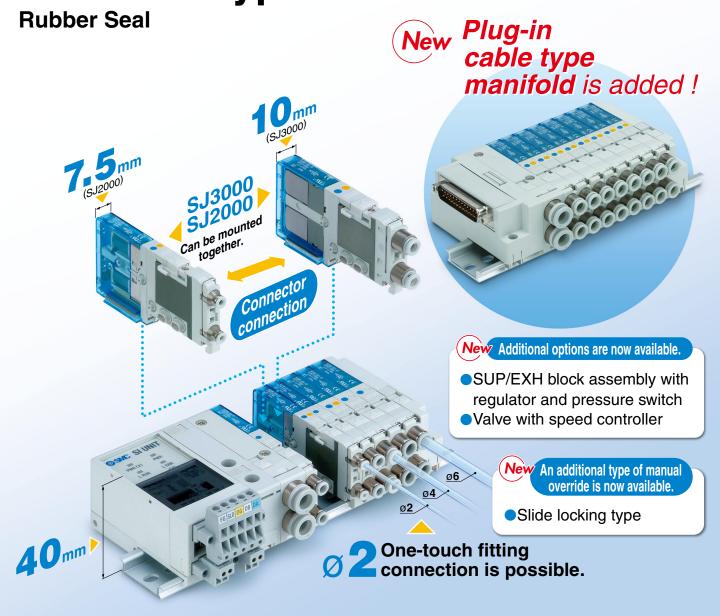
4 Port Solenoid Valve Cassette Type Manifold







Vacuum release valve with restrictor Suction and release can be controlled with a single unit.

Series SJ2000/3000



4 Port Solenoid Valve Cassette Type Manifold

Power consumption

0.15 W (SJ3000 with power saving circuit) 0.23 W (SJ2000 with power saving circuit)

Service life of 50 million cycles or more (Based on SMC life test conditions)

Connector type (Card edge type) Series SJ2000 and SJ3000 can be mounted together.

· Can easily increase or decrease stations and replace valves.

• 34 pins connector allows up to 16 stations with double solenoids, 32 stations with single solenoids.

Non plug-in individual wiring compliant, too



Manifold uses halogen-free lead wires.

New Plug-in cable type manifold



Piping variations

With One-touch fittings



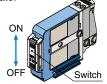
Threaded type



Threaded type is not available for 1(P), 3/5(E) port.

With switch (Connector type)

- · Possible to shut the signal of each valves individually.
- · Manual operation is possible by switching OFF, even when the valve is in the energized



Card edge connector

> The valve coil is kept in a deenergized state even when there is an electric signal from the manifold side connector, and this enables manifold opera-

Manual locking

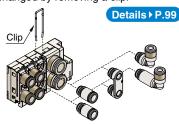
Prevents wrong operation by sliding the switch to avoid a manual button from being pressed.





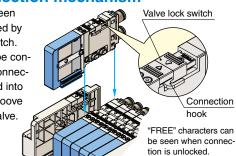
Fittings are replaceable.

Fittings (including type and size) can be easily changed by removing a clip.



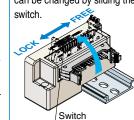
Valve connection mechanism

Connection between valves can be fixed by the valve lock switch. Connection can be confirmed with the connection hook inserted into the connection groove of the adjacent valve.



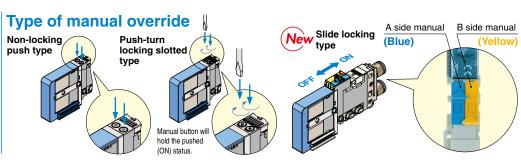
Connector mounting direction

Connecter mounting direction can be changed by sliding the





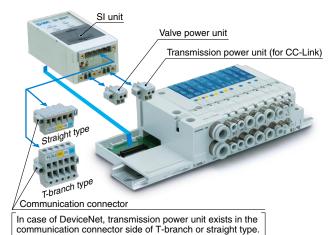
Features 1





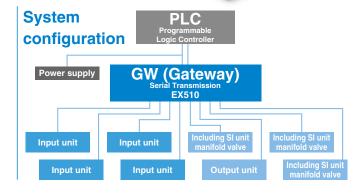
EX180 Integrated type (for output) serial transmission system*

- * Connector type only.
- CC-Link (32 outputs), DeviceNet (32, 16 outputs)
- Easy attaching/detaching of the SI unit and wiring by the connector
- \bullet Separated valve power unit and transmission power unit/Ensuring safety at maintenance
- Selectable between T-branch and straight type of communication connector



EX510 Gateway system serial transmission system*

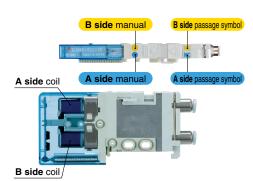
- * Connector type only.
- Max. 128 points (Input 64 points/ Output 64 points)
- All wires can be plugged into the connector units.
- CC-Link, DeviceNet, PROFIBUS-DP compliant



4 position dual 3 port valve

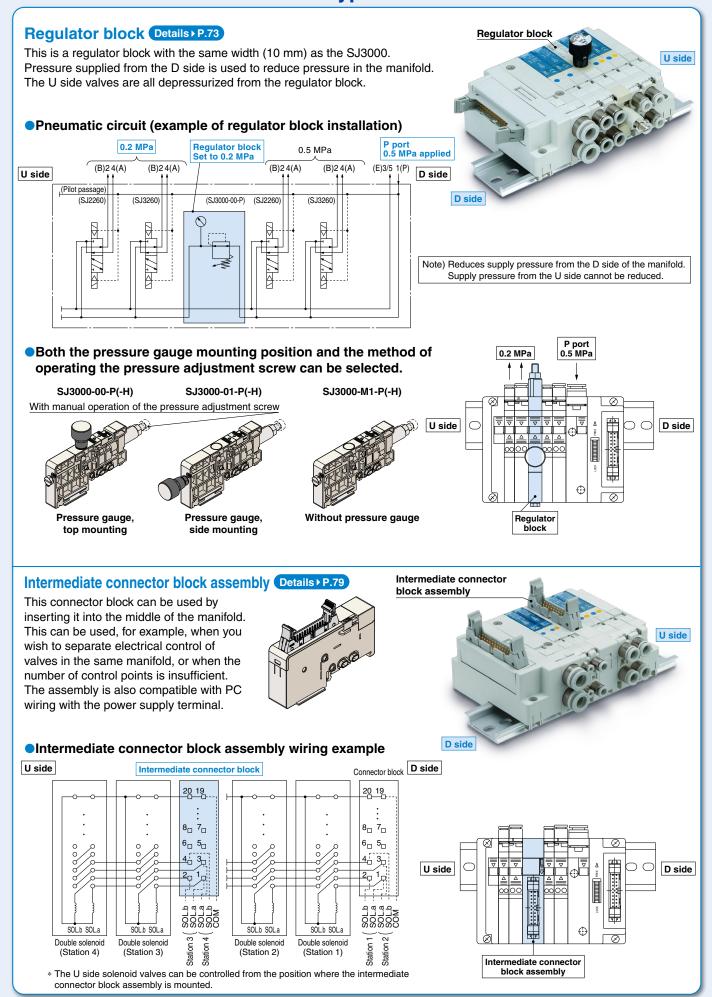
- Integrated to a single valve from 3-port valve
- Possible to control 4(A), 2(B) port individually.
- Can be mounted on the same manifold with a 4-port valve.
- Prepared 3 types of combination
- Label with the same colors of the manual override is attached to show the functions of A side and B side.

ĺ	A side	B side	Symbol
	N.C. valve	N.C. valve	4(A) 2(B) VELLE V
	N.O. valve	N.O. valve	4(A) 2(B) 75(EA) 1(P) 3(EB)
	N.C. valve	N.O. valve	4(A) 2(B) VELLE V





4 Port Solenoid Valve Cassette Type Manifold

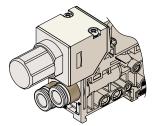




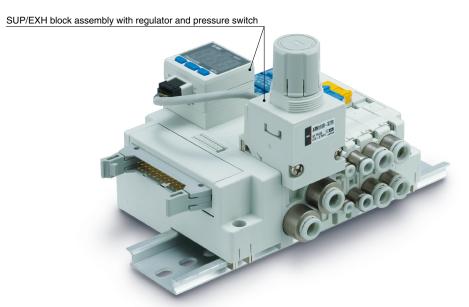
New SUP/EXH block assembly with regulator and pressure switch Details > P.75

Valve with speed controller Meter-in: Black

This pressure regulator is intended to adjust the SUP pressure of the manifold. Additionally, pressure switch and pressure gauge can be mounted.



Lateral handle

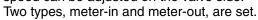


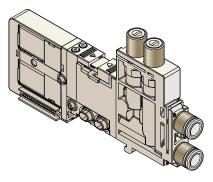
Upward handle

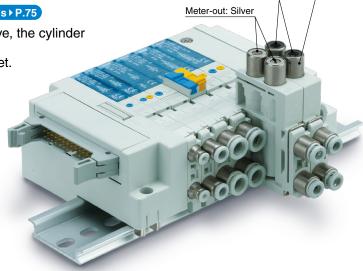


New Valve with speed controller Details > P.75

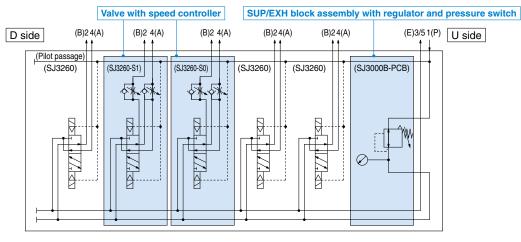
As a speed controller is built-into this valve, the cylinder speed can be adjusted on the valve side.





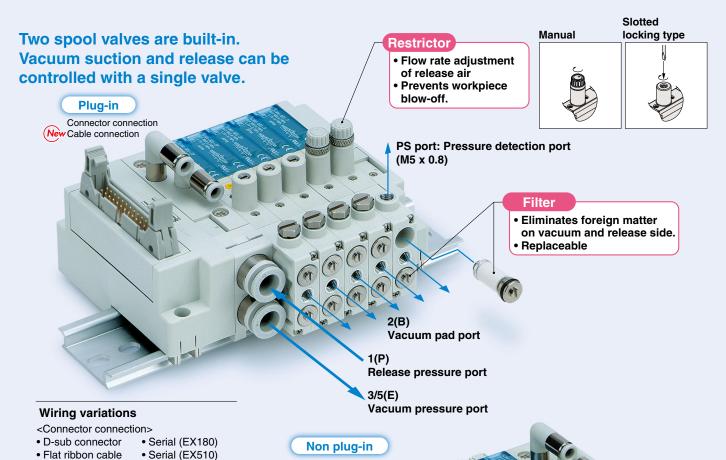


Pneumatic circuit (Installation example of SUP/EXH block assembly with regulator and pressure switch, valve with speed controller)



Vacuum Release Valve with Restrictor (€ 🕬 us





Individual wiring

Series SJ3A6

• PC wiring

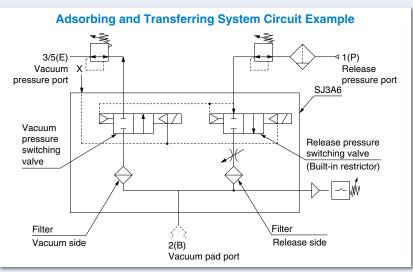
<Cable connection> D-sub connector • Flat ribbon cable

- Power consumption 0.15 W (with power saving circuit)
- Width: 10 mm (same size as Series SJ3000)
- Equipped with restrictor to enable flow rate adjustment of release air.
- Replaceable filters are built-in on the vacuum and release sides.
- Equipped with a pressure detection port enabling connection of a pressure switch,
- Can be combined with 4 port solenoid valve, Series SJ2000/3000 (Made to Order).

(Consult SMC for details.)

■ Enables 2-system pressure switching where the 1(P) port and 3/5(E) are set to different positive pressures.

(In this case, flow can be adjusted on the P-port side only.)





Common Specifications P.83

SJ3A6

4 Port Solenoid Va	lve Series SJ2000/3000	
	Common Specifications Construction	
Plug-in Connector Type Manifold	D-sub Connector/Flat Ribbon Cable/PC Wiring	
P.14 Cable Type Manifold	How to Order/Connector Type ·····	P.15
	How to Order/Cable Type	P.17
	Manifold Electrical Wiring/Connector Type, Cable Type	P.19
	Dimensions/Connector Type, Cable Type	P.2
Political Control of the Control of	PC Wiring System with Power Supply Terminal	
	How to Order/Connector Type ·····	P.3
	Manifold Electrical Wiring/Connector Type	P.3
	Dimensions/Connector Type	P.36
00000	EX180 Integrated Type (for Output) Serial Transmission System	
Q soloo	How to Order/Connector Type	P.4
	Dimensions/Connector Type	P.43
	EX510 Gateway System Serial Transmission System	
Control of the contro	• •	P.49
		P.5
	Manifold Exploded View/Connector Type, Cable Type P.5 How to Increase Manifold Stations/Connector Type, Cable Type P.5	
Non plug-in Individual Wiring Manifold	Individual Wiring	
P.60	How to Order	P.6
	Dimensions	P.63
	Manifold Exploded View/Individual Wiring	P.68
Manifold Options		P.69
Made to Order		P.80
Vacuum Release Valv	e with Restrictor Series SJ3A6 P.8	2

Plug-in Connector Type Manifold Cable Type Manifold How to Order/Connector Type P.85 How to Order/Cable Type P.87 Dimensions/Connector Type, Cable Type P.94,95 Non plug-in Individual Wiring Manifold Individual Wiring How to Order P.91 Dimensions P.93 Manifold Exploded View/Individual Wiring P.94

Specific Product Precautions

Manifold Variations

4 Port Solenoid Valve Series SJ2000/3000

Vacuum Release Valve with Restrictor

Se	Series SJ3A6				Flat ribbon cab connector	PC wiring	PC wiring (With power supply ter	EX180 (For output)	EX510 (Gateway syster	Individual wir	
		Manifold type		D-sub connecto	Ĕ		(With p		<u>(Ö</u>		
Ve	Plug-in	Connector Type	SS5J2/3-60□	P.15	P.15	P.15	P.33	P.41	P.49	Note 1) P.16 P.34 P.42 P.50	
4 port solenoid valve		Cable Type New	SS5J2/3-60L□	P.17	P.17	_	_	_	_	_	
4	Non plug-in		SS5J2/3-60-□	_	_	_	_	_	_	P.62	
with restrictor	Plug-in	Connector Type	SS3J3-60□	P.85	P.85	P.85	P.85	P.85	P.85	Note 1) P.86	
Vacuum release valve with	Flug-III	Cable Type New	SS3J3-60L□	P.87	P.87	_	_	_	_	_	
Vacuum	Non plug-in SS3J3-60-				_	-	_	_	_	P.91	
Note	1) A linkage print	ed circuit board is built-into the ind	lividual Note 4) TI	ne vacijiji	n release	งลไงค แรค	s only the	double w	irina		

Note 1) A linkage printed circuit board is built-into the individual wiring valve so as to combine with the plug-in type.

Connection method

rminal)

Serial wiring

Ē

Parallel wiring

e



Note 2) Specify the required specifications in the manifold specification sheet.

Note 3) The all single wiring or all double wiring can be specified.

Note 4) The vacuum release valve uses only the double wiring.

Note 5) Only SJ3000 size is provided.

Note 6) Adding 1 additional station is possible up to the maximum number of stations.

Series SJ3A6

			N	/lanifold	option	ıs				Sol	enoid v	alve spe	ecificati	ons
		ram/	>			투명	ē			Voltag	ge supp	ressor		
Mixed wiring Single/Double	Mixed type M60 \$J2000/3000	Different pressure pneumatic circuit diagram/ Block disk assembly	Blanking block assembly	Dual flow fitting	Regulator block	SUP/EXH block assembly with regulator and pressure switch	Valve with speed controller	Intermediate connector block assembly	Increase of manifold stations	Non-polar	+/- common Polar	With power saving circuit	With individual switch	Main valve fluororubber specifications
Note 2)	P.15	P.69	P.70	Note 5) P.72	P.73	P.75	Note 5) P.75	P.79	P.58	•				P.80
Note 3)	_	P.69	P.70	Note 5) P.72	_	_	Note 5) P.75	_	Note 6) P.59	_		•	_	P.80
•	P.61	P.69	P.70	Note 5) P.72	P.73	P.75	Note 5) P.75	_	P.58	_		_	_	P.80
Note 4)	_	P.69	P.70	_	_	_	_	P.79	P.58	•	•			P.80
Note 4)	_	P.69	P.70	_	_	_	_	_	Note 6) P.59	_	•	•	_	P.80
Note 4)	_	P.69	P.70	_	_	_	_	_	P.58	_		_	_	P.80

SJ 2000 3000

4 Port Solenoid Valve Series SJ2000/3000 Common Specifications 1 (€ c Nus

Manifold Specifications

			D-sub connector		Flat ribbon cable		Serial	wiring	Individual wiring
Model		Type 60F (Connector type/ Cable type	Type 60P (Connector type/ Cable type	Type 60PG (Connector type/ Cable type Type 60J (Connector type) Type 60G (Connector type)	Connector type/ Cable type	Type 60S□ (EX180/ (Connector type)	Type 60S6B (EX510/ (Connector type)	Type 60	
Manifold	type			Plug-in, Connecto	or type/Cable type)	Plug-in, Cor	nnector type	Non plug-in
1(P: SUP), 3/5(E: EX	H)			C	Common SUP, EX	Н		
Valve stations Connector type: 1 to 24 stations 1 to 18 stations Type PG 1 to 8 stations Type PG 1 to 8 stations 1 to 32 stations 1 to 16 stations Type J, Type G 1 to 8 stations 1 to 32 stations 1 to 16 stations Type J, Type G 1 to 8 stations 1 to 18 s				1 to 20 stations					
Applicable connector		or	D-sub connector Conforming to MIL-C-24308 JIS-X-5101	Flat ribbon cable connector Socket: 26 pins MIL type with strain relief Conforming to MIL-C-83503	Flat ribbon cable connector Socket: 20 pins MIL type with strain relief Conforming to MIL-C-83503	Flat ribbon cable connector Socket: 10 pins MIL type with strain relief Conforming to MIL- C-83503	_	_	_
Internal v	viring		Connector type: non-polar, positive common, negative common/Cable type: positive common, negative common						
4(A), 2(B)	port	Location	Valve						
piping sp	ec.	Direction		Horizontal, U	Jpward, Downwar	d (Using elbow fit	tings for upward o	or downward)	
	1(P), 3/5(E	E) port		C	C6, C8, N7, N9 (In	ch size elbow fittir	ng is not available	ı.)	
Port size	4(A), 2(B)	SJ2000			(C2, C4, N1, N3, M	3		
	port	SJ3000			C2, C	C4, C6, N1, N3, N	7, M5		
Weight W (g)Note 2) (n: Number of SUP/EXH blocks m: Weight of DIN rail					١	<i>W</i> = 51n + m + 13	3		

Note 1) When many valves are operated simultaneously, use B type (SUP/EXH both sides), applying pressure to the 1(P) ports on both sides and exhaust from the 3/5(E) ports on both sides.

Flow Characteristics

SJ2000

Port si	ze	Flow characteristics							
1(P) 3/5(E)	4, 2 (A, B)	1→2/4 (P→A/B)			4/2→3/5 (A/B→E)				
		C[dm ³ /(s·bar)]	b	Cv	C[dm ³ /(s·bar)]	b	Cv		
	C2	0.13	0.55	0.04	0.13	0.50	0.04		
C8	C4	0.33	0.16	0.08	0.36	0.13	0.08		
	МЗ	0.18	0.52	0.06	0.20	0.29	0.06		

SJ3000

Port size		Flow characteristics							
1(P) 3/5(E)	4, 2 (A, B)		1→2/4 (P→A/B)		4/2→3/5 (A/B→E)				
		C[dm ³ /(s·bar)]	b	Cv	C[dm ³ /(s·bar)]	b	Cv		
	C2	0.13	0.56	0.04	0.14	0.51	0.04		
C8	C4	0.42	0.17	0.11	0.45	0.16	0.11		
00	C6	0.55	0.10	0.12	0.56	0.11	0.12		
	M5	0.40	0.28	0.11	0.45	0.15	0.11		

Note) The value is for manifold base with 5 stations and individually operated 2 position type. Please contact SMC for 4 position dual 3 port valves.



Note 2) The weight W is the value for the D-sub connector manifold only with internal pilot, SUP/EXH block straight fittings specifications. To obtain the weight with solenoid valves attached, add the solenoid valve weights given on page 5 for the appropriate number of stations. Refer to page 71 for the weight of DIN rail. (Please contact SMC for the weight of external pilot specifications, elbow fittings.)

Solenoid Valve Specifications





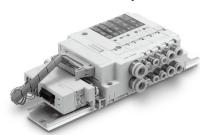
Flat ribbon cable



PC wiring



EX180 Integrated type (for output) serial transmission system



EX510 Gateway system serial transmission system



Individual wiring

Fluid			Air	
	2 position	single	0.15 to 0.7	
Internal pilot operating pressure	4 position	dual 3 port valve	0.13 to 0.7	
range (MPa)	2 position	double	0.1 to 0.7	
	3 position		0.2 to 0.7	
	Operating	pressure range	-100 kPa to 0.7	
External pilot operating pressure	Pilot	2 position single		
range (MPa)	pressure	2 position double	0.25 to 0.7	
• ,	range	3 position		
Ambient and fluid te	mperature ((°C)	-10 to 50 (No freezing)	
	2 position single, double		10	
Maximum operating frequency (Hz)	4 position dual 3 port valve		10	
	3 position	ı	3	
Manual override (Ma	nual aparat	tion)	Non-locking push type	
Mariuai Override (Ma	iluai operai		Push-turn locking slotted type	
Pilot exhaust method	Internal p	ilot	Main and pilot valve common exhaust	
Filot extraust method	External p	oilot	Pilot valve individual exhaust	
Lubrication			Not required	
Mounting orientation			Unrestricted	
Impact/Vibration res	istance (m/	/s²)	150/30	
Enclosure			Dustproof	

Note) 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 ev-

ery once for each condition. (Value in the initial state)

Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000Hz. Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value

in the initial state)

Solenoid Specifications

Coil rated voltag	е	24 VDC, 12 VDC			
Allowable voltag	e fluctuation	±10% of rated voltage*			
	Standard	SJ2000	0.55		
Power consumption		SJ3000	0.4		
(W)	With power saving circuit (Continuous duty type)	SJ2000	0.23		
		SJ3000	0.15		
Surge voltage suppressor		Diode			
Indicator light		LED			

^{*} For the allowable voltage fluctuation for Z and T types (with power saving circuit), please observe the following range because they have voltage drop due to internal circuit.

Z type 24 VDC: -7% to +10%

12 VDC: -4% to +10% T type 24 VDC: -5% to +10%

12 VDC: -6% to +10%

Response Time

Type of actuation	Response time	ms (at 0.5 MPa)	
Type of actuation	SJ2000	SJ3000	
2 position single	16 or less	16 or less	
2 position double	10 or less	10 or less	
3 position	34 or less	22 or less	
4 position dual 3 port valve	30 or less	30 or less	

Note) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage)

4 Port Solenoid Valve Series SJ2000/3000

Common Specifications 2

Weight

Model/SJ2000

Valve model	Тур	e of actuation	Port size 4(A), 2(B)	Weight (g)
	2 position	Single		43
	2 position	Double	C2	46
SJ2□60-C2		Closed center	/ø2 One-∖	
30200-02	3 position	Exhaust center	touch	50
		Pressure center	\fitting	
	4 position	Dual 3 port valve		46
	2 position 3 position	Single		41
		Double	C4	44
SJ2□60-C4		Closed center	/ø4 One-∖	
30200-04		Exhaust center	touch	48
		Pressure center	\fitting	
	4 position	Dual 3 port valve		44
	2 position	Single		39
	2 position	Double		42
SJ2□60-M3		Closed center	M3 x 0.5	
302 00-IVI3	3 position	Exhaust center	IVIS X U.S	46
	•	Pressure center		
	4 position	Dual 3 port valve		42

Note) Please contact SMC for the weight of elbow fittings.

Model/SJ3000

Valve model	Тур	e of actuation	Port size 4(A), 2(B)	Weight (g)
		Single	1(, t), 2(2)	63
	2 position	Double	C2	71
SJ3□60-C2		Closed center	/ø2 One-\	
	3 position	Exhaust center	touch	75
		Pressure center	fitting /	
	4 position	Dual 3 port valve		71
	2 position	Single		65
	2 position	Double	C4	73
SJ3□60-C4	3 position	Closed center	∫ø4 One-∖	
30300-04		Exhaust center	touch	77
		Pressure center	\fitting	
	4 position	Dual 3 port valve		73
	2 position	Single	_	61
	2 position	Double	C6	69
SJ3□60-C6		Closed center	/ø6 One-∖	
303-00-00	3 position	Exhaust center	touch	73
		Pressure center	\fitting	
	4 position	Dual 3 port valve		69
	2 position	Single		57
	2 position	Double		65
SJ3□60-M5		Closed center	M5 x 0.8	
203 LOU-IVIS	3 position	Exhaust center	I IVIO X U.O	69
		Pressure center		
	4 position	Dual 3 port valve		65

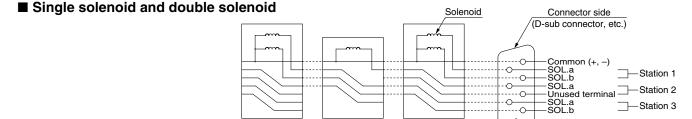
Note) Please contact SMC for the weight of elbow fittings.

Station 1

Connector Wiring Diagram

For both serial and parallel wiring, additional valves are sequentially assigned pins on the connector. This makes it completely unnecessary to disassemble the connector unit.

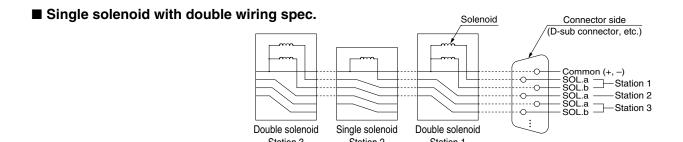
Station 3

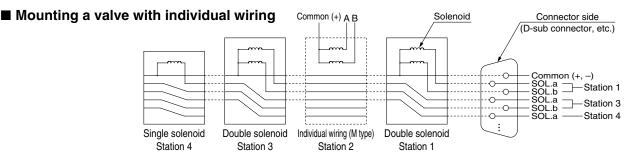


Single solenoid

(Double wiring spec.)

Station 2





Symbol

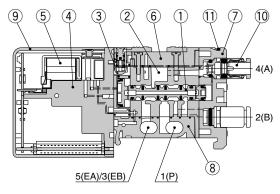
2 position single



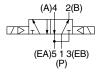
2 position single with back pressure check valve



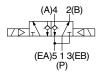
2 position single



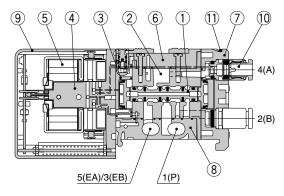
2 position double



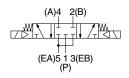
2 position double with back pressure check valve

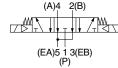


2 position double

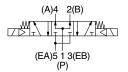


3 position closed center

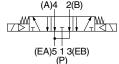




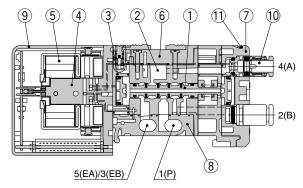




3 position exhaust center



3 position closed center/exhaust center/pressure center



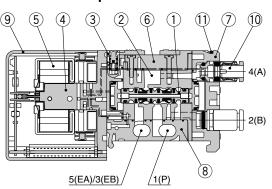
Component Parts

	•		
No.	Description	Material	Note
1	Spool valve assembly	Resin/HNBR (3 position solenoid valve: Aluminum/HNBR)	_
2	Body	Zinc die-cast	_
3	Adapter plate	Resin	White
4	Pilot adapter	Resin	White
5	Pilot valve assembly	_	_
6	Body cover	Resin	White
7	Port block	Resin	White
8	Bottom cover	Resin	White
9	Light cover	Resin	Light blue

Replacement Parts

No.	Description Part no.	
10	One-touch fitting	Refer to the One-touch fitting part no. on page 99.
11	Clip	SJ2000-CL-1 (10 pcs.)

SJ2260K with back pressure check valve



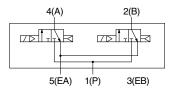
Individual | Non plug-in | Connector Type | Plug-in | Wiring | Non plug-in | Cable Type |

Construction 2

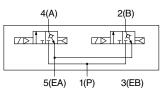
SJ2000: Connector Type

Symbol

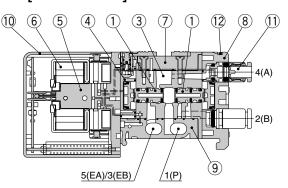
4 position dual 3 port valve SJ2A60 [N.C. valve x 2]



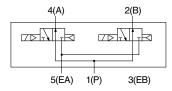
SJ2A60K with back pressure check valve



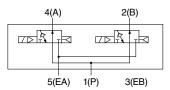
SJ2A60 [N.C. valve x 2]



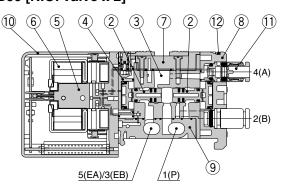
SJ2B60 [N.O. valve x 2]



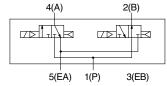
SJ2B60K with back pressure check valve



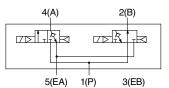
SJ2B60 [N.O. valve x 2]



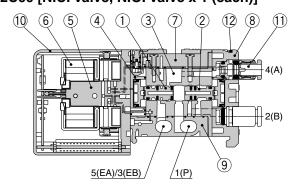
SJ2C60 [N.C., N.O. valve x 1 (each)]



SJ2C60K with back pressure check valve



SJ2C60 [N.C. valve, N.O. valve x 1 (each)]



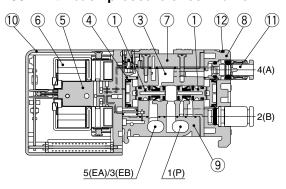
Component Parts

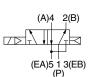
No.	Description	Material	Note
1	Spool valve assembly	Resin/HNBR	N.C. (Normally closed)
2	Spool valve assembly	Resin/HNBR	N.O. (Normally open)
3	Body	Zinc die-cast	_
4	Adapter plate	Resin	White
5	Pilot adapter	Resin	White
6	Pilot valve assembly	_	_
7	Body cover	Resin	White
8	Port block	Resin	White
9	Bottom cover	Resin	White
10	Light cover	Resin	Light blue

Replacement Parts

No.	Description	Part no.	
11 One-touch fitting		Refer to the One-touch fitting part no. on page 99.	
12	Clip	SJ2000-CL-1 (10 pcs.)	

SJ2A60K with back pressure check valve

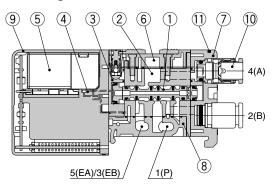




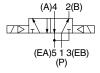
2 position single with back pressure check valve



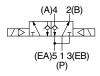
2 position single



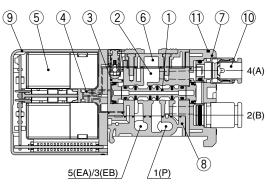
2 position double



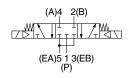
2 position double with back pressure check valve



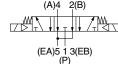
2 position double



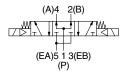
3 position closed center

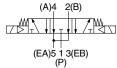


3 position exhaust center

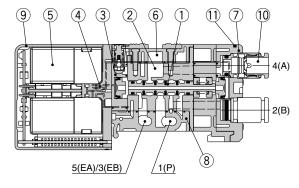








3 position closed center/exhaust center/pressure center



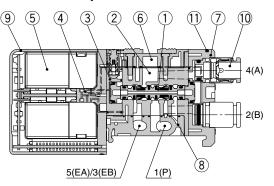
Component Parts

No.	Description	Material	Note
1	Spool valve assembly	Resin/HNBR (3 position solenoid valve: Aluminum/HNBR)	_
2	Body	Zinc die-cast	_
3	Adapter plate	Resin	White
4	Pilot adapter	Resin	White
5	Pilot valve assembly	_	_
6	Body cover	Resin	White
7	Port block	Resin	White
8	Bottom cover	Resin	White
9	Light cover	Resin	Light blue

Replacement Parts

No.	Description	Part no.
10	One-touch fitting	Refer to the One-touch fitting part no. on page 99.
11	Clip	SJ3000-CL-1 (10 pcs.)

