5 Port Solenoid Valve

Metal Seal / Rubber Seal

Power Saving

New

CE

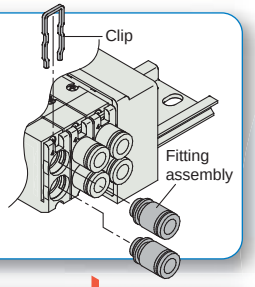
Standard **0.4W**

Compared to existing model **60% DOWN**

High pressure 0.95W
(1 MPa Metal seal)

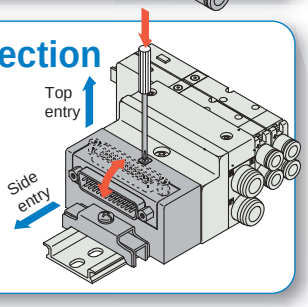
Easy Replacement of Clip Type One-touch Fittings

One-touch fittings can be replaced without removing valves.



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.



4 Position Dual 3 Port Valve

- 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, 5-port valve.

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 centre type valve, etc.

Easy to add or decrease the number of valve stations.

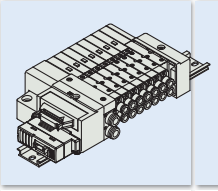
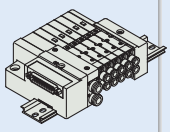
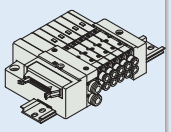
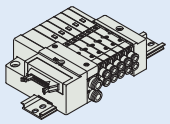
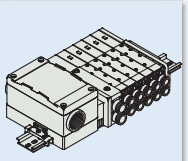
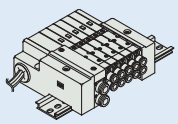
The use of cassette style valves and manifolds makes it easy to increase or decrease the number of stations on a DIN rail. The plug-in type includes two extra valve station connectors. This design makes rewiring unnecessary during manifold expansion.

Series SQ1000/2000

SMC

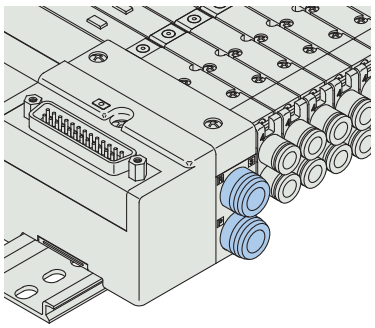
CAT.EUS11-105A-UK

Wiring Type

Manifold variations		EX510 Gateway-type serial transmission system	D-sub connector kit F kit	Flat ribbon cable connector kit P kit	PC wiring system compatible flat ribbon cable J kit	Terminal block box kit T kit	Lead wire kit L kit	
								
Plug-in Unit	SQ1000	(P.1)	(P.5, 11)	(P.5, 13)	(P.5, 15)	—	(P.5, 17)	
	SQ2000	(P.21)	(P.25, 31)	(P.25, 33)	(P.25, 35)	(P.25, 37)	(P.25, 39)	
Plug Lead Unit	SQ1000	—	(P.67, 73)	(P.67, 75)	(P.67, 77)	—	—	
	SQ2000	—	(P.81, 87)	(P.81, 89)	(P.81, 91)	—	—	

Piping Specifications

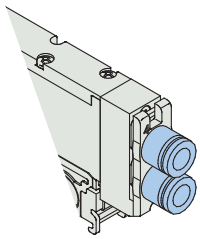
1(P), 3(R)	4(A), 2(B)
○**Supply/Exhaust port**	○**Cylinder port**



SQ1000
One-touch fittings for ø8

SQ2000
One-touch fittings for ø10

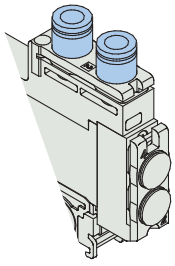
Side ported



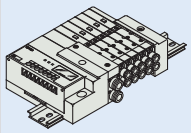
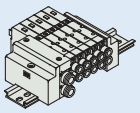
SQ1000
One-touch fittings for ø3.2
One-touch fittings for ø4
One-touch fittings for ø6
M5

SQ2000
One-touch fittings for ø4
One-touch fittings for ø6
One-touch fittings for ø8

Top ported



Top porting can be changed to side porting.

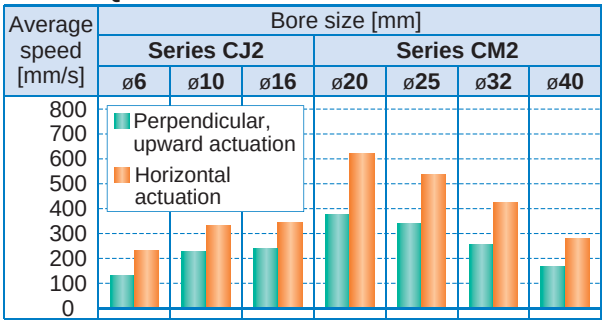
	Serial transmission kit	Connector kit	Manifold options
	S kit	C kit	
			
	● (P.5, 19)	—	P.7
	● (P.25, 41)	—	P.27
	—	● (P.67, 79)	P.69
	—	● (P.81, 93)	P.83

Contents

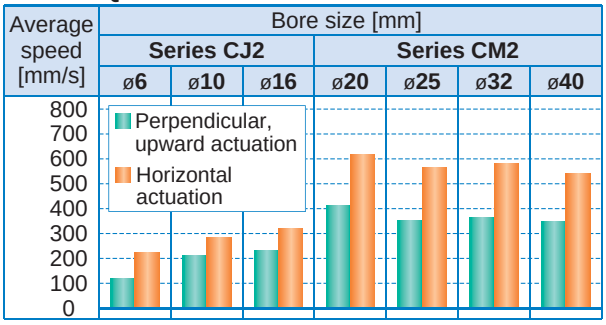
Cylinder Speed Chart

Use as a guide for selection. Please confirm the actual conditions with SMC Sizing Program.

Series SQ1000



Series SQ2000



Pressure: 0.5 MPa/Load factor: 50%

∗ It is when the cylinder is extending so that the exhaust is controlled by speed controller (directly connected with cylinder), and its needle valve being fully open.
∗ The average velocity of the cylinder is what the stroke is divided by the total stroke time.
∗ Load factor: ((Load weight x 9.8) /Theoretical force) x 100%

Conditions

Base mounted		Series CJ2	Series CM2	Series MB, CA2
SQ1000	Tube x Length	T0604 x 1 m		
	Speed controller	AS3002F-06		
	Silencer	AN110-01		
SQ2000	Tube x Length	T0604 x 1 m	T1075 x 1 m	T1209 x 1 m
	Speed controller	AS3002F-06	AS4002F-10	
	Silencer	AN20-02		

EX510 Gateway-type Serial Transmission System Plug-in Unit

Series SQ1000

How to Order Manifold

SS5Q 1 3 – SB N 08 – D □ – □ – Q

Manifold series

1	SQ1000

SI unit output polarity

—	Positive common
N	Negative common

Valve stations

Symbol	Stations	Note
01	1 station	Double Wiring
⋮	⋮	
08	8 stations	

Note) Max. 16 stations (Special wiring specifications)

1(P), 3(R) port size

—	1(P), 3(R) port, One-touch fittings for ø8
00T	1(P), 3(R) port, One-touch fittings for ø5/16"

Option

—	None
02 to 16 (1)	DIN rail length specified
B (2)(3)	Back pressure check valve
K (4)	Special wiring specifications (Except double wiring)
N	With name plate (Side ported only)
R	External pilot specifications
S	Built-in silencer, direct exhaust

Note 1) Specify DIN rail length with "D□" at the end. (Enter the number of stations inside □.) The number of stations that may be displayed is longer than the manifold number of stations. Example: -D09

Note 2) When "-B" is selected, a back pressure check valve is included in all stations of the manifold. If the back pressure check valve is used only for the station that need it, then specify the station location in the manifold specification. ("-B" is not necessary)

Note 3) Since 4 port specification valves (5 (R1) and 3 (R2) are common) are used, back pressure cannot be prevented with dual 3 port valves.

Note 4) Specify "-K" for wiring specification for cases below.
- All single wiring
- Single and double mixed wiring
- When there are stations which do not require wiring (e.g. single SUP spacer), specify the wiring specification in the manifold specification so that the number of the solenoids is 16 maximum. (Standard wiring specification is double wiring)

Note 5) For specifying two or more options, enter them alphabetically. Example: -BKN

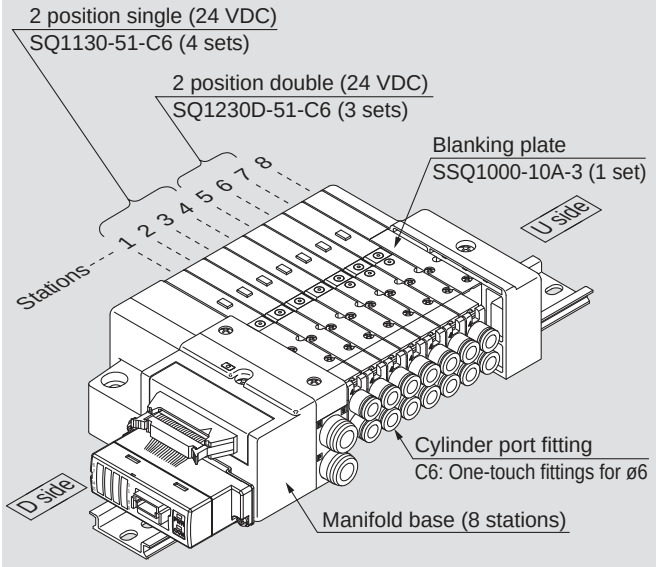
∗ Refer to pages 42 to 46 and 52 to 54 for manifold option parts.

DIN rail mounting

CE compliant

How to Order Manifold Assembly

Example



SS5Q13-SB08-D ····· 1 set(SB kit 8-station manifold base part no.)
- ∗**SQ1130-5-C6 ····· 4 sets (Single type part no.)**
- ∗**SQ1230-5-C6 ····· 3 sets (Double type part no.)**
- ∗**SSQ1000-10A-3 ····· 1 set (Blanking plate part no.)**

The asterisk denotes the symbol for assembly.
Prefix it to the part nos. of the solenoid valve, etc.
Enter in order starting from the first station on the D side.

Add the valve and option part number under the manifold base part number. When entry of part numbers becomes complicated, indicate by the manifold specification sheet.

SI Unit Part No.

Symbol	SI Unit Specifications	SI unit part no.
—	Positive common (NPN)	EX510-S002B
N	Negative common (PNP)	EX510-S102B

Refer to catalogue and the Operation Manual for the details of EX510 gateway-type serial transmission system. Please download it via our website, http://www.smc.eu

How to Order Valves

SQ 1 1 3 0 [ ] – 5 [ ] 1 – C6 – [ ] – [ ] – Q

Series

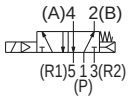
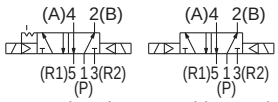
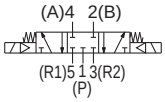
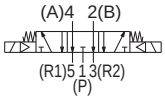
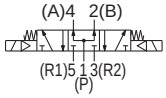
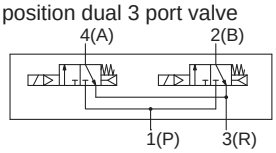
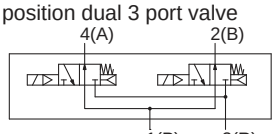
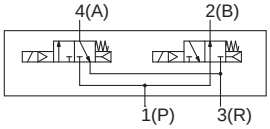
1	SQ1000

Seal

0	Metal seal
1	Rubber seal

CE compliant

Type of actuation

1	2 position single 
2	2 position double (Double solenoid)(1)  Metal seal / Rubber seal
3	3 position closed centre 
4	3 position exhaust centre 
5	3 position pressure centre 
A(2)	4 position dual 3 port valve 
B(2)	4 position dual 3 port valve 
C(2)	4 position dual 3 port valve 

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

Function

Symbol	Specifications
—	Standard type (0.4 W)
B	Quick response type (0.95 W)
D(1)	2 position double (Double solenoid specifications)
K	High pressure type (1 MPa, 0.95 W) [Applicable to metal seal only]
N(2)	Negative common
R(3)	External pilot specifications

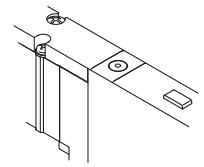
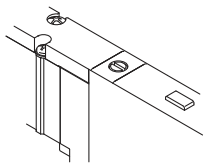
Rated voltage

5	24 VDC

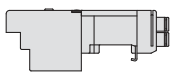
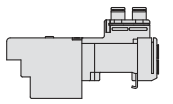
Note) Light/surge voltage suppressor is built-in.

Note 1) "D" is specified for 2 position double.
Note 2) When SI unit output polarity is negative common, the valve common specification should be also be negative common.
Note 3) Except dual 3 port valves.
Note 4) When two or more symbols are specified, indicate them alphabetically.

Manual override

—	B
Non-locking push type (Tool required)	Locking type (Tool required)
	

Cylinder port

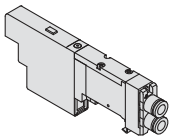
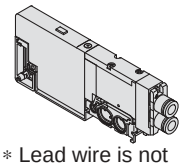
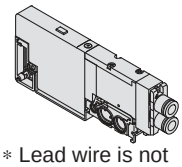
Symbol	Port size	Port location	
C3	With One-touch fittings for ø3.2	Side ported	
C4	With One-touch fittings for ø4		
C6	With One-touch fittings for ø6		
M5	M5 thread		
L3	With One-touch fittings for ø3.2	Top(1) ported	
L4	With One-touch fittings for ø4		
L6	With One-touch fittings for ø6		
L5	M5 thread		

Note 1) Can be changed to side ported configuration.
Note 2) Refer to page 54 for the inch-size One-touch fittings.

Port plug mounting port

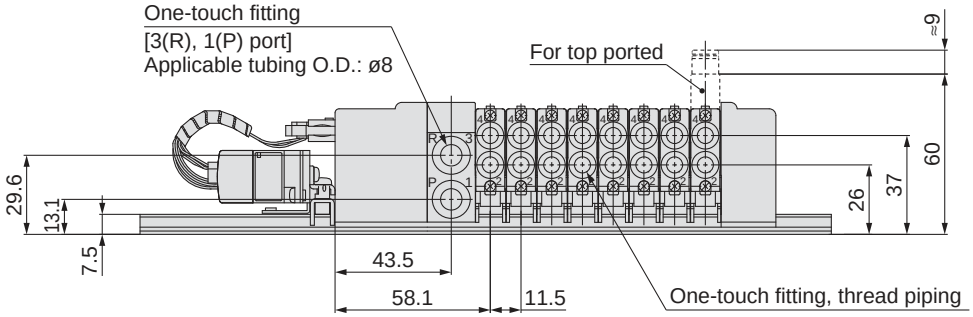
—	None
A	Port 4(A)
B	Port 2(B)

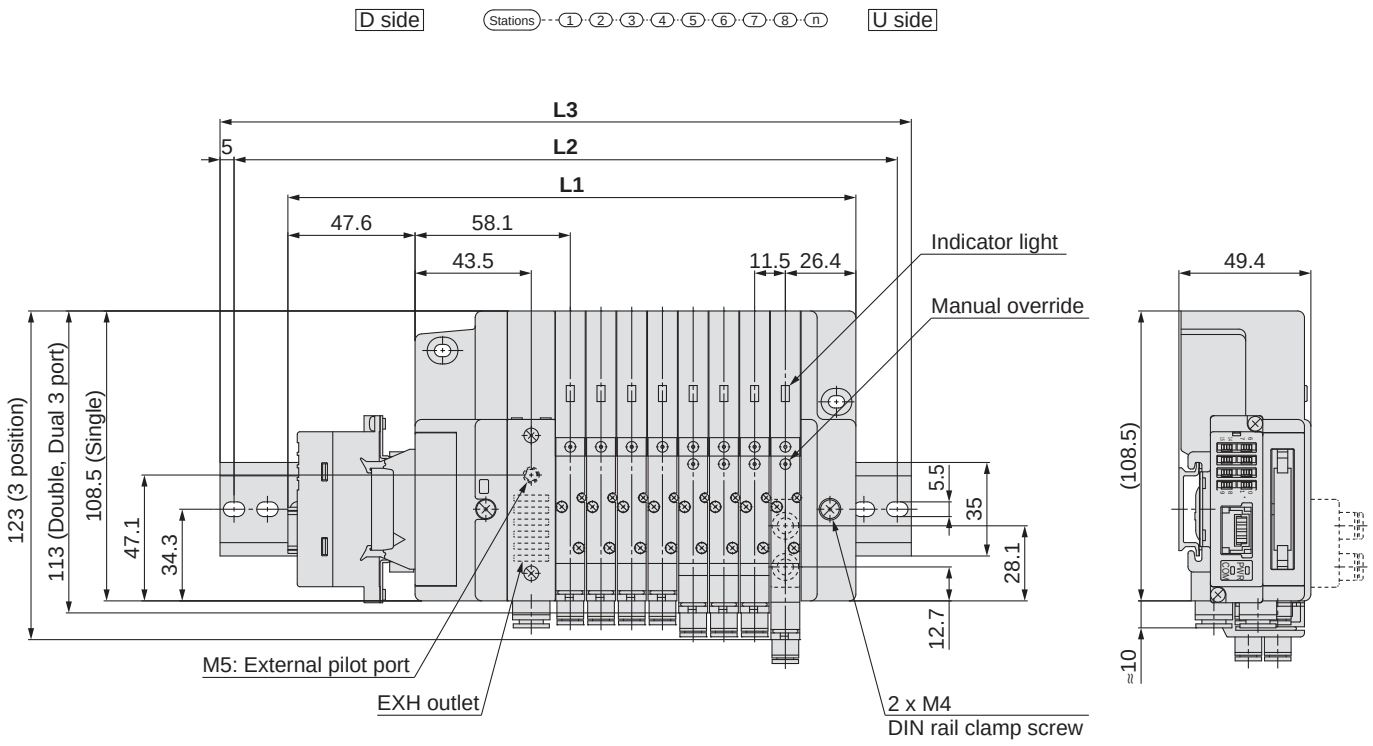
With/Without manifold block

—	M	MB Note)
Without manifold block	With manifold block	With manifold block, 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	

Note) Since 4 port specification valves (5 (R1) and 3 (R2) are common) are used, back pressure cannot be prevented with dual 3 port valves.

Dimensions: SQ1000





Dimensions [mm]

Formula: L1 = 11.5n + 120.5 n: Stations (Maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	132	143.5	155	166.5	178	189.5	201	212.5	224	235.5	247	258.5	270	281.5	293	304.5
L2	162.5	175	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	312.5	312.5	325
L3	173	185.5	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	323	323	335.5

Plug-in Unit
Series SQ1000

How to Order Manifold

SS5Q13 − 08 FD2 − D □ − □ − Q

Stations

01	1 station
⋮	⋮
24 Note)	24 stations

Note) The maximum number of stations depends on the type of electrical entries. Refer to "Electrical entry" for details.

Manifold mounting

D	DIN rail mounting style
E Note)	Direct mounting style

Note) Refer to page 53 for details.

Option

—	None
02 to 24(1)	DIN rail length specified
B(2)(3)	Back pressure check valve
K(4)	Special wiring specifications (Except double wiring)
N	With name plate (Side ported only)
R	External pilot specifications
S	Built-in silencer, direct exhaust

1(P), 3(R) port size

—	1(P), 3(R) port One-touch fittings for ø8
00T	1(P), 3(R) port One-touch fittings for ø5/16"

CE compliant

Note 1) Specify DIN rail length with "D□ at the end. (Enter the number of stations inside□.) The number of stations that may be displayed is longer than the manifold number of stations. Example: -D09
Note 2) When "-B" is selected, a back pressure check valve is included in all stations of the manifold. If the back pressure check valve is used only for the station that need it, then specify the station location in the manifold specification. ("-B" is not necessary)
Note 3) Since 4 port specification valves (5 (R1) and 3 (R2) are common) are used, back pressure cannot be prevented with dual 3 port valves.
Note 4) Specify "-K" for wiring specification for cases below. (Except L kit)
- All single wiring
- Single and double mixed wiring.
- When there are stations which do not require wiring (e.g. single SUP spacer), specify the wiring specification in the manifold specification so that the number of solenoids is the maximum number of solenoids or less. (Standard wiring specification is double wiring)

Note 5) For specifying two or more options, enter them alphabetically. Example: -BKN
∗ Refer to pages 42 to 46 and 52 to 54 for manifold option parts.

Electrical entry

Kit type		Lead wire connector location	Cable/SI unit specifications	Station (Double wiring)	Max. number of solenoids for special wiring specifications(2)
F kit D-sub connector kit (U side, D side)	**FD0**	D side	D-sub connector (25P) kit, without cable	1 to 12 stations	24
	FD1		D-sub connector (25P) kit, with 1.5 m cable		
	FD2		D-sub connector (25P) kit, with 3.0 m cable		
	FD3		D-sub connector (25P) kit, with 5.0 m cable		
P kit Flat ribbon cable connector kit (26P, 20P)	**PD0**	D side (1)	Flat ribbon cable (26P) kit, without cable	1 to 12 stations	24
	PD1		Flat ribbon cable (26P) kit, with 1.5 m cable		
	PD2		Flat ribbon cable (26P) kit, with 3.0 m cable		
	PD3		Flat ribbon cable (26P) kit, with 5.0 m 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
L kit Lead wire kit	**LD0**	D side	Lead wire kit with 0.6 m cable	1 to 12 stations	—
	LU0	U side			
	LD1	D side	Lead wire kit with 1.5 m cable		
	LU1	U side			
	LD2	D side	Lead wire kit with 3.0 m cable		
	LU2	U side			
S kit Serial transmission kit EX140 integrated-type (for output) serial transmission system(3)	**SDQ**	D side	DeviceNet	1 to 8 stations	6
	SDR1		OMRON Corp.: CompoBus/S (16 output points)		
	SDR2		OMRON Corp.: CompoBus/S (8 output points)	1 to 4 stations	8
	SDV		CC-LINK	1 to 8 stations	16

Note 1) Separately order the 20P type cable assembly for the P kit.
Note 2) Specify the wiring so that the maximum number of solenoids is not exceeded. (The number of solenoids are counted as: 1 for single solenoids and 2 for type 3P and 4P double solenoids.)
Note 3) Refer to catalogue and the Operation Manual for the details of EX140 integrated-type (for output) serial transmission system. Please download it via our website. http://www.smc.eu
∗ Refer to page 64 for manifold spare parts.

SI Unit Part No.

Symbol	Protocol type	SI unit part no.
SDQ	DeviceNet	EX140-SDN1
SDR1	OMRON Corp.: CompoBus/S (16 output points)	EX140-SCS1
SDR2	OMRON Corp.: CompoBus/S (8 output points)	EX140-SCS2
SDV	CC-LINK	EX140-SMJ1

How to Order Valves

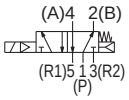
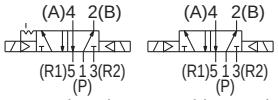
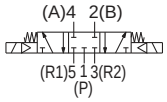
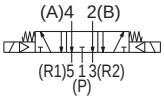
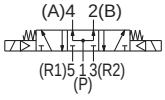
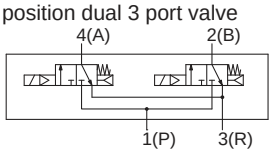
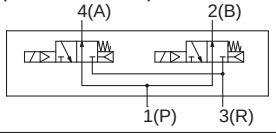
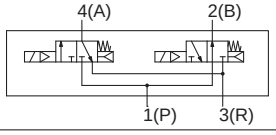
SQ1 1 3 0 ☐ – 5 ☐ 1 – C6 – ☐ – ☐ – Q

CE compliant

Seal

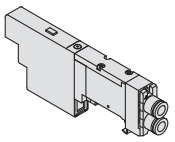
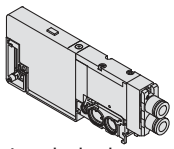
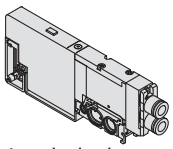
0	Metal seal
1	Rubber seal

Type of actuation

1	2 position single 
2	2 position double (Double solenoid) (1) 
3	3 position closed centre 
4	3 position exhaust centre 
5	3 position pressure centre 
A(2)	4 position dual 3 port valve 
B(2)	4 position dual 3 port valve 
C(2)	4 position dual 3 port valve 

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

With/Without manifold block

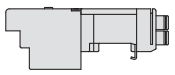
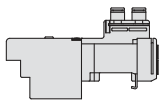
—	M	MB Note)
Without manifold block	With manifold block	With manifold block, built-in back pressure check valve
	 ∗ Lead wire is not included.	 ∗ Lead wire is not included.
• When ordering with manifolds • When only valves are required.	For adding stations	

Note) Since 4 port specification valves (5 (R1) and 3 (R2) are common) are used, back pressure cannot be prevented with dual 3 port valves.

Port plug mounting port

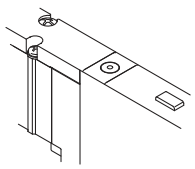
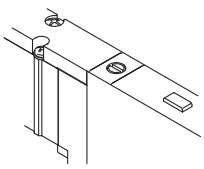
—	None
A	Port 4(A)
B	Port 2(B)

Cylinder port

Symbol	Port size	Port location	
C3	With One-touch fittings for ø3.2	Side ported	
C4	With One-touch fittings for ø4		
C6	With One-touch fittings for ø6		
M5	M5 thread		
L3	With One-touch fittings for ø3.2	Top(1) ported	
L4	With One-touch fittings for ø4		
L6	With One-touch fittings for ø6		
L5	M5 thread		

Note 1) Can be changed to side ported configuration.
Note 2) Refer to page 54 for the inch-size One-touch fittings.

Manual override

—	B
Non-locking push type (Tool required)	Locking type (Tool required)
	

Rated voltage

5	24 VDC
6	12 VDC

Note 1) Light/surge voltage suppressor is built-in.
Note 2) S kit: 24 VDC only

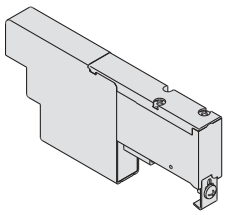
Function

Symbol	Specifications
—	Standard type (0.4 W)
B	Quick response type (0.95 W)
D(1)	2 position double (Double solenoid specifications)
K	High pressure type (1 MPa, 0.95 W) [Applicable to metal seal only]
N(2)	Negative common
R(3)	External pilot specifications

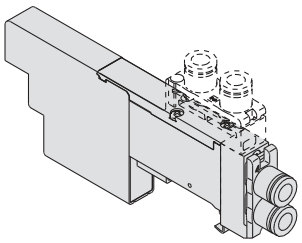
Note 1) "D" is specified for 2 position double.
Note 2) For L kit, when the manifold specifies negative common, the valve common should also be negative. The combination of negative common of the valve cannot be specified with S kit (EX140).
Note 3) Except dual 3 port valves.
Note 4) When two or more symbols are specified, indicate them alphabetically.

Manifold Options

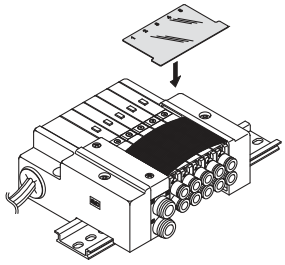
Blanking plate
SSQ1000-10A-3 P.42



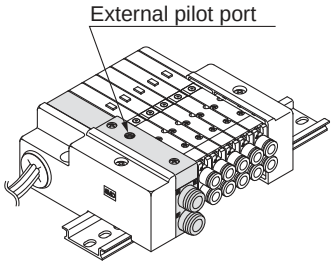
Individual SUP/EXH spacer
SSQ1000-PR1-3-$^{C6}_{L6}$ P.43



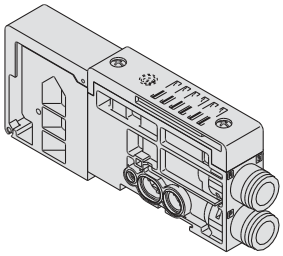
Name plate (-N)
SSQ1000-N3-n P.45



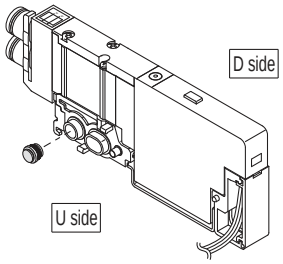
External pilot specifications (-R) P.46



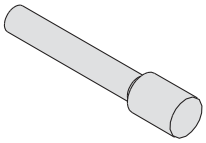
SUP/EXH block
SSQ1000-PR-3-C8(-S) P.42



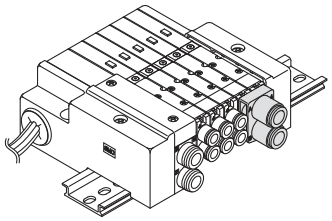
SUP block plate
SSQ1000-B-P P.44



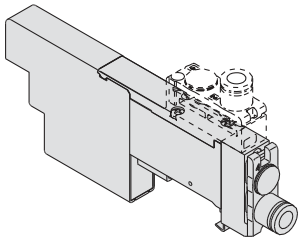
Blanking plug
KQ2P-23/04/06/08 P.45



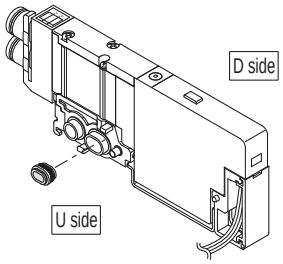
Dual flow fitting
SSQ1000-52A-$^{C8}_{N9}$ P.46



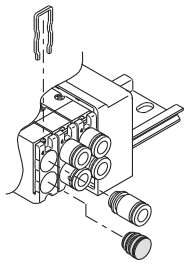
Individual SUP spacer
SSQ1000-P-3-$^{C6}_{L6}$ P.42



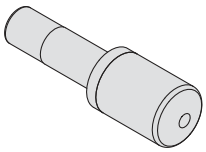
EXH block plate
SSQ1000-B-R P.44



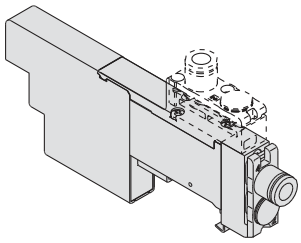
Port plug
VVQZ100-CP P.45



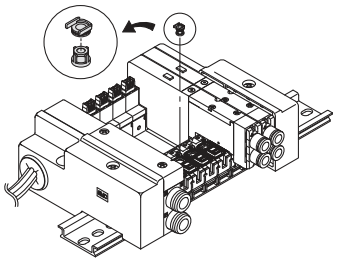
Silencer
(For EXH port) P.46



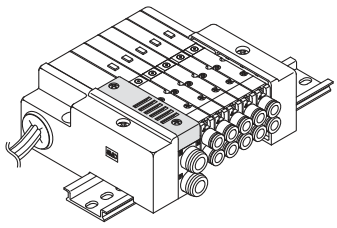
Individual EXH spacer
SSQ1000-R-3-$^{C6}_{L6}$ P.43



Back pressure check valve (-B)
SSQ1000-BP P.44

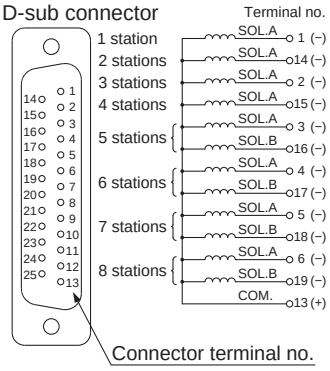


Built-in silencer, direct exhaust (-S) P.45



Special wiring specifications (-K)
P.52

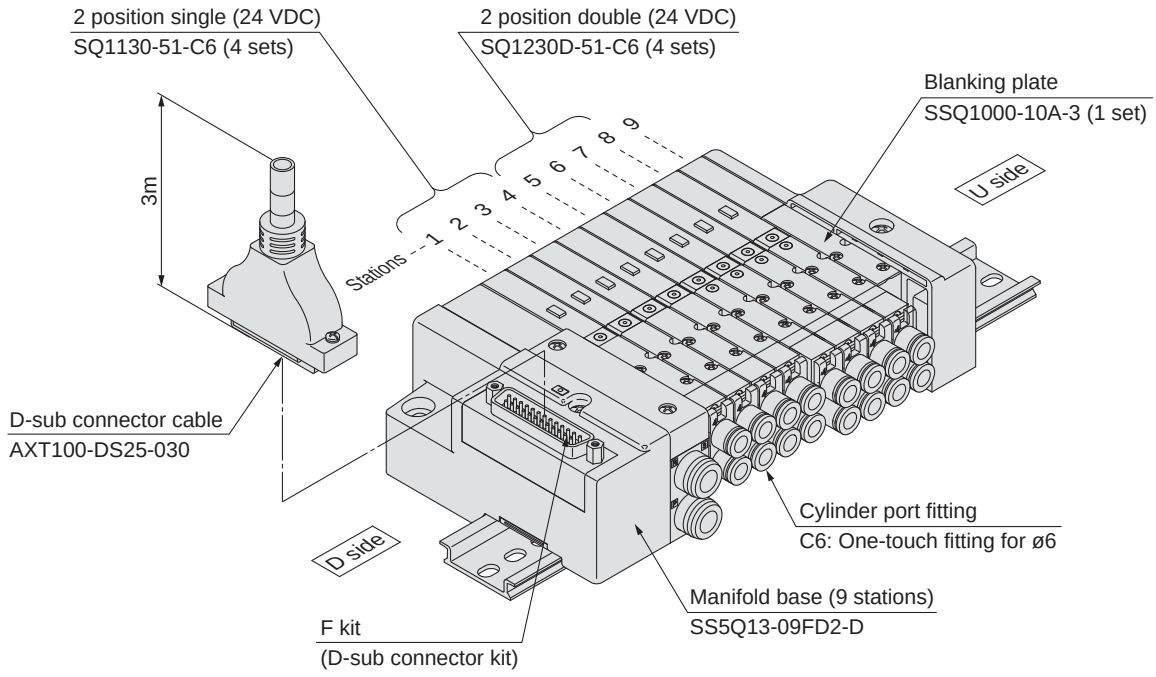
D-sub connector



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

How to Order Manifold Assembly

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



SS5Q13-09FD2-D ····· 1 set (F kit 9-station manifold base)
∗ SQ1130-51-C6 ····· 4 sets (2 position single)
∗ SQ1230D-51-C6 ····· 4 sets (2 position double)
∗ SSQ1000-10A-3 ····· 1 set (Blanking plate)

→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

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 the manifold specification sheet.

Valve Specifications

Model

Series	Type of actuation		Seal	Model	Flow characteristic (1)								Response time [ms] (2)		Weight [g]
					1 → 4/2 (P → A/B)				4 → 5 (A → R1)				Standard (0.4 W)	Quick response (0.95 W)	
					C [dm³/(s·bar)]	b	Cv	Q [L/min] (ANR) Note 3)	C [dm³/(s·bar)]	b	Cv	Q [L/min] (ANR) Note 3)			
SQ1000	2 position	Single	Metal seal	SQ1130	0.62	0.10	0.14	141	0.63	0.11	0.14	144	26 or less	12 or less	80
			Rubber seal	SQ1131	0.79	0.20	0.19	189	0.80	0.20	0.19	192	24 or less	15 or less	80
		Double	Metal seal	SQ1230D	0.62	0.10	0.14	141	0.63	0.11	0.14	144	13 or less	10 or less	95
			Rubber seal	SQ1231D	0.79	0.20	0.19	189	0.80	0.20	0.19	192	20 or less	15 or less	95
	3 position	Closed centre	Metal seal	SQ1330	0.58	0.12	0.14	133	0.63	0.11	0.14	144	44 or less	29 or less	100
			Rubber seal	SQ1331	0.64	0.20	0.15	153	0.58	0.26	0.16	144	39 or less	25 or less	100
		Exhaust centre	Metal seal	SQ1430	0.58	0.12	0.14	133	0.60	0.14	0.14	139	44 or less	29 or less	100
			Rubber seal	SQ1431	0.64	0.20	0.15	153	0.80	0.20	0.19	192	39 or less	25 or less	100
		Pressure centre	Metal seal	SQ1530	0.62	0.12	0.14	142	0.63	0.14	0.14	146	44 or less	29 or less	100
			Rubber seal	SQ1531	0.79	0.21	0.19	190	0.59	0.20	0.14	141	39 or less	25 or less	100
	4 position	Dual 3 port valve	Rubber seal	SQ1$^{A}_{B}_{C}$31	0.59	0.28	0.15	148	0.59	0.28	0.15	148	27 or less	14 or less	95

Note 1) Values for the cylinder port size of C6, CYL → Values of EXH. Flow characteristics of 2 → 3 (B → R2) delines about 30% of 4 → 5 (A → R1).
Note 2) Based on JIS B 8375-1981. (Values with a supply pressure of 0.5 MPa and light/surge voltage suppressor. Values fluctuate depending on the pressure and air quality.
Note 3) These valves have been calculated according to ISO6358 and indicate the flow rate under standard conditions with an inlet pressure of 0.6 MPa (relative pressure) and a pressure drop of 0.1 MPa.

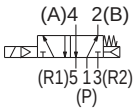
Specifications

Valve specifications	Valve construction		Metal seal	Rubber seal
	Fluid		Air/Inert gas	
	Maximum operating pressure		0.7 MPa (High pressure type (3): 1.0 MPa)	
	Min. operating pressure	Single	0.1MPa	0.15MPa
		Double (Double solenoid)	0.1MPa	0.1MPa
		3 position	0.1MPa	0.2MPa
		4 position	—	0.15MPa
	Ambient and fluid temp.		–10 to 50°C (1)	
	Lubrication		Not required	
	Pilot valve manual override		Push type/Locking type (Tool required)	
	Vibration/Impact resistance (2)		30/150 m/s²	
	Protection structure		Dust tight	
Solenoid specifications	Coil rated voltage		12 VDC, 24 VDC	
	Allowable voltage fluctuation		±10% of rated voltage	
	Coil insulation type		Equivalent to class B	
	Power consumption (Current)	24 VDC	0.4 W DC (17 mA), 0.95 W DC (40 mA) (4)	
		12 VDC	0.4 W DC (34 mA), 0.95 W DC (80 mA) (4)	

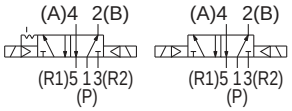
Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)
Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and deenergized states every once for each condition.
Note 3) Metal seal type only.
Note 4) Value for quick response, high pressure type

JIS Symbol

2 position single

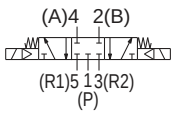


2 position double (Double solenoid)

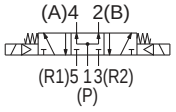


Metal seal Rubber seal

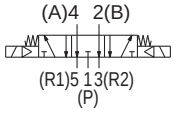
3 position closed centre



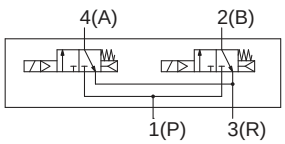
3 position pressure centre



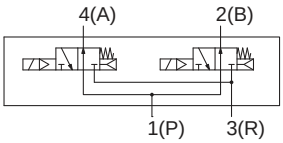
3 position exhaust centre



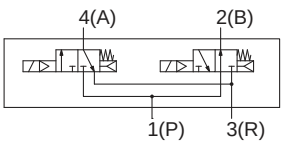
4 position dual 3 port valve (A)



4 position dual 3 port valve (B)



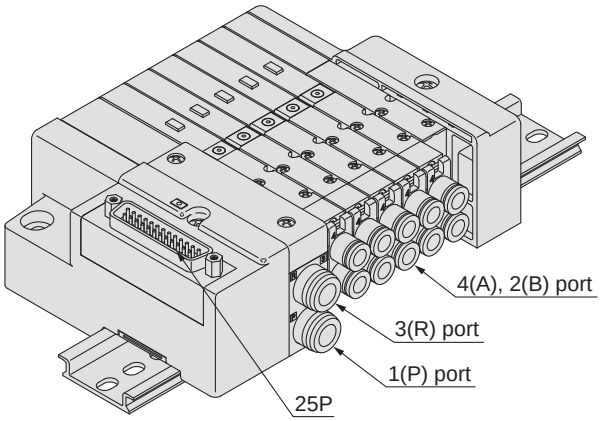
4 position dual 3 port valve (C)



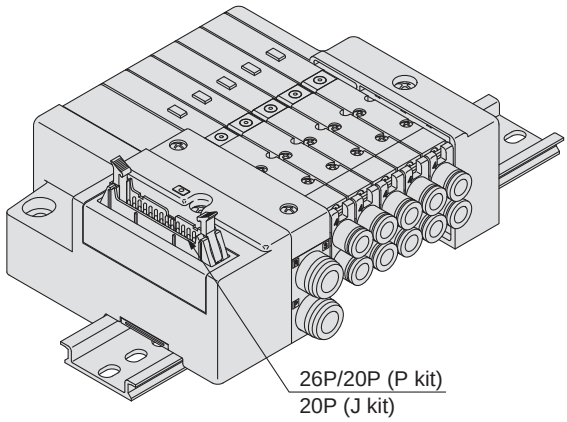
Manifold Specifications

Base model	Porting specifications: Port size (1) 1(P), 3(R)	Porting specifications: Port size (1) 4(A), 2(B) Port location	Porting specifications: Port size (1) 4(A), 2(B) Port size	Applicable solenoid valve	Type of connection		Applicable stations (3) (Double wiring)	5-station weight (4) [g]	Addition per station (4) [g]
SS5Q13-□□-□	C8 (For ø8) Option Built-in silencer, direct exhaust	Side	C3 (For ø3.2) C4 (For ø4) C6 (For ø6) M5 (M5 thread)	**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		
		Top (2)	L3 (For ø3.2) L4 (For ø4) L6 (For ø6) L5 (M5 thread)		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

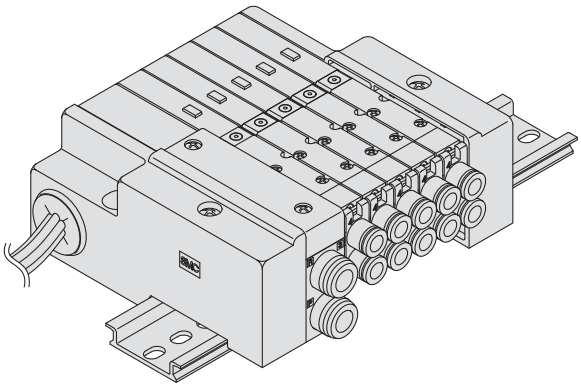
Note 1) One-touch fittings in inch sizes are also available. For details, refer to page 54.
Note 2) Can be changed to side ported configuration.
Note 3) An optional specification for special wiring is available to increase the maximum number of stations. Refer to page 52 for details.
Note 4) Except valves. For valve weight, refer to page 9.



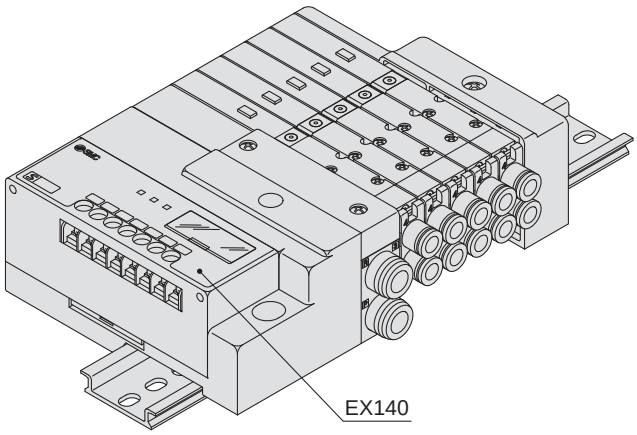
F kit



P kit **J kit**



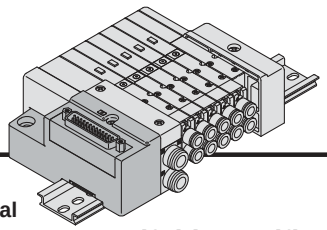
L kit



Refer to catalogue and the Operation Manual for the details of EX140 integrated-type (for output) serial transmission system. Please download it via our website, http://www.smc.eu

S kit

F Kit (D-sub Connector Kit)

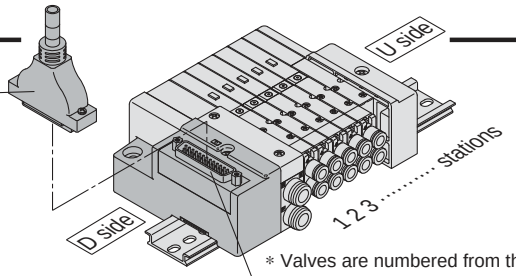


- **The D-sub connector reduces installation labour for electrical connections.**
- **Using the D-sub connector (25P), conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.**
- **Top or side receptacle position can be selected in accordance with the available mounting space.**

Manifold Specifications

Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ1000	Side, Top	C8	C3,C4,C6,M5	12 stations (24 as a semi-standard)

D-sub Connector (25 Pins)

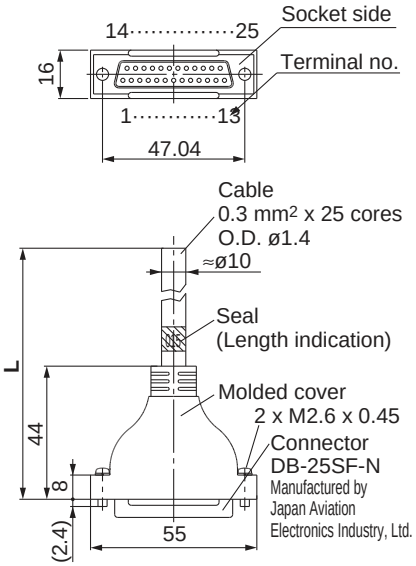


∗ Valves are numbered from the D side.

Cable Assembly

AXT100-DS25- 015 / 030 / 050

(The D-sub connector cable assemblies can be ordered with manifolds. Refer to "How to Order Manifold.")



D-sub Connector Cable Assembly

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

∗ For other commercial connectors, use a 25 pins type with female connector conforming to MIL-C-24308.
∗ Cannot be used for movable wiring.
∗ Lengths other than the above are also available. Please contact SMC for details.

D-sub Connector Cable Assembly Terminal No.

Terminal number	Lead wire colour	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	Grey	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	Grey	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Grey	Red
24	Black	White
25	White	None

Electrical Characteristics

Item	Property
Conductor resistance Ω/km, 20°C	65 or less
Withstand voltage VAC, 1 min.	1000
Insulation resistance MΩ/km, 20°C	5 or more

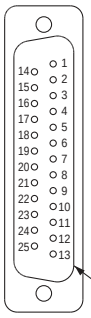
Note) The minimum bending inner radius of D-sub connector cable is 20 mm.

Connector manufacturers' example

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

Electrical Wiring Specifications

D-sub connector



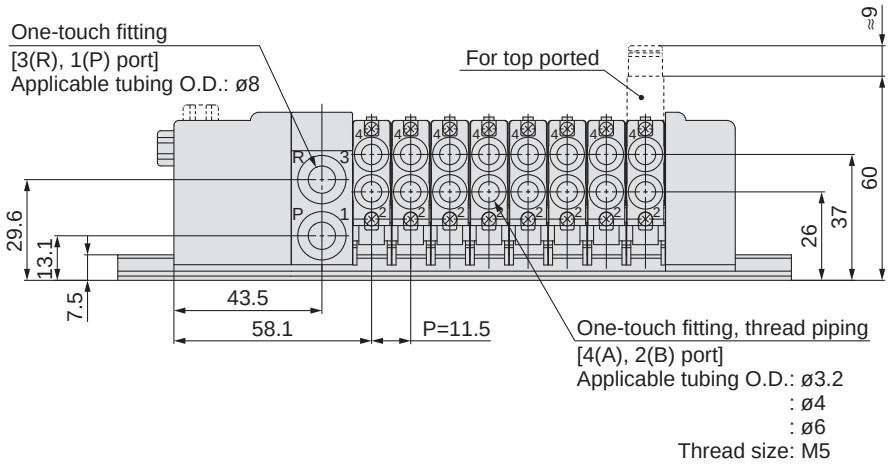
Connector terminal no.

As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types.
Mixed single and double wiring is available as an option.
For details, refer to page 52.

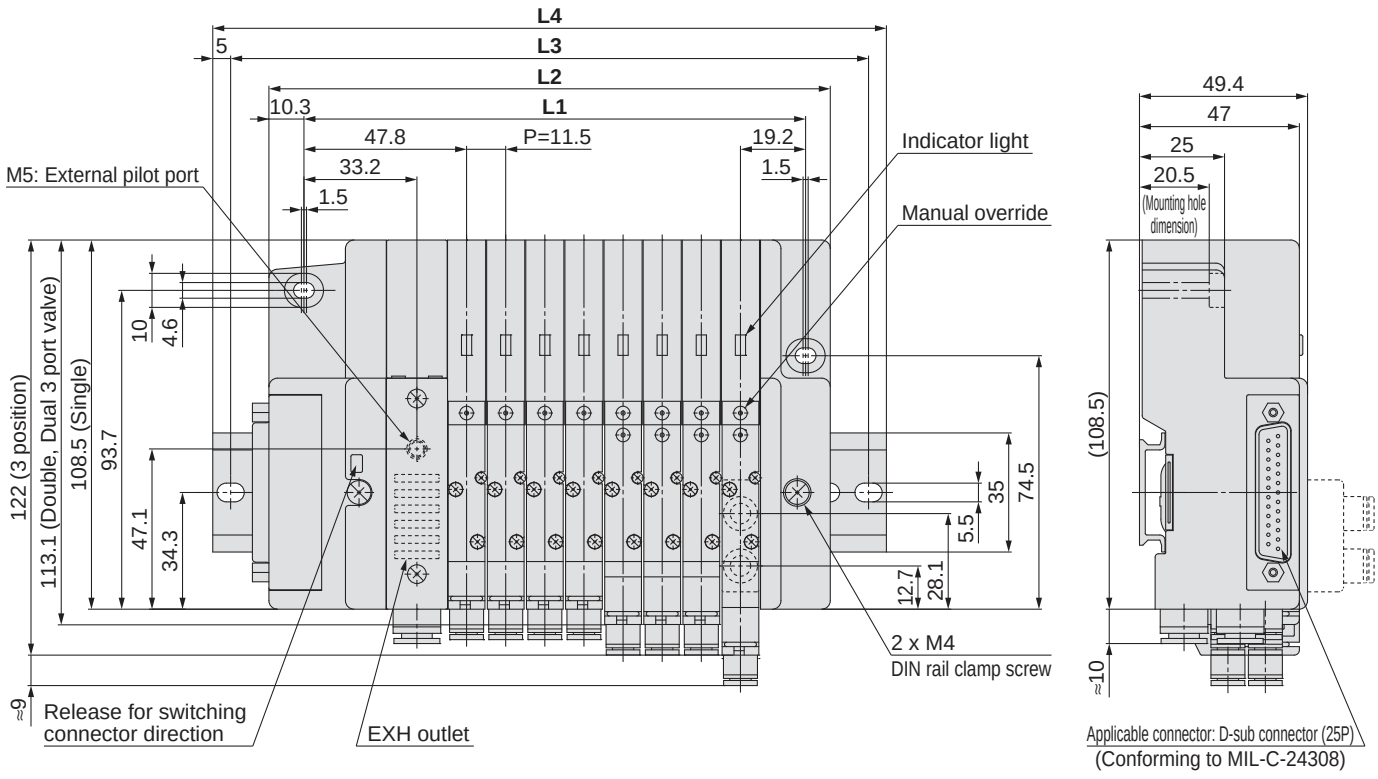
D-sub connector assembly wire colours (AXT100-DS25- 015 / 030 / 050)

		Terminal no.	Polarity		Lead wire colour	Dot marking
1 station	SOL.a	1	(−)	(+)	Black	None
	SOL.b	14	(−)	(+)	Yellow	Black
2 stations	SOL.a	2	(−)	(+)	Brown	None
	SOL.b	15	(−)	(+)	Pink	Black
3 stations	SOL.a	3	(−)	(+)	Red	None
	SOL.b	16	(−)	(+)	Blue	White
4 stations	SOL.a	4	(−)	(+)	Orange	None
	SOL.b	17	(−)	(+)	Purple	None
5 stations	SOL.a	5	(−)	(+)	Yellow	None
	SOL.b	18	(−)	(+)	Grey	None
6 stations	SOL.a	6	(−)	(+)	Pink	None
	SOL.b	19	(−)	(+)	Orange	Black
7 stations	SOL.a	7	(−)	(+)	Blue	None
	SOL.b	20	(−)	(+)	Red	White
8 stations	SOL.a	8	(−)	(+)	Purple	White
	SOL.b	21	(−)	(+)	Brown	White
9 stations	SOL.a	9	(−)	(+)	Grey	Black
	SOL.b	22	(−)	(+)	Pink	Red
10 stations	SOL.a	10	(−)	(+)	White	Black
	SOL.b	23	(−)	(+)	Grey	Red
11 stations	SOL.a	11	(−)	(+)	White	Red
	SOL.b	24	(−)	(+)	Black	White
12 stations	SOL.a	12	(−)	(+)	Yellow	Red
	SOL.b	25	(−)	(+)	White	None
	COM.	13	(+)	(−)	Orange	Red
			Positive common specifications	Negative common specifications		

Note) When using the negative common specifications, use valves for negative common.



D side Stations 1 2 3 4 5 6 7 8 n U side

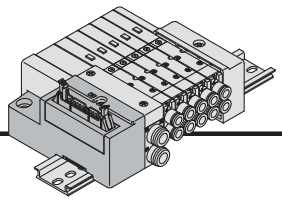


Dimensions [mm]

Formula: 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 Connector)

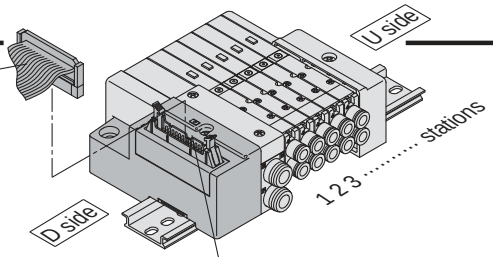


- **Flat ribbon cable connector reduces installation labour for electrical connection.**
- **Using the connector for flat ribbon cable (26P, 20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.**
- **Top or side receptacle position can be selected in accordance with the available mounting space.**

Manifold Specifications

Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ1000	Side, Top	C8	C3, C4, C6, M5	12 stations (24 as a semi-standard)

Flat Ribbon Cable (26 Pins, 20 Pins)

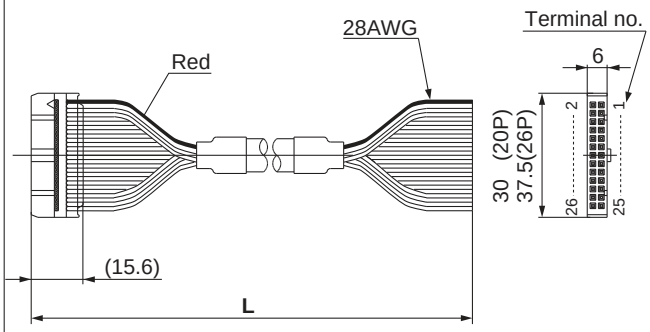


∗ Valves are numbered from the D side.

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 "How to Order Manifold".)



Flat Ribbon Cable Connector Assembly

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

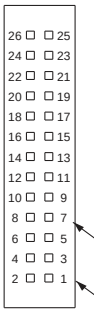
∗ For other commercial connectors, use a 26 pins or 20 pins with strain relief conforming to MIL-C-83503.
∗ Cannot be used for movable wiring.
∗ Lengths other than the above are also available. Please contact SMC for details.

Connector manufacturers' example

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

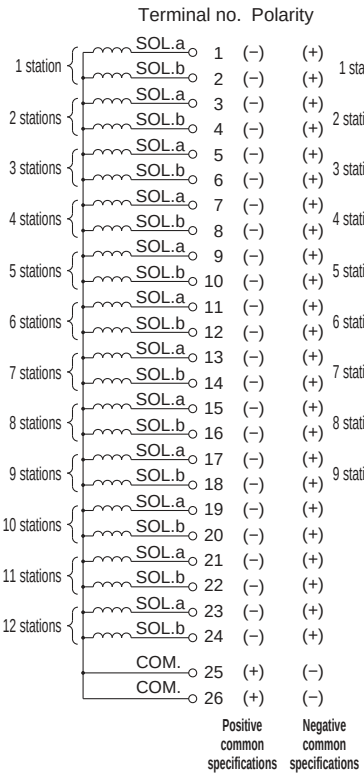
Electrical Wiring Specifications

Flat ribbon cable connector

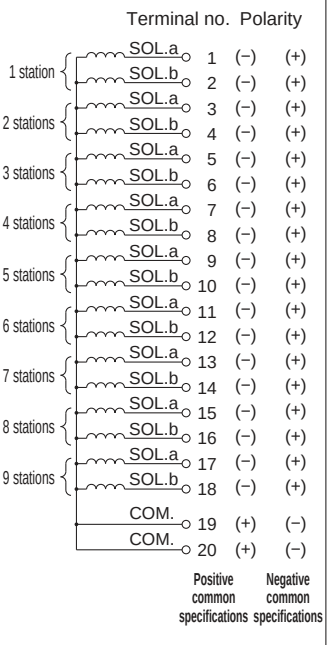


Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option.
For details, refer to page 52.

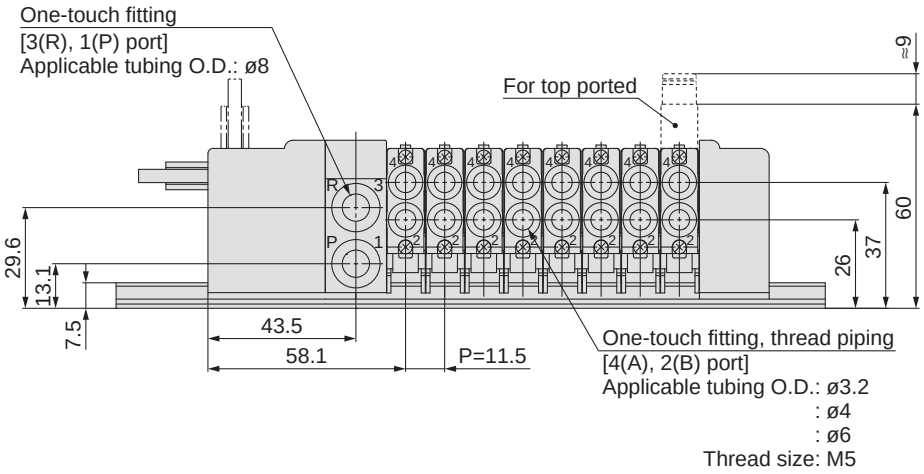
<26P>

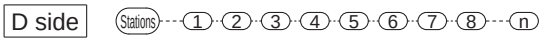


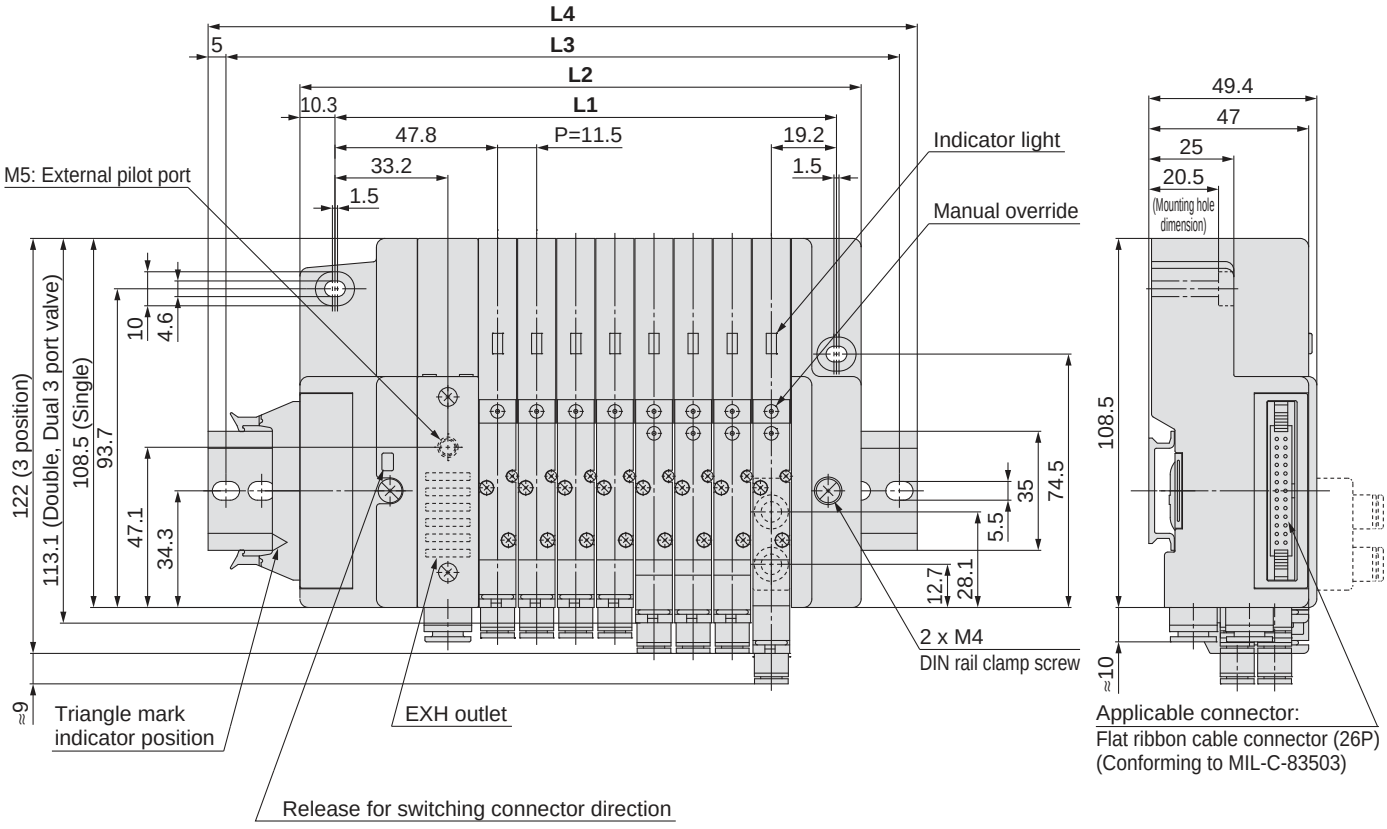
<20P>



Note) When using the negative common specifications, use valves for negative common.





