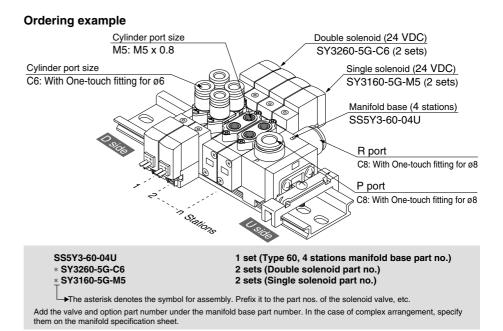
Series SY3000/5000/7000Body Ported ManifoldType 60Cassette Type

How to Order Manifold SS5Y 3 60 05 D Option When a DIN rail longer than standard is required, enter the number of manifold stations that corresponds with the length of DIN rail needed. Series Valve stations 02 2 stations 3 SY3000 5 SY5000 1 Max. 20 stations 7 SY7000 20 stations SUP/EXH block assembly mounting position Symbol Mounting position Applicable stations U U side 2 to 10 stations D D side В 2 to 20 stations Both sides \mathbf{M}^* Special location For special specifications, indicate separately on the manifold specification sheet.

How to Order Valve Manifold Assembly







Manifold Specifications

Model		SS5Y3-60	SS5Y5-60	SS5Y7-60		
Applicable valve		SY3⊟60	SY5□60	SY7⊡60		
Manifold type		Stacking type/DIN rail mounted				
P (SUP)/R (EXI	H)		Common SUP/Common EXH			
Valve stations			2 to 20 stations Note 1)			
A, B port location		Valve				
Port size	P, R port	C8 (One-touch fitting for ø8)	C10 (One-touch fitting for ø10)	C12 (One-touch fitting for ø12)		
	A, B port	M5 x 0.8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	1/8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	1/4 C8 (One-touch fitting for ø8) C10 (One-touch fitting for ø10)		
Manifold base weight W (g) ^{Note 2)} (n: Number of SUP/EXH blocks, m: Weight of DIN rail)		W = 13n + m + 36	W = 41.2n + m + 77.6	W = 65.4n + m + 128.2		

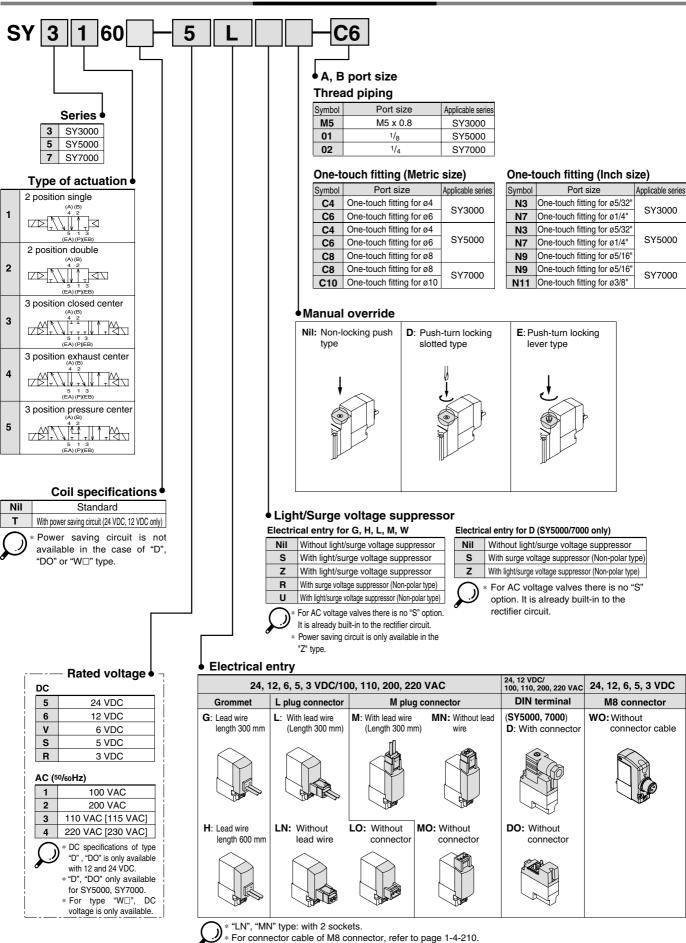
Note 1) In cases such as those where many valves are operated simultaneously, use "-<u>[station]</u>B (SUP/EXH block on both sides)" (both sides SUP/EXH) applying pressure to the P ports on both sides and exhausting from the R ports on both sides. Note 2) For DIN rail weight, refer to page 1-4-72.