SJ3260K with back pressure check valve

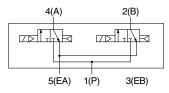


Construction 3

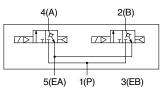
SJ3000: Connector Type

Symbol

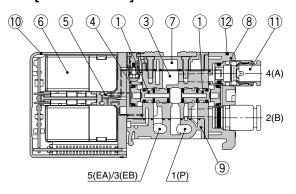
4 position dual 3 port valve SJ3A60 [N.C. valve x 2]



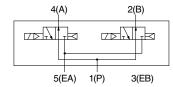
SJ3A60K with back pressure check valve



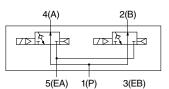
SJ3A60 [N.C. valve x 2]



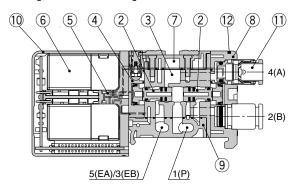
SJ3B60 [N.O. valve x 2]



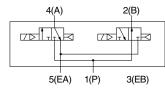
SJ3B60K with back pressure check valve



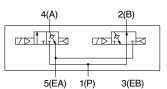
SJ3B60 [N.O. valve x 2]



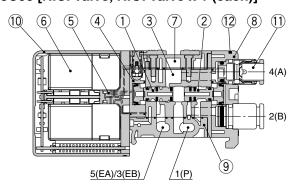
SJ3C60 [N.C., N.O. valve x 1 (each)]



SJ3C60K with back pressure check valve



SJ3C60 [N.C. valve, N.O. valve x 1 (each)]



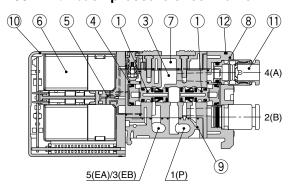
Component Parts

No.	Description	Material	Note
1	Spool valve assembly	Resin/HNBR	N.C. (Normally closed)
2	Spool valve assembly	Resin/HNBR	N.O. (Normally open)
3	Body	Zinc die-cast	_
4	Adapter plate	Resin	White
5	Pilot adapter	Resin	White
6	Pilot valve assembly	_	_
7	Body cover	Resin	White
8	Port block	Resin	White
9	Bottom cover	Resin	White
10	Light cover	Resin	Light blue

Replacement Parts

No.	Description	Part no.
11	One-touch fitting	Refer to the One-touch fitting part no. on page 99.
12	Clip	SJ3000-CL-1 (10 pcs.)

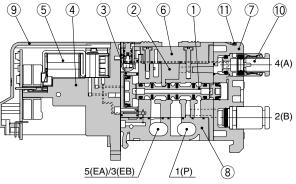
SJ3A60K with back pressure check valve





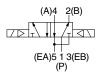


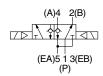
2 position single



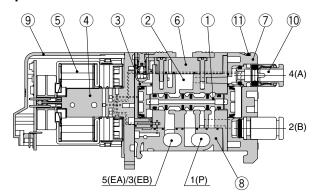
2 position double

2 position double with back pressure check valve



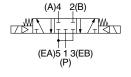


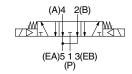
2 position double



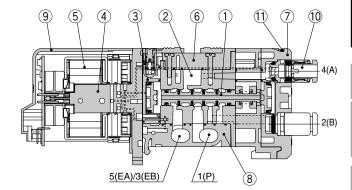
3 position closed center

3 position exhaust center

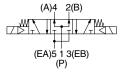




3 position closed center/exhaust center/pressure center



3 position pressure center



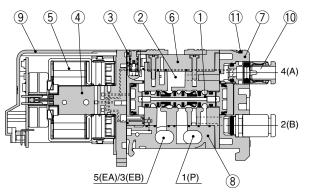
Component Parts

No.	Description	Material	Note	
1	Spool valve assembly	Resin/HNBR (3 position solenoid valve: Aluminum/HNBR)	_	
2	Body	Zinc die-cast	_	
3	Adapter plate	Resin	White	
4	Pilot adapter	Resin	White	
5	Pilot valve assembly	_	_	
6	Body cover	Resin	White	
7	Port block	Resin	White	
8	Bottom cover assembly	Resin	White	
9	Light cover	Resin	Light blue	

Replacement Parts

No.	Description	Part no.	
10 One-touch fitting		Refer to the One-touch fitting part no. on page 99.	
11	Clip	SJ2000-CL-1 (10 pcs.)	

SJ2260K with back pressure check valve

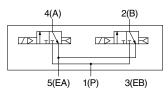


Construction 4

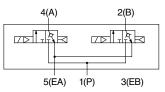
SJ2000: Cable Type

Symbol

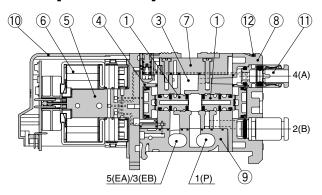
4 position dual 3 port valve SJ2A60 [N.C. valve x 2]



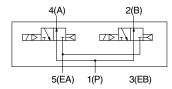
SJ2A60K with back pressure check valve



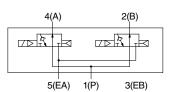
SJ2A60 [N.C. valve x 2]



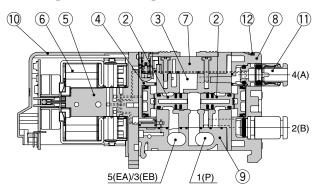
SJ2B60 [N.O. valve x 2]



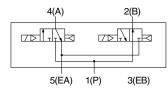
SJ2B60K with back pressure check valve



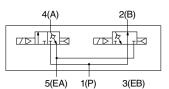
SJ2B60 [N.O. valve x 2]



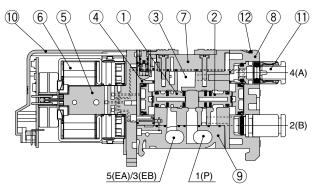
SJ2C60 [N.C., N.O. valve x 1 (each)]



SJ2C60K with back pressure check valve



SJ2C60 [N.C. valve, N.O. valve x 1 (each)]



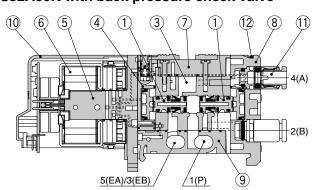
Component Parts

No.	Description	Material	Note
1	Spool valve assembly	Resin/HNBR	N.C. (Normally closed)
2	Spool valve assembly	Resin/HNBR	N.O. (Normally open)
3	Body	Zinc die-cast	_
4	Adapter plate	Resin	White
5	Pilot adapter	Resin	White
6	Pilot valve assembly	_	_
7	Body cover	Resin	White
8	Port block	Resin	White
9	Bottom cover assembly	Resin	White
10	Light cover	Resin	Light blue

Replacement Parts

ricpiacement i arts			
	No.	Description	Part no.
	11	One-touch fitting	Refer to the One-touch fitting part no. on page 99.
	12	Clip	SJ2000-CL-1 (10 pcs.)

SJ2A60K with back pressure check valve



Symbol

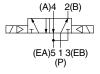
2 position single



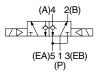
2 position single with back pressure check valve



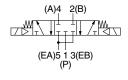
2 position double



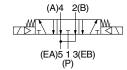
2 position double with back pressure check valve



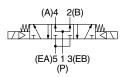
3 position closed center



3 position exhaust center



3 position pressure center



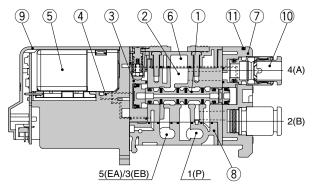
Component Parts

No.	Description	Material	Note
1	Spool valve assembly	Resin/HNBR (3 position solenoid valve: Aluminum/HNBR)	_
2	Body	Zinc die-cast	_
3	Adapter plate	Resin	White
4	Pilot adapter	Resin	White
5	Pilot valve assembly	_	_
6	Body cover	Resin	White
7	Port block	Resin	White
8	Bottom cover assembly	Resin	White
9	Light cover	Resin	Light blue

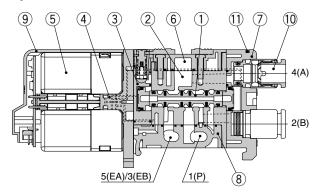
Replacement Parts

No.	Description	Part no.
10	One-touch fitting	Refer to the One-touch fitting part no. on page 99.
11	Clip	SJ3000-CL-1 (10 pcs.)

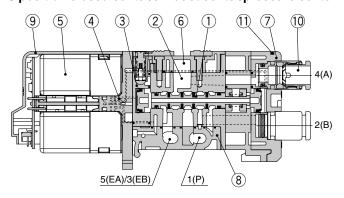
2 position single



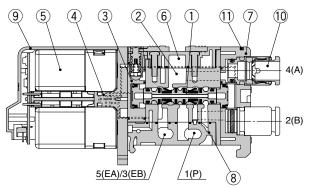
2 position double



3 position closed center/exhaust center/pressure center



SJ3260K with back pressure check valve



Individual | Non plug-in | Connector Type | Plug-in | Wiring |

Made to Order

SJ3A6

Common Specifications/ Construction

Plug-in Somm

Connector Type/ | P

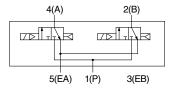
Individual | Non plug-in Co

Construction 5

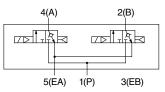
SJ3000: Cable Type

Symbol

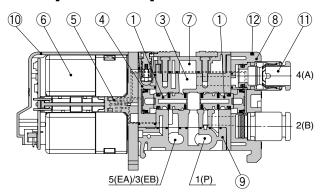
4 position dual 3 port valve SJ3A60 [N.C. valve x 2]



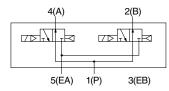
SJ3A60K with back pressure check valve



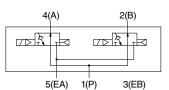
SJ3A60 [N.C. valve x 2]



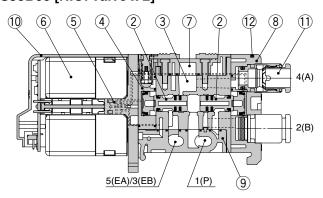
SJ3B60 [N.O. valve x 2]



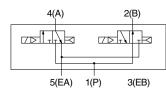
SJ3B60K with back pressure check valve



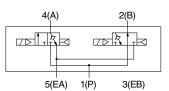
SJ3B60 [N.O. valve x 2]



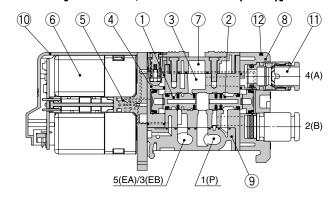
SJ3C60 [N.C., N.O. valve x 1 (each)]



SJ3C60K with back pressure check valve



SJ3C60 [N.C. valve, N.O. valve x 1 (each)]



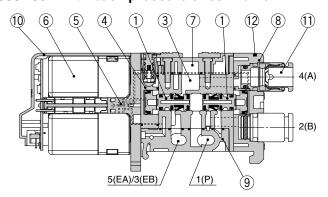
Component Parts

No.	Description	Material	Note
1	Spool valve assembly	Resin/HNBR	N.C. (Normally closed)
2	Spool valve assembly	Resin/HNBR	N.O. (Normally open)
3	Body	Zinc die-cast	_
4	Adapter plate	Resin	White
5	Pilot adapter	Resin	White
6	Pilot valve assembly	_	_
7	Body cover	Resin	White
8	Port block	Resin	White
9	Bottom cover assembly	Resin	White
10	Light cover	Resin	Light blue

Replacement Parts

neplacement raits		
No.	Description	Part no.
11	One-touch fitting	Refer to the One-touch fitting part no. on page 99.
12	Clip	SJ3000-CL-1 (10 pcs.)

SJ3A60K with back pressure check valve



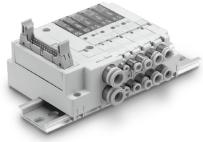
Plug-in **Connector Type Manifold Cable Type Manifold**

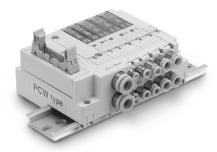
Series **SJ2000/3000**



Connector Type Manifold D-sub Connector/Flat Ribbon Cable/PC Wiring







P.17

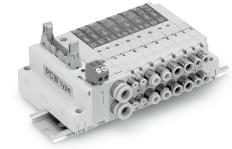
Cable Type Manifold D-sub Connector/Flat Ribbon Cable



Connector Type Manifold PC Wiring System with Power Supply Terminal







P.41

Connector Type Manifold EX180 Integrated Type (for Output) Serial Transmission System



Connector Type Manifold EX510 Gateway System Serial Transmission System





D-sub Connector/Flat Ribbon Cable/ PC Wiring

Series SJ2000/3000

How to Order

An order cannot be placed with only the manifold part no. Be sure to order solenoid valves for mounting at the same time while referring to the ordering example.

Connector type manifold

SJ3000 (SJ2000/3000 mixed)



Mixed mounting type •

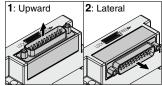
NII	Standard Note 1)
M	Mixed mounting Note 2)

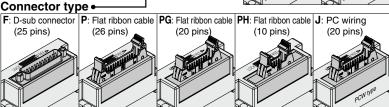
Note 1) There is no need to enter anything when you operate either the SJ2000 or SJ3000 series alone.

Note 2) Enter "M" when the SJ2000 or SJ3000 series will be mounted on the same manifold base together.

Connector mounting position •

Symbol	woulding position	Car	nootor on	
D	D side	Coi	nector en directi	•
			airecu	OH
	1 : Upwa	ard	2: Lateral	

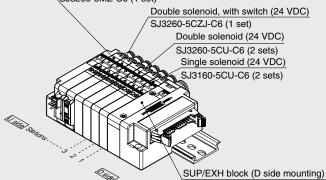




How to Order Manifold Assembly

Ordering example (SS5J3-60PD2-□)

Double solenoid, individual wiring/lead wire length 300 mm (24 VDC) SJ3260-5MZ-C6 (1 set) Double solenoid, with switch (24 VDC) SJ3260-5CZJ-C6 (1 set)



SS5J3-60PD2-06D ··· 1 set (Manifold part no.)

- * SJ3160-5CU-C6 ---- 2 sets (Single solenoid part no.)
- * SJ3260-5CU-C6 2 sets (Double solenoid part no.)
- * SJ3260-5CZJ-C6 ····· 1 set (Double solenoid, with switch part no.)
- SJ3260-5MZ-C6 ······· 1 set (Double solenoid, individual wiring/lead wire length 300 mm part no.)
 - The asterisk denotes the symbol for assembly. Prefix to the part no. of the solenoid valve, etc.
- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. In the case of complex arrangement, specify them in the manifold specification sheet.

Note) When ordering a manifold, specify the part nos. of valves to be mounted together. (An order cannot be placed with only the manifold part no.)

DIN rail length specified

Nil	Standard length		
2	2 stations	Specify a longer	
÷		rail than the	
24	24 stations	standard length.	

 Specify the valve stations not exceeding the maximum stations.

SUP/EXH block fitting spec.

Nil	Straight fitting With external pilot spec. X, PE port	
L	Elbow fitting (Upward) With external pilot spec. X, PE port	
В	Elbow fitting (Downward) With external pilot spec. X, PE port	

There is no need to enter anything when the SUP/EXH block mounting position "M" is selected.

Pilot spec.

	Nil Internal pilot	
	S Internal pilot/Built-in silencer	
	R External pilot	
RS External pilot/Built-in silencer		

- * There is no need to enter anything when the SUP/EXH block mounting position "M" is selected.
- * For built-in silencers, the 3/5(E) ports are plugged.

SUP/EXH block mounting position

U	U side (1 to 10 stations)
D	D side (1 to 10 stations)
В	Both sides (1 to 24 stations)
M*	Special specifications

Specify the required specifications including port sizes other than ø8) by means of the manifold specification sheet

Valve stations

F: D-sub connector

Symbol	Stations	Note
01	1 station	Up to 24
:	::	solenoids
24	24 stations	possible.

PG: Flat ribbon cable (20 pins) PH: Flat ribbon cable (10 pins)

Symbol	Stations	Note
01	1 station	Up to 18
:	:	solenoids
18	18 stations	possible.

* The number of the blanking block assembly is also included. Since single and double wiring are available with the blanking block assembly, select a model compatible with the valve wiring spec. planned for the future. (Refer to

P: Flat ribbon cable (26 pins)

Symbol	Stations	Note		
01	1 station	Up to 24		
÷		solenoids		
24	24 stations	possible.		

Symbol	Stations	Note		
01	1 station	Up to 8		
:	::	solenoids		
08	8 stations	possible.		

J: PC wiring (20 pins)

Symbol	Stations	Note	
01	1 station	Up to 16	
÷		solenoids	
16	16 stations	possible.	
16	16 stations	possible.	

Refer to page 33 through to 40 for PC wiring type with power supply terminal



Single solenoid

There is no need to enter

double, 3 position and 4

position solenoid valves.

unused numbers to wiring

are set. Refer to page 5

Select this when the

anything for 2 position

D

for details.

A, B port size

C2: ø2 One-touch fitting

C4: ø4 One-touch fitting

C6: ø6 One-touch fitting

N1: Ø1/8" One-touch fitting

N7: ø1/4" One-touch fitting

(SJ3000 only)

M3: M3 x 0.5 (SJ2000 only)

M5: M5 x 0.8 (SJ3000 only)

N3: ø5/32" One-touch fitting

(SJ3000 only)

Straight

(Metric size)

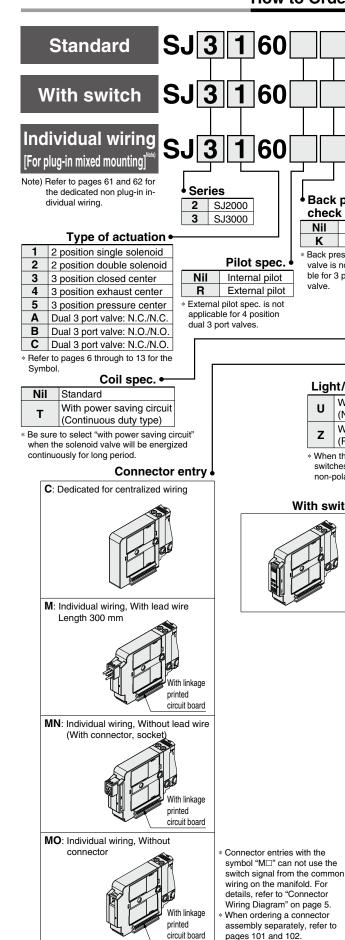
(Inch size)

wiring spec.

Single wiring

Double wiring

How to Order Solenoid Valves



Back pressure check valve Nil None Built-in K

Back pressure check valve is not applicable for 3 position valve

Rated voltage **5** 24 VDC 12 VDC

6

Common specifications Nil Positive common

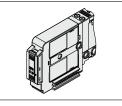
N Negative common For the non-polar type, there is no need to se-

lect a symbol.

Light/surge voltage suppressor •

- With light/surge voltage suppressor (Non-polar type)
- With light/surge voltage suppressor Z (Polar type)
- * When the types with power saving circuit, with switches, and individual wiring are used, the non-polar type cannot be selected.

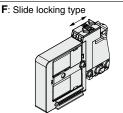
With switch •



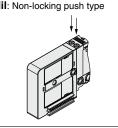


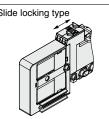
D: Push-turn locking slotted type





Manual override





Elbow fitting assembly (Upward entry) (Metric size)

L2: ø2 elbow fitting assembly

L4: ø4 elbow fitting assembly

L6: ø6 elbow fitting assembly (SJ3000 only)

(Inch size)

LN1: ø1/8" elbow fitting assembly LN3: ø5/32" elbow fitting assembly

LN7: ø1/4" elbow fitting assembly (SJ3000 only)

Elbow fitting assembly (Downward entry) (Metric size)

B2: ø2 elbow fitting assembly

B4: ø4 elbow fitting assembly

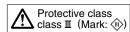
B6: ø6 elbow fitting assembly (SJ3000 only)

(Inch size)

BN1: ø1/8" elbow fitting assembly

BN3: ø5/32" elbow fitting assembly BN7: ø1/4" elbow fitting assembly

(SJ3000 only)





Plug-in Cable Type

D-sub Connector/Flat Ribbon Cable

Series SJ2000/3000

How to Order

An order cannot be placed with only the manifold part no. Be sure to order solenoid valves for mounting at the same time while referring to the ordering example.

●Cable type manifold



SJ2000 SJ3000

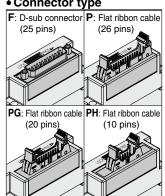
Cable type

Connector mounting position •

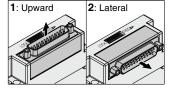
3

Symbol	Mounting position
D	D side

Connector type



Connector entry direction



Manifold wiring spec.

Nil	All double wiring Note 1)
S	All single wiring Note 2)

- Note 1) All double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.
- Note 2) All single wiring: Available only for the manifold which has 2-position single for all stations. Note that 2-position double, 3- or 4-position valves cannot be used.
- Note 3) If a mixture of single wiring and double wiring is required, it is available as a special order.

DIN rail length specified

Nil	Standard length						
3	3 stations	3 stations Specify a longer					
:	: rail than the						
20	20 stations	standard length.					

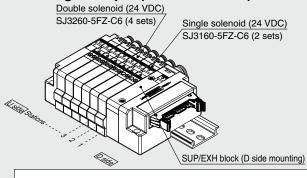
* Specify the valve stations not exceeding the maximum stations.

SUP/E	EXH block fitti	ng spec.
	Straight fitting	
Nil	With external pilot spec. X, PE port: Elbow fitting	
	Elbow fitting (Upward)	<u> </u>
L	With external pilot spec. X, PE port: Straight fitting	
	Elbow fitting (Downward)	
В	With external pilot spec. X, PE port: Elbow fitting	

* There is no need to enter anything when the SUP/EXH block mounting position "M" is selected.

How to Order Manifold Assembly

Ordering example (SS5J3-60LPD2)



SS5J3-60LPD2-06D \cdots 1 set (Manifold part no.)

- * SJ3160-5FZ-C6········ 2 sets (Single solenoid part no.) SJ3260-5FZ-C6········· 4 sets (Double solenoid part no.)
- The asterisk denotes the symbol for assembly. Prefix to the part no. of the solenoid valve, etc.
- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. In the case of complex arrangement, specify them in the manifold specification sheet.

Note) When ordering a manifold, specify the part nos. of valves to be mounted together. (An order cannot be placed with only the manifold part no.)

SUP/EXH block

mounting position						
U	U side (2 to 10 stations)					
D	D side (2 to 10 stations)					
В	Both sides (2 to 20 stations)					
M*	Special specifications					

* Specify the required specifications (including port sizes other than Ø8) by means of the manifold specification sheet.

Pilot spec.

Nil	Internal pilot		
s	Internal pilot/		
	Built-in silencer		
R External pilot			
DC	External pilot/		
RS	Built-in silencer		

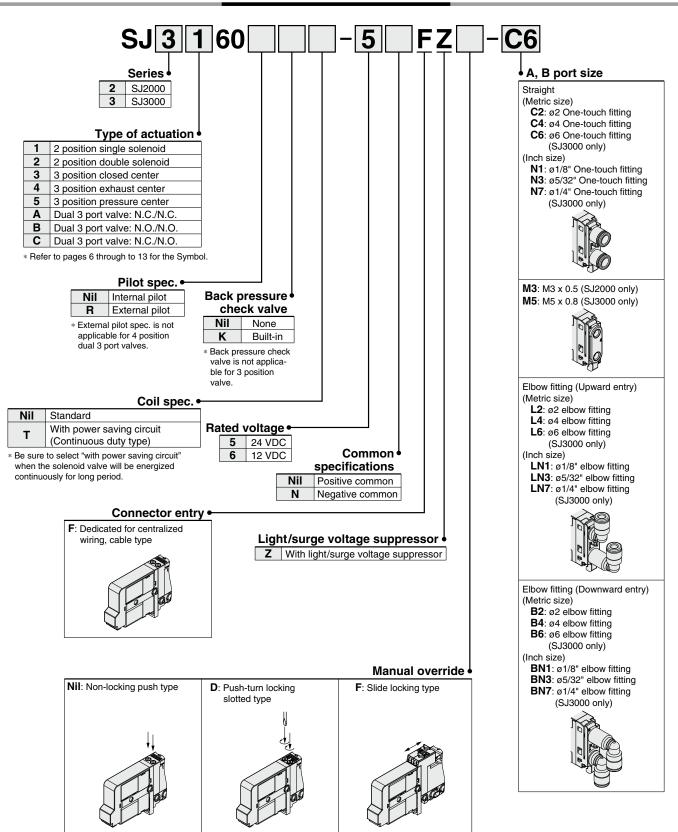
There is no need to enter anything when the SUP/EXH block mounting position "M" is selected.

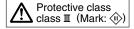
Valve stations

F : D-	sub connecto	or (25 pins)	P: Flat ribbon cable (26 pins)			PG : Flat ribbon cable (20 pins)		
Symbol	Stations	Note	Symbol	Stations	Note	Symbol	Stations	Note
02	2 stations	All	02	2 stations	All	02	2 stations	All
÷	:	double	:	:	double	:	:	double
10	10 stations	wiring	10	10 stations	wiring	09	9 stations	wiring
02	2 stations	All	02	2 stations	All	02	2 stations	All
÷	:	single	:	÷	single	:	:	single
20	20 stations	wiring	20	20 stations	wiring	18	18 stations	wiring

- **PH**: Flat ribbon cable (10 pins) Symbol Stations Note 2 stations double wiring 4 stations 02 2 stations ΑII single 08 8 stations wiring
- The number of the blanking block assembly is also included.
- The cable type is applicable to 2 or more sta-

How to Order Solenoid Valves

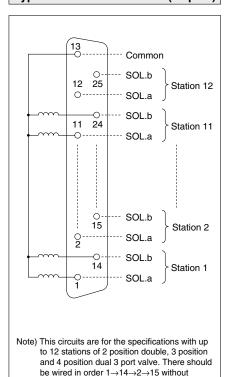




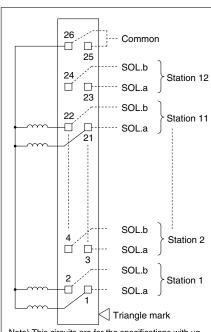


Manifold Electrical Wiring/Connector Type (Non-polar Type)

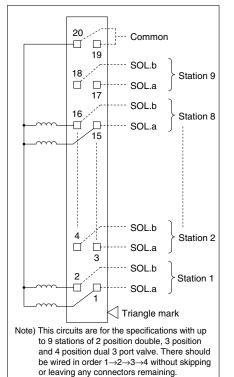
Type 60F: D-sub connector (25 pins)



Type 60P: Flat ribbon cable (26 pins)



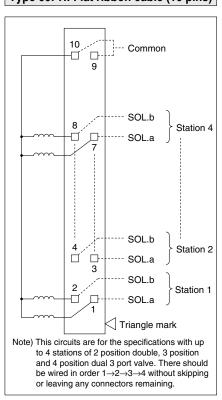
Type 60PG: Flat ribbon cable (20 pins)



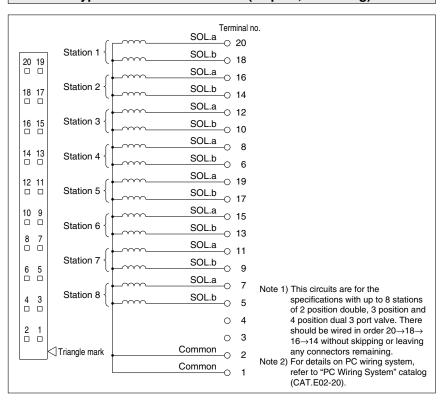
Note) This circuits are for the specifications with up to 12 stations of 2 position double, 3 position and 4 position dual 3 port valve. There should be wired in order 1→2→3→4 without skipping or leaving any connectors remaining.

Type 60PH: Flat ribbon cable (10 pins)

skipping or leaving any connectors remaining.



Type 60J: Flat ribbon cable (20 pins, PC wiring)



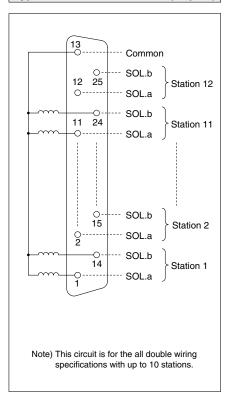
⚠ Caution

When the non-polar U type valves are used, either positive common or negative common wiring of the manifold is possible. However, when the Z type valves are used, select the positive common or negative common according to the wiring specifications.

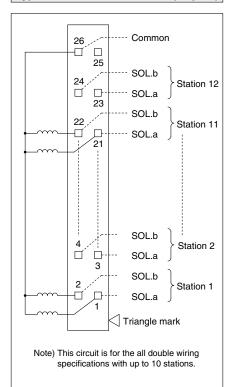


Manifold Electrical Wiring/Cable Type

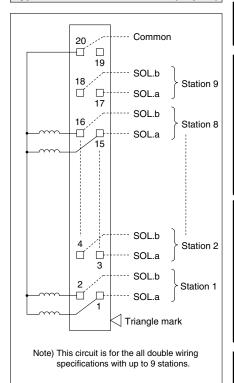
Type 60LF: D-sub connector (25 pins)



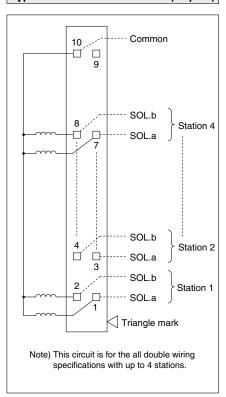
Type 60LP: Flat ribbon cable (26 pins)



Type 60LPG: Flat ribbon cable (20 pins)



Type 60LPH: Flat ribbon cable (10 pins)



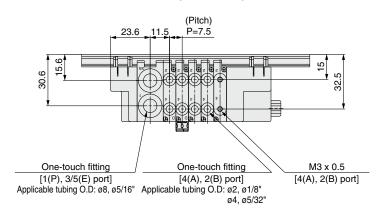
⚠ Caution

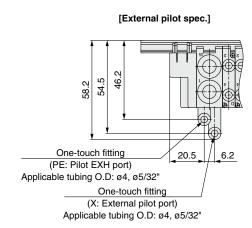
When the non-polar U type valves are used, either positive common or negative common wiring of the manifold is possible. However, when the Z type valves are used, select the positive common or negative common according to the wiring specifications.

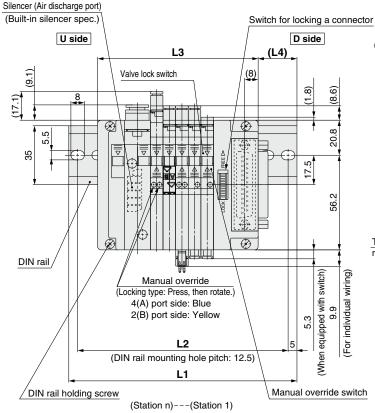


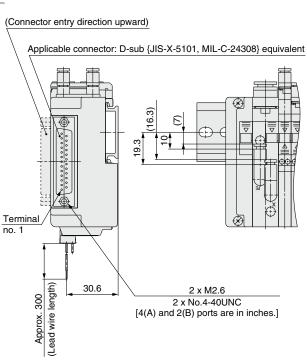
Dimensions: Series SJ2000 for D-sub Connector

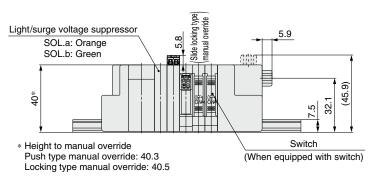
SS5J2-60FD₂-Stations U(S, R, RS)

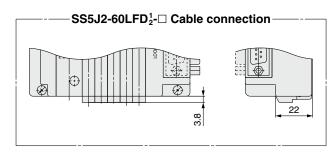










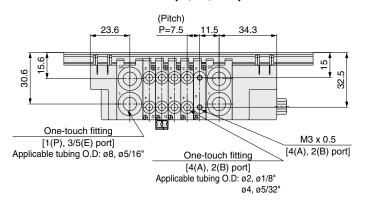


-	L: Dimensions n: Stati									Stations	
Ì	۲ <u>/</u>	1	2	3	4	5	6	7	8	9	10
	L1	98	110.5	110.5	123	135.5	135.5	148	148	160.5	173
Ī	L2	87.5	100	100	112.5	125	125	137.5	137.5	150	162.5
	L3	65.3	72.8	80.3	87.8	95.3	102.8	110.3	117.8	125.3	132.8
Ī	L4	19.5	22	18	20.5	23	19.5	22	18	20.5	23

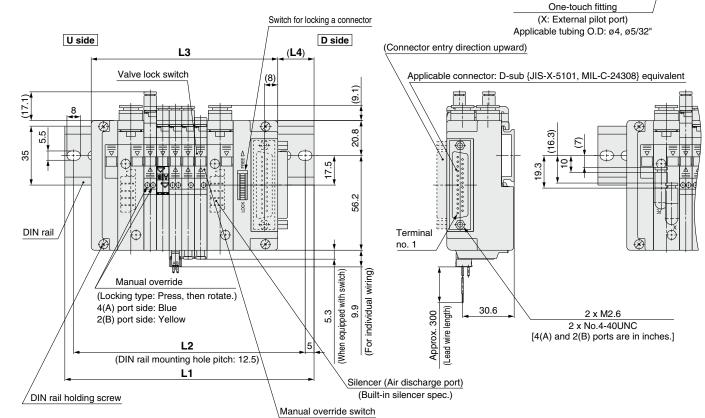
Note) For manifold dimensions including elbow fitting, refer to page 31.

