

5 Port Solenoid Valve

SY3000/5000/7000/9000 Series

Rubber Seal

The SS5Y3/5-45T/T1□ type plug-in terminal block manifold is to be discontinued as of December 2019. Therefore, we recommend considering the SY3000/5000/7000 plug-in connector connecting base terminal block box type manifold as a substitute. ([Click here](#) for details.) However, keep in mind that there is no specification or mounting compatibility between the two products.

CE cUL[®] US
 [Option] (30-SY → From page 630)

SJ

SY

SY

S0700

S0700

Power Consumption
0.1W*
 With Power Saving Circuit

* For details, refer to page 636.



• Flow Rate Characteristics

Series	Flow rate characteristics		
	C [dm ³ /(s·bar)]	b	Cv
SY3000	1.1	0.28	0.29
SY5000	2.8	0.37	0.90
SY7000	4.5	0.28	1.4
SY9000	10	0.29	2.5

• Long service life

* Please contact SMC if life test data is required.

5 Port Solenoid Valve Body Ported/Single Unit



[Option]
Note) AC-type models that are CE-compliant have DIN terminals only.

SY3000/5000/7000/9000 Series

How to Order

SY 5 1 20 - 5 L - 01 - - - -

Series

3	SY3000
5	SY5000
7	SY7000
9	SY9000

Type of actuation

1	2 position single (A) 4 2 (B)	
	(EA) 5 1 3 (EB) (P)	
2	2 position double (A) 4 2 (B)	
	(EA) 5 1 3 (EB) (P)	
3	3 position closed center (A) 4 2 (B)	
	(EA) 5 1 3 (EB) (P)	
4	3 position exhaust center (A) 4 2 (B)	
	(EA) 5 1 3 (EB) (P)	
5	3 position pressure center (A) 4 2 (B)	
	(EA) 5 1 3 (EB) (P)	

Note) For details about Symbol of the 3 position type of the SY9000 series, refer to page 407.

Coil specifications

	Standard
T	With power saving circuit (24, 12 VDC only)

* Power saving circuit is not available in the case of D, DO, Y, YO or W□ type.

For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

Rated voltage

For AC (%Hz)	
1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

* DC specifications of type D, Y, DO and YO is only available with 12 and 24 VDC.

* For type W□, DC voltage is only available. Note) AC-type models that are CE-compliant have DIN terminals only.

Electrical entry

	24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC																				
	<table border="1"> <tr> <th>Grommet</th> <th>L plug connector</th> <th>M plug connector</th> <th>DIN terminal</th> </tr> <tr> <td>G: Lead wire length 300 mm</td> <td>L: With lead wire (Length 300 mm)</td> <td>M: With lead wire (Length 300 mm)</td> <td>D, Y: With connector</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>H: Lead wire length 600 mm</td> <td>LN: Without lead wire</td> <td>LO: Without connector</td> <td>DO, YO: Without connector</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Grommet	L plug connector	M plug connector	DIN terminal	G: Lead wire length 300 mm	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	D, Y: With connector					H: Lead wire length 600 mm	LN: Without lead wire	LO: Without connector	DO, YO: Without connector				
Grommet	L plug connector	M plug connector	DIN terminal																		
G: Lead wire length 300 mm	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	D, Y: With connector																		
H: Lead wire length 600 mm	LN: Without lead wire	LO: Without connector	DO, YO: Without connector																		
CE-compliant	<table border="1"> <tr> <td>DC</td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> </tr> <tr> <td>AC</td> <td>—</td> <td>—</td> <td>—</td> <td>●</td> </tr> </table>	DC	●	●	●	●	AC	—	—	—	●										
DC	●	●	●	●																	
AC	—	—	—	●																	

24, 12 VDC
6, 5, 3 VDC

M8 connector

W□: Without connector cable

W□: With connector cable (Note)

W□: With connector cable (Note)

CE-compliant	DC	●
AC	—	—

- * LN, MN type: with 2 sockets.
 - * For DIN terminal of SY3000 series, refer to page 639.
 - * "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 638.
 - * For connector cable of M8 connector, refer to page 641.
 - * M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 623 for details.
 - * Refer to page 638 for the lead wire length of L and M plug connectors.
 - * Refer to page 639 for the connector assembly with cover for L and M plug connectors.
- Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 642.

A, B port size

Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
01	1/8	SY5000
02	1/4	SY7000
02	1/4	SY9000
03	3/8	SY9000

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	SY3000
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	SY5000
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	SY7000
C8	One-touch fitting for ø8	SY9000
C10	One-touch fitting for ø10	SY9000
C12	One-touch fitting for ø12	SY9000

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø 3/32	SY3000
N7	One-touch fitting for ø 1/4"	SY3000
N3	One-touch fitting for ø 3/32	SY5000
N7	One-touch fitting for ø 1/4"	SY5000
N9	One-touch fitting for ø 5/16"	SY5000
N9	One-touch fitting for ø 5/16"	SY7000
N11	One-touch fitting for ø 3/8"	SY7000
N9	One-touch fitting for ø 5/16"	SY9000
N11	One-touch fitting for ø 3/8"	SY9000

Manual override

Nil: Non-locking push type 	D: Push-turn locking slotted type 	E: Push-turn locking lever type
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Light/Surge voltage suppressor

Electrical entry for G, H, L, M, W

Symbol	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

- * For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
- * For "R" and "U", DC voltage is only available.
- * Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y

Symbol	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

- * DOZ and YOZ are not available.
- * For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 467.)

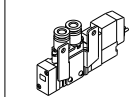
Bracket

Nil: Without bracket
F1: With foot bracket

(2 position single only)



F2: With side bracket



* SY9000 has no bracket.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

* Except for M5

Made to Order

Nil	—
X20	Body ported external pilot (Refer to page B24.)
X90	Main valve fluororubber (Refer to page B24.)

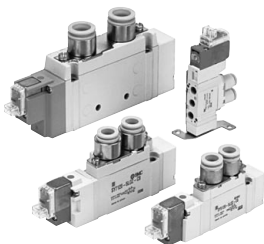
CE-compliant

Nil	—
Q	CE-compliant

Note) AC-type models that are CE-compliant have DIN terminals only.

Body Ported SY3000/5000/7000/9000 Series

Specifications



Series		SY3000	SY5000	SY7000	SY9000
Fluid		Air			
Internal pilot	2 position single	0.15 to 0.7			
Operating pressure range (MPa)	2 position double	0.1 to 0.7			
	3 position	0.2 to 0.7			
Ambient and fluid temperature (°C)		-10 to 50 (No freezing)			
Max. operating frequency (Hz)	2 position single, double	10	5	5	5
	3 position	3	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 orientation		Unrestricted			
Impact/Vibration resistance (m/s ²) ^{Note)}		150/30			
Enclosure		Dust proof (* DIN terminal and M8 connector: IP65)			

* Based on IEC60529

Note) 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)



Made to Order

(For details, refer to pages 616 to 628.)

Solenoid Specifications

Electrical entry		Grommet (G), (H) L plug connector (L) M plug connector (M)		DIN terminal (D), (Y) M8 connector (W)	
		G, H, L, M, W		D, Y	
Coil rated voltage (V)	DC	24, 12, 6, 5, 3		24, 12	
	AC 50/60 Hz	100, 110, 200, 220			
Allowable voltage fluctuation		±10% of rated voltage *			
Power consumption (W)	DC	Standard	0.35 (With indicator light: 0.4 DIN terminal with indicator light: 0.45)		
		With power saving circuit	0.1 (With indicator light only) * [Starting 0.4, Holding 0.1]		
Apparent power (VA) *	AC	100 V	0.78 (With indicator light: 0.81)	0.78 (With indicator light: 0.87)	
		110 V [115 V]	0.86 (With indicator light: 0.89) [0.94 (With indicator light: 0.97)]	0.86 (With indicator light: 0.97) [0.94 (With indicator light: 1.07)]	
		200 V	1.18 (With indicator light: 1.22)	1.15 (With indicator light: 1.30)	
		220 V [230 V]	1.30 (With indicator light: 1.34) [1.42 (With indicator light: 1.46)]	1.27 (With indicator light: 1.46) [1.39 (With indicator light: 1.60)]	
Surge voltage suppressor		Diode (Varistor is for DIN terminal and Non-polar type.)			
Indicator light		LED (AC of DIN connector is neon light.)			

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

* For 115 VAC and 230 VAC, the allowable voltage is -15% to +5% of rated voltage.

* DIN terminal and M8 connector with power saving circuit are not available.

* For details, refer to page 636.