Flow Characteristics

Model 1, 5/3		Port size		Flow characteristics					
		4, 2	1	$1 \rightarrow 4/2(P \rightarrow A/B)$			$4/2 \rightarrow 5/3(A/B \rightarrow R)$		
	(P, R)	(A, B)	C (dm ³ /(s·bar))	b	Cv	C (dm ³ /(s·bar))	b	Cv	
	M5	0.55	0.29	0.14	0.72	0.24	0.18		
SS5Y3-60	C8	C4	0.57	0.24	0.14	0.71	0.20	0.17	
		C6	0.68	0.28	0.17	0.77	0.24	0.19	
		1/8	1.8	0.24	0.44	2.1	0.17	0.47	
SS5Y5-60	C10	C6	1.5	0.30	0.37	2.0	0.16	0.46	
		C8	1.8	0.20	0.45	2.2	0.17	0.50	
		1/4	3.7	0.25	0.96	3.8	0.19	0.94	
SS5Y7-60	C12	C8	3.2	0.26	0.81	4.0	0.18	0.96	
		C10	3.7	0.28	0.98	4.1	0.19	1.0	

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





How to Order Valves





Specifications

S	eries	SY3000	SY5000	SY7000	
Fluid			Air		
Internal pilot	2 position single		0.15 to 0.7		
Operating pressure	2 position double		0.1 to 0.7		
range (MPa)	3 position		0.2 to 0.7		
Ambient and flu	uid temperature (°C)		Max. 50		
Max. operating	2 position double	10	5	5	
frequency (Hz)	3 position	3	3	3	
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type			
Pilot exhaust	method	Common exhaust type for main and pilot valve			
Lubrication		Not required			
Mounting pos	sition	Unrestricted			
Impact/Vibrati	on resistance Note)	150/30			
Enclosure		Dustproof (* DIN terminal, M8 connector conforms to IP65)			
	npact resistance: ibration resistance:	with a drop test the right angle: armature in bo states every or No malfunctior between 45 an Test was perfor de-energized s at the right ang	nce for each con n occurred in a c	direction and at live and d de-energized ndition. one-sweep test nergized and al direction and valve and	
_		annalure. (val	ues in me initial	slage)	

* Based on IEC529

Solenoid Specifications

Electrical entry			Grommet (G), (H) L plug connector (L) M plug connector (M) DIN terminal (D) M8 connector (W)
Coil rated	DC		24 ,12 ,6 ,5 ,3
voltage (V)	AC 5	50/60Hz	100 ,110 ,200 ,220*
Allowable voltage fluctuation (%)			$\pm 10\%$ of rated voltage
Power consumption	DC	Standard	0.35 [With indicator light: 0.4 (DIN terminal with indicator light: 0.45)]
(W)		With power saving circuit	0.1 (With indicator light only)
		100V	1.4 (With indicator light: 1.5)
Apparent		110V [115V]	1.6 (With indicator light: 1.7) [1.7 (With indicator light: 1.8)]
power* VA	AC	200V	2.3 (With indicator light: 2.4)
		220V [230V]	2.5 (With indicator light: 2.6) [2.7 (With indicator light: 2.8)]
Surge voltag	e sup	pressor	Diode (Varistor is for DIN terminal and non-polar)
Indicator ligh	t		LED (AC of DIN connector is neon bulb.)

