Type 20P/N

Series SX3000/5000/7000
Body Ported Manifold
Bar Stock Type
Flat Ribbon Cable

How to Order Manifold

SS5X 5 — 20 P — 05 ☐

Series

3	SX3000
5	SX5000
7	SX7000

Stations

03	3 stations
⋮	⋮
12	12 stations

Note) For SS5X3: 4 to 12 stations.

P, R ports Thread type

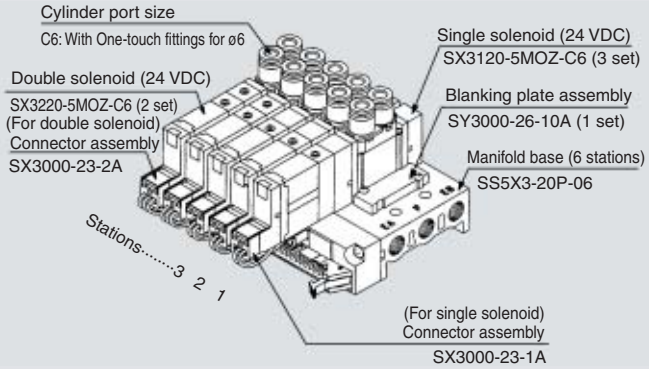
Nil	Rc
00F	G
00N	NPT
00T	NPTF

Common specifications

P	Positive common
N	Negative common

How to Order Valve Manifold Assembly

Ordering example



SS5X3-20P-06····· 1 set (Type 20P, 6-station manifold no.)
∗SY3000-26-10A····· 1 set (Blanking plate assembly part no.)
∗SX3120-5MOZ-C6··· 3 sets (Single solenoid part no.)
∗SX3220-5MOZ-C6··· 2 sets (Double solenoid part no.)
∗SX3000-23-1A····· 3 sets (Connector assembly no.)
∗SX3000-23-2A····· 2 sets (Connector assembly no.)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

How to Order Valves

SX 5 1 20 — 5 N MOZ ☐ — 01 ☐

Series

3	SX3000
5	SX5000
7	SX7000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Rated voltage

5	24 VDC
6	12 VDC

Common specifications

Nil	Positive common
N	Negative common

∗ Common specifications for the valve must correspond with common specifications for the manifold.

Manual override

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

A/B port size
Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SX3000
01	1/8	SX5000
02	1/4	SX7000

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SX3000
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SX5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
C8	One-touch fitting for ø8	SX7000
C10	One-touch fitting for ø10	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SX3000
N7	One-touch fitting for ø1/4"	
N3	One-touch fitting for ø5/32"	SX5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
N9	One-touch fitting for ø5/16"	SX7000
N11	One-touch fitting for ø3/8"	

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

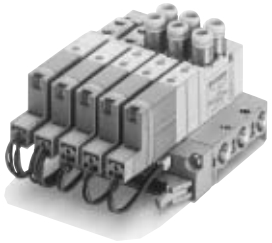
How to Order Connector Assembly

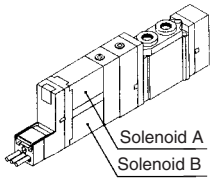
- Positive common specifications
  For single solenoid: SX3000-23-1A
  For double solenoid, 3 position: SX3000-23-2A
- Negative common specifications
  For single solenoid: SX3000-24-1A
  For double solenoid, 3 position: SX3000-24-2A

For detailed information on connector assembly, refer to page 1-6-9.

- **Multiple valve wiring is simplified through the use of the flat cable connector.**
- **Clean appearance**

In the case of a flat cable style, each valve is wired on the print board of manifold base to allow the external wiring to be piped all together with 26 pins MIL connector.





Manifold Specifications

Model		SS5X3-20P/N	SS5X5-20P/N	SS5X7-20P/N
Applicable valve		SX3□20	SX5□20	SX7□20
Manifold type		Single base/B mount		
P (SUP), R (EXH)		Common SUP/Common EXH		
Valve stations Note (1)		4 to 12 stations	3 to 12 stations	
A, B port location		Valve		
Port size	P, EA, EB port	1/8	1/4	1/4
	A, B port	M5 x 0.8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	1/8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	1/4 C8 (One-touch fitting for ø8) C10 (One-touch fitting for ø10)
Manifold base weight W (g) n: Stations		W = 19n + 45	W = 43n + 77	W = 51n + 81
Applicable flat ribbon cable connector		Socket: 26 pins MIL with strain relief (Conforming to MIL-C-83503)		
Internal wiring (2)		+COM (Type 20P), –COM (Type 20N)		
Rated voltage		12, 24 VDC		