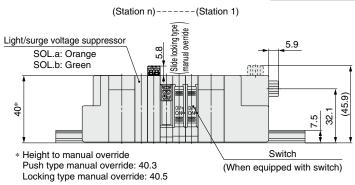
Dimensions: Series SJ2000 for D-sub Connector

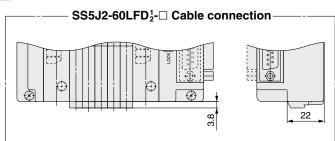
SS5J2-60FD₂-Stations B(S, R, RS)



[External pilot spec.] (There is a piping of X, PE port in the both sides.) 54.5 46. 58.2 20.5 One-touch fitting (PE: Pilot EXH port) Applicable tubing O.D: ø4, ø5/32"







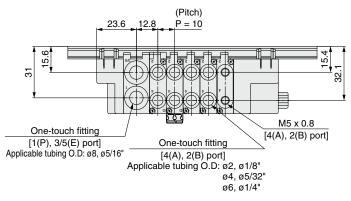
Note) For manifold dimensions including elbow fitting, refer to page 31.

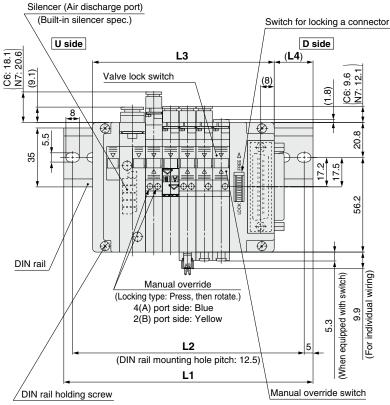
D: .		•
 I)IM	nane	ions

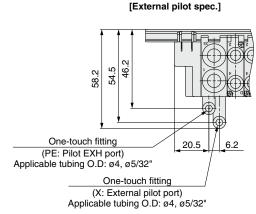
L: D	L: Dimensions n: Stat															tations								
L	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	110.5	123	135.5	135.5	148	148	160.5	173	173	185.5	185.5	198	210.5	210.5	223	223	235.5	248	248	260.5	260.5	273	285.5	285.5
L2	100	112.5	125	125	137.5	137.5	150	162.5	162.5	175	175	187.5	200	200	212.5	212.5	225	237.5	237.5	250	250	262.5	275	275
L3	80.8	88.3	95.8	103.3	110.8	118.3	125.8	133.3	140.8	148.3	155.8	163.3	170.8	178.3	185.8	193.3	200.8	208.3	215.8	223.3	230.8	238.3	245.8	253.3
L4	18	20.5	23	19	21.5	18	20.5	23	19	21.5	18	20.5	23	19	21.5	18	20.5	23	19	21.5	18	20.5	23	19

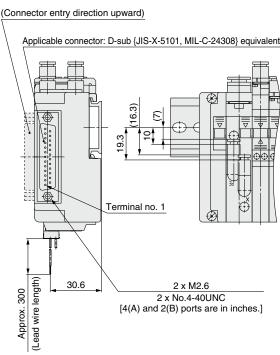
Dimensions: Series SJ3000 for D-sub Connector

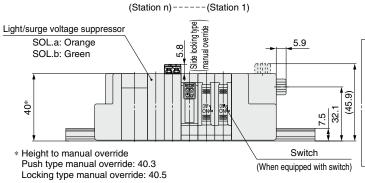
SS5J3-60FD₂-Stations U(S, R, RS)

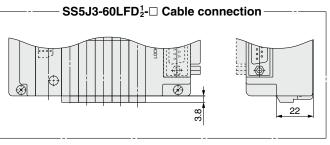










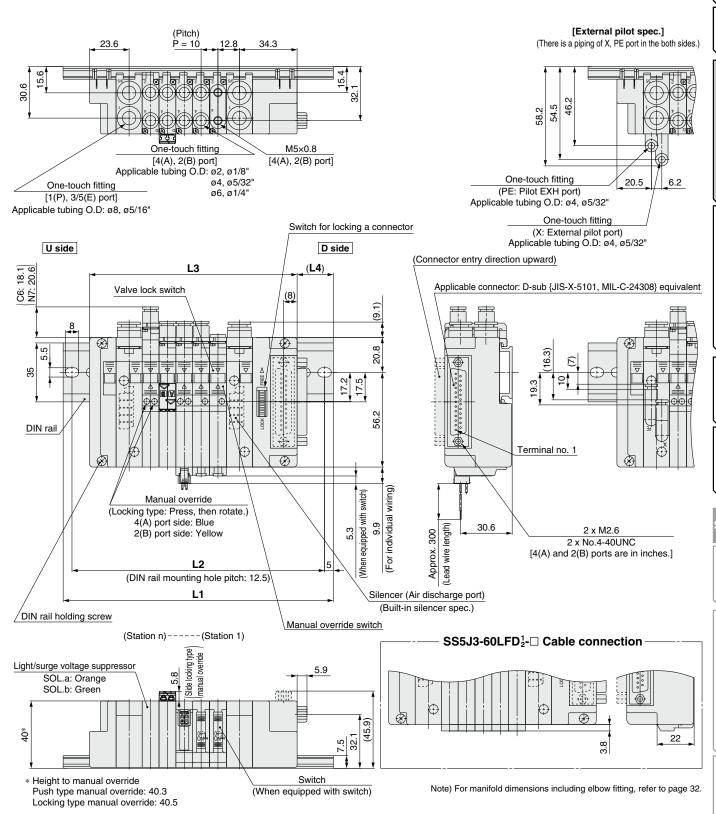


Note) For manifold dimensions including elbow fitting, refer to page 32.

L: Dimensions n: Stations												
L	1	2	3	4	5	6	7	8	9	10		
L1	98	110.5	123	135.5	148	148	160.5	173	185.5	198		
L2	87.5	100	112.5	125	137.5	137.5	150	162.5	175	187.5		
L3	67.8	77.8	87.8	97.8	107.8	117.8	127.8	137.8	147.8	157.8		
L4	18	19	20.5	21.5	22.5	17.5	18.5	20	21	22		

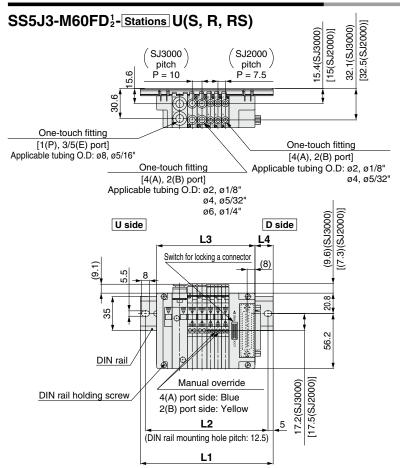
Dimensions: Series SJ3000 for D-sub Connector

SS5J3-60FD₂-Stations B(S, R, RS)



L: D	L: Dimensions n: Statio															tations								
	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	123	123	135.5	148	160.5	173	185.5	185.5	198	210.5	223	235.5	235.5	248	260.5	273	285.5	298	298	310.5	323	335.5	348	348
L2	112.5	112.5	125	137.5	150	162.5	175	175	187.5	200	212.5	225	225	237.5	250	262.5	275	287.5	287.5	300	312.5	325	337.5	337.5
L3	83.3	93.3	103.3	113.3	123.3	133.3	143.3	153.3	163.3	173.3	183.3	193.3	203.3	213.3	223.3	233.3	243.3	253.3	263.3	273.3	283.3	293.3	303.3	313.3
L4	22.5	17.5	19	20	21	22	23.5	18.5	19.5	20.5	21.5	23	18	19	20	21	22.5	23.5	18.5	19.5	20.5	22	23	18

Dimensions: SJ2000/3000 Mixed Manifold

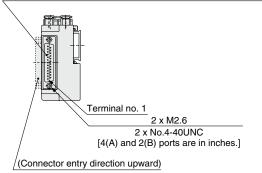


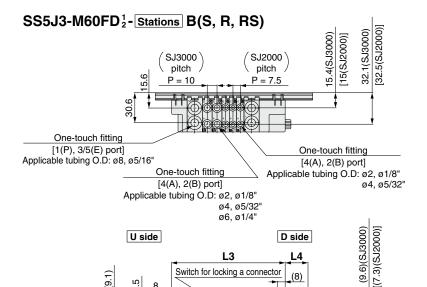
L dimension: Formula, L1 to L4 $L3 = 7.5 \times n1 + 10 \times n2 + 57.8$ M = (L3 + 9.9)/12.5 + 1Remove all numbers after the decimal. $L1 = M \times 12.5 + 23$ L2 = L1 - 10.5L4 = (L1 - L3)/2 + 1

> n1: Quantity of SJ2000 n2: Quantity of SJ3000

* The dimensions of L1 to L4 for SS5J3-M60FD1/2-Stations D are the same as those of SS5J3-M60FD1/2-Stations U.

Applicable connector: D-sub {JIS-X-5101, MIL-C-24308} equivalent





Switch for locking a connector

Manual override

2(B) port side: Yellow

4(A) port side: Blue

L2

(DIN rail mounting hole pitch: 12.5)

(8)

20.8

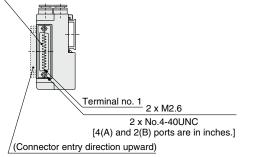
56.2

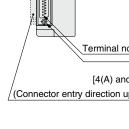
[17.5(\$J2000)]

L dimension: Formula, L1 to L4 $L3 = 7.5 \times n1 + 10 \times n2 + 73.3$ M = (L3 + 9.9)/12.5 + 1Remove all numbers after the decimal. $L1 = M \times 12.5 + 23$ L2 = L1 - 10.5 L4 = (L1 - L3)/2 + 1

> n1: Quantity of SJ2000 n2: Quantity of SJ3000

Applicable connector: D-sub {JIS-X-5101, MIL-C-24308} equivalent



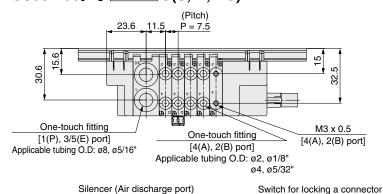


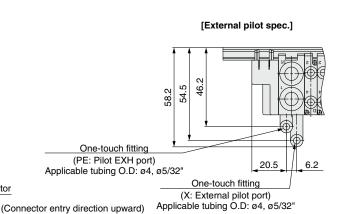
DIN rail

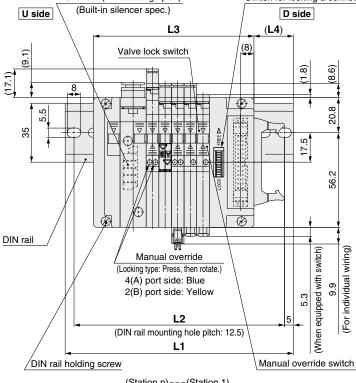
DIN rail holding screw

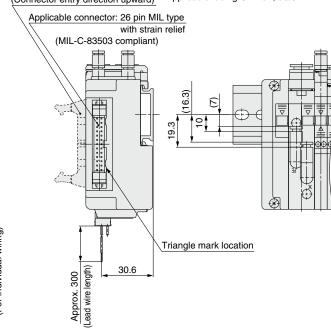
Dimensions: Series SJ2000 for Flat Ribbon Cable/PC Wiring

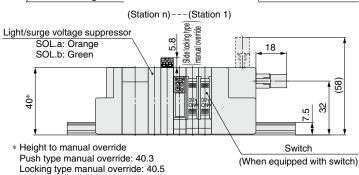
SS5J2-60^PD¹₂-Stations U(S, R, RS)

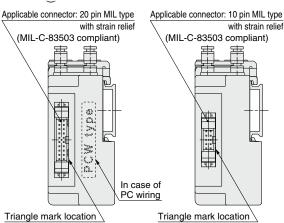








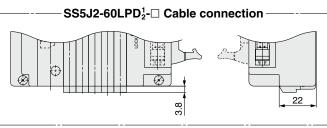




Note 1) Type 60PG, 60PH and 60J differ only in their connectors, and the L1 through L4 dimensions are the same as type 60P.

Note 2) For manifold dimensions including elbow fitting, refer to page 31.

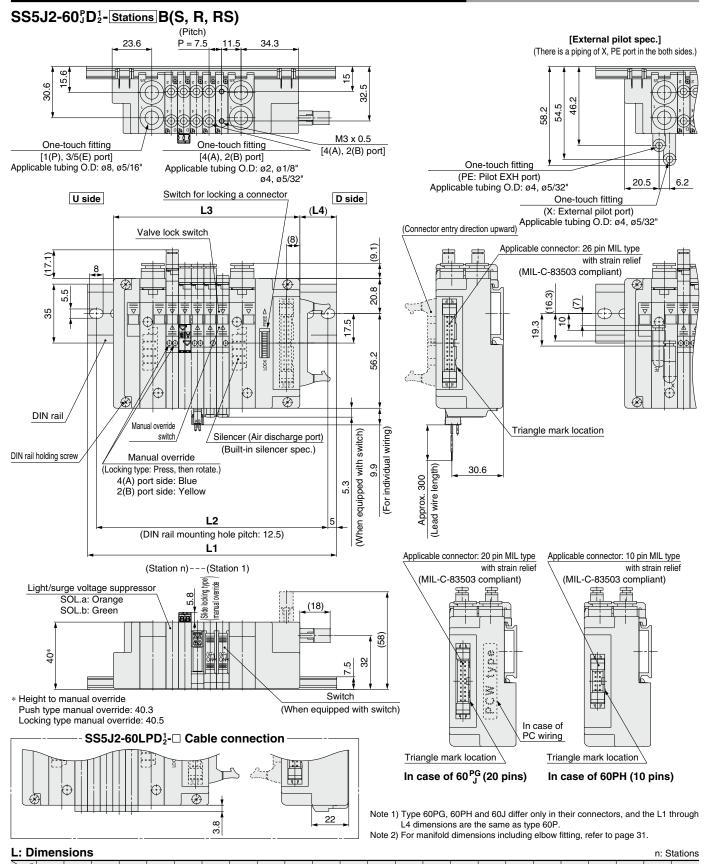
L: Dimensions n: Stations												
L	1	2	3	4	5	6	7	8	9	10		
L1	98	110.5	110.5	123	135.5	135.5	148	148	160.5	173		
L2	87.5	100	100	112.5	125	125	137.5	137.5	150	162.5		
L3	65.3	72.8	80.3	87.8	95.3	102.8	110.3	117.8	125.3	132.8		
L4	19.5	22	18.5	21	23.5	19.5	22	18.5	21	23.5		



In case of 60 PG (20 pins)

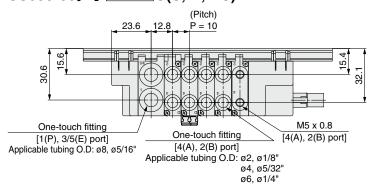
In case of 60PH (10 pins)

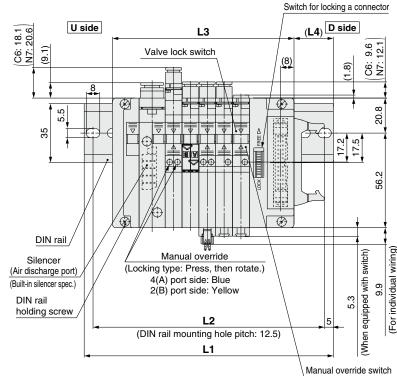
Dimensions: Series SJ2000 for Flat Ribbon Cable/PC Wiring

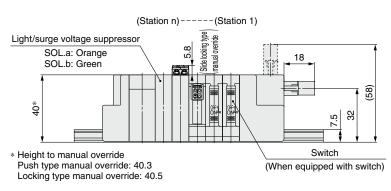


Dimensions: Series SJ3000 for Flat Ribbon Cable/PC Wiring

SS5J3-60^PD¹₂-Stations U(S, R, RS)



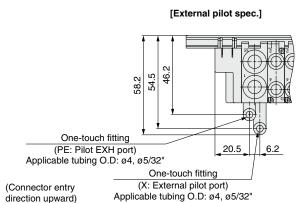


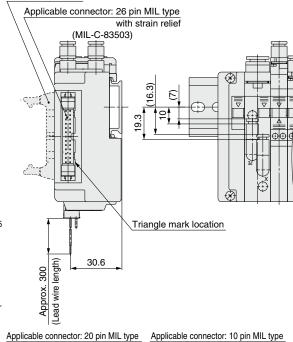


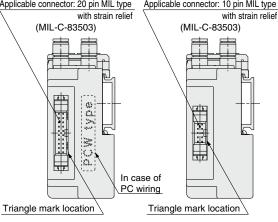
Note 1) Type 60PG, 60PH and 60J differ only in their connectors, and the L1 through L4 dimensions are the same as type 60P.

Note 2) For manifold dimensions including elbow fitting, refer to page 32.

L: Dimensions n: Stations												
L	1	2	3	4	5	6	7	8	9	10		
L1	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198		
L2	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5		
L3	67.8	77.8	87.8	97.8	107.8	117.8	127.8	137.8	147.8	157.8		
L4	18.5	19.5	20.5	22	23	24	19	20	21.5	22.5		

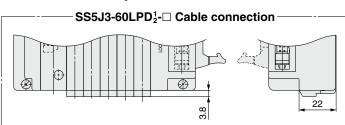






In case of 60^{PG}_{.I}(20 pins)

In case of 60PH (10 pins)





28

Plug-in

Connector Type/ Cable Type

Non plug-in Individual

Manifold Options

SJ3A6

Made to Order

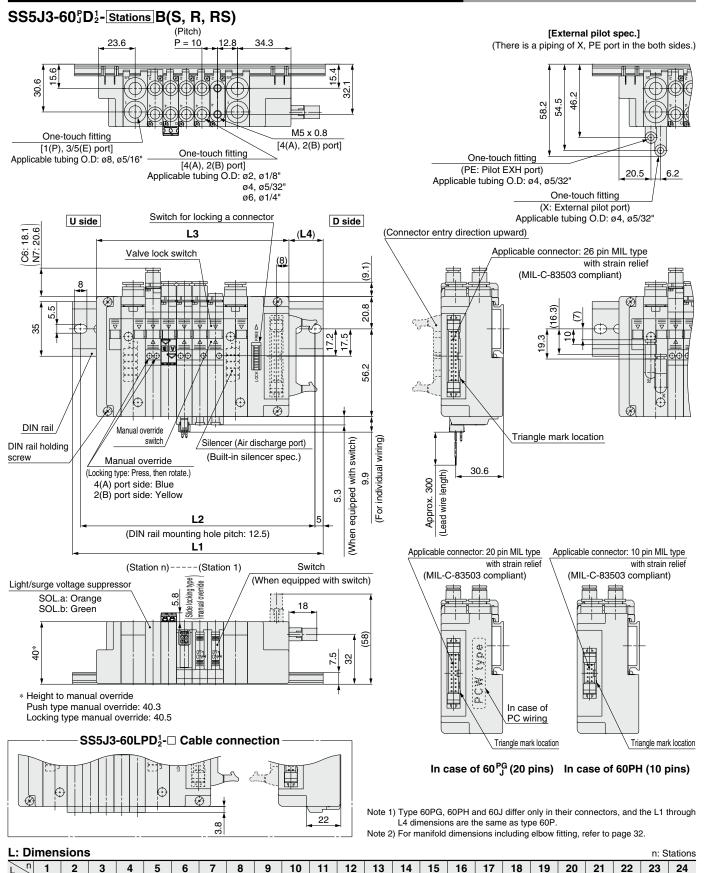
Common Specifications

Plug-in Connector Type/ Cable Type

Non plug-in

Individual

Dimensions: Series SJ3000 for Flat Ribbon Cable/PC Wiring



L3

123

112.5 125

83.3

23

135.5

93.3

135.5 148

103.3

125

160.5 173

21.5

137.5 150

113.3 123.3

185.5

23.5

162.5 175

133.3 143.3

22.5

185.5 198

175

153.3

18.5 20

210.5 223

173.3

21

212.5 225

183.3

187.5 200

163.3

193.3

235.5 248

237.5

24.5

248

237.5 250

19.5

203.3 213.3 223.3 233.3

260.5 273

20.5

262.5 275

21.5

285.5 298

243.3

22.5 24

298

287.5 300

19

263.3 273.3

287.5

253.3

310.5 323

20

312.5 325

283.3

21

335.5 348

293.3

303.3

23.5

348

337.5

313.3

18.5

[32.5(\$J2000)] 32.1(\$J3000)

15.4(SJ3000) 15(\$J2000)]

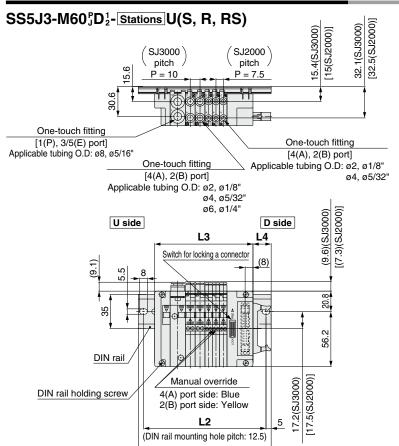
One-touch fitting

S.12000 \

pitch

P = 7.5

Dimensions: SJ2000/3000 Mixed Manifold



L1

SS5J3-M60^PD₂-Stations B(S, R, RS)

One-touch fitting

[1(P), 3/5(E) port]

SJ3000

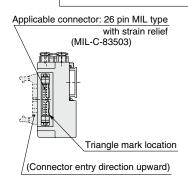
pitch

P = 10

L dimension: Formula, L1 to L4 $L3 = 7.5 \times n1 + 10 \times n2 + 57.8$ M = (L3 + 10.6)/12.5 + 1Remove all numbers after the decimal. $L1 = M \times 12.5 + 23$ L2 = L1 - 10.5L4 = (L1 - L3)/2 + 1.3

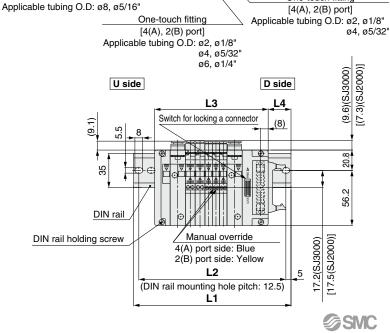
> n1: Quantity of SJ2000 n2: Quantity of SJ3000

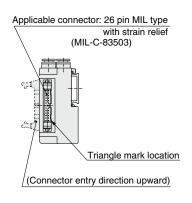
* The dimensions of L1 to L4 for SS5J3-M60PD1/2-Stations D are the same as those of SS5J3-M60PD1/2-Stations U.



L dimension: Formula, L1 to L4 $L3 = 7.5 \times n1 + 10 \times n2 + 73.3$ M = (L3 + 10.6)/12.5 + 1Remove all numbers after the decimal. L1 = M x 12.5 + 23 L2 = L1 - 10.5L4 = (L1 - L3)/2 + 1.3

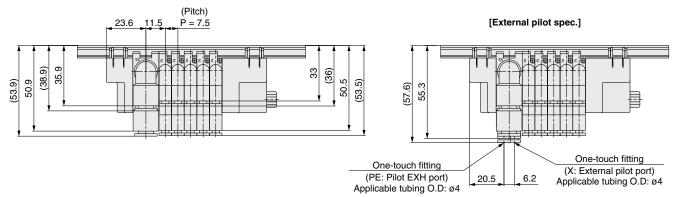
> n1: Quantity of SJ2000 n2: Quantity of SJ3000

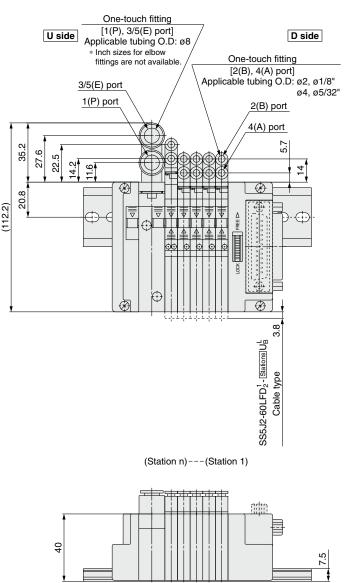




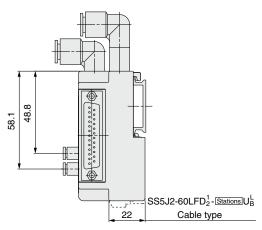
Dimensions: Series SJ2000 with Elbow Fittings

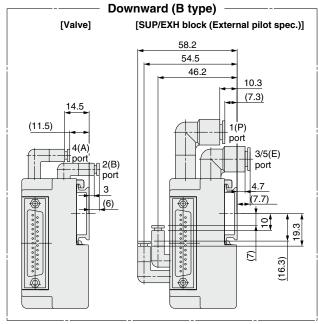
SS5J2-60FD₂-Stations U_B





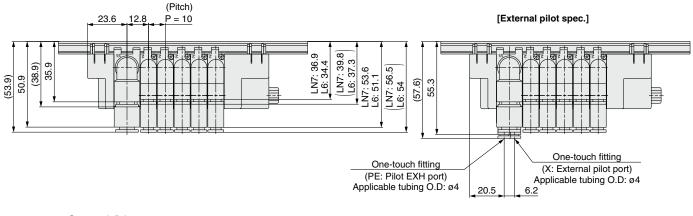
[SUP/EXH block (External pilot spec.)]

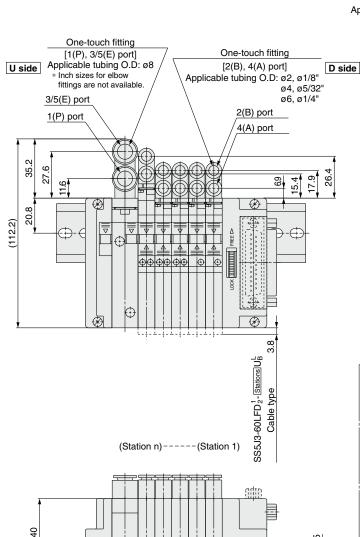


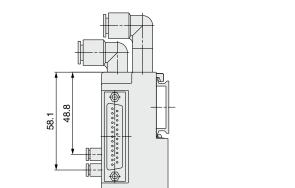


Dimensions: Series SJ3000 with Elbow Fittings

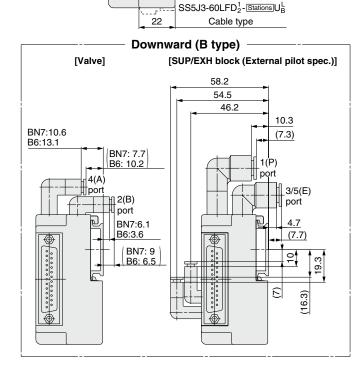
SS5J3-60FD₂-Stations U_B







[SUP/EXH block (External pilot spec.)]



SJ 2000 3000

Individual | Non plug-in | Connector Type | Plug-in Wiring |

Manifold Options

Made to Order

SJ3A6

Common Specifications Plug-in

Connector Type/ Cable Type

Individual | Non plug-in

Plug-in Connector Type PC Wiring System with Power Supply Terminal

Series SJ2000/3000

How to Order

An order cannot be placed with only the manifold part no. Be sure to order solenoid valves for mounting at the same time while referring to the ordering example.

●Connector type manifold

SS5J3--60<u>G</u>D-05U

Series •

2	SJ2000
3	SJ3000 (SJ2000/3000 mixed)

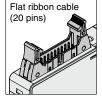
Mixed mounting type

Nil	Standard Note 1)						
M	Mixed mounting Note 2)						
Note 1) There is no need to enter							

Note 1) There is no need to enter anything when you operate either the SJ2000 or SJ3000 series alone. Note 2) Enter "M" when the SJ2000

Note 2) Enter "M" when the SJ200 or SJ3000 series will be mounted on the same manifold base together.





Connector mounting position

Symbol Mounting position

Symbol Mounting position

D side

How to Order Manifold Assembly

Ordering example (SJ3000) Double solenoid, individual wiring/lead wire length 300 mm (24 VDC) SJ3260-5MZ-C6 (1 set) Double solenoid, with switch (24 VDC) SJ3260-5CZJ-C6 (1 set) Double solenoid (24 VDC) SJ3260-5CU-C6 (2 sets) Single solenoid (24 VDC) SJ3160-5CU-C6 (2 sets)

- SS5J3-60GD-06U ··· 1 set (Manifold part no.)
- * SJ3160-5CU-C6······ 2 sets (Single solenoid part no.)
- * SJ3260-5CU-C6..... 2 sets (Double solenoid part no.)
- * SJ3260-5CZJ-C6···· 1 set (Double solenoid, with switch part no.)
- * SJ3260-5MZ-C6····· 1 set (Double solenoid, individual wiring/lead wire length 300 mm part no.)
- →The asterisk denotes the symbol for assembly. Prefix to the part no. of the solenoid valve, etc.
- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. In the case of complex arrangement, specify them in the manifold specification sheet.

Note) When ordering a manifold, specify the part nos. of valves to be mounted together. (An order cannot be placed with only the manifold part no.)

DIN rail length specified

Nil	Standard length								
2	2 stations Specify a longer								
÷		rail than the							
16	16 stations	standard length.							

Specify the valve stations not exceeding the maximum stations.

SUP/EXH block fitting spec.

Nil	Straight fitting With external pilot spec. X, PE port
L	Elbow fitting (Upward) With external pilot spec. X, PE port
В	Elbow fitting (Downward) With external pilot spec. X, PE port

* There is no need to enter anything when the SUP/EXH block mounting position "M" is selected.

Pilot spec

i not opou.								
Nil Internal pilot								
S	Internal pilot/Built-in silencer							
R	External pilot							
RS	External pilot/Built-in silencer							

- * There is no need to enter anything when the SUP/EXH block mounting position "M" is selected.
- * For built-in silencers, the 3/5(E) ports are plugged.

SUP/EXH block mounting position

U	U side (1 to 10 stations)
D	D side (1 to 10 stations)
В	Both sides (1 to 16 stations)
M*	Special specifications

 Specify the required specifications (including port sizes other than Ø8) by means of the manifold specification sheet.

Symbol	Stations	Note
01	1 station	Up to 16 solenoids
:		possible.
16	16 stations	pussible.

* The number of the blanking block assembly is also included. Since single and double wiring are available with the blanking block assembly, select a model compatible with the valve wiring spec. planned for the future. (Refer to page 70.)



For the wiring to power supply terminal, refer to page 102.

Single solenoid

How to Order Solenoid Valves

Nil

K

valve

(Non-polar type)

(Polar type)

Rated voltage

With light/surge voltage suppressor

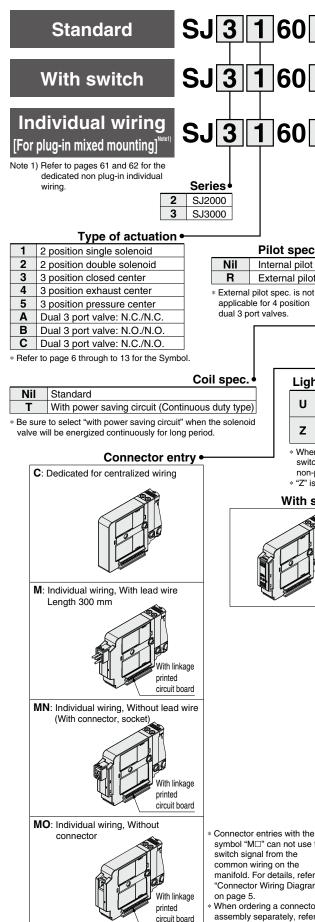
With light/surge voltage suppressor

5 24 VDC

Pilot spec.

Internal pilot

External pilot



When the types with power saving circuit, with switches, and/or individual wiring are used, the non-polar type cannot be selected. "Z" is positive common spec. With switch •

- Connector entries with the symbol "M□" can not use the switch signal from the common wiring on the manifold. For details, refer to "Connector Wiring Diagram" on page 5. When ordering a connector
- assembly separately, refer to pages 101 and 102.

wiring spec. Single wiring **Back pressure** D Double wiring check valve There is no need to enter None anything for 2 position

Built-in double, 3 position and 4 position solenoid valves. Back pressure check Select this when the valve is not applicaunused numbers to wiring ble for 3 position are set. Refer to page 5 for details.