* In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.

 $\ast\,$ For 115 VAC and 230 VAC, the allowable voltage is -15% to 5% of rated voltage.

Response Time

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

SY3000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)					
	Without surge voltage	With surge voltage suppressor				
	suppressor	S, Z type	R, U type			
2 position single	12 or less	15 or less	12 or less			
2 position double	10 or less	13 or less	10 or less			
3 position	15 or less	20 or less	16 or less			

SY5000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)						
	Without surge voltage	With surge voltage suppressor					
	suppressor	S, Z type	R, U type				
2 position single	19 or less	26 or less	19 or less				
2 position double	18 or less	22 or less	18 or less				
3 position	32 or less	38 or less	32 or less				

SY7000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)				
	Without light/surge	With light/surge voltage suppressor			
	voltage suppressor	S, Z type	R, U type		
2 position single	31 or less	38 or less	33 or less		
2 position double	27 or less	30 or less	28 or less		
3 position	50 or less	56 or less	50 or less		

Weight

Series SY3000

			Port size	١	Veight (g)
Valve model	Type of actuation		A, B	Grom- met	L, M plug connector	M8 Connector
	2	Single		49	51	55
	position	Double		70	73	81
SY3⊡60-⊡-M5		Closed center	M5 x 0.8			
	3 position	Exhaust center		73	76	84
	position	Pressure center				
	2 position	Single	C4 (One-touch (fitting for ø4)	62	61	65
		Double		80	83	91
SY3□60-□-C4	3 position	Closed center				
		Exhaust center		82	86	94
		Pressure center				
	2	Single		55	57	61
	position	Double	C6	76	79	87
SY3□60-□-C6		Closed center	/ One-touch \			
	3 nonition	Exhaust center	fitting for ø6	78	82	90
	position	Pressure center				
Note) []: Denotes normal position.						

Series SY5000

	odel Type of actuation		Port size		Weigh	nt (g)	
Valve model			А, В	Grom- met	L, M plug connector	DIN terminal	M8 Connec- tor
	2	Single		67	69	90	71
	position	Double		91	94	136	102
SY5⊡60-⊡-01		Closed center	1/8				
	3 position	Exhaust center		97	100	142	108
	pooliton	Pressure center					
	2	Single		91	93	114	97
	position	Double	C4	113	116	158	124
SY5□60-□-C4	3 position	Closed center	(One-touch fitting for ø4)				
		Exhaust center		119	122	164	130
		Pressure center					
	2 position	Single		86	88	109	92
		Double	C6	108	111	153	119
SY5⊡60-⊡-C6		Closed center	(One-touch				
	3 position	Exhaust center	(fitting for ø6)	114	117	159	125
	position	Pressure center					
	2	Single		78	80	101	84
	position	Double	C8	100	103	145	111
SY5□60-□-C8		Closed center	(One-touch)				
	3 position	Exhaust center	fitting for ø8	106	109	151	117
	position	Pressure center					

