

5 Port Solenoid Valve

Series SQ1000/2000

Metal Seal

Rubber Seal

Stacking Manifold

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

Manifold Mounted Type

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

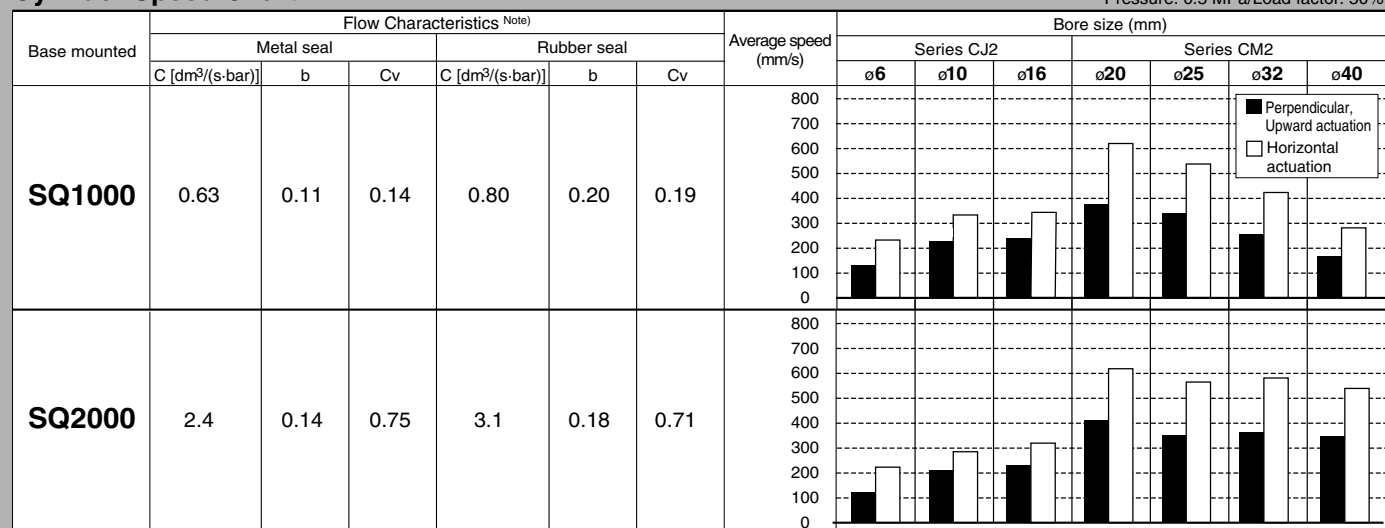
Easy Replacement of Clip Type One-touch Fittings

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.

Cylinder Speed Chart



- * It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with 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	TO604 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	AN200-02	



Built-in Back Pressure Check Valve (Option symbol: B)

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

Unprecedented High Speed Response and Long Service Life

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

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

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

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

VFR

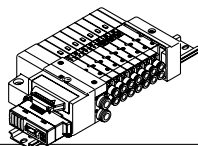
VQ7

Metal Seal/Rubber Seal 5 Port Solenoid Valve

Plug-in Unit

Series *SQ1000*

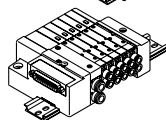
- **EX510 Gateway Type Serial Transmission System**



..... P. 986

- **F kit**

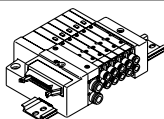
D-sub connector kit



..... P. 990, 996

- **P kit**

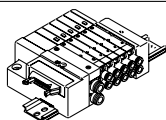
Flat ribbon cable connector kit



..... P. 990, 998

- **J kit**

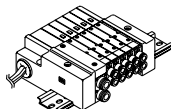
PC Wiring System compatible
Flat ribbon cable



..... P. 990, 1000

- **L kit**

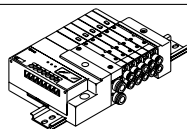
Lead wire kit



..... P. 990, 1002

- **S kit**

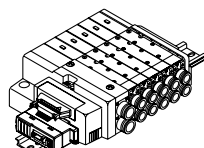
Serial transmission kit



..... P. 990, 1004

Series *SQ2000*

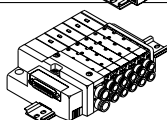
- **EX510 Gateway Type Serial Transmission System**



..... P. 1006

- **F kit**

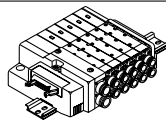
D-sub connector kit



..... P. 1010, 1016

- **P kit**

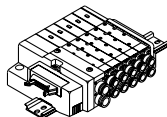
Flat ribbon cable connector kit



..... P. 1010, 1018

- **J kit**

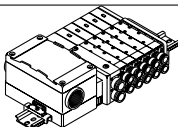
PC Wiring System compatible
Flat ribbon cable



..... P. 1010, 1020

- **T kit**

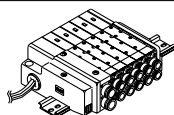
Terminal block box kit



..... P. 1010, 1022

- **L kit**

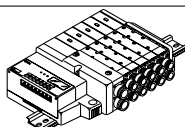
Lead wire kit



..... P. 1010, 1024

- **S kit**

Serial transmission kit



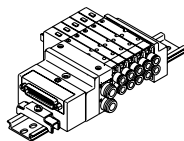
..... P. 1010, 1026

Plug Lead Unit

Series **SQ1000**

● **F kit**

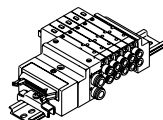
D-sub connector kit



..... P. 1052, 1058

● **P kit**

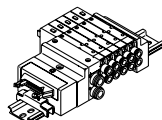
Flat ribbon cable connector kit



..... P. 1052, 1060

● **J kit**

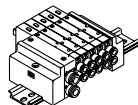
PC Wiring System compatible
Flat ribbon cable



..... P. 1052, 1062

● **C kit**

Connector kit

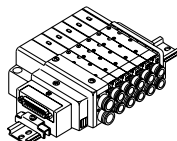


..... P. 1052, 1064

Series **SQ2000**

● **F kit**

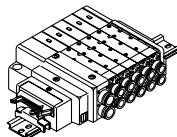
D-sub connector kit



..... P. 1066, 1072

● **P kit**

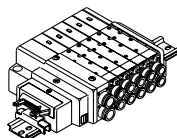
Flat ribbon cable connector kit



..... P. 1066, 1074

● **J kit**

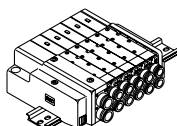
PC Wiring System compatible
Flat ribbon cable



..... P. 1066, 1076

● **C kit**

Connector kit



..... P. 1066, 1078

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

VFR

VQ7

EX510 Gateway Type Serial Transmission System Plug-in Unit

Series *SQ1000*



How to Order Manifold

SS5Q 1 3 – SB 08 – **D**

• **Manifold series**

1	SQ1000
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• **SI unit**

Nil	Positive COM (NPN)
N	Negative COM (PNP)

• **Valve stations**

Symbol	Stations
01	1 station
⋮	⋮
08	8 stations

Note) Max. 16 stations
(Special wiring specifications)

• **CE compliant**

Nil	—
Q	CE compliant

• **1(P), 3(R) port size**

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

• **Option**

Nil	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: -D08

Note 2) Since 4 port specification valves (5 (R1) and 3 (R2) are common) are used, back pressure cannot be prevented with dual 3 port valves.

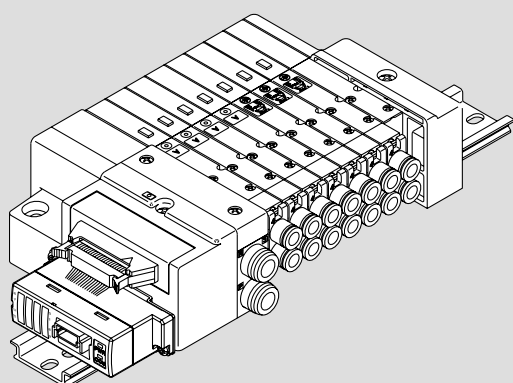
Note 3) Standard wiring specifications are for double wiring. Indicate wiring specifications for single wiring or mixed single and double wiring, or when exceeding the standard maximum number of stations.

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

• **DIN rail mounting**

How to order manifold (Order example)

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.	Page
Nil	Positive COM (NPN)	EX510-S002B	P. 1715 to 1717
N	Negative COM (PNP)	EX510-S102B	

Refer to pages 1696 to 1724 for the details of EX510 gateway type serial transmission system.

How to Order Valves

SQ 1 1 3 0 - 5 - C6 - - -

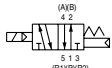
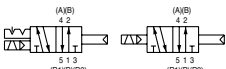
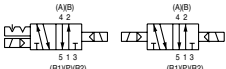
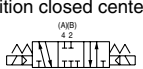


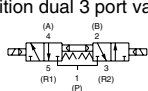
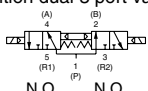
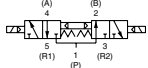
Series

1	SQ1000
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CE compliant

Nil	—
Q	CE compliant

Type of actuation

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



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

Note 2) Only rubber seal types are applicable.

Seal

0	Metal seal
1	Rubber seal

With/Without manifold block

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

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

Nil	None
A	Port 4(A)
B	Port 2(B)

Cylinder port

	Symbol	Port size	
Metric size	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	Top ported
	L3	With One-touch fittings for ø3.2	
	L4	With One-touch fittings for ø4	
Inch size	L6	With One-touch fittings for ø6	Side ported
	L5	M5 thread	
	N1	With One-touch fittings for ø1/8"	
	N3	With One-touch fittings for ø5/32"	Top ported
	N7	With One-touch fittings for ø1/4"	
	LN1	With One-touch fittings for ø1/8"	
	LN3	With One-touch fittings for ø5/32"	
	LN7	With One-touch fittings for ø1/4"	

Manual override

Symbol	Specifications
Nil	Non-locking push type (Tool required)
B ^{Note)}	Locking type (Tool required)



Note) Except double (latching) type.

Rated voltage

5	24 VDC
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Note) Light/Surge voltage suppressor is built-in.

Function

Symbol	Specifications
Nil	Standard type (1.0 W DC)
D	2 position double (Double solenoid specifications)
K ⁽¹⁾	High pressure type (1 MPa, 1.0 W DC)
N	Negative COM
Y ^{(1) (3)}	Low wattage type (0.5 W DC)
R ⁽²⁾	External pilot specifications



Note 1) Except double (latching) type.

Note 2) Except dual 3 port valves.

Note 3) Please select when you expect to energize the unit for extended periods of time. Refer to page 3 for details.

Note 4) When two or more symbols are specified, indicate them alphabetically.

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

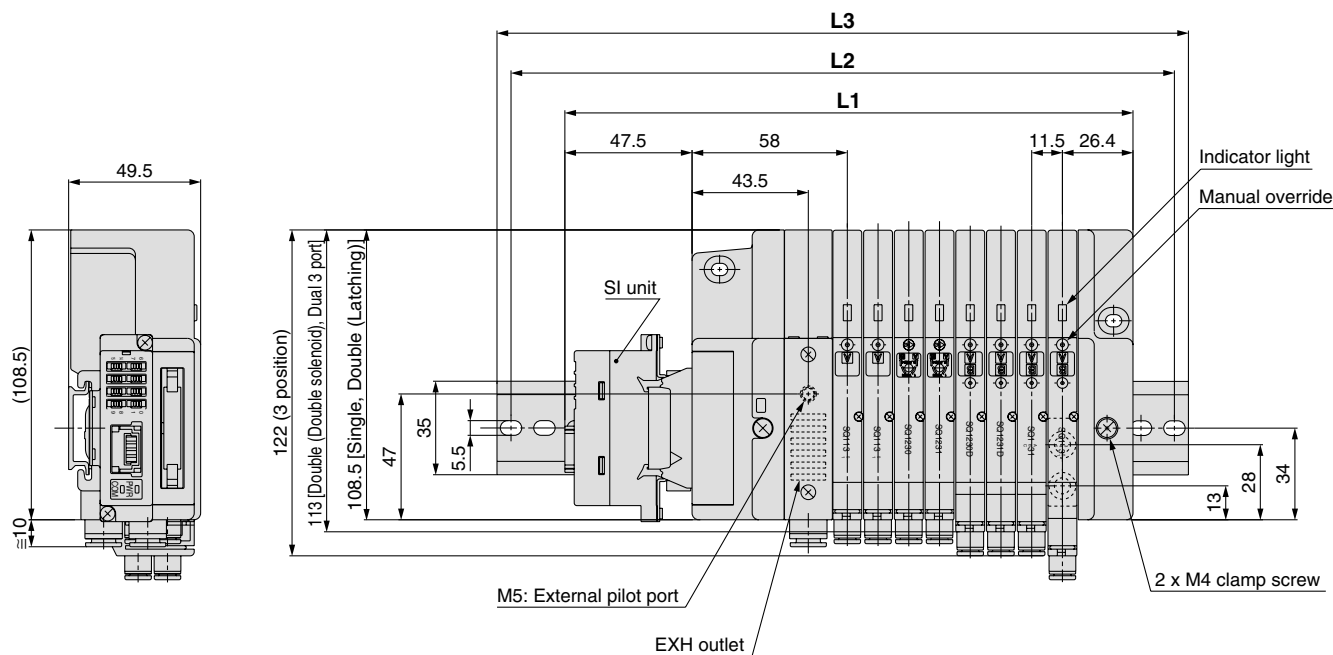
VFS

VFR

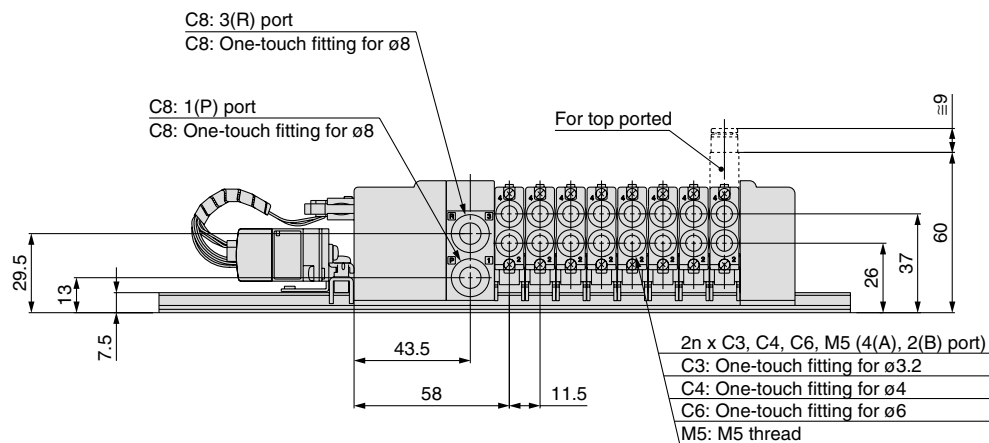
VQ7

Series SQ1000

Dimensions: SQ1000



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



Dimensions

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

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

SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Plug-in Unit

Series SQ1000



How to Order Manifold

SS5Q13 - 08 FD2 - D - - -

Stations

01	1 station
⋮	⋮
24 (Note)	24 stations

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

Manifold mounting

D	DIN rail mounting style
E (Note)	Direct mounting style

Note) Refer to page 1038 for details.

Option

Nil	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: -D08

Note 2) When installing back pressure check valves only on the stations required, enter the part number and specify the mounting stations on a manifold specification sheet.

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) Standard wiring specifications are for double wiring. Indicate wiring specifications for single wiring or mixed single and double wiring, or when exceeding the standard maximum number of stations. (Except L kit.)

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

* Refer to pages 1027 to 1031 and 1037 to 1039 for manifold option parts.

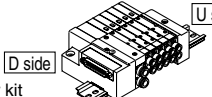
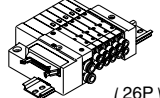
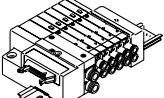
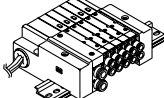
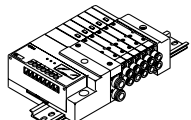
CE compliant

Nil	—
Q	CE compliant

1(P), 3(R) port size

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

Electrical entry

Kit type	Lead wire connector location	Cable specifications	Station	Max. number of stations for special wiring specifications	Max. number ⁽²⁾ of solenoids
F kit D-sub connector kit 	D side	FD0	1 to 12 stations	24 stations	24
		FD1			
		FD2			
		FD3			
P kit Flat ribbon cable connector kit (26P/20P) 	D side ⁽¹⁾	PD0	1 to 12 stations	24 stations	24
		PD1			
		PD2			
		PD3			
		PDC	1 to 9 stations	18 stations	18
J kit Flat ribbon cable (20P) (PC Wiring System compatible) 	D side	JD0	1 to 8 stations	16 stations	16
L kit Lead wire kit 	D side	LD0	1 to 12 stations	—	—
	U side	LU0			
	D side	LD1			
	U side	LU1			
	D side	LD2			
	U side	LU2			
S kit Serial transmission kit EX140 integrated-type (for output) serial transmission system ⁽³⁾ 	D side	SDF	1 to 8 stations	16 stations	16
		SDH			
		SDJ1			
		SDJ2	1 to 4 stations	8 stations	8
		SDQ	1 to 8 stations	16 stations	16
		SDR1			
		SDR2			
		SDV	1 to 4 stations	8 stations	8
			1 to 8 stations	16 stations	16

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

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

Note 3) Refer to pages 1656 and 1657 for the details of EX140 integrated-type (for output) serial transmission system.

Refer to "SI Unit Part No." when ordering the CE-compliant SI unit.

* Refer to page 1049 for manifold spare parts.

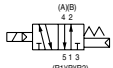
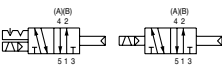

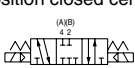

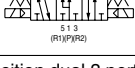
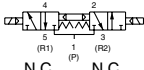
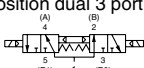
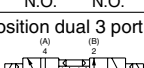
SI unit part no.


Symbol	Protocol type	SI unit part no.	CE compliant	Page	Symbol	Protocol type	SI unit part no.	CE compliant	Page
SDF	NKE Corp.: Uni-wire System	EX140-SUW1	—	P. 1656	SDQ	DeviceNet	EX140-SDN1	●	P. 1656
SDH	NKE Corp.: Uni-wire H System	EX140-SUH1	—		SDR1	OMRON Corp.: CompoBus/S (16 output points)	EX140-SCS1	●	
SDJ1	SUNX Corp.: S-LINK (16 output points)	EX140-SSL1	—		SDR2	OMRON Corp.: CompoBus/S (8 output points)	EX140-SCS2	●	
SDJ2	SUNX Corp.: S-LINK (8 output points)	EX140-SSL2	—		SDV	CC-LINK	EX140-SMJ1	●	

How to Order Valves

SQ1 **1** **3** **0** **5** **C6**

Type of actuation

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

-  Note 1) Refer to page 1108 for precautions.
Note 2) For double solenoid specification, the function symbol below is "D".
Note 3) Only rubber seal types are applicable.

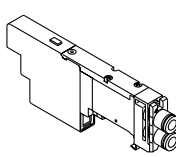
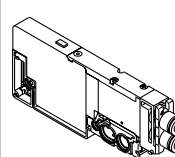
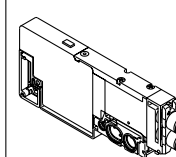
Seal

0	Metal seal
1	Rubber seal

CE compliant

Nil	—
Q	CE compliant

With/Without manifold block

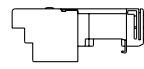

Nil	M	MB (Note)
Without manifold block 	With manifold block 	With manifold block, built-in back pressure check valve 
• When ordering with manifolds • When only valves are required.	* Lead wire is not included.	* Lead wire is not included.
For adding stations		


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

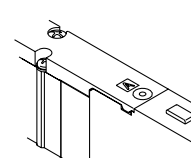
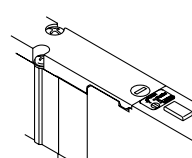
Nil	None
A	Port 4(A)
B	Port 2(B)


Cylinder port

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	Top ported (1) 
L3	With One-touch fittings for ø3.2	
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 1039 for the inch-size one-touch fittings.


Manual override

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

 Note) Except double (latching) type.


Coil voltage

5	24 VDC
6	12 VDC

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

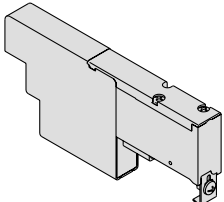
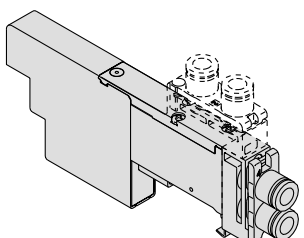
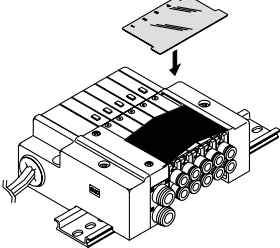
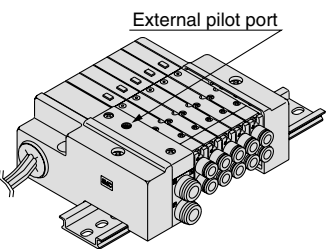
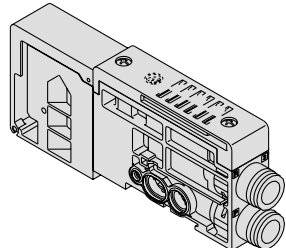
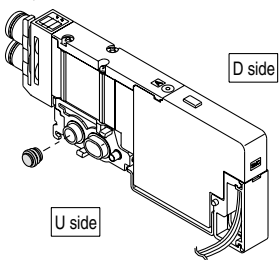
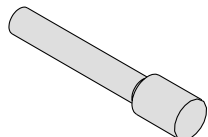
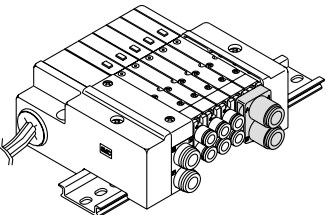
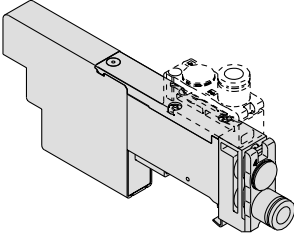
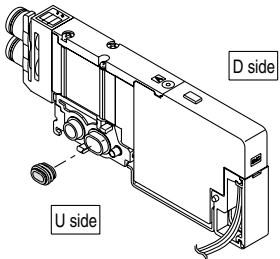
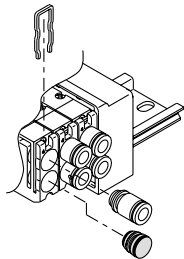
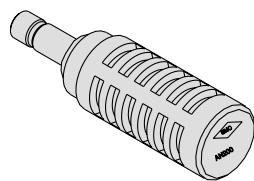
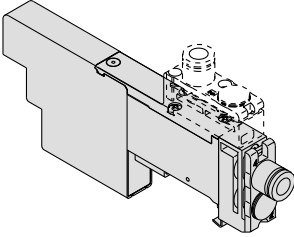
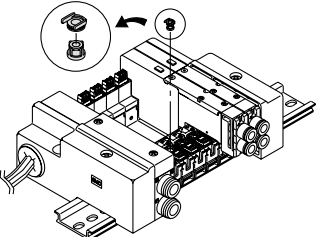
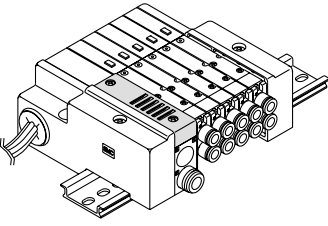
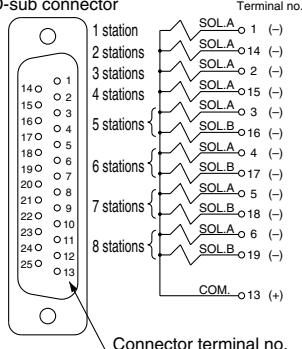
Function

Nil	Standard type (1.0 W DC)
D	2 position double (Double solenoid specifications) (Latching type: Nil)
K (1)	High pressure type (1 MPa, 1.0 W DC) [Applicable to metal seal only]
N	Negative COM
Y (2) (3)	Low wattage type (0.5 W DC)
R (4)	External pilot specifications

-  Note 1) Except double (latching) type.
Note 2) Except double (latching) and K (high-voltage) types.
Note 3) Please select when you expect to energize the unit for extended periods of time. Refer to page 3 for details.
Note 4) Except dual 3 port valves.
Note 5) When two or more symbols are specified, indicate them alphabetically.

Series SQ1000

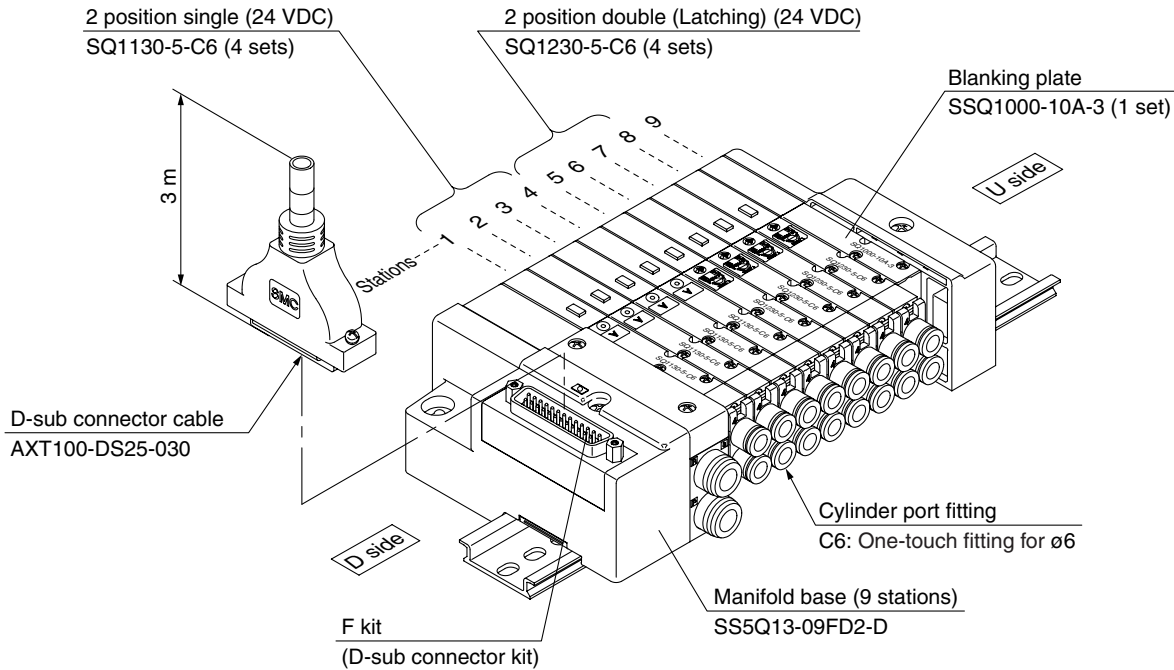
Manifold Option

Blanking plate SSQ1000-10A-3 	Individual SUP/EXH spacer SSQ1000-PR1-3-^{C6}_{L6} 	Name plate (-N) SSQ1000-N3-n 	External pilot specifications (-R) 
SUP/EXH block SSQ1000-PR-3-C8 (-S) 	SUP block plate SSQ1000-B-P 	Blanking plug KQ2P-23/04/06/08 	Dual flow fitting SSQ1000-52A-^{C8}_{N9} 
Individual SUP spacer SSQ1000-P-3-^{C6}_{L6} 	EXH block plate SSQ1000-B-R 	Port plug VVQZ100-CP 	Silencer (For EXH port) 
Individual EXH spacer SSQ1000-R-3-^{C6}_{L6} 	Back pressure check valve (-B) SSQ1000-BP 	Built-in silencer (-S) 	Special wiring specifications (-K) 

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

How to Order Manifold Assembly (Example)

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



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

→ 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.

SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Valve Specifications

Model

Series		Number of solenoids	Model		Flow characteristic ⁽¹⁾						Response time (ms) ⁽²⁾		Mass (g)
					1 → 4/2 (P → A/B)			4 → 5 (A → R1)			Standard: 1 W	Low wattage	
					C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv			
SQ1000	2 position	Single	Metal seal	SQ1130	0.62	0.10	0.14	0.63	0.11	0.14	12 or less	15 or less	80
			Rubber seal	SQ1131	0.79	0.20	0.19	0.80	0.20	0.19	15 or less	20 or less	80
		Double (Latching)	Metal seal	SQ1230	0.62	0.10	0.14	0.63	0.11	0.14	15 or less	—	80
			Rubber seal	SQ1231	0.79	0.20	0.19	0.80	0.20	0.19	20 or less	—	80
		Double (Double solenoid)	Metal seal	SQ1230D	0.62	0.10	0.14	0.63	0.11	0.14	10 or less	13 or less	95
			Rubber seal	SQ1231D	0.79	0.20	0.19	0.80	0.20	0.19	15 or less	20 or less	95
	3 position	Closed center	Metal seal	SQ1330	0.58	0.12	0.14	0.63	0.11	0.14	20 or less	26 or less	100
			Rubber seal	SQ1331	0.64	0.20	0.15	0.58	0.26	0.16	25 or less	33 or less	100
		Exhaust center	Metal seal	SQ1430	0.58	0.12	0.14	0.60	0.14	0.14	20 or less	26 or less	100
			Rubber seal	SQ1431	0.64	0.20	0.15	0.80	0.20	0.19	25 or less	33 or less	100
		Pressure center	Metal seal	SQ1530	0.62	0.12	0.14	0.63	0.14	0.14	20 or less	26 or less	100
			Rubber seal	SQ1531	0.79	0.21	0.19	0.59	0.20	0.14	25 or less	33 or less	100
	1 position	Dual 3 port valve	Rubber seal	SQ1 ^A _B ^C 31	0.59	0.28	0.15	0.59	0.28	0.15	25 or less	33 or less	95

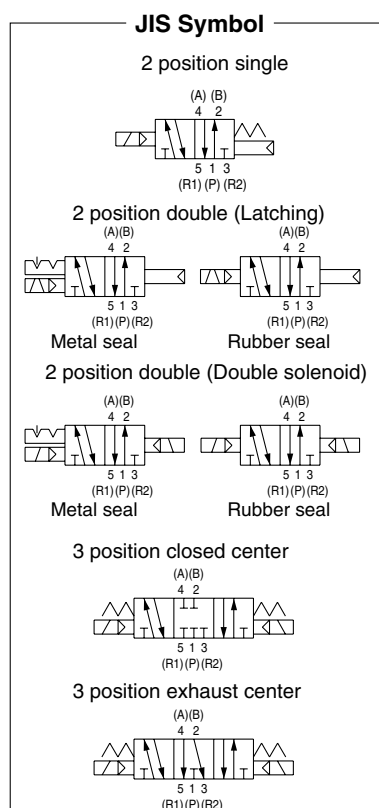
Note 1) Values for the cylinder port size of C6, CYL → Values of EXH. Flow characteristics of 2 → 3 (B → R2) delines about 30% of 4 → 5 (A → R1).
 Note 2) Based on JIS B 8375-1981. (Values with a supply pressure of 0.5 MPa and light/surge voltage suppressor. Values fluctuate depending on the pressure and air quality.)



Specifications

Valve specifications	Valve construction		Metal seal	Rubber seal
	Fluid		Air/Inert gas	
	Maximum operating pressure		0.7 MPa (High pressure type: 1.0 MPa) ⁽³⁾	
	Min. operating pressure	Single	0.1 MPa	0.15 MPa
		Double (Latching)	0.18 MPa	0.18 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 temp.		-10 to 50°C ⁽¹⁾	
	Lubrication		Not required	
	Pilot valve manual override		Push type/Locking type (Tool required)	
Solenoid specifications	Vibration/Impact resistance ⁽²⁾		30/150 m/s ²	
	Protection structure		Dust tight	
	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	1 W DC (42 mA), 0.5 W DC (21 mA) ⁽⁴⁾	
		12 VDC	1 W DC (83 mA), 0.5 W DC (42 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 de-energized states every once for each condition.
 Note 3) Metal seal type only. [Except double (latching) type.]
 Note 4) Values for the low wattage (0.5 W) specifications.



Manifold Specifications

Base model	Porting specifications			Applicable solenoid valve	Type of connection	Applicable station ⁽³⁾	5 station mass ⁽⁴⁾ (g)	1 station mass ⁽⁴⁾ (g)	
	Port size ⁽¹⁾								
	1(P), 3(R)	4(A), 2(B)							
Port location		Port size							
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		
		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		
		Top ⁽²⁾	L3 (For ø3.2) L4 (For ø4) L6 (For ø6) L5 (M5 thread)						

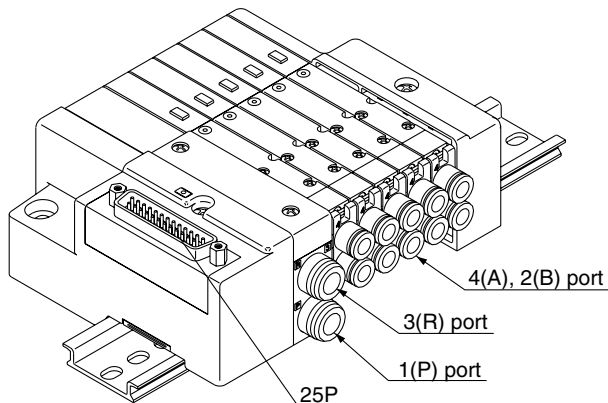


Note 1) One-touch fittings in inch sizes are also available. For details, refer to page 1039.

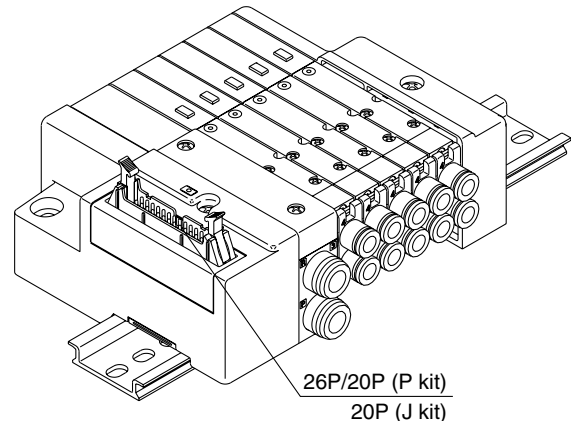
Note 2) Can be changed to side ported configuration.

Note 3) An optional specification for special wiring is available to increase the maximum number of stations. Refer to page 1037 for details.

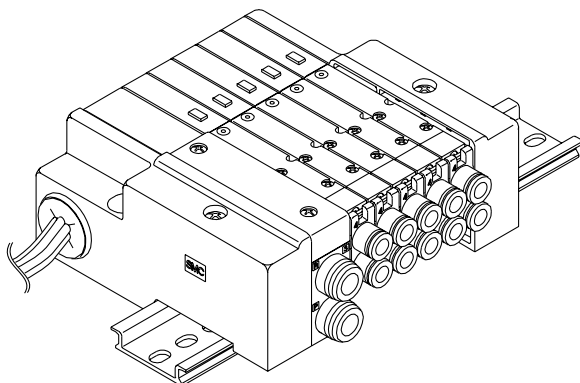
Note 4) Except valves. For valve mass, refer to page 994.



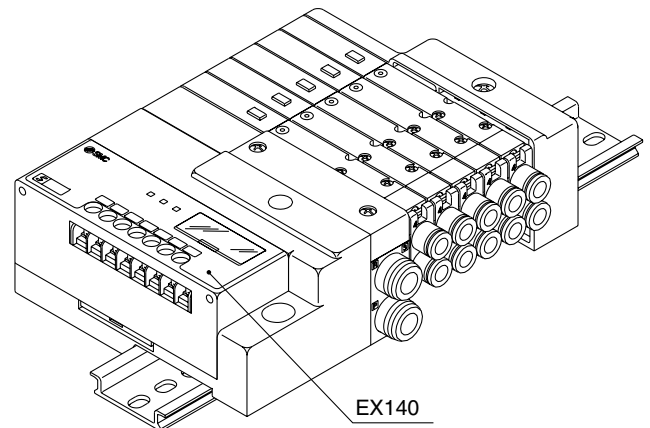
F kit



P kit J kit



L kit



Refer to pages 1656 and 1657 for the details of EX140 integrated-type (for output) serial transmission system.

S kit

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

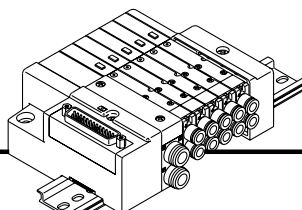
SQ

VFS

VFR

VQ7

F Kit (D-sub connector kit)



- Simplification and labor 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

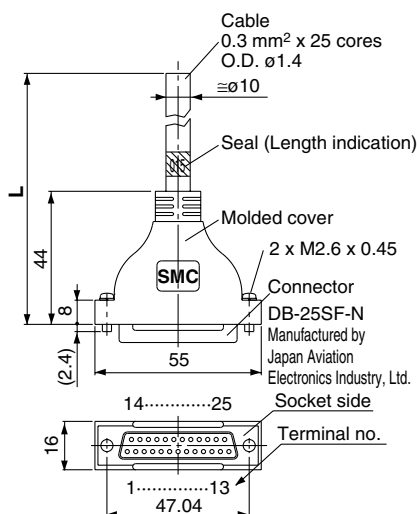
Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ1000	Side, Top	C8	C3, C4, C6, M5	12 stations (24 as an option)

D-sub Connector (25 pins)

Cable assembly

015
AXT100-DS25-030
050

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



D-sub Connector Cable Assembly Terminal No.

Terminal number	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black
16	Blue	White
17	Purple	None
18	Gray	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	None

D-sub Connector Cable Assembly

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

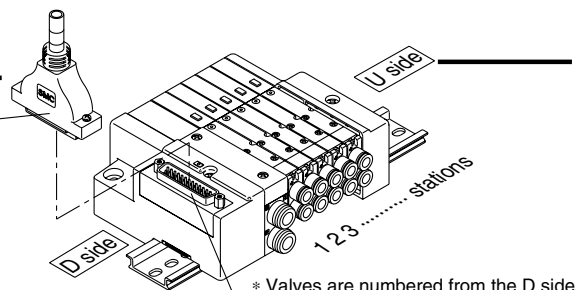
Electric Characteristics

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 cables is 20 mm.

Connector manufacturers' example

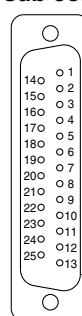
- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Hirose Electric Co., Ltd.



* Valves are numbered from the D side.

Electrical wiring specifications

D-sub connector



Connector terminal no.

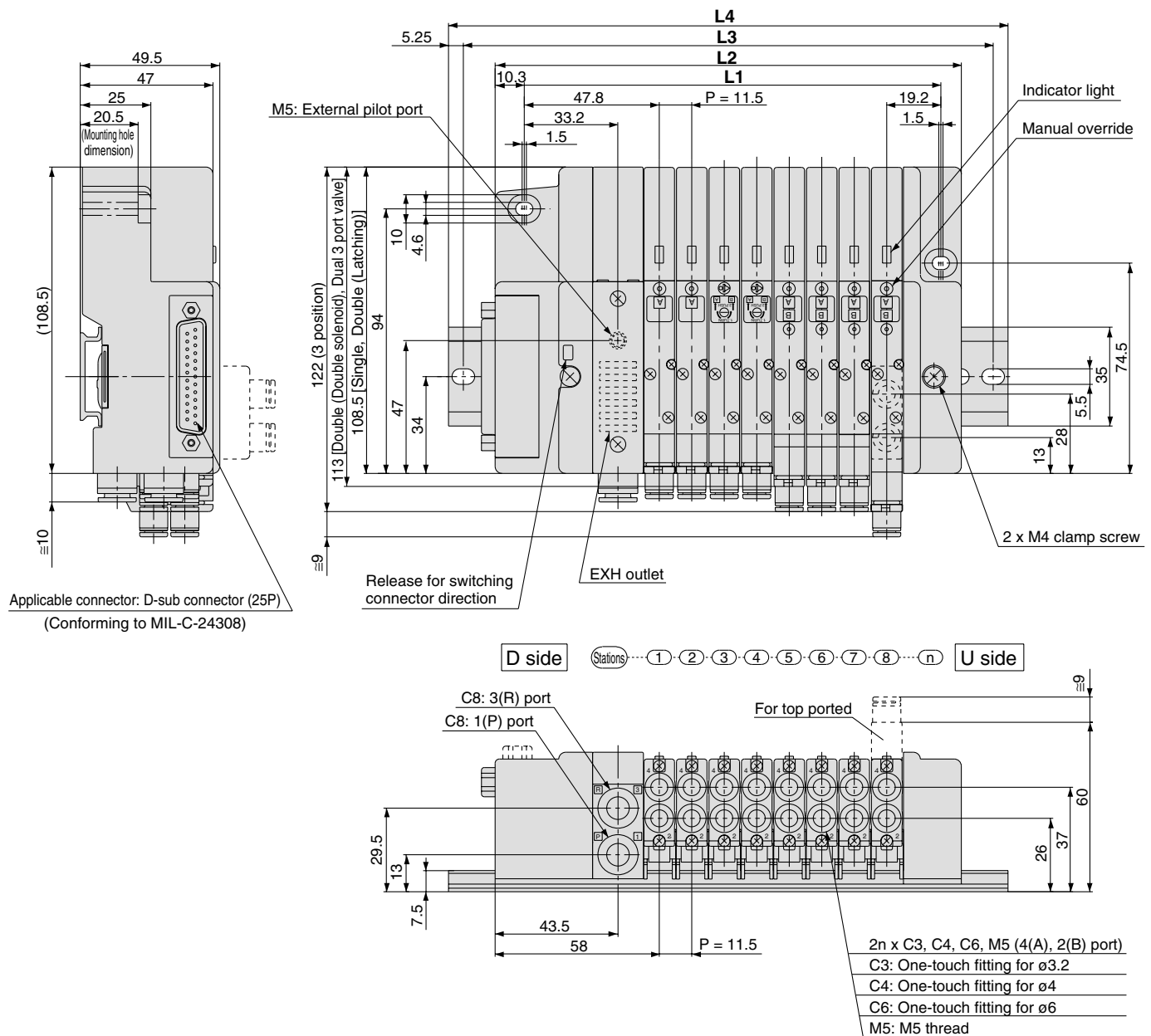
As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 1037.

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

	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	(-)	(+)	Gray 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	(-)	(+)	Gray Black
	SOL.B 22	(-)	(+)	Pink Red
10 stations	SOL.A 10	(-)	(+)	White Black
	SOL.B 23	(-)	(+)	Gray 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

Note)
Positive common specifications Negative common specifications

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



SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

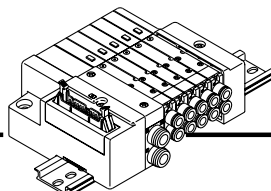
Dimensions

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	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	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)



- Simplification and labor savings for wiring work can be achieved by using a flat ribbon cable for the electrical connection.
- Using 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 entry for the connector can be changed freely, allowing later changes according to the mounting space.

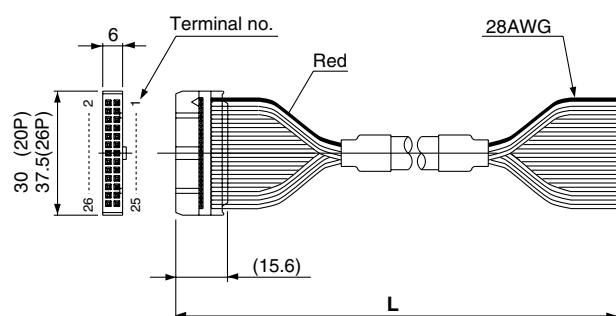
Manifold Specifications

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

Flat Ribbon Cable (26 pins, 20 pins)

AXT100-FC²⁰₂₆-¹₂³

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



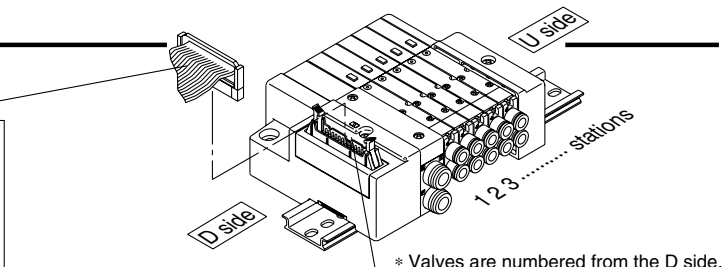
Flat Ribbon Cable Connector Assembly

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 transfer 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

26 □ □ 25
24 □ □ 23
22 □ □ 21
20 □ □ 19
18 □ □ 17
16 □ □ 15
14 □ □ 13
12 □ □ 11
10 □ □ 9
8 □ □ 7
6 □ □ 5
4 □ □ 3
2 □ □ 1

Connector terminal no.

Triangle mark indicator position

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 1037.

<26P>					<20P>				
Terminal no. Polarity					Terminal no. Polarity				
1 station	SOL.A	1	(-)	(+)	1 station	SOL.A	1	(-)	(+)
	SOL.B	2	(-)	(+)		SOL.B	2	(-)	(+)
2 stations	SOL.A	3	(-)	(+)	2 stations	SOL.A	3	(-)	(+)
	SOL.B	4	(-)	(+)		SOL.B	4	(-)	(+)
3 stations	SOL.A	5	(-)	(+)	3 stations	SOL.A	5	(-)	(+)
	SOL.B	6	(-)	(+)		SOL.B	6	(-)	(+)
4 stations	SOL.A	7	(-)	(+)	4 stations	SOL.A	7	(-)	(+)
	SOL.B	8	(-)	(+)		SOL.B	8	(-)	(+)
5 stations	SOL.A	9	(-)	(+)	5 stations	SOL.A	9	(-)	(+)
	SOL.B	10	(-)	(+)		SOL.B	10	(-)	(+)
6 stations	SOL.A	11	(-)	(+)	6 stations	SOL.A	11	(-)	(+)
	SOL.B	12	(-)	(+)		SOL.B	12	(-)	(+)
7 stations	SOL.A	13	(-)	(+)	7 stations	SOL.A	13	(-)	(+)
	SOL.B	14	(-)	(+)		SOL.B	14	(-)	(+)
8 stations	SOL.A	15	(-)	(+)	8 stations	SOL.A	15	(-)	(+)
	SOL.B	16	(-)	(+)		SOL.B	16	(-)	(+)
9 stations	SOL.A	17	(-)	(+)	9 stations	SOL.A	17	(-)	(+)
	SOL.B	18	(-)	(+)		SOL.B	18	(-)	(+)
10 stations	SOL.A	19	(-)	(+)		COM.	19	(+)	(-)
	SOL.B	20	(-)	(+)		COM.	20	(+)	(-)
11 stations	SOL.A	21	(-)	(+)					
	SOL.B	22	(-)	(+)					
12 stations	SOL.A	23	(-)	(+)					
	SOL.B	24	(-)	(+)					
		COM.	25	(+)					
		COM.	26	(+)					
		Positive common specifications	Negative common specifications				Positive common specifications	Negative common specifications	



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

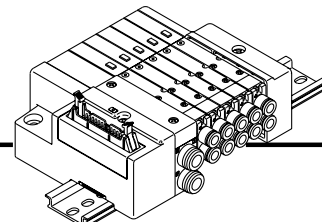


L	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1		67	78.5	90	101.5	113	124.5	136	147.5	159	170.5	182	193.5	205	216.5	228	239.5	251	262.5	274	285.5	297	308.5	320	331.5
L2		84.5	96	107.5	119	130.5	142	153.5	165	176.5	188	199.5	211	222.5	234	245.5	257	268.5	280	291.5	303	314.5	326	337.5	349
L3		112.5	125	137.5	150	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	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	

Series SQ1000

J

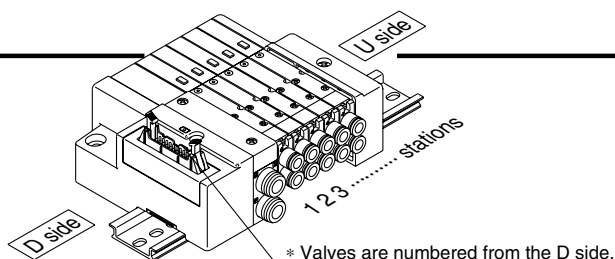
Kit (PC Wiring System compatible flat ribbon cable kit)



- PC Wiring System compatible.
- 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 entry for the connector can be changed freely, allowing later changes according to the mounting space.

Manifold Specifications

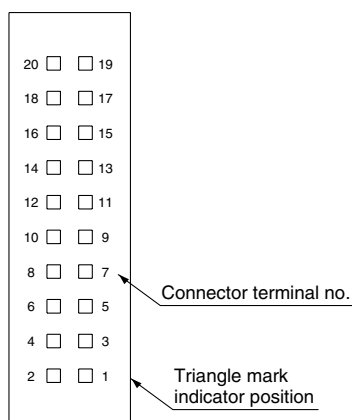
Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ1000	Side, Top	C8	C3, C4, C6, M5	8 stations (16 as an option)



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 1037.