A, B port size

Straight

(Metric size)

C2: ø2 One-touch fitting C4: ø4 One-touch fitting

C6: ø6 One-touch fitting (SJ3000 only)

(Inch size)

N1: Ø1/8" One-touch fitting N3: ø5/32" One-touch fitting N7: Ø1/4" One-touch fitting

(SJ3000 only)

M3: M3 x 0.5 (SJ2000 only) M5: M5 x 0.8 (SJ3000 only)



Elbow fitting assembly (Upward entry) (Metric size)

L2: ø2 elbow fitting assembly J L4: ø4 elbow fitting assembly

L6: ø6 elbow fitting assembly (SJ3000 only)

(Inch size)

LN1: ø1/8" elbow fitting assembly LN3: Ø5/32" elbow fitting assembly LN7: Ø1/4" elbow fitting assembly

(SJ3000 only)

Elbow fitting assembly (Downward entry) (Metric size)

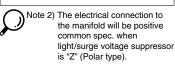
B2: ø2 elbow fitting assembly B4: ø4 elbow fitting assembly

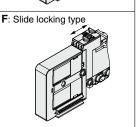
B6: ø6 elbow fitting assembly (SJ3000 only)

(Inch size)

BN1: ø1/8" elbow fitting assembly BN3: ø5/32" elbow fitting assembly

BN7: ø1/4" elbow fitting assembly (SJ3000 only)



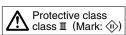


Manual override

Nil: Non-locking push type

D: Push-turn locking

slotted type





Manifold Electrical Wiring

Type 60G: Flat ribbon cable (20 pins, PC wiring with power supply terminal) Terminal no. SOL.a **→** 20 Station 1 SOL.b ___ 18 20 19 □ SOL.a 0 Station 2 17 _ Station 3 SOL.b 15 _ SOL.a Station 4 14 12 _ 11 Station 5 SOL.b 10 9 Station 6 SOL.b 13 Station 7 SOL.a Station 8 SOL.b 4 3 2 1 3,4 Triangle mark 1,2 24 VDC Power supply terminal

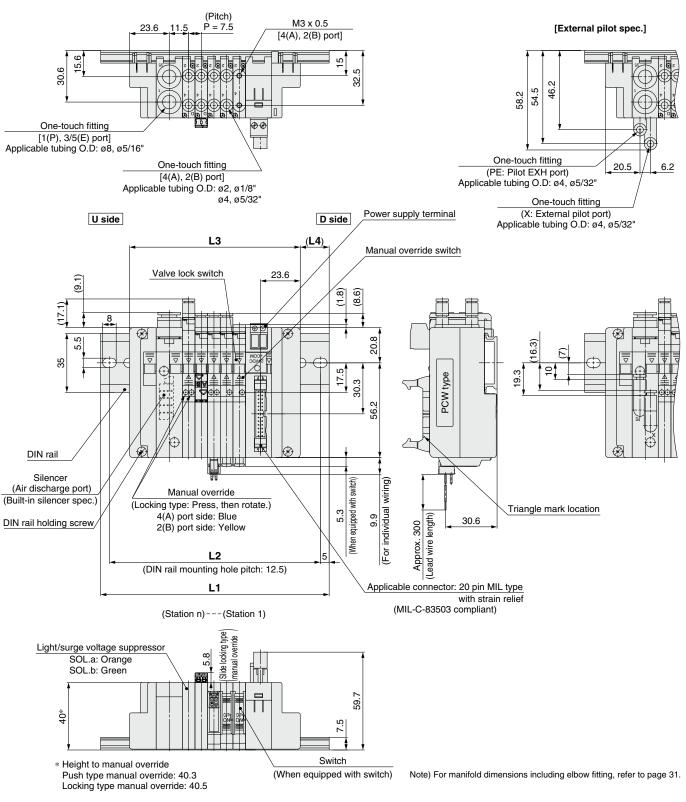
Note 1) This circuits are for the specifications with up to 8 stations of 2 position double, 3 position and 4 position dual 3 port valves. These should be wired in order 20→18→16→14 without skipping or leaving any connectors remaining.

Note 2) For details on PC wiring systems, refer to "PC Wiring System" catalog (CAT.E02-20).



Dimensions

SS5J2-60GD-Stations U(S, R, RS)



L: Di	L: Dimensions n: Stations										
L	1	2	3	4	5	6	7	8	9	10	
L1	98	110.5	110.5	123	135.5	135.5	148	148	160.5	173	
L2	87.5	100	100	112.5	125	125	137.5	137.5	150	162.5	
L3	71.2	78.7	86.2	93.7	101.2	108.7	116.2	123.7	131.2	138.7	
L4	13.5	16	12	14.5	17	13.5	16	12	14.5	17	

Plug-in

Individual | Non plug-in

Manifold Options Made to Order

SJ3A6

Common Specifications

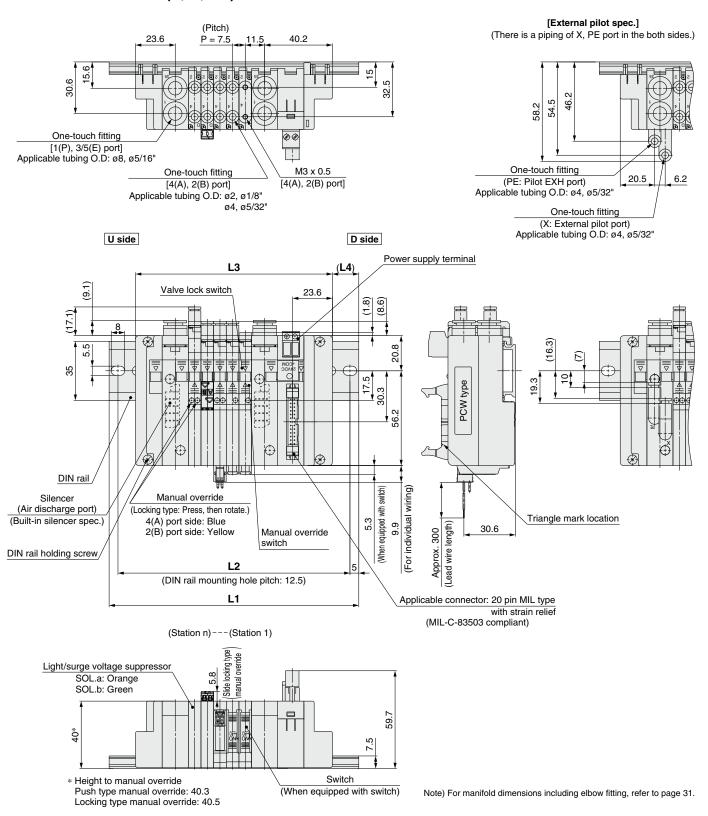
Plug-in Connector Type/ Cable Type

Individual | Non plug-in

Dimensions

37

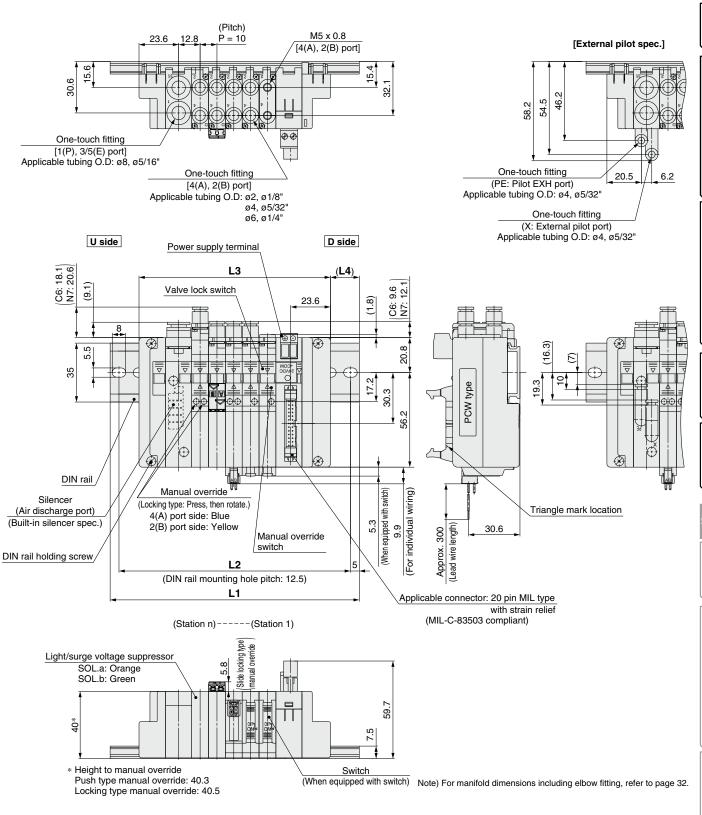
SS5J2-60GD-Stations B(S, R, RS)



L	L: Dimensions n: Stations																
l	/_	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	L1	110.5	123	135.5	135.5	148	148	160.5	173	173	185.5	185.5	198	210.5	210.5	223	223
	L2	100	112.5	125	125	137.5	137.5	150	162.5	162.5	175	175	187.5	200	200	212.5	212.5
	L3	86.7	94.2	101.7	109.2	116.7	124.2	131.7	139.2	146.7	154.2	161.7	169.2	176.7	184.2	191.7	199.2
Ī	L4	12	14.5	17	13	15.5	12	14.5	17	13	15.5	12	14.5	17	13	15.5	12

Dimensions

SS5J3-60GD-Stations U(S, R, RS)



L: Dimensions n: Stations												
L n	1	2	3	4	5	6	7	8	9	10		
L1	98	110.5	123	135.5	148	148	160.5	173	185.5	198		
L2	87.5	100	112.5	125	137.5	137.5	150	162.5	175	187.5		
L3	73.7	83.7	93.7	103.7	113.7	123.7	133.7	143.7	153.7	163.7		
L4	12	13	14.5	15.5	16.5	11.5	12.5	14	15	16		



Cable Type Plug-in

Individual | Non plug-in |

Manifold Options Made to Order

SJ3A6

Common Specifications

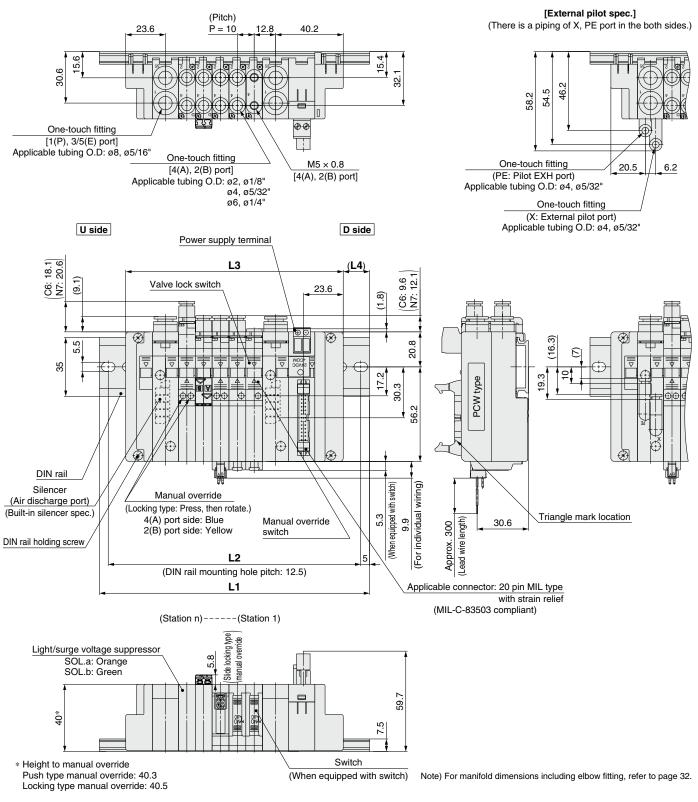
Connector Type/ Plug-in Cable Type

Individual | Non plug-in |

Dimensions

39

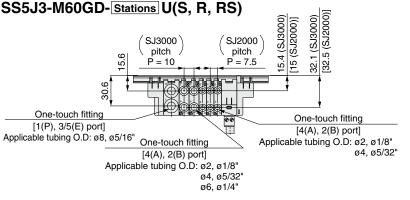
SS5J3-60GD-Stations B(S, R, RS)



L:	L: Dimensions n: Stations																
	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L	1	123	123	135.5	148	160.5	173	185.5	185.5	198	210.5	223	235.5	235.5	248	260.5	273
L	2	112.5	112.5	125	137.5	150	162.5	175	175	187.5	200	212.5	225	225	237.5	250	262.5
L	3	89.2	99.2	109.2	119.2	129.2	139.2	149.2	159.2	169.2	179.2	189.2	199.2	209.2	219.2	229.2	239.2
1.	4	17	115	13	14	15	16.5	17.5	125	13.5	14.5	16	17	12	13	14	15.5

SJ3A6

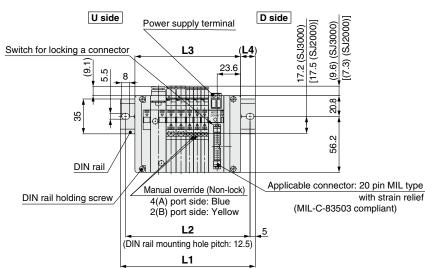
Dimensions

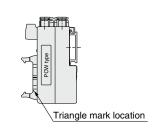


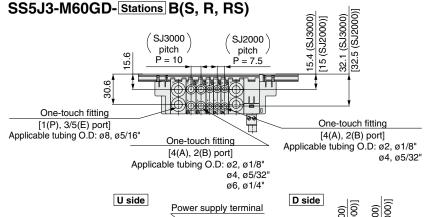
L dimension: Formula, L1 to L4 $L3 = 7.5 \times n1 + 10 \times n2 + 63.7$ M = (L3 + 4)/12.5 + 1Remove all numbers after the decimal. $L1 = M \times 12.5 + 23$ L2 = L1 - 10.5L4 = (L1 - L3)/2-2

> n1: Quantity of SJ2000 n2: Quantity of SJ3000

* The dimensions of L1 to L4 for SS5J3-M60GD-Stations D are the same as those of SS5J3-M60GD-Stations U.

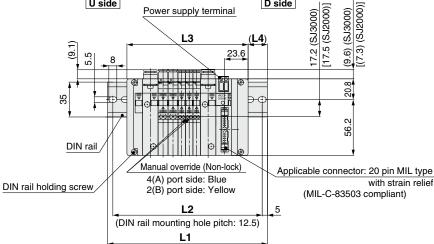




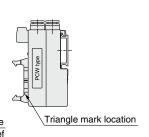


L dimension: Formula, L1 to L4 $L3 = 7.5 \times n1 + 10 \times n2 + 79.2$ M = (L3 + 4)/12.5 + 1Remove all numbers after the decimal. $L1 = M \times 12.5 + 23$ L2 = L1 - 10.5 L4 = (L1 - L3)/2-2

> n1: Quantity of SJ2000 n2: Quantity of SJ3000



SMC



туре 60Ѕ□

Plug-in Connector Type

EX180 Integrated Type (for Output) Serial Transmission System

Series SJ2000/3000

How to Order

An order cannot be placed with only the manifold part no. Be sure to order solenoid valves for mounting at the same time while referring to the ordering example.

11011 10 014

SS5J3-60SV2 D-05U

Series

3 SJ3000 (SJ2000/3000 mixed)

Mixed mounting type

Nil	Standard Note 1)
M	Mixed mounting Note 2)

Note 1) There is no need to enter anything when you operate either the SJ2000 or SJ3000 series alone.

Note 2) Enter "M" when the SJ2000 or SJ3000 series will be mounted on the same manifold base together.

Component module •

	Without SI unit
V2	CC-Link compliant (32 points)
Q2	DeviceNet compliant (32 points)
Q3	DeviceNet compliant (16 points)

 Please contact SMC for a specification of the SI unit.

Communication connector spec.

lik	T-branch type
Α	Straight type

 Communication connector, power connector are shipped together with manifold. Power connector is available of straight type only.

SI unit common spec.

Nil	Positive common		
N	Negative common		

Unit mounting position

Valve stations

Symbol	Stations	Note					
01	1 station	Lin to 00 colonoido					
:	:	Up to 32 solenoids possible.					
32	32 stations	possible.					

* The number of the blanking block assembly is also included. Since single and double wiring are available with the blanking block assembly, select a model compatible with the valve wiring spec. planned for the future. (Refer to page 70.)

DIN rail length specified

Nil	Standard length						
2	2 stations	Specify a longer					
:		rail than the standard length					
32	32 stations						

 Specify the valve stations not exceeding the maximum stations.

SUP/EXH block fitting spec

Sol /Extraplock litting spec.						
Nil	Straight fitting					
L	Elbow fitting (Upward)					
В	Elbow fitting (Downward)					

* There is no need to enter anything when the SUP/EXH block mounting position "M" is selected.

• Pilot spec.

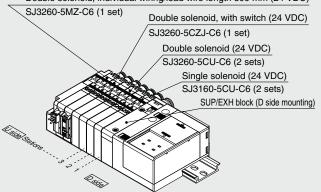
1 Hot opool					
Nil Internal pilot					
S Internal pilot/Built-in silencer					
R	External pilot				
RS	External pilot/Built-in silencer				

- * There is no need to enter anything when the SUP/EXH block mounting position "M" is selected.
- For built-in silencers, the 3/5(E) ports are plugged.

How to Order Manifold Assembly

Ordering example (SS5J3-60SV2□-□)

Double solenoid, individual wiring/lead wire length 300 mm (24 VDC)



- SS5J3-60SV2D-06D ···1 set (Manifold part no.)
- * SJ3160-5CU-C6·········2 sets (Single solenoid part no.)
- * SJ3260-5CU-C6-----2 sets (Double solenoid part no.)
- * SJ3260-5CZJ-C6....... 1 set (Double solenoid, with switch part no.)

 * SJ3260-5MZ-C6...... 1 set (Double solenoid, individual wiring/lead wire length 300 mm part no.)
- The asterisk denotes the symbol for assembly. Prefix to the part no. of the solenoid valve, etc.
- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. In the case of complex arrangement, specify them in the manifold specification sheet.

Note) When ordering a manifold, specify the part nos. of valves to be mounted together. (An order cannot be placed with only the manifold part no.)

SUP/EXH block mounting position

	<u> </u>
U	U side (1 to 10 stations)
D	D side (1 to 10 stations)
В	Both sides (1 to 32 stations)
M*	Special specifications

Specify the required specifications (including port sizes other than ø8) by means of the manifold specification sheet.

SI Unit Part No.

0. 0			
Symbol	Component module/Communication connector specifications	Common spec.	SI unit part no.
V2	CC-LINK compliant	NPN output (Positive common)	EX180-SMJ3
V2N	(32 points), T-branch type	PNP output (Negative common)	EX180-SMJ5
V2A	CC-LINK compliant	NPN output (Positive common)	EX180-SMJ3A
V2AN	(32 points), Straight type	PNP output (Negative common)	EX180-SMJ5A
Q2	DeviceNet compliant	NPN output (Positive common)	EX180-SDN3
Q2N	(32 points), T-branch type	PNP output (Negative common)	EX180-SDN5
Q2A	DeviceNet compliant	NPN output (Positive common)	EX180-SDN3A
Q2AN	(32 points), Straight type	PNP output (Negative common)	EX180-SDN5A
Q3	DeviceNet compliant	NPN output (Positive common)	EX180-SDN4
Q3N	(16 points), T-branch type	PNP output (Negative common)	EX180-SDN6
Q3A	DeviceNet compliant	NPN output (Positive common)	EX180-SDN4A
Q3AN	(16 points), Straight type	PNP output (Negative common)	EX180-SDN6A

	Specifications	
Power source	Non-polar	24 VDC + 10%/-5%
for driving valve	With energy saving circuit (Continuous duty)	24 VDC + 10%/0%

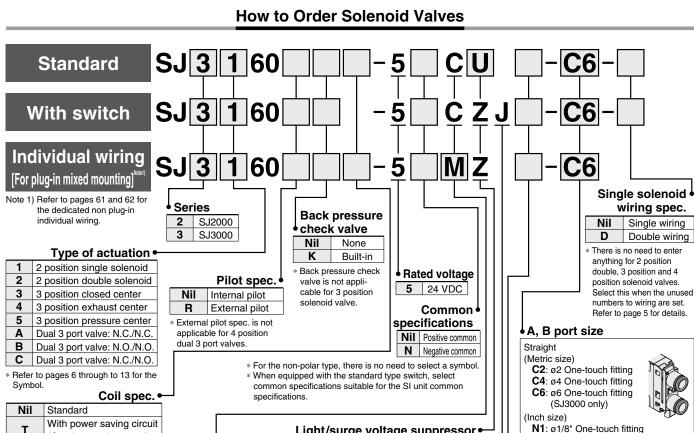
Refer to Reduced Wiring Fieldbus System (Serial Transmission) in Electric Products (CAT.E150) and the Operation Manual for the details of EX180 integrated-type (for output) serial transmission system. Please download it via our website. http://www.smcworld.com



wiring spec.

Single wiring

Double wiring



Light/surge voltage suppressor

J	With light/surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Polar type)

* When the types with power saving circuit, with switches, and/or individual wiring are used, the non-polar type cannot be selected.

With switch •

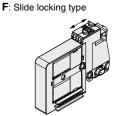


Manual override



D: Push-turn locking slotted





Elbow fitting assembly (Upward entry) (Metric size)

L2: ø2 elbow fitting assembly

L4: ø4 elbow fitting assembly

N3: ø5/32" One-touch fitting

N7: Ø1/4" One-touch fitting

(SJ3000 only)

M3: M3 x 0.5 (SJ2000 only)

M5: M5 x 0.8 (SJ3000 only)

L6: ø6 elbow fitting assembly (SJ3000 only)

(Inch size)

LN1: ø1/8" elbow fitting assembly LN3: ø5/32" elbow fitting assembly LN7: ø1/4" elbow fitting assembly

(SJ3000 only)

Elbow fitting assembly (Downward entry) (Metric size)

B2: ø2 elbow fitting assembly

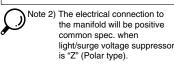
B4: ø4 elbow fitting assembly

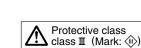
B6: ø6 elbow fitting assembly (SJ3000 only)

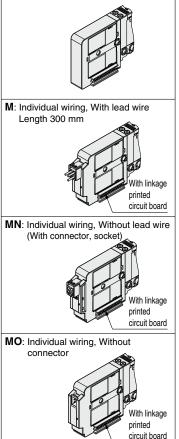
(Inch size)

BN1: ø1/8" elbow fitting assembly BN3: ø5/32" elbow fitting assembly

BN7: ø1/4" elbow fitting assembly (SJ3000 only)







(Continuous duty type)

C: Dedicated for centralized wiring

Connector entry •

Be sure to select "with power saving

circuit" when the solenoid valve will be

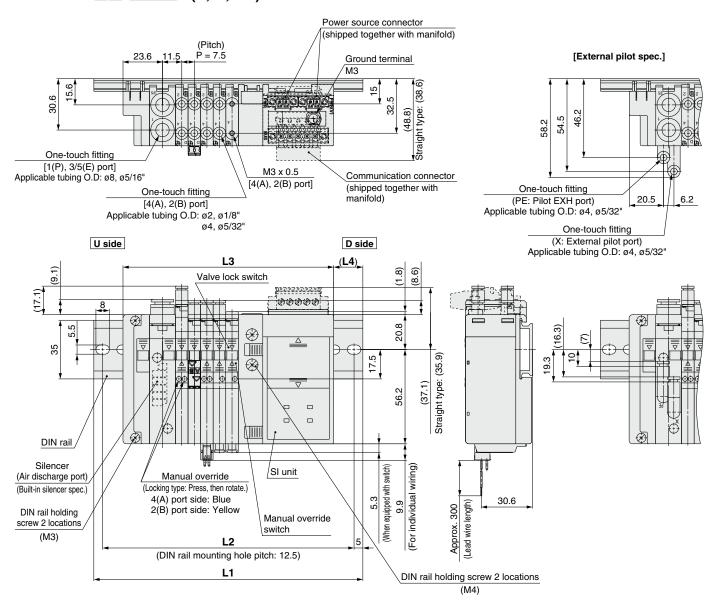
energized continuously for long period.

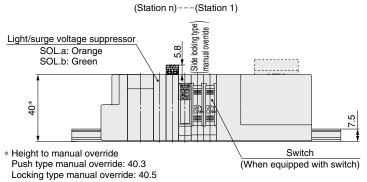
- Connector entries with the symbol "M□" can not use the switch signal from the common wiring on the manifold. For details, refer to "Connector Wiring Diagram" on page 5. When ordering a connector
- assembly separately, refer to pages 101 and 102.



Dimensions: Series SJ2000 for EX180 Integrated Type (for Output) Serial Transmission System

SS5J2-60S ___-Stations U(S, R, RS)





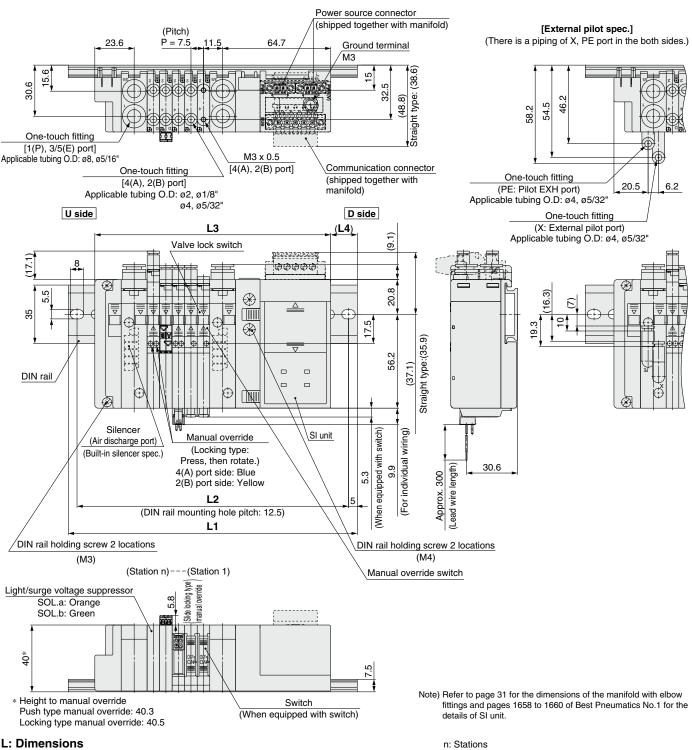
Note) Refer to page 31 for the dimensions of the manifold with elbow fittings and pages 1658 to 1660 of Best Pneumatics No.1 for the details of SI unit.

L: Di	L: Dimensions n: Stations									Stations
L	1	2	3	4	5	6	7	8	9	10
L1	123	135.5	135.5	148	160.5	160.5	173	173	185.5	198
L2	112.5	125	125	137.5	150	150	162.5	162.5	175	187.5
L3	95.7	103.2	110.7	118.2	125.7	133.2	140.7	148.2	155.7	163.2
L4	13.5	16	12.5	15	17.5	13.5	16	12.5	15	17.5



Dimensions: Series SJ2000 for EX180 Integrated Type (for Output) Serial Transmission System

SS5J2-60S Stations B(S, R, RS)



L: Di	mens	sions													n: S	Stations
L	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	135.5	148	160.5	160.5	173	173	185.5	198	198	210.5	210.5	223	235.5	235.5	248	248
L2	125	137.5	150	150	162.5	162.5	175	187.5	187.5	200	200	212.5	225	225	237.5	237.5
L3	111.2	118.7	126.2	133.7	141.2	148.7	156.2	163.7	171.2	178.7	186.2	193.7	201.2	208.7	216.2	223.7
L4	12	14.5	17	13.5	16	12	14.5	17	13.5	16	12	14.5	17	13.5	16	12
\sqrt{n}	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
	260.5	273	273	285.5	285.5	298	310.5	310.5	323	323	335.5	348	348	360.5	360.5	373
L2	250	262.5	262.5	275	275	287.5	300	300	312.5	312.5	325	337.5	337.5	350	350	362.5
L3	231.2	238.7	246.2	253.7	261.2	268.7	276.2	283.7	291.2	298.7	306.2	313.7	321.2	328.7	336.2	343.7
L4	14.5	17	13.5	16	12	14.5	17	13.5	16	12	14.5	17	13.5	16	12	14.5

Plug-in

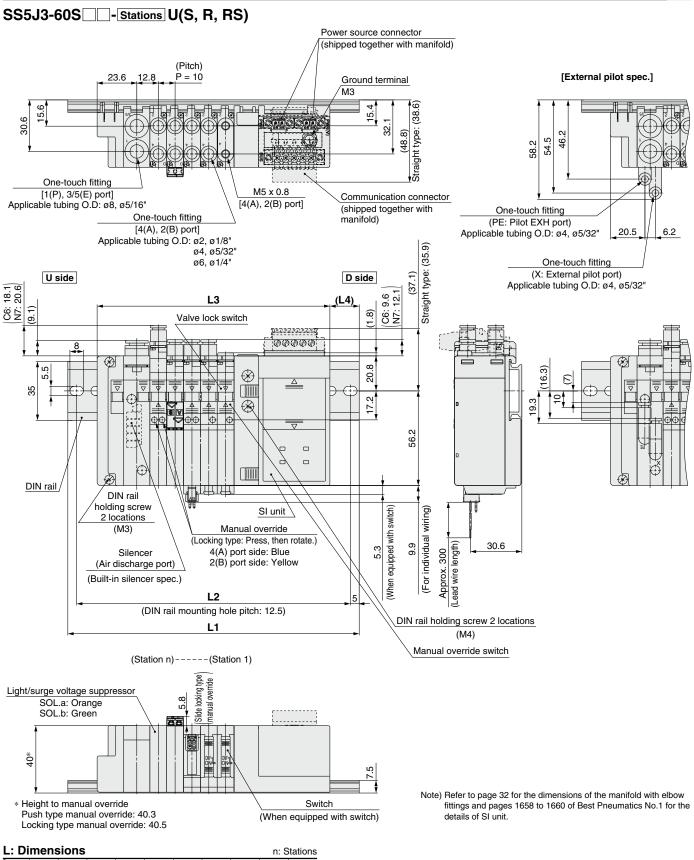
Non plug-in

Made to Order

SJ3A6

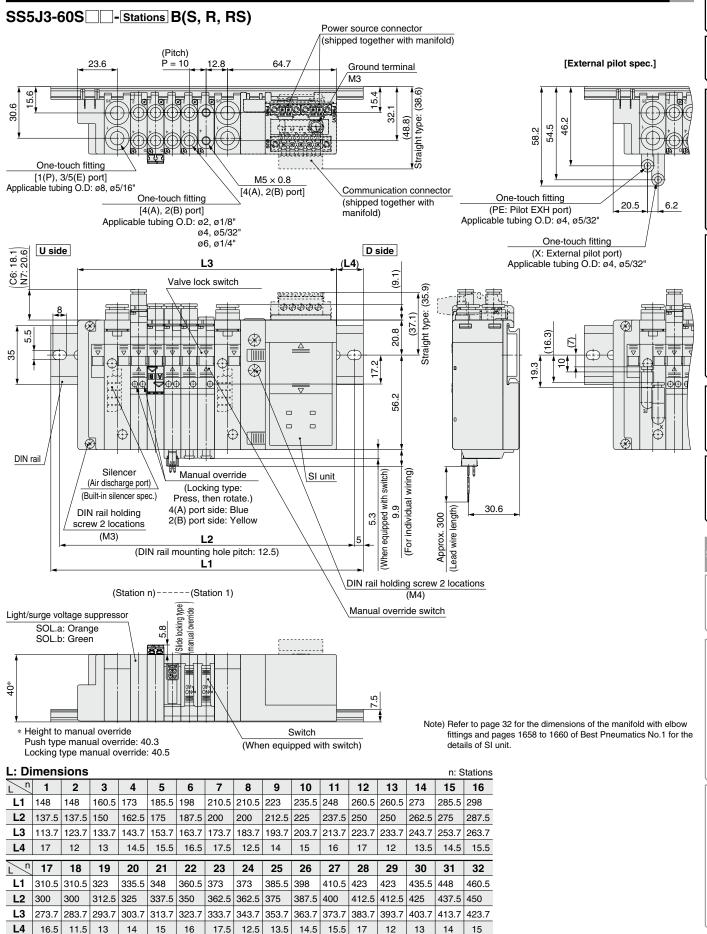
Plug-in Connector Type/ Cable Type

Dimensions: Series SJ3000 for EX180 Integrated Type (for Output) Serial Transmission System



3 4 7 8 5 6 9 10 L1 123 135.5 148 160.5 173 173 185.5 198 210.5 223 L2 112.5 125 137.5 150 162.5 162.5 175 187.5 200 212.5 L3 98.2 118.2 168.2 188.2 108.2 128.2 138.2 148.2 158.2 178.2 L4 12.5 13.5 16 17 12 13 15.5 16.5

Dimensions: Series SJ3000 for EX180 Integrated Type (for Output) Serial Transmission System

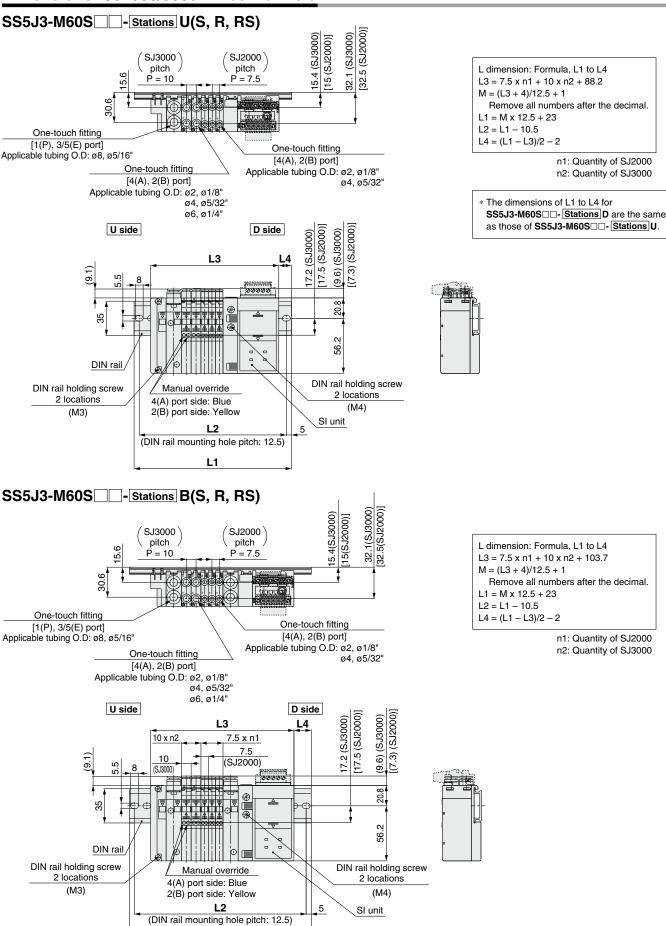


Connector Type/ Cable Type

Non plug-in Individual

Made to Order

Dimensions: SJ2000/3000 Mixed Manifold



SMC

SMC

Plug-in Connector Type EX510 Gateway System

Serial Transmission System

Type 60S6B | Series SJ2000/3000

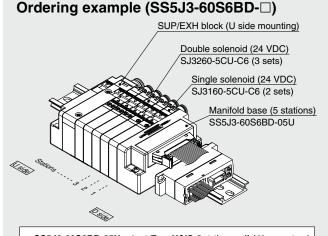
How to Order Manifold

An order cannot be placed with only the manifold part no. Be sure to order solenoid valves for mounting at the same time while referring to the ordering example.