Response Time

Note) Based on dynamic performance test, JIS B 8419: 2010. (Coil temperature: 20°C, at rated voltage)

SY3000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
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 light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
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 voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
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

SY9000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	35 or less	41 or less	35 or less
2 position double	35 or less	41 or less	35 or less
3 position	62 or less	64 or less	62 or less

SY3000/5000/7000/9000 Series

Flow Rate Characteristics/Weight

SY3000 series

Valve model	Type of actuation	Port size		Flow rate characteristics						Weight (g)		
		1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)		4/2→5/3 (AB→EA/EB)		Gro- mmet	L/M plug connector	W M8 connector		
				C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv			
SY3020 -□-M5	2 position	M5 x 0.8		0.61	0.44	0.16	0.64	0.45	0.18	51	53	57
	Double									68	74	82
	Closed center									71	76	84
	3 position											
SY3020 -□-C4	2 position	M5 x 0.8	C4 (One-touch fitting for ø4)	0.72	0.29	0.18	0.64	0.34	0.17	60	63	67
	Double									78	83	91
	Closed center									81	86	94
	3 position											
SY3020 -□-C6	2 position	M5 x 0.8	C6 (One-touch fitting for ø6)	0.76	0.30	0.19	0.65	0.39	0.17	56	59	63
	Double									74	79	87
	Closed center									77	82	90
	3 position											

Note) []: denotes normal position.

SY7000 series

Valve model	Type of actuation	Port size		Flow rate characteristics						Weight (g)		
		1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)		4/2→5/3 (AB→EA/EB)		Gro- mmet	L/M plug connector	DIN terminal	W M8 connector	
				C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv			
SY7020 -□-02	2 position	1/4		4.1	0.23	0.93	3.3	0.33	0.81	101	104	125
	Double									120	125	167
	Closed center									128	133	175
	3 position											
SY7020 -□-C8	2 position	1/4	C8 (One-touch fitting for ø8)	3.2	0.26	0.77	3.2	0.37	0.82	107	110	131
	Double									126	132	174
	Closed center									134	140	182
	3 position											
SY7020 -□-C10	2 position	1/4	C10 (One-touch fitting for ø10)	3.8	0.26	0.86	3.2	0.34	0.82	103	105	126
	Double									122	127	169
	Closed center									130	135	177
	3 position											

Note) []: denotes normal position.

SY5000 series

Valve model	Type of actuation	Port size		Flow rate characteristics						Weight (g)		
		1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)		4/2→5/3 (AB→EA/EB)		Gro- mmet	L/M plug connector	DIN terminal	W M8 connector	
				C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv			
SY5020 -□-01	2 position	1/8		1.9	0.35	0.49	2.4	0.39	0.61	70	72	93
	Double									88	93	135
	Closed center									93	98	140
	3 position											
SY5020 -□-C4	2 position	1/8	C4 (One-touch fitting for ø4)	0.75	0.43	0.20	0.85	0.64	0.30	94	96	117
	Double									111	117	159
	Closed center									117	122	164
	3 position											
SY5020 -□-C6	2 position	1/8	C6 (One-touch fitting for ø6)	1.5	0.33	0.33	2.0	0.37	0.52	88	91	112
	Double									106	111	153
	Closed center									111	116	158
	3 position											
SY5020 -□-C8	2 position	1/8	C8 (One-touch fitting for ø8)	1.9	0.21	0.45	2.3	0.29	0.57	80	82	103
	Double									98	103	145
	Closed center									103	108	150
	3 position											

Note) []: denotes normal position.

SY9000 series

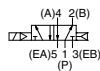
Valve model	Type of actuation	Port size		Flow rate characteristics						Weight (g)		
		1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)		4/2→5/3 (AB→EA/EB)		Gro- mmet	L/M plug connector	DIN terminal	W M8 connector	
				C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv			
SY9020 -□-02	2 position	1/4		7.0	0.33	1.7	7.6	0.35	2.0	241	244	265
	Double									260	266	308
	Closed center									284	290	332
	3 position											
SY9020 -□-03	2 position	3/8		8.0	0.29	1.9	8.0	0.33	2.0	236	239	260
	Double									255	261	303
	Closed center									279	285	327
	3 position											
SY9020 -□-C8	2 position	1/4	C8 (One-touch fitting for ø8)	4.3	0.31	0.99	6.1	0.28	1.4	293	296	317
	Double									312	318	360
	Closed center									336	342	384
	3 position											
SY9020 -□-C10	2 position	1/4	C10 (One-touch fitting for ø10)	6.1	0.28	1.4	7.9	0.33	1.9	279	282	303
	Double									298	304	346
	Closed center									322	328	370
	3 position											
SY9020 -□-C12	2 position	1/2	C12 (One-touch fitting for ø12)	7.0	0.25	1.6	8.6	0.41	2.2	265	268	289
	Double									284	290	332
	Closed center									308	314	356
	3 position											

Note) []: denotes normal position.

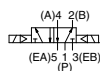
Construction

SY series

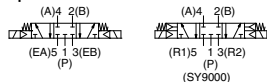
Symbol 2 position single



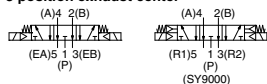
Symbol 2 position double



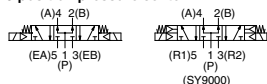
Symbol 3 position closed center



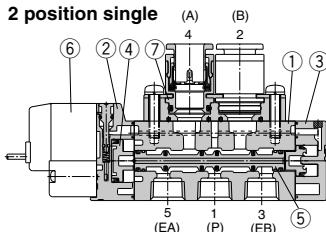
3 position exhaust center



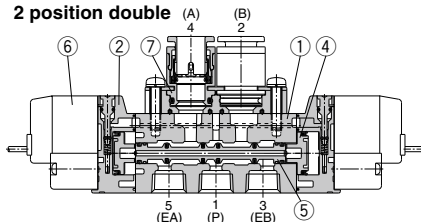
3 position pressure center



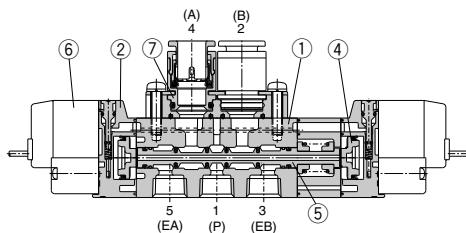
2 position single



2 position double



3 position closed center / exhaust center / pressure center



(This figure shows a closed center type.)

Component Parts

No.	Description	Material	Note
1	Body	Aluminum die-casted (SY3000: Zinc die-casted)	White
2	Adapter plate	Resin	White (SY9000: Gray)
3	End plate	Resin	White
4	Piston	Resin	-
5	Spool valve assembly	Aluminum, H-NBR	-

Replacement Parts

No.	Description	Part no.
6	Pilot valve assembly	Refer to "How to Order Pilot Valve Assembly" on page 629.
7	M5 port block assembly	Refer to "How to Order Port Block Assembly" on page 629.

Bracket Assembly No.

Description	Part no.
Bracket (For F1)	SX000-16-2A (with mounting screw)
Bracket (For F2)	SX000-16-1A (with mounting screw)

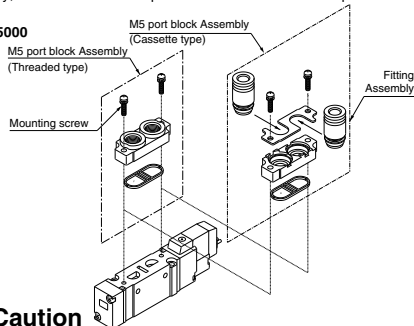
* SY9000 has no bracket.

SJ
SY
SY
S0700
S0700

How to Change Port Block Assembly

If using body port type, both A and B port sizes can be changed by replacing the port block assembly mounted on the body. When changing this block assembly, the correct screw torque must be achieved to avoid possible air leakage.

For SY5000



Caution

Mounting screw tightening torques

SY3000 (M2): 0.12 N·m
 SY5000 (M3): 0.6 N·m
 SY9000 (M4): 1.4 N·m

* Refer to "How to Order Port Block Assembly" on page 629 for part no.

5 Port Solenoid Valve

Base Mounted/Single Unit

SY3000/5000/7000/9000 Series



[Option]
Note) AC-type models that are CE-compliant have DIN terminals only.

How to Order

SY 5 2 40 [] [] - 5 L [] [] - [] [] - [] []

Series

3	SY3000
5	SY5000
7	SY7000
9	SY9000

Type of actuation

1	2 position single (A)4 2(B) (EA)5 1 3(EB) (P)
2	2 position double (A)4 2(B) (EA)5 1 3(EB) (P)
3	3 position closed center (A)4 2(B) (EA)5 1 3(EB) (P)
4	3 position exhaust center (A)4 2(B) (EA)5 1 3(EB) (P)
5	3 position pressure center (A)4 2(B) (EA)5 1 3(EB) (P)

Note) For details about Symbol of the 3 position type of SY9000 series, refer to page 423.

Pilot type

Nil	Internal pilot
R	External pilot*

* External pilot specifications for SY3000 DIN terminal are not available.

Coil specifications

Nil	Standard
T	With power saving circuit (24, 12 VDC only)

* Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

Rated voltage

For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

For AC (50/60 Hz)

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

* DC specifications of type D, Y, DO and YO is only available with 12 and 24 VDC.
* For type W□, DC voltage is only available.