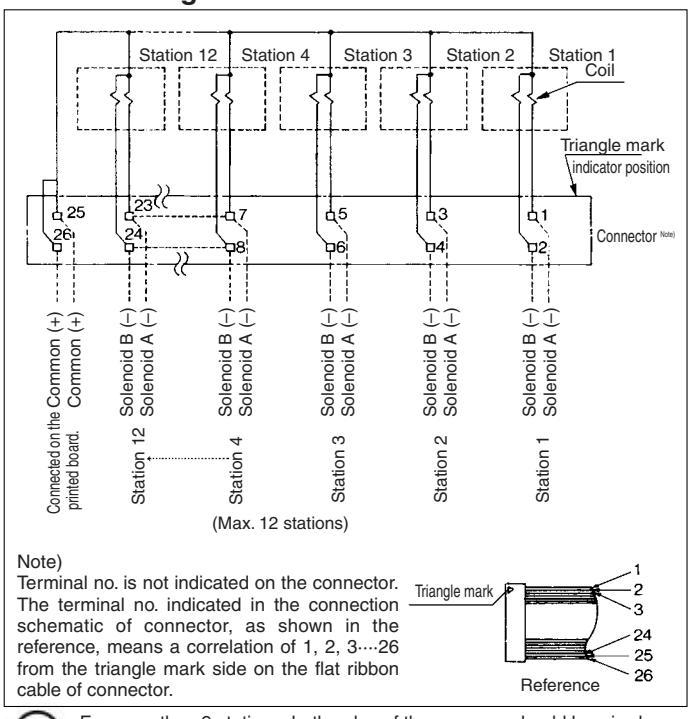
Note 1) For more than 10 stations (more than 5 stations in case of SS5X7), supply pressure to P port on both sides and exhaust from EA and EB port on both sides.
Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.

Flow Characteristics

Model	Port size		Flow characteristics					
			1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
SS5X3-20P/N	Rc 1/8	C6	0.72	0.29	0.18	0.80	0.36	0.21
SS5X5-20P/N	Rc 1/4	C8	1.9	0.28	0.48	2.2	0.20	0.53
SS5X7-20P/N	Rc 1/4	C10	3.6	0.31	0.93	3.6	0.27	0.88

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

Internal Wiring of Manifold

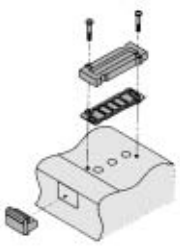


Note)
Terminal no. is not indicated on the connector. The terminal no. indicated in the connection schematic of connector, as shown in the reference, means a correlation of 1, 2, 3····26 from the triangle mark side on the flat ribbon cable of connector.

- For more than 9 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid A side.
- The maximum number of stations is 12. If more than 12 stations are required, please consult with SMC.
- –COM and +COM specifications are available. (Diagram above is for +COM specifications.)

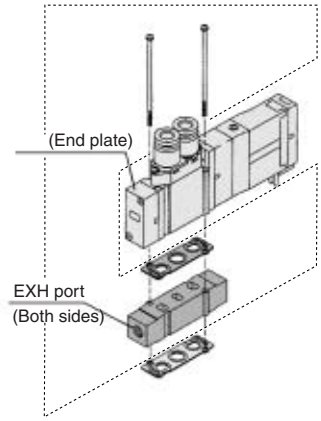
Manifold Option

■ Blanking plate assembly



Series	Assembly part no.
SX3000	SY3000-26-10A
SX5000	SY5000-26-21A
SX7000	SY7000-26-23A

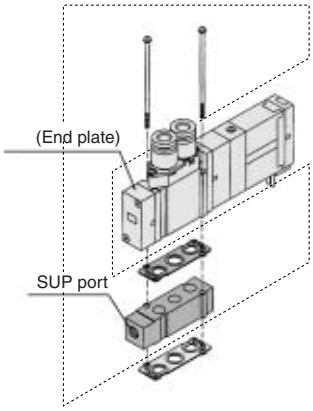
■ Individual EXH spacer assembly



Series	Assembly part no.	Port size
SX3000	SX3000-39-20A	M5 x 0.8
SX5000	SX5000-39-1⊠A	1/8
SX7000	SX7000-39-1⊠A	1/4

Note) For protection of the wiring unit section from drain, it should be piped at the EA port so that it will not be directly exposed to exhaust from the valve.

■ Individual SUP spacer assembly



Series	Assembly part no.	Port size
SX3000	SX3000-38-20A	M5 x 0.8
SX5000	SX5000-38-1⊠A	1/8
SX7000	SX7000-38-1⊠A	1/4

Note) The SUP port may be either on the lead wire side or on the end plate side (Factory assembled spacer will be shipped with the orientation shown in the figure.)

⚠ Caution

Mounting screw tightening torques

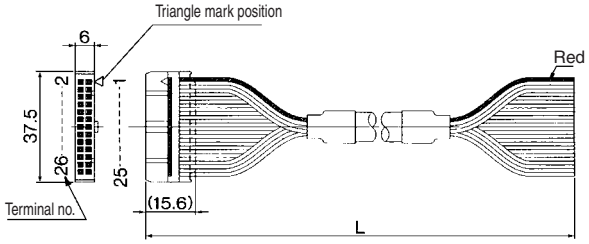
M2: 0.17 N·m
M3: 0.8 N·m
M4: 1.4 N·m

∗ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

■ Cable assembly

AXT100-FC26- 1 to 3



Connector Assembly for Flat Ribbon Cable

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-FC26-1	Cable 26 cores x 28AWG
3 m	AXT100-FC26-2	
5 m	AXT100-FC26-3	

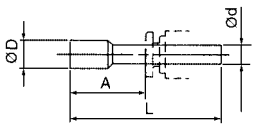
∗ For other commercial connectors, use a 26 pins type with strain relief conforming to MIL-C-83503.

