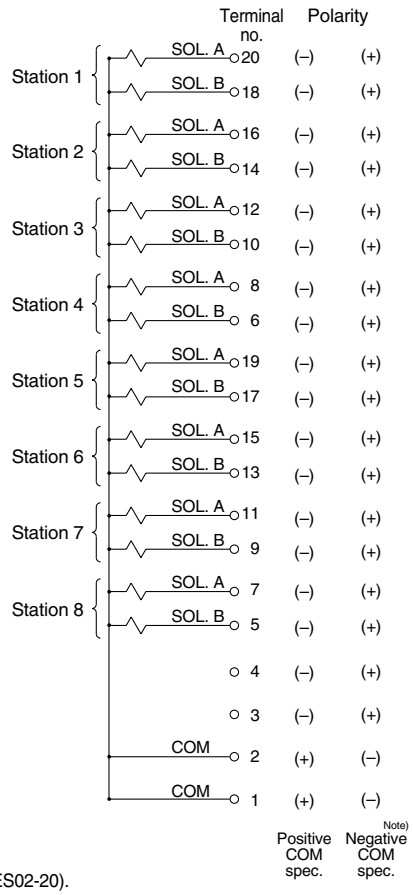
Electrical wiring specifications

∗ Valves are numbered from the D side.

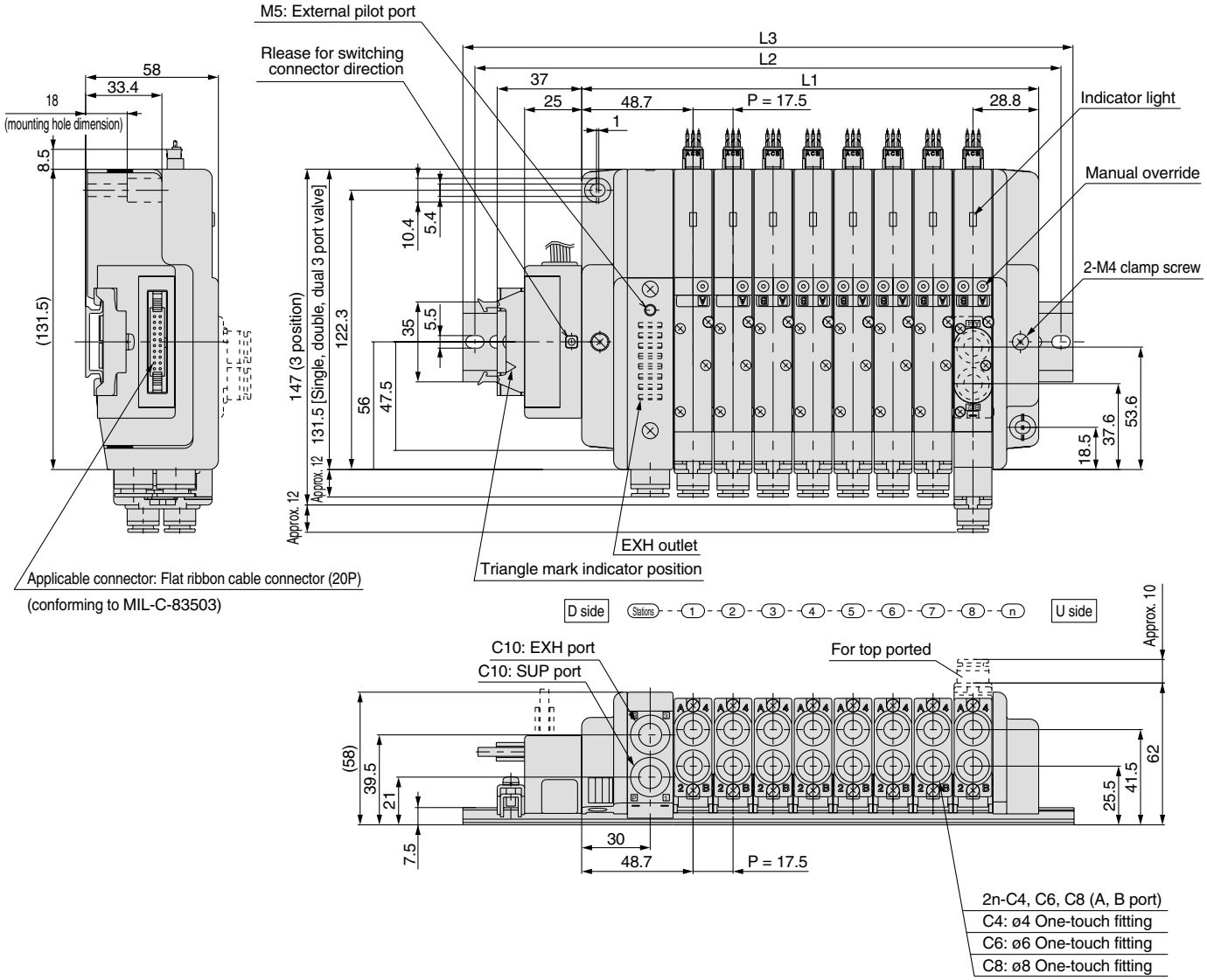
Double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
Mixed single and double wiring is available as an option.
Refer to page 109 for details.

Flat ribbon cable connector





Note) When using the negative COM specification, use valves for negative COM.
For details on the PC Wiring System, refer to catalog "PC Wiring System" (CAT. ES02-20).

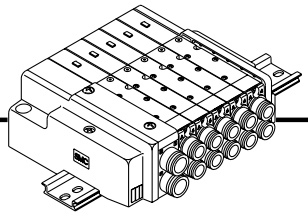


Dimensions

Formula: L1 = 17.5n + 60 n: Stations (maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	77.5	95	112.5	130	147.5	165	182.5	200	217.5	235	252.5	270	287.5	305	322.5	340
L2	137.5	162.5	175	187.5	212.5	225	250	262.5	275	300	312.5	337.5	350	362.5	387.5	400
L3	148	173	185.5	198	223	235.5	260.5	273	285.5	310.5	323	348	360.5	373	398	410.5

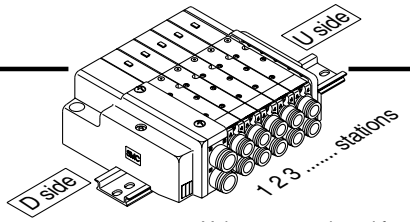
C Kit (Connector Kit)



• This is the standard type with lead wires for each valve.

Manifold specifications

Series	Configuration			Maximum number of stations
	Port position	Port size		
		P, R	A, B	
SQ2000	Side, Top	C10	C4, C6, C8	16 stations

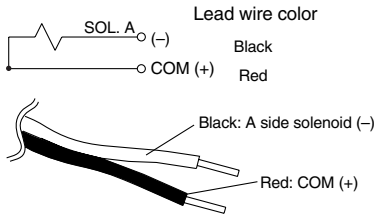


∗ Valves are numbered from the D side.

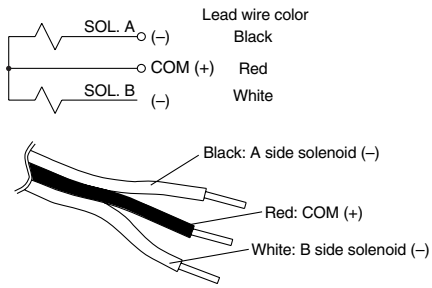
• Wiring Specifications/Positive COM Specifications

Since lead wires are connected to the valves as shown below, connect each wire to the power supply.

Single Solenoid Type



Double Solenoid Type



• Lead wire length of plug connectors
The lead wire length of the valves with lead wire is 300mm. When ordering a lead wire length of 600mm or longer, list the part numbers for the valve without connector and the connector assembly.
Example) For lead wire length of 1000mm:
SQ1140-5LO-C6 ..... 3 pcs.
AXT661-14AL-10 ..... 3 pcs.

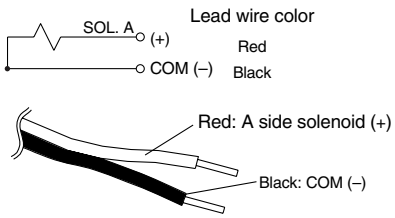
Connector assembly part nos.

Lead wire length	Single solenoid	Double solenoid
Socket only (3 pcs.)	AXT661-12AL	
300mm	AXT661-14AL	AXT661-13AL
600mm	AXT661-14AL-6	AXT661-13AL-6
1000mm	AXT661-14AL-10	AXT661-13AL-10
2000mm	AXT661-14AL-20	AXT661-13AL-20
3000mm	AXT661-14AL-30	AXT661-13AL-30

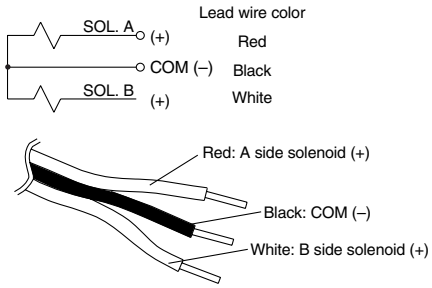
• Wiring Specifications/Negative COM Specifications (optional)

Since lead wires are connected to the valves as shown below, connect each wire to the power supply.

Single Solenoid Type



Double Solenoid Type

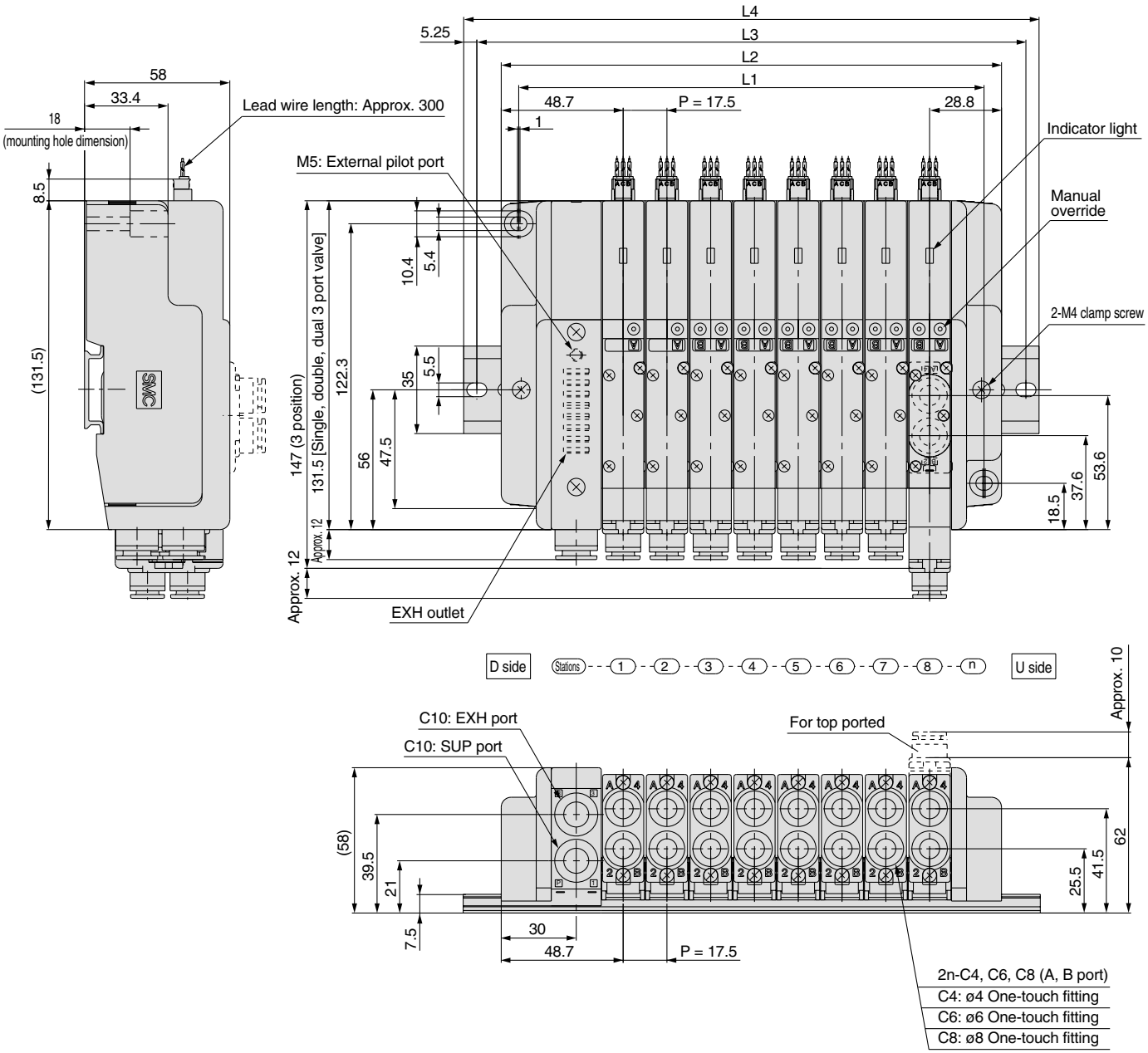


• Lead wire length of plug connectors
The lead wire length of the valves with lead wire is 300mm. When ordering a lead wire length of 600mm or longer, list the part numbers for the valve without connector and the connector assembly.
Example) For lead wire length of 1000mm:
SQ1140-5LO-C6 ..... 3 pcs.
AXT661-14ANL-10 ..... 3 pcs.

Connector assembly part nos.

Lead wire length	Single solenoid	Double solenoid
Socket only (3 pcs.)	AXT661-12AL	
300mm	AXT661-14ANL	AXT661-13ANL
600mm	AXT661-14ANL-6	AXT661-13ANL-6
1000mm	AXT661-14ANL-10	AXT661-13ANL-10
2000mm	AXT661-14ANL-20	AXT661-13ANL-20
3000mm	AXT661-14ANL-30	AXT661-13ANL-30

Note) When using the negative COM specification, use valves for negative COM.



Dimensions

Formulas: L1 = 17.5n + 46, L2 = 17.5n + 60 n: Stations (maximum 16 stations)

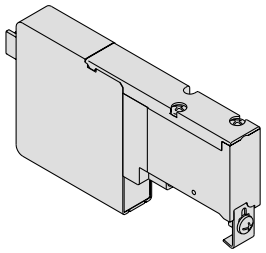
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	63.5	81	98.5	116	133.5	151	168.5	186	203.5	221	238.5	256	273.5	291	308.5	326
L2	77.5	95	112.5	130	147.5	165	182.5	200	217.5	235	252.5	270	287.5	305	322.5	340
L3	100	125	137.5	150	175	187.5	212.5	225	237.5	262.5	275	300	312.5	325	350	362.5
L4	110.5	135.5	148	160.5	185.5	198	223	235.5	248	273	285.5	310.5	323	335.5	360.5	373

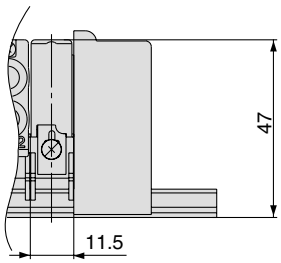
Optional Manifold Parts for SQ1000

Blanking plate

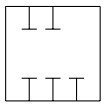
SSQ1000-10A-4

This is mounted on a manifold block when a valve is removed for maintenance or when installation of an additional valve is planned for the future, etc.





JIS symbol



SUP/EXH block

SSQ1000-PR-4-C8-□

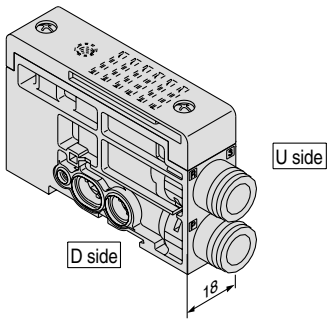
Option

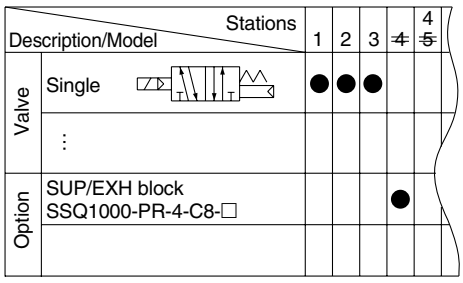
Nil	Standard
R	External pilot specification
S	Built-in silencer

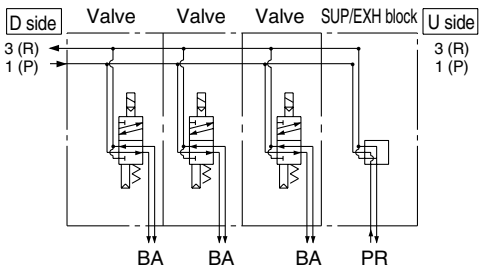
Note) When specifying both options, indicate "RS".
∗ Specify the spacer mounting position on a manifold specification sheet.

For standard type manifolds, the SUP/EXH block is mounted on the D side. It is added to the manifold to increase SUP/EXH capacity.

∗ The number of SUP/EXH blocks that can be added is limited to two sets, one between manifold stations and another on the U side of the manifold, due to the length of the lead wire.
∗ SUP/EXH blocks are not included in the number of manifold stations.







Individual SUP spacer

SSQ1000-P-4-C6

Port direction

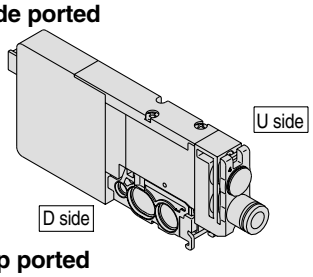
C6	Side ported
L6	Top ported

This is used as a supply port for different pressures when using different pressures in the same manifold (for one station). Both sides of the station which is used with supply pressure from the individual SUP spacer are shut off. (See examples.)

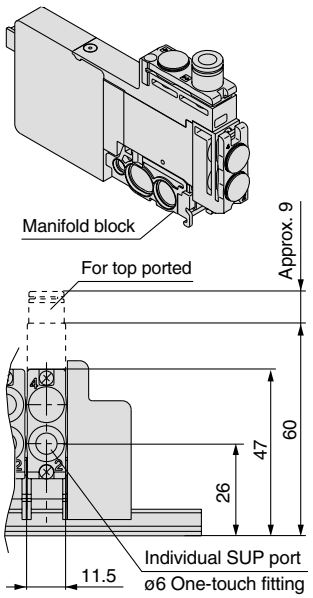
∗ Specify the spacer mounting position and SUP passage shut off positions on a manifold specification sheet. Two shut off positions are required per unit. (Two pieces of SUP block plate that shut off the supply pressure are included with the individual SUP spacer, therefore, it is not necessary to order them separately.)
∗ Electrical wiring is also connected to the manifold station with the individual SUP spacer.
∗ By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later (from the individual SUP spacer to the individual EXH spacer).
∗ The number of spacers is not limited when ordered with the manifold. However, for F, P, and J kits, when adding individual SUP spacers later, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.
∗ Part number with manifold block:

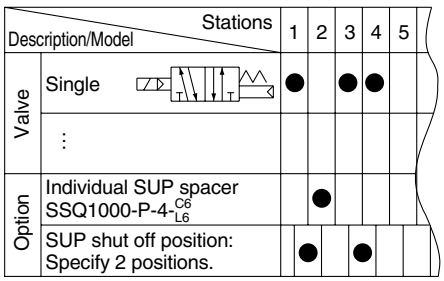
SSQ1000-P-4-$\frac{C6}{L6}$-M

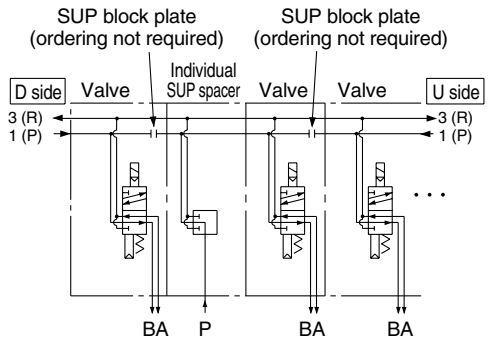
Side ported



Top ported







Individual EXH spacer

SSQ1000-R-4-C6

• Port direction

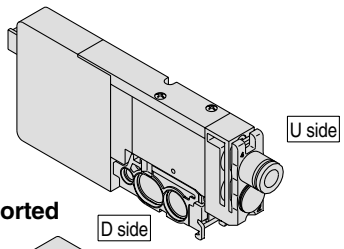
C6	Side ported
L6	Top ported

This is used to exhaust an individual valve when the exhaust from a valve interferes with other stations in the circuit (used for one station).

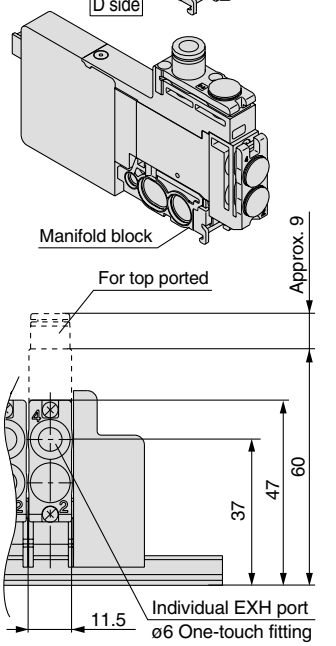
Both sides of the station which is to be individually exhausted are shut off. (See examples.)

* Specify the spacer mounting position and EXH passage shut off positions on a manifold specification sheet. Two shut off positions are required per unit.
(Two pieces of EXH block plate that shut off the exhaust are included with the individual EXH spacer, therefore, it is not necessary to order them separately.)
* Electrical wiring is also connected to the manifold station with the individual EXH spacer.
* By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later (from the individual EXH spacer to the individual SUP spacer).
* The number of spacers is not limited when ordered with the manifold. However, for F, P, and J kits, when adding individual EXH spacers later, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire .
* Part number with manifold block:
SSQ1000-R-4-$\frac{C6}{L6}$-M

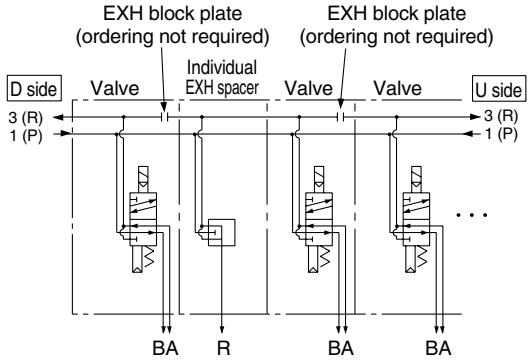
Side ported



Top ported



Description/Model	Stations	1	2	3	4	5
Valve	Single	●		●	●	
	⋮					
Option	Individual EXH spacer SSQ1000-R-4-$\frac{C6}{L6}$		●			
	EXH shut off position: Specify 2 positions.	●		●		



Individual SUP/EXH spacer

SSQ1000-PR1-4-C6

• Port direction

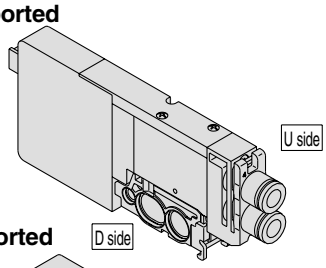
C6	Side ported
L6	Top ported

This has both functions of the individual SUP and EXH spacers above.