SS5J3-60S6B D-05 D Manifold series 2 SJ2000 SJ3000 3 (SJ2000/3000 mixed) SI unit common spec. Positive common Mixed mounting type Negative common Standard Note 1) Nil Mixed mounting Note 2) Note 1) There is no need to enter anything when you operate either the SJ2000 or SJ3000 series alone. Unit mounting position D side Note 2) Enter "M" when the SJ2000 or SJ3000 series will be mounted on the same manifold base together. Valve stations • Symbol No. of stations Note 01 1 station Up to 16 solenoids possible. 16 16 stations The number of the blanking block assembly is also included. Since single and double wiring are available with the blanking block assembly, select a model compatible with the valve

wiring spec. planned for the future.

How to Order Valve Manifold Assembly



 $\textbf{SS5J3-60S6BD-05U} \cdots \textbf{1} \text{ set (Type 60S6B, 5-station manifold base part no.)}$

* SJ3160-5CU-C62 sets (Single solenoid part no.) SJ3260-5CU-C6 3 sets (Double solenoid part no.)

The asterisk denotes the symbol for assembly. Prefix to the part no. of the solenoid valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. In the case of complex ement, specify them in the manifold specification sheet.

Note) When ordering a manifold, specify the part nos. of valves to be mounted together. (An order cannot be placed with only the manifold part no.)

DIN rail length specified

Nil	Standard le	Standard length									
2	2 stations	Specify a longer									
:	:	rail than the									
16	16 stations	standard length.									

* Specify the valve stations not exceeding the maximum stations.

SUP/EXH block fitting spec.

Nil	Straight fitting With external pilot spec. X, PE port	18
L	Elbow fitting (Upward) With external pilot spec. X, PE port	
В	Elbow fitting (Downward) With external pilot spec. X, PE port	

* There is no need to enter anything when the SUP/EXH block mounting position "M" is selected.

Pilot spec.

Nil	Internal pilot					
S Internal pilot/Built-in silencer						
R	External pilot					
RS	External pilot/Built-in silencer					

- * There is no need to enter anything when the SUP/EXH block mounting position "M" is selected.
- * For built-in silencers, the 3/5(E) ports are plugged.

SUP/EXH block mounting position

U side (1 to 10 stations)
D side (1 to 10 stations)
Both sides (1 to 16 stations)
Special specifications

Specify the required specifications (including port sizes other than Ø8) by means of the manifold specification sheet.

SI Unit Part No.

Symbo	SI unit specifications	SI unit part no.	Page
Nil	NPN output (Positive common)	EX510-S002C	P.1715 to 1717,
N	PNP output (Negative common)	EX510-S102C	Best Pneumatics No.1

Refer to Reduced Wiring Fieldbus System (Serial Transmission) in Electric Products (CAT.E150) and the Operation Manual for the details of EX510 gateway system serial transmission system. Please download it via our website. http://www.smcworld.com



Single solenoid

There is no need to enter

double, 3 position and 4 po-

Select this when the unused

numbers to wiring are set.

Refer to page 5 for details.

anything for 2 position

sition solenoid valves.

Nil

D

A, B port size

C2: ø2 One-touch fitting

C4: ø4 One-touch fitting

C6: ø6 One-touch fitting

(SJ3000 only)

N1: Ø1/8" One-touch fitting

N7: Ø1/4" One-touch fitting

(SJ3000 only)

M3: M3 x 0.5 (SJ2000 only)

M5: M5 x 0.8 (SJ3000 only)

N3: ø5/32" One-touch fitting

Straight

(Metric size)

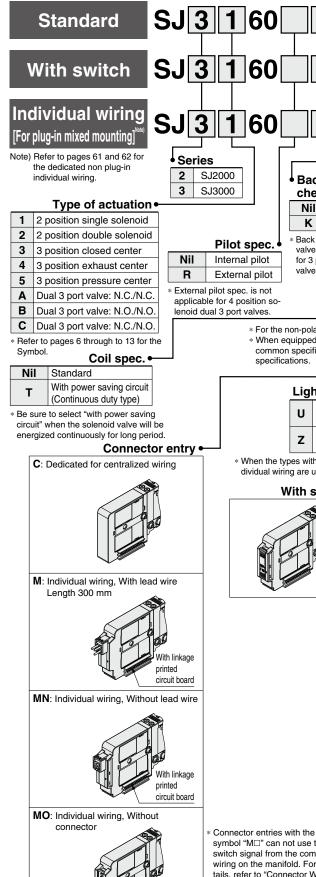
(Inch size)

wiring spec.

Single wiring

Double wiring

How to Order Solenoid Valves



Back pressure check valve Nil None Built-in * Back pressure check

valve is not applicable

for 3 position solenoid

valve External pilot External pilot spec. is not applicable for 4 position so-

Pilot spec.

Internal pilot

- Negative common * For the non-polar type, there is no need to select a symbol. * When equipped with the standard type switch, select
- common specifications suitable for the SI unit common specifications.

Light/surge voltage suppressor

- With light/surge voltage suppressor (Non-polar type) With light/surge voltage suppressor Z
- * When the types with power saving circuit, with switches, and individual wiring are used, the non-polar type cannot be selected.

(Polar type)

With switch •



Nil: Non-locking push type

Rated voltage

Common

5 24 VDC

specifications

N

Nil Positive common

D: Push-turn locking slotted type



symbol "M□" can not use the switch signal from the common wiring on the manifold. For details, refer to "Connector Wiring Diagram" on page 5.

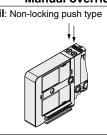
When ordering a connector assembly separately, refer to pages 101 and 102.

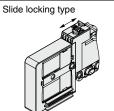
With linkage

circuit board

printed

Manual override





Elbow fitting assembly (Upward entry) (Metric size)

L2: ø2 elbow fitting assembly

L4: ø4 elbow fitting assembly

L6: ø6 elbow fitting assembly (SJ3000 only)

(Inch size)

LN1: ø1/8" elbow fitting assembly LN3: ø5/32" elbow fitting assembly LN7: ø1/4" elbow fitting assembly (SJ3000 only)

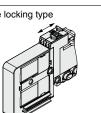
Elbow fitting assembly (Downward entry) (Metric size)

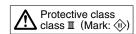
- B2: ø2 elbow fitting assembly
- B4: ø4 elbow fitting assembly
- **B6**: ø6 elbow fitting assembly (SJ3000 only)

(Inch size)

BN1: ø1/8" elbow fitting assembly

BN3: Ø5/32" elbow fitting assembly **BN7**: Ø1/4" elbow fitting assembly (SJ3000 only)

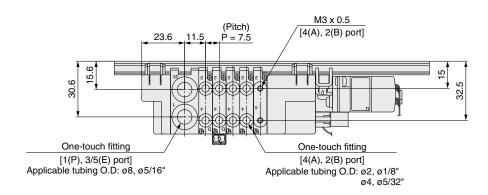


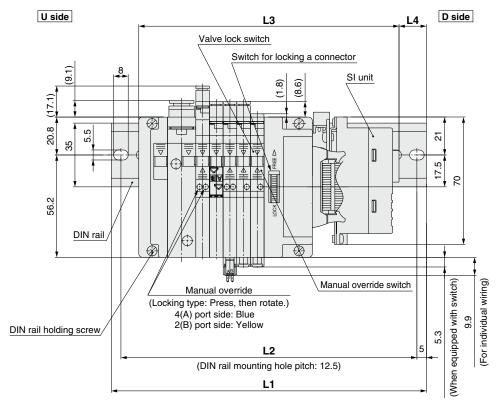


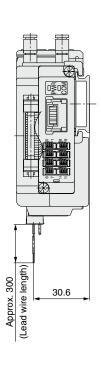


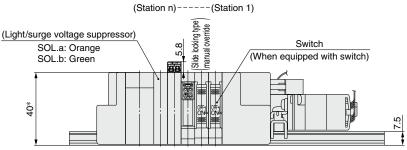
Dimensions: Series SJ2000 for EX510 Gateway System Serial Transmission System

SS5J2-60S6B D- Stations U-









Height to manual override
 Push type manual override: 40.3
 Locking type manual override: 40.5

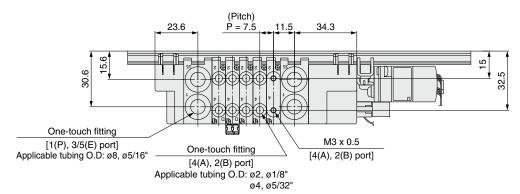
Note) Refer to page 43 for the external pilot specifications, page 31 for the dimensions of the manifold with elbow fittings, and pages 1696 to 1724 of Best Pneumatics No.1 for the details of SI unit.

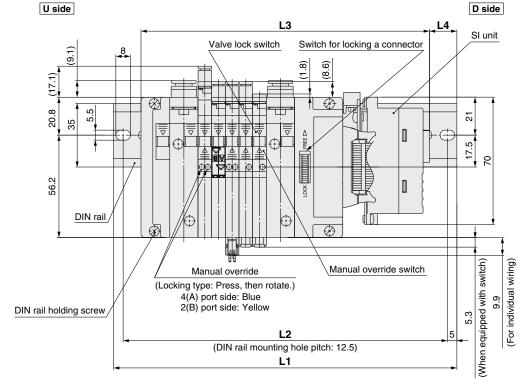
L: Dim	L: Dimensions n: Stations													
/ _	1	2	3	4	5	6	7	8	9	10				
L1	148	148	160.5	160.5	173	185.5	185.5	198	198	210.5				
L2	137.5	137.5	150	150	162.5	175	175	187.5	187.5	200				
L3	112.9	120.4	127.9	135.4	142.9	150.4	157.9	165.4	172.9	180.4				
L4	17.5	14	16.5	12.5	15	17.5	14	16.5	12.5	15				

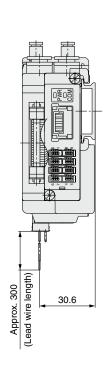


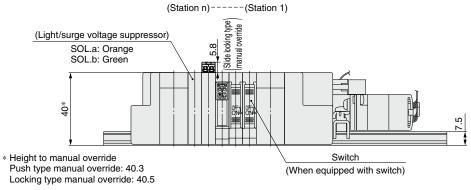
Dimensions: Series SJ2000 for EX510 Gateway System Serial Transmission System

SS5J2-60S6B D- Stations B-









Note) Refer to page 44 for the external pilot specifications, page 31 for the dimensions of the manifold with elbow fittings, and pages 1696 to 1724 of Best Pneumatics No.1 for the details of SI unit.

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L: Dim	L: Dimensions n: Stations															
\ -	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	160.5	160.5	173	185.5	185.5	198	198	210.5	223	223	235.5	248	248	260.5	260.5	273
L2	150	150	162.5	175	175	187.5	187.5	200	212.5	212.5	225	237.5	237.5	250	250	262.5
L3	128.4	135.9	143.4	150.9	158.4	165.9	173.4	180.9	188.4	195.9	203.4	210.9	218.4	225.9	233.4	240.9
L4	16	12.5	15	17.5	13.5	16	12.5	15	17.5	13.5	16	18.5	15	17.5	13.5	16

Individual | Non plug-in | Connector Type/ | Plug-in | | Construction | Wiring |

Manifold Options

Made to Order

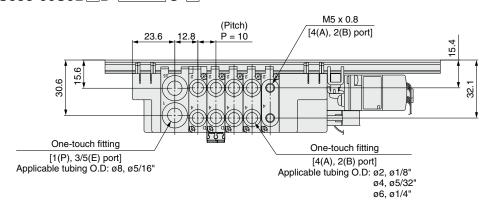
SJ3A6

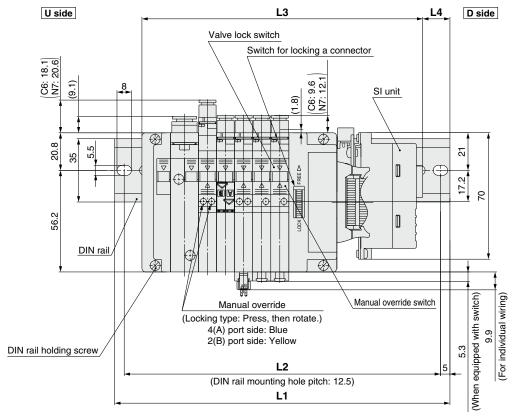
Common Specifications

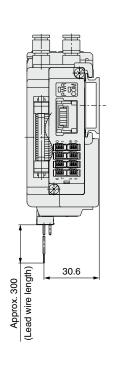
Connector Type/ Plug-in Cable Type

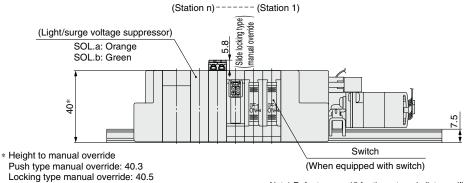
Dimensions: Series SJ3000 for EX510 Gateway System Serial Transmission System

SS5J3-60S6B D- Stations U-









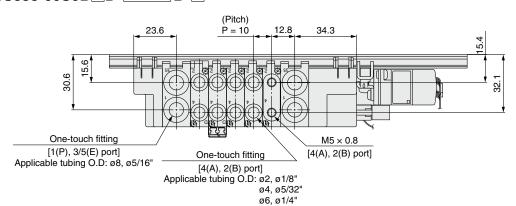
Note) Refer to page 45 for the external pilot specifications, page 32 for the dimensions of the manifold with elbow fittings, and pages 1696 to 1724 of Best Pneumatics No.1 for the details of SI unit.

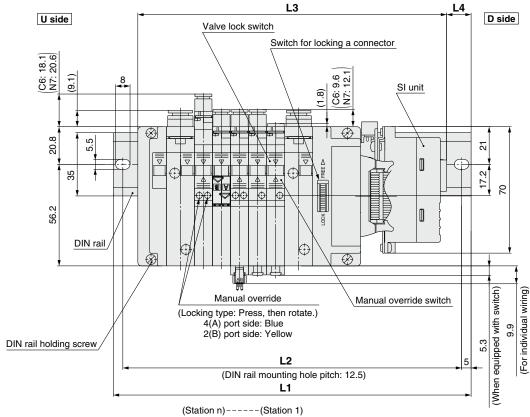
L: Dim	ension	S							n	: Stations
^/ /_	1	2	3	4	5	6	7	8	9	10
L1	148	160.5	160.5	173	185.5	198	210.5	210.5	223	235.5
L2	137.5	150	150	162.5	175	187.5	200	200	212.5	225
L3	115.4	125.4	135.4	145.4	155.4	165.4	175.4	185.4	195.4	205.4
L4	16.5	17.5	12.5	14	15	16.5	17.5	12.5	14	15

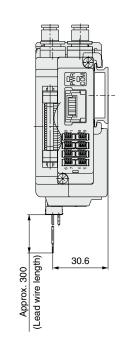


Dimensions: Series SJ3000 for EX510 Gateway System Serial Transmission System

SS5J3-60S6B D- Stations B-







Slide locking type (Light/surge voltage suppressor) SOL.a: Orange SOL.b: Green 5.8 *04 Switch * Height to manual override Push type manual override: 40.3 Locking type manual override: 40.5 (When equipped with switch)

Note) Refer to page 46 for the external pilot specifications, page 32 for the dimensions of the manifold with elbow fittings, and pages 1696 to 1724 of Best Pneumatics No.1 for the details of SI unit.

_			
 I)ın	nan	CIAI	20
	nen	SIUI	13

L: Dim	L: Dimensions n: Stations															
L	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	160.5	173	185.5	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	298	310.5
L2	150	162.5	175	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	287.5	287.5	300
L3	130.9	140.9	150.9	160.9	170.9	180.9	190.9	200.9	210.9	220.9	230.9	240.9	250.9	260.9	260.9	280.9
L4	15	16	17.5	12.5	13.5	15	16	17.5	18.5	13.5	15	16	17.5	18.5	18.5	15

DIN rail

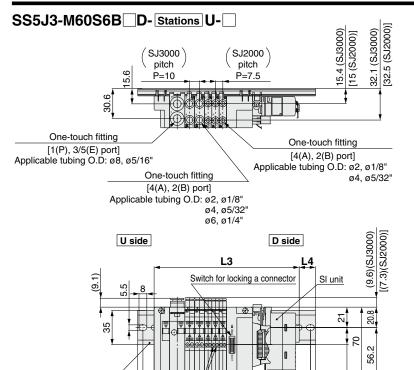
DIN rail holding screw

Dimensions: SJ2000/3000 Mixed Manifold for EX510 Gateway System Serial Transmission System

[17.5 (SJ2000)]

(873000)

17.2



Manual override

2(B) port side: Yellow

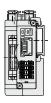
4(A) port side: Blue

(DIN rail mounting hole pitch: 12.5)

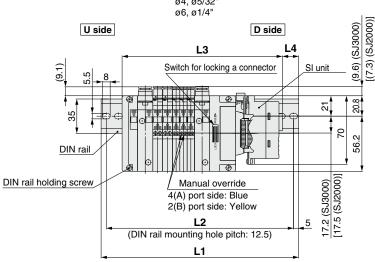
L dimension: Formula, L1 to L4 L3 = $7.5 \times n1 + 10 \times n2 + 105.4$ M = (L3 + 4)/12.5 + 1Remove all numbers after the decimal. L1 = M × 12.5 + 23 L2 = L1 - 10.5 L4 = (L1 - L3)/2 - 2

> n1: Quantity of SJ2000 n2: Quantity of SJ3000

* The dimensions of L1 to L4 for SS5J3-M60S6B□D-Stations D are the same as those of SS5J3-M60S6B□D-Stations U.

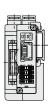


SS5J3-M60S6B D- Stations B-[32.5 (SJ2000) 15.4 (SJ3000) 32.1 (\$J3000) [15 (SJ2000)]SJ3000 SJ2000 pitch P = 10 pitch P = 7.5 One-touch fitting One-touch fitting [1(P), 3/5(E) port] Applicable tubing O.D: ø8, ø5/16" [4(A), 2(B) port] Applicable tubing O.D: ø2, ø1/8" One-touch fitting ø4, ø5/32" [4(A), 2(B) port] Applicable tubing O.D: ø2, ø1/8" ø4, ø5/32"



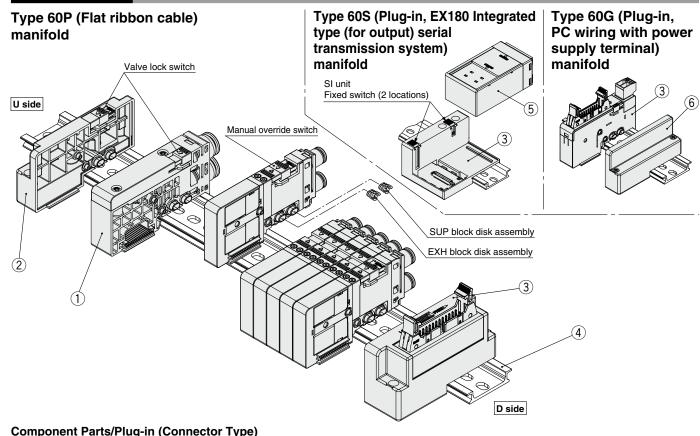
 $\label{eq:Laplace} \begin{array}{l} L \mbox{ dimension: Formula, L1 to L4} \\ L3 = 7.5 \times n1 + 10 \times n2 + 120.9 \\ M = (L3 + 4)/12.5 + 1 \\ \mbox{ Remove all numbers after the decimal.} \\ L1 = M \times 12.5 + 23 \\ L2 = L1 - 10.5 \\ L4 = (L1 - L3)/2 - 2 \end{array}$

n1: Quantity of SJ2000 n2: Quantity of SJ3000



Manifold Exploded View 1

Connector Type



No.		Description		Note
		Internal pilot	SJ3000-50-1A-□□	(Metric size)
		Internal pilot/Built-in silencer	SJ3000-50-1AS-□□	C6: With ø6 One-touch fitting (straight)
	SUP/EXH block assembly	External pilot	SJ3000-50-1AR- (X, PE port: Metric size ø4 Inch size ø5/32")	C8: With ø8 One-touch fitting (straight) L6: With ø6 One-touch fitting (elbow upward entry) L8: With ø8 One-touch fitting (elbow upward entry)
1		External pilot/Built-in silencer	SJ3000-50-1ARS-□□ (X port: Metric size ø4 Inch size ø5/32")	B6: With ø6 One-touch fitting (elbow downward entry) B8: With ø8 One-touch fitting (elbow downward entry)
		For different pressures, internal pilot Note 1)	SJ3000-50-3A-□□	(Inch size)
		For different pressures, internal pilot/Built-in silencer Note 1)	SJ3000-50-3AS-□□	N7: With 1/4" One-touch fitting (straight) N9: With 5/16" One-touch fitting (straight)
2	End block assembly		SJ3000-53-1A	For U side
3	Connector block assembly		SJ3000-42-□A-□ SJ3000-76-2A-05	Refer to the connector block assembly part no. shown below.
4	DIN rail		VZ1000-11-1-□	Refer to page 71.
5	SI unit		EX180-□□	Refer to the SI unit part numbers on page 41.
6	End block assembly		SJ3000-53-2A	For D side

Note 1) The valves cannot be operated only with the SUP/EXH block assembly for different pressure, select them in combination with the SUP/EXH block assembly for internal/ external pilot.

Connector Block Assembly Part No.					
Connector specifications	Mounting position	Part no.	Note		
For D-sub connector (Locking bracket: Metric size thread)		SJ3000-42-1A-□			
For D-sub connector (Locking bracket: Unified thread)		SJ3000-42-1AU-			
For flat ribbon cable 26 pins		SJ3000-42-2A-□			
For flat ribbon cable 20 pins		SJ3000-42-3A-□			
For flat ribbon cable 10 pins	D side	SJ3000-42-4A-□	□: 1 (Connector upward)		
For PC wiring 20 pins	D side	SJ3000-42-6A-□	□: 2 (Connector lateral)		
For EX180 serial wiring Note)		SJ3000-42-20A			
For EX510 serial wiring Note)		SJ3000-42-3A-2			
For PC wiring 20 pins		SJ3000-76-2A-05			
with power supply terminal		CCCCCC			

Note) SI unit is not included.

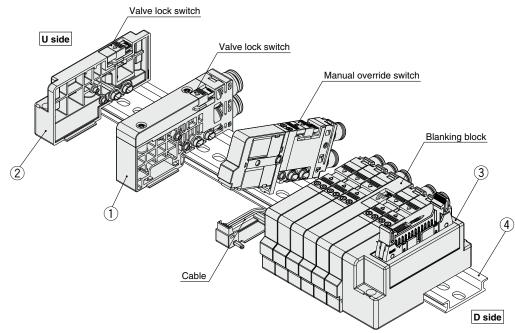
Connector Block Assembly with SI Unit

Note 2) Refer to page 69 about the SUP/EXH block disk assembly and method of handling of parts at different pressures.

Manifold Exploded View 2

Cable Type

Type 60LP (Flat ribbon cable)



Component Parts/Plug-in (Cable Type)

No.	Description		Part no.	Note	
1		Internal pilot	SJ3000-50-5A-□□		
	SUP/EXH block assembly	Internal pilot/Built-in silencer	SJ3000-50-5AS-□□	(Metric size)	
		External pilot	SJ3000-50-5AR-□□ (X, PE port: Metric size ø4 Inch size ø5/32")	C6: With ø6 One-touch fitting (straight) C8: With ø8 One-touch fitting (straight) L6: With ø6 One-touch fitting (elbow upward entry)	
		External pilot/Built-in silencer	SJ3000-50-5ARS- (X port: Metric size ø4 Inch size ø5/32")	L8: With ø8 One-touch fitting (elbow upward entry) B6: With ø6 One-touch fitting (elbow downward entry B8: With ø8 One-touch fitting (elbow downward entry	
		For different pressures, internal pilot Note 1)	SJ3000-50-6A-□□	(Inch size) N7: With 1/4" One-touch fitting (straight)	
		For different pressures, internal pilot/Built-in silencer Note 1)	SJ3000-50-6AS-□□	N9: With 5/16" One-touch fitting (straight)	
2	End block assembly		SJ3000-53-1A	For U side	
3	Connector block assembly		SJ3000-42-□A-□	Refer to the connector block assembly part no. shown below	
4	DIN rail		VZ1000-11-1-□	Refer to page 71.	

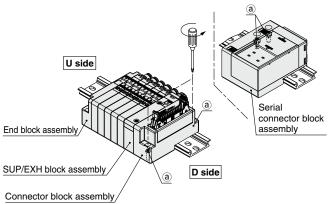
Note 1) The valves cannot be operated only with the SUP/EXH block assembly for different pressure, select them in combination with the SUP/EXH block assembly for internal/external pilot.

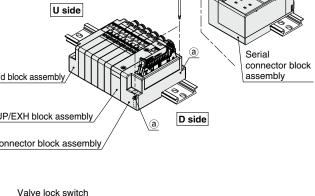
Note 2) Refer to page 69 about the SUP/EXH block disk assembly and method of handling of parts at different pressures.

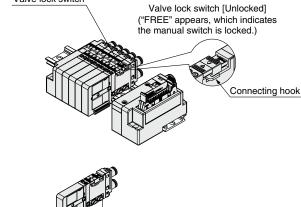
Connector Block Assembly SJ3000-42-Valve stations Connector type 02 to 10 For D-sub connector All double wiring For D-sub connector 02 to 20 For flat ribbon cable 26 pins Series All single wiring All double wiring 9 For flat ribbon cable 20 pins SJ3000 02 to 10 For flat ribbon cable 26 pins 10 For flat ribbon cable 10 pins 02 to 20 All single wiring All double wiring 11 For D-sub connector 02 to 09 For flat ribbon cable 20 pins For flat ribbon cable 26 pins Series 02 to 18 All single wiring 13 For flat ribbon cable 20 pins 02 to 04 All double wiring SJ2000 For flat ribbon cable 10 pins 14 For flat ribbon cable 10 pins 02 to 08 All single wiring * All connector block assembly mounting positions Wiring become the D side * The connector block assembly includes the cables All double wiring necessary for the number of stations. All single wiring Locking bracket Connector entry direction Nil Metric size thread Upward Unified thread Lateral * D-sub connector only.

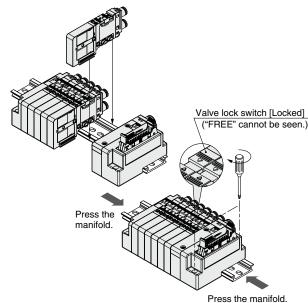
How to Increase Manifold Stations 1

Connector Type







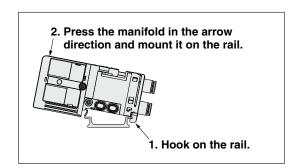


1 Loosen threads ⓐ, which are fixed onto the DIN rail (two locations on one side).

In the direction of the coil, slide the valve where the station is desired to add and the valve lock switch on each block.

If blocks are removed without completely releasing the valve lock switch, the connection hook of that switch could be damaged or deformed.

3 Install an additional valve or an SUP/EXH block assembly block on the DIN rail.



A manifold equipped with a valve or a block assembly can be mounted on the DIN rail. However, a serial connector block assembly cannot be mounted on the DIN rail when it is connected with another block; the serial connector block must be mounted separately.

4 Press the valves and block assemblies to each other for connection. Press the valve lock switch in the cylinder port direction until it does not go any further. Fasten threads ⓐ onto the DIN rail.

After fixing the connector block assembly, fasten the threads onto the end block assembly while holding it lightly by hand. This is necessary to improve sealing.

∕! Caution

D-sub, Connector block assembly for flat ribbon cable, End block assembly M3: 0.6 N·m Connector block assembly for EX180 serial wiring M4: 1.4 N·m Mounting bracket for EX510 serial wiring M4: 0.6 N⋅m

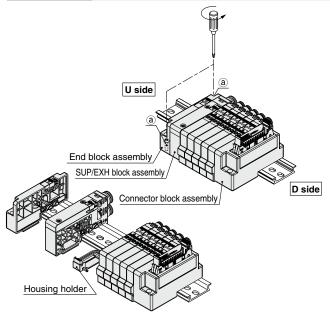
Caution

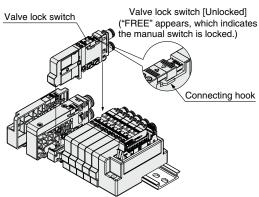
- 1. When increasing the number of stations from 10 or below to 11 or above, increase the number of SUP/EXH block assemblies as well.
- 2. Be sure to turn off the power and stop the supply of air before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
- 3. After assembly and disassembly, air leakage could occur if blocks are not well connected or a thread is not tightly fastened onto the end block assembly. Before supplying air, make sure that no gaps exist in between blocks and that the valve and block are tightly fastened onto the DIN rail. Also, make sure that air is not leaking before use.
- 4. For the SJ3A6 series manifold with vacuum release valve with restrictor, there is no valve lock switch for connecting, so when mounting, tighten the screws after checking that there are no gaps between valves.

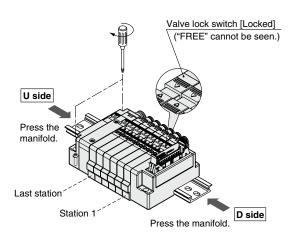


How to Increase Manifold Stations 2

Cable Type







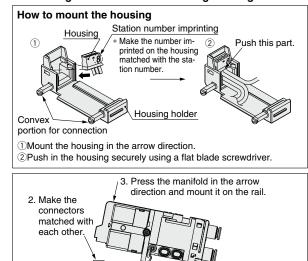
! Caution

To increase a manifold station, a housing holder (refer to the table below) is required in addition to the solenoid valve.

For the manifold with less than the maximum stations, spare housing (for one station) for adding the manifold station is stored in the housing holder of the last station or the SUP/EXH block assembly. To increase a manifold station, follow the steps below to disassemble and reassemble the manifold.

Series	Housing holder part no.		Material	Note
SJ2000	SJ2000-86-1		Pagin White	\A/In:4 n
SJ3000	SJ3000-86-1		Resin	White

- Loosen threads ⓐ, which are fixed onto the DIN rail (two locations).
- | Note: To replace the DIN rail, also loosen the screws (2 locations) on the connector block assembly.
- 2 Slide the valve lock switch on each block toward the coil, and then remove the end block assembly and Up/EXH block assembly.
 - Take out the stored housing for adding the manifold station and assemble it to a newly added housing holder. Insert this housing holder next to the existing housing holder.



Press the valves and block assemblies to each other for connection. Press the valve lock switch in the cylinder port direction until it does not go any further. Fasten threads ⓐ onto the DIN rail. Connect the added valve and SUP/EXH block, and then fasten the DIN rail fixing screws on the end block on the U side.

. Hook on the rail.

After fixing the connector block assembly, fasten the threads onto the end block assembly while holding it lightly by hand. This is necessary to improve sealing.

⚠ Caution D-sub, Connector block assembly for flat ribbon cable, End block assembly M3: 0.6 N⋅m

∧ Caution

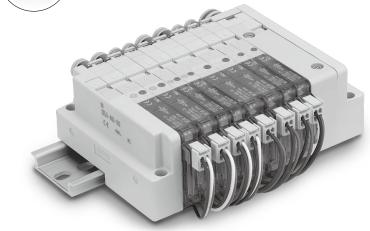
- 1. When increasing the number of stations from 10 or below to 11 or above, increase the number of SUP/EXH block assemblies as well. Add the valve to the U side of the last station, and then add the SUP/EXH block assembly to its U side. The SUP/EXH block cannot be added to a position adjacent to the connector block assembly or an intermediate position.
- 2. Be sure to turn off the power and stop the supply of air before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
- 3. After assembly and disassembly, air leakage could occur if blocks are not well connected or a thread is not tightly fastened onto the end block assembly. Before supplying air, make sure that no gaps exist in between blocks and that the valve and block are tightly fastened onto the DIN rail. Also, make sure that air is not leaking before use.
- 4. For the SJ3A6 series manifold with vacuum release valve with restrictor, there is no valve lock switch for connecting, so when mounting, tighten the screws after checking that there are no gaps between valves.



Non Plug-in **Individual Wiring Manifold**

Series **SJ2000/3000**

P.61 **Individual Wiring**

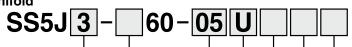


Non plug-in Individual Wiring (& C Tusus Series SJ2000/3000

How to Order

An order cannot be placed with only the manifold part no. Be sure to order solenoid valves for mounting at the same time while referring to the ordering example.

Individual wiring manifold



2	SJ2000
3	SJ3000 (SJ2000/3000 mixed)

Nil	Standard Note 1)		
М	Mixed mounting Note 2)		

Note 1) There is no need to enter anything when you operate either the SJ2000 or SJ3000 series alone.

Note 2) Enter "M" when the SJ2000 or SJ3000 series will be mounted on the same manifold base together.