Connector manufacturers' example

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

■ Plug

These are inserted in cylinder ports or SUP/EXH ports which are not being used.
Purchasing order is available in units of 10 pieces.



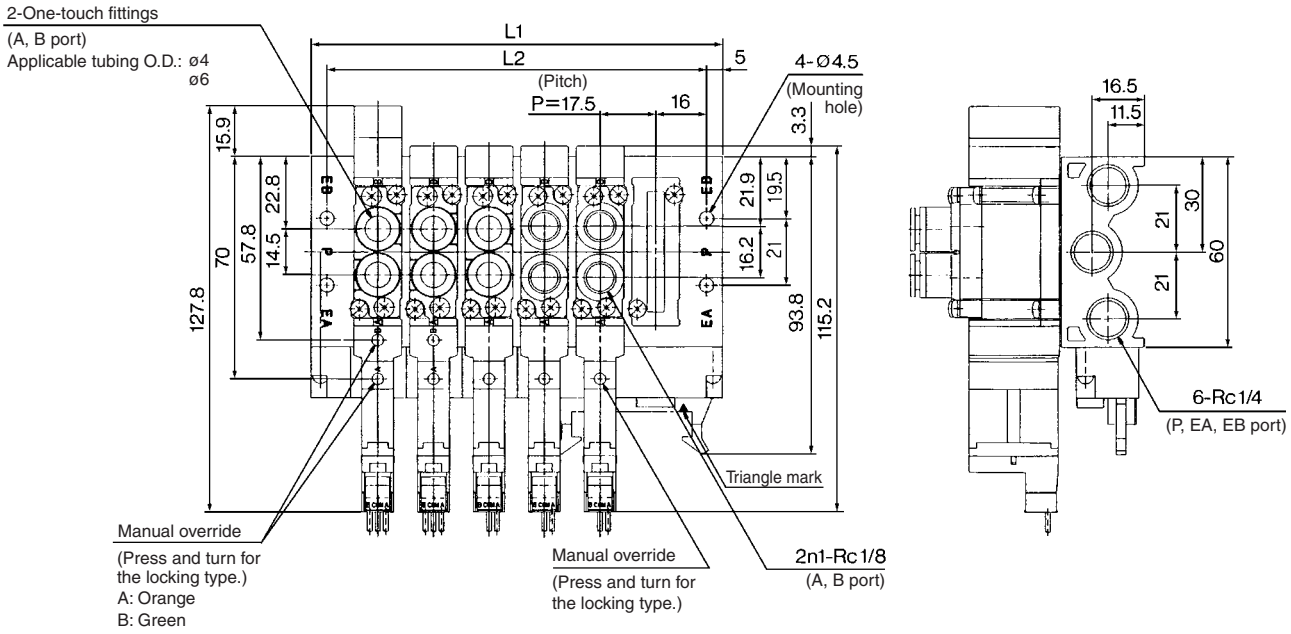
Dimensions

Applicable fittings fitting ød	Model	A	L	D
4	**KQ2P-04**	16	32	6
6	**KQ2P-06**	18	35	8
8	**KQ2P-08**	20.5	39	10
10	**KQ2P-10**	22	43	12
5/32"	**KQ2P-03**	16	32	6
1/4"	**KQ2P-07**	18	35	8.5
5/16"	**KQ2P-09**	20.5	39	10
3/8"	**KQ2P-11**	22	43	11.5

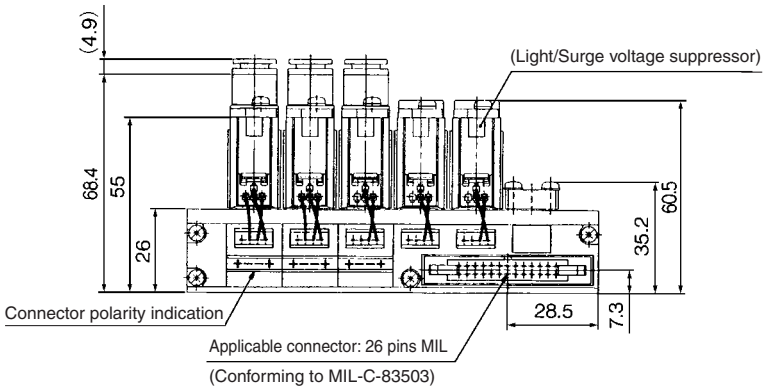
⚠ Warning

When mounting a valve or spacer on the manifold base or sub-plate, etc., those mounting directions are determined. If mounted in the wrong direction, the equipment to be connected may cause malfunction. Refer to external dimensions in pages 1-6-51 to 1-6-53, and then mount it.