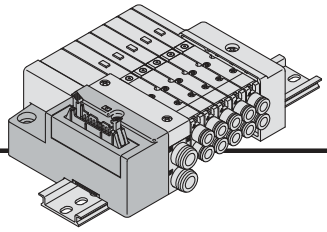


Dimensions [mm]

Formula: 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

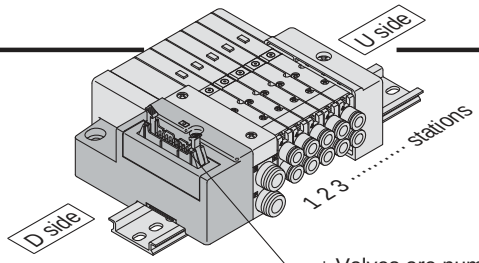
J Kit (PC Wiring System Compatible Flat Ribbon Cable Kit)



- **Compatible with PC wiring system.**
- **Using connector for flat ribbon cable (20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.**
- **Top or side receptacle position can be selected in accordance with the available mounting space.**

Manifold Specifications

Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ1000	Side, Top	C8	C3, C4, C6, M5	8 stations (16 as a semi-standard)

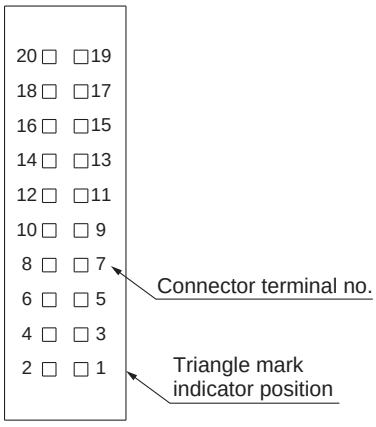


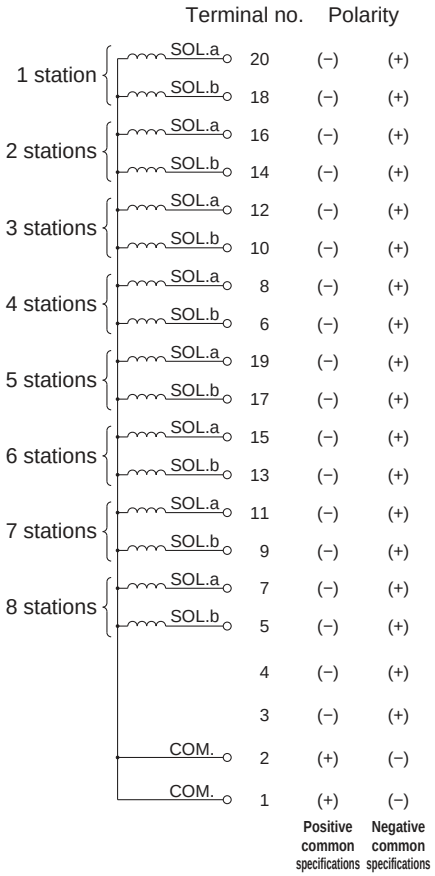
∗ Valves are numbered from the D side.

Electrical Wiring Specifications

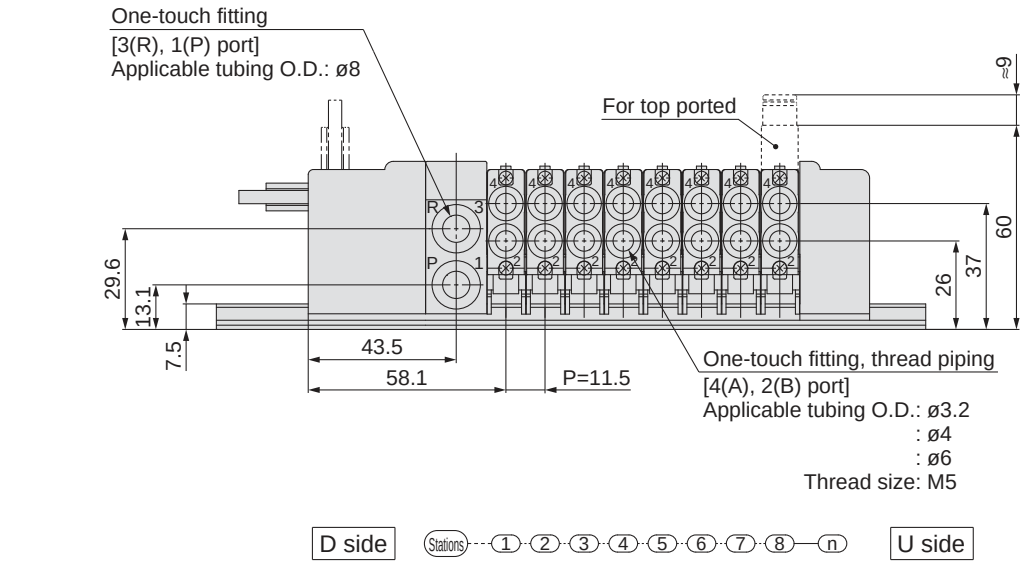
Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types.
Mixed single and double wiring is available as an option.
For details, refer to page 52.

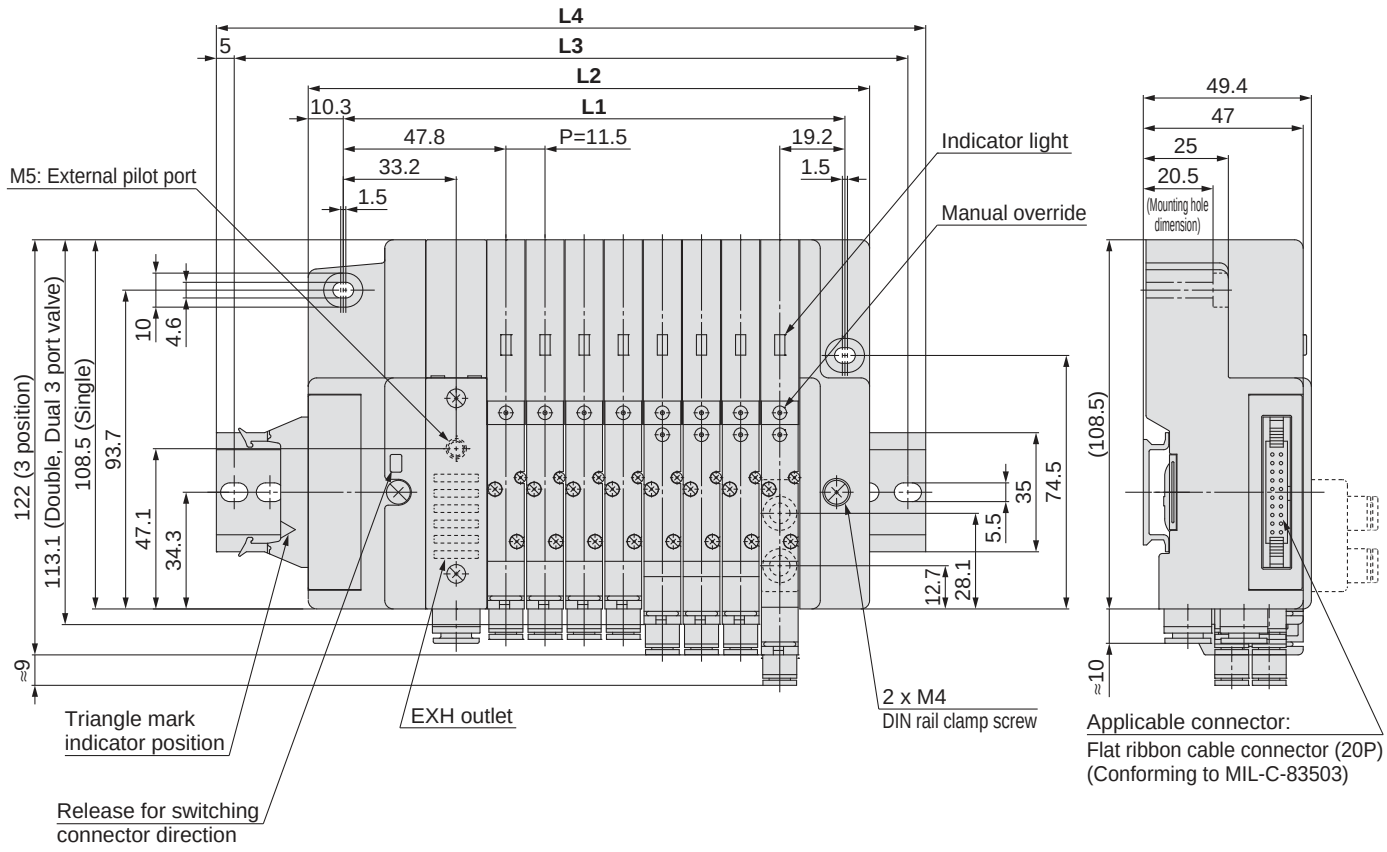
Flat ribbon cable connector





Note) When using the negative common specifications, use valves for negative common.
For details about the PC wiring system, refer to the PCW series catalogue (CAT.E02-20) separately.



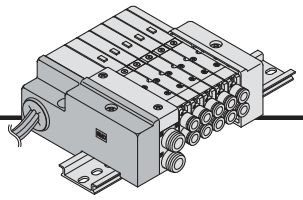


Dimensions [mm]

Formula: 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

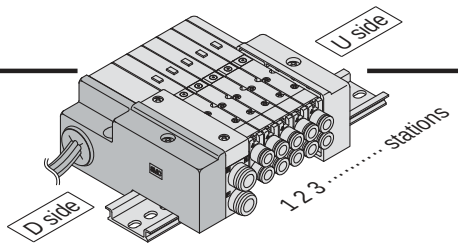
L Kit (Lead Wire Cable)



● **Direct electrical entry type**

Manifold Specifications

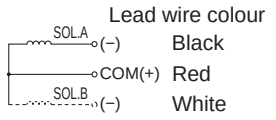
Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ1000	Side, Top	C8	C3, C4, C6, M5	12 stations



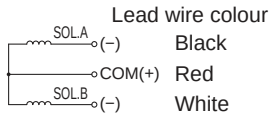
∗ Valves are numbered from the D side.

● Wiring Specifications: Positive Common Specifications

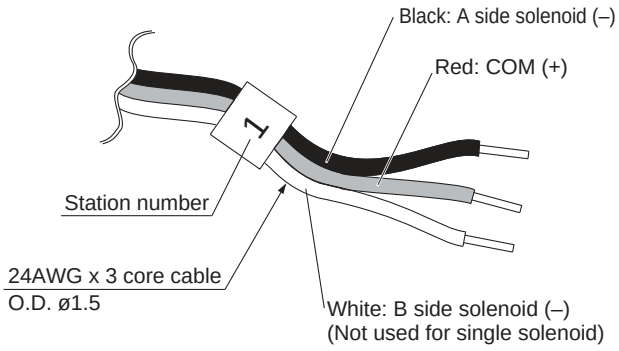
Three lead wires are included per station regardless of valves used.
Among the three lead wires, the red wire is for COM.



Single solenoid

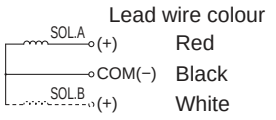


Double solenoid

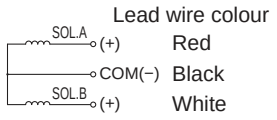


● Wiring Specifications: Negative Common Specifications (Semi-standard)

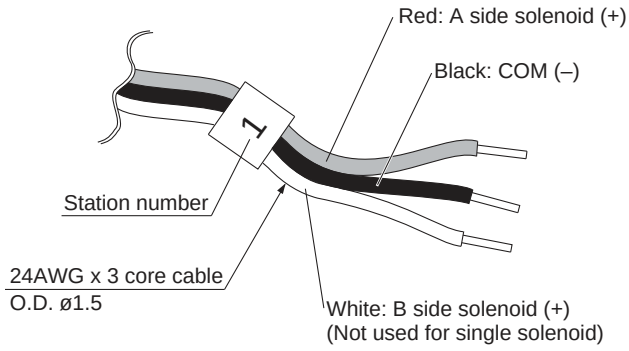
Three lead wires are included per station regardless of valves used.
Among the three lead wires, the black wire is for COM.



Single solenoid



Double solenoid



Note) When using the negative common specifications, use valves for negative common.

Negative Common Specifications

The following part numbers are for negative common specifications.

● How to order negative common valves (Example)

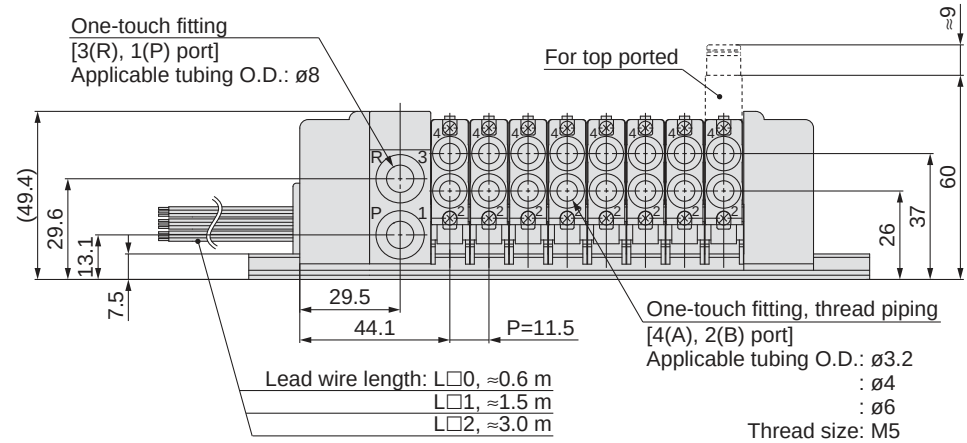
SQ1130 N -51-C6

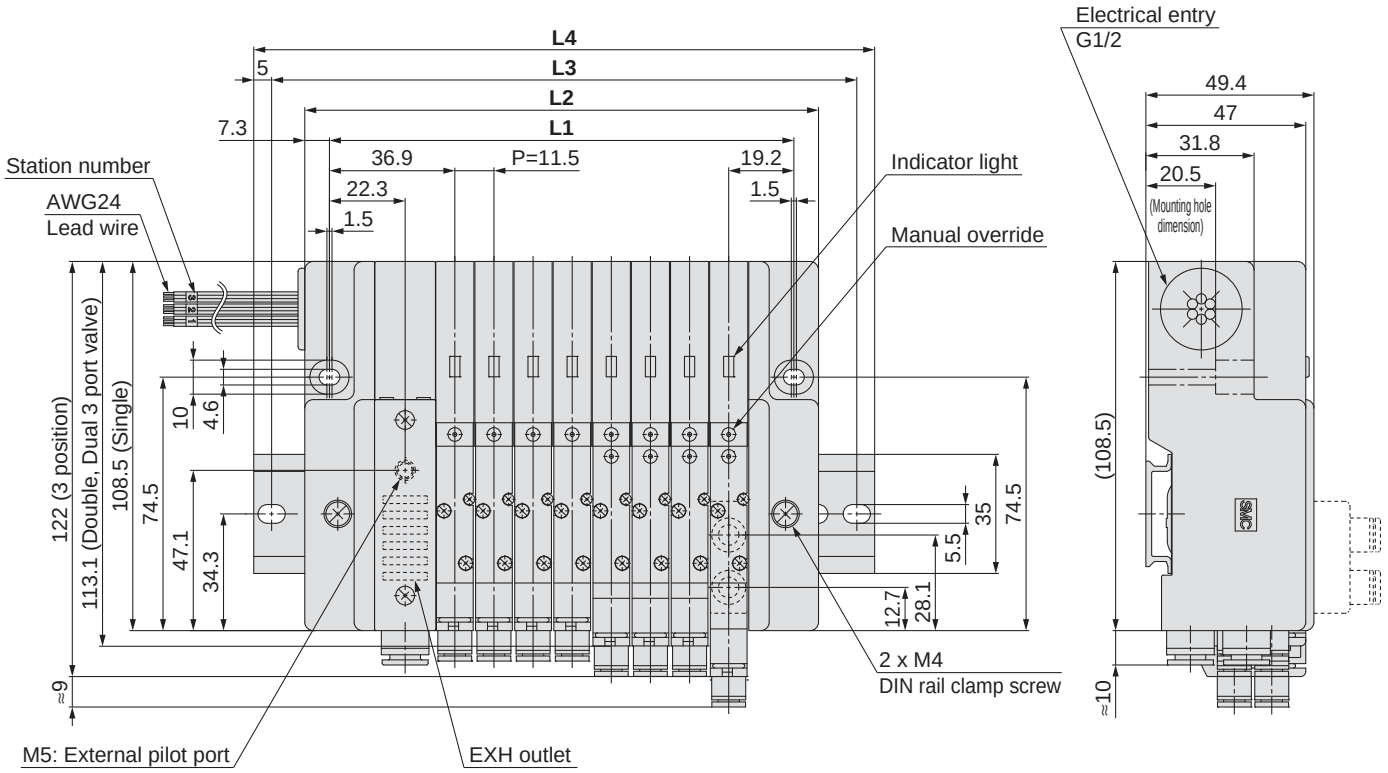
N: Negative common specifications

● How to order negative common manifold (Example)

SS5Q13-08 LD1 N- D N

- 08: Stations
- LD1: Kit type
- N: Negative common specifications
- D: DIN rail mounting style
- N: Option



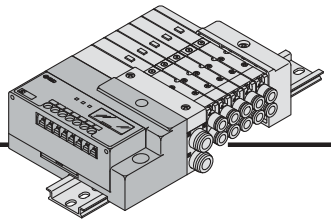


Dimensions [mm]

Formula: 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 Unit)
EX140 Integrated-type (for Output) Serial Transmission System

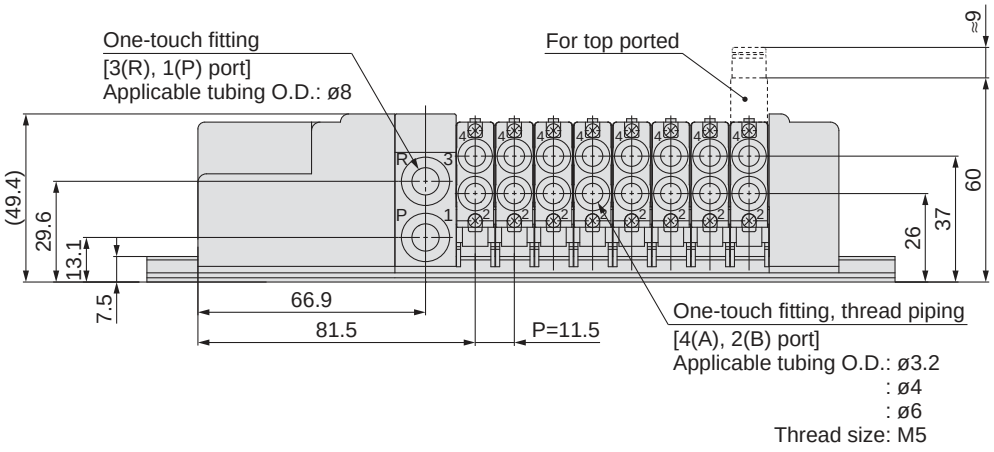


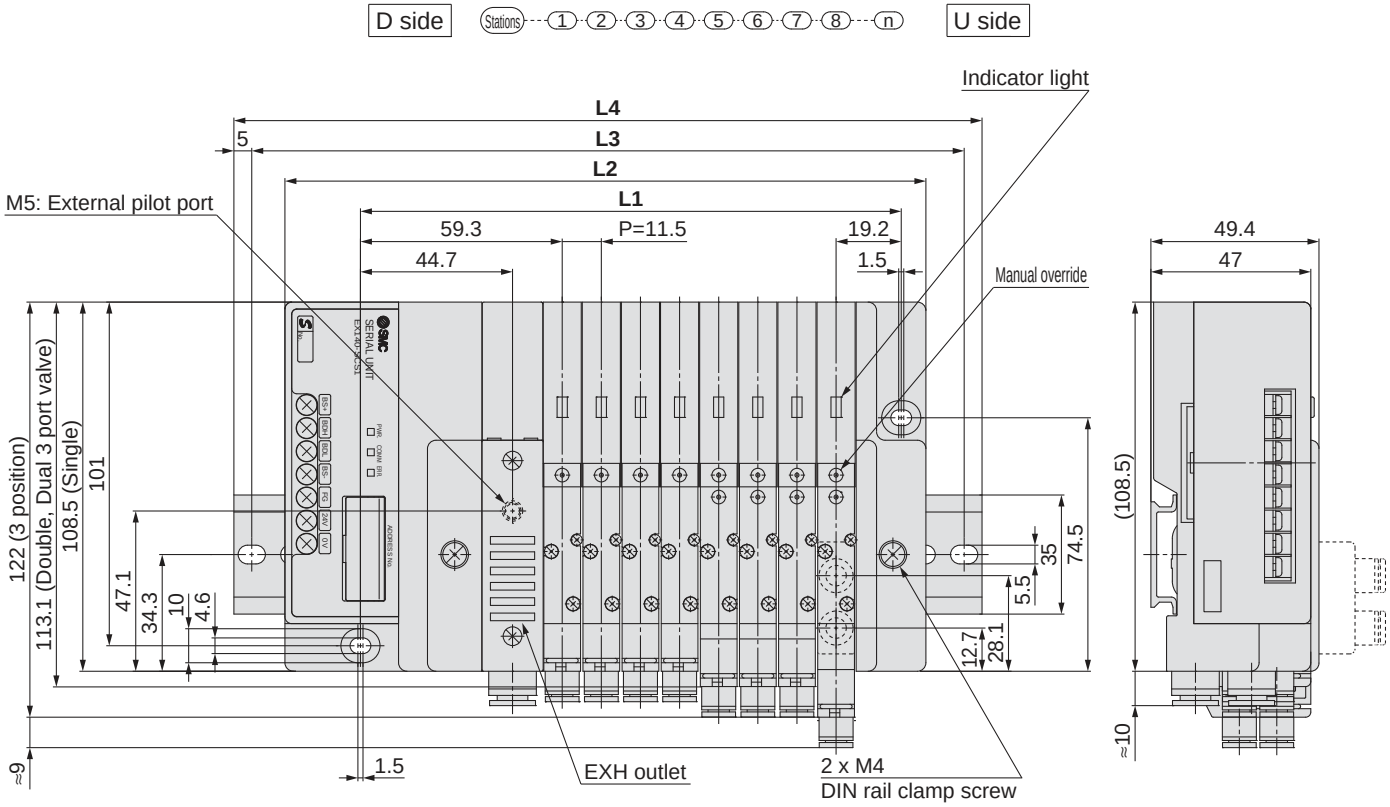
- **The serial transmission system reduces wiring work, while minimizing wiring and saving space.**
- **The maximum number of stations is 8. (16 as a semi-standard). Only for type J2, the maximum stations are 4 (8 as a semi-standard).**

Refer to catalogue and the Operation Manual for the details of EX140 integrated-type (for output) serial transmission system. Please download it via our website, http://www.smc.eu

Manifold Specifications

Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ1000	Side, Top	C8	C3, C4, C6, M5	8 stations (16 as a semi-standard)





Dimensions [mm]

Formula: 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

EX510 Gateway-type Serial Transmission System Plug-in Unit

Series SQ2000

How to Order Manifold

SS5Q 2 3 – SB N 08 – D □ – □ – Q

Manifold series

2	SQ2000

SI unit output polarity

—	Positive common
N	Negative common

Stations

Symbol	Stations	Note
01	1 station	Double Wiring
⋮	⋮	
08	8 stations	

Note) Max. 16 stations (Special wiring specifications)

1(P), 3(R) port size

—	1(P), 3(R) port, One-touch fittings for ø10
00T	1(P), 3(R) port, One-touch fittings for ø3/8"

Option

—	None
02 to 16 (1)	DIN rail length specified
B (2)	Back pressure check valve
K (3)	Special wiring specifications (Except double wiring)
N	With name plate (Side ported only)
R	External pilot specifications
S	Built-in silencer, direct exhaust

Note 1) Specify DIN rail length with "D□" at the end. (Enter the number of stations inside □.) The number of stations that may be displayed is longer than the manifold number of stations.
Example: -D09

Note 2) When "-B" is selected, a back pressure check valve is included in all stations of the manifold. If the back pressure check valve is used only for the station that need it, then specify the station location in the manifold specification. ("-B" is not necessary)

Note 3) Specify "-K" for wiring specification for cases below.
- All single wiring
- Single and double mixed wiring
- When there are stations which do not require wiring (e.g. single SUP spacer), specify the wiring specification in the manifold specification so that the number of the solenoids is 16 maximum. (Standard wiring specification is double wiring)

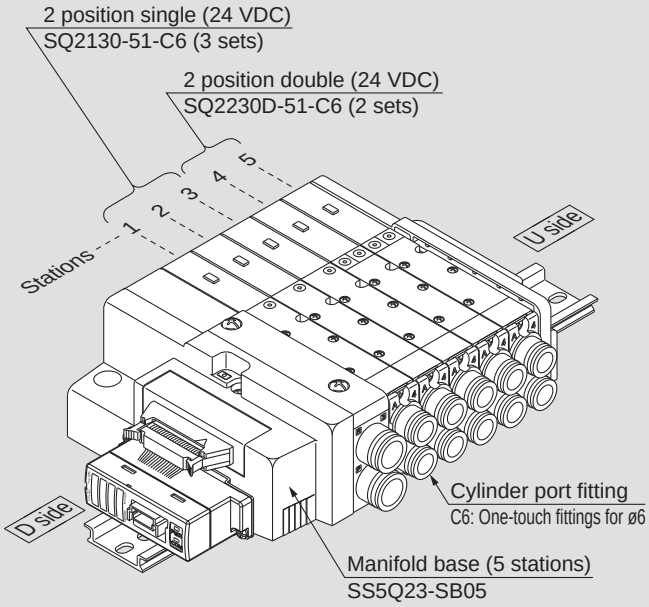
Note 4) For specifying two or more options, enter them alphabetically.
Example: -BKN

∗ Refer to pages 47 to 54 for manifold option parts.

DIN rail mounting

How to Order Manifold

Example



SS5Q23-SB05-D ··· 1 set (SB kit 5-station manifold base part no.)
∗ SQ2130-51-C6 ····· 3sets (Single type part no.)
∗ SQ2230D-51-C6 ···· 2 sets (Double type part no.)
The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.
Enter in order starting from the first station on the D side.

Add the valve and option part number under the manifold base part number. When entry of part numbers becomes complicated, indicate by the manifold specification sheet.

SI Unit Part No.

Symbol	SI unit output polarity	SI unit part no.
—	Positive common	EX510-S002B
N	Negative common	EX510-S102B

Refer to catalogue and the Operation Manual for the details of EX510 gateway-type serial transmission system. Please download it via our website, http://www.smc.eu

How to Order Valves

SQ 2 1 3 0 □ – 5 □ 1 – C6 – □ – □ – Q

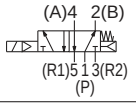
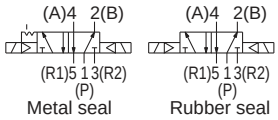
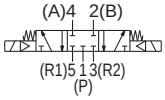
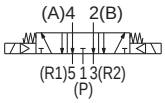
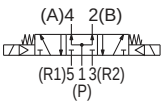
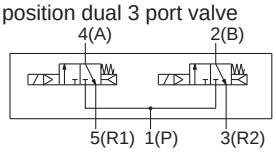
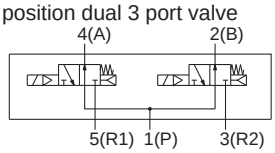
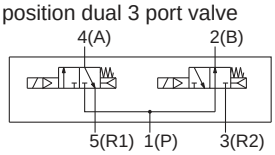
Series

2	SQ2000

Seal

0	Metal seal
1	Rubber seal

Type of actuation

1	2 position single 
2	2 position double (Double solenoid) (1) 
3	3 position closed centre 
4	3 position exhaust centre 
5	3 position pressure centre 
A (2)	4 position dual 3 port valve 
B (2)	4 position dual 3 port valve 
C (2)	4 position dual 3 port valve 

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

Function

Symbol	Specifications
—	Standard type (0.4 W)
B	Quick response type (0.95 W)
D (1)	2 position double (Double solenoid specifications)
N (2)	Negative common
R (3)	External pilot specifications

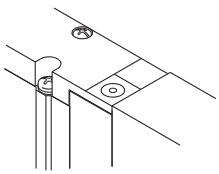
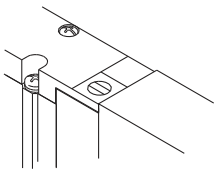
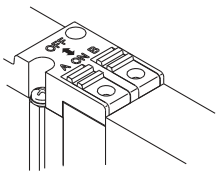
Note 1) "D" is specified for 2 position double.
Note 2) When SI unit output polarity is negative common, the valve common specification should be also be negative common.
Note 3) Except dual 3 port valves.
Note 4) When two or more symbols are specified, indicate them alphabetically.

Rated voltage

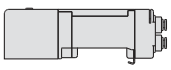
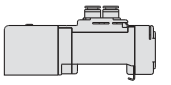
5	24 VDC

Note) Light/surge voltage suppressor is built-in.

Manual override

—	B	D
Non-locking push type (Tool required)	Locking type (Tool required)	Slide locking type (Manual type) ∗ Only side ported type applicable
		

Cylinder port

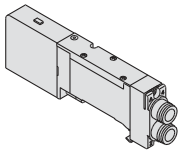
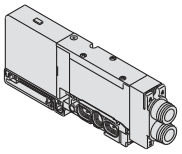
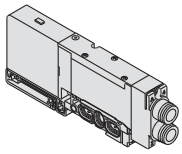
Symbol	Port size	Port location	
C4	One-touch fittings for ø4	Side ported	
C6	One-touch fittings for ø6		
C8	One-touch fittings for ø8		
L4	One-touch fittings for ø4	Top (1) ported	
L6	One-touch fittings for ø6		
L8	One-touch fittings for ø8		

Note 1) Can be changed to side ported configuration.
Note 2) Refer to page 54 for the inch-size One-touch fittings.

Port plug mounting port

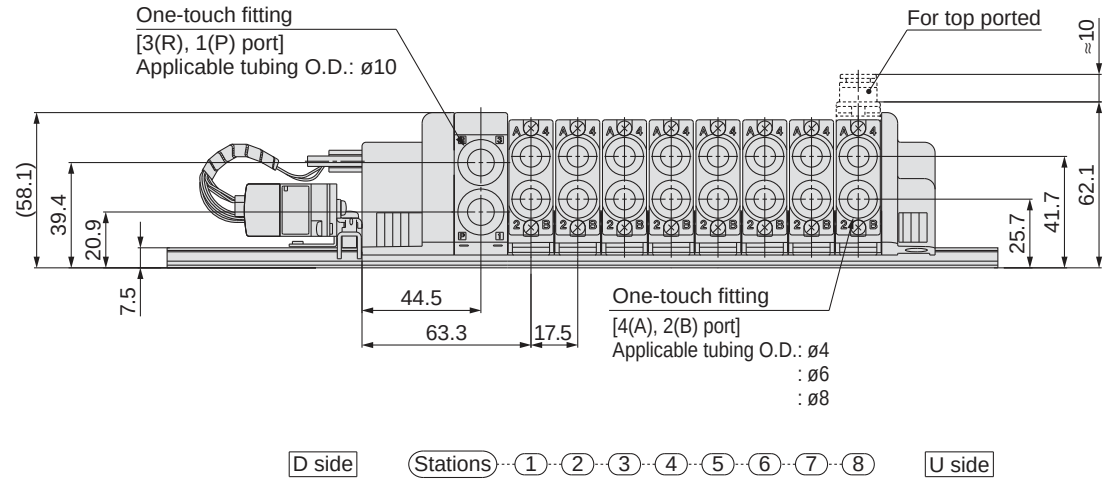
—	None
A	Port 4(A)
B	Port 2(B)

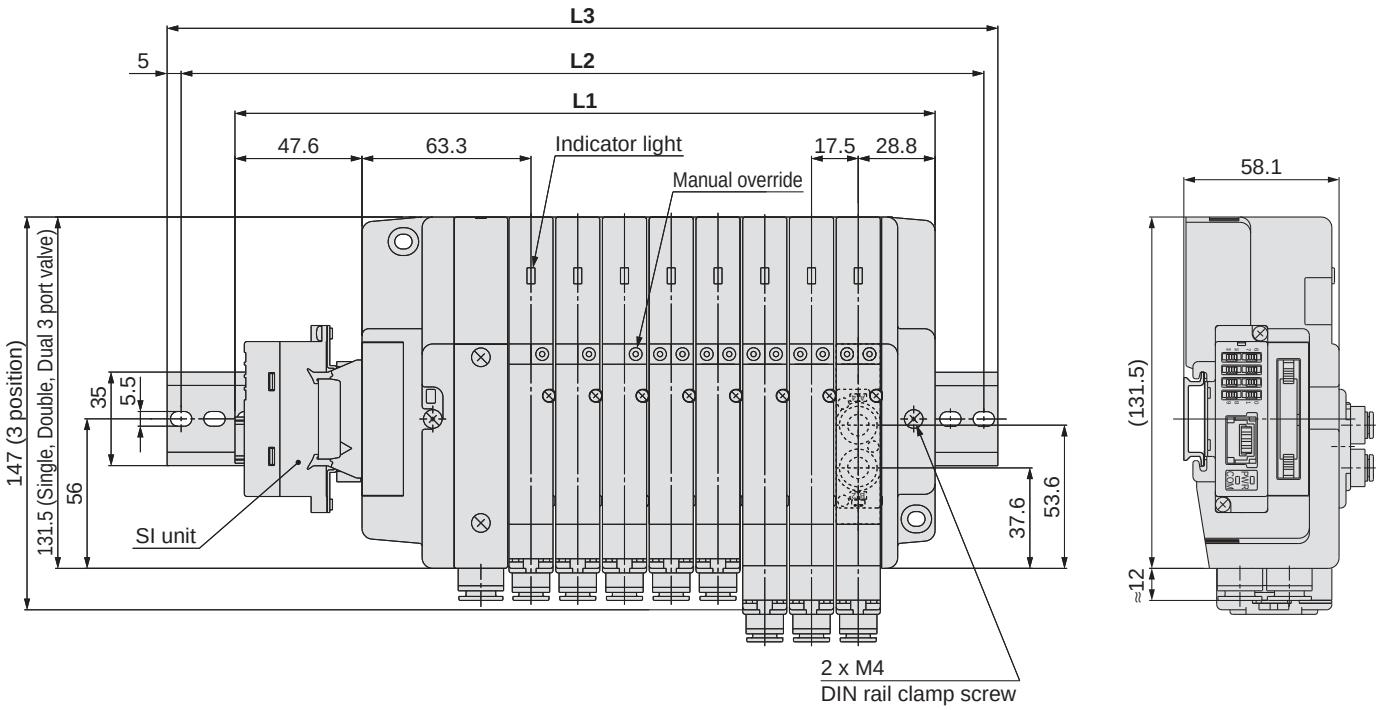
With/Without manifold block

—	M	MB
Without manifold block	With manifold block	With manifold block, 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	

CE compliant

Dimensions: SQ2000





Dimensions [mm]

Formula: L1 = 17.5n + 122 n: Stations (Maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	139.5	157	174.5	192	209.5	227	244.5	262	279.5	297	314.5	332	349.5	367	384.5	402
L2	162.5	187.5	200	212.5	237.5	250	275	287.5	300	325	337.5	362.5	375	387.5	412.5	425
L3	173	198	210.5	223	248	260.5	285.5	298	310.5	335.5	348	373	385.5	398	423	435.5

Plug-in Unit

Series SQ2000

How to Order Manifold

SS5Q23 − 08 FD2 − D □ − □ − Q

Stations

01	1 station
⋮	⋮
16 Note)	16 stations

Note) The maximum number of stations depends on the type of electrical entries. Refer to "Electrical entry" for details.

Manifold mounting

D	DIN rail mounting style
E Note)	Direct mounting style

Note) Refer to page 53 for details.

Option

—	None
02 to 16 (1)	DIN rail length specified
B (2)	Back pressure check valve
K (3)	Special wiring specifications (Except double wiring)
N	With name plate (Side ported only)
R	External pilot specifications
S	Built-in silencer, direct exhaust

1(P), 3(R) port size

—	1(P), 3(R) port One-touch fittings for ø10
00T	1(P), 3(R) port One-touch fittings for ø3/8"

CE compliant

Note 1) Specify DIN rail length with "D□ at the end. (Enter the number of stations inside □.) The number of stations that may be displayed is longer than the manifold number of stations. Example: -D09

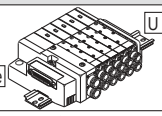
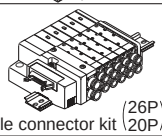
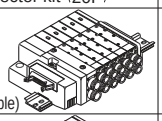
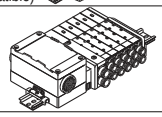
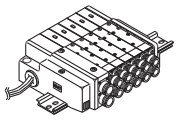
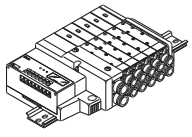
Note 2) When "-B" is selected, a back pressure check valve is included in all stations of the manifold. If the back pressure check valve is used only for the station that need it, then specify the station location in the manifold specification. ("-B" is not necessary)

Note 3) Specify "-K" for wiring specification for cases below. (Except L kit)
- All single wiring
- Single and double mixed wiring.
- When there are stations which do not require wiring (e.g. single SUP spacer), specify the wiring specification in the manifold specification so that the number of solenoids is the maximum number of solenoids or less. (Standard wiring specification is double wiring)

Note 4) For specifying two or more options, enter them alphabetically. Example: -BKN

∗ Refer to pages 47 to 54 for manifold option parts.

Electrical entry

Kit type		Lead wire connector location	Cable/SI unit specifications	Station (Double wiring)	Max. number of stations for special wiring specifications	Max. number of solenoids for special wiring specifications (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 1.5 m cable			
	FD2		D-sub connector (25P) kit, with 3.0 m cable			
	FD3		D-sub connector (25P) kit, with 5.0 m cable			
P kit Flat ribbon cable connector kit (26P 20P) 	**PD0**	D side (1)	Flat ribbon cable (26P) kit, without cable	1 to 12 stations	16 stations	24
	PD1		Flat ribbon cable (26P) kit, with 1.5 m cable			
	PD2		Flat ribbon cable (26P) kit, with 3.0 m cable			
	PD3		Flat ribbon cable (26P) kit, with 5.0 m 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 0.6 m cable	1 to 12 stations	—	—
	LU0	U side				
	LD1	D side	Lead wire kit with 1.5 m cable			
	LU1	U side				
	LD2	D side	Lead wire kit with 3.0 m cable			
	LU2	U side				
S kit Serial transmission kit EX140 integrated-type (for output) serial transmission system (3) 	**SDQ**	D side	DeviceNet	1 to 8 stations	16 stations	16
	SDR1		OMRON Corp.: CompoBus/S (16 output points)			
	SDR2		OMRON Corp.: CompoBus/S (8 output points)	1 to 4 stations	8 stations	8
	SDV		CC-LINK	1 to 8 stations	16 stations	16

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

Note 2) Specify the number of the solenoid so that the maximum station number is not exceeded.(The number of solenoids are counted as: 1 for single solenoids and 2 for type 3P and 4P double solenoids.)

Note 3) Refer to catalogue and the Operation Manual for the details of EX140 integrated-type (for output) serial transmission system. Please download it via our website, http://www.smc.eu ∗ Refer to page 66 for manifold spare parts.

SI Unit Part No.

Symbol	Protocol type	SI unit part no.
SDQ	DeviceNet	EX140-SDN1
SDR1	OMRON Corp.: CompoBus/S (16 output points)	EX140-SCS1
SDR2	OMRON Corp.: CompoBus/S (8 output points)	EX140-SCS2
SDV	CC-LINK	EX140-SMJ1

How to Order Valves

SQ2 1 3 0 □ – 5 □ 1 – C6 – □ – □ – Q

Seal

0	Metal seal
1	Rubber seal

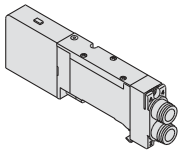
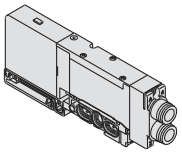
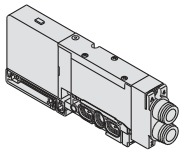
CE compliant

Type of actuation

1	2 position single (A)4 2(B) (R1)5 1 3(R2) (P)
2	2 position double (Double solenoid) (1) (A)4 2(B) (R1)5 1 3(R2) (P) Metal seal (A)4 2(B) (R1)5 1 3(R2) (P) Rubber seal
3	3 position closed centre (A)4 2(B) (R1)5 1 3(R2) (P)
4	3 position exhaust centre (A)4 2(B) (R1)5 1 3(R2) (P)
5	3 position pressure centre (A)4 2(B) (R1)5 1 3(R2) (P)
A (2)	4 position dual 3 port valve 4(A) 2(B) 5(R1) 1(P) 3(R2)
B (2)	4 position dual 3 port valve 4(A) 2(B) 5(R1) 1(P) 3(R2)
C (2)	4 position dual 3 port valve 4(A) 2(B) 5(R1) 1(P) 3(R2)

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

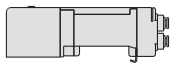
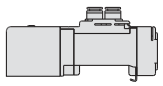
With/Without manifold block

—	M	MB
Without manifold block	With manifold block	With manifold block, 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

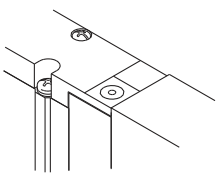
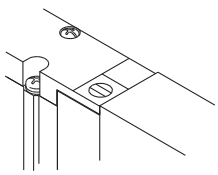
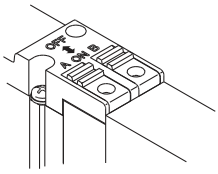
—	None
A	Port 4(A)
B	Port 2(B)

Cylinder port

Symbol	Port size	Port location	
C4	With One-touch fittings for ø4	Side ported	
C6	With One-touch fittings for ø6		
C8	With One-touch fittings for ø8		
L4	With One-touch fittings for ø4	Top (1) ported	
L6	With One-touch fittings for ø6		
L8	With One-touch fittings for ø8		

Note 1) Can be changed to side ported configuration.
Note 2) Refer to page 54 for the inch-size One-touch fittings.

Manual override

—	B	D
Non-locking push type (Tool required)	Locking type (Tool required)	Slide locking type (Manual type) ∗ Only side ported type applicable
		

Function

Symbol	Specifications
—	Standard type (0.4 W)
B	Quick response type (0.95 W)
D (1)	2 position double (Double solenoid specifications)
N (2)	Negative common
R (3)	External pilot specifications

Rated voltage

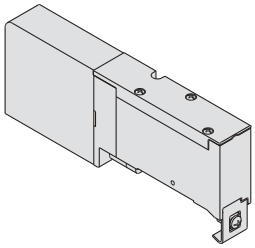
5	24 VDC
6	12 VDC

Note 1) Light/surge voltage suppressor is built-in.
Note 2) S kit: 24 VDC only

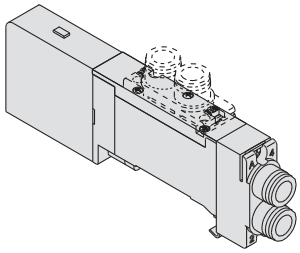
Note 1) "D" is specified for 2 position double.
Note 2) Negative common specifications are not available for the S kit.
Note 3) Except dual 3 port valves.
Note 4) When two or more symbols are specified, indicate them alphabetically.

Manifold Options

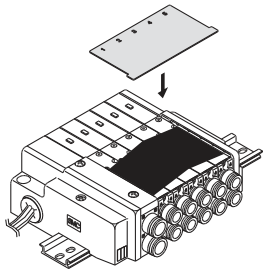
Blanking plate
SSQ2000-10A-3 P.47



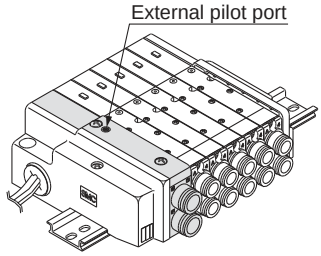
Individual SUP/EXH spacer
SSQ2000-PR1-3-C8/L8 P.48



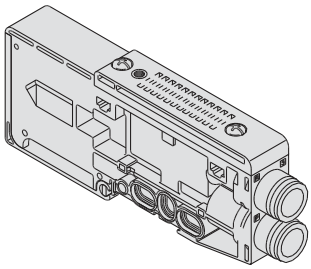
Name plate (-N)
SSQ2000-N3-n P.50



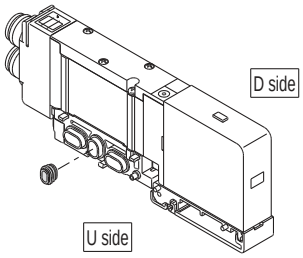
External pilot specifications (-R) P.51



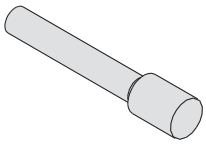
SUP/EXH block
SSQ2000-PR-3-C10(-S) P.47



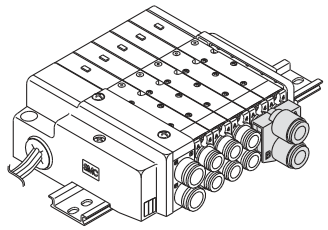
SUP block plate
SSQ1000-B-R P.49



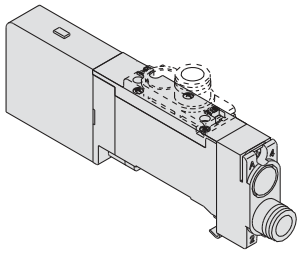
Blanking plug
KQ2P-04/06/08/10 P.50



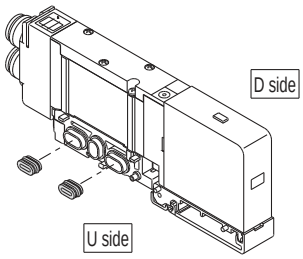
Dual flow fitting
SSQ2000-52A-C10/N11 P.51



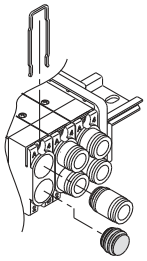
Individual SUP spacer
SSQ2000-P-3-C8/L8 P.47



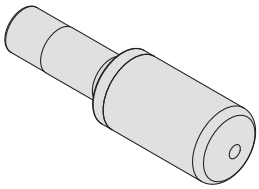
EXH block plate
SSQ2000-B-R P.49



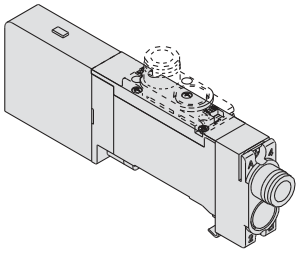
Port plug
VVQZ2000-CP P.50



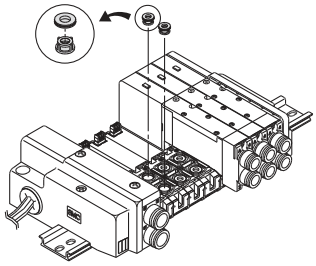
Silencer
(For EXH port) P.51



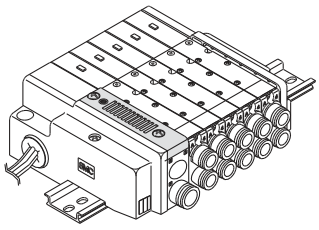
Individual EXH spacer
SSQ2000-R-3-C8/L8 P.48



Back pressure check valve (-B)
SSQ2000-BP P.49

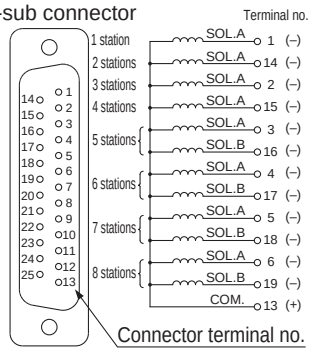


Built-in silencer, direct exhaust (-S) P.50



Special wiring specifications (-K) P.52

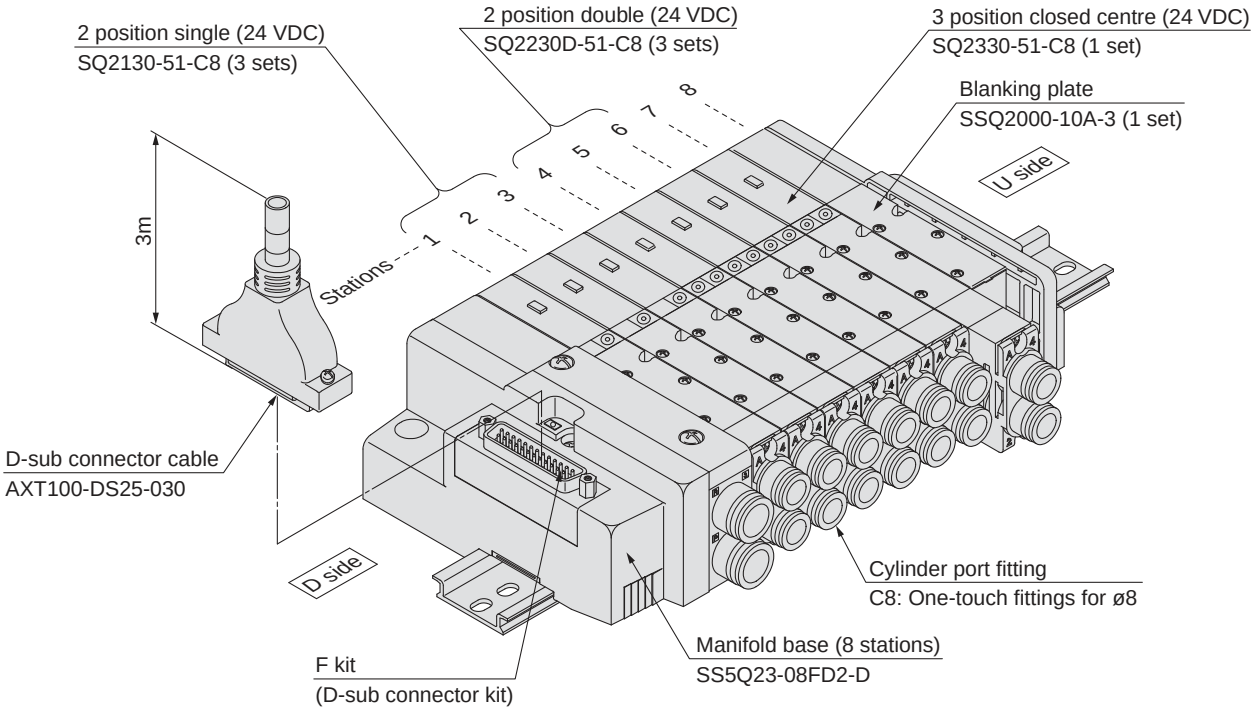
D-sub connector



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

How to Order Manifold Assembly

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



SS5Q23-08FD2-D ··· 1 set (F kit 8-station manifold base)
* **SQ2130-51-C8 ·····3 sets (2 position single)**
* **SQ2230D-51-C8 ···3 sets (2 position double)**
* **SQ2330-51-C8 ·····1 set (3 position closed centre)**
* **SSQ2000-10A-3 ··· 1 set (Blanking plate)**

The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

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 the manifold specification sheet.

Valve Specifications

Model

Series	Type of actuation		Seal	Model	Flow characteristic (1)								Response time [ms] (2)		Weight [g]
					1 → 4/2 (P → A/B)				4/2 → 5/3 (A/B → R1/R2)				Standard (0.4 W)	Quick response (0.95 W)	
					C [dm³/(s·bar)]	b	Cv	Q [L/min] (ANR) Note 3)	C [dm³/(s·bar)]	b	Cv	Q [L/min] (ANR) Note 3)			
SQ1000	2 position	Single	Metal seal	SQ2130	2.2	0.17	0.51	518	2.4	0.14	0.57	556	35 or less	20 or less	145
			Rubber seal	SQ2131	2.3	0.17	0.51	542	3.1	0.18	0.71	734	31 or less	24 or less	140
		Double	Metal seal	SQ2230D	2.2	0.17	0.51	518	2.4	0.14	0.57	556	20 or less	15 or less	160
			Rubber seal	SQ2231D	2.3	0.17	0.51	542	3.1	0.18	0.71	734	26 or less	20 or less	155
	3 position	Closed centre	Metal seal	SQ2330	1.9	0.17	0.46	448	2.1	0.15	0.47	489	56 or less	37 or less	180
			Rubber seal	SQ2331	1.9	0.17	0.46	448	1.8	0.29	0.47	455	44 or less	34 or less	175
		Exhaust centre	Metal seal	SQ2430	1.9	0.17	0.46	448	2.4	0.14	0.55	556	56 or less	37 or less	180
			Rubber seal	SQ2431	1.9	0.17	0.46	448	3.1	0.14	0.65	719	44 or less	34 or less	175
		Pressure centre	Metal seal	SQ2530	2.3	0.17	0.51	542	2.1	0.18	0.47	497	56 or less	37 or less	180
			Rubber seal	SQ2531	2.5	0.17	0.56	589	1.8	0.30	0.47	458	44 or less	34 or less	175
	4 position	Dual 3 port valve	Rubber seal	SQ2$^{A}_{B}_{C}$31	1.5	0.17	0.40	353	1.5	0.17	0.40	353	34 or less	19 or less	155

Note 1) Values for the top ported cylinder port size of C8. CYL → Values of EXH. The side ported type will be about 10% less.
Note 2) Based on JIS B 8375-1981. (Values with a supply pressure of 0.5 MPa and light/surge voltage suppressor. Values fluctuate depending on the pressure and air quality.)
Note 3) These valves have been calculated according to ISO6358 and indicate the flow rate under standard conditions with an inlet pressure of 0.6 MPa (relative pressure) and a pressure drop of 0.1 MPa.

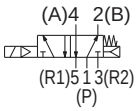
Specifications

Valve specifications	Valve construction		Metal seal	Rubber seal
	Fluid		Air/Inert gas	
	Maximum operating pressure		0.7 MPa	
	Min. operating pressure	Single	0.1 MPa	0.15 MPa
		Double (Double solenoid)	0.1 MPa	0.1 MPa
		3 position	0.1 MPa	0.2 MPa
		4 position	—	0.15 MPa
	Ambient fluid temperature		–10 to 50°C (1)	
	Lubrication		Not required	
	Pilot valve manual override		Push type (Tool required)/Locking type (Tool required)/Slide locking type (Manual type)	
	Vibration/Impact resistance (2)		30/150 m/s²	
	Protection structure		Dust tight	
Solenoid specifications	Coil rated voltage		12 VDC, 24 VDC	
	Allowable voltage fluctuation		±10% of rated voltage	
	Coil insulation type		Equivalent to class B	
	Power consumption (Current)	24 VDC	0.4 W DC (17 mA), 0.95 W DC (40 mA) (3)	
		12 VDC	0.4 W DC (34 mA), 0.95 W DC (80 mA) (3)	

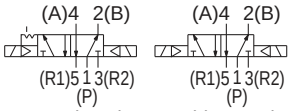
Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)
Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition.
Note 3) Value for quick response type.

JIS Symbol

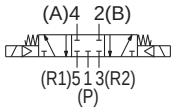
2 position single



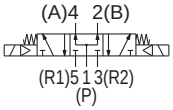
2 position double (Double solenoid)



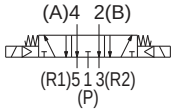
3 position closed centre



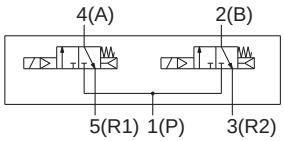
3 position pressure centre



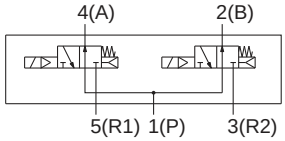
3 position exhaust centre



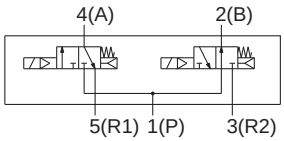
4 position dual 3 port valve (A)



4 position dual 3 port valve (B)



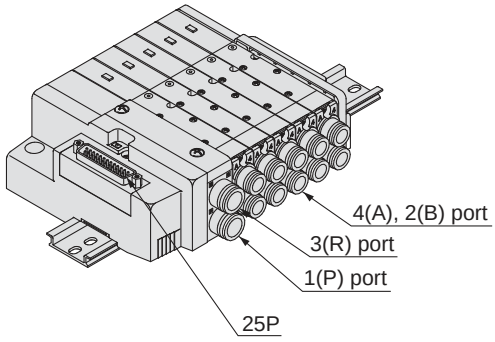
4 position dual 3 port valve (C)



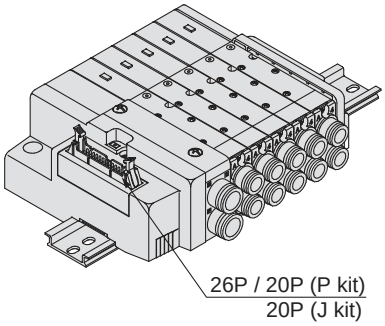
Manifold Specifications

Base model	Porting specifications: Port size (1) 1(P), 3(R)	Porting specifications: Port size (1) 4(A), 2(B) Port location	Porting specifications: Port size (1) 4(A), 2(B) Port size	Applicable solenoid valve	Type of connection		Applicable stations (3) (Double wiring)	5-station weight (4) [g]	Addition per station (4) [g]
SS5Q23-□□-□	C10 (For ø10) Option Built-in silencer, direct exhaust	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
		Top (2)	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

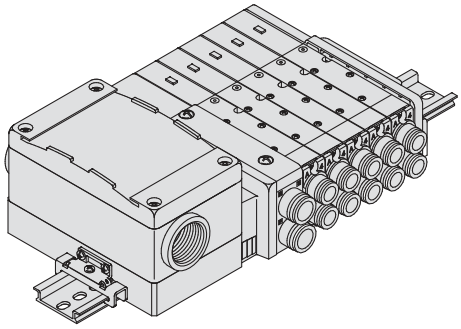
Note 1) One-touch fittings in inch sizes are also available. For details, refer to page 54.
Note 2) Can be changed to side ported configuration.
Note 3) An optional specification for special wiring is available to increase the maximum number of stations. Refer to page 52 for details.
Note 4) Except valves. For valve weight, refer to page 29.