Port size

Symbol	Port size	Applicable series
Nil	Without sub-plate	
01	1/8 With sub-plate	SY3000
02	1/4 With sub-plate	SY5000 SY7000
03	3/8 With sub-plate	SY7000 SY9000
04	1/2 With sub-plate	SY9000

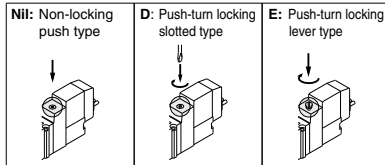
Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Made to Order

Nil	—
X90	Main valve fluororubber (Refer to page 624.)

Manual override



CE-compliant

Nil	—
Q	CE-compliant

Note)
AC-type models that are CE-compliant have DIN terminals only.

Light/Surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
* For "R" and "U", DC voltage is only available.
* Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

* DOZ and YOZ are not available.
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

	24, 12, 6, 5, 3 VDC / 100, 110, 200, 220 VAC				24, 12 VDC / 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
	Grommet	L plug connector	M plug connector	MN: Without lead wire	D, Y: With connector	WO: Without connector cable
G: Lead wire length 300 mm		L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	MN: Without lead wire		
H: Lead wire length 600 mm		LN: Without lead wire	LO: Without connector	MO: Without connector	DO, YO: Without connector	W□: With connector cable (Note)
CE-compliant	DC	AC	AC	AC	AC	AC

* LN, MN type: with 2 sockets.

* The DIN terminal of SY3000 series cannot be mounted on the standard sub-plate. For details, refer to page 639.

* "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 638.

* For connector cable of M8 connector, refer to page 641.

* M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 623 for details.

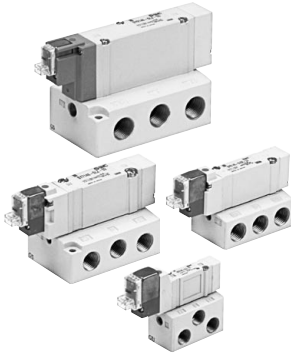
* Refer to page 638 for the lead wire length of L and M plug connectors.

* Refer to page 639 for the connector assembly with cover for L and M plug connectors.

Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 642.

Note) When ordering single unit of the base mounted type solenoid valve, the mounting screws and gaskets for the manifold are included.

Specifications



Made to Order
(For details, refer to pages 616 to 628.)

Series		SY3000	SY5000	SY7000	SY9000
Fluid		Air			
Internal pilot	2 position single	0.15 to 0.7			
	2 position double	0.1 to 0.7			
Operating pressure range (MPa)	3 position	0.2 to 0.7			
	Operating pressure range	-100 kPa to 0.7			
External pilot	Operating pressure range (MPa)	Pilot pressure	0.25 to 0.7		
		2 position single	0.25 to 0.7		
		2 position double	0.25 to 0.7		
	3 position	0.25 to 0.7			
Ambient and fluid temperature (°C)		-10 to 50 (No freezing.)			
Max. operating frequency (Hz)	2 position single, double	10	5	5	5
	3 position	3	3	3	3
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type			
Pilot exhaust method	Internal pilot	Common exhaust type for main and pilot valve			
	External pilot	Pilot valve individual exhaust			
Lubrication		Not required			
Mounting orientation		Unrestricted			
Impact/Vibration resistance (m/s²) <small>Note</small>		150/30			
Enclosure		Dust proof (* DIN terminal and M8 connector: IP65)			

* Based on IEC60529

Note) 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)

SJ

SY

SY

S0700

S0700

Response Time

Note) Based on dynamic performance test, JIS B 8419: 2010. (Coil temperature: 20°C, at rated voltage)

SY3000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	Type S, Z Type R, U
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 light/surge voltage suppressor	With light/surge voltage suppressor	Type S, Z Type R, U
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 voltage suppressor	With light/surge voltage suppressor	Type S, Z Type R, U
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

SY9000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	Type S, Z Type R, U
2 position single	35 or less	41 or less	35 or less
2 position double	35 or less	41 or less	35 or less
3 position	62 or less	64 or less	62 or less

Solenoid Specifications

Electrical entry		Grommet (G), (H) L plug connector (L) M plug connector (M)	DIN terminal (D), (Y) M8 connector (W)
Coil rated voltage (V)	DC	G, H, L, M, W	D, Y
	AC 50/60 Hz	24, 12, 6, 5, 3	24, 12
Allowable voltage fluctuation		±10% of rated voltage *	
Power consumption (W)	Standard	0.35 (With indicator light: 0.4 DIN terminal with indicator light: 0.45)	
	DC With power saving circuit	0.1 (With indicator light only) * [Starting 0.4, Holding 0.1]	
Apparent power (VA) *	AC	100 V	0.78 (With indicator light: 0.81) 0.78 (With indicator light: 0.87)
		110 V [115 V]	0.86 (With indicator light: 0.89) 0.86 (With indicator light: 0.97)
		200 V	1.18 (With indicator light: 1.22) 1.15 (With indicator light: 1.30)
		220 V [230 V]	1.30 (With indicator light: 1.34) 1.27 (With indicator light: 1.46)
Surge voltage suppressor		Diode (Varistor is for DIN terminal and Non-polar type.)	
Indicator light		LED (AC of DIN connector is neon light.)	

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

* For 115 VAC and 230 VAC, the allowable voltage is -15% to +5% of rated voltage.

* DIN terminal and M8 connector with power saving circuit are not available.

* For details, refer to page 636.

SY3000/5000/7000/9000 Series

Flow Rate Characteristics/Weight

SY3000 series

Valve model	Type of actuation		Port size	Flow rate characteristics ^{Note 1)}						Weight (g) ^{Note 2)}		
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	L plug connector, M plug connector	W M8 connector
				C (dm ³ /s/bar)	b	Cv	C (dm ³ /s/bar)	b	Cv			
SY3□40-□-01	2 position	Single	1/8	1.0	0.30	0.24	1.1	0.30	0.26	84 (50)	85 (53)	89 (57)
		Double		0.77	0.28	0.18	0.85	0.30	0.19	102 (68)	107 (73)	115 (81)
	Closed center			0.73	0.31	0.18	1.1	0.26	0.24	104 (69)	109 (74)	117 (82)
	Exhaust center			1.2	0.24	0.29	[0.55]	[0.52]	[0.16]			
	Pressure center			[0.51]	[0.45]	[0.14]	0.89	0.47	0.24			

Note 1) []: denotes the normal position. Note 2) (): denotes without sub-plate.

SY5000 series

Valve model	Type of actuation		Port size	Flow rate characteristics ^{Note 1)}						Weight (g) ^{Note 2)}			
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	L plug connector, M plug connector	DIN terminal	W M8 connector
				C (dm ³ /s/bar)	b	Cv	C (dm ³ /s/bar)	b	Cv				
SY5□40-□-02	2 position	Single	1/4	2.4	0.41	0.64	2.8	0.29	0.66	121 (58)	123 (61)	154 (92)	127 (65)
		Double		1.8	0.47	0.50	1.8	0.40	0.47	139 (76)	144 (81)	186 (123)	152 (89)
	Closed center			1.4	0.55	0.44	3.0	0.33	0.72	144 (82)	150 (87)	192 (129)	158 (95)
	Exhaust center			[1.2]	[0.48]	[0.37]	[1.2]	[0.48]	[0.37]				
	Pressure center			3.3	0.36	0.85	1.8	0.40	0.48				

Note 1) []: denotes the normal position. Note 2) (): denotes without sub-plate.

SY7000 series

Valve model	Type of actuation		Port size	Flow rate characteristics ^{Note 1)}						Weight (g) ^{Note 2)}			
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	L plug connector, M plug connector	DIN terminal	W M8 connector
				C (dm ³ /s/bar)	b	Cv	C (dm ³ /s/bar)	b	Cv				
SY7□40-□-02	2 position	Single	1/4	4.1	0.41	1.1	4.1	0.29	1.0	218 (89)	221 (92)	242 (113)	225 (96)
		Double		3.0	0.43	0.80	2.6	0.41	0.72	237 (108)	242 (113)	284 (155)	250 (121)
	Closed center			2.6	0.42	0.71	4.7	0.35	1.1	239 (110)	245 (116)	287 (158)	253 (124)
	Exhaust center			[1.7]	[0.48]	[0.49]	[1.7]	[0.48]	[0.49]				
	Pressure center			5.3	0.39	1.3	2.2	0.49	0.63				
	SY7□40-□-03	2 position		Single	3/8	4.9	0.29	1.2	4.5	0.27	1.1	218 (89)	221 (92)
Double			3.0	0.40		0.80	2.6	0.45	0.73	237 (108)	242 (113)	284 (155)	250 (121)
Closed center		2.6	0.42	0.71		4.8	0.35	1.1	239 (110)	245 (116)	287 (158)	253 (124)	
Exhaust center		[1.7]	[0.48]	[0.49]		[1.7]	[0.48]	[0.49]					
Pressure center		5.3	0.31	1.3		2.3	0.45	0.66					[2.3]

Note 1) []: denotes the normal position. Note 2) (): denotes without sub-plate.