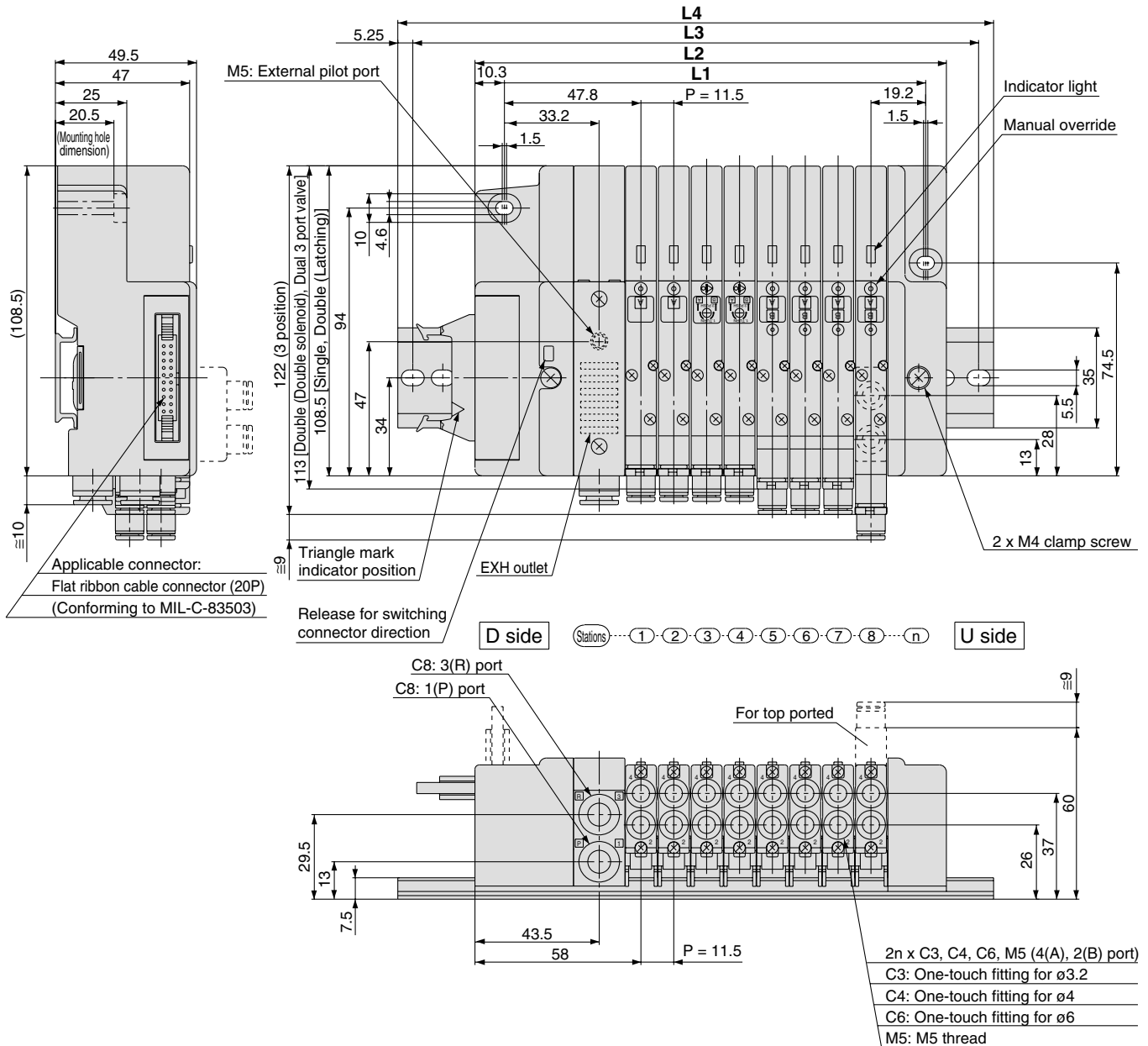
Flat ribbon cable connector



	Terminal no.	Polarity
1 station	SOL.A 20	(-) (+)
	SOL.B 18	(-) (+)
2 stations	SOL.A 16	(-) (+)
	SOL.B 14	(-) (+)
3 stations	SOL.A 12	(-) (+)
	SOL.B 10	(-) (+)
4 stations	SOL.A 8	(-) (+)
	SOL.B 6	(-) (+)
5 stations	SOL.A 19	(-) (+)
	SOL.B 17	(-) (+)
6 stations	SOL.A 15	(-) (+)
	SOL.B 13	(-) (+)
7 stations	SOL.A 11	(-) (+)
	SOL.B 9	(-) (+)
8 stations	SOL.A 7	(-) (+)
	SOL.B 5	(-) (+)
	4	(-) (+)
	3	(-) (+)
	COM. 2	(+) (-)
	COM. 1	(+) (-)
		Positive common specifications
		Negative common specifications



Note) When using the negative common specifications, use valves for negative common.
For details about the PC Wiring System, refer to catalog CAT.E02-20 separately.



SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

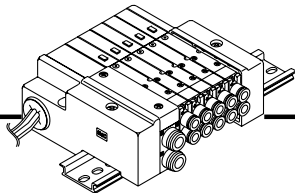
Dimensions

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	162.5	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	
L4		123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	

Series SQ1000

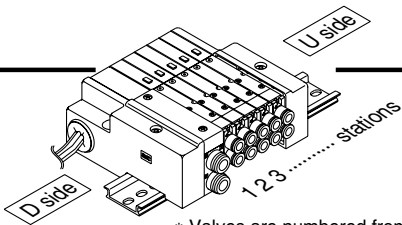
L Kit (Lead wire cable)



● Direct electrical entry type

Manifold Specifications

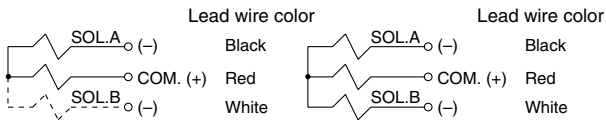
Series	Port location	Porting specifications		Maximum number of stations
		1(P), 3(R)	4(A), 2(B)	
SQ1000	Side, Top	C8	C3, C4, C6, M5	12 stations



* Valves are numbered from the D side.

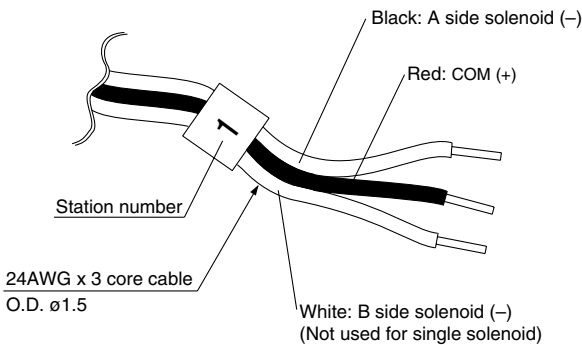
● Wiring Specifications: Positive COM Specifications

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



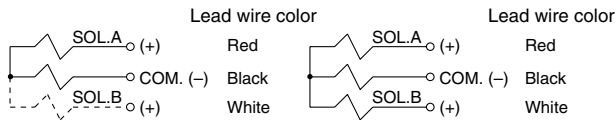
Single solenoid

Double solenoid



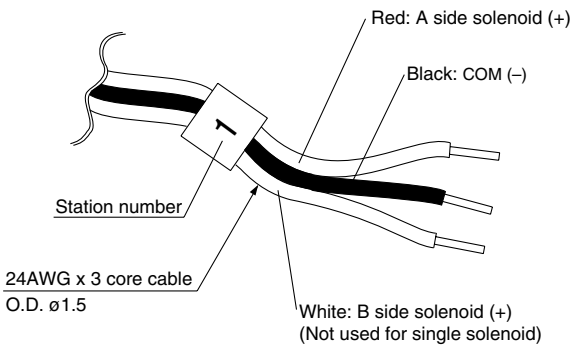
● Wiring Specifications: Negative COM Specifications (Option)

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

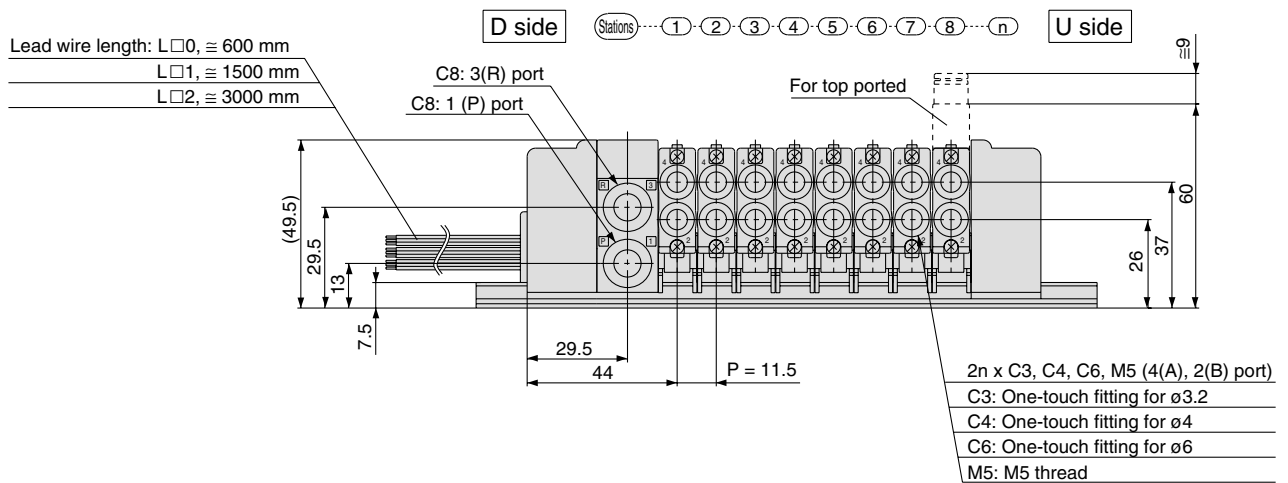
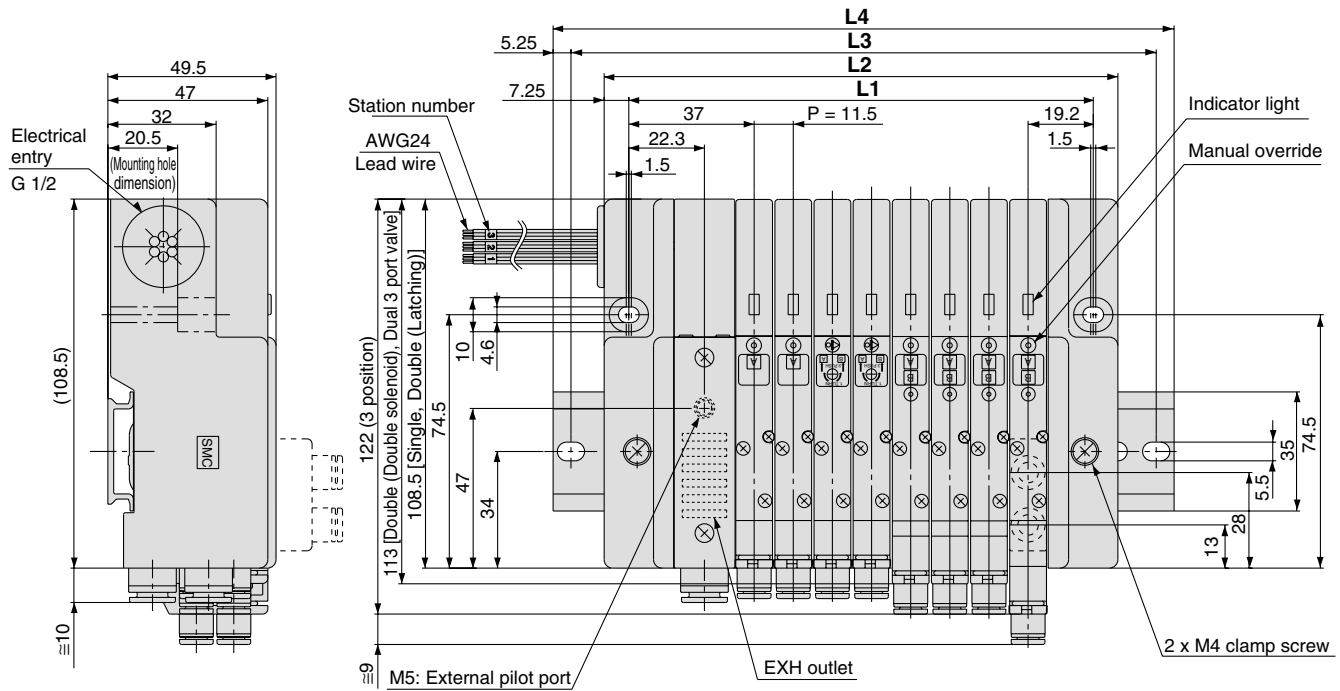


Single solenoid

Double solenoid



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



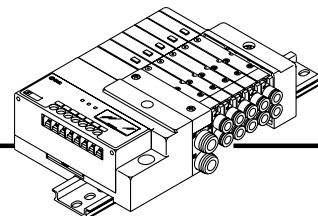
Dimensions Formula: $L1 = 11.5n + 44.5$, $L2 = 11.5n + 59$ n: Stations (Maximum 12 stations)

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	137.5	150	162.5	175	187.5	200	212.5	225	
L4		110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	

Series SQ1000

S

Kit (Serial transmission unit) EX140 Integrated-type (for Output) Serial Transmission System

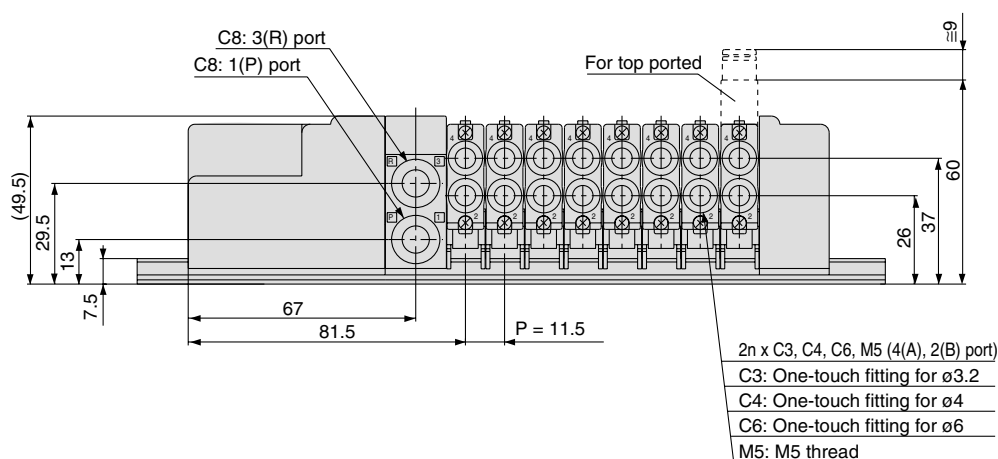
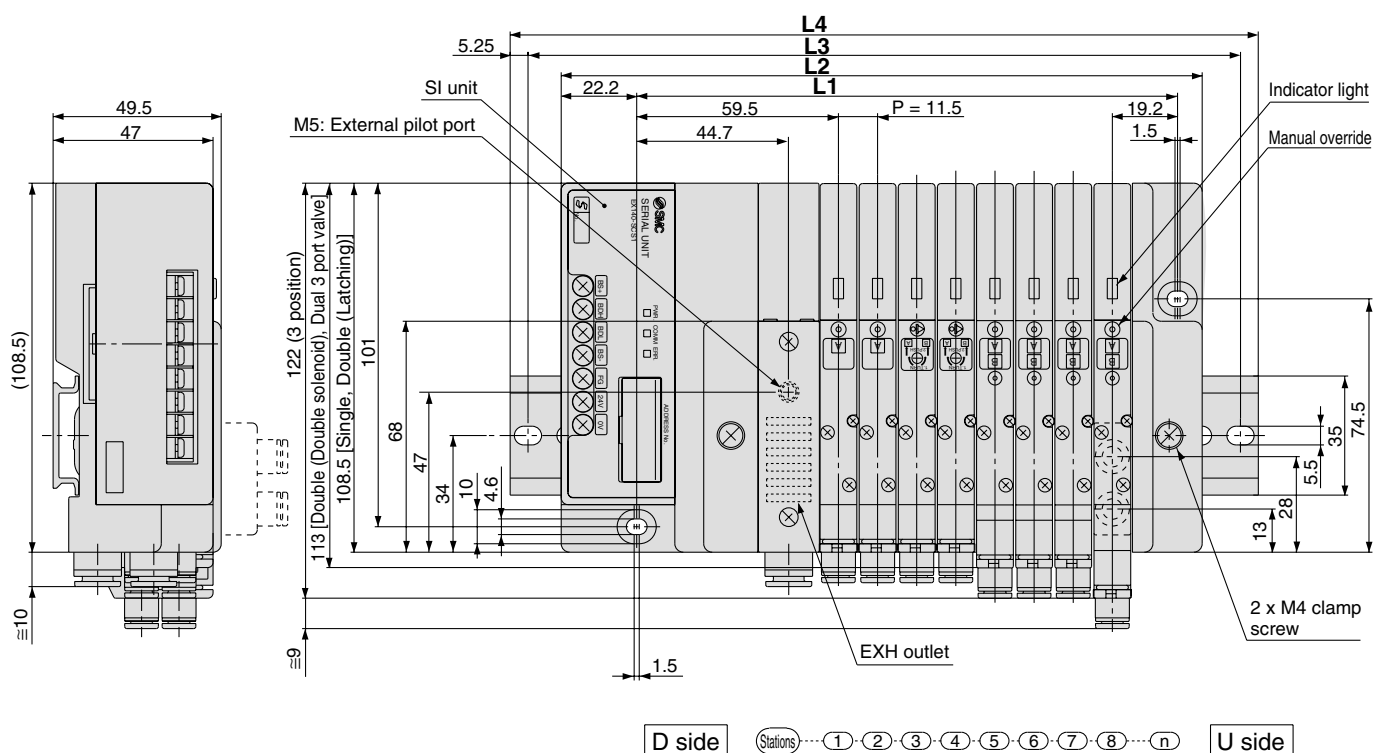


- The serial transmission system reduces wiring work, while minimizing wiring and saving space.
- The maximum number of stations is 8. (16 as an option).
Only for type J2 and R2, the maximum stations are 4 (8 as an option).

Refer to pages 1656 and 1657 for the details of EX140 integrated-type (for output) serial transmission system.

Manifold Specifications

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



Dimensions

Formula: $L1 = 11.5n + 67$, $L2 = 11.5n + 96.5$ n: Stations (Maximum 16 stations)

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	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	312.5	325
L4	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	323	335.5

SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

EX510 Gateway Type Serial Transmission System Plug-in Unit

Series *SQ2000*



How to Order Manifold

SS5Q 2 3 - SB 08 - **D** - -

• **Manifold series**

2	SQ2000
---	--------

• **SI unit**

Nil	Positive COM (NPN)
N	Negative COM (PNP)

• **Valve stations**

Symbol	Stations
01	1 station
⋮	⋮
08	8 stations

Note) Max. 16 stations
(Special wiring specifications)

• **CE compliant**

Nil	—
Q	CE compliant

• **1(P), 3(R) port size**

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

• **Option**

Nil	None
02 to 16 ⁽¹⁾	DIN rail length specified
B	Back pressure check valve
K ⁽²⁾	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: -D08

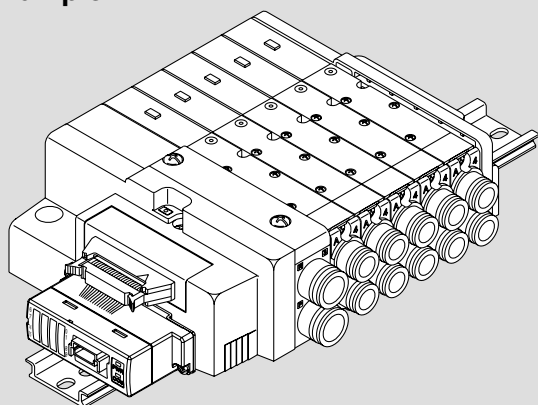
Note 2) Standard wiring specifications are for double wiring.
Indicate wiring specifications for single wiring or mixed single and double wiring, or when exceeding the standard maximum number of stations.

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

• **DIN rail mounting**

How to order manifold (Order example)

Example



SS5Q23-SB08-D 1 set (SB kit 5-station manifold base part no.)

*SQ2130-5-C6 3 sets (Single type part no.)

*SQ2230-5-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	SI unit part no.	Page
Nil	Positive COM (NPN)	EX510-S002B	P. 1715 to 1717
N	Negative COM (PNP)	EX510-S102B	

Refer to pages 1696 to 1724 for the details of EX510 gateway type serial transmission system.

How to Order Valves

SQ 2 1 3 0 - **5** - **C6** - - -


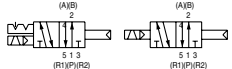
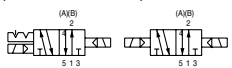
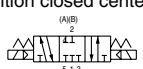

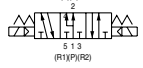
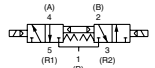
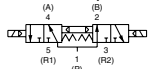
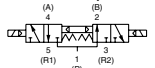
Series

2	SQ2000
---	--------

CE compliant

Nil	—
Q	CE compliant

Type of actuation

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

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

Seal

0	Metal seal
1	Rubber seal

With/Without manifold block

Symbol	Specifications
Nil	Without manifold block • When ordering with manifolds • When only valves are required.
M	With manifold block * Lead wire is not included.
MB	With manifold block, built-in back pressure check valve * Lead wire is not included.

Port plug mounting port

Nil	None
A	Port 4(A)
B	Port 2(B)

Cylinder port

Metric size	Symbol	Port size	
	C4	With One-touch fittings for ø4	Side ported
	C6	With One-touch fittings for ø6	
	C8	With One-touch fittings for ø8	
Inch size	L4	With One-touch fittings for ø4	Top ported
	L6	With One-touch fittings for ø6	
	L8	With One-touch fittings for ø8	
	N3	With One-touch fittings for ø5/32"	Side ported
	N7	With One-touch fittings for ø1/4"	
	N9	With One-touch fittings for ø5/16"	
	LN3	With One-touch fittings for ø5/32"	Top ported
	LN7	With One-touch fittings for ø1/4"	
	LN9	With One-touch fittings for ø5/16"	

Manual override

Symbol	Specifications
Nil	Non-locking push type (Tool required)
B Note)	Locking type (Tool required)
D Note)	Slide locking type (Manual type)

Rated voltage

5	24 VDC
---	--------

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

Function

Symbol	Specifications
Nil	Standard type (1.0 W DC)
D	2 position double (Double solenoid specifications)
N	Negative COM
Y (1) (3)	Low wattage type (0.5 W DC)
R (2)	External pilot specifications

Note 1) Except double (latching) type.
Note 2) Except dual 3 port valves.
Note 3) Please select when you expect to energize the unit for extended periods of time. Refer to page 3 for details.
Note 4) When two or more symbols are specified, indicate them alphabetically.

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

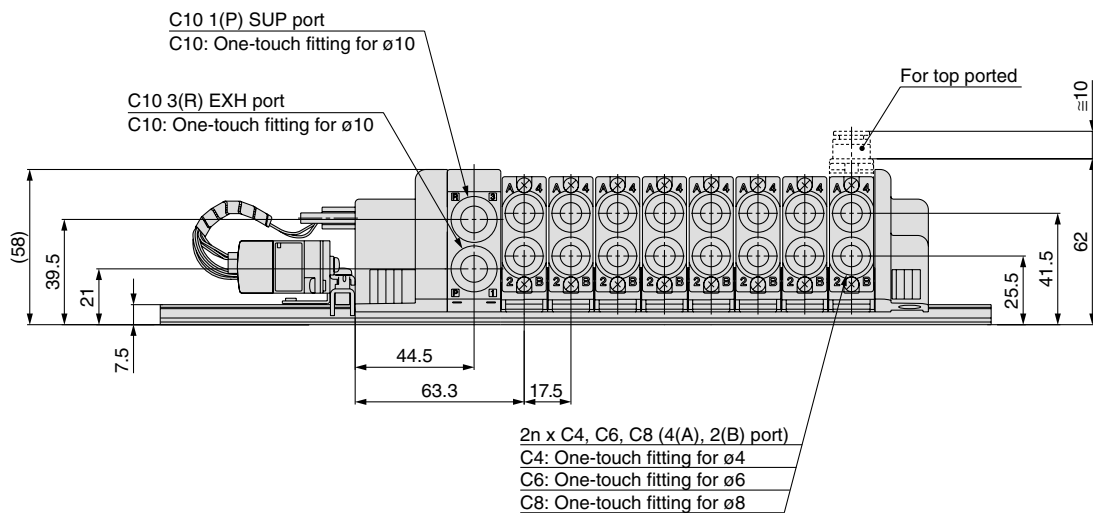
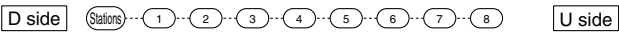
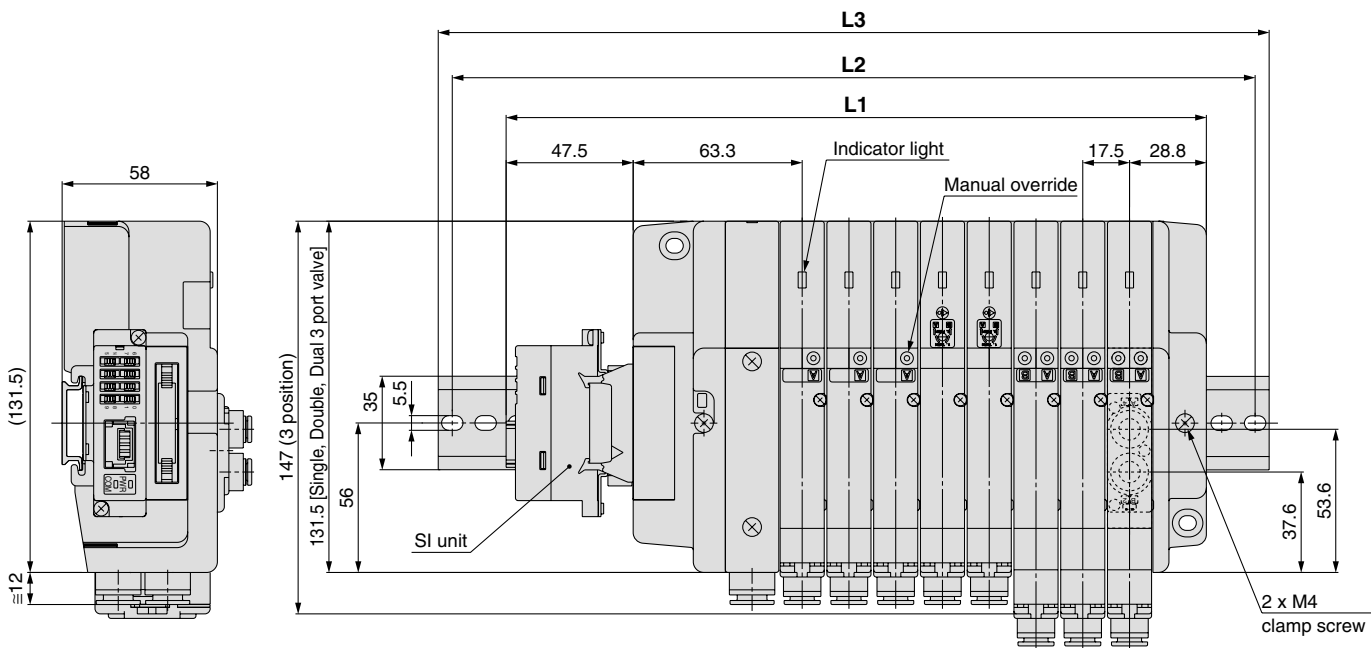
VFS

VFR

VQ7

Series **SQ2000**

Dimensions: **SQ2000**



Dimensions

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

SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Plug-in Unit

Series SQ2000



How to Order Manifold

SS5Q23 - 08 FD2 - D - - -

Stations

01	1 station
⋮	⋮
16 (Note)	16 stations

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

Manifold mounting

D	DIN rail mounting style
E (Note)	Direct mounting style

Note) Refer to page 1038 for details.

Option

Nil	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: -D08

Note 2) When installing back pressure check valves only on the stations required, enter the part number and specify the mounting stations on a manifold specification sheet.

Note 3) Standard wiring specifications are for double wiring. Indicate wiring specifications for single wiring or mixed single and double wiring, or when exceeding the standard maximum number of stations. (Except L kit.)

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

* Refer to pages 1032 to 1039 for manifold option parts.

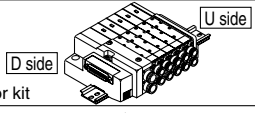
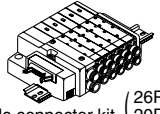
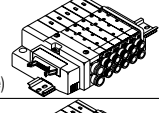
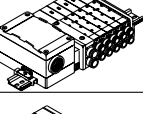
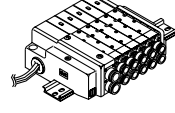
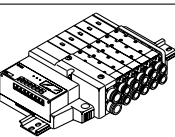
CE compliant

Nil	—
Q	CE marked

1(P), 3(R) port size

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

Electrical entry

Kit type	Lead wire connector location	Cable specifications	Station	Max. number of stations for special wiring specifications	Max. number of solenoids ⁽²⁾
F kit D-sub connector kit 	FD0 FD1 FD2 FD3 D side	D-sub connector (25P) kit, without cable D-sub connector (25P) kit, with 1.5 m cable D-sub connector (25P) kit, with 3.0 m cable D-sub connector (25P) kit, with 5.0 m cable	1 to 12 stations	16 stations	24
P kit Flat ribbon cable connector kit (26P/20P) 	PD0 PD1 PD2 PD3 PDC D side ⁽¹⁾	Flat ribbon cable (26P) kit, without cable Flat ribbon cable (26P) kit, with 1.5 m cable Flat ribbon cable (26P) kit, with 3.0 m cable Flat ribbon cable (26P) kit, with 5.0 m cable Flat ribbon cable (20P) kit, without cable	1 to 12 stations 1 to 9 stations	16 stations	24 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	20
L kit Lead wire kit 	LD0 LU0 LD1 LU1 LD2 LU2 D side U side D side U side D side U side	Lead wire kit with 0.6 m cable Lead wire kit with 1.5 m cable Lead wire kit with 3.0 m cable	1 to 12 stations	—	—
S kit Serial transmission kit EX140 integrated-type (for output) serial transmission system ⁽³⁾ 	SDF SDH SDJ1 SDJ2 SDQ SDR1 SDR2 SDV D side	NKE Corp.: Uni-wire System NKE Corp.: Uni-wire H System SUNX Corp.: S-LINK (16 output points) SUNX Corp.: S-LINK (8 output points) DeviceNet OMRON Corp.: CompoBus/S (16 output points) OMRON Corp.: CompoBus/S (8 output points) CC-LINK	1 to 8 stations 1 to 4 stations 1 to 8 stations 1 to 4 stations 1 to 8 stations	16 stations 8 stations 16 stations 8 stations 16 stations	16 8 16 8 16

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

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

Note 3) Refer to pages 1656 and 1657 for the details of EX140 integrated-type (for output) serial transmission system.

* Refer to page 1051 for manifold spare parts.

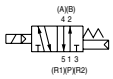
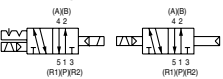
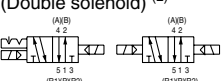
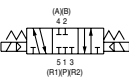
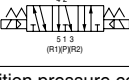
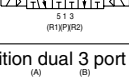
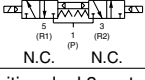
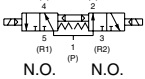
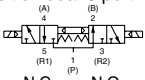
SI unit part no.

Symbol	Protocol type	SI unit part no.	Page	Symbol	Protocol type	SI unit part no.	Page
SDF	NKE Corp.: Uni-wire System	EX140-SUW1	P. 1656	SDQ	DeviceNet	EX140-SDN1	P. 1656
SDH	NKE Corp.: Uni-wire H System	EX140-SUH1		SDR1	OMRON Corp.: CompoBus/S (16 output points)	EX140-SCS1	
SDJ1	SUNX Corp.: S-LINK (16 output points)	EX140-SSL1		SDR2	OMRON Corp.: CompoBus/S (8 output points)	EX140-SCS2	
SDJ2	SUNX Corp.: S-LINK (8 output points)	EX140-SSL2		SDV	CC-LINK	EX140-SMJ1	

How to Order Valves

SQ2 **1** **3** **0** **5** **C6**

Type of actuation

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

- Note 1) Refer to page 1108 for precautions.
Note 2) For double solenoid specification, the function symbol below is "D".
Note 3) Only rubber seal types are applicable.

Seal

0	Metal seal
1	Rubber seal

Function

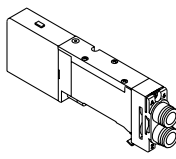
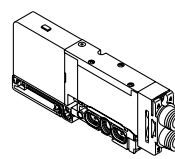
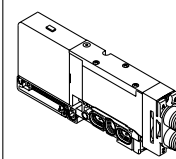
Nil	Standard type (1.0 W DC)
D	2 position double (Double solenoid specifications) (Latching type: Nil)
N	Negative common
Y ^{(1) (2)}	Low wattage type (0.5 W DC)
R ⁽³⁾	External pilot specifications

- Note 1) Except double (latching) type.
Note 2) Please select when you expect to energize the unit for extended periods of time. Refer to page 3 for details.
Note 3) Except dual 3 port valves.
Note 4) When two or more symbols are specified, indicate them alphabetically.

CE compliant

Nil	—
Q	CE compliant

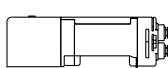
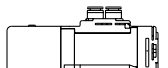
With/Without manifold block

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

Port plug mounting port

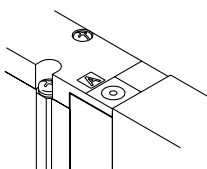
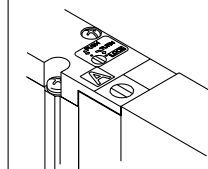
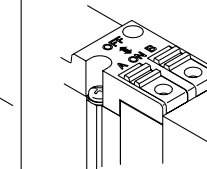
Nil	None
A	Port 4(A)
B	Port 2(B)

Cylinder port

C4	With One-touch fittings for ø4	Side ported	
C6	With One-touch fittings for ø6		
C8	With One-touch fittings for ø8	Top ported ⁽¹⁾	
L4	With One-touch fittings for ø4		
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 1039 for the inch-size one-touch fittings.

Manual override

Nil	B Note)	D Note)
Non-locking push type (Tool required) 	Locking type (Tool required) 	Slide locking type (Manual type) * Only side ported type applicable 

Note) Except double (latching) type.

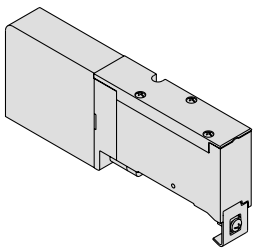
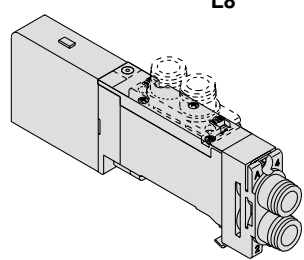
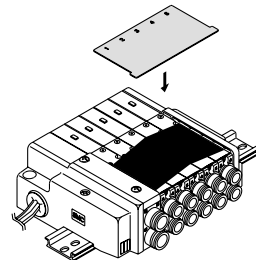
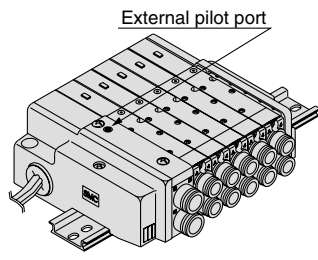
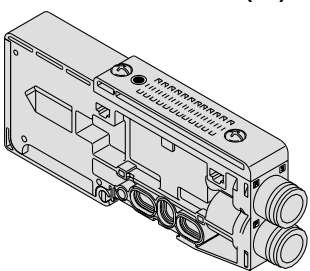
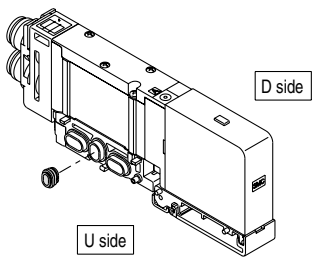
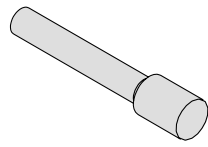
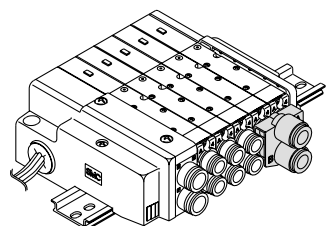
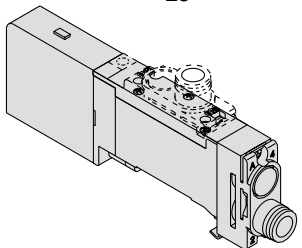
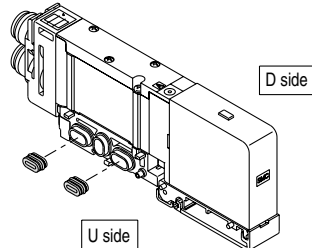
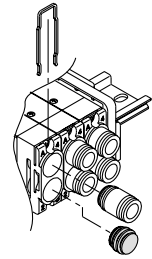
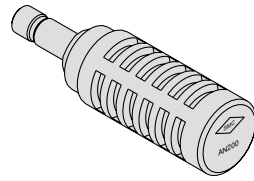
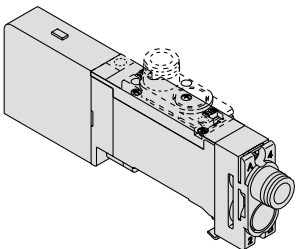
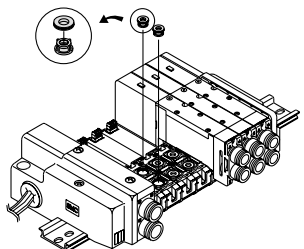
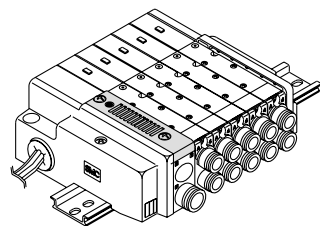
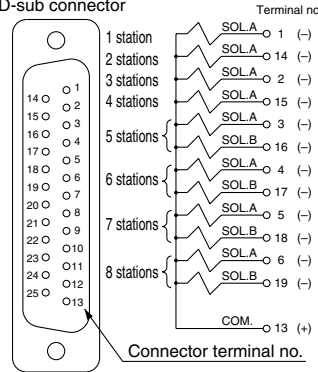
Coil voltage

5	24 VDC
6	12 VDC

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

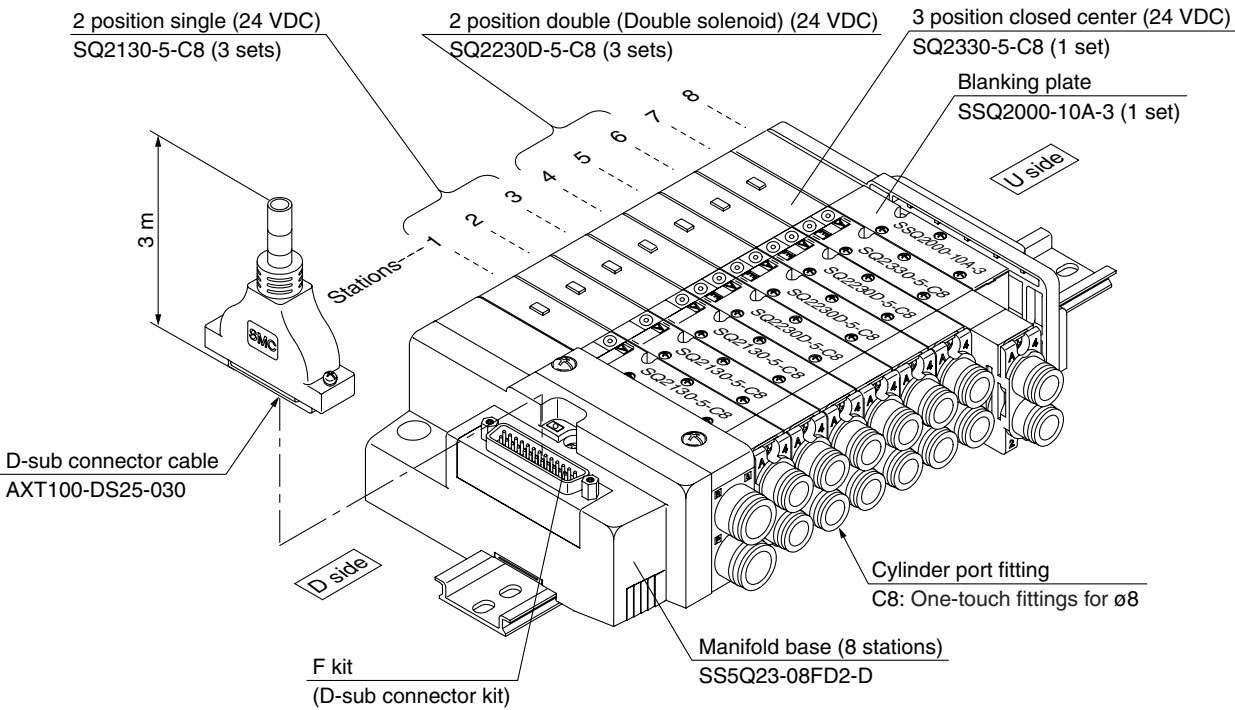
Series SQ2000

Manifold Option

Blanking plate SSQ2000-10A-3 	Individual SUP/EXH spacer SSQ2000-PR1-3-^{C8}_{L8} 	Name plate (-N) SSQ2000-N3-n 	External pilot specifications (-R) 
SUP/EXH block SSQ2000-PR-3-C10 (-S) 	SUP block plate SSQ1000-B-R 	Blanking plug KQ2P-04/06/08/10 	Dual flow fitting SSQ2000-52A-^{C10}_{N11} 
Individual SUP spacer SSQ2000-P-3-^{C8}_{L8} 	EXH block plate SSQ2000-B-R 	Port plug VVQZ2000-CP 	Silencer (For EXH port) 
Individual EXH spacer SSQ2000-R-3-^{C8}_{L8} 	Back pressure check valve (-B) SSQ2000-BP 	Built-in silencer (-S) 	Special wiring specifications (-K) 

How to Order Manifold Assembly (Example)

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



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

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.

SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Valve Specifications

Model

Series		Number of solenoids	Model		Flow characteristic ⁽¹⁾						Response time (ms) ⁽²⁾		Mass (g)
					1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → R1/R2)			Standard: 1 W	Low wattage	
					C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv			
SQ2000	2 position	Single	Metal seal	SQ2130	2.2	0.17	0.51	2.4	0.14	0.57	20 or less	26 or less	145
			Rubber seal	SQ2131	2.3	0.17	0.51	3.1	0.18	0.71	24 or less	31 or less	140
		Double (Latching)	Metal seal	SQ2230	2.2	0.17	0.51	2.4	0.14	0.57	26 or less	—	145
			Rubber seal	SQ2231	2.3	0.17	0.51	3.1	0.18	0.71	31 or less	—	140
		Double (Double solenoid)	Metal seal	SQ2230D	2.2	0.17	0.51	2.4	0.14	0.57	15 or less	20 or less	160
			Rubber seal	SQ2231D	2.3	0.17	0.51	3.1	0.18	0.71	20 or less	26 or less	155
	3 position	Closed center	Metal seal	SQ2330	1.9	0.17	0.46	2.1	0.15	0.47	34 or less	44 or less	180
			Rubber seal	SQ2331	1.9	0.17	0.46	1.8	0.29	0.47	34 or less	44 or less	175
		Exhaust center	Metal seal	SQ2430	1.9	0.17	0.46	2.4	0.14	0.55	34 or less	44 or less	180
			Rubber seal	SQ2431	1.9	0.17	0.46	3.1	0.14	0.65	34 or less	44 or less	175
		Pressure center	Metal seal	SQ2530	2.3	0.17	0.51	2.1	0.18	0.47	34 or less	44 or less	180
			Rubber seal	SQ2531	2.5	0.17	0.56	1.8	0.30	0.47	34 or less	44 or less	175
	1 position	Dual 3 port valve	Rubber seal	SQ2 ^A _B 31 ^C	1.5	0.17	0.40	1.5	0.17	0.40	34 or less	44 or less	155

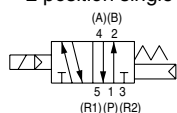
Note 1) Values for the top ported cylinder port size of C8. CYL → Values of EXH. The side ported type will be about 10% less.
 Note 2) Based on JIS B 8375-1981. (Values with a supply pressure of 0.5 MPa and light/surge voltage suppressor. Values fluctuate depending on the pressure and air quality.)

Specifications

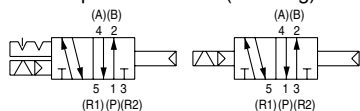


JIS Symbol

2 position single

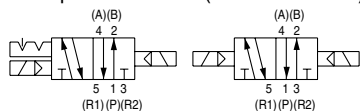


2 position double (Latching)



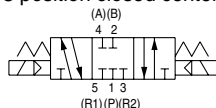
Metal seal Rubber seal

2 position double (Double solenoid)

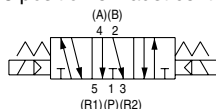


Metal seal Rubber seal

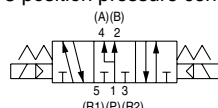
3 position closed center



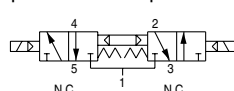
3 position exhaust center



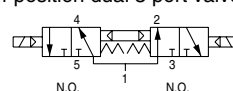
3 position pressure center



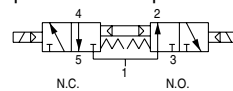
4 position dual 3 port valve (A)



4 position dual 3 port valve (B)



4 position dual 3 port valve (C)



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 (Latching)	0.18 MPa	0.18 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)	
Solenoid specifications	Vibration/Impact resistance ⁽²⁾		30/150 m/s ²	
	Protection structure		Dust tight	
	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	1 W DC (42 mA), 0.5 W DC (21 mA) ⁽³⁾	
		12 VDC	1 W DC (83 mA), 0.5 W DC (42 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) Values for the low wattage (0.5 W) specifications.

Manifold Specifications

Base model	Porting specifications			Applicable solenoid valve	Type of connection		Applicable stations ⁽³⁾	5 station mass ⁽⁴⁾ mass (g)	1 station mass ⁽⁴⁾ mass (g)	
	Port size ⁽¹⁾									
	1(P), 3(R)	4(A), 2(B)								
Port location		Port size								
Series SQ2000	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	
SS5Q23-□□-□					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			
		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			
	Top ⁽²⁾	L4 (For ø4) L6 (For ø6) L8 (For ø8)								

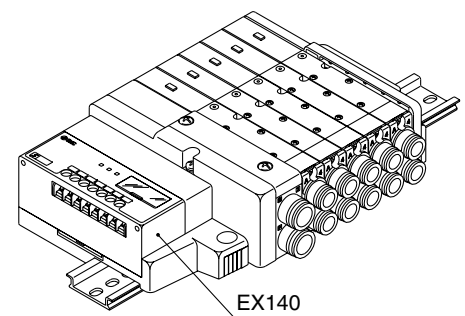
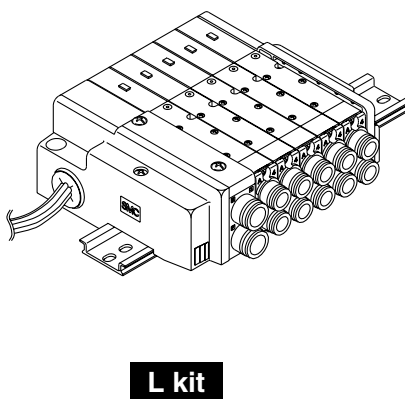
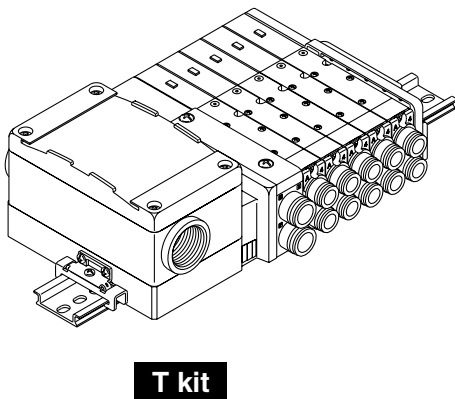
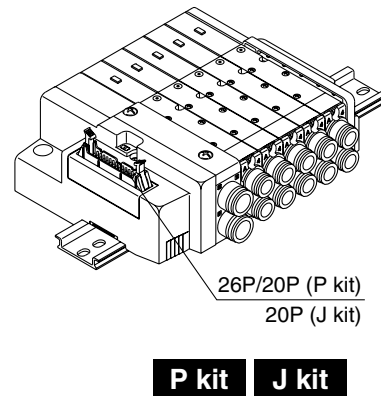
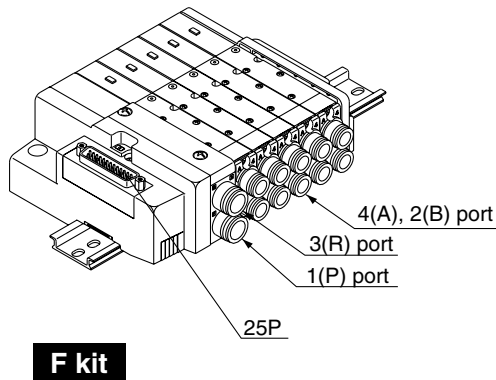


Note 1) One-touch fittings in inch sizes are also available. For details, refer to page 1039.

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 1037 for details.

Note 4) Except valves. For valve mass, refer to page 1014.



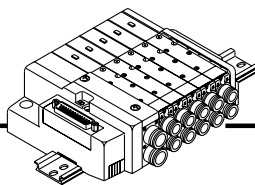
Refer to pages 1656 and 1657 for the details of EX140 integrated-type (for output) serial transmission system.

SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Series SQ2000

F

Kit (D-sub connector kit)



- Simplification and labor 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

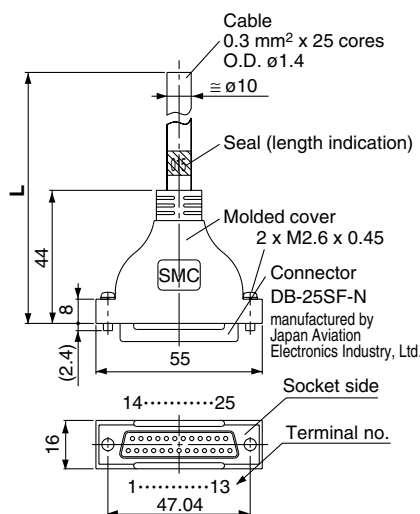
Series	Port location	Porting specifications		Maximum number of stations
		1(P), 3(R)	4(A), 2(B)	
SQ2000	Side, Top	C10	C4, C6, C8	12 stations (16 as an option)

D-sub Connector (25 pin)

Cable assembly

015
AXT100-DS25-030
050

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



D-sub Connector Cable Assembly Terminal No.

Terminal number	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black
16	Blue	White
17	Purple	None
18	Gray	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	None

D-sub Connector Cable Assembly

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-DS25-015	Cable
3 m	AXT100-DS25-030	0.3 mm ² x 25 cores
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.

