4 Port Solenoid Valve Common Specifications

Series SJ2000/3000

Manifold Specifications

			D-sub connector		Flat ribbon cable		Serial	wiring	Individual wiring		
	Model		Type 60F	Type 60P	Type 60PG Type 60J Type 60G Type 60G		Type 60S□ (EX180)	Type 60S6B (EX510)	Type 60		
Manifold	type				Plug-in, Cor	nnector type			Non-plug-in		
1(P: SUP), 3/5(E: EX	(H)			C	ommon SUP, EX	Н				
Valve stations			2 to 24	2 to 18 2 to 24 stations 2 to 16 (Type J		2 to 8 stations	2 to 32 stations 2 to 16 station		2 to 20 stations		
Applicable	Applicable connector		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		Non-polar, +COM								
4(A), 2(B)	port	Location	Valve								
piping sp	ec.	Direction		Horizontal, Upward, Downward (Using elbow fittings for upward or downward)							
	1(P), 3/5(I	E) port	C6, C8, N7, N9 (Inch size elbow fitting is not available.)								
Port size	Port size 4(A), 2(B) SJ200 SJ300				C	C2, C4, N1, N3, M	3				
					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					\	V = 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

00200								
Port si	ize			Flow char	naracteristics			
1(P)	4, 2		1→2/4 (P→A/B)		4/2→3/5 (A/B→E)			
3/5(E)	(A, B)	C [dm³/(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 si	ze	Flow characteristics									
1(P)	4, 2		1→2/4 (P→A/B)		4/2→3/5 (A/B→E)						
3/5(E)	(A, B)	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				
_ Co	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 3 for the appropriate number of stations. Refer to page 61 for the weight of DIN rail. (Please contact SMC for the weight of external pilot specifications, elbow fittings.)

Non-plug-in Individual Wiring Manifold

Series **SJ2000/3000**

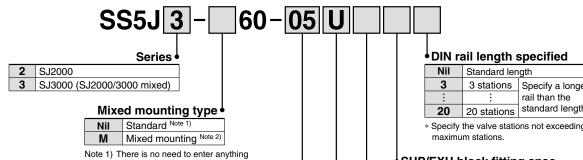


Non-plug-in Individual Wiring

Series SJ2000/3000

How to Order

Individual wiring manifold



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

Symbol	Stations
02	2 stations
:	
20	20 stations

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

* Specify the valve stations not exceeding the

SUP/EXH block fitting spec.

001 /1	-XIII DIOCK IIIIII	ng 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 Valve Manifold Assembly

Ordering example (SS5J3-60-□) Double solenoid (24 VDC) SJ3260N-5MZ-C6 (4 sets) Single solenoid (24 VDC) SJ3160N-5MZ-C6 (2 sets) SUP/EXH block (U side mounting)

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

SS5J3-60-06D1 set (Manifold part no.) * SJ3160N-5MZ-C6 -----2 sets (Single solenoid part no.) * SJ3260N-5MZ-C6 -----4 sets (Double solenoid part no.)

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

Pilot spec.

Internal pilot					
Internal pilot / Built-in silencer					
External pilot					
External pilot / Built-in silencer					
ĺ					

- * 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 (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.

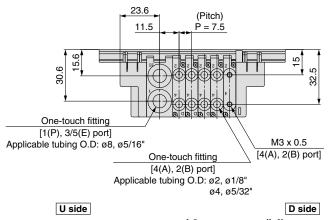


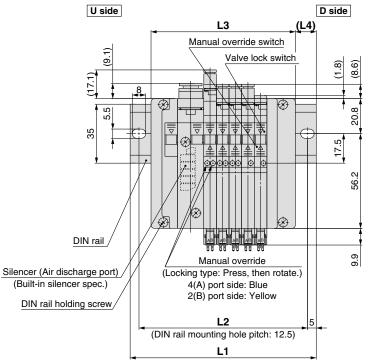
[•] Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. In the case of complex arrangement, specify them in the manifold specification sheet.