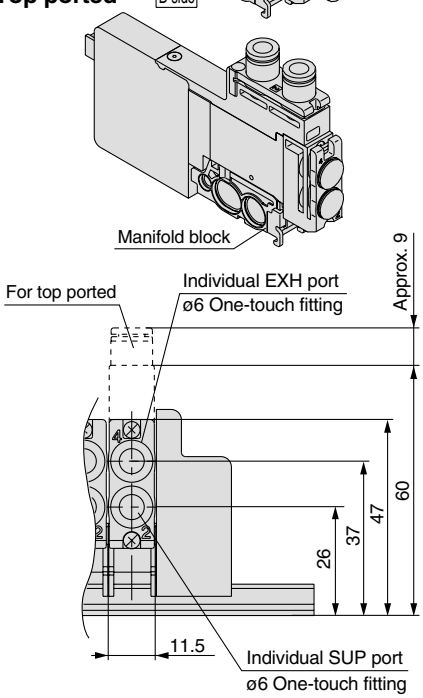
(See examples.)

* Specify the spacer mounting position and SUP and EXH passage shut off positions on a manifold specification sheet. Two shut off positions each for SUP and EXH are required per unit.
(Two pieces each of block plate that shut off the SUP and EXH passages are included with the individual SUP/EXH spacer.)
* Electrical wiring is also connected to the manifold station with the individual EXH spacer.
* By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later.
* The number of spacers is not limited when ordered with the manifold. However, for F, P, and J kits, when adding individual SUP/EXH spacers later, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.
* Part number with manifold block:
SSQ1000-PR1-4-$\frac{C6}{L6}$-M

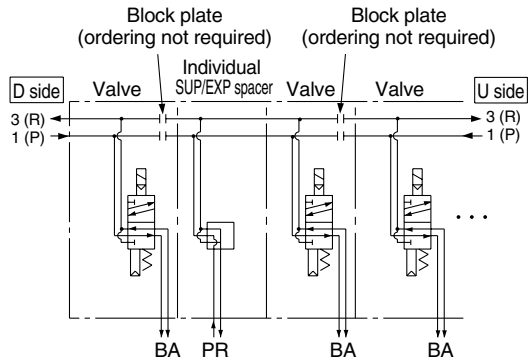
Side ported



Top ported



Description/Model	Stations	1	2	3	4	5
Valve	Single	●		●	●	
	⋮					
Option	Individual SUP/EXH spacer SSQ1000-PR1-4-$\frac{C6}{L6}$		●			
	SUP shut off position: Specify 2 positions.	●		●		
	EXH shut off position: Specify 2 positions.	●		●		



Optional Manifold Parts for SQ1000

SUP block plate

SSQ1000-B-P

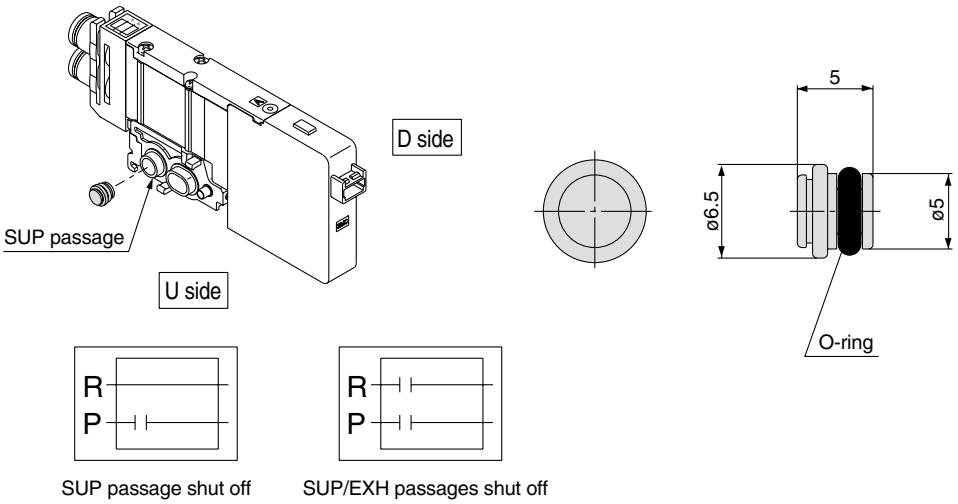
When supplying two different pressures, high and low, to one manifold, this is used between stations with different pressures. Also, it is used with an individual SUP spacer to shut off the air supply.

* Specify the station position on a manifold specification sheet.

<Shut off label>

When a SUP passage is shut off with a SUP block plate, a label is attached for external confirmation of the shut off position (one label each).

* Shut off labels are applied when SUP block plates are ordered with manifolds.



SUP passage shut off SUP/EXH passages shut off

EXH block plate

SSQ1000-B-R

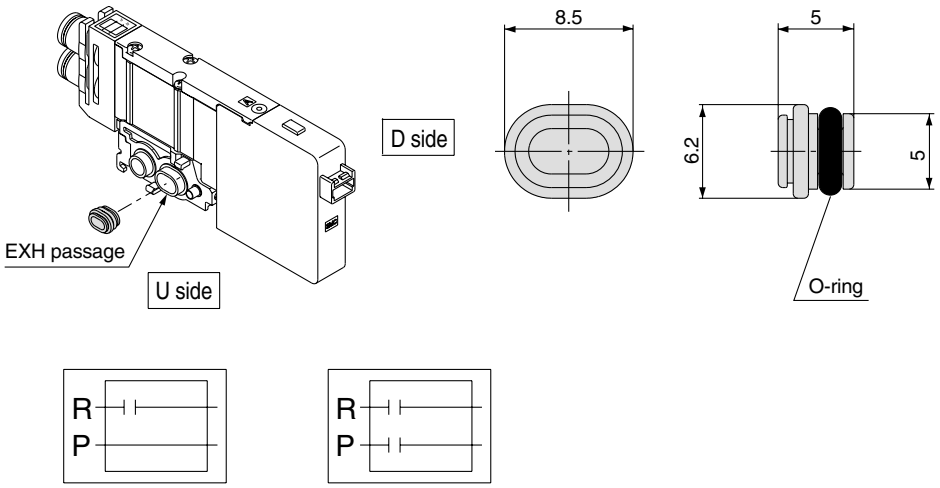
When the exhaust from a valve interferes with other stations in the circuit, this is used between stations to separate exhausts. Also, it is used with an individual EXH spacer to shut off the exhaust of individual valves.

* Specify the station position on a manifold specification sheet.

<Shut off label>

When an EXH passage is shut off with an EXH block plate, a label is attached for external confirmation of the shut off position (one label each).

* Shut off labels are applied when EXH block plates are ordered with manifolds.



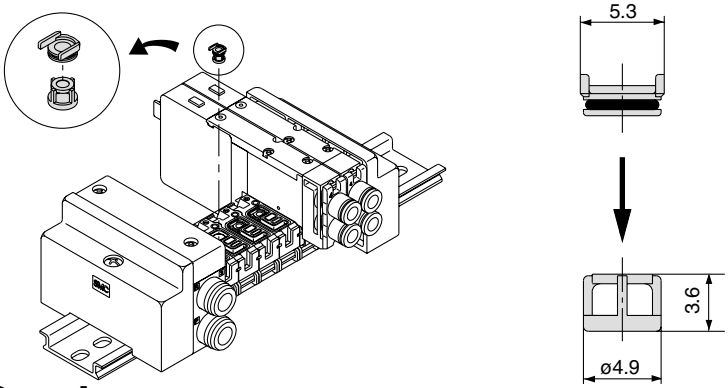
EXH passage shut off SUP/EXH passages shut off

Back pressure check valve [-B]

SSQ1000-BP

This prevents cylinder malfunction caused by the exhaust from other valves. It is inserted into the R (EXH) port of the valve that is affected. It is especially effective when using single acting cylinders or exhaust center type solenoid valves.

* When installing back pressure check valves only on the stations required, enter the part number and specify the station positions on a manifold specification sheet.
* When installing back pressure check valves on all of the stations, indicate "-B" at the end of the manifold part number.



⚠ Caution

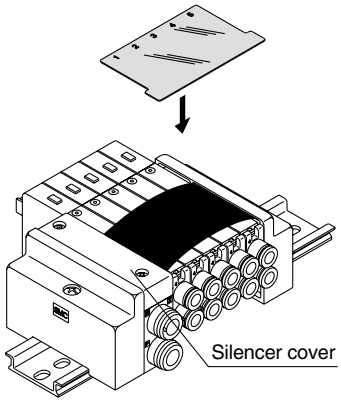
1. Although the back pressure check valve is an assembly part with a check valve mechanism, a small amount of air leakage is allowed. Therefore, take care not to restrict the exhaust air from the exhaust port.
2. The effective area of valves is about 20% less when the back pressure check valve is installed.
3. Since 4 port specification valves (R1 and R2 are common) are used, back pressure cannot be prevented with dual 3 port valves.

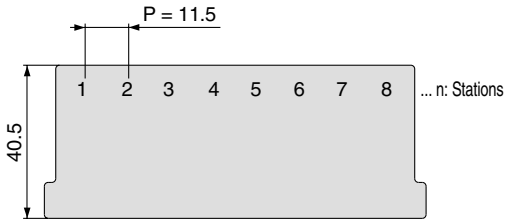
Labeling plate [-N]

SSQ1000-N3- Stations (1 to maximum)

This is a clear resin plate for applying solenoid valve function description labels, etc.
To install, bend the plate slightly as shown and insert into the slots on the end plate side. Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to install it.

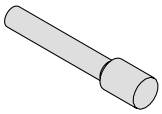
* When ordering with manifolds, add "-N" at the end of the manifold number.



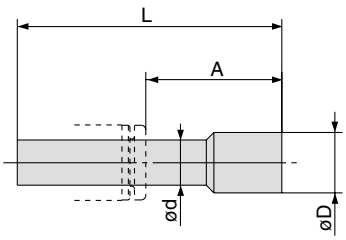


Blanking plug (for One-touch fitting)

KQ2P- **23** **04** **06** **08**



This is inserted into cylinder ports and SUP and EXH ports that are not used.
Available in 10 piece units.



Dimensions

Applicable fitting size ød	Model	A	L	D
3.2	KQ2P-23	16	31.5	3.2
4	KQ2P-04	16	32	6
6	KQ2P-06	18	35	8
8	KQ2P-08	20.5	39	10

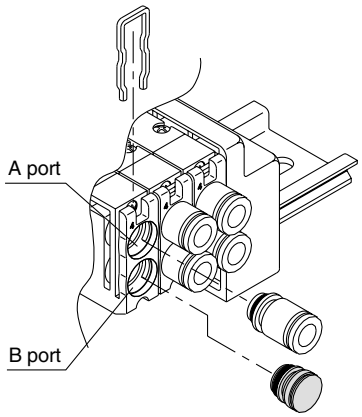
Port plug

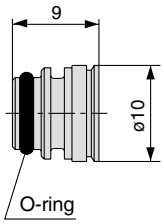
VVQZ100-CP

This is used to close the cylinder ports when changing a 5 port valve to a 3 port valve.

* Add "A" or "B" at the end of the valve part number when ordering with valves.

Example) SQ1141-5L-C6-A (N.O. specification)
• A port plug
Example) SQ1141-5L-C6-B (N.C. specification)
• B port plug
Example) SQ1141-5L-C6-B-M
(B port plug with manifold block)



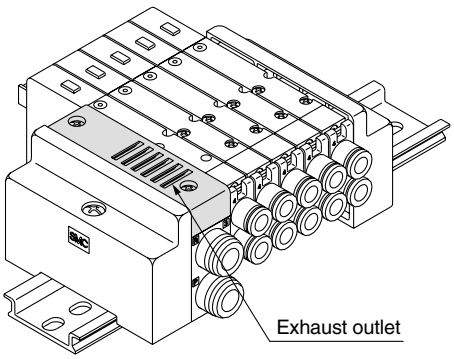


Direct exhaust outlet with built-in silencer [-S]

The exhaust outlet is placed on the top side of the manifold end plate. The built-in silencer provides highly effective noise reduction. (Noise reduction of 30dB)

Note) Note that when excessive drainage occurs in the air supply, the drainage will be released along with the exhaust.

* Add "-S" at the end of the manifold part number when ordering with manifolds.
* Refer to page 134 for handling precautions and the replacement of elements.



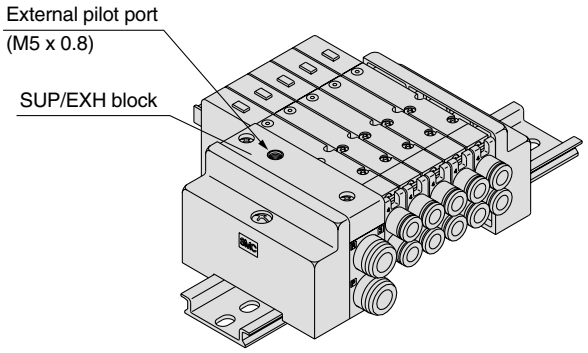
Optional Manifold Parts for SQ1000

External pilot specification [-R]

This can be used when the air pressure is 0.1 to 0.2 MPa lower than the minimum operating pressure of the solenoid valves or used for vacuum specifications.
Add "R" to the part numbers of manifolds and valves to indicate the external pilot specification.
An M5 port will be installed on the top side of the manifold's SUP/EXH block.

• Example for valve part number
SQ1140 R -5L-C6
External pilot specification

• Example for manifold part number
∗ Indicate "R" for an option.
SS5Q14-08FD1-DR
External pilot specification



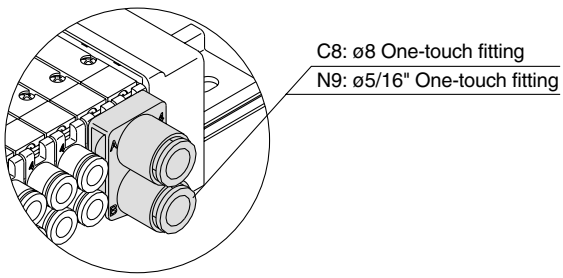
Note 1) Not applicable for dual 3 port valves.
Note 2) Indicate "RY" for low power consumption types.
Note 3) Valves with the external pilot specification have a pilot EXH with individual exhaust specification and EXH can be pressurized. However, the pressure supplied from EXH should be 0.4MPa or lower.

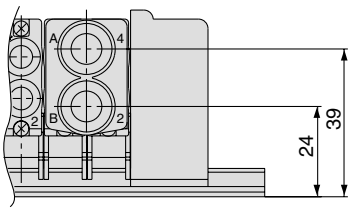
Dual flow fitting

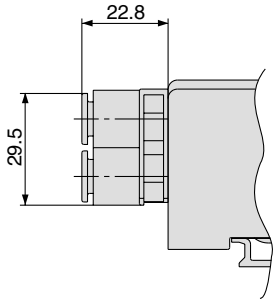
SSQ1000-52A- C8
•**Bore size**

C8	ø8
N9	ø5/16"

To drive a large bore cylinder, two valve stations are operated simultaneously to double the air flow. This fitting is used on the cylinder ports in this situation. Available sizes are ø8 and ø5/16" One-touch fittings.
∗ When ordering with valves, specify the valve number without One-touch fitting and list the dual flow fitting part number.
Example) Valve part number
(without One-touch fitting part number)
SQ1141-5L-C0 ····· 2 sets
∗ SSQ1000-52A-C8/N9 ····· 1 set

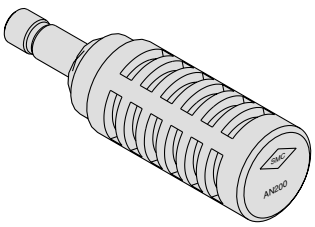


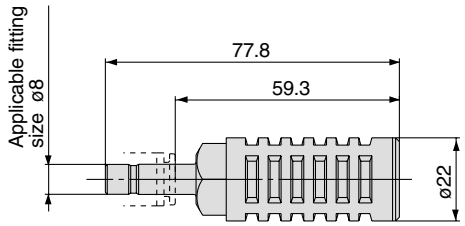




Silencer (for EXH port)

This is inserted into the centralized type EXH port (One-touch fitting).





Specifications

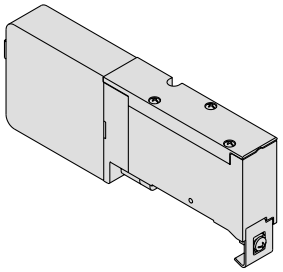
Series	Model	Effective area mm² (Cv factor)	Noise reduction dB
SQ1000	AN200-KM8	20 (1.1)	30

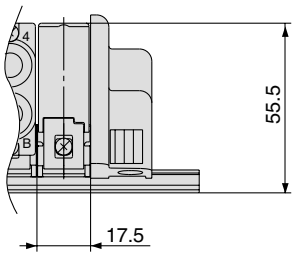
Optional Manifold Parts for SQ2000

Blanking plate

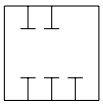
SSQ2000-10A-4

This is mounted on a manifold block when a valve is removed for maintenance or when installation of an additional valve is planned for the future, etc.





JIS symbol



SUP/EXH block

SSQ2000-PR-4-C10-□

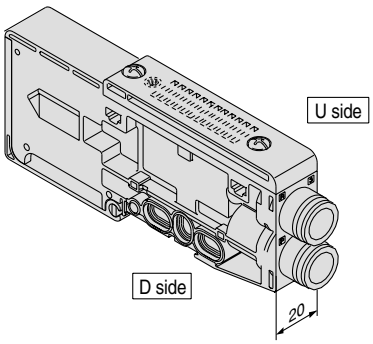
Option

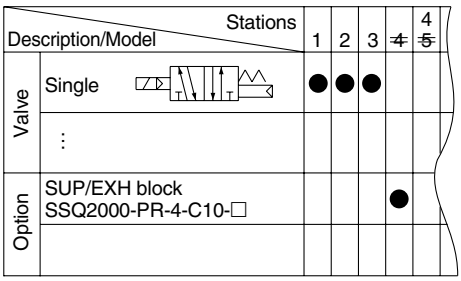
Nil	Standard
R	External pilot specification
S	Built-in silencer

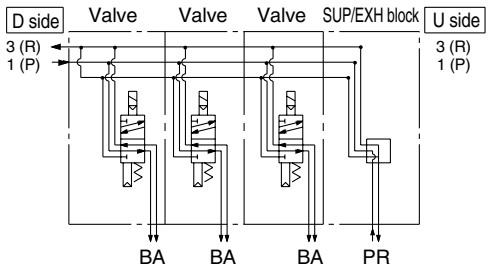
Note) When specifying both options, indicate "RS".
* Specify the spacer mounting position on a manifold specification sheet.

For standard type manifolds, the SUP/EXH block is mounted on the D side. It is added to the manifold to increase SUP/EXH capacity.

* The number of SUP/EXH blocks that can be added is limited to two sets, one between manifold stations and another on the U side of the manifold, due to the length of the lead wire.
* SUP/EXH blocks are not included in the number of manifold stations.







Individual SUP spacer

SSQ2000-P-4-C8

Port direction

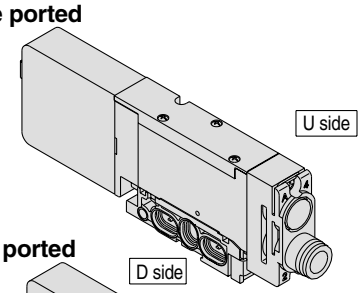
C8	Side ported
L8	Top ported

This is used as a supply port for different pressures when using different pressures in the same manifold (for one station).

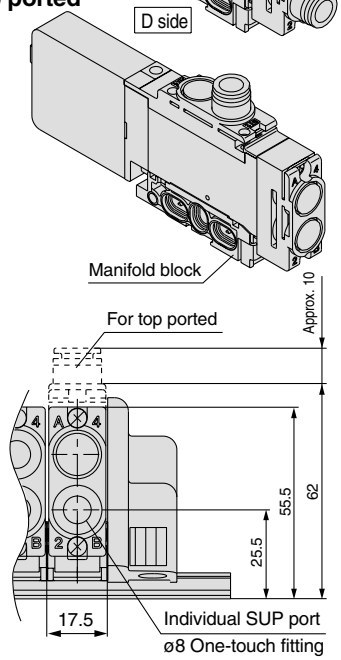
Both sides of the station which is used with supply pressure from the individual SUP spacer are shut off. (See examples.)

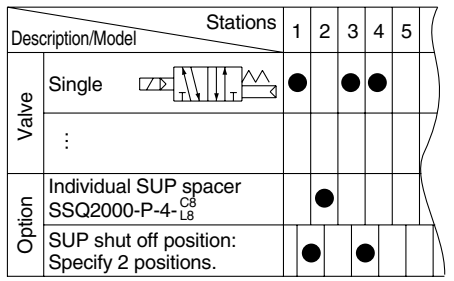
* Specify the spacer mounting position and SUP passage shut off positions on a manifold specification sheet. Two shut off positions are required per unit.
  (Two pieces of SUP block plate that shut off the supply pressure are included with the individual SUP spacer, therefore, it is not necessary to order them separately.)
* Electrical wiring is also connected to the manifold station with the individual SUP spacer.
* By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later (from the individual SUP spacer to the individual EXH spacer).
* The number of spacers is not limited when ordered with the manifold. However, for F, P, and J kits, when adding individual SUP spacers later, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.
* Part number with manifold block:
  SSQ2000-P-4-$\frac{C8}{L8}$-M

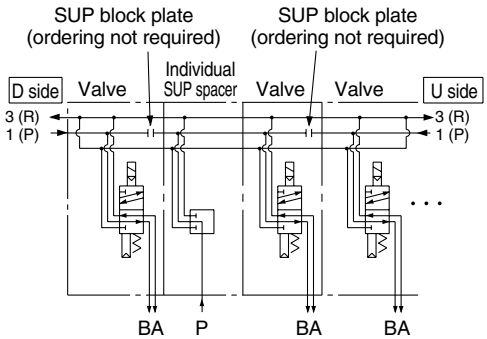
Side ported



Top ported







Manifold Option Parts for SQ2000

Individual EXH spacer

SSQ2000-R-4-C8

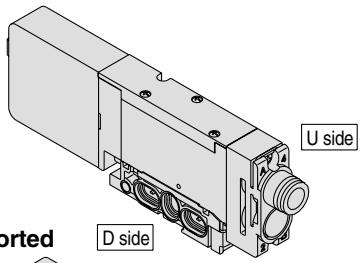
• Port direction

C8	Side ported
L8	Top ported

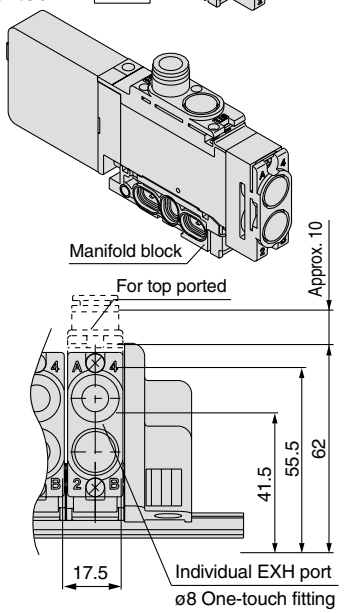
This is used to exhaust an individual valve when the exhaust from a valve interferes with other stations in the circuit (used for one station). Both sides of the station which is to be individually exhausted are shut off. (See examples.)