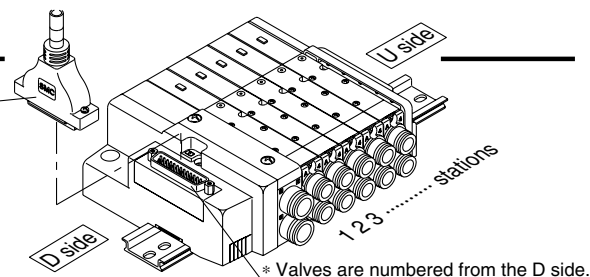
Electric Characteristics

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 cables 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

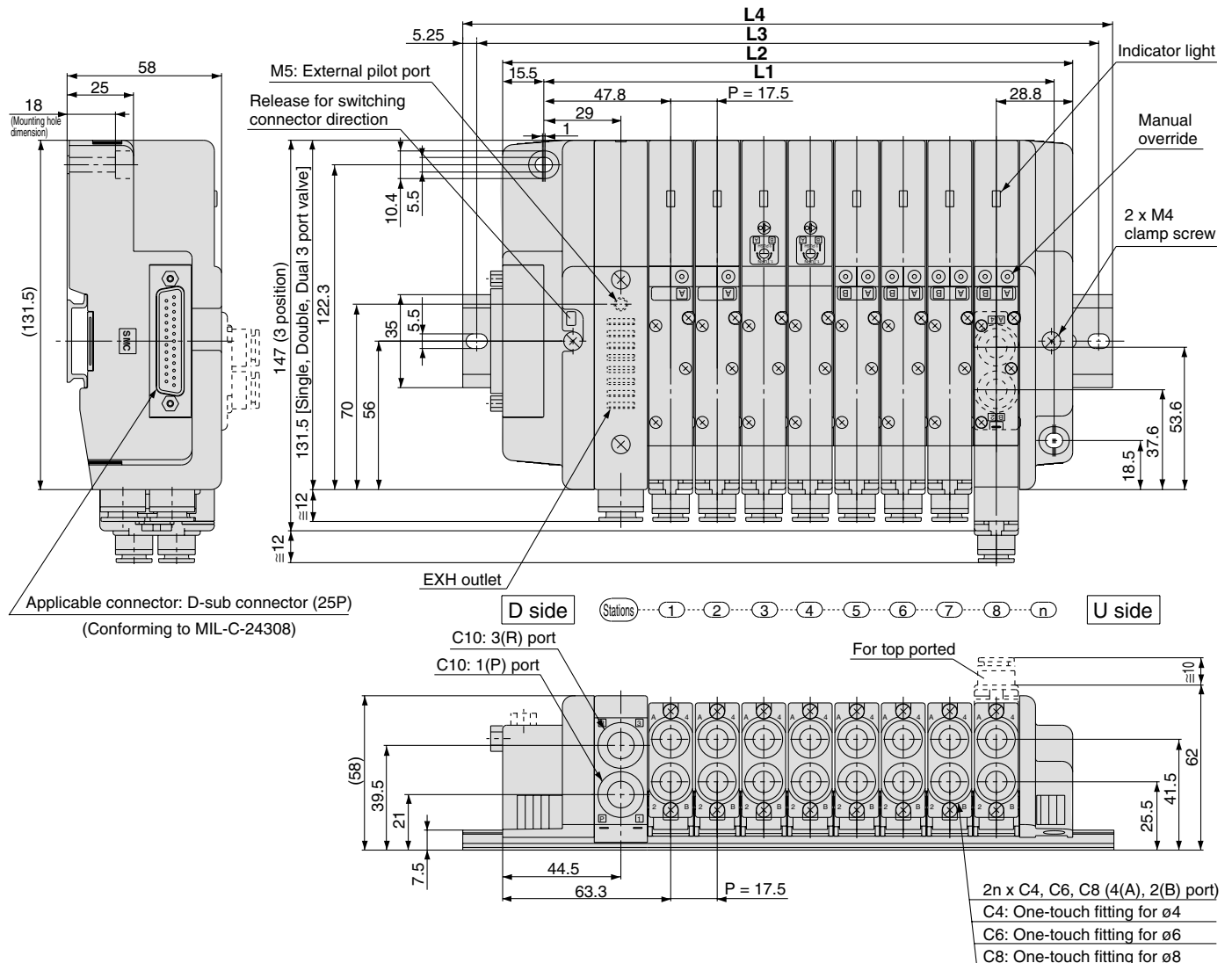
As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 1037.

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

	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	(-)	Gray	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	(-)	Gray	Black
	SOL.B 22	(-)	Pink	Red
10 stations	SOL.A 10	(-)	White	Black
	SOL.B 23	(-)	Gray	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

Note)
Positive common specifications Negative common specifications

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



SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

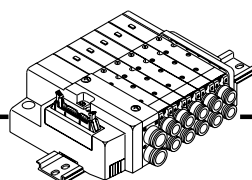
Dimensions

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)



- Simplification and labor savings for wiring work can be achieved by using a flat ribbon cable for the electrical connection.
- Using 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 entry for the connector can be changed freely, allowing later changes according to the mounting space.

Manifold Specifications

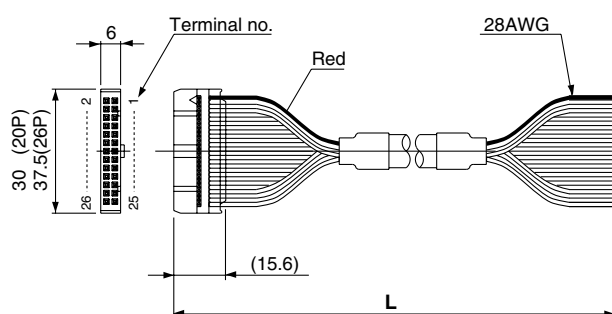
Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ2000	Side, Top	C10	C4, C6, C8	12 stations (16 as an option)

Flat Ribbon Cable (26 pins, 20 pins)

Cable assembly

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

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



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

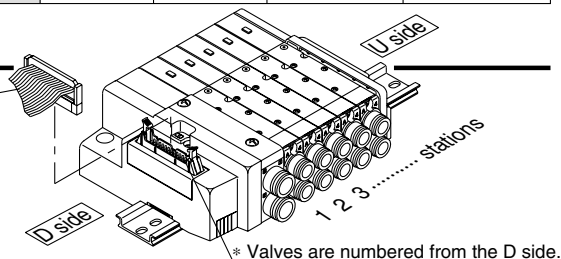
* For other commercial connectors, use a 26 pins or 20 pins with strain relief conforming to MIL-C-83503.

* Cannot be used for transfer 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

26 □ □ 25
24 □ □ 23
22 □ □ 21
20 □ □ 19
18 □ □ 17
16 □ □ 15
14 □ □ 13
12 □ □ 11
10 □ □ 9
8 □ □ 7
6 □ □ 5
4 □ □ 3
2 □ □ 1

Connector terminal no.

Triangle mark indicator position

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 1037.

<26P>

Terminal no. Polarity

1 station	SOL.A	1	(-)	(+)
	SOL.B	2	(-)	(+)
2 stations	SOL.A	3	(-)	(+)
	SOL.B	4	(-)	(+)
3 stations	SOL.A	5	(-)	(+)
	SOL.B	6	(-)	(+)
4 stations	SOL.A	7	(-)	(+)
	SOL.B	8	(-)	(+)
5 stations	SOL.A	9	(-)	(+)
	SOL.B	10	(-)	(+)
6 stations	SOL.A	11	(-)	(+)
	SOL.B	12	(-)	(+)
7 stations	SOL.A	13	(-)	(+)
	SOL.B	14	(-)	(+)
8 stations	SOL.A	15	(-)	(+)
	SOL.B	16	(-)	(+)
9 stations	SOL.A	17	(-)	(+)
	SOL.B	18	(-)	(+)
10 stations	SOL.A	19	(-)	(+)
	SOL.B	20	(-)	(+)
11 stations	SOL.A	21	(-)	(+)
	SOL.B	22	(-)	(+)
12 stations	SOL.A	23	(-)	(+)
	SOL.B	24	(-)	(+)
	COM.	25	(+)	(-)
	COM.	26	(+)	(-)

Positive common specifications Negative common specifications

<20P>

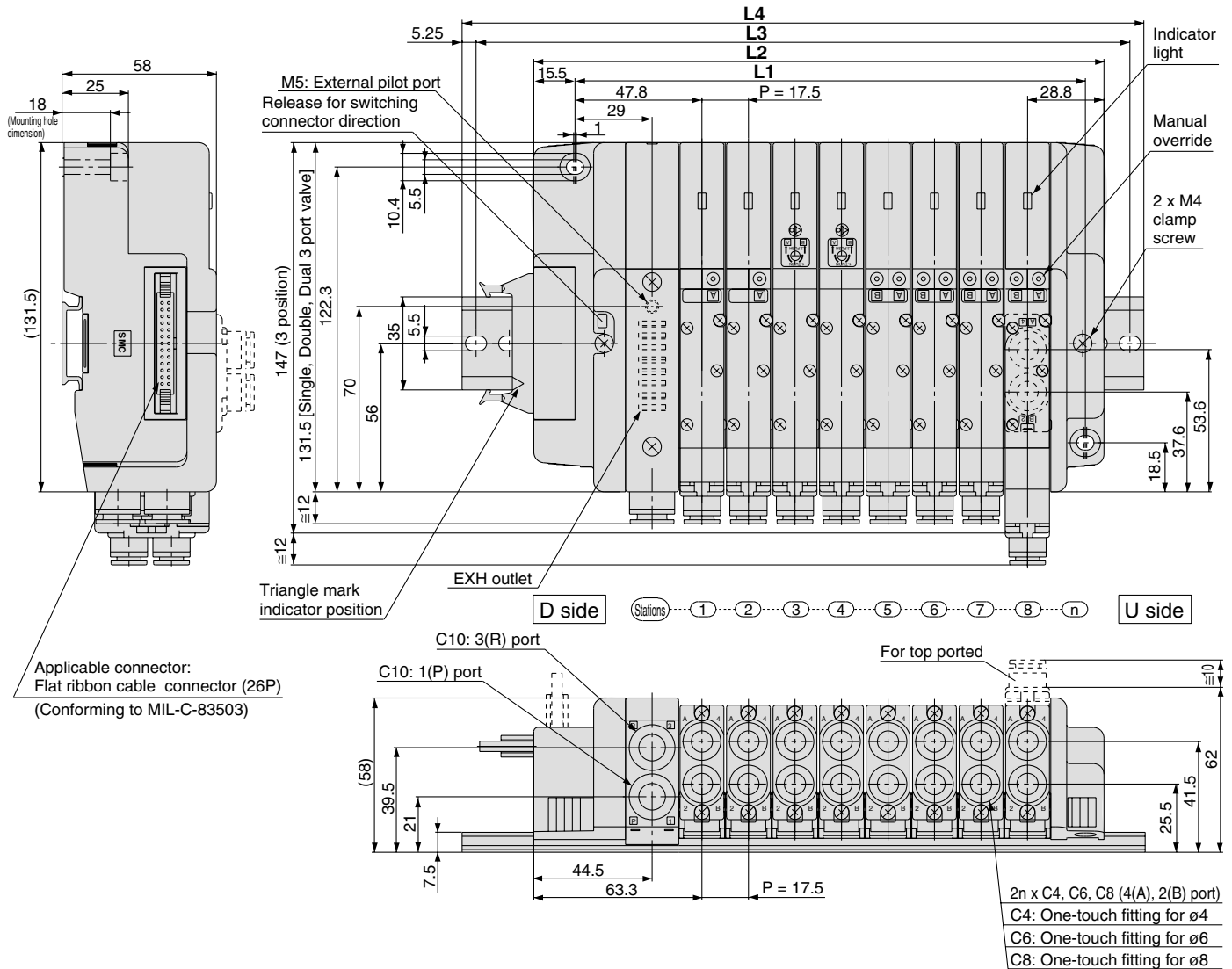
Terminal no. Polarity

1 station	SOL.A	1	(-)	(+)
	SOL.B	2	(-)	(+)
2 stations	SOL.A	3	(-)	(+)
	SOL.B	4	(-)	(+)
3 stations	SOL.A	5	(-)	(+)
	SOL.B	6	(-)	(+)
4 stations	SOL.A	7	(-)	(+)
	SOL.B	8	(-)	(+)
5 stations	SOL.A	9	(-)	(+)
	SOL.B	10	(-)	(+)
6 stations	SOL.A	11	(-)	(+)
	SOL.B	12	(-)	(+)
7 stations	SOL.A	13	(-)	(+)
	SOL.B	14	(-)	(+)
8 stations	SOL.A	15	(-)	(+)
	SOL.B	16	(-)	(+)
9 stations	SOL.A	17	(-)	(+)
	SOL.B	18	(-)	(+)
	COM.	19	(+)	(-)
	COM.	20	(+)	(-)

Positive common specifications Negative common specifications



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



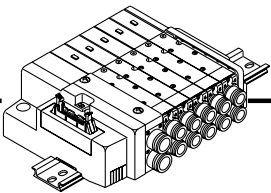
Dimensions

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

Series SQ2000

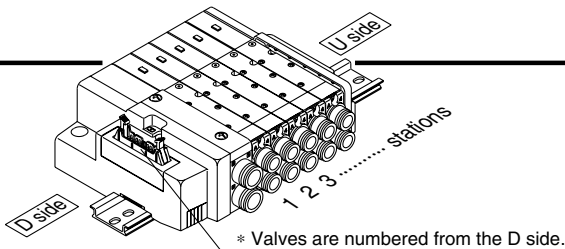
J Kit (PC Wiring System compatible flat ribbon cable kit)



- PC Wiring System compatible.
- 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 entry for the connector can be changed freely, allowing later changes according to the mounting space.

Manifold Specifications

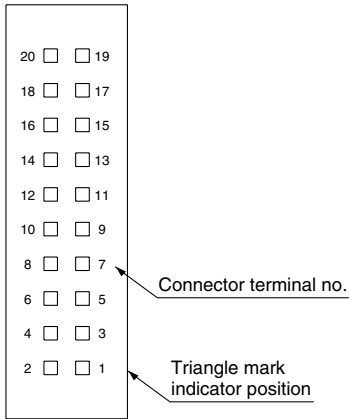
Series	Porting specifications			Maximum number of stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
SQ2000	Side, Top	C10	C4, C6, C8	8 stations (16 as an option)



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 1037.

Flat ribbon cable connector



		Terminal no.	Polarity	
1 station	SOL.A	20	(-)	(+)
	SOL.B	18	(-)	(+)
2 stations	SOL.A	16	(-)	(+)
	SOL.B	14	(-)	(+)
3 stations	SOL.A	12	(-)	(+)
	SOL.B	10	(-)	(+)
4 stations	SOL.A	8	(-)	(+)
	SOL.B	6	(-)	(+)
5 stations	SOL.A	19	(-)	(+)
	SOL.B	17	(-)	(+)
6 stations	SOL.A	15	(-)	(+)
	SOL.B	13	(-)	(+)
7 stations	SOL.A	11	(-)	(+)
	SOL.B	9	(-)	(+)
8 stations	SOL.A	7	(-)	(+)
	SOL.B	5	(-)	(+)
		4	(-)	(+)
		3	(-)	(+)
	COM.	2	(+)	(-)
	COM.	1	(+)	(-)
			Positive common specifications	Negative common specifications

Note)



Note) When using the negative common specifications, use valves for negative common.
For details about the PC Wiring System, refer to catalog CAT.E02-20 separately.

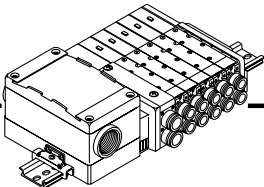


L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	69.5	87	104.5	122	139.5	157	174.5	192	209.5	227	244.5	262	279.5	297	314.5	332
L2	92	109.5	127	144.5	162	179.5	197	214.5	232	249.5	267	284.5	302	319.5	337	354.5
L3	112.5	137.5	150	175	187.5	200	225	237.5	262	275	287.5	312.5	325	350	362.5	375
L4	123	148	160.5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

Series SQ2000

T

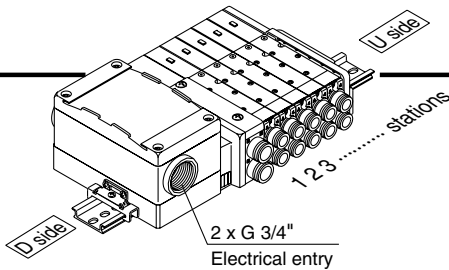
Kit (Terminal block box kit)



- A compact terminal block is installed inside the box.
G 3/4" female threads prepared for the electrical entry enables a conduit tube bracket to be connected.
- The maximum number of stations is 10 (16 option).

Manifold Specifications

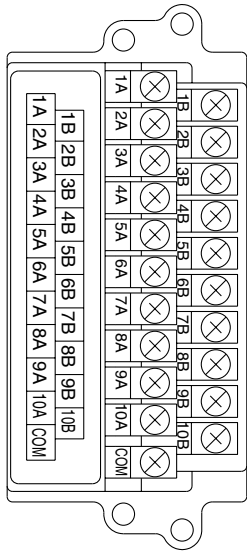
Series	Porting specifications		Maximum number of stations
	Port location	Port size	
SQ2000	Side, Top	1(P), 3(R)	10 stations (16 as an option)
		4(A), 2(B)	



* 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 1037.



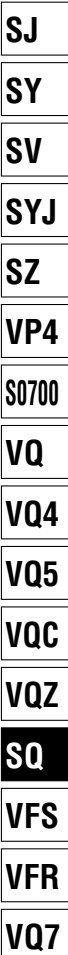
		Terminal no.	Polarity	
1 station	SOL. A	1A	(-)	(+)
	SOL. B	1B	(-)	(+)
2 stations	SOL. A	2A	(-)	(+)
	SOL. B	2B	(-)	(+)
3 stations	SOL. A	3A	(-)	(+)
	SOL. B	3B	(-)	(+)
4 stations	SOL. A	4A	(-)	(+)
	SOL. B	4B	(-)	(+)
5 stations	SOL. A	5A	(-)	(+)
	SOL. B	5B	(-)	(+)
6 stations	SOL. A	6A	(-)	(+)
	SOL. B	6B	(-)	(+)
7 stations	SOL. A	7A	(-)	(+)
	SOL. B	7B	(-)	(+)
8 stations	SOL. A	8A	(-)	(+)
	SOL. B	8B	(-)	(+)
9 stations	SOL. A	9A	(-)	(+)
	SOL. B	9B	(-)	(+)
10 stations	SOL. A	10A	(-)	(+)
	SOL. B	10B	(-)	(+)
		COM	(+)	(-)

Note)

Positive common specifications Negative common specifications



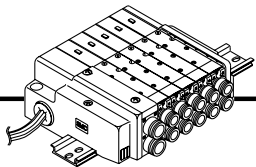
Note) When using the negative common specifications, use valves for negative common.



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

Series SQ2000

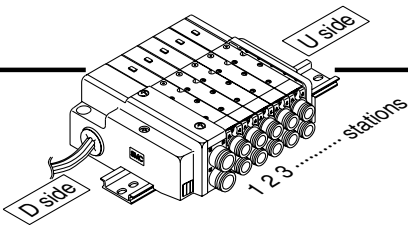
L Kit (Lead wire cable)



● Direct electrical entry type

Manifold Specifications

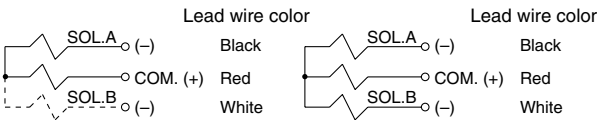
Series	Port location	Porting specifications		Maximum number of stations
		1(P), 3(R)	4(A), 2(B)	
SQ2000	Side, Top	C10	C4, C6, C8	12 stations



* Valves are numbered from the D side.

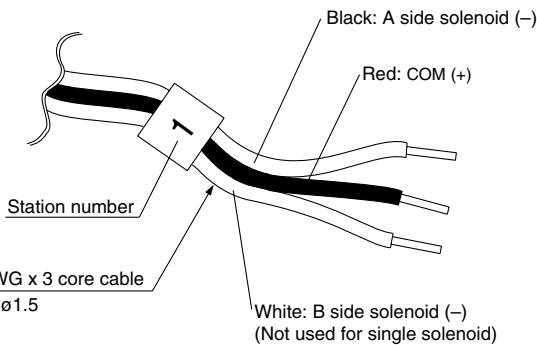
● Wiring Specifications: Positive COM Specifications

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



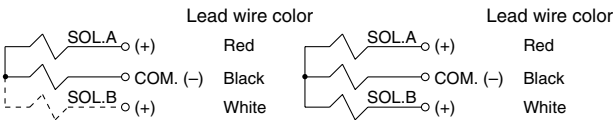
Single solenoid

Double solenoid



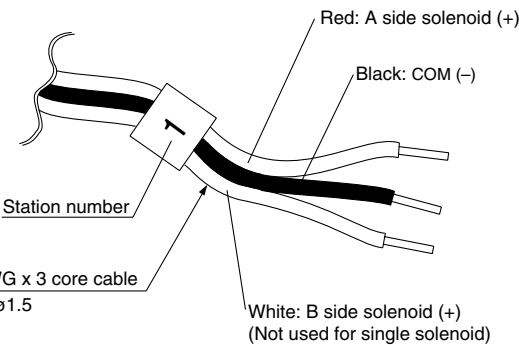
● Wiring Specifications: Negative COM Specifications (Option)

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

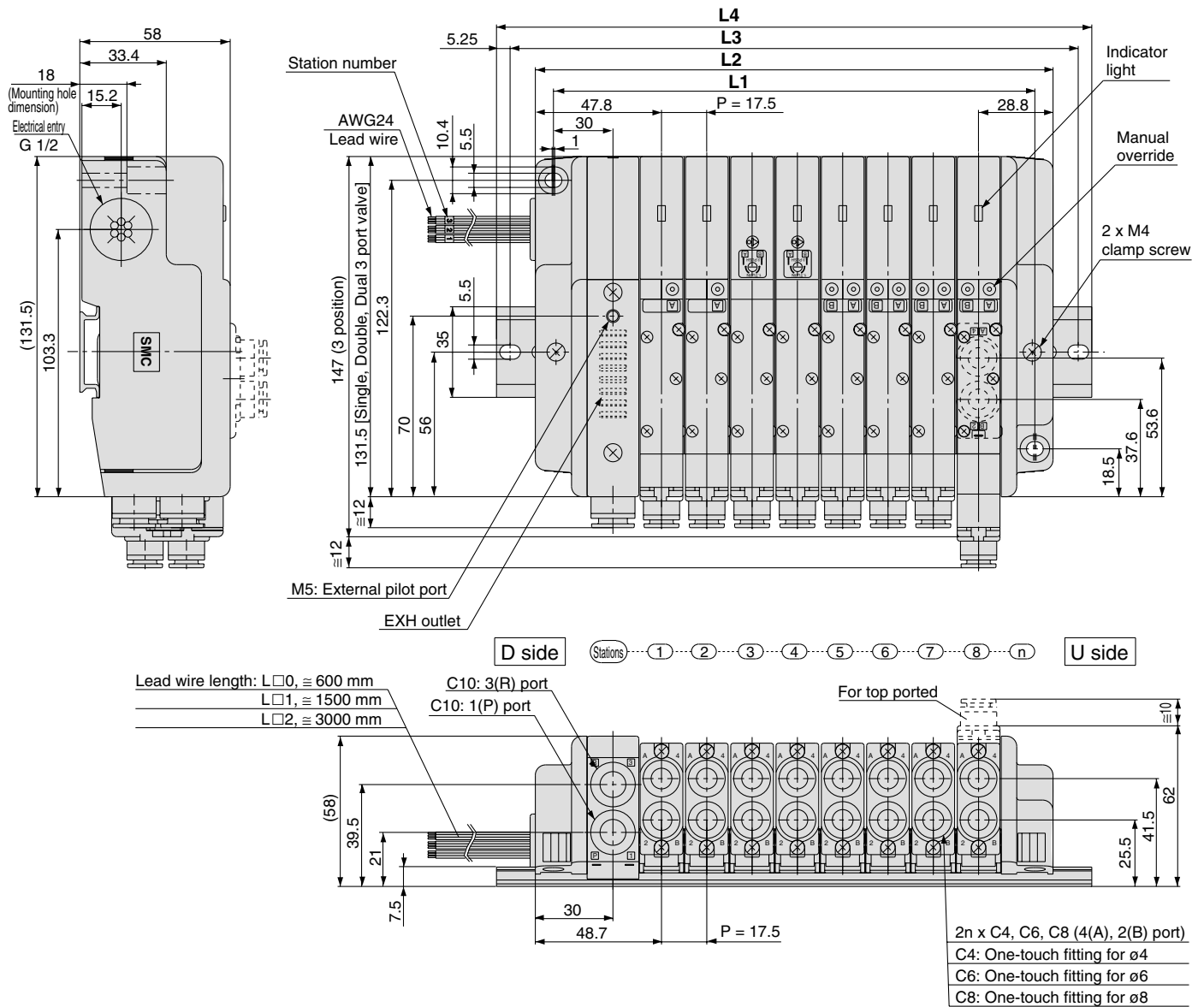


Single solenoid

Double solenoid



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



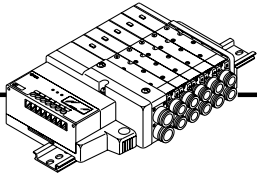
- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ**
- VFS
- VFR
- VQ7

Dimensions 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

Series SQ2000

S Kit (Serial transmission unit) EX140 Integrated-type (for Output) Serial Transmission System

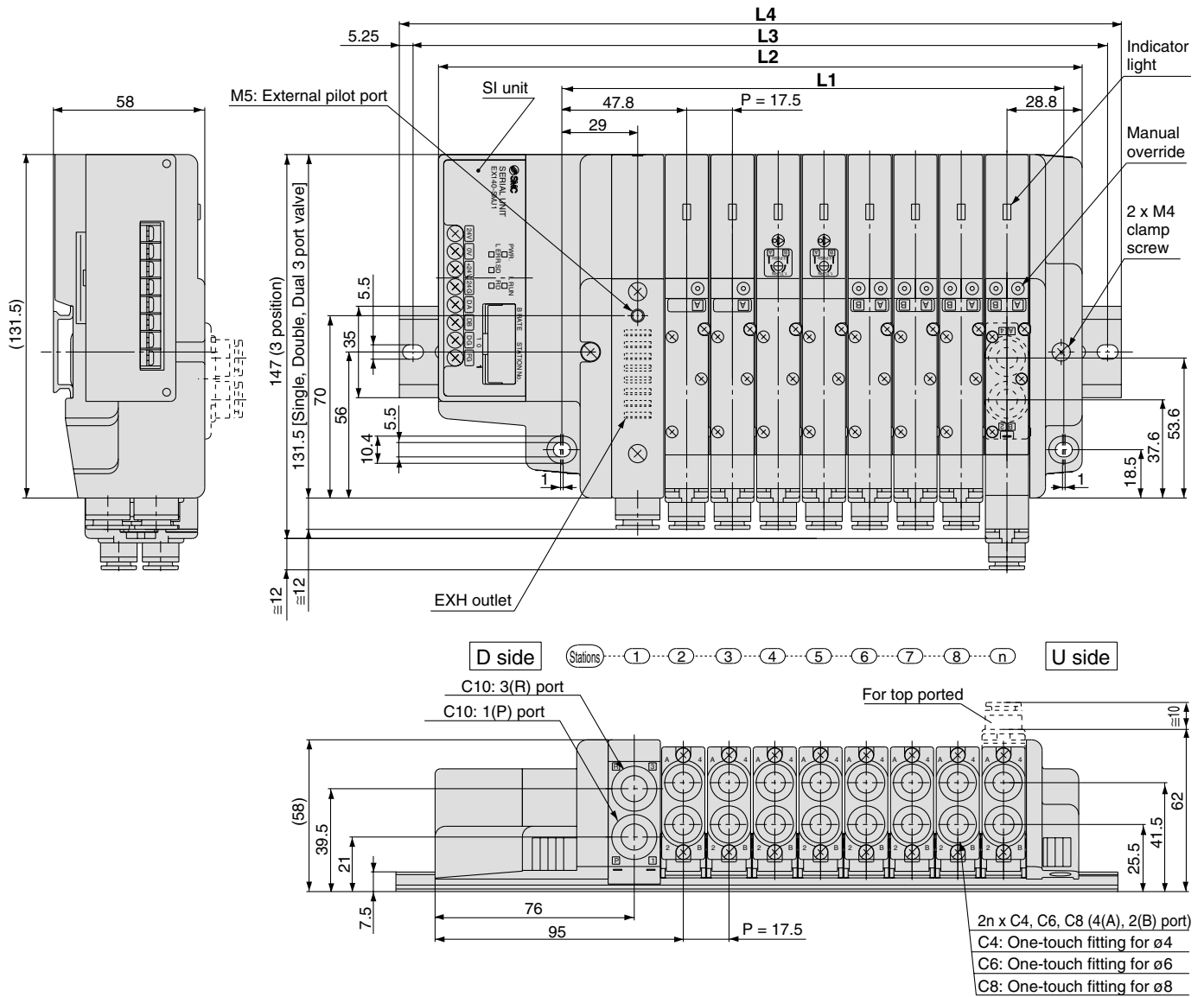


- The serial transmission system reduces wiring work, while minimizing wiring and saving space.
- The maximum number of stations is 8. (16 as an option).
Only for type J2 and R2, the maximum stations are 4 (8 as an option)

Refer to pages 1656 and 1657 for the details of EX140 integrated-type (for output) serial transmission system.

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



Dimensions

Formula: $L1 = 17.5n + 5$, $L2 = 17.5n + 106$ n: Stations (Maximum 16 stations)

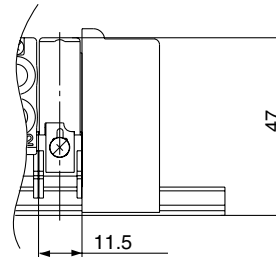
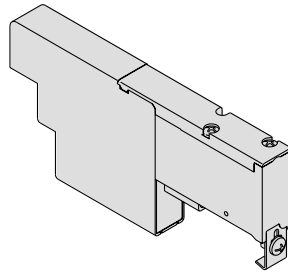
n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	69.5	87	104.5	122	139.5	157	174.5	192	209.5	227	244.5	262	279.5	297	314.5	332
L2	123.5	141	158.5	176	193.5	211	228.5	246	263.5	281	298.5	316	333.5	351	368.5	386
L3	150	162.5	187.5	200	225	237.5	250	275	287.5	312.5	325	337.5	362.5	375	400	412.5
L4	160.5	173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

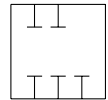
Blanking plate

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

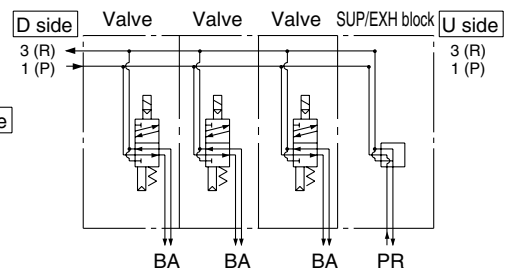
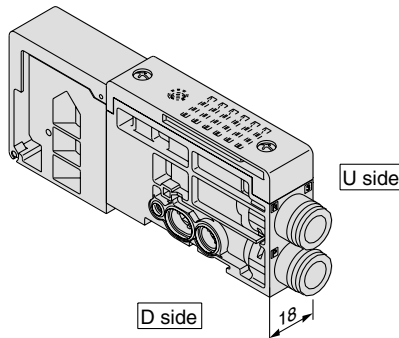
Nil	Standard
R	External pilot specifications
S	Built-in silencer

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

Description/Model		Stations				
		1	2	3	4	5
Valve	Single	●	●	●		
	...					
Option	SUP/EXH block				●	
	SSQ1000-PR-3-C8-□					

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

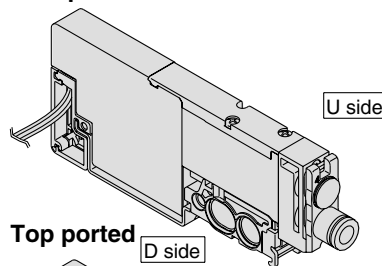
•Port size

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"

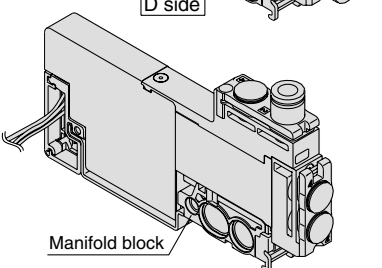
This is used as a supply port for different pressures when using different pressures in the same manifold (for one station). Both sides of the station which is used with supply pressure from the individual SUP spacer are shut off.

- (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-□ C6 - M

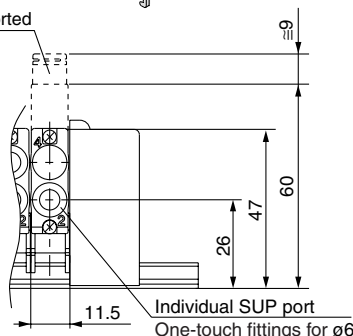
Side ported



Top ported

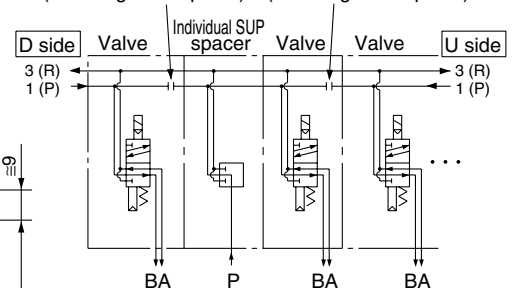


For top ported



Description/Model		Stations				
		1	2	3	4	5
Valve	Single	●	●	●		
	...					
Option	Individual SUP spacer					
	SSQ1000-P-3-□ C6					
Option	SUP shut off position:					
	Specify 2 positions.	●	●			

SUP block plate (Ordering not required) SUP block plate (Ordering not required)



Series SQ1000

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.

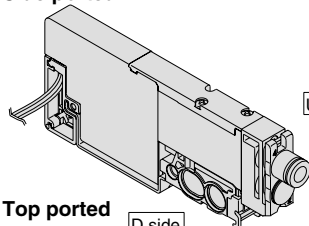
* By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later (from the individual EXH spacer to the individual SUP spacer).

* 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.

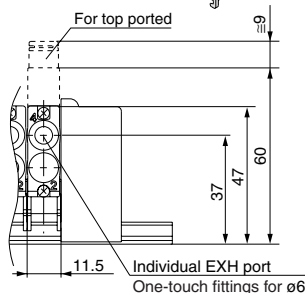
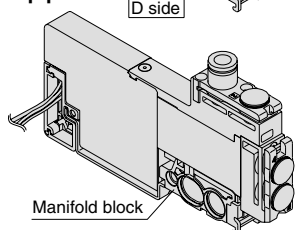
* Model no. with manifold block:

SSQ1000-R-3-C6-M

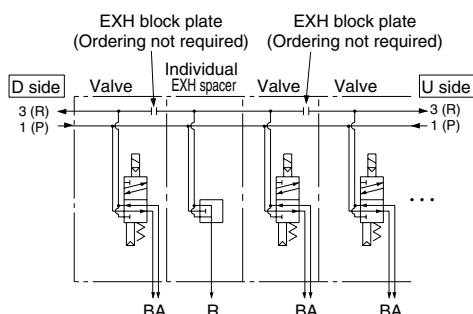
Side ported



Top ported



Description/Model		Stations				
		1	2	3	4	5
Valve	Single	●	●	●		
	:					
Option	Individual EXH spacer SSQ1000-R-3- <u>C6</u>	●				
	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.

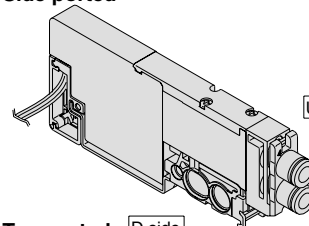
* The number of spacers is not limited when ordered with the manifold. However, when adding individual SUP/EXH spacers later, it is limited to two units, one between manifold stations and another on the U side due to the length of the internal lead wire.

* Model no. with manifold block:

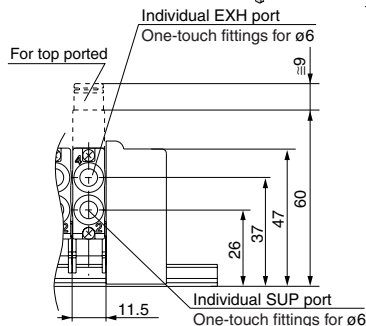
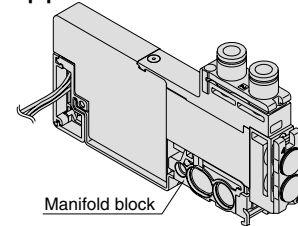
SSQ1000-PR1-3-C6-M

* Do not install any back pressure check valve on the manifold station, on which the spacer is to be mounted. When installing the back pressure check valve on other manifold station, be sure to specify the manifold station position on the manifold specification sheet instead of ordering by specifying the manifold option symbol "B".

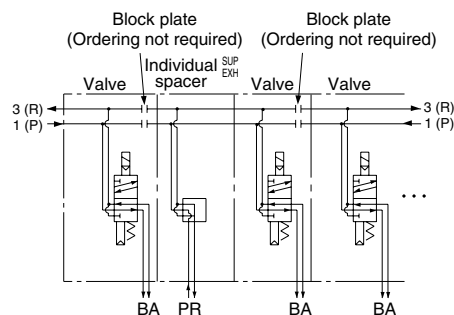
Side ported



Top ported



Description/Model		Stations				
		1	2	3	4	5
Valve	Single	●	●	●		
	:					
Option	Individual SUP/EXH spacer SSQ1000-PR1-3- <u>C6</u>	●				
	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

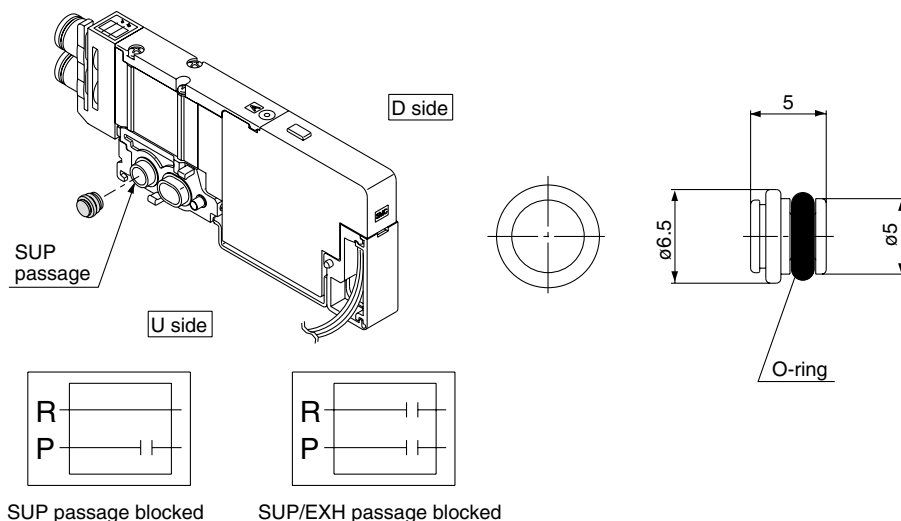
When supplying two different pressures, high and low, to one manifold, this is used between stations with different pressures. Also, it is used with an individual SUP spacer to shut off the air supply.

* Specify the station position on the manifold specification sheet.

<Shut off label>

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

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



EXH block plate

SSQ1000-B-R

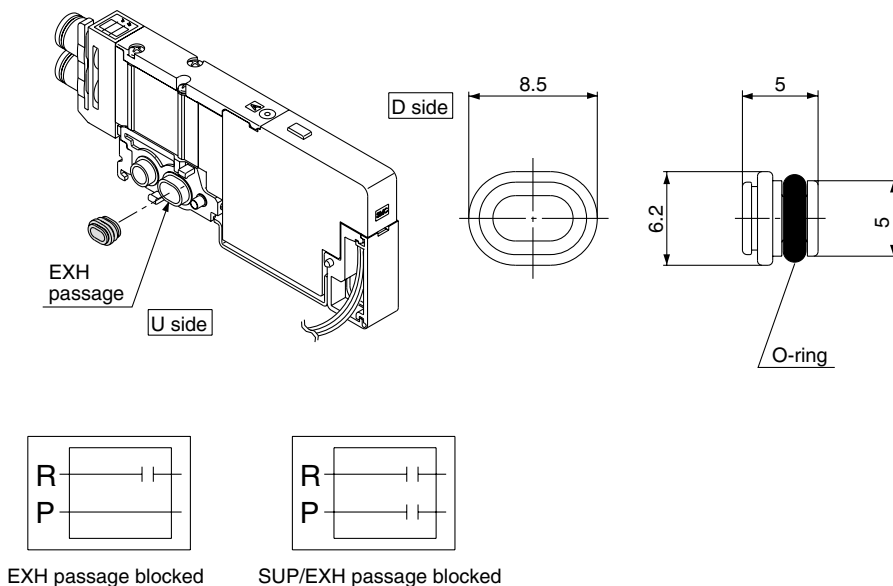
When the exhaust from a valve interferes with other stations in the circuit, this is used between stations to separate exhausts. Also, it is used with an individual EXH spacer to shut off the exhaust of individual valves.

* Specify the station position on the manifold specification sheet.

<Shut off label>

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

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



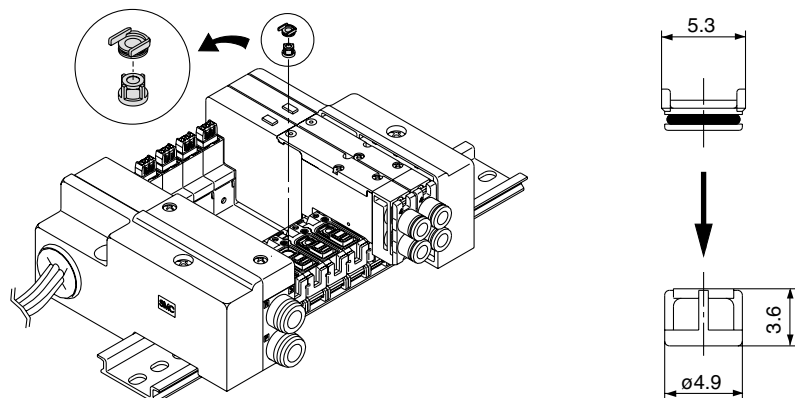
Back pressure check valve [-B]

SSQ1000-BP

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

* When installing back pressure check valves only on the stations required, enter the part number and specify the mounting stations on a manifold specification sheet.

* When installing back pressure check valves on all of the stations, indicate "-B" at the end of the manifold part number.



⚠ Caution

1. Although the back pressure check valve is an assembly part with a check valve mechanism, a small amount of air leakage is allowed. Therefore, take care not to restrict the exhaust air from the exhaust port.
2. The effective area of valves is about 20% less when the back pressure check valve is installed.
3. Since 4 port specification valves (5 (R1) and 3 (R2) are common) are used, back pressure cannot be prevented with dual 3 port valves.

Series SQ1000

Manifold Option Parts for SQ1000

Name plate [-N]

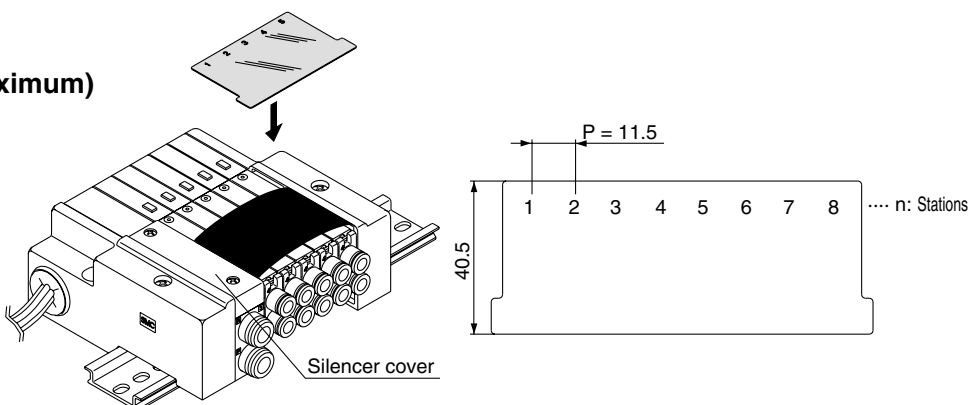
SSQ1000-N3-Stations (1 to maximum)

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

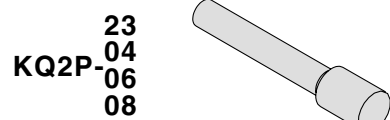
To install, bend the plate slightly as shown and insert into the slots on the end plate side.

Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to install it.

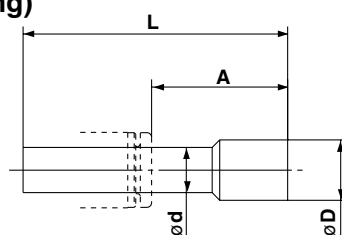
* When ordering with manifolds, add "-N" at the end of the manifold number.



Blanking plug (For One-touch fitting)



This is inserted into cylinder ports and SUP and EXH ports that are not used. Purchasing order is available in units of 10 pieces.



Dimensions

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

Port plug

VVQZ100-CP

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

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

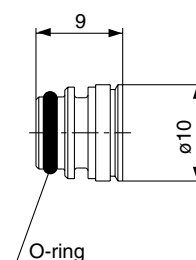
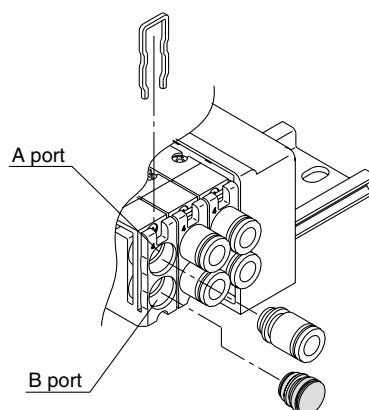
Example) SQ1131-5-C6-A (N.O. specifications)

• 4 (A) port plug

Example) SQ1131-5-C6-B (N.C. specifications)

• 2 (B) port plug

Example) SQ1131-5-C6-B-M (B port plug with manifold block)



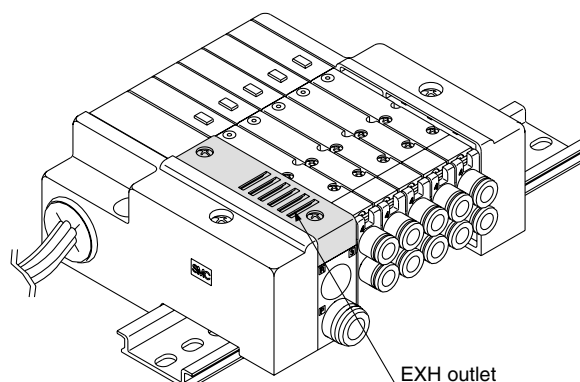
Direct EXH outlet, built-in silencer [-S]

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

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

* Add "S" at the end of the manifold part number when ordering with manifolds.

* For precautions on handling and how to replace elements, refer to page 1109.



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.

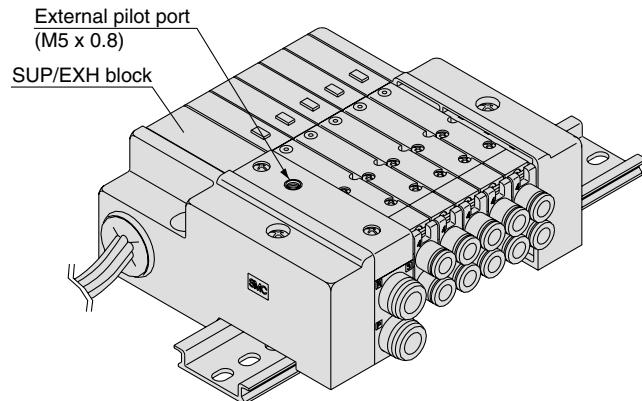
- How to order valves (Example)
SQ1130 R -5-C6 (-Q)

External pilot specifications

- How to order manifold (Example)
* Indicate "R" for an option.

SS5Q13-08FD1-DR

External pilot specifications



Note 1) Not applicable for 4 position dual 3 port valves.

Note 2) Indicate "RY" for low wattage types.

Note 3) 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.

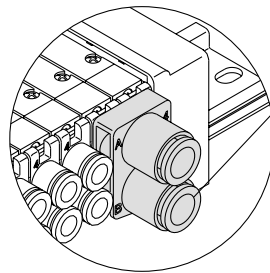
This fitting is used on the cylinder ports in this situation. Available sizes are ø8 and ø5/16" One-touch fittings.

* When ordering with valves, specify the valve part number without One-touch fitting and list the dual flow fitting part number.

Example) Valve part number (without One-touch fitting)

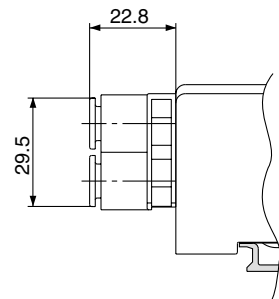
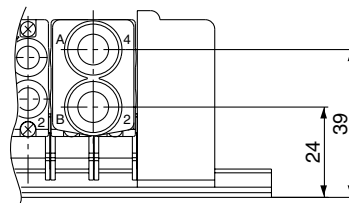
SQ1131-5-C0(-Q)..... 2 sets

*SSQ1000-52A-C8..... 1 set



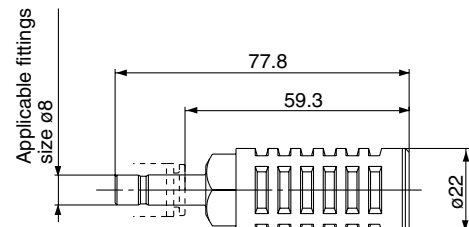
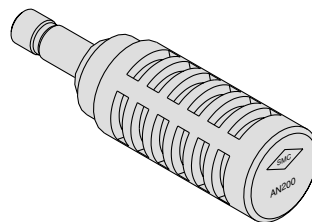
C8: One-touch fittings for ø8

N9: One-touch fittings for ø5/16"



Silencer (For EXH port)

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



Specifications

Series	Model	Effective area mm ² (Cv factor)	Noise reduction (dB)
SQ1000	AN200-KM8	20 (1.1)	30

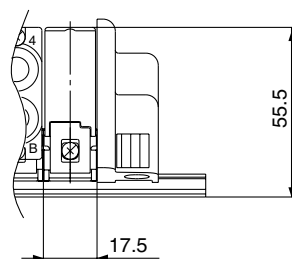
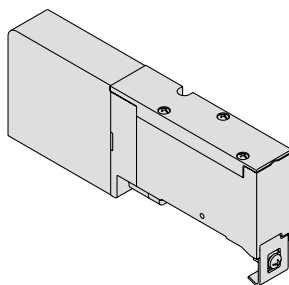
SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Manifold Option Parts for SQ2000

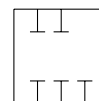
Blanking plate

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

Nil	Standard
R	External pilot specifications
S	Built-in silencer

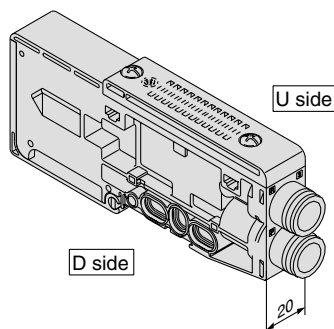
Note) When specifying both options, indicate "RS".

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

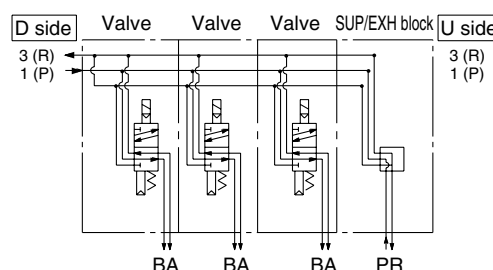
For standard type manifolds, the SUP/EXH block is mounted on the D side. It is added to the manifold to increase SUP/EXH capacity.

* 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).

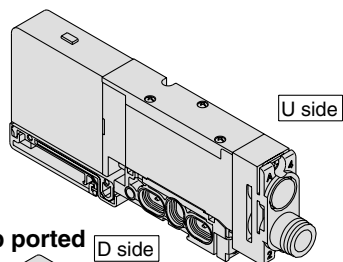
* The number of spacers is not limited when ordered with the manifold. However, when adding individual SUP spacers later, it is limited to two units, and another on the U side due to the length of the internal lead wire.

* Model no. with manifold block:

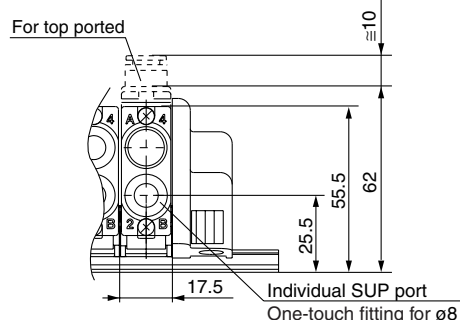
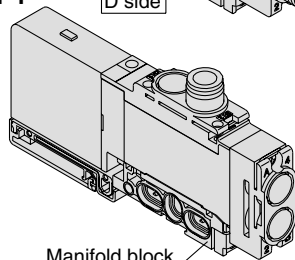
SSQ2000-P-3-C8-M

1032

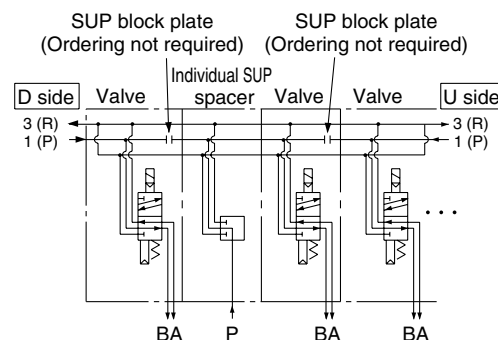
Side ported



Top ported



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



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.