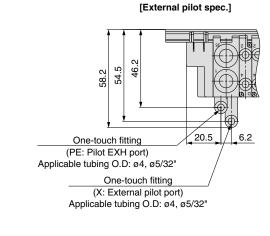
Series **SJ2000/3000**

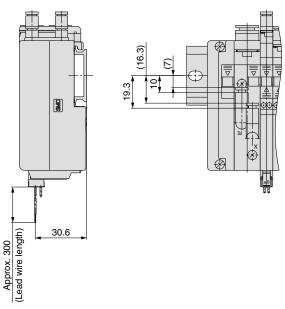
Dimensions

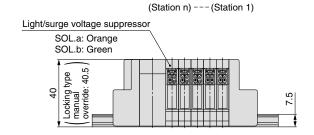
SS5J2-60-Stations U (S, R, RS)











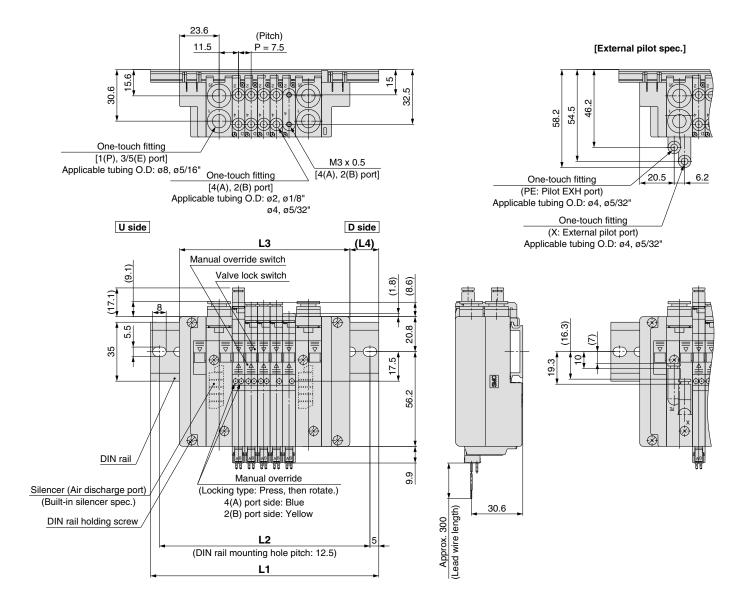
Note) For manifold dimensions including elbow fitting, refer to page 23.

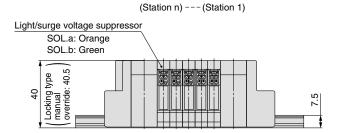
L: Dim	L: Dimensions n: Stations								
	2	3	4	5	6	7	8	9	10
L1	98	98	110.5	110.5	123	135.5	135.5	148	148
L2	87.5	87.5	100	100	112.5	125	125	137.5	137.5
L3	63.2	70.7	78.2	85.7	93.2	100.7	108.2	115.7	123.2
L4	17.5	13.5	16	12.5	15	17.5	13.5	16	12.5

Non-plug-in Individual Wiring Series \$\int 32000/3000\$

Dimensions

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





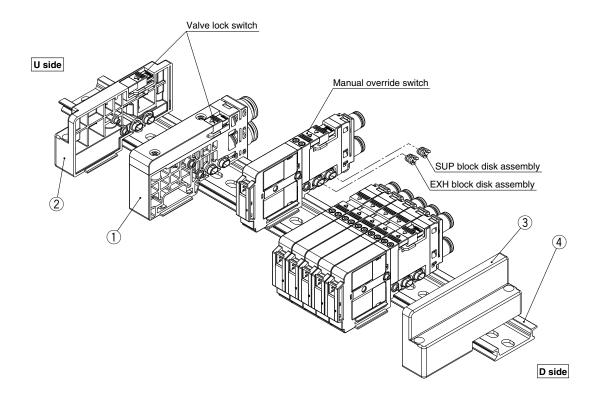
Note) For manifold dimensions including elbow fitting, refer to page 23.

L: Dim	ensio	ns																n:	Stations
L	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	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	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	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	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

Manifold Exploded View

Type 60 (Non-plug-in) manifold

Note) Refer to page 50 for "How to Add Manifold Stations."



Component Parts / Non-plug-in

No.		Description	Part no.	Note		
		Internal pilot	SJ3000-50-5A-□□	(Matric circ)		
		Internal pilot / Built-in silencer	SJ3000-50-5AS-□□	(Metric size) C6: With ø6 one-touch fitting (straight)		
	0110/57/11	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 ent		
		For different pressures, internal pilot Note 1)	SJ3000-50-6A-□□	(Inch size)		
		For different pressures Note 1) Internal pilot / Built-in silencer	SJ3000-50-6AS-□□	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	End block assembly		SJ3000-53-2A	For D side		
4	DIN rail		VZ1000-11-1-□	Refer to page 61.		