* Specify the spacer mounting position and EXH passage shut off positions on a manifold specification sheet.
  Two shut off positions are required per unit.
  (Four pieces of EXH block plate that shut off the exhaust are included with the individual EXH spacer, therefore, it is not necessary to order them separately.)
* Electrical wiring is also connected to the manifold station with the individual EXH spacer.
* By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later (from the individual EXH spacer to the individual SUP spacer).
* The number of spacers is not limited when ordered with the manifold. However, for F, P, and J kits, when adding individual EXH spacers later, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire .
* Part number with manifold block:
  SSQ2000-R-4-$\overset{C8}{L8}$-$\underline{\underline{M}}$

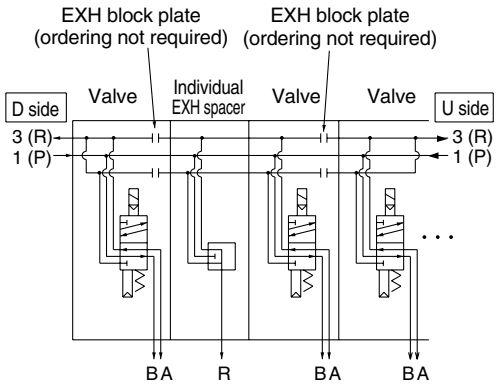
Side ported



Top ported



Description/Model	Stations 1	2	3	4	5
Valve: Single	●		●	●	
Valve: ⋮					
Option: Individual EXH spacer SSQ2000-R-4-$\overset{C8}{L8}$		●			
Option: EXH shut off position: Specify 2 positions.	●		●		



Individual SUP/EXH spacer

SSQ2000-PR1-4-C8

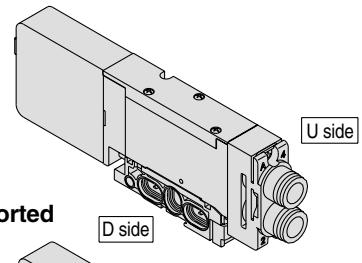
• Port direction

C8	Side ported
L8	Top ported

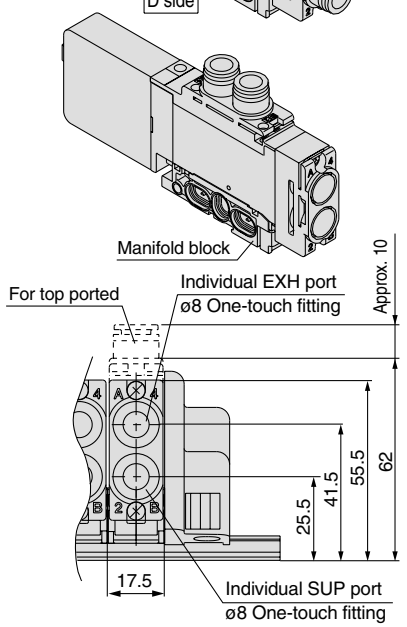
This has both functions of the individual SUP and EXH spacers above.
(See examples.)

* Specify the spacer mounting position and SUP and EXH passage shut off positions on a manifold specification sheet. Two shut off positions each for SUP and EXH are required per unit.
  [Block plates that shut off the SUP and EXH passages are included with the individual SUP/EXH spacer (2 pcs. of SUP block plate and 4 pcs. of EXH block plate).]
* Electrical wiring is also connected to the manifold station with the individual EXH spacer.
* By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later.
* The number of spacers is not limited when ordered with the manifold. However, for F, P, and J kits, when adding individual SUP/EXH spacers later, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.
* Part number with manifold block:
  SSQ2000-PR1-4-$\overset{C8}{L8}$-$\underline{\underline{M}}$

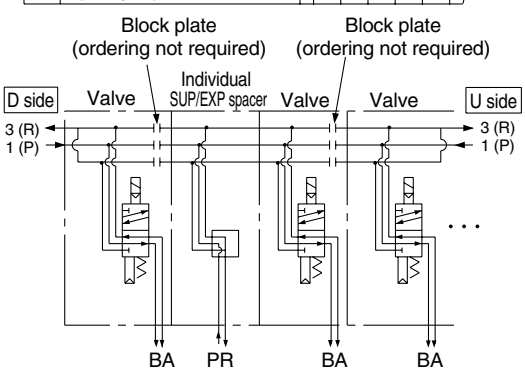
Side ported



Top ported



Description/Model	Stations 1	2	3	4	5
Valve: Single	●		●	●	
Valve: ⋮					
Option: Individual SUP/EXH spacer SSQ2000-PR1-4-$\overset{C8}{L8}$		●			
Option: SUP shut off position: Specify 2 positions.	●		●		
Option: EXH shut off position: Specify 2 positions.	●		●		



SUP block plate

SSQ1000-B-R

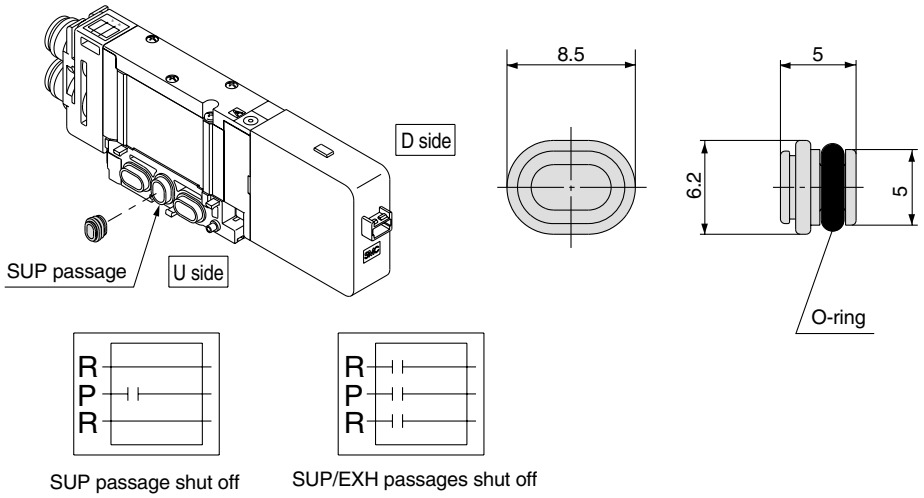
When supplying two different pressures, high and low, to one manifold, this is used between stations with different pressures. Also, it is used with an individual SUP spacer to shut off the air supply.

* Specify the station position on a manifold specification sheet.

<Shut off label>

When a SUP passage is shut off with a SUP block plate, a label is attached for external confirmation of the shut off position (one label each).

* Shut off labels are applied when SUP block plates are ordered with manifolds.



SUP passage shut off

SUP/EXH passages shut off

EXH block plate

SSQ2000-B-R

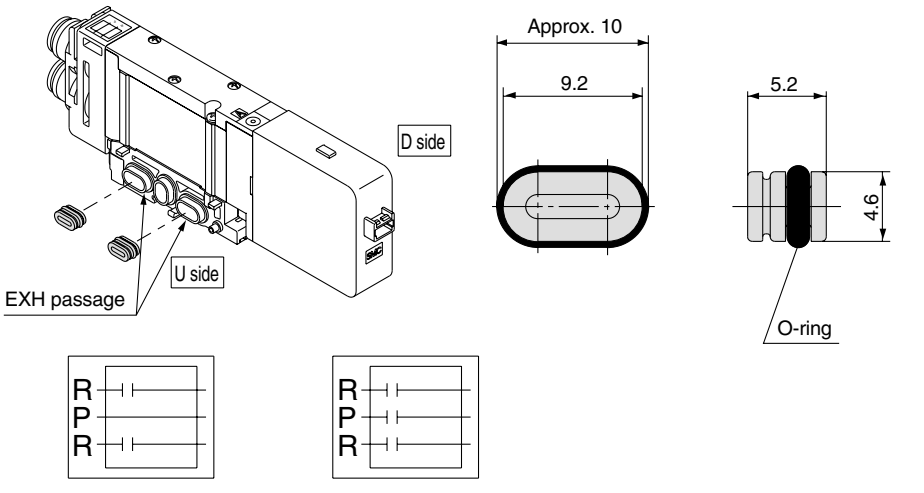
When the exhaust from a valve interferes with other stations in the circuit, this is used between stations to separate exhausts. Also, it is used with an individual EXH spacer to shut off the exhaust of individual valves.

* Specify the station position on a manifold specification sheet.

<Shut off label>

When an EXH passage is shut off with an EXH block plate, a label is attached for external confirmation of the shut off position (one label each).

* Shut off labels are applied when EXH block plates are ordered with manifolds.



EXH passage shut off

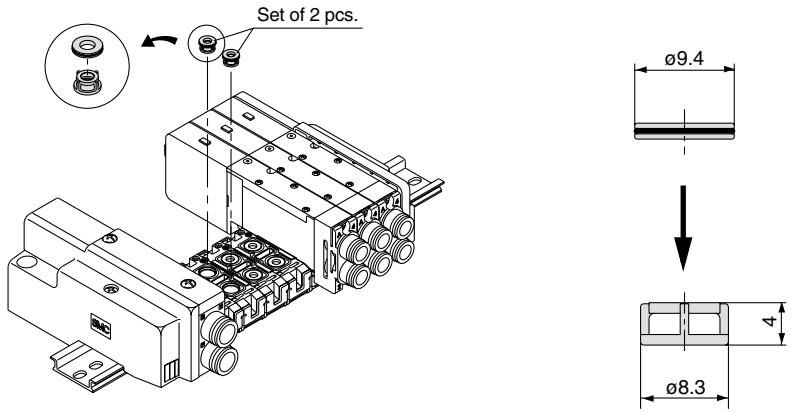
SUP/EXH passages shut off

Back pressure check valve [-B]

SSQ2000-BP

This prevents cylinder malfunction caused by the exhaust from other valves. It is inserted into the R (EXH) port of the valve that is affected. It is especially effective when using single acting cylinders or exhaust center type solenoid valves.

* When installing back pressure check valves only on the stations required, enter the part number and specify the station positions on a manifold specification sheet.
* When installing back pressure check valves on all of the stations, indicate "-B" at the end of the manifold part number.



⚠ Caution

1. Although the back pressure check valve is an assembly part with a check valve mechanism, a small amount of air leakage is allowed. Therefore, take care not to restrict the exhaust air from the exhaust port.
2. The effective area of valves is about 20% less when the back pressure check valve is installed.

Manifold Option Parts for SQ2000

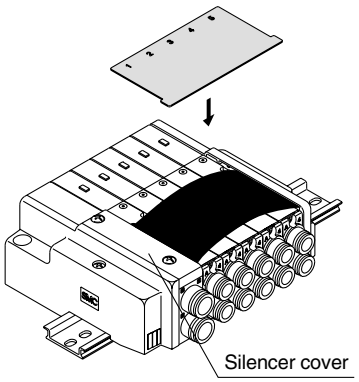
Labeling plate [-N]

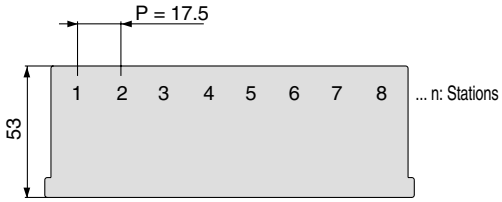
SSQ2000-N3- Stations (1 to maximum)

This is a clear resin plate for applying solenoid valve function description labels, etc.

To install, bend the plate slightly as shown and insert into the slots on the end plate side. Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to install it.

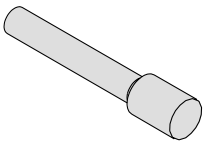
* When ordering with manifolds, add "-N" at the end of the manifold number.



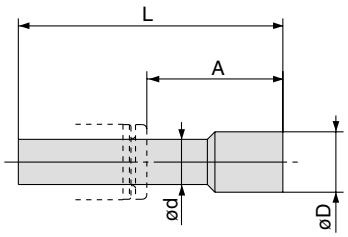


Blanking plug (for One-touch fitting)

KQ2P- 04 / 06 / 08 / 10



This is inserted into cylinder ports and SUP and EXH ports that are not used.
Available in 10 piece units.



Dimensions

Applicable fitting size ød	Model	A	L	D
4	KQ2P-04	16	32	6
6	KQ2P-06	18	35	8
8	KQ2P-08	20.5	39	10
10	KQ2P-10	22	43	12

Port plug

VVQZ2000-CP

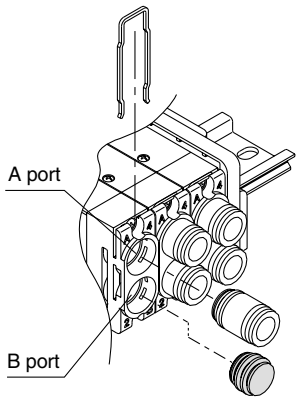
This is used to close the cylinder ports when changing a 5 port valve to a 3 port valve.

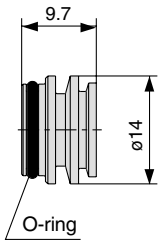
* Add "A" or "B" at the end of the valve part number when ordering with valves.

Example) SQ2141-5L-C8-A (N.O. specification)
A port plug

Example) SQ2141-5L-C8-B (N.C. specification)
B port plug

Example) SQ2141-5L-C8-B-M
(B port plug with manifold block)



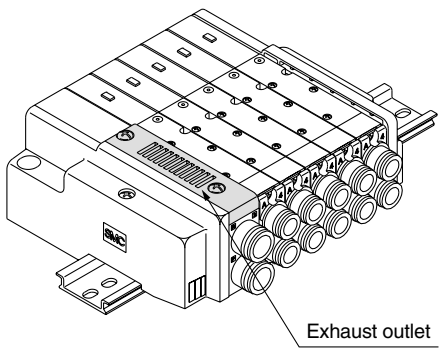


Direct exhaust outlet with built-in silencer [-S]

The exhaust outlet is placed on the top side of the manifold end plate. The built-in silencer provides highly effective noise reduction. (Noise reduction of 30dB)

Note) Note that when excessive drainage occurs in the air supply, the drainage will be released along with the exhaust.

* Add "-S" at the end of the manifold part number when ordering with manifolds.
* Refer to page 134 for handling precautions and the replacement of elements.

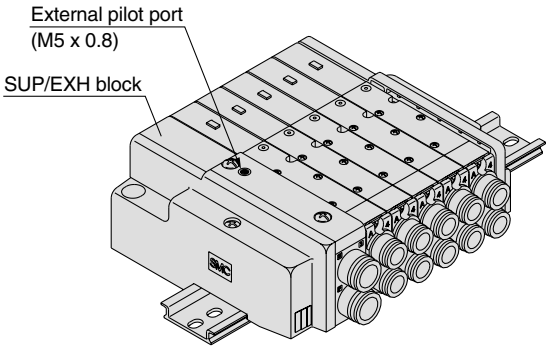


External pilot specification [-R]

This can be used when the air pressure is 0.1 to 0.2 MPa lower than the minimum operating pressure of the solenoid valves or used for vacuum specifications.
Add "R" to the part numbers of manifolds and valves to indicate the external pilot specification.
An M5 port will be installed on the top side of the manifold's SUP/EXH block.

• Example for valve part number
SQ2140 R -5L-C6
External pilot specification

• Example for manifold part number
∗ Indicate "R" for an option.
SS5Q24-08FD1-DR
External pilot specification



Note 1) Not applicable for 4 position dual 3 port valves.
Note 2) Indicate "RY" for low power consumption types.
Note 3) Valves with the external pilot specification have a pilot EXH with individual exhaust specification and EXH can be pressurized. However, the pressure supplied from EXH should be 0.4MPa or lower.

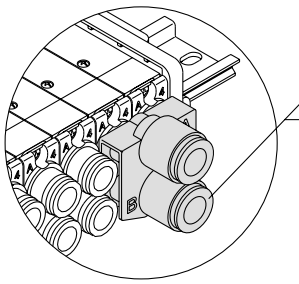
Dual flow fitting

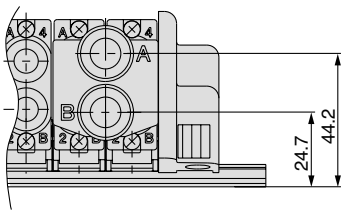
SSQ2000-52A- C10
• Bore size

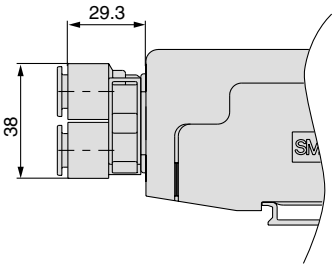
C10	ø10
N11	ø3/8"

To drive a large bore cylinder, two valve stations are operated simultaneously to double the air flow. This fitting is used on the cylinder ports in this situation. Available sizes are ø10 and ø3/8" One-touch fittings.
∗ When ordering with valves, specify the valve number without One-touch fitting and list the dual flow fitting part number.

Example) Valve part number
(without One-touch fitting)
SQ2141-5L-C0 ..... 2 sets
∗ SSQ2000-52A-C10/N11 ..... 1 set

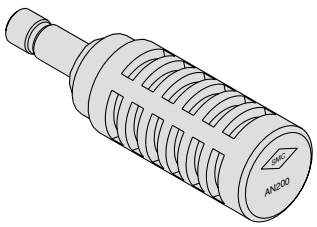


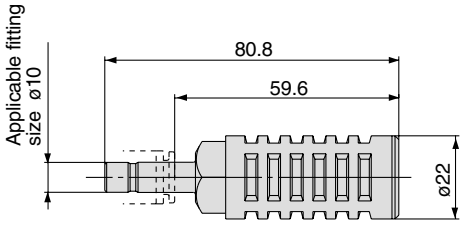




Silencer (for EXH port)

This is inserted into the centralized type EXH port (One-touch fitting).





Specifications

Series	Model	Effective area mm² (Cv factor)	Noise reduction dB
SQ2000	AN200-KM10	26 (1.4)	30

Manifold Options for SQ1000/SQ2000

Special wiring specifications

The standard internal wiring of F kit, P kit, and J kit is double wiring (connected to SOL. A and SOL. B) regardless of the valve and option types. Mixed single and double wiring is available as an option.

1. How to order

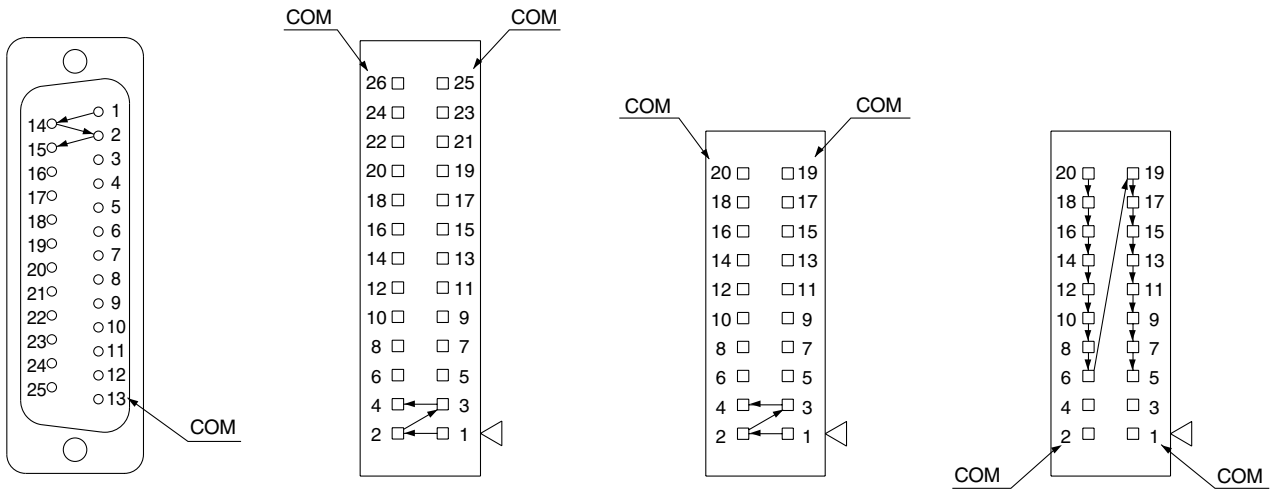
Indicate option symbol "**-K**" in the manifold part number and be sure to specify station positions for single or double wiring on a manifold specification sheet.

Example) **SS5Q14-09 FD0 -DKS**

•Other option symbols: Enter in alphabetical order.

2. Wiring specifications

Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without skipping any terminal numbers.



F kit
D-sub connector
(for 25P)

P kit
Flat ribbon cable connector
(for 26P)

P kit
Flat ribbon cable connector
(for 20P)

J kit
Flat ribbon cable connector (20P)
PC Wiring System compatible

3. Maximum stations

The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. Determine the number of stations so that the total number of solenoids is no more than the maximum points in the table below.

Kit	F kit (D-sub connector)	P kit (Flat ribbon cable connector)		J kit Flat ribbon cable connector PC Wiring System compatible
Type	FD□ 25P	PD□ 26P	PDC 20P	JD0 20P
Max. points	24 points	24 points	18 points	16 points

Note) Maximum stations ..... SQ1000: 24 stations
SQ2000: 16 stations

Applicable DIN rail mounting

Each manifold can be mounted on a DIN rail.
Indicate the symbol "-D" for ordering DIN rail mount type manifolds.
The standard DIN rail provided is approximately 30mm longer than the overall length of the manifold with a specified number of stations.
The following options are also available.

• DIN rail length longer than the standard type (for stations to be added later, etc.)

In the manifold part number, specify "-D" for the manifold mounting symbol and add the number of required stations after the symbol.

Example) **SS5Q14- 08FD0 - D09BNK**

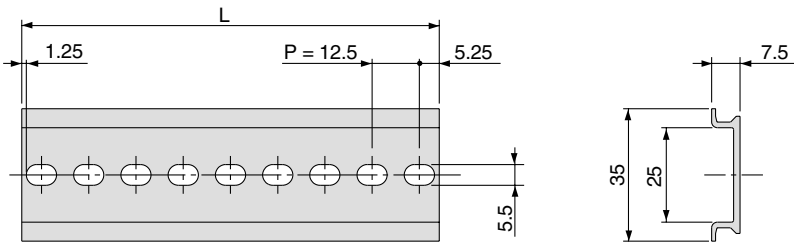
- 8 station manifold
- Option symbols (in alphabetical order)
- DIN rail for 9 stations

• Ordering DIN rail only

DIN rail part number

AXT100- DR -n

Note) For "n", enter a number from the "No." line in the table below.
Refer to the dimensions of each kit for dimension L.



Dimension L

L = 12.5 x n + 10.5

No.	1	2	3	4	5	6	7	8	9	10
Dimension L	23	35.5	48	60.5	73	85.5	98	110.5	123	135.5

No.	11	12	13	14	15	16	17	18	19	20
Dimension L	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5

No.	21	22	23	24	25	26	27	28	29	30
Dimension L	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5

No.	31	32	33	34	35	36	37	38	39	40
Dimension L	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

Manifold Options for SQ1000/SQ2000

Negative COM specifications

The following valve part numbers are for negative COM specifications. Manifold part numbers are the same as standard.