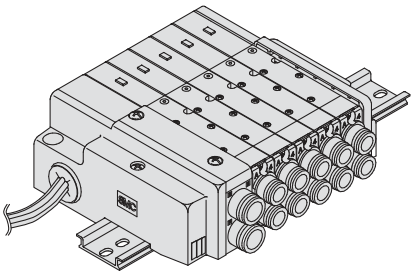
F kit



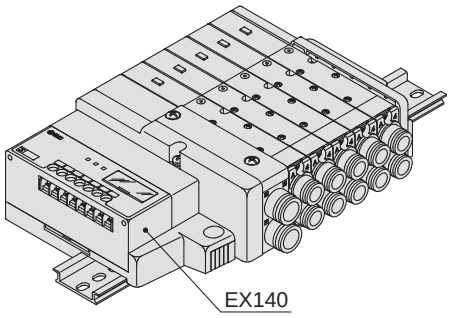
P kit **J kit**



T kit



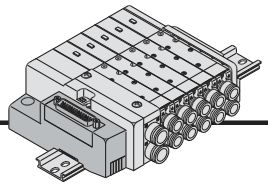
L kit



Refer to catalogue and the Operation Manual for the details of EX140 integrated-type (for output) serial transmission system.
Please download it via our website, http://www.smc.eu

S kit

F Kit (D-sub Connector Kit)

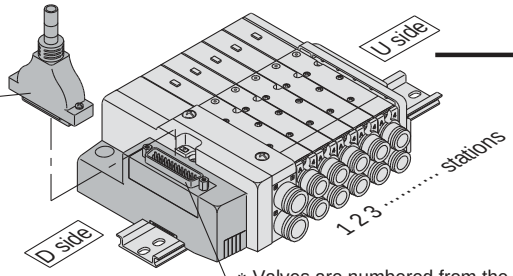


- **Simplification and labour savings for wiring work can be achieved by using a D-sub connector for the electrical connection.**
- **Using connector for flat ribbon cable (25P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.**
- **Top or side entry for the connector can be changed freely, allowing later changes according to the mounting space.**

Manifold Specifications

Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ2000	Side, Top	C10	C4, C6, C8	12 stations (16 as a semi-standard)

D-sub Connector (25 Pin)

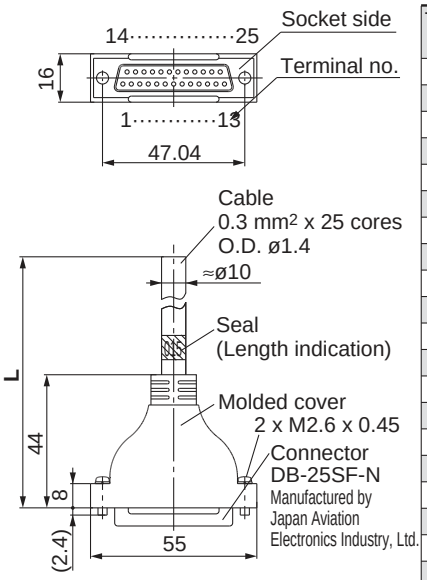


∗ Valves are numbered from the D side.

Cable Assembly

AXT100-DS25- 015 / 030 / 050

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



D-sub Connector Cable Assembly

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

∗ For other commercial connectors, use a 25 pins type with female connector conforming to MIL-C-24308.
∗ Cannot be used for transfer wiring.
∗ Lengths other than the above are also available. Please contact SMC for details.

D-sub Connector Cable Assembly Terminal No.

Terminal number	Lead wire colour	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	Grey	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	Grey	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Grey	Red
24	Black	White
25	White	None

Electric Characteristics

Item	Characteristics
Conductor resistance Ω/km, 20°C	65 or less
Withstand voltage VAC, 1 min.	1000
Insulation resistance MΩ/km, 20°C	5 or more

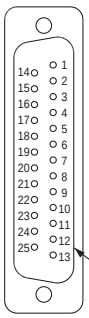
Note) The minimum bending radius for D-sub connector cable is 20 mm.

Connector manufacturers' example

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

Electrical Wiring Specifications

D-sub connector



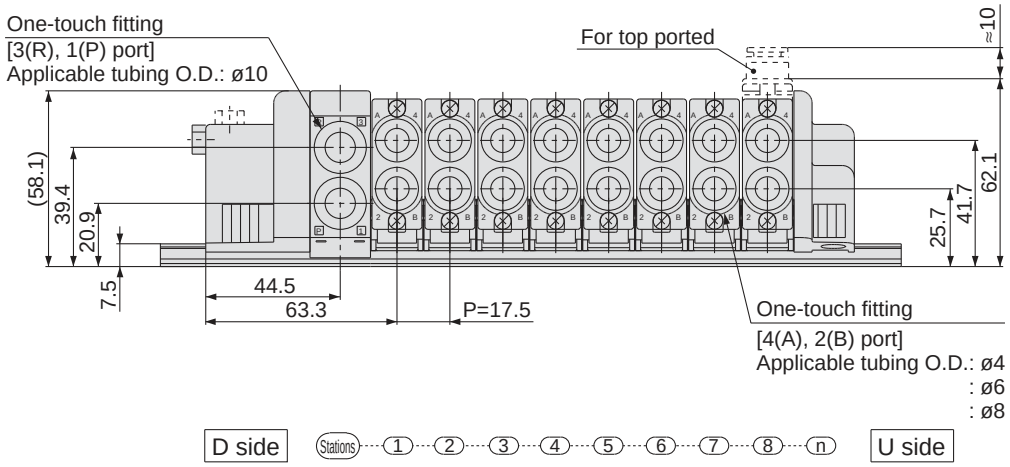
As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types.
Mixed single and double wiring is available as an option.
For details, refer to page 52.

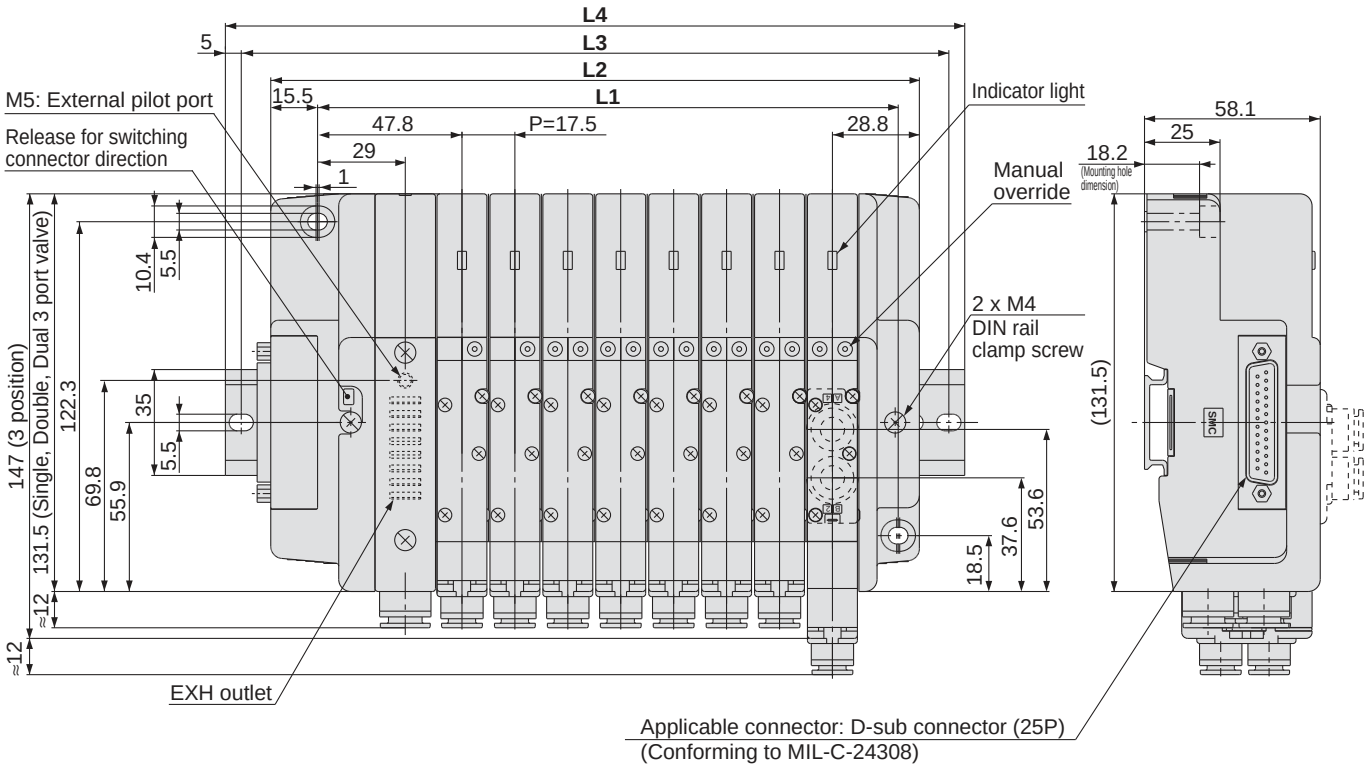
Connector terminal no.

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

		Terminal no.	Polarity		Lead wire color	Dot marking
1 station	SOL.a	1	(−)	(+)	Black	None
	SOL.b	14	(−)	(+)	Yellow	Black
2 stations	SOL.a	2	(−)	(+)	Brown	None
	SOL.b	15	(−)	(+)	Pink	Black
3 stations	SOL.a	3	(−)	(+)	Red	None
	SOL.b	16	(−)	(+)	Blue	White
4 stations	SOL.a	4	(−)	(+)	Orange	None
	SOL.b	17	(−)	(+)	Purple	None
5 stations	SOL.a	5	(−)	(+)	Yellow	None
	SOL.b	18	(−)	(+)	Grey	None
6 stations	SOL.a	6	(−)	(+)	Pink	None
	SOL.b	19	(−)	(+)	Orange	Black
7 stations	SOL.a	7	(−)	(+)	Blue	None
	SOL.b	20	(−)	(+)	Red	White
8 stations	SOL.a	8	(−)	(+)	Purple	White
	SOL.b	21	(−)	(+)	Brown	White
9 stations	SOL.a	9	(−)	(+)	Grey	Black
	SOL.b	22	(−)	(+)	Pink	Red
10 stations	SOL.a	10	(−)	(+)	White	Black
	SOL.b	23	(−)	(+)	Grey	Red
11 stations	SOL.a	11	(−)	(+)	White	Red
	SOL.b	24	(−)	(+)	Black	White
12 stations	SOL.a	12	(−)	(+)	Yellow	Red
	SOL.b	25	(−)	(+)	White	None
	COM.	13	(+)	(−)	Orange	Red
			Positive common specifications	Negative common specifications		

Note) When using the negative common specifications, use valves for negative common.



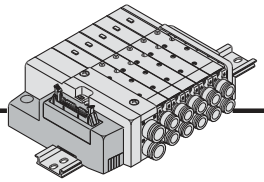


Dimensions [mm]

Formula: 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 Connector)



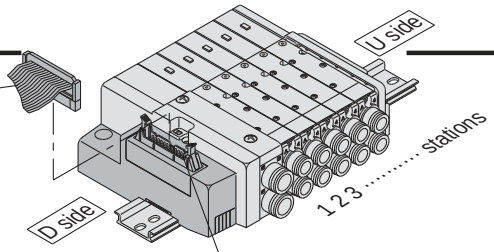
- **Flat ribbon cable connector reduces installation labour for electrical connection.**
- **Using the connector for flat ribbon cable (26P, 20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.**
- **Top or side receptacle position can be selected in accordance with the available mounting space.**

Manifold Specifications

Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ2000	Side, Top	C10	C4, C6, C8	12 stations (16 as a semi-standard)

Flat Ribbon Cable (26 Pins, 20 Pins)

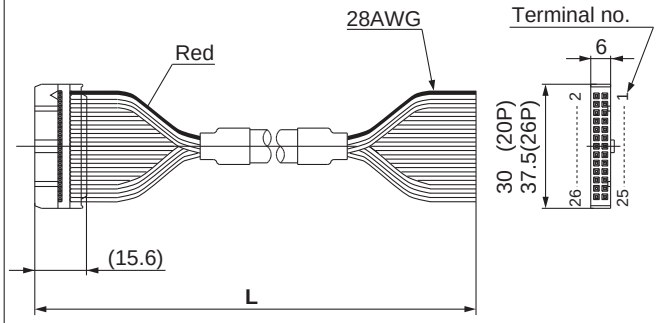
Cable Assembly



∗ Valves are numbered from the D side.

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 "How to Order manifold".)



Flat Ribbon Cable Connector Assembly

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

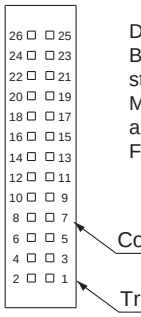
∗ For other commercial connectors, use a 26 pins or 20 pins with strain relief conforming to MIL-C-83503.
∗ Cannot be used for movable wiring.
∗ Lengths other than the above are also available. Please contact SMC for details.

Connector manufacturers' example

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

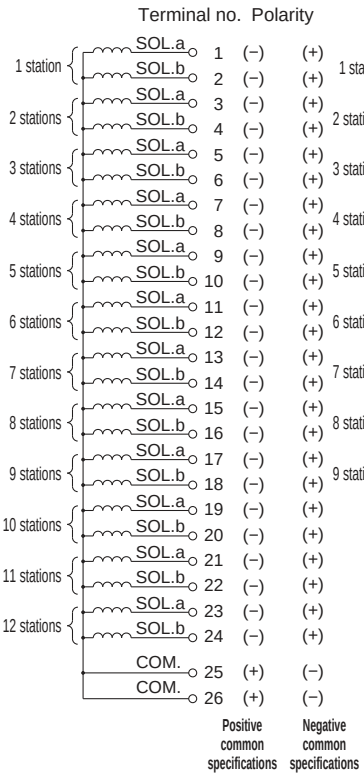
Electrical Wiring Specifications

Flat ribbon cable connector

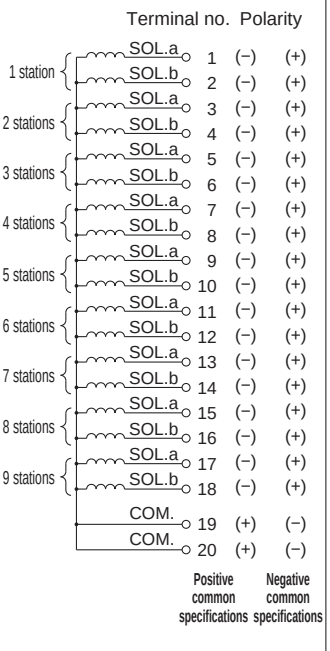


Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option.
For details, refer to page 52.

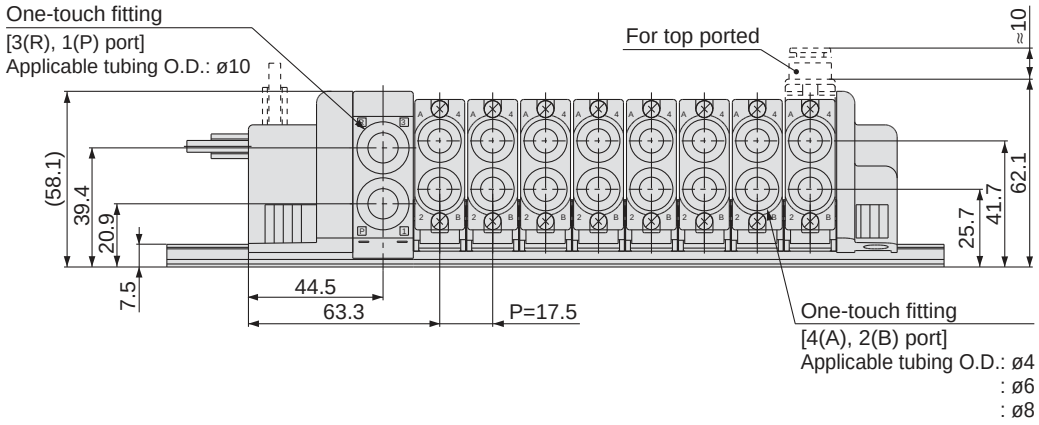
<26P>

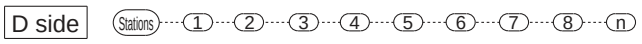


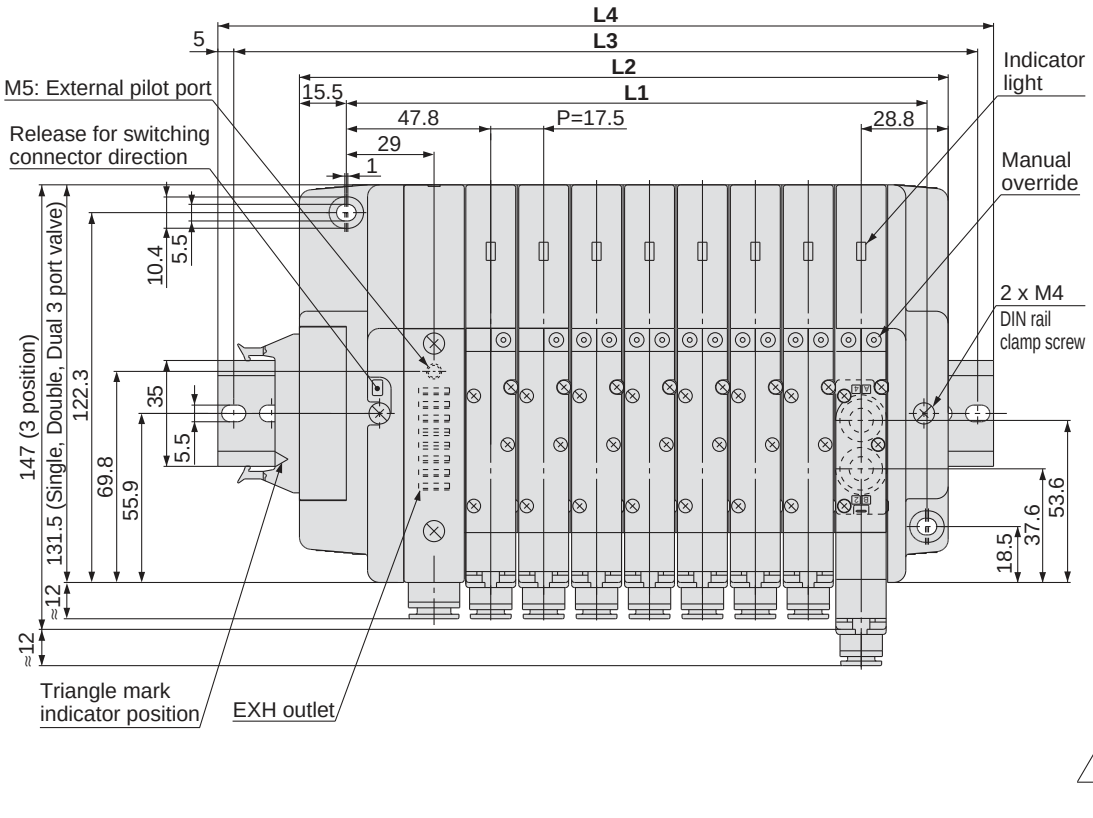
<20P>

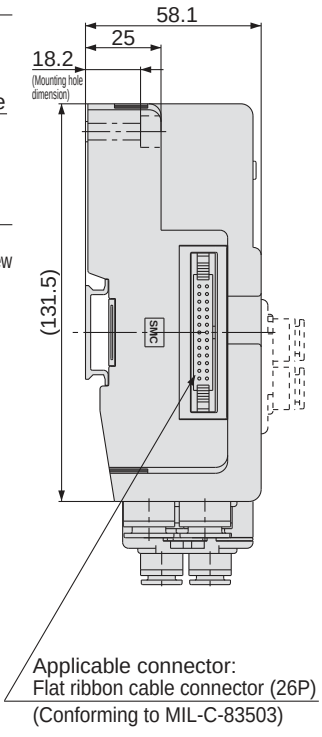


Note) When using the negative common specifications, use valves for negative common.









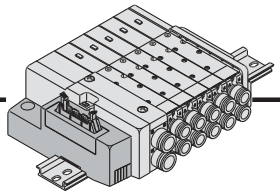
Applicable connector:
Flat ribbon cable connector (26P)
(Conforming to MIL-C-83503)

Dimensions [mm]

Formula: 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

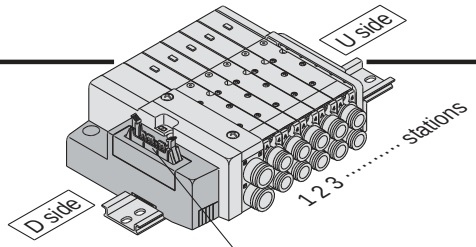
J Kit (PC Wiring System Compatible Flat Ribbon Cable Kit)



- **Compatible with PC wiring system.**
- **Using connector for flat ribbon cable (20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.**
- **Top or side receptacle position can be selected in accordance with the available mounting space.**

Manifold Specifications

Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ2000	Side, Top	C10	C4, C6, C8	8 stations (16 as a semi-standard)

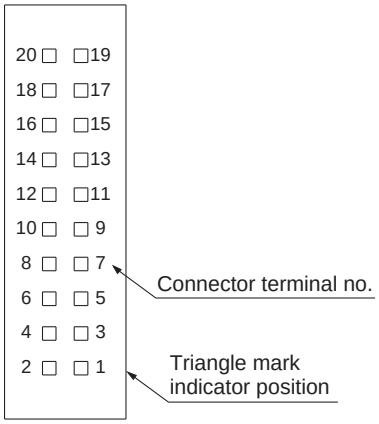


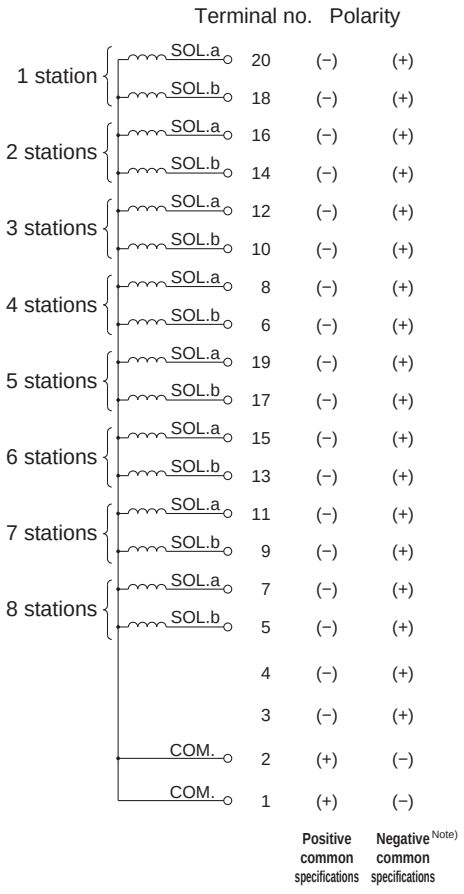
∗ Valves are numbered from the D side.

Electrical Wiring Specifications

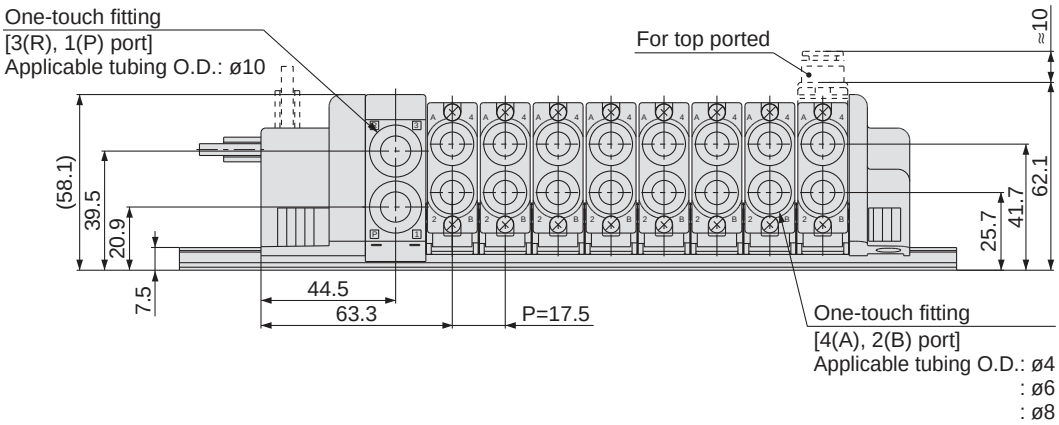
Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types.
Mixed single and double wiring is available as an option.
For details, refer to page 52.

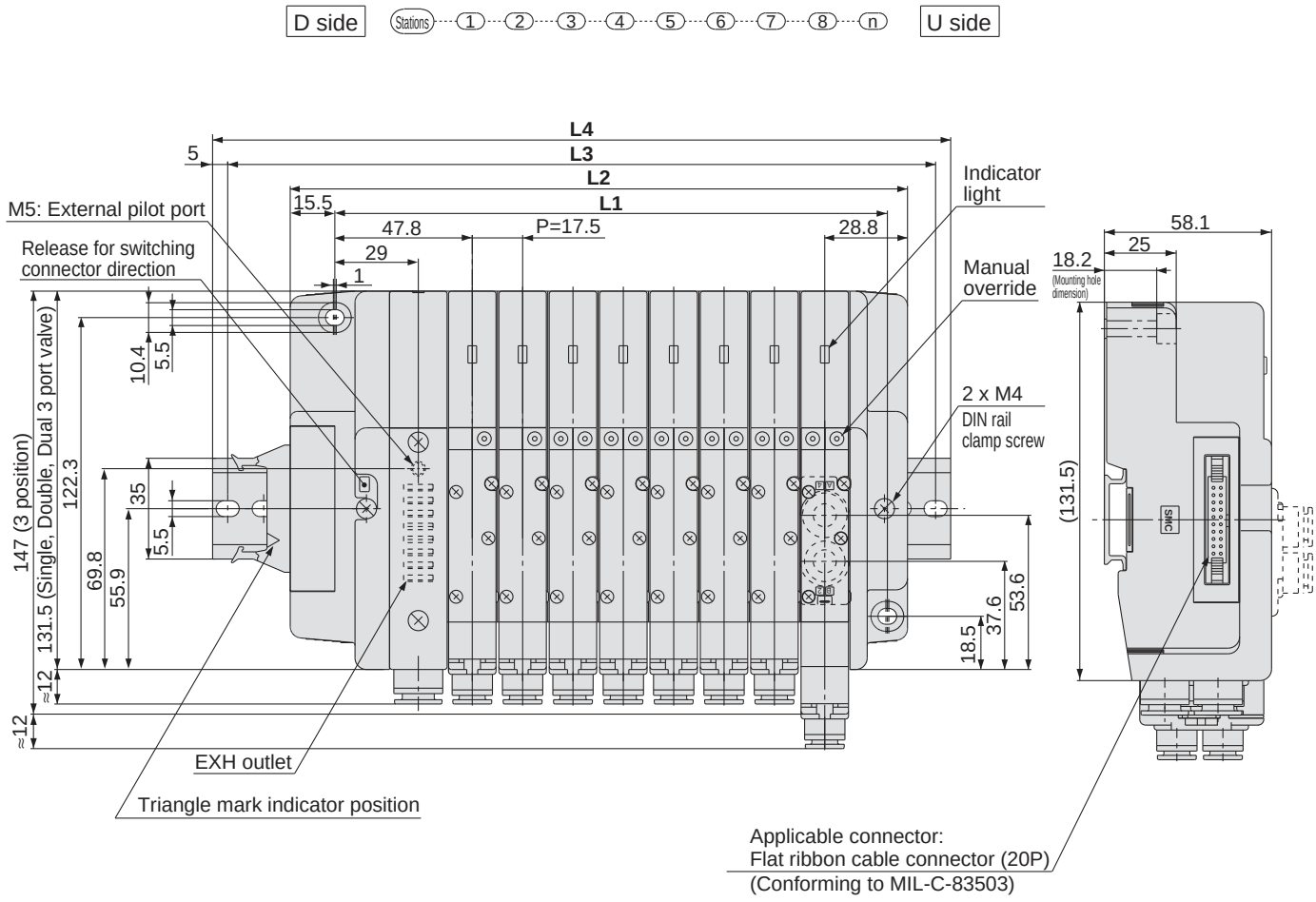
Flat ribbon cable connector





Note) When using the negative common specifications, use valves for negative common.
For details about the PC wiring system, refer to the PCW series catalogue (CAT.E02-20) separately.



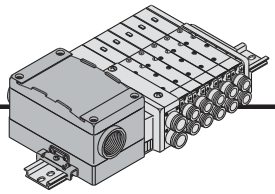


Dimensions [mm]

Formula: 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

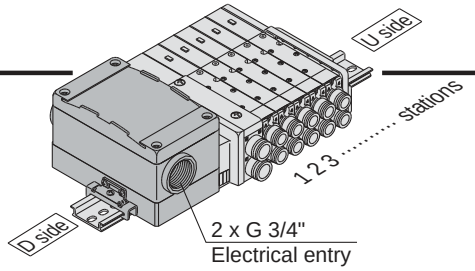
T Kit (Terminal Block Box Kit)



- **This kit has a small terminal box inside a junction box. The electrical entry port (G3/4) permits connection of conduit fittings.**
- **The maximum number of stations is 10 (16 as a semi-standard).**

Manifold Specifications

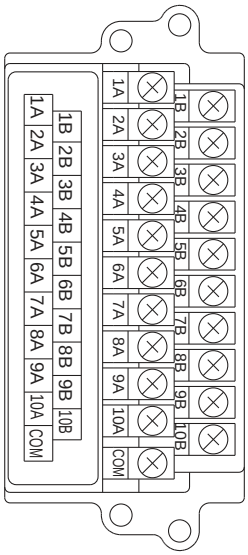
Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ2000	Side, Top	C10	C4, C6, C8	10 stations (16 as a semi-standard)

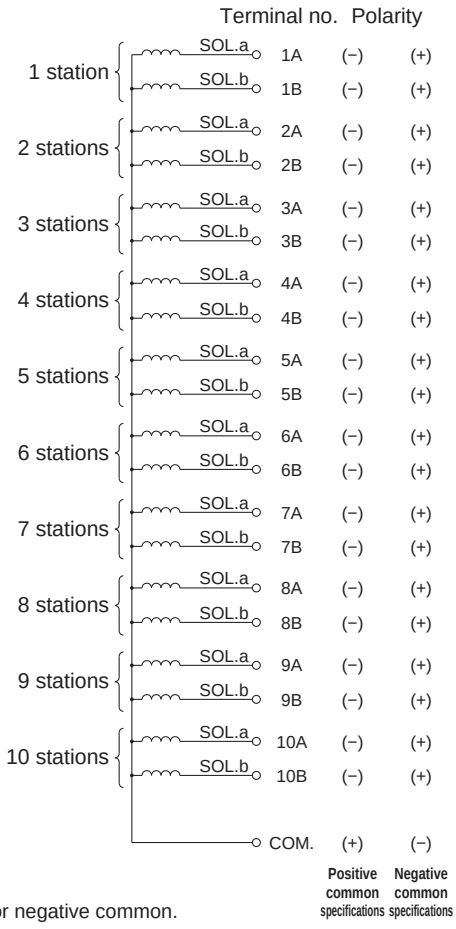


∗ Valves are numbered from the D side.

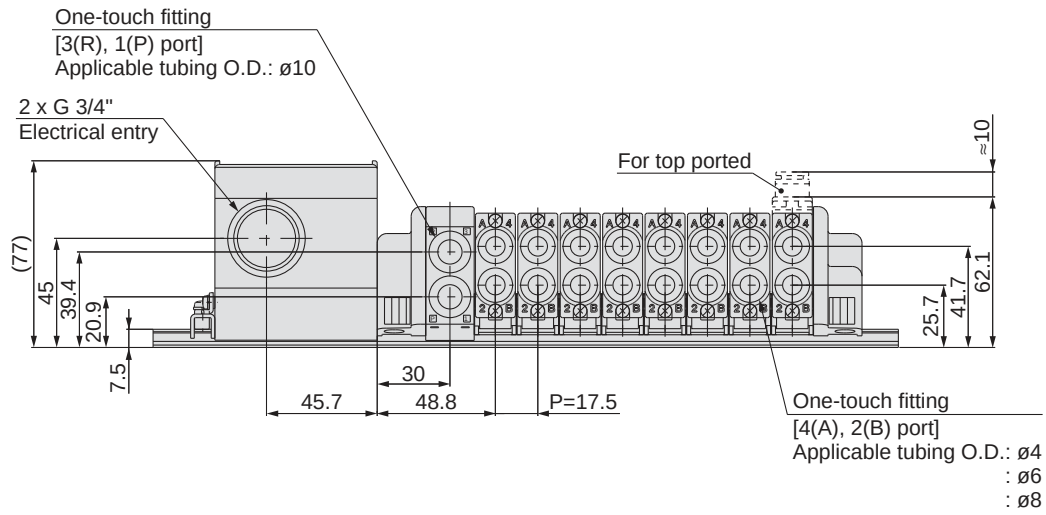
Electrical Wiring Specifications

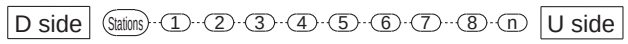
As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 10 stations or less, regardless of valve and option types.
Mixed single and double wiring is available as an option.
For details, refer to page 52.

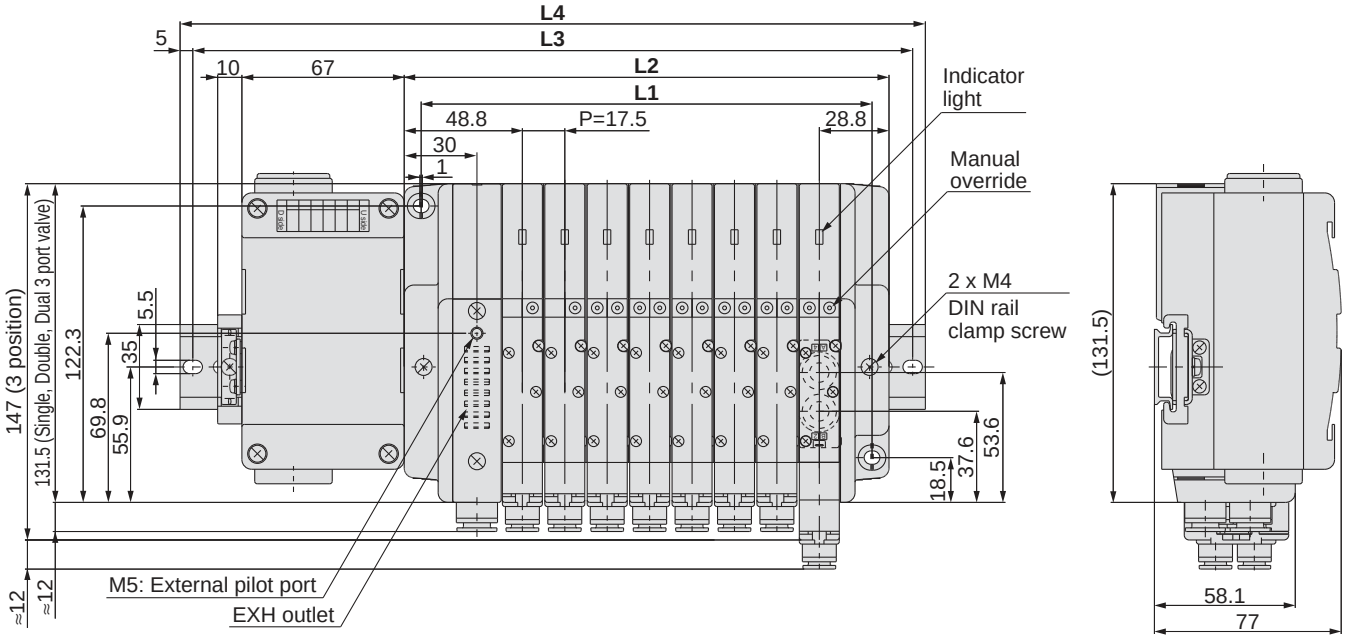




Note) When using the negative common specifications, use valves for negative common.





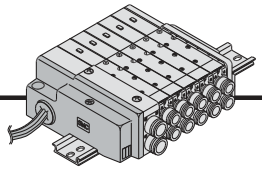


Dimensions [mm]

Formula: 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	DIN rail mounting	185.5	210.5	223	248	260.5	273	298	310.5	335.5	348	360.5	385.5	398	423	435.5	448
	Direct mounting	160.5	173.0	198.0	210.5	235.5	248.0	260.5	285.5	298.0	323.0	335.5	348.0	373.0	385.5	410.5	423.0

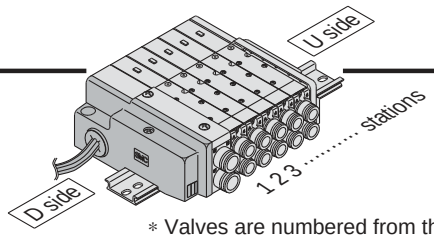
L Kit (Lead Wire Cable)



● **Direct electrical entry type**

Manifold Specifications

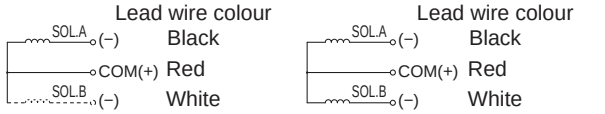
Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ2000	Side, Top	C10	C4, C6, C8	12 stations

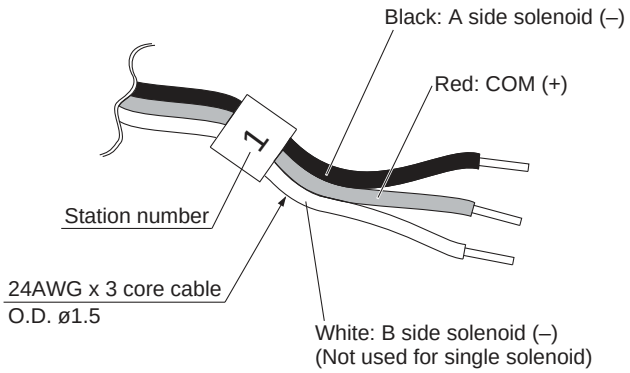


∗ Valves are numbered from the D side.

● Wiring Specifications: Positive Common Specifications

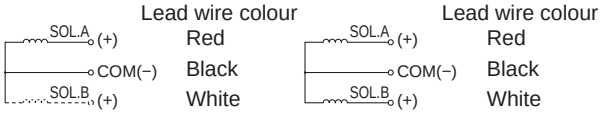
Three lead wires are included per station regardless of valves used.
Among the three lead wires, the red wire is for COM.

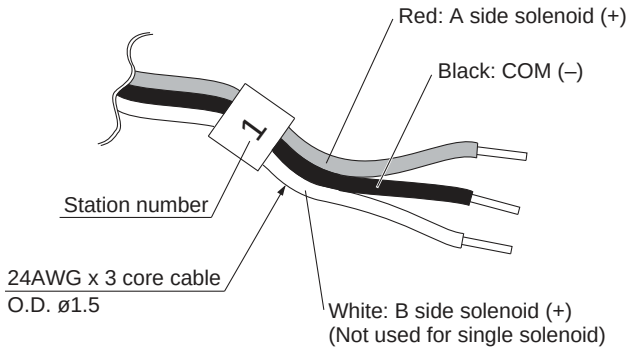




● Wiring Specifications: Negative Common Specifications (Semi-standard)

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 common specifications, use valves for negative common.

Negative Common Specifications

The following part numbers are for negative common specifications.

● How to order negative common valves (Example)

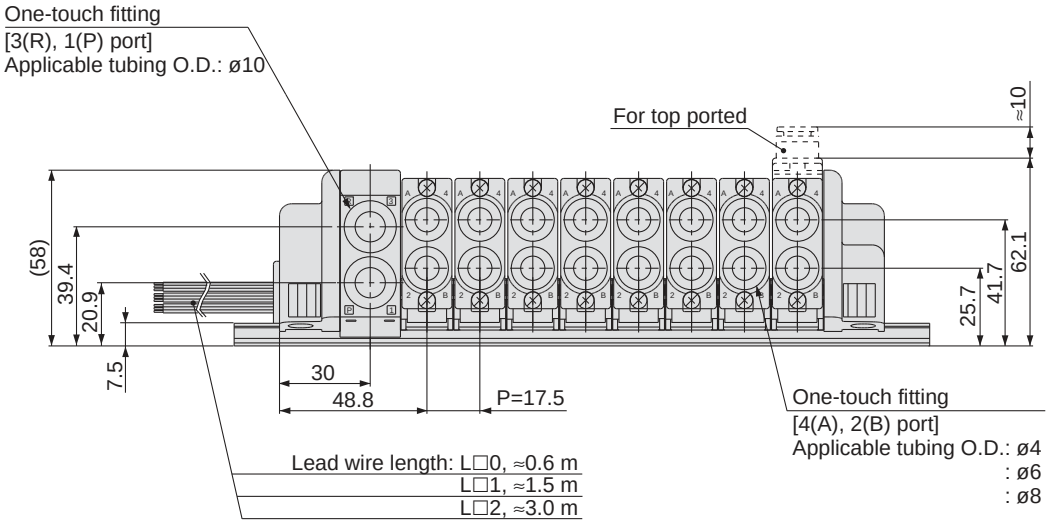
SQ2130 N -51-C6

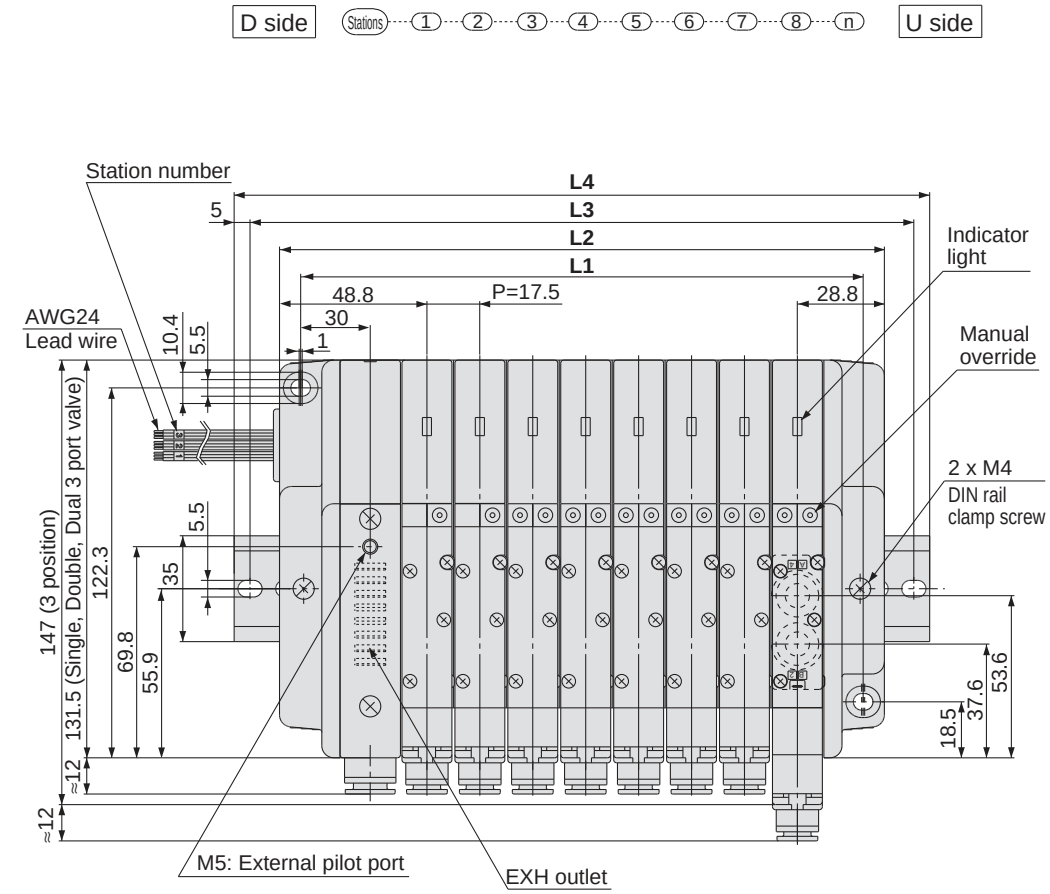
N: Negative common specifications

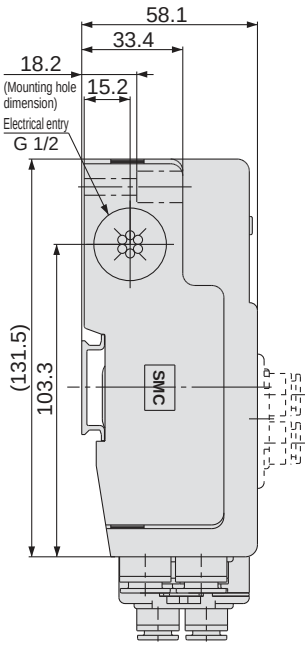
● How to order negative common manifold (Example)

SS5Q23-08 LD1 N- D N

- 08: Stations
- LD1: Kit type
- N: Negative common specifications
- D: DIN rail mounting style
- N: Option







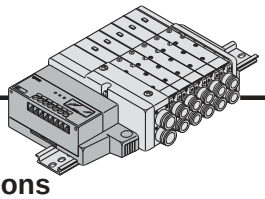
D side Stations 1 2 3 4 5 6 7 8 n U side

Dimensions [mm]

Formula: 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 Unit)
EX140 Integrated-type (for Output) Serial Transmission System

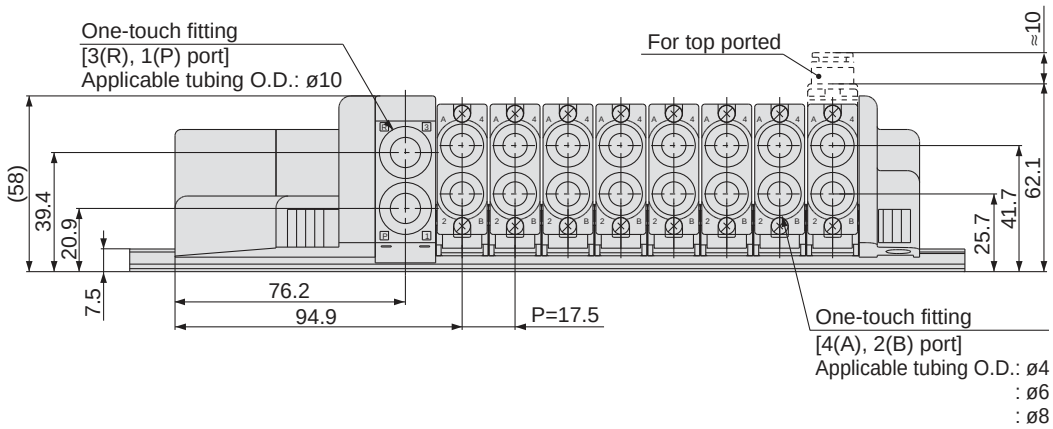


- **The serial transmission system reduces wiring work, while minimizing wiring and saving space.**
- **The maximum number of stations is 8. (16 as a semi-standard). Only for type J2 and R2, the maximum stations are 4 (8 as a semi-standard).**

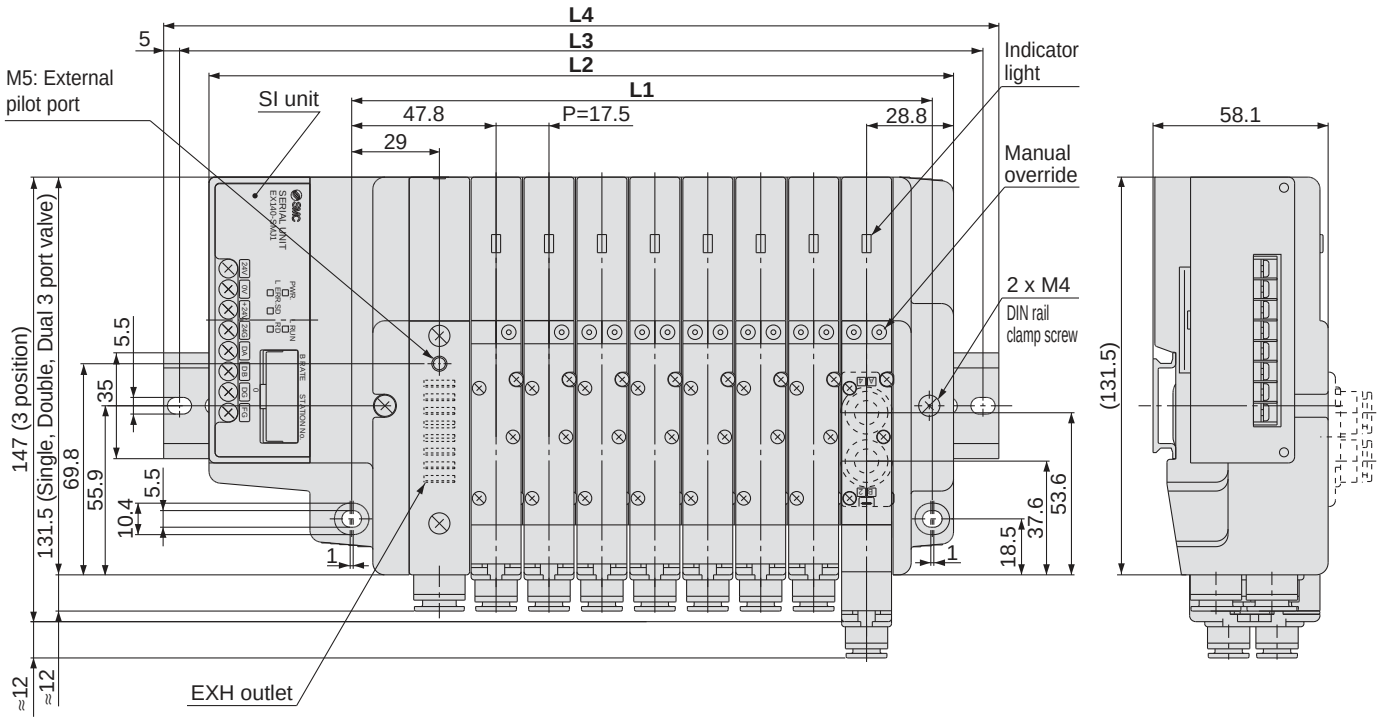
Refer to catalogue and the Operation Manual for the details of EX140 integrated-type (for output) serial transmission system.
Please download it via our website, http://www.smc.eu

Manifold Specifications

Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ2000	Side, Top	C10	C4, C6, C8	8 stations (16 as a semi-standard)



D side (Stations 1 2 3 4 5 6 7 8 n) U side



Dimensions [mm]

Formula: L1 = 17.5n + 52, L2 = 17.5n + 106 n: Stations (Maximum 16 stations)

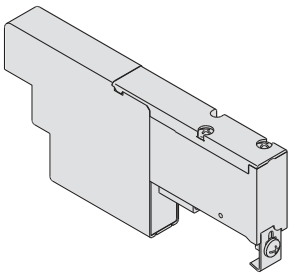
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	69.5	87	104.5	122	139.5	157	174.5	192	209.5	227	244.5	262	279.5	297	314.5	332
L2	123.5	141	158.5	176	193.5	211	228.5	246	263.5	281	298.5	316	333.5	351	368.5	386
L3	150	162.5	187.5	200	225	237.5	250	275	287.5	312.5	325	337.5	362.5	375	400	412.5
L4	160.5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

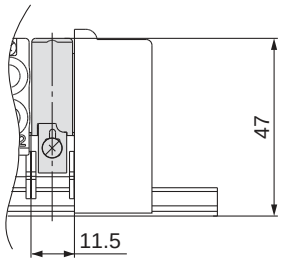
Manifold Option Parts for SQ1000

Blanking plate

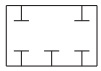
SSQ1000-10A-3

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.





JIS Symbol



SUP/EXH block

SSQ1000-PR-3-C8-□

Port size

C8	One-touch fittings for ø8
N9	One-touch fittings for ø5/16"

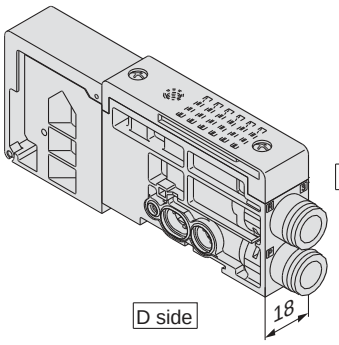
Option

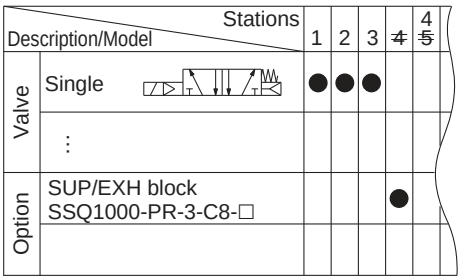
—	Standard
R	External pilot specifications
S	Built-in silencer

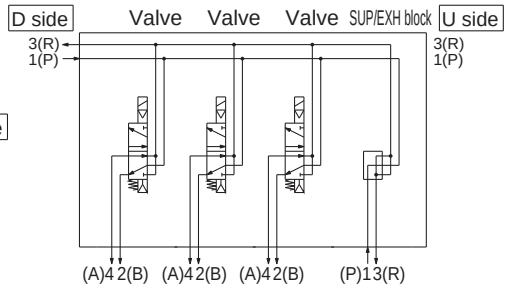
Note) When specifying both options, indicate "RS".
* Specify the spacer mounting position on the manifold specification sheet.

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

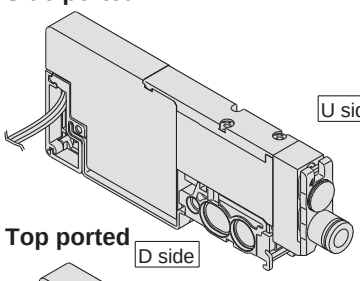
Port size

Side ported	**C6**	One-touch fittings for ø6
	N7	One-touch fittings for ø1/4"
Top ported	**L6**	One-touch fittings for ø6
	LN7	One-touch fittings for ø1/4"

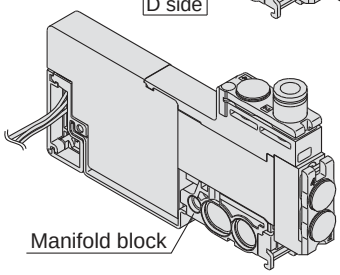
This is used as a supply port for different pressures when using different pressures in the same manifold (for one station). Both sides of the station which is used with supply pressure from the individual SUP spacer are shut off. (Refer to application example.)

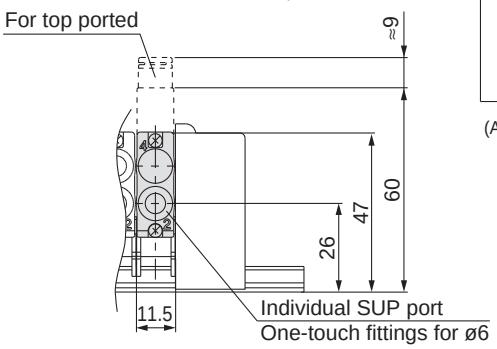
* Specify the spacer mounting position and SUP passage shut off positions on the manifold specification sheet. Two shut off positions are required per unit.
  (Two pieces of SUP block plate that shut off the supply pressure are included with the individual SUP spacer, therefore, it is not necessary to order them separately.)
* Electrical wiring is also connected to the manifold station with the individual 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 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, 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

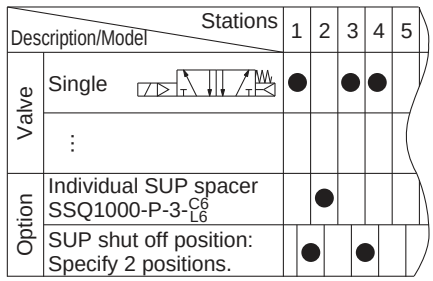
Side ported

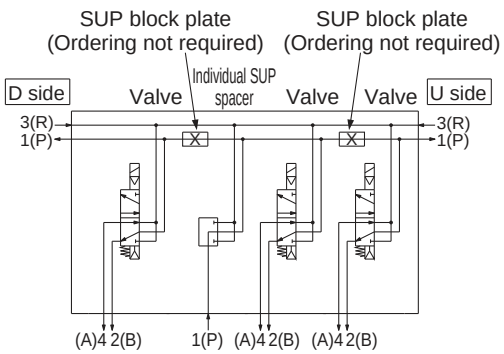


Top ported









Manifold Option Parts for SQ1000

Individual EXH spacer

SSQ1000-R-3- C6

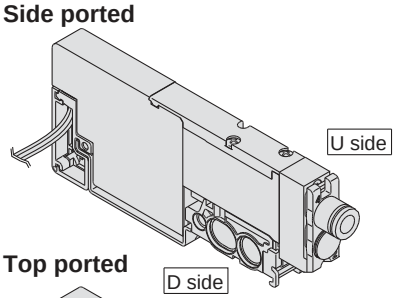
Port size

Side ported	**C6**	One-touch fittings for ø6
	N7	One-touch fittings for ø1/4"
Top ported	**L6**	One-touch fittings for ø6
	LN7	One-touch fittings for ø1/4"

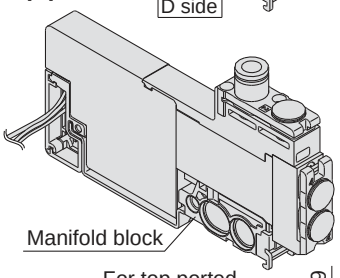
This is used to exhaust an individual valve when the exhaust from a valve interferes with other stations in the circuit (used for one station).
Both sides of the station which is to be individually exhausted are shut off. (Refer to application example.)

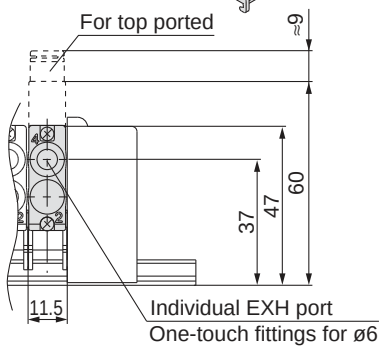
- Specify the spacer mounting position and EXH passage shut off positions on the manifold specification sheet. Two shut off positions are required per unit.
  (Two pieces of EXH block plate that shut off the exhaust are included with the individual EXH spacer, therefore, it is not necessary to order 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.
- Model no. with manifold block:
  SSQ1000-R-3-$\frac{C6}{L6}$-M

Side ported

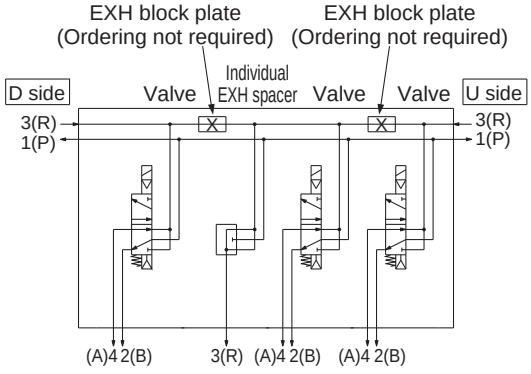


Top ported





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



Individual SUP/EXH spacer

SSQ1000-PR1-3- C6

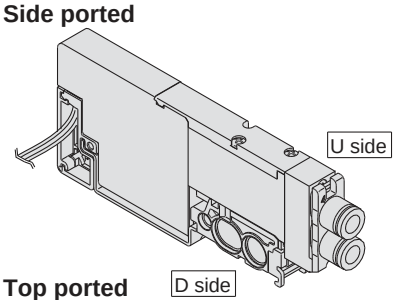
Port size

Side ported	**C6**	One-touch fittings for ø6
	N7	One-touch fittings for ø1/4"
Top ported	**L6**	One-touch fittings for ø6
	LN7	One-touch fittings for ø1/4"

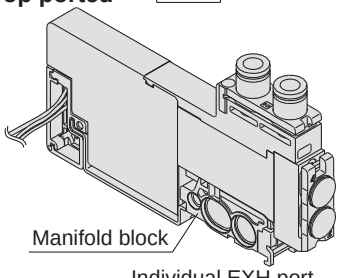
This has both functions of the individual SUP and EXH spacers above. (Refer to application example.)

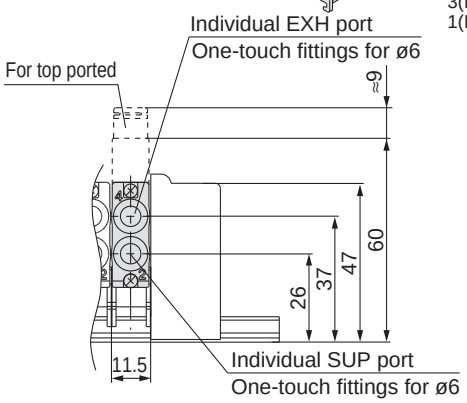
- Specify the spacer mounting position and SUP and EXH passage shut off positions on the manifold specification sheet. Two shut off positions each for SUP and EXH are required per unit.
  (Two pieces each of block plate that shut off the SUP and EXH passages are included with the individual SUP/EXH spacer.)
- 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.
- Model no. with manifold block:
  SSQ1000-PR1-3-$\frac{C6}{L6}$-M

Side ported

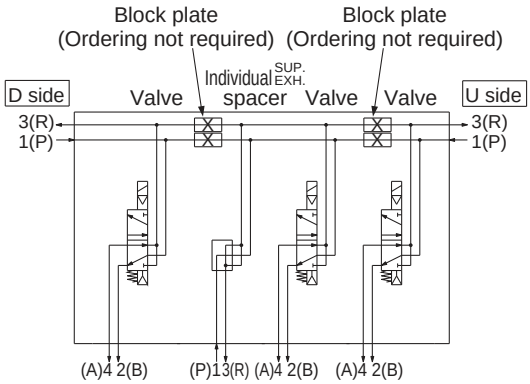


Top ported





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



Manifold Option Parts for SQ1000

SUP block plate

SSQ1000-B-P

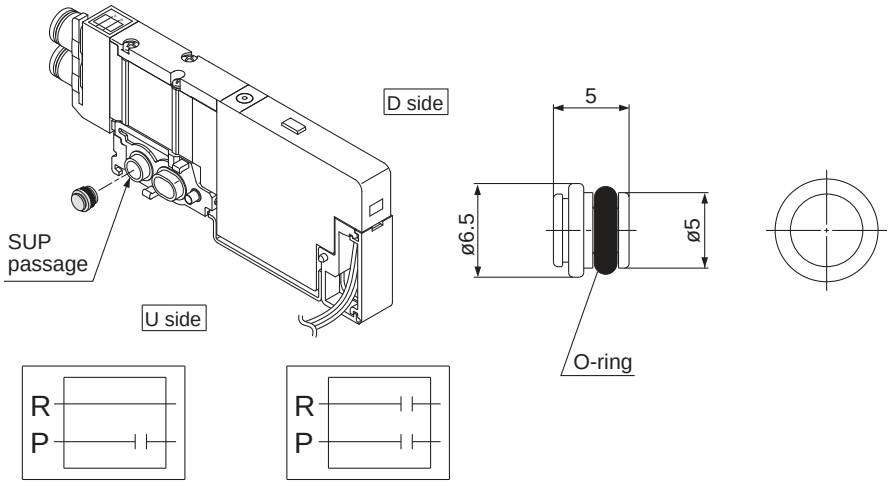
When supplying two different pressures, high and low, to one manifold, this is used between stations with different pressures. Also, it is used with an individual SUP spacer to shut off the air supply.