Valve stations

Symbo	Stations
01	1 station
÷	:
20	20 stations

DIN rail length specified

Nil	Standard length		
2	2 stations Specify a longer		
:	:	: rail than the	
20	20 stations	standard length.	

Specify the valve stations not exceeding the maximum stations

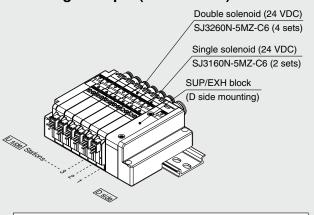
SUP/EXH block fitting spec.

Nil	Straight fitting With external pilot spec. X, PE port
L	Elbow fitting (Upward) With external pilot spec. X, PE port
В	Elbow fitting (Downward) With external pilot spec. X, PE port

* There is no need to enter anything when the SUP/EXH block mounting position "M" is selected.

How to Order Manifold Assembly

Ordering example (SS5J3-60-□)



SS5J3-60-06D 1 set (Manifold part no.)

* SJ3160N-5MZ-C6 ··· 2 sets (Single solenoid part no.)

The asterisk denotes the symbol for assembly Prefix to the part no. of the solenoid valve, etc.

• The valve arrangement is numbered as the 1st station from D side

 Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. In the case of complex arrangement, specify them in the manifold specification sheet

Pilot spec.

Nil	Internal pilot	
S	S Internal pilot/Built-in silencer	
R	External pilot	
RS	External pilot/Built-in silencer	

- * There is no need to enter anything when the SUP/EXH block mounting position "M" is selected.
- * For built-in silencers, the 3/5(E) ports are plugged.

SUP/EXH block mounting position

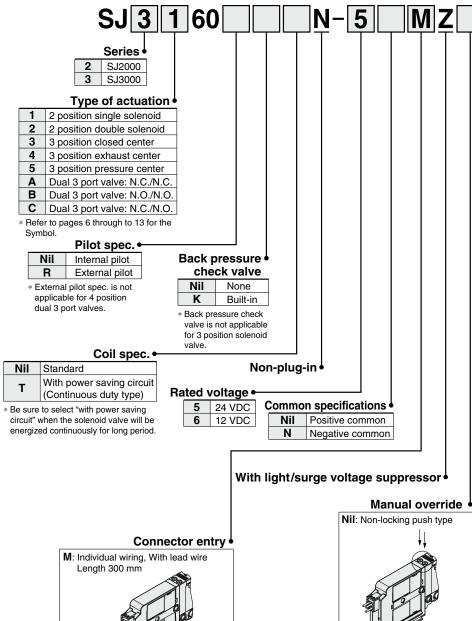
U	U side (1 to 10 stations)
D	D side (1 to 10 stations)
B Both sides (1 to 20 stations	
M* Special specifications	

* Specify the required specifications (including port sizes other than Ø8) by means of the manifold specification sheet.



SJ3A6

How to Order Solenoid Valves

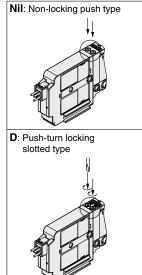


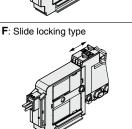
Without linkage printed circuit board MN: Individual wiring, Without lead wire (With connector, socket) Without linkage printed circuit board MO: Individual wiring, Without connector

* When ordering a connector assembly separately, refer to pages 101 and 102.

Without linkage

printed circuit board





A, B port size

Straight (Metric size)

C2: ø2 One-touch fitting C4: ø4 One-touch fitting

C6: Ø6 One-touch fitting (SJ3000 only)

(Inch size)

N1: ø1/8" One-touch fitting N3: ø5/32" One-touch fitting N7: Ø1/4" One-touch fitting (SJ3000 only)



M3: M3 x 0.5 (SJ2000 only) M5: M5 x 0.8 (SJ3000 only)



Elbow fitting assembly (Upward entry) (Metric size)

L2: ø2 elbow fitting assembly L4: ø4 elbow fitting assembly L6: ø6 elbow fitting assembly

(SJ3000 only)

(Inch size)

LN1: ø1/8" elbow fitting assembly LN3: ø5/32" elbow fitting assembly (SJ3000 only)



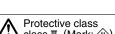
Elbow fitting assembly (Downward entry) (Metric size)

B2: ø2 elbow fitting assembly **B4**: ø4 elbow fitting assembly

B6: ø6 elbow fitting assembly (SJ3000 only)

(Inch size)

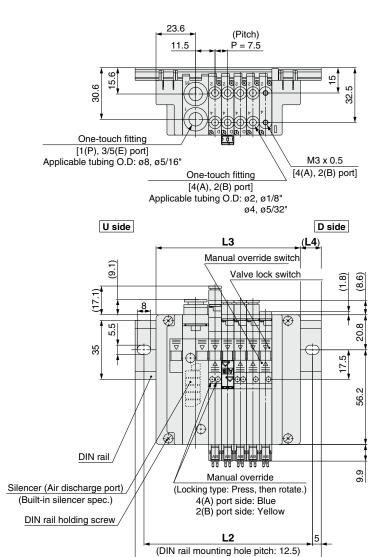
BN1: Ø1/8" elbow fitting assembly BN3: ø5/32" elbow fitting assembly BN7: ø1/4" elbow fitting assembly (SJ3000 only)

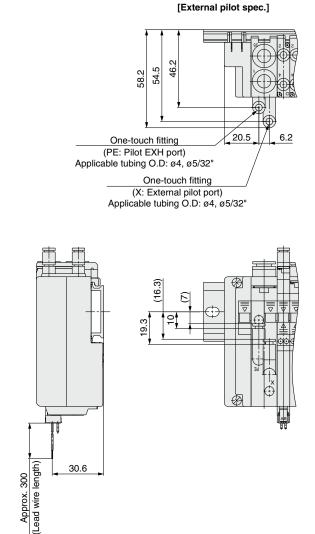


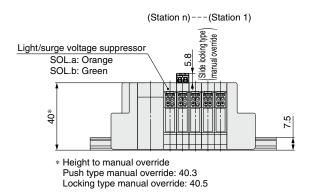
class II (Mark: (ii))

Dimensions

SS5J2-60-Stations U (S, R, RS)







L1

Note) For manifold dimensions including elbow fitting, refer to page 31.

ı	L: Dimensions n: Stations													
		1	2	3	4	5	6	7	8	9	10			
L1		85.5	98	98	110.5	110.5	123	135.5	135.5	148	148			
Ī	L2	75	87.5	87.5	100	100	112.5	125	125	137.5	137.5			
	L3	55.7	63.2	70.7	78.2	85.7	93.2	100.7	108.2	115.7	123.2			

12.5

15

17.5

13.5

13.5

16

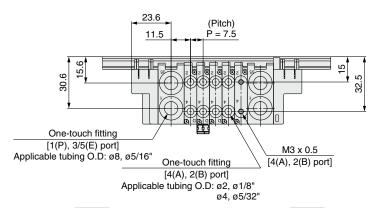
L4

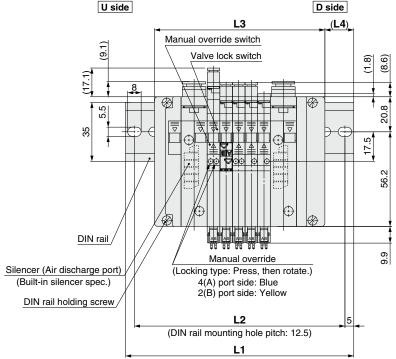
63

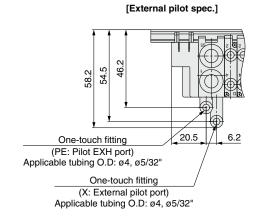
Non plug-in Individual Wiring Series \$\int \text{SJ2000/3000}\$

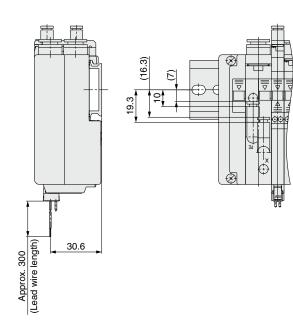
Dimensions

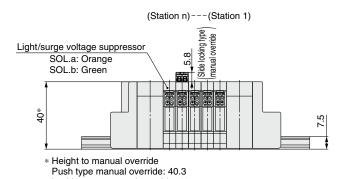
SS5J2-60-Stations B (S, R, RS)











Locking type manual override: 40.5

Note) For manifold dimensions including elbow fitting, refer to page 31.

L: Dim	L: Dimensions n: Stations																			
L	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	98	110.5	110.5	123	135.5	135.5	148	148	160.5	173	173	185.5	185.5	198	210.5	210.5	223	223	235.5	248
L2	87.5	100	100	112.5	125	125	137.5	137.5	150	162.5	162.5	175	175	187.5	200	200	212.5	212.5	225	237.5
L3	71.2	78.7	86.2	93.7	101.2	108.7	116.2	123.7	131.2	138.7	146.2	153.7	161.2	168.7	176.2	183.7	191.2	198.7	206.2	213.7
L4	13.5	16	12	14.5	17	13.5	16	12	14.5	17	13.5	16	12	14.5	17	13.5	16	12	14.5	17

Cable Type Plug-in

Non plug-in

Manifold Options

Made to Order SJ3A6

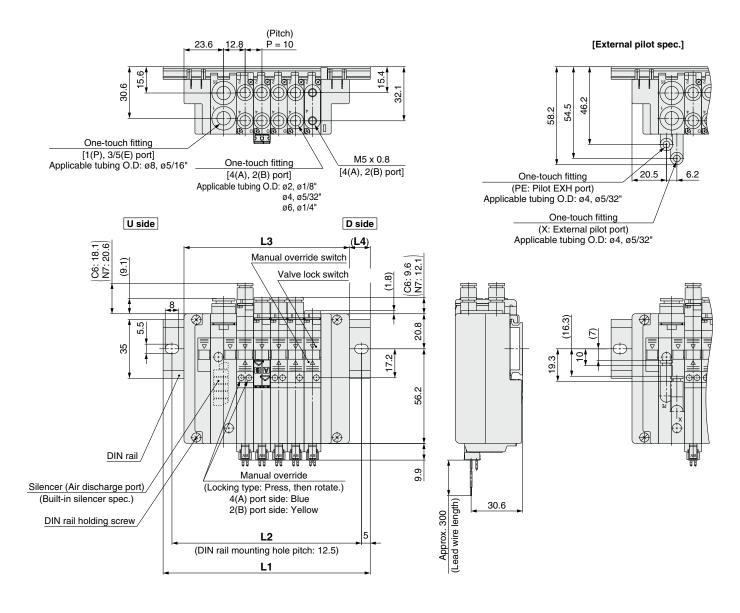
Common Specifications

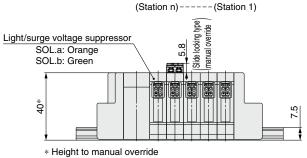
Connector Type/ Plug-in Cable Type

Non plug-in Individual Wiring

Dimensions

SS5J3-60-Stations U (S, R, RS)





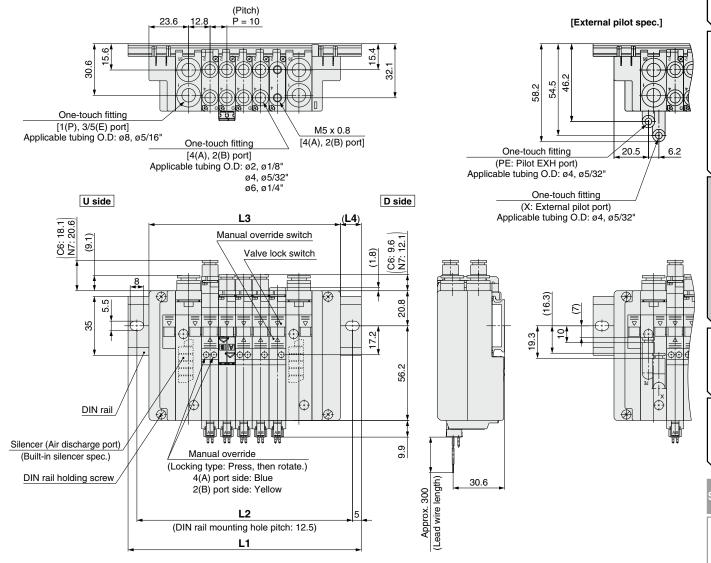
Height to manual override
 Push type manual override: 40.3
 Locking type manual override: 40.5

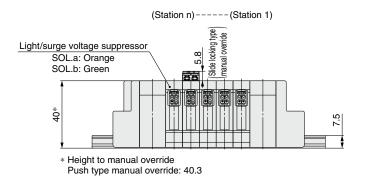
Note) For manifold dimensions including elbow fitting, refer to page 32.

L: Dimensions n: Stations													
L	1	2	3	4	5	6	7	8	9	10			
L1	85.5	98	110.5	123	123	135.5	148	160.5	173	185.5			
L2	75	87.5	100	112.5	112.5	125	137.5	150	162.5	175			
L3	58.2	68.2	78.2	88.2	98.2	108.2	118.2	128.2	138.2	148.2			
L4	13.5	14.5	16	17	12	13	14	15.5	16.5	17.5			

Dimensions

SS5J3-60-Stations B (S, R, RS)





Locking type manual override: 40.5

Note) For manifold dimensions including elbow fitting, refer to page 32.

L: Dim	ensio	ns																	n:	Stations
L	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	98	110.5	123	135.5	148	148	160.5	173	185.5	198	210.5	210.5	223	235.5	248	260.5	260.5	273	285.5	298
L2	87.5	100	112.5	125	137.5	137.5	150	162.5	175	187.5	200	200	212.5	225	237.5	250	250	262.5	275	287.5
L3	73.7	83.7	93.7	103.7	113.7	123.7	133.7	143.7	153.7	163.7	173.7	183.7	193.7	203.7	213.7	223.7	233.7	243.7	253.7	263.7
L4	12	13	14.5	15.5	16.5	11.5	12.5	14	15	16	17.5	12	13.5	14.5	15.5	17	11.5	13	14	15

Connector Type/ Plug-in Cable Type

Non plug-in

Manifold Options

Made to Order

SJ3A6

Common Specifications

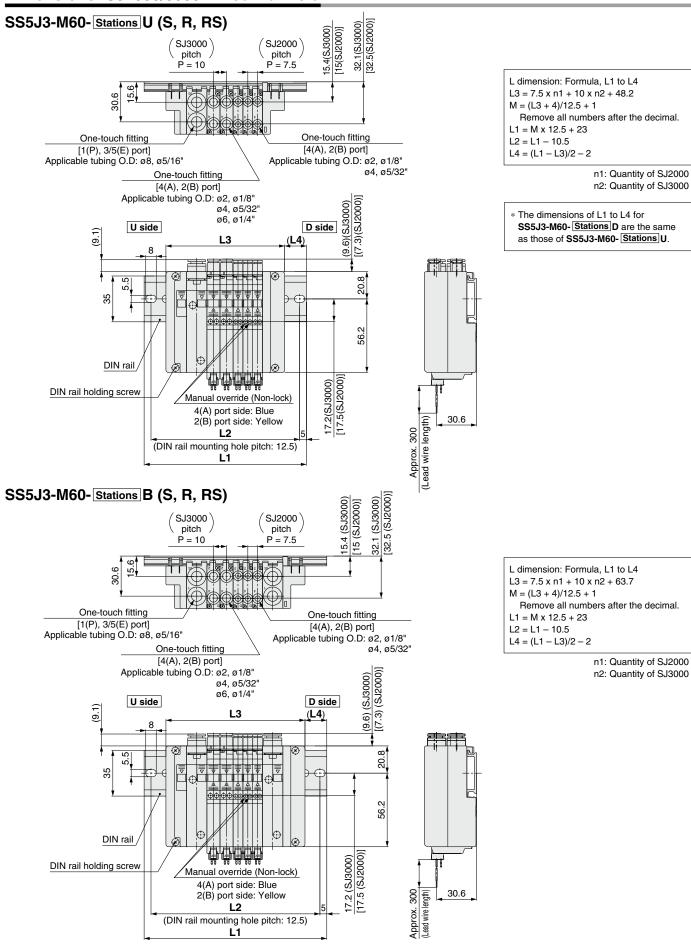
Connector Type/ Plug-in Cable Type

Non plug-in Individual Wiring

66

Series **SJ2000/3000**

Dimensions: SJ2000/3000 Mixed Manifold



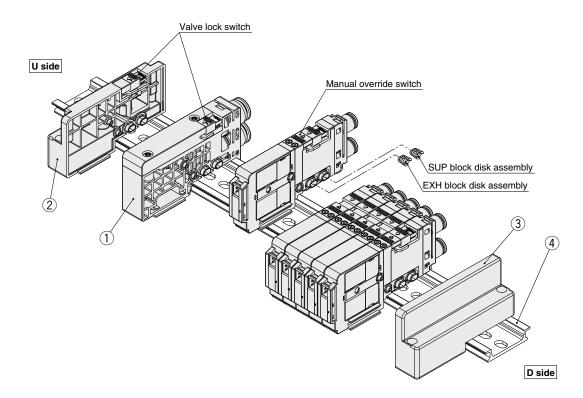
SMC

Manifold Exploded View

Individual Wiring

Type 60 individual wiring (Non plug-in)

Note) Refer to page 58 for "How to Increase Manifold Stations."



Component Parts/Individual Wiring (Non Plug-in)

No.		Description	Part no.	Note		
		Internal pilot	SJ3000-50-5A-□□	(Makeig sing)		
		Internal pilot/Built-in silencer	SJ3000-50-5AS-□□	(Metric size) C6: With ø6 One-touch fitting (straight)		
		External pilot	SJ3000-50-5AR-□□ (X, PE port: Metric size ø4 Inch size ø5/32")	C8: With ø8 One-touch fitting (straight) L6: With ø6 One-touch fitting (elbow upward entry) L8: With ø8 One-touch fitting (elbow upward entry)		
1	SUP/EXH block assembly	External pilot/Built-in silencer	SJ3000-50-5ARS- (X port: Metric size ø4 Inch size ø5/32")	B6: With ø6 One-touch fitting (elbow downward entry) B8: With ø8 One-touch fitting (elbow downward entry)		
		For different pressures, internal pilot Note 1)	SJ3000-50-6A-□□	(Inch size)		
		For different pressures, internal pilot/Built-in silencer Note 1)	SJ3000-50-6AS-□□	N7: With 1/4" One-touch fitting (straight) N9: With 5/16" One-touch fitting (straight)		
2	End block assembly End block assembly		SJ3000-53-1A	For U side		
3			SJ3000-53-2A	For D side		
4	DIN rail		VZ1000-11-1-□	Refer to page 71.		

Note 1) The valves cannot be operated only with the SUP/EXH block assembly for different pressure, select them in combination with the SUP/EXH block assembly for internal/

Note 2) Refer to page 69 about the SUP/EXH block disk assembly and method of handling of parts at different pressure.



Series SJ2000/3000 Manifold Options 1

Common to Connector Type/Cable Type/Individual Wiring

■ SUP block disk assembly

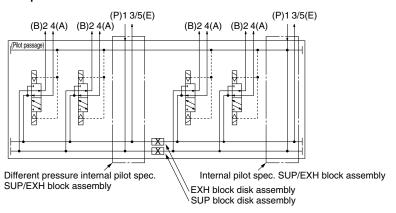
By placing a SUP block disk assembly in a manifold valve's pressure supply passage, two different high andlow pressures can be supplied to one manifold. When supplying different pressures using the manifold of the internal pilot, fill out a manifold specification sheet to place an order for an SUP/EXH block assembly for the internal pilot specifications and another SUP/EXH block assembly for the different pressure internal pilot specifications (Refer to Circuit Diagram 1).



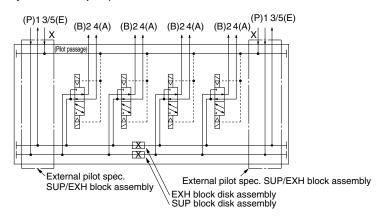
Series	Part no.
SJ2000	SJ3000-44-1A
SJ3000	333000-44-1A

[Different pressure pneumatic circuit diagram]

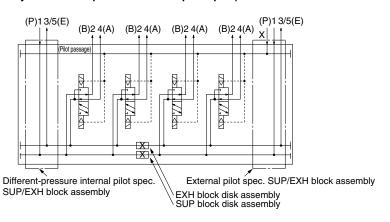
- The SJ series supplies air to the pilot port of each valve using a 1(P) port of the SUP/EXH block assembly. When using in situations such as where there are different pressures, combine SUP/EXH block assemblies for internal pilot, external pilot and different-pressure by referring to the circuit below.
- 1. Different-pressure spec. using the internal pilot



2. Different-pressure spec. using the external pilot (For using the SUP/EXH block assembly for external pilot)



3. Different-pressure spec. using the external pilot (For using the SUP/EXH block assembly for different-pressure internal pilot spec.)



Note 1) When operating under the different-pressure spec., supply the higher pressure to the pilot passage.

Note 2) If there is a need to partition the pilot passage, consult SMC.



■ EXH block disk assembly

By installing an EXH block disk in a manifold valve's exhaust passage, the valve's exhaust can be separated so that it will not affect other valves.



	Series	Part no.			
	SJ2000	SJ3000-44-1A			
-	SJ3000	SJ3000-44-1A			

■ Label for block disk

These labels are attached to manifolds in which SUP and EXH block disks have been installed, in order to identify the installed locations. (Three sheets each included.)

SJ3000-155-1A

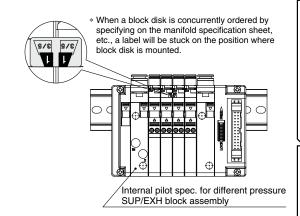
Label for SUP/EXH block disk







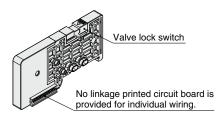




■ Blanking block assembly

These are mounted when later addition of valves is planned, etc.

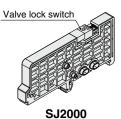
<Connector type/Individual wiring>

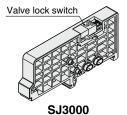


Series	Part no.	Note	Width	
SJ2000	SJ3000-49-1A	Connector type (Single wiring)		
SJ3000	SJ3000-49-2A	Connector type (Double wiring)		
SJ3A6 Note)	SJ3000-49-2A-N	Connector type (Double wiring)	7.5 mm	
SJ2000 SJ3000	SJ3000-49-3A	Individual wiring		
SJ3A6 Note)	SJ3000-49-3A-N			

Note) Valve lock switch is not available for the SJ3A6.

<Cable type>



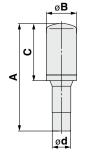


Series	Part no.	Width
SJ2000	SJ2000-49-4A	7.5 mm
SJ3000	SJ3000-49-4A	10
SJ3A6 Note)	SJ3000-49-4A-N	10 mm

Note) Valve lock switch is not available for the SJ3A6.

■ Silencer with One-touch fitting

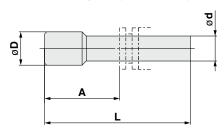
This silencer can be mounted on the manifolds' port 3/5 (E: Exhaust) with a single touch.



Series	Model	Effective area	Α	В	С	ød
For SJ2000 (Ø8)	AN15-C08	20 mm ²	45 mm	13 mm	20 mm	ø8

■ Plug

These are inserted in unused cylinder ports and P, E ports.



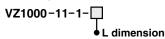
Dimensions								
Applicable fitting size ød	Model	Α	L	D				
2	KJP-02	8.2	17	3				
4	KQ2P-04	16	32	6				
6	KQ2P-06	18	35	8				
8	KQ2P-08	20.5	39	10				
1/8"	KQ2P-01	16	31.5	5				
5/32"	KQ2P-03	16	32	6				
1/4"	KQ2P-07	18	35	8.5				
5/16"	KQ2P-09	20.5	39	10				

Series **SJ2000/3000**

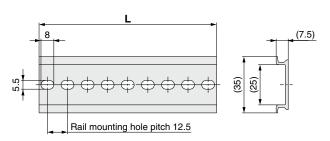
Manifold Options 3

Common to Connector Type/Cable Type/Individual Wiring

■ DIN rail



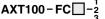
* Enter a number from the DIN rail dimension table shown below.

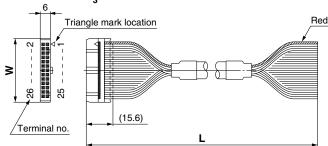


No.	S1	0	1	2	3	4	5	6	7	8	9
L dimension	85.5	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5
Weight (g)	15.4	17.6	19.9	22.1	24.4	26.6	28.9	31.1	33.4	35.6	37.9
No.	10	11	12	13	14	15	16	17	18	19	
L dimension	223	235.5	248	260.5	273	285.5	298	310.5	323	335.5	
Weight (g)	40.1	42.4	44.6	46.9	49.1	51.4	53.6	55.9	58.1	60.4	
					•				•		
No.	20	21	22	23	24	25	26	27	28	29	
L dimension	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5	
Weight (g)	62.6	64.9	67.1	69.4	71.6	73.9	76.1	78.4	80.6	82.9	

(Unit: mm)

■ Flat ribbon cable assembly





Flat Ribbon Cable Assembly

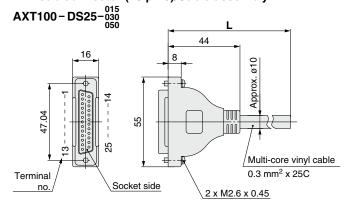
Cable length (L)	10 pins	20 pins	26 pins
1.5 m	AXT100-FC10-1	AXT100-FC20-1	AXT100-FC26-1
3 m	AXT100-FC10-2	AXT100-FC20-2	AXT100-FC26-2
5 m	AXT100-FC10-3	AXT100-FC20-3	AXT100-FC26-3
Connector width (W)	17.2	30	37.5

^{*} For other commercial connectors, use a type with strain relief that conforms to MIL-C-83503.

Connector manufacturers:

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

■ D-sub connector (25 pins)/Cable assembly



D-sub Connector Cable Assembly

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-DS25-015	Cable 25
3 m	AXT100-DS25-030	cores x
5 m	AXT100-DS25-050	24AWG

^{*} For other commercial connectors, use a 25 pins type with female connector conforming to MIL-C-24308.

Connector manufacturers:

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

D-sub Connector Cable Assembly Cable Color List of Each Terminal No.

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



Electric Characteristics Item

D-sub connector

cables is 20 mm.

Conductor resistance

 Ω /km, 20°C Withstand pressure

VAC, 1 min Insulation resistance

MΩkm, 20°C Note) The minimum bending radius for

Characteristics

65 or less

1000

5 or less

Manifold Options 4

Common to Connector Type/Cable Type/Individual Wiring

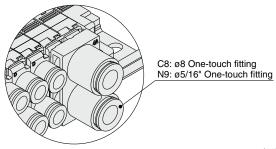
■ Dual flow fitting (Set for SJ3000 series)

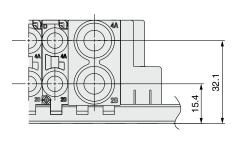
Port size **C8** ø8 **N9** ø5/16"

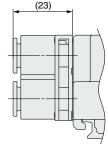
This is a fitting for cylinder ports which enables simultaneous actuation and increase in flow rate of valves for 2 stations. This is a One-touch fitting with port sizes of ø8 and ø5/16.

* When arranging mounted to the valve, arrange the valve part no. using the part no. without the One-touch fitting, and then add the part no. for the dual flow fitting. If the arrangement is complicated, please specify them by means of the manifold specification sheet.

Ordering example Valve type (without One-touch fitting) SJ3160-5CU-C0 2 sets * SJ3000-120-1A-C8 1 set →The asterisk denotes the symbol for assembly.





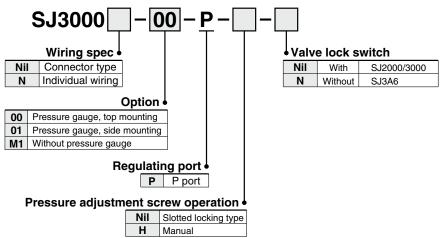


Series SJ2000/3000 Manifold Options 5

For Connector type/Individual Wiring

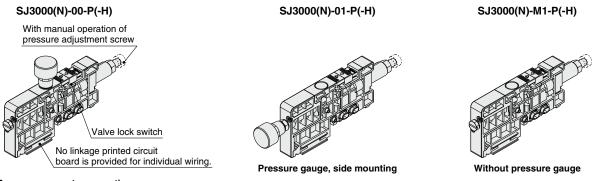
■ Regulator block/How to Order

This is used to reduce the pressure supplied from the D side inside the manifold. All valves on the U side are depressurized from the regulator block.



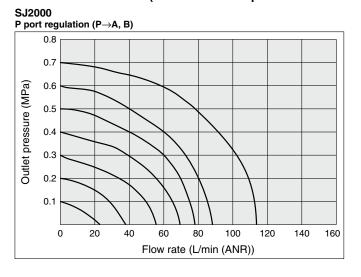
Note 1) Be sure to apply the pressure from the 1(P) port of the manifold before using the regulator block.

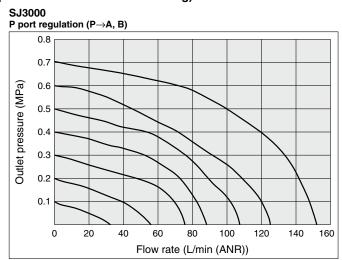
Note 2) When ordering with a regulator block installed in the manifold, please order using the manifold specification sheet.



Pressure gauge, top mounting

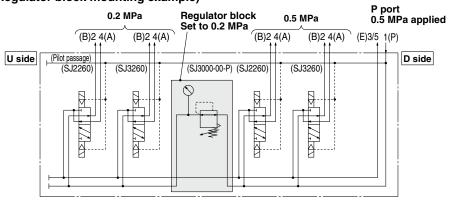
■ Flow Characteristics (Conditions: Inlet pressure 0.7 MPa 2 position solenoid valve mounting)





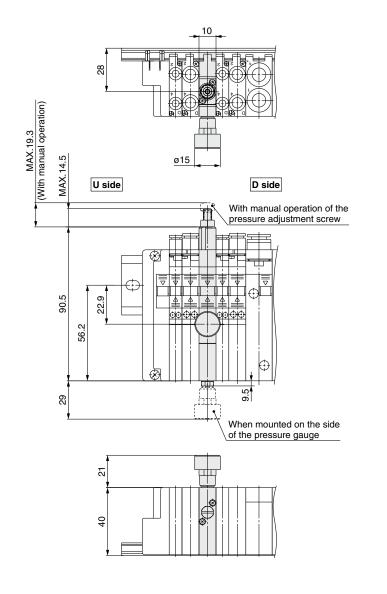
Manifold Options 6

■ Pneumatic circuit (Regulator block mounting example)



Note) Reduces supply pressure from the D side of manifold. Supply pressure from the U side cannot be reduced.

■ Dimensions

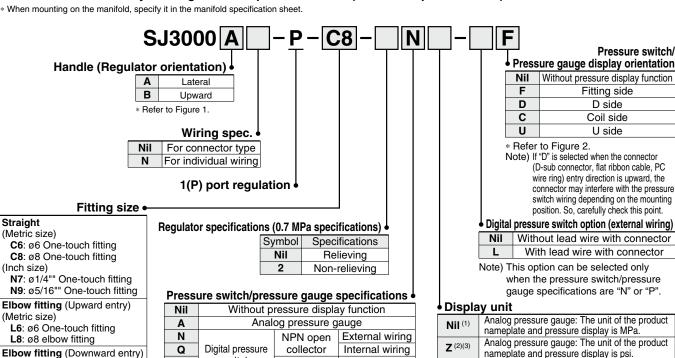




Series SJ2000/3000 **Manifold Options 7**

For Connector Type/Individual Wiring

■ SUP/EXH block assembly with regulator and pressure switch (for internal pilot manifold)/How to Order



External wiring

s collector Internal wiring Note 1) "Internal wiring" specifications mean that the wiring is assigned to the centralized wiring on the manifold. (For details, refer to "Electrical

switch

P

Wiring" on page 78.) Note 2) For the internal wiring specifications, select an appropriate pressure switch according to the polarity of the valve to be mounted.

PNP open

Note 3) For the serial manifold and non plug-in, "Q" and 'S" (internal wiring specifications) cannot be

Note 4) The analog pressure gauge is not applicable to the copper-free specifications.

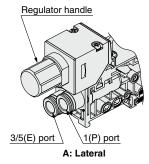
Z (2)(3) nameplate and pressure display is psi Digital pressure switch: With display unit **ZA** (2)(4) switching function (Initial valve MPa.)

Note 1) Digital pressure switch, you will (MPa) a fixed

Note 2) According to the New Measurement Law (SI units are used in Japan), these pressure gauges are sold only to the overseas market. Both "MPa" and "psi" are written on the unit display of the digital pressure switch.

Note 3) The digital pressure switch has the unit conversion function and its initial setting is the "psi" display.

Note 4) For digital pressure switches.



(Metric size)

B6: ø6 elbow fitting

B8: Ø8 elbow fitting

orientation is lateral, the

cannot be selected.

elbow fitting (upward entry)

Note) When the handle

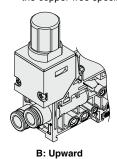


Fig.1 Handle orientation (Regulator mounting orientation)

Note 1) Be sure to apply the pressure from the 1(P) port of the manifold before using the SUP/EXH block assembly with regulator and pressure switch.