• How to order negative COM valves (example)

SQ1140 N -5L-C6

• Negative COM specification

One-touch fittings in inch sizes

For One-touch fittings in inch sizes, use the following part numbers. Also, the color of the release button is orange.

• How to order valves (example)

SQ1140- 5L -□ N7

Port position • **• Cylinder port size**

Nil	Side
L	Top

Symbol		N1	N3	N7	N9
Applicable tube O.D. inch		ø1/8"	ø5/32"	ø1/4"	ø5/16"
A/B port	SQ1000	●	●	●	—
	SQ2000	—	●	●	●

• How to order manifolds (example)

Add "00T" at the end of the part number.

SS5Q14-08 FD0 – DN- 00T

• P/R port in inch size
- SQ1000: ø5/16"(N9)
- SQ2000: ø3/8"(N11)

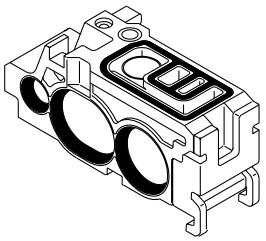
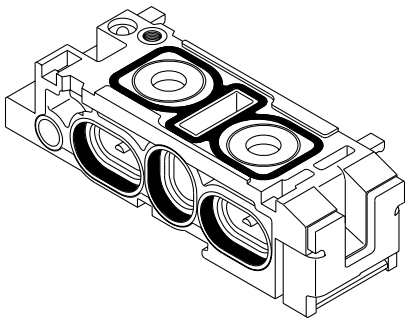
How to Add Manifold Stations for SQ1000/SQ2000

1. How to add manifold stations

What to order

• Valves with manifold block (refer to pages 66 and 80) or the manifold blocks shown below. For F kit, P kit, and J kit, also order the lead wire assemblies in the next section.

Manifold block part nos.

SQ1000	SQ2000
	
SSQ1000—1A—4□ Option ● Nil: None B: With back pressure check valve R: External pilot specification Note) Enter "-BR" for both options.	**SSQ2000—1A—4□** Option ● Nil: None B: With back pressure check valve R: External pilot specification Note) Enter "-BR" for both options.

How to Add Manifold Stations for SQ1000/SQ2000

For F kit, P kit, J kit,

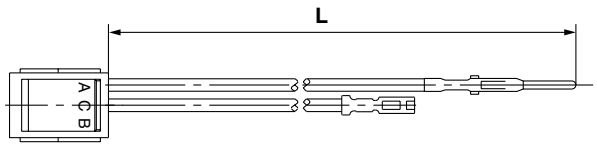
What to prepare: Lead wire assemblies

SQ1000

D-sub connector kit (F kit)

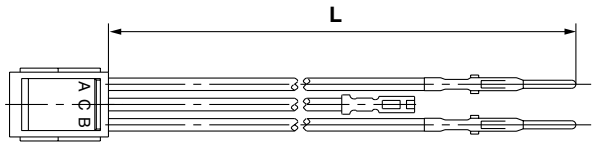
• For single wiring

SSQ1000 — 40A — F — 205



• For double wiring

SSQ1000 — 41A — F — 280

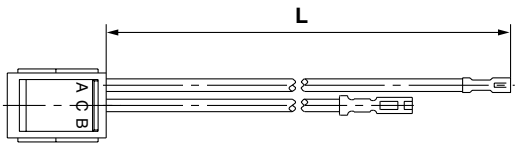


Station	Symbol (Dimension L)	Station	Symbol (Dimension L)
Station 2	165	Station 14	320
Station 3	175	Station 15	335
Station 4	190	Station 16	350
Station 5	205	Station 17	365
Station 6	215	Station 18	375
Station 7	230	Station 19	385
Station 8	245	Station 20	400
Station 9	260	Station 21	405
Station 10	280	Station 22	420
Station 11	290	Station 23	435
Station 12	300	Station 24	450
Station 13	310		

Flat ribbon cable kit (P kit), PC Wiring System compatible (J kit)

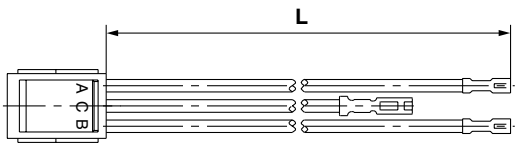
• For single wiring

SSQ1000 — 40A — P — 200



• For double wiring

SSQ1000 — 41A — P — 275



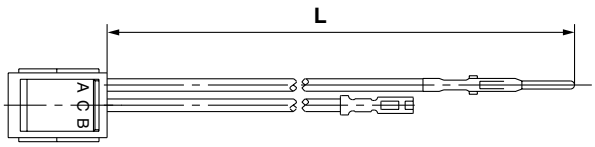
Station	Symbol (Dimension L)	Station	Symbol (Dimension L)
Station 2	160	Station 14	315
Station 3	170	Station 15	330
Station 4	185	Station 16	345
Station 5	200	Station 17	360
Station 6	210	Station 18	370
Station 7	225	Station 19	380
Station 8	240	Station 20	395
Station 9	255	Station 21	400
Station 10	275	Station 22	415
Station 11	285	Station 23	430
Station 12	295	Station 24	445
Station 13	305		

SQ2000

D-sub connector kit (F kit)

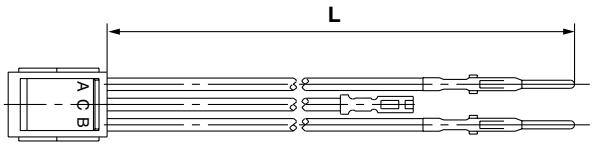
• For single wiring

SSQ1000— 40A —F— 250



• For double wiring

SSQ1000— 41A —F— 350

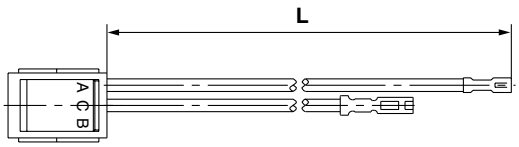


Station	Symbol (Dimension L)	Station	Symbol (Dimension L)
Station 2	190	Station 14	430
Station 3	210	Station 15	450
Station 4	230	Station 16	470
Station 5	250	Station 17	490
Station 6	270	Station 18	510
Station 7	290	Station 19	530
Station 8	310	Station 20	550
Station 9	330	Station 21	570
Station 10	350	Station 22	590
Station 11	370	Station 23	610
Station 12	390	Station 24	630
Station 13	410		

Flat ribbon cable kit (P kit), PC Wiring System compatible (J kit)

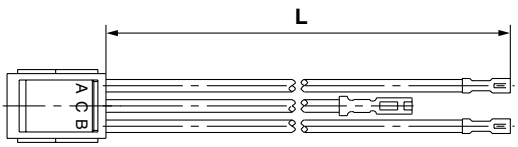
• For single wiring

SSQ1000— 40A —P— 250



• For double wiring

SSQ1000— 41A —P— 350

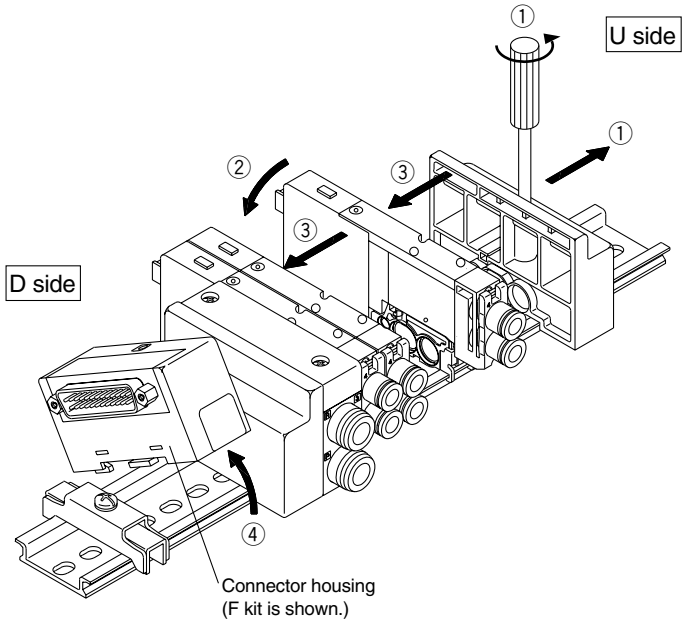


Station	Symbol (Dimension L)	Station	Symbol (Dimension L)
Station 2	190	Station 14	430
Station 3	210	Station 15	450
Station 4	230	Station 16	470
Station 5	250	Station 17	490
Station 6	270	Station 18	510
Station 7	290	Station 19	530
Station 8	310	Station 20	550
Station 9	330	Station 21	570
Station 10	350	Station 22	590
Station 11	370	Station 23	610
Station 12	390	Station 24	630
Station 13	410		

How to Add Manifold Stations for SQ1000/SQ2000

Steps for adding stations

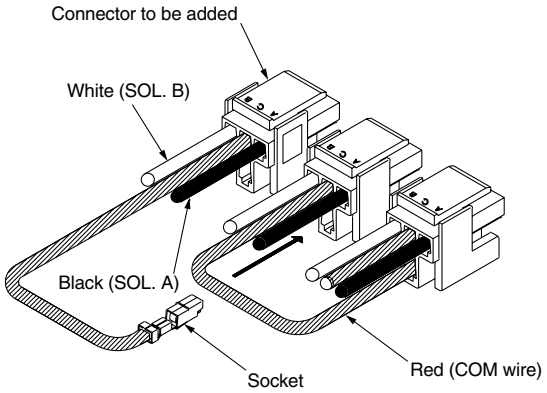
① Loosen the clamp screw on the U side end plate and open the manifold.
↓
② Mount the manifold block or valve with manifold block to be added.
↓
③ Press on the end plate to eliminate any space between the manifold blocks and tighten the clamp screw.
(Proper tightening torque: 0.8 to 1.0N·m)
↓
④ In the case of F kit, P kit or J kit, remove the connector housing from the DIN rail and connect the wiring.



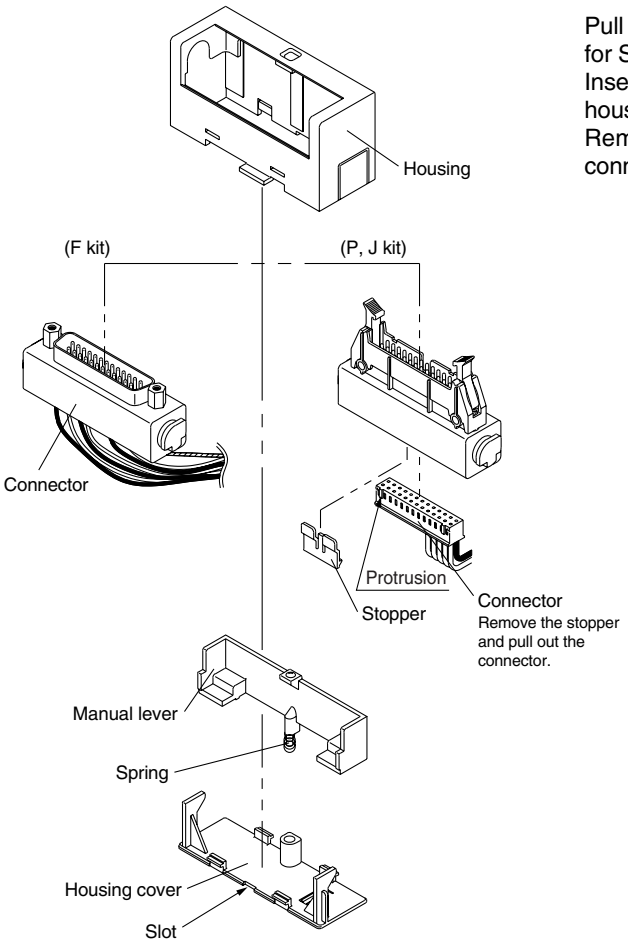
2. Connection method

① Connecting common wire

Insert the red lead wire (common wire) of the connector to be added into the adjacent connector as shown in the drawing below. After inserting, lightly pull on the wire to confirm that the socket is locked.



② Pulling out connector



F, P, J kit

Pull out the connector to connect the lead wires for SOL. A and SOL. B.
Insert a flat head screw driver into the slot of the housing cover and remove it.
Remove the manual lever and pull out the connector.

How to Add Manifold Stations for SQ1000/SQ2000

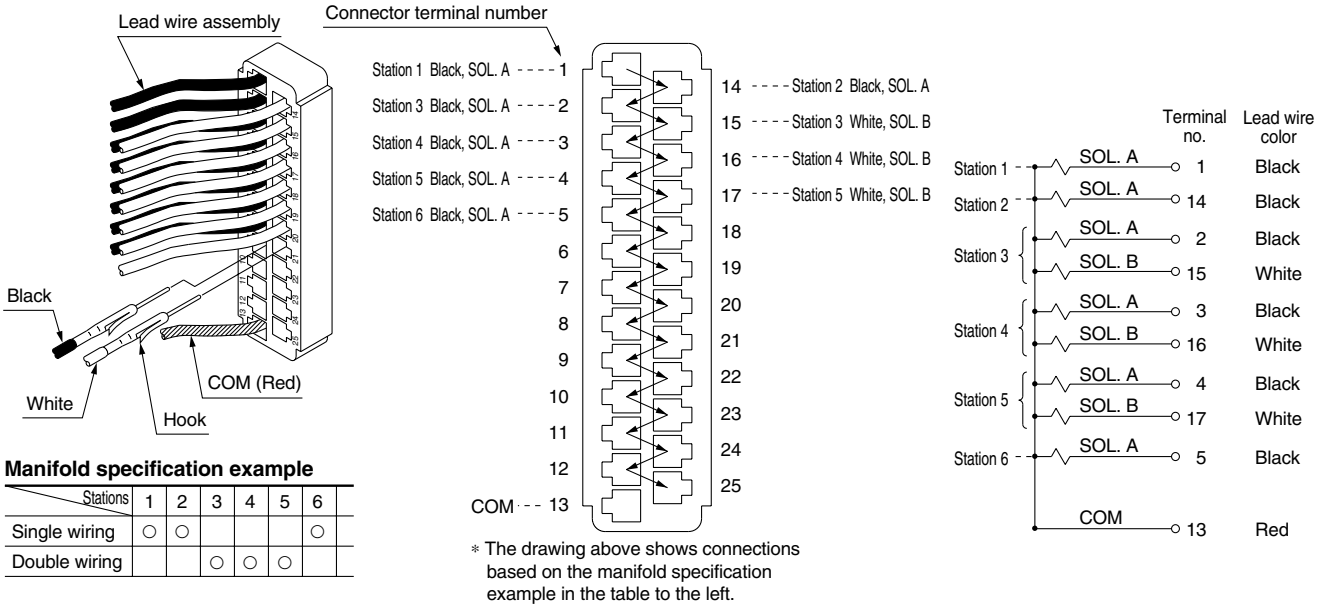
③ **Connector connection/Connect the black and white lead wire pins to the positions shown below in accordance with each kit.**

⚠**Caution** 1) After inserting the pin, confirm that the pin hook is locked by lightly pulling the lead wire.

2) Do not pull the lead wire forcefully when connecting. Also, take care that lead wires do not get caught between manifolds or when remounting the housing.

Wiring (F kit: D-sub connector kit)

Procedure) Based on the manifold specification, station 1 of SOL. A (black wire) will be terminal number 1 of the D-sub connector, and for station 2 and thereafter, connect black wires to white wires in the order shown by the arrows in the drawing below.



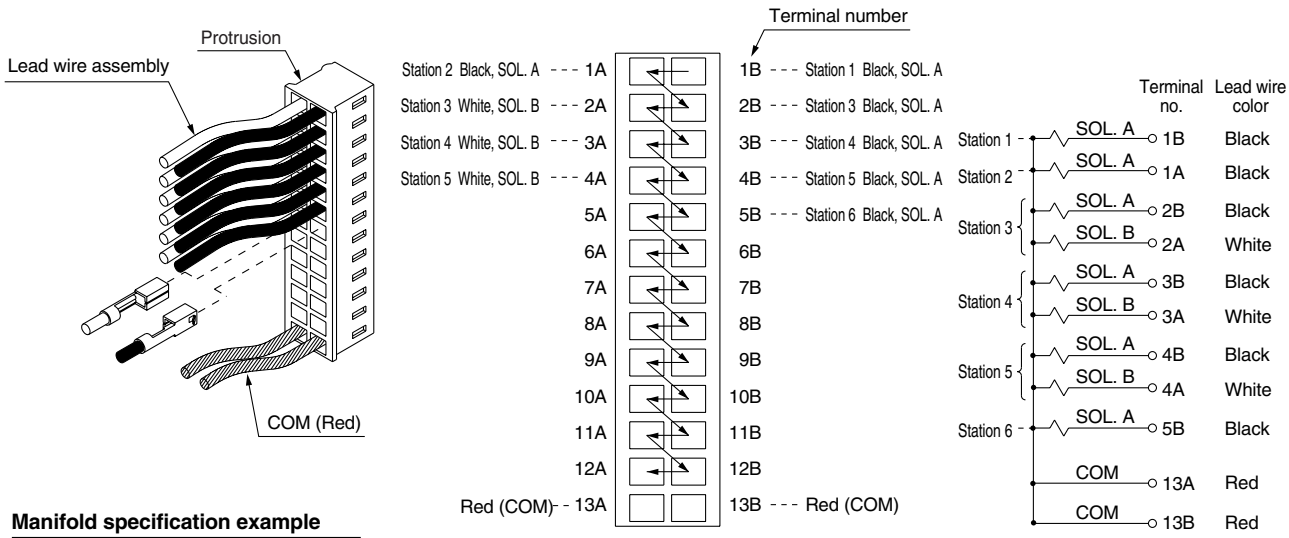
Manifold specification example

Stations	1	2	3	4	5	6
Single wiring	○	○				○
Double wiring			○	○	○	

∗ The drawing above shows connections based on the manifold specification example in the table to the left.

Wiring (P kit: Flat ribbon cable kit)

Procedure) Based on the manifold specification, station 1 of SOL. A (black wire) will be terminal number 1B of the flat ribbon cable connector, and for station 2 and thereafter, connect black wires to white wires in the order shown by the arrows in the drawing below.



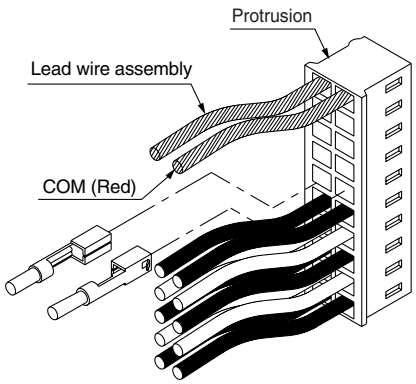
Manifold specification example

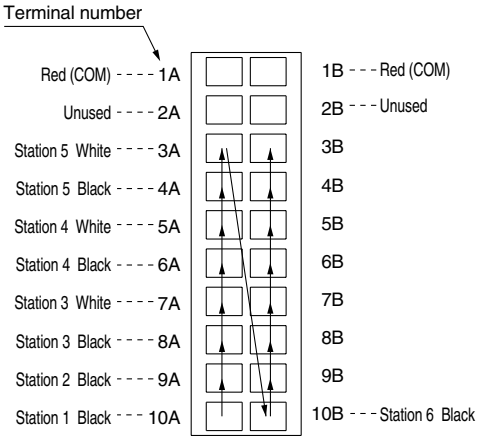
Stations	1	2	3	4	5	6
Single wiring	○	○				○
Double wiring			○	○	○	

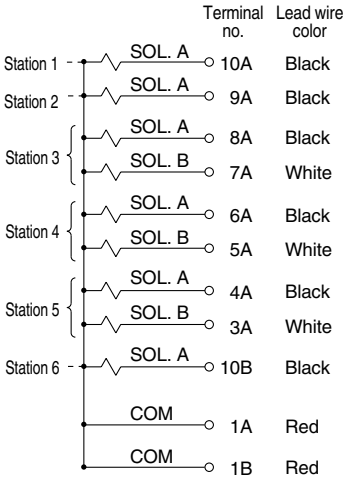
∗ The drawing above shows connections for type 26P flat ribbon cable connector based on the manifold specification example in the table to the left. For type 20P, the connection will be the same as above except that COM changes to 10A and 10B.

Wiring (J kit: Flat ribbon cable, PC Wiring System compatible)

Procedure) Based on the manifold specification, station 1 of SOL. A (black wire) will be terminal number 10A of the flat ribbon cable connector, and for station 2 and thereafter, connect black wires to white wires in the order shown by the arrows in the drawing below.