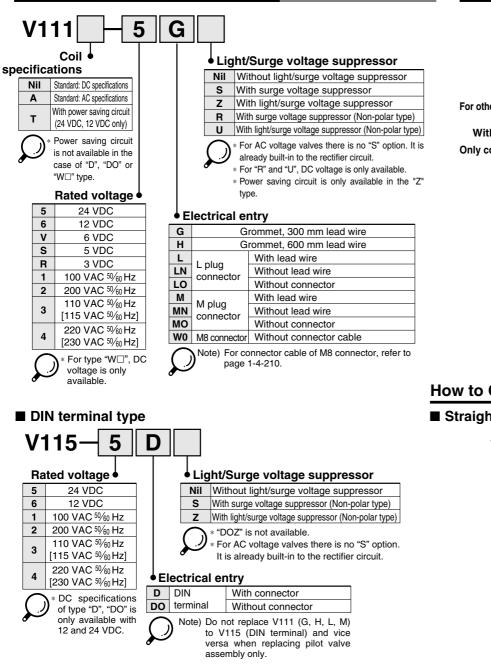
Series SY7000

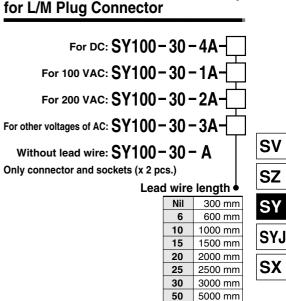
	Type of actuation		Port size		Weigh	nt (g)	
Valve model			А, В	Grom- met	L, M plug connector	DIN terminal	M8 Connec- tor
	2	Single		103	105	126	109
	position	Double		125	128	170	136
SY7⊡60-⊡-02		Closed center	1/4				
	3 position	Exhaust center		133	136	178	144
	position	Pressure center					
	2 position	Single	C8 (One-touch (fitting for ø8)	138	139	160	143
		Double		160	163	205	171
SY7⊡60-⊡-C8	3 position	Closed center					
		Exhaust center		168	171	213	179
	poolition	Pressure center					
SY7□60-□-C10	2	Single		123	125	146	129
	position	Double	C10	145	149	191	157
	3 position	Closed center	(One-touch)				
		Exhaust center	fitting for ø10	153	157	199	165
	position	Pressure center					

Body Ported Series SY3000/5000/7000

How to Order Connector Assembly

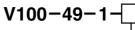
How to Order Pilot Valve Assembly





How to Order M8 Connector Cable

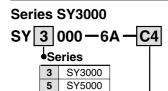
Straight type



Cable	Cable length				
1	300 mm				
2	500 mm				
3	1000 mm				
4	2000 mm				
7	5000 mm				



How to Order Port Block Assembly



A, B port size

Th	read	piping	

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
01	1/8	SY5000

One-touch	fitting	(Metric	size)
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Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	513000
C4	One-touch fitting for ø4	
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series	
N3	One-touch fitting for ø5/32"	SY3000	
N7	One-touch fitting for ø1/4"	513000	
N3	One-touch fitting for ø5/32"		
N7	One-touch fitting for ø1/4"	SY5000	
N9	One-touch fitting for ø5/16"		

Series SY7000 SY7000—13A—C8

A, B port size -

i nread piping			
Symbol	Port size	Applicable series	
02	1/4	SY7000	

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	317000

One-touch fitting (Inch size)

Symbol	Port size	Applicable serie
N9	One-touch fitting for ø5/16"	SY7000
N11	One-touch fitting for ø3/8"	517000

How to Change Port Block Assembly

Connecting port size of A and B can be changed by replacing port block assembly mounted on body. When changing block assembly, correct screw torque must be achieved to avoid trouble; e.g. air leakage.

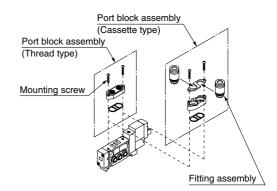
With the one-touch fitting port block assembly, it is only necessary to change the fitting and not the whole block. Refer to following part numbers.

One-touch fitting (Metric size)

Port size	Fitting assembly part no.	Applicable series
One-touch fitting for ø4	VVQ1000-50A-C4	SY3000
One-touch fitting for ø6	VVQ1000-50A-C6	313000
One-touch fitting for ø4	VVQ1000-51A-C4	
One-touch fitting for ø6	VVQ1000-51A-C6	SY5000
One-touch fitting for ø8	VVQ1000-51A-C8	
One-touch fitting for ø8	VVQ2000-51A-C8	SY7000
One-touch fitting for ø10	VVQ2000-51A-C10	517000

One-touch fitting (Inch size)