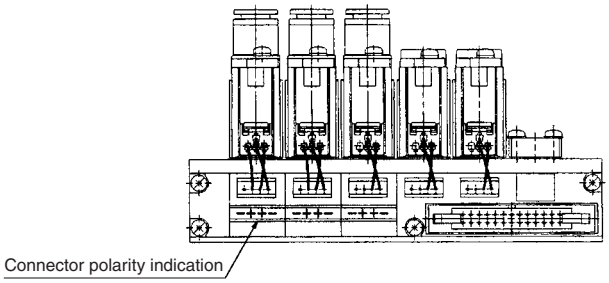
SX5000: SS5X5-20P- Stations



(n) ····· (2) (1) stations



SS5X5-20N



n: Stations (n1 + n2)

Stations n	3	4	5	6	7	8	9	10	11	12
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L2	67	84.5	102	119.5	137	154.5	172	189.5	207	224.5

Type 41P/N
Type 42P/N

Series SX3000/5000/7000
Base Mounted Manifold
Bar Stock Type
Flat Ribbon Cable

How to Order Manifold

Type 41P/N (Compact type)

SS5X 5 — 41 P — 05 — C8 ☐

Series

3	SX3000
5	SX5000

Common specifications

P	Positive common
N	Negative common

Stations

03	3 stations
⋮	⋮
12	12 stations

Note) For SS5X3: 4 to 12 stations.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

A/B port size Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SX3000
01	1/8	SX5000

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SX3000
C6	One-touch fitting for ø6	
C6	One-touch fitting for ø6	SX5000
C8	One-touch fitting for ø8	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SX3000
N7	One-touch fitting for ø1/4"	
N7	One-touch fitting for ø1/4"	SX5000
N9	One-touch fitting for ø5/16"	

Type 42P/N (Common external pilot type)

SS5X 5 — 42 P — 05 — C8 ☐

Series

3	SX3000
5	SX5000
7	SX7000

Common specifications

P	Positive common
N	Negative common

Stations

03	3 stations
⋮	⋮
12	12 stations

Note) For SS5X3: 4 to 12 stations.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

A/B port size Thread piping

Symbol	Port size	Applicable series
01	1/8	SX3000
02	1/4	SX5000
02	1/4	SX7000

One-touch fitting (Metric size)

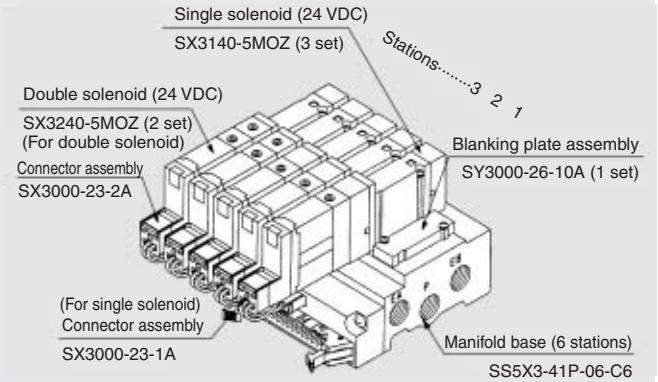
Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SX3000
C6	One-touch fitting for ø6	
C6	One-touch fitting for ø6	SX5000
C8	One-touch fitting for ø8	
C10	One-touch fitting for ø10	SX7000

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SX3000
N7	One-touch fitting for ø1/4"	
N7	One-touch fitting for ø1/4"	SX5000
N9	One-touch fitting for ø5/16"	
N11	One-touch fitting for ø3/8"	SX7000

How to Order Valve Manifold Assembly

Ordering example



SS5X3-41P-06-C6 ····· 1 set (Type 41P, 6-station manifold base part no.)
∗SY3000-26-10A····· 1 set (Blanking plate assembly part no.)
∗SX3140-5MOZ ····· 3 sets (Single solenoid part no.)
∗SX3240-5MOZ ····· 2 sets (Double solenoid part no.)
∗SX3000-23-1A ····· 3 sets (Connector assembly no.)
∗SX3000-23-2A ····· 2 sets (Connector assembly no.)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

How to Order Valves

SX [5] [1] **40** [ ] — [5] [N] **MOZ** [ ]

Series

3	SX3000
5	SX5000
7	SX7000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Pilot type

Nil	Internal pilot
R	External pilot

Rated voltage

5	24 VDC
6	12 VDC

Common specifications

Nil	Positive common
N	Negative common

* Common specifications for the valve must correspond with common specifications for the manifold.

Manual override

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

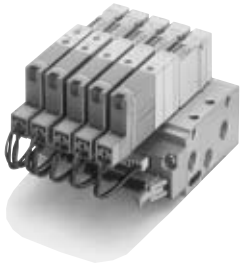
How to Order Connector Assembly

- Positive common specifications
  For single solenoid: SX3000-23-1A
  For double solenoid, 3 position: SX3000-23-2A
- Negative common specifications
  For single solenoid: SX3000-24-1A
  For double solenoid, 3 position: SX3000-24-2A

For detailed information on connector assembly, refer to page 1-6-9.

- **Multiple valve wiring is simplified through the use of the flat cable connector.**
- **Clean appearance**

In case of a flat cable style, each valve is wired on the print board of manifold base to allow the external wiring to be piped all together with 26 pins MIL connector.