* Specify the station position on the manifold specification sheet.

<Block indication label>

When using block plates for SUP passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)

* When ordering a block plate for SUP incorporated with the manifold, a block indication label is attached to the manifold.



SUP passage blocked SUP/EXH passage blocked

EXH block plate

SSQ1000-B-R

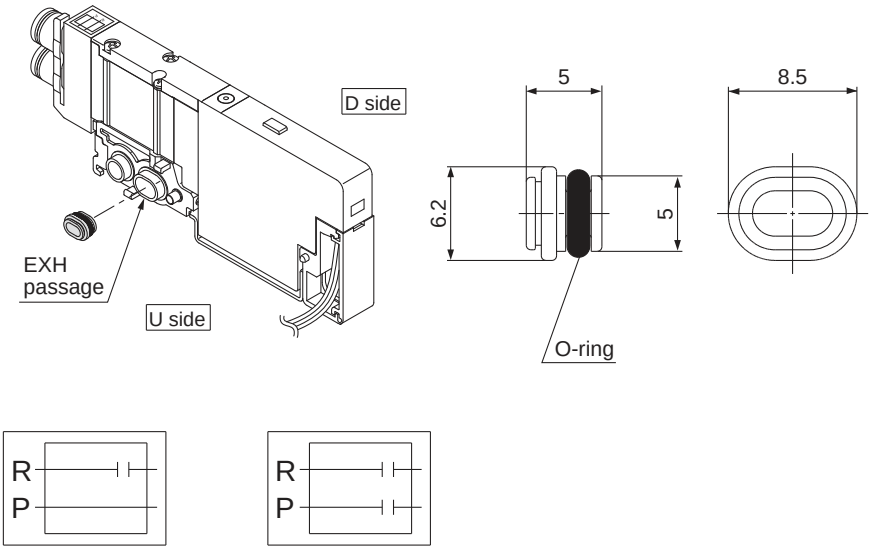
When the exhaust from a valve interferes with other stations in the circuit, this is used between stations to separate exhausts. Also, it is used with an individual EXH spacer to shut off the exhaust of individual valves.

* Specify the station position on the manifold specification sheet.

<Block indication label>

When using block plates for EXH passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)

* When ordering a block plate for EXH incorporated with the manifold, a block indication label is attached to the manifold.



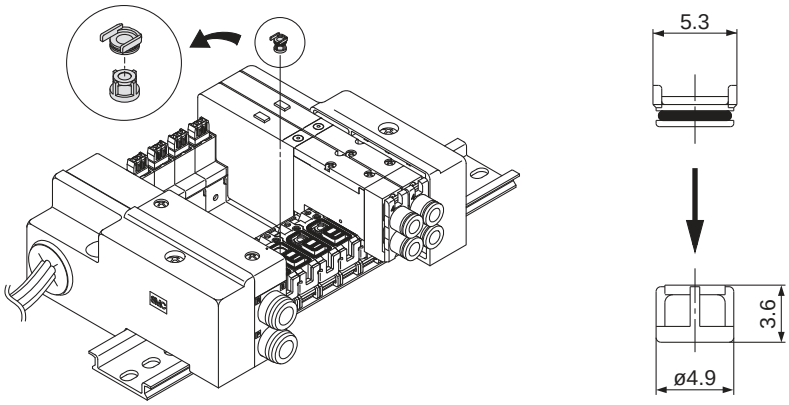
EXH passage blocked SUP/EXH passage blocked

Back pressure check valve [-B]

SSQ1000-BP

It prevents cylinder malfunction caused by other valve exhaust. Insert it into R (EXH) port on the manifold side of a valve which is affected. It is effective when a single action cylinder is used or an exhaust centre type solenoid valve is used.

* When a check valve for back pressure prevention is desired, and is to be installed only in certain manifold stations, clearly write the part number and specify the number of stations on the manifold specification sheet.
* When ordering this option incorporated with a manifold, suffix "-B" to the end of the manifold part number.



⚠ Caution

1. The back pressure check valve assembly is assembly parts with a check valve structure. However, as slight air leakage is allowed for the back pressure, take care the exhaust air will not be restricted at the exhaust port.
2. When a back pressure check valve is mounted, the effective area of the valve will decrease by about 20%.
3. Since 4 port specification valves (5 (R1) and 3 (R2) are common) are used, back pressure cannot be prevented with dual 3 port valves.

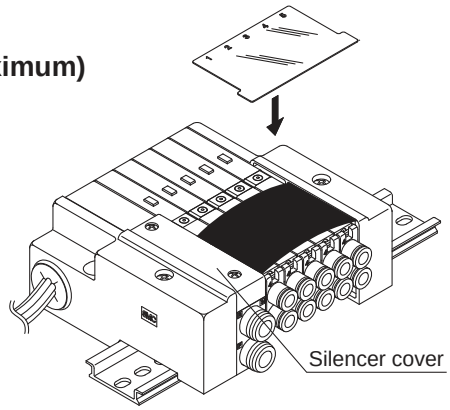
Manifold Option Parts for SQ1000

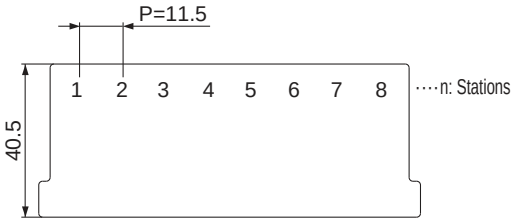
Name plate [-N]

SSQ1000-N3-Stations (1 to maximum)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.
Insert it into the groove on the side of the end plate and bend it as shown in the figure. Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to install it.

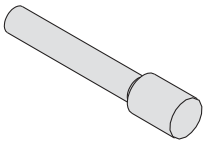
* When ordering this option incorporated with a manifold, suffix "-N" to the end of the manifold part number.



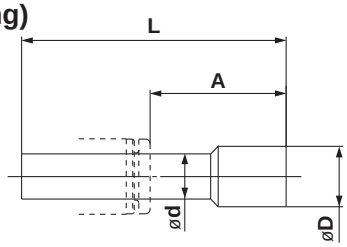


Blanking plug (For One-touch fitting)

KQ2P-23 / 04 / 06 / 08



It is inserted into an unused cylinder port and SUP/EXH ports.
Purchasing order is available in units of 10 pieces.



Dimensions [mm]

Applicable fittings size ø**d**	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

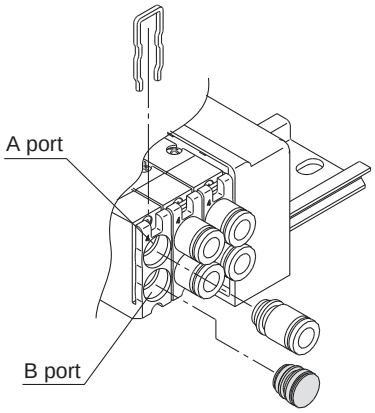
Port plug

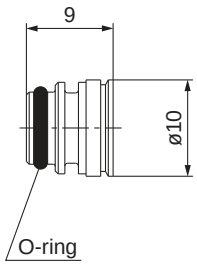
VVQZ100-CP

The plug is used to block the cylinder port when using a 5-port valve as a 3-port valve.

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

Example) SQ1131-51-C6-A (N.O. specifications)
→ 4 (A) port plug
Example) SQ1131-51-C6-B (N.C. specifications)
→ 2 (B) port plug
Example) SQ1131-51-C6-B-M
(B port plug with manifold block)



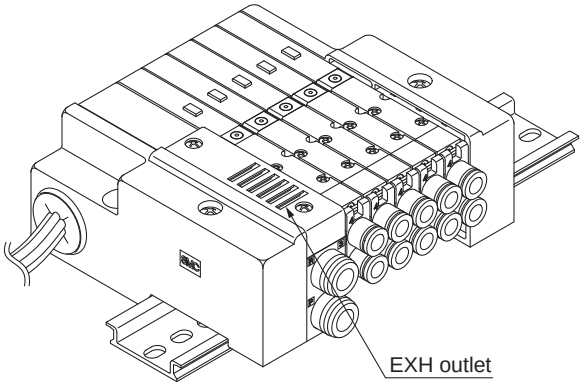


Direct EXH outlet, built-in silencer [-S]

This is a type with an exhaust port atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Noise reduction: 30 dB)

Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

* When ordering this option incorporated with a manifold, suffix "-S" to the end of the manifold part number.
* For precautions on handling and how to replace elements, refer to "Specific Product Precautions."



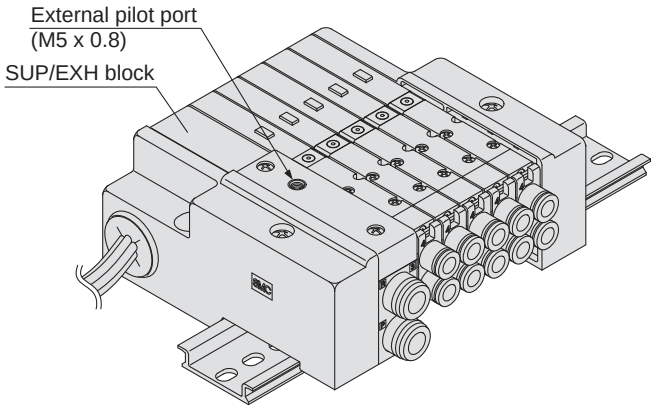
Manifold Option Parts for SQ1000

External pilot specifications [-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.

● How to order valves (Example)
SQ1130 R -51-C6
R: External pilot specifications

● How to order manifold (Example)
∗ Indicate "R" for an option.
SS5Q13-08FD1-DR
R: External pilot specifications



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

Dual flow fitting

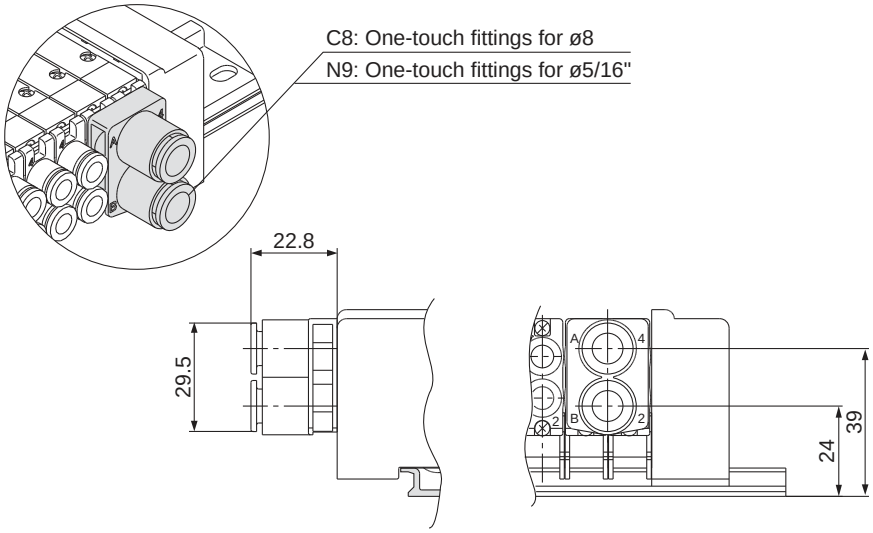
SSQ1000-52A-C8

Port size

C8	ø8
N9	ø5/16"

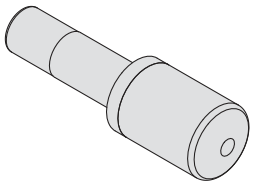
To drive a large bore cylinder, two valve stations are operated simultaneously to double the air flow.
This fitting is used on the cylinder ports in this situation. Available sizes are ø8 and ø5/16" One-touch fittings.
∗ When ordering with valves, specify the valve part number without One-touch fitting and list without One-touch fitting and list the dual flow fitting part number.

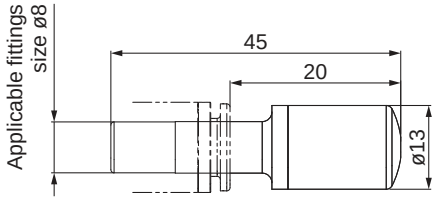
Example) Valve part number (without Onetouch fitting)
SQ1131-51-C0 ····· 2 sets
∗SSQ1000-52A-C8/N9 ····· 1 set



Silencer (For EXH port)

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





Specifications

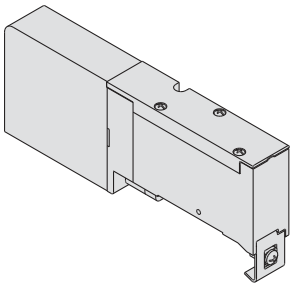
Series	Model	Effective area [mm²] (Cv factor)	Noise reduction [dB]
SQ1000	AN15-C08	20 (1.1)	30

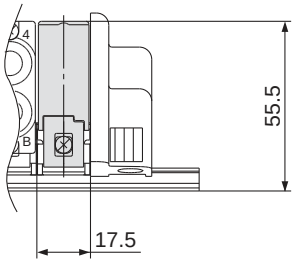
Manifold Option Parts for SQ2000

Blanking plate

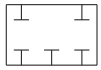
SSQ2000-10A-3

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.





JIS Symbol



SUP/EXH block

SSQ2000-PR-3-C10-□

Port size

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

Option

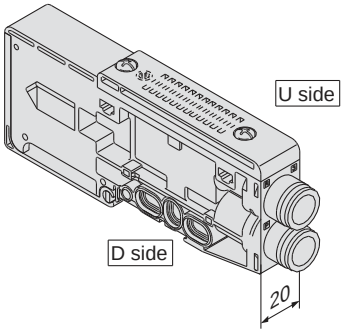
—	Standard
R	External pilot specifications
S	Built-in silencer

Note) When specifying both options, indicate "RS".

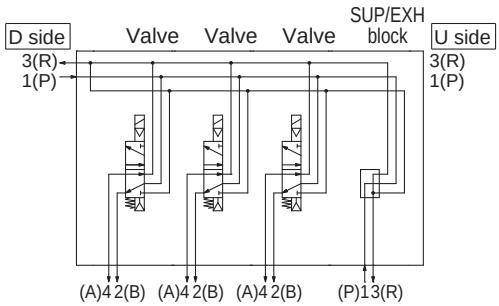
* Specify the spacer mounting position on the manifold specification sheet.

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.



Description/Model	Stations	1	2	3	~~4~~	~~5~~
Valve	Single	●	●	●		
	⋮					
Option	SUP/EXH block SSQ2000-PR-3-C10-□				●	



Individual SUP spacer

SSQ2000-P-3-C8

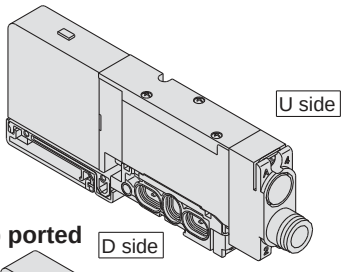
Port size

Side ported	C8	One-touch fittings for ø8
	N9	One-touch fittings for ø5/16"
Top ported	L8	One-touch fittings for ø8
	LN9	One-touch fittings for ø5/16"

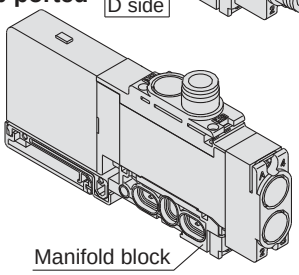
This is used as a supply port for different pressures when using different pressures in the same manifold (for one station).
Both sides of the station which is used with supply pressure from the individual SUP spacer are shut off. (Refer to application example.)

* Specify the spacer mounting position and SUP passage shut off positions on the 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, and another on the U side due to the length of the internal lead wire.
* Model no. with manifold block: SSQ2000-P-3-C8/L8-M

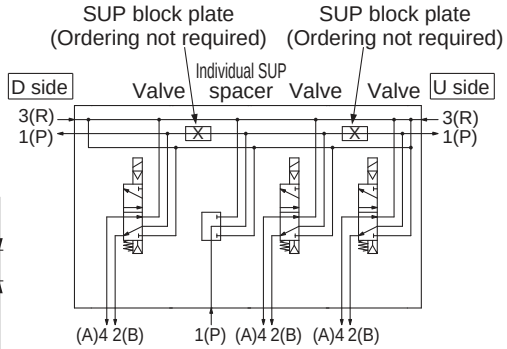
Side ported



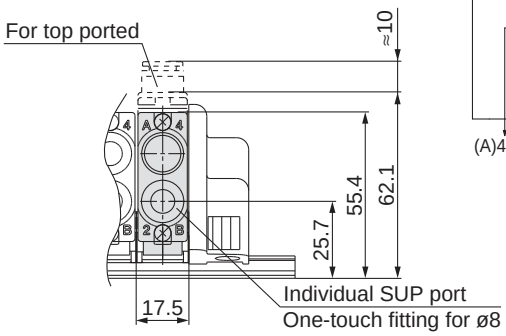
Top ported



Description/Model	Stations	1	2	3	4	5
Valve	Single	●		●	●	
	⋮					
Option	Individual SUP spacer SSQ2000-P-3-C8/L8		●			
	SUP shut off position: Specify 2 positions.	●		●		



For top ported



Manifold Option Parts for SQ2000

Individual EXH spacer

SSQ2000-R-3-C8

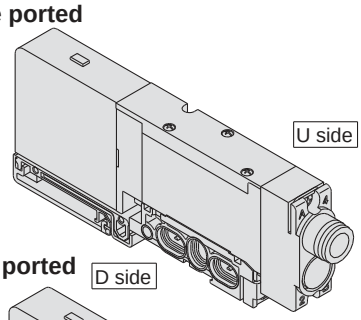
Port size

Side ported	**C8**	One-touch fittings for ø8
	N9	One-touch fittings for ø5/16"
Top ported	**L8**	One-touch fittings for ø8
	LN9	One-touch fittings for ø5/16"

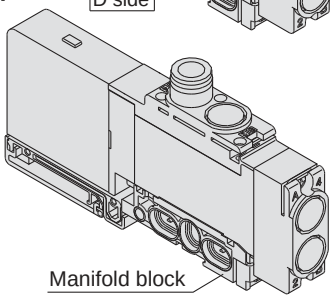
This is used to exhaust an individual valve when the exhaust from a valve interferes with other stations in the circuit (used for one station).
Both sides of the station which is to be individually exhausted are shut off. (Refer to application example.)

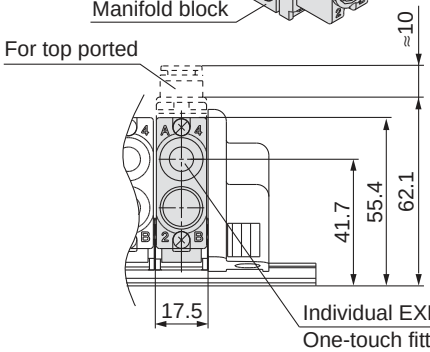
- Specify the spacer mounting position and EXH passage shut off positions on the manifold specification sheet. Two shut off positions are required per unit.
  (Four pieces of EXH block plate that shut off the exhaust are included with the individual EXH spacer, therefore, it is not necessary to order 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.
- Model no. with manifold block:
  SSQ2000-R-3-$\frac{C8}{L8}$- M

Side ported

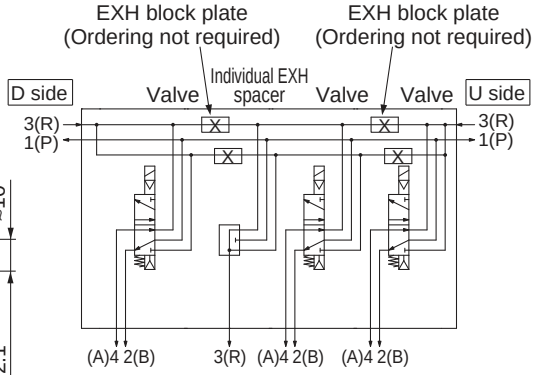


Top ported





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

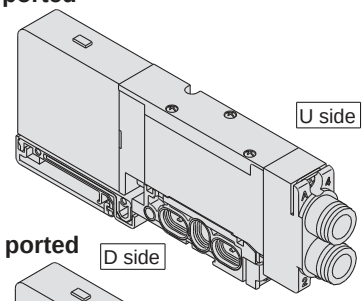
Port size

Side ported	**C8**	One-touch fittings for ø8
	N9	One-touch fittings for ø5/16"
Top ported	**L8**	One-touch fittings for ø8
	LN9	One-touch fittings for ø5/16"

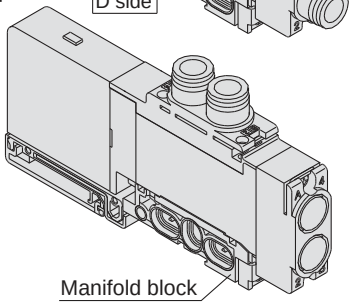
This has both functions of the individual SUP and EXH spacers above. (Refer to application example.)

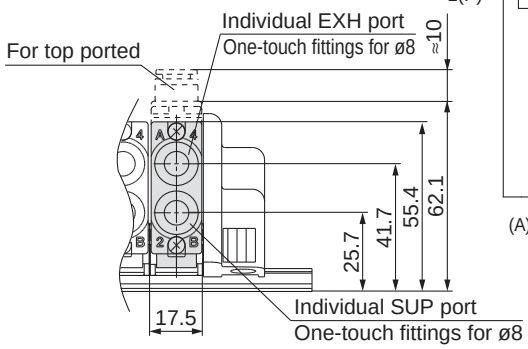
- Specify the spacer mounting position and SUP and EXH passage shut off positions on the manifold specification sheet. Two shut off positions each for SUP and EXH are required per unit.
  [Block plates that shut off the SUP and EXH passages are included with the individual SUP/EXH spacer (2 pcs. of SUP 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 on the U side due to the length of the internal lead wire.
- Model no. with manifold block:
  SSQ2000-PR1-3-$\frac{C8}{L8}$- M

Side ported

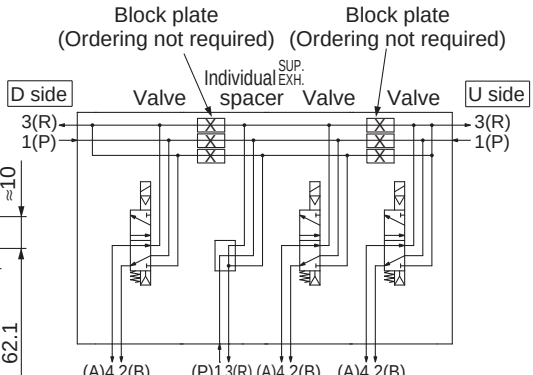


Top ported





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.	●		●		



Manifold Option Parts for SQ2000

SUP block plate

SSQ1000-B-R

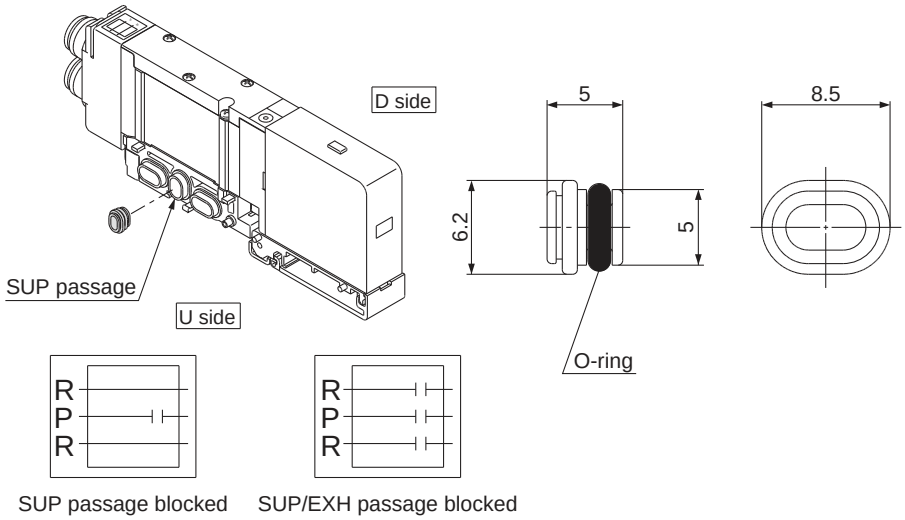
When supplying two different pressures, high and low, to one manifold, this is used between stations with different pressures. Also, it is used with an individual SUP spacer to shut off the air supply.

* Specify the station position on the manifold specification sheet.

<Block indication label>

When using block plates for SUP passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)

* When ordering a block plate for SUP incorporated with the manifold, a block indication label is attached to the manifold.



EXH block plate

SSQ2000-B-R

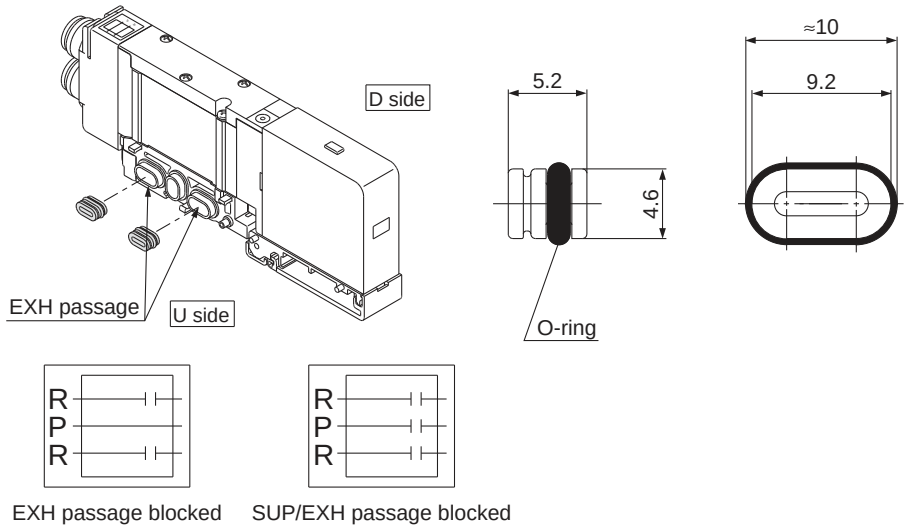
When the exhaust from a valve interferes with other stations in the circuit, this is used between stations to separate exhausts. Also, it is used with an individual EXH spacer to shut off the exhaust of individual valves.

* Specify the station position on the manifold specification sheet.

<Block indication label>

When using block plates for EXH passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)

* When ordering a block plate for EXH incorporated with the manifold, a block indication label is attached to the manifold.

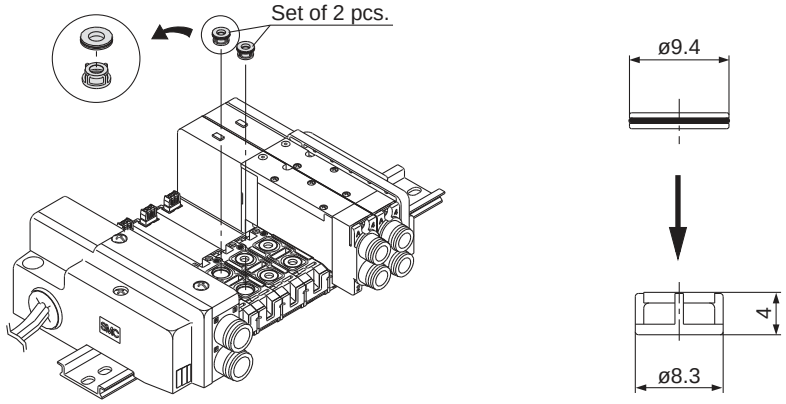


Back pressure check valve [-B]

SSQ2000-BP

It prevents cylinder malfunction caused by other valve exhaust. Insert it into R (EXH) port on the manifold side of a valve which is affected. It is effective when a single action cylinder is used or an exhaust centre type solenoid valve is used.

* When a check valve for back pressure prevention is desired, and is to be installed only in certain manifold stations, clearly write the part number and specify the number of stations on the manifold specification sheet.
* When ordering this option incorporated with a manifold, suffix "-B" to the end of the manifold part number.



⚠ Caution

1. The back pressure check valve assembly is an assembly part with a check valve structure. However, as slight air leakage is allowed for the back pressure, take care the exhaust air will not be restricted at the exhaust port.
2. When a back pressure check valve is mounted, the effective area of the valve will decrease by about 20%.

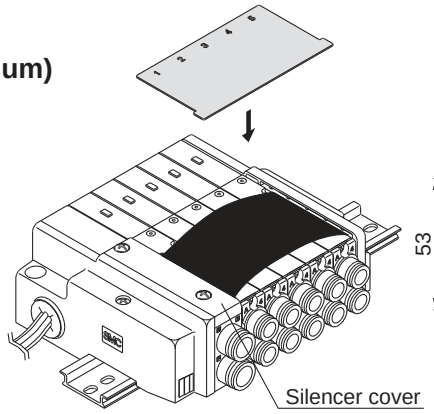
Manifold Option Parts for SQ2000

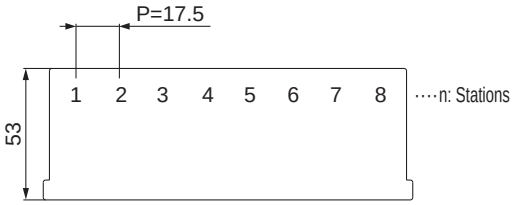
Name plate [-N]

SSQ2000-N3- Stations (1 to maximum)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.
Insert it into the groove on the side of the end plate and bend it as shown in the figure. Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to install it.

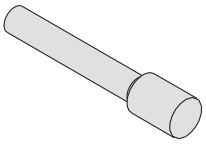
* When ordering this option incorporated with a manifold, suffix "-N" to the end of the manifold part number.



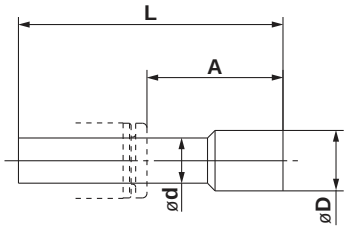


Blanking plug (For One-touch fitting)

KQ2P- 04 06 08 10



It is inserted into an unused cylinder port and SUP/EXH ports.
Purchasing order is available in units of 10 pieces.



Dimensions [mm]

Applicable fittings 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

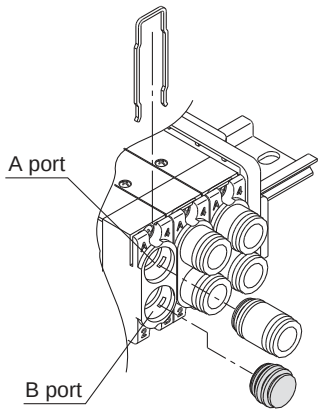
The plug is used to block the cylinder port when using a 5-port valve as a 3-port valve.

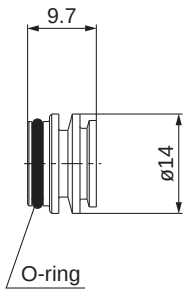
* Add "A" or "B" at the end of the valve part number when ordering with valves.

Example) SQ2131-51-C8-A (N.O. specifications)
→ 4 (A) port plug

Example) SQ2131-51-C8-B (N.C. specifications)
→ 2 (B) port plug

Example) SQ2131-51-C8-B-M
(B port plug with manifold block)



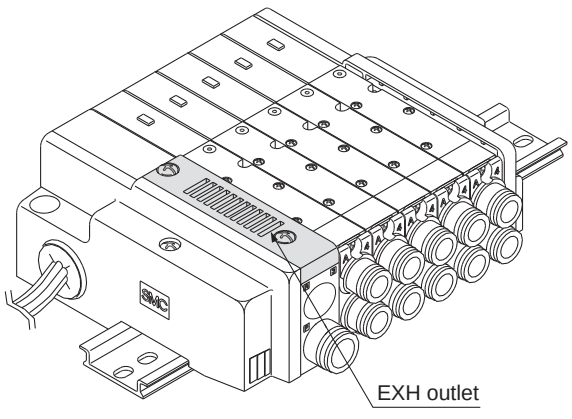


Direct EXH outlet, built-in silencer [-S]

This is a type with an exhaust port atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Noise reduction: 30 dB)

Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

* When ordering this option incorporated with a manifold, suffix "-S" to the end of the manifold part number.
* For precautions on handling and how to replace elements, refer to "Specific Product Precautions."



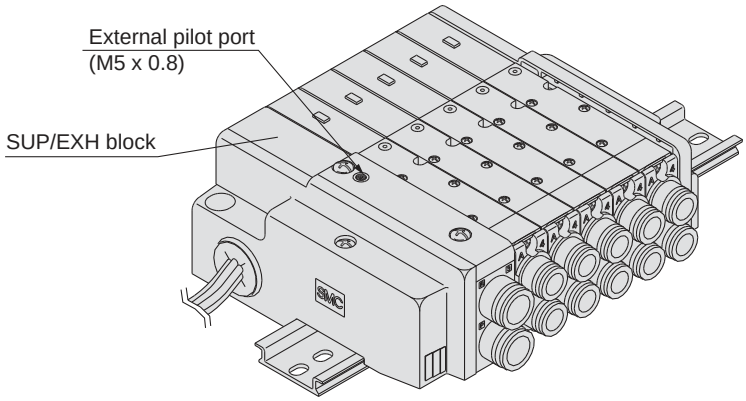
Manifold Option Parts for SQ2000

External pilot specifications [-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 specifications.
An M5 port will be installed on the top side of the manifold's SUP/EXH block.

● How to order valves (Example)
SQ2130 R -51-C6
External pilot specifications

● How to order manifold (Example)
∗ Indicate "R" for an option.
SS5Q23-08FD1-DR
External pilot specifications



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

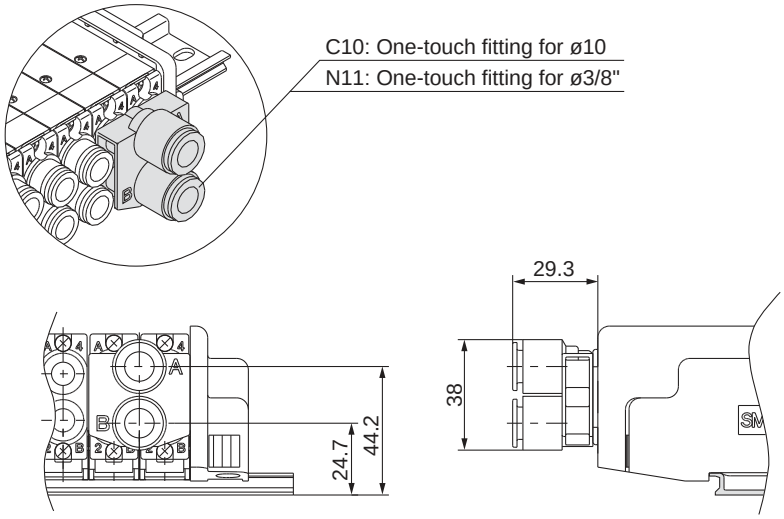
Dual flow fitting

SSQ2000-52A- C10
Port size

C10	ø10
N11	ø3/8"

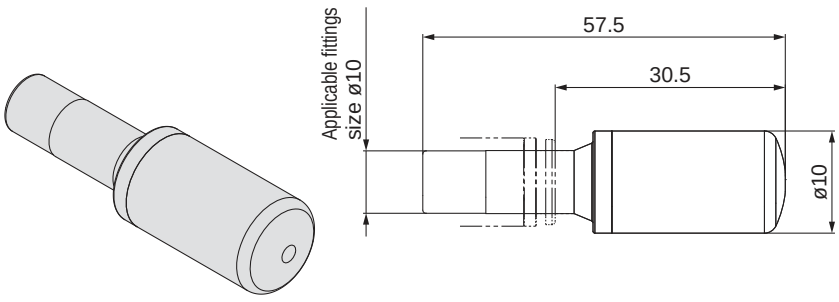
To drive a large bore cylinder, two valve stations are operated simultaneously to double the air flow. This fitting is used on the cylinder ports in this situation. Available sizes are ø10 and ø3/8" One-touch fittings.
∗ When ordering with valves, specify the valve part number without One-touch fitting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

Example) Valve part number (without One-touch fitting)
SQ2131-51 -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	AN20-C10	30 (1.6)	30

Manifold Option for SQ1000/2000

Special Wiring Specifications

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

1. How to Order

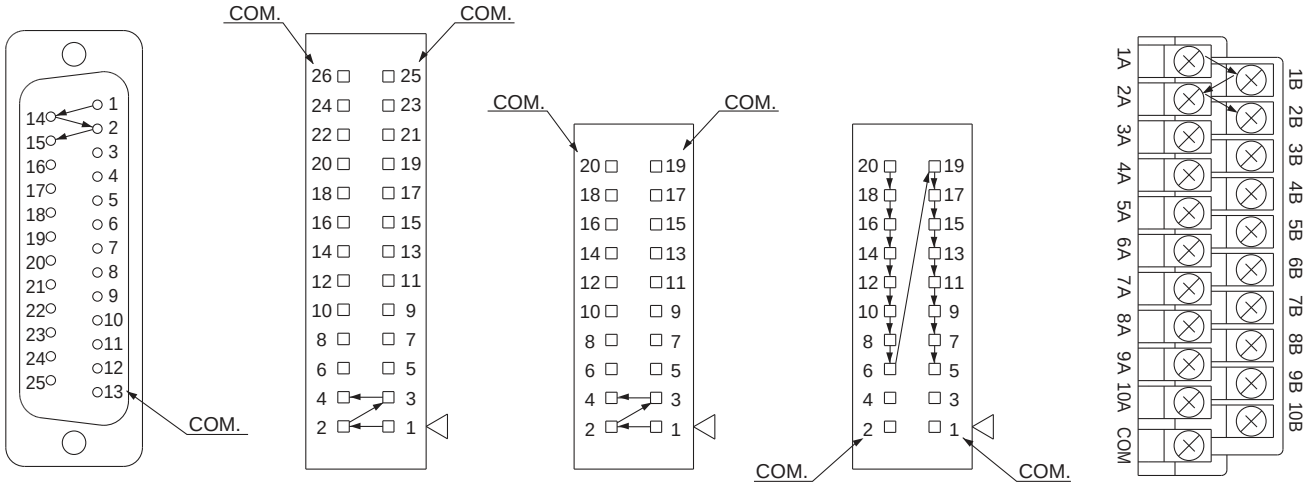
Indicate option symbol "-K" in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet. Also, specify wiring for spare connectors.
(Up to two spare connectors are included depending on the remaining number of connector pins. When the wiring for the spare connectors is not specified, they will be wired according to "Spare Connector Wiring" on page 55.)

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

- Others, option symbols: to be indicated alphabetically.

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)

For S kit (serial transmission kit), refer to specific catalogues.

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 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

Manifold Option for SQ1000/2000

Special DIN Rail Length (DIN Rail Mounting (-D) Only)

The standard DIN rail provided is approximately 30 mm 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**

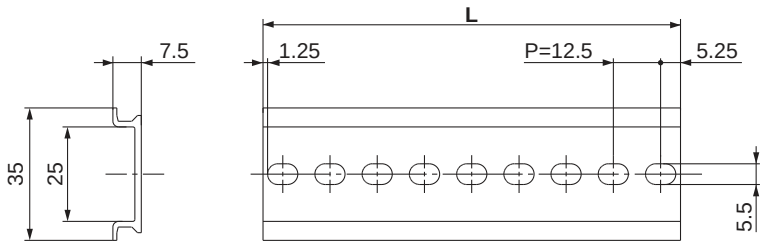
- 8 station manifold
- Option symbols (alphabetically)
- DIN rail for 9 stations

● 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.
For L dimension, refer to the dimensions of each kit.



Dimensions

L = 12.5 x n + 10.5

No.	1	2	3	4	5	6	7	8	9	10
L [mm]	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
L [mm]	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5

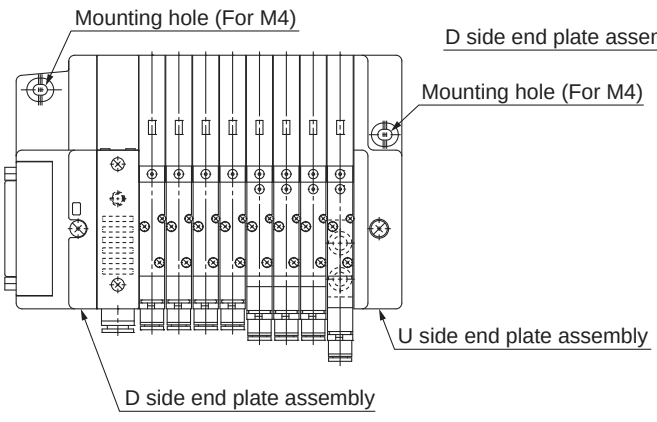
No.	21	22	23	24	25	26	27	28	29	30
L [mm]	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5

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

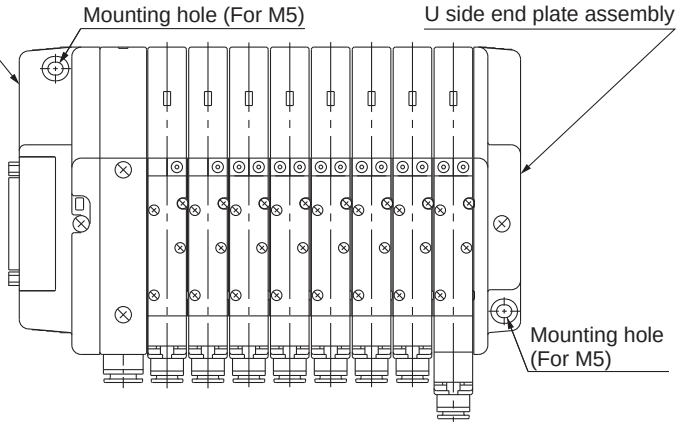
Direct Mounting Style (-E)

Manifold is mounted by using mounting holes of both sides of the manifold.
DIN rail is not sticking out of the edge of end plate. (Except SQ2000 T kit type. Refer to pages 37 and 38.)
Furthermore, the reinforcing part that comes to the bottom of the DIN rail is attached to the end plate assembly.

SQ1000



SQ2000



Manifold Option for SQ1000/2000

Negative Common Specifications

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

● How to order negative common valves (Example)

SQ1130 N -51-C6

N: Negative common specifications

● How to order negative common manifold (Example)

SS5Q13 -08 LD1 N - D N

- **08: Stations**
- **LD1: Kit type**
- **N: Negative common specifications**
- **D: DIN rail mounting style**
- **N: Option**

Inch-size One-touch Fittings

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

● How to order valves (Example)

SQ1130- 51 - □ N7

Port location | **Cylinder port**

—	Side ported
L	Top ported

Symbol		N1	N3	N7	N9
Applicable tubing O.D. [Inch]		ø1/8"	ø5/32"	ø1/4"	ø5/16"
4(A), 2(B) port	**SQ1000**	●	●	●	—
	SQ2000	—	●	●	●

● How to order manifold (Example)

Add “00T” at the end of the part number.

SS5Q13-08 FD0 -DN- 00T

- **00T:** 1 (P), 3 (R) port in inch size
  - SQ1000: ø5/16" (N9)
  - SQ2000: ø3/8" (N11)

How to Increase Manifold Stations for SQ1000/2000

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 steps are for using spare connectors to add stations.

• Spare Connector Wiring

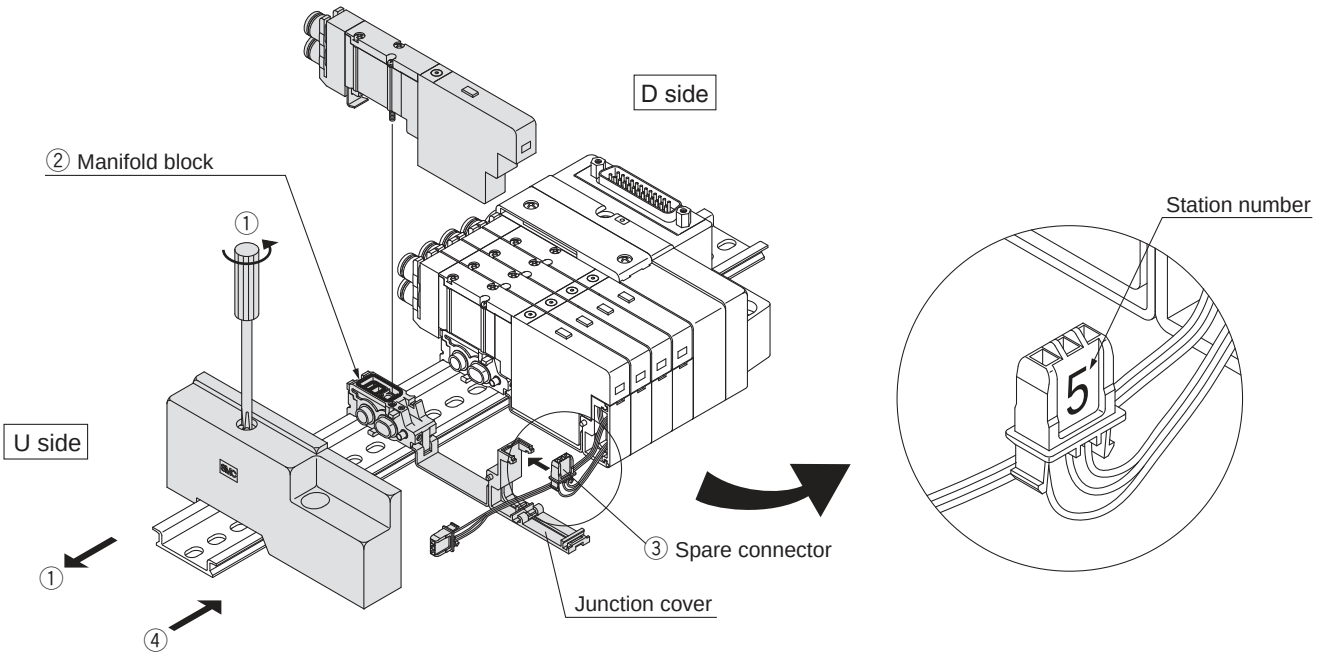
Remaining connector pins	4 pins or more	3 pins	2 pins	1 pin	0 pin
Spare connector wiring	2 for double wiring	1 for double wiring (on the low no. station side) 1 for single wiring	1 for double wiring	1 for single wiring	None

What to order

• Valves with manifold block (refer to pages 6 and 26) or the manifold blocks (Refer to page 56).

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 1.0 N·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 56.)
Note 2) Do not let the lead wires get caught between manifolds, or when closing the junction cover.

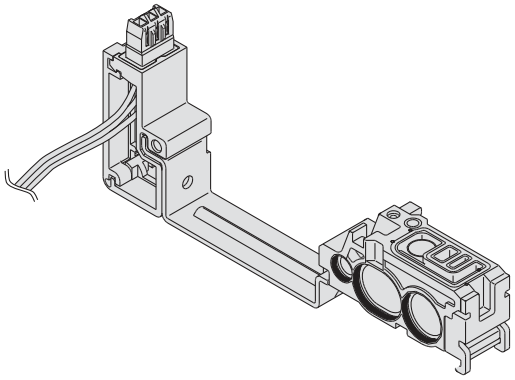
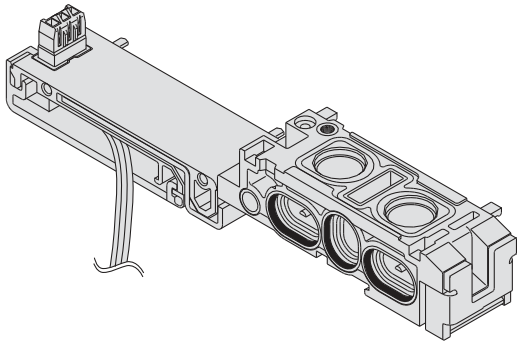


How to Increase Manifold Stations for SQ1000/2000

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 as in the tables below.

How to order manifold blocks with lead wire

SQ1000	SQ2000
	

SSQ1000−1A−3−FS 03 N −□

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 0.6 m
L1	L kit (Lead wire kit) Lead wire length 1.5 m
L2	L kit (Lead wire kit) Lead wire length 3.0 m
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) "F0": —
Note 2) S kit is from 01 to 16

COM. (L kit only)

—	Positive common
N	Negative common

Option

—	None
B	Back pressure check valve
R	External pilot specifications

Note) Enter "-BR" for both options.

SSQ2000−1A−3−FS 03 N −□

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 0.6 m
L1	L kit (Lead wire kit) Lead wire length 1.5 m
L2	L kit (Lead wire kit) Lead wire length 3.0 m
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 1) "F0": —

COM. (L kit only)

—	Positive common
N	Negative common

Option

—	None
B	Back pressure check valve
R	External pilot specifications

Note) Enter "-BR" for both options.

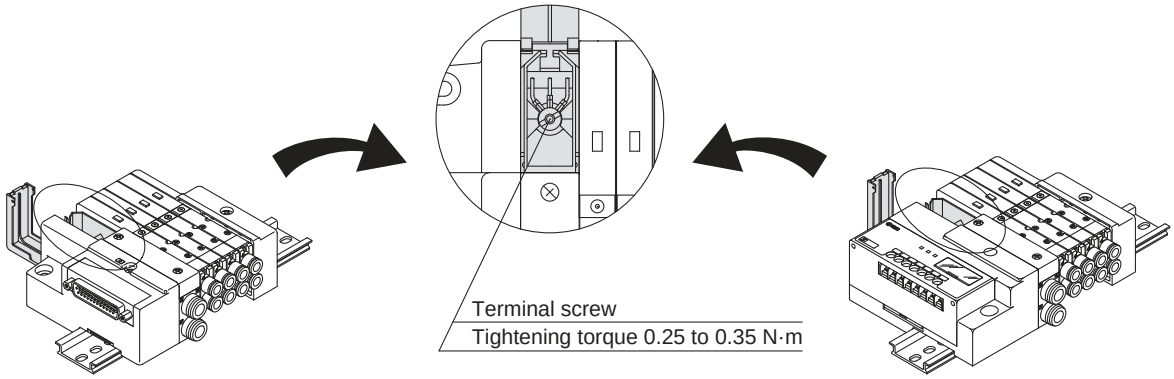
How to Increase Manifold Stations for SQ1000/2000

3. Connection Method (Refer to page 55 regarding the steps for adding stations to a manifold block.)

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

(1) Connecting common terminals

Connect lead wire assemblies included with manifold blocks as follows.

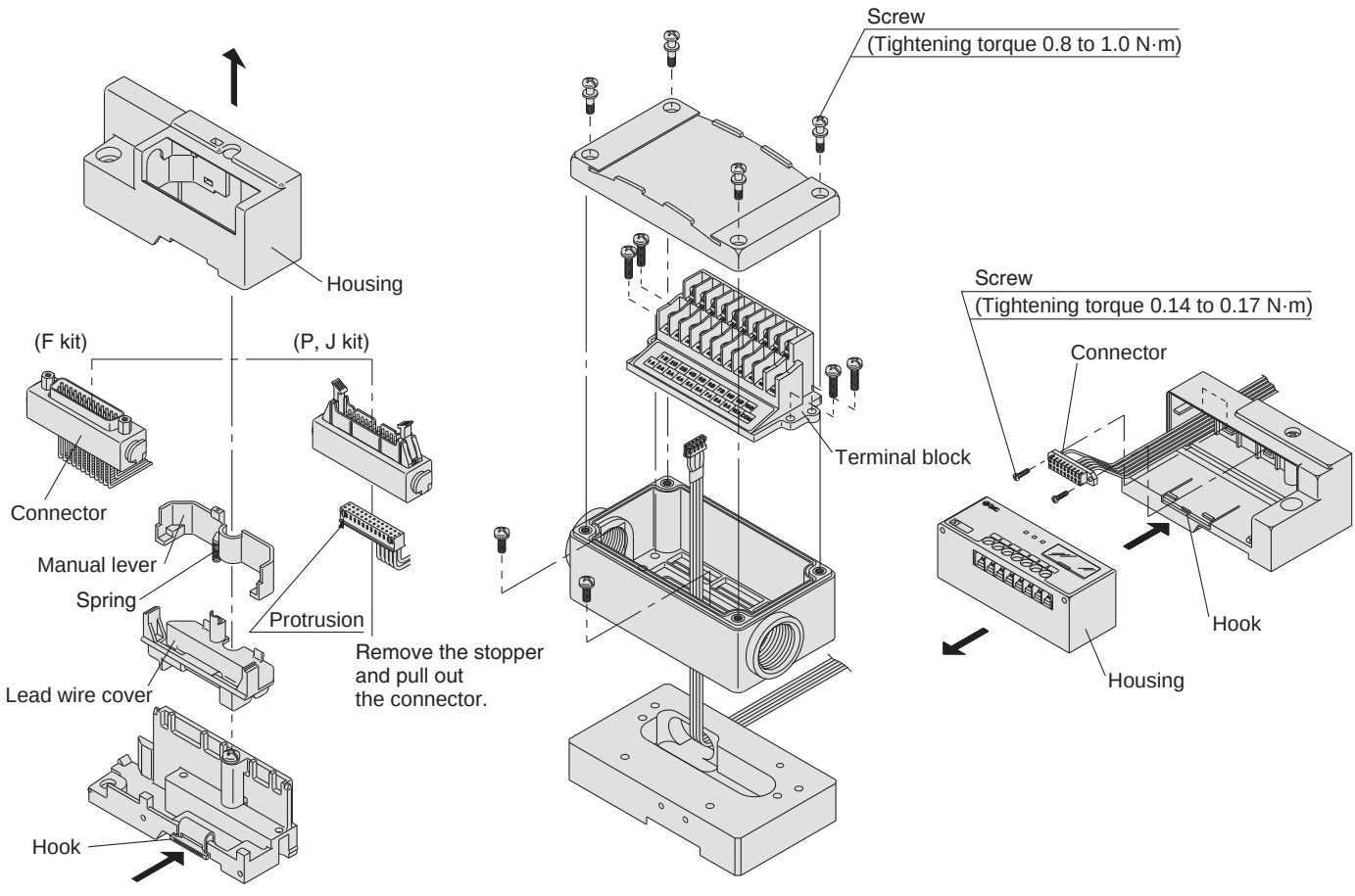


F, P, J kit **T, S kit**

(2) Pulling out connector

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 screwdriver, 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 Increase Manifold Stations for SQ1000/2000

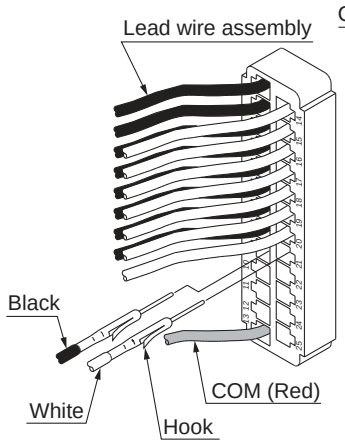
(3) Connect the black and white lead wire pins to the positions shown below in accordance with each kit.

⚠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.

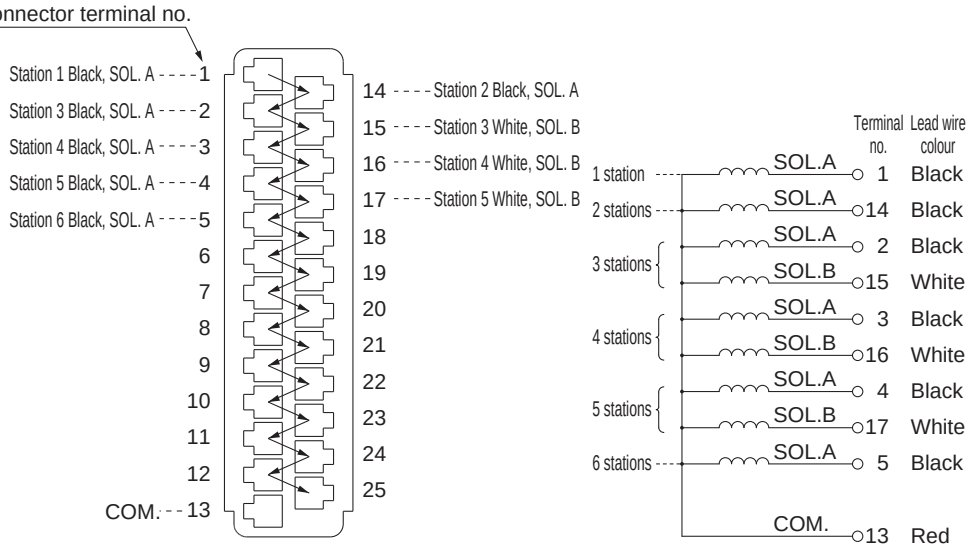
Wiring (F Kit: D-sub Connector Kit)

Procedure) Based on the manifold specifications, 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, then white wires in the order as shown below by the arrows.



Manifold Specifications' Example

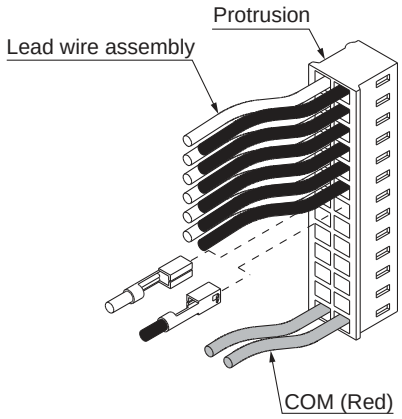
Stations	1	2	3	4	5	6
Single wiring	○	○				○
Double wiring			○	○	○	



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

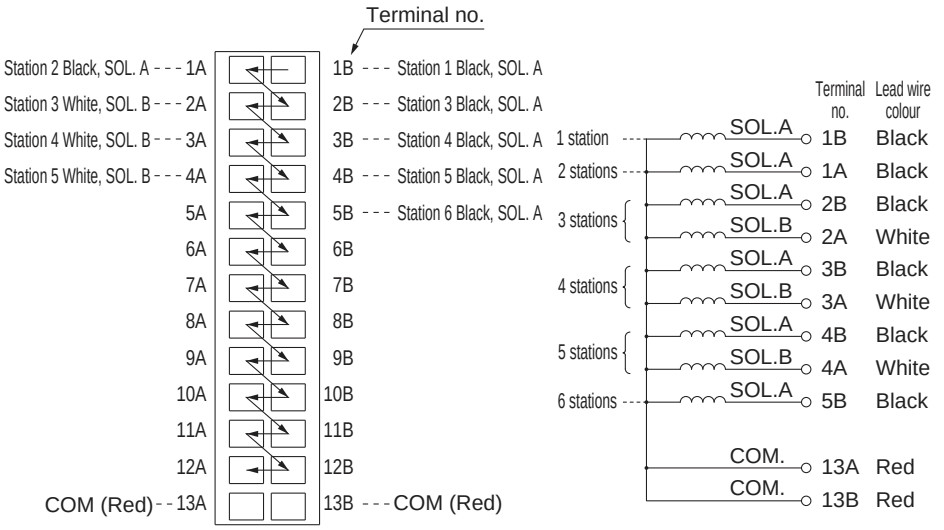
Wiring (P Kit: Flat Ribbon Cable Kit)

Procedure) Based on the manifold specifications, 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, then white wires in the order as shown below by the arrows.