Port size	Fitting assembly part no.	Applicable series		
One-touch fitting for ø5/32"	VVQ1000-50A-N3	SY3000		
One-touch fitting for ø1/4"	VVQ1000-50A-N7	313000		
One-touch fitting for ø5/32"	VVQ1000-51A-N3			
One-touch fitting for ø1/4"	VVQ1000-51A-N7	SY5000		
One-touch fitting for ø5/16"	VVQ1000-51A-N9			
One-touch fitting for ø1/4"	VVQ2000-51A-N9	SY7000		
One-touch fitting for ø3/8"	VVQ2000-51A-N11	517000		



A Caution

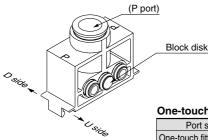
SY3000(M2): 0.12 N·m SY5000, 7000 (M3): 0.6 N·m

* Refer to "How to Change Port Block Assembly" for part numbers.

Body Ported Series SY3000/5000/7000 Type 60

Manifold Option

Individual SUP block assembly



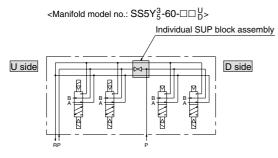
One-touch fitting (Metric size)				
Port size	Assembly part no.	Applicable series		
One-touch fitting for ø6	SY3000-54-2C	SY3000		
One-touch fitting for ø8	SY3000-54-1C	313000		
One-touch fitting for ø10	SY5000-54-1C	SY5000		
One-touch fitting for ø12	SY7000-54-1C	SY7000		

ne-touch fitting (Inch size)

Port size	Assembly part no.	Applicable series
One-touch fitting for ø5/16"	SY3000-54-3C	SY3000
One-touch fitting for ø3/8"	SY5000-54-2C	SY5000
One-touch fitting for ø3/8"	SY7000-54-3C	SY7000

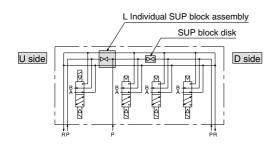
[When supplying the manifold with 2 different supply pressures.]

Specify arrangement of individual SUP block assembly on the manifold specification sheet. (When using SS5Y \Box -60- $\Box\Box$ D, block disk is assembled on D side.)

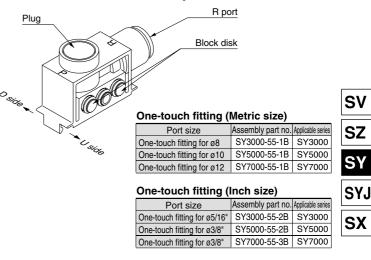


[When a different supply pressure is required for only a middle valve.] Specify arrangement of individual SUP block assembly and SUP block disk on the manifold specification sheet.

(Applicable manifold model no.: SS5YD-60-DDB)

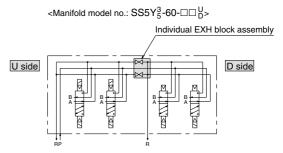


■ Individual EXH block assembly



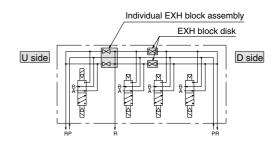
[When 2 different EXH passages are required.]

Specify arrangement of individual EXH block assembly on the manifold specification sheet. (When using SS5YD-60-DD, block disk is assembled on D side.)



[When a separate exhaust passage is needed on only a middle valve.] Specify arrangement of individual EXH block assembly and EXH block disk on the manifold specification sheet.

(Applicable manifold model no.: SS5YD-60-DDB)



Manifold Option

SUP block disk

By installing a SUP block disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold. (This is the same block disk used with the individual SUP block assembly.)



EXH block disk

By installing an EXH block disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to separate both EXH passages. It is the same block disk that is used in the individual EXH block assembly.)

à.	Series	Part no.
	SY3000	SY3000-52-2A
()	SY5000	SY5000-52-4A
	SY7000	SY7000-70-2A

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R

Label for block disk

The labels shown below are used on manifold stations containing SUP/EXH block disk(s) to show their location. (3 pcs. each)

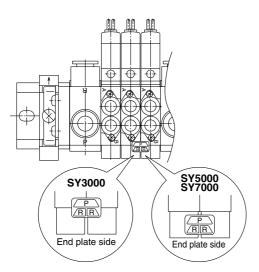
VZ3000-123-1A

Label for SUP block disk Label for EXH block disk Label for SUP/EXH block disk



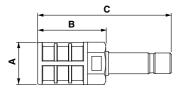


* When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.