Flat Ribbon Cable Manifold Specifications

Model		SS5X3-41P/N	SS5X3-42P/N	SS5X5-41P/N	SS5X5-42P/N	SS5X7-42P/N
Applicable valve		SX3□40	SX3□40(R)	SX5□40	SX5□40(R)	SX7□40(R)
Manifold type		Single base/B mount				
P (SUP)/R (EXH)		Common SUP/Common EXH				
Valve stations (1)		4 to 12 stations		3 to 12 stations		
A, B port specifications	Location	Base				
	Direction	Side				
Port size	P, EA, EB port	Rc 1/8		Rc 1/4		Rc 1/4
	A, B port	M5 x 0.8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	Rc 1/8 C4 (One-touch fitting ø4) C6 (One-touch fitting for ø6)	Rc 1/8 C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	Rc 1/4 C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	Rc 1/4 C10 (One-touch fitting for ø10)
Manifold base weight W (g) n: Stations		W = 39n + 83	W = 48n + 99	W = 67n + 118	W = 88n + 151	W = 109n + 174
Applicable flat ribbon cable connector		Socket: 26 pins MIL with strain relief (Conforming to MIL-C-83503)				
Internal wiring (2)		+COM (Type 41P, 42P), –COM (Type 41N, 42N)				
Rated voltage		12, 24 VDC				

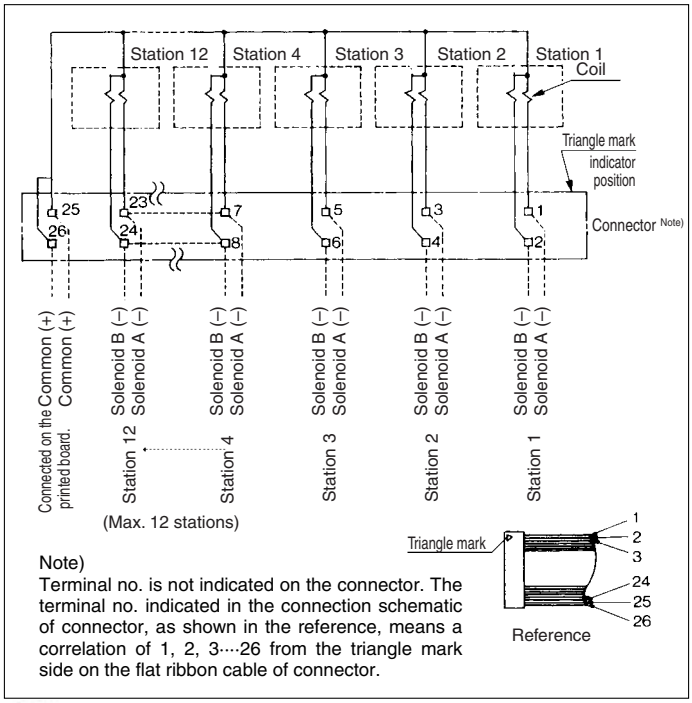
Note 1) For more than 10 stations, supply pressure to P port on both sides and exhaust from EA and EB port on both sides.
Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.

Flow Characteristics

Model	Port size		Flow characteristics					
			1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
SS5X3-41P/N	Rc 1/8	C6	0.75	0.19	0.18	0.81	0.23	0.20
SS5X3-42P/N	Rc 1/8	C6	0.75	0.20	0.18	0.82	0.20	0.20
SS5X5-41P/N	Rc 1/4	C8	1.8	0.23	0.44	1.9	0.16	0.45
SS5X5-42P/N	Rc 1/4	C8	1.9	0.20	0.46	1.9	0.12	0.43
SS5X7-42P/N	Rc 1/4	C10	3.0	0.25	0.75	3.0	0.12	0.66

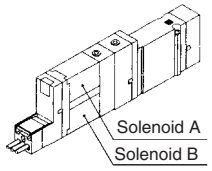
Note) The value is for manifold base with 5 stations and individually operated 2 position type.

Internal Wiring of Manifold



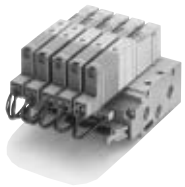
Note)
Terminal no. is not indicated on the connector. The terminal no. indicated in the connection schematic of connector, as shown in the reference, means a correlation of 1, 2, 3····26 from the triangle mark side on the flat ribbon cable of connector.

- For more than 9 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid A side.
- The maximum number of stations is 12. If more than 12 stations are required, please consult with SMC.
- –COM and +COM specifications are available. (Diagram above is for +COM specifications.)