Manifold Specifications' Example

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

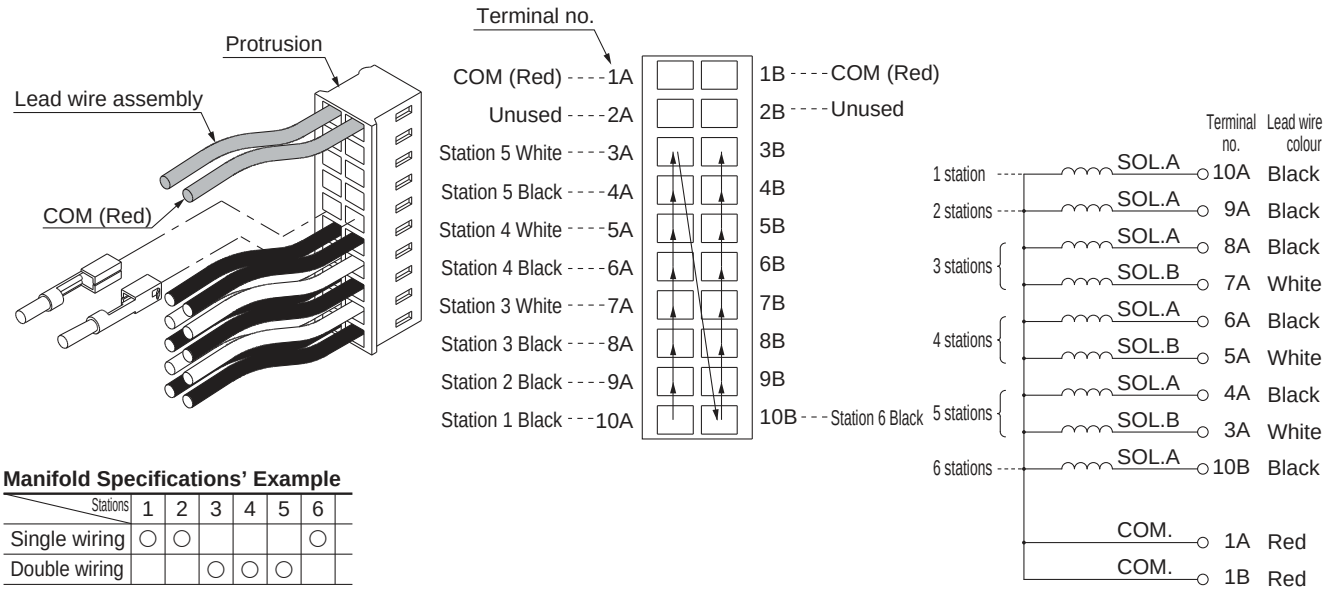


∗ The drawing above shows connections for type 26P flat ribbon cable connector based on the manifold specifications' example in the table to the left. For type 20P, the connection will be the same as above except that COM changes to 10A and 10B.

How to Increase Manifold Stations for SQ1000/2000

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

Procedure) Based on the manifold specifications, 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, then white wires in the order as shown below by the arrows.

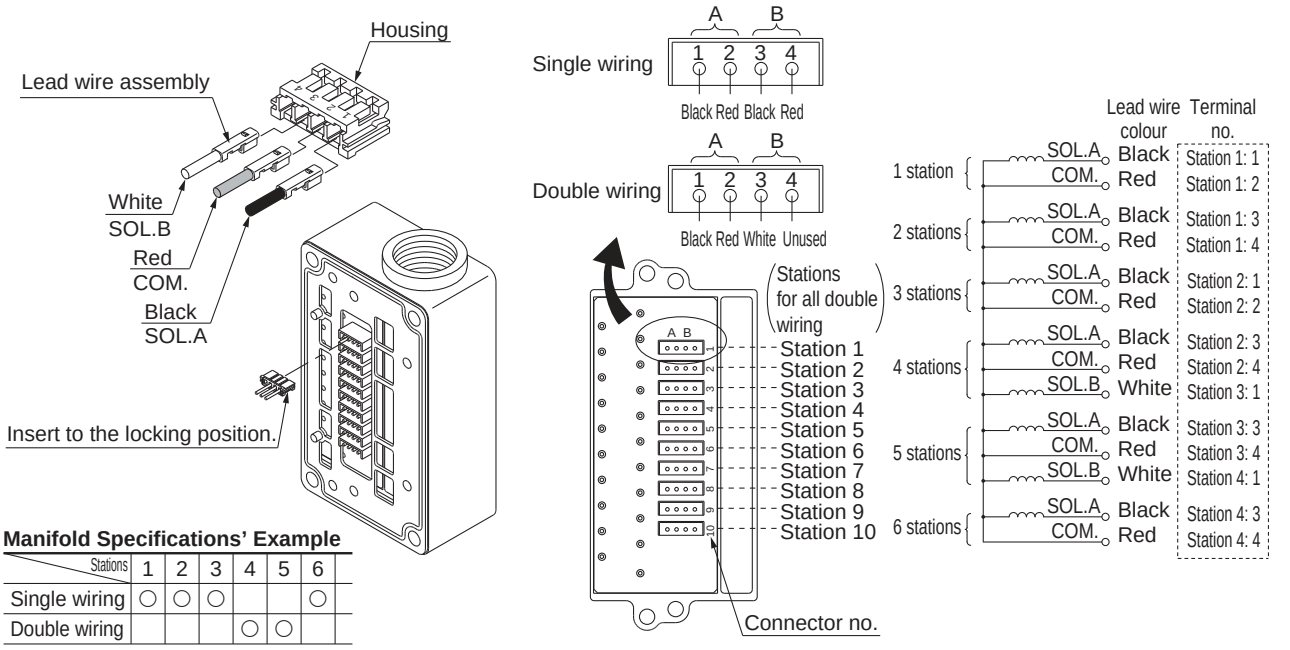


Manifold Specifications' Example

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

Wiring (T Kit: Terminal Block Kit)

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



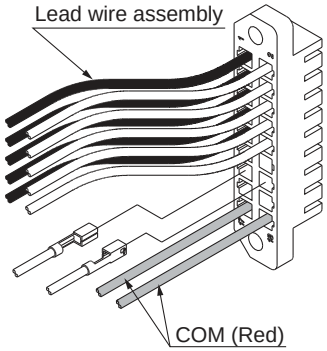
Manifold Specifications' Example

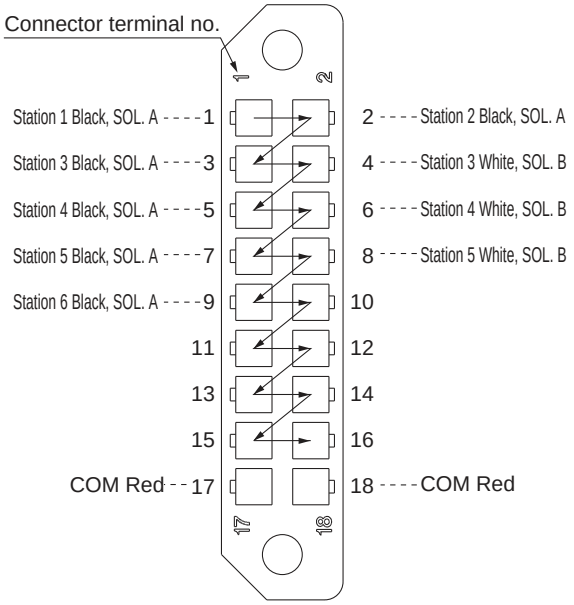
Stations	1	2	3	4	5	6
Single wiring	○	○	○			○
Double wiring				○	○	

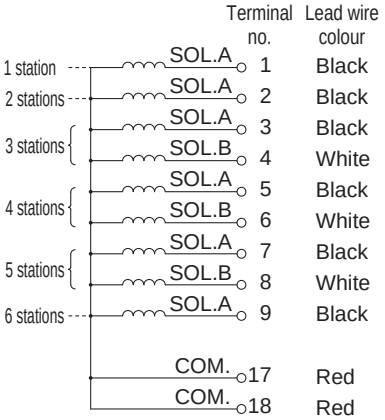
How to Increase Manifold Stations for SQ1000/2000

Wiring (S Kit: Serial Transmission Kit)

Procedure) Based on the manifold specifications, 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, then white wires in the order as shown below by the arrows.







Manifold Specifications' Example

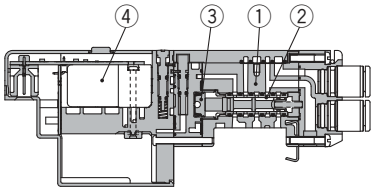
Stations	1	2	3	4	5	6
Single wiring	○	○				○
Double wiring			○	○	○	

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

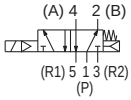
Construction: Series SQ1000 Plug-in Type Main Parts and Pilot Valve Assembly

Metal seal type

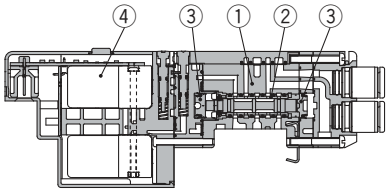
Single: SQ1130



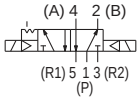
SQ1130



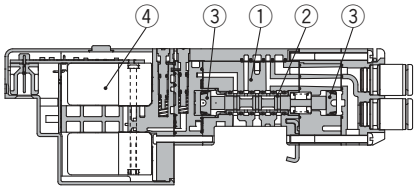
Double: SQ1230D



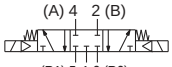
SQ1230D



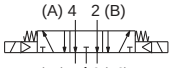
3 position: SQ1$^{3}_{4}_{5}$30



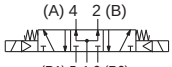
SQ1330



SQ1430



SQ1530



Component Parts

No.	Description	Material
1	**Body**	Zinc die-casted
2	**Spool/Sleeve**	Stainless steel (Metal seal)
	Spool	Aluminium (Rubber seal)
3	**Piston**	Resin
4	**Pilot valve assembly (Refer to the below.)**	—

Pilot valve assembly

V112 □ - □

Coil voltage

5	24 VDC
6	12 VDC

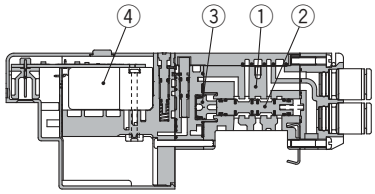
Function

Symbol	Specifications	DC
—	Standard type	(0.4 W) ○
B	Quick response type	(0.95 W) ○
K	High pressure type (1.0MPa)	(0.95 W) ○

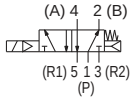
Note) Common to single solenoid and double solenoid

Rubber seal type

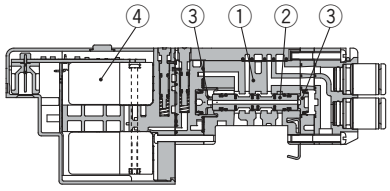
Single: SQ1131



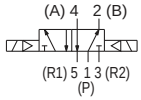
SQ1131



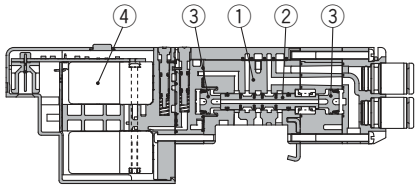
Double: SQ1231D



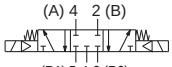
SQ1231D



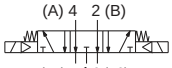
3 position: SQ1$^{3}_{4}_{5}$31



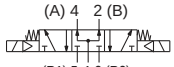
SQ1331



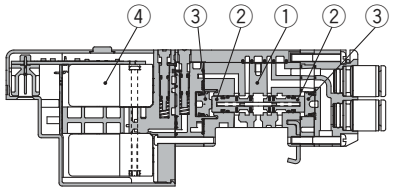
SQ1431



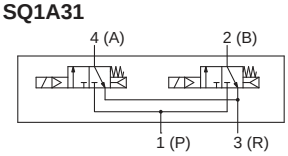
SQ1531



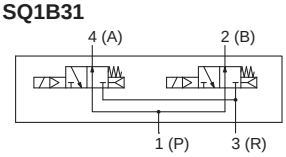
Dual 3 port valve: SQ1$^{A}_{B}_{C}$31



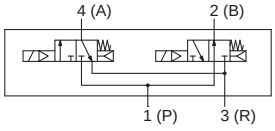
SQ1A31



SQ1B31



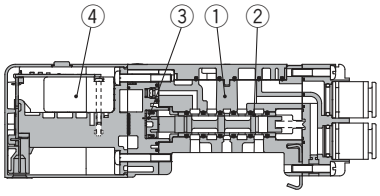
SQ1C31

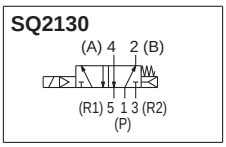


Construction: Series SQ2000 Plug-in Type Main Parts and Pilot Valve Assembly

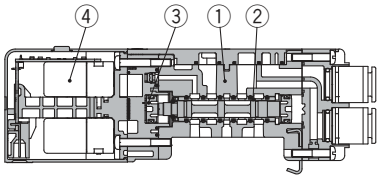
Metal seal type

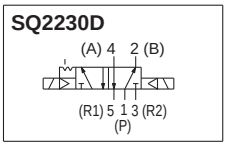
Single: SQ2130



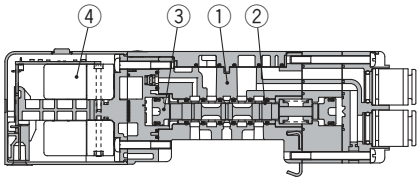


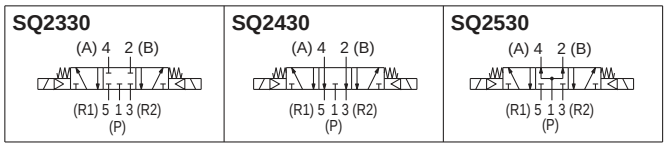
Double: SQ2230D





3 position: SQ2$^{3}_{5}$30





Component Parts

No.	Description	Material
1	**Body**	Aluminium die-casted
2	**Spool/Sleeve**	Stainless steel (Metal seal)
	Spool	Aluminium (Rubber seal)
3	**Piston**	Resin
4	**Pilot valve assembly (Refer to the below.)**	—

Pilot valve assembly

V112 □ - □

Coil voltage

5	24 VDC
6	12 VDC

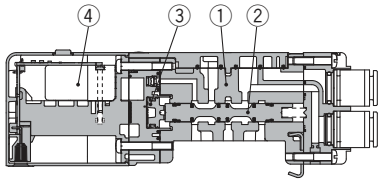
Function

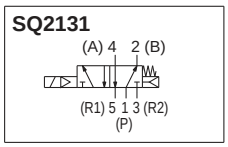
Symbol	Specifications	DC
—	Standard type	(0.4 W) ○
B	Quick response type	(0.95 W) ○

Note) Common to single solenoid and double solenoid

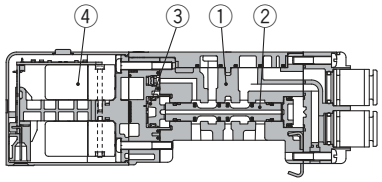
Rubber seal type

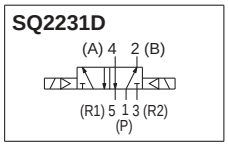
Single: SQ2131



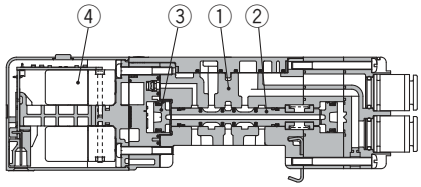


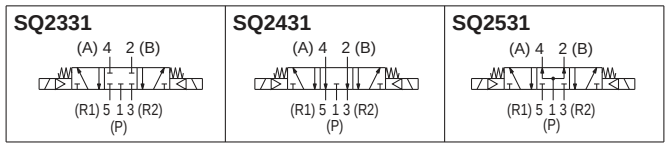
Double: SQ2231D



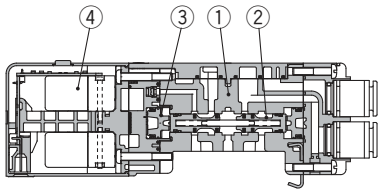


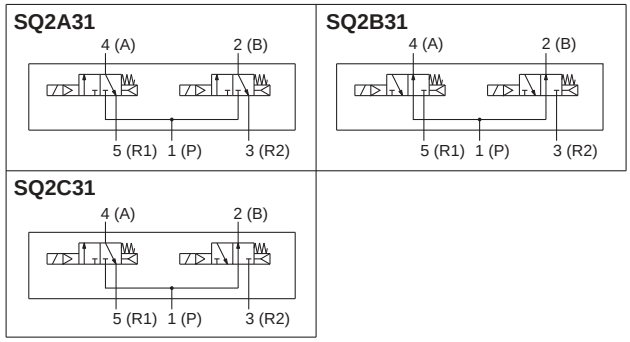
3 position: SQ2$^{3}_{5}$31





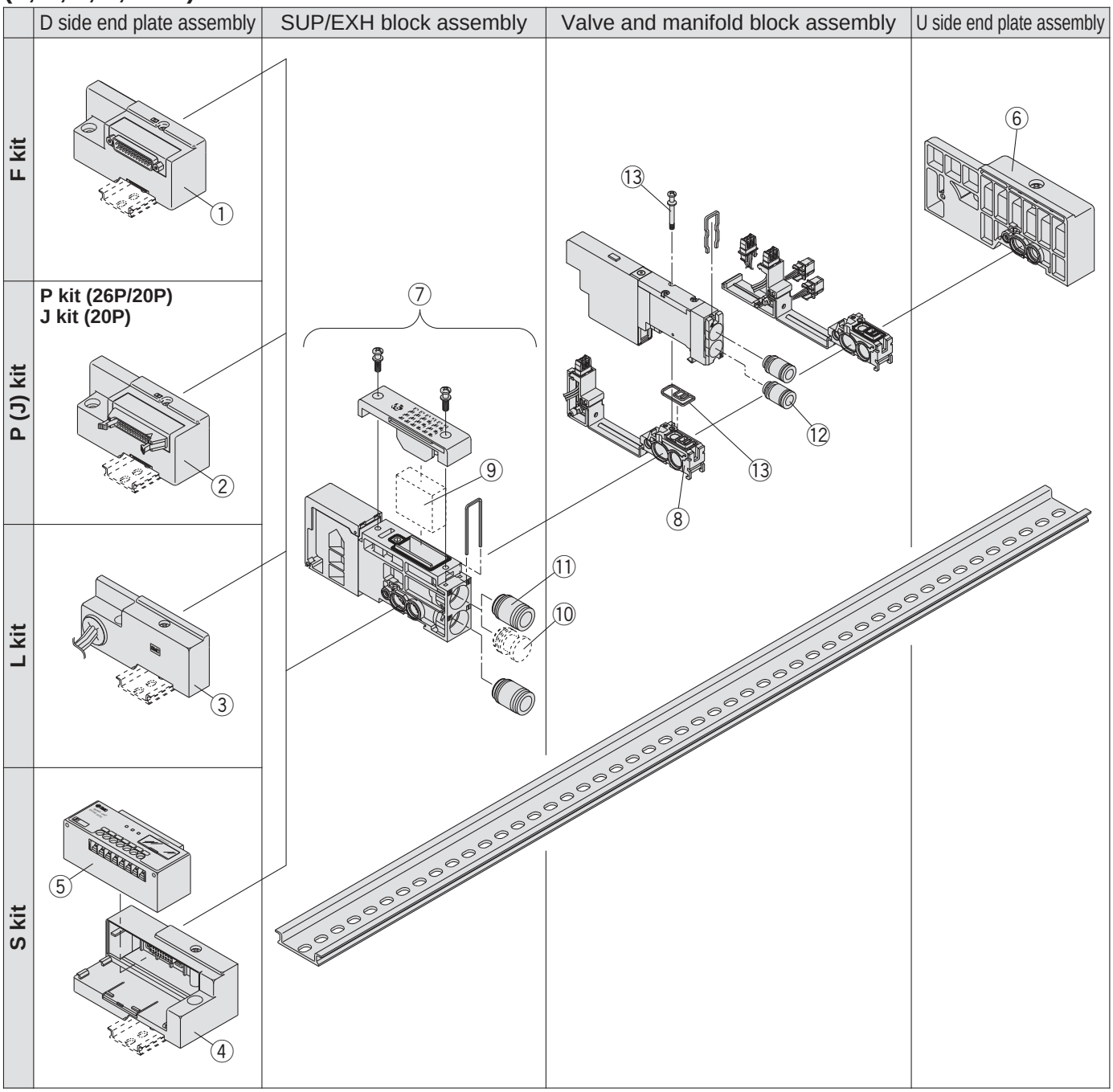
Dual 3 port valve: SQ2$^{A}_{B}_{C}$31





Manifold Exploded View: SQ1000 (Plug-in Type Manifold) SS5Q13

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



Manifold Spare Parts

Refer to pages 55 to 60 of “How to Increase Manifold Stations” regarding the mounting of each spare parts.

<① ② ③ ④ D side end plate assembly>

SSQ1000 − 3A − 3 □ − □ □ □

Manifold mounting

—	DIN rail mounting style
E	Direct mounting style

Electrical entry

F	F kit	①
P	P kit (26P)	②
PC	P kit (20P)	
J	J kit (20P)	
—	L kit	③
S	S kit	④

Wiring specifications

0	Without lead wire
S	Single wiring
W	Double wiring

Note) L kit: —

Stations

01	For 1 station
⋮	⋮
24	For 24 stations

Note 1) The maximum number of stations will be different depending on the wiring specifications.
Note 2) L kit: —

<⑤ SI unit>

Manifold	No.	Description
SDQ kit	EX140-SDN1	DeviceNet™ (16 output points)
SDR1 kit	EX140-SCS1	OMRON Corp.: CompoBus/S (16 output points)
SDR2 kit	EX140-SCS2	OMRON Corp.: CompoBus/S (8 output points)
SDV kit	EX140-SMJ1	CC-LINK (16 output points)

<⑥ U side end plate assembly>

(For F, P, J, S kit)

SSQ1000 − 2A − 3 □ − 1

(For L kit)

SSQ1000 − 2A − 3 □ − 2

Manifold mounting

—	DIN rail mounting style
E	Direct mounting style

<⑦ SUP/EXH block assembly>

SSQ1000 − PR − 3 − C8 − □

Port size

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

Option

—	Common exhaust type
R	External pilot
S	Built-in silencer, direct exhaust

Note) Enter “-RS” for both options.

<⑧ Manifold block assembly>

SSQ1000 − 1A − 3 − F0 01 − □ Including gaskets ⑬

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 0.6 m
L1	L kit: Lead wire kit Lead wire length 1.5 m
L2	L kit: Lead wire kit Lead wire length 3 m
SS	S kit: Serial transmission kit Single wiring
SW	S kit: Serial transmission kit Double wiring

Option

—	None
B	Back pressure check valve
R	External pilot specifications

Note) Enter “-BR” for both options.

Applicable stations (For F, P, J, S kit)

01	Station 1
⋮	⋮
24	Station 24

Note 1) “F0”: —
Note 2) Specify from “01” to “16” for S kit.

<⑨ Element>

SSQ1000 − SE

Note) Part number for a 10 piece set of element. For replacement procedures, refer to page 120.

<⑩ Port plug>

VVQZ2000 − CP

<⑪ Fitting assembly>

(For P, R port)

VVQ1000 − 51A − C8

Port size

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

Note) Purchasing order is available in units of 10 pieces.

<⑫ Fitting assembly>

(For cylinder port)

VVQ1000 − 50A − C3

Port size

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

Note) Purchasing order is available in units of 10 pieces.

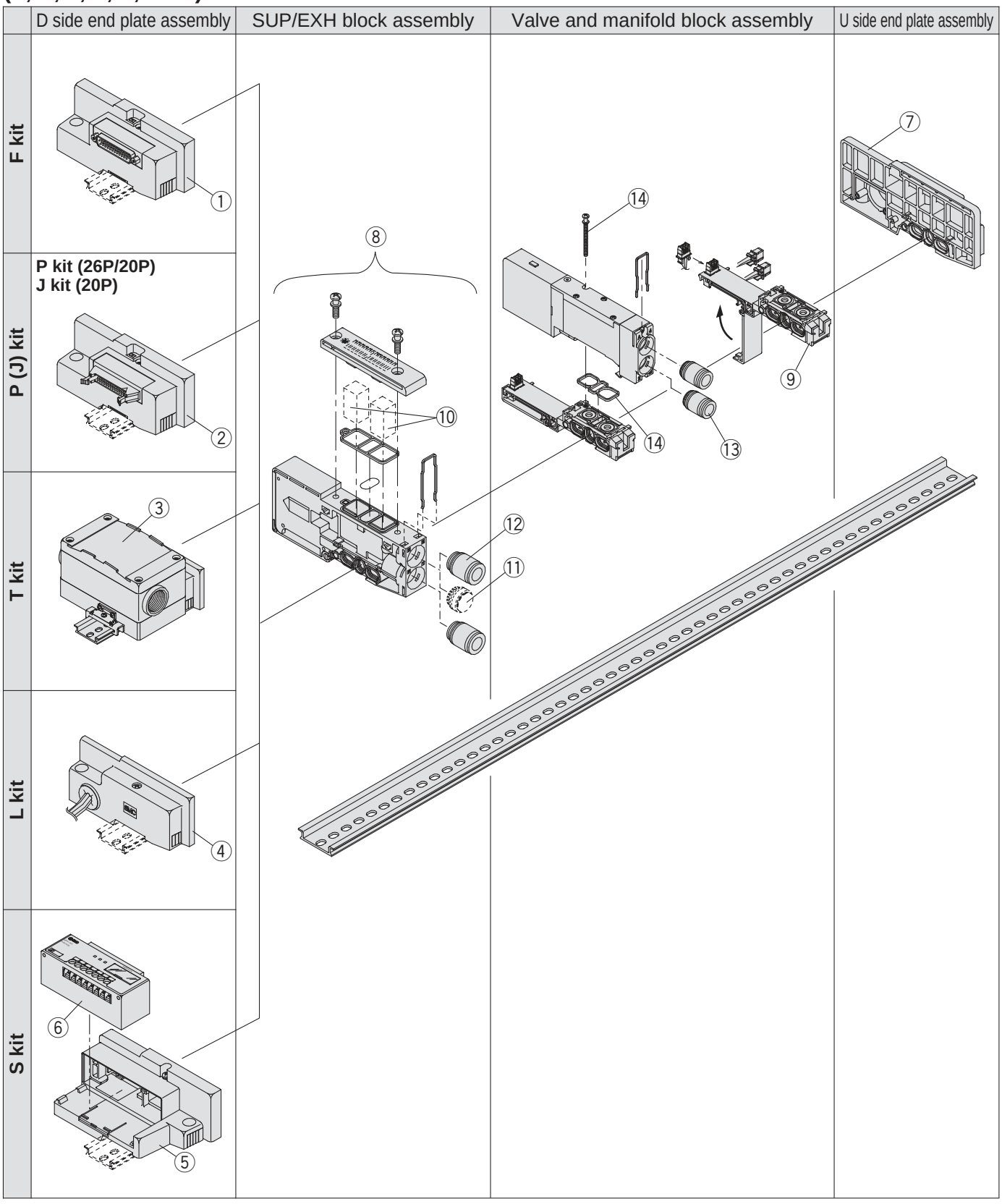
<⑬ Gasket and screw assembly>

SQ1000 − GS

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

Manifold Exploded View: SQ2000 (Plug-in Type Manifold) SS5Q23

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



Manifold Spare Parts

Refer to pages 55 to 60 of “How to Increase Manifold Stations” regarding the mounting of each spare parts.

<① ② ③ ④ ⑤ D side end plate assembly>

SSQ2000 − 3A − 3 □ − □ □ □

Manifold mounting

—	DIN rail mounting style
E	Direct mounting style

Electrical entry

F	F kit	①
P	P kit (26P)	②
PC	P kit (20P)	
J	J kit (20P)	
T	T kit	③
—	L kit	④
S	S kit	⑥

Wiring specifications

0	Without lead wire
S	Single wiring
W	Double wiring

Note) L kit: —

Stations

01	For 1 station
⋮	⋮
16	For 16 stations

Note 1) The maximum number of stations will be different depending on the wiring specifications.
Note 2) L kit: —

<⑥ SI unit>

Manifold	No.	Description
SDQ kit	EX140-SDN1	DeviceNet™ (16 output points)
SDR1 kit	EX140-SCS1	OMRON Corp.: CompoBus/S (16 output points)
SDR2 kit	EX140-SCS2	OMRON Corp.: CompoBus/S (8 output points)
SDV kit	EX140-SMJ1	CC-LINK (16 output points)

<⑦ U side end plate assembly>

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

SSQ2000 − 2A − 3 □ − 1

(For L kit)

SSQ2000 − 2A − 3 □ − 2

Manifold mounting

—	DIN rail mounting style
E	Direct mounting style

<⑧ SUP/EXH block assembly>

SSQ2000 − PR − 3 − C8 − □

Port size

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

Option

—	Common exhaust type
R	External pilot
S	Built-in silencer, direct exhaust

Note) Enter “-RS” for both options.

<⑨ Manifold block assembly>

SSQ2000 − 1A − 3 − F0 01 − □ Including gaskets ⑬

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 0.6 m
L1	L kit: Lead wire kit Lead wire length 1.5 m
L2	L kit: Lead wire kit Lead wire length 3 m
SS	S kit: Serial transmission kit Single wiring
SW	S kit: Serial transmission kit Double wiring

Option

—	None
B	Back pressure check valve
R	External pilot specifications

Note) Enter “-BR” for both options.

Applicable stations

01	Station 1
⋮	⋮
16	Station 16

Note 1) “F0”: —

<⑩ Element>

SSQ2000 − SE

Note) Part number for a 10 piece set of element.
For replacement procedures, refer to page 120.

<⑪ Port plug>

VVQZ3000 − CP

<⑫ Fitting assembly>

(For P, R port)

VVQ2000 − 51A − C8

Port size

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

Note) Purchasing order is available in units of 10 pieces.

<⑬ Fitting assembly>

(For cylinder port)

VVQ1000 − 51A − C4

Port size

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

Note) Purchasing order is available in units of 10 pieces.

<⑭ Gasket and screw assembly>

SQ2000 − GS

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

Plug Lead Unit

Series SQ1000

How to Order Manifold

SS5Q14 – 08 FD2 – D □ – □ – Q

Stations

01	1 station
⋮	⋮
24 Note)	24 stations

Note) The maximum number of stations depends on the type of electrical entries. Refer to "Electrical entry" for details.

CE compliant

1(P), 3(R) port size

—	1(P), 3(R) port, One-touch fittings for ø8
00T	1(P), 3(R) port, One-touch fittings for ø5/16"

Manifold mounting

D	DIN rail mounting style

Option

—	None
02 to 24 (1)	DIN rail length specified
B (2)(3)	Back pressure check valve
K (4)	Special wiring specifications (Except double wiring)
N	With name plate (Side ported only)
R	External pilot specifications
S	Built-in silencer, direct exhaust

Note 1) Specify DIN rail length with "D□ at the end. (Enter the number of stations inside □.) The number of stations that may be displayed is longer than the manifold number of stations. Example: -D09

Note 2) When "-B" is selected, a back pressure check valve is included in all stations of the manifold. If the back pressure check valve is used only for the station that need it, then specify the station location in the manifold specification. ("-B" is not necessary)

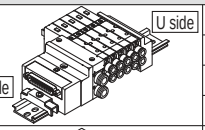
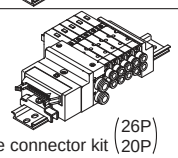
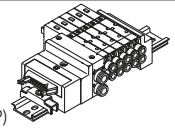
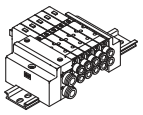
Note 3) Since 4 port specification valves (5 (R1) and 3 (R2) are common) are used, back pressure cannot be prevented with dual 3 port valves.

Note 4) Specify "-K" for wiring specification for cases below. (Except C kit)
- All single wiring
- Single and double mixed wiring.
- When there are stations which do not require wiring (e.g. single SUP. spacer), specify the wiring specification in the manifold specification so that the number of solenoids is the maximum number of solenoids or less. (Standard wiring specification is double wiring)

Note 5) For specifying two or more options, enter them alphabetically. Example: -BKN

∗ Refer to pages 95 to 99 and 105 to 107 for manifold option parts.

Electrical entry

Kit type		Lead wire connector location	Cable specifications	Station	Max. number of solenoids for special wiring specifications (2)
F kit D-sub Connector kit 	**FD0**	D side	D-sub connector (25P) kit, without cable	1 to 12 stations (Double wiring)	24
	FD1		D-sub connector (25P) kit, with 1.5 m cable		
	FD2		D-sub connector (25P) kit, with 3.0 m cable		
	FD3		D-sub connector (25P) kit, with 5.0 m cable		
P kit Flat ribbon cable connector kit (26P 20P) 	**PD0**	D side (1)	Flat ribbon cable (26P) kit, without cable	1 to 12 stations (Double wiring)	24
	PD1		Flat ribbon cable (26P) kit, with 1.5 m cable		
	PD2		Flat ribbon cable (26P) kit, with 3.0 m cable		
	PD3		Flat ribbon cable (26P) kit, with 5.0 m cable		
	PDC		Flat ribbon cable (20P) kit, without cable	1 to 9 stations (Double wiring)	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 (Double wiring)	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) Specify the wiring so that the maximum number of solenoids is not exceeded.(The number of solenoids are counted as: 1 for single solenoids and 2 for type 3P and 4P double solenoids.)

∗ Refer to page 116 for manifold spare parts.

How to Order Valves

SQ1 1 4 0 □ – 5 L □ 1 – C6 – □ – □ – Q

Seal

0	Metal seal
1	Rubber seal

Type of actuation

1	2 position single (A)4 2(B) (R1)5 1 3(R2) (P)
2	2 position double (Double solenoid) (1) (A)4 2(B) (R1)5 1 3(R2) (P) Metal seal (A)4 2(B) (R1)5 1 3(R2) (P) Rubber seal
3	3 position closed centre (A)4 2(B) (R1)5 1 3(R2) (P)
4	3 position exhaust centre (A)4 2(B) (R1)5 1 3(R2) (P)
5	3 position pressure centre (A)4 2(B) (R1)5 1 3(R2) (P)
A (2)	4 position dual 3 port valve 4(A) 2(B) 1(P) 3(R)
B (2)	4 position dual 3 port valve 4(A) 2(B) 1(P) 3(R)
C (2)	4 position dual 3 port valve 4(A) 2(B) 1(P) 3(R)

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

Function

Symbol	Specifications
—	Standard type (0.4 W)
B	Quick response type (0.95 W)
D (1)	2 position double (Double solenoid specifications)
K	High pressure type (1 MPa, 0.95 W) [Applicable to metal seal only]
N	Negative common
R (2)	External pilot specifications

Note 1) "D" is specified for 2 position double.
Note 2) Except dual 3 port valves.
Note 3) When two or more symbols are specified, indicate them alphabetically.

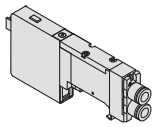
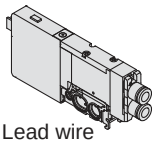
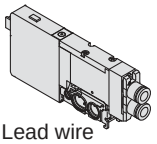
Rated voltage

5	24 VDC
6	12 VDC

Note) Light/surge voltage suppressor is built-in.

CE compliant

With/Without manifold block

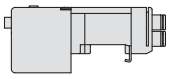
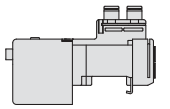
—	**M**	**MB** Note)
Without manifold block	With manifold block	With manifold block, built-in back pressure check valve
	 ∗ Lead wire is not included.	 ∗ Lead wire is not included.
• When ordering with manifolds • When only valves are required.	For adding stations	

Note) Since 4 port specification valves (5 (R1) and 3 (R2) are common) are used, back pressure cannot be prevented with dual 3 port valves.

Port plug mounting port

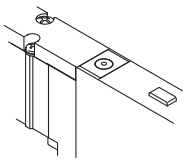
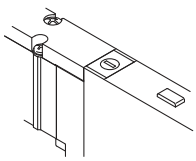
—	None
A	Port 4(A)
B	Port 2(B)

Cylinder port

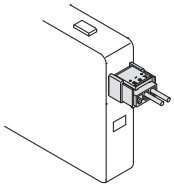
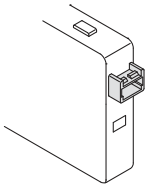
Symbol	Port size	Port location	
C3	One-touch fitting for ø3.2	Side ported	
C4	One-touch fitting for ø4		
C6	One-touch fitting for ø6		
M5	M5 thread		
L3	One-touch fitting for ø3.2	Top (1) ported	
L4	One-touch fitting for ø4		
L6	One-touch fitting for ø6		
L5	M5 thread		

Note 1) Can be changed to side ported configuration.
Note 2) Refer to page 107 for the inch-size One-touch fittings.

Manual override

—	**B**
Non-locking push type (Tool required)	Locking type (Tool required)
	

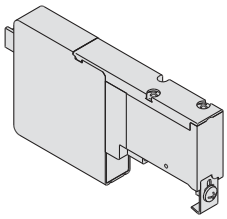
Electrical entry

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

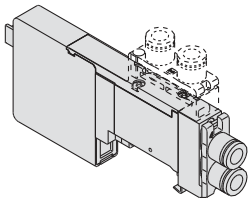
Note) Indicate "LO" when ordering centralized wiring type manifolds, F, P, and J kits, since the lead wire will be attached to the manifold side.

Manifold Options

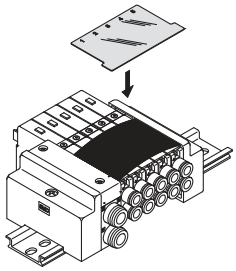
Blanking plate
SSQ1000-10A-4 P.95



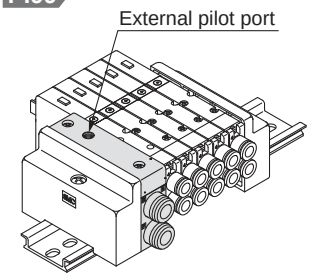
Individual SUP/EXH spacer
SSQ1000-PR1-4-$^{C6}_{L6}$ P.96



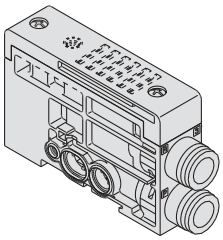
Name plate (-N)
SSQ1000-N3-n P.98



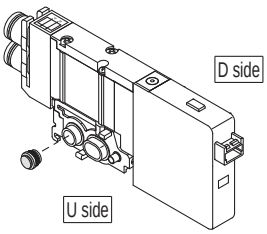
External pilot specifications (-R) P.99



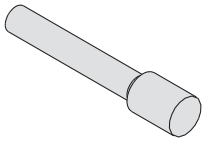
SUP/EXH block
SSQ1000-PR-4-C8 (-S) P.95



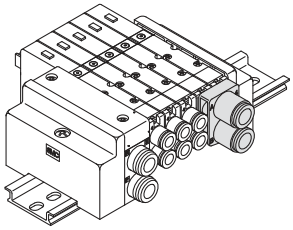
SUP block plate
SSQ1000-B-P P.97



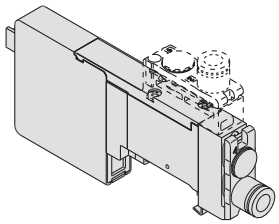
Blanking plug
KQ2P-23/04/06/08 P.98



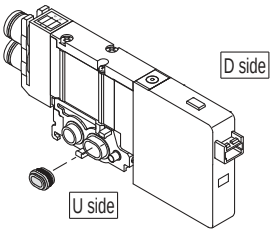
Dual flow fitting
SSQ1000-52A-$^{C8}_{N9}$ P.99



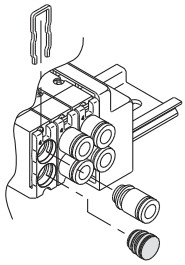
Individual SUP spacer
SSQ1000-P-4-$^{C6}_{L6}$ P.95



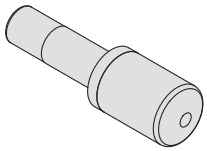
EXH block plate
SSQ1000-B-R P.97



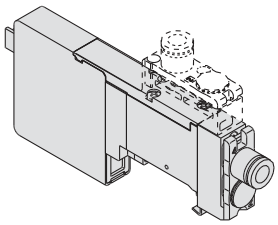
Port plug
VVQZ100-CP P.98



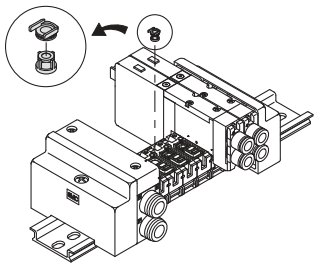
Silencer
(For EXH port) P.99



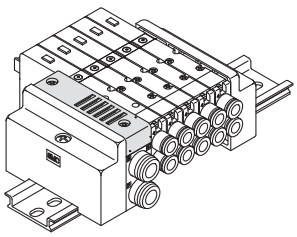
Individual EXH spacer
SSQ1000-R-4-$^{C6}_{L6}$ P.96



Back pressure check valve (-B)
SSQ1000-BP P.97

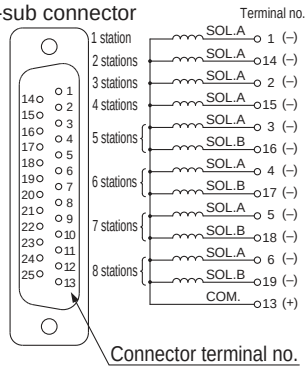


Built-in silencer,
direct exhaust (-S) P.98



Special wiring specifications (-K) P.105

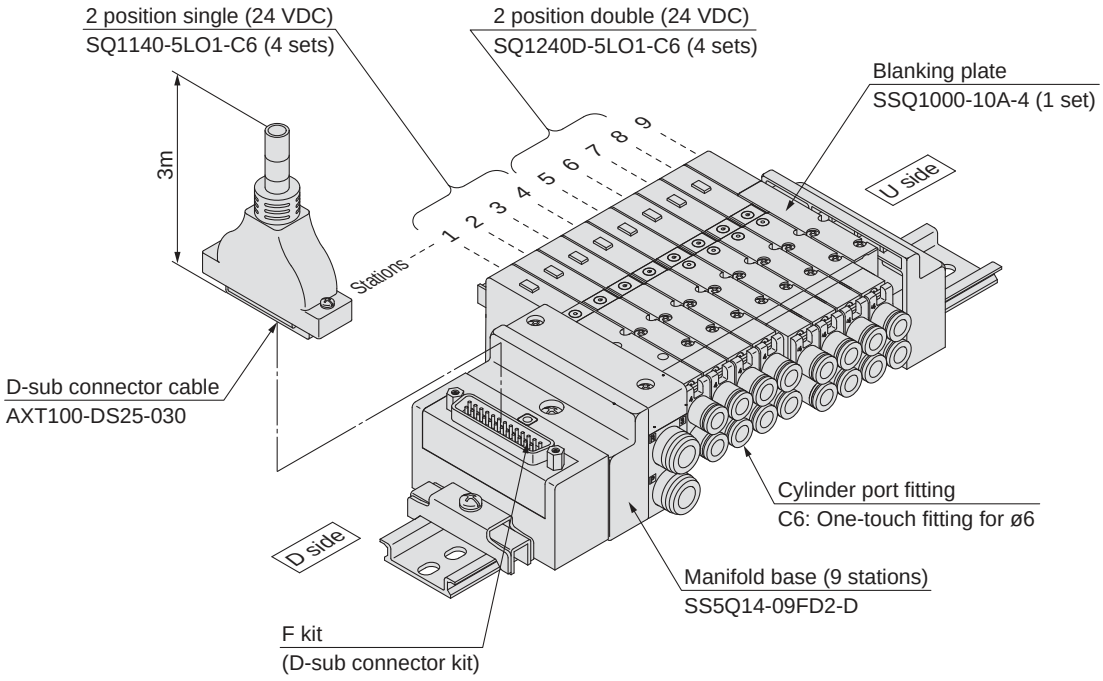
D-sub connector



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

How to Order Manifold Assembly

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



SS5Q14-09FD2-D ·····1 set (F kit 9-station manifold base)
* **SQ1140-5LO1-C6 ·····4 sets (2 position single)**
* **SQ1240D-5LO1-C6 ···4 sets (2 position double)**
* **SSQ1000-10A-4 ·····1 set (Blanking plate)**

The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

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 the manifold specification sheet.

Valve Specifications

Model

Series	Type of actuation		Seal	Model	Flow characteristic (1)								Response time [ms] (2)		Weight [g]
					1 → 4/2 (P → A/B)				4 → 5 (A → R1)				Standard (0.4 W)	Quick response (0.95 W)	
					C [dm³/(s·bar)]	b	Cv	Q [L/min] (ANR) Note 3)	C [dm³/(s·bar)]	b	Cv	Q [L/min] (ANR) Note 3)			
SQ1000	2 position	Single	Metal seal	SQ1140	0.62	0.10	0.14	141	0.63	0.11	0.14	144	26 or less	12 or less	80
			Rubber seal	SQ1141	0.79	0.20	0.19	189	0.80	0.20	0.19	192	24 or less	15 or less	80
		Double	Metal seal	SQ1240D	0.62	0.10	0.14	141	0.63	0.11	0.14	144	13 or less	10 or less	95
			Rubber seal	SQ1241D	0.79	0.20	0.19	189	0.80	0.20	0.19	192	20 or less	15 or less	95
	3 position	Closed centre	Metal seal	SQ1340	0.58	0.12	0.14	133	0.63	0.11	0.14	144	44 or less	29 or less	100
			Rubber seal	SQ1341	0.64	0.20	0.15	153	0.58	0.26	0.16	144	39 or less	25 or less	100
		Exhaust centre	Metal seal	SQ1440	0.58	0.12	0.14	133	0.60	0.14	0.14	139	44 or less	29 or less	100
			Rubber seal	SQ1441	0.64	0.20	0.15	153	0.80	0.20	0.19	192	39 or less	25 or less	100
		Pressure centre	Metal seal	SQ1540	0.62	0.12	0.14	142	0.63	0.14	0.14	146	44 or less	29 or less	100
			Rubber seal	SQ1541	0.79	0.21	0.19	190	0.59	0.20	0.14	141	39 or less	25 or less	100
	4 position	Dual 3 port valve	Rubber seal	SQ1$^{A}_{C}$41	0.59	0.28	0.15	148	0.59	0.28	0.15	148	27 or less	14 or less	95

Note 1) Values for the cylinder port size of C6, CYL → Values of EXH. Flow characteristics of 2 → 3 (B → R2) delines about 30% of 4 → 5 (A → R1).
Note 2) Based on JIS B 8375-1981. (Values with a supply pressure of 0.5 MPa and light/surge voltage suppressor. Values fluctuate depending on the pressure and air quality.
Note 3) These valves have been calculated according to ISO6358 and indicate the flow rate under standard conditions with an inlet pressure of 0.6 MPa (relative pressure) and a pressure drop of 0.1 MPa.

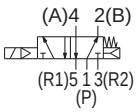
Specifications

Valve specifications	Valve construction		Metal seal	Rubber seal
	Fluid		Air/Inert gas	
	Maximum operating pressure		0.7 MPa (High pressure type (3) : 1.0 MPa)	
	Min. operating pressure	Single	0.1 MPa	0.15 MPa
		Double (Double solenoid)	0.1 MPa	0.1 MPa
		3 position	0.1 MPa	0.2 MPa
		4 position	—	0.15 MPa
	Ambient and fluid temperature		–10 to 50°C (1)	
	Lubrication		Not required	
	Pilot valve manual override		Push type/Locking type (Tool required)	
	Vibration/Impact resistance (2)		30/150 m/s²	
	Protection structure		Dust tight	
Solenoid specifications	Coil rated voltage		12 VDC, 24 VDC	
	Allowable voltage fluctuation		±10% of rated voltage	
	Coil insulation type		Equivalent to class B	
	Power consumption (Current)	24 VDC	0.4 W DC (17 mA), 0.95 W DC (40 mA) (4)	
		12 VDC	0.4 W DC (34 mA), 0.95 W DC (80 mA) (4)	

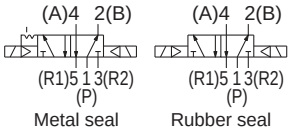
Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)
Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and deenergized states every once for each condition.
Note 3) Metal seal type only.
Note 4) Value for quick response, high pressure type.

JIS Symbol

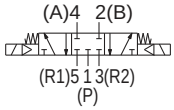
2 position single



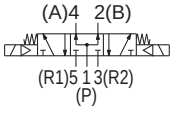
2 position double (Double solenoid)



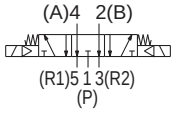
3 position closed centre



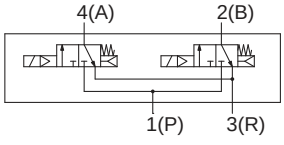
3 position pressure centre



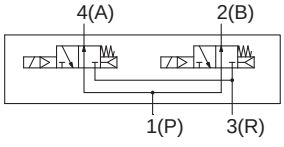
3 position exhaust centre



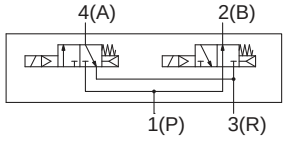
4 position dual 3 port valve (A)



4 position dual 3 port valve (B)



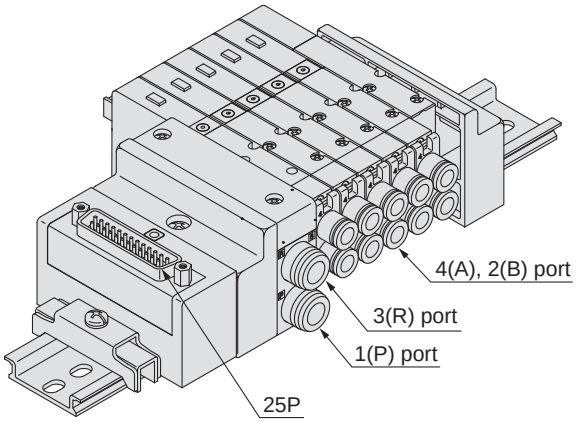
4 position dual 3 port valve (C)



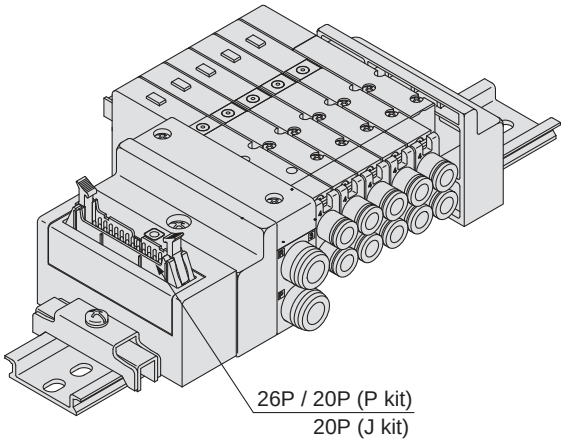
Manifold Specifications

Base model	Porting specifications: Port size (1) 1(P), 3(R)	Porting specifications: Port size (1) 4(A), 2(B) Port location	Porting specifications: Port size (1) 4(A), 2(B) Port size	Applicable solenoid valve	Type of connection		Applicable stations (3)	5-station weight (4) [g]	Addition per station (4) [g]
SS5Q14-□□-□	C8 (For ø8) Option Built-in silencer, direct exhaust	Side	C3 (For ø3.2) C4 (For ø4) C6 (For ø6) M5 (M5 thread)	**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		
		Top (2)	L3 (For ø3.2) L4 (For ø4) L6 (For ø6) L5 (M5 thread)		J kit: Flat ribbon cable PC wiring system compatible		1 to 8 stations	420	20
					C kit: Connector kit		1 to 24 stations	460	35

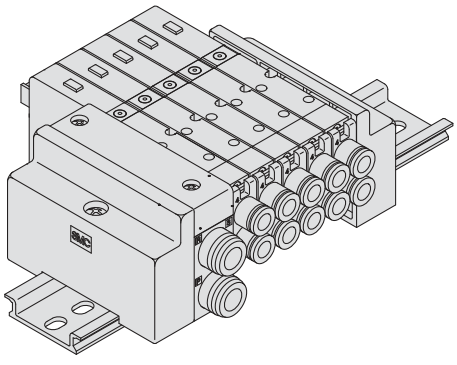
Note 1) One-touch fittings in inch sizes are also available. For details, refer to page 107.
Note 2) Can be changed to side ported configuration.
Note 3) An optional specification for special wiring is available to increase the maximum number of stations. Refer to page 105 for details.
Note 4) Except valves. For valve weight, refer to page 71.



F kit

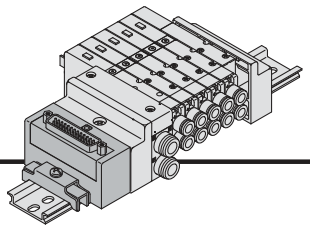


P kit **J kit**



C kit

F Kit (D-sub Connector Kit)

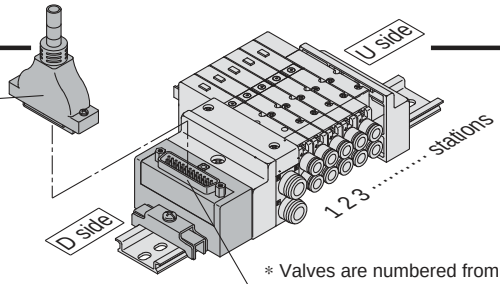


- **The D-sub connector reduces installation labour for electrical connections.**
- **Using the D-sub connector (25P), conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.**
- **Top or side receptacle position can be selected in accordance with the available mounting space.**

Manifold Specifications

Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P) , 3(R)	4(A) , 2(B)	
SQ1000	Side, Top	C8	C3, C4, C6, M5	12 stations (24 as a semi-standard)

D-sub connector (25 Pins)

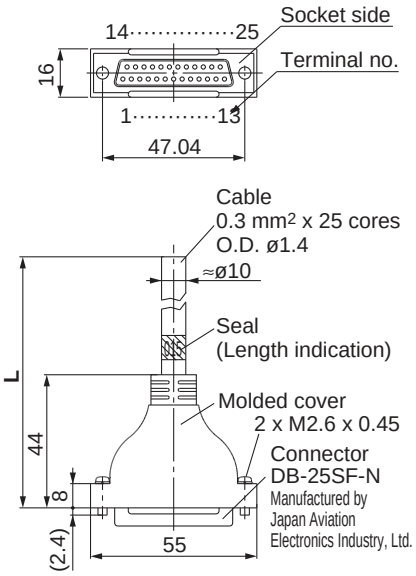


∗ Valves are numbered from the D side.

Cable assembly

AXT100-DS25- 015 / 030 / 050

(The D-sub connector cable assemblies can be ordered with manifolds. Refer to "How to Order Manifold.")



D-sub Connector Cable Assembly

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

∗ For other commercial connectors, use a 25 pins type with female connector conforming to MIL-C-24308.
∗ Cannot be used for movable wiring.
∗ Lengths other than the above are also available. Please contact SMC for details.

D-sub Connector Cable Assembly Terminal No.

Terminal number	Lead wire colour	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	Grey	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	Grey	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Grey	Red
24	Black	White
25	White	None

Electrical Characteristics

Item	Property
Conductor resistance Ω/km, 20°C	65 or less
Withstand voltage VAC, 1 min.	1000
Insulation resistance MΩ/km, 20°C	5 or more

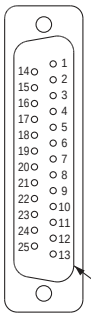
Note) The minimum bending inner radius of D-sub connector cable is 20 mm.

Connector manufacturers' example

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

Electrical Wiring Specifications

D-sub connector



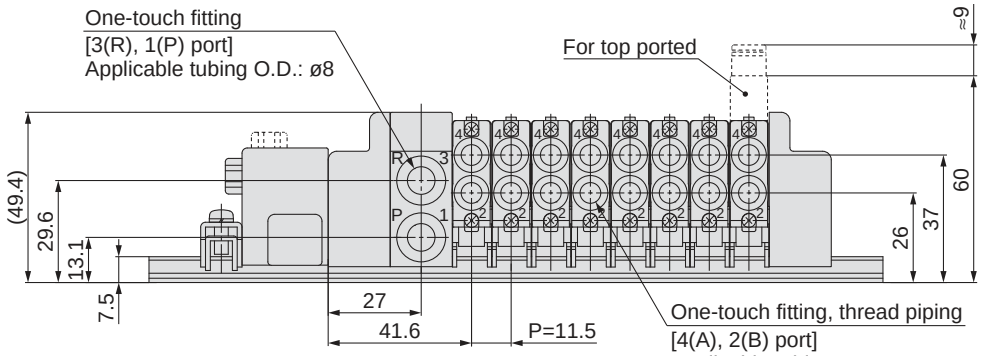
As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types.
Mixed single and double wiring is available as an option.
For details, refer to page 105.

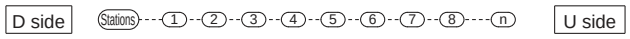
Connector terminal no.

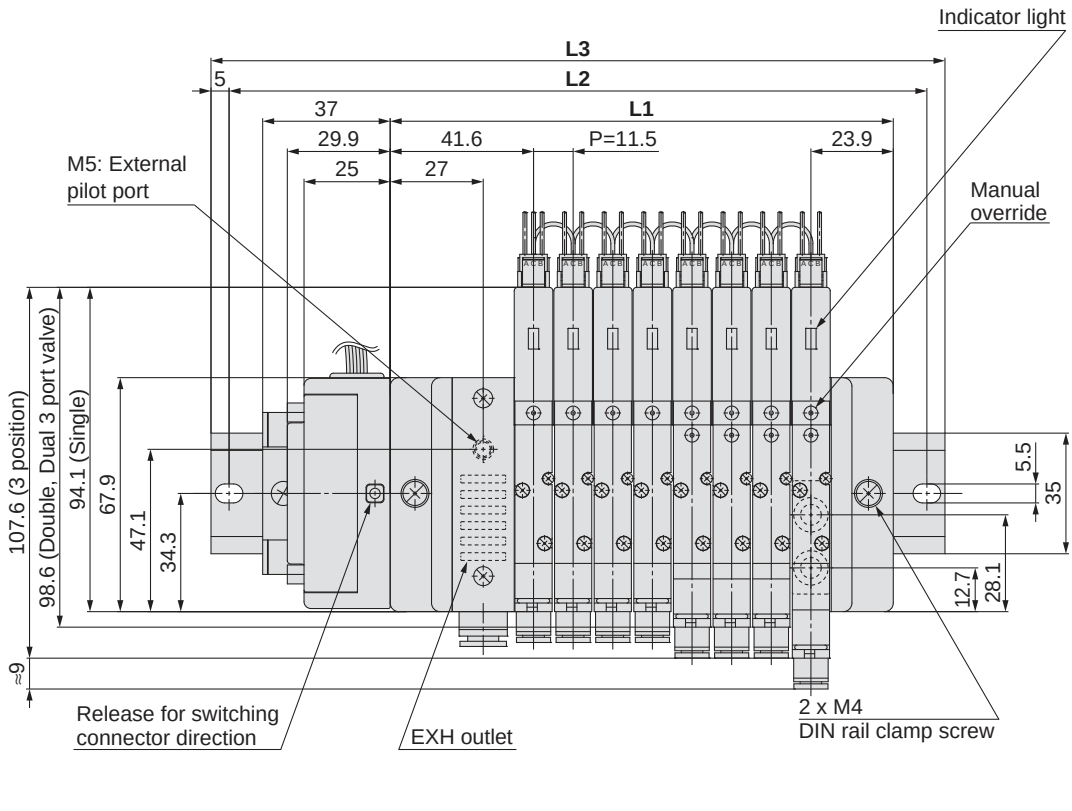
D-sub connector assembly wire colours (AXT100-DS25- 015 / 030 / 050)

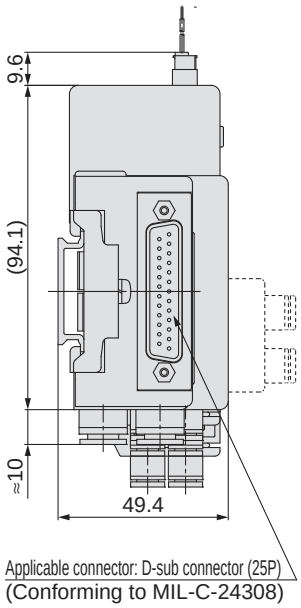
		Terminal no.	Polarity		Lead wire colour	Dot marking
1 station	SOL.a	1	(−)	(+)	Black	None
	SOL.b	14	(−)	(+)	Yellow	Black
2 stations	SOL.a	2	(−)	(+)	Brown	None
	SOL.b	15	(−)	(+)	Pink	Black
3 stations	SOL.a	3	(−)	(+)	Red	None
	SOL.b	16	(−)	(+)	Blue	White
4 stations	SOL.a	4	(−)	(+)	Orange	None
	SOL.b	17	(−)	(+)	Purple	None
5 stations	SOL.a	5	(−)	(+)	Yellow	None
	SOL.b	18	(−)	(+)	Grey	None
6 stations	SOL.a	6	(−)	(+)	Pink	None
	SOL.b	19	(−)	(+)	Orange	Black
7 stations	SOL.a	7	(−)	(+)	Blue	None
	SOL.b	20	(−)	(+)	Red	White
8 stations	SOL.a	8	(−)	(+)	Purple	White
	SOL.b	21	(−)	(+)	Brown	White
9 stations	SOL.a	9	(−)	(+)	Grey	Black
	SOL.b	22	(−)	(+)	Pink	Red
10 stations	SOL.a	10	(−)	(+)	White	Black
	SOL.b	23	(−)	(+)	Grey	Red
11 stations	SOL.a	11	(−)	(+)	White	Red
	SOL.b	24	(−)	(+)	Black	White
12 stations	SOL.a	12	(−)	(+)	Yellow	Red
	SOL.b	25	(−)	(+)	White	None
	COM.	13	(+)	(−)	Orange	Red
			Positive common specifications	Negative common specifications		

Note) When using the negative common specifications, use valves for negative common.