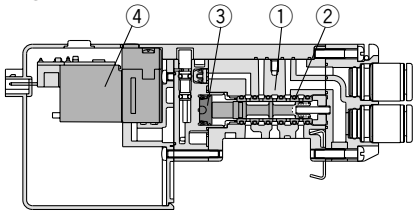
Manifold specification example

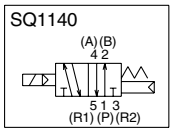
Stations	1	2	3	4	5	6
Single wiring	○	○				○
Double wiring			○	○	○	

Construction/Series SQ1000 Plug Lead Type Main Parts and Pilot Valve Assemblies

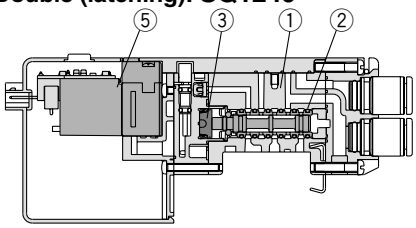
Metal seal type

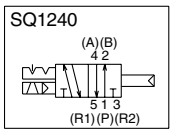
Single: SQ1140



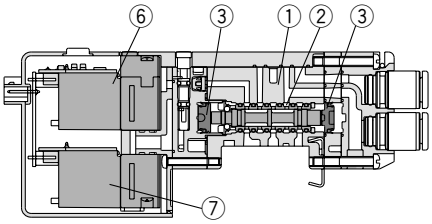


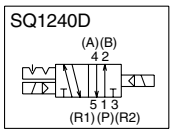
Double (latching): SQ1240



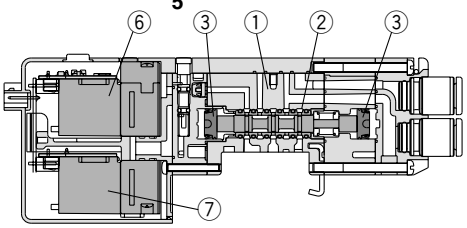


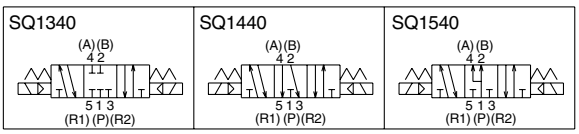
Double (double solenoid): SQ1240D





3 position: SQ1340 / SQ1440 / SQ1540





Parts list

No.	Description	Material
1	Body	Die-cast zinc
2	Spool sleeve	Stainless steel (metal seal)
	Spool	Aluminum (rubber seal)
3	Piston	Resin

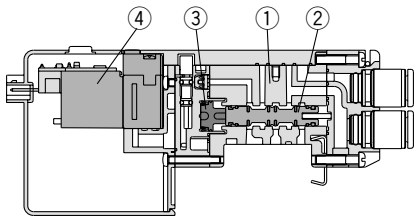
Pilot valve assemblies Note)

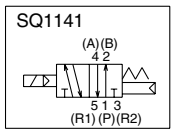
No.	Type	SQ1□4□
4	For single	VQ110(K)(Y)-5/6(N)J1(B)-1
5	For double (latching)	VQ110L-5/6J2-1 Negative COM: VQ110N-5/6J2-1
6	For double (double solenoid) on A side	VQ110(K)(Y)-5/6(N)J3(B)-1
	For 3P, dual 3 port on A side	
7	For double (double solenoid) on B side	VQ111(K)(Y)-5/6(N)J4-1
	For 3P, dual 3 port on B side	

Note) Nil: Standard
B: Locking type manual override
K: High pressure specification (metal seal only)
N: Negative COM specification
Y: Low power consumption specification

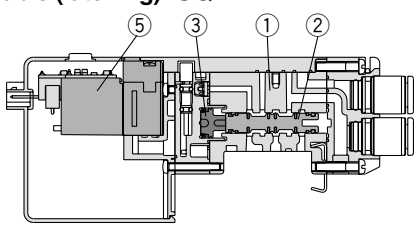
Rubber seal type

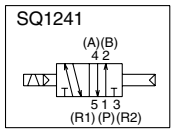
Single: SQ1141



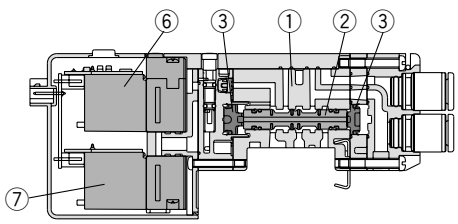


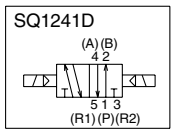
Double (latching): SQ1241



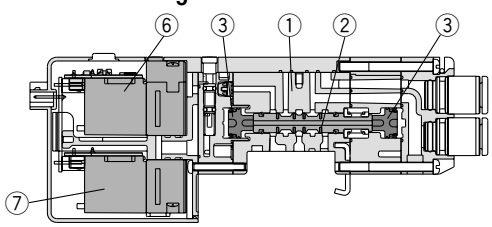


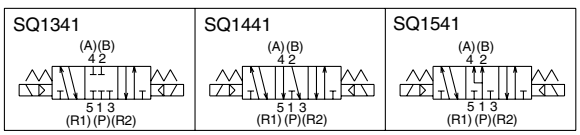
Double (double solenoid): SQ1241D



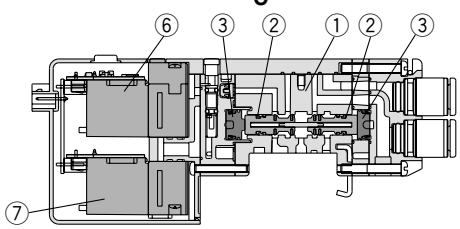


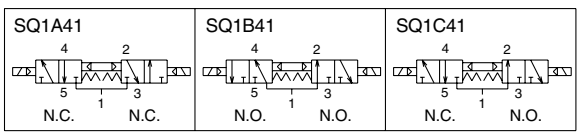
3 position: SQ1341 / SQ1441 / SQ1541





Dual 3 port valve: SQ1A41 / SQ1B41 / SQ1C41

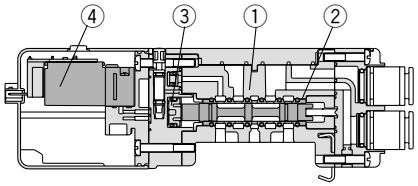


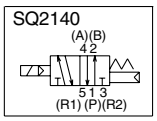


Construction/Series SQ2000 Plug Lead Type Main Parts and Pilot Valve Assemblies

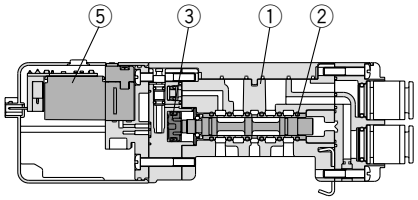
Metal seal type

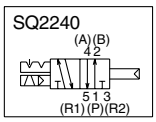
Single: SQ2140



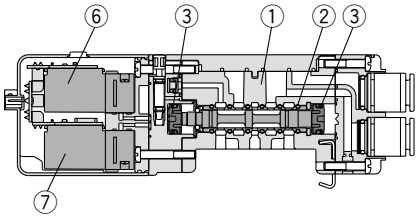


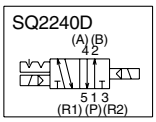
Double (latching): SQ2240



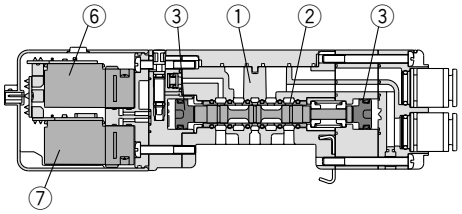


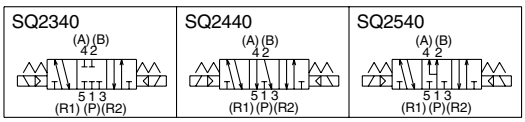
Double (double solenoid): SQ2240D





3 position: SQ2 3 4 40 5





Parts list

No.	Description	Material
1	Body	Die-cast aluminum
2	Spool sleeve	Stainless steel (metal seal)
	Spool	Aluminum (rubber seal)
3	Piston	Resin

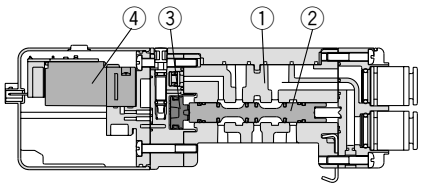
Pilot valve assemblies Note)

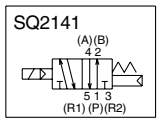
No.	Type	SQ2□4□
4	For single	VQ111S(Y)-$\frac{5}{6}$(N)J21-1
5	For double (latching)	VQ110SL-$\frac{5}{6}$J22-1 Negative COM: VQ110SN-$\frac{5}{6}$J22-1
6	For double (double solenoid) on A side	VQ111S(Y)-$\frac{5}{6}$(N)J23-1
	For 3P, dual 3 port on A side	
7	For double (double solenoid) on B side	VQ111S(Y)-$\frac{5}{6}$(N)J24-1
	For 3P, dual 3 port on B side	

Note) Nil: Standard
N: Negative COM specification
Y: Low power consumption specification

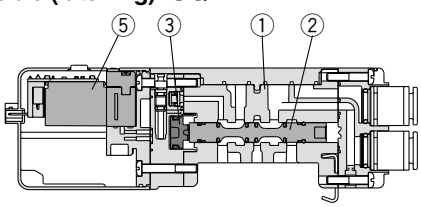
Rubber seal type

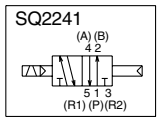
Single: SQ2141



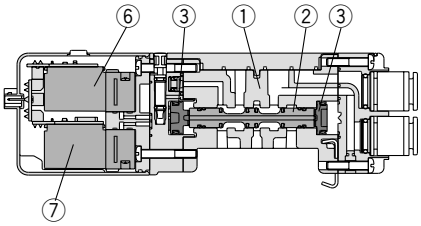


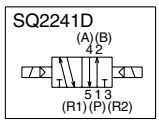
Double (latching): SQ2241



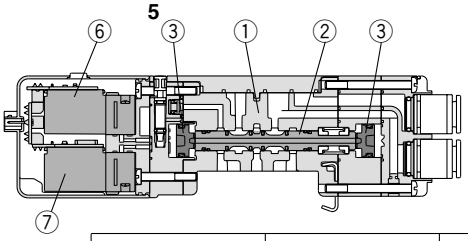


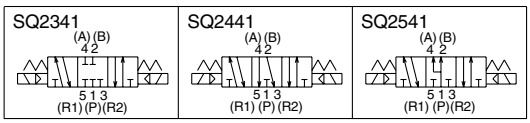
Double (double solenoid): SQ2241D



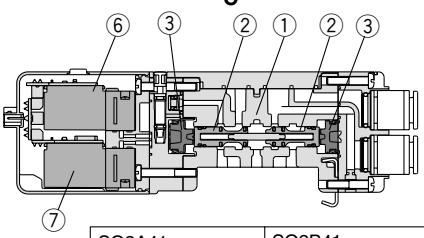


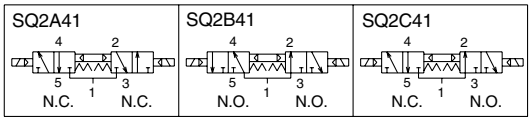
3 position: SQ2 3 4 41 5





Dual 3 port valve: SQ2 A B C 41

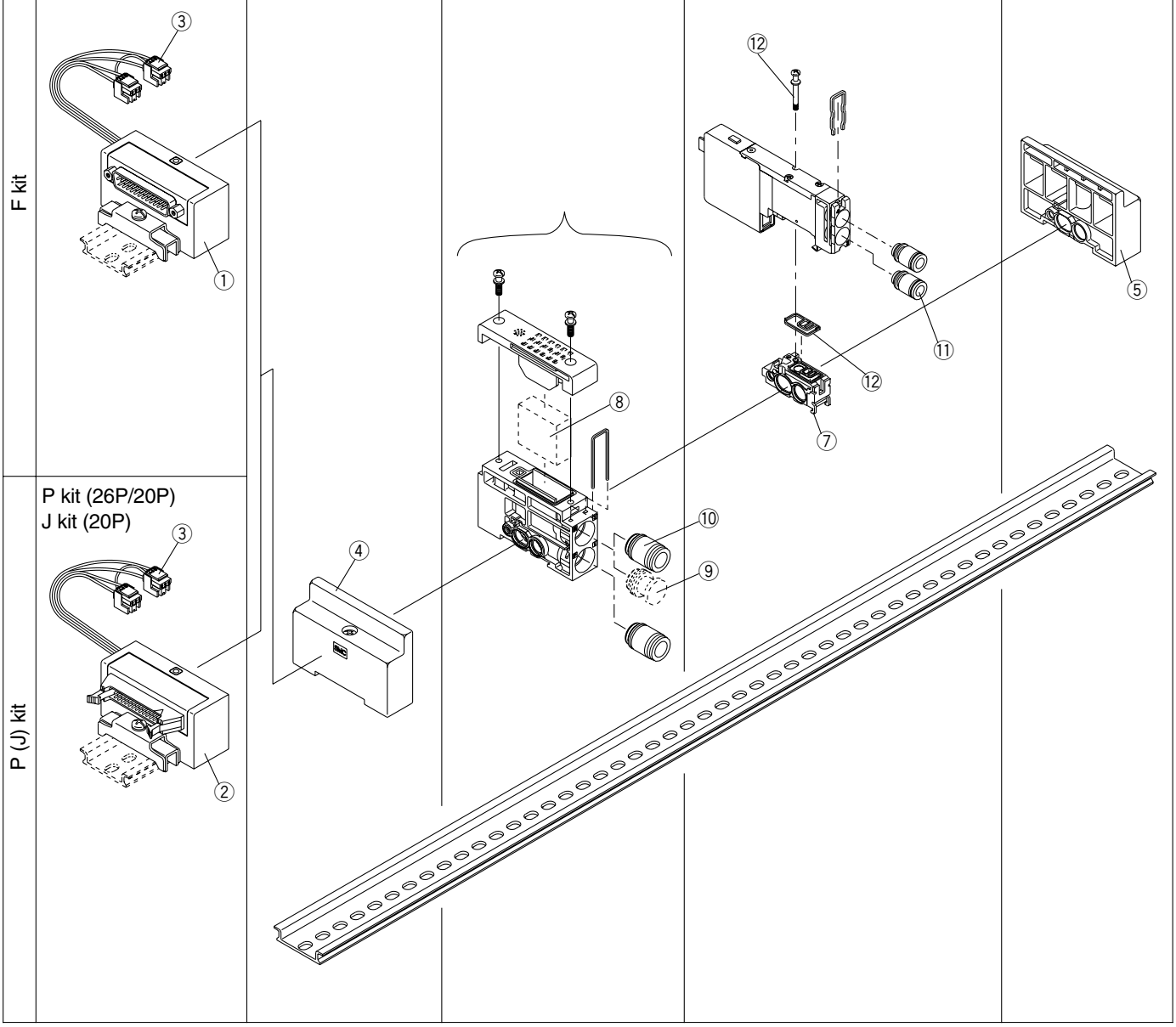




Exploded View of Manifold/SQ1000 (Plug Lead Type Manifold) SS5Q14

(F, P, J, C kit)

	Wiring unit assembly	D side end plate assembly	SUP/EXH block assembly	Valve and manifold block assemblies	U side end plate assembly
F kit					
P (J) kit	P kit (26P/20P) J kit (20P)				



Manifold Spare Parts

Refer to pages 106 through 112 of "How to Add Manifold Stations" regarding the mounting of each spare part.

<① D-sub connector housing assemblies>

AXT100 − 40 − FL25 − S 03

Wiring

S	Single wiring
D	Double wiring

Stations

01	1 station
⋮	⋮
24	24 stations

<② Flat ribbon cable connector housing assemblies>

AXT100 − 40 − PL26 / PL20 / JL20 − S 03

Wiring

S	Single wiring
D	Double wiring

Stations Note)

01	1 station
⋮	⋮
24	24 stations

Note)
PL26: 01 to 24 (P kit, 26P)
PL20: 01 to 18 (P kit, 20P)
JL20: 01 to 16 (J kit, 20P)

<③ Lead wire assemblies>

(For F kit)

For station 1 **SSQ1000 − 4 1 B − F − 155**

Wiring

0	For single (2 wires)
1	For double (3 wires)

For stations 2 to 24 **SSQ1000 − 4 1 A − F — 205**

Wiring

0	For single (2 wires)
1	For double (3 wires)

Lead wire length

Station	Dimension L (mm)	Station	Dimension L (mm)	Station	Dimension L (mm)	Station	Dimension L (mm)
2	165	8	245	14	320	20	400
3	175	9	260	15	335	21	405
4	190	10	280	16	350	22	420
5	205	11	290	17	365	23	435
6	215	12	300	18	375	24	450
7	230	13	310	19	385		

(For P, J kits)

For station 1 **SSQ1000 − 4 1 B − P − 150**

Wiring

0	For single (2 wires)
1	For double (3 wires)

For stations 2 to 24 **SSQ1000 − 4 1 A − P — 200**

Wiring

0	For single (2 wires)
1	For double (3 wires)

Lead wire length

Station	Dimension L (mm)	Station	Dimension L (mm)	Station	Dimension L (mm)	Station	Dimension L (mm)
2	160	8	240	14	315	20	395
3	170	9	255	15	330	21	400
4	185	10	275	16	345	22	415
5	200	11	285	17	360	23	430
6	210	12	295	18	370	24	445
7	225	13	305	19	380		

(For C kit)

AXT661−1 3 AL —

Wiring

3	For double (3 wires)
4	For single (2 wires)

Lead wire length

Symbol	Dimension L (mm)
Nil	300
6	600
10	1000
15	1500
20	2000
25	2500
30	3000
50	5000

<④ D side end plate assemblies>

SSQ1000−3A − 4

<⑤ U side end plate assemblies>

SSQ1000−2A − 4

<⑥ SUP/EXH block assemblies>

SSQ1000−PR − 4 — C8 —

Bore size

C6	ø6 One-touch fitting
C8	ø8 One-touch fitting
N7	ø1/4" One-touch fitting
N9	ø5/16" One-touch fitting

Option

Nil	Centralized exhaust
R	For external pilot
S	For direct exhaust outlet with built-in silencer

Note) Enter "-RS" for both options.

<⑦ Manifold block assemblies>

SSQ1000−1A − 4 — ⑫ Includes gaskets

Option

Nil	None
B	Back pressure check valve
R	External pilot specification

Note) Enter "-BR" for both options.

<⑧ Elements>

SSQ1000−SE

Note) Part number for a 10 piece set of elements. Refer to page 134 for replacement procedures.

<⑨ Port plugs>

VVQZ2000−CP

<⑩ Fitting assemblies>

(For P, R port)

VVQ1000−51A — C8

Bore size

C6	ø6 One-touch fitting
C8	ø8 One-touch fitting
N7	ø1/4" One-touch fitting
N9	ø5/16" One-touch fitting

Note) Available in units of 10 pieces.

<⑪ Fitting assemblies>

(For cylinder port)

VVQ1000−50A — C6

Bore size

C3	ø3.2 One-touch fitting
C4	ø4 One-touch fitting
C6	ø6 One-touch fitting
M5	M5 threads
N1	ø1/8" One-touch fitting
N3	ø5/32" One-touch fitting
N7	ø1/4" One-touch fitting

Note) Available in units of 10 pieces.

<⑫ Gasket and screw assemblies>

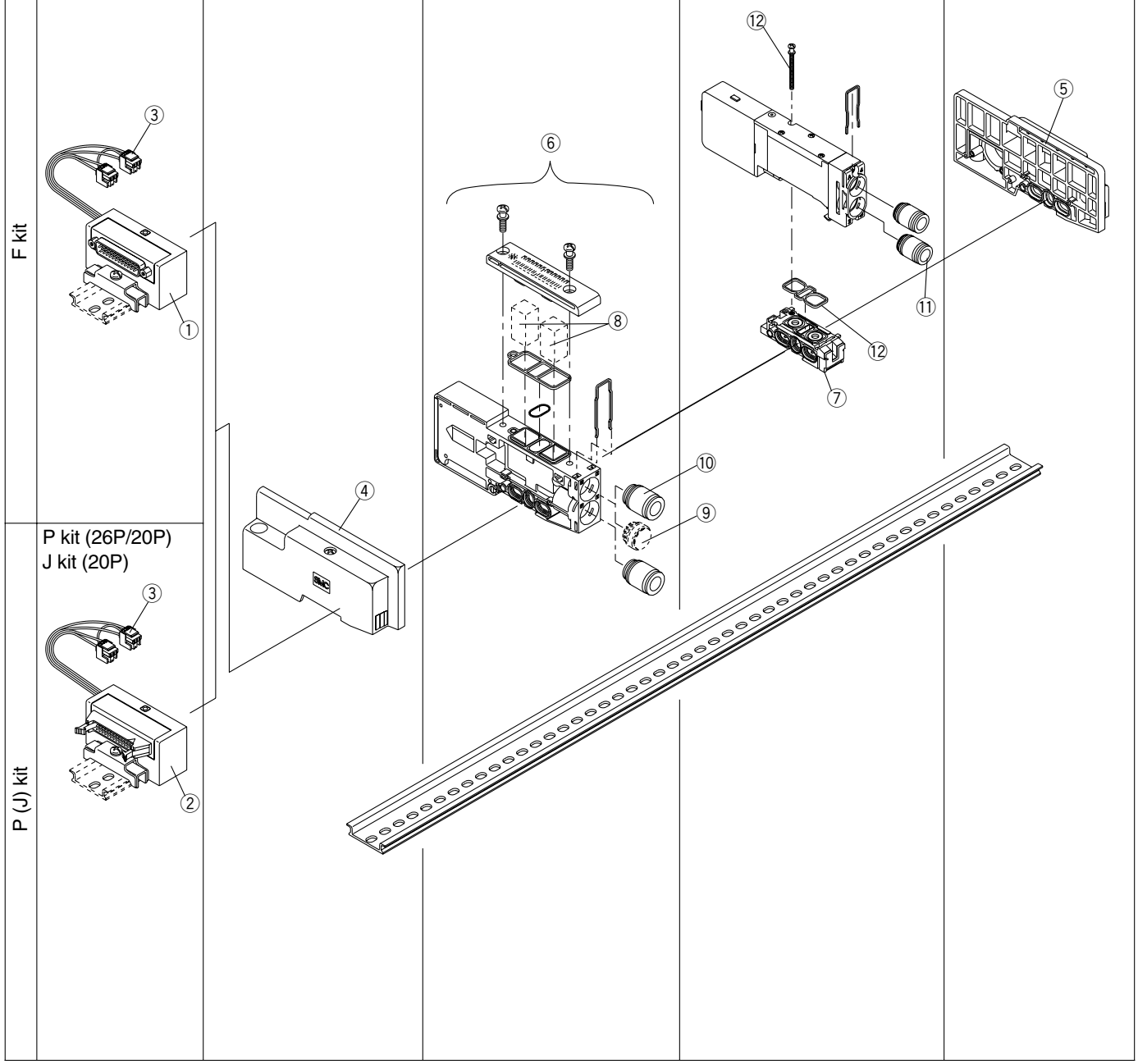
SQ1000−GS

Note) Part number for 10 pieces each of gaskets and screws.

Exploded View of Manifold/SQ2000 (Plug Lead Type Manifold) SS5Q24

(F, P, J, C kit)

	Wiring unit assembly	D side end plate assembly	SUP/EXH block assembly	Valve and manifold block assemblies	U side end plate assembly
F kit					
P (J) kit	P kit (26P/20P) J kit (20P)				



Manifold Spare Parts

Refer to pages 106 through 112 of "How to Add Manifold Stations" regarding the mounting of each spare part.

<① D-sub connector housing assemblies>

AXT100−41− FL25 −[S][03]

Wiring

S	Single wiring
D	Double wiring

Stations

01	1 station
⋮	⋮
12	12 stations

<② Flat ribbon cable connector housing assemblies>

AXT100−41− PL26 / PL20 / JL20 −[S][03]

Wiring

S	Single wiring
D	Double wiring

Stations Note)

01	1 station
⋮	⋮
12	12 stations

Note)
PL26: 01 to 12 (P kit, 26P)
PL20: 01 to 09 (P kit, 20P)
JL20: 01 to 08 (J kit, 20P)

<③ Lead wire assemblies>

(For F kit)

For station 1 **SSQ1000 −4[1] B−F−170**

Wiring

0	For single (2 wires)
1	For double (3 wires)

For stations 2 to 24 **SSQ1000 −4[1] A−F−[230]**

Wiring

0	For single (2 wires)
1	For double (3 wires)

Lead wire length

Station	Dimension L (mm)	Station	Dimension L (mm)	Station	Dimension L (mm)	Station	Dimension L (mm)
2	190	8	310	14	430	20	550
3	210	9	330	15	450	21	570
4	230	10	350	16	470	22	590
5	250	11	370	17	490	23	610
6	270	12	390	18	510	24	630
7	290	13	410	19	530		

(For P, J kits)

For station 1 **SSQ1000 −4[1] B−P−170**

Wiring

0	For single (2 wires)
1	For double (3 wires)

For stations 2 to 24 **SSQ1000 −4[1] A−P−[310]**

Wiring

0	For single (2 wires)
1	For double (3 wires)

Lead wire length

Station	Dimension L (mm)	Station	Dimension L (mm)	Station	Dimension L (mm)	Station	Dimension L (mm)
2	190	8	310	14	430	20	550
3	210	9	330	15	450	21	570
4	230	10	350	16	470	22	590
5	250	11	370	17	490	23	610
6	270	12	390	18	510	24	630
7	290	13	410	19	530		

(For C kit)

AXT661−1[3] AL−[6]

Wiring

3	For double (3 wires)
4	For single (2 wires)

Lead wire length

Symbol	Dimension L (mm)
Nil	300
6	600
10	1000
15	1500
20	2000
25	2500
30	3000
50	5000

<④ D side end plate assemblies>

SSQ2000−3A − 4[ ]

Manifold mounting

Nil	DIN rail mount type
E	Direct mount type

<⑤ U side end plate assemblies>

SSQ2000−2A − 4[ ]− 1

Manifold mounting

Nil	DIN rail mount type
E	Direct mount type

<⑥ SUP/EXH block assemblies>

SSQ2000−PR− 4 −[C10]−[ ]

Bore size

C8	ø8 One-touch fitting
C10	ø10 One-touch fitting
N9	ø5/16" One-touch fitting
N11	ø3/8" One-touch fitting

Option

Nil	Centralized exhaust
R	For external pilot
S	For direct exhaust outlet with built-in silencer

Note) Enter "-RS" for both options.