■ Silencer with One-touch fitting

The silencer plugs directly into the One-touch fittings of the manifold.



Series	Model	Effective area	Α	В	С
SY3000 (for ø8)	AN203-KM8	14 mm ²	ø16	26	51
SY5000 (for ø10)	AN200-KM10	26 mm ²	ø22	54	80.8
	AN300-KM10	30 mm ²	ø25	70	97
SY7000 (for ø12)	AN300-KM12	41 mm ²	ø25	70	98

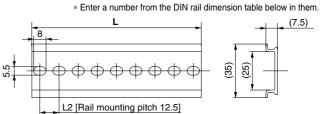
Plug (white)

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces. $\begin{tabular}{c} \end{tabular}$

Dimensions		- · · · · · · · · · · · · · · · · · · ·	-	
Applicable fittings size ød	Model	Α	L	D
4	KQ2P-04	16	32	6
6	KQ2P-06	18	35	8
8	KQ2P-08	20.5	39	10
10	KQ2P-10	22	43	12
12	KQ2P-12	24	45.5	14
5/32"	KQ2P-03	16	32	6
1/4"	KQ2P-07	18	35	8.5
5/16"	KQ2P-09	20.5	39	10
3/8"	KQ2P-11	22	43	11.5

■ DIN Rail Dimensions/Weight for SY3000/5000 VZ1000-11-1-

• Refer to the L dimension tables

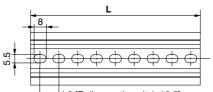


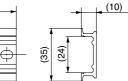
No.	0	1	2	3	4	5	6	7	8	9
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5
Weight (g)	17.6	19.9	22.1	24.4	26.6	28.9	31.1	33.4	35.6	37.9
No.	10	11	12	13	14	15	16	17	18	19
L dimension	223	235.5	248	260.5	273	285.5	298	310.5	323	335.5
Weight (g)	40.1	42.4	44.6	46.9	49.1	51.4	53.6	55.9	58.1	60.4
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

■ DIN Rail Dimensions/Weight for SY7000

VZ1000-11-4-

Refer to the L dimension tables * Enter a number from the DIN rail dimension table below in them







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)	24.8	28	31.1	34.3	37.4	40.6	43.8	46.9	50.1	53.3
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)	56.4	59.6	62.7	65.9	69.1	72.2	75.4	78.6	81.7	84.9
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)	88	91.2	94.4	97.5	100.7	103.9	107	110.2	113.3	116.5

Note) For DIN rail mounting, refer to page 1-4-210.