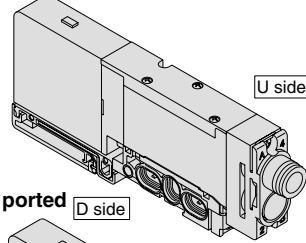
* By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later (from the individual EXH spacer to the individual SUP spacer).

* 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.

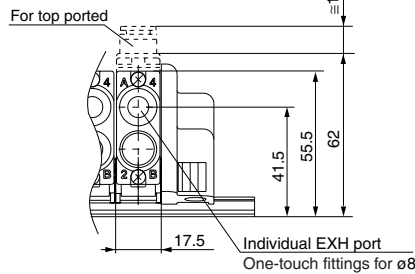
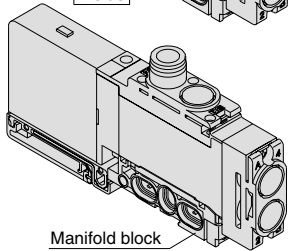
* Model no. with manifold block:

SSQ2000-R-3-**C8**-**M**
L8

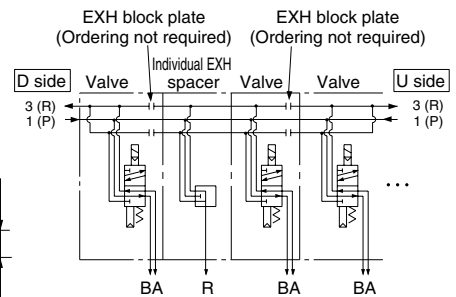
Side ported



Top ported



		Stations				
Description/Model		1	2	3	4	5
Valve	Single	●	●	●		
	:					
Option	Individual EXH spacer SSQ2000-R-3- C8 L8		●			
	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.

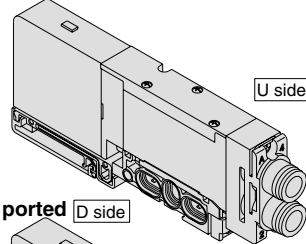
* The number of spacers is not limited when ordered with the manifold. However, when adding individual SUP/EXH spacers later, it is limited to two units, one between manifold stations on the U side due to the length of the internal lead wire.

* Model no. with manifold block:

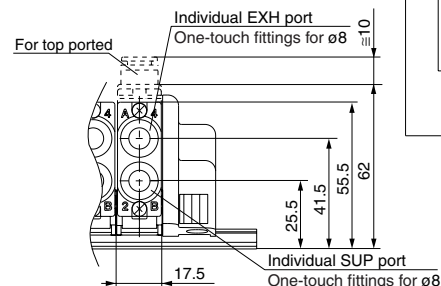
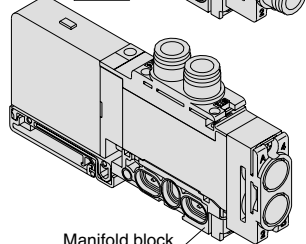
SSQ2000-PR1-3-**C8**-**M**
L8

* Do not install any back pressure check valve on the manifold station, on which the spacer is to be mounted. When installing the back pressure check valve on other manifold station, be sure to specify the manifold station position on the manifold specification sheet instead of ordering by specifying the manifold option symbol "B".

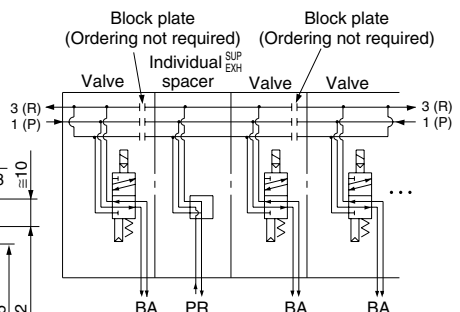
Side ported



Top ported



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



Series SQ2000

Manifold Option Parts for SQ2000

SUP block plate

SSQ1000-B-R

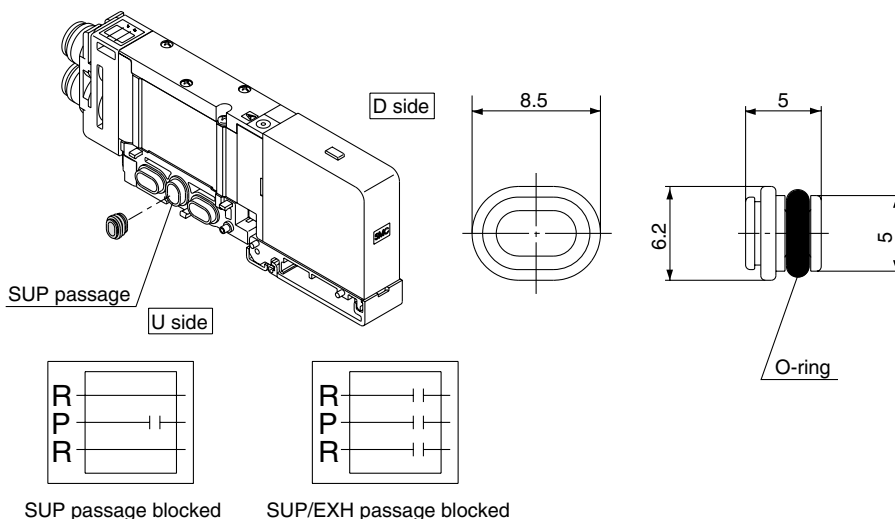
When supplying two different pressures, high and low, to one manifold, this is used between stations with different pressures. Also, it is used with an individual SUP spacer to shut off the air supply.

* Specify the station position on the manifold specification sheet.

<Shut off label>

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

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



EXE block plate

SSQ2000-B-R

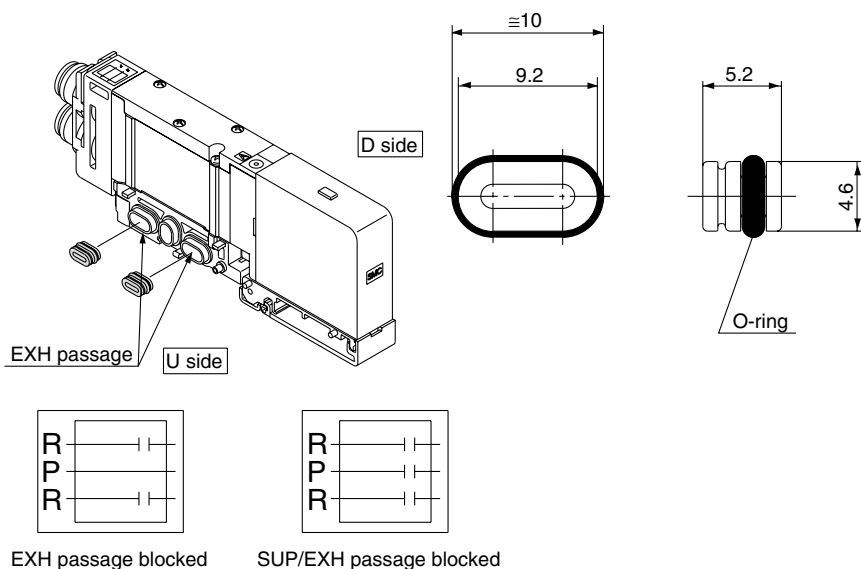
When the exhaust from a valve interferes with other stations in the circuit, this is used between stations to separate exhausts. Also, it is used with an individual EXH spacer to shut off the exhaust of individual valves.

* Specify the station position on the manifold specification sheet.

<Shut off label>

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

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



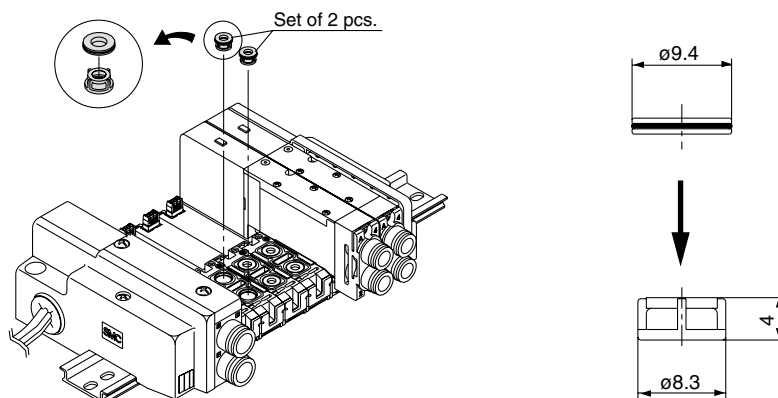
Back pressure check valve [-B]

SSQ2000-BP

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

* When installing back pressure check valves only on the stations required, enter the part number and specify the mounting stations on a manifold specification sheet.

* When installing back pressure check valves on all of the stations, indicate "B" at the end of the manifold part number.



⚠ Caution

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

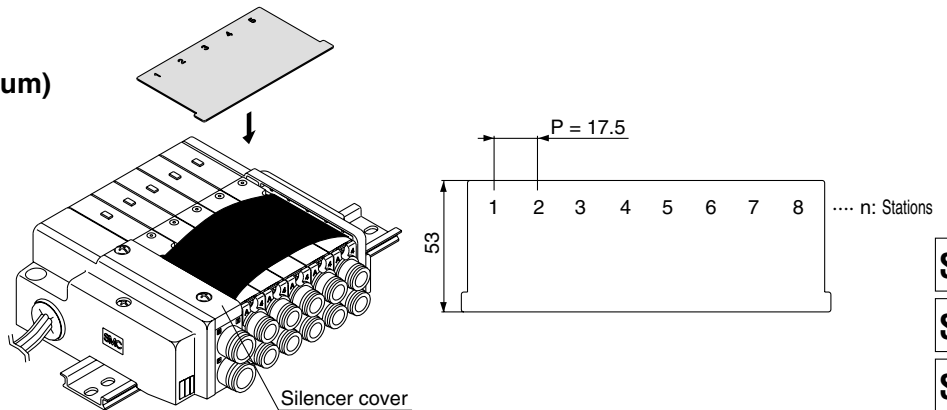
Manifold Option Parts for SQ2000

Name plate [-N]

SSQ2000-N3- Stations (1 to maximum)

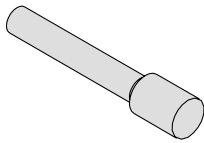
This is a clear resin plate for applying solenoid valve function description labels, etc.
To install, bend the plate slightly as shown and insert into the slots on the end plate side. Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to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

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

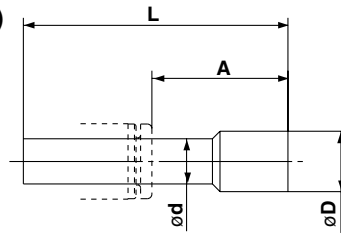


Blanking plug (For One-touch fitting)

KQ2P-
04
06
08
10



This is inserted into cylinder ports and SUP and EXH ports that are not used.
Purchasing order is available in units of 10 pieces.



Dimensions

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

Port plug

VVQZ2000-CP

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

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

Example) SQ2131-5-C8-A (N.O. specifications)

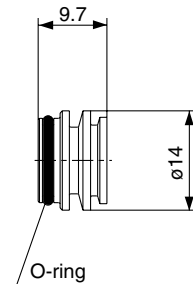
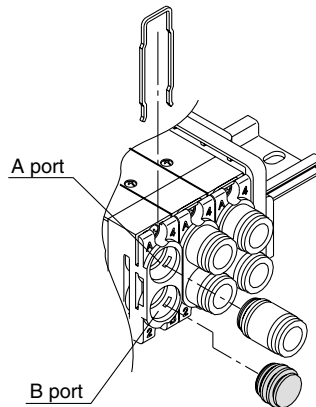
• 4 (A) port plug

Example) SQ2131-5-C8-B (N.C. specifications)

• 2 (B) port plug

Example) SQ2131-5-C8-B-M

(B port plug with manifold block)



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

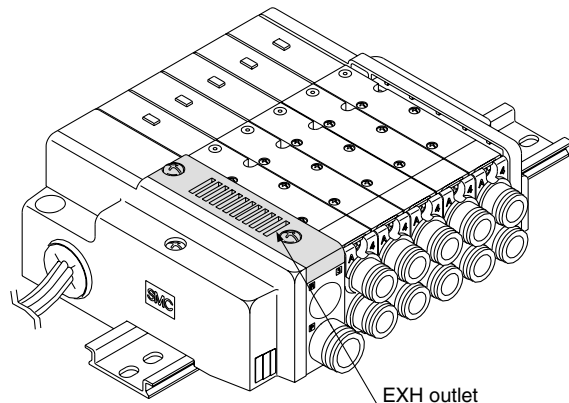
The EXH outlet is placed on the top side of the manifold end plate. The built-in silencer provides highly effective noise reduction. (Noise reduction of 30 dB)



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

* Add "-S" at the end of the manifold part number when ordering with manifolds.

* For precautions on handling and how to replace elements, refer to page 1109.



SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Series SQ2000

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 -5-C6 (-Q)

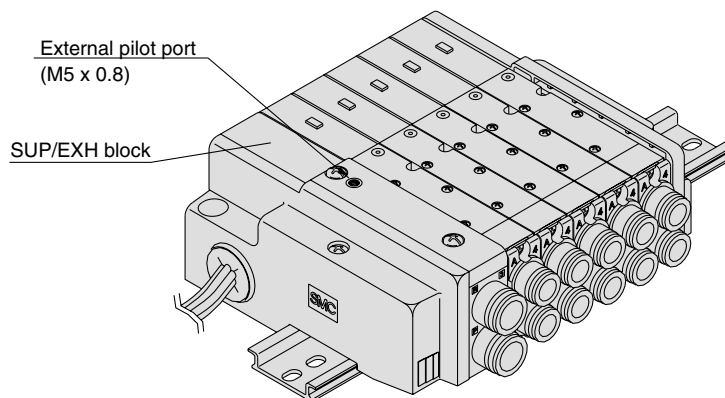
- External pilot specifications

- How to order manifold (Example)

* Indicate "R" for an option.

SS5Q23-08FD1-DR (-Q)

- External pilot specifications



Note 1) Not applicable for dual 3 port valves.

Note 2) Indicate "RY" for low wattage types.

Note 3) 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"

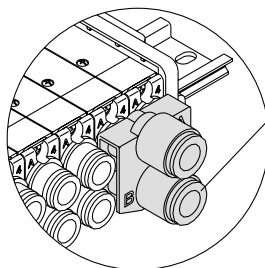
To drive a large bore cylinder, two valve stations are operated simultaneously to double the air flow. This fitting is used on the cylinder ports in this situation. Available sizes are ø10 and ø3/8" One-touch fittings.

* When ordering with valves, specify the valve part number without One-touch fitting and list the dual flow fitting part number.

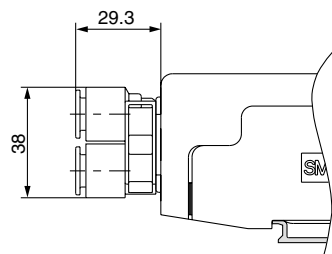
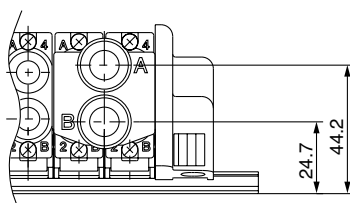
Example) Valve part number (without One-touch fitting)

SQ2131-5 - C10 (-Q) 2 sets

* SSQ2000- 52A - C10 1 set

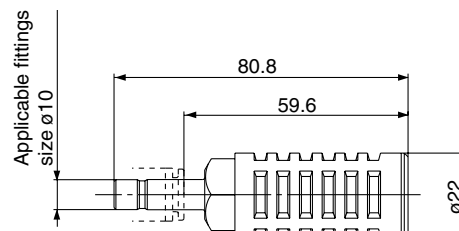
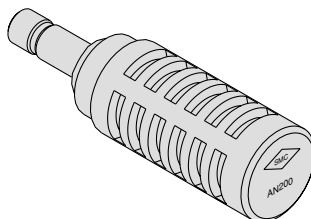


C10: One-touch fitting for ø10
N11: One-touch fitting for ø3/8"



Silencer (For EXH port)

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



Specifications

Series	Model	Effective area (mm ²) (Cv factor)	Noise reduction (dB)
SQ2000	AN200-KM10	26 (1.4)	30

Manifold Option Parts for SQ1000/SQ2000

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

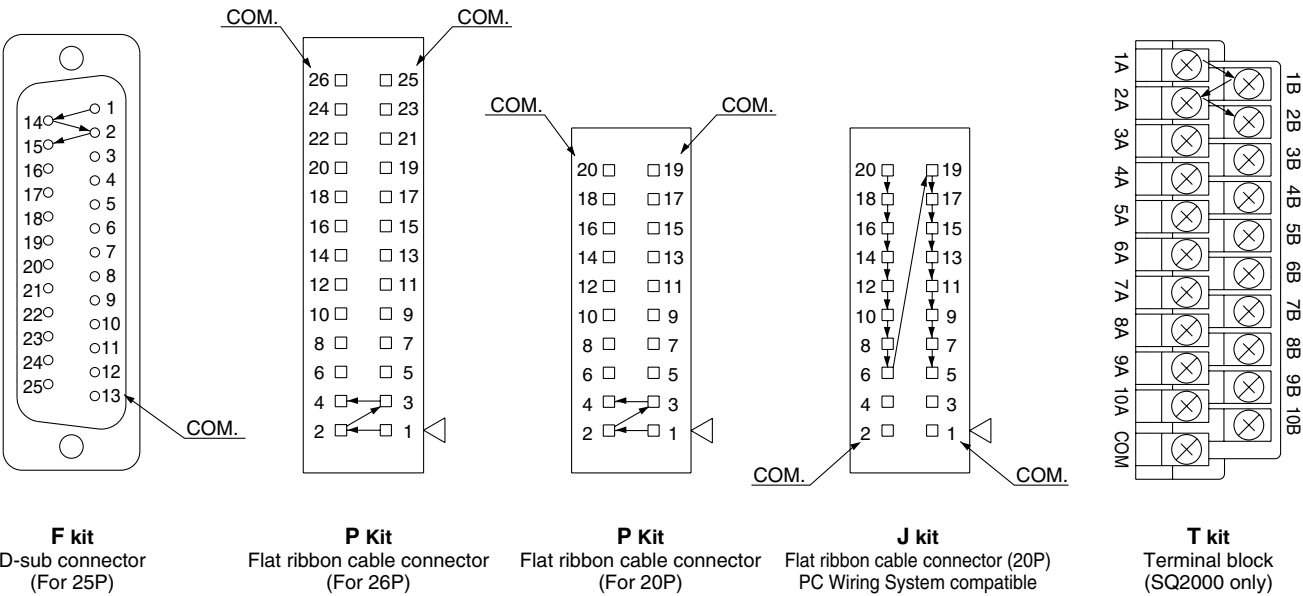
Indicate option symbol “-K” in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet. Also, specify wiring for spare connectors.
(Up to two spare connectors are included depending on the remaining number of connector pins. When the wiring for the spare connectors is not specified, they will be wired according to “Spare Connector Wiring” on page 1040.)

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.



For S kit (serial transmission kit), refer to pages 1004 and 1026.

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

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

VFR

VQ7

Series SQ1000/2000

Manifold Option Parts for SQ1000/SQ2000

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 (-Q)**

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

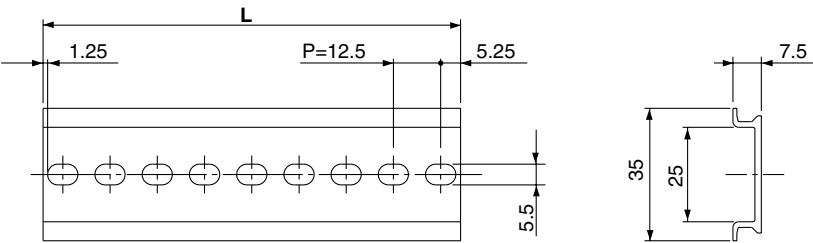
● **Ordering DIN rail only**

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.



L Dimension

$L = 12.5 \times n + 10.5$

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

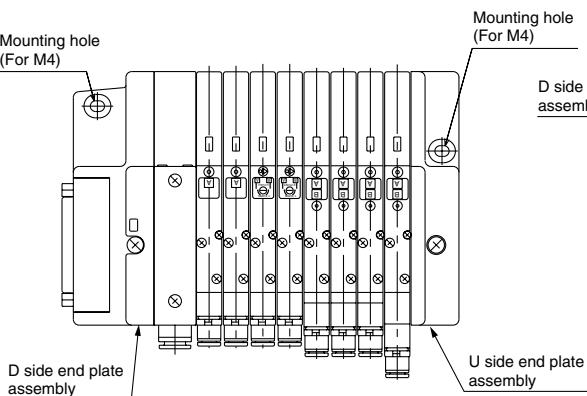
No.	21	22	23	24	25	26	27	28	29	30
L dimension	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5

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

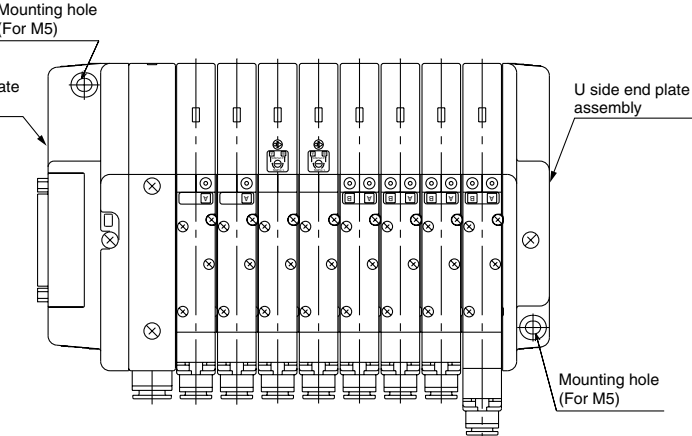
Direct Mounting Style (-E)

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 1022 and 1023.)
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/SQ2000

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 COM specifications are not available for the S kit.

● How to order negative COM valves (Example)

SQ1130 N -5-C6 (-Q)

• Negative common specifications

● How to order negative COM manifold (Example)

SS5Q13 -08LD1 N -DN (-Q)

Stations

Option

Kit type

DIN rail mounting style

• Negative common specifications

Inch-size One-touch Fittings

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

● How to order valves (Example)

SQ1130- 5 - ☐ N7 (-Q)

Port location

• Cylinder port

Nil	Side ported	Symbol	N1	N3	N7	N9
L	Top ported	Applicable tubing O.D. (Inch)	ø1/8"	ø5/32"	ø1/4"	ø5/16"
4(A),			●	●	●	—
2(B) port			—	●	●	●

● How to order manifold (Example)

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

SS5Q13-08FD0 - DN - 00T (-Q)

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

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

VFR

VQ7

How to Add Manifold Stations for SQ1000/SQ2000

1. Using Spare Connector to Add Stations

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

• Spare Connector Wiring

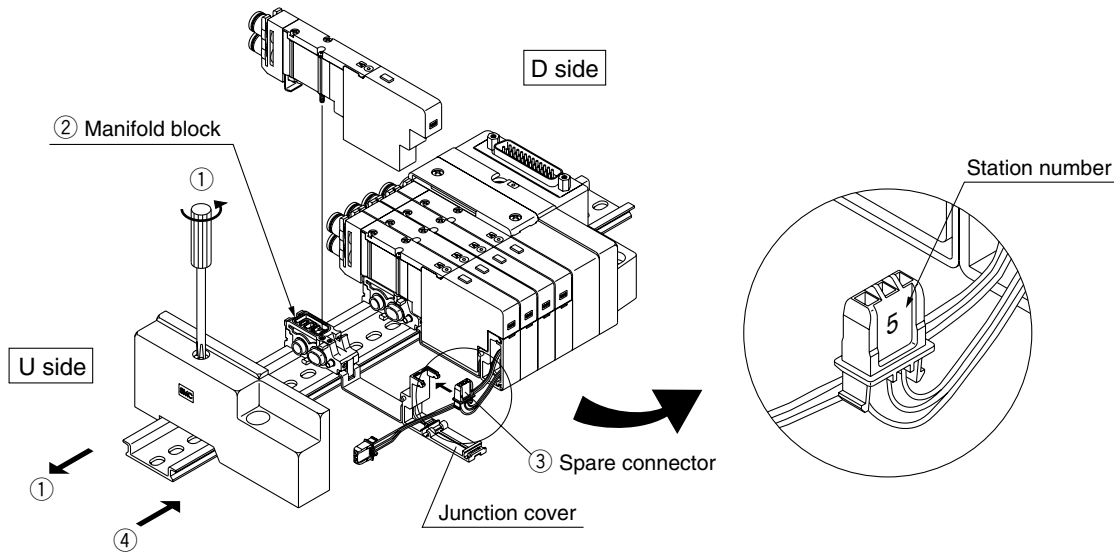
Remaining connector pins	4 pins or more	3 pins	2 pins	1 pin	0 pin
Spare connector wiring	2 for double wiring	1 for double wiring (on the low no. station side) 1 for single wiring	1 for double wiring	1 for single wiring	None

What to order

- Valves with manifold block (refer to pages 991 and 1011) or the manifold blocks (Refer to page 1041).

Steps for adding stations

- Loosen the clamp screw on the U side end plate and open the manifold.
- Mount the manifold block to be added.
- Open the junction cover and attach the spare connector. Match the station position of the added station and the spare connector station number.
- 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 1041.)
Note 2) Do not let the lead wires get caught between manifolds, or when closing the junction cover.

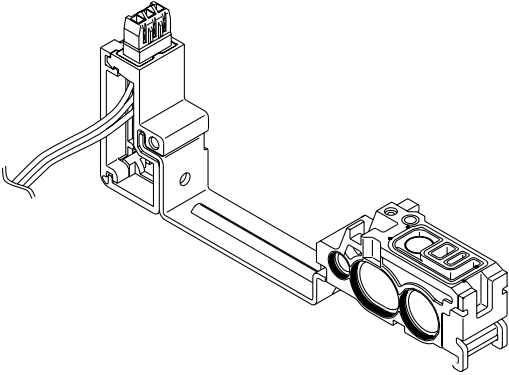
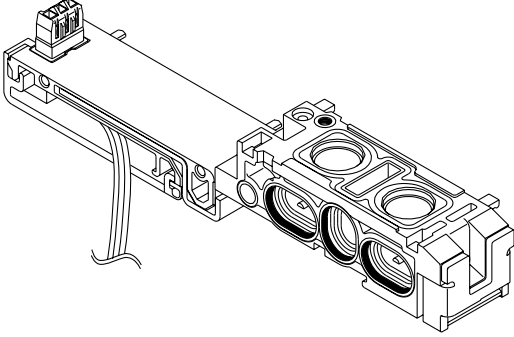






How to Add Manifold Stations for SQ1000/SQ2000

2. Adding Stations Without Required Spare Connectors

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

How to Order Manifold Blocks with Lead Wire

SQ1000	SQ2000																																																																												
																																																																													
<p style="font-size: 1.2em; font-weight: bold;">SSQ1000-1A-3-FS03 </p> <p>Lead wire type ●</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%; text-align: center;">F0</td><td>Without lead wire (for using spare connectors to add stations)</td></tr> <tr><td style="text-align: center;">FS</td><td>F kit (D-sub connector kit) Single wiring</td></tr> <tr><td style="text-align: center;">FW</td><td>F kit (D-sub connector kit) Double wiring</td></tr> <tr><td style="text-align: center;">PS</td><td>P, J kit (Flat ribbon cable kit) Single wiring</td></tr> <tr><td style="text-align: center;">PW</td><td>P, J kit (Flat ribbon cable kit) Double wiring</td></tr> <tr><td style="text-align: center;">L0</td><td>L kit (Lead wire kit) Lead wire length 0.6 m</td></tr> <tr><td style="text-align: center;">L1</td><td>L kit (Lead wire kit) Lead wire length 1.5 m</td></tr> <tr><td style="text-align: center;">L2</td><td>L kit (Lead wire kit) Lead wire length 3.0 m</td></tr> <tr><td style="text-align: center;">SS</td><td>S kit (Serial transmission kit) Single wiring</td></tr> <tr><td style="text-align: center;">SW</td><td>S kit (Serial transmission kit) Double wiring</td></tr> </table> <p>Applicable stations ●</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%; text-align: center;">01</td><td>1 station</td></tr> <tr><td style="text-align: center;">⋮</td><td>⋮</td></tr> <tr><td style="text-align: center;">24</td><td>24 stations</td></tr> </table> <p>  Note 1) No symbol required for "F0". Note 2) S kit is from 01 to 16 </p> <p>COM. (L kit only) ●</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%; text-align: center;">Nil</td><td>Positive common</td></tr> <tr><td style="text-align: center;">N</td><td>Negative common</td></tr> </table> <p style="text-align: right;">Option ●</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%; text-align: center;">Nil</td><td>None</td></tr> <tr><td style="text-align: center;">B</td><td>Back pressure check valve</td></tr> <tr><td style="text-align: center;">R</td><td>External pilot specifications</td></tr> </table> <p>  Note) Enter "-BR" for both options. </p>	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	01	1 station	⋮	⋮	24	24 stations	Nil	Positive common	N	Negative common	Nil	None	B	Back pressure check valve	R	External pilot specifications	<p style="font-size: 1.2em; font-weight: bold;">SSQ2000-1A-3-FS03 </p> <p>Lead wire type ●</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%; text-align: center;">F0</td><td>Without lead wire (for using spare connectors to add stations)</td></tr> <tr><td style="text-align: center;">FS</td><td>F kit (D-sub connector kit) Single wiring</td></tr> <tr><td style="text-align: center;">FW</td><td>F kit (D-sub connector kit) Double wiring</td></tr> <tr><td style="text-align: center;">PS</td><td>P, J kit (Flat ribbon cable kit) Single wiring</td></tr> <tr><td style="text-align: center;">PW</td><td>P, J kit (Flat ribbon cable kit) Double wiring</td></tr> <tr><td style="text-align: center;">TS</td><td>T kit (Terminal block kit) Single wiring</td></tr> <tr><td style="text-align: center;">TW</td><td>T kit (Terminal block kit) Double wiring</td></tr> <tr><td style="text-align: center;">L0</td><td>L kit (Lead wire kit) Lead wire length 0.6 m</td></tr> <tr><td style="text-align: center;">L1</td><td>L kit (Lead wire kit) Lead wire length 1.5 m</td></tr> <tr><td style="text-align: center;">L2</td><td>L kit (Lead wire kit) Lead wire length 3.0 m</td></tr> <tr><td style="text-align: center;">SS</td><td>S kit (Serial transmission kit) Single wiring</td></tr> <tr><td style="text-align: center;">SW</td><td>S kit (Serial transmission kit) Double wiring</td></tr> </table> <p>Applicable stations ●</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%; text-align: center;">01</td><td>1 station</td></tr> <tr><td style="text-align: center;">⋮</td><td>⋮</td></tr> <tr><td style="text-align: center;">16</td><td>16 stations</td></tr> </table> <p>  Note 1) No symbol required for "F0". </p> <p>COM. (L kit only) ●</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%; text-align: center;">Nil</td><td>Positive common</td></tr> <tr><td style="text-align: center;">N</td><td>Negative common</td></tr> </table> <p style="text-align: right;">Option ●</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%; text-align: center;">Nil</td><td>None</td></tr> <tr><td style="text-align: center;">B</td><td>Back pressure check valve</td></tr> <tr><td style="text-align: center;">R</td><td>External pilot specifications</td></tr> </table> <p>  Note) Enter "-BR" for both options. </p>	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	01	1 station	⋮	⋮	16	16 stations	Nil	Positive common	N	Negative common	Nil	None	B	Back pressure check valve	R	External pilot specifications
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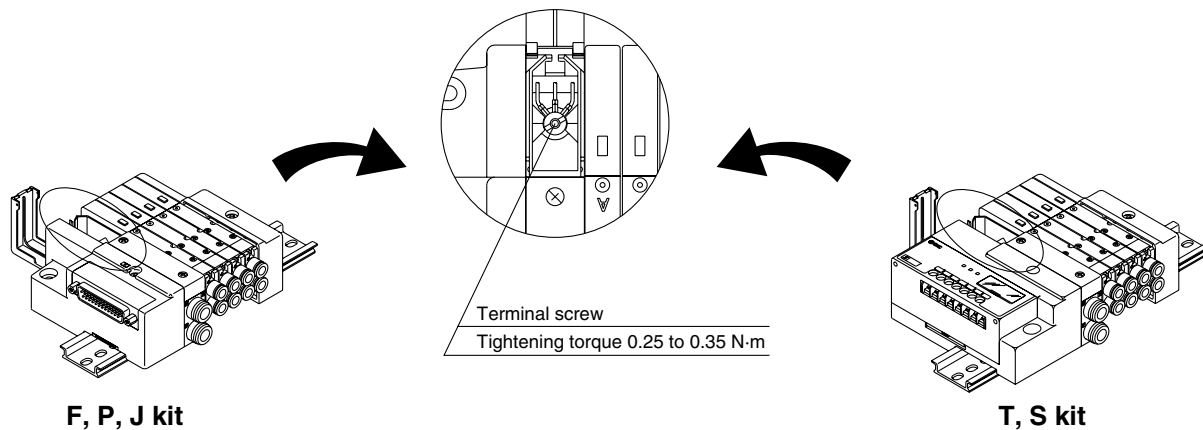
How to Add Manifold Stations for SQ1000/SQ2000

3. Connection Method (Refer to page 1040 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

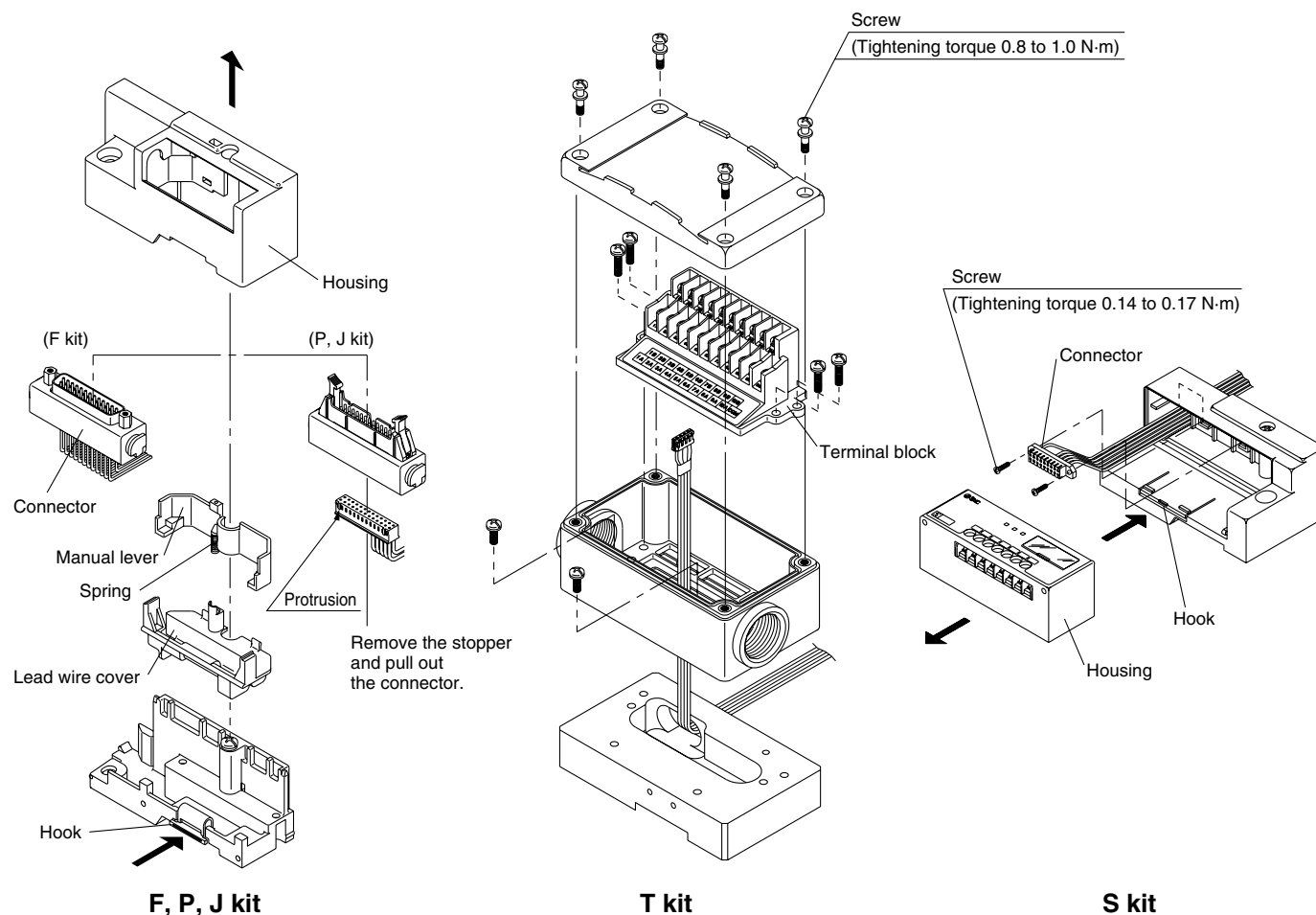
Connect lead wire assemblies included with manifold blocks as follows.



(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.



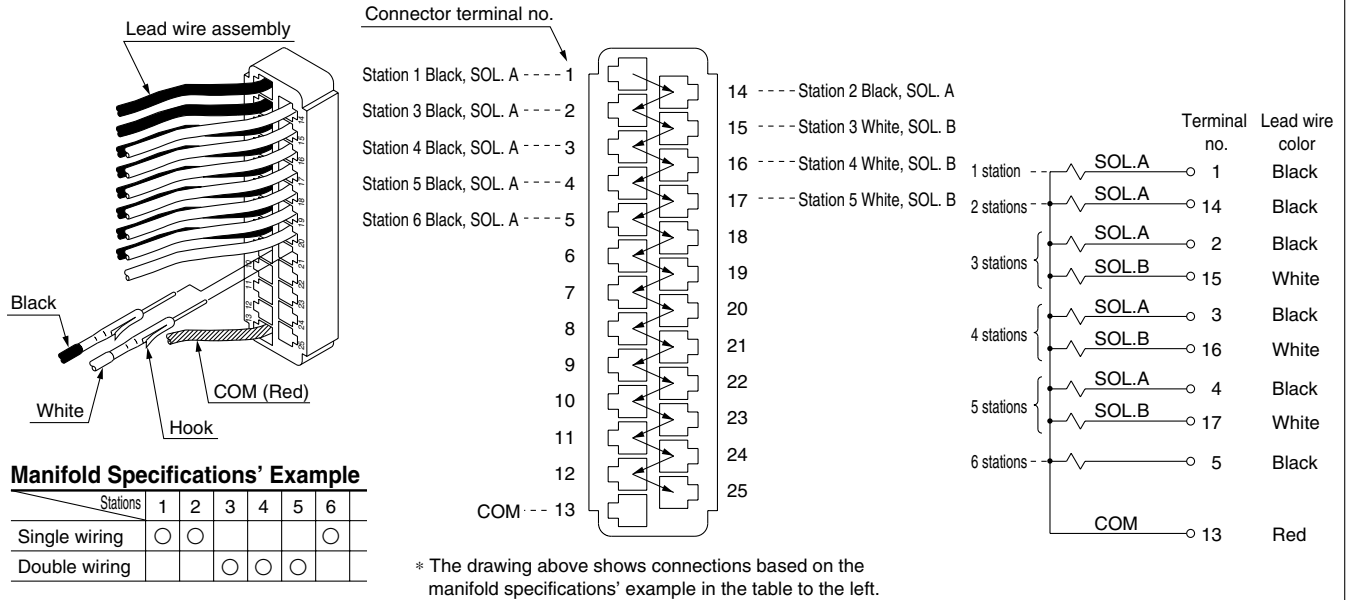
How to Add Manifold Stations for SQ1000/SQ2000

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

- ⚠ Caution**
1. After inserting the pin, confirm that the pin hook is locked by lightly pulling the lead wire.
 2. Do not pull the lead wire forcefully when connecting. Also, take care that lead wires do not get caught between manifolds or when closing the junction cover.

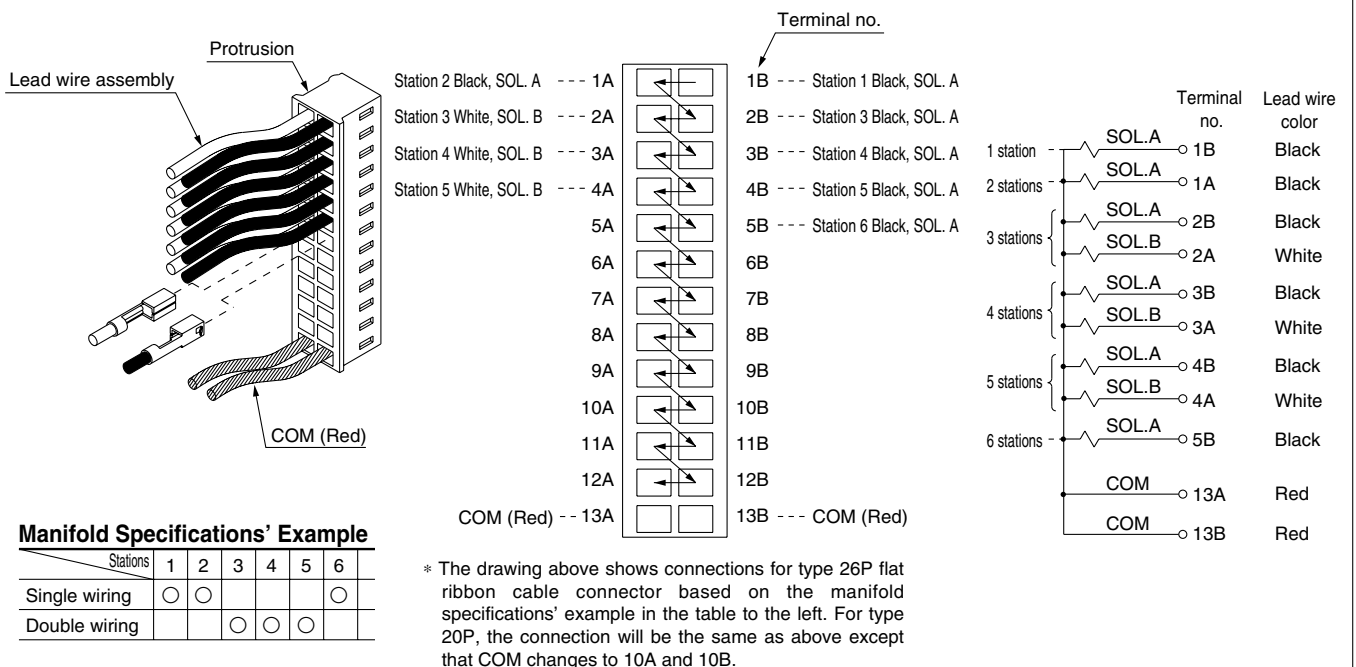
Wiring (F kit: D-sub connector kit)

Procedure) Based on the manifold 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.



Wiring (P kit: Flat ribbon cable 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.



Series SQ1000/2000

How to Add Manifold Stations for SQ1000/SQ2000

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.

Terminal no.

COM (Red) ---- 1A

Unused ---- 2A

Station 5 White ---- 3A

Station 5 Black ---- 4A

Station 4 White ---- 5A

Station 4 Black ---- 6A

Station 3 White ---- 7A

Station 3 Black ---- 8A

Station 2 Black ---- 9A

Station 1 Black ---- 10A

1B ---- COM (Red)

2B ---- Unused

3B

4B

5B

6B

7B

8B

9B

10B ---- Station 6 Black

	Terminal no.	Lead wire color
1 station	SOL.A 10A	Black
2 stations	SOL.A 9A	Black
3 stations	SOL.A 8A	Black
	SOL.B 7A	White
4 stations	SOL.A 6A	Black
	SOL.B 5A	White
5 stations	SOL.A 4A	Black
	SOL.B 3A	White
6 stations	SOL.A 10B	Black
	COM 1A	Red
	COM 1B	Red

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.

Lead wire assembly

Housing

White SOL.B

Red COM.

Black SOL.A

Insert to the locking position.

Single wiring

Double wiring

Black Red Black Red

Black Red White Unused

(Stations for all double wiring)

Station 1

Station 2

Station 3

Station 4

Station 5

Station 6

Station 7

Station 8

Station 9

Station 10

Connector no.

	Lead wire color	Terminal no.
1 station	SOL.A	Black
	COM	Red
2 stations	SOL.A	Black
	COM	Red
3 stations	SOL.A	Black
	COM	Red
4 stations	SOL.A	Black
	COM	Red
	SOL.B	White
5 stations	SOL.A	Black
	COM	Red
	SOL.B	White
6 stations	SOL.A	Black
	COM	Red

Station 1: 1

Station 1: 2

Station 1: 3

Station 1: 4

Station 2: 1

Station 2: 2

Station 2: 3

Station 2: 4

Station 3: 1

Station 3: 3

Station 3: 4

Station 4: 1

Station 4: 3

Station 4: 4

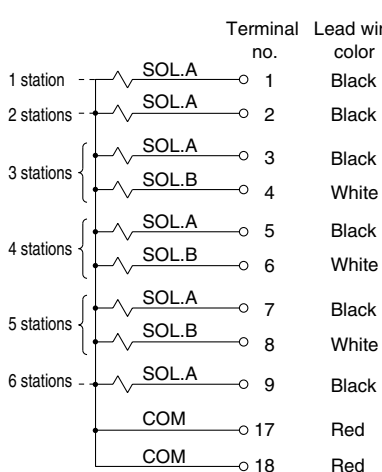
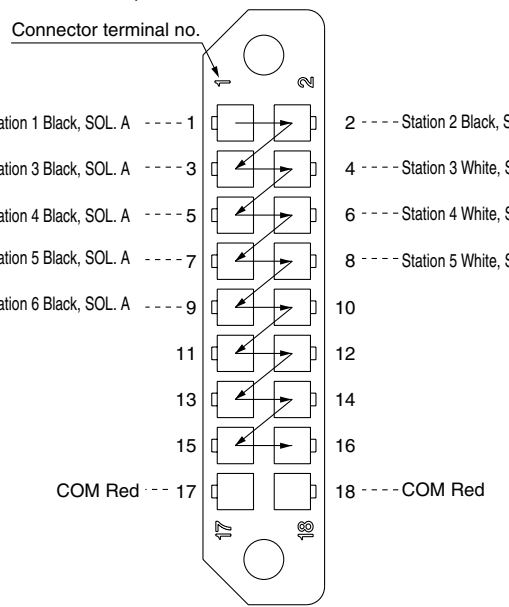
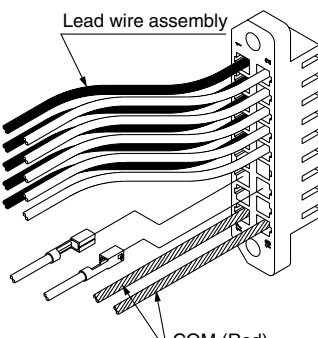
Manifold Specifications' Example

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

How to Add Manifold Stations for SQ1000/SQ2000

Wiring (S kit: Serial transmission kit)

Procedure) Based on the manifold 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.



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.

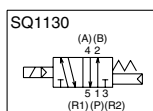
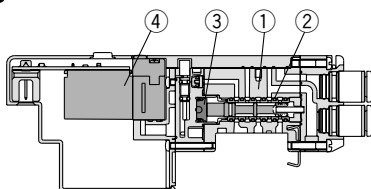
- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

Series SQ1000

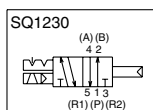
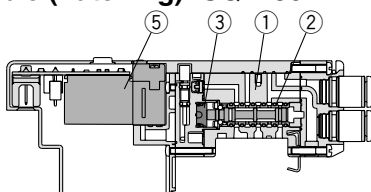
Construction: Series SQ1000 Plug-in Type Main Parts and Pilot Valve Assembly

Metal seal type

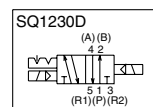
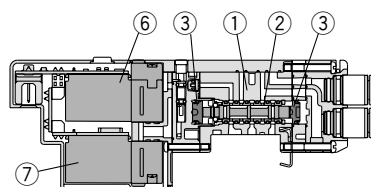
Single: SQ1130



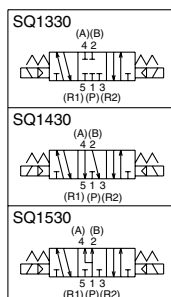
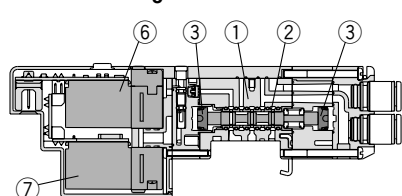
Double (Latching): SQ1230



Double (Double solenoid): SQ1230D



3 position: SQ1³/₅30



Component Parts

No.	Description	Material
1	Body	Zinc die-casted
2	Spool/Sleeve	Stainless steel (Metal seal)
	Spool	Aluminum (Rubber seal)
3	Piston	Resin

Pilot Valve Assembly Note)

No.	Model	SQ1□3□
4	For single	VQ110S ^(K) / ₅ 6(N)J11(B)(-Q)
5	For double (Latching)	VQ110SL ⁻⁵ 6J12(-Q) Negative COM: VQ110SN ⁻⁵ 6J12(-Q)
6	For double (Double solenoid) on A side 3P: For A side	VQ110S ^(K) / ₅ 6(N)J13(B)(-Q)
7	For double (Double solenoid) on B side 3P: For B side	VQ111S ^(K) / ₅ 6J14(-Q)
8	Dual 3 port: For A side	VQ110S(Y) ⁻⁵ 6(N)J13(B)-X274(-Q)
9	Dual 3 port: For B side	VQ111S(Y) ⁻⁵ 6J14-X274(-Q)



Note 1) Nil: Standard

B : Locking type manual override

K : High pressure specifications (metal seal only)

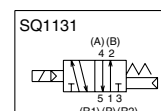
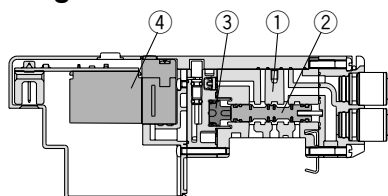
N : Negative COM specifications

Y : Low wattage specifications

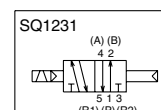
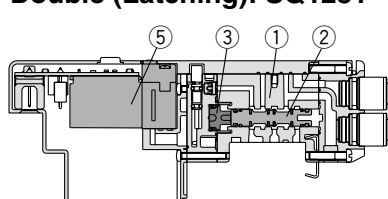
Note 2) Suffix "-Q" to the end of the part number for CE compliant.