<⑦ Manifold block assemblies>

⑫ Includes gaskets

SSQ2000−1A − 4 −[ ]

Option

Nil	None
B	Back pressure check valve
R	External pilot specification

Note) Enter "-BR" for both options.

<⑧ Elements>

SSQ2000−SE

Note) Part number for a 10 piece set of elements. Refer to page 134 for replacement procedures.

<⑨ Port plugs>

VVQZ3000−CP

<⑩ Fitting assemblies>

(For P, R port)

VVQ2000−51A−[C10]

Bore size

C8	ø8 One-touch fitting
C10	ø10 One-touch fitting
N9	ø5/16" One-touch fitting
N11	ø3/8" One-touch fitting

Note) Available in units of 10 pieces.

<⑪ Fitting assemblies>

(For cylinder port)

VVQ1000−51A−[C8]

Bore size

C4	ø4 One-touch fitting
C6	ø6 One-touch fitting
C8	ø8 One-touch fitting
N3	ø5/32" One-touch fitting
N7	ø1/4" One-touch fitting
N9	ø5/16" One-touch fitting

Note) Available in units of 10 pieces.

<⑫ Gasket and screw assemblies>

SQ2000−GS

Note) Part number for 10 pieces each of gaskets and screws.

Series SQ1000/Plug-in Unit

❶ How to order manifolds

SS5Q 1 3 — 08 F P J L S D0 — D (–00T)

- 1 3: Series SQ1000 / Plug-in
- ①: 08
- F P J L S: Kit type
- ②: D0
- ③: D
- ④: (blank)
- (–00T): For P, R port in inch size

① Stations

01	1 station
⋮	⋮
24	24 stations

The maximum number of stations differs depending on the electrical entry. Refer to ②.

② Electrical entry/Cable length

Note 2)

Kit type		Entry direction	Cable specification	Standard stations
F	FD0	D side	D-sub connector (25P) kit without cable	1 to 12 (24)
	FD1		D-sub connector (25P) kit with 1.5m cable	
	FD2		D-sub connector (25P) kit with 3.0m cable	
	FD3		D-sub connector (25P) kit with 5.0m cable	
P	PD0	Note 1) D side	Flat ribbon cable (26P) kit without cable	1 to 12 (24)
	PD1		Flat ribbon cable (26P) kit with 1.5m cable	
	PD2		Flat ribbon cable (26P) kit with 3.0m cable	
	PD3		Flat ribbon cable (26P) kit with 5.0m cable	
	PDC		Flat ribbon cable (20P) kit without cable	1 to 9 (18)
J	JD0	D side	PC Wiring System compatible flat ribbon cable (20P) kit without cable	1 to 8 (16)
L	LD0	D side	Lead wire kit with 0.6m cable	1 to 12
	LU0	U side		
	LD1	D side	Lead wire kit with 1.5m cable	
	LU1	U side		
	LD2	D side	Lead wire kit with 3.0m cable	
	LU2	U side		
S	SDF	D side	NKE Corporation: Uni-wire System compatible	1 to 8 (16)
	SDH		NKE Corporation: Uni-wire H System compatible	
	SDJ1		SUNX Corporation: S-LINK system (16 outputs) compatible	
	SDJ2		SUNX Corporation: S-LINK system (8 outputs) compatible	1 to 4 (8)
	SDQ		Device Net compatible, OMRON Corporation: CompoBus/D compatible	1 to 8 (16)
	SDR1		OMRON Corporation: CompoBus/S (16 outputs) compatible	
	SDR2		OMRON Corporation: CompoBus/S (8 outputs) compatible	1 to 4 (8)
	SDV		Mitsubishi Electric corporation: CC-LINK System compatible	1 to 8 (16)

Note 1) Separately order the cable assembly for type 20P P kit.
Note 2) Numbers inside ( ) indicate the maximum number of solenoids for mixed single and double wiring. Also, indicate the option symbol "-K" for mixed wiring.

③ Manifold mounting

D	DIN rail mount type
E Note)	Direct mount type

Note) E type is mounted using two holes in each end plate and a DIN rail that is shorter than the manifold length.

④ Option

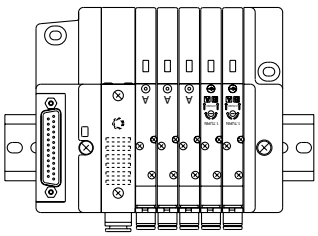
Nil	None
02 to 24	DIN rail length specified Note 2)
B	All stations with back pressure check valve
K	Special specification wiring Note 3) (except for double wiring)
N	Labeling plate (only for valves with side port specification)
R	External pilot specification
S	Built-in silencer

Note 1) For specifying two or more options, list symbols in alphabetical order. Example) -D12BS
Note 2) For specifying DIN rail length, indicate "D□". (Enter the number of stations inside □.) Example) -D08
In this example, stations will be mounted on a DIN rail for 8 stations regardless of the actual number of manifold stations.
Note 3) Be sure to indicate the wiring specification in the specification table.

❷ How to order applicable valves

SQ 1 1 3 1 — 5 — C6 — —

- 1: Series SQ1000
- Ⓐ: 1
- Ⓑ: 3
- Ⓒ: 1
- Ⓓ: 5
- Ⓔ: (blank)
- Ⓕ: C6
- Ⓖ: (blank)
- Ⓗ: (blank)



D side Stations ···1 ···2 ···3 ···4 ···5 ····n U side

∗ Stations are numbered from the D side.

Ⓐ Switching type

1	2 position single
2 Note 1)	2 position double (latching/double solenoid)
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A Note 2)	Dual 3 port valve N.C. + N.C.
B Note 2)	Dual 3 port valve N.O. + N.O.
C Note 2)	Dual 3 port valve N.C. + N.O.

Note 1) For the double solenoid specification, the symbol for Ⓒ Function is "D".
Note 2) Only rubber seal types are applicable.

Ⓑ Seal type

0	Metal seal
1	Rubber seal

Ⓒ Function

Nil	Standard type (1W)
D	2 position double (double solenoid specification)
K Note 1)	High voltage type (1.0MPa, 1W) [Only metal seal types applicable]
N	Negative COM
Y Note 1)	Low power consumption type (0.5W)
R Note 2)	External pilot specification

Note 1) Except double (latching) type.
Note 2) Except dual 3 port valves.
Note 3) For specifying two or more functions, enter symbols in alphabetical order.

Ⓓ Coil voltage

5	24VDC
6	12VDC

Note) Indicator light/surge voltage suppressor is built-in.

Ⓔ Manual override

Nil	Non-locking push type (tool required)
B Note)	Locking type (tool required)

Note) Except double (latching) type.

Ⓕ Cylinder port size

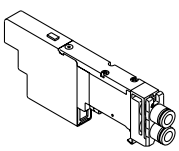
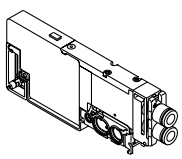
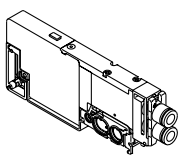
C3	With ø3.2 One-touch fitting	Side ported
C4	With ø4 One-touch fitting	
C6	With ø6 One-touch fitting	
M5	M5 threads	
L3	With ø3.2 One-touch fitting	Top ported
L4	With ø4 One-touch fitting	
L6	With ø6 One-touch fitting	
L5	M5 threads	

Note) Symbols for inch sizes are as follows.
N1: ø1/8"
N3: ø5/32"
N7: ø1/4"
For top ported specification, indicate "LN□".

Ⓖ Port plug mounting port

Nil	None
A	A port
B	B port

Ⓗ Manifold block specification

Nil	M	MB
Without manifold block	With manifold block	Manifold block with built-in back pressure check valve
		
• When ordering with manifolds • When only valves are required.	For adding stations	

SMC

Manifold Specification Sheet

Series SQ1000/Plug-in Unit

Manifold Model

SS5Q13 — [ ] — **F P J L S** — [ ] — **D E** — [ ]

● (Circle to specify.)

Date: / /

Customer name			
Contact person			
Specification sheet no.			
Purchase order no.			
Equipment name			
Quantity	set(s)	Required date	

Specifications

← D side

∗ Indicate required stations with a ○."

U side →

Description/Type \ Stations			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Valves	Single																									
	Double (latching)																									
	Double (double solenoid)																									
	Closed center																									
	Exhaust center																									
	Pressure center																									
	Dual 3 port valve (A)																									
	Dual 3 port valve (B)																									
	Dual 3 port valve (C)																									
Options	Blanking plate SSQ1000-10A-3																									
	Individual SUP spacer SSQ1000-P-3-C6(L6)																									
	SUP shut off position: Specify 2 positions.																									
	Individual EXH spacer SSQ1000-R-3-C6(L6)																									
	EXH shut off position: Specify 2 positions.																									
	Individual SUP/EXH spacer SSQ1000-PR1-3-C6(L6)																									
	SUP shut off position: Specify 2 positions.																									
	EXH shut off position: Specify 2 positions.																									
	SUP/EXH block Note 1) SSQ1000-PR-3-C8-(S)																									
	Back pressure check valve Note 2) SSQ1000-BP																									
	SUP block plate SSQ1000-B-P	P																								
	EXH block plate SSQ1000-B-R	R																								
	Port plug Note 3)		A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B
Cylinder port sizes Note 4)	With ø3.2 (ø1/8") One-touch fitting	C3 (N1)																								
	With ø4 (ø5/32") One-touch fitting	C4 (N3)																								
	With ø6 (ø1/4") One-touch fitting	C6 (N7)																								
Special wiring specification Note 5)		Single wiring																								
		Double wiring																								
Description/Type \ Stations			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Note

Note 1) The number of SUP/EXH blocks that can be added is limited to two sets, one between manifold stations and another on the U side of the manifold, due to the length of the internal lead wire.

Note 2) When installing back pressure check valves on all of the stations, indicate "-B" for the option symbol in the manifold part number. When installing back pressure check valves only on the stations required, specify the mounting stations in the table above.

Note 3) When using port plugs, circle ports to specify.

Note 4) For valves with top port specification, enter "L" in the table above.

Note 5) In case of single wiring or mixed wiring, connections to the connector terminals start from the A side solenoid of station 1 and continue in order without skipping any terminals. Also, when wiring is not required for a station that is to be mounted with an option such as an individual SUP spacer, enter an "X". In such a case, the wiring for that station is connected to the next station.

For SMC use only

Applicable valves and options

	Part no.	Qty.

	Part no.	Qty.

Order no.	
Clerk (code no.)	
Dept. code	

∗ Copy this page for use as needed.

Manifold Specification Sheet

Series SQ2000/Plug-in Unit

❶ How to order manifolds

SS5Q 2 3 — 08 — F P J T L S — D0 — D — ☐ — (–00T)

- Series SQ2000
- Plug-in
- ① Stations
- ② Electrical entry/Cable length
- Kit type
- ③ Manifold mounting
- ④ Option
- For P, R port in inch size

① Stations

01	1 station
⋮	⋮
16	16 stations

The maximum number of stations differs depending on the electrical entry. Refer to ②.

② Electrical entry/Cable length

Note 2)

Kit type		Entry direction	Cable specification	Standard stations
F	FD0	D side	D-sub connector (25P) kit without cable	1 to 12 (24)
	FD1		D-sub connector (25P) kit with 1.5m cable	
	FD2		D-sub connector (25P) kit with 3.0m cable	
	FD3		D-sub connector (25P) kit with 5.0m cable	
P	PD0	Note 1) D side	Flat ribbon cable (26P) kit without cable	1 to 12 (24)
	PD1		Flat ribbon cable (26P) kit with 1.5m cable	
	PD2		Flat ribbon cable (26P) kit with 3.0m cable	
	PD3		Flat ribbon cable (26P) kit with 5.0m cable	
	PDC		Flat ribbon cable (20P) kit without cable	1 to 9 (18)
J	JD0	D side	PC Wiring System compatible flat ribbon cable (20P) kit without cable	1 to 8 (16)
T	TD0	D side	Terminal block box kit	1 to 10 (16)
L	LD0	D side	Lead wire kit with 0.6m cable	1 to 12
	LU0	U side		
	LD1	D side	Lead wire kit with 1.5m cable	
	LU1	U side		
	LD2	D side	Lead wire kit with 3.0m cable	
	LU2	U side		
S	SDF	D side	NKE Corporation: Uni-wire System compatible	1 to 8 (16)
	SDH		NKE Corporation: Uni-wire H System compatible	
	SDJ1		SUNX Corporation: S-LINK system (16 outputs) compatible	
	SDJ2		SUNX Corporation: S-LINK system (8 outputs) compatible	1 to 4 (8)
	SDQ		Device Net compatible, OMRON Corporation: CompoBus/D compatible	1 to 8 (16)
	SDR1		OMRON Corporation: CompoBus/S (16 outputs) compatible	
	SDR2		OMRON Corporation: CompoBus/S (8 outputs) compatible	1 to 4 (8)
	SDV		Mitsubishi Electric corporation: CC-LINK System compatible	1 to 8 (16)

Note 1) Separately order the cable assembly for type 20P P kit.

Note 2) Numbers inside ( ) indicate the maximum number of solenoids for mixed single and double wiring. The maximum number of stations is determined by the total number of solenoids. Also, indicate the option symbol "-K" for mixed wiring.

③ Manifold mounting

D	DIN rail mount type
E Note)	Direct mount type

Note) E type is mounted using two holes in each end plate and a DIN rail that is shorter than the manifold length.

④ Option

Nil	None
02 to 24	DIN rail length specified Note 2)
B	All stations with back pressure check valve
K	Special specification wiring Note 3) (except for double wiring)
N	Labeling plate (only for valves with side port specification)
R	External pilot specification
S	Built-in silencer

Note 1) For specifying two or more options, list symbols in alphabetical order. Example) -D12BS

Note 2) For specifying DIN rail length, indicate "D☐". (Enter the number of stations inside ☐.) Example) -D08

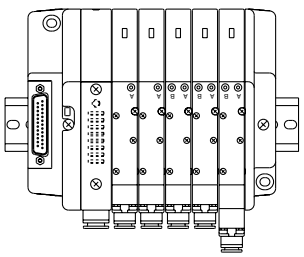
In this example, stations will be mounted on a DIN rail for 8 stations regardless of the actual number of manifold stations.

Note 3) Be sure to indicate the wiring specification in the specification table.

❷ How to order applicable valves

SQ 2 1 3 1 ☐ — 5 ☐ — C6 — ☐ — ☐

- Series SQ2000
- Ⓐ Switching type
- Ⓑ Seal type
- Ⓒ Function
- Ⓓ Coil voltage
- Ⓔ Manual override
- Ⓕ Cylinder port size
- Ⓖ Port plug mounting port
- Ⓗ Manifold block specification



∗ Stations are numbered from the D side.

Ⓐ Switching type

1	2 position single
2 Note 1)	2 position double (latching/double solenoid)
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A Note 2)	Dual 3 port valve N.C. + N.C.
B Note 2)	Dual 3 port valve N.O. + N.O.
C Note 2)	Dual 3 port valve N.C. + N.O.

Note 1) For the double solenoid specification, the symbol for Ⓒ Function is "D".

Note 2) Only rubber seal types are applicable.

Ⓑ Seal type

0	Metal seal
1	Rubber seal

Ⓒ Function

Nil	Standard type (1W)
D	2 position double (double solenoid specification)
N	Negative COM
Y Note 1)	Low power consumption type (0.5W)
R Note 2)	External pilot specification

Note 1) Except double (latching) type.

Note 2) Except dual 3 port valves.

Note 3) For specifying two or more functions, enter symbols in alphabetical order.

Ⓓ Coil voltage

5	24VDC
6	12VDC

Note) Indicator light/surge voltage suppressor is built-in.

Ⓔ Manual override

Nil	Non-locking push type (tool required)
B Note)	Locking type (tool required)
D Note)	Slide locking type: Side ported only

Note) Except double (latching) type.

Ⓕ Cylinder port size

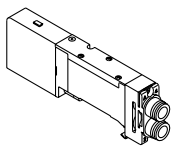
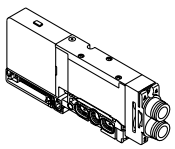
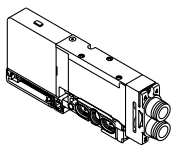
C4	ø4 One-touch fitting	Side ported
C6	ø6 One-touch fitting	
C8	ø8 One-touch fitting	
L4	ø4 One-touch fitting	Top ported
L6	ø6 One-touch fitting	
L8	ø8 One-touch fitting	

Note) Symbols for inch sizes are as follows.
N3: ø5/32"
N7: ø1/4"
N9: ø5/16"
For top ported specification, indicate "LN☐".

Ⓖ Port plug mounting port

Nil	None
A	A port
B	B port

Ⓗ Manifold block specification

Nil	M	MB
Without manifold block	With manifold block	Manifold block with built-in back pressure check valve
		
• When ordering with manifolds • When only valves are required.	For adding stations	

SMC

Manifold Specification Sheet

Series SQ2000/Plug-in Unit

Manifold Model

SS5Q23 — [ ] — [F P J T L S] — [ ] — [D E] — [ ]

● (Circle to specify.)

Date: / /

Customer name			
Contact person			
Specification sheet no.			
Purchase order no.			
Equipment name			
Quantity	set(s)	Required date	

Specifications

← D side

∗ Indicate required stations with a ○."

U side →

Description/Type			Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Valves	Single																										
	Double (latching)																										
	Double (double solenoid)																										
	Closed center																										
	Exhaust center																										
	Pressure center																										
	Dual 3 port valve (A)																										
	Dual 3 port valve (B)																										
	Dual 3 port valve (C)																										
Options	Blanking plate SSQ2000-10A-3																										
	Individual SUP spacer SSQ2000-P-3-C8(L8)																										
	SUP shut off position: Specify 2 positions.																										
	Individual EXH spacer SSQ2000-R-3-C8(L8)																										
	EXH shut off position: Specify 2 positions.																										
	Individual SUP/EXH spacer SSQ1000-PR1-3-C8(L8)																										
	SUP shut off position: Specify 2 positions.																										
	EXH shut off position: Specify 2 positions.																										
	SUP/EXH block Note 1) SSQ2000-PR-3-C10-(S)																										
	Back pressure check valve Note 2) SSQ2000-BP																										
	SUP block plate SSQ1000-B-R	P																									
	EXH block plate SSQ2000-B-R	R																									
	Port plug Note 3)			A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B
Cylinder port sizes Note 4)	ø4 (ø5/32") One-touch fitting	C4 (N3)																									
	ø6 (ø1/4") One-touch fitting	C6 (N7)																									
	ø8 (ø5/16") One-touch fitting	C8 (N9)																									
Special wiring specification Note 5)		Single wiring																									
		Double wiring																									
Description/Type			Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Note

Note 1) The number of SUP/EXH blocks that can be added is limited to two sets, one between manifold stations and another on the U side of the manifold, due to the length of the internal lead wire.

Note 2) When installing back pressure check valves on all of the stations, indicate "-B" for the option symbol in the manifold part number. When installing back pressure check valves only on the stations required, specify the mounting stations in the table above.

Note 3) When using port plugs, circle ports to specify.

Note 4) For valves with top port specification, enter "L" in the table above.

Note 5) In case of single wiring or mixed wiring, connections to the connector terminals start from the A side solenoid of station 1 and continue in order without skipping any terminals. Also, when wiring is not required for a station that is to be mounted with an option such as an individual SUP spacer, enter an "X". In such a case, the wiring for that station is connected to the next station.

For SMC use only

Applicable valves and options

	Part no.	Qty.

	Part no.	Qty.

Order no.	
Clerk (code no.)	
Dept. code	

∗ Copy this page for use as needed.

Manifold Specification Sheet

Series SQ1000/Plug Lead Unit

❶ How to order manifolds

SS5Q 1 4 — 08 (F P J C) D0 — D □ (–00T)

- Series SQ1000
- Plug lead
- ① Stations
- ② Electrical entry/Cable length
- Kit type
- ③ Option
- For P, R port in inch size

① Stations

01	1 station
⋮	⋮
24	24 stations

Maximum number of stations differs depending on the electrical entry. Refer to ②.

② Electrical entry/Cable length

Note 2)

Kit type		Entry direction	Cable specification	Standard stations
F	FD0	D side	D-sub connector (25P) kit without cable	1 to 12 (24)
	FD1		D-sub connector (25P) kit with 1.5m cable	
	FD2		D-sub connector (25P) kit with 3.0m cable	
	FD3		D-sub connector (25P) kit with 5.0m cable	
P	PD0	Note 1) D side	Flat ribbon cable (26P) kit without cable	1 to 12 (24)
	PD1		Flat ribbon cable (26P) kit with 1.5m cable	
	PD2		Flat ribbon cable (26P) kit with 3.0m cable	
	PD3		Flat ribbon cable (26P) kit with 5.0m cable	
	PDC		Flat ribbon cable (20P) kit without cable	1 to 9 (18)
J	JD0	D side	PC Wiring System compatible flat ribbon cable (20P) kit without cable	1 to 8 (16)
C	None		Connector kit	1 to 24

Note 1) Separately order the cable assembly for type 20P P kit.

Note 2) Numbers inside ( ) indicate the maximum number of solenoids for mixed single and double wiring. The maximum number of stations is determined by the total number of solenoids. Also, indicate the option symbol "-K" for mixed wiring.

③ Option

Nil	None
02 to 24	DIN rail length specified Note 2)
B	All stations with back pressure check valve
K	Special specification wiring Note 3) (except for double wiring)
N	Labeling plate (only for valves with side port specification)
R	External pilot specification
S	Built-in silencer

Note 1) For specifying two or more options, list symbols in alphabetical order. Example) -D12BS

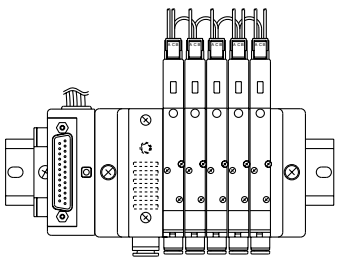
Note 2) For specifying DIN rail length, indicate "D□". (Enter the number of stations inside □.) Example) -D08 In this example, stations will be mounted on a DIN rail for 8 stations regardless of the actual number of manifold stations.

Note 3) Be sure to indicate the wiring specification in the specification table.