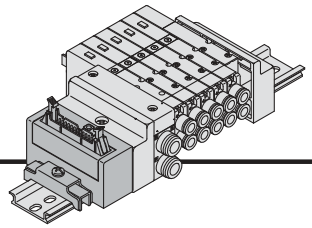


Dimensions [mm]

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 Connector)

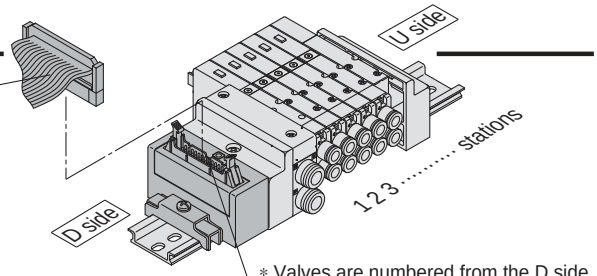


- **Simplification and labour savings for wiring work can be achieved by using a MIL type for the electrical connection.**
- **Using the connector for flat ribbon cable (26P, 20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.**
- **Top or side receptacle position can be selected in accordance with the available mounting space.**

Manifold Specifications

Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ1000	Side, Top	C8	C3, C4, C6, M5	12 stations (24 as a semi-standard)

Flat Ribbon Cable (26 Pins, 20 Pins)

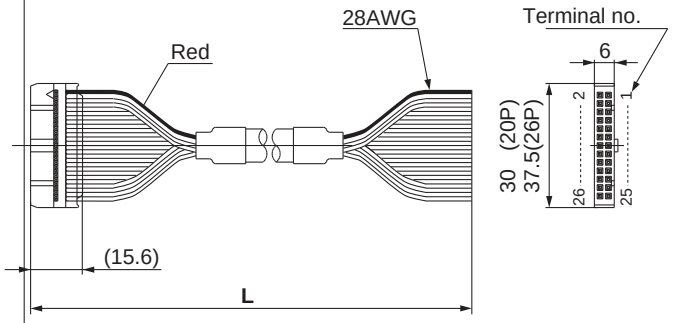


∗ Valves are numbered from the D side.

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 "How to Order manifold".)



Flat Ribbon Cable Connector Assembly

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

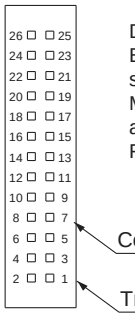
∗ For other commercial connectors, use a 26 pins or 20 pins with strain relief conforming to MIL-C-83503.
∗ Cannot be used for movable wiring.
∗ Lengths other than the above are also available. Please contact SMC for details.

Connector manufacturers' example

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

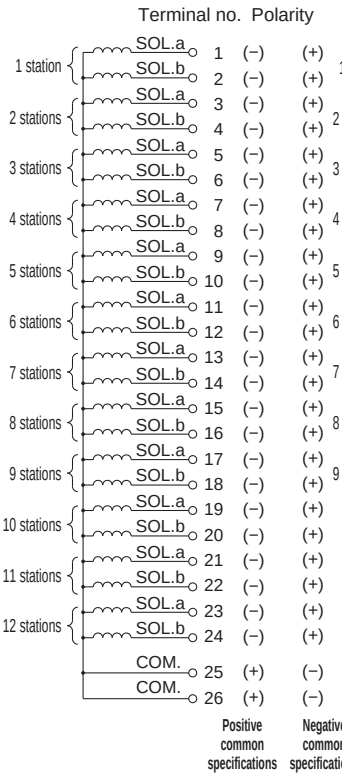
Electrical Wiring Specifications

Flat ribbon cable connector

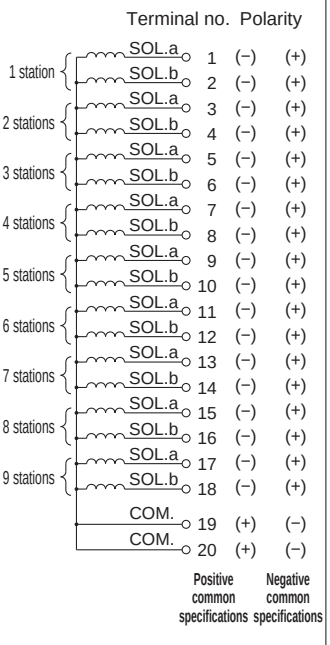


Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option.
For details, refer to page 105.

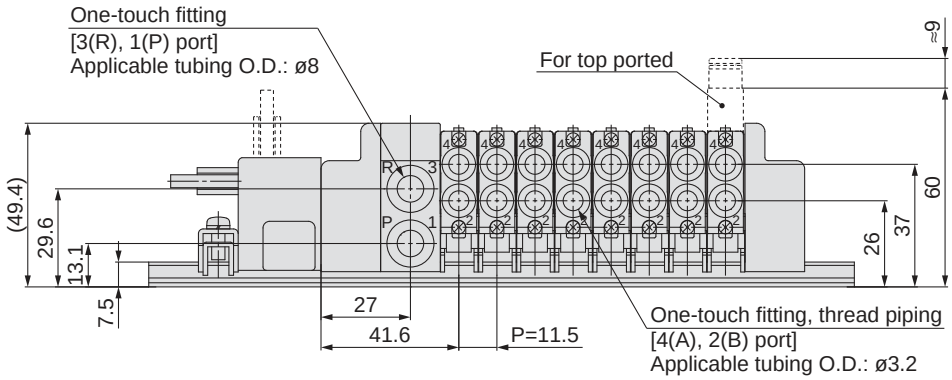
<26P>

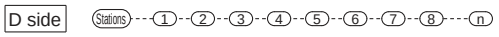


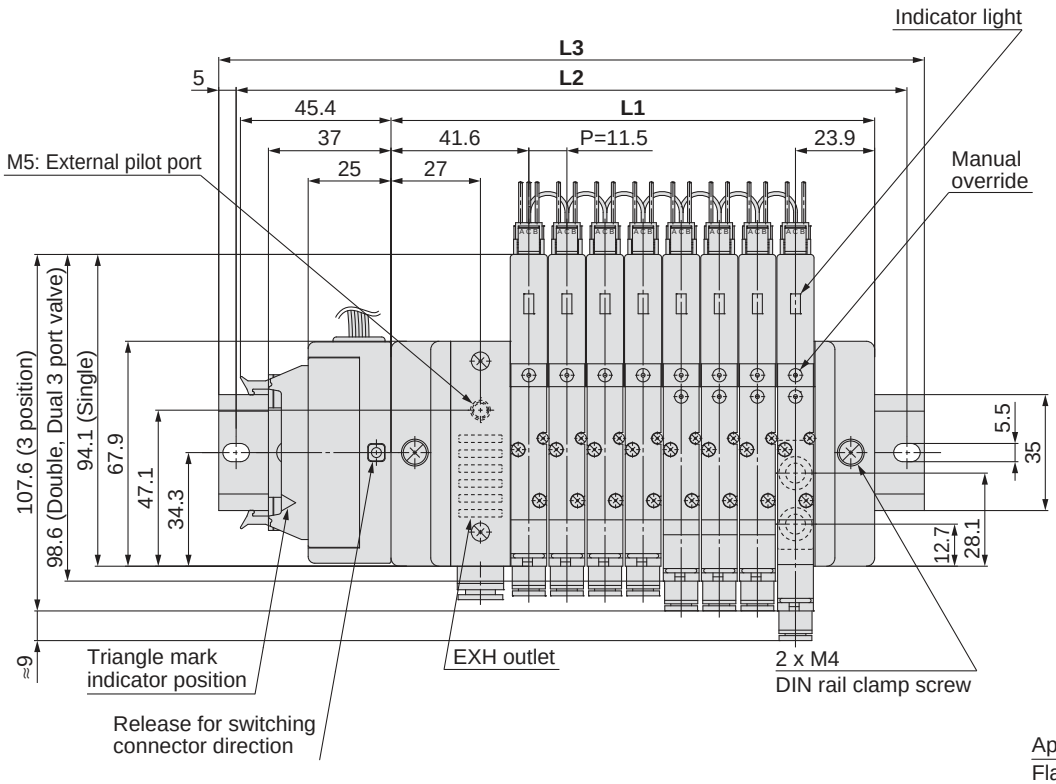
<20P>

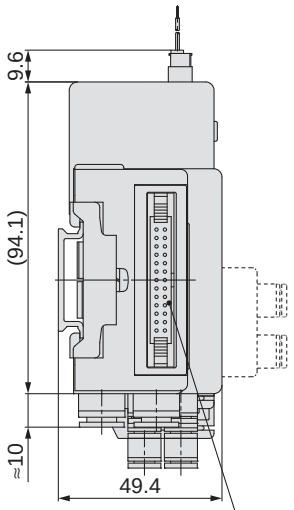


Note) When using the negative common specifications, use valves for negative common.









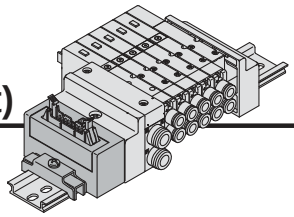
Applicable connector:
Flat ribbon cable connector (26P)
(Conforming to MIL-C-83503)

Dimensions [mm]

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

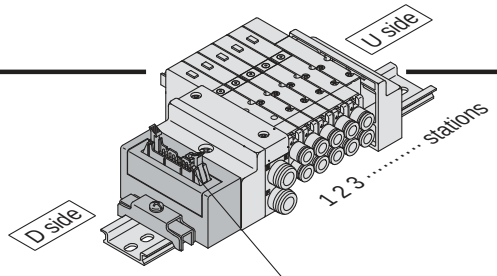
J Kit (PC Wiring System Compatible Flat Ribbon Cable Kit)



- **Compatible with PC wiring system.**
- **Using connector for flat ribbon cable (20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.**
- **Top or side receptacle position can be selected in accordance with the available mounting space.**

Manifold Specifications

Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ1000	Side, Top	C8	C3, C4, C6, M5	8 stations (16 as a semi-standard)

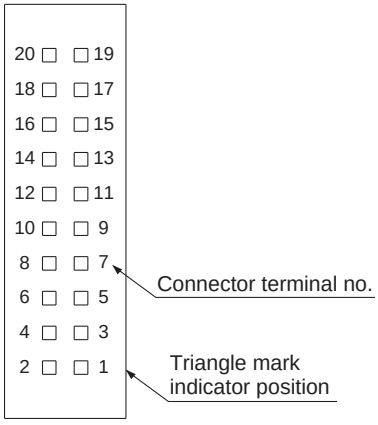


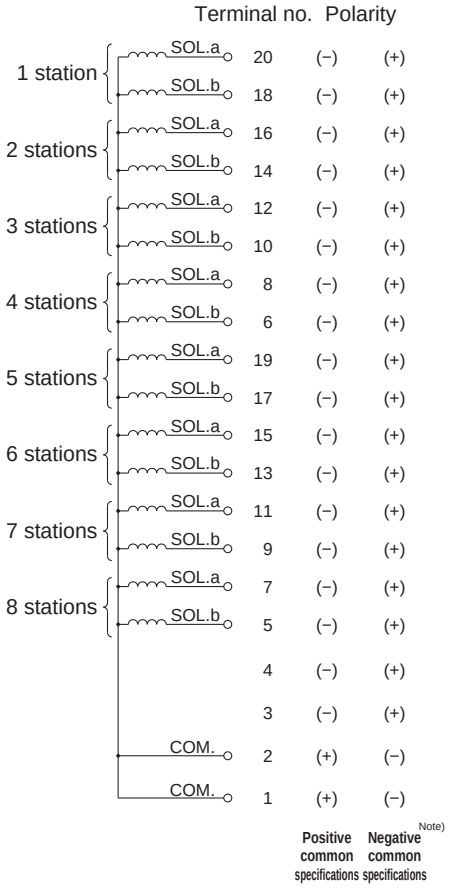
∗ Valves are numbered from the D side.

Electrical Wiring Specifications

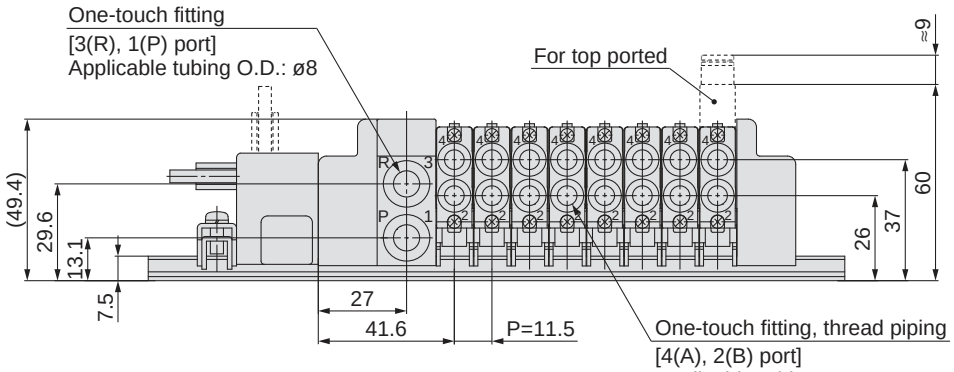
Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types.
Mixed single and double wiring is available as an option.
For details, refer to page 105.

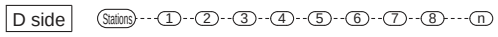
Flat ribbon cable connector

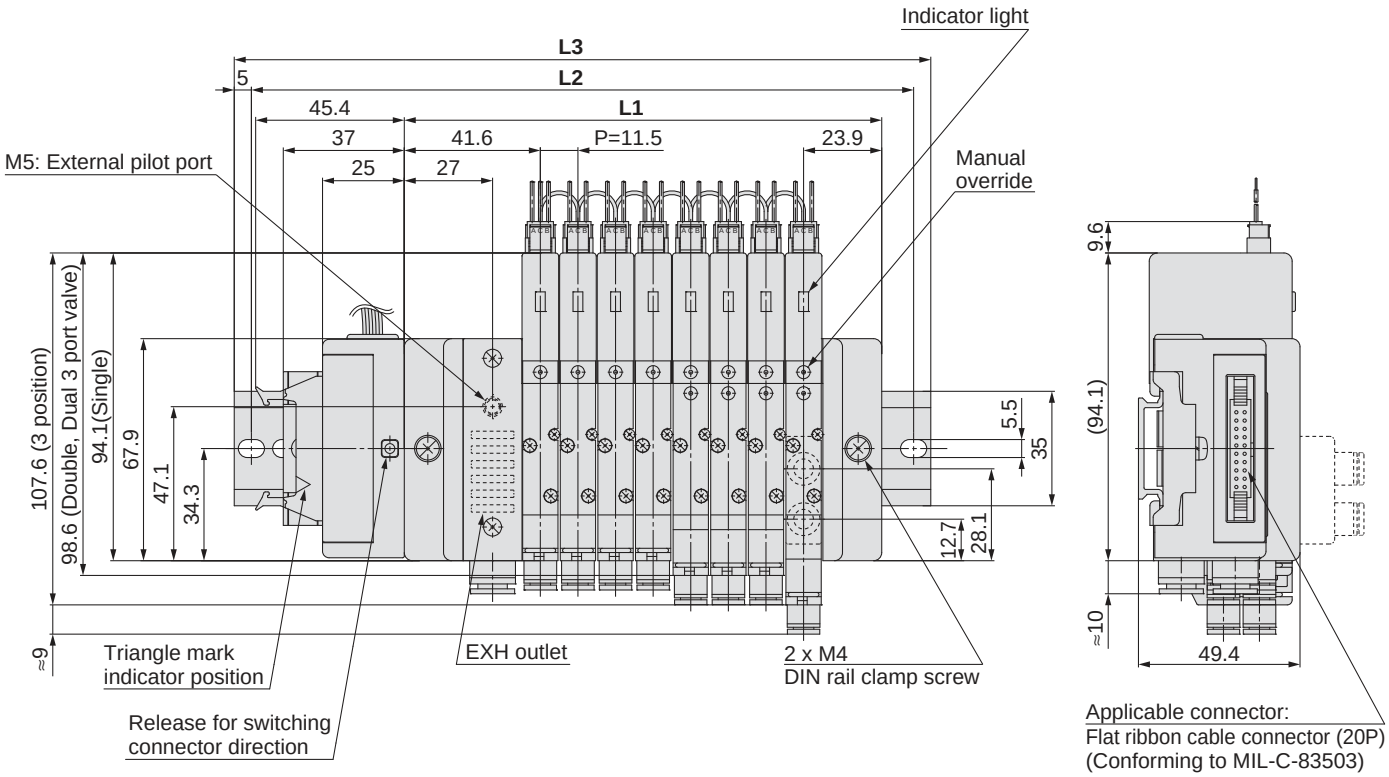




Note) When using the negative common specifications, use valves for negative common.
For details about the PC wiring system, refer to the PCW series catalogue (CAT.E02-20) separately.





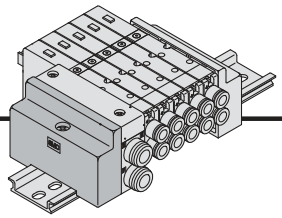


Dimensions [mm]

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

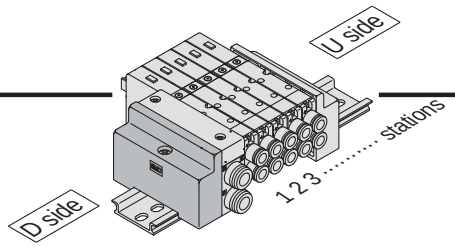
C Kit (Connector)



● **Standard with lead wires connected to each valve individually.**

Manifold Specifications

Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ1000	Side, Top	C8	C3, C4, C6, M5	24 stations

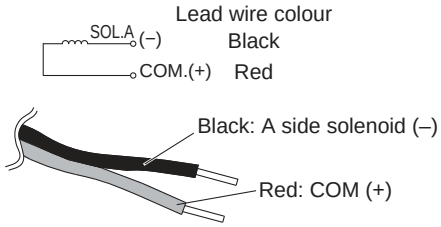


∗ Valves are numbered from the D side.

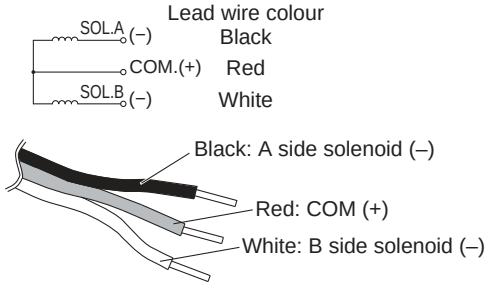
● Wiring Specifications: Positive Common Specifications

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

Single solenoid



Double solenoid



● **Plug connector lead wire length**

The lead wire length of the valves with lead wire is 300 mm. When ordering a lead wire length of 600 mm or longer, list the part numbers for the valve without connector and the connector assembly.

Example) For lead wire length of 1000 mm: SQ1140-5LO1-C6····3 pcs.
AXT661-14AL-10····3 pcs.

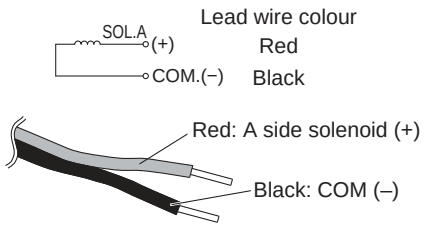
Connector Assembly Part No.

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

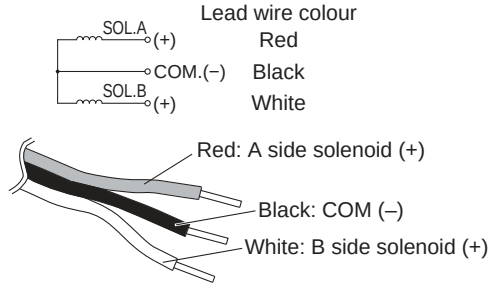
● Wiring Specifications: Negative Common Specifications (Semi-standard)

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

Single solenoid



Double solenoid



● **Plug connector lead wire length**

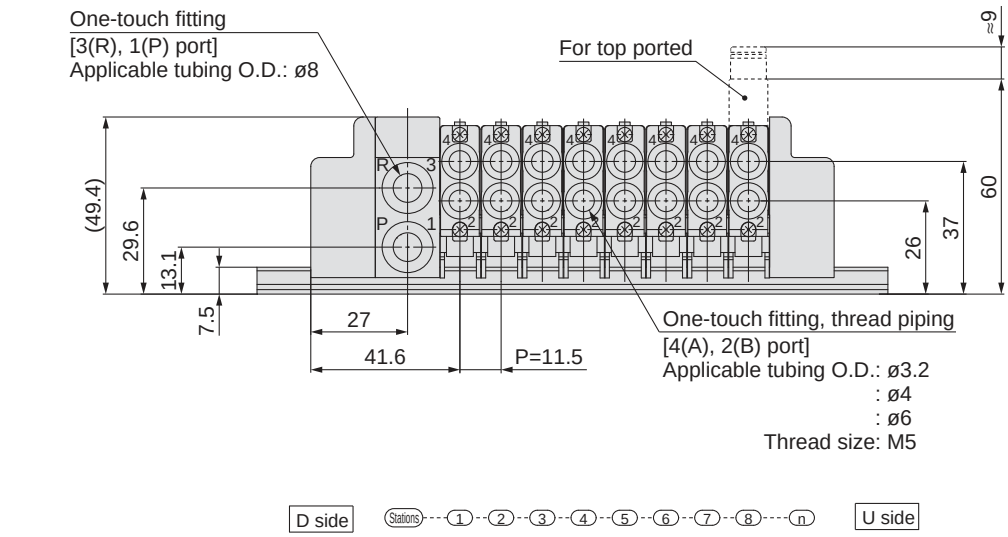
The lead wire length of the valves with lead wire is 300 mm. When ordering a lead wire length of 600 mm or longer, list the part numbers for the valve without connector and the connector assembly.

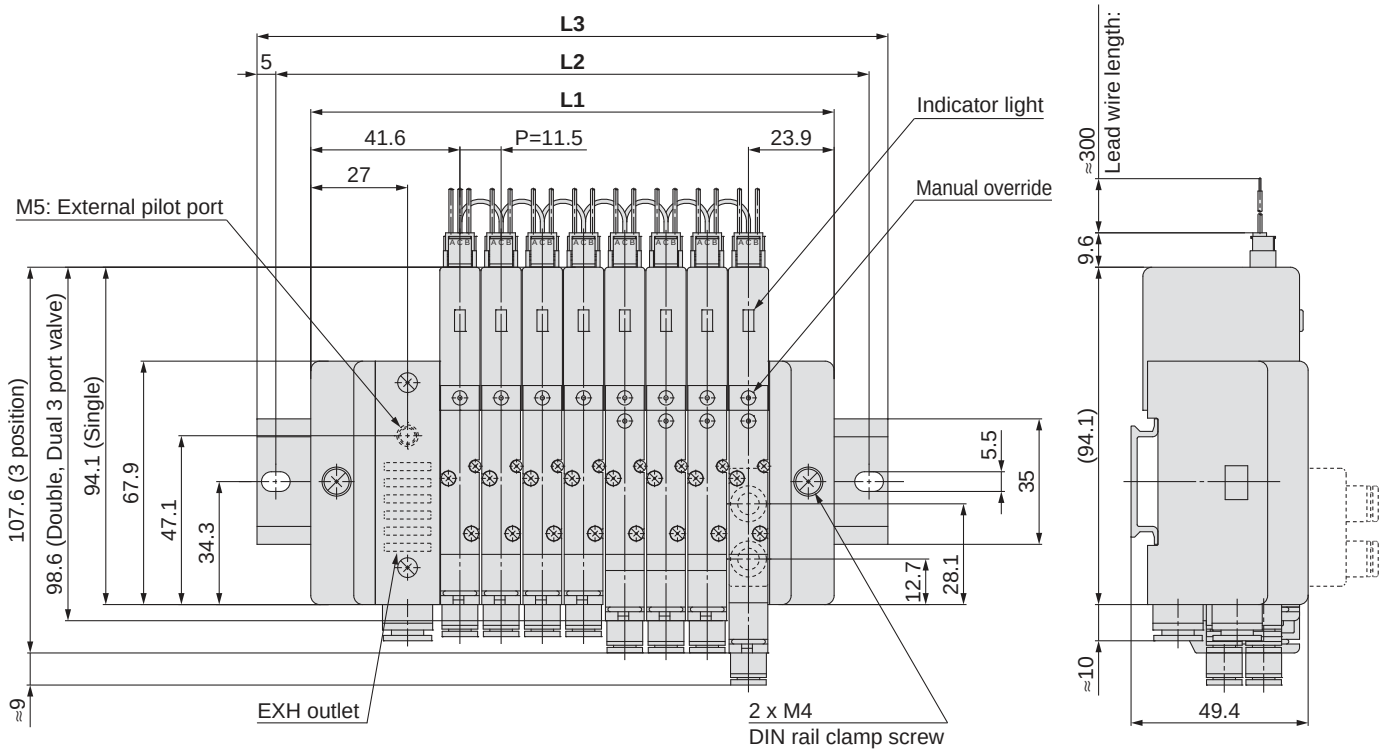
Example) For lead wire length of 1000 mm: SQ1140-5LO1-C6····3 pcs.
AXT661-14ANL-10····3 pcs.

Connector Assembly Part No.

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

Note) When using the negative common specifications, use valves for negative common.





Dimensions [mm]

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

Plug Lead Unit

Series SQ2000

How to Order Manifold

SS5Q24 − 08 FD2 − D □ − □ − Q

Stations

01	1 station
⋮	⋮
16	16 stations

Refer to "Electrical entry" for details.

CE compliant

1(P), 3(R) port size

—	1(P), 3(R) port, One-touch fittings for ø10
00T	1(P), 3(R) port, One-touch fittings for ø3/8"

Manifold mounting

D	DIN rail mounting style
E Note)	Direct mounting style

Note) Type E is only available with a C kit.
Refer to page 106 for details.

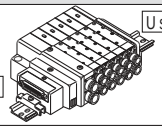
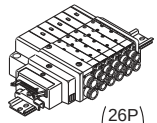
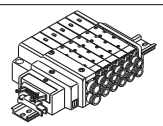
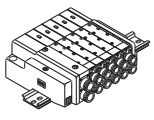
Option

—	None
02 to 16 (1)	DIN rail length specified
B	Back pressure check valve
K (3)	Special wiring specifications (Except double wiring)
N	With name plate (Side ported only)
R	External pilot specifications
S	Built-in silencer, direct exhaust

Note 1) Specify DIN rail length with "D□ at the end. (Enter the number of stations inside □.)
The number of stations that may be displayed is longer than the manifold number of stations. Example: -D09
Note 2) When "-B" is selected, a back pressure check valve is included in all stations of the manifold. If the back pressure check valve is used only for the station that need it, then specify the station location in the manifold specification. ("-B" is not necessary)
Note 3) Specify "-K" for wiring specification for cases below. (Except C kit)
- All single wiring
- Single and double mixed wiring.
- When there are stations which do not require wiring (e.g. single SUP spacer), specify the wiring specification in the manifold specification so that the number of solenoids is the maximum number of solenoids or less. (Standard wiring specification is double wiring)

Note 4) For specifying two or more options, enter them alphabetically. Example: -BKN
∗ Refer to pages 100 to 107 for manifold option parts.

Electrical entry

Kit type		Lead wire connector location	Cable specifications	Stations	Max. number of solenoids for special wiring specifications	Max. number of solenoids for special wiring specifications (2)
F kit D-sub Connector kit 	**FD0**	D side	D-sub connector (25P) kit, without cable	1 to 12 stations (Double wiring)	16 stations	24
	FD1		D-sub connector (25P) kit, with 1.5 m cable			
	FD2		D-sub connector (25P) kit, with 3.0 m cable			
	FD3		D-sub connector (25P) kit, with 5.0 m cable			
P kit Flat ribbon cable connector kit (26P, 20P) 	**PD0**	D side (1)	Flat ribbon cable (26P) kit, without cable	1 to 12 stations (Double wiring)	16 stations	24
	PD1		Flat ribbon cable (26P) kit, with 1.5 m cable			
	PD2		Flat ribbon cable (26P) kit, with 3.0 m cable			
	PD3		Flat ribbon cable (26P) kit, with 5.0 m cable			
	PDC		Flat ribbon cable (20P) kit, without cable	1 to 9 stations (Double wiring)		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 (Double wiring)	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) Specify the number of the solenoid so that the maximum station number is not exceeded.(The number of solenoids are counted as: 1 for single solenoids and 2 for type 3P and 4P double solenoids.)
∗ Refer to page 116 for manifold spare parts.

How to Order Valves

SQ2 1 4 0 □ – 5 L □ 1 – C6 – □ – □ – Q

Seal

0	Metal seal
1	Rubber seal

Type of actuation

1	2 position single (A)4 2(B) (R1)5 1 3(R2) (P)
2	2 position double (Double solenoid) (1) (A)4 2(B) (R1)5 1 3(R2) (P) Metal seal (A)4 2(B) (R1)5 1 3(R2) (P) Rubber seal
3	3 position closed centre (A)4 2(B) (R1)5 1 3(R2) (P)
4	3 position exhaust centre (A)4 2(B) (R1)5 1 3(R2) (P)
5	3 position pressure centre (A)4 2(B) (R1)5 1 3(R2) (P)
A (2)	4 position dual 3 port valve 4(A) 2(B) 5(R1) 1(P) 3(R2)
B (2)	4 position dual 3 port valve 4(A) 2(B) 5(R1) 1(P) 3(R2)
C (2)	4 position dual 3 port valve 4(A) 2(B) 5(R1) 1(P) 3(R2)

Note 1) For double solenoid specifications, the "function" symbol is "D".
Note 2) Only rubber seal types are applicable.

Function

Symbol	Specifications
—	Standard type (0.4 W)
B	Quick response type (0.95 W)
D (1)	2 position double (Double solenoid specifications)
N	Negative common
R (2)	External pilot specifications

Note 1) "D" is specified for 2 position double.
Note 2) Except dual 3 port valves.
Note 3) When two or more symbols are specified, indicate them alphabetically.

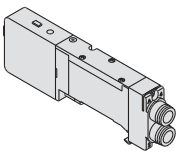
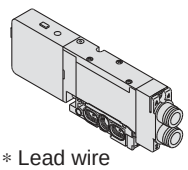
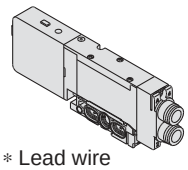
Rated voltage

5	24 VDC
6	12 VDC

Note) Light/surge voltage suppressor is built-in.

CE compliant

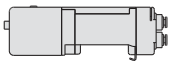
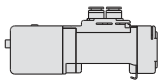
With/Without manifold block

—	M	MB
Without manifold block	With manifold block	With manifold block, 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

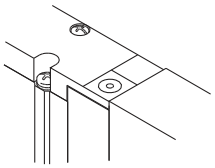
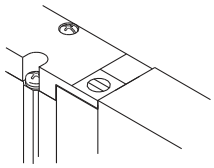
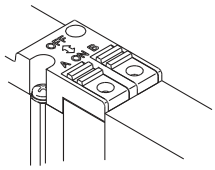
—	None
A	Port 4(A)
B	Port 2(B)

Cylinder port

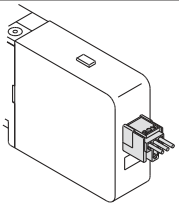
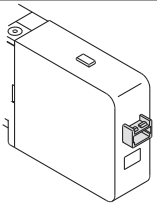
Symbol	Port size	Port location	
C4	One-touch fitting for ø4	Side ported	
C6	One-touch fitting for ø6		
C8	One-touch fitting for ø8		
L4	One-touch fitting for ø4	Top ported(1)	
L6	One-touch fitting for ø6		
L8	One-touch fitting for ø8		

Note 1) Can be changed to side ported configuration.
Note 2) Refer to page 107 for the inch-size One-touch fittings.

Manual override

—	B	D
Non-locking push type (Tool required)	Locking type (Tool required)	Slide locking type (Manual type) ∗ Only side ported type applicable
		

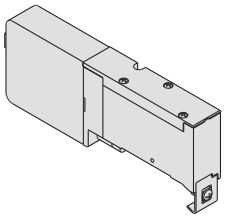
Electrical entry

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

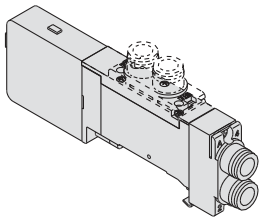
Note) Indicate "LO" when ordering centralized wiring type manifolds, F, P, and J kits, since the lead wire will be attached to the manifold side.

Manifold Options

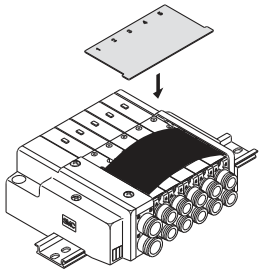
Blanking plate
SSQ2000-10A-4 P.100



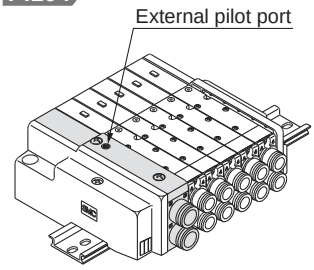
Individual SUP/EXH spacer
SSQ2000-PR1-4-$^{C8}_{L8}$ P.101



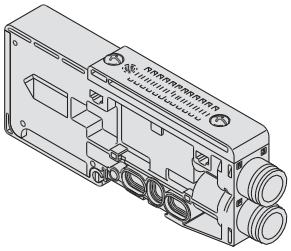
Name plate (-N)
SSQ2000-N3-n P.103



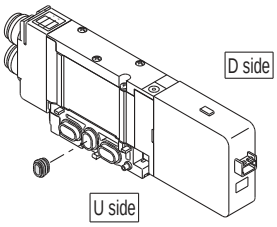
External pilot specifications (-R)
P.104



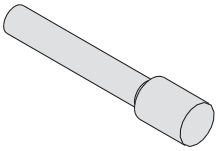
SUP/EXH block
SSQ2000-PR-3-C10(-S) P.100



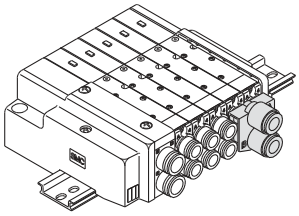
SUP block plate
SSQ1000-B-R P.102



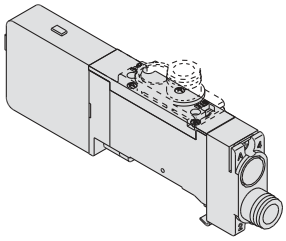
Blanking plug
KQ2P-04/06/08/10 P.103



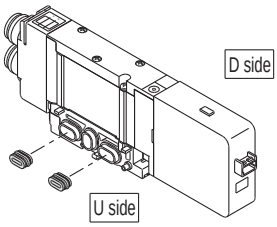
Dual flow fitting
SSQ2000-52A-$^{C10}_{N11}$ P.104



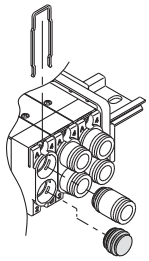
Individual SUP spacer
SSQ2000-P-4-$^{C8}_{L8}$ P.100



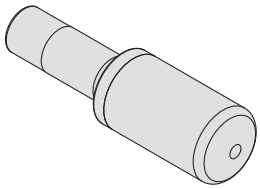
EXH block plate
SSQ2000-B-R P.102



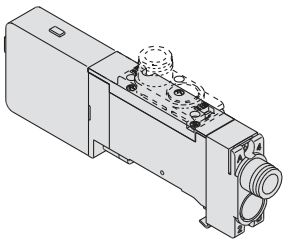
Port plug
VVQZ2000-CP P.103



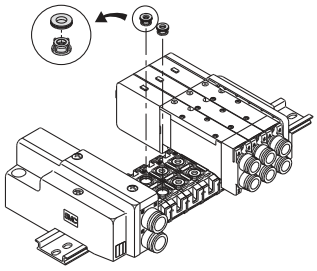
Silencer
(For EXH port) P.104



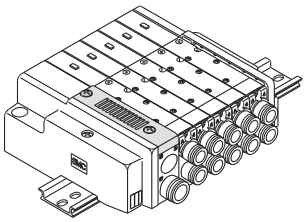
Individual EXH spacer
SSQ2000-R-4-$^{C8}_{L8}$ P.101



Back pressure check valve (-B)
SSQ2000-BP P.102

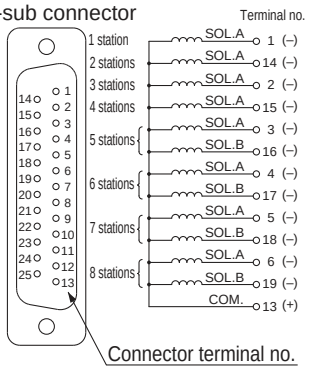


Built-in silencer,
direct exhaust (-S) P.103



Special wiring specifications (-K)
P.105

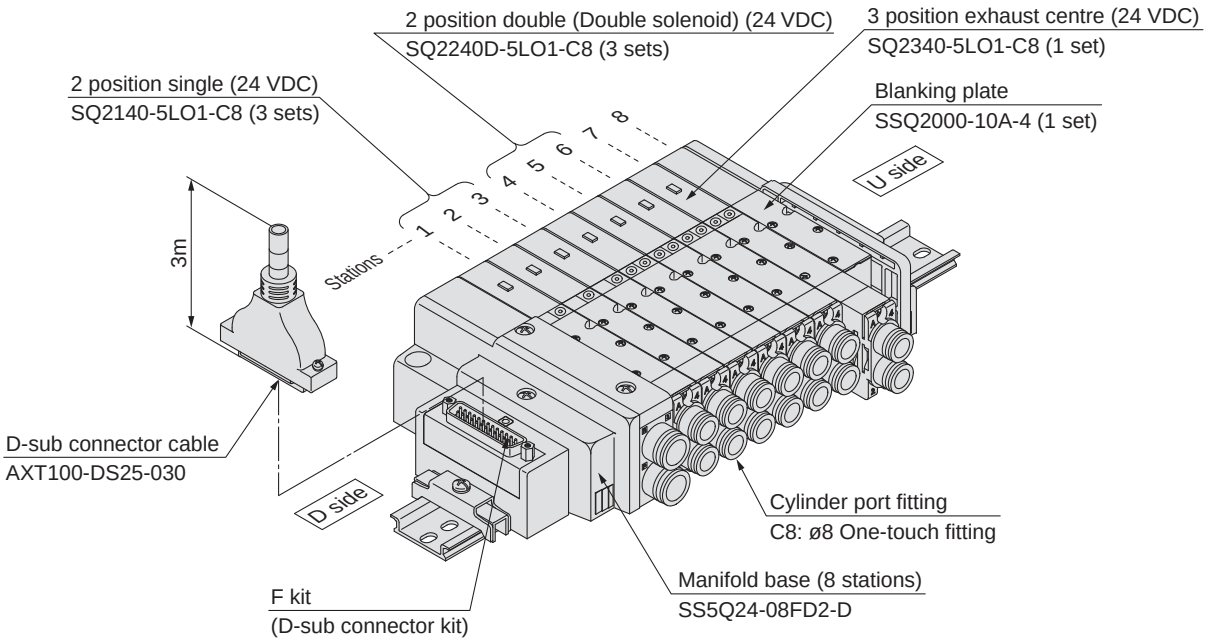
D-sub connector



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

How to Order Manifold Assembly

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



SS5Q24-08FD2-D ·····1 set (F kit 8-station manifold base)
* **SQ2140-5LO1-C8 ·····3 sets (2 position single)**
* **SQ2240D-5LO1-C8 ···3 sets (2 position double)**
* **SQ2340-5LO1-C8 ·····1 set (3 position exhaust centre)**
* **SSQ2000-10A-4 ·····1 set (Blanking plate)**

The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

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 the manifold specification sheet.

Valve Specifications

Model

Series	Type of actuation		Seal	Model	Flow characteristic (1)								Response time [ms] (2)		Weight [g]
					1 → 4/2 (P → A/B)				4/2 → 5/3 (A/B → R1/R2)				Standard (0.4 W)	Quick response (0.95 W)	
					C [dm³/(s·bar)]	b	Cv	Q [L/min] (ANR) Note 3)	C [dm³/(s·bar)]	b	Cv	Q [L/min] (ANR) Note 3)			
SQ1000	2 position	Single	Metal seal	SQ2140	2.2	0.17	0.51	518	2.4	0.14	0.57	556	35 or less	20 or less	145
			Rubber seal	SQ2141	2.3	0.17	0.51	542	3.1	0.18	0.71	734	31 or less	24 or less	140
		Double	Metal seal	SQ2240D	2.2	0.17	0.51	518	2.4	0.14	0.57	556	20 or less	15 or less	160
			Rubber seal	SQ2241D	2.3	0.17	0.51	542	3.1	0.18	0.71	734	26 or less	20 or less	155
	3 position	Closed centre	Metal seal	SQ2340	1.9	0.17	0.46	448	2.1	0.15	0.47	489	56 or less	37 or less	180
			Rubber seal	SQ2341	1.9	0.17	0.46	448	1.8	0.29	0.47	455	44 or less	34 or less	175
		Exhaust centre	Metal seal	SQ2440	1.9	0.17	0.46	448	2.4	0.14	0.55	556	56 or less	37 or less	180
			Rubber seal	SQ2441	1.9	0.17	0.46	448	3.1	0.14	0.65	719	44 or less	34 or less	175
		Pressure centre	Metal seal	SQ2540	2.3	0.17	0.51	542	2.1	0.18	0.47	497	56 or less	37 or less	180
			Rubber seal	SQ2541	2.5	0.17	0.56	589	1.8	0.30	0.47	458	44 or less	34 or less	175
	4 position	Dual 3 port valve	Rubber seal	SQ2$^{A}_{B}_{C}$41	1.5	0.17	0.40	353	1.5	0.17	0.40	353	34 or less	19 or less	155

Note 1) Values for the cylinder port size of C6, CYL → Values of EXH. Flow characteristics of 2 → 3 (B → R2) delines about 30% of 4 → 5 (A → R1).
Note 2) Based on JIS B 8375-1981. (Values with a supply pressure of 0.5 MPa and light/surge voltage suppressor. Values fluctuate depending on the pressure and air quality.
Note 3) These valves have been calculated according to ISO6358 and indicate the flow rate under standard conditions with an inlet pressure of 0.6 MPa (relative pressure) and a pressure drop of 0.1 MPa.

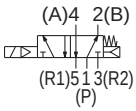
Specifications

Valve specifications	Valve construction		Metal seal	Rubber seal
	Fluid		Air/Inert gas	
	Maximum operating pressure		0.7 MPa	
	Min. operating pressure	Single	0.1 MPa	0.15 MPa
		Double (Double solenoid)	0.1 MPa	0.1 MPa
		3 position	0.1 MPa	0.2 MPa
		4 position	—	0.15 MPa
	Ambient and fluid temperature		–10 to 50°C (1)	
	Lubrication		Not required	
	Pilot valve manual override		Push type (Tool required)/Locking type (Tool required) Slide locking type (Manual type)	
	Vibration/Impact resistance (2)		30/150 m/s²	
	Protection structure		Dust tight	
Solenoid specifications	Coil rated voltage		12 VDC, 24 VDC	
	Allowable voltage fluctuation		±10% of rated voltage	
	Coil insulation type		Equivalent to class B	
	Power consumption (Current)	24 VDC	0.4 W DC (17 mA), 0.95 W DC (40 mA) (3)	
		12 VDC	0.4 W DC (34 mA), 0.95 W DC (80 mA) (3)	

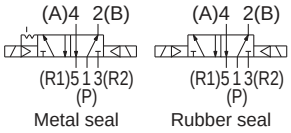
Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)
Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and deenergized states every once for each condition.
Note 3) Value for quick response type.

JIS Symbol

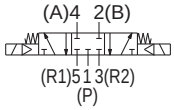
2 position single



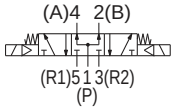
2 position double (Double solenoid)



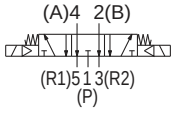
3 position closed centre



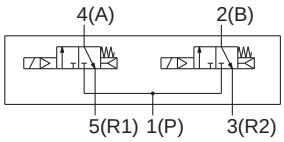
3 position pressure centre



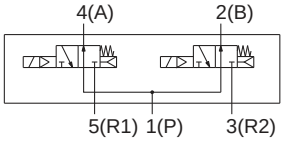
3 position exhaust centre



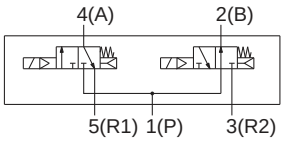
4 position dual 3 port valve (A)



4 position dual 3 port valve (B)



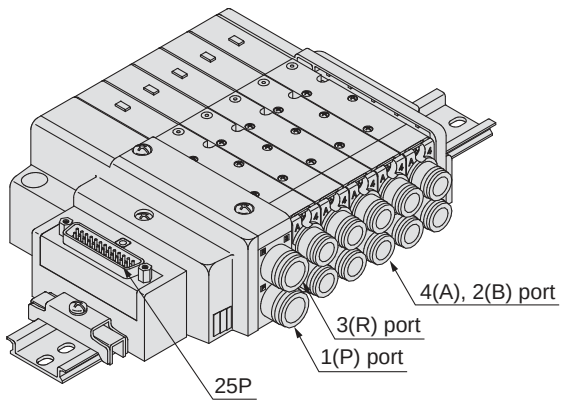
4 position dual 3 port valve (C)



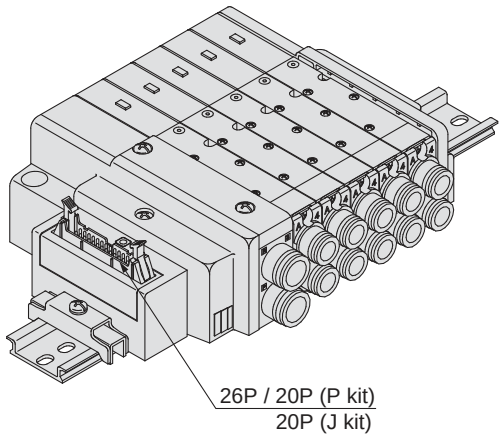
Manifold Specifications

Base model	Porting specifications: Port size (1) 1(P), 3(R)	Porting specifications: Port size (1) 4(A), 2(B) Port location	Porting specifications: Port size (1) 4(A), 2(B) Port size	Applicable solenoid valve	Type of connection		Applicable stations (3)	5-station weight (4) [g]	Addition per station (4) [g]
SS5Q24-□□-□	C10 (For ø10) Option Built-in silencer, direct exhaust	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		
		Top (2)	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 16 stations	620	50

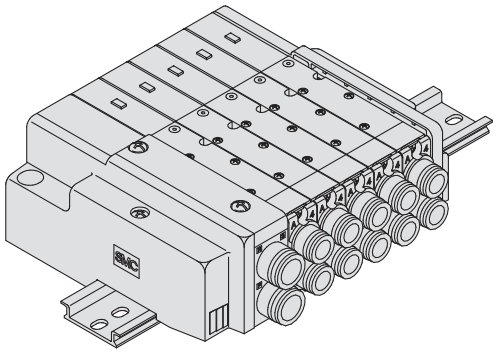
Note 1) One-touch fittings in inch sizes are also available. For details, refer to page 107.
Note 2) Can be changed to side ported configuration.
Note 3) An optional specification for special wiring is available to increase the maximum number of stations. Refer to page 105 for details.
Note 4) Except valves. For valve weight, refer to page 85.



F kit

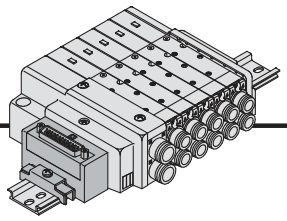


P kit **J kit**



C kit

F Kit (D-sub Connector Kit)

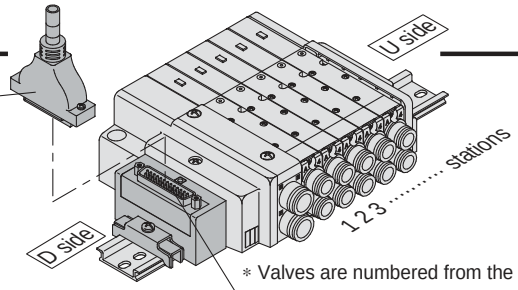


- **The D-sub connector reduces installation labour for electrical connections.**
- **Using the D-sub connector (25P), conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.**
- **Top or side receptacle position can be selected in accordance with the available mounting space.**

Manifold specifications

Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ2000	Side, Top	C10	C4, C6, C8	12 stations (16 as a semi-standard)

D-sub Connector (25 Pins)

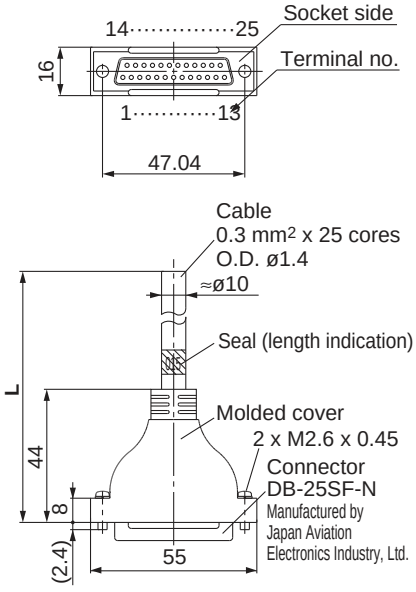


∗ Valves are numbered from the D side.

Cable assembly

AXT100-DS25- 015 / 030 / 050

(The D-sub connector cable assemblies can be ordered with manifolds. Refer to "How to Order Manifold.")



D-sub Connector Cable Assembly

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

∗ For other commercial connectors, use a 25 pins type with female connector conforming to MIL-C-24308.
∗ Cannot be used for movable wiring.
∗ Lengths other than the above are also available. Please contact SMC for details.

D-sub Connector Cable Assembly Terminal No.

Terminal number	Lead wire colour	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	Grey	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	Grey	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Grey	Red
24	Black	White
25	White	None

Electrical Characteristics

Item	Property
Conductor resistance Ω/km, 20°C	65 or less
Withstand voltage VAC, 1 min.	1000
Insulation resistance MΩ/km, 20°C	5 or more

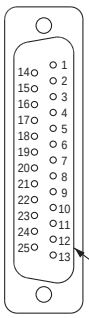
Note) The minimum bending inner radius of D-sub connector cable is 20 mm.

Connector manufacturers' example

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

Electrical Wiring Specifications

D-sub connector



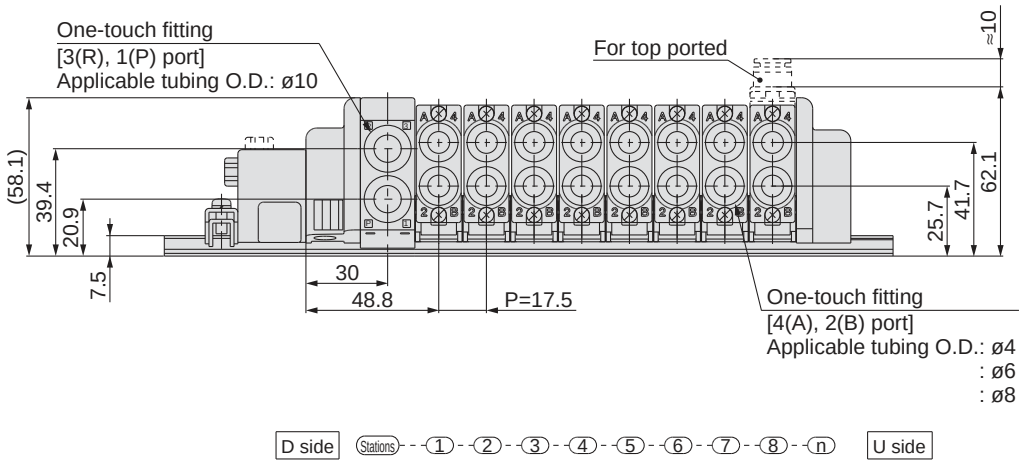
As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option.
For details, refer to page 105.

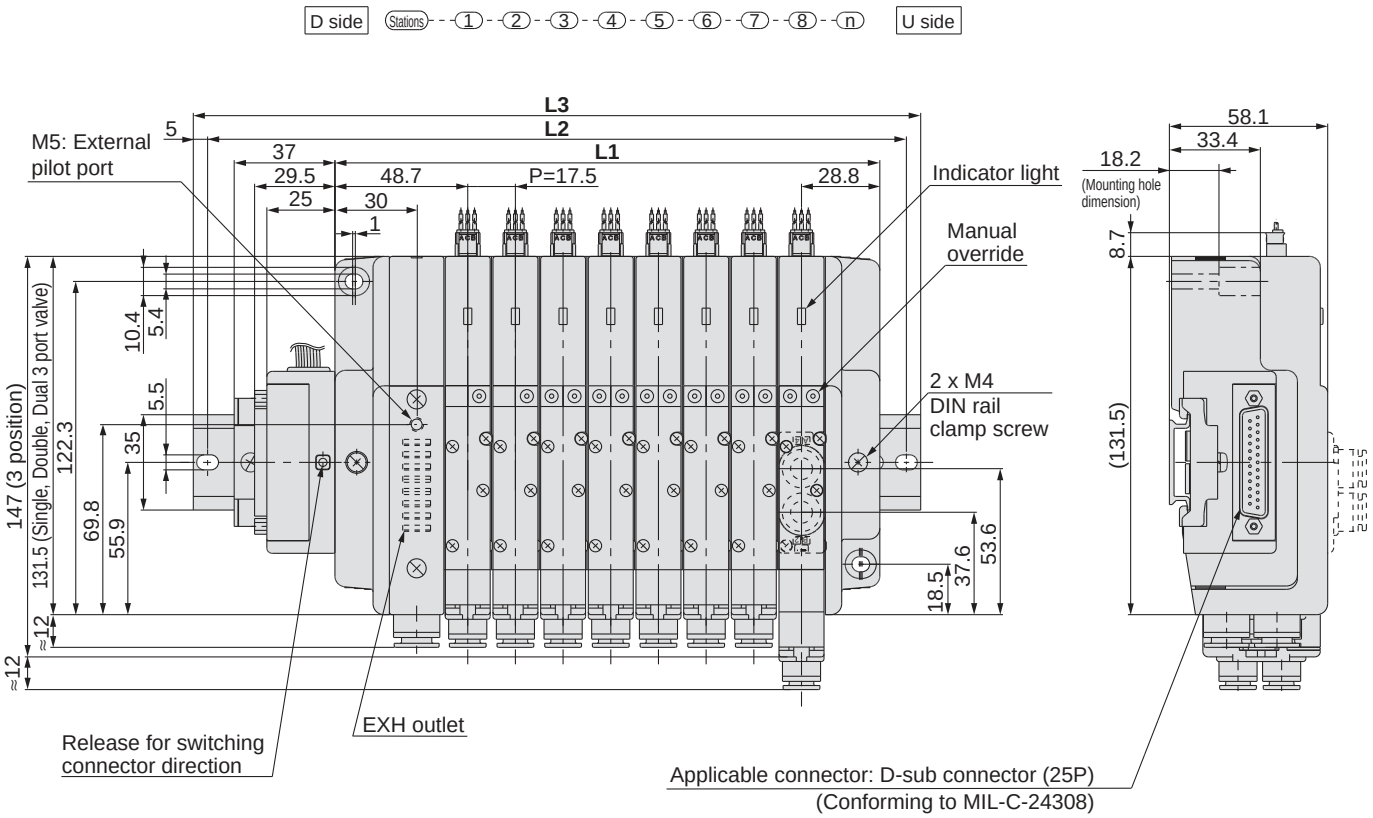
Connector terminal no.

D-sub connector assembly wire colours (AXT100-DS25- 015 / 030 / 050**)**

		Terminal no.	Polarity		Lead wire colour	Dot marking
1 station	SOL.a	1	(−)	(+)	Black	None
	SOL.b	14	(−)	(+)	Yellow	Black
2 stations	SOL.a	2	(−)	(+)	Brown	None
	SOL.b	15	(−)	(+)	Pink	Black
3 stations	SOL.a	3	(−)	(+)	Red	None
	SOL.b	16	(−)	(+)	Blue	White
4 stations	SOL.a	4	(−)	(+)	Orange	None
	SOL.b	17	(−)	(+)	Purple	None
5 stations	SOL.a	5	(−)	(+)	Yellow	None
	SOL.b	18	(−)	(+)	Grey	None
6 stations	SOL.a	6	(−)	(+)	Pink	None
	SOL.b	19	(−)	(+)	Orange	Black
7 stations	SOL.a	7	(−)	(+)	Blue	None
	SOL.b	20	(−)	(+)	Red	White
8 stations	SOL.a	8	(−)	(+)	Purple	White
	SOL.b	21	(−)	(+)	Brown	White
9 stations	SOL.a	9	(−)	(+)	Grey	Black
	SOL.b	22	(−)	(+)	Pink	Red
10 stations	SOL.a	10	(−)	(+)	White	Black
	SOL.b	23	(−)	(+)	Grey	Red
11 stations	SOL.a	11	(−)	(+)	White	Red
	SOL.b	24	(−)	(+)	Black	White
12 stations	SOL.a	12	(−)	(+)	Yellow	Red
	SOL.b	25	(−)	(+)	White	None
	COM.	13	(+)	(−)	Orange	Red
			Positive common specifications	Negative common specifications		

Note) When using the negative common specifications, use valves for negative common.



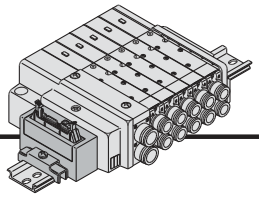


Dimensions [mm]

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 Connector)



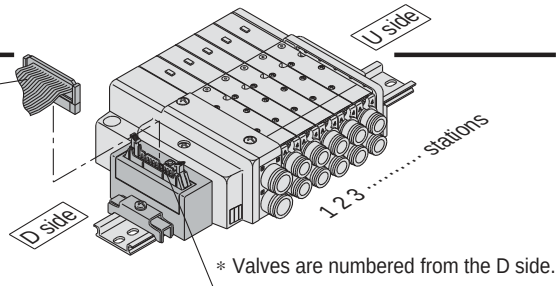
- **Simplification and labour savings for wiring work can be achieved by using a MIL type for the electrical connection.**
- **Using the connector for flat ribbon cable (26P, 20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.**
- **Top or side receptacle position can be selected in accordance with the available mounting space.**

Manifold Specifications

Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ2000	Side, Top	C10	C4, C6, C8	12 stations (16 as a semi-standard)

Flat Ribbon Cable (26 Pins, 20 Pins)

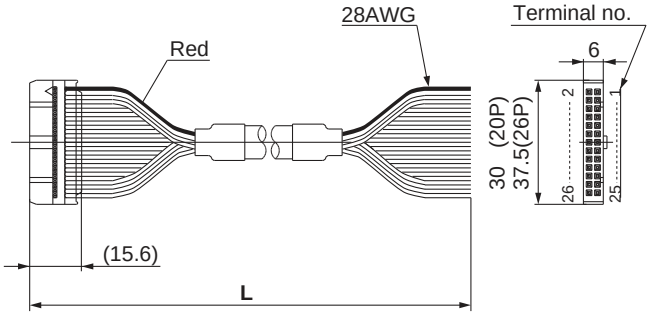
Cable assembly



∗ Valves are numbered from the D side.

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 "How to Order manifold".



Flat Ribbon Cable Connector Assembly

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

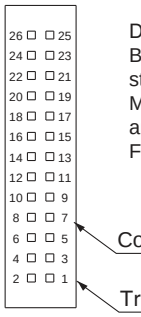
∗ For other commercial connectors, use a 26 pins or 20 pins with strain relief conforming to MIL-C-83503.
∗ Cannot be used for movable wiring.
∗ Lengths other than the above are also available. Please contact SMC for details.

Connector manufacturers' example

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

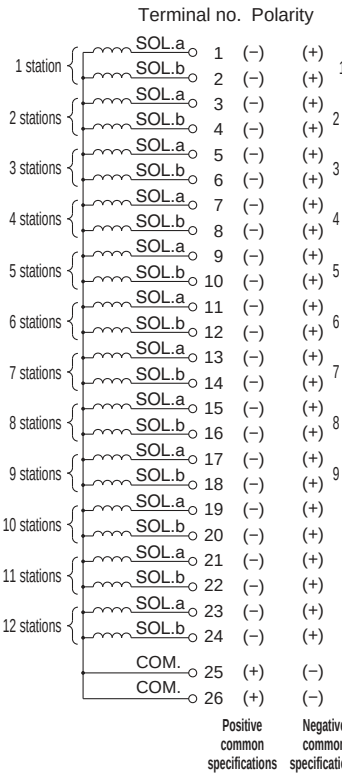
Electrical Wiring Specifications

Flat ribbon cable connector

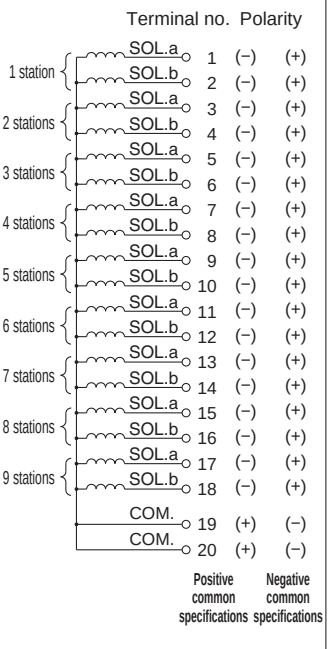


Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option.
For details, refer to page 105.