SY9000 series

Valve model	Type of actuation		Port size	Flow rate characteristics ^{Note 1)}						Weight (g) ^{Note 2)}			
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	L plug connector, M plug connector	DIN terminal	W M8 connector
				C (dm ³ /s/bar)	b	Cv	C (dm ³ /s/bar)	b	Cv				
SY9□40-□-03	2 position	Single	3/8	7.9	0.34	2.0	9.6	0.43	2.6	469(172)	472(175)	493(196)	476(179)
		Double		7.5	0.33	1.8	7.3	0.30	1.7	488(191)	494(197)	535(239)	502(205)
	Closed center			7.2	0.34	1.7	13	0.23	2.8	512(215)	518(221)	560(263)	526(229)
	Exhaust center			[4.0]	[0.41]	[0.95]	[4.0]	[0.41]	[0.95]				
	Pressure center			12	0.26	2.8	6.7	0.40	1.9				
	SY9□40-□-04	2 position		Single	1/2	8.0	0.48	2.2	10	0.29	2.5	448 (172)	453 (175)
Double			7.6	0.32		1.8	7.3	0.32	1.8	467 (191)	473 (197)	515	481(205)
Closed center		7.3	0.42	2.0		13	0.32	3.6	491 (215)	497 (221)	539	505(229)	
Exhaust center		[4.7]	[0.54]	[1.5]		[4.7]	[0.54]	[1.5]					
Pressure center		12	0.33	3.3		7.4	0.33	1.9					[3.3]

Note 1) []: denotes the normal position. Note 2) (): denotes without sub-plate.

5 Port Solenoid Valve Body Ported Manifold Bar Stock Type/Individual Wiring



Type **20**

SY3000/5000/7000 Series

How to Order Manifold

SS5Y **5** - **20** - **05** - -

Manifold series

3	SY3000
5	SY5000
7	SY7000

Stations

02	2 stations
⋮	⋮
20	20 stations

* This also includes the number of blanking plate assemblies.

Thread type

NII	Rc
00F	G
00N	NPT
00T	NPTF

CE-compliant

NII	—
Q	CE-compliant

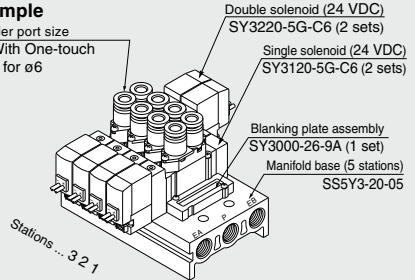
Note) AC-type models that are CE-compliant have DIN terminals only.

How to Order Manifold Assembly (Example)

Example

Cylinder port size

C6: With One-touch fitting for ø6



SS5Y3-20-05 1 set (Type 20, 5-station manifold base part no.)

* SY3000-26-9A 1 set (Blanking plate assembly part no.)

* SY3120-5G-C6 ... 2 sets (Single solenoid part no.)

* SY3220-5G-C6 ... 2 sets (Double solenoid part no.)

↳ The asterisk denotes the symbol for assembly.

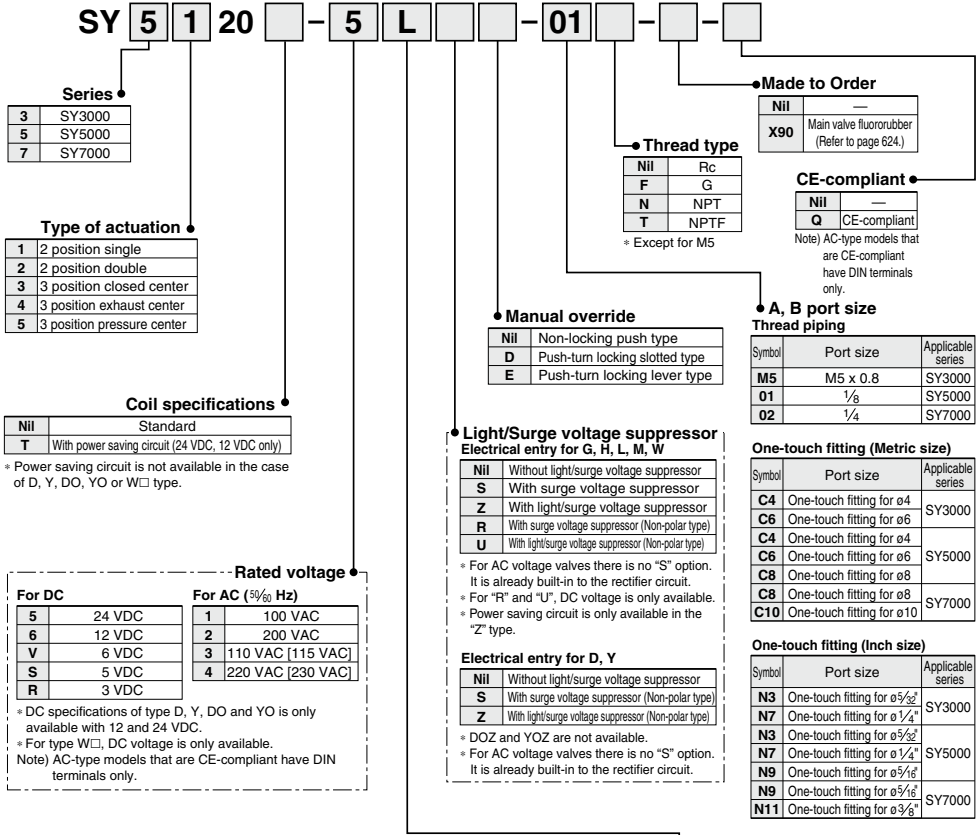
Prefix it to the part nos. of the solenoid valve, etc.

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



Note) AC-type models that are CE-compliant have DIN terminals only.

How to Order Valve



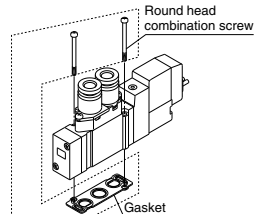
SY
SY
S0700
S0700

Electrical entry

	24, 12, 6, 5, 3 VDC/ 100, 110, 200, 220 VAC	24, 12 VDC/ 100, 110, 200, 220 VAC		24, 12, 6, 5, 3 VDC		
		Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
Manifold mounting	SY3000 SY5000 SY7000	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●
CE-compliant	DC AC	● —	● —	● —	● ●	● —

Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary.

Gasket assembly part no.



Series	Gasket assembly part no.
SY3000	SY3000-GS-1
SY5000	SY5000-GS-1
SY7000	SY7000-GS-1

Note) The gasket assembly includes 10 sets of mounting screws and a gasket.

Note 1) The DIN terminal of the SY3000 series cannot be mounted on a standard manifold. For details, refer to page 639.

Note 2) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 642.

* LN, MN type: with 2 sockets.

* "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43850C).

For details, refer to page 638.

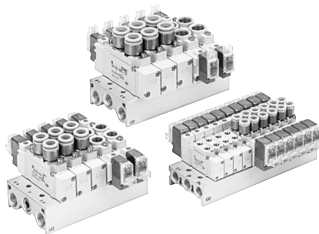
* For connector cable of M8 connector, refer to page 641.

* M8 thread conforming to IEC60947-5-2 standard is also available. Refer to page 623 for details.

* Refer to page 638 for the lead wire length of L and M plug connectors.

* Refer to page 639 for the connector assembly with cover for L and M plug connectors.





Manifold Specifications

Model	SS5Y3-20(-Q)	SS5Y5-20(-Q)	SS5Y7-20(-Q)	
Applicable valve	SY3□20	SY5□20	SY7□20	
Manifold type	Single base/B mount			
P (SUP)/R (EXH)	Common SUP, Common EXH			
Valve stations	2 to 20 stations ^{Note1)}			
A, B port location	Valve			
Port size	P, EA, EB port	1/8	1/4	1/4
	A, B port	M5 x 0.8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	1/8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	1/4 C8 (One-touch fitting for ø8) C10 (One-touch fitting for ø10)
Manifold base weight W (g)	W = 13n + 24	W = 36n + 64	W = 43n + 35	
n: Stations				

Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.

Note 2) Refer to "Manifold Option" on page 467.

Flow Rate Characteristics

Model	Port size		Flow rate characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C (dm ³ /(s·bar))	b	Cv	C (dm ³ /(s·bar))	b	Cv
SS5Y3-20(-Q)	1/8	C6	0.72	0.29	0.18	0.80	0.36	0.21
SS5Y5-20(-Q)	1/4	C8	1.9	0.28	0.48	2.2	0.20	0.53
SS5Y7-20(-Q)	1/4	C10	3.6	0.31	0.93	3.6	0.27	0.88

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

Type **20P**

5 Port Solenoid Valve Body Ported Manifold Bar Stock Type/Flat Ribbon Cable **SY3000/5000/7000 Series**

How to Order Manifold

Note) CE-compliant:
For DC only.



SS5Y **5** - 20P - **05** - [] - []

Manifold series

3	SY3000
5	SY5000
7	SY7000

Stations

03	3 stations
:	:
12	12 stations

Note) SS5Y3 has 4
to 12 stations.

Thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

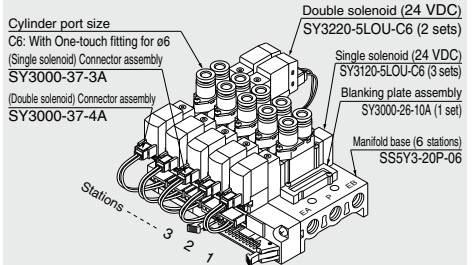
CE-compliant

Nil	—
Q	CE-compliant

Note) CE-compliant: For
DC only.

How to Order Manifold Assembly (Example)

Example



- SS5Y3-20P-06 1 set (Type 20P, 6-station manifold part no.)
 * SX3000-26-10A 1 set (Blanking plate assembly part no.)
 * SY3120-5LOU-C6... 3 sets (Single solenoid part no.)
 * SY3220-5LOU-C6... 2 sets (Double solenoid part no.)
 * SY3000-37-3A 3 sets (Connector assembly part no.)
 * SY3000-37-4A 2 sets (Connector assembly part no.)

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

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

Note) Please indicate the connector assembly part no. below that connects the valve and the manifold.

Connector Assembly

For 12, 24 VDC

Specifications	For SY3000	For SY5000/7000
For single solenoid	SY3000-37-3A	SY5000-37-3A
Double solenoid, 3 position type	SY3000-37-4A	SY5000-37-4A
Single with spacer assembly	SY5000-37-3A	SY5000-37-5A
Double, 3 position with spacer assembly	SY3000-37-6A	SY5000-37-6A

Note) Spacer assembly indicates Individual SUP/EXH.

For 100 VAC

Specifications	For SY3000	For SY5000/7000
For single solenoid	SY3000-37-32A	SY5000-37-15A
Double solenoid, 3 position type	SY3000-37-33A	SY5000-37-16A
Single with spacer assembly	SY5000-37-15A	SY5000-37-17A
Double, 3 position with spacer assembly	SY3000-37-34A	SY5000-37-18A

For 100 VAC (115 VAC)

Specifications	For SY3000	For SY5000/7000
For single solenoid	SY3000-37-35A	SY5000-37-19A
Double solenoid, 3 position type	SY3000-37-36A	SY5000-37-20A
Single with spacer assembly	SY5000-37-19A	SY5000-37-21A
Double, 3 position with spacer assembly	SY3000-37-37A	SY5000-37-22A

⚠ Caution

- For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.



How to Order Valve

Note) CE-compliant:
For DC only. [Option]

Note) In the case of flat cable type, "U" and "Z" types are for DC specifications and "Z" type is for AC specifications. "Z" for DC is positive common specifications only. For the other combination, please contact SMC.

Coil specifications

Nil	Standard
T	With power saving circuit

Rated voltage CE-compliant

5	24 VDC	●
6	12 VDC	●

Light/surge voltage suppressor

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

Note) Z: Positive common specifications only.
* Power saving circuit is only available in the "Z" type.

CE-compliant

Nil	—
Q	CE-compliant

Note) CE-compliant: For DC only.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

* Except for M5

A, B port size
Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
O1	1/8	SY5000
O2	1/4	SY7000

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	SY3000
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	SY5000
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	SY7000

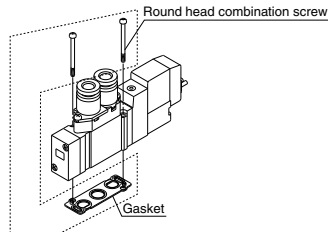
One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø $\frac{3}{8}$ "	SY3000
N7	One-touch fitting for ø $\frac{1}{4}$ "	SY3000
N3	One-touch fitting for ø $\frac{3}{8}$ "	SY5000
N7	One-touch fitting for ø $\frac{1}{4}$ "	SY5000
N9	One-touch fitting for ø $\frac{3}{8}$ "	SY7000
N9	One-touch fitting for ø $\frac{3}{8}$ "	SY7000
N11	One-touch fitting for ø $\frac{3}{8}$ "	SY7000

Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary.
Note) Since the electrical entry is "LO", select a connector assembly part no. from those stated on page 448.

- SY
- SY
- S0700
- S0700

■ Gasket assembly part no.

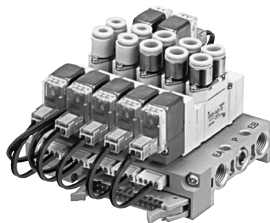


Series	Gasket assembly part no.
SY3000	SY3000-GS-1
SY5000	SY5000-GS-1
SY7000	SY7000-GS-1

Note) The gasket assembly includes 10 sets of mounting screws and a gasket.

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

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



Manifold Specifications

Model	SS5Y3-20P(-Q)	SS5Y5-20P(-Q)	SS5Y7-20P(-Q)
Applicable valve	SY3□20	SY5□20	SY7□20
Manifold type	Single base/B mount		
P (SUP/R (EXH))	Common SUP, Common EXH		
Valve stations	4 to 12 stations ⁽¹⁾	3 to 12 stations ^(Note 1)	
A, B port location	Valve		
P, EA, EB port	1/8	1/4	1/4
Port size	M5 x 0.8,	1/8	1/4
	C4 (One-touch fitting for ø4)	C4 (One-touch fitting for ø4)	C8 (One-touch fitting for ø8)
	C6 (One-touch fitting for ø6)	C6 (One-touch fitting for ø6)	C10 (One-touch fitting for ø10)
Manifold base weight W (g)	W = 19n + 45	W = 43n + 77	W = 51n + 81
	n: Stations		
Applicable flat ribbon cable connector	Flat ribbon cable connector, Socket: 26 pins MIL type with strain relief, Conforming to MIL-C-83503		
Internal wiring	In common between +COM and -COM (Z type: +COM only).		
Rated voltage ^(Note 4)	12, 24 VDC 100, 110 VAC		

Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.

Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.

Note 3) Refer to "Manifold Option" on page 467.

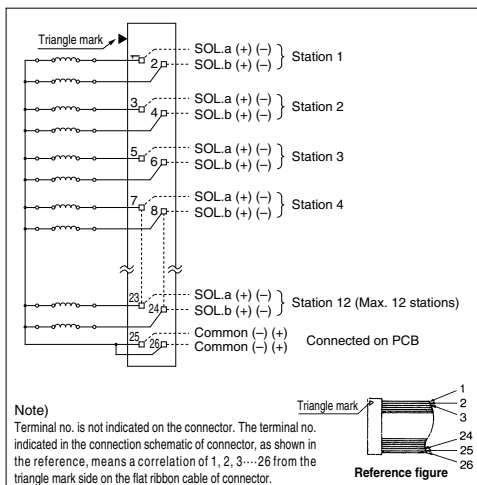
Note 4) CE-compliant: For DC only.

Flow Rate Characteristics

Model	Port size		Flow rate characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv
SS5Y3-20P	1/8	C6	0.72	0.29	0.18	0.80	0.36	0.21
SS5Y5-20P	1/4	C8	1.9	0.28	0.48	2.2	0.20	0.53
SS5Y7-20P	1/4	C10	3.6	0.31	0.93	3.6	0.27	0.88

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

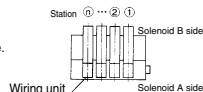
Internal Wiring of Manifold



Caution

- For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.

- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid A side.
- The maximum number of stations that can be accommodated is 12. For more stations, please contact SMC.



Type **20SA**

EX510 Gateway-type Serial Transmission System Body Ported Manifold/Integrated Base **SY3000/5000/7000 Series**



How to Order Manifold

SS5Y 3 - 20SA - 04 - - -

Manifold series

3	SY3000
5	SY5000
7	SY7000

SI unit

NII	NPN output (+COM.)
N	PNP output (-COM.)

SI unit part no.

Symbol	SI unit specifications	SI unit part no.	Page
NII	NPN output (+COM.)	EX510-S001	P.897
N	PNP output (-COM.)	EX510-S101	

Refer to page 878 and the Operation Manual for the details of EX510 Gateway-type Serial Transmission System. Please download the Operation Manual via our website, <http://www.smcworld.com>

CE-compliant

NII	—
Q	CE-compliant

P, R port thread type

NII	Rc
00F	G
00N	NPT
00T	NPTF

Valve stations

Symbol	Stations	Note
03	3 stations	Double wiring ^{Note 1)}
:	:	
08	8 stations	Specified layout ^{Note 2)} (Compatible with 16 solenoid valves)
03	3 stations	
:	:	
16	16 stations	

* SSSY3 can be set from 4 stations.

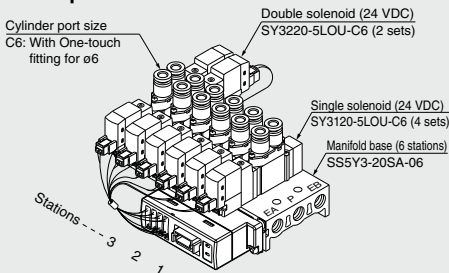
* The number of the blanking plate assembly is also included.

Note 1) Double wiring: Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate wiring specifications on the manifold specification sheet. (Note that double and 3 position valves cannot be used where single solenoid wiring has been specified.)

How to Order Manifold Assembly (Example)

Example



SSSY3-20SA-06 1 set (20SA type 6-station manifold part no.)
 * SY3120-5LOU-C6 4 sets (Single solenoid part no.)
 * SY3220-5LOU-C6 2 sets (Double solenoid part no.)