Note 2) For details on regulator and electric circuit of the external wiring specifications, see the catalog for Series ARM11

Note 3) Applicable only to the manifolds with the internal pilot specifications.

Note 4) This regulator block cannot be combined with the vacuum release valve of Series SJ3A6.

■ Series SJ3000 Valve with Speed Controller/How to Order



 Meter-out Identification color: Silver Meter-in Identification color: Black

Note 1) Applicable only to Series SJ3000. Note 2) Specify S0 or S1 at the end of the valve part no.

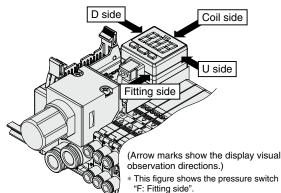
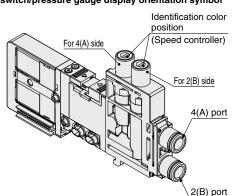


Fig.2 Pressure switch/pressure gauge display orientation symbol

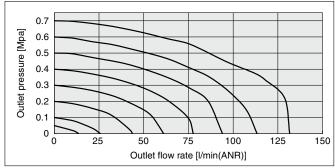


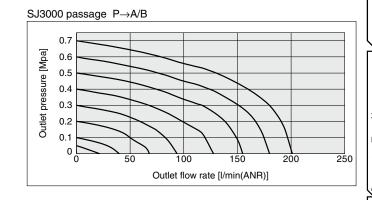
Manifold Options 8

■ Flow characteristics

Regulator unit flow characteristics

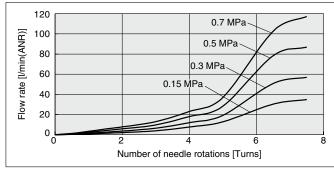
SJ2000 passage P→A/B

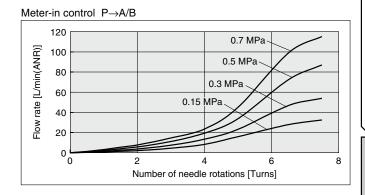




Valve with speed controller flow characteristics

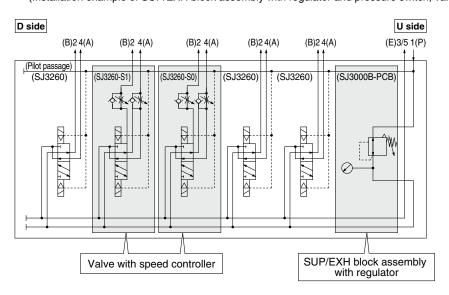
Meter-out control A/B→E





■ Pneumatic circuit

(Installation example of SUP/EXH block assembly with regulator and pressure switch, valve with speed controller)



Connector Type/ | Plug-in Cable Type

Non plug-in Individual

SJ3A6

Common Specifications

Plug-in

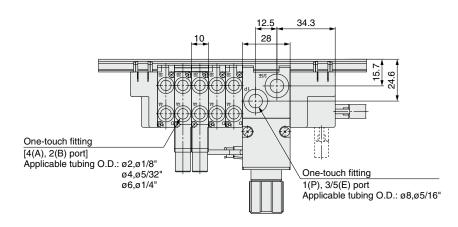
Connector Type/ Cable Type

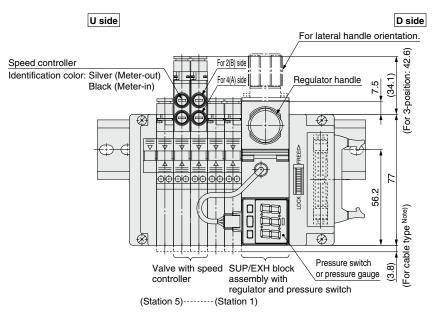
Individual | Non plug-in

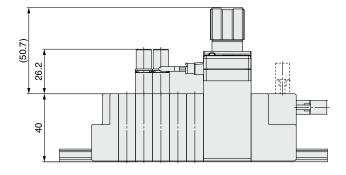
Series SJ2000/3000 Manifold Options 9

For Connector Type/Individual Wiring

■ SUP/EXH block assembly with regulator and pressure switch, valve with speed controller/Dimensions







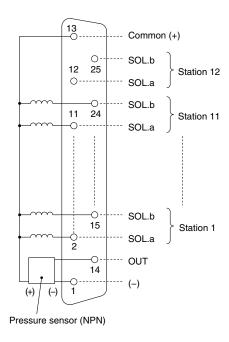
Note) The SUP/EXH block assembly with regulator and pressure switch cannot be mounted on the plug-in cable type manifold.

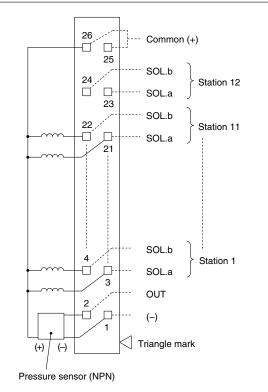
Manifold Options 10

■ Manifold electrical wiring when the SUP/EXH block assembly with the regulator and pressure switch is mounted. (Internal wiring and pressure switch (NPN))

D-sub connector (25 pins)

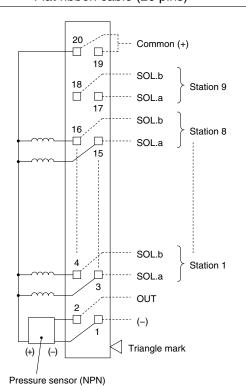
Flat ribbon cable (26 pins)

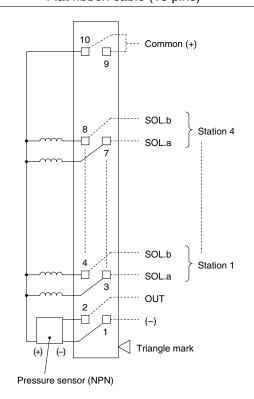




Flat ribbon cable (20 pins)

Flat ribbon cable (10 pins)





Note 1) This figure shows when the SUP/EXH block assembly with the regulator and pressure switch is mounted between the connector block and 1st station valve.

Note 2) Applicable only to the connector type manifold.



Individual | Non plug-in | Connector Type | Plug-in | Wiring | Non plug-in | Cable Type |

Made to Order

SJ3A6

Connector Type/ Plug-in Cable Type

Individual | Non plug-in

Series SJ2000/3000 Manifold Options 11

For connector type

■ Dimensions

■ Intermediate connector block assembly

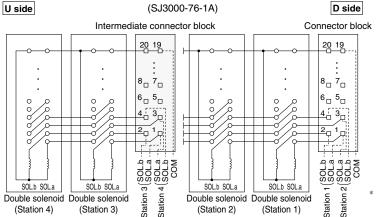
This connector block can be used by inserting it into the middle of the manifold.

This can be used, for example, when you wish to separate electrical control of valves in the same manifold, or when the number of control points is insufficient.

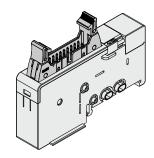
Series	Part no.	Note
	SJ3000-76-1A	Flat ribbon cable (20 pins)
SJ2000 SJ3000	SJ3000-76-4A	Flat ribbon cable (26 pins)
533000	SJ3000-76-2A-05	With power supply terminal (for PC wiring)

Note) When ordering with an intermediate connector block assembly installed in the manifold, please order using the manifold specification sheet.

■ Intermediate connector block assembly wiring example

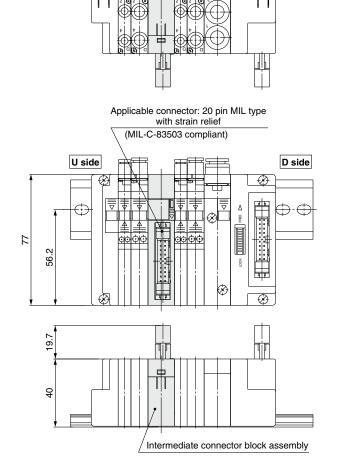


15.5



For flat ribbon cable (20 pins)

 Enables control of U side solenoid valves from the position where the intermediate connector block assembly is installed.



* This drawing shows the SJ3000-76-1A.



For detailed dimensions, specifications, and delivery, please contact SMC.



Individual | Non plug-in | Connector Type | Plug-in | Wiring | Non plug-in | Cable Type |

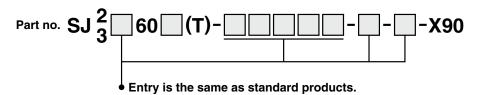
SJ3A6

1 Main Valve Fluororubber Specifications

Symbol -X90

Fluororubber is used for rubber parts of the main valve to allow use in applications such as the following.

- 1. When using a lubricant other than the recommended turbine oil, and there is a possibility of malfunction due to swelling of the spool valve seals.
- 2. When ozone enters or is generated in the air supply.



Note) Because in series -X90 fluororubber is used for only main valve, the rubber parts of the application/usage in conditions requiring heat resistance should be avoided.

Vacuum Release Valve with Restrictor

Series SJ3A6

Plug-in Type

P.85

Connector Connection

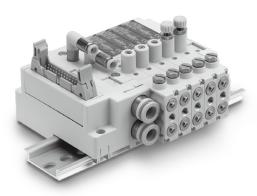
D-sub Connector Flat Ribbon Cable **PC** Wiring

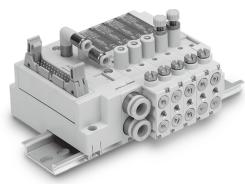
Serial Wiring: EX180 Serial Wiring: EX510



Cable Connection

D-sub Connector Flat Ribbon Cable





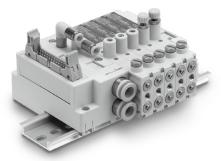
Non Plug-in Type Individual Wiring

P.91

Individual Wiring



Series SJ3A6





Manifold Valve Specifications

Valve construction		3 position 3 port valve with restrictor	
Fluid		Air	
Operating	Release pressure port 1(P)	0.25 to 0.7	
pressure	Vacuum pressure port 3/5(E)	-100 kPa to 0.7 Note 1)	
range (MPa)	Pilot X port	0.25 to 0.7 Note 2)	
Ambient and flu	uid temperature (°C)	-10 to 50 (No freezing)	
Max. operating	frequency (Hz)	3	
Manual override (Manual operation)		Non-locking push type	
		Push-turn locking slotted type	
Restrictor operation		Manual	
nestrictor opera	ation	Slotted locking type	
Pilot method		External pilot/Pilot valve individual exhaust	
Lubrication		Not required	
Mounting orien	tation	Unrestricted	
Impact/Vibration resistance (m/s²) Note 3)		150/30	
Enclosure		Dustproof	

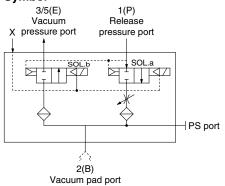
Note 1) Can be used with positive pressure to suit the application.

Note 2) Please use with pilot X port pressure equal to or higher than the release port 1(P) pressure.

Note 3) Impact resistance: No malfunction occurred when it is tested 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. (Values at the initial period)

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)

Symbol



Solenoid Specifications

Coil rated voltage		24 VDC, 12 VDC	
Allowable voltage fluctuation		±10% of rated voltage *	
Power	Standard	0.4	
consumption (W) With power saving circuit (Continuous duty type)		0.15	
Surge voltage suppressor		Diode	
Indicator type		LED	

* For the allowable voltage fluctuation for Z/T type (with power saving circuit), please observe the following range because they have voltage drop due to internal circuit.

12 VDC: -4% to +10% 24 VDC: -5% to +10% 12 VDC: -6% to +10%

Response Time

Valve model	Response time ms (at 0.5 MPa)
SJ3A6-□□-□	19 or less

Flow Characteristics

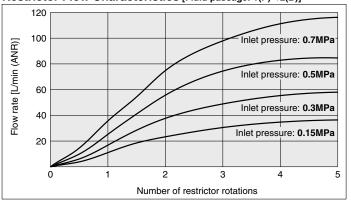
Flow Characteristics (When restrictor is fully open)

	01100 (11110			90,			
Value medal	Fluid passage	1(P)	→2(B)		2(B)-	→3/5(E)	
Valve model	2(B) Port size	C[dm3/(s.bar)]	b	Cv	C[dm3/(s.bar)]	b	Cv
SJ3A6-□□-□	M5	0.24	0.19	0.05	0.40	0.18	0.10

Weight

Valve model	Weight (g)
SJ3A6-□□-P	79

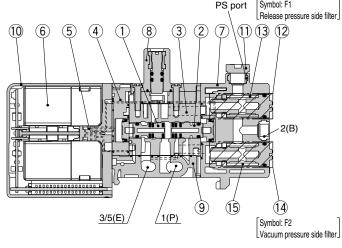
Restrictor Flow Characteristics [Fluid passage: 1(P)→2(B)]



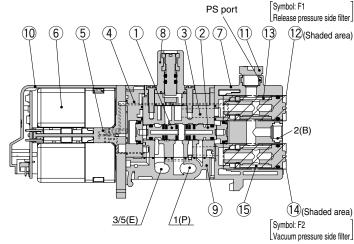
Construction/Circuit Example

Construction

Connector type



Cable type



Component Parts

• • • • • • • • • • • • • • • • • • • •			
No.	Description	Material	Note
1	Spool valve assembly	Resin/HNBR	A side (for release pressure switching)
2	Spool valve assembly	Resin/HNBR	B side (for vacuum pressure switching)
3	Body	Zinc die-cast	_
4	Adapter plate	Resin	White
5	Pilot adapter	Resin	White
6	Pilot valve assembly	_	_
7	End cover	Resin	White
8	Restrictor block assembly Note)	Resin	White
9	Bottom cover	Resin	White
10	Light cover	Resin	Light blue

Note) Set the operating torque of the restrictor of the restrictor block assembly to 0.3 N·m or less.

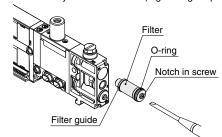
Component Parts

Ν	ο.	Description	Part no.	Note
1	1	Plug	M-5P	PS port with plug
1	2	Filter assembly	SJ3000-110-1A	1 μm White <release pressure="" side=""></release>
1	3	Filter	SJ3000-107-1A	1 µm White <release pressure="" side="">, 5 pcs. included</release>
1	4	Filter assembly	SJ3000-110-2A	30 µm Light purple <vacuum pressure="" side=""></vacuum>
1	5	Filter	SJ3000-107-2A	30 µm Light purple <vacuum pressure="" side="">, 5 pcs. included</vacuum>

<Filter replacement instructions>

If there are situations such as filter clogging, a drop in suction force, or slow response time, stop operation and replace the filter.

- Using a precision driver, remove the filter assembly (② or ③) from the main unit.
- 2. Turn the filter guide by hand and remove.
- Replace the filter (13 or 15) and gently hand tighten the filter guide. At this time, check that there is no foreign matter on the O-ring of the filter assembly.
- 4. Return the filter assembly to the main unit. (Tightening torque: 0.12 N·m)



After tightening the plug (M-5P) with a tightening torque of 1 N·m, or manually tightening, use the tightening tool and tighten it by 1/4 turn.

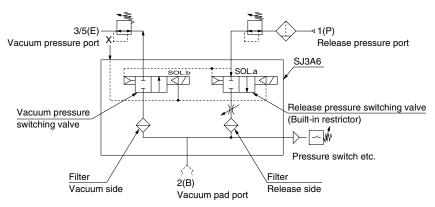
1214 Filter assembly (with filter)

1315 Filter (5 pcs. included)





Adsorbing and Transferring System Circuit Example





Plug-in Connector Type

Vacuum Release Valve with Restrictor

Series SJ3A6 (E RULLIS

How to Order

An order cannot be placed with only the manifold part no. Be sure to order solenoid valves for mounting at the same time while referring to the ordering example.

Vacuum release valve manifold with restrictor

SS3J3-V60

Vacuum release valve with restrictor type

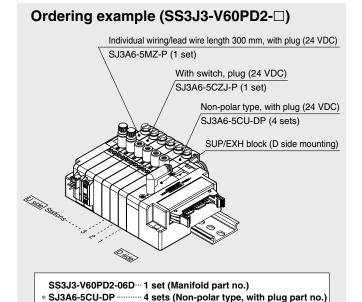
Connector type

Symbol	Mounting position	Page	Note
FD	D-sub connector		
PD	Flat ribbon cable 26 pins	1	
PGD	Flat ribbon cable 20 pins	D 15	
PHD	Flat ribbon cable 10 pins		Dorollol wiring
JD	Flat ribbon cable (PC wiring, without power supply terminal)		Parallel wiring
GD	Flat ribbon cable (PC wiring, with power supply terminal)	P.33	
S□	EX180 serial transmission	P.41	Carrial cuinina
S6B	EX510 serial transmission	P.49	Serial wiring

Connector entry

With parallel wiring specifications, it is necessary to select the connector entry direction (1: upward, 2: lateral). (Only upward is available for GD.) For details, refer to pages 15 and 33.

How to Order Manifold Assembly



- The asterisk denotes the symbol for assembly. Prefix to the part no. of the solenoid valve, etc.
- The valve arrangement is numbered as the 1st station from D side. Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. In the case of complex ement, specify them in the manifold specification sheet.

* SJ3A6-5CZJ-P 1 set (With switch, plug part no.) * SJ3A6-5MZ-P ··········· 1 set (Individual wiring, lead wire length 300 mm, with plug part no.)

Note) When ordering a manifold, specify the part nos. of valves to be mounted together. (An order cannot be placed with only the manifold part no.)

SUP/EXH block

mounting position			
U	U side (1 to 10 stations)		
D	D side (1 to 10 stations)		
В	Both sides (1 to 16 stations)		
M*	Special specifications		

Specify the required specifications (Including port sizes other than ø8) by means of the manifold specification sheet.

DIN rail length specified

Nil	Standard length		
2	2 stations Specify a longer		
÷		rail than the	
16	16 stations	standard length.	

Specify the valve stations not exceeding the maximum stations.

SUP/EXH block fitting spec.

Nil	Straight fitting	
L	Elbow fitting (Upward)	
В	Elbow fitting (Downward)	

* There is no need to enter anything when the SUP/EXH block mounting position "M" is selected. Also, this manifold comes standard with external pilot specifications.

Valve stations

F: D-sub connector

Symbol	Stations
01	1 station
÷	:
12	12 stations

PG: Flat ribbon cable (20 pins) PH: Flat ribbon cable (10 pins)

Stations
1 station
9 stations

Flat ribbon cable (PC wiring)

J: Flat ribbon cable		
Symbol	Stations	
01	1 station	
:	:	
08	8 stations	

P: Flat ribbon cable (26 pins)

Symbol	Stations
01	1 station
÷	÷
12	12 stations

Symbol	Stations
01	1 station
:	:
0/1	4 stations

S6B: EX510 serial transmission

t Hobbin babie (i o willing)		OOD. EXCITOSCIN		
ool	Stations		Symbol	Stations
	1 station		01	1 station
	:		÷	:
	8 stations		08	8 stations

G: Flat ribbon cable (PC wiring, with power supply terminal)

Symbol	Stations
01	1 station
:	:
08	8 stations

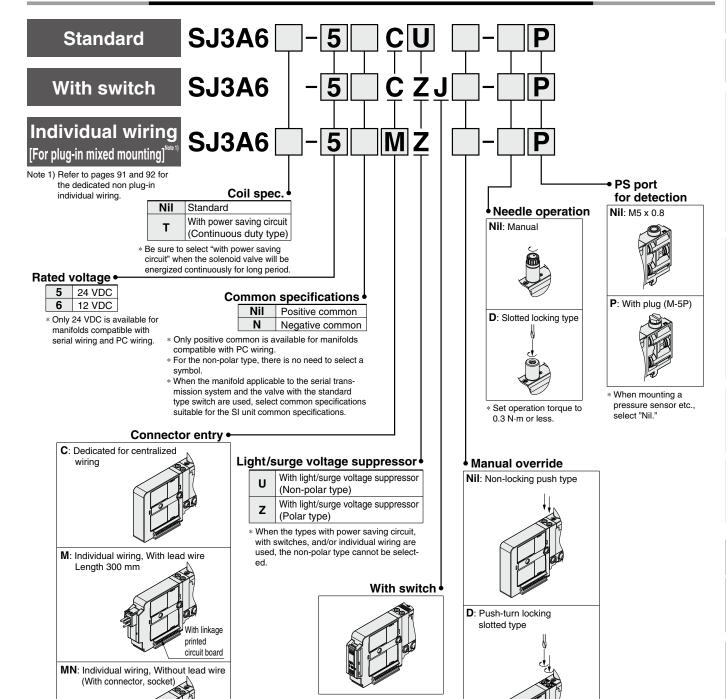
S□: EX180 serial transmission

Symbol	Stations	Note
01	1 station	There are limitations on the station
:	:	number, depending on the serial type.
16	16 stations	Refer to page 41 for details.

^{*} The number of the blanking block assembly is also included. For the blanking block assembly, please select double wiring specifications.



How to Order Solenoid Valves (3 Position 3 Port with Restrictor)



With linkage printed

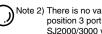
MO: Individual wiring, Without

connector

- * Connector entries with the symbol "M \square " can not use the switch signal from the common wiring on the manifold.
- When ordering a connector assembly separately, refer to pages 101 and 102.

Vith linkage

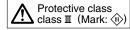
circuit board



Note 2) There is no valve block switch for linking the neighboring valve, etc. to the 3 position 3 port solenoid valve with restrictor. Consult SMC if you wish to use the SJ2000/3000 valve with a valve block switch, or an end block or SUP/EXH block assembly.

No slide locking type manual over-

ride setting is provided.





Plug-in Cable Type

Vacuum Release Valve with Restrictor

Series SJ3A6 (C. RULUS

How to Order

An order cannot be placed with only the manifold part no. Be sure to order solenoid valves for mounting at the same time while referring to the ordering example.

●Vacuum release valve manifold with restrictor

SS3J3-V60 L D D-05 U

Vacuum release valve with restrictor type

Connector type

Symbol	Mounting position	Page	Note
F	D-sub connector Flat ribbon cable 26 pins		
Р			Dorollol wiring
PG Flat ribbon cable 20 pins		P.17	Parallel wiring
PH	Flat ribbon cable 10 pins		

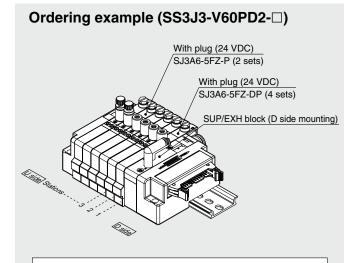
Connector mounting position

Symbol	Mounting position
D	D side

Connector entry

With parallel wiring specifications, it is necessary to select the connector entry direction (1: upward, 2: lateral). For details, refer to page 17.

How to Order Valve Manifold Assembly



- SS3J3-V60LPD2-06D ··· 1 set (Manifold part no.)
 * SJ3A6-5FZ-DP ············· 4 sets (With plug part no.)
- * SJ3A6-5FZ-P2 sets (With plug part no.)

 The asterisk denotes the symbol for assembly.

 Prefix to the part no. of the solenoid valve, etc.
- The valve arrangement is numbered as the 1st station from D side.
 Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. In the case of complex arrangement, specify them in the manifold specification sheet.

DIN rail length specified

Nil	Standard length	
3	3 stations Specify a longer	
÷		rail than the
10	10 stations	standard length.

* When specifying a rail longer than the standard length, select the valve stations not exceeding the maximum stations.

SUP/EXH block fitting spec.

Nil	Straight fitting
	X, PE port: elbow fitting
L	Elbow fitting (Upward)
	X, PE port: straight fitting
В	Elbow fitting (Downward)
	X, PE port: elbow fitting

* There is no need to enter anything when the SUP/EXH block mounting position "M" is selected. Also, this manifold comes standard with external pilot specifications.

SUP/EXH block mounting position

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B Both sides (2 to 10 station	
M*	Special specifications

* For the special specifications, a port size of the SUP/EXH block assembly can be specified. At this time, the mounting position becomes only U, D, or B.

Valve stations

F: D-sub connector Symbol Stations

Symbol	Stations	
02	2 stations	
÷	:	
10	10 stations	

PG: Flat ribbon cable (20 pins)

P.G. Flat Hibboti Cal		
Symbol	Stations	
02	2 stations	
i	:	
09	9 stations	

P: Flat ribbon cable (26 pins)

Symbol	Stations	
02	2 stations	
÷	:	
10	10 stations	

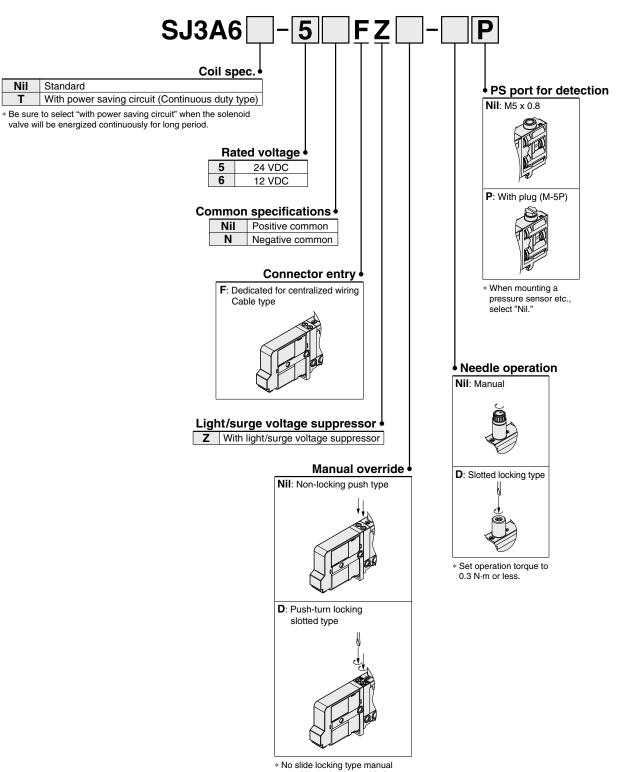
PH: Flat ribbon cable (10 pins)

Symbol	Stations		
02	2 stations		
÷	:		
04	4 stations		

- * The number of the blanking block assembly is also included.
- * The cable type is applicable to 2 or more stations.

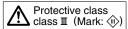
Plug-in Cable Type Vacuum Release Valve with Restrictor Series \$\int 3A6\$

How to Order Solenoid Valves (3 Position 3 Port with Restrictor)



override setting is provided.

Note) There is no valve block switch for the 3 position 3 port solenoid valve with restrictor.



Construction

Individual | Non plug-in | Connector Type | Plug-in | Wiring |

Manifold Options

Made to Order

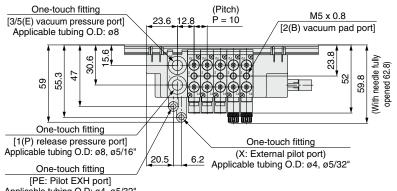
SJ3A6

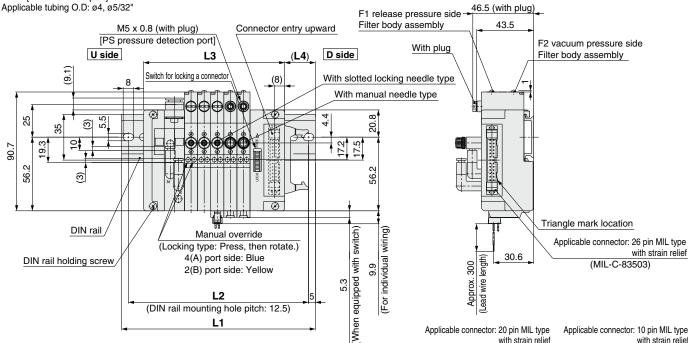
88

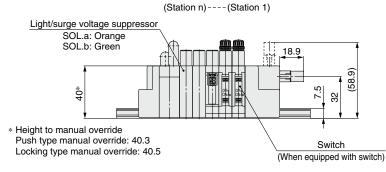
Series SJ3A6

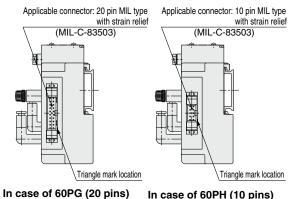
Dimensions

SS3J3-V60 $_{\text{FD}}^{\text{P}\square \text{D}}$ $_{2}^{1}$ -Stations U/D/B









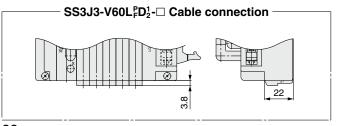
Applicable connector: D-SUB {JIS-X-5101, MIL-C-24308} equivalent

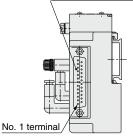
SMC

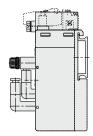
In case of 60PH (10 pins)

Since DIN rail dimensions are the same as the SS5J3-60 series, refer to the following pages. For D-sub connector: Page 23, 24

For flat ribbon cable: Page 28, 29 For EX180 serial wiring: Page 45, 46 For EX510 serial wiring: Page 53, 54







In case of 60FD

In case of 60S□

Non plug-in Individual Wiring

Vacuum Release Valve with Restrictor

Series SJ3A6 (CANUS

How to Order

An order cannot be placed with only the manifold part no. Be sure to order solenoid valves for mounting at the same time while referring to the ordering example.

Individual wiring manifold

SS3J3-V60-05 U

Vacuum release valve with restrictor type

Valve stations

Symbol	Stations	
01	1 station	
:	:	
20	20 stations	

* The number of the blanking block assembly is also included.

SUP/EXH block mounting position

U	U side (1 to 10 stations)	
D D side (1 to 10 stations) B Both sides (1 to 20 station		
		M*

* Specify the required specifications (Including port sizes other than Ø8) by means of the manifold specification sheet.

DIN rail length specified

Nil	Standard length			
2	2 stations Specify a longer			
:	:	rail than the		
20	20 stations	standard length.		

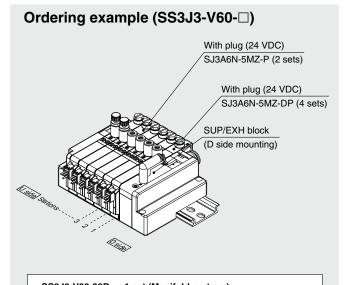
* Specify the valve stations not exceeding the maximum stations.

SUP/EXH block fitting spec.

Nil	Straight fitting	
L	Elbow fitting (Upward)	
В	Elbow fitting (Downward)	

* There is no need to enter anything when the SUP/EXH block mounting position "M" is selected. Also, this manifold comes standard with external pilot specifications.

How to Order Manifold Assembly



SS3J3-V60-06D ····· 1 set (Manifold part no.)

* SJ3A6N-5MZ-DP ··· 4 sets (With plug part no.)

* SJ3A6N-5MZ-DP \cdots 4 sets (With plug part no.) $\underline{*}$ SJ3A6N-5MZ-P \cdots 2 sets (With plug part no.)

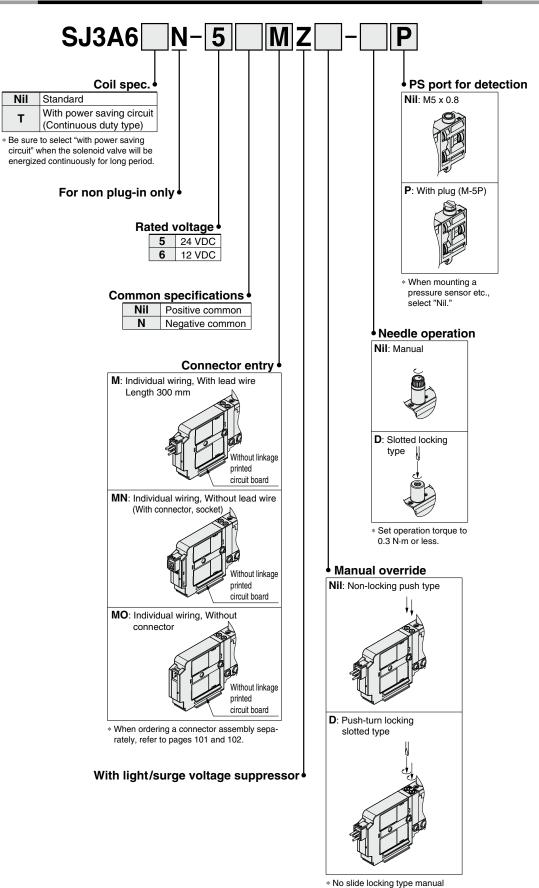
The asterisk denotes the symbol for assembly.

Prefix to the part no. of the solenoid valve, etc.

• The valve arrangement is numbered as the 1st station from D side.

 Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. In the case of complex arrangement, specify them in the manifold specification sheet.

How to Order Solenoid Valves (3 Position 3 Port with Restrictor)



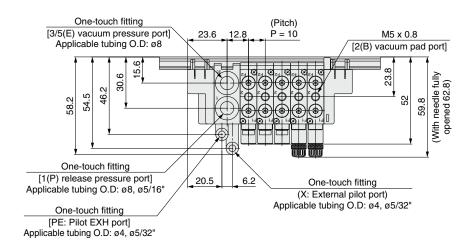
SMC

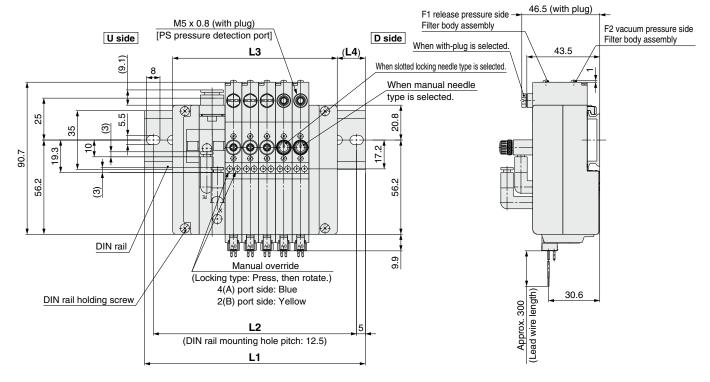
override setting is provided.