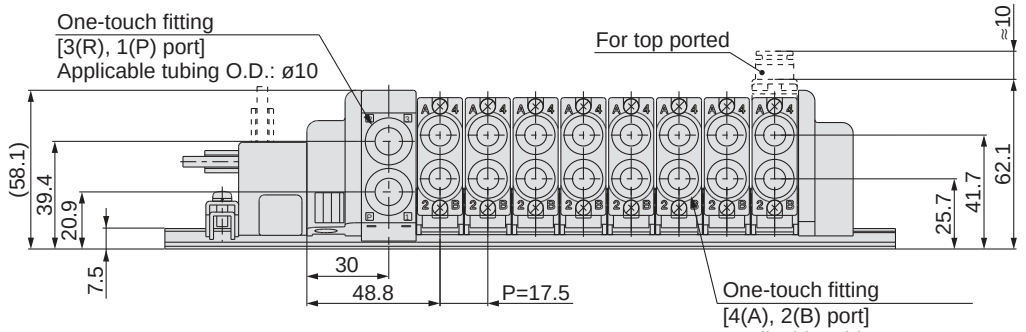
<26P>

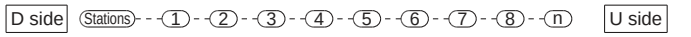


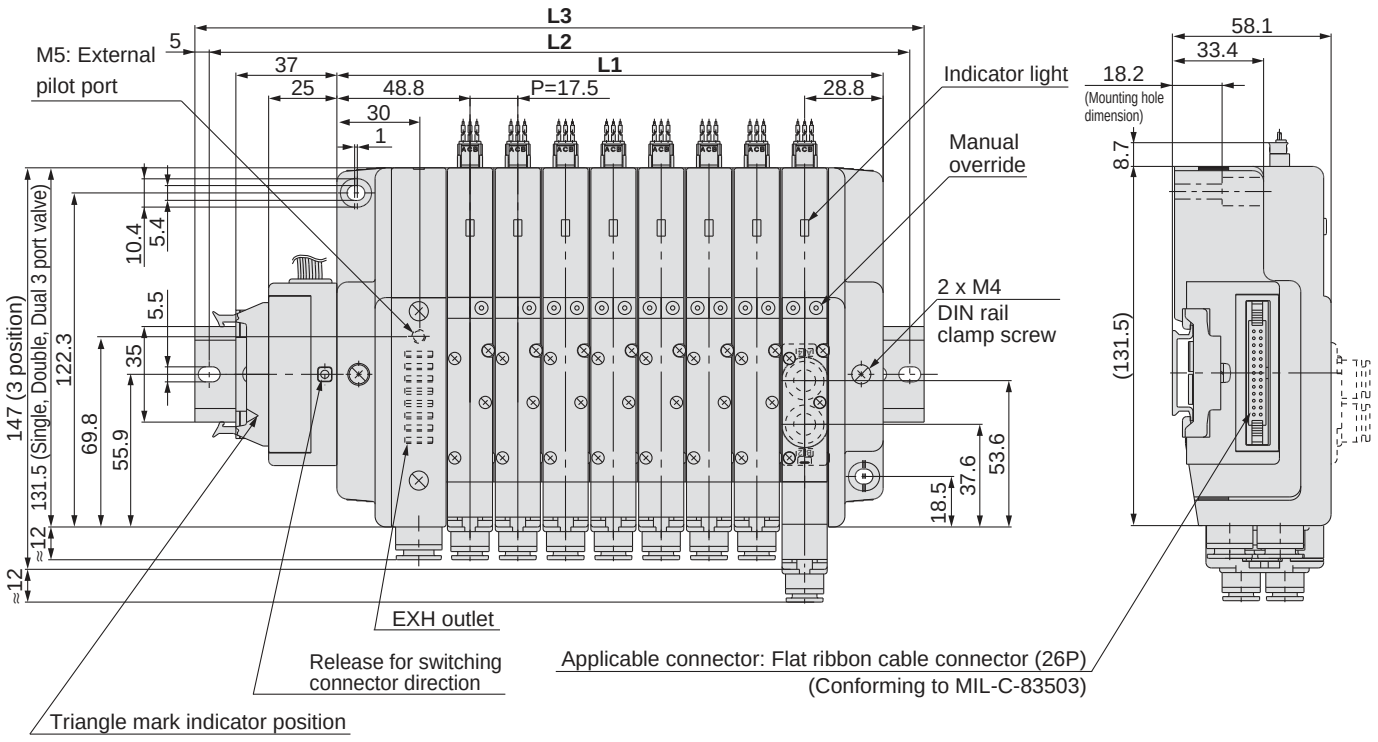
<20P>



Note) When using the negative common specifications, use valves for negative common.





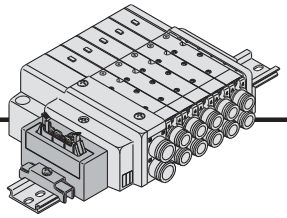


Dimensions [mm]

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

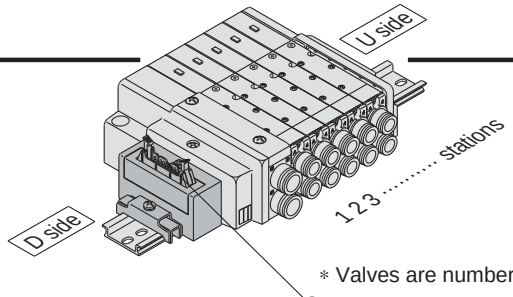
J Kit (PC Wiring System Compatible Flat Ribbon Cable Kit)



- **Compatible with PC wiring system.**
- **Using connector for flat ribbon cable (20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.**
- **Top or side receptacle position can be selected in accordance with the available mounting space.**

Manifold Specifications

Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ2000	Side, Top	C10	C4, C6, C8	8 stations (16 as a semi-standard)

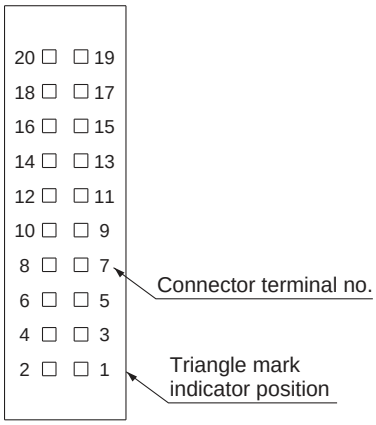


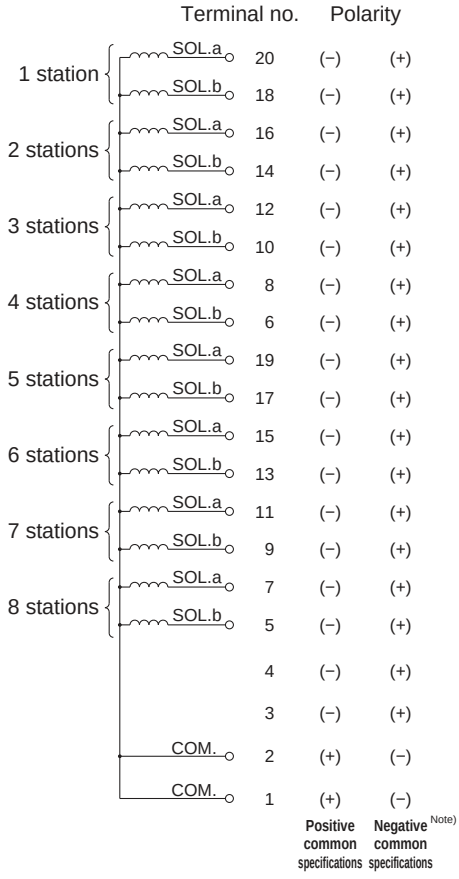
∗ Valves are numbered from the D side.

Electrical Wiring Specifications

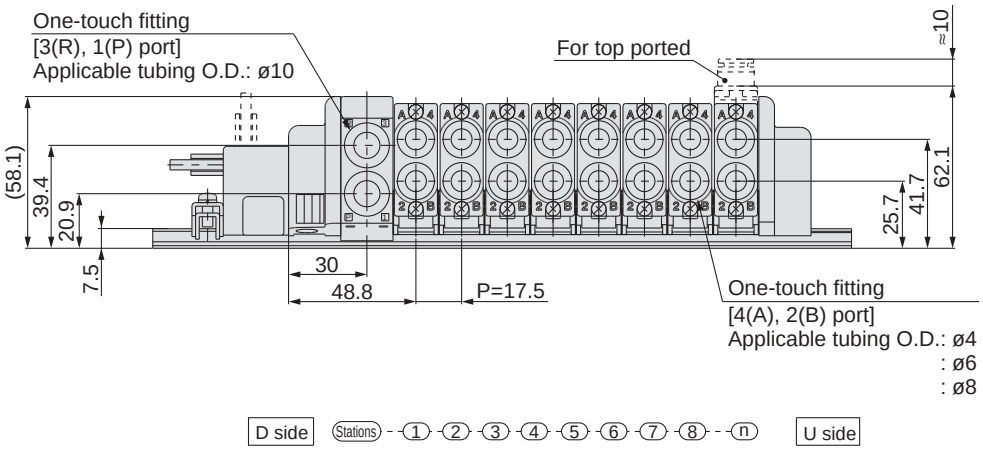
Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types.
Mixed single and double wiring is available as an option.
For details, refer to page 105.

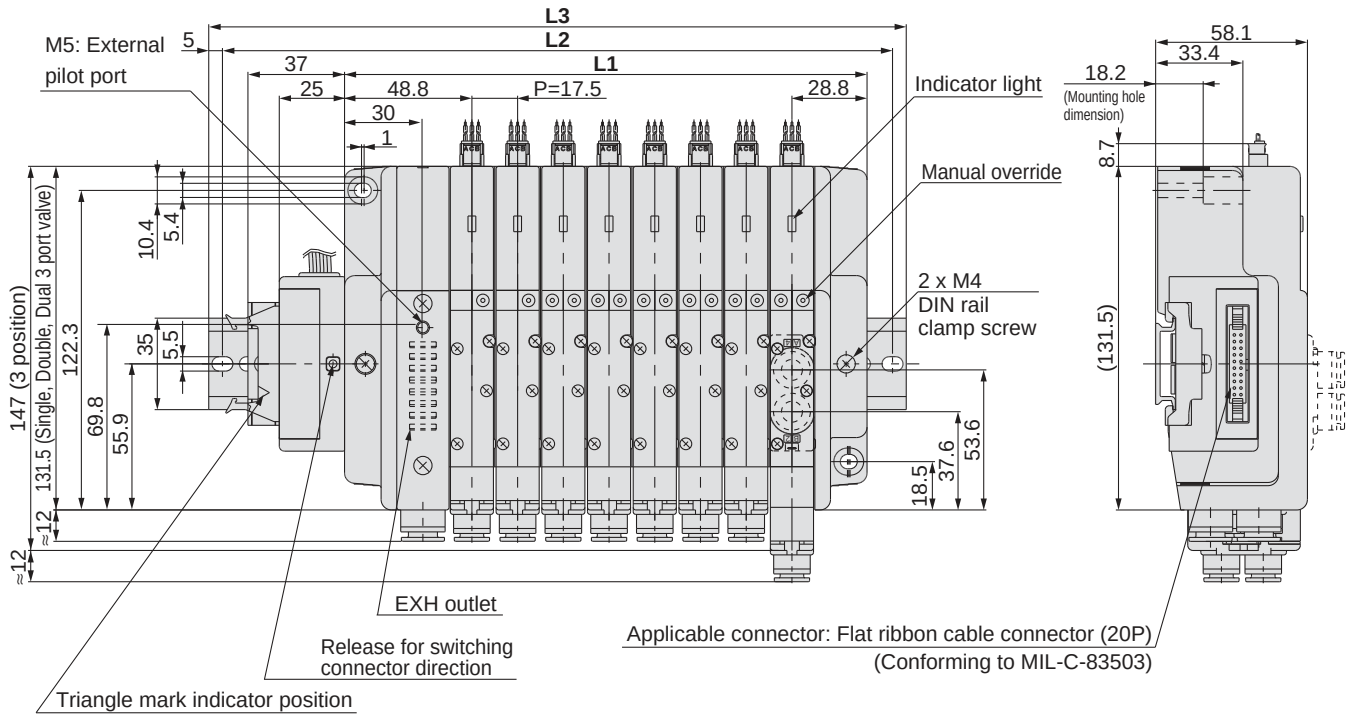
Flat ribbon cable connector





Note) When using the negative common specifications, use valves for negative common.
For details about the PC wiring system, refer to the PCW series catalogue (CAT.E02-20) separately.



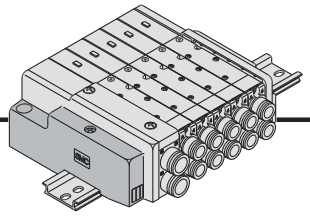


Dimensions [mm]

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

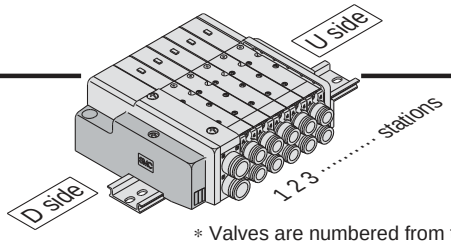
C Kit (Connector)



● **Standard with lead wires connected to each valve individually.**

Manifold Specifications

Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ2000	Side, Top	C10	C4, C6, C8	16 stations

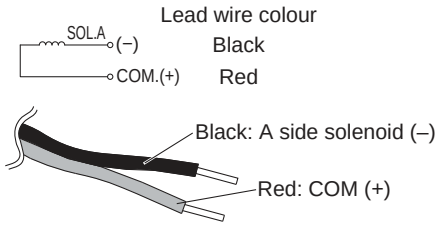


∗ Valves are numbered from the D side.

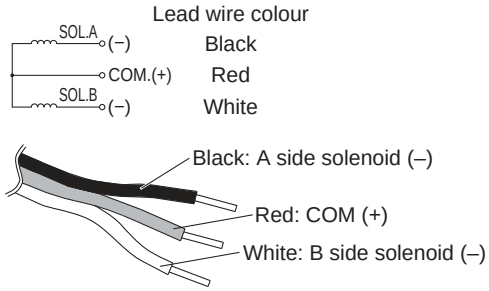
● Wiring Specifications: Positive Common Specifications

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

Single solenoid



Double solenoid



● **Plug connector lead wire length**

The lead wire length of the valves with lead wire is 300 mm. When ordering a lead wire length of 600 mm or longer, list the part numbers for the valve without connector and the connector assembly.

Example) For lead wire length of 1000 mm: SQ2140-5LO1-C6····3 pcs.
AXT661-14AL-10····3 pcs.

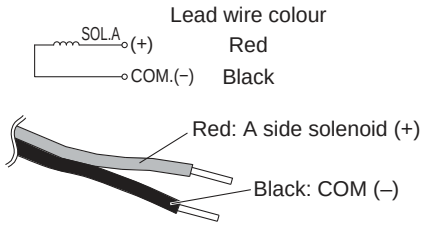
Connector Assembly Part No.

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

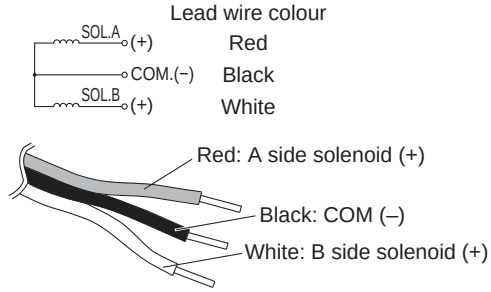
● Wiring Specifications: Negative Common Specifications (Semi-standard)

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

Single solenoid



Double solenoid



● **Plug connector lead wire length**

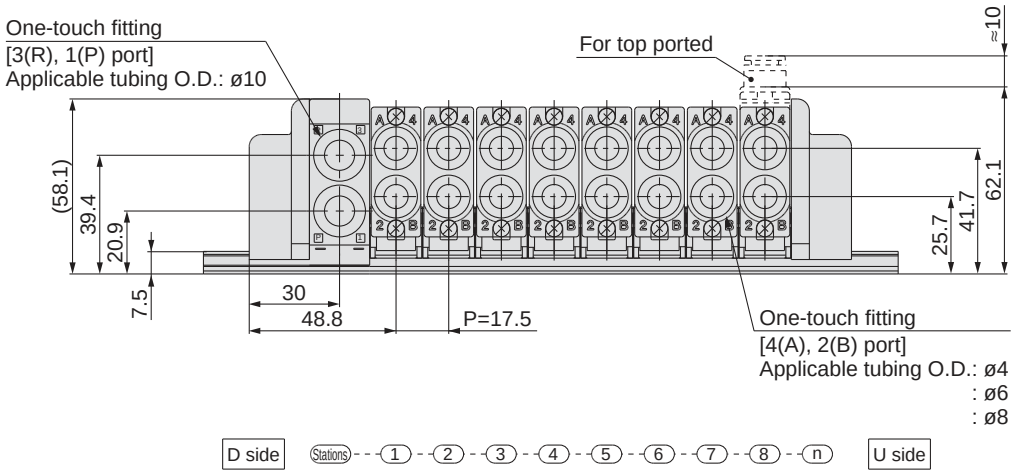
The lead wire length of the valves with lead wire is 300 mm. When ordering a lead wire length of 600 mm or longer, list the part numbers for the valve without connector and the connector assembly.

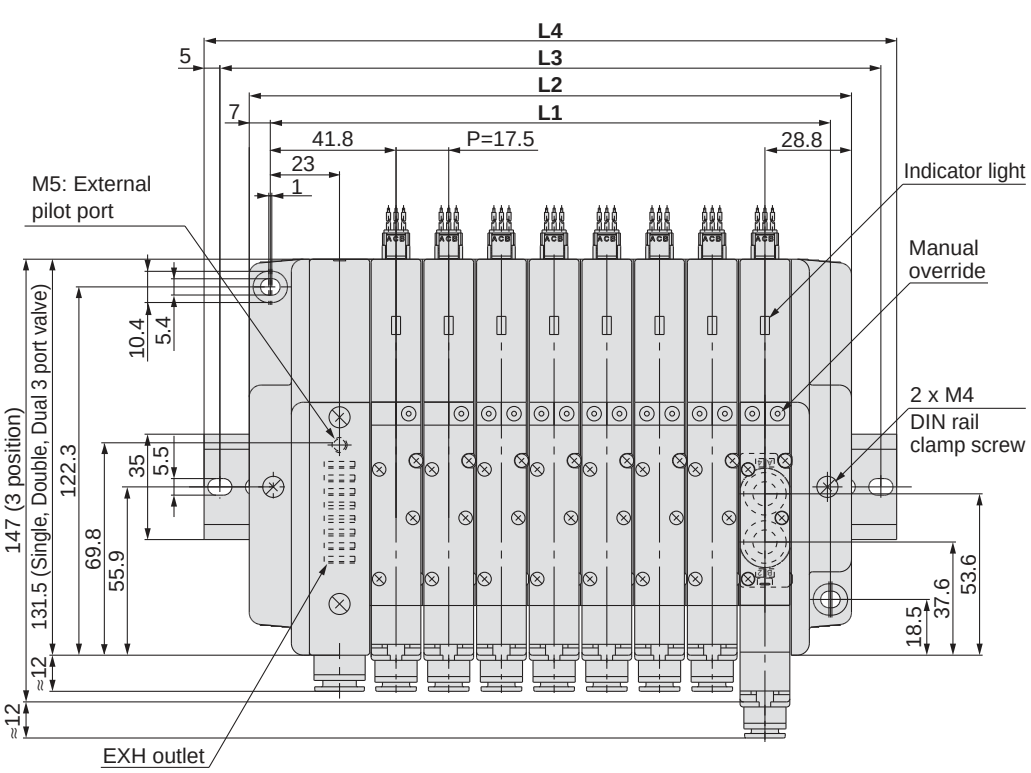
Example) For lead wire length of 1000 mm: SQ2140N-5LO1-C6···3 pcs.
AXT661-14ANL-10···3 pcs.

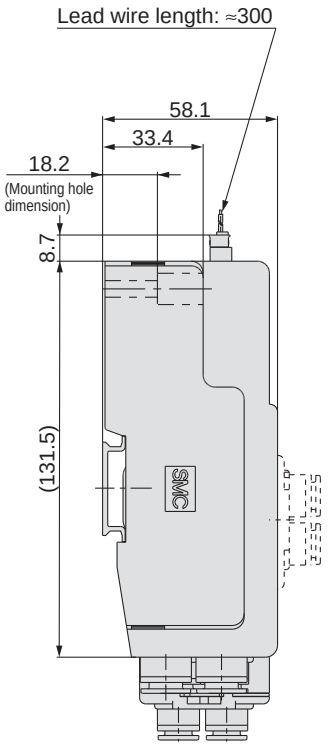
Connector Assembly Part No.

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

Note) When using the negative common specifications, use valves for negative common.







Dimensions [mm]

Formula: L1 = 17.5n + 46, L2 = 17.5n + 60 n: Stations (Maximum 16 stations)

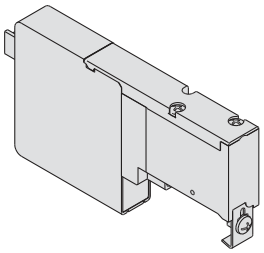
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	63.5	81	98.5	116	133.5	151	168.5	186	203.5	221	238.5	256	273.5	291	308.5	326
L2	77.5	95	112.5	130	147.5	165	182.5	200	217.5	235	252.5	270	287.5	305	322.5	340
L3	100	125	137.5	150	175	187.5	212.5	225	237.5	262.5	275	300	312.5	325	350	362.5
L4	110.5	135.5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

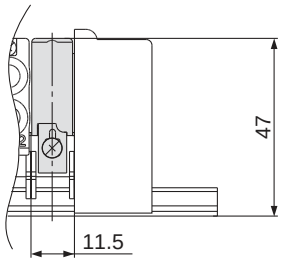
Manifold Option Parts for SQ1000

Blanking plate

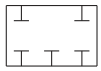
SSQ1000-10A-4

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.





JIS Symbol



SUP/EXH block

SSQ1000-PR-4-C8-□

Port size

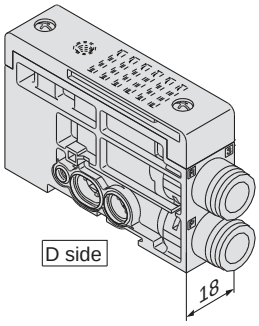
C8	One-touch fittings for ø8
N9	One-touch fittings for ø5/16"

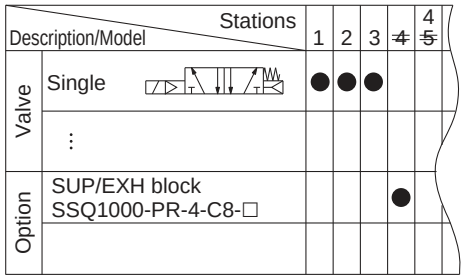
Option

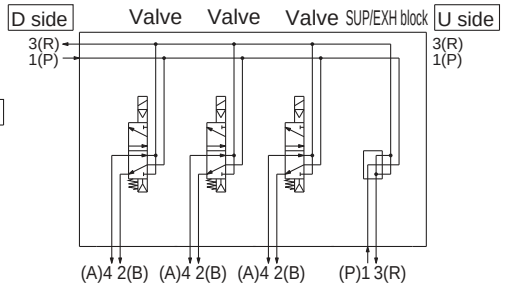
—	Standard
R	External pilot specifications
S	Built-in silencer

Note) When specifying both options, indicate "-RS".
* Specify the spacer mounting position on the 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

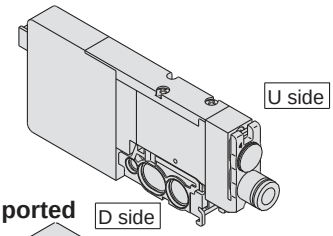
SSQ1000-P-4-C6

Port size

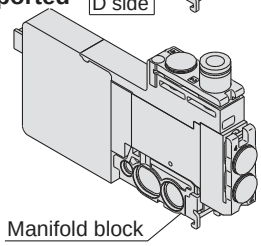
Side ported	**C6**	One-touch fittings for ø6
	N7	One-touch fittings for ø1/4"
Top ported	**L6**	One-touch fittings for ø6
	LN7	One-touch fittings for ø1/4"

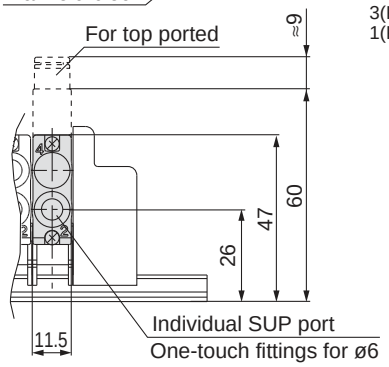
This is used as a supply port for different pressures when using different pressures in the same manifold (for one station). Both sides of the station which is used with supply pressure from the individual SUP spacer are shut off. (Refer to application example.)
* Specify the spacer mounting position and SUP passage shut off positions on the 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 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 for F, P, and J kits, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.
* Model no. with manifold block: SSQ1000-P-4-$\frac{C6}{L6}$-M

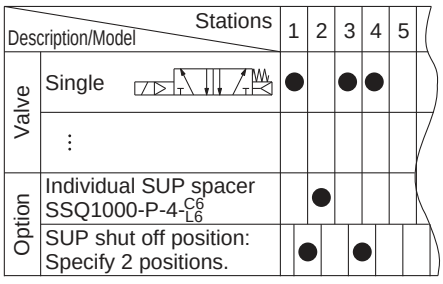
Side ported

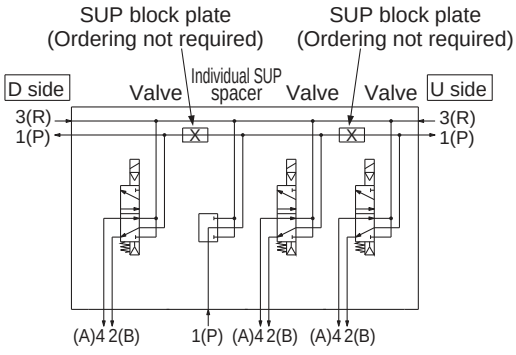


Top ported









Individual EXH spacer

SSQ1000-R-4-C6

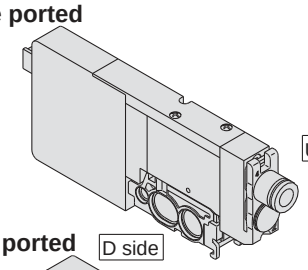
Port size

Side ported	**C6**	One-touch fittings for ø6
	N7	One-touch fittings for ø1/4"
Top ported	**L6**	One-touch fittings for ø6
	LN7	One-touch fittings for ø1/4"

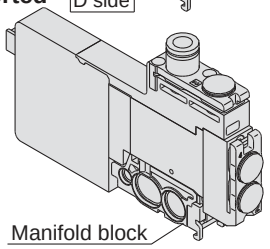
This is used to exhaust an individual valve when the exhaust from a valve interferes with other stations in the circuit (used for one station). Both sides of the station which is to be individually exhausted are shut off. (Refer to application example.)

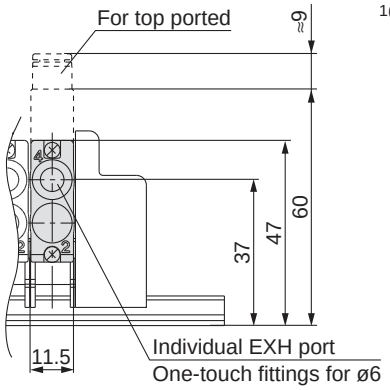
* Specify the spacer mounting position and EXH passage shut off positions on the manifold specification sheet. Two shut off positions are required per unit.
  (Two pieces of EXH block plate that shut off the exhaust are included with the individual EXH spacer, therefore, it is not necessary to order them separately.)
* Electrical wiring is 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 for F, P, and J kits, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.
* Model no. with manifold block:
  SSQ1000-R-4-$\frac{C6}{L6}$-M$\overline{\overline{\text{M}}}$

Side ported

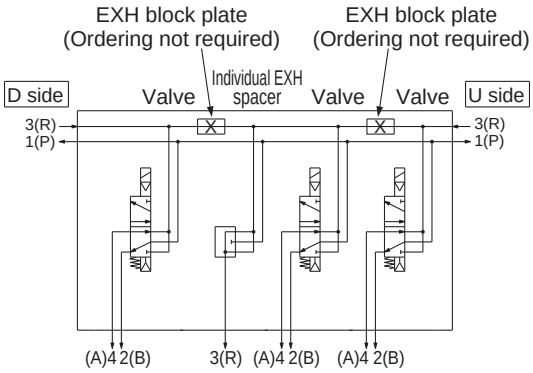


Top ported





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

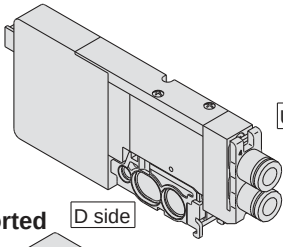
Port size

Side ported	**C6**	One-touch fittings for ø6
	N7	One-touch fittings for ø1/4"
Top ported	**L6**	One-touch fittings for ø6
	LN7	One-touch fittings for ø1/4"

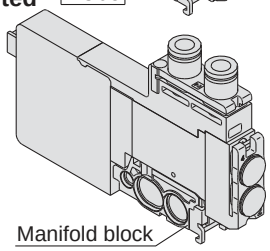
This has both functions of the individual SUP and EXH spacers above.
(Refer to application example.)

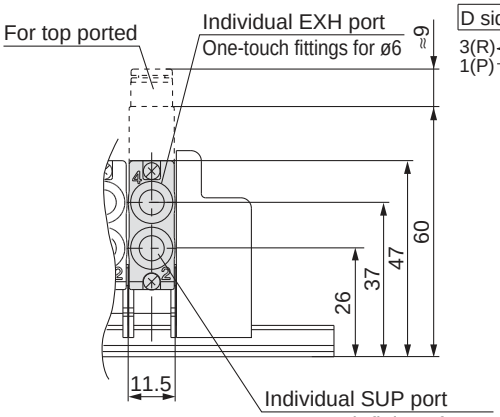
* Specify the spacer mounting position and SUP and EXH passage shut off positions on the manifold specification sheet. Two shut off positions each for SUP and EXH are required per unit.
  (Two pieces each of block plate that shut off the SUP and EXH passages are included with the individual SUP/EXH spacer.)
* Electrical wiring is 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 for F, P, and J kits, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.
* Model no. with manifold block:
  SSQ1000-PR1-4-$\frac{C6}{L6}$-M$\overline{\overline{\text{M}}}$

Side ported

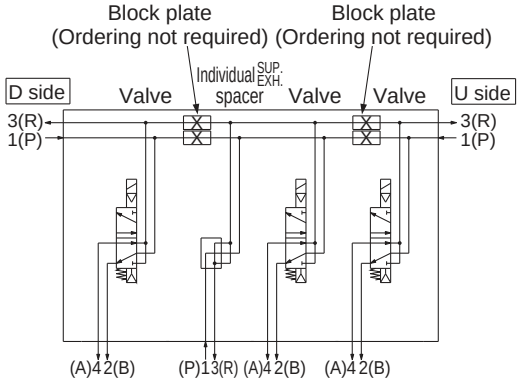


Top ported





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.	●		●		



Manifold Option Parts for SQ1000

SUP block plate

SSQ1000-B-P

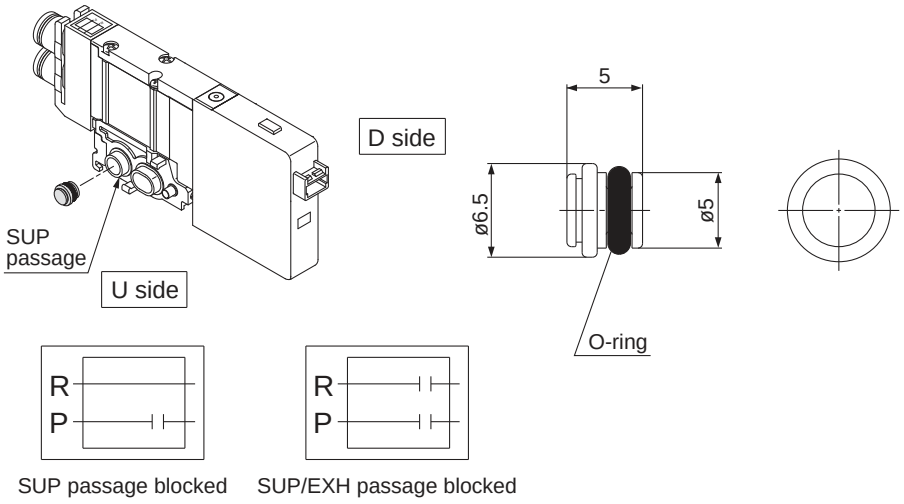
When supplying two different pressures, high and low, to one manifold, this is used between stations with different pressures. Also, it is used with an individual SUP spacer to shut off the air supply.

* Specify the station position on the manifold specification sheet.

<Block indication label>

When using block plates for SUP passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)

* When ordering a block plate for SUP incorporated with the manifold, a block indication label is attached to the manifold.



SUP passage blocked SUP/EXH passage blocked

EXH block plate

SSQ1000-B-R

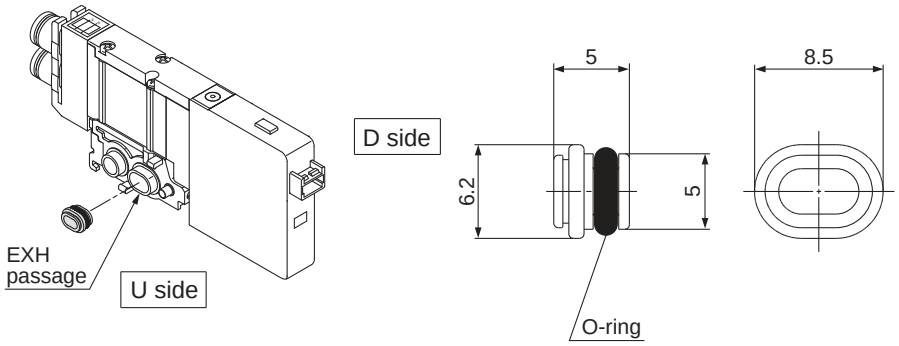
When the exhaust from a valve interferes with other stations in the circuit, this is used between stations to separate exhausts. Also, it is used with an individual EXH spacer to shut off the exhaust of individual valves.

* Specify the station position on the manifold specification sheet.

<Block indication label>

When using block plates for EXH passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)

* When ordering a block plate for EXH incorporated with the manifold, a block indication label is attached to the manifold.



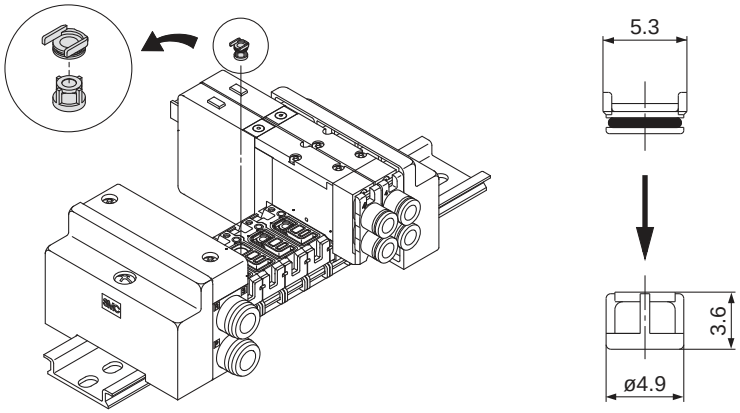
EXH passage blocked SUP/EXH passage blocked

Back pressure check valve [-B]

SSQ1000-BP

It prevents cylinder malfunction caused by other valve exhaust. Insert it into R (EXH) port on the manifold side of a valve which is affected. It is effective when a single action cylinder is used or an exhaust centre type solenoid valve is used.

* When a check valve for back pressure prevention is desired, and is to be installed only in certain manifold stations, clearly write the part number and specify the number of stations on the manifold specification sheet.
* When ordering this option incorporated with a manifold, suffix "-B" to the end of the manifold part number.



⚠ Caution

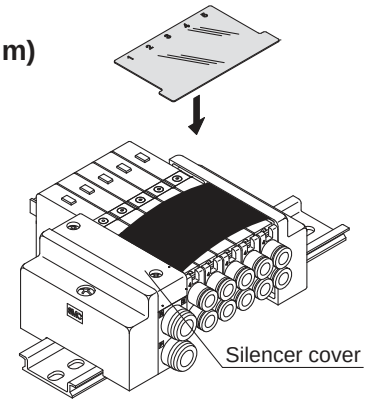
1. The back pressure check valve assembly is assembly parts with a check valve structure. However, as slight air leakage is allowed for the back pressure, take care the exhaust air will not be restricted at the exhaust port.
2. When a back pressure check valve is mounted, the effective area of the valve will decrease by about 20%.
3. Since 4 port specification valves (5 (R1) and 3 (R2) are common) are used, back pressure cannot be prevented with dual 3 port valves.

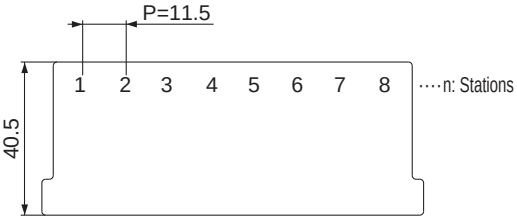
Name plate [-N]

SSQ1000-N3-Stations (1 to maximum)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.
Insert it into the groove on the side of the end plate and bend it as shown in the figure. Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to install it.

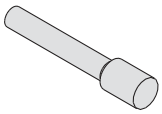
∗ When ordering this option incorporated with a manifold, suffix "-N" to the end of the manifold part number.



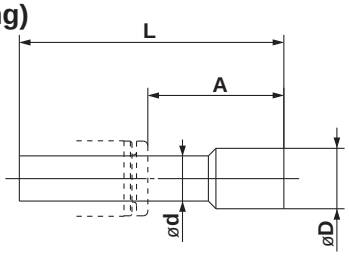


Blanking plug (For One-touch fitting)

KQ2P- 23 / 04 / 06 / 08



It is inserted into an unused cylinder port and SUP/EXH ports.
Purchasing order is available in units of 10 pieces.



Dimensions [mm]

Applicable fittings size ø**d**	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

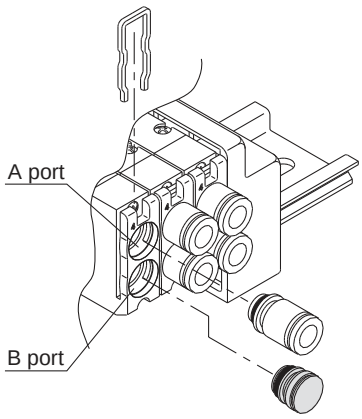
The plug is used to block the cylinder port when using a 5-port valve as a 3-port valve.

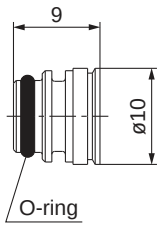
∗ Add "A" or "B" at the end of the valve part number when ordering with valves.

Example) SQ1141-5L1-C6-A (N.O. specifications)
- 4 (A) port plug

Example) SQ1141-5L1-C6-B (N.C. specifications)
- 2 (B) port plug

Example) SQ1141-5L1-C6-B-M
(B port plug with manifold block)





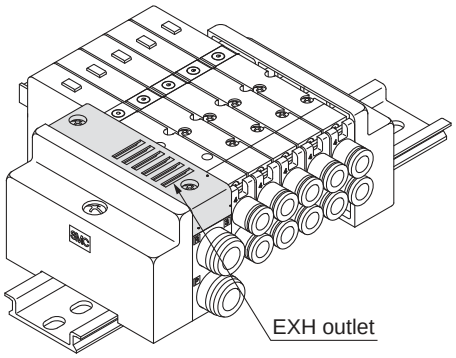
Direct EXH outlet, built-in silencer [-S]

This is a type with an exhaust port atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Noise reduction: 30 dB)

Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

∗ When ordering this option incorporated with a manifold, suffix "-S" to the end of the manifold part number.

∗ For precautions on handling and how to replace elements, refer to "Specific Product Precautions."



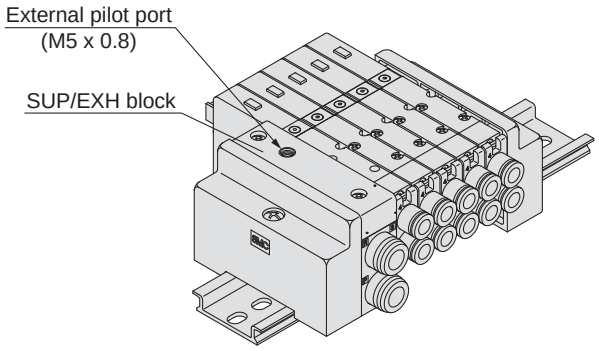
Manifold Option Parts for SQ1000

External pilot specifications [-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.

● How to order valves (Example)
SQ1140 R -5L1-C6
R: External pilot specifications

● How to order manifold (Example)
∗ Indicate “R” for an option.
SS5Q14-08FD1-DR
R: External pilot specifications



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

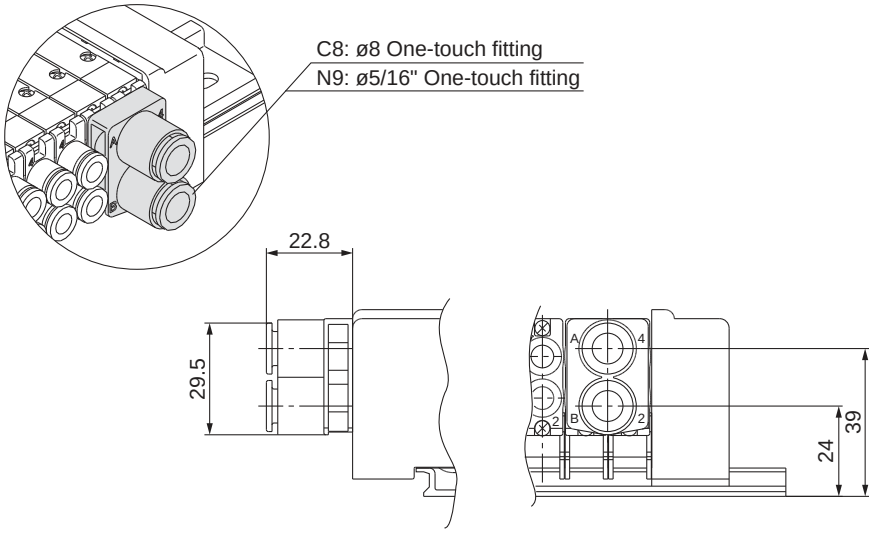
Dual flow fitting

SSQ1000-52A-C8
C8: Port size

C8	ø8
N9	ø5/16"

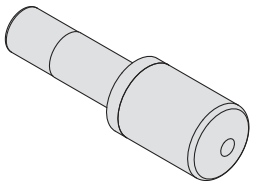
To drive a large bore cylinder, two valve stations are operated simultaneously to double the air flow. This fitting is used on the cylinder ports in this situation. Available sizes are ø8 and ø5/16" One-touch fitting.
∗ When ordering with valves, specify the valve part number without One-touch fitting and list the dual flow fitting part number.

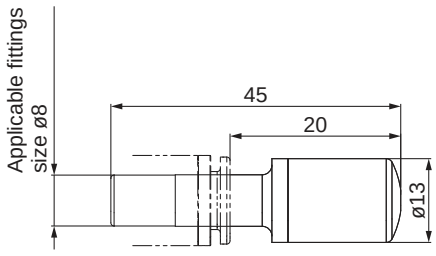
Example) Valve part number (without One-touch fitting part number)
SQ1141-5L1-C0 ····· 2 sets
∗ SSQ1000-52A-C8/N9 ····· 1 set



Silencer (For EXH port)

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





Specifications

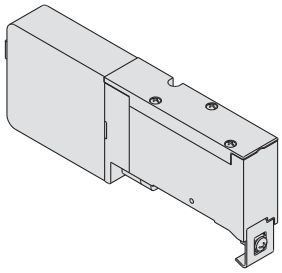
Series	Model	Effective area [mm²] (Cv factor)	Noise reduction [dB]
SQ1000	AN15-C08	20 (1.1)	30

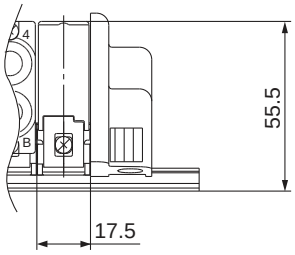
Manifold Option Parts for SQ2000

Blanking plate

SSQ2000-10A-4

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.





JIS Symbol

SUP/EXH block

SSQ2000-PR-3-C10-□

Port size

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

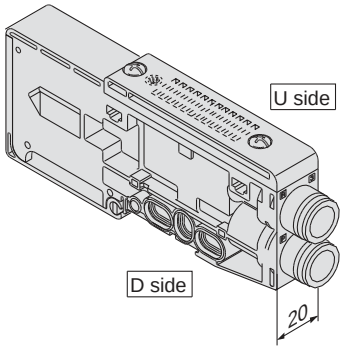
Option

—	Standard
R	External pilot specifications
S	Built-in silencer

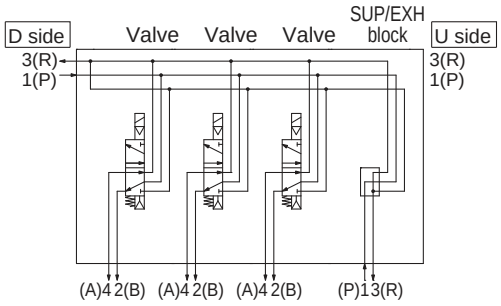
Note) When specifying both options, indicate "RS".
* Specify the spacer mounting position on the manifold specification sheet.

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 manifold, due to the length of the lead wire.
* SUP/EXH blocks are not included in the number of manifold stations.



Description/Model	Stations	1	2	3	~~4~~	~~5~~
Valve	Single	●	●	●		
	⋮					
Option	SUP/EXH block SSQ2000-PR-3-C10-□				●	



Individual SUP spacer

SSQ2000-P-4-C8

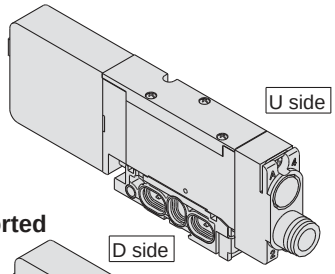
Port size

Side ported	**C8**	One-touch fittings for ø8
	N9	One-touch fittings for ø5/16"
Top ported	**L8**	One-touch fittings for ø8
	LN9	One-touch fittings for ø5/16"

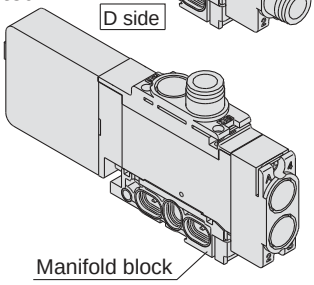
This is used as a supply port for different pressures when using different pressures in the same manifold (for one station).
Both sides of the station which is used with supply pressure from the individual SUP spacer are shut off. (Refer to application example.)

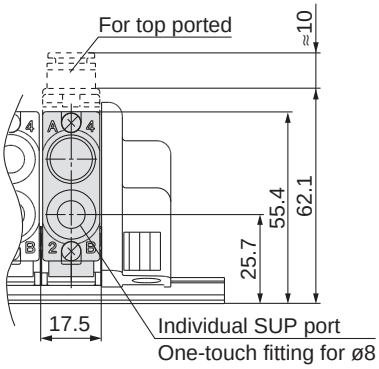
* Specify the spacer mounting position and SUP passage shut off positions on the manifold specification sheet. Two shut off positions are required per unit.
  (Two pieces of SUP block plate that shut off the supply pressure are included with the individual SUP spacer, therefore, it is not necessary to order them separately.)
* Electrical wiring is 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 for F, P, and J kits, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.
* Model no. with manifold block: SSQ2000-P-4-$\frac{C8}{L8}$-M

Side ported

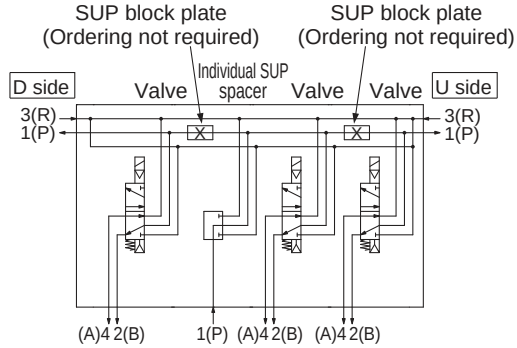


Top ported





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



Manifold Option Parts for SQ2000

Individual EXH spacer

SSQ2000-R-4-C8

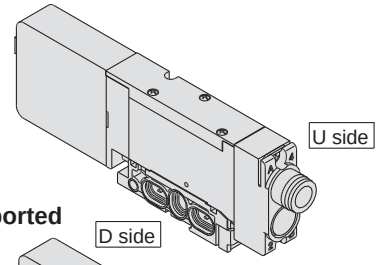
Port size

Side ported	**C8**	One-touch fittings for ø8
	N9	One-touch fittings for ø5/16"
Top ported	**L8**	One-touch fittings for ø8
	LN9	One-touch fittings for ø5/16"

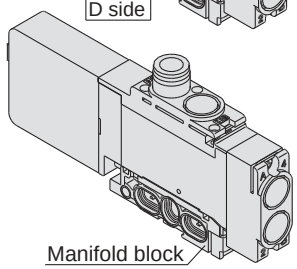
This is used to exhaust an individual valve when the exhaust from a valve interferes with other stations in the circuit (used for one station). Both sides of the station which is to be individually exhausted are shut off. (Refer to application example.)

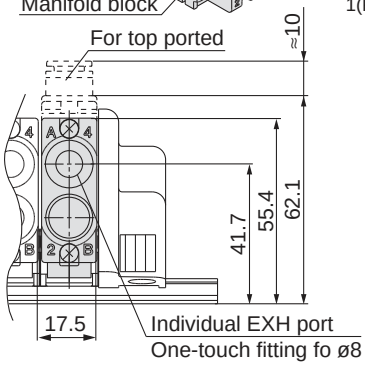
* Specify the spacer mounting position and EXH passage shut off positions on the manifold specification sheet. Two shut off positions are required per unit. (Four pieces of EXH block plate that shut off the exhaust are included with the individual EXH spacer, therefore, it is not necessary to order them separately.)
* Electrical wiring is 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 for F, P, and J kits, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.
* Model no. with manifold block: SSQ2000-R-4-$\frac{C8}{L8}$-M

Side ported

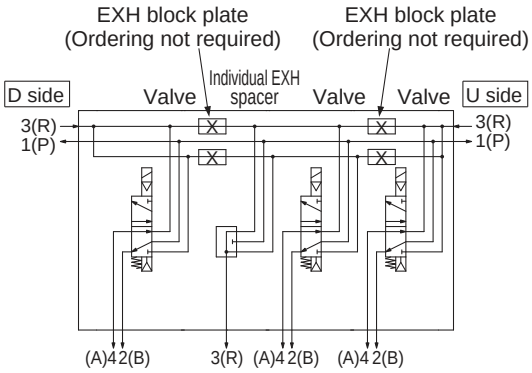


Top ported





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



Individual SUP/EXH spacer

SSQ2000-PR1-4-C8

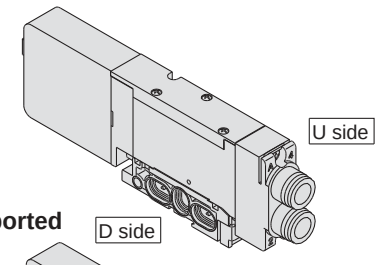
Port size

Side ported	**C8**	One-touch fittings for ø8
	N9	One-touch fittings for ø5/16"
Top ported	**L8**	One-touch fittings for ø8
	LN9	One-touch fittings for ø5/16"

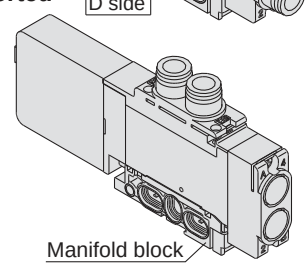
This has both functions of the individual SUP and EXH spacers above. (Refer to application example.)

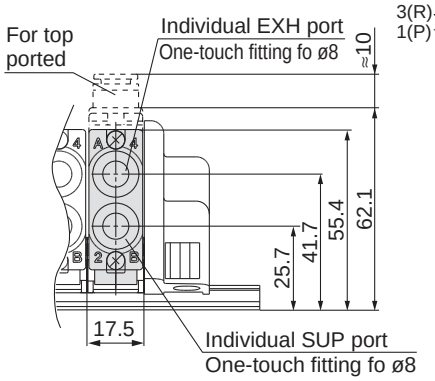
* Specify the spacer mounting position and SUP and EXH passage shut off positions on the manifold specification sheet. Two shut off positions each for SUP and EXH are required per unit. [Block plates that shut off the SUP and EXH passages are included with the individual SUP/EXH spacer (2 pcs. of SUP block plate and 4 pcs. of EXH block plate).]
* Electrical wiring is 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 for F, P, and J kits, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.
* Model no. with manifold block: SSQ2000-PR1-4-$\frac{C8}{L8}$-M

Side ported

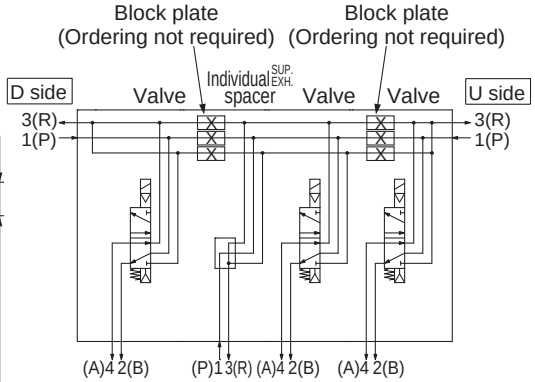


Top ported





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



SUP block plate

SSQ1000-B-R

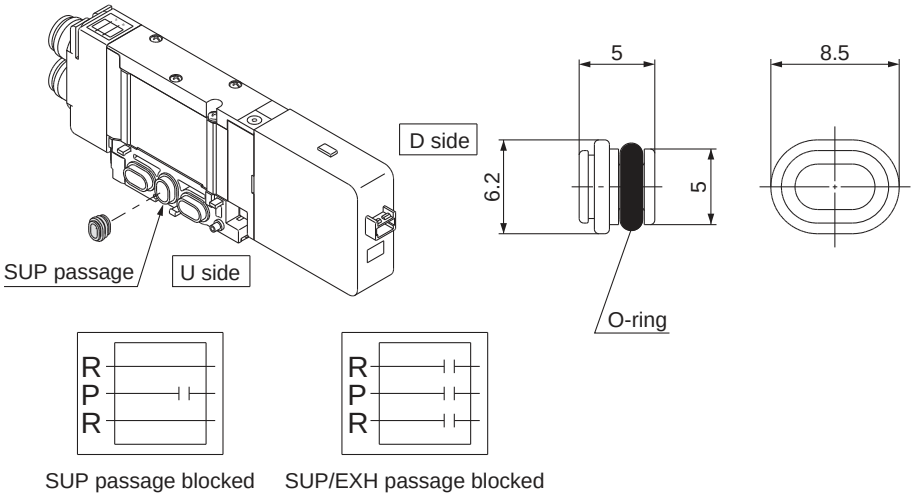
When supplying two different pressures, high and low, to one manifold, this is used between stations with different pressures. Also, it is used with an individual SUP spacer to shut off the air supply.

* Specify the station position on the manifold specification sheet.

<Block indication label>

When using block plates for SUP passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)

* When ordering a block plate for SUP incorporated with the manifold, a block indication label is attached to the manifold.



SUP passage blocked SUP/EXH passage blocked

EXH block plate

SSQ2000-B-R

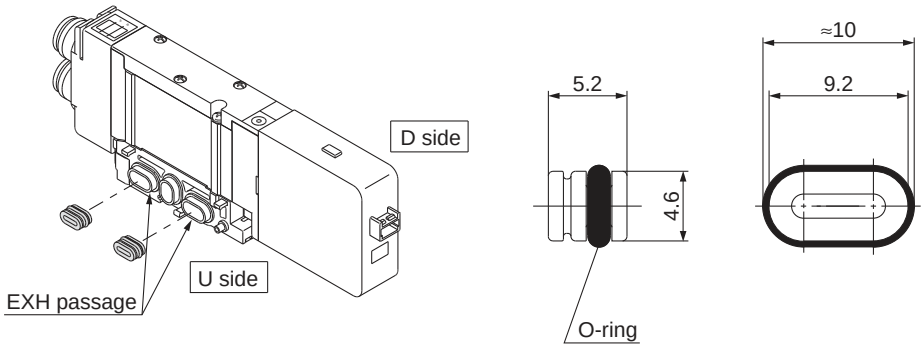
When the exhaust from a valve interferes with other stations in the circuit, this is used between stations to separate exhausts. Also, it is used with an individual EXH spacer to shut off the exhaust of individual valves.

* Specify the station position on the manifold specification sheet.

<Block indication label>

When using block plates for EXH passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)

* When ordering a block plate for EXH incorporated with the manifold, a block indication label is attached to the manifold.



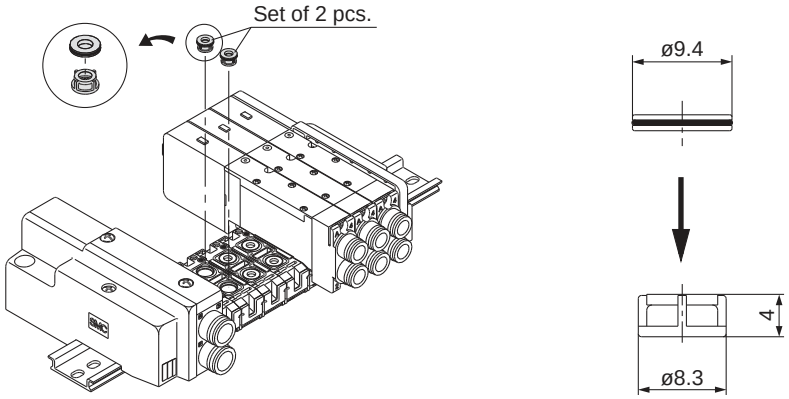
EXH passage blocked SUP/EXH passage blocked

Back pressure check valve [-B]

SSQ2000-BP

It prevents cylinder malfunction caused by other valve exhaust. Insert it into R (EXH) port on the manifold side of a valve which is affected. It is effective when a single action cylinder is used or an exhaust centre type solenoid valve is used.

* When a check valve for back pressure prevention is desired, and is to be installed only in certain manifold stations, clearly write the part number and specify the number of stations on the manifold specification sheet.
* When ordering this option incorporated with a manifold, suffix "-B" to the end of the manifold part number.



⚠ Caution

1. The back pressure check valve assembly is assembly parts with a check valve structure. However, as slight air leakage is allowed for the back pressure, take care the exhaust air will not be restricted at the exhaust port.
2. When a back pressure check valve is mounted, the effective area of the valve will decrease by about 20%.

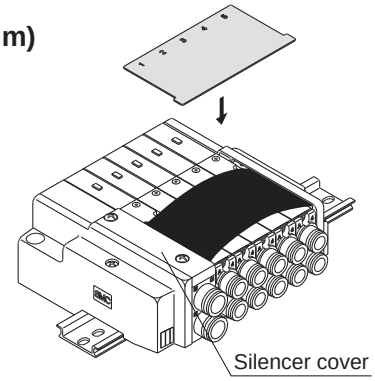
Manifold Option Parts for SQ2000

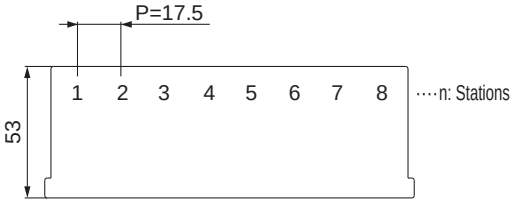
Name plate [-N]

SSQ2000-N3-Stations (1 to maximum)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.
Insert it into the groove on the side of the end plate and bend it as shown in the figure. Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to install it.