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

Add the valve and option part number under the manifold base part number.

When entry of part numbers becomes complicated, indicate by the manifold specification sheet. For a manifold for an EX510, the length of the lead wire for a connector assembly depends on the number of stations. Therefore, the manifold assembly is shipped with the valves (including blanking plates) and connector assembly mounted on it, as the standard specification. Be sure to specify the part nos. of the solenoid valves to be mounted.

How to Order Valves

SY 3 1 20 - **5 LO Z** - **M5** -

Series

3	SY3000
5	SY5000
7	SY7000

Type of actuation

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

Coil specifications

Nil	Standard
T	With power saving circuit

Rated voltage: 24 VDC

Light/Surge voltage suppressor

Z	With light/surge voltage suppressor
U	With light/surge voltage suppressor (non-polar type)

Note 1) Power saving circuit is only available in the "Z" type.

Note 2) When the SI unit is the PNP output (-COM.), only the "U" type is available.

Manual override

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

CE-compliant

Nil	—
Q	CE-compliant

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

A, B port size

Thread piping

M5	M5 x 0.8	SY3000
01	1/8	SY5000
02	1/4	SY7000

One-touch fitting (Metric size)

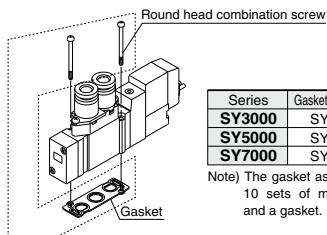
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	SY3000
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	SY5000
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	SY7000

One-touch fitting (Inch size)

N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	SY3000
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	SY5000
N9	One-touch fitting for ø5/16"	SY7000
N11	One-touch fitting for ø3/8"	SY7000

Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary.

■ Gasket assembly part no.



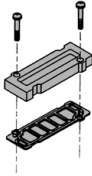
Series	Gasket assembly part no.
SY3000	SY3000-GS-1
SY5000	SY5000-GS-1
SY7000	SY7000-GS-1

Note) The gasket assembly includes 10 sets of mounting screws and a gasket.

SJ
SY
SY
S0700
S0700

Manifold Option

■ Type 20, 23, 20SA, 23SA Blanking plate assembly



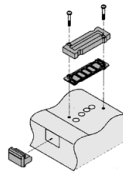
<Standard>

Series	Assembly part no.
SY3000	SY3000-26-9A
SY5000	SY5000-26-20A
SY7000	SY7000-26-22A
SY9000	SY9000-26-1A

<CE-compliant>

Series	Assembly part no.
SY3000	SY3000-26-19A-Q
SY5000	SY5000-26-1A-Q
SY7000	SY7000-26-1A-Q
SY9000	SY9000-26-1A-Q

■ Type 20P, 23P Blanking plate assembly



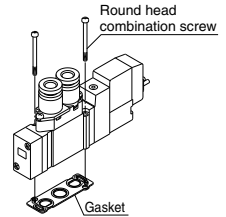
<Standard>

Series	Assembly part no.
SY3000	SY3000-26-10A
SY5000	SY5000-26-21A
SY7000	SY7000-26-23A
SY9000	SY9000-26-3A

<CE-compliant>

Series	Assembly part no.
SY3000	SY3000-26-20A-Q
SY5000	SY5000-26-3A-Q
SY7000	SY7000-26-3A-Q
SY9000	SY9000-26-3A-Q

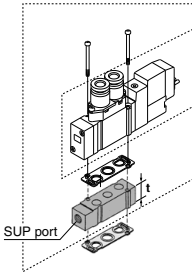
■ Gasket assembly part no.



Series	Gasket assembly part no.
SY3000	SY3000-GS-1
SY5000	SY5000-GS-1
SY7000	SY7000-GS-1
SY9000	SY9000-GS-1

Note) The gasket assembly includes 10 sets of mounting screws and a gasket.

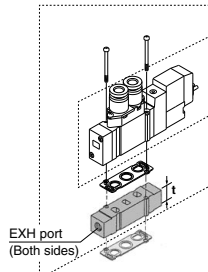
■ Individual SUP spacer assembly



Series	Assembly part no.	Port size	t
SY3000	SY3000-38-20A(-Q)	M5 x 0.8	10.5
SY5000	SY5000-38-1+A(-Q)	1/8	15
SY7000	SY7000-38-1+A(-Q)	1/4	18
SY9000	SY9000-38-1+A(-Q)	1/4	20

Note) • The SUP port of SY3000/5000/7000 may be either on the lead wire side or on the end plate side. However, as the CE-compliant products (-Q) must be mounted in the specified direction, the port directions cannot be changed. (An assembly is shipped under the conditions shown in the figure.)
• For the SY9000, it can only be used on the end plate side.

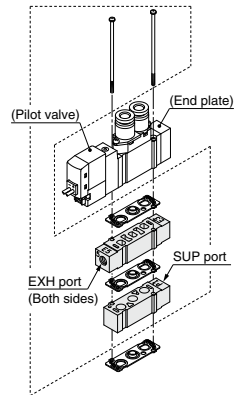
■ Individual EXH spacer assembly



Series	Assembly part no.	Port size	t
SY3000	SY3000-39-20A(-Q)	M5 x 0.8	10.5
SY5000	SY5000-39-1+A(-Q)	1/8	15
SY7000	SY7000-39-1+A(-Q)	1/4	18
SY9000	SY9000-39-1+A(-Q)	1/4	20

Note) In case of 20P and 23P, for protection of the wiring unit section from drainage, piping at the EA port should be arranged so that it will not be directly exposed to exhaust from the valve.

■ Individual SUP spacer assembly + Individual EXH spacer assembly (Double spacer)



●: Available x: Not available

Series	Individual SUP + Individual EXH Assemble part no.	Port size	Applicable manifold types	
			20	20P
SY3000	SY3000-120-1A(-Q)	M5 x 0.8	●	x
SY5000	SY5000-75-2+A(-Q)	1/8	●	x
SY7000	SY7000-73-3+A(-Q)	1/4	●	x

Note) The SUP spacer's port does not have an orientation. However, as the CE-compliant products (-Q) must be mounted in the specified direction, the port directions cannot be changed. As for the EXH ports, adjust the symbol "S" to the pilot valve side. Also, please make sure to connect the individual ports to protect the wiring section of the pilot valve from drainage, etc.

The individual SUP spacer and EXH spacer can be mounted either on the upper side or lower side. (The above illustration shows the condition when the product is shipped out from a factory.)

⚠ Caution

Mounting screw tightening torques

M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

* Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

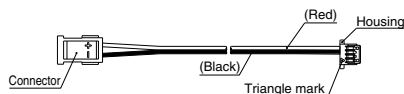
⚠ Warning

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

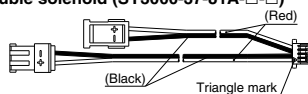
Manifold Option

■ Connector assembly

For single solenoid (SY3000-37-81A-□-N)



For double solenoid (SY3000-37-81A-□-□)



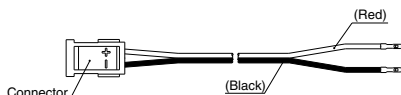
Connector assembly order no. (Can be used for the manifold without a specified layout (8 stations or less))
Integrated type

Model	Part no.	Connector mounting position
SS5Y3-20SA	SY3000-37-81A-3-N	Single : For 1 to 4 stations
	SY3000-37-81A-3-6	Double/3 position: For 1 to 4 stations
	SY3000-37-81A-2-N	Single : For 5 to 8 stations
	SY3000-37-81A-2-4	Double/3 position: For 5 to 8 stations
SS5Y5-20SA	SY3000-37-81A-3-N	Single : For 1 to 8 stations
	SY3000-37-81A-3-6	Double/3 position: For 1 to 8 stations
SS5Y7-20SA	SY3000-37-81A-3-N	Single : For 1 to 4 stations
	SY3000-37-81A-3-6	Double/3 position: For 1 to 4 stations
	SY3000-37-81A-4-N	Single : For 5 to 8 stations
	SY3000-37-81A-4-7	Double/3 position: For 5 to 8 stations

Note) The above is for the station addition or maintenance. When ordering a connector assembly separately, a number would not be printed on the connector.

■ Connector assembly

SY3000-37-80A-□



■ Housing (8 pcs/set)

SY3000-44-3A



Connector assembly order no. (Can be used for the manifold with a specified layout)

Model	Part no.	Connector mounting position
SS5Y3-20SA	SY3000-37-80A-3	For A side
	SY3000-37-80A-6	For B side
	SY3000-37-80A-4	For A side
	SY3000-37-80A-7	For B side
SS5Y5-20SA	SY3000-37-80A-3	For A side
	SY3000-37-80A-6	For B side
	SY3000-37-80A-7	For A side
	SY3000-37-80A-9	For B side
SS5Y7-20SA	SY3000-37-80A-4	For A side
	SY3000-37-80A-7	For B side
	SY3000-37-80A-8	For A side
	SY3000-37-80A-11	For B side
SS5Y9-23SA	SY3000-37-80A-6	For A side
	SY3000-37-80A-11	For B side
	SY3000-37-80A-9	For A side
	SY3000-37-80A-14	For B side
	SY3000-37-80A-13	For A side
	SY3000-37-80A-18	For B side

Note 1) The above is for station addition or maintenance. When ordering a connector assembly separately, a number will not be printed on the connector.