SV

SZ

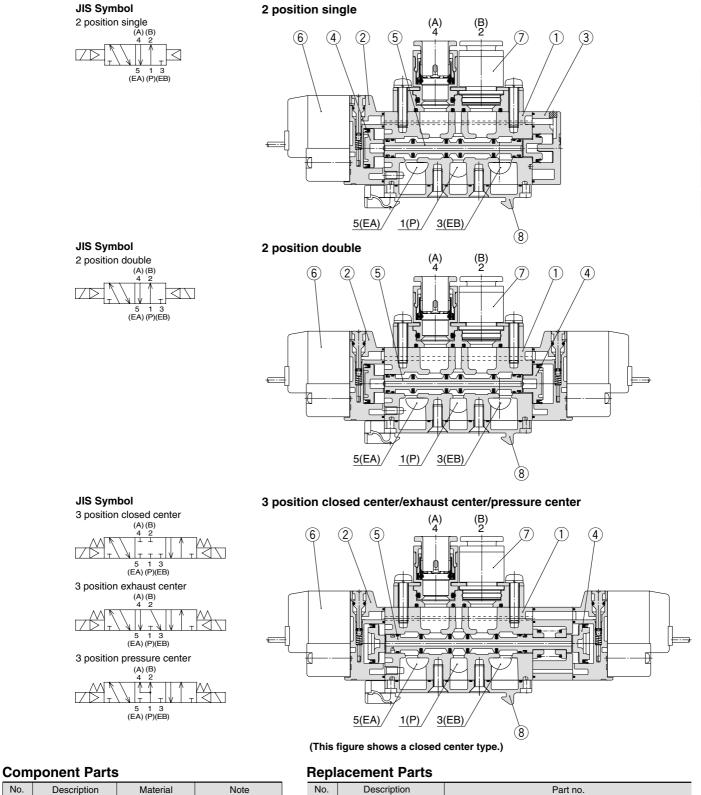
SY

SYJ

SX

Construction

Series SY



No.	Description	Material	Note
1	Body	Aluminum die-casted (SY3000: Zinc die-casted)	White
2	Adapter plate	Resin	White
3	End plate	Resin	White
(4)	Piston	Resin	_
5	Spool valve assembly	Aluminum/NBR	_

6	Pilot valve assembly	Refer to "How to Order Pilot Valve Assembly" on page 1-4-69.						
\bigcirc	Port block assembly	Refer to "How to Order Port Block Assembly" on page1-4-70.						
(8)	Bottom cover	SY3000-41-2A (with screw, gasket)						
٢	assembly Note)	SY5000-41-2A (with screw, gasket)						
1-4-) T								

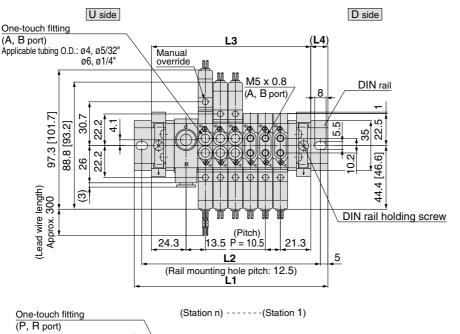
Note) There is no bottom cover assembly available for SY7000.

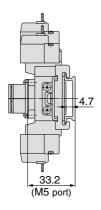




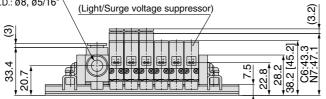
Dimensions

SS5Y3-60- Stations U



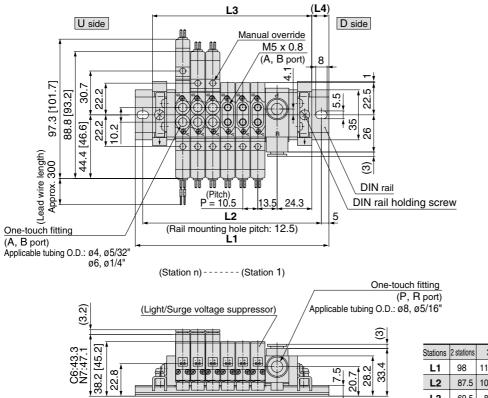


One-touch fitting	(Station n)(Station 1)
(P, R port)	
Applicable tubing O.D.: Ø8, Ø5/16"	(Light/Surge voltage suppressor)
) (<u>(</u>)	



_										
S	tations	2 stations	3	4	5	6	7	8	9	10 stations
	L1	98	110.5	123	135.5	135.5	148	160.5	173	185.5
	L2	87.5	100	112.5	125	125	137.5	150	162.5	175
	L3	69.5	80	90.5	101	111.5	122	132.5	143	153.5
	L4	14	15	16	17	12	13	14	15	16

SS5Y3-60-Stations D



33.2 (M5 port)