❷ How to order applicable valves

SQ 1 1 4 1 □ — 5 L □ — C6 — □ — □

- Series SQ1000
- Ⓐ Switching type
- Ⓑ Seal type
- Ⓒ Function
- Ⓓ Coil voltage
- Ⓔ Electrical entry
- Ⓕ Manual override
- Ⓖ Cylinder port size
- Ⓗ Port plug mounting port
- Ⓘ Manifold block specification



D side Stations - -1 - -2 - -3 - -4 - -5 - -n U side

∗ Stations are numbered from the D side.

Ⓐ Switching type

1	2 position single
2 Note 1)	2 position double (latching/double solenoid)
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A Note 2)	Dual 3 port valve N.C. + N.C.
B Note 2)	Dual 3 port valve N.O. + N.O.
C Note 2)	Dual 3 port valve N.C. + N.O.

Note 1) For the double solenoid specification, the symbol for Ⓒ Function is "D".

Note 2) Only rubber seal types are applicable.

Ⓑ Seal type

0	Metal seal
1	Rubber seal

Ⓒ Function

Nil	Standard type (1W)
D	2 position double (double solenoid specification)
K Note 1)	High voltage type (1.0MPa, 1W) [Only metal seal types applicable]
N	Negative COM
Y Note 1)	Low power consumption type (0.5W)
R Note 2)	External pilot specification

Note 1) Except double (latching) type.

Note 2) Except dual 3 port valves.

Note 3) For specifying two or more functions, enter symbols in alphabetical order.

Ⓓ Coil voltage

5	24VDC
6	12VDC

Ⓔ Electrical entry

L	L type plug connector with lead wire	—
L0	L type plug connector without connector	For F, P, J kit manifolds Note 1)

Note) Indicate "LO" when ordering centralized wiring type manifolds, F, P, and J kits, since the lead wire will be attached to the manifold side.

Ⓕ Manual override

Nil	Non-locking push type (tool required)
B Note)	Locking type (tool required)

Note) Except double (latching) type.

Ⓖ Cylinder port size

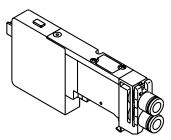
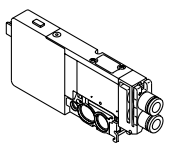
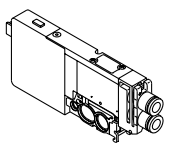
C3	With ø3.2 One-touch fitting	Side ported
C4	With ø4 One-touch fitting	
C6	With ø6 One-touch fitting	
M5	M5 threads	
L3	With ø3.2 One-touch fitting	Top ported
L4	With ø4 One-touch fitting	
L6	With ø6 One-touch fitting	
L5	M5 threads	

Note) Symbols for inch sizes are as follows.
N1: ø1/8"
N3: ø5/32"
N7: ø1/4"
For top ported specification, indicate "LN□".

Ⓗ Port plug mounting port

Nil	None
A	A port
B	B port

Ⓘ Manifold block specification

Nil	M	MB
Without manifold block	With manifold block	Manifold block with built-in back pressure check valve
		
• When ordering with manifolds • When only valves are required.	For adding stations	

Manifold Specification Sheet

Series SQ1000/Plug Lead Unit

Manifold Model

SS5Q14 — ☐ — **F P J C** — ☐ — **D** ☐

● **(Circle to specify.)**

Date: / /

Customer name			
Contact person			
Specification sheet no.			
Purchase order no.			
Equipment name			
Quantity	set(s)	Required date	

Specifications

← D side

∗ Indicate required stations with a ○."

U side →

Description/Type \ Stations			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Valves	Single																									
	Double (latching)																									
	Double (double solenoid)																									
	Closed center																									
	Exhaust center																									
	Pressure center																									
	Dual 3 port valve (A)																									
	Dual 3 port valve (B)																									
	Dual 3 port valve (C)																									
Options	Blanking plate SSQ1000-10A-4																									
	Individual SUP spacer SSQ1000-P-4-C6(L6)																									
	SUP shut off position: Specify 2 positions.																									
	Individual EXH spacer SSQ1000-R-4-C6(L6)																									
	EXH shut off position: Specify 2 positions.																									
	Individual SUP/EXH spacer SSQ1000-PR1-4-C6(L6)																									
	SUP shut off position: Specify 2 positions.																									
	EXH shut off position: Specify 2 positions.																									
	SUP/EXH block Note 1) SSQ1000-PR-4-C8-(S)																									
	Back pressure check valve Note 2) SSQ1000-BP																									
	SUP block plate SSQ1000-B-P	P																								
	EXH block plate SSQ1000-B-R	R																								
	Port plug Note 3)		A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B
Cylinder port sizes Note 4)	ø3.2 (ø1/8") One-touch fitting	C3 (N1)																								
	ø4 (ø5/32") One-touch fitting	C4 (N3)																								
	ø6 (ø1/4") One-touch fitting	C6 (N7)																								
Special wiring specification Note 5)		Single wiring																								
		Double wiring																								
Description/Type \ Stations			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Note

Note 1) The number of SUP/EXH blocks that can be added is limited to two sets, one between manifold stations and another on the U side of the manifold, due to the length of the internal lead wire.

Note 2) When installing back pressure check valves on all of the stations, indicate "-B" for the option symbol in the manifold part number. When installing back pressure check valves only on the stations required, specify the mounting stations in the table above.

Note 3) When using port plugs, circle ports to specify.

Note 4) For valves with top port specification, enter "L" in the table above.

Note 5) In case of single wiring or mixed wiring, connections to the connector terminals start from the A side solenoid of station 1 and continue in order without skipping any terminals. Also, when wiring is not required for a station that is to be mounted with an option such as an individual SUP spacer, enter an "X". In such a case, the wiring for that station is connected to the next

For SMC use only

Applicable valves and options

	Part no.	Qty.

	Part no.	Qty.

Order no.	
Clerk (code no.)	
Dept. code	

∗ Copy this page for use as needed.

Manifold Specification Sheet

Series SQ2000/Plug Lead Unit

❶ How to order manifolds

SS5Q 2 4 – 08 F/P/J/C D0 – D ☐ (–00T)

- Series SQ2000: 2
- Plug lead: 4
- ① 08
- Kit type: F, P, J, C
- ② D0
- ③ D
- ④ ☐
- For P, R port in inch size: (–00T)

① Stations

01	1 station
⋮	⋮
16	16 stations

The maximum number of stations differs depending on the electrical entry. Refer to ②.

② Electrical entry/Cable length Note 2)

Kit type		Entry direction	Cable specification	Standard stations
F	FD0	D side	D-sub connector (25P) kit without cable	1 to 12 (24)
	FD1		D-sub connector (25P) kit with 1.5m cable	
	FD2		D-sub connector (25P) kit with 3.0m cable	
	FD3		D-sub connector (25P) kit with 5.0m cable	
P	PD0	Note 1) D side	Flat ribbon cable (26P) kit without cable	1 to 12 (24)
	PD1		Flat ribbon cable (26P) kit with 1.5m cable	
	PD2		Flat ribbon cable (26P) kit with 3.0m cable	
	PD3		Flat ribbon cable (26P) kit with 5.0m cable	
	PDC		Flat ribbon cable (20P) kit without cable	1 to 9 (18)
J	JD0	D side	PC Wiring System compatible flat ribbon cable (20P) kit without cable	1 to 8 (16)
C	None		Connector kit	1 to 24

Note 1) Separately order the cable assembly for type 20P P kit.
Note 2) Numbers inside ( ) indicate the maximum number of solenoids for mixed single and double wiring. The maximum number of stations is determined by the total number of solenoids. Also, indicate the option symbol "-K" for mixed wiring.

③ Manifold mounting

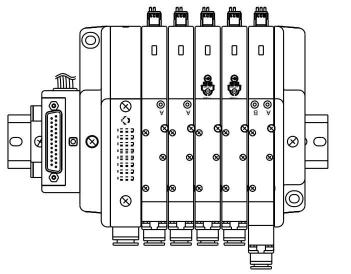
D	DIN rail mount type
E Note)	Direct mount type

Note) C kit only. E type is mounted using two holes in each end plate and a DIN rail that is shorter than the manifold length.

④ Option

Nil	None
02 to 24	DIN rail length specified Note 2)
B	All stations with back pressure check valve
K	Special specification wiring Note 3) (except for double wiring)
N	Labeling plate (only for valves with side port specification)
R	External pilot specification
S	Built-in silencer

Note 1) For specifying two or more options, list symbols in alphabetical order. Example) -D12BS
Note 2) For specifying DIN rail length, indicate "D☐". (Enter the number of stations inside ☐.) Example) -D08
In this example, stations will be mounted on a DIN rail for 8 stations regardless of the actual number of manifold stations.
Note 3) Be sure to indicate the wiring specification in the specification table.



D side Stations-1- -2- -3- -4- -5- -n U side

∗ Stations are numbered from the D side.

❷ How to order applicable valves

SQ 2 1 4 1 ☐ – 5 L ☐ – C6 – ☐ – ☐

- Series SQ2000: 2
- Ⓐ 1
- Ⓑ 1
- Ⓒ ☐
- Ⓓ 5
- Ⓔ L
- Ⓕ ☐
- Ⓖ C6
- Ⓗ ☐
- Ⓘ ☐

Ⓐ Switching type

1	2 position single
2 Note 1)	2 position double (latching/double solenoid)
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A Note 2)	Dual 3 port valve N.C. + N.C.
B Note 2)	Dual 3 port valve N.O. + N.O.
C Note 2)	Dual 3 port valve N.C. + N.O.

Note 1) For the double solenoid specification, the symbol for Ⓒ Function is "D".
Note 2) Only rubber seal types are applicable.

Ⓑ Seal type

0	Metal seal
1	Rubber seal

Ⓒ Function

Nil	Standard type (1W)
D	2 position double (double solenoid specification)
N	Negative COM
Y Note 1)	Low power consumption type (0.5W)
R Note 2)	External pilot specification

Note 1) Except double (latching) type.
Note 2) Except dual 3 port valves.
Note 3) For specifying two or more functions, enter symbols in alphabetical order.

Ⓓ Coil voltage

5	24VDC
6	12VDC

Ⓔ Electrical entry

L	L type plug connector with lead wire	—
L0	L type plug connector without connector	For F, P, J kit manifolds Note 1)

Note) Indicate "LO" when ordering centralized wiring type manifolds, F, P, and J kits, since the lead wire will be attached to the manifold side.

Ⓕ Manual override

Nil	Non-locking push type (tool required)
B Note)	Locking type (tool required)
D Note)	Slide locking type: Side ported only

Note) Except double (latching) type.

Ⓖ Cylinder port size

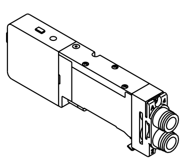
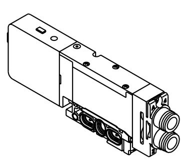
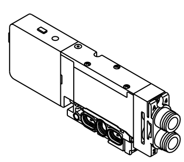
C4	ø4 One-touch fitting	Side ported
C6	ø6 One-touch fitting	
C8	ø8 One-touch fitting	
L4	ø4 One-touch fitting	Top ported
L6	ø6 One-touch fitting	
L8	ø8 One-touch fitting	

Note) Symbols for inch sizes are as follows.
N3: ø5/32"
N7: ø1/4"
N9: ø5/16"
For top ported specification, indicate "LN☐".

Ⓗ Port plug mounting port

Nil	None
A	A port
B	B port

Ⓘ Manifold block specification

Nil	M	MB
Without manifold block	With manifold block	Manifold block with built-in back pressure check valve
		
• When ordering with manifolds • When only valves are required.	For adding stations	

Manifold Specification Sheet

Series SQ2000/Plug Lead Unit

Date: / /

Customer name	
Contact person	
Specification sheet no.	
Purchase order no.	
Equipment name	
Quantity	set(s) Required date

Manifold Model

SS5Q24 — [ ] — **F P J C** — [ ] — **D E** — [ ]

● **(Circle to specify.)**

Specifications

← D side ∗ Indicate required stations with a ○." U side →

Description/Type			Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Valves	Single																										
	Double (latching)																										
	Double (double solenoid)																										
	Closed center																										
	Exhaust center																										
	Pressure center																										
	Dual 3 port valve (A)																										
	Dual 3 port valve (B)																										
	Dual 3 port valve (C)																										
Options	Blanking plate SSQ2000-10A-4																										
	Individual SUP spacer SSQ2000-P-4-C8(L8)																										
	SUP shut off position: Specify 2 positions.																										
	Individual EXH spacer SSQ2000-R-4-C8(L8)																										
	EXH shut off position: Specify 2 positions.																										
	Individual SUP/EXH spacer SSQ1000-PR1-4-C8(L8)																										
	SUP shut off position: Specify 2 positions.																										
	EXH shut off position: Specify 2 positions.																										
	SUP/EXH block Note 1) SSQ2000-PR-4-C10-(S)																										
	Back pressure check valve Note 2) SSQ2000-BP																										
	SUP block plate SSQ1000-B-R	P																									
	EXH block plate SSQ2000-B-R	R																									
	Port plug Note 3)			A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B	A B
Cylinder port sizes Note 4)	ø4 (ø5/32") One-touch fitting	C4 (N3)																									
	ø6 (ø1/4") One-touch fitting	C6 (N7)																									
	ø8 (ø5/16") One-touch fitting	C8 (N9)																									
Special wiring specification Note 5)		Single wiring																									
		Double wiring																									
Description/Type			Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Note

Note 1) The number of SUP/EXH blocks that can be added is limited to two sets, one between manifold stations and another on the U side of the manifold, due to the length of the internal lead wire.

Note 2) When installing back pressure check valves on all of the stations, indicate "-B" for the option symbol in the manifold part number. When installing back pressure check valves only on the stations required, specify the mounting stations in the table above.

Note 3) When using port plugs, circle ports to specify.

Note 4) For valves with top port specification, enter "L" in the table above.

Note 5) In case of single wiring or mixed wiring, connections to the connector terminals start from the A side solenoid of station 1 and continue in order without skipping any terminals. Also, when wiring is not required for a station that is to be mounted with an option such as an individual SUP spacer, enter an "X". In such a case, the wiring for that station is connected to the next station.

For SMC use only

Applicable valves and options

	Part no.	Qty.

	Part no.	Qty.

Order no.	
Clerk (code no.)	
Dept. code	

∗ Copy this page for use as needed.

Series SQ1000/2000
Safety Instructions

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 ISO 4414 Note 1), JIS B 8370 Note 2) and other safety practices.

⚠ Caution: Operator error could result in injury or equipment damage.

⚠ Warning: Operator error could result in serious injury or loss of life.

⚠ Danger: In extreme conditions, there is a possible result of serious injury or loss of life.

Note 1) ISO 4414 : Pneumatic fluid power – Recommendations for the application of equipment to transmission and control systems

Note 2) JIS B 8370 : General Rules for Pneumatic Equipment

⚠ Warning

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

Since the products specified here are used in various operating conditions, their compatibility for the specific pneumatic system must be based on specifications or after analysis and/or tests to meet your specific requirements.

2. Only trained personnel 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 trained and experienced operators.

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

1. Inspection and maintenance of machinery/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. Before machinery/equipment is restarted, take measures to prevent shooting-out of cylinder piston rod, etc. (Bleed air into the system gradually to create back pressure.)

4. Contact SMC if the product is to be used in any of the following conditions:

1. Conditions and environments beyond the given specifications, or if product is used outdoors.
2. Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverages, recreation equipment, emergency stop circuits, press applications, or safety equipment.
3. An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

Series SQ1000/2000
5 Port Solenoid Valve Precautions 1

Be sure to read before handling.

Design

⚠Warning

1. Actuator drive

When an actuator, such as a cylinder, is to be driven using a valve, take appropriate measures to prevent potential danger caused by actuator operation.

2. Intermediate stopping

When a 3 position closed center valve is used to stop a cylinder at an intermediate position, accurate stopping of the piston in a predetermined position is not possible due to the compressibility of air. Furthermore, since valves and cylinders are not guaranteed for zero air leakage, it may not be possible to hold a stopped position for an extended length of time. Contact SMC if it is necessary to hold a stopped position for an extended time.

3. Effect of back pressure when using a manifold

Use caution when valves are used on a manifold, as actuator malfunction due to back-pressure may occur. Special caution is necessary when using a 3 position exhaust center valve, or when driving a single acting cylinder, etc. In cases where there is a danger of this kind of malfunction, take countermeasures by using an individual EXH spacer, or a back pressure check valve.

Also, because SQ1000 4 position dual 3 port valves have a 4 port specification (common R1 and R2), one back pressure check valve can be mounted. Therefore, although the back pressure of other stations can be prevented, it is not possible to prevent the back pressure in the same valve.

4. Holding of pressure (including vacuum)

Since valves are subject to air leakage, they cannot be used for applications such as holding pressure (including vacuum) in a pressure vessel.

5. Cannot be used as an emergency shutoff valve, etc.

The valves are not designed for safety applications such as an emergency shutoff valve. If the valves are used in this type of system, other reliable safety assurance measures should also be adopted.

6. Maintenance space

Allow sufficient space for maintenance activities.

7. Release of residual pressure

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

8. Vacuum applications

When a valve is used for vacuum switching, etc., take measures against the suction of external dust or other contaminants from vacuum pads and exhaust ports, etc. Moreover, an external pilot type valve should be used in this case. Contact SMC in case of an internal pilot type.

Selection

⚠Warning

1. Confirm the specifications.

The products are designed only for use in compressed air systems (including vacuum). Do not operate at pressures or temperatures, etc., beyond the range of specifications, as this can cause damage or malfunction. (Refer to specifications.)

Contact SMC when using a fluid other than compressed air (including vacuum).

2. Extended periods of continuous energization

Use the low power consumption specification (0.5W) if valves will be continuously energized for extended periods of time or the energized period will be longer than the de-energized period. Use the low power consumption specification (0.5W) especially when three or more adjacent stations on a manifold are continuously energized, because the temperature increases substantially. For 2 position double latching type, use the type with energy saving circuit SQ $2^{1}_{2}{}^{30}_{41}$ □□-X11.

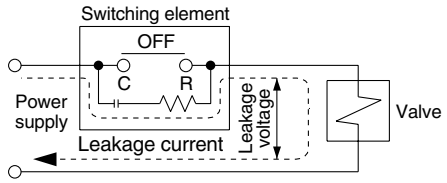
⚠Caution

1. Momentary energization (double solenoid type)

If a double solenoid valve will be operated with momentary energization, it should be energized for at least 0.1 second (20mS or more for 2 position double latching type).
However, malfunction may occur due to load conditions on the secondary side. In that case energize until the cylinder moves to the stroke end. Furthermore, when using a double solenoid valve for air blowing, energize when performing the air blowing.

2. Leakage voltage

Particularly when using a C-R element (surge voltage suppressor) for protection of the switching element, take note that leakage voltage will increase due to leakage current flowing through the C-R element, etc.



Limit the amount of residual leakage voltage to the following values:

With DC coil	2% or less of rated voltage
With AC coil	12.5% or less of rated voltage

3. Operation of solenoid valves with an SSR

Malfunction may occur when the minimum load current of the SSR is larger than the load current of solenoid valves.

Consider the element specifications in the catalog to select an SSR.

4. Surge voltage suppressor

If a general diode such as zener diode or ZNR is not used in the surge voltage suppressor on the controller side, be aware that there will be a residual voltage according to the protective element and rated voltage.

Moreover, the residual voltage of the diode is approximately 1V.

5. Low temperature operation

Valves can be operated at a temperature as low as –10°C unless otherwise indicated in the specifications for each valve, however, measures should be taken to avoid solidification or freezing of drainage and moisture, etc.

Series SQ1000/2000
5 Port Solenoid Valve Precautions 2
Be sure to read before handling.

Selection

⚠Caution

6. Operation for air blowing

When using solenoid valves for air blowing, use an external pilot type. When using an internal pilot and an external pilot on the same manifold, a pressure drop caused by air blowing may affect the internal pilot valve.

Also, supply to the external pilot port compressed air within the pressure range prescribed in the specifications; and with 2 position double (double solenoid), always energize when air blowing.

7. Mounting orientation

In the case of 2 position single or 4 position dual 3 port valves, the mounting orientation is unrestricted. In the case of 2 position double (double solenoid) or 3 position valves, mount so that the spool valve is horizontal.

Mounting

⚠Warning

1. If air leakage increases or equipment does not operate properly, stop operation.

After mounting or maintenance, connect the compressed air and power supplies, and perform appropriate function and leakage tests to confirm that the unit is mounted properly.

2. Instruction manual

Mount and operate the product after reading the manual carefully and understanding its contents. Also keep the manual where it can be referred to as necessary.

3. Painting and coating

Warnings or specifications printed or pasted on the product should not be erased, removed or covered up.

Furthermore, confirm before painting the resin parts, because this may cause an adverse effect depending on the solvent.

Piping

⚠Caution

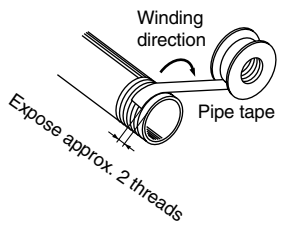
1. Preparation before piping

Before piping is connected, it should be thoroughly blown out with air (flushing) or washed to remove chips, cutting oil and other debris from inside the pipe.

2. Wrapping of pipe tape

When connecting pipes and fittings, etc., be sure that chips from the pipe threads and sealing material do not get inside the valve.

Furthermore, when pipe tape is used, leave 1.5 to 2 thread ridges exposed at the end of the threads.



Piping

⚠Caution

3. When using closed center valves

When using 3 position closed center type valves, check carefully to be sure there are no air leaks from the piping between the valves and cylinders.

4. Screwing in fittings

When screwing fittings into valves, tighten as follows.

1) For M3, M5 threads

1-1) When using SMC fittings, tighten in the following manner. After tightening by hand, tighten an additional 1/4 rotation for M3 and 1/6 rotation for M5 with a tool. However, when using a miniature fitting, tighten an additional 1/4 rotation with a tool after tightening by hand. Also, when there are 2 gaskets such as for a universal elbow and universal tee, tighten an additional 1/2 rotation.

Note) Over-tightening will cause breakage of the fitting threads or air leakage due to deformation of the gasket. Under-tightening will cause loosening or air leakage.

1-2) When using fittings other than SMC products, follow the instructions of the respective manufacturers.

2) For Rc threads

Tighten with the torques given below.

Connection threads	Proper tightening torque N·m
Rc 1/8	7 to 9
Rc 1/4	12 to 14

5. Connection of piping to products

When connecting piping to a product, refer to its instruction manual to avoid mistakes regarding the supply port, etc.

Wiring

⚠Caution

1. Polarity

Confirm whether or not there is polarity when connecting electrical wiring to solenoid valves with a DC specification (indicator light) surge voltage suppressor. When there is polarity, be aware of the following.

The valves will not switch if the polarity is reversed.

2. Applied voltage

When electric power is connected to a solenoid valve, be careful to apply the proper voltage. Improper voltage may cause malfunction or coil damage.

3. Confirm the connections.

After completing the wiring, confirm that the connections are correct.

Series SQ1000/2000
5 Port Solenoid Valve Precautions 3
Be sure to read before handling.

Lubrication

⚠Caution

1. Lubrication

1) The valve has been lubricated for life at the factory, and does not require any further lubrication.

2) In the event that it is lubricated, use Class 1 turbine oil (without additives), ISO VG32.