Rubber seal type

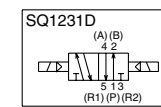
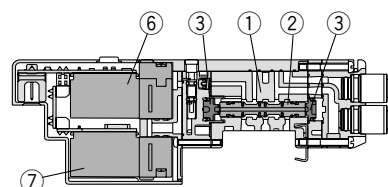
Single: SQ1131



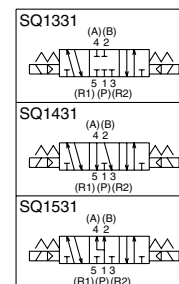
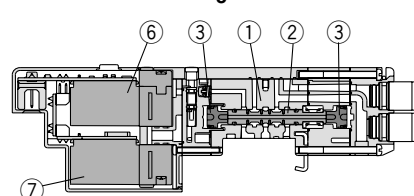
Double (Latching): SQ1231



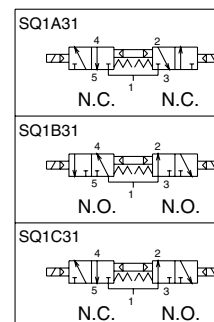
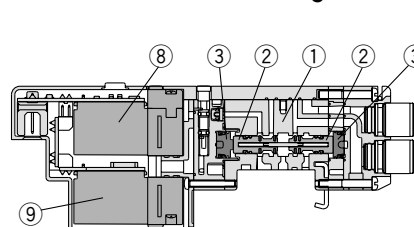
Double (Double solenoid): SQ1231D



3 position: SQ1³/₅31



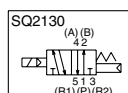
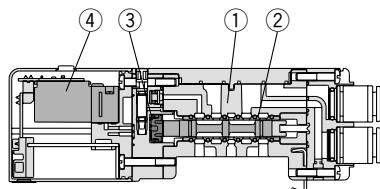
Dual 3 port valve: SQ1^A/_B31



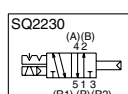
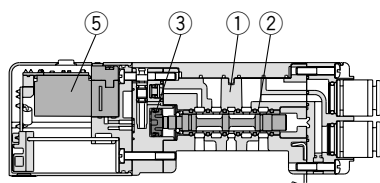
Construction: Series SQ2000 Plug-in Type Main Parts and Pilot Valve Assembly

Metal seal type

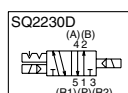
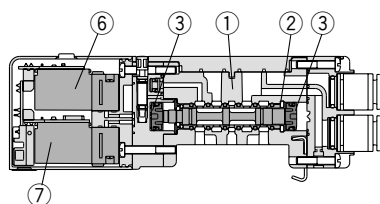
Single: SQ2130



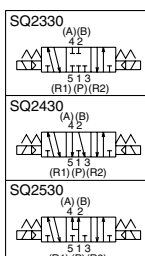
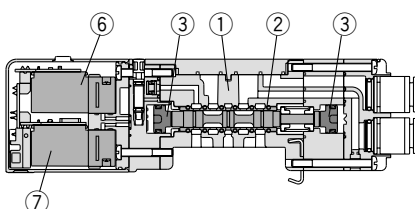
Double (Latching): SQ2230



Double (Double solenoid): SQ2230D

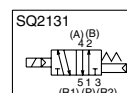
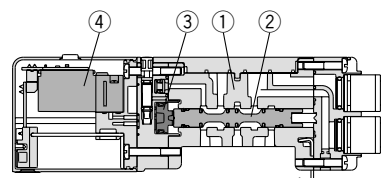


3 position: SQ2 $\frac{3}{5}$ 30

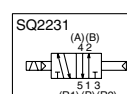
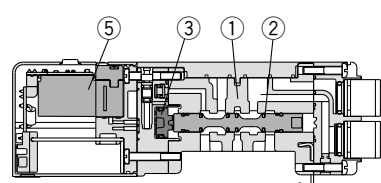


Rubber seal type

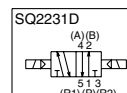
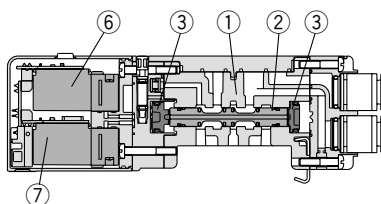
Single: SQ2131



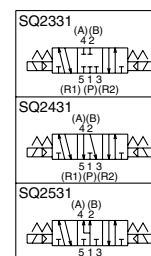
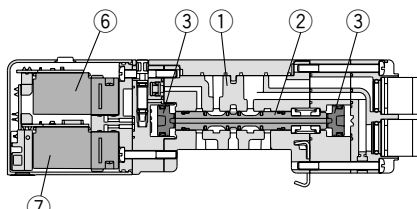
Double (Latching): SQ2231



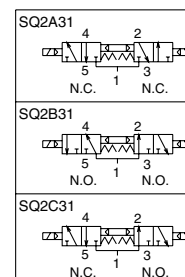
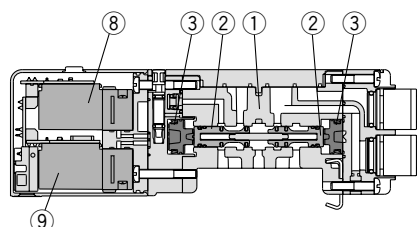
Double (Double solenoid): SQ2231D



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



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



Component Parts

No.	Description	Material
1	Body	Aluminum die-casted
2	Spool/Sleeve	Stainless steel (Metal seal)
	Spool	Aluminum (Rubber seal)
3	Piston	Resin

Pilot Valve Assembly Note)

No.	Model	SQ2□□□
4	For single	VQ111S(Y)- $\frac{5}{6}$ (N)J31(-Q)
5	For double (Latching)	VQ110SL- $\frac{5}{6}$ J32(-Q) Negative COM: VQ110SN- $\frac{5}{6}$ J32(-Q)
6	For double (Double solenoid) on A side	VQ111S(Y)- $\frac{5}{6}$ (N)J239(-Q)
	3P: For A side	
7	For double (Double solenoid) on B side	VQ111S(Y)- $\frac{5}{6}$ J34(-Q)
	3P: For B side	
8	Dual 3 port: For A side	VQ111S(Y)- $\frac{5}{6}$ (N)J23-X274(-Q)
9	Dual 3 port: For B side	VQ111S(Y)- $\frac{5}{6}$ J34-X274(-Q)

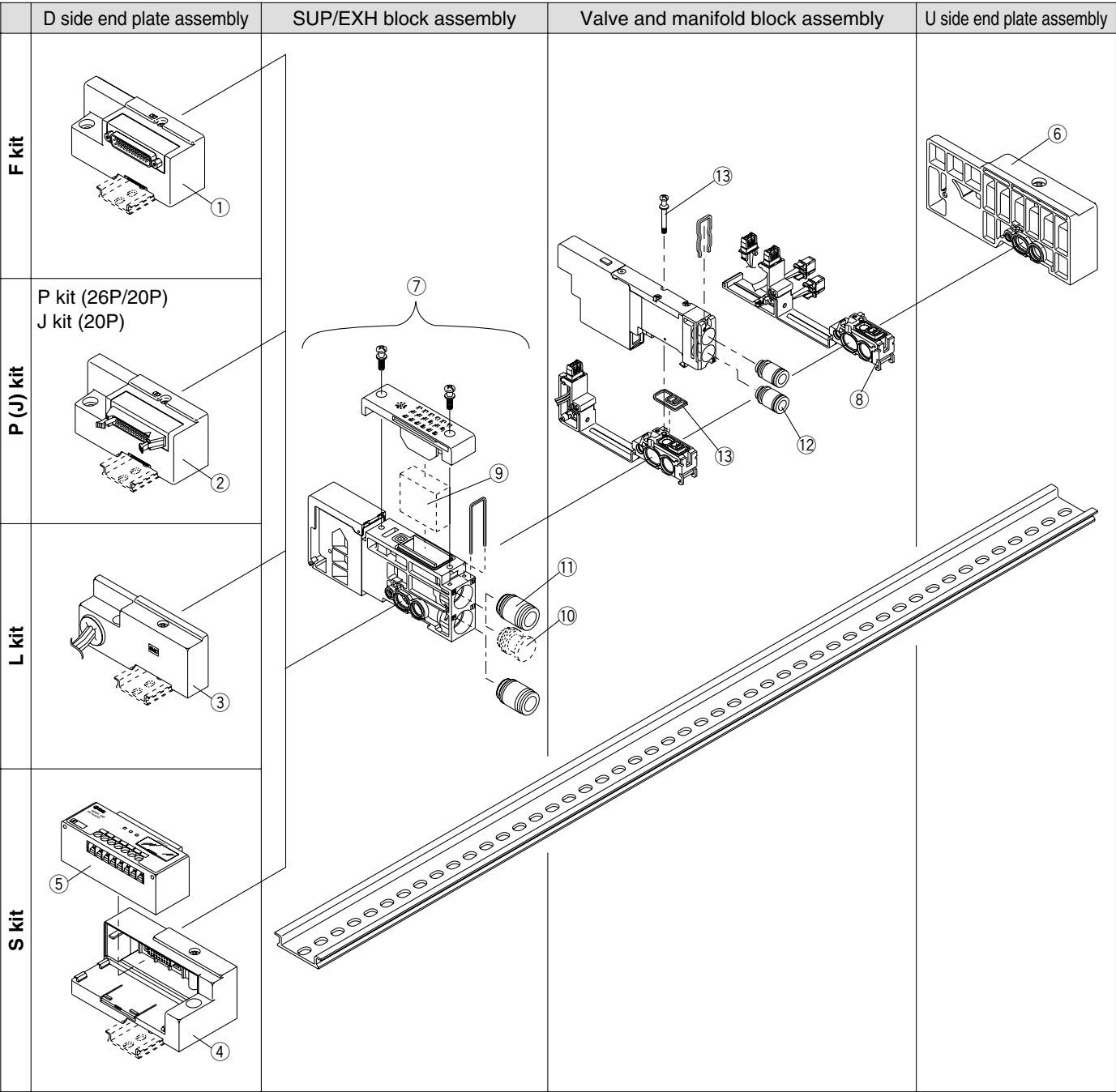
Note 1) Nil: Standard
N : Negative COM specifications
Y : Low wattage specifications

Note 2) Suffix "-Q" to the end of the part number for CE compliant.

Series **SQ1000**

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

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



Manifold Spare Parts



Refer to pages 1040 to 1045 of "How to Add Manifold Stations" regarding the mounting of each spare parts.

<① ② ③ ④ D side end plate assembly>

SSQ1000 – 3A – 3

Manifold mounting

Nil	DIN rail mount style
E	Direct mount style

Electrical entry

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

Wiring specifications

O	Without lead wire
S	Single wiring
W	Double wiring

Note) L kit: Nil

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: Nil

<⑤ SI unit>

Manifold	No.	Description
SDF kit	EX140-SUW1	NKE Corp.: Uni-wire System (16 output points)
SDH kit	EX140-SUH1	NKE Corp.: Uni-wire H System (16 output points)
SDJ1 kit	EX140-SSL1	SUNX Corp.: S-LINK System (16 output points)
SDJ2 kit	EX140-SSL2	SUNX Corp.: S-LINK System (8 output points)
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

(For L kit)

SSQ1000 – 2A – 3

Manifold mounting

Nil	DIN rail mount style
E	Direct mount 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

Nil	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

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

Nil	None
B	Back pressure check valve
R	External pilot specifications

Note) Enter "RS" for both options.

Applicable stations

(For F, P, J, S kit)

01	Station 1
⋮	⋮
24	Station 24



Note 1) No symbol required for "F0".

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

<⑨ Element>

SSQ1000 – SE



Note) Part number for a 10 piece set of element. For replacement procedures, refer to page 1109.

<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.

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

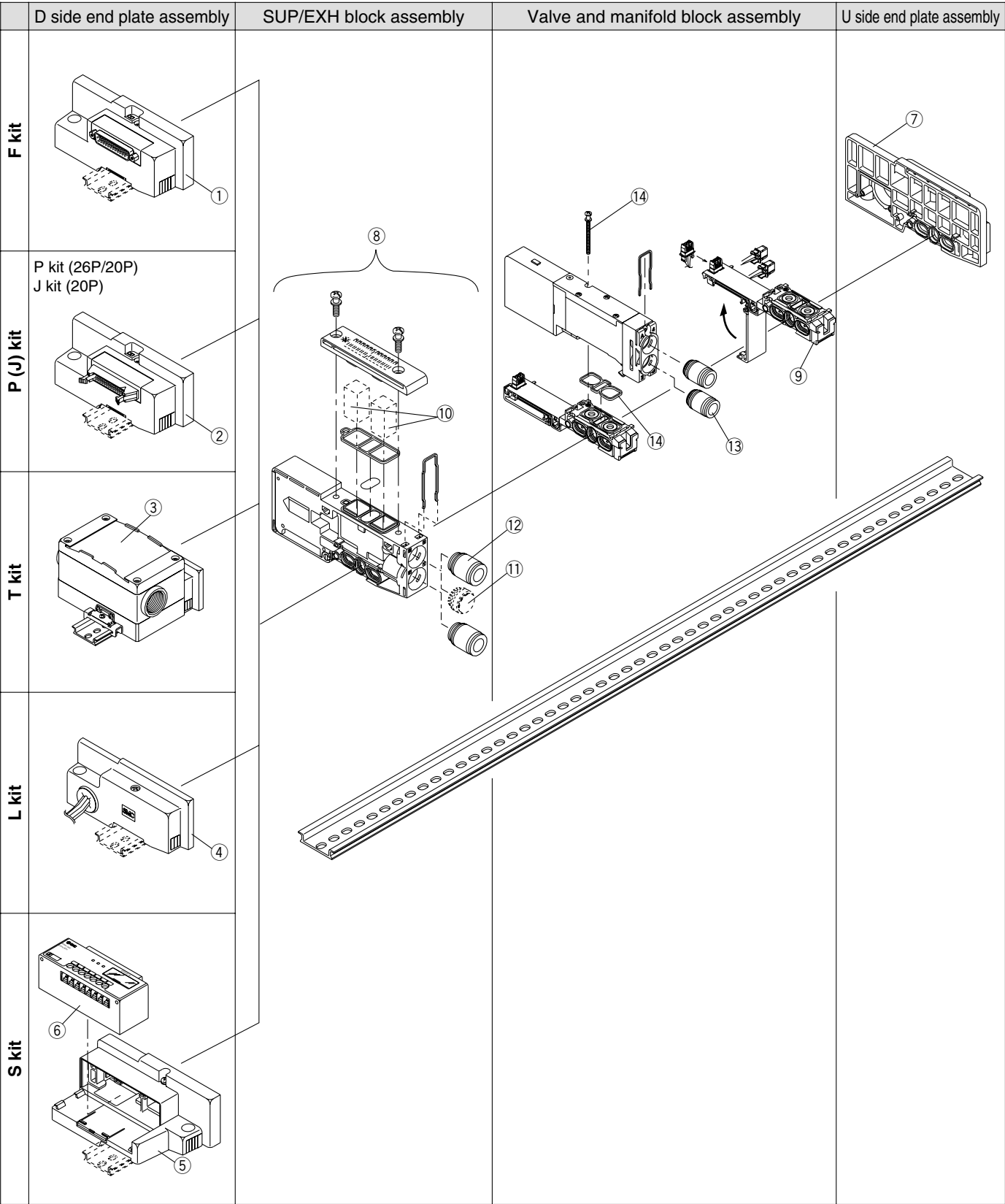
VFR

VQ7

Series SQ2000

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

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



Manifold Spare Parts

Refer to pages 1040 to 1045 of "How to Add Manifold Stations" regarding the mounting of each spare parts.

<① ② ③ ④ ⑤ D side end plate assemblies>

SSQ2000 – 3A – 3

Manifold mounting

Nil	DIN rail mount style
E	Direct mount style

Electrical entry

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

Wiring specifications

O	Without lead wire
S	Single wiring
W	Double wiring

Note) L kit: Nil

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: Nil

<⑥ SI unit>

Manifold	No.	Description
SDF kit	EX140-SUW1	NKE Corp.: Uni-wire System (16 output points)
SDH kit	EX140-SUH1	NKE Corp.: Uni-wire H System (16 output points)
SDJ1 kit	EX140-SSL1	SUNX Corp.: S-LINK System (16 output points)
SDJ2 kit	EX140-SSL2	SUNX Corp.: S-LINK System (8 output points)
SDQ kit	EX140-SDN1	DeviceNet (16 output points)
SDR1 kit	EX140-SCS1	OMRON Corp.: CompoBus (16 output points)
SDR2 kit	EX140-SCS2	OMRON Corp.: CompoBus (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

(For L kit)

SSQ2000 – 2A – 3

Manifold mounting

Nil	DIN rail mount style
E	Direct mount 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

Nil	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

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
PS	J kit: PC Wiring System compatible Single wiring
PW	P kit: Flat ribbon cable kit Double wiring
PW	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

Nil	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) No symbol required for "F0".

<⑩ Element>

SSQ2000 – SE



Note) Part number for a 10 piece set of element.
For replacement procedure, refer to page 1109.

<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.

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

VFR

VQ7

Plug Lead Unit

Series SQ1000



How to Order Manifold

SS5Q14 - **08** **FD2** - **D** - -

Stations

01	1 station
⋮	⋮
24 <small>Note)</small>	24 stations



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

CE compliant

Nil	—
Q	CE marked

1(P), 3(R) port size

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

Option

Nil	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: -D08

Note 2) When installing back pressure check valves only on the stations required, enter the part number and specify the mounting stations on a manifold specification sheet.

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) Standard wiring specification are for double wiring. Indicate wiring specifications for single wiring or mixed single and double wiring, or when exceeding the standard maximum number of stations. (Except C kit)

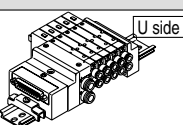
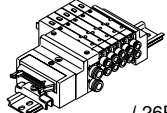
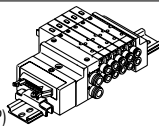
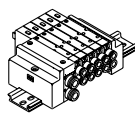
Note 5) For specifying two or more options, enter them alphabetically.
Example: -BKN

* Refer to pages 1080 to 1084 and 1090 to 1092 for manifold option parts.

Manifold mounting

D	DIN rail mounting style
----------	-------------------------

Electrical entry

Kit type	Lead wire connector location	Cable specifications	Station	Max. number of stations for special wiring specifications	Max. number of solenoids ⁽²⁾
F kit  D-sub Connector kit	D side	FD0 D-sub connector (25P) kit, without cable	1 to 12 stations	24 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)	D side ⁽¹⁾	PD0 Flat ribbon cable (26P) kit, without cable	1 to 12 stations	24 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 stations	18
J kit  Flat ribbon cable (20P) (PC Wiring System compatible)	D side	JD0 Flat ribbon cable (20P) PC Wiring System compatible	1 to 8 stations	16 stations	16
C kit  Connector kit	—	C Connector kit	1 to 24 stations	—	—



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

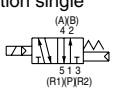
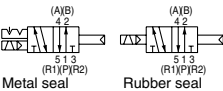
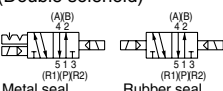
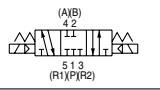
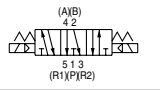
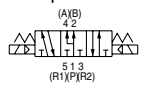
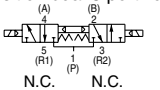
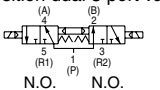
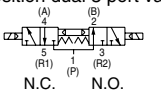
Note 2) The maximum number of stations should not be more than the maximum number of solenoids. (The number of solenoids are counted as: 1 for single solenoids and 2 for type 3P and 4P double solenoids.)

* Refer to page 1103 for manifold spare parts.

How to Order Valves

SQ1 **1** **4** **0** **5** **L** **C6**

Type of actuation

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

- Note 1) Refer to page 1108 for precautions.
Note 2) For double solenoid specification, the function symbol below is "D".
Note 3) Only rubber seal types are applicable.

Seal

0	Metal seal
1	Rubber seal

Function

Nil	Standard type (1.0 W DC)
D	2 position double (Double solenoid specifications) (Latching type: Nil)
K (1)	High pressure type (1 MPa, 1.0 W DC) [Applicable to metal seal only]
N	Negative COM
Y (2) (3)	Low wattage type (0.5 W DC)
R (4)	External pilot specifications

- Note 1) Except double (latching) type.
Note 2) Except double (latching) and K (high pressure) types.
Note 3) Please select when you expect to energize the unit for extended periods of time. Refer to page 3 for details.
Note 4) Except dual 3 port valves.
Note 5) When two or more symbols are specified, indicate them alphabetically.

Coil voltage

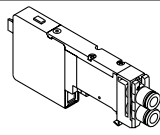
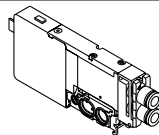
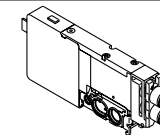
5	24 VDC
6	12 VDC

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

CE compliant

Nil	—
Q	CE compliant

With/Without manifold block

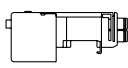
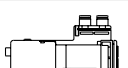
Nil	M	MB (Note)
Without manifold block 	With manifold block 	With manifold block, built-in back pressure check valve 
• When ordering with manifolds • When only valves are required.	* Lead wire is not included.	* Lead wire is not included.
For adding stations		

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

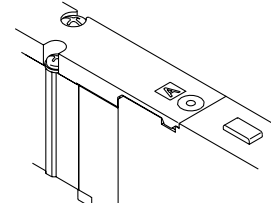
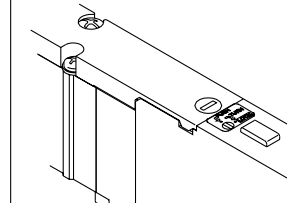
Nil	None
A	Port 4(A)
B	Port 2(B)

Cylinder port

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

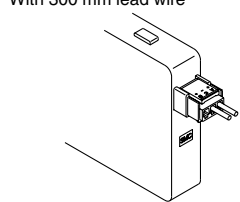
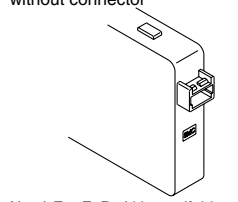
- Note 1) Can be changed to side ported configuration.
Note 2) Refer to page 1092 for the inch-size One-touch fittings.

Manual override

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

Note) Except double (latching) type.

Electrical entry

L	LO
Plug connector type With 300 mm lead wire 	Plug connector type without connector 

Note) For F, P, J kit manifolds

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

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

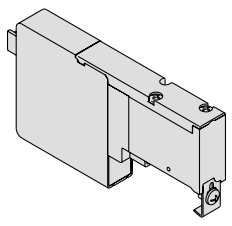
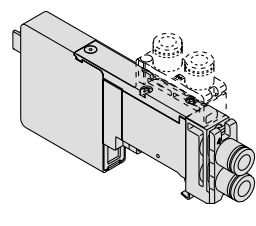
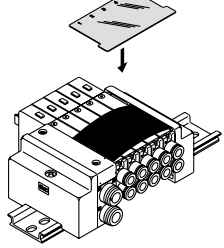
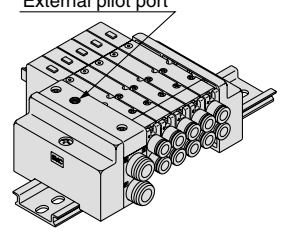
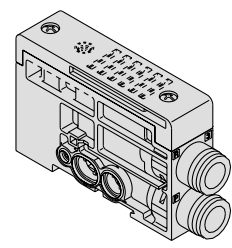
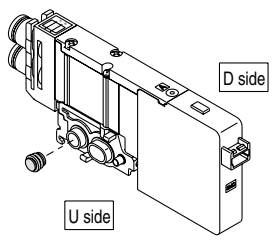
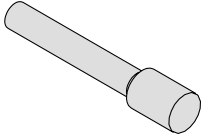
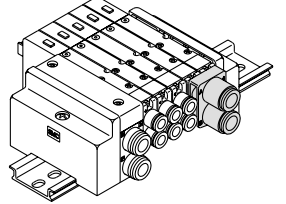
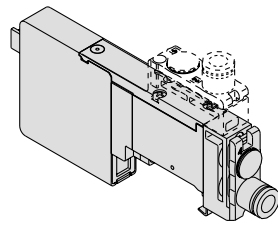
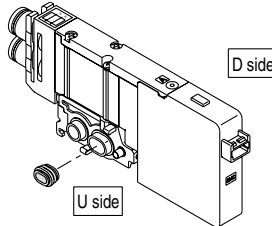
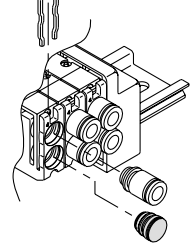
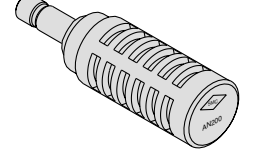
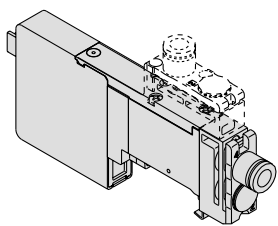
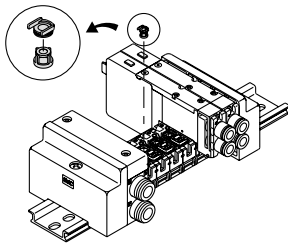
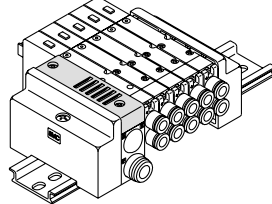
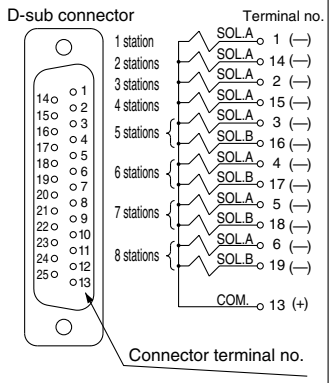
VFS

VFR

VQ7

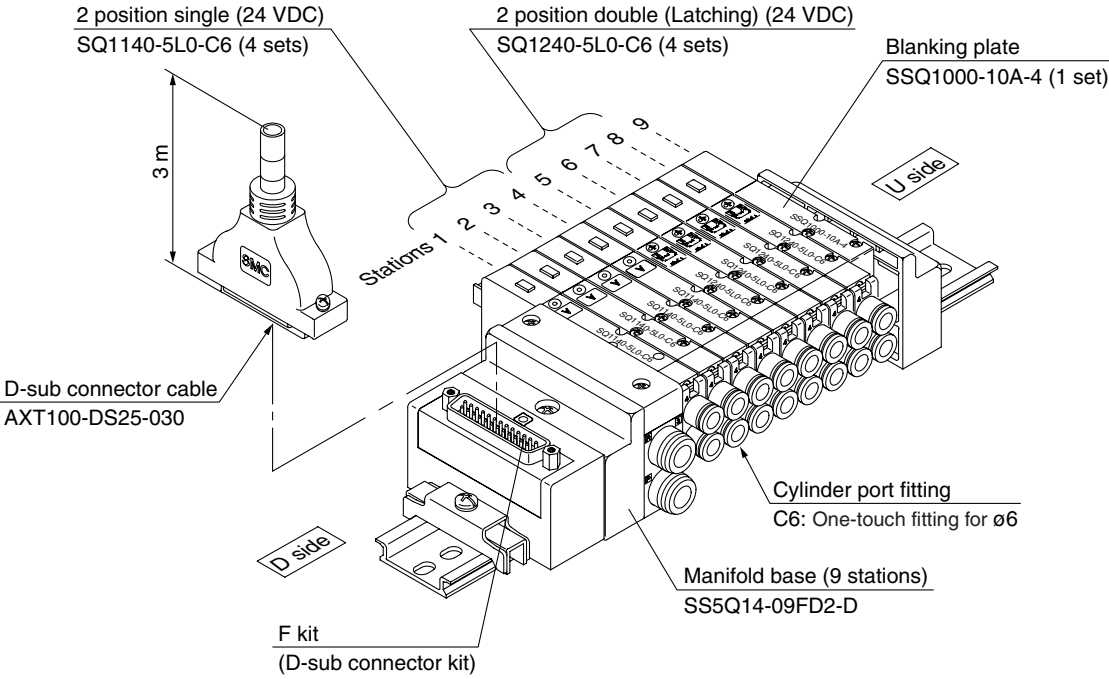
Series SQ1000

Manifold Option

Blanking plate SSQ1000-10A-4 	Individual SUP/EXH spacer SSQ1000-PR1-4-^{C6}_{L6} 	Name plate (-N) SSQ1000-N3-n 	External pilot specifications (-R) 
SUP/EXH block SSQ1000-PR-4-C8 (-S) 	SUP block plate SSQ1000-B-P 	Blanking plug KQ2P-23/04/06/08 	Dual flow fitting SSQ1000-52A-^{C8}_{N9} 
Individual SUP spacer SSQ1000-P-4-^{C6}_{L6} 	EXH block plate SSQ1000-B-R 	Port plug VVQZ100-CP 	Silencer (For EXH port) 
Individual EXH spacer SSQ1000-R-4-^{C6}_{L6} 	Back pressure check valve (-B) SSQ1000-BP 	Built-in silencer (-S) 	Special wiring specifications (-K)  <p>Although the standard products come with double wiring, mixed single and double wiring is available upon request.</p>

How to Order Manifold Assembly (Example)

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



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

→ 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.

SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Valve Specifications

Model

Series		Number of solenoids	Model		Flow characteristics ⁽¹⁾						Response time (ms) ⁽²⁾		Mass (g)
					1 → 4/2 (P → A/B)			4 → 5 (A → R1)			Standard: 1 W	Low wattage	
					C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv			
SQ1000	2 position	Single	Metal seal	SQ1140	0.62	0.10	0.14	0.63	0.11	0.14	12 or less	15 or less	80
			Rubber seal	SQ1141	0.79	0.20	0.19	0.80	0.20	0.19	15 or less	20 or less	80
		Double (Latching)	Metal seal	SQ1240	0.62	0.10	0.14	0.63	0.11	0.14	15 or less	—	80
			Rubber seal	SQ1241	0.79	0.20	0.19	0.80	0.20	0.19	20 or less	—	80
		Double (Double solenoid)	Metal seal	SQ1240D	0.62	0.10	0.14	0.63	0.11	0.14	10 or less	13 or less	95
			Rubber seal	SQ1241D	0.79	0.20	0.19	0.80	0.20	0.19	15 or less	20 or less	95
	3 position	Closed center	Metal seal	SQ1340	0.58	0.12	0.14	0.63	0.11	0.14	20 or less	26 or less	100
			Rubber seal	SQ1341	0.64	0.20	0.15	0.58	0.26	0.16	25 or less	33 or less	100
		Exhaust center	Metal seal	SQ1440	0.58	0.12	0.14	0.60	0.14	0.14	20 or less	26 or less	100
			Rubber seal	SQ1441	0.64	0.20	0.15	0.80	0.20	0.19	25 or less	33 or less	100
		Pressure center	Metal seal	SQ1540	0.62	0.12	0.14	0.63	0.14	0.14	20 or less	26 or less	100
			Rubber seal	SQ1541	0.79	0.21	0.19	0.59	0.20	0.14	25 or less	33 or less	100
	4 position	Dual 3 port valve	Rubber seal	SQ1 ^A _B C41	0.59	0.28	0.15	0.59	0.28	0.15	25 or less	33 or less	95

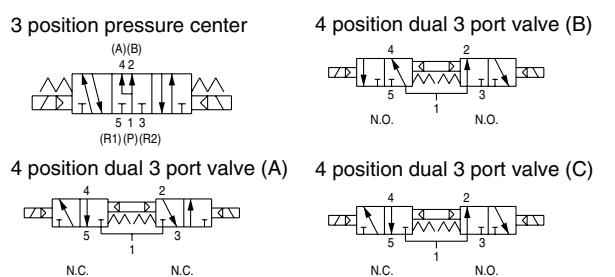
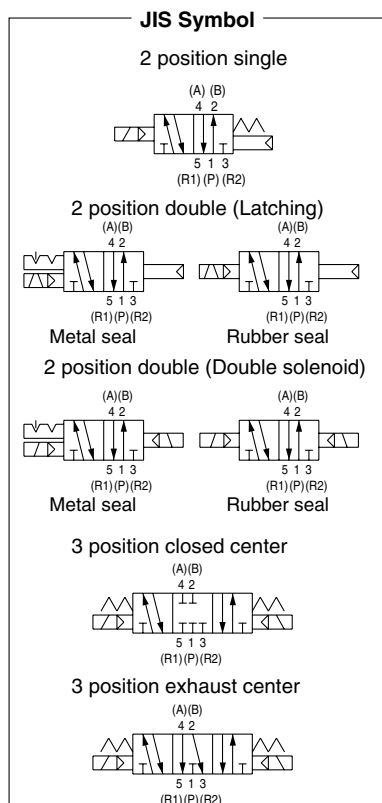
Note 1) Values for the cylinder port size of C6, CYL → Values of EXH. Flow characteristics of 2 → 3 (B → R2) delines about 30% of 4 → 5 (A → R1).
 Note 2) Based on JIS B 8375-1981. (Values with a supply pressure of 0.5 MPa and light/surge voltage suppressor. Values fluctuate depending on the pressure and air quality.)



Specifications


Valve specifications	Valve construction		Metal seal	Rubber seal
	Fluid		Air/Inert gas	
	Maximum operating pressure		0.7 MPa (High pressure type: 1.0 MPa) ⁽³⁾	
	Min. operating pressure	Single	0.1 MPa	0.15 MPa
		Double (Latching)	0.18 MPa	0.18 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/s ²	
Solenoid specifications	Protection structure		Dust tight	
	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	1 W DC (42 mA), 0.5 W DC (21 mA) ⁽⁴⁾	
		12 VDC	1 W DC (83 mA), 0.5 W DC (42 mA) ⁽⁴⁾	

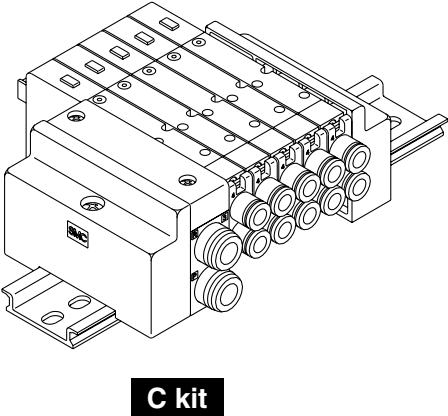
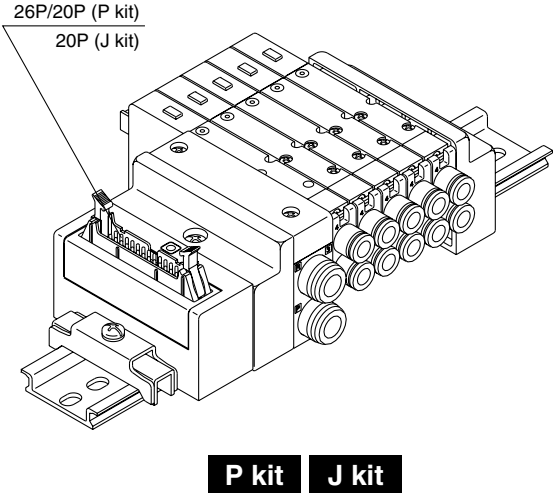
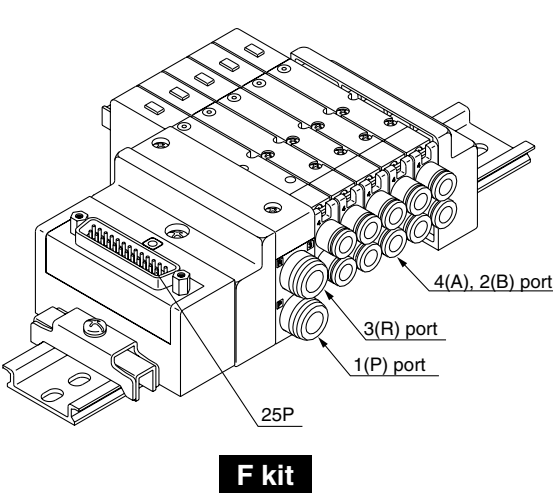
Note 1) Use dry air to prevent condensation when operating at low temperatures.
 Note 2) Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve 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 de-energized states every once for each condition.
 Note 3) Metal seal type only. [Except double (latching) type.]
 Note 4) Values for the low wattage (0.5 W) specification.



Manifold Specifications

Base model	Porting specifications			Applicable solenoid valve	Type of connection	Applicable station ⁽³⁾	5 station mass ⁽⁴⁾ (g)	1 station mass ⁽⁴⁾ (g)	
	Port size ⁽¹⁾								
	1(P), 3(R)	4(A), 2(B)							
		Port location	Port size						
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		
		J kit: Flat ribbon cable PC Wiring System compatible			1 to 8 stations	420	20		
		C kit: Connector kit			1 to 12 stations	460	35		

 Note 1) One-touch fittings in inch sizes are also available. For details, refer to page 1092.
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 1090 for details.
Note 4) Except valves. For valve mass, refer to page 1056.



SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

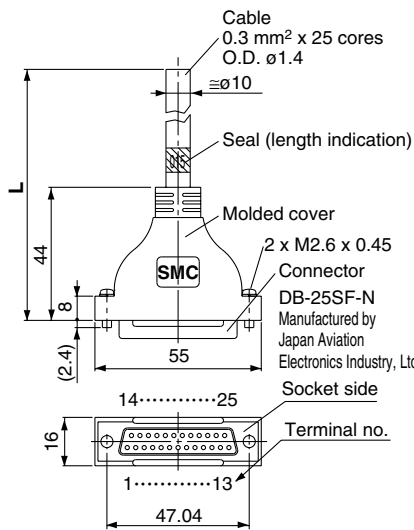
F Kit (D-sub connector kit)

- Simplification and labor 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.

D-sub connector (25 pins)

015
AXT100-DS25-030
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 mm ² 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.

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

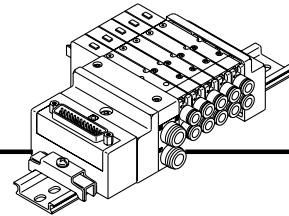
Note) The minimum bending radius for D-sub connector cables is 20 mm.

D-sub Connector Cable Assembly Terminal No.

Terminal number	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black
16	Blue	White
17	Purple	None
18	Gray	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	None

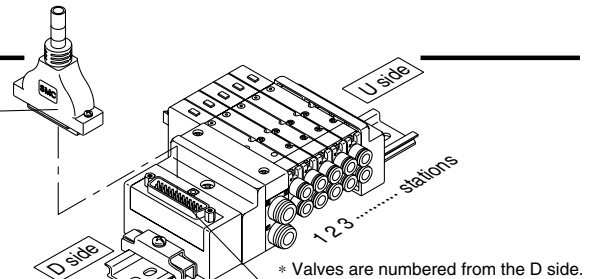
Connector manufacturers' example

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



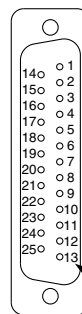
Manifold Specifications

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



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 1090.

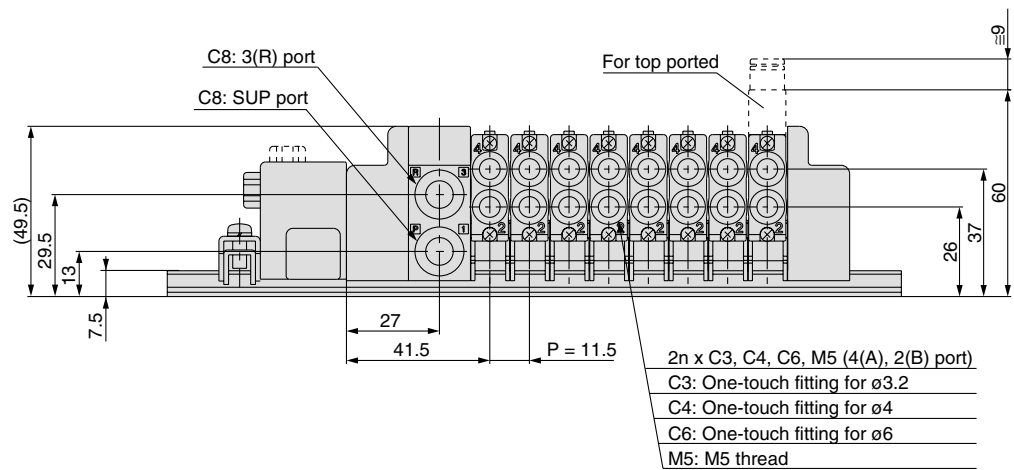
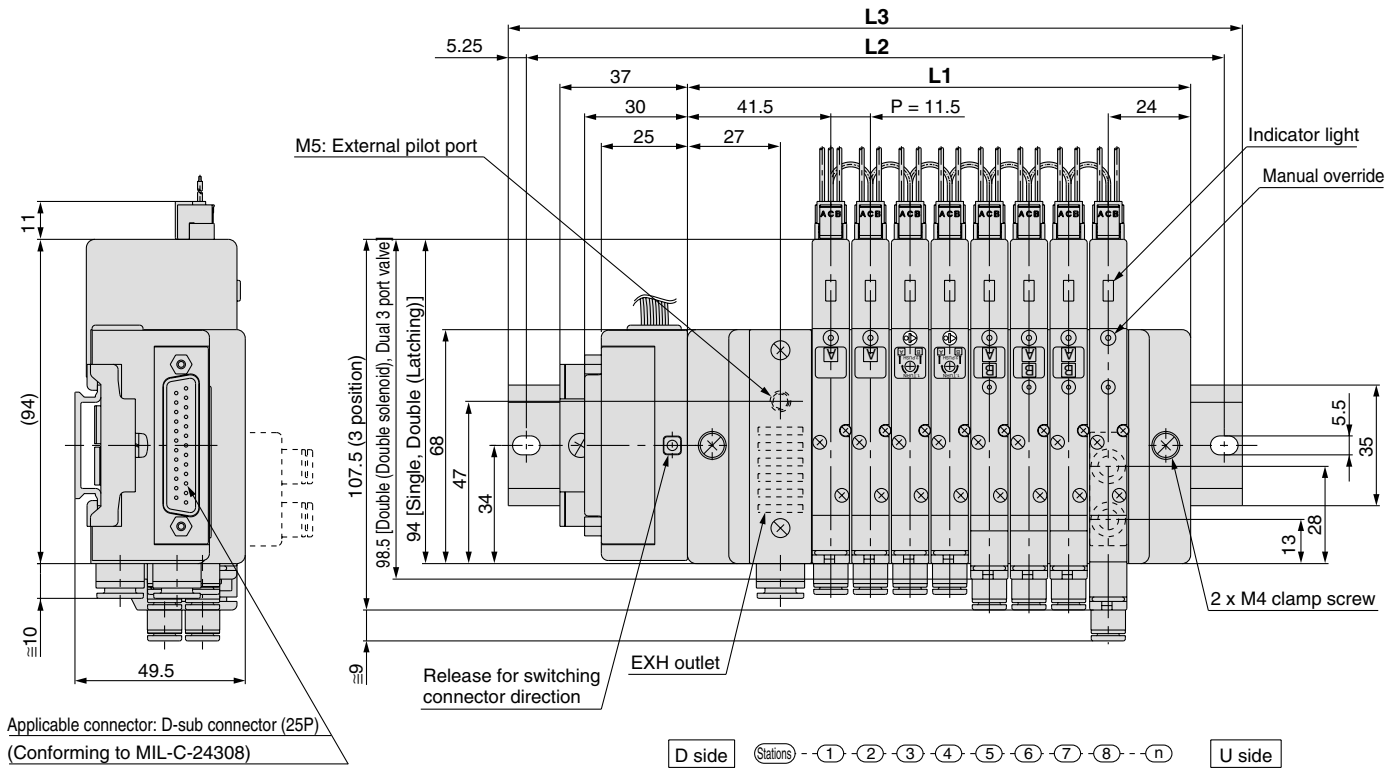
Lead wire colors for D-sub connector assembly

015
AXT100-DS25-030
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	(-)	Gray	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	(-)	Gray	Black
	SOL.B 22	(-)	Pink	Red
10 stations	SOL.A 10	(-)	White	Black
	SOL.B 23	(-)	Gray	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

Note) Positive common specifications Negative common specifications

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



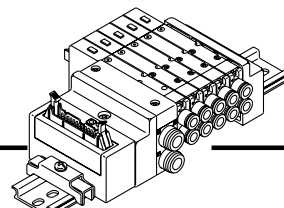
Dimensions

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

L	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1		65.5	77	88.5	100	111.5	123	134.5	146	157.5	169	180.5	192	203.5	215	226.5	238	249.5	261	272.5	284	295.5	307	318.5	330
L2		125	137.5	150	162.5	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	312.5	325	337.5	350	362.5	375	375	387.5	398
L3		135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5	385.5	398	410.5

P

Kit (Flat ribbon cable connector)



- Simplification and labor savings for wiring work can be achieved by using a MIL type for the electrical connection.
- Using 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 entry for the connector can be changed freely, allowing later changes according to the mounting space.

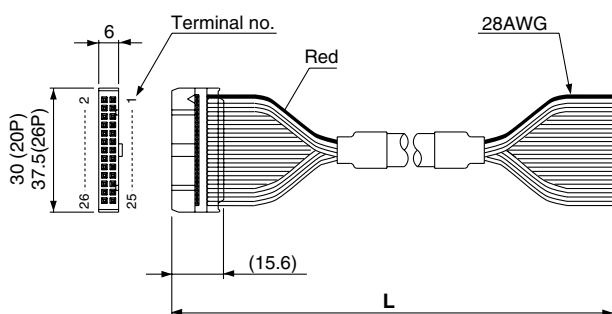
Manifold Specifications

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

Flat ribbon cable (26 pins, 20 pins)

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

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



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

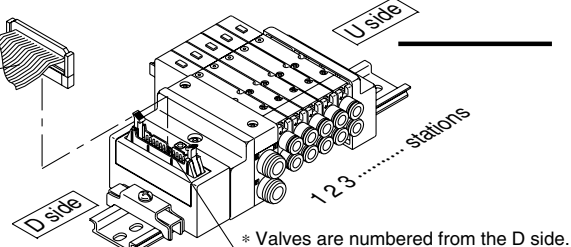
* For other commercial connectors, use a 26 pins or 20 pins with strain relief conforming to MIL-C-83503.

* Cannot be used for transfer 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

26	□	25
24	□	23
22	□	21
20	□	19
18	□	17
16	□	15
14	□	13
12	□	11
10	□	9
8	□	7
6	□	5
4	□	3
2	□	1

Connector terminal no.

Triangle mark indicator position

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 1090.

<26P>				<20P>			
		Terminal no.	Polarity			Terminal no.	Polarity
1 station	SOL.A	1	(-) (+)	1 station	SOL.A	1	(-) (+)
	SOL.B	2	(-) (+)		SOL.B	2	(-) (+)
2 stations	SOL.A	3	(-) (+)	2 stations	SOL.A	3	(-) (+)
	SOL.B	4	(-) (+)		SOL.B	4	(-) (+)
3 stations	SOL.A	5	(-) (+)	3 stations	SOL.A	5	(-) (+)
	SOL.B	6	(-) (+)		SOL.B	6	(-) (+)
4 stations	SOL.A	7	(-) (+)	4 stations	SOL.A	7	(-) (+)
	SOL.B	8	(-) (+)		SOL.B	8	(-) (+)
5 stations	SOL.A	9	(-) (+)	5 stations	SOL.A	9	(-) (+)
	SOL.B	10	(-) (+)		SOL.B	10	(-) (+)
6 stations	SOL.A	11	(-) (+)	6 stations	SOL.A	11	(-) (+)
	SOL.B	12	(-) (+)		SOL.B	12	(-) (+)
7 stations	SOL.A	13	(-) (+)	7 stations	SOL.A	13	(-) (+)
	SOL.B	14	(-) (+)		SOL.B	14	(-) (+)
8 stations	SOL.A	15	(-) (+)	8 stations	SOL.A	15	(-) (+)
	SOL.B	16	(-) (+)		SOL.B	16	(-) (+)
9 stations	SOL.A	17	(-) (+)	9 stations	SOL.A	17	(-) (+)
	SOL.B	18	(-) (+)		SOL.B	18	(-) (+)
10 stations	SOL.A	19	(-) (+)		COM.	19	(+) (-)
	SOL.B	20	(-) (+)		COM.	20	(+) (-)
11 stations	SOL.A	21	(-) (+)				
	SOL.B	22	(-) (+)				
12 stations	SOL.A	23	(-) (+)				
	SOL.B	24	(-) (+)				
		COM.	25	(+) (-)			
		COM.	26	(+) (-)			

Positive common specifications Negative common specifications



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

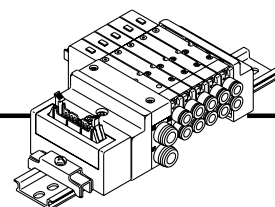


Formula: $L1 = 11.5n + 54$ n : Stations (Maximum 24 stations)

Series SQ1000

J

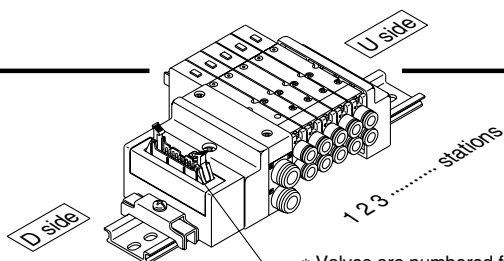
Kit (PC wiring system compatible flat ribbon cable kit)



- PC Wiring System compatible.
- 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 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)	
SQ1000	Side, Top	C8	C3, C4, C6, M5	8 stations (16 as an option)

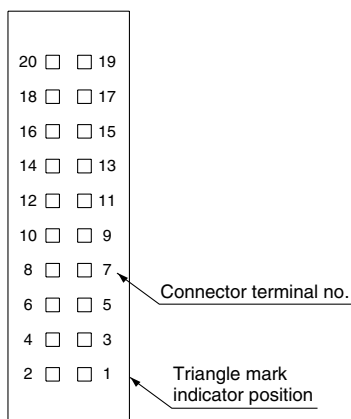


* Valves are numbered from the D side.

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 1090.