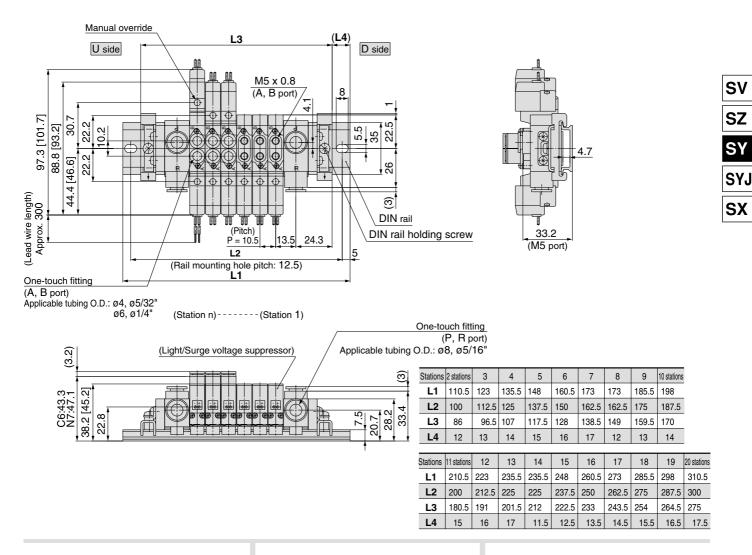
Stations	2 stations	3	4	5	6	7	8	9	10 stations
L1	98	110.5	123	135.5	135.5	148	160.5	173	185.5
L2	87.5	100	112.5	125	125	137.5	150	162.5	175
L3	69.5	80	90.5	101	111.5	122	132.5	143	153.5
L4	14	15	16	17	12	13	14	15	16



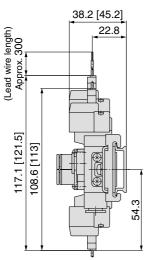
Body Ported Series SY3000/5000/7000 Type 60

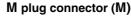
₽_{[]: AC}

SS5Y3-60- Stations B

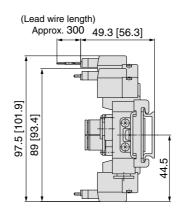


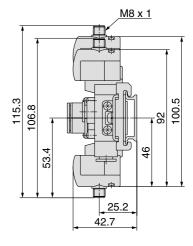
L plug connector (L)





M8 connector (WO)



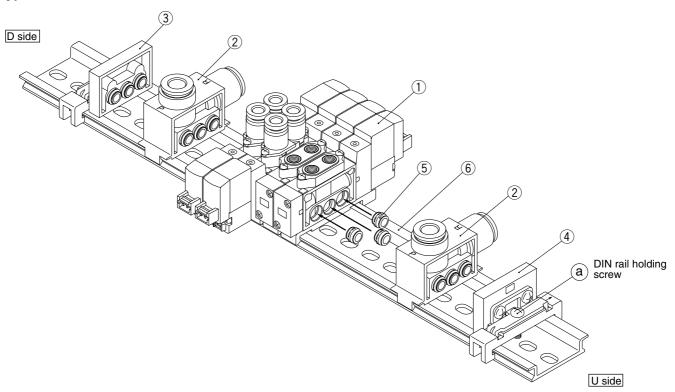


Note) Refer to page 1-4-210 for dimensions of connector types.



DIN Rail Manifold Exploded View

SY3000 Type 60



Replacement Parts No Description Part no. Note □ at the end of part number denotes A. B port size: M5, C4, C6, N3, N7. 1 SY3060-00-0 Valve Includes bushing assembly (SY3000-52-1A) 3 pcs. P, R port (1: One-touch fitting for ø8, 2: One-touch fitting for ø5/16") 2 SY3000-55-¹₂A SUP/EXH block assembly Includes bushing assembly (SY3000-52-1A) 3 pcs. End block assembly 3 SY3000-56-1A For D side (Bushing assembly: Not available for SY3000-52-1A) End block assembly (4) SY3000-56-1B For U side (Bushing assembly: Not available for SY3000-52-1A) (5) Bushing assembly SY3000-52-1A 6 DIN rail VZ1000-11-1-□ Refer to page 1-4-72.