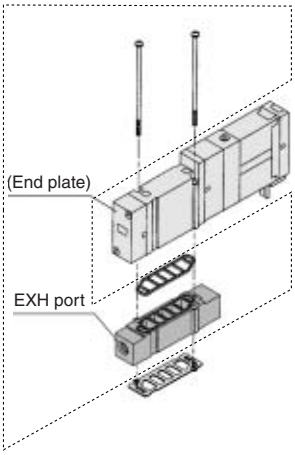
Manifold Option

■ Blanking plate assembly



Series	Assembly part no.
SX3000	SY3000-26-10A
SX5000	SY5000-26-21A
SX7000	SY7000-26-23A

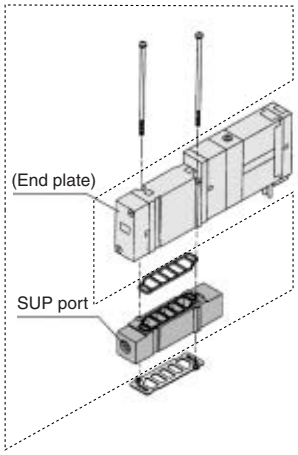
■ Individual EXH spacer assembly



Series	Assembly part no.	Port size
SX3000	SX3000-39-2A	M5 x 0.8
SX5000	SX5000-39-16⊠A	1/8
SX7000	SX7000-39-16⊠A	1/4

Note) For protection of the wiring unit section, the EXH port is on the end plate side.

■ Individual SUP spacer assembly



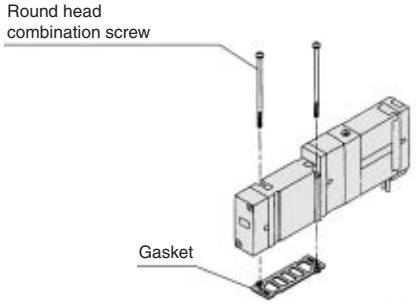
Series	Assembly part no.	Port size
SX3000	SX3000-38-2A	M5 x 0.8
SX5000	SX5000-38-16⊠A	1/8
SX7000	SX7000-38-16⊠A	1/4

Note) The SUP port may be either on the lead wire side or on the end plate side. (An assembly is shipped under the condition shown in the figure.)

∗ Thread type

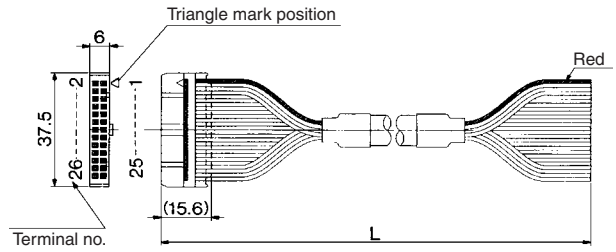
Nil	Rc
F	G
N	NPT
T	NPTF

■ Bolt and gasket part no.



Series	Round head combination screw	Gasket
SX3000	SX3000-22-2 (M2 x 24)	SY3000-11-25
SX5000	M3 x 30 (Matt nickel plated)	SY5000-11-15
SX7000	M4 x 35 (Matt nickel plated)	SY7000-11-11

■ Cable assembly AXT100-FC26-$^{1}_{\text{to}}{}_{3}$



Connector Assembly for Flat Ribbon Cable

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-FC26-1	Cable 26 cores x 28AWG
3 m	AXT100-FC26-2	
5 m	AXT100-FC26-3	

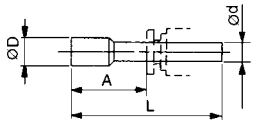
∗ For other commercial connectors, use a 26 pins type with strain relief conforming to MIL-C-83503.

Connector manufacturers' example

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

■ Plug

These are inserted in cylinder ports or SUP/EXH ports which are not being used.



Dimensions

Applicable fittings size ød	Model	A	L	D
4	**KQ2P-04**	16	32	6
6	**KQ2P-06**	18	35	8
8	**KQ2P-08**	20.5	39	10
10	**KQ2P-10**	22	43	12
5/32"	**KQ2P-03**	16	32	6
1/4"	**KQ2P-07**	18	35	8.5
5/16"	**KQ2P-09**	20.5	39	10
3/8"	**KQ2P-11**	22	43	11.5