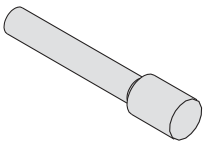
* When ordering this option incorporated with a manifold, suffix "-N" to the end of the manifold part number.



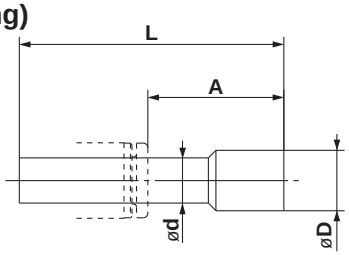


Blanking plug (For One-touch fitting)

KQ2P- **04** **06** **08** **10**



It is inserted into an unused cylinder port and SUP/EXH ports.
Purchasing order is available in units of 10 pieces.



Dimensions [mm]

Applicable fittings 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

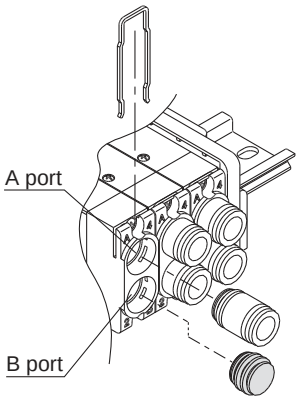
Port plug

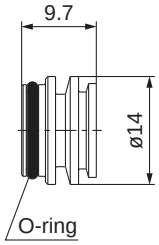
VVQZ2000-CP

The plug is used to block the cylinder port when using a 5-port valve as a 3-port valve.

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

Example) SQ2141-5L1-C8-A (N.O. specifications)
• 4(A) port plug
Example) SQ2141-5L1-C8-B (N.C. specifications)
• 2(B) port plug
Example) SQ2141-5L1-C8-B-M
(B port plug with manifold block)



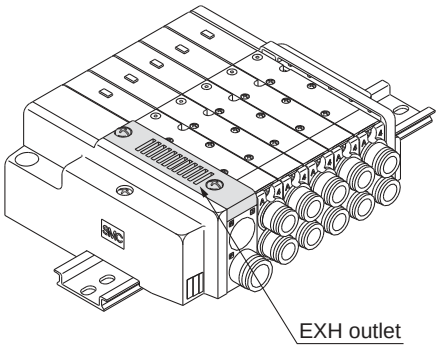


Direct EXH outlet, built-in silencer [-S]

This is a type with an exhaust port atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Noise reduction: 30 dB)

Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

* When ordering this option incorporated with a manifold, suffix "-S" to the end of the manifold part number.
* For precautions on handling and how to replace elements, refer to "Specific Product Precautions."

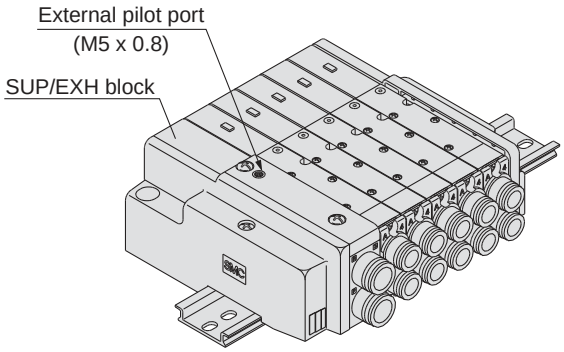


External pilot specifications [-R]

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 specifications.
An M5 port will be installed on the top side of the manifold's SUP/EXH block.

● How to order valves (Example)
SQ2140 R -5L1-C6
External pilot specifications

● How to order manifold (Example)
∗ Indicate "R" for an option.
SS5Q24-08FD1-DR
External pilot specifications



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

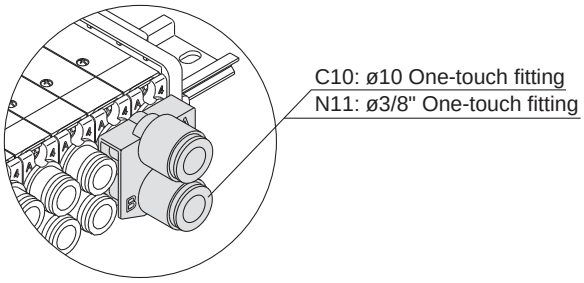
Dual flow fitting

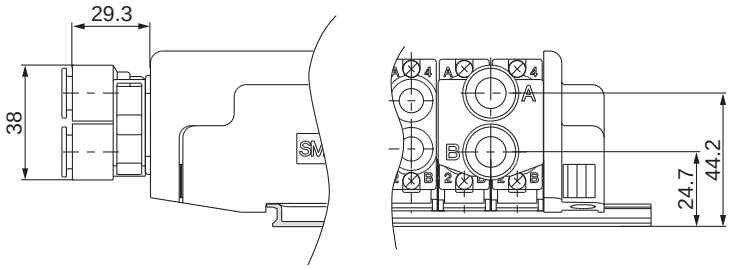
SSQ2000-52A-C10
Port size

C10	ø10
N11	ø3/8"

To drive a large bore cylinder, two valve stations are 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 part number without One-touch fitting and list the dual flow fitting part number.

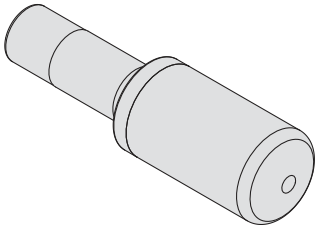
Example) Valve part number (without Onetouch fitting)
SQ2141-5L1-C0 ····· 2 sets
∗ SSQ2000-52A-C10/N11 ····· 1 set

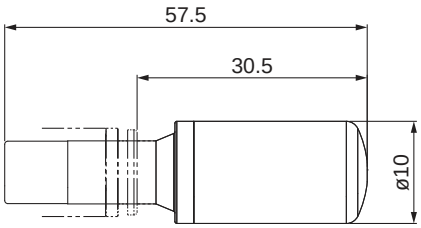




Silencer (For EXH port)

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





Specifications

Series	Model	Effective area [mm²] (Cv factor)	Noise reduction [dB]
SQ2000	AN20-C10	30 (1.6)	30

Manifold Option for SQ1000/2000

Special Wiring Specifications

In the internal wiring of F kit, P kit, and J kit, double wiring (connected to SOL. A and SOL. B) is adopted for each station regardless of the valve and option types. Mixed wiring of single and double wiring can be specified for the wiring specification.

1. How to order

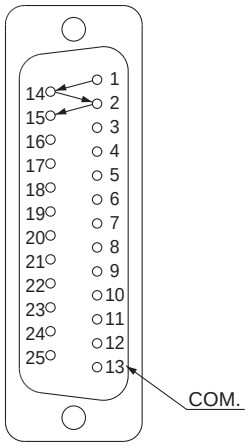
Indicate option symbol " -K " in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet.

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

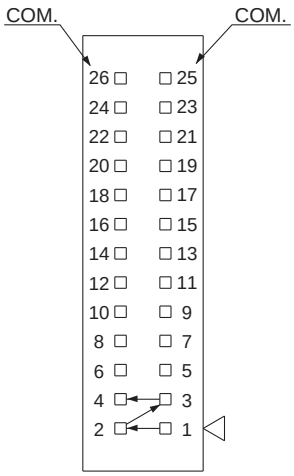
- Others, option symbols: to be indicated alphabetically.

2. Wiring specifications

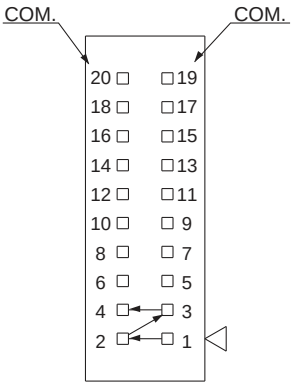
Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without skipping any terminal numbers.



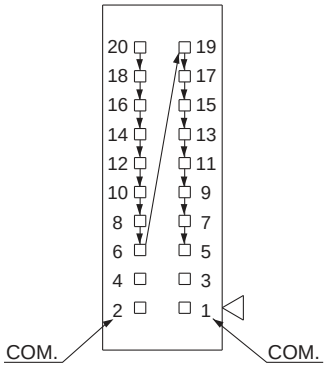
F kit
D-sub connector
(for 25P)



P kit
Flat ribbon cable connector
(for 26 P)



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 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

Special DIN Rail Length (DIN Rail Mounting (-D) Only)

The standard DIN rail provided is approximately 30 mm 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**

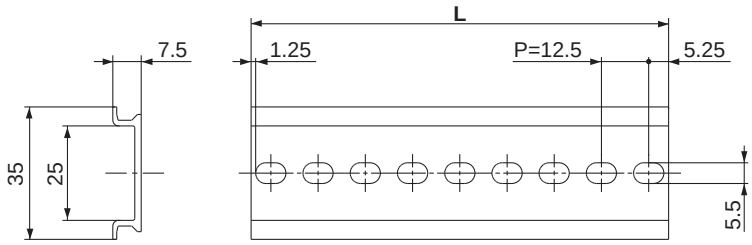
- 8 station manifold
- Option symbols (alphabetically)
- DIN rail for 9 stations

● 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.
For L dimension, refer to the dimensions of each kit.



Dimensions

L = 12.5 x n + 10.5

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

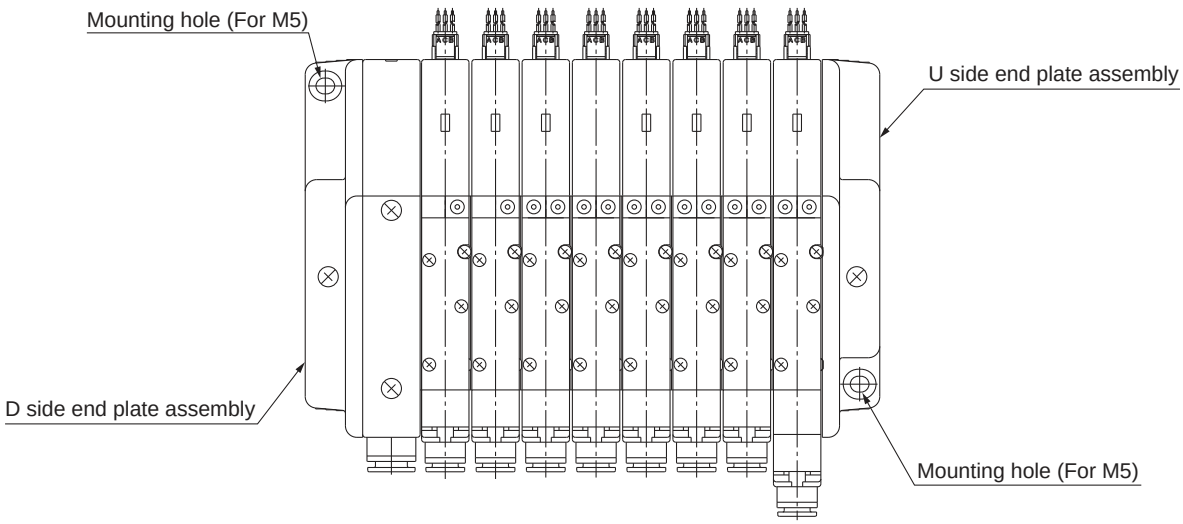
No.	11	12	13	14	15	16	17	18	19	20
L [mm]	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5

No.	21	22	23	24	25	26	27	28	29	30
L [mm]	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
L [mm]	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

Direct Mounting Style (-E) (SQ2000 C Kit Only)

Manifold is mounted by using mounting holes of both sides of the manifold.
DIN rail is not sticking out of the edge of end plate.
Furthermore, the reinforcing part that comes to the bottom of the DIN rail is attached to the end plate assembly.



Manifold Option for SQ1000/2000

Negative Common Specifications

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

● How to order negative common valves (Example)

SQ1140 N -5L1-C6

• Negative common specifications

Inch-size One-touch Fittings

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

● How to order valves (Example)

SQ1140 - 5L1- □ N7

Port location • • **Cylinder port**

—	Side ported
L	Top ported

Symbol		N1	N3	N7	N9
Applicable tubing O.D. [Inch]		ø1/8"	ø5/32"	ø1/4"	ø5/16"
4(A), 2(B) port	SQ1000	●	●	●	—
	SQ2000	—	●	●	●

● How to order manifold (Example)

Add “00T” at the end of the part number.

SS5Q14 - 08 FD0 - DN - 00T

• 1 (P), 3 (R) port in inch size
- SQ1000: ø5/16" (N9)
- SQ2000: ø3/8" (N11)

How to Increase Manifold Stations for SQ1000/2000

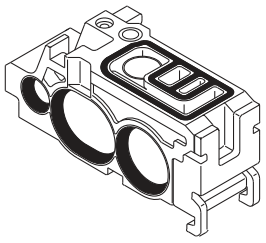
1. How to Increase Manifold Stations

What to order

• Valves with manifold block (refer to pages 68 and 82) 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 No.

SQ1000



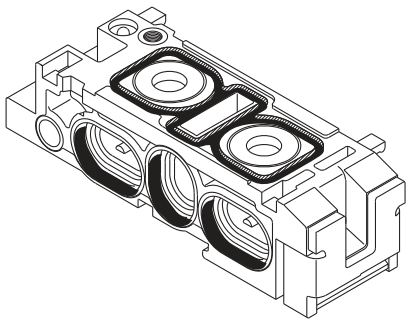
SSQ1000−1A−4−□

Option •

—	None
B	Back pressure check valve
R	External pilot specifications

Note) Enter “-BR” for both options.

SQ2000



SSQ2000−1A−4−□

Option •

—	None
B	Back pressure check valve
R	External pilot specifications

Note) Enter “-BR” for both options.

How to Increase Manifold Stations for SQ1000/2000

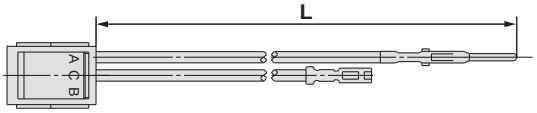
For F kit, P kit, J kit

What to order: Lead wire assembly

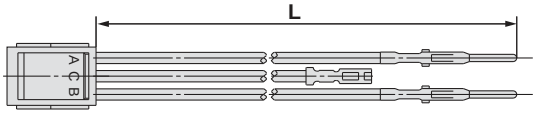
SQ1000

D-sub connector kit (F kit)

● **For single wiring SSQ1000−40A−F−205**



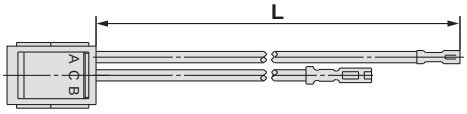
● **For double wiring SSQ1000−41A−F−280**



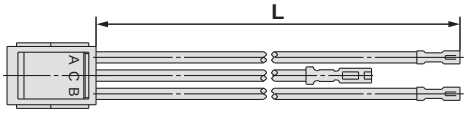
Stations	Symbol (L [mm])	Stations	Symbol (L [mm])
Station 2	165	Station 14	320
Station 3	175	Station 15	335
Station 4	190	Station 16	350
Station 5	205	Station 17	365
Station 6	215	Station 18	375
Station 7	230	Station 19	385
Station 8	245	Station 20	400
Station 9	260	Station 21	405
Station 10	280	Station 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**

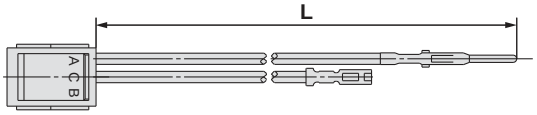


Stations	Symbol (L [mm])	Stations	Symbol (L [mm])
Station 2	160	Station 14	315
Station 3	170	Station 15	330
Station 4	185	Station 16	345
Station 5	200	Station 17	360
Station 6	210	Station 18	370
Station 7	225	Station 19	380
Station 8	240	Station 20	395
Station 9	255	Station 21	400
Station 10	275	Station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

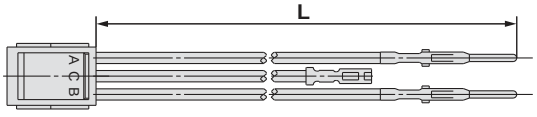
SQ2000

D-sub connector kit (F kit)

● **For single wiring SSQ1000−40A−F−250**



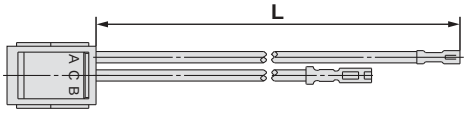
● **For double wiring SSQ1000−41A−F−350**



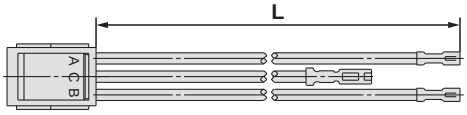
Stations	Symbol (L [mm])	Stations	Symbol (L [mm])
Station 2	190	Station 14	430
Station 3	210	Station 15	450
Station 4	230	Station 16	470
Station 5	250	Station 17	490
Station 6	270	Station 18	510
Station 7	290	Station 19	530
Station 8	310	Station 20	550
Station 9	330	Station 21	570
Station 10	350	Station 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**

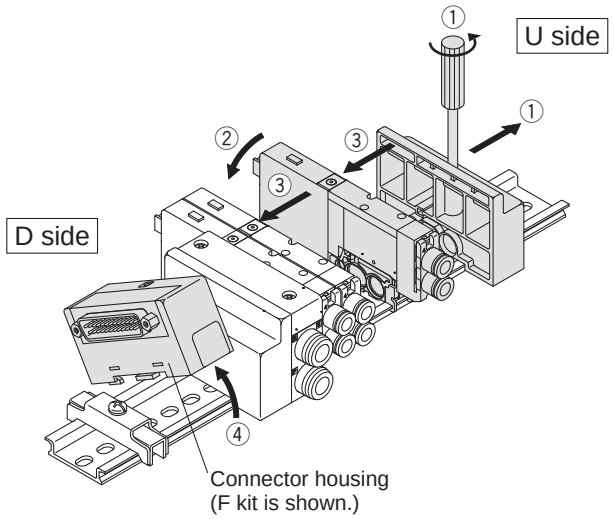


Stations	Symbol (L [mm])	Stations	Symbol (L [mm])
Station 2	190	Station 14	430
Station 3	210	Station 15	450
Station 4	230	Station 16	470
Station 5	250	Station 17	490
Station 6	270	Station 18	510
Station 7	290	Station 19	530
Station 8	310	Station 20	550
Station 9	330	Station 21	570
Station 10	350	Station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

How to Increase Manifold Stations for SQ1000/2000

Steps for adding stations

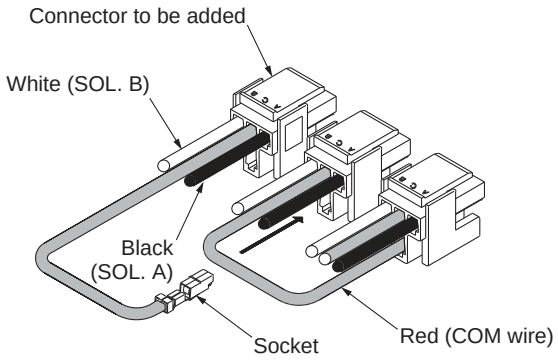
① Loosen the clamp screw on the U side end plate and open the manifold.
② Mount the manifold block or valve with manifold block to be added.
③ Press on the end plate to eliminate any space between the manifold blocks and tighten the clamp screw.
(Proper tightening torque: 0.8 to 1.0 N·m)
④ In the case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



2. Connection Method

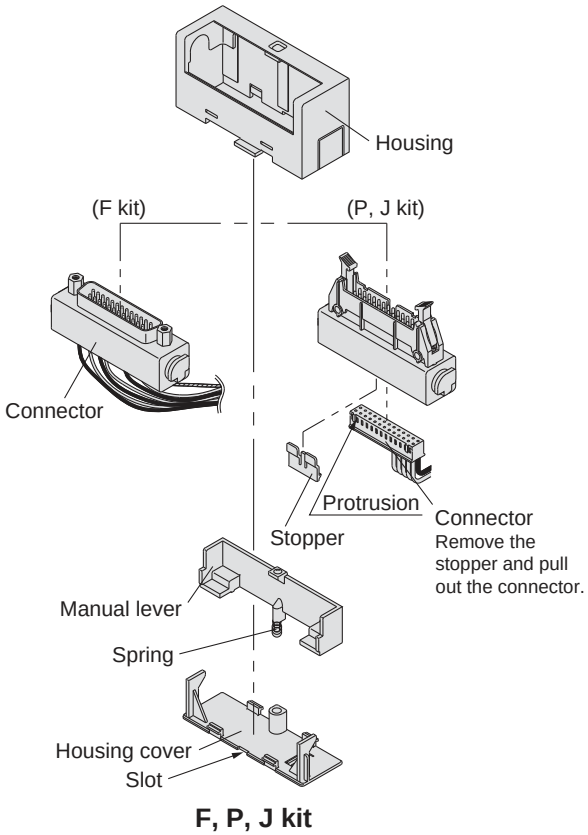
(1) Connecting common wire

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

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



F, P, J kit

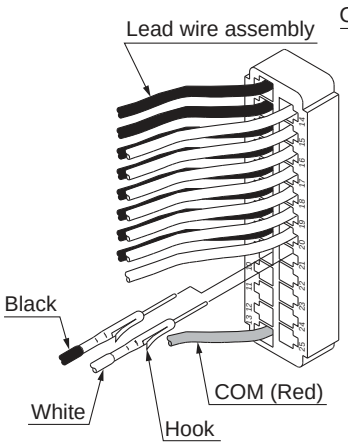
(3) Connector connection/Connect the black and white lead wire pins to the positions shown below in accordance with each kit.

⚠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.

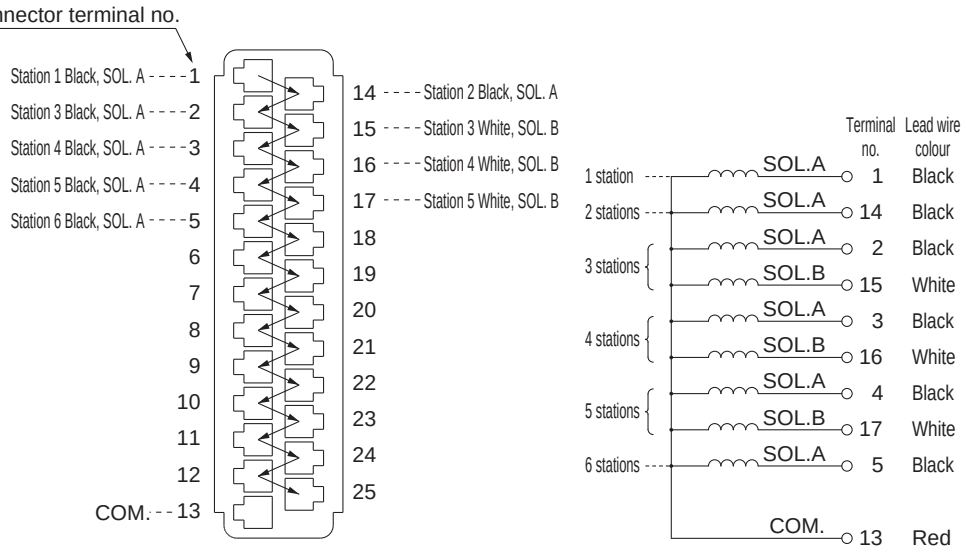
Wiring (F Kit: D-sub Connector Kit)

Procedure) Based on the manifold specifications, 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, then white wires in the order as shown below by the arrows.



Manifold Specifications' Example

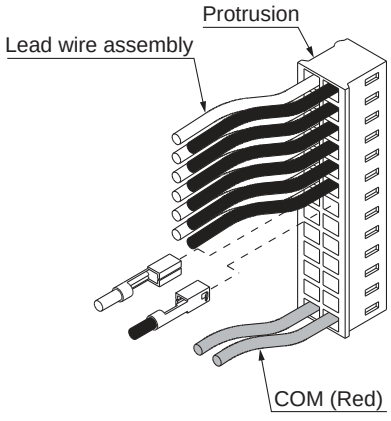
Stations	1	2	3	4	5	6
Single wiring	○	○				○
Double wiring			○	○	○	



* The drawing above shows connections based on the manifold specifications' example in the table to the left.

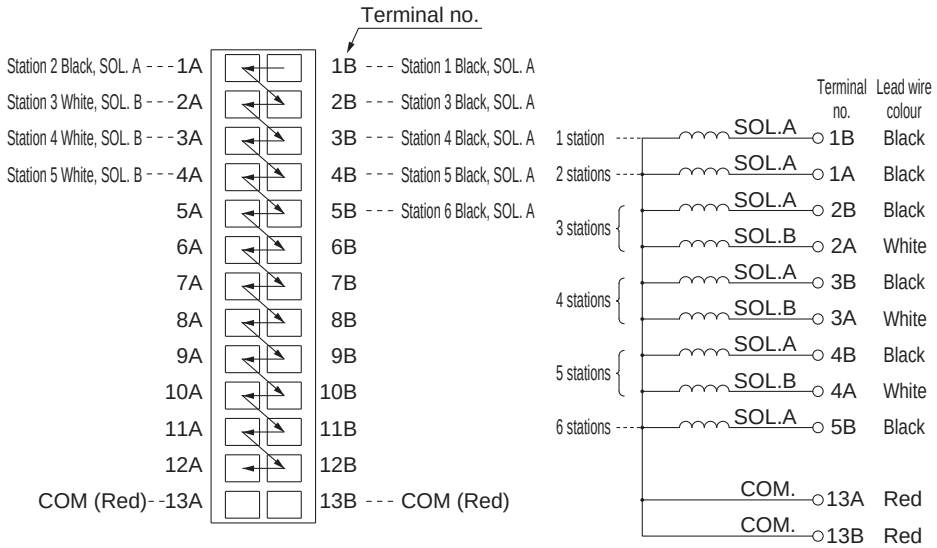
Wiring (P Kit: Flat Ribbon Cable Kit)

Procedure) Based on the manifold specifications, 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, then white wires in the order as shown below by the arrows.



Manifold Specifications' Example

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

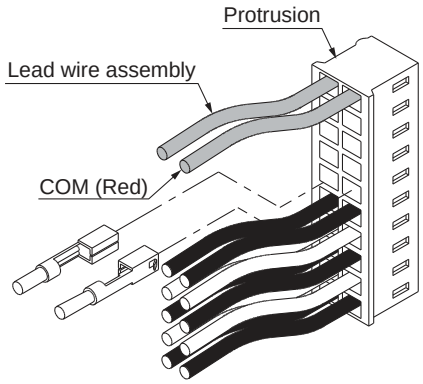


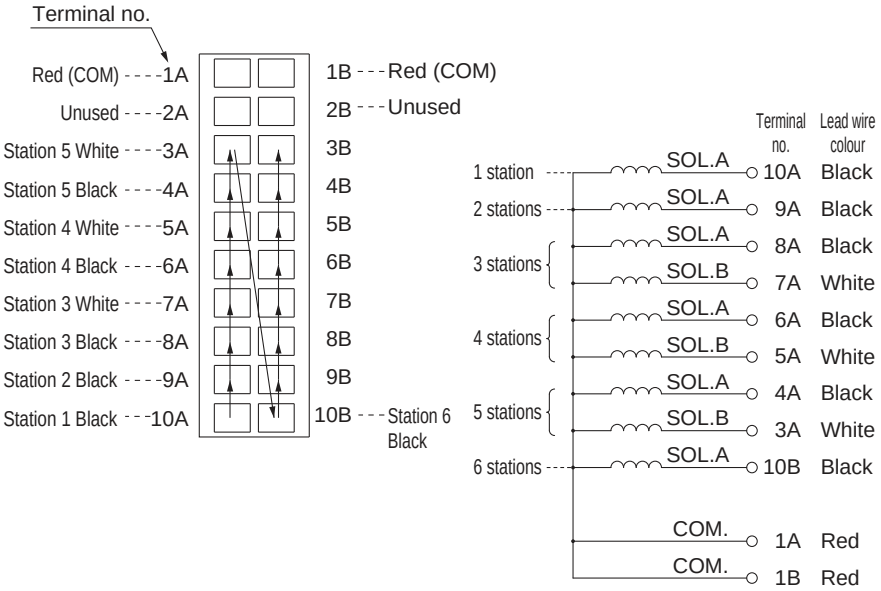
* The drawing above shows connections for type 26P flat ribbon cable connector based on the manifold specifications' example in the table to the left.
For type 20P, the connection will be the same as above except that COM changes to 10A and 10B.

How to Increase Manifold Stations for SQ1000/2000

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

Procedure) Based on the manifold specifications, 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, then white wires in the order as shown below by the arrows.





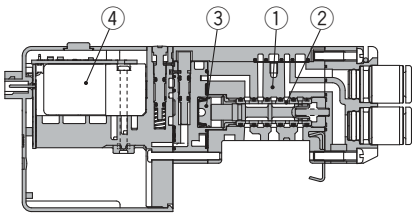
Manifold Specifications' Example

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

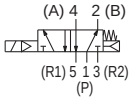
Construction: Series SQ1000 Plug Lead Type Main Parts and Pilot Valve Assembly

Metal seal type

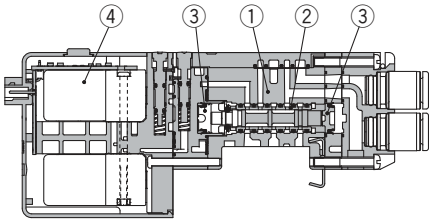
Single: SQ1140



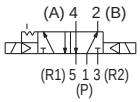
SQ1140



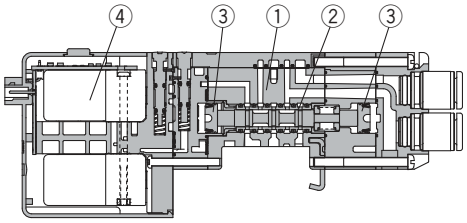
Double: SQ1240D



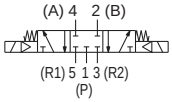
SQ1240D



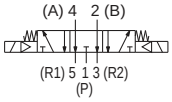
3 position: SQ1$^{3}_{5}$40



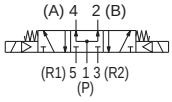
SQ1340



SQ1440

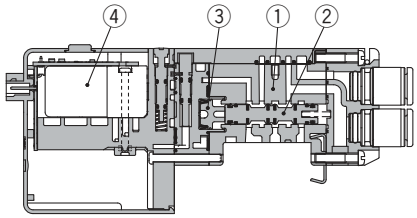


SQ1540

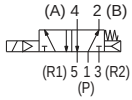


Rubber seal type

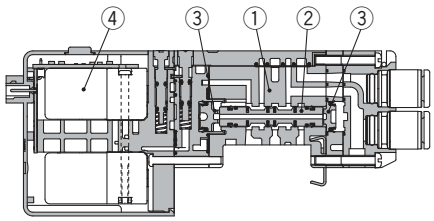
Single: SQ1141



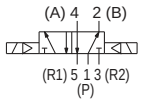
SQ1141



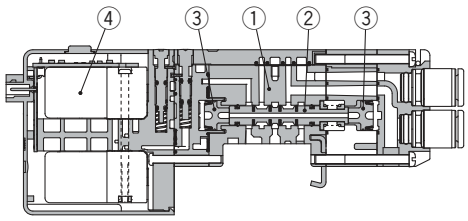
Double: SQ1241D



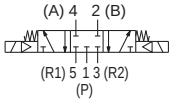
SQ1241D



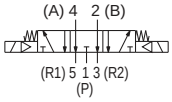
3 position: SQ1$^{3}_{5}$41



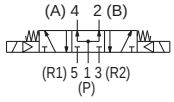
SQ1341



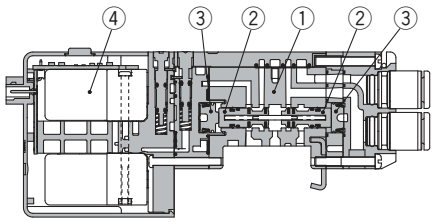
SQ1441



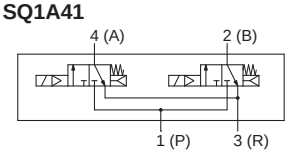
SQ1541



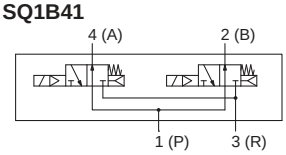
Dual 3 port valve: SQ1$^{A}_{B}_{C}$41



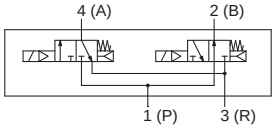
SQ1A41



SQ1B41



SQ1C41



Component Parts

No.	Description	Material
1	**Body**	Zinc die-casted
2	**Spool/Sleeve**	Stainless steel (Metal seal)
	Spool	Aluminium (Rubber seal)
3	**Piston**	Resin
4	**Pilot valve assembly (Refer to the below.)**	—

Pilot valve assembly

V112 □ - □

Coil voltage

5	24 VDC
6	12 VDC

Function

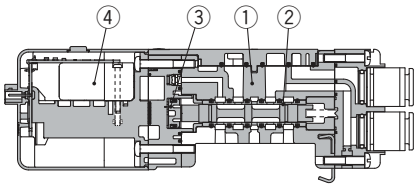
Symbol	Specifications	DC
—	Standard type	(0.4 W) ○
B	Quick response type	(0.95 W) ○
K	High pressure type (1.0 MPa)	(0.95 W) ○

Note) Common to single solenoid and double solenoid

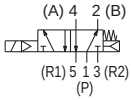
Construction: Series SQ2000 Plug Lead Type Main Parts and Pilot Valve Assembly

Metal seal type

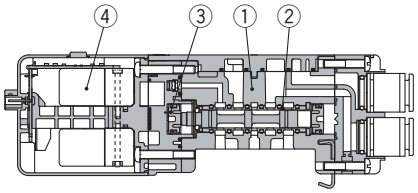
Single: SQ2140



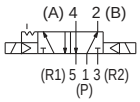
SQ2140



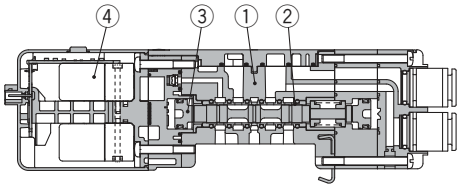
Double: SQ2240D



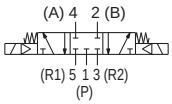
SQ2240D



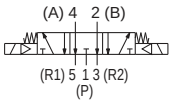
3 position: SQ2$^{3}_{5}$40



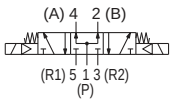
SQ2340



SQ2440

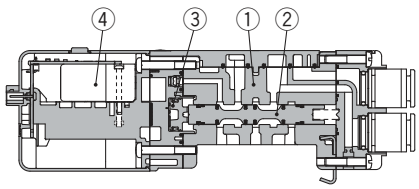


SQ2540

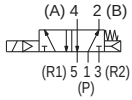


Rubber seal type

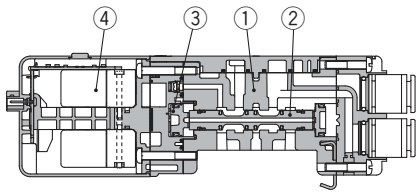
Single: SQ2141



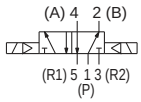
SQ2141



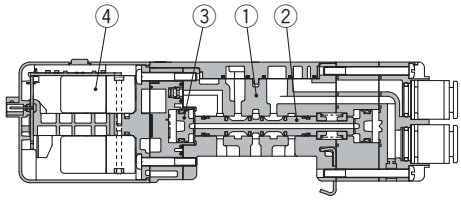
Double: SQ2241D



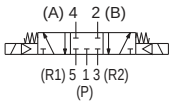
SQ2241D



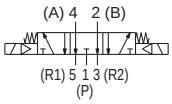
3 position: SQ2$^{3}_{5}$41



SQ2341



SQ2441



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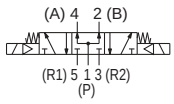
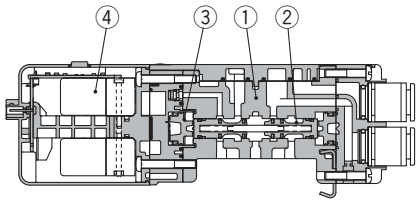
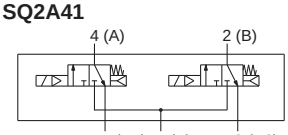


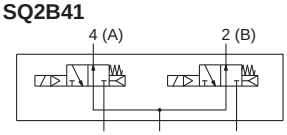
Dual 3 port valve: SQ2$^{A}_{B}_{C}$41



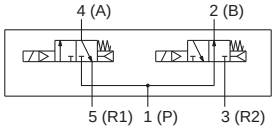
SQ2A41



SQ2B41



SQ2C41



Component Parts

No.	Description	Material
1	**Body**	Aluminium die-casted
2	**Spool/Sleeve**	Stainless steel (Metal seal)
	Spool	Aluminium (Rubber seal)
3	**Piston**	Resin
4	Pilot valve assembly (Refer to the below.)	—

Pilot valve assembly

V112 □ - □

Coil voltage

5	24 VDC
6	12 VDC

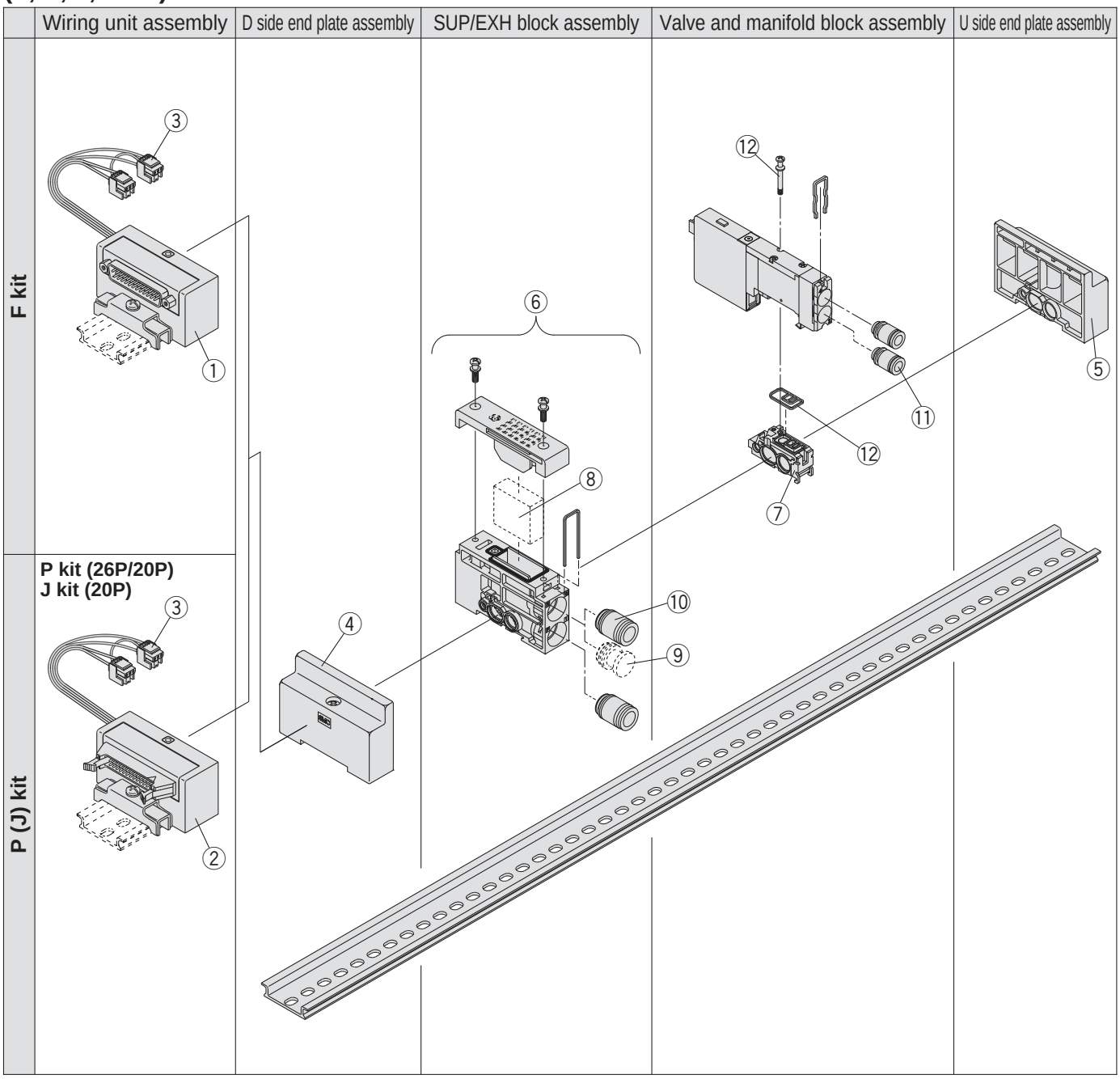
Function

Symbol	Specifications	DC
—	Standard type	(0.4 W) ○
B	Quick response type	(0.95 W) ○

Note) Common to single solenoid and double solenoid

Manifold Exploded View: SQ1000 (Plug Lead Type Manifold) SS5Q14

(F, P, J, C kit)



Manifold Spare Parts

Refer to pages 108 to 111 of “How to Increase Manifold Stations” regarding the mounting of each spare parts.

<① D-sub connector housing assembly>

AXT100 − 40 − FL25 − S 03

Wiring

S	Single wiring
D	Double wiring

Stations

01	For 1 station
⋮	⋮
24	For 24 stations

<② Flat ribbon cable connector housing assembly>

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

Wiring

S	Single wiring
D	Double wiring

Stations Note)

01	For 1 station
⋮	⋮
24	For 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 assembly>

(For F kit)

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

Wiring

0	For single (2-wire)
1	For double (3-wire)

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

Wiring

0	For single (2-wire)
1	For double (3-wire)

Lead wire length

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

(For P, J kit)

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

Wiring

0	For single (2-wire)
1	For double (3-wire)

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

Wiring

0	For single (2-wire)
1	For double (3-wire)

Lead wire length

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

(For C kit)

AXT661 − 1 3 AL − □

Wiring

3	For double (3-wire)
4	For single (2-wire)

Lead wire length

Symbol	L dimension [mm]
—	300
6	600
10	1000
15	1500
20	2000
25	2500
30	3000
50	5000

<④ D side end plate assembly>

SSQ1000 − 3A − 4

<⑤ U side end plate assembly>

SSQ1000 − 2A − 4

<⑥ SUP/EXH block assembly>

SSQ1000 − PR − 4 − C8 − □

Port size

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

Option

—	Common exhaust type
R	External pilot
S	Built-in silencer, direct exhaust

Note) Enter “-RS” for both options.

<⑦ Manifold block assembly>

SSQ1000 − 1A − 4 − □ Including gaskets ⑫

Option

—	None
B	Back pressure check valve
R	External pilot specifications

Note) Enter ”-BR“ for both options.

<⑧ Element>

SSQ1000 − SE

Note) Part number for a 10 piece set of elements. Refer to page 120 for replacement procedures.

<⑨ Port plug>

VVQZ2000 − CP

<⑩ Fitting assembly>

(For P, R port)

VVQ1000 − 51A − C8

Port size

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

Note) Purchasing order is available in units of 10 pieces.

<⑪ Fitting assembly>

(For cylinder port)

VVQ1000 − 50A − C6

Port size

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

Note) Purchasing order is available in units of 10 pieces.

<⑫ Gasket and screw assembly>

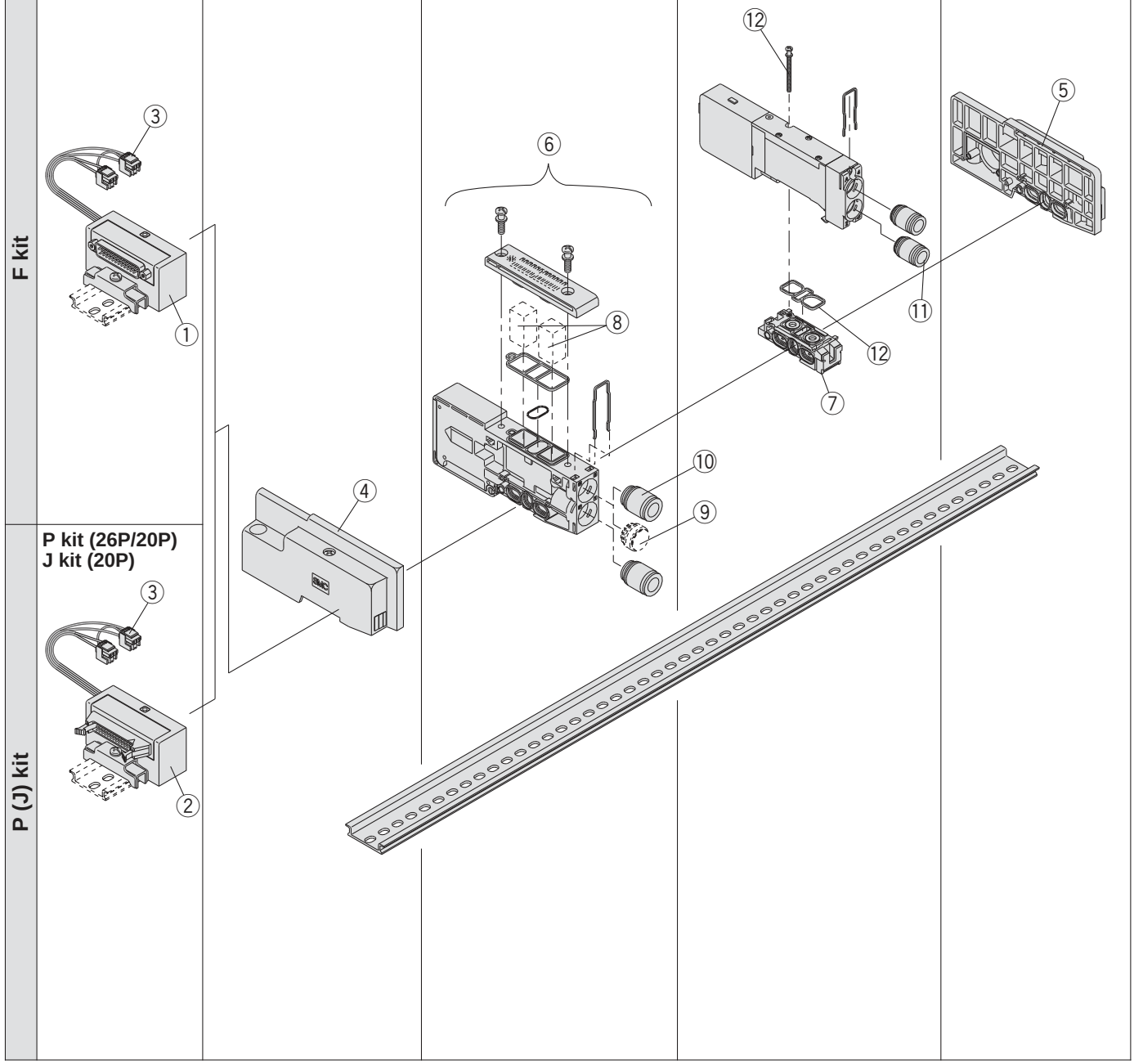
SQ1000 − GS

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

Manifold Exploded View: 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 assembly	U side end plate assembly
F kit					
P (J) kit	P kit (26P/20P) J kit (20P)				



Manifold Spare Parts

Refer to pages 108 to 111 of “How to Increase Manifold Stations” regarding the mounting of each spare parts.

<① D-sub connector housing assembly>

AXT100 − 41 − FL25 − S 03

Wiring

S	Single wiring
D	Double wiring

Stations

01	For 1 station
⋮	⋮
24	For 12 stations

<② Flat ribbon cable connector housing assembly>

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

Wiring

S	Single wiring
D	Double wiring

Stations Note)

01	For 1 station
⋮	⋮
24	For 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 assembly>

(For F kit)

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

Wiring

0	For single (2-wire)
1	For double (3-wire)

For station 2 to 24 **SSQ1000 − 4 1 A − F − 230**

Wiring

0	For single (2-wire)
1	For double (3-wire)

Lead wire length

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

(For P, J kit)

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

Wiring

0	For single (2-wire)
1	For double (3-wire)

For station 2 to 24 **SSQ1000 − 4 1 A − P − 310**

Wiring

0	For single (2-wire)
1	For double (3-wire)

Lead wire length

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

(For C kit)

AXT661 − 1 3 AL − 6

Wiring

3	For double (3-wire)
4	For single (2-wire)

Lead wire length

Symbol	L dimension [mm]
—	300
6	600
10	1000
15	1500
20	2000
25	2500
30	3000
50	5000

<④ D side end plate assembly>

SSQ2000 − 3A − 4 □

Manifold mounting

—	DIN rail mounting style
E	Direct mounting style

<⑤ U side end plate assembly>

SSQ2000 − 2A − 4 □ − 1

Manifold mounting

—	DIN rail mounting style
E	Direct mounting style

<⑥ SUP/EXH block assembly>

SSQ2000 − PR − 3 − C10 − □

Port size

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

Option

—	Common exhaust type
R	External pilot
S	Built-in silencer, direct exhaust

Note) Enter “-RS” for both options.

<⑦ Manifold block assembly>

Including gaskets ⑫

SSQ2000 − 1A − 4 − □

Option

—	None
B	Back pressure check valve
R	External pilot specifications

Note) Enter “-BR” for both options.

<⑧ Element>

SSQ2000 − SE

Note) Part number for a 10 piece set of elements. Refer to page 120 for replacement procedure.

<⑨ Port plug>

VVQZ3000 − CP

<⑩ Fitting assembly>

(For P, R port)

VVQ2000 − 51A − C10

Port size

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

Note) Purchasing order is available in units of 10 pieces.

<⑪ Fitting assembly>

(For cylinder port)

VVQ1000 − 51A − C8

Port size

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

Note) Purchasing order is available in units of 10 pieces.

<⑫ Gasket and screw assembly>

SQ2000 − GS

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

Series SQ1000/2000
Specific Product Precautions 1

Be sure to read before handling. Refer to back cover for Safety Instructions,"Handling Precautions for SMC Products" (M-E03-3) and the Operation Manual for 3/4/5 Port Solenoid Valves Precautions. Please download it via our website, http://www.smc.eu

Manual Override

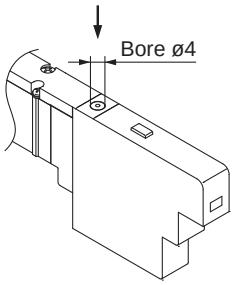
⚠Warning

Use to switch the main valve.

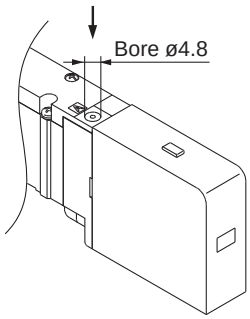
Push Type (Tool Required)

Push down on the manual override button with a small screwdriver until it stops.

SQ1000



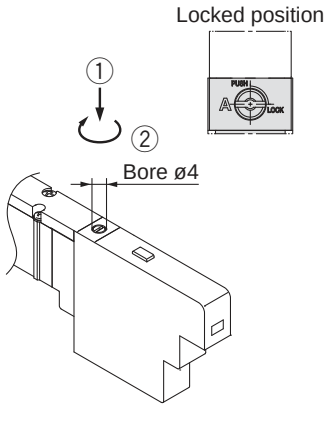
SQ2000



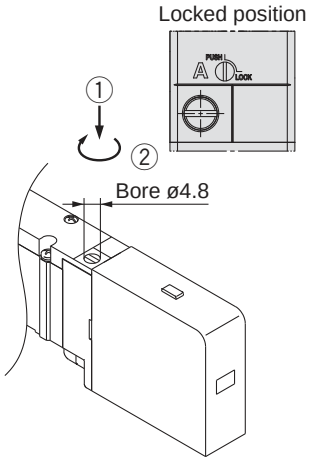
Locking Type (Tool Required)

Push down completely on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it. Turn it counterclockwise to release it.

SQ1000



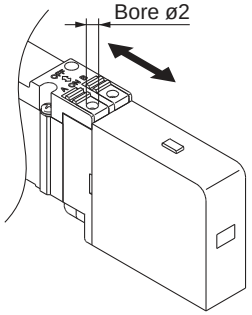
SQ2000

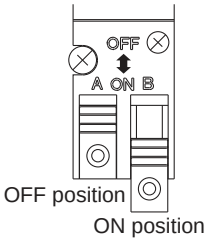


Slide Locking Type (Manual Type) (SQ2000 only)

The manual override is locked by sliding it all the way to the pilot valve side (ON side) with a small flat head screwdriver 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 screwdriver, etc., of ø2 or less.

SQ2000



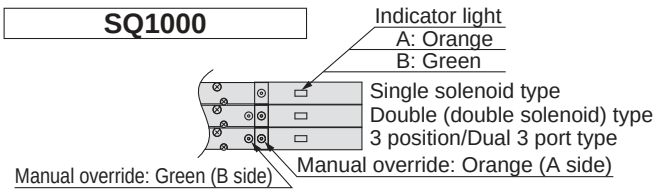


Light/Surge Voltage Suppressor

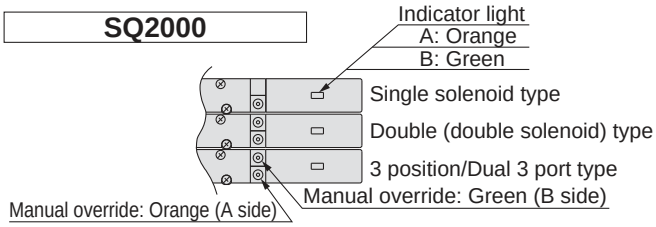
⚠Caution

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 colours are used to indicate the energization of A side or B side.

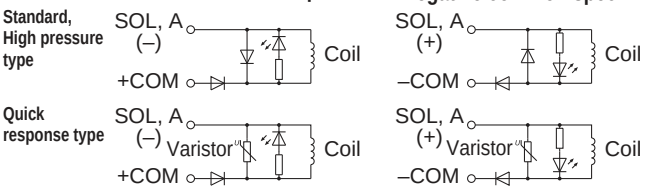
SQ1000



SQ2000



● Single Solenoid Type (SQ1000/2000)

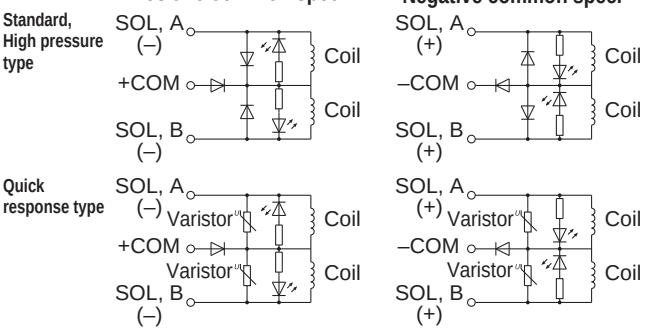


Note) With quick response type, approximately -40 V of coil surge voltage is generated when the valve is switched OFF.

● Double Type (SQ1000/2000)

● 3 Position Type (SQ1000/2000)

● 4 Position Dual 3 Port Type (SQ1000/2000)



Note) With quick response type, approximately -40 V of coil surge voltage is generated when the valve is switched OFF.

Continuous Duty

⚠Caution

If a valve is energized continuously for a long period of time, the rise in temperature due to heat-up of the coil assembly may cause a decline in solenoid valve performance, reduce service life, or have adverse effects on peripheral equipment. When the valve is continuously energized, use the standard type (0.4 W) at ambient temperature of 40°C or less with proper heat radiation. In particular, if three or more adjacent stations on the manifold are energized simultaneously for extended periods of time or if the valves on A side and B side of the dual 3 port valve are energized simultaneously for a long period of time, take special care as the temperature rise will be greater.

Series SQ1000/2000
Specific Product Precautions 2

Be sure to read before handling. Refer to back cover for Safety Instructions,"Handling Precautions for SMC Products" (M-E03-3) and the Operation Manual for 3/4/5 Port Solenoid Valves Precautions. Please download it via our website, http://www.smc.eu

Mounting and Removal of Valves

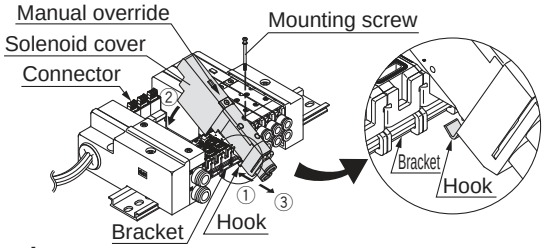
⚠Caution

Mounting

- Insert the hook of the valve into the bracket 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 0.23 N·m
SQ2000	0.25 to 0.35 N·m

- When pushing the valve down, press it on the area near the manual override. Be careful not to push the solenoid cover.



Removing

- 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.

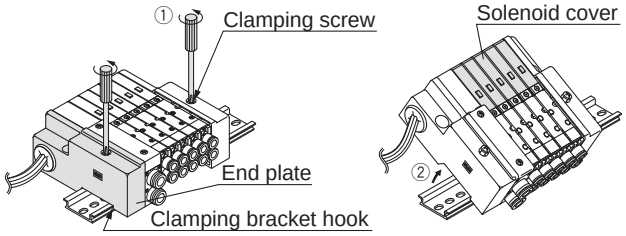
If it is difficult to loosen the screw, loosen it while pressing the valve gently on the area near the manual override.

Mounting and Removal of Manifold with DIN Rail

⚠Caution

Removing Manifold from DIN Rail

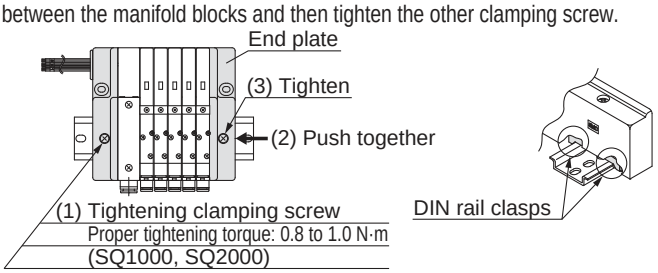
① Loosen the end plate clamping screws on both sides until they turn freely. (The screws do not come out.)
② Remove the manifold from the DIN rail by lifting it from the solenoid cover side.



When a manifold contains a large number of stations and it 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.

Replacement of Cylinder Port Fittings

⚠Caution

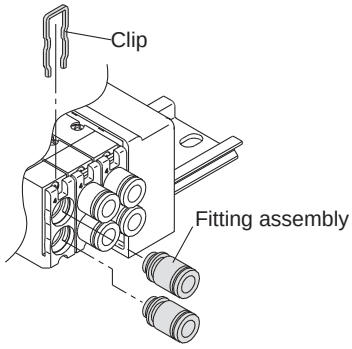
The cylinder port fittings are a cassette for easy replacement. Fittings are secured with a clip that is inserted from the top side of the valve. Remove the clip with a flat head screwdriver, etc., to replace the fittings.
To mount a fitting, insert the fitting assembly until it stops and reinsert the clip to its designated position.

Applicable tubing 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

Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.



Built-in Silencer Replacement Element

⚠Caution

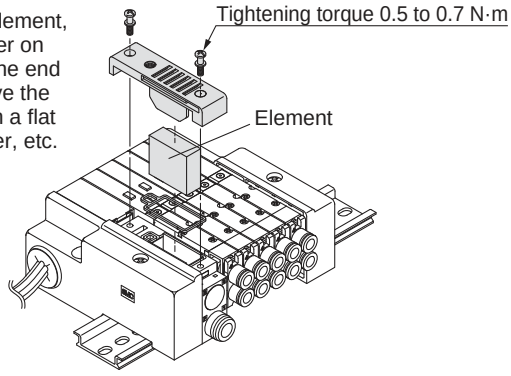
A filter element is built into the manifold base end plate. When the element becomes dirty and clogged, this will cause trouble such as a drop in the cylinder speed, etc. Therefore, replace the element regularly.

Element part no.

Type	Element part no.	
	SQ1000	**SQ2000**
Built-in silencer direct exhaust (-S)	SSQ1000-SE	SSQ2000-SE

∗ 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 screwdriver, etc.



How to Calculate the Flow Rate

For obtaining the flow rate, refer to Best Pneumatics No.1.

■Trademark
DeviceNet™ is a trademark of ODVA.

⚠ Safety Instructions

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

⚠ Caution: **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

⚠ Warning: **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

⚠ Danger : **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots - Safety.
etc.

⚠ Warning

1. **The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.**
   Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.
2. **Only personnel with appropriate training should operate machinery and equipment.**
   The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.
3. **Do not service or attempt to remove product and machinery/equipment until safety is confirmed.**
   1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
   2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
   3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
4. **Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.**
   1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
   2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.
   3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
   4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

⚠ Caution

1. **The product is provided for use in manufacturing industries.**
   The product herein described is basically provided for peaceful use in manufacturing industries.
   If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
   If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/ Compliance Requirements

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

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, wichever is first.*2)
   Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
   This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.

*2) **Vacuum pads are excluded from this 1 year warranty.**
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.
Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

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

⚠ Safety Instructions | Be sure to read "Handling Precautions for SMC Products" (M-E03-3) before using.

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1st printing RT printing RT 00 Printed in Spain