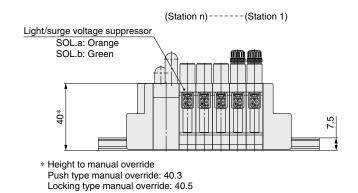
Series SJ3A6

Dimensions

SS3J3-V60-Stations U/D/B





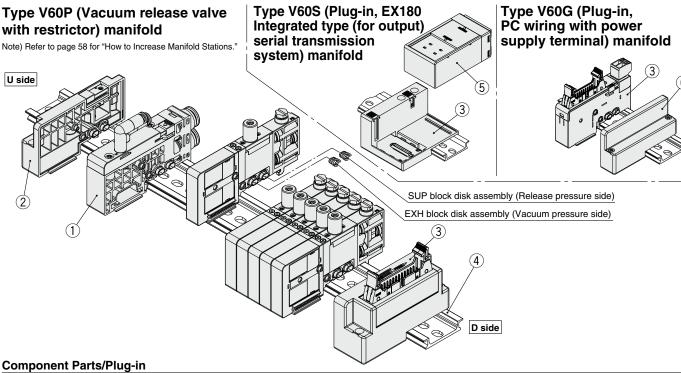


Since DIN rail dimensions are the same as the SS5J3-60-□ series, refer to pages 65 and 66.



Series SJ3A6 **Manifold Exploded View 1**

Connector Type/Individual Wiring



No.		Description	Part no.	Note	
1 Note 1)	SUP/EXH block	External pilot specification	SJ3000-50-1AR-□□-N (X, PE port: Metric size ø4 Inch size ø5/32")	(Metric size) C6: With ø6 One-touch fitting (straight) C8: With ø6 One-touch fitting (straight) L6: With ø6 One-touch fitting (elbow upward entry) L8: With ø8 One-touch fitting (elbow upward entry)	
1 Note I)	assembly	For different pressures Note 2)	SJ3000-50-3A-□□-N	B6: With Ø6 One-touch litting (elbow upward entry) B6: With Ø6 One-touch fitting (elbow downward entry) B8: With Ø8 One-touch fitting (elbow downward entry) (Inch size) N7: With 1/4" One-touch fitting (straight) N9: With 5/16" One-touch fitting (straight)	
2 Note 1)	End block assen	nbly	SJ3000-53-1A-N	For U side	
3	Connector block assembly		SJ3000-42-□A-□ SJ3000-76-2A-05	Refer to the connector block assembly part no. shown below.	
4	DIN rail		VZ1000-11-1-□	Refer to page 71.	
5	SI unit		EX180-□□	Refer to the SI unit part numbers on page 41.	
6	End block assembly		SJ3000-53-2A	For D side	

Connector Block Assembly Part No.

Connector specifications	Mounting position	Part no.	Note
	Mounting position		INOLE
For D-sub connector (Locking bracket: Metric size thread)		SJ3000-42-1A-□	
For D-sub connector (Locking bracket: Unified thread)		SJ3000-42-1AU-□	
For flat ribbon cable 26 pins		SJ3000-42-2A-□	
For flat ribbon cable 20 pins		SJ3000-42-3A-□	
For flat ribbon cable 10 pins	D side	SJ3000-42-4A-□	☐: 1 (Connector upward)
For PC wiring 20 pins		SJ3000-42-6A-□	☐: 2 (Connector lateral)
For EX180 serial wiring Note)		SJ3000-42-20A	
For EX510 serial wiring Note)		SJ3000-42-3A-2	
For PC wiring 20 pins with power supply terminal		SJ3000-76-2A-05	

Note) SI unit is not included.

Component Parts/Non plug-in (Individual Wiring)

COIII	omponent Faits/Non plug-in (individual wiring)				
No.	Description		Part no.	Note	
4 100 0	SUP/EXH block assembly	External pilot specification	SJ3000-50-5AR-□□-N (X, PE port: Metric size ø4 Inch size ø5/32")	(Metric size) C6: With ø6 One-touch fitting (straight) C8: With ø8 One-touch fitting (straight) L6: With ø6 One-touch fitting (elbow upward entry) L8: With ø8 One-touch fitting (elbow upward entry)	
Note 1)		For different pressures Note 2)	SJ3000-50-6A-□□-N	B6: With ø6 One-touch fitting (elbow downward entry) B8: With ø8 One-touch fitting (elbow downward entry) (Inch size) N7: With 1/4" One-touch fitting (straight) N9: With 5/16" One-touch fitting (straight)	
2 Note 1)	te 1) End block assembly		SJ3000-53-1A-N	For U side	
4	4 DIN rail		VZ1000-11-1-□	Refer to page 71.	
6	6 End block assembly		SJ3000-53-2A	For D side	

Note 1) For the SJ3A6 series, valve block and manual switches are not available.

Note 2) The valves cannot be operated only with the SUP/EXH block assembly for different pressure, select in combination with the SUP/EXH block assembly for external pilot. Note 3) Refer to page 69 about the SUP/EXH block disk assembly and method of handling of parts at different pressure.



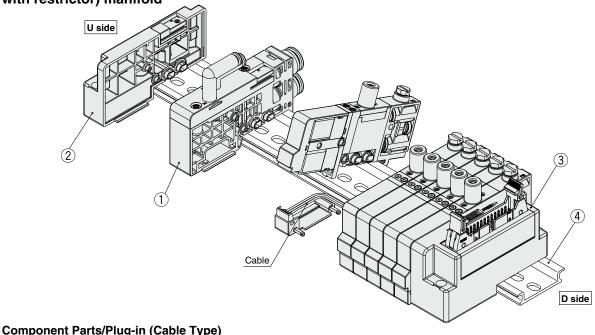
Series SJ3A6

Manifold Exploded View 2

Cable Type

Type V60LP (Vacuum release valve with restrictor) manifold

Note) Refer to page 59 for "How to Increase Manifold Stations."

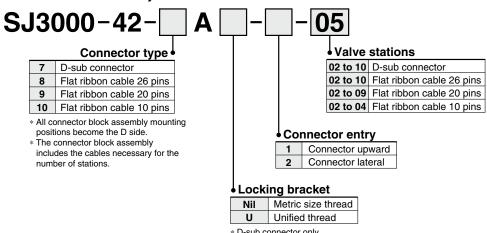


No.	Description		Part no.	Note	
	SUP/EXH block assembly	External pilot specification	SJ3000-50-5AR-□□-N (X, PE port: Metric size ø4 Inch size ø5/32"	(Metric size) C6: With ø6 One-touch fitting (straight) C8: With ø8 One-touch fitting (straight) L6: With ø6 One-touch fitting (elbow upward entry) L8: With ø8 One-touch fitting (elbow upward entry)	
1 Note1)		For different pressures Note 2)	SJ3000-50-6A-□□-N	B6: With ø6 One-touch fitting (elbow downward entry) B8: With ø8 One-touch fitting (elbow downward entry) (Inch size) N7: 1/4" One-touch fitting (straight) N9: 5/16" One-touch fitting (straight)	
2 Note1)	End block assembly		SJ3000-53-1A-N		
3	Connector block assembly		SJ3000-42-□A-□	Refer to the connector block assembly part no. shown below.	
4	DIN rail		VZ1000-11-1-□	Refer to page 71.	

Note 1) For the SJ3A6 series, valve block and manual switches are not available.

Note 2) The valves cannot be operated only with the SUP/EXH block assembly for different pressure, select in combination with the SUP/EXH block assembly for external pilot. Note 3) Refer to page 69 about the SUP/EXH block disk assembly and method of handling of parts at different pressure.

Connector Block Assembly



^{*} D-sub connector only.

Series **SJ2000/3000**

Specific Product Precautions 1

Be sure to read before handling.

Refer to back cover for Safety Instructions and "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valve Precautions.

Manual Override Switch Operation

. Warning

For manual override operation, move the manual override switch to a position where letters A and B can be seen. [Manual override switch release status (refer to the figure below)] Operation with the manual override switch in a locked status can cause damage to the manual override and air leakage, so be sure to release the manual override switch before use. After manual override operation, lock the manual switch for use (when the manual override of the push-turn locking slotted type is locked, a manual override switch cannot be locked).



Manual override switch locked status



switch slide direction

Manual override

Manual override switch unlocked status

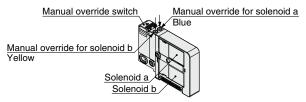
Manual Override Operation

. Warning

When the manual override is operated, connected equipment will be actuated. Confirm safety before operating.

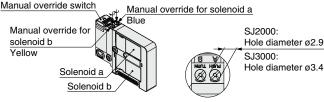
■Non-locking push type

Press in the direction of the arrow.



■Push-turn locking slotted type

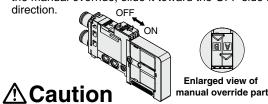
While pressing, turn in the direction of the arrow (90° clockwise). If it is not turned, it can be used in the same way as the non-locking push type.



Enlarged view of manual override part

■Slide locking type (manual override)

Slide the manual override all the way to the ON side in the arrow direction. The manual override is then locked. To unlock the manual override, slide it toward the OFF side in the arrow direction.



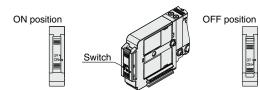
When you operate the D type with a screw driver, turn it gently using a watchmaker's screw driver. [Torque: under 0.05 N·m] When you lock the manual override of the D type, be sure to push it before turning. [Load: 10 N or less] Turning without pushing can cause damage to the manual override and trouble such as air leakage, etc.

Valve with Switch

⚠ Warning

When turning OFF the valve using the switch, move it to the position where the valve is locked. If the switch is at an improper position and is energized, equipment connected to the valve could be actuated.

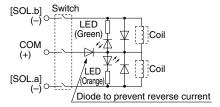
Also, if the switch is turned OFF on the valve in the energized state, be careful because any actuators connected to a single solenoid, a dual 3 port valve or a 3 position valve will actuate.



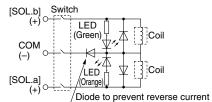
Normal operation: The valve is switched according to electric signals from the connector on the manifold side.

The valve coil is kept in a deenergized state even when there is an electric signal from the connector on the manifold side.

Electric circuit diagram (with positive common and light/surge voltage suppressor)



(with negative common and light/surge voltage suppressor)



Built-in Back Pressure Check Valve Type

⚠ Caution

Valves with built-in back pressure check valve is to protect the back pressure inside a valve. For this reason, use caution the valves with external pilot specification cannot be pressurized from exhaust port [3/5(E)].

As compared with the types which do not integrate the back pressure check valve, C value of the flow characteristics (sonic conductance) goes down. For details, please contact SMC.

Exhaust Restriction

⚠ Caution

Since the SJ series is a type in which the pilot valve exhaust joins the main valve exhaust inside the valve, use caution, so that the piping from the exhaust port is not restricted.



Series **SJ2000/3000**

Specific Product Precautions 2

Be sure to read before handling.

Refer to back cover for Safety Instructions and "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valve Precautions.

When Using a 4 Port Valve as a 3 Port Valve

⚠ Caution

■When using a 4 port valve as a 3 port valve

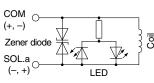
The SJ2000/3000 series can be used as normally closed (N.C.) or normally open (N.O.) 3 port valves by plugging one of the cylinder ports 4(A) or 2(B). However, exhaust ports should be left open. It is convenient when a double solenoid 3 port valve is required.

Plug position		2(B) port	4(A) port		
Туре	e of actuation	N.C.	N.O.		
solenoids	Single	(A)4 2(B) (EA)513(EB) (P)	(A)4 2(B) (EA)513(EB) (P)		
Number of	Double	(A)4 2(B) (EA)513(EB) (P)	(A)4 2(B) X (EA)513(EB) (P)		

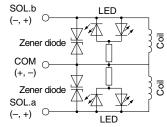
Light/Surge Voltage Suppressor

⚠ Caution

■Non-polar type Single solenoid

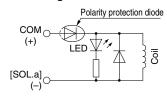


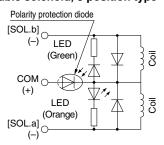
Double solenoid, 3 position type



■Positive common Single solenoid

Double solenoid, 3 position type

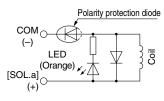


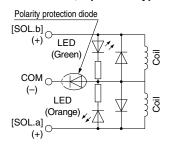


■Negative common Single solenoid

97

Double solenoid, 3 position type





Continuous Duty

∧ Caution

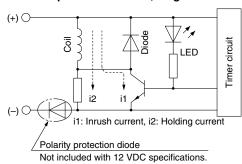
If a valve is energized continuously for a long time, the rise in temperature due to heat-up of the coil may cause a decline in solenoid valve performance, reduce service life, or have adverse effects on peripheral equipment. If a valve will be energized continuously, please be sure to use the "Continuous duty type" with a power saving circuit. In particular, there will be a large increase in temperature if 3 or more neighboring stations are simultaneously continuously energized for a long time, or if the A and B sides are simultaneously continuously energized for a long time in a dual 3 port valve. Please be very careful in such cases.

If the continuously energized time exceeds three hours, contact SMC.

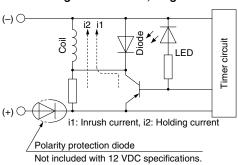
■With power saving circuit

Compared to the standard products, power consumption is reduced down to approx. 1/3 (in case of SJ3 \square 60T) by cutting the unnecessary wattage required to hold the valve in an energized state. (Effective energizing time is over 67 ms at 24 VDC.)

Electric circuit diagram (with power saving circuit) In case of positive common, single solenoid



In case of negative common, single solenoid



Series **SJ2000/3000**

Specific Product Precautions 3

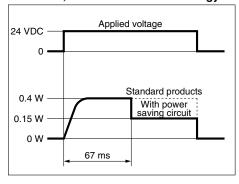
Be sure to read before handling.

Refer to back cover for Safety Instructions and "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valve Precautions.

Working Principle

With the circuit of page 93, the current consumption, when holding, is reduced to save energy. Please refer to the electric wave form data below.

In case of SJ3□60T, electric waveform of energy saving type

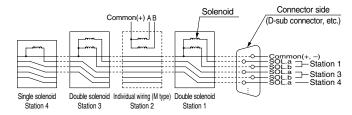


- When a power saving circuit is installed, a diode to prevent reverse current is not available for 12 VDC spec. Therefore, use caution not to connect in reverse.
- Be careful about the allowable voltage fluctuation since a voltage drop of about 0.5 V occurs due to a transistor. (Refer to the solenoid specifications of each valve for details.)

■Measures to prevent detours of surge voltage

When the DC power supply is shut off, by the emergency breaking circuit for example, valve misoperation may occur due to surge voltage produced by other electrical parts (such as electromagnetic coils). Please take measures to prevent surges from detouring to the valve (surge protection diode etc.), or use a valve with diode to prevent reverse current (polar: Z type). However, surge countermeasures are provided on the serial unit side of the serial type.

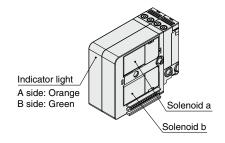
Circuit example



Light Indication

A Caution

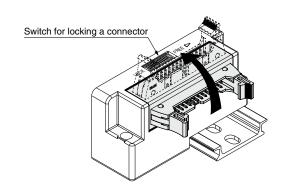
When equipped with light/surge voltage suppressor, the light window turns orange when solenoid a is energized, and it turns green when solenoid b is energized.



Changing the Connector Entry Direction

∧ Caution

To change the connector's entry direction, set the switch on the top of the connector block to the FREE position, before turning the connector. Make sure to set the switch back to the LOCK position before connecting the connector. (When the switch is difficult to slide, move the connector a little so that it will slide easier.) If an excessive force is applied on the connector in the LOCK position, the connector block may be damaged. Also, using in such a way that the connector floats in the FREE position, it may cause the lead wire, etc. to break. Thus, refrain from using in these ways.



Manifold Mounting

When attaching a manifold to a mounting surface, etc., with bolts, if the entire bottom surface of the DIN rail contacts the mounting surface in a horizontal mounting, it can be used by simply securing both ends of the DIN rail. However, for any other mounting method or for side facing and rear facing, etc., secure the DIN rail with bolts at uniform intervals using the following as a guide: 2 to 5 stations at 2 locations, 6 to 10 stations at 3 locations, 11 to 15 stations at 4 locations, 16 to 20 stations at 5 locations, 21 to 25 stations at 6 locations, 26 to 30 stations at 7 locations and more than 30 stations at 8 locations.

In addition, even in the case of a horizontal mounting, if the mounting surface is subject to vibration, etc., take the same measures indicated above. If secured at fewer than the specified number of locations, warping or twisting may occur in the DIN rail and manifold, causing trouble such as air leakage.



Series **SJ2000/3000**

Specific Product Precautions 4

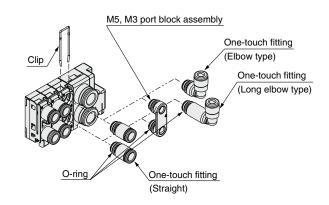
Be sure to read before handling.

Refer to back cover for Safety Instructions and "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valve Precautions.

Fitting Replacement

⚠ Caution

By replacing a valve's fitting assembly, it is possible to change the port size of the 4(A), 2(B), 1(P), and 3/5(E) ports. When replacing it, pull out the fitting assembly after removing the clip with a flat brade screw driver, etc. To mount a new fitting assembly, insert it into place and then fully reinsert the clip.



Fitting Assembly Part No.

Metric Size

Port	Port size	Part no.
	ø2 One-touch fitting(Straight)	KJH02-C1
	ø4 One-touch fitting (Straight)	KJH04-C1
SJ2000	ø2 One-touch fitting (Elbow type)	KJL02-C1
4(A)	ø4 One-touch fitting (Elbow type)	KJL04-C1-N
2(B)	ø2 One-touch fitting (Long elbow type)	KJW02-C1
	ø4 One-touch fitting (Long elbow type)	KJW04-C1-N
	M3 port block assembly	SJ2000-56-1A
	ø2 One-touch fitting (Straight)	KJH02-C2
	ø4 One-touch fitting (Straight)	KJH04-C2
	ø6 One-touch fitting (Straight)	KJH06-C2
	ø2 One-touch fitting (Elbow type)	KJL02-C2
SJ3000	ø4 One-touch fitting (Elbow type)	KJL04-C2
4(A) 2(B)	ø6 One-touch fitting (Elbow type)	KJL06-C2-N
()	ø2 One-touch fitting (Long elbow type)	KJW02-C2
	ø4 One-touch fitting (Long elbow type)	KJW04-C2
	ø6 One-touch fitting (Long elbow type)	KJW06-C2-N
	M5 port block assembly	SJ3000-56-1A
	ø6 One-touch fitting (Straight)	VVQ1000-51A-C6
	ø6 One-touch fitting (Elbow type)	SZ3000-74-1A-L6
1(P)	ø6 One-touch fitting (Long elbow type)	SZ3000-74-2A-L6
3/5(É)	ø8 One-touch fitting (Straight)	VVQ1000-51A-C8
	ø8 One-touch fitting (Elbow type)	SZ3000-74-1A-L8
	ø8 One-touch fitting (Long elbow type)	SZ3000-74-2A-L8

Inch Size

Port	Port size	Part no.
	ø1/8" One-touch fitting (Straight)	KJH01-C1
	ø5/32" One-touch fitting (Straight)	KJH03-C1
SJ2000	ø1/8" One-touch fitting (Elbow type)	KJL01-C1
4(A) 2(B)	ø5/32" One-touch fitting (Elbow type)	KJL03-C1
	ø1/8" One-touch fitting (Long elbow type)	KJW01-C1
	ø5/32" One-touch fitting (Long elbow type)	KJW03-C1
	ø1/8" One-touch fitting (Straight)	KJH01-C2
	ø5/32" One-touch fitting (Straight)	KJH03-C2
	ø1/4" One-touch fitting (Straight)	KJH07-C2
SJ3000	ø1/8" One-touch fitting (Elbow type)	KJL01-C2
4(A) 2(B)	ø5/32" One-touch fitting (Elbow type)	KJL03-C2
	ø1/4" One-touch fitting (Elbow type)	KJL07-C2
	ø1/8" One-touch fitting (Long elbow type)	KJW01-C2
	ø5/32" One-touch fitting (Long elbow type)	KJW03-C2
	ø1/4" One-touch fitting (Long elbow type)	KJW07-C2
1(P)	ø1/4" One-touch fitting (Straight)	VVQ1000-51A-N7
3/5(É)	ø5/16" One-touch fitting (Straight)	VVQ1000-51A-N9

Note 1) To change the port size of the 1(P), 3/5(E) ports into the port sizes other than Ø8 (straight), specify the change by means of the manifold specification sheet. Note 2) Be careful to avoid damage or contamination to the O-rings, as this can cause air leakage.

Note 3) When removing a straight-type fitting from a valve, after removing the clip, attach tubing or a plug (KJP-02, KQ2P-□□) to the One-touch fitting, and pull it out while holding the tubing or plug. If it is pulled out while holding the release button of the fitting (resin part), the release button may be damaged.

Note 4) Be sure to turn off the power and stop the supply of air before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before starting any work.

Note 5) While inserting a tubing into an elbow-type fitting, hold the main body of the fitting by hand. Failure to do so will exert an undue force on the valve or the fitting, resulting in air leakage or damage.

Note 6) Each fitting assembly part no. contains 1 pc. Additionally, when the piping is constructed in the same direction using the elbow-type fitting, order the elbow-type and/or long elbow-type fitting.

Clip Part No.

Par	t no.	Note	
SJ2000	SJ3000	Note	
SJ2000-CL-1 SJ3000-CL-1		These part numbers contain 10 pcs. each.	

O-ring for Valve Connection (Common to SJ2000/3000)

	o inig ioi rairo					
Part no.		Note				
	SJ3000-96-1A	The part numbers shown on the left includes parts for 5 units. (10 pcs. each for P, E port and X port)				



Series **SJ2000/3000**

Specific Product Precautions 5

Be sure to read before handling.

Refer to back cover for Safety Instructions and "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valve Precautions.

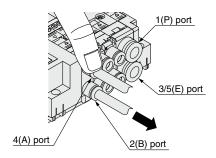
One-touch Fittings

⚠ Caution

The pitch of the SJ series piping ports (A, B etc.) has been set assuming the use of KJ series One-touch fittings. Therefore, when using fittings with an M3 or M5 port block assembly, there may be some interference between fittings, depending on the type and size, so please use after checking dimensions in the catalog for the pipe fitting being used.

1. Tube attachment/detachment for One-touch fittings

- 1) Tube attachment
 - (1) Take a tube having no flaws on its periphery and cut it off at a right angle. When cutting the tube, use tube cutters TK-1, 2 or 3. Do not use pinchers, nippers or scissors, etc. If cutting is done with tools other than tube cutters, the tube may be cut diagonally or become flattened, etc., making a secure installation impossible, and causing problems such as the tube pulling out after installation or air leakage.
 - Also allow some extra length in the tube.
 - (2) Grasp the tube and push it in slowly, inserting it securely all the way into the fitting.
 - (3) After inserting the tube, pull on it lightly to confirm that it will not come out. If it is not installed securely all the way into the fitting, this can cause problems such as air leakage or the tube pulling out.
- 2) Tube detachment
 - (1) The 4(A) and 2(B) ports use the KJ series, so the tube can be removed by pressing on part of the release bush. However, for the 1(P) and 3/5(E) ports, please press the release bush evenly as before.
 - (2) Pull out the tube while holding down the release button so that it does not come out. If the release button is not pressed down sufficiently, there will be increased bite on the tube and it will become more difficult to pull it out.
 - (3) When the removed tube is to be used again, cut off the portion which has been chewed before reusing it. If the chewed portion of the tube is used as is, this can cause trouble such as air leakage or difficulty in removing the tube.



Hold down part of the release bush with your finger or a similar tool, as shown in the diagram, and pull out in the direction indicated by the arrow.

Other Tube Brands

⚠ Caution

- 1. When using other than SMC brand tube, confirm that the following specifications are satisfied with respect to the tube outside diameter tolerance.
 - 1) Nylon tube within \pm 0.1 mm 2) Soft nylon tube within \pm 0.1 mm
 - 3) Polyurethane tube within +0.15 mm, within -0.2 mm Do not use tube which does not meet these outside diameter tolerances. It may not be possible to connect them, or they may cause other trouble, such as air leakage or the tube pulling out after connection.

How to Use Plug Connector

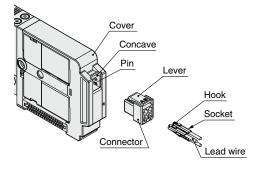
⚠ Caution

When attaching and detaching a connector, first shut off the electric power and the air supply.

Also, crimp the lead wires and sockets securely.

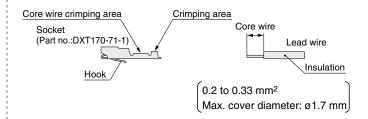
1. Connector attachment/detachment

- To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.
- To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.



2. Crimping of lead wires and sockets

Peel 3.2 to 3.7 mm of the tip of lead wire, enter the core wires neatly into a socket and crimp it with a special crimp tool. Be careful so that the cover of lead wire does not enter into the crimping part. (Crimping tool: Model no. DXT170-75-1)





Series **SJ2000/3000**

Specific Product Precautions 6

Be sure to read before handling.

Refer to back cover for Safety Instructions and "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valve Precautions.

How to Use Plug Connector

▲Caution

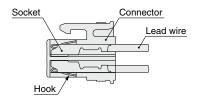
3. Lead wires with sockets attachment/detachment

Attachment

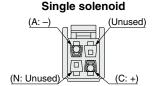
Insert the sockets into the square holes of the connector (with A, B, C, and N indication), and continue to push the sockets all the way in until the lock by hooking into the seats in the connector. (When they are pushed in, their hooks open and they are locked automatically.) Next, confirm that they are locked by pulling lightly on the lead wires.

Detachment

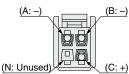
To detach a socket from a connector, pull out the lead wire while pressing the socket's hook with a stick having a thin tip (approx. 1 mm). If the socket is used again, spread the hook outward.



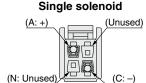
<Positive common>



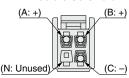




<Negative common>



Double solenoid



Plug Connector Lead Wire Length

⚠ Caution

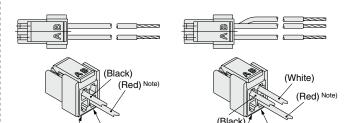
Plug connector lead wires have a standard length of 300 mm, however, the following lengths are also available.

Connector Assembly Part No.

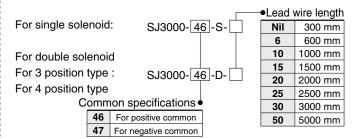
Single solenoid Double solenoid,

3 position type, 4 position type

SJ3000-46-S- \square (for positive common) SJ3000-46-D- \square (for positive common) SJ3000-47-S- \square (for negative common) SJ3000-47-D- \square (for negative common)



Note) In case of negative common, the lead wire changes from red to vellow.



For single solenoid

Without lead wire: SJ3000-46-S-N (positive/negative common)

(Connector, Socket x 2 pcs. only)

For double solenoid

Without lead wire: SJ3000-46-D-N (positive/negative common)

(Connector, Socket x 3 pcs. only)

How to Order

Include the connector assembly part number together with the part number for the plug connector's solenoid valve without connector.

(Example) In case of lead wire length 2000 mm and positive com-

SJ3160-5MOZ-C6 SJ3000-46-S-20

Connector Assembly for Manifolds (for Junction Common)



Using the connector assembly (for junction common) for solenoid valves installed in the manifold reduces the labor involved in wiring work because common wiring for all solenoid valves is integrated into a single wire.



Series **SJ2000/3000**

Specific Product Precautions 7

Be sure to read before handling.

Refer to back cover for Safety Instructions and "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valve Precautions.

Connector Assembly Part No. (for Junction Common)

Single solenoid

Double solenoid,

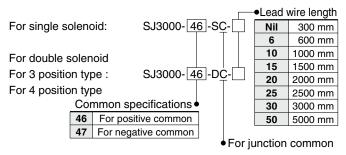
3 position type, 4 position type

SJ3000-46-SC- (for positive common)
SJ3000-47-SC- (for negative common)

SJ3000-46-DC-□ (for positive common)
SJ3000-47-DC-□ (for negative common)

(Black)
(Red) Note)
(Black)
(Red) Note)

Note) In case of negative common, the lead wire changes from red to yellow.

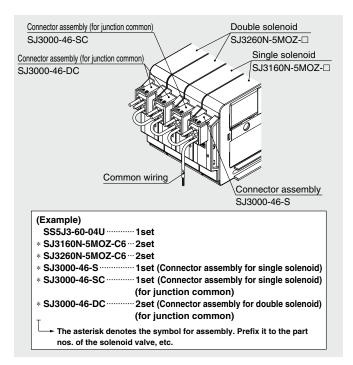


How to Order

Indicate the part no. of the connector assembly for the manifold and solenoid valve.

If the arrangement is complicated, please specify them by means of the manifold specification sheet.

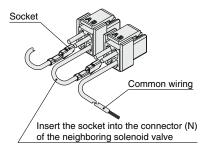
- Note 1) Applications like connectors not wired to a valve is not possible
- Note 2) For the solenoid valve, please designate "No connector (MOZ)" for the connector type.
- Note 3) Connector assembly with lead wire for place where the signals are transmitted to the common wiring. (Only the valves of first station and/or last station of manifold are compatible to connector with lead wire for common.)



Wiring Instructions for Connector Assembly (for Junction Common)

∧ Caution

If only connector assembly (for junction common) is ordered, please wire according to the instructions in the diagram below. For details on socket mounting, please refer to "How to Use Plug Connector" on page 100.



How to Wire to PC Wiring System Compliant Power Supply Terminal

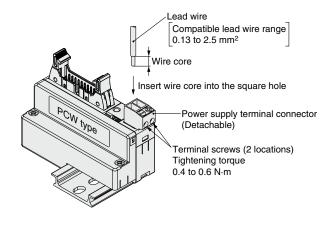
⚠ Caution

Wire connection instructions

- 1. Strip 6.5 to 7.5 mm from the tip of the lead wire.
- Loosen the terminal screws (slotted head screws) of the power supply terminal connectors, plug the core wire of the lead wire into the square holes of the connector, tighten terminal screws at the proper torque, and fasten them securely. (Gently pull the lead wire and check that it is fastened.)

Precautions

- To remove the power supply terminal connector, pull it upward as is. When mounting, push it in until it makes a snapping noise
- When connecting wire, be careful because using lead wire that is outside of compatible lead wire ranges, or that are tightened to anything other than the proper torque, creates a risk of defective contact and other problems.





Series **SJ2000/3000**

Specific Product Precautions 8

Be sure to read before handling.

Refer to back cover for Safety Instructions and "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valve Precautions.

One-touch Fittings

⚠ Caution

When fittings are used, they may interfere with one another depending on their types and sizes. Therefore, the dimensions of the fittings to be used should first be confirmed in their respective catalogs.

Fittings whose compliance with the SJ serise is already confirmed are stated below. If the fitting within the applicable range is selected, there will not be any interference.

Applicable Fittings: Series KQ2H, KQ2S Series KJH, KJS

Series	Model	Piping port	Port size	Fitting	Applicable tubing O.D.			
Series					ø2	ø3.2	ø4	ø6
0.10000	SJ3□60-□□-M5	4A, 2B	M5	KQ2H KJH				
SJ3000				KQ2S KJS				
(10 mm pitch)								
SJ2000	SJ2□60-□□-M3	4A, 2B	МЗ	KQ2H KJH				
(7.5 mm pitch)				KQ2S KJS				
SJ3A6	SJ3A6-□□	2B	M5	KQ2H KJH				
(10 mm pitch)				KQ2S KJS				



⚠ Safety Instructions

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

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

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

🗥 Danger :

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

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

ISO 10218-1: Manipulating industrial robots - Safety.

⚠ Warning

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

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

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

- 3. Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.
 - 1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
 - 2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
 - 3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
- 4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following
 - 1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
 - 2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
 - 3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
 - 4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

⚠ Caution

1. The product is provided for use in manufacturing industries.

The product herein described is basically provided for peaceful use in manufacturing industries.

If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary

If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/ **Compliance Requirements**

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".

Read and accept them before using the product.

Limited warranty and Disclaimer

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

Compliance Requirements

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

Revision history

- Edition B * Addition of non plug-in type individual wiring manifold.
 - * Addition of EX510 serial wiring compatible type.
 - * Addition of PC wiring compatible type.
 - * Addition of regulator block and intermediate connector block as options.
 - * Addition of vacuum release valve with restrictor Series SJ3A6.
 - * Number of pages from 48 to 96

- Edition C * Addition of plug-in cable type manifold.
 - * Addition of SUP/EXH block assembly with regulator and pressure switch, and valve with speed controller as options.
 - * Addition of slide locking type manual override.
 - * Number of pages from 96 to 112

RΩ

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

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