⚠ Caution

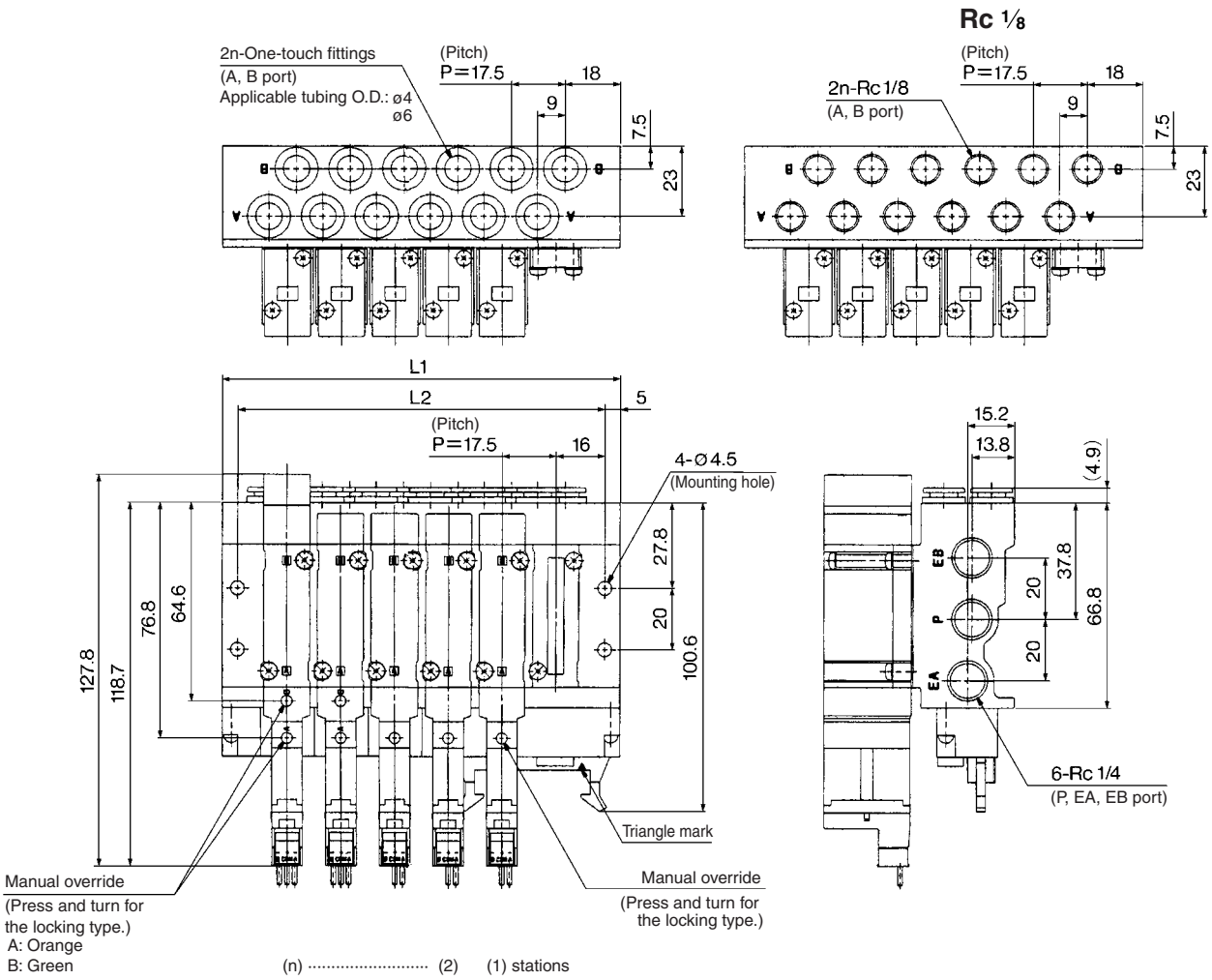
Mounting screw tightening torques

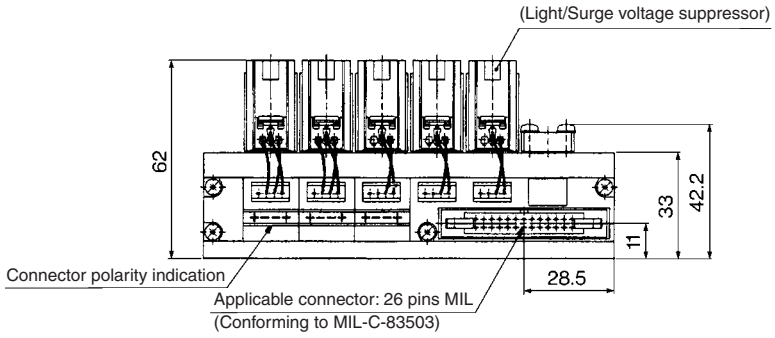
M2: 0.17 N·m
M3: 0.8 N·m
M4: 1.4 N·m

⚠ Warning

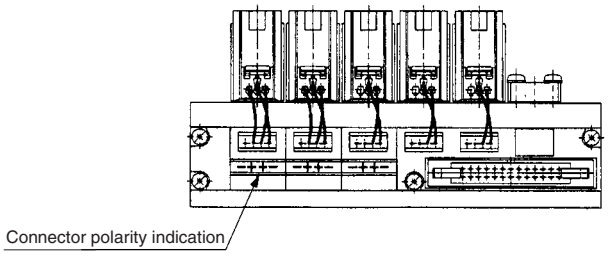
When mounting a valve or spacer on the manifold base or sub-plate, etc., those mounting directions are determined. If mounted in the wrong direction, the equipment to be connected may cause malfunction. Refer to external dimensions in pages 1-6-68 to 1-6-72, and then mount it.