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 60 about the SUP/EXH block disk assembly and method of handling of parts at different pressure.



Series SJ2000/3000 Manifold Options

■ SUP block disk assembly

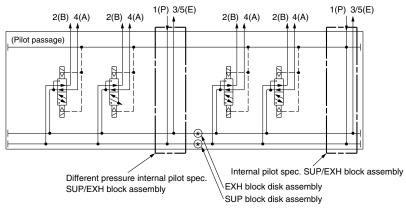
By placing a SUP block disk in a manifold valve's pressure supply passage, two different high and low pressures can be supplied to one manifold. When supplying different pressures using the manifold of the internal pilot, fill out a manifold specification sheet to place an order for an SUP/EXH assembly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



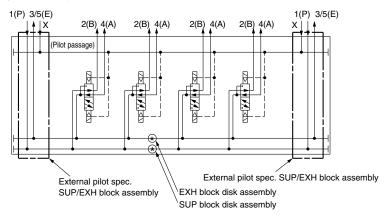
Series	Part no.
SJ2000	S.I3000-44-1A
SJ3000	303000-44-1A

[Different pressure pneumatic circuit diagram]

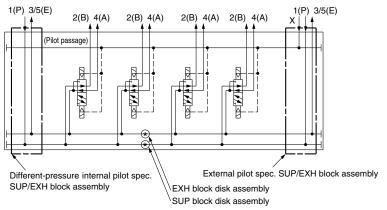
- The SJ series supplies air to the pilot port of each valve using a 1(P) port of the SUP/EXH block assembly. When using in situations such as where there are different pressures, combine SUP/EXH block assemblies for internal pilot, external pilot and different-pressure by referring to the circuit below.
- 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	333000-44-1A

■ 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



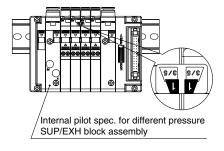
Label for SUP block disk



Label for EXH block disk

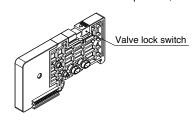


* When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.



■ Blanking block assembly

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

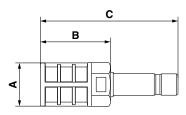


Series	Part no.	Note	Width
SJ2000	SJ3000-49-1A	Single wiring	
SJ3000	SJ3000-49-2A	Double wiring	7.5 mm
SJ3A6	SJ3000-49-2A-N	Double wiring Note)	

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

■ Silencer with one-touch fitting

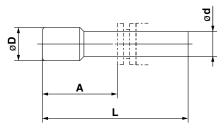
This silencer can be mounted on the manifolds' port 3/5 (E: Exhaust) with a single touch.



Series	Model	Effective area	Α	В	С
For SJ2000 (ø8)	AN203-KM8	14 mm²	ø16	26	51

■ Plug

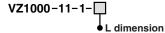
These are inserted in unused cylinder ports and P, E ports.



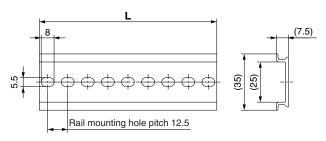
Dimensions

Applicable fitting size ø d	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

■ DIN rail



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



No.	0	1	2	3	4	5	6	7	8	9
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5
Weight (g)	17.6	19.9	22.1	24.4	26.6	28.9	31.1	33.4	35.6	37.9

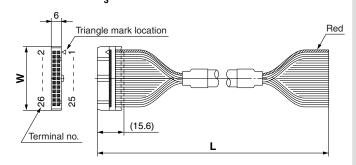
No.	10	11	12	13	14	15	16	17	18	19
L dimension	223	235.5	248	260.5	273	285.5	298	310.5	323	335.5
Weight (g)	40.1	42.4	44.6	46.9	49.1	51.4	53.6	55.9	58.1	60.4

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



Series SJ2000/3000

■ Flat ribbon cable assembly AXT100 - FC □ -2



Flat Ribbon Cable Assembly

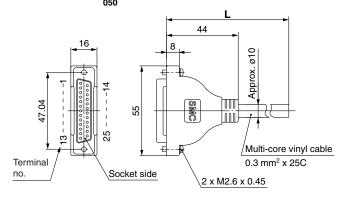
Cable length (L)	10 pins	20 pins	26 pins
1.5 m	AXT100-FC10-1	AXT100-FC20-1	AXT100-FC26-1
3 m	AXT100-FC10-2	AXT100-FC20-2	AXT100-FC26-2
5 m	AXT100-FC10-3	AXT100-FC20-3	AXT100-FC26-3
Connector width (W)	17.2	30	37.5

^{*} 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 AXT100 - DS25-030 050



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

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.