Note 2) After inserting the connector assembly into the housing, be sure to confirm that the lead wire will not come off by lightly pulling the wire. Furthermore, do not reuse the lead wire after it has been inserted and removed.

Note 3) Wiring is set longer than the actual wiring distance.

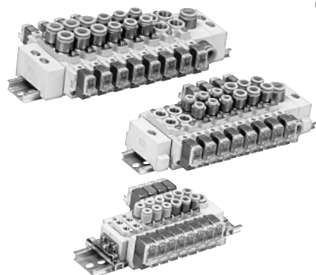
5 Port Solenoid Valve Body Ported Manifold Cassette Type

Note) AC-type models that are CE-compliant have DIN terminals only.



Type **60**

SY3000/5000/7000 Series



How to Order

SS5Y **3** - 60 - **05** **D** - [] - []

Series	
3	SY3000
5	SY5000
7	SY7000

Valve stations	
02	2 stations
:	:
20	20 stations

CE-compliant

NII	—
Q	CE-compliant

Note) AC-type models that are CE-compliant have DIN terminals only.

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. Max. 20 stations

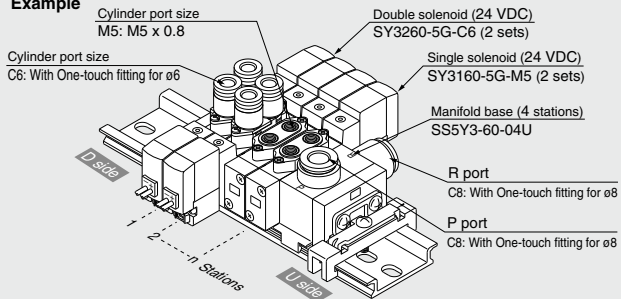
SUP/EXH block assembly mounting position

Symbol	Mounting position	Applicable stations
U	U side	2 to 10 stations
D	D side	2 to 20 stations
B	Both sides	2 to 20 stations
M	Special location	

* For special specifications, indicate separately by the manifold specification sheet.

How to Order Manifold Assembly (Example)

Example



SS5Y3-60-04U 1 set (Type 60, 4-station manifold base part no.)
 * SY3260-5G-C6 2 sets (Double solenoid part no.)
 * SY3160-5G-M5 2 sets (Single solenoid part no.)

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

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

Manifold Specifications

Model	SS5Y3-60(-Q)		SS5Y5-60(-Q)		SS5Y7-60(-Q)	
Applicable valve	SY3□60		SY5□60		SY7□60	
Manifold type	Stacking type/DIN rail mounted					
P (SUP)/R (EXH)	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) M5 x 0.8	C10 (One-touch fitting for ø10) 1/8	C12 (One-touch fitting for ø12) 1/4		
	A, B port	C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	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 "-[station]B (SUP/EXH block on both sides)", 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 478.

Flow Rate Characteristics

Model	Port size		Flow rate characteristics					
	1,5/3 (P,R)	4,2 (A,B)	1 → 4/2(P → A/B)			4/2 → 5/3(A/B → R)		
			C (dm ³ /(s·bar))	b	Cv	C (dm ³ /(s·bar))	b	Cv
SS5Y3-60(-Q)	C8	M5	0.55	0.29	0.14	0.72	0.24	0.18
		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
SS5Y5-60(-Q)	C10	1/8	1.8	0.24	0.44	2.1	0.17	0.47
		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
SS5Y7-60(-Q)	C12	1/4	3.7	0.25	0.96	3.8	0.19	0.94
		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.

SJ

SY

SY

S0700

S0700



How to Order Valve

Note) AC-type models that are CE-compliant have DIN terminals only. [Option]

SY 3 1 60 - **5 L** - **C6**

Series

3	SY3000
5	SY5000
7	SY7000

Type of actuation

1	2 position single (A)4 2(B)	
	(EA)5 1 3(EB) (P)	
2	2 position double (A)4 2(B)	
	(EA)5 1 3(EB) (P)	
3	3 position closed center (A)4 2(B)	
	(EA)5 1 3(EB) (P)	
4	3 position exhaust center (A)4 2(B)	
	(EA)5 1 3(EB) (P)	
5	3 position pressure center (A)4 2(B)	
	(EA)5 1 3(EB) (P)	

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

* Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

Rated voltage

For DC	
5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

For AC (50/60Hz)	
1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

* DC specifications of type D, Y, DO and YO is only available with 12 and 24 VDC.
 * D, Y, DO and YO only available for SY5000, SY7000.
 * For type W□, DC voltage is only available.
 Note) AC-type models that are CE-compliant have DIN terminals only.

A, B port size Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
O1	1/8	SY5000
O2	1/4	SY7000

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

* Except for M5

Made to Order

Nil	—
X20	Body ported external pilot (Refer to page 624.)
X90	Main valve fluoro rubber (Refer to page 624.)

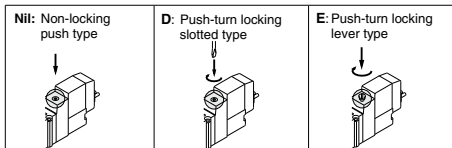
One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	SY3000
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	SY5000
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	SY7000

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	—
N7	One-touch fitting for ø1/4"	SY3000
N3	One-touch fitting for ø5/32"	—
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	—
N9	One-touch fitting for ø5/16"	SY7000
N11	One-touch fitting for ø3/8"	SY7000

Manual override



CE-compliant

Nil	—
Q	CE-compliant

Note) AC-type models that are CE-compliant have DIN terminals only.

Light/Surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With light/surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
 * Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y, (SY5000/7000 only)

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

* DOZ and YOZ are not available.
 * For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

	24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC				24, 12 VDC/100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
	Grommet	L plug connector	M plug connector	DIN terminal	M8 connector	
G: Lead wire length 300 mm	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	MN: Without lead wire	(SY5000, 7000) D, Y: With connector	WO: Without connector cable	
H: Lead wire length 600 mm	LN: Without lead wire	LO: Without connector	MO: Without connector	DO, YO: Without connector	W□: With connector cable (Note 2)	
Manifold mounting	SY3000 ●	●	●	— (Note 1)	●	
	SY5000 ●	●	●	●	●	
	SY7000 ●	●	●	●	●	
CE-compliant	DC ●	—	—	●	—	
	AC —	—	—	●	—	

Note 1) The DIN terminal of the SY3000 series cannot be mounted on a standard manifold. For details, refer to page 639.
 Note 2) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 642.
 Note 3) When ordering single unit of the cassette type solenoid valve, the bushing assembly is included.
 * LN, MN type: with 2 sockets.
 * "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 638.
 * For connector cable of M8 connector, refer to page 641.
 * M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 623 for details.
 * Refer to page 638 for the lead wire length of L and M plug connectors.
 * Refer to page 639 for the connector assembly with cover for L and M plug connectors.

Specifications

Series		SY3000	SY5000	SY7000
Fluid		Air		
Internal pilot Operating pressure range (MPa)	2 position single	0.15 to 0.7		
	2 position double	0.1 to 0.7		
	3 position	0.2 to 0.7		
Ambient and fluid temperature (°C)		Max. 50		
Max. operating frequency (Hz)	2 position double	10	5	5
	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 position		Unrestricted		
Impact/Vibration resistance ^{Note)}		150/30		
Enclosure		Dust proof (+ DIN terminal, M8 connector: IP65)		

Note) 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.

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 in the initial stage)

* Based on IEC60529

Solenoid Specifications

Electrical entry		Grommet (G), (H) L plug connector (L) M plug connector (M) DIN terminal (D), (Y) M8 connector (W)	
Coil rated voltage (V)	DC	24, 12, 6, 5, 3	24, 12
	AC 50/60 Hz	100, 110, 200, 220	
Allowable voltage fluctuation		±10% of rated voltage *	
Power consumption (W)	DC	Standard	0.35 [With indicator light: 0.4 (DIN terminal with indicator light: 0.45)]
		With power saving circuit	0.1 (With indicator light only) * [Starting 0.4, Holding 0.1]
Apparent power (VA) *	AC	100 V	0.78 (With indicator light: 0.81) 0.78 (With indicator light: 0.87)
		110 V [115 V]	0.86 (With indicator light: 0.89) 0.86 (With indicator light: 0.97) 0.94 (With indicator light: 0.97) 0.94 (With indicator light: 1.07)
		200 V	1.18 (With indicator light: 1.22) 1.15 (With indicator light: 1.30)
		220 V [230 V]	1.30 (With indicator light: 1.34) 1.27 (With indicator light: 1.46) 1.42 (With indicator light: 1.46) 1.39 (With indicator light: 1.60)
Surge voltage suppressor		Diode (Varistor is for DIN terminal and non-polar)	
Indicator light		LED (AC of DIN connector is neon light.)	