Flat ribbon cable connector

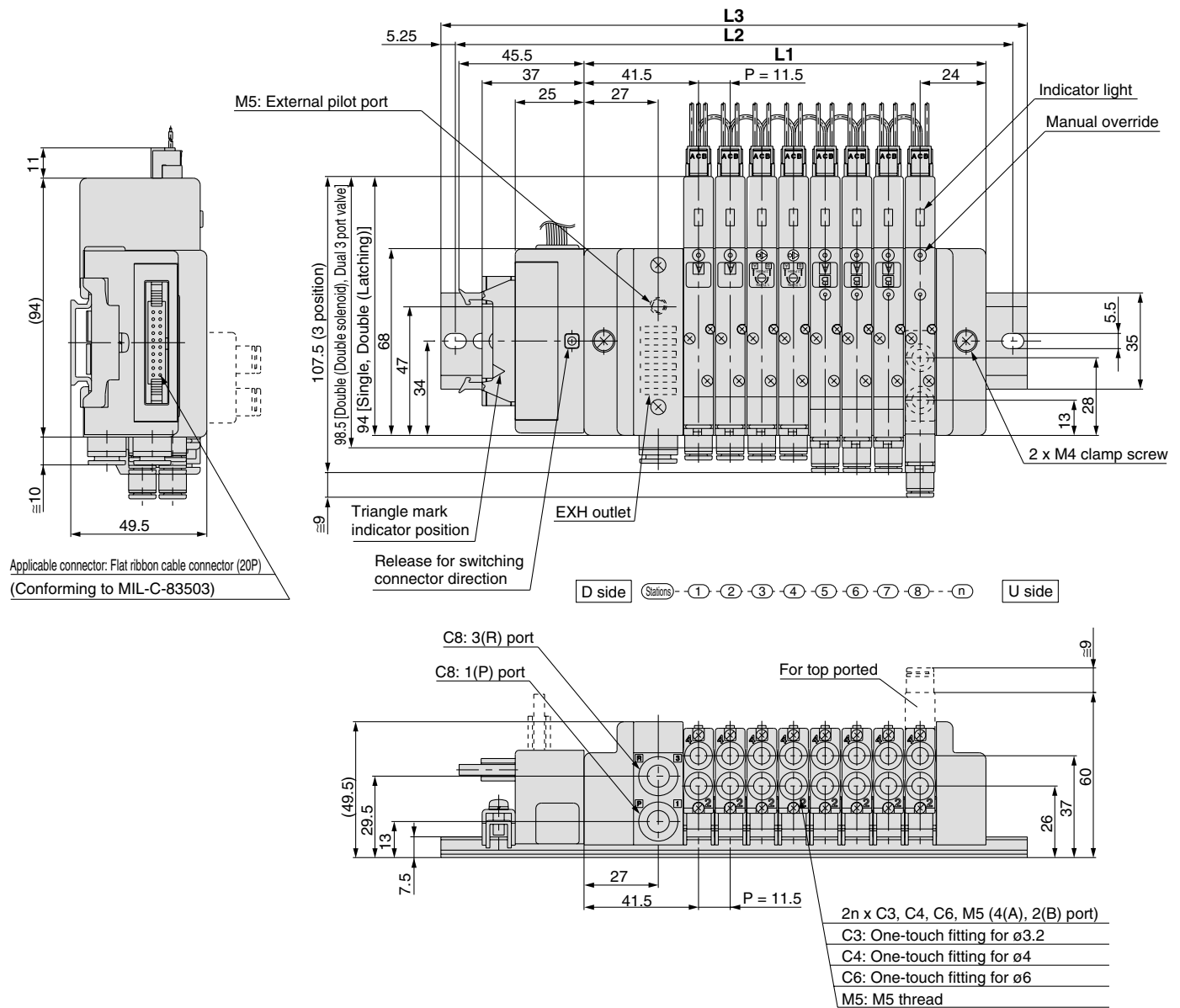


	Terminal no.	Polarity
1 station	SOL.A 20	(-) (+)
	SOL.B 18	(-) (+)
2 stations	SOL.A 16	(-) (+)
	SOL.B 14	(-) (+)
3 stations	SOL.A 12	(-) (+)
	SOL.B 10	(-) (+)
4 stations	SOL.A 8	(-) (+)
	SOL.B 6	(-) (+)
5 stations	SOL.A 19	(-) (+)
	SOL.B 17	(-) (+)
6 stations	SOL.A 15	(-) (+)
	SOL.B 13	(-) (+)
7 stations	SOL.A 11	(-) (+)
	SOL.B 9	(-) (+)
8 stations	SOL.A 7	(-) (+)
	SOL.B 5	(-) (+)
	4	(-) (+)
	3	(-) (+)
	COM. 2	(+) (-)
	COM. 1	(+) (-)

Note)
Positive common specifications Negative common specifications



Note) When using the negative common specifications, use valves for negative common.
For details about the PC Wiring System, refer to catalog CAT.E02-20 separately.



Dimensions

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

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

Series SQ1000

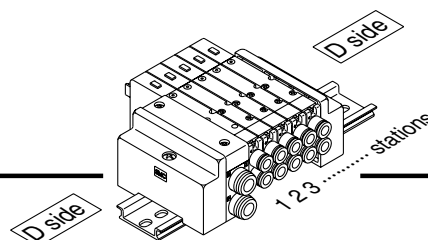
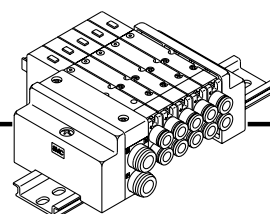
C

Kit (Connector)

- Standard with lead wires connected to each valve individually.

Manifold Specifications

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

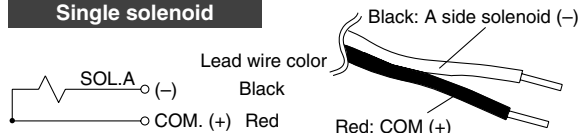


* Valves are numbered from the D side.

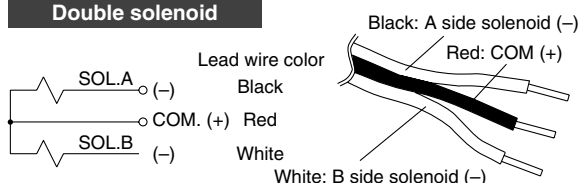
● Wiring Specifications: Positive COM Specifications

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

Single solenoid



Double solenoid



● Individual Common

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

● 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: SQ1140-5LO-C6...3 pcs.
AXT661-14AL-10...3 pcs.

● All Common

Connector Assembly for All Common Type Part No.

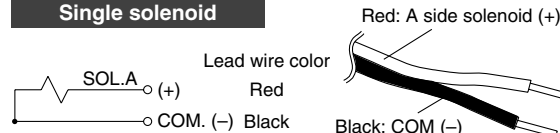
Mounted valve (n: Station)	Part no.	Connector assembly shape
Station n Single type	AXT661-50B-□ (Note)	
Station 1 to (n-1) station Single type	AXT661-50A-□ (Note)	
Station n Latching, double solenoid 3-position, dual 3-port blanking plate	AXT661-51B-□ (Note)	
Station 1 to (n-1) station Latching, double solenoid 3-position, dual 3-port blanking plate	AXT661-51A-□ (Note)	

Note) □: Lead wire length. 03: 0.3 m, 06: 0.6 m, 10: 1 m, 20: 2 m, 30: 3 m, 50: 5 m

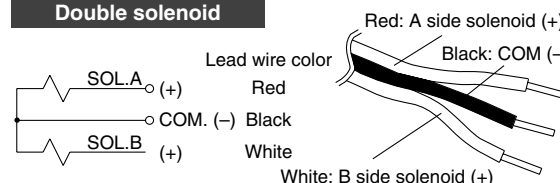
● Wiring Specifications: Negative COM Specifications (Option)

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

Single solenoid



Double solenoid



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



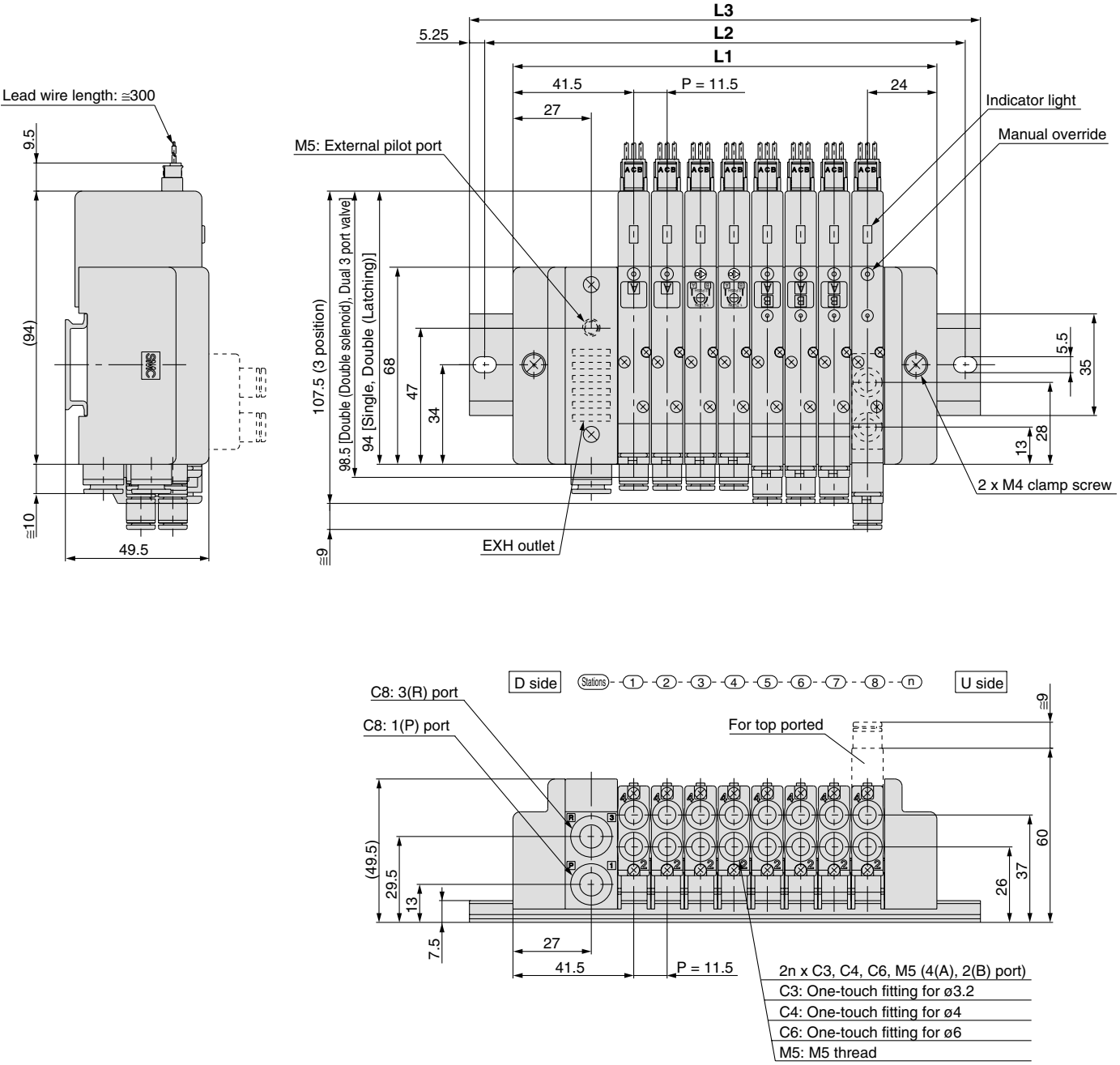
Note) When using the negative common specifications, use valves for negative common.

● 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: SQ1140-5LO-C6...3 pcs.
AXT661-14ANL-10...3 pcs.

Mounted valve (n: Station)	Part no.	Connector assembly shape
Station n Single type	AXT661-50BN-□ (Note)	
Station 1 to (n-1) station Single type	AXT661-50AN-□ (Note)	
Station n Latching, double solenoid 3-position, dual 3-port blanking plate	AXT661-51BN-□ (Note)	
Station 1 to (n-1) station Latching, double solenoid 3-position, dual 3-port blanking plate	AXT661-51AN-□ (Note)	



- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ**
- VFS
- VFR
- VQ7

Dimensions

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

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

Plug Lead Unit

Series SQ2000



How to Order Manifold

SS5Q24 - **08** **FD2** - **D** - - -

Stations

01	1 station
⋮	⋮
16 ^{Note)}	16 stations

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

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 1091 for details.

CE compliant

Nil	—
Q	CE marked

1(P), 3(R) port size

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

Option

Nil	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: -D08

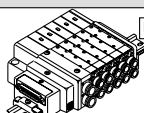
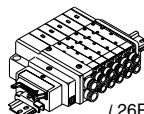
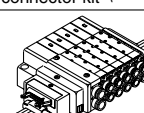
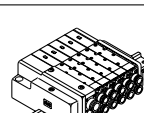
Note 2) When installing back pressure check valves only on the stations required, enter the part number and specify the mounting stations on a manifold specification sheet.

Note 3) Standard wiring specifications are for double wiring. Indicate wiring specifications for single wiring or mixed single and double wiring, or when exceeding the standard maximum number of stations. (Except C kit.)

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

* Refer to pages 1085 to 1092 for manifold option parts.

Electrical entry

Kit type	Lead wire connector location	Cable specifications	Stations	Max. number of stations for special wiring specifications	Max. number of solenoids ⁽²⁾
F kit  D-sub connector kit	D side	FD0 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)	D side ⁽¹⁾	PD0 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)	D side	JD0 Flat ribbon cable (20P) PC Wiring System compatible	1 to 8 stations	16 stations	16
C kit  Connector kit	—	Connector kit	1 to 16 stations	—	—

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

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

* Refer to page 1103 for manifold spare parts.

How to Order Valves

SQ2 **1** **4** **0** **—** **5** **L** **—** **C6** **—** **—** **—**

Type of actuation

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

- Note 1) Refer to page 1108 for precautions.
Note 2) For double solenoid specifications, the function symbol below is "D".
Note 3) Only rubber seal types are applicable.

Seal

0	Metal seal
1	Rubber seal

Function

Nil	Standard type (1.0 W DC)
D	2 position double (Double solenoid specifications) (Latching type: Nil)
N	Negative COM
Y (1) (2)	Low wattage type (0.5 W DC)
R (3)	External pilot specifications

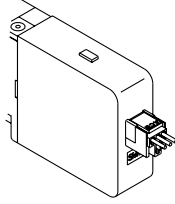
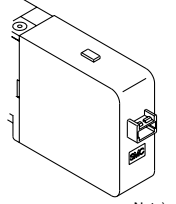
- Note 1) Except double (latching) type.
Note 2) Please select when you expect to energize the unit for extended periods of time. Refer to page 3 for details.
Note 3) Except dual 3 port valves.
Note 4) When two or more symbols are specified, indicate them alphabetically.

Coil voltage

5	24 VDC
6	12 VDC

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

Electrical entry

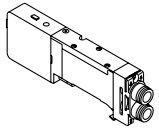
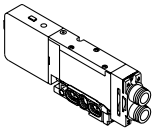
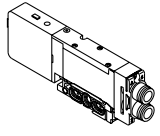
L	LO
Plug connector type With 300 mm lead wire	Plug connector type without connector
	
	For F, P, J kit manifolds Note)

- 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.

CE compliant

Nil	—
Q	CE compliant

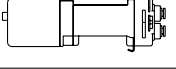

With/Without manifold block

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

Port plug mounting port

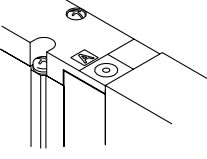
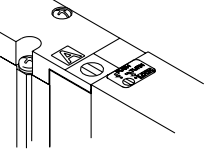
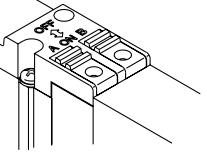
Nil	None
A	Port 4(A)
B	Port 2(B)

Cylinder port

C4	One-touch fitting for ø4	Side ported	
C6	One-touch fitting for ø6		
C8	One-touch fitting for ø8	Top ported (1)	
L4	One-touch fitting for ø4		
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 1092 for the inch-size One-touch fittings.

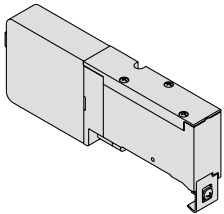
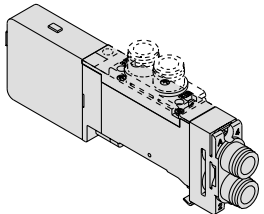
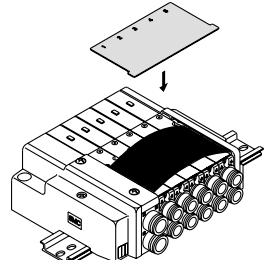
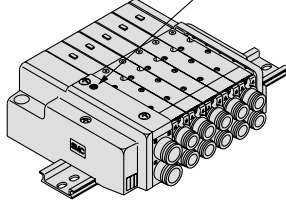
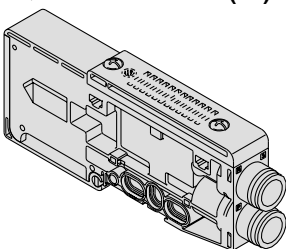
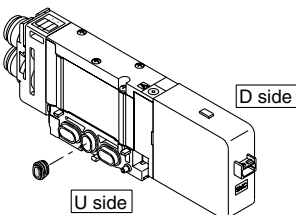
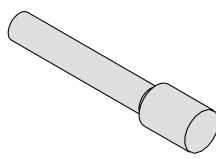
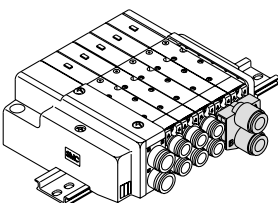
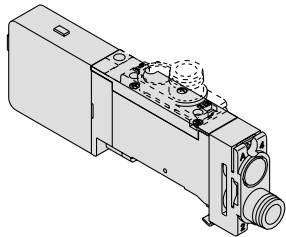
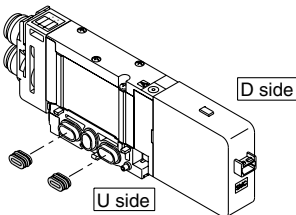
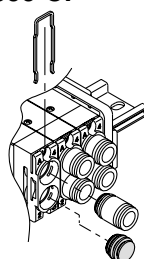
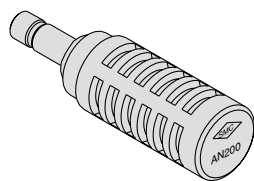
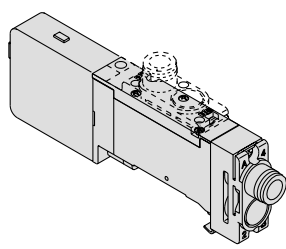
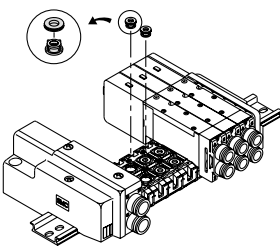
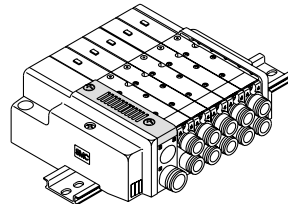
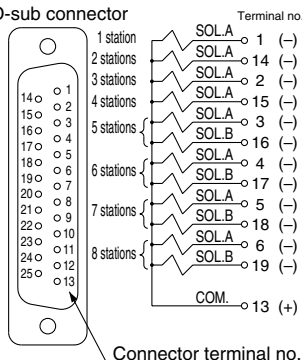
Manual override

Nil	B Note)	D Note)
Non-locking push type (Tool required)	Locking type (Tool required)	Slide locking type (Manual type) * Only side ported type applicable
		

- Note) Except double (latching) type.

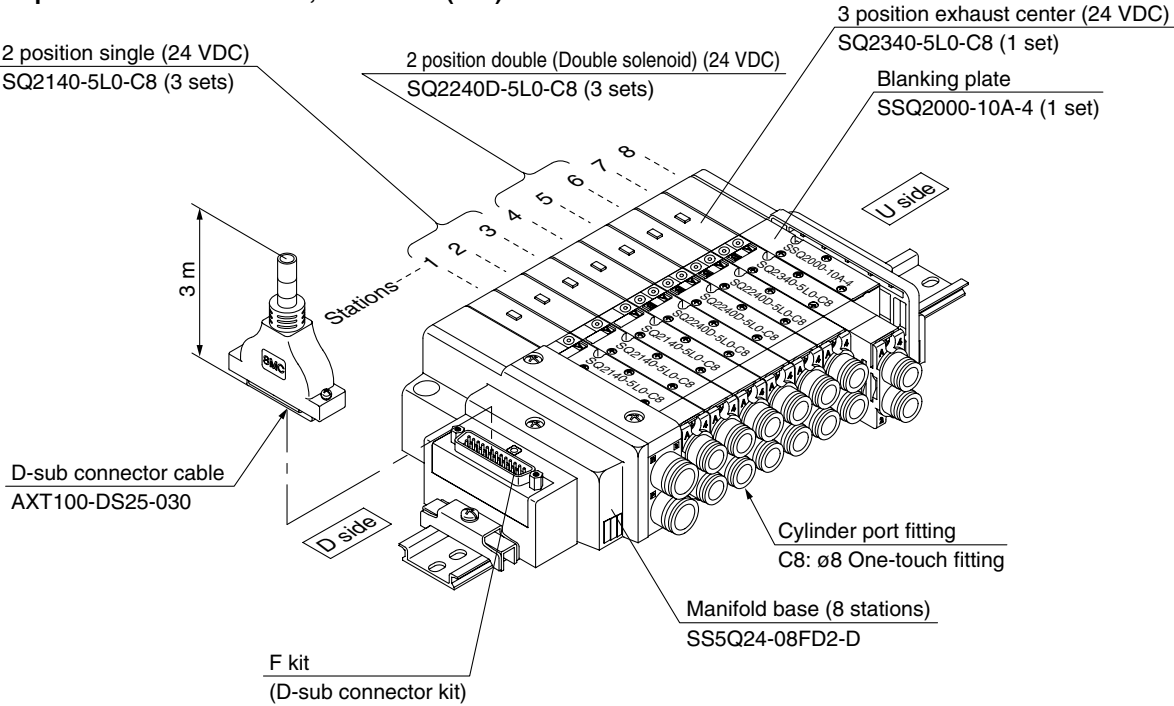
Series SQ2000

Manifold Option

Blanking plate SSQ2000-10A-4 	P. 1085	Individual SUP/EXH spacer SSQ2000-PR1-4-^{C8}_{L8} 	P. 1086	Name plate (-N) SSQ2000-N3-n 	P. 1088	External pilot specifications (-R) <u>External pilot port</u> 	P. 1089
SUP/EXH block SSQ2000-PR-4-C10 (-S) 	P. 1085	SUP block plate SSQ1000-B-R 	P. 1087	Blanking plug KQ2P-04/06/08/10 	P. 1088	Dual flow fitting SSQ2000-52A-^{C10}_{N11} 	P. 1089
Individual SUP spacer SSQ2000-P-4-^{C8}_{L8} 	P. 1085	EXH block plate SSQ2000-B-R 	P. 1087	Port plug VVQZ2000-CP 	P. 1088	Silencer (For EXH port) 	P. 1089
Individual EXH spacer SSQ2000-R-4-^{C8}_{L8} 	P. 1086	Back pressure check valve (-B) SSQ2000-BP 	P. 1087	Built-in silencer (-S) 	P. 1088	Special wiring specifications (-K) 	P. 1090

How to Order Manifold Assembly (Example)

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



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

→ 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.

SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Valve Specifications

Model

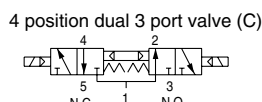
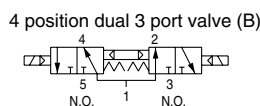
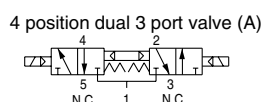
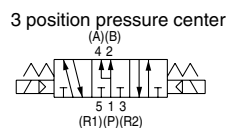
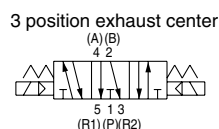
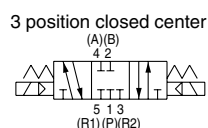
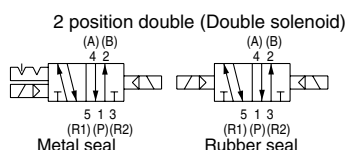
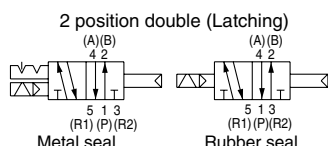
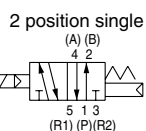
Series		Number of solenoids	Model		Flow characteristics ⁽¹⁾						Response time (ms) ⁽²⁾		Mass (g)
					1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → R1/R2)			Standard: 1 W	Low wattage	
					C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv			
SQ2000	2 position	Single	Metal seal	SQ2140	2.2	0.17	0.51	2.4	0.14	0.57	20 or less	26 or less	145
			Rubber seal	SQ2141	2.3	0.17	0.51	3.1	0.18	0.71	24 or less	31 or less	140
		Double (Latching)	Metal seal	SQ2240	2.2	0.17	0.51	2.4	0.14	0.57	26 or less	—	145
			Rubber seal	SQ2241	2.3	0.17	0.51	3.1	0.18	0.71	31 or less	—	140
		Double (Double solenoid)	Metal seal	SQ2240D	2.2	0.17	0.51	2.4	0.14	0.57	15 or less	20 or less	160
			Rubber seal	SQ2241D	2.3	0.17	0.51	3.1	0.18	0.71	20 or less	26 or less	155
	3 position	Closed center	Metal seal	SQ2340	1.9	0.17	0.46	2.1	0.15	0.47	34 or less	44 or less	180
			Rubber seal	SQ2341	1.9	0.17	0.46	1.8	0.29	0.45	34 or less	44 or less	175
		Exhaust center	Metal seal	SQ2440	1.9	0.17	0.46	2.4	0.14	0.55	34 or less	44 or less	180
			Rubber seal	SQ2441	1.9	0.17	0.46	3.1	0.14	0.58	34 or less	44 or less	175
		Pressure center	Metal seal	SQ2540	2.3	0.17	0.51	2.1	0.18	0.47	34 or less	44 or less	180
			Rubber seal	SQ2541	2.5	0.17	0.56	1.8	0.30	0.47	34 or less	44 or less	175
	4 position	Dual 3 port valve	Rubber seal	SQ2 ^A _B 41 ^C	1.5	0.17	0.40	1.5	0.17	0.40	34 or less	44 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.)

Specifications



JIS Symbol




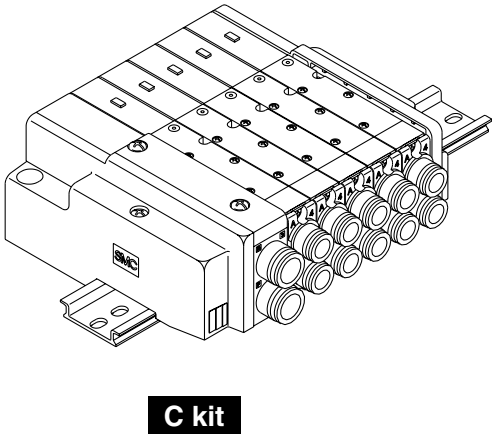
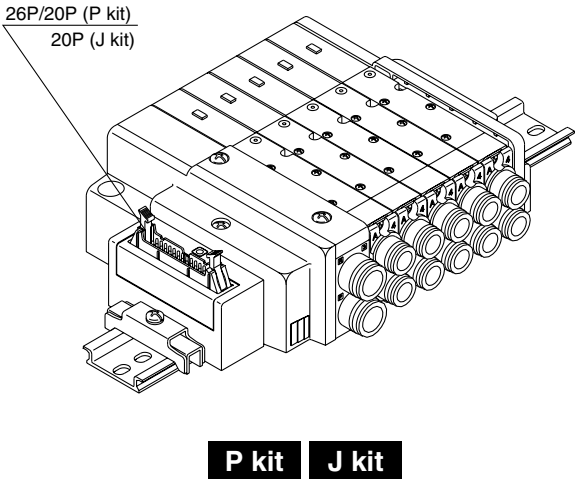
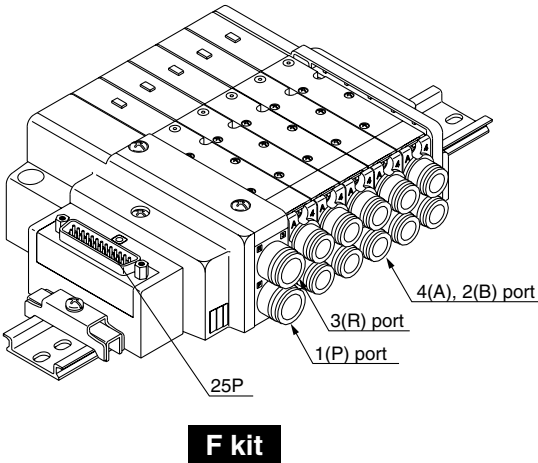
Valve specifications	Valve construction		Metal seal	Rubber seal
	Fluid		Air/Inert gas	
	Maximum operating pressure		0.7 MPa	
	Min. operating pressure	Single	0.1 MPa	0.15 MPa
		Double (Latching)	0.18 MPa	0.18 MPa
		Double (Double solenoid)	0.1 MPa	0.1 MPa
		3 position	0.1 MPa	0.2 MPa
		4 position	—	0.15 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)	
Solenoid specifications	Vibration/Impact resistance ⁽²⁾		30/150 m/s ²	
	Protection structure		Dust tight	
	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	1 W DC (42 mA), 0.5 W DC (21 mA) ⁽³⁾	
		12 VDC	1 W DC (83 mA), 0.5 W DC (42 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) Values for the low wattage (0.5 W) specifications.

Manifold Specifications

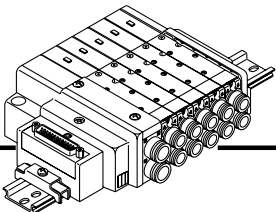
Base model	Porting specifications			Applicable solenoid valve	Type of connection	Applicable station ⁽³⁾	5 station mass ⁽⁴⁾ (g)	1 station mass ⁽⁴⁾ (g)	
	Port size								
	1(P), 3(R)	4(A), 2(B)							
		Port location	Port size						
SS5Q24-□□-□	C10 (For ø10) Option Built-in silencer, (direct exhaust)	Side	C4 (For ø4)	SQ2□40 SQ2□41	F kit: D-sub connector		1 to 12 stations	580	35
			C6 (For ø6) C8 (For ø8)		P kit: Flat ribbon cable	26P	1 to 12 stations	580	35
						20P	1 to 9 stations		
		Option Built-in silencer, (direct exhaust)	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
	C kit: Connector kit					1 to 12 stations	620	50	

 Note 1) One-touch fittings in inch sizes are also available. For details, refer to page 1092.
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 1090 for details.
Note 4) Except valves. For valve mass, refer to page1070.



SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

F Kit (D-sub Connector kit)



- Simplification and labor 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.

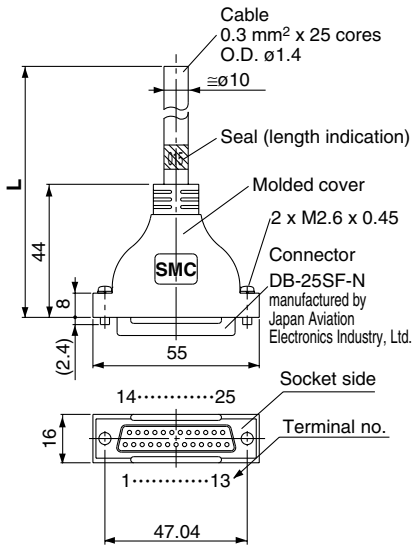
Manifold specifications

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

D-sub Connector (25 pins)

**015
AXT100-DS25-030
050**

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



D-sub Connector Cable Assembly Terminal No.

Terminal number	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black
16	Blue	White
17	Purple	None
18	Gray	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	None

D-sub Connector Cable Assembly

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-DS25-015	Cable 0.3 mm ² 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.

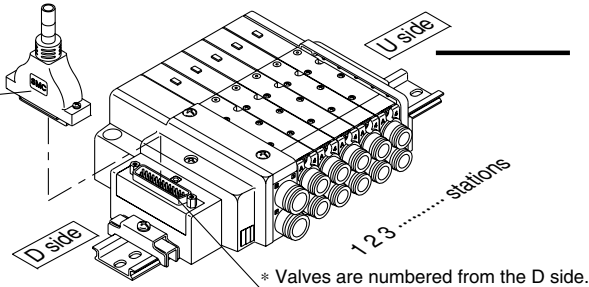
Electric characteristics

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

Connector manufacturers' example

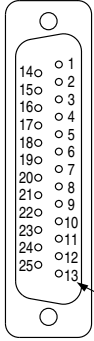
- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Hirose Electric Co., Ltd.

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



Electrical wiring specifications

D-sub connector



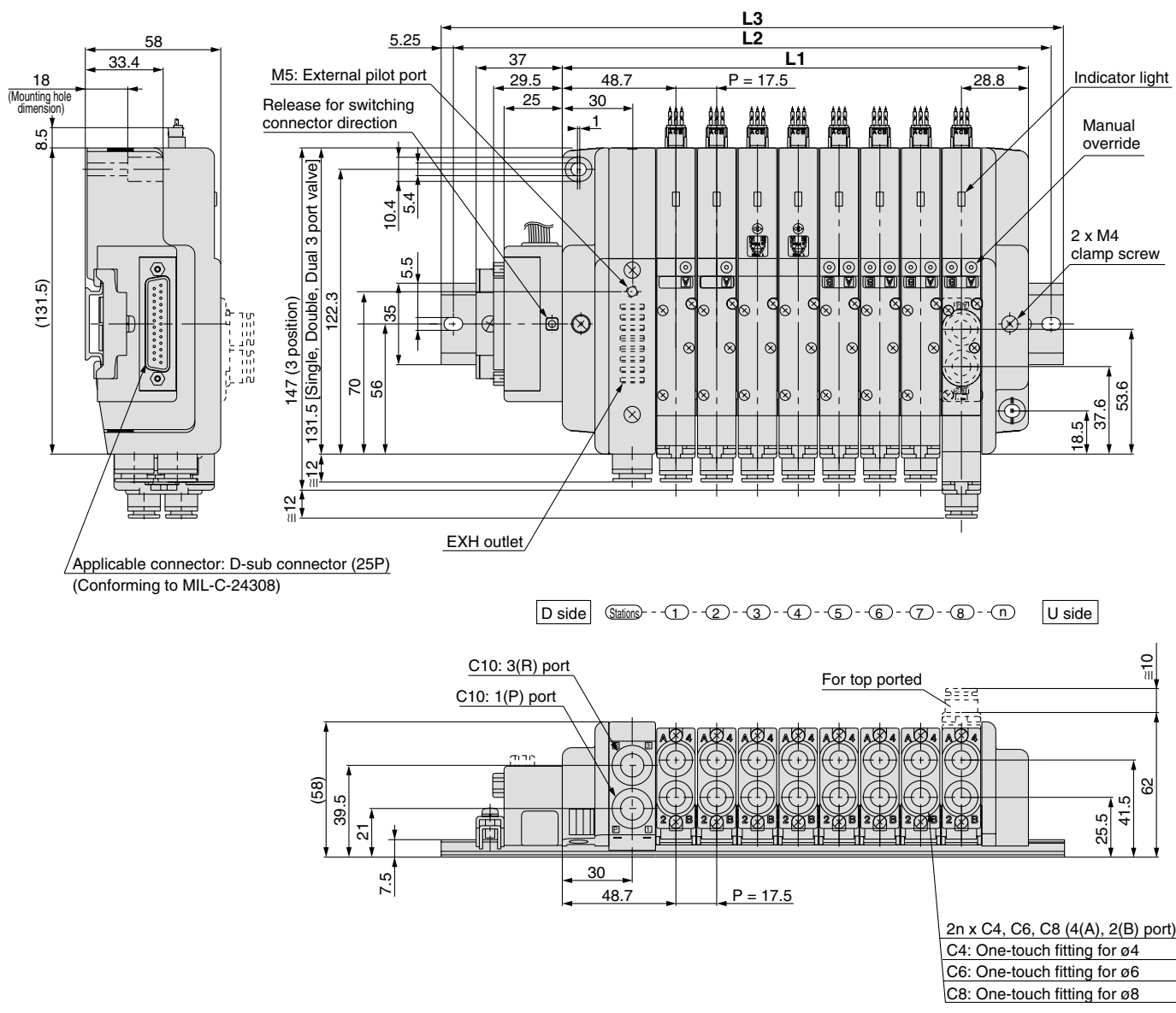
As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 1090.

Lead wire colors for D-sub connector assembly

	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 (-)	(+) Gray	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 (-)	(+) Gray	Black
	SOL.B	22 (-)	(+) Pink	Red
10 stations	SOL.A	10 (-)	(+) White	Black
	SOL.B	23 (-)	(+) Gray	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.



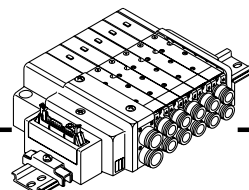
Dimensions

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 labor savings for wiring work can be achieved by using a MIL type for the electrical connection.
- Using 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 entry for the connector can be changed freely, allowing later changes according to the mounting space.

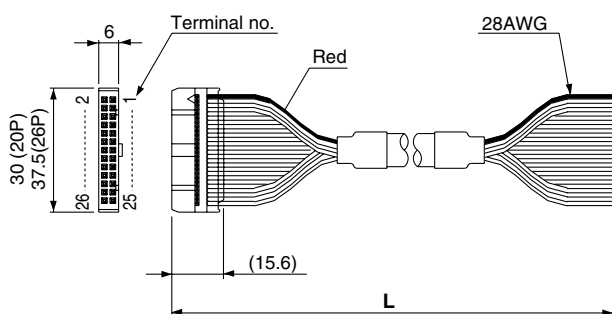
Manifold Specifications

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

Flat Ribbon Cable (26 pins, 20 pins)

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

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



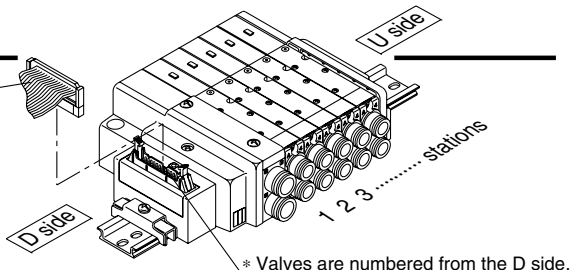
Flat Ribbon Cable Connector Assembly

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 transfer 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

26 □	25
24 □	23
22 □	21
20 □	19
18 □	17
16 □	15
14 □	13
12 □	11
10 □	9
8 □	7
6 □	5
4 □	3
2 □	1

Connector terminal no.

Triangle mark indicator position

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 1090.

<26P>				<20P>			
		Terminal no.	Polarity			Terminal no.	Polarity
1 station		SOL.A	1 (-) (+)	1 station		SOL.A	1 (-)
		SOL.B	2 (-) (+)			SOL.B	2 (-)
2 stations		SOL.A	3 (-) (+)	2 stations		SOL.A	3 (-)
		SOL.B	4 (-) (+)			SOL.B	4 (-)
3 stations		SOL.A	5 (-) (+)	3 stations		SOL.A	5 (-)
		SOL.B	6 (-) (+)			SOL.B	6 (-)
4 stations		SOL.A	7 (-) (+)	4 stations		SOL.A	7 (-)
		SOL.B	8 (-) (+)			SOL.B	8 (-)
5 stations		SOL.A	9 (-) (+)	5 stations		SOL.A	9 (-)
		SOL.B	10 (-) (+)			SOL.B	10 (-)
6 stations		SOL.A	11 (-) (+)	6 stations		SOL.A	11 (-)
		SOL.B	12 (-) (+)			SOL.B	12 (-)
7 stations		SOL.A	13 (-) (+)	7 stations		SOL.A	13 (-)
		SOL.B	14 (-) (+)			SOL.B	14 (-)
8 stations		SOL.A	15 (-) (+)	8 stations		SOL.A	15 (-)
		SOL.B	16 (-) (+)			SOL.B	16 (-)
9 stations		SOL.A	17 (-) (+)	9 stations		SOL.A	17 (-)
		SOL.B	18 (-) (+)			SOL.B	18 (-)
10 stations		SOL.A	19 (-) (+)			COM.	19 (+)
		SOL.B	20 (-) (+)			COM.	20 (+)
11 stations		SOL.A	21 (-) (+)				
		SOL.B	22 (-) (+)				
12 stations		SOL.A	23 (-) (+)				
		SOL.B	24 (-) (+)				
		COM.	25 (+) (-)				
		COM.	26 (+) (-)				
			(+) (-)				
			(+) (-)				

Positive common specifications

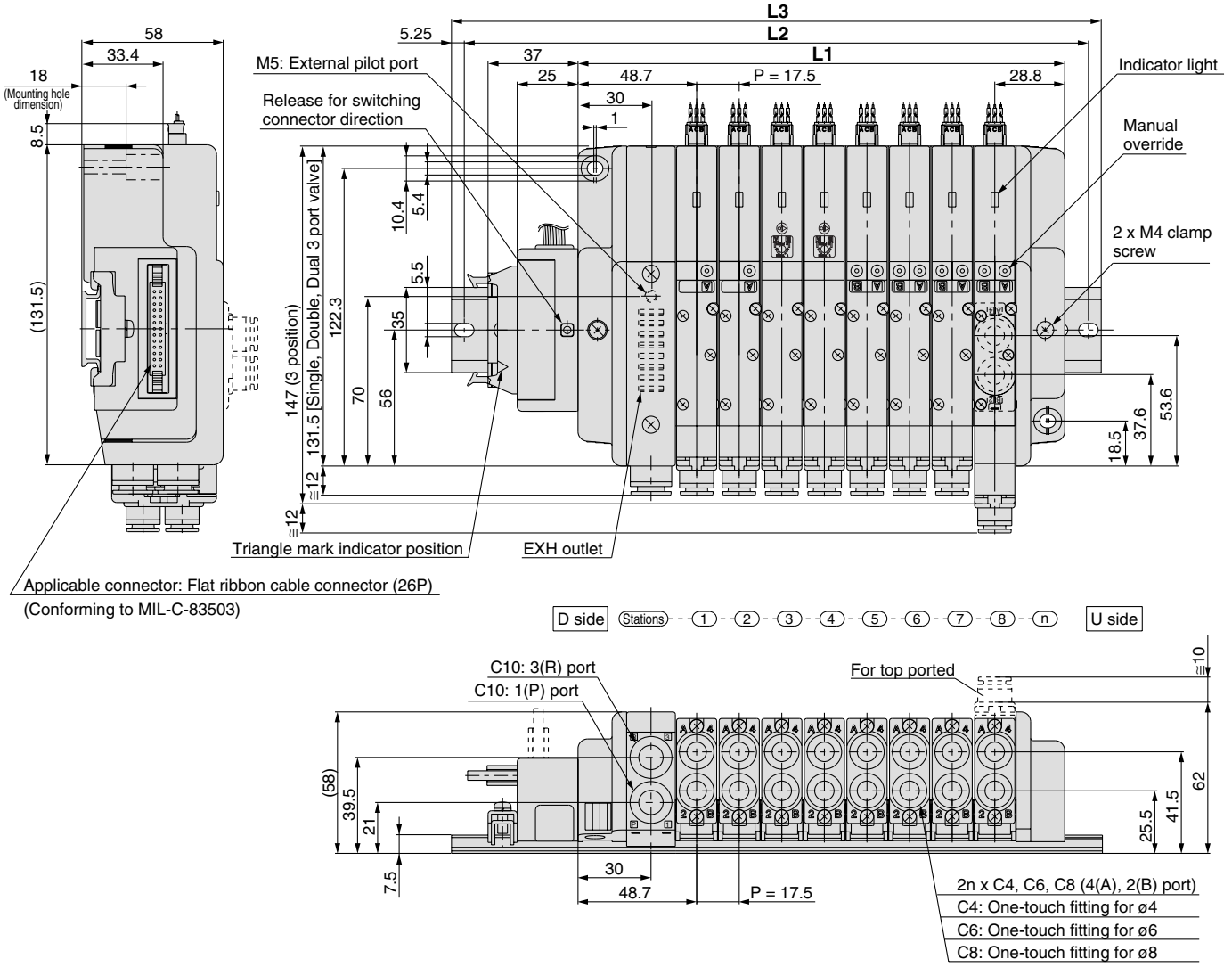
Negative common specifications

Note)

Note)
Positive common specifications Negative common specifications



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



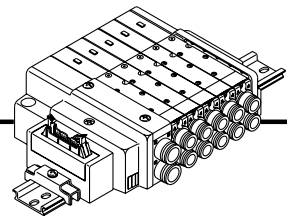
Dimensions

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

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

Series SQ2000

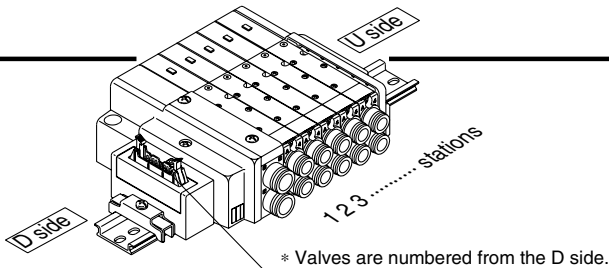
J Kit (PC wiring system compatible flat ribbon cable Kit)



- PC Wiring System compatible.
- 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 entry for the connector can be changed freely, allowing later changes according to the mounting space.

Manifold specifications

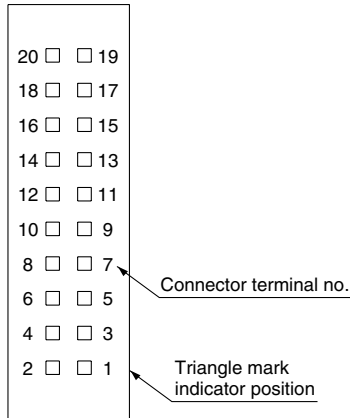
Series	Porting specifications		Maximum number of stations	
	Port location	Port size		
		1(P), 3(R)		4(A), 2(B)
SQ2000	Side, Top	C10	C4, C6, C8	8 stations (16 as an option)



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 1090.

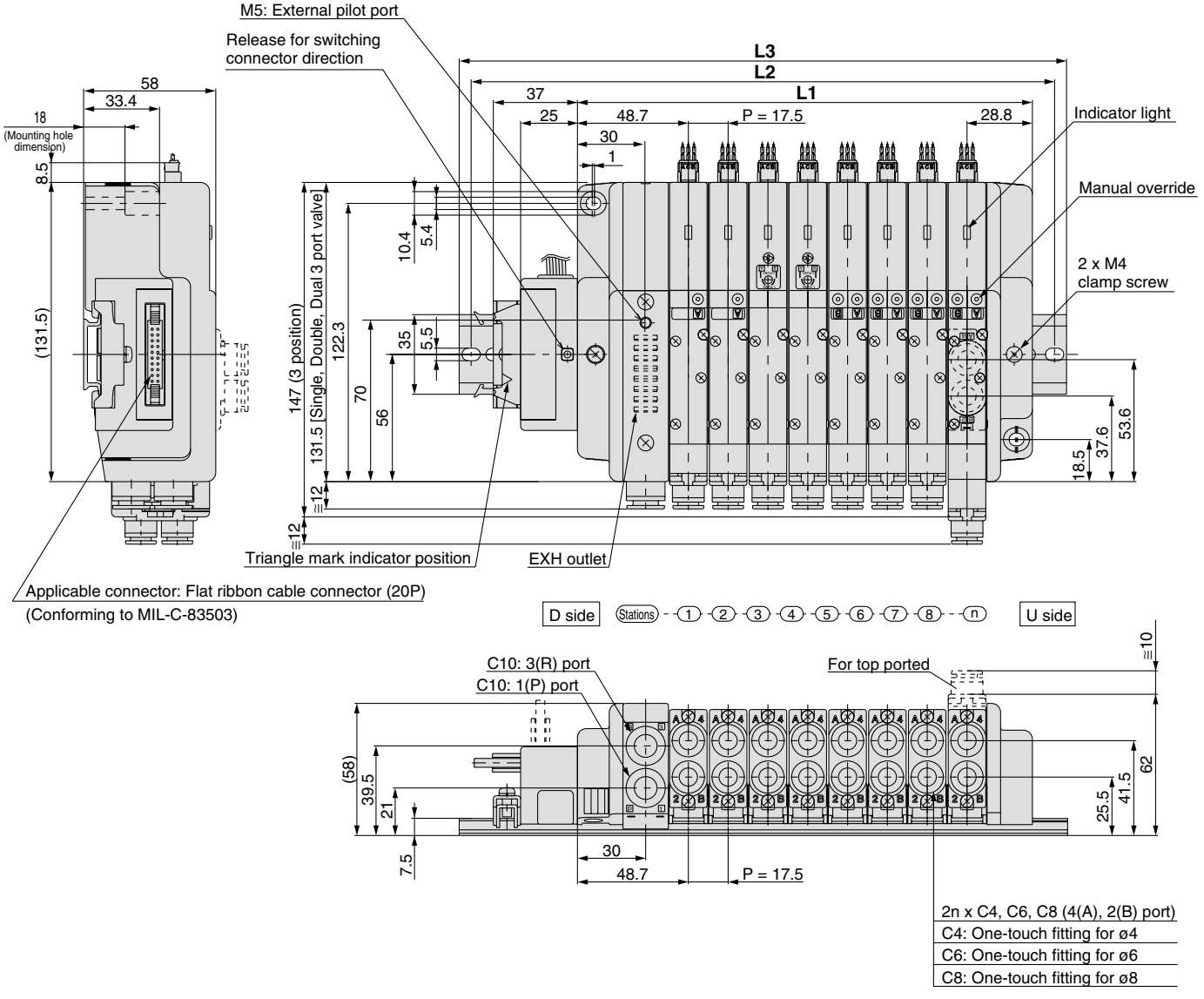
Flat ribbon cable connector



	Terminal no.	Polarity
1 station	SOL.A 20	(-) (+)
	SOL.B 18	(-) (+)
2 stations	SOL.A 16	(-) (+)
	SOL.B 14	(-) (+)
3 stations	SOL.A 12	(-) (+)
	SOL.B 10	(-) (+)
4 stations	SOL.A 8	(-) (+)
	SOL.B 6	(-) (+)
5 stations	SOL.A 19	(-) (+)
	SOL.B 17	(-) (+)
6 stations	SOL.A 15	(-) (+)
	SOL.B 13	(-) (+)
7 stations	SOL.A 11	(-) (+)
	SOL.B 9	(-) (+)
8 stations	SOL.A 7	(-) (+)
	SOL.B 5	(-) (+)
	○ 4	(-) (+)
	○ 3	(-) (+)
	COM. 2	(+) (-)
	COM. 1	(+) (-)
		Positive common specifications
		Negative common specifications



Note) When using the negative common specifications, use valves for negative common.
For details about the PC Wiring System, refer to catalog CAT.E02-20 separately.



SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Dimensions		Formula: L1 = 17.5n + 60 n: Stations (Maximum 16 stations)															
L \ n	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

Series SQ2000

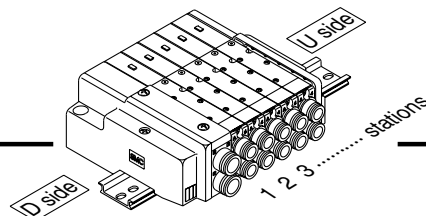
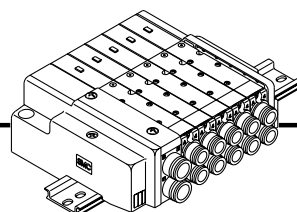
C

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

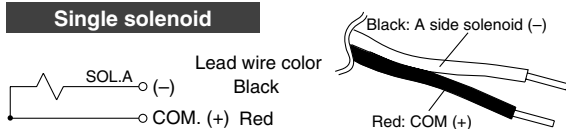


* Valves are numbered from the D side.