SX5000: SS5X5-41P- Stations -01/C6/C8





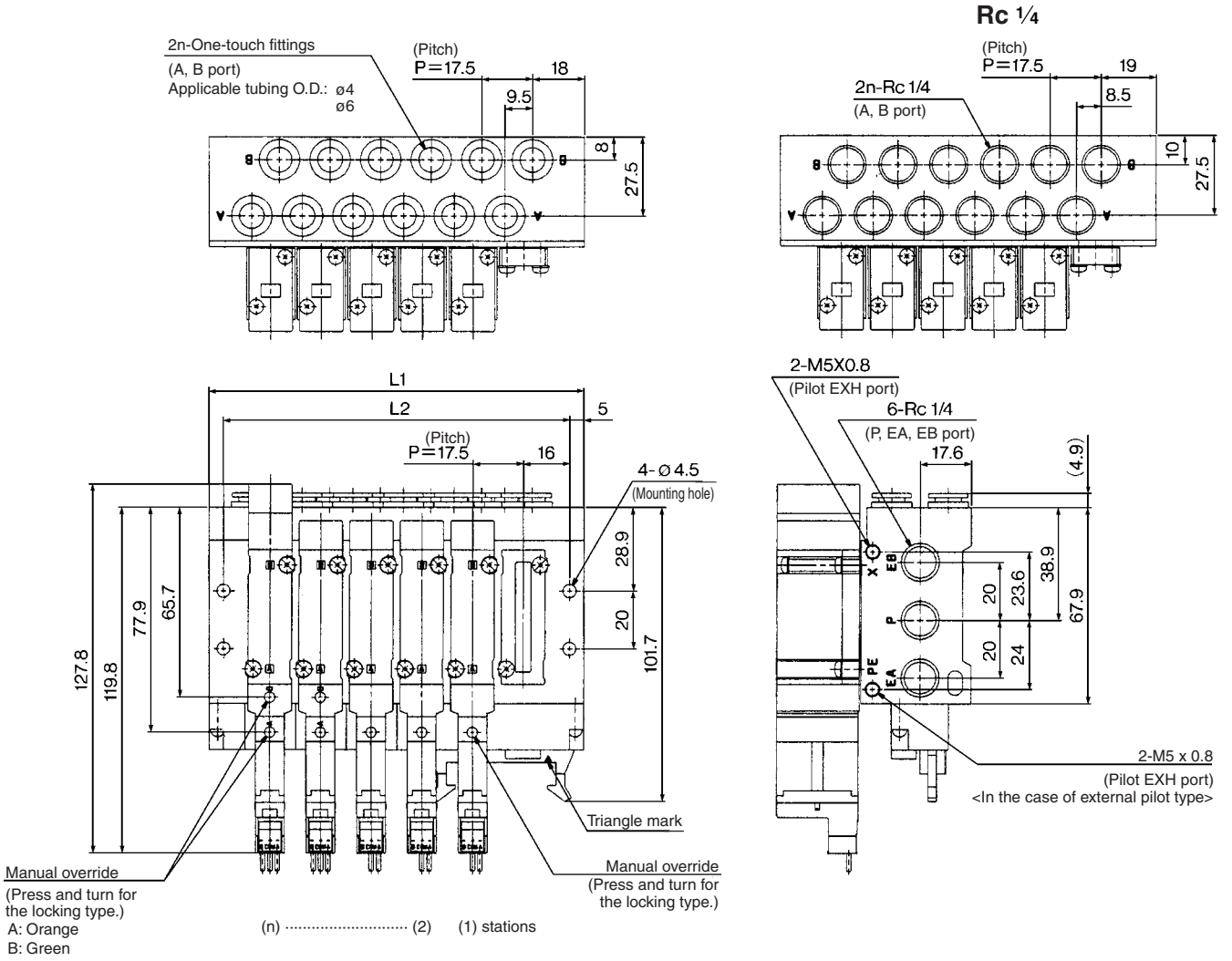
SS5X3-41N

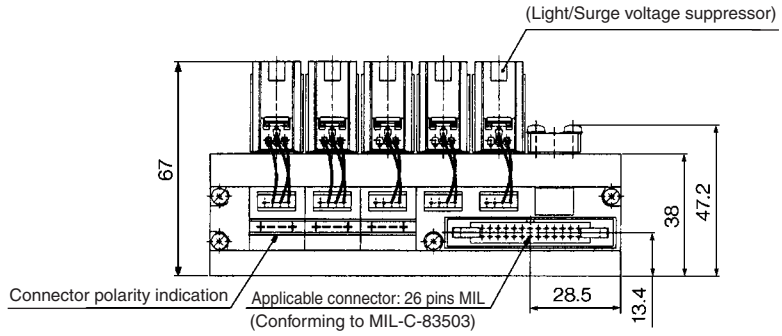


(mm)

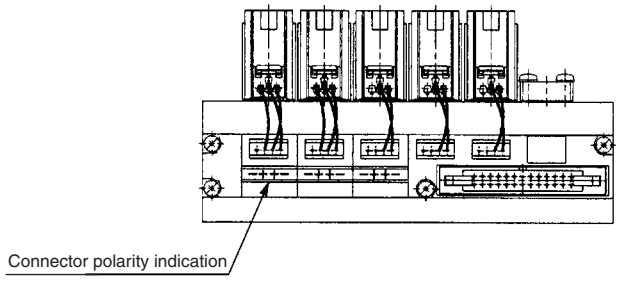
Stations n	3	4	5	6	7	8	9	10	11	12
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L2	67	84.5	102	119.5	137	154.5	172	189.5	207	224.5

SX5000: SS5X5-42P- Stations -02/C6/C8





SS5X5-42N



(mm)

Stations n	3	4	5	6	7	8	9	10	11	12
L1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L2	67	84.5	102	119.5	137	154.5	172	189.5	207	224.5