Electric Characteristics

Licoti io Oriai actoristico						
Item	Charac- teristics					
Conductor resistance Ω /km, 20°C	65 or less					
Withstand pressure V, 1 min, AC	1000					
Insulation resistance MΩkm, 20°C	5 or less					

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

Connector manufacturers:

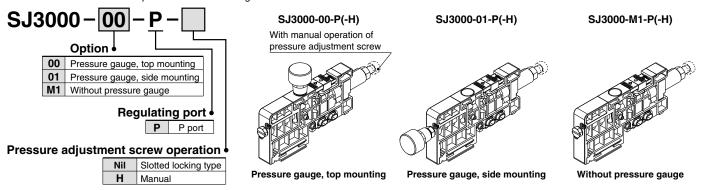
- Hirose Electric Co., Ltd.
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.

4 Port Solenoid Valve Series SJ2000/3000

■ Regulator block

How to Order Regulator Block

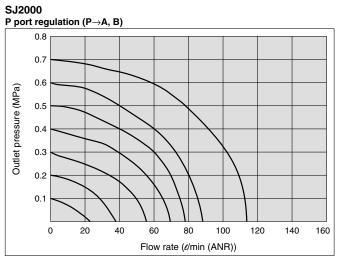
This is used to reduce the pressure supplied from the D side inside the manifold. All valves on the U side are depressurized from the regulator block.



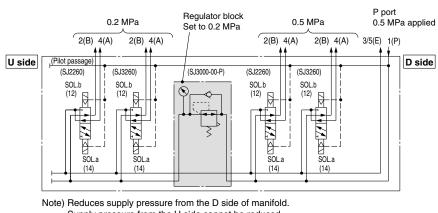
Note) When ordering with a regulator block installed in the manifold, please order using the manifold specification sheet.

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

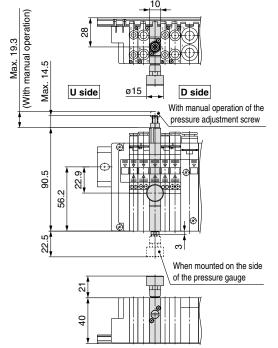
SJ3000 P port regulation (P→A, B) 0.8 0.7 0.6 Outlet pressure (MPa) 0.5 0.4 0.3 0.2 0.1 160 0 20 40 60 80 100 120 140 Flow rate (d/min (ANR))



Pneumatic circuit (Regulator block mounting example)



Supply pressure from the U side cannot be reduced.



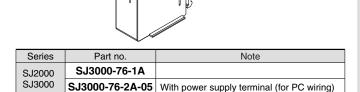


Series **SJ2000/3000**

■ Intermediate connector block assembly

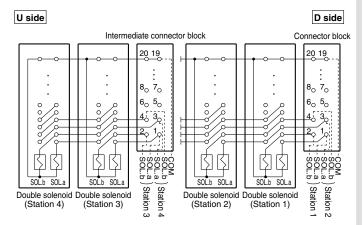
This connector block can be used by inserting it into the middle of the manifold.

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.

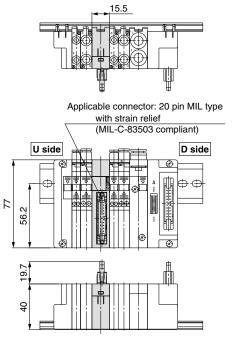


Note) When ordering with an intermediate connector block assembly installed in the manifold, please order using the manifold specification sheet.

Intermediate connector block assembly wiring example



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



■ Dual flow fitting (Set for SJ3000 series)

SJ3000-120-1A-C8

● 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 $\emptyset 8$ and $\emptyset 5/16$.

* 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.

Example) Valve type (without one-touch fitting)

SJ3160-5CU-CO ----- 2 sets * SJ3000-120-1A-C8 ---- 1 set