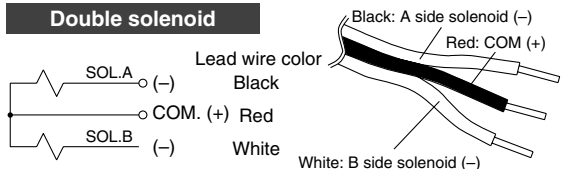
● Wiring Specifications: Positive COM Specifications

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

Single solenoid



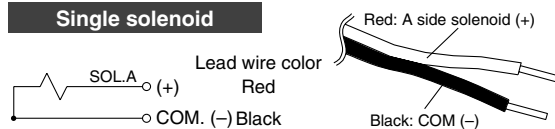
Double solenoid



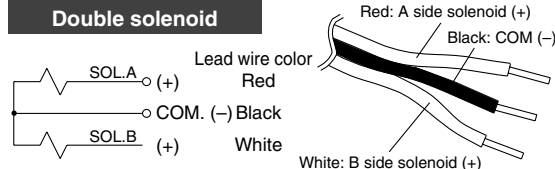
● Wiring Specifications: Negative COM Specifications (Option)

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

Single solenoid



Double solenoid



● Individual Common 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

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.

● 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: SQ1140-5LO-C6....3 pcs.
AXT661-14AL-10....3 pcs.

● 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: SQ1140-5LO-C6....3 pcs.
AXT661-14ANL-10....3 pcs.

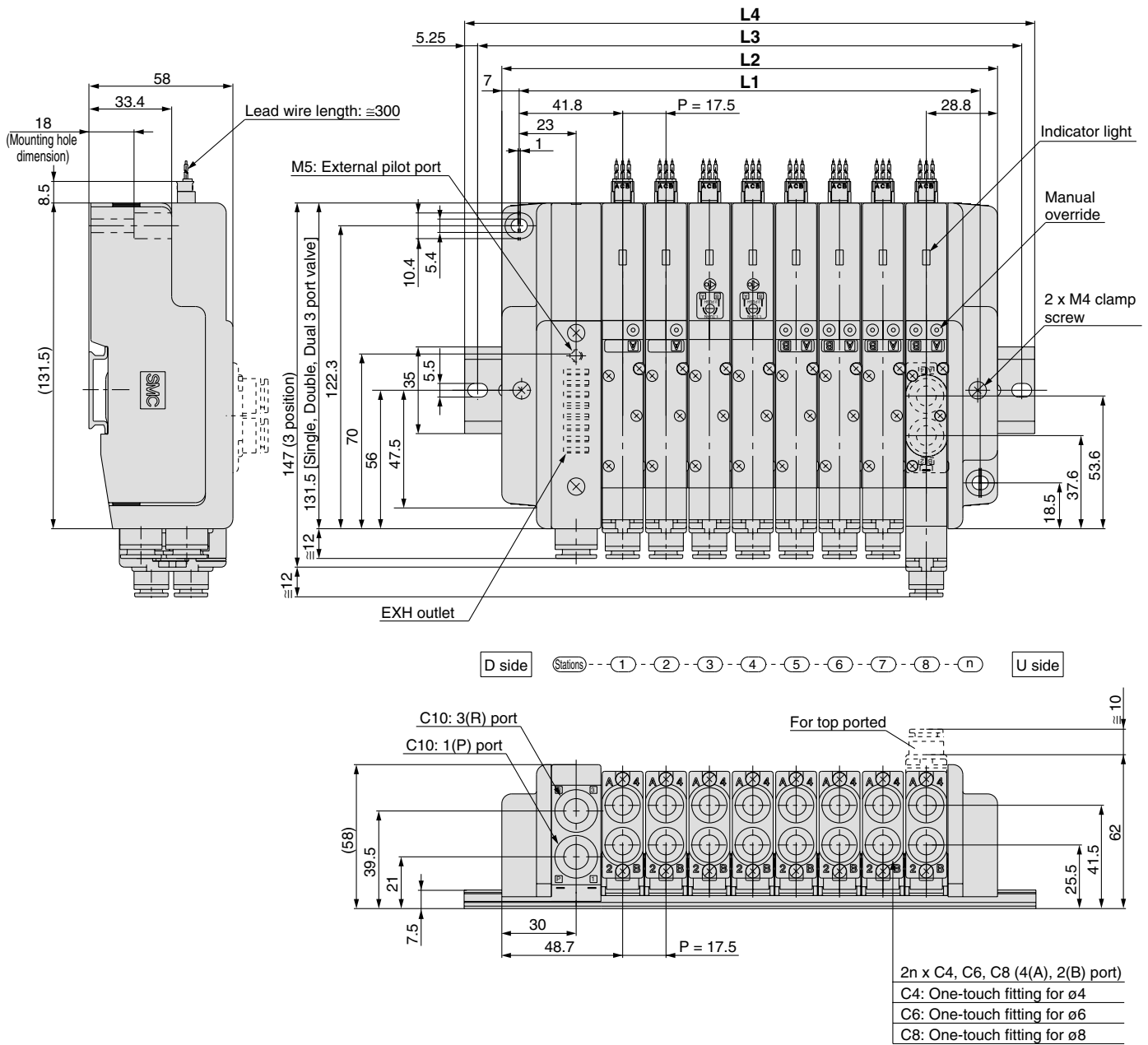
● All Common

Connector Assembly for All Common Type Part No.

Mounted valve (n: Station)	Part no.	Connector assembly shape
Station n Single type	AXT661-50B-□ (Note)	
Station 1 to (n-1) station Single type	AXT661-50A-□ (Note)	
Station n Latching, double solenoid 3-position, dual 3-port blanking plate	AXT661-51B-□ (Note)	
Station 1 to (n-1) station Latching, double solenoid 3-position, dual 3-port blanking plate	AXT661-51A-□ (Note)	

Mounted valve (n: Station)	Part no.	Connector assembly shape
Station n Single type	AXT661-50BN-□ (Note)	
Station 1 to (n-1) station Single type	AXT661-50AN-□ (Note)	
Station n Latching, double solenoid 3-position, dual 3-port blanking plate	AXT661-51BN-□ (Note)	
Station 1 to (n-1) station Latching, double solenoid 3-position, dual 3-port blanking plate	AXT661-51AN-□ (Note)	

Note) □: Lead wire length. 03: 0.3 m, 06: 0.6 m, 10: 1 m, 20: 2 m, 30: 3 m, 50: 5 m



SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Dimensions

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

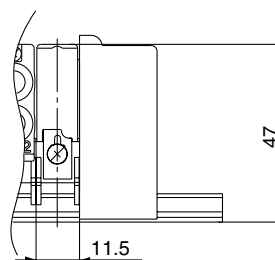
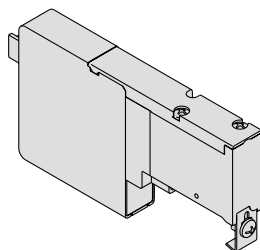
Series SQ1000

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

Nil	Standard
R	External pilot specifications
S	Built-in silencer

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

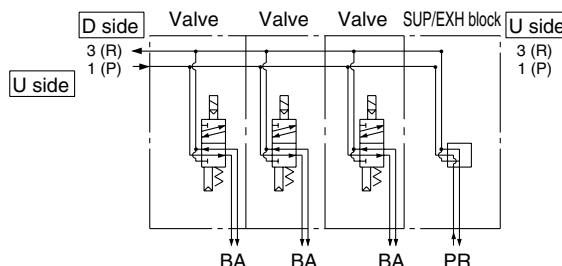
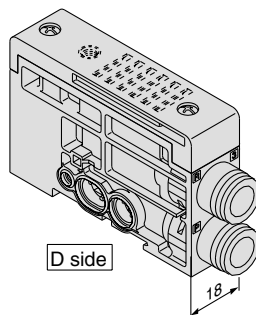
* Specify the spacer mounting position on the manifold specification sheet.

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.



Description/Model	Stations	1	2	3	4	5
Valve	Single	●	●	●		
Option	SUP/EXH block SSQ1000-PR-4-C8-□				●	

Individual SUP spacer

SSQ1000-P-4- C6

• Port size

Side ported	C6	One-touch fittings for ø6
Top ported	N7	One-touch fittings for ø1/4"
Top ported	L6	One-touch fittings for ø6
Top ported	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 not connected to the manifold station with the individual SUP spacer. When electrical wiring is required to be connected to the manifold station with the individual SUP spacer, specify a model by means of the manifold specification sheet.

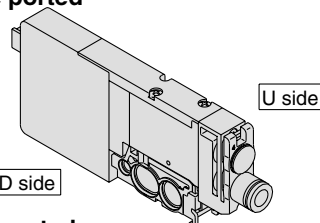
* By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later (from the individual SUP spacer to the individual EXH spacer).

* 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.

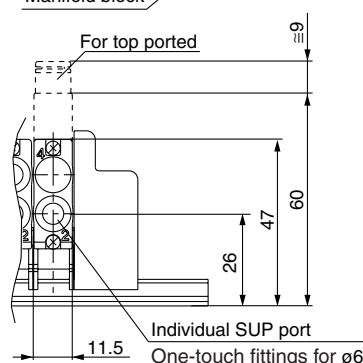
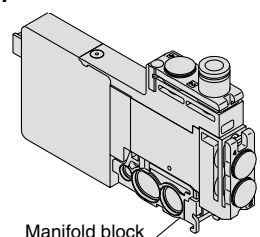
* Model no. with manifold block:

SSQ1000-P-4- C6 L6 M

Side ported

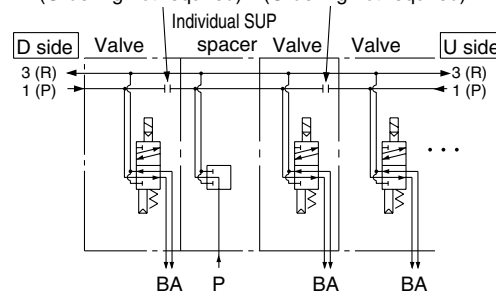


Top ported



Description/Model	Stations	1	2	3	4	5
Valve	Single	●	●	●		
Option	Individual SUP spacer SSQ1000-P-4- C6 L6		●			
	SUP shut off position: Specify 2 positions.	●		●		

SUP block plate (Ordering not required)



Individual EXH spacer

SSQ1000-R-4-C6

•Port size

Side ported	C6	One-touch fittings for $\phi 6$
	N7	One-touch fittings for $\phi 1/4"$
Top ported	L6	One-touch fittings for $\phi 6$
	LN7	One-touch fittings for $\phi 1/4"$

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.)

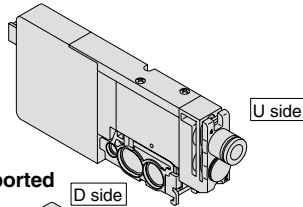
* Electrical wiring is not connected to the manifold station with the individual EXH spacer. When electrical wiring is required to be connected to the manifold station with the individual EXH spacer, specify a model by means of the manifold specification sheet.

* 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).

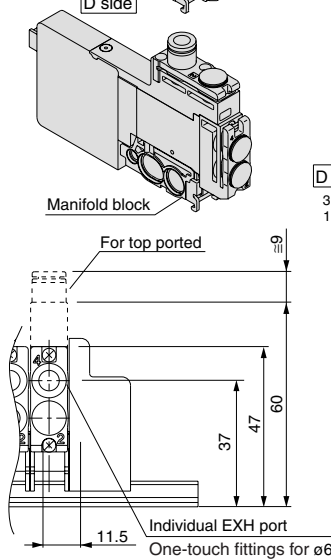
* The number of spacers is not limited when ordered with the manifold. However, when adding individual for F, P, and J kits, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.

* Model no. with manifold block:
SSQ1000-R-4-C6-M

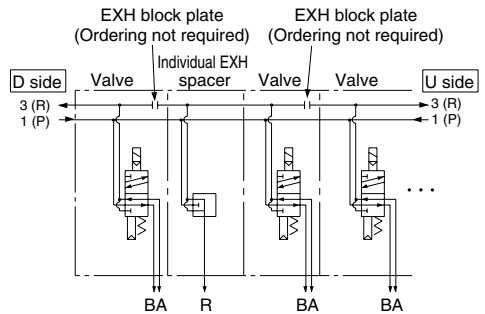
Side ported



Top ported



		Stations				
Description/Model		1	2	3	4	5
Valve	Single	●	●	●		
	...					
Option	Individual EXH spacer SSQ1000-R-4- <u>C6</u>	●				
	EXH shut off position: Specify 2 positions.	●	●			



Individual SUP/EXH spacer

SSQ1000-PR1-4-C6

•Port size

Side ported	C6	One-touch fittings for $\phi 6$
	N7	One-touch fittings for $\phi 1/4"$
Top ported	L6	One-touch fittings for $\phi 6$
	LN7	One-touch fittings for $\phi 1/4"$

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 not connected to the manifold station with the individual SUP/EXH spacer. When electrical wiring is required to be connected to the manifold station with the individual EXH spacer, specify a model by means of the manifold specification sheet.

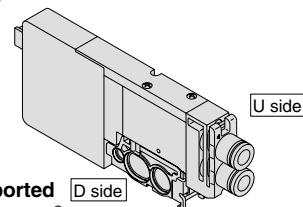
* By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later.

* 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.

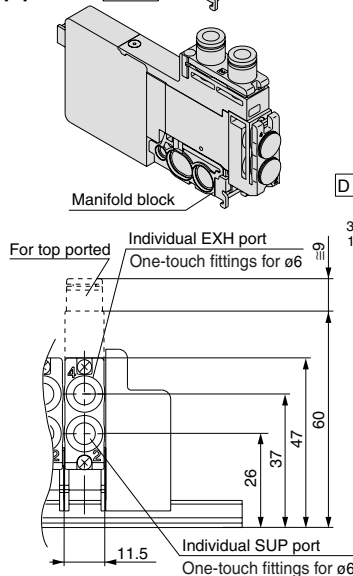
* Model no. with manifold block:
SSQ1000-PR1-4-C6-M

* Do not install any back pressure check valve on the manifold station, on which the spacer is to be mounted. When installing the back pressure check valve on other manifold station, be sure to specify the manifold station position on the manifold specification sheet instead of ordering by specifying the manifold option symbol "B".

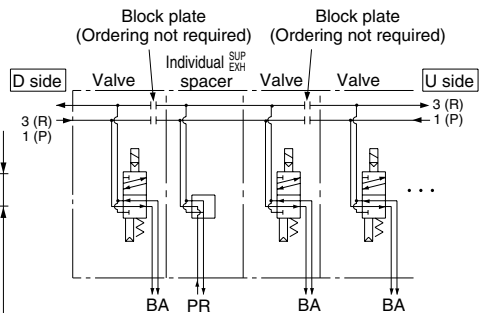
Side ported



Top ported



		Stations				
Description/Model		1	2	3	4	5
Valve	Single	●	●	●		
	...					
Option	Individual SUP/EXH spacer SSQ1000-PR1-4- <u>C6</u>	●				
	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

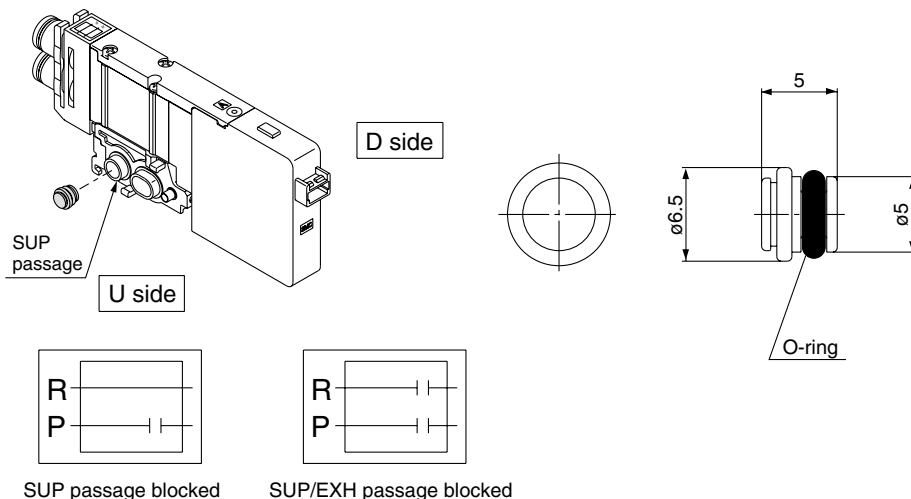
When supplying two different pressures, high and low, to one manifold, this is used between stations with different pressures. Also, it is used with an individual SUP spacer to shut off the air supply.

* Specify the station position on the manifold specification sheet.

<Shut off label>

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

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



EXH block plate

SSQ1000-B-R

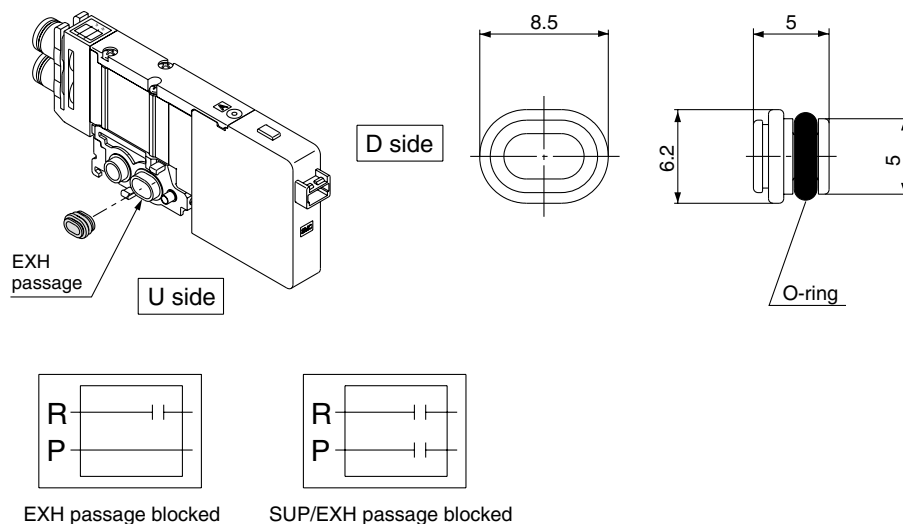
When the exhaust from a valve interferes with other stations in the circuit, this is used between stations to separate exhausts. Also, it is used with an individual EXH spacer to shut off the exhaust of individual valves.

* Specify the station position on the manifold specification sheet.

<Shut off label>

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

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



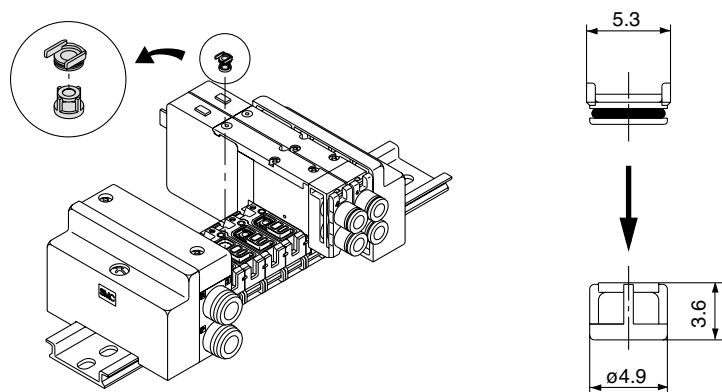
Back pressure check valve [-B]

SSQ1000-BP

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

- * When installing back pressure check valves only on the stations required, enter the part number and specify the station positions on a manifold specification sheet.

* When installing back pressure check valves on all of the stations, indicate “-B” at the end of the manifold part number.



Caution

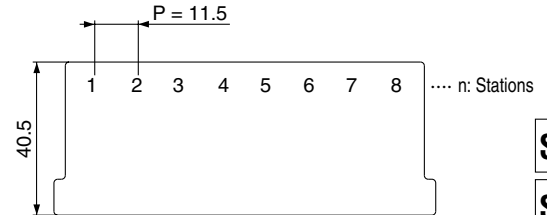
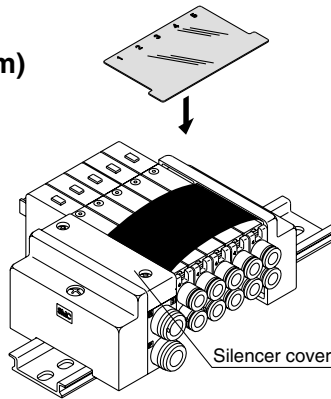
1. Although the back pressure check valve is an assembly part with a check valve mechanism, a small amount of air leakage is allowed. Therefore, take care not to restrict the exhaust air from the exhaust port.
2. The effective area of valves is about 20% less when the back pressure check valve is installed.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

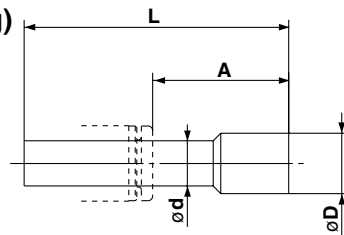
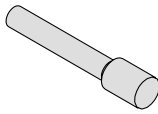
This is a clear resin plate for applying solenoid valve function description labels, etc. To install, bend the plate slightly as shown and insert into the slots on the end plate side. Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to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

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



Blanking plug (For One-touch fitting)

23
KQ2P-
04
06
08



Dimensions

Applicable fittings size ϕd	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

This is inserted into cylinder ports and SUP and EXH ports that are not used.

Purchasing order is available in units of 10 pieces.

Port plug

VVQZ100-CP

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

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

Example) SQ1141-5L-C6-A (N.O. specifications)

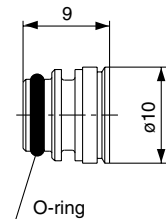
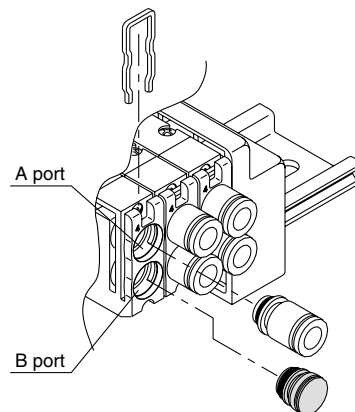
• 4 (A) port plug

Example) SQ1141-5L-C6-B (N.C. specifications)

• 2 (B) port plug

Example) SQ1141-5L-C6-B-M

(B port plug with manifold block)



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

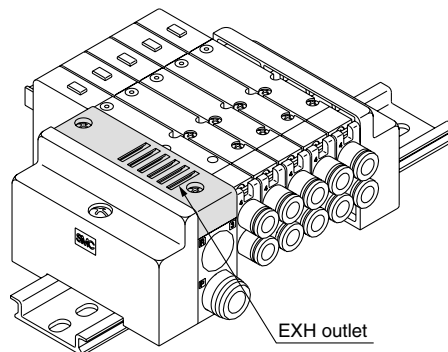
The EXH outlet is placed on the top side of the manifold end plate. The built-in silencer provides highly effective noise reduction. (Noise reduction of 30 dB)



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

* Add "-S" at the end of the manifold part number when ordering with manifolds.

* For precautions on handling and how to replace elements, refer to page 1109.



SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

VFR

VQ7

Series SQ1000

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 -5L-C6 (-Q)

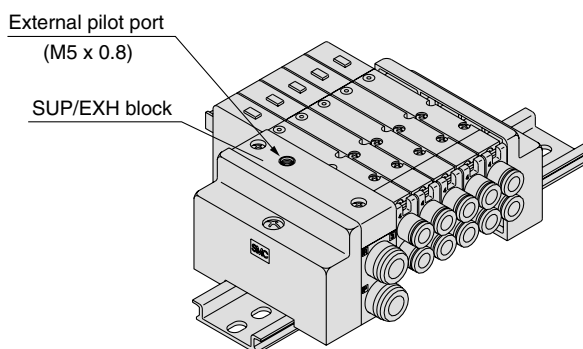
External pilot specifications

● How to order manifold (Example)

* Indicate "R" for an option.

SS5Q14-08FD1-DR (-Q)

External pilot specifications



Note 1) Not applicable for dual 3 port valves.

Note 2) Indicate "RY" for low wattage types.

Note 3) 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"

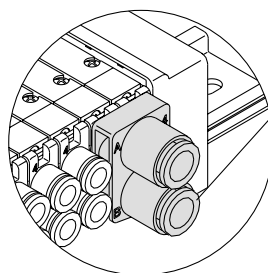
To drive a large bore cylinder, two valve stations are operated simultaneously to double the air flow. This fitting is used on the cylinder ports in this situation. Available sizes are ø8 and ø5/16" One-touch fitting.

* 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)

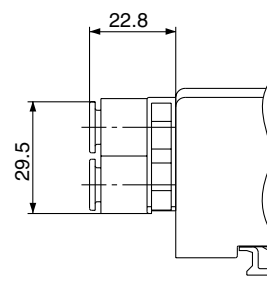
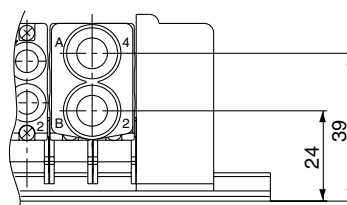
SQ1141-5L- C0 (-Q)..... 2 sets

* SSQ1000-52A- C8 1 set



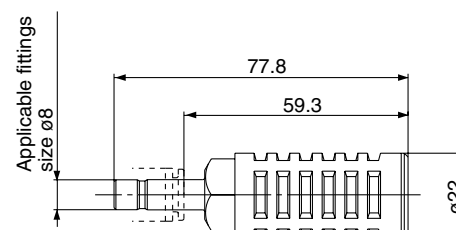
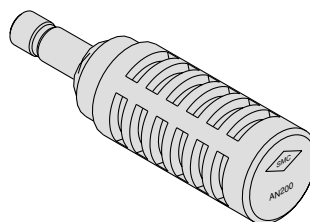
C8: ø8 One-touch fitting

N9: ø5/16" One-touch fitting



Silencer (For EXH port)

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



Specifications

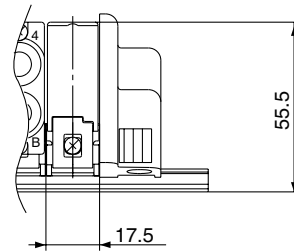
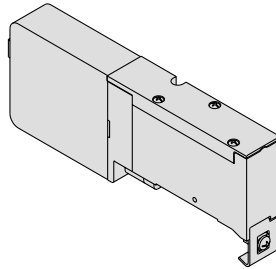
Series	Model	Effective area (mm ²) (Cv factor)	Noise reduction (dB)
SQ1000	AN200-KM8	20 (1.1)	30

Manifold Option Parts for SQ2000

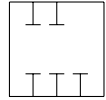
Blanking plate

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

Nil	Standard
R	External pilot specifications
S	Built-in silencer

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

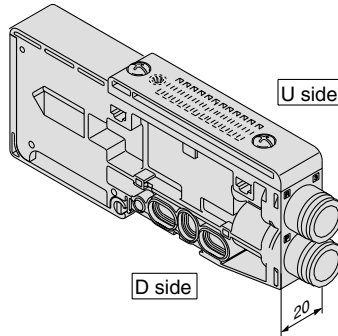
* Specify the spacer mounting position on the manifold specification sheet.

For standard type manifolds, the SUP/EXH block is mounted on the D side.

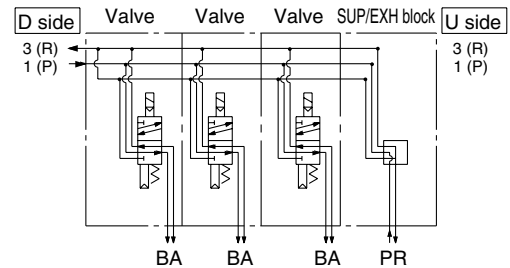
It is added to the manifold to increase SUP/EXH capacity.

* 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 not connected to the manifold station with the individual SUP spacer. When electrical wiring is required to be connected to the manifold station with the individual SUP spacer, specify a model by means of the manifold specification sheet.

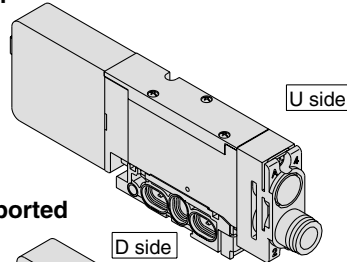
* By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later (from the individual SUP spacer to the individual EXH spacer).

* 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.

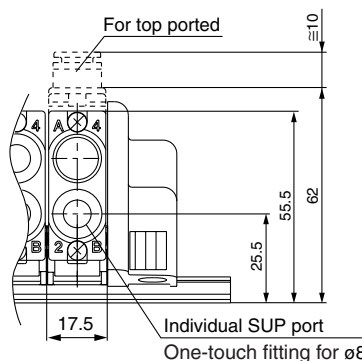
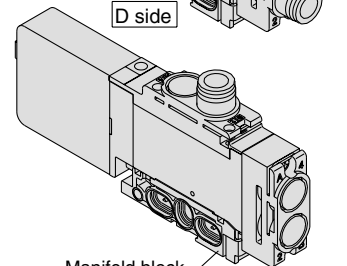
* Model no. with manifold block:

SSQ2000-P-4-C8-L8-M

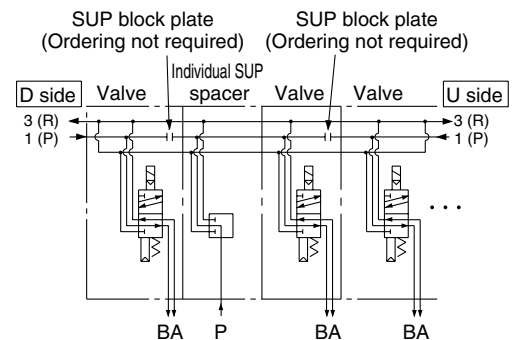
Side ported



Top ported



Description/Model		Stations				
		1	2	3	4	5
Valve	Single	●	●	●		
	:					
Option	Individual SUP spacer		●			
	SSQ2000-P-4-C8-L8					
Option	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 position 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 not connected to the manifold station with the individual EXH spacer. When electrical wiring is required to be connected to the manifold station with the individual EXH spacer, specify a model by means of the manifold specification sheet.

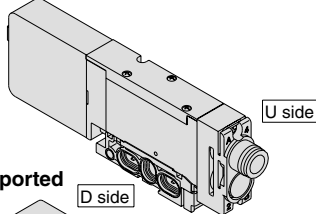
* By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later (from the individual EXH spacer to the individual SUP spacer)

* 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.

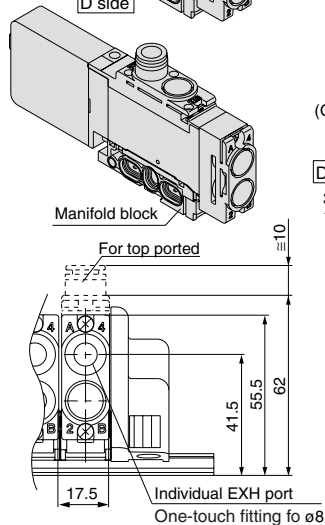
* Model no. with manifold block:

SSQ2000-R-4-C8-M

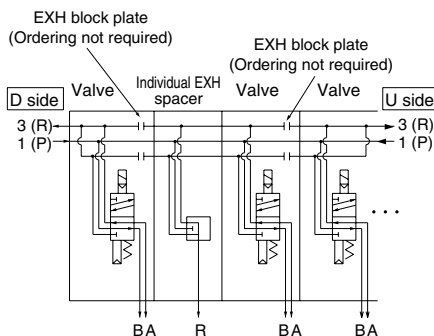
Side ported



Top ported



		Stations				
Description/Model		1	2	3	4	5
Valve	Single	●	●	●		
	:					
Option	Individual EXH spacer SSQ2000-R-4- <u>C8</u>	●				
	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 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 not connected to the manifold station with the individual SUP/EXH spacer. When electrical wiring is required to be connected to the manifold station with the individual EXH spacer, specify a model by means of the manifold specification sheet.

* By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later.

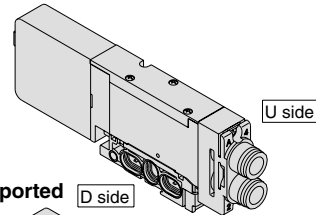
* The number of spacers is not limited when ordered with the manifold. However, when adding individual for F, P, and J kits, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.

* Model no. with manifold block:

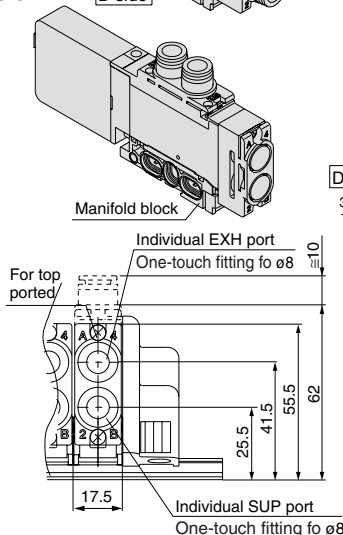
SSQ2000-PR1-4-C8-M

* Do not install any back pressure check valve on the manifold station, on which the spacer is to be mounted. When installing the back pressure check valve on other manifold station, be sure to specify the manifold station position on the manifold specification sheet instead of ordering by specifying the manifold option symbol "B".

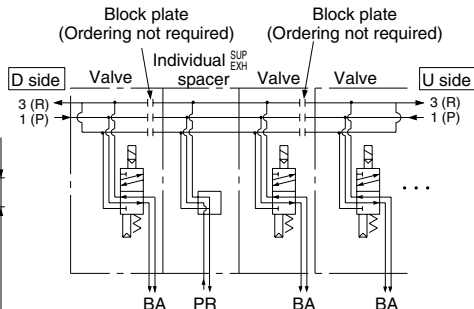
Side ported



Top ported



		Stations				
Description/Model		1	2	3	4	5
Valve	Single	●	●	●		
	:					
Option	Individual SUP/EXH spacer SSQ2000-PR1-4- <u>C8</u>	●				
	SUP shut off position: Specify 2 positions.	●	●			
	EXH shut off position: Specify 2 positions.	●	●			



SUP block plate

SSQ1000-B-R

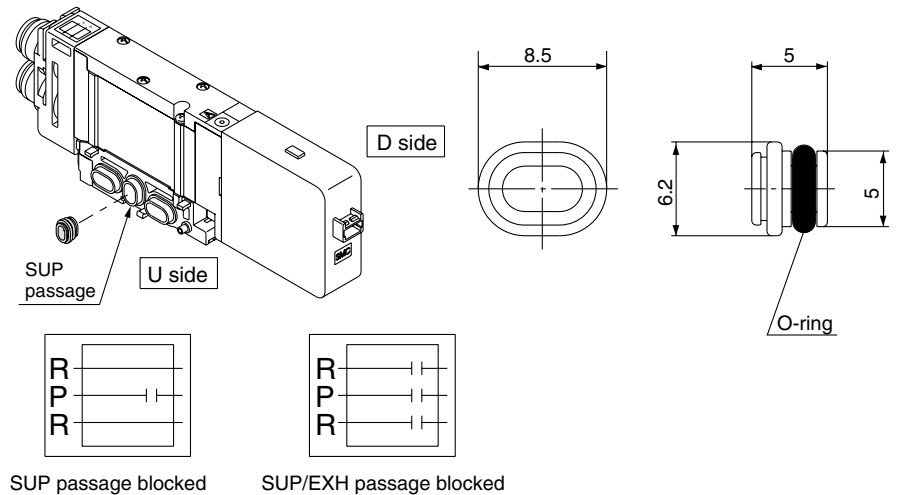
When supplying two different pressures, high and low, to one manifold, this is used between stations with different pressures. Also, it is used with an individual SUP spacer to shut off the air supply.

* Specify the station position on the manifold specification sheet.

<Shut off label>

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

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



EXH block plate

SSQ2000-B-R

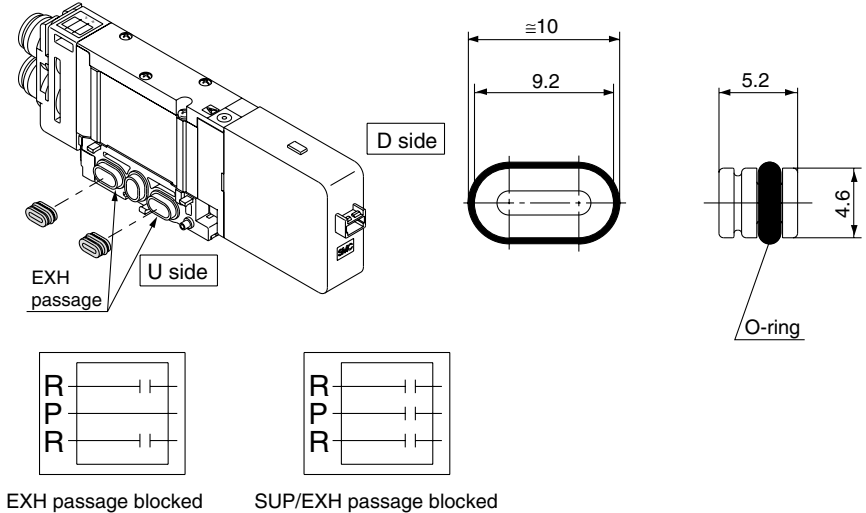
When the exhaust from a valve interferes with other stations in the circuit, this is used between stations to separate exhausts. Also, it is used with an individual EXH spacer to shut off the exhaust of individual valves.

* Specify the station position on the manifold specification sheet.

<Shut off label>

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

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



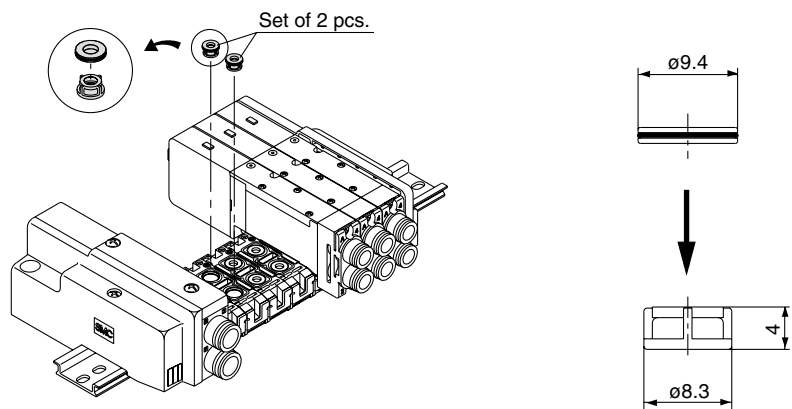
Back pressure check valve [-B]

SSQ2000-BP

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

* When installing back pressure check valves only on the stations required, enter the part number and specify the station positions on a manifold specification sheet.

* When installing back pressure check valves on all of the stations, indicate "-B" at the end of the manifold part number.



⚠ Caution

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

Series SQ2000

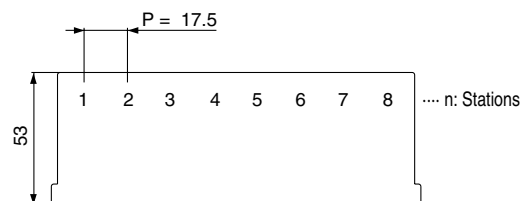
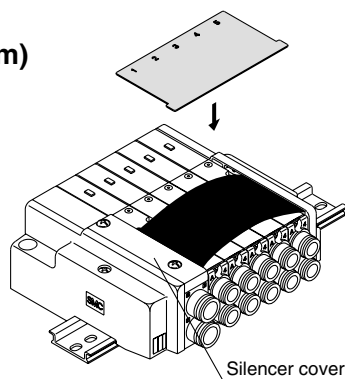
Manifold Option Parts for SQ2000

Name plate [-N]

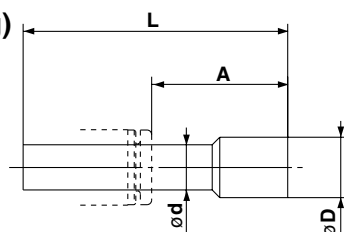
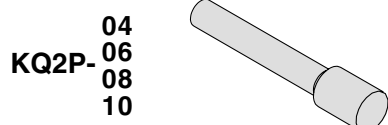
SSQ2000-N3-Stations (1 to maximum)

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

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



Blanking plug (For One-touch fitting)



Dimensions

Applicable fittings size ϕd	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

This is inserted into cylinder ports and SUP and EXH ports that are not used.
Purchasing order is available in units of 10 pieces.

Port plug

VVQZ2000-CP

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

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

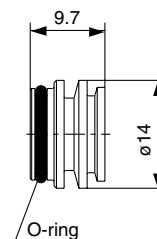
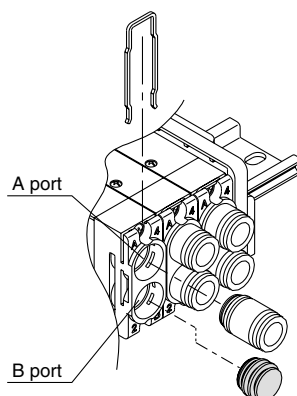
Example) SQ2141-5L-C8-A (N.O. specifications)

• 4(A) port plug

Example) SQ2141-5L-C8-B (N.C. specifications)


• 2(B) port plug

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



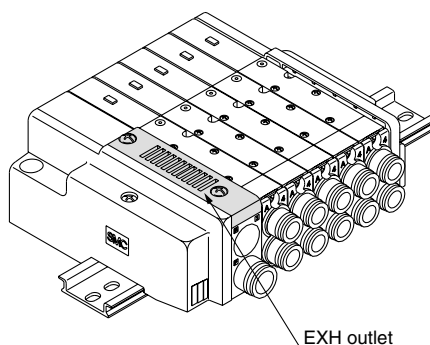
Direct EXH outlet, built-in silencer [-S]

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

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

* Add "S" at the end of the manifold part number when ordering with manifolds.

* For precautions on handling and how to replace elements, refer to page 1109.

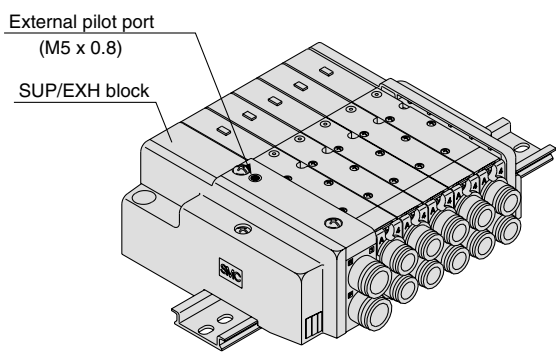


External pilot specifications [-R]

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 -5L-C6 (-Q)
 • External pilot specifications
- How to order manifold (Example)
* Indicate "R" for an option.
SS5Q24-08FD1-DR (-Q)
 • External pilot specifications



- Note 1) Not applicable for dual 3 port valves.
- Note 2) Indicate "RY" for low wattage types.
- Note 3) 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

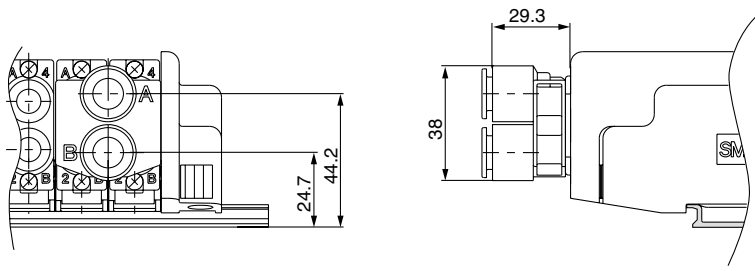
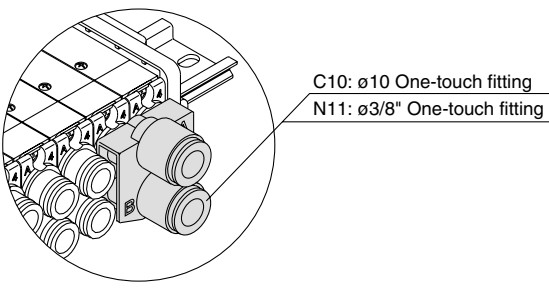
•Port size

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.

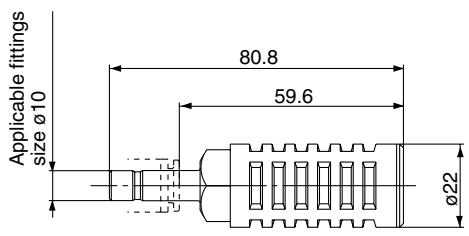
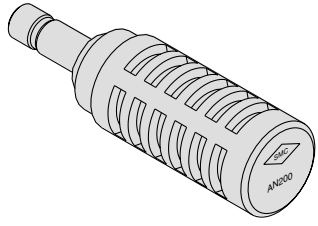
* When ordering with valves, specify the valve part number without One-touch fitting and list the dual flow fitting part number.

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



Silencer (For EXH port)

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



Specifications

Series	Model	Effective area (mm ²) (Cv factor)	Noise reduction (dB)
SQ2000	AN200-KM10	26 (1.4)	30

SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Series SQ1000/2000

Manifold Option Parts for SQ1000/SQ2000

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 single and double wiring is available as an option.

1. How to order

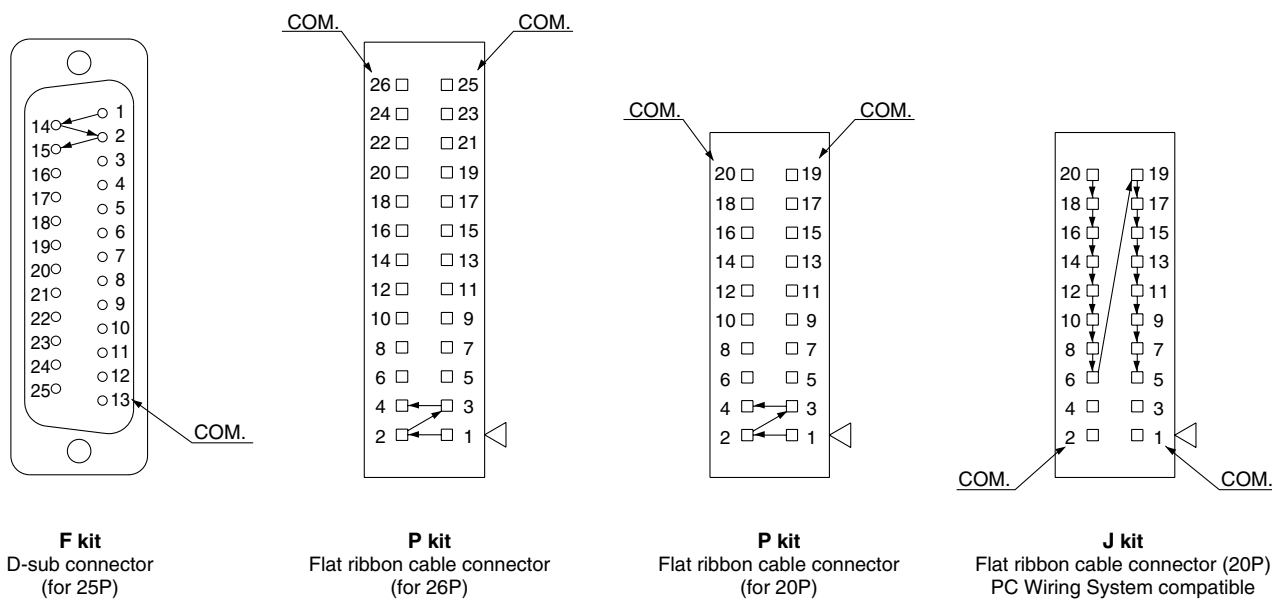
Indicate option symbol “-K” in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet.

Example) **SS5Q14-09FD0-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.



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 (-Q)**

8 station manifold

Option symbols
(alphabetically)

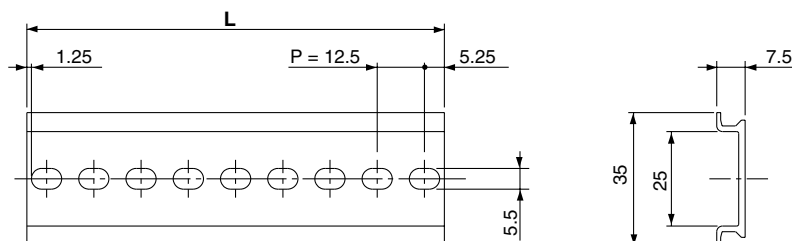
DIN rail for 9 stations

● 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.



L Dimension

$$L = 12.5 \times n + 10.5$$

No.	1	2	3	4	5	6	7	8	9	10
L dimension	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 dimension	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 dimension	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5

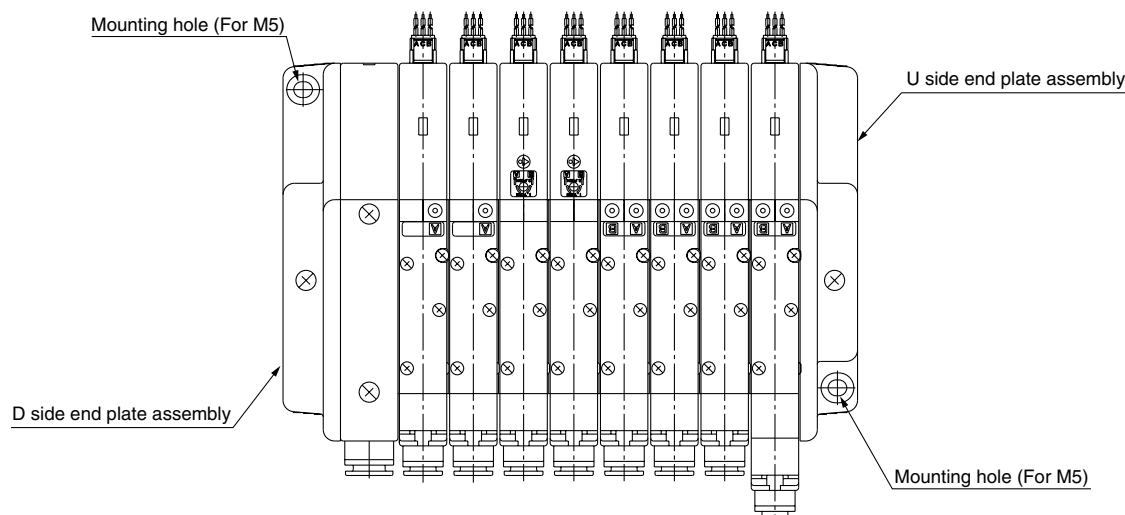
No.	31	32	33	34	35	36	37	38	39	40
L dimension	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

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.



SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

VFR

VQ7

Series SQ1000/2000

Manifold Option for SQ1000/SQ2000

Negative Common Specifications

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

● How to order negative COM valves (Example)

SQ1140 N -5L-C6 (-Q)

- Negative common specifications

Inch-size One-touch Fittings

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

● How to order valves (Example)

SQ1140-5L-□ N7 (-Q)

- Port location
- Cylinder port

Nil	Side ported	Symbol		N1	N3	N7	N9
L	Top ported	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 (-Q)

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

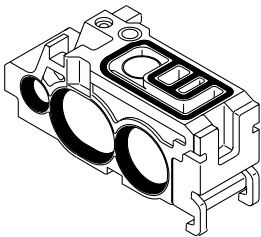
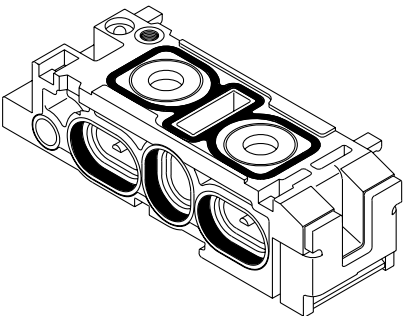
How to Add Manifold Stations for SQ1000/SQ2000

1. How to Add Manifold Stations

What to order

- Valves with manifold block (refer to pages 1053 and 1067) 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	SQ2000												
													
<div>SSQ1000-1A-4-<div></div><div>Option<div><table><tr><td>Nil</td><td>None</td></tr><tr><td>B</td><td>Back pressure check valve</td></tr><tr><td>R</td><td>External pilot specifications</td></tr></table></div>Note) Enter "-BR" for both options.</div></div>	Nil	None	B	Back pressure check valve	R	External pilot specifications	<div>SSQ2000-1A-4-<div></div><div>Option<div><table><tr><td>Nil</td><td>None</td></tr><tr><td>B</td><td>Back pressure check valve</td></tr><tr><td>R</td><td>External pilot specifications</td></tr></table></div>Note) Enter "-BR" for both options.</div></div>	Nil	None	B	Back pressure check valve	R	External pilot specifications
Nil	None												
B	Back pressure check valve												
R	External pilot specifications												
Nil	None												
B	Back pressure check valve												
R	External pilot specifications												

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

VFR

VQ7

Series SQ1000/2000

How to Add Manifold Stations for SQ1000/SQ2000

For F kit, P kit, J kit

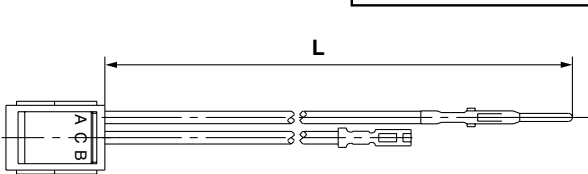
What to order: Lead wire assembly

SQ1000

D-sub connector kit (F kit)

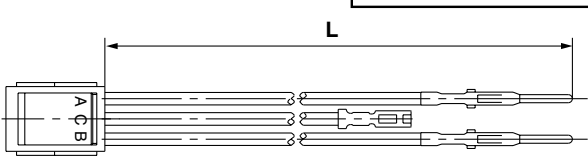
- For single wiring

SSQ1000-40A-F-205



- For double wiring

SSQ1000-41A-F-280

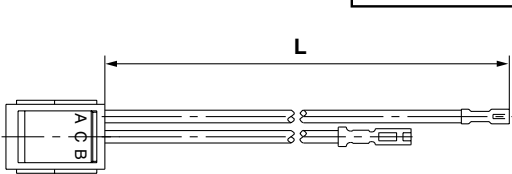


Stations	Symbol (L dimension)	Stations	Symbol (L dimension)
Station 2	165	Station 14	320
Station 3	175	Station 15	335
Station 4	190	Station 16	350
Station 5	205	Station 17	365
Station 6	215	Station 18	375
Station 7	230	Station 19	385
Station 8	245	Station 20	400
Station 9	260	Station 21	405
Station 10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

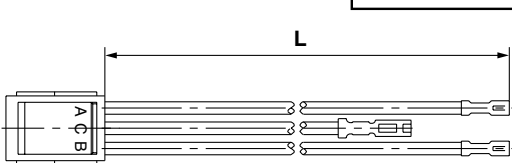
- For single wiring

SSQ1000-40A-P-200



- For double wiring

SSQ1000-41A-P-275



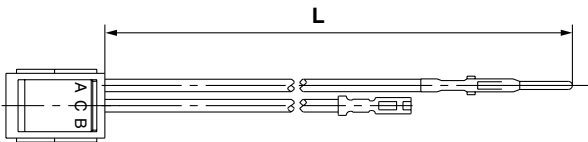
Stations	Symbol (L dimension)	Stations	Symbol (L dimension)
Station 2	160	Station 14	315
Station 3	170	Station 15	330
Station 4	185	Station 16	345
Station 5	200	Station 17	360
Station 6	210	Station 18	370
Station 7	225	Station 19	380
Station 8	240	Station 20	395
Station 9	255	Station 21	400
Station 10	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)

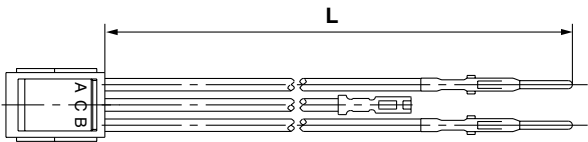
- For single wiring

SSQ1000-40A-F-250



- For double wiring

SSQ1000-41A-F-350

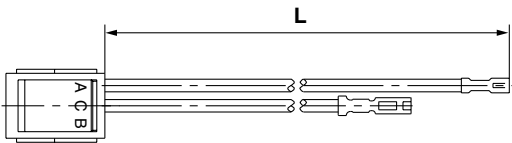


Stations	Symbol (L dimension)	Stations	Symbol (L dimension)
Station 2	190	Station 14	430
Station 3	210	Station 15	450
Station 4	230	Station 16	470
Station 5	250	Station 17	490
Station 6	270	Station 18	510
Station 7	290	Station 19	530
Station 8	310	Station 20	550
Station 9	330	Station 21	570
Station 10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

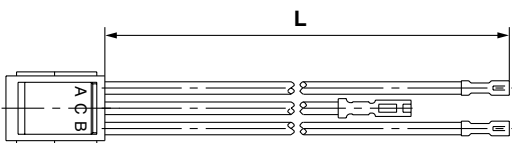
- For single wiring

SSQ1000-40A-P-250



- For double wiring

SSQ1000-41A-P-350



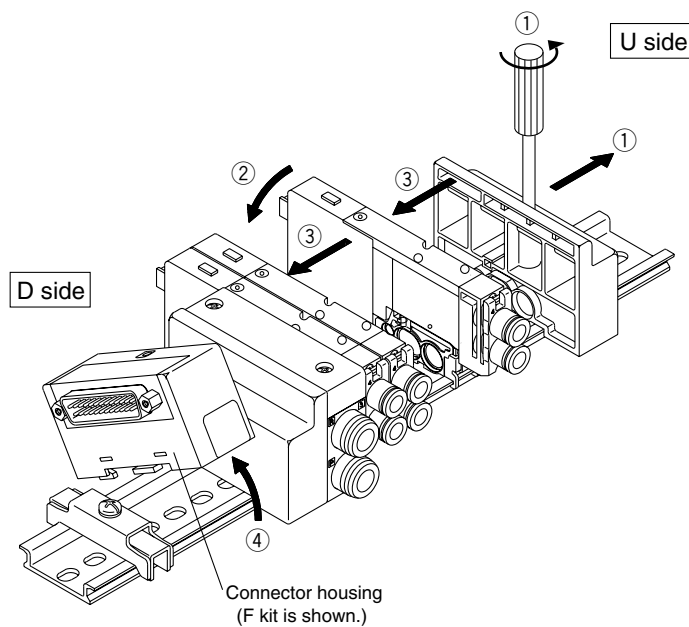
Stations	Symbol (L dimension)	Stations	Symbol (L dimension)
Station 2	190	Station 14	430
Station 3	210	Station 15	450
Station 4	230	Station 16	470
Station 5	250	Station 17	490
Station 6	270	Station 18	510
Station 7	290	Station 19	530
Station 8	310	Station 20	550
Station 9	330	Station 21	570
Station 10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

SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

How to Add Manifold Stations for SQ1000/SQ2000

Steps for adding stations

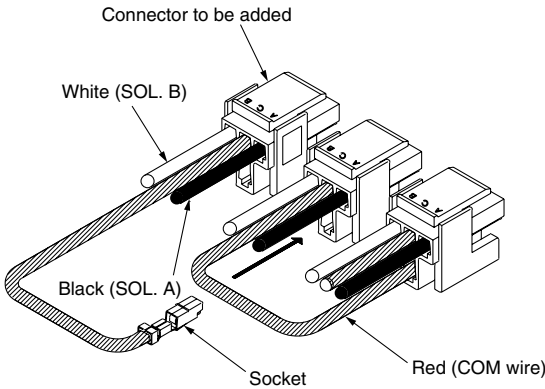
- ① Loosen the clamp screw on the U side end plate and open the manifold.
- ↓
- ② Mount the manifold block or valve with manifold block to be added.
- ↓
- ③ Press on the end plate to eliminate any space between the manifold blocks and tighten the clamp screw.
(Proper tightening torque: 0.8 to 1.0 N·m)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



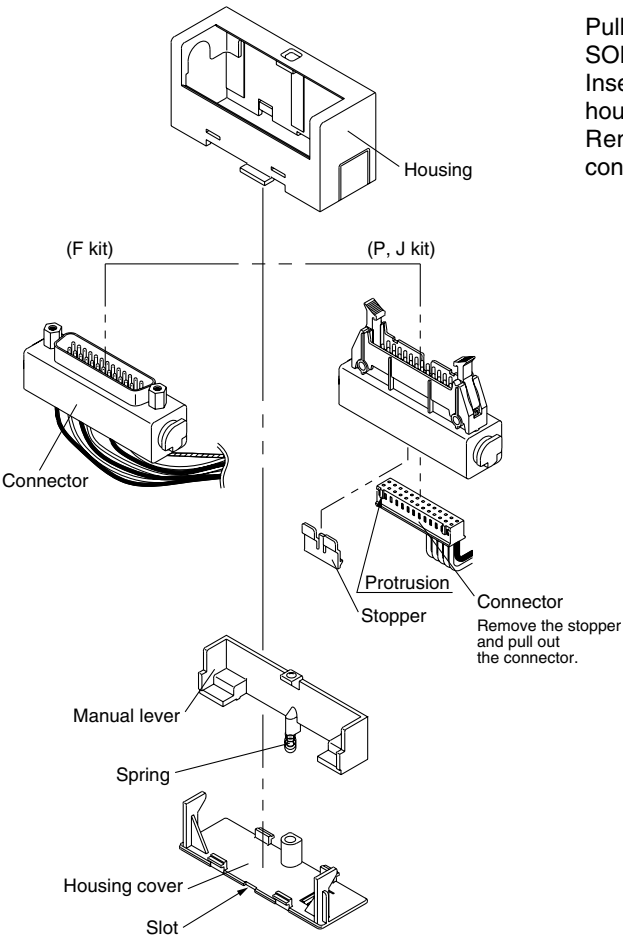
2. Connection Method

(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

SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

How to Add Manifold Stations for SQ1000/SQ2000

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

- ⚠ Caution

1.

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

2.

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

Wiring (F kit: D-sub connector kit)

Procedure)

Based on the manifold 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.

Lead wire assembly

Black

White

Hook

COM (Red)

Connector terminal no.

Station 1 Black, SOL. A --- 1

Station 3 Black, SOL. A --- 2

Station 4 Black, SOL. A --- 3

Station 5 Black, SOL. A --- 4

Station 6 Black, SOL. A --- 5

6

7

8

9

10

11

12

COM --- 13

14 --- Station 2 Black, SOL. A

15 --- Station 3 White, SOL. B

16 --- Station 4 White, SOL. B

17 --- Station 5 White, SOL. B

18

19

20

21

22

23

24

25

Terminal Lead wire

no.

color

1 station --- SOL.A --- 1 Black

2 stations --- SOL.A --- 14 Black

3 stations --- SOL.A --- 2 Black

3 stations --- SOL.B --- 15 White

4 stations --- SOL.A --- 3 Black

4 stations --- SOL.B --- 16 White

5 stations --- SOL.A --- 4 Black

5 stations --- SOL.B --- 17 White

6 stations --- SOL.A --- 5 Black

COM --- 13 Red

Manifold Specifications' Example

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

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

Wiring (P kit: Flat ribbon cable kit)

Procedure)

Based on the manifold 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.

Lead wire assembly

Protrusion

COM (Red)

Terminal no.

Station 2 Black, SOL. A --- 1A

Station 3 White, SOL. B --- 2A

Station 4 White, SOL. B --- 3A

Station 5 White, SOL. B --- 4A

5A

6A

7A

8A

9A

10A

11A

12A

COM (Red) --- 13A

1B --- Station 1 Black, SOL. A

2B --- Station 3 Black, SOL. A

3B --- Station 4 Black, SOL. A

4B --- Station 5 Black, SOL. A

5B --- Station 6 Black, SOL. A

6A

7B

8B

9B

10B

11B

12B

13B --- COM (Red)

Terminal Lead wire

no.

color

1 station --- SOL.A --- 1B Black

2 stations --- SOL.A --- 1A Black

3 stations --- SOL.A --- 2B Black

3 stations --- SOL.B --- 2A White

4 stations --- SOL.A --- 3B Black

4 stations --- SOL.B --- 3A White

5 stations --- SOL.A --- 4B Black

5 stations --- SOL.B --- 4A White

6 stations --- SOL.A --- 5B Black

COM --- 13A Red

COM --- 13B Red

Manifold Specifications' Example

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

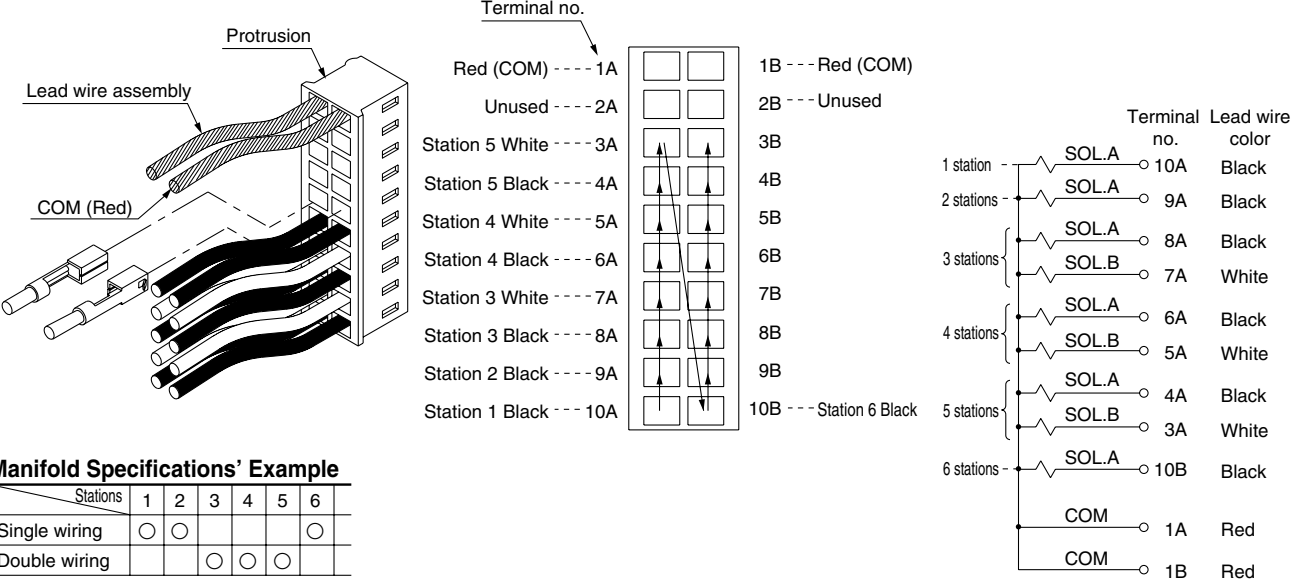
* The drawing above shows connections for type 26P flat ribbon cable connector based on the manifold specification example in the table to the left.
For type 20P, the connection will be the same as above except that COM changes to 10A and 10B.

1098

SMC

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.



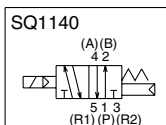
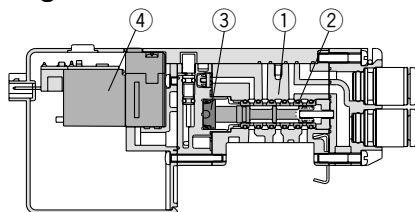
- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ**
- VFS
- VFR
- VQ7

Series SQ1000

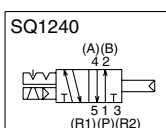
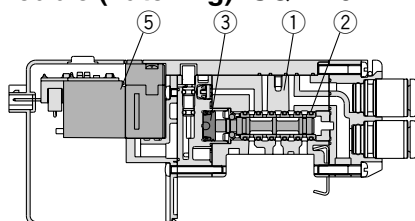
Construction: Series SQ1000 Plug Lead Type Main Parts and Pilot Valve Assembly

Metal seal type

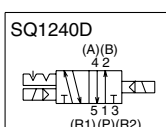
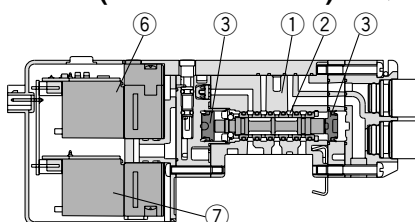
Single: SQ1140



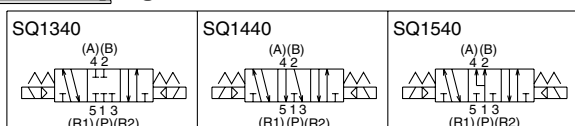
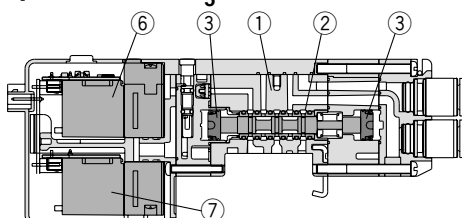
Double (Latching): SQ1240



Double (Double solenoid): SQ1240D



3 position: SQ1 $\frac{3}{4}$ 40



Component Parts

No.	Description	Material
1	Body	Zinc die-casted
2	Spool/Sleeve	Stainless steel (Metal seal)
2	Spool	Aluminum (Rubber seal)
3	Piston	Resin

Pilot Valve Assembly Note)

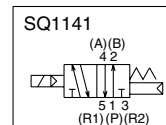
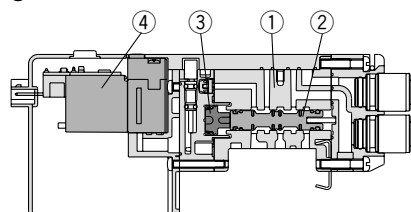
No.	Model	SQ1□4□
4	For single	VQ110 ^(K) _(Y) - ⁵ / ₆ (N)J1(B)-(-Q)
5	For double (Latching)	VQ110L ^(K) _(Y) - ⁵ / ₆ J2(-Q) Negative COM: VQ110N ^(K) _(Y) - ⁵ / ₆ J2(-Q)
6	For double (Double solenoid) on A side	VQ110 ^(K) _(Y) - ⁵ / ₆ (N)J3(B)-(-Q)
7	For double (Double solenoid) on B side	VQ111 ^(K) _(Y) - ⁵ / ₆ J4(-Q)
8	Dual 3 port: For A side	VQ110(Y)- ⁵ / ₆ (N)J3(B)-X274(-Q)
9	Dual 3 port: For B side	VQ111(Y)- ⁵ / ₆ J4-X274(-Q)

Note 1) Nil: Standard N : Negative COM specifications
B : Locking type manual override Y : Low wattage specifications
K : High pressure specifications (metal seal only)

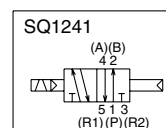
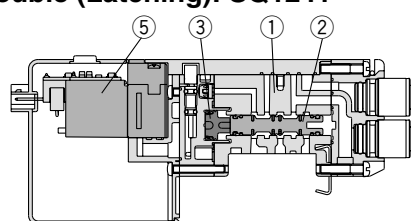
Note 2) Suffix "-Q" to the end of the part number for CE compliant.

Rubber seal type

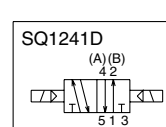
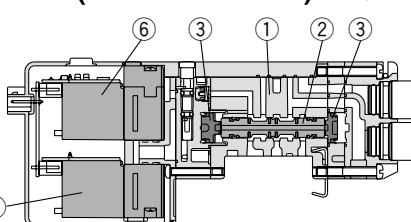
Single: SQ1141



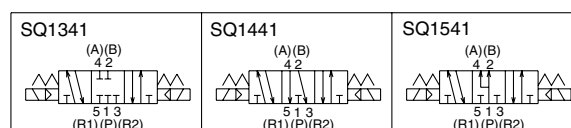
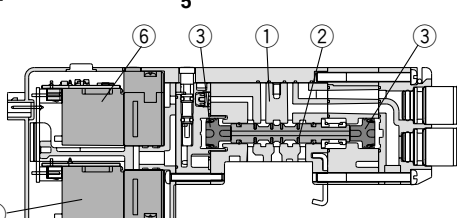
Double (Latching): SQ1241



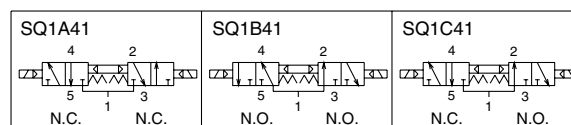
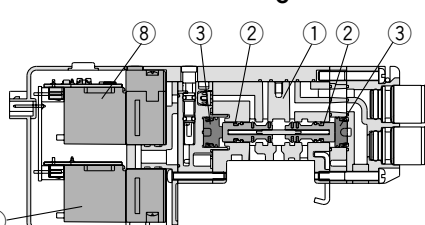
Double (Double solenoid): SQ1241D



3 position: SQ1 $\frac{3}{4}$ 41



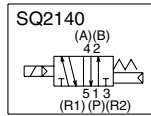
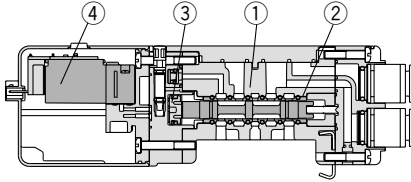
Dual 3 port valve: SQ1 $\frac{A}{B}$ 41



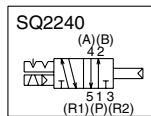
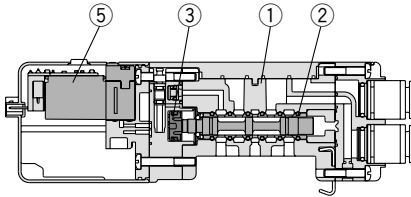
Construction: Series SQ2000 Plug Lead Type Main Parts and Pilot Valve Assembly

Metal seal type

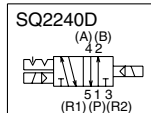
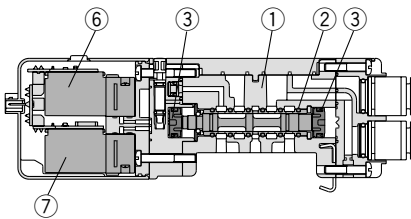
Single: SQ2140



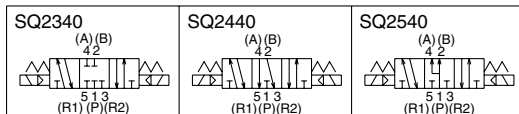
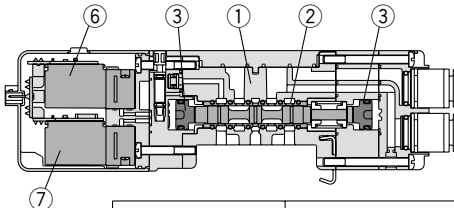
Double (Latching): SQ2240



Double (Double solenoid): SQ2240D



3 position: SQ2 $\frac{3}{4}$ 40



Component Parts

No.	Description	Material
1	Body	Zinc die-casted
2	Spool/Sleeve	Stainless steel (Metal seal)
	Spool	Aluminum (Rubber seal)
3	Piston	Resin

Pilot Valve Assembly Note)

No.	Model	SQ2□4□
4	For single	VQ111S(Y)- $\frac{5}{6}$ (N)J21(-Q)
5	For double (Latching)	VQ110SL- $\frac{5}{6}$ J22(-Q) Negative COM: VQ110SN- $\frac{5}{6}$ J22(-Q)
6	For double (Double solenoid) on A side 3P: For A side	VQ111S(Y)- $\frac{5}{6}$ (N)J23(-Q)
7	For double (Double solenoid) on B side 3P: For B side	VQ111S(Y)- $\frac{5}{6}$ J24(-Q)
8	Dual 3 port: For A side	VQ111S(Y)- $\frac{5}{6}$ (N)J23-X274(-Q)
9	Dual 3 port: For B side	VQ111S(Y)- $\frac{5}{6}$ J24-X274(-Q)

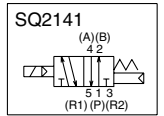
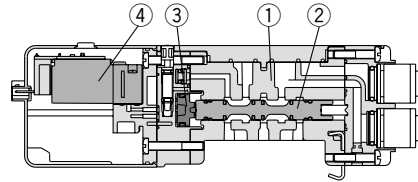


Note 1) Nil : Standard
N : Negative COM specifications
Y : Low wattage specifications

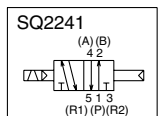
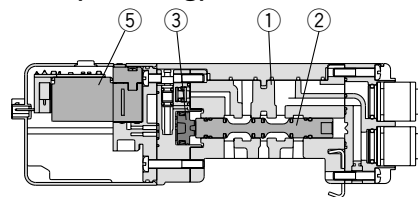
Note 2) Suffix "-Q" to the end of the part number for CE compliant.

Rubber seal type

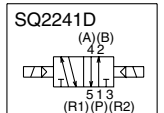
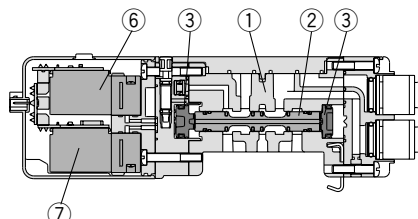
Single: SQ2141



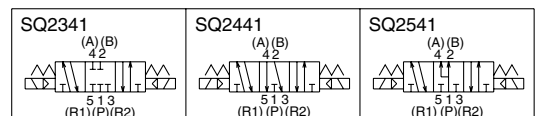
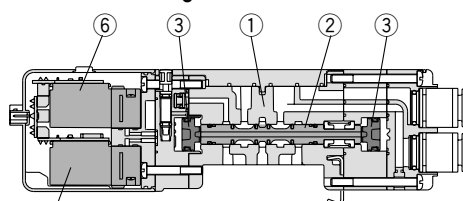
Double (Latching): SQ2241



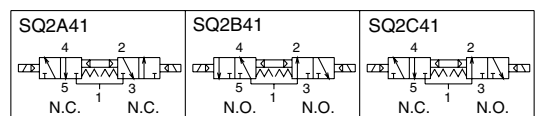
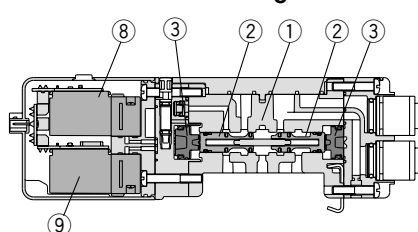
Double (Double solenoid): SQ2241D



3 position: SQ2 $\frac{3}{4}$ 41



Dual 3 port valve: SQ2 $\frac{A}{B}$ 41



SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

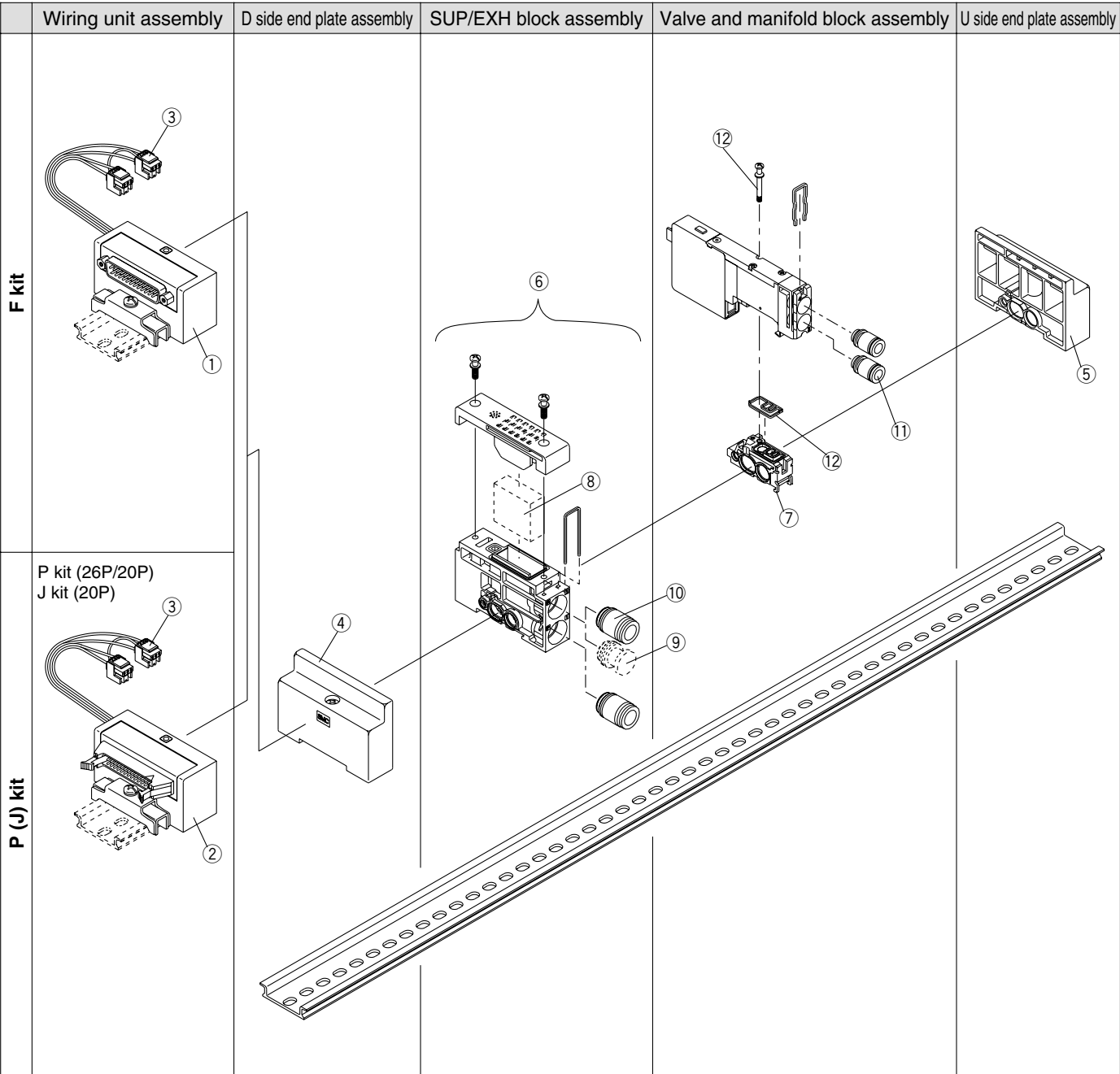
VFR

VQ7

Series **SQ1000**

Exploded View of Manifold: SQ1000 (Plug lead type manifold) SS5Q14

(F, P, J, C kit)



Manifold Spare Parts



Refer to pages 1094 to 1099 of "How to Add Manifold Stations" regarding the mounting of each spare parts.

<① D-sub connector housing assembly>

AXT100 - 40 - FL25 - S 03

Wiring		Stations	
S	Single wiring	01	For 1 station
D	Double wiring	24	For 24 stations

<② Flat ribbon cable connector housing assembly>

AXT100 - 40 - PL20 - S 03

Wiring		Stations (Note)	
S	Single wiring	01	For 1 station
D	Double wiring	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		Lead wire length	
3	For double (3-wire)	Symbol	L dimension (mm)
4	For single (2-wire)	Nil	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	
Nil	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	
Nil	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 1109 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>

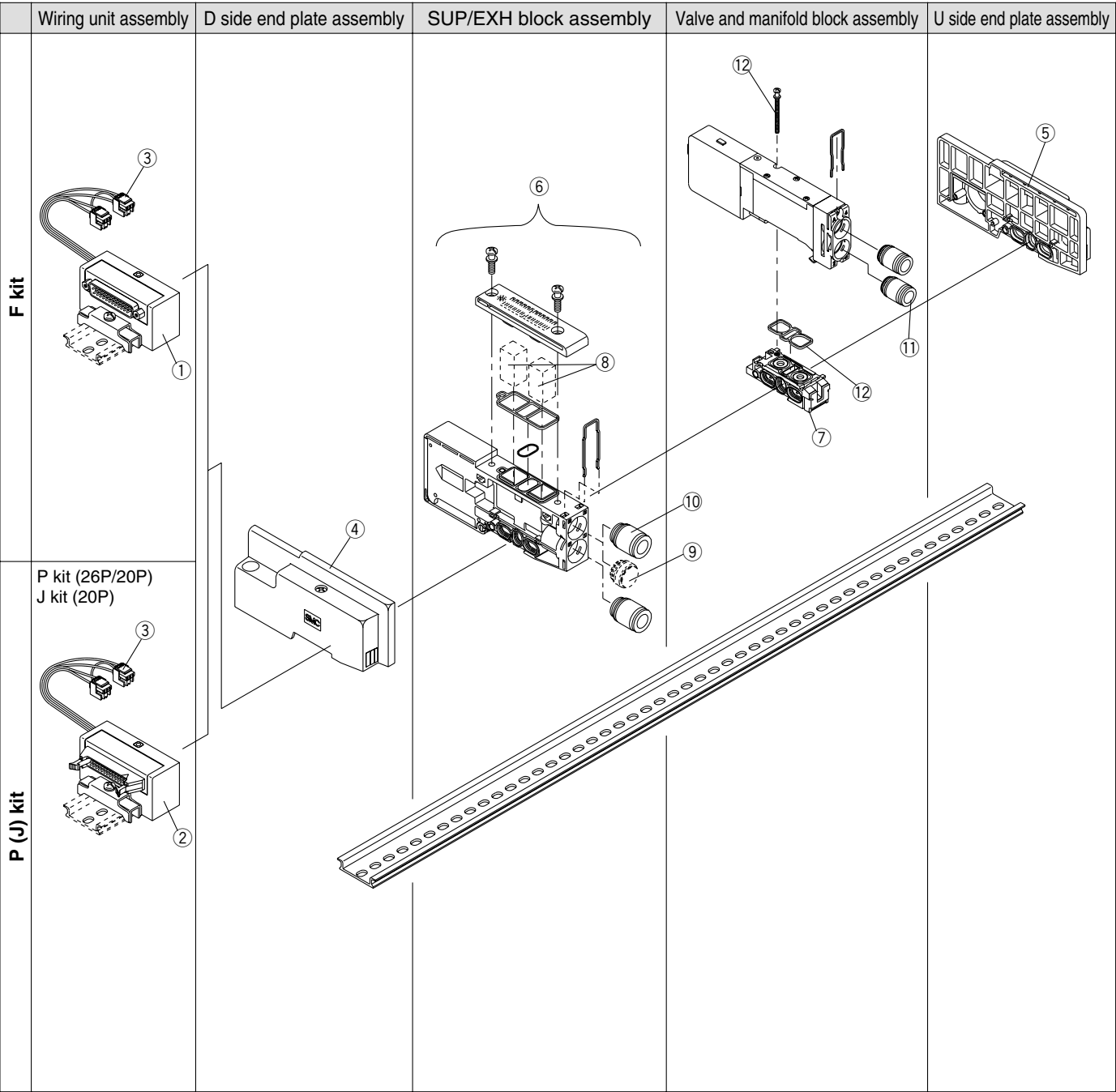
SQ1000 - GS

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

Series **SQ2000**

Exploded View of Manifold: SQ2000 (Plug lead type manifold) SS5Q24

(F, P, J, C kit)



Manifold Spare Parts

Refer to pages 1094 to 1099 of "How to Add Manifold Stations" regarding the mounting of each spare parts.

<① D-sub connector housing assembly>

AXT100 - 41 - FL25 - S 03

Wiring	Stations
S Single wiring	01 For 1 station
D Double wiring	12 For 12 stations

<② Flat ribbon cable connector housing assembly>

AXT100 - 41 - PL20 - S 03
PL26
JL20

Wiring	Stations	Note
S Single wiring	01 For 1 station	PL26: 01 to 12 (P kit, 26P)
D Double wiring	12 For 12 stations	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)

Symbol	L dimension (mm)
Nil	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
Nil DIN rail mount style
E Direct mount style

<⑤ U side end plate assembly>

SSQ2000 - 2A - 4 - 1

Manifold mounting
Nil DIN rail mount style
E Direct mount 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
Nil Common exhaust type
R External pilot
S Built-in silencer, direct exhaust

Note) Enter "-RS" for both options.

<⑦ Manifold block assembly>

SSQ2000 - 1A - 4 -

Including gaskets ⑫

Option
Nil 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 1109 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 front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Manual Override

⚠ Warning

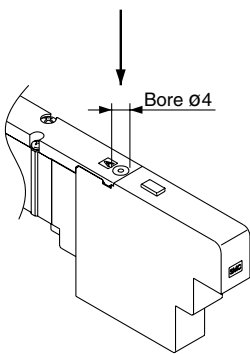
Use to switch the main valve.

Push Type (Tool required)

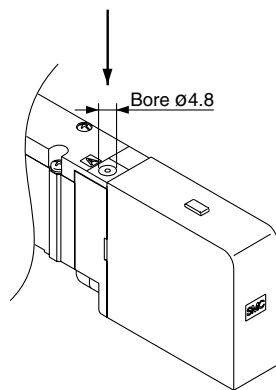
Push down on the manual override button with a small screwdriver until it stops.

(Available for all types except 2 position double (Latching).)

SQ1000

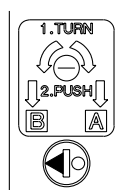


SQ2000

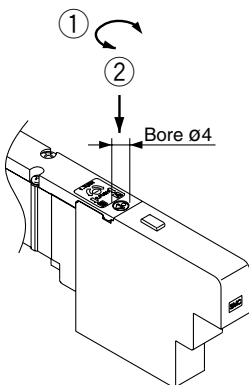


Push Type (Tool required) 2 Position Double (Latching) Type

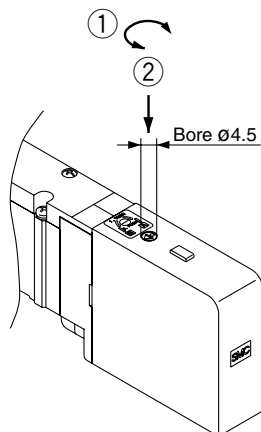
- To lock in set position (Flow path: P → A): Turn the manual override clockwise by 180° to ► mark press down. Valve is now locked in the set condition. (Flow path: P → A)
- To reset (Flow path: P → B): Turn manual override counterclockwise to mark ► and press down. Valve will then be in the reset condition.



SQ1000



SQ2000



<Caution>

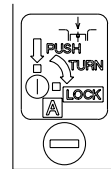
Do not turn the manual override when it is pushed in, as this may cause damage.

The construction is such that the operating force is different on sides A and B.

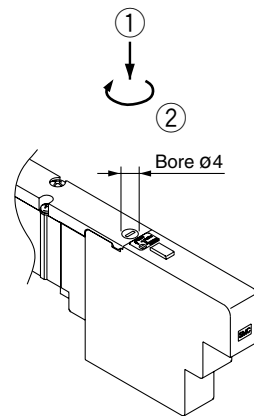
Locking Type (Tool required)

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.

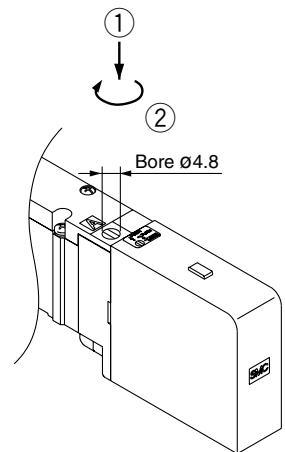
(Available for all types except 2 position double (Latching).)



SQ1000



SQ2000

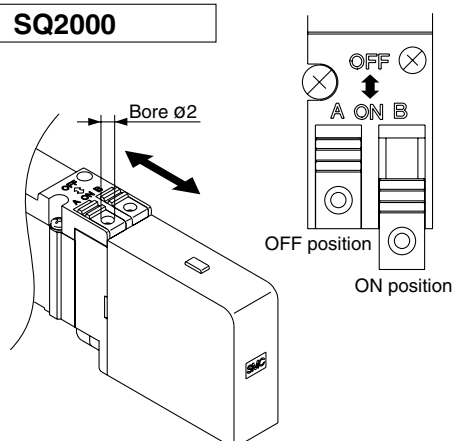


Slide Locking Type (Manual type)

(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. (Available for all types except 2 position double (Latching).)

SQ2000





Series SQ1000/2000

Specific Product Precautions 2

Be sure to read before handling.

Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

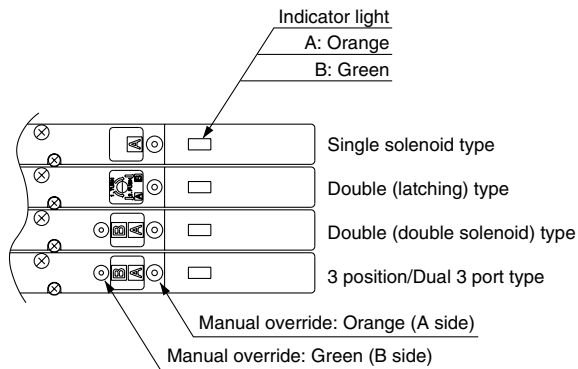
Light/Surge Voltage Suppressor

Caution

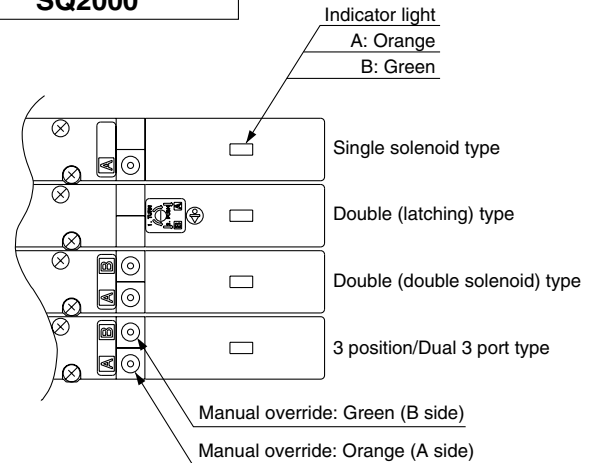
Indicator lights are all positioned on one side for both single solenoid and double solenoid types.

For double, 3 position, and 4 position dual 3 port types, 2 colors are used to indicate the energization of A side or B side.

SQ1000

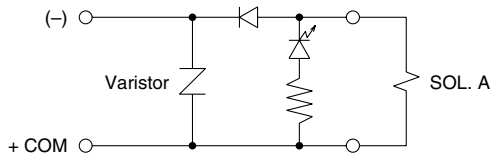


SQ2000

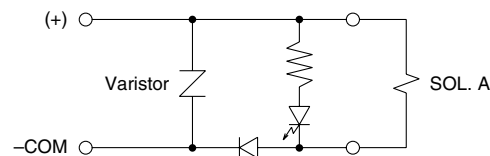


● Single Solenoid Type (SQ1000/2000)

Positive common specifications



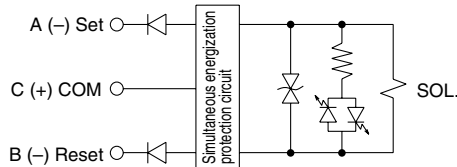
Negative common specifications



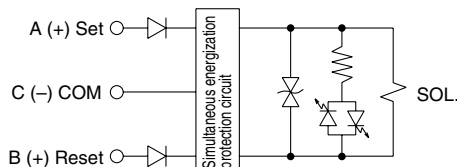
Note) Coil surge voltage generated when OFF is about -60 V.

● Double (Latching) Type (SQ1000/2000)

Positive common specifications



Negative common specifications



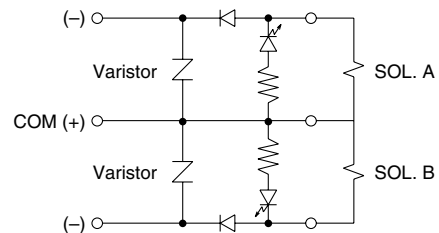
Note) Coil surge voltage generated when OFF is about -10 V.

● Double (Double solenoid) Type (SQ1000/2000)

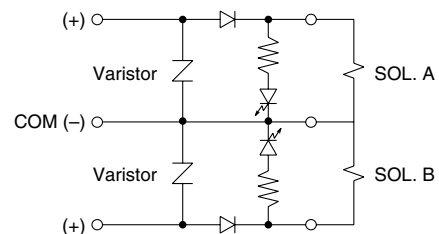
● 3 Position Type (SQ1000/2000)

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

Positive common specifications



Negative common specifications



Note) Coil surge voltage generated when OFF is about -60 V.

* Please contact SMC separately for further suppression of the coil surge voltage.



Series SQ1000/2000

Specific Product Precautions 3

Be sure to read before handling.

Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

2 Position Double (Latching solenoid) Type

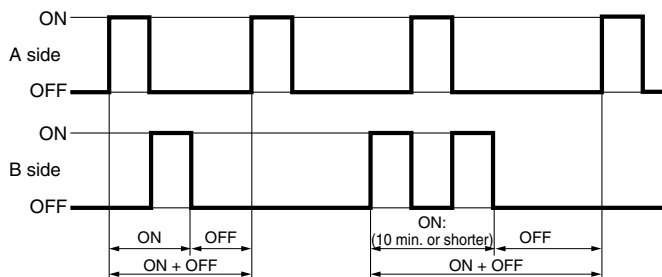
⚠ Caution

Within the double type, a latching (with self holding mechanism) solenoid type is available in addition to the conventional double solenoid. The appearance is the same as the single solenoid. However, the construction allows the armature inside the solenoid to hold the A side ON position and B side ON position during momentary energization (20 ms or longer). The operating method and functions are the same as the conventional double solenoid type.

<Special precautions for latching solenoid>

1. Use in a circuit that does not have simultaneous energization of ON and OFF signals.
2. To operate with momentary energization, the energized time should be 20 ms or longer.
3. Although there is no problem for normal operations and environments, do not operate in an environment with vibration (3 G or more) or strong magnetic field.
4. This valve is shipped with the armature inside the solenoid holding the B side ON position (Reset). However, energize to conform whether it is holding the A side ON position or B side ON position before operation.
5. Do not continuously energize the latching type. If it is necessary to energize it continuously, the time should be shorter than 10 minutes and the de-energized time (Both A and B sides are OFF.) before starting the next operation should be longer than the energized time. Duty ratio should be 50% or less.

When the valve is energized for the extended periods of time, select double solenoid, low wattage type, SQ₂¹2₄₁³⁰DY-□□-□.



• ON: Max. 10 minutes

• Duty ratio ≤ 50% (Duty ratio = $\frac{\text{ON}}{\text{ON} + \text{OFF}}$)

Example: When the energized time is 5 minutes, keep the de-energized time over 5 minutes. Since the latching type is equipped with one solenoid, make sure for both A and B sides to be OFF over 5 minutes.

Mounting and Removal of Valves

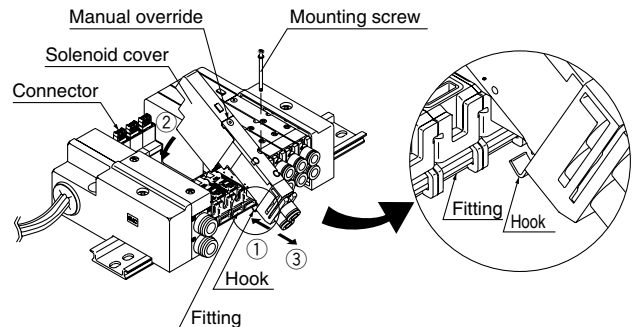
⚠ Caution

Mounting

- Insert the hook of the valve into the fitting on the manifold block, then push the valve down into place and tighten the mounting screw.
- Tighten the screw with the appropriate tightening torque shown below.

SQ1000	0.17 to 0.23 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.

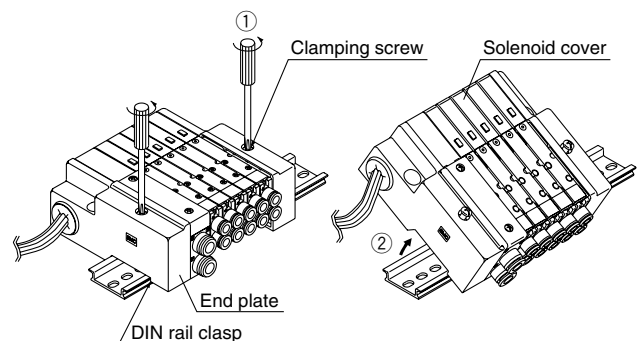
If it is difficult to loosen the screw, loosen it while pressing the valve gently on the area near the manual override.

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.



Series SQ1000/2000 Specific Product Precautions 4

Be sure to read before handling.

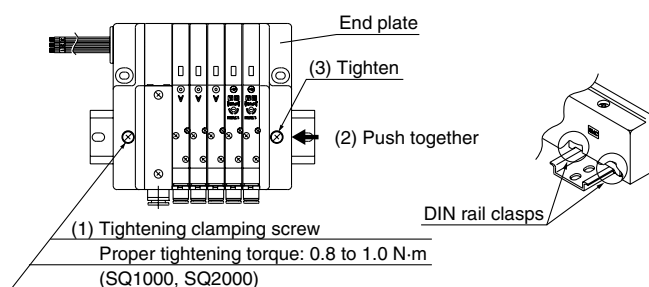
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Mounting and Removal of Manifold with DIN Rail

Caution

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.

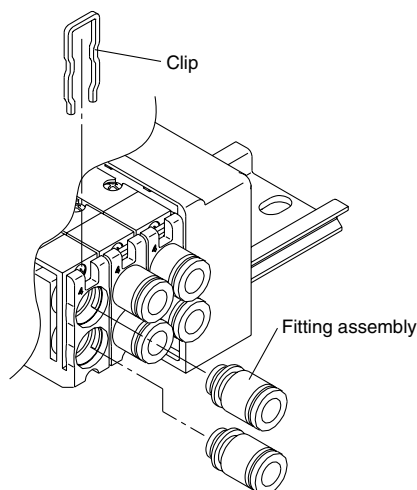
To mount a fitting, insert the fitting assembly until it stops and re-insert the clip to its designated position.

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

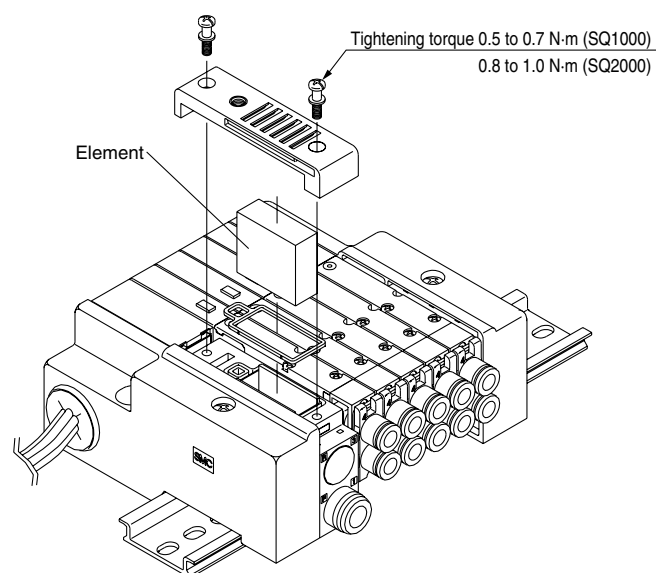
Caution

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 front matters 44 to 47.

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

VFR

VQ7