However, once lubrication is applied it must be continued, as the original lubricant may be eliminated leading to malfunction.

Contact SMC regarding Class 2 turbine oil (with additives), ISO VG32.

Air Supply

⚠Warning

1. Use clean air.

Do not use compressed air which contains chemicals, synthetic oils containing organic solvents, salts or corrosive gases, etc., as this can cause damage or malfunction.

⚠Caution

1. Install air filters.

Install air filters close to valves at their upstream side.

2. Install an air dryer, after-cooler or water separator, etc.

Air that includes excessive drainage may cause malfunction of valves and other pneumatic equipment. To prevent this, install an air dryer, after-cooler or water separator, etc.

3. If excessive carbon dust is generated, eliminate it by installing mist separators at the upstream side of valves.

If excessive carbon dust is generated by the compressor, it may adhere to the inside of valves and cause malfunction.

Refer to SMC's "Air Cleaning Equipment" catalog for further details on compressed air quality.

Operating Environment

⚠Warning

1. Do not use valves in atmospheres of corrosive gases, chemicals, salt water, water or steam, or where there is direct contact with them.

2. Do not use in an explosive atmosphere.

3. Do not use in locations subject to vibration or impact. Confirm the specifications in the main section of the catalog.

4. A protective cover, etc., should be used to shield valves from direct sunlight.

5. Shield valves from radiated heat generated by nearby heat sources.

6. Employ suitable protective measures in locations where there is contact with water droplets, oil or welding spatter, etc.

Operating Environment

⚠Warning

7. When solenoid valves are mounted inside a control panel or are energized for extended periods of time, employ measures to radiate excess heat so that temperatures remain within the valve specification range.

Maintenance

⚠Warning

1. Perform maintenance procedures as shown in the instruction manual.

If handled improperly, malfunction or damage of machinery or equipment may occur.

2. Equipment removal and supply/exhaust of compressed air

When equipment is removed, first confirm that measures are in place to prevent dropping 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. Furthermore, with a 3 position closed center type, release the compressed air that remains between the valve and cylinder in the same manner.

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.

3. Low frequency operation

Valves should be switched at least once every 30 days to prevent malfunction. (Use caution regarding the air supply.)

4. Manual override operation

When the manual override is operated, connected equipment will be actuated. Confirm safety before operating.

⚠Caution

1. Drainage removal

Remove drainage from air filters regularly. (Refer to specifications.)

2. Lubrication

Once lubrication has been started, it must be continued.

Use Class 1 turbine oil (without additives) VG32. Other lubricating oils will cause malfunction or other trouble.

Contact SMC regarding Class 2 turbine oil (with additives) VG32.

How to Find the Flow Rate (at air temperature of 20°C)

Subsonic flow when $P1 + 0.1013 < 1.89\ (P2 + 0.1013)$

$$Q = 226S\sqrt{\triangle P(P_2 + 0.1013)}$$

Sonic flow when $P1 + 0.1013 \geq 1.89\ (P2 + 0.1013)$

$$Q = 113S\ (P_1 + 0.1013)$$

Q: Air flow rate [ℓ/min (ANR)]

S: Effective area (mm^2)

△P: Differential pressure (P1–P2) [MPa]

P1: Upstream pressure [MPa]

P2: Downstream pressure [MPa]

∗ Correction for different air temperatures
Multiply the flow rate calculated with the above formulas by a coefficient from the table below.

Air temperature (°C)	–20	–10	0	10	30	40	50	60
Correction coefficient	1.08	1.06	1.04	1.02	0.98	0.97	0.95	0.94

Series SQ1000/2000
Specific Product Precautions 1

Be sure to read before handling.
Refer to pages 127 through 130 for safety instructions and precautions.

⚠ Warning

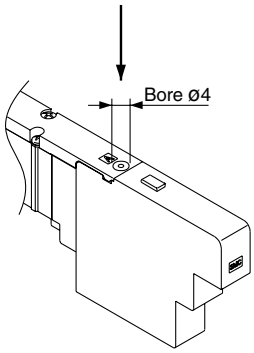
Manual Override

Use to switch the main valve.

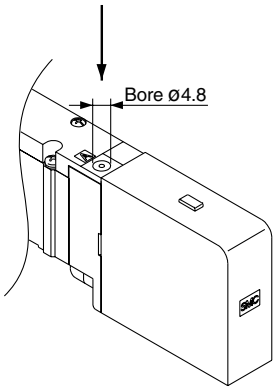
Push type (tool required)

Push the manual override all the way in using a small screw driver, etc.
[Available for all types except 2 position double (latching)]

SQ1000

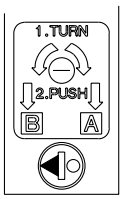


SQ2000

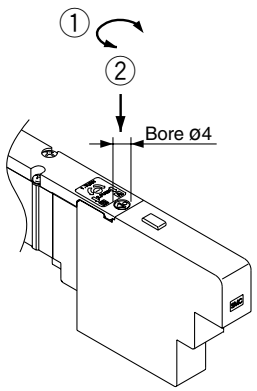


Push type (tool required)
2 position double (latching) type

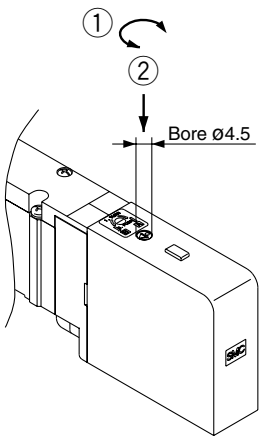
- Turn the manual override 180° clockwise until the ▶ mark aligns with "A" and push in to lock in the set condition (flow from P to A).
- Turn the manual override 180° counter clockwise until the ▶ mark aligns with "B" and push in to return to the reset condition (flow from P to B).



SQ1000



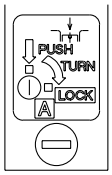
SQ2000



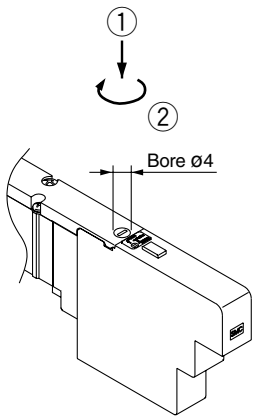
<Caution>
Do not turn the manual override when it is pushed in, as this may cause damage. The construction is such that the operating force is different on sides A and B.

Locking type (tool required)

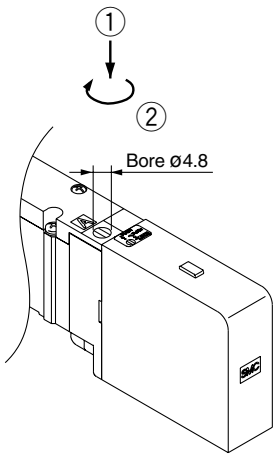
The manual override is locked by pushing it all the way in and turning it 90° clockwise using a small flat head screw driver. Turn it counter clockwise to release it.
[Available for all types except 2 position double (latching)]



SQ1000



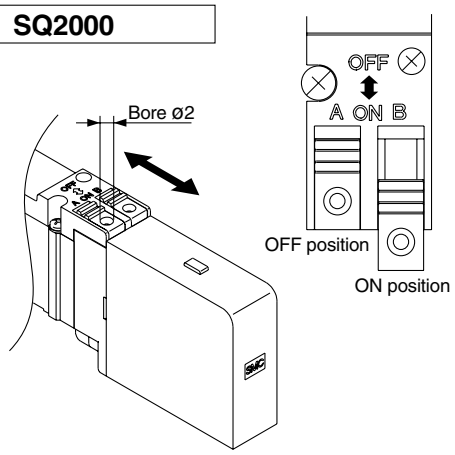
SQ2000



Slide locking type **(SQ2000 only)**

The manual override is locked by sliding it all the way to the pilot valve side (ON side) with a small flat head screw driver or finger. Slide it to the fitting side (OFF side) to release it. In addition, it can also be used as a push type by using a screw driver, etc., of ø2 or less.
[Available for all types except 2 position double (latching)]

SQ2000



Series SQ1000/2000
Specific Product Precautions 2

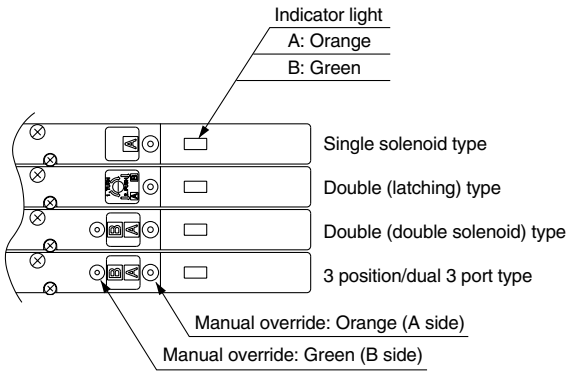
Be sure to read before handling.
Refer to pages 127 through 130 for safety instructions and precautions.

⚠ Caution

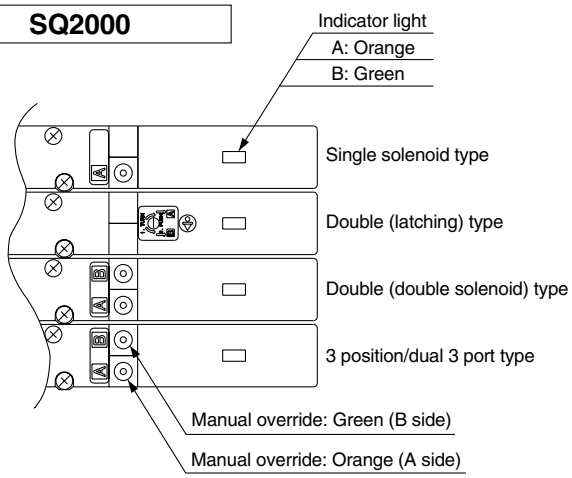
Indicator light/surge voltage suppressor

Indicator lights are all positioned on one side for both single solenoid and double solenoid types. For double, 3 position, and 4 position dual 3 port types, 2 colors are used to indicate the energization of A side or B side.

SQ1000

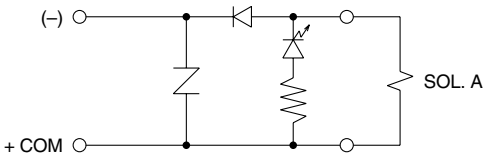


SQ2000

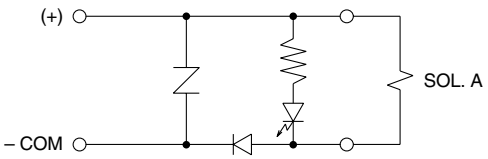


• Single solenoid type (SQ1000/2000)

Positive COM specification

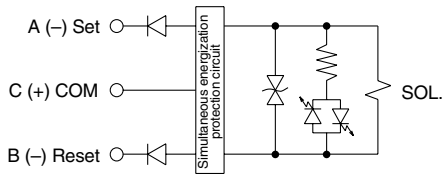


Negative COM specification

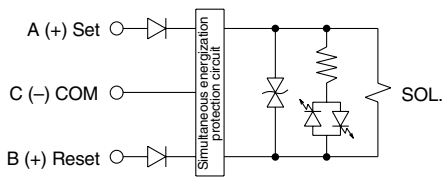


• Double (latching) type (SQ1000/2000)

Positive COM specification



Negative COM specification

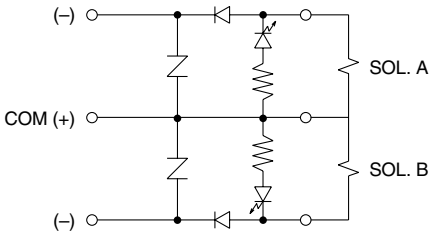


• Double (double solenoid) type (SQ1000/2000)

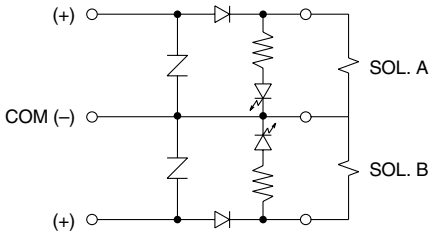
• 3 position type (SQ1000/2000)

• 4 position dual 3 port type (SQ1000/2000)

Positive COM specification



Negative COM specification



Series SQ1000/2000
Specific Product Precautions 3

Be sure to read before handling.
Refer to pages 127 through 130 for safety instructions and precautions.

⚠Caution

2 Position Double (Latching Solenoid) Type

Within the double type, a latching (with self holding mechanism) solenoid type is available in addition to the conventional double solenoid. The appearance is the same as the single solenoid. However, the construction allows the armature inside the solenoid to hold the A side ON position and B side ON position during momentary energization (20ms or longer). The operating method and functions are the same as the conventional double solenoid type.

<Special precautions for latching solenoid>

1. Use in a circuit that does not have simultaneous energization of ON and OFF signals.
2. To operate with momentary energization, the energized time should be 20ms or longer.
3. Although there is no problem for normal operations and environments, do not operate in an environment with vibration (3G or more) or strong magnetic field.
4. This valve is shipped with the armature inside the solenoid holding the B side ON position (Reset). However, energize to confirm whether it is holding the A side ON position or B side ON position before operation.
5. To operate for an extended time, use SQ$^{1}_{2}$2$^{30}_{41}$-□□-□□-**X11** with energy saving circuit**.**

⚠Caution

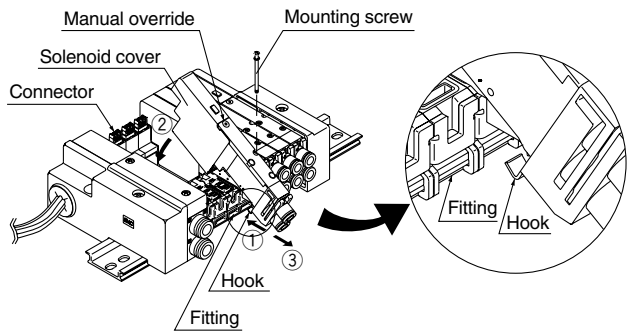
Mounting and Removal of Valves

Mounting

- Insert the hook of the valve into the fitting on the manifold block, then push the valve down into place and tighten the mounting screw.
- Tighten the screw with the appropriate tightening torque shown below.

SQ1000	0.17 to 0.23N·m
SQ2000	0.25 to 0.35N·m

- When pushing the valve down, press it on the area near the manual override. Be careful not to push the solenoid cover.



Removal

Loosen the valve mounting screw, lift the valve from the solenoid cover side and remove it by sliding it in the direction of arrow ③.

If it is difficult to loosen the screw, loosen it while pressing the valve gently on the area near the manual override.

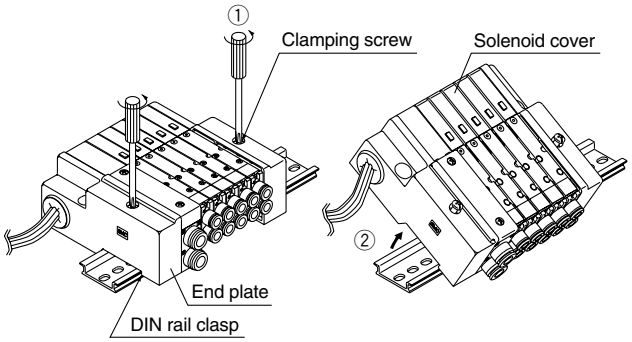
⚠Caution

Mounting and Removal of Manifold with DIN Rail

Removing Manifold from DIN Rail

① Loosen the end plate clamping screws on both sides until they turn freely. (The screws do not come out.)

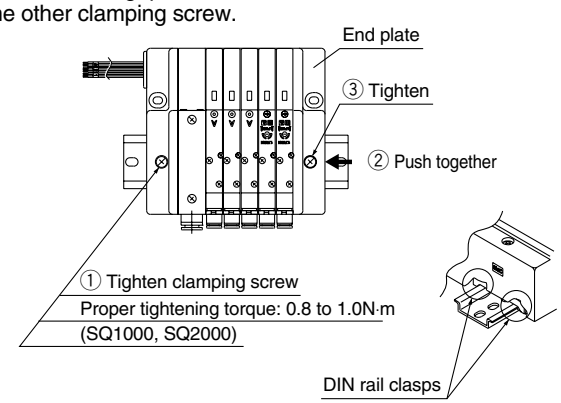
② Remove the manifold from the DIN rail by lifting it from the solenoid cover side.



When a manifold contains a large number of stations and is difficult to remove all at once, separate the manifold into several sections before removing it.

Mounting Manifold on DIN Rail

The procedure is the reverse of that above. After tightening the clamping screw on one side, push on the opposite end plate so that there are no gaps between the manifold blocks and then tighten the other clamping screw.



- Confirm that the DIN rail clasps are securely hooked into the DIN rail.

Series SQ1000/2000
Specific Product Precautions 4

Be sure to read before handling.
Refer to pages 127 through 130 for safety instructions and precautions.

⚠Caution

Replacing Cylinder Port Fittings

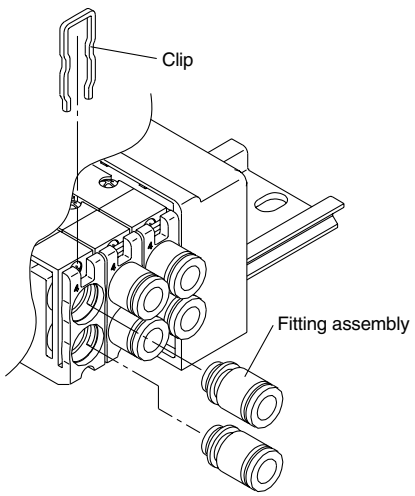
Cylinder port fittings are available in cassette type and can be replaced easily.
Fittings are secured with a clip that is inserted from the top side of the valve. Remove the clip with a flat head screw driver, etc., to replace the fittings.
To mount a fitting, insert the fitting assembly until it stops and reinsert the clip to its designated position.

Applicable tube O.D. (mm)	Fitting assembly part no.	
	SQ1000	SQ2000
3.2	VVQ1000-50A-C3	—
4	VVQ1000-50A-C4	VVQ1000-51A-C4
6	VVQ1000-50A-C6	VVQ1000-51A-C6
8	—	VVQ1000-51A-C8

∗ Part numbers above are for one fitting; however, order them in 10 piece units.

⚠Caution

Do not scratch or put foreign matter on the O-rings as this will cause air leakage.



⚠Caution

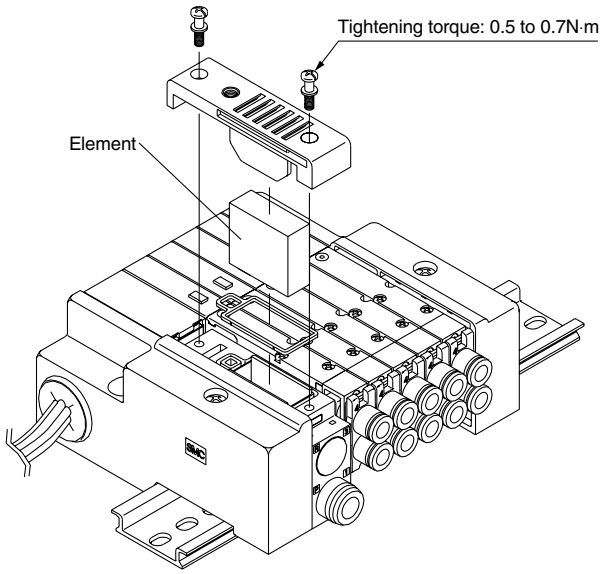
Built-in Silencer Elements

A filter element is built into the manifold base end plate. When the element becomes dirty and clogged, this will cause trouble such as a drop in the cylinder speed, etc. Therefore, replace the element regularly.

Element part nos.

Type	Element part no.	
	SQ1000	SQ2000
Built-in silencer Direct exhaust (-S)	SSQ1000-82A-3	SSQ2000-82A-3

∗ Part numbers above are for a set of ten elements.



To replace an element, remove the cover on the top side of the end plate and remove the old element with a flat head screw driver, etc.

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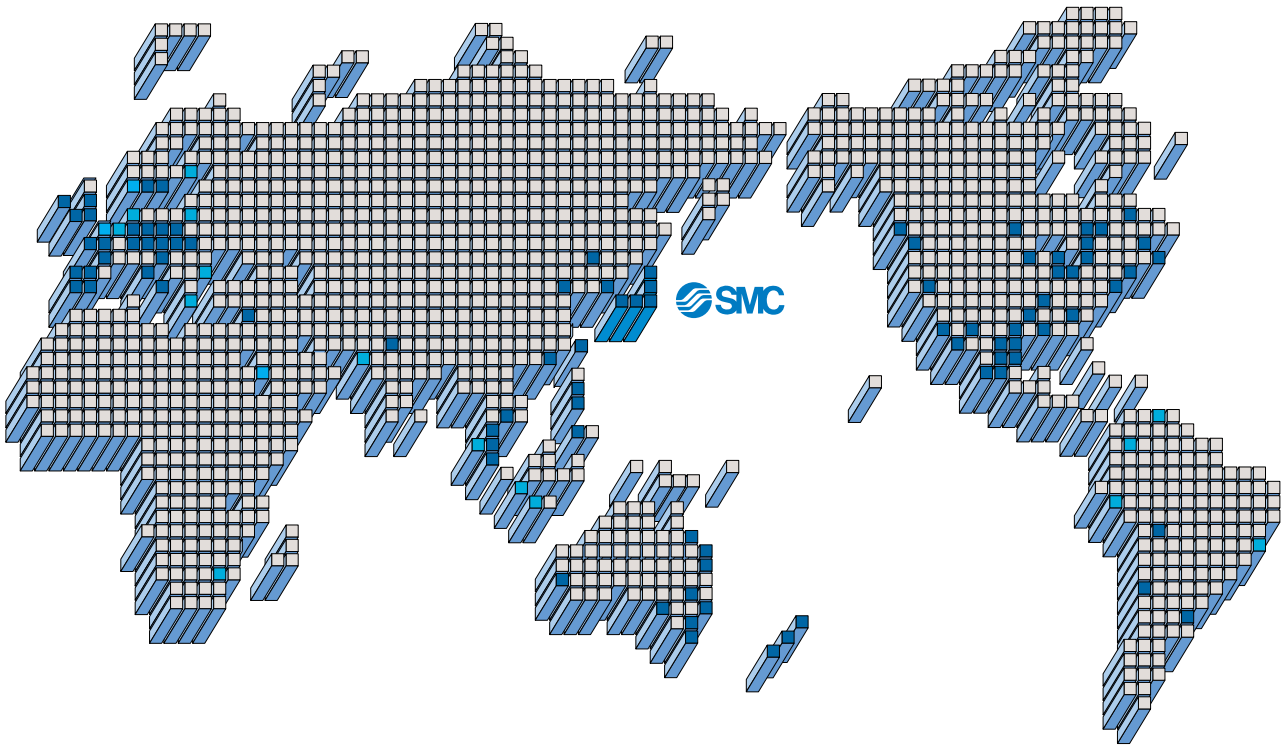

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SMC CORPORATION

1-16-4 Shimbashi, Minato-ku, Tokyo 105-0004, JAPAN
Tel: 03-3502-2740 Fax: 03-3508-2480
URL http://www.smcworld.com

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