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

* For 115 VAC and 230 VAC, the allowable voltage is -15% to +5% of rated voltage.

* For details, refer to page 636.

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 suppressor	With surge voltage 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 suppressor	With surge voltage 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 voltage suppressor	With light/surge 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

SJ

SY

SY

S0700

S0700

Weight

SY3000 series

Valve model	Type of actuation		Port size A, B	Weight (g)		
				Gro-mmet	L/M plug connector	M8 Connector
SY3□60-□-M5	2 position	Single	M5 x 0.8	49	51	55
		Double		70	73	81
	3 position	Closed center		73	76	84
		Exhaust center Pressure center				
SY3□60-□-C4	2 position	Single	C4 (One-touch fitting for ø4)	62	61	65
		Double		80	83	91
	3 position	Closed center		82	86	94
		Exhaust center Pressure center				
SY3□60-□-C6	2 position	Single	C6 (One-touch fitting for ø6)	55	57	61
		Double		76	79	87
	3 position	Closed center		78	82	90
		Exhaust center Pressure center				

Note) [] : denotes normal position.

SY7000 series

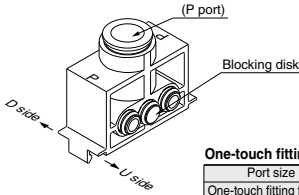
Valve model	Type of actuation		Port size A, B	Weight (g)			
				Gro-mmet	L/M plug connector	DIN terminal	M8 Connector
SY7□60-□-O2	2 position	Single	1/4	103	105	126	109
		Double		125	128	170	136
	3 position	Closed center		133	136	178	144
		Exhaust center Pressure center					
SY7□60-□-C8	2 position	Single	C8 (One-touch fitting for ø8)	138	139	160	143
		Double		160	163	205	171
	3 position	Closed center		168	171	213	179
		Exhaust center Pressure center					
SY7□60-□-C10	2 position	Single	C10 (One-touch fitting for ø10)	123	125	146	129
		Double		145	149	191	157
	3 position	Closed center		153	157	199	165
		Exhaust center Pressure center					

SY5000 series

Valve model	Type of actuation		Port size A, B	Weight (g)			
				Gro-mmet	L/M plug connector	DIN terminal	M8 Connector
SY5□60-□-O1	2 position	Single	1/8	67	69	90	71
		Double		91	94	136	102
	3 position	Closed center		97	100	142	108
		Exhaust center Pressure center					
SY5□60-□-C4	2 position	Single	C4 (One-touch fitting for ø4)	91	93	114	97
		Double		113	116	158	124
	3 position	Closed center		119	122	164	130
		Exhaust center Pressure center					
SY5□60-□-C6	2 position	Single	C6 (One-touch fitting for ø6)	86	88	109	92
		Double		108	111	153	119
	3 position	Closed center		114	117	159	125
		Exhaust center Pressure center					
SY5□60-□-C8	2 position	Single	C8 (One-touch fitting for ø8)	78	80	101	84
		Double		100	103	145	111
	3 position	Closed center		106	109	151	117
		Exhaust center Pressure center					

Manifold Option

■ Individual SUP block assembly



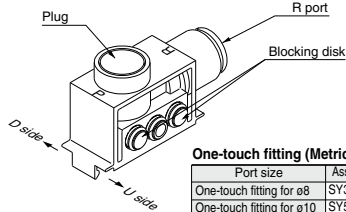
One-touch fitting (Metric size)

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

One-touch fitting (Inch size)

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

■ Individual EXH block assembly



One-touch fitting (Metric size)

Port size	Assembly part no.	Applicable series
One-touch fitting for ø6	SY3000-55-1B(-Q)	SY3000
One-touch fitting for ø10	SY5000-55-1B(-Q)	SY5000
One-touch fitting for ø12	SY7000-55-1B(-Q)	SY7000

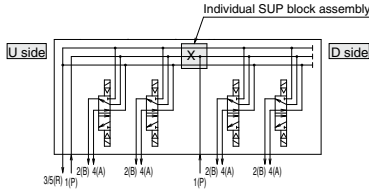
One-touch fitting (Inch size)

Port size	Assembly part no.	Applicable series
One-touch fitting for ø5/16"	SY3000-55-2B(-Q)	SY3000
One-touch fitting for ø3/8"	SY5000-55-2B(-Q)	SY5000
One-touch fitting for ø3/8"	SY7000-55-3B(-Q)	SY7000

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

Specify arrangement of individual SUP block assembly on the manifold specification sheet. (When using SSSY□-60-□□□, blocking disk is assembled on D side.)

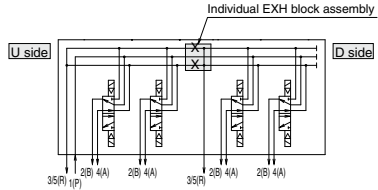
<Manifold model no.: SSSY $\frac{3}{8}$ -60-□□□>



[When 2 different EXH passages are required.]

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

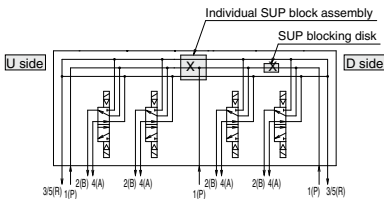
<Manifold model no.: SSSY $\frac{3}{8}$ -60-□□□>



[When a different supply pressure is required for only a middle valve.]

Specify arrangement of individual SUP block assembly and SUP blocking disk on the manifold specification sheet.

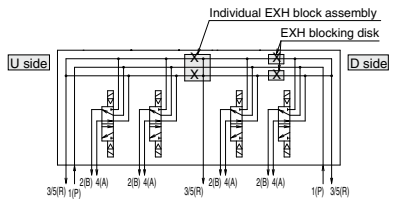
(Applicable manifold model no.: SSSY□-60-□□B)



[When a separate exhaust passage is needed on only a middle valve.]

Specify arrangement of individual EXH block assembly and EXH blocking disk on the manifold specification sheet.

(Applicable manifold model no.: SSSY□-60-□□B)



Manifold Option

■ SUP blocking disk

By installing a SUP blocking 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.)



Series	Part no.
SY3000	SY3000-52-6A
SY5000	SY5000-52-4A
SY7000	SY7000-70-2A

■ EXH blocking disk

By installing an EXH blocking 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.)



Series	Part no.
SY3000	SY3000-52-6A
SY5000	SY5000-52-4A
SY7000	SY7000-70-2A

■ Label for block disk

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

VZ3000-123-1A

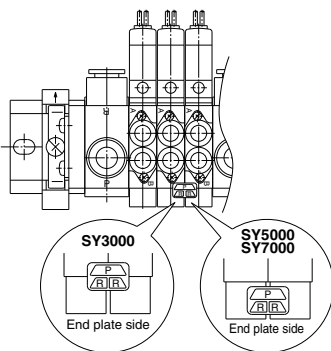
Label for SUP block disk

Label for EXH block disk

Label for SUP/EXH block disk

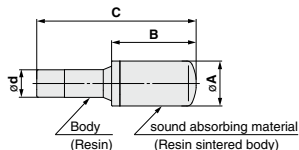


* When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.



■ Silencer with One-touch fitting

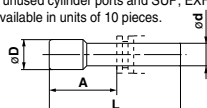
The silencer plugs directly into the One-touch fittings of the manifold.



Series	Model	Effective area mm ²	A	B	C
SY3000 (for ø8)	AN15-C08	20	ø13	20	45
SY5000 (for ø10)	AN20-C10	30	ø16.5	30.5	57.5
SY7000 (for ø12)	AN30-C12	41	ø20	43.5	71.5

■ Plug

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.



Dimensions

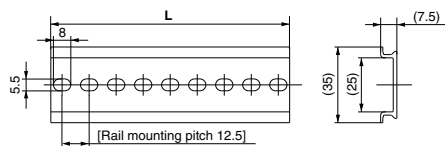
Applicable fittings size ød	Model	A	L	D
4	KQ2P-04	16	32	6
6	KQ2P-06	18	35	8
8	KQ2P-08	20.5	39	10
10	KQ2P-10	22	43	12
12	KQ2P-12	24	45.5	14
5/32"	KQ2P-03	16	32	6
1/4"	KQ2P-07	18	35	8.5
5/16"	KQ2P-09	20.5	39	10
3/8"	KQ2P-11	22	43	11.5

■ DIN Rail Dimensions/Weight for SY3000/5000

VZ1000-11-1-□

Refer to the L dimension tables

* 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)	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

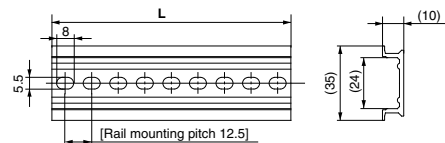
No.	20	21	22	23	24	25	26	27	28	29
L dimension	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5
Weight (g)	62.6	64.9	67.1	69.4	71.6	73.9	76.1	78.4	80.6	82.9

■ 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 640.

Type **41**Type **42**

5 Port Solenoid Valve Base Mounted Manifold Bar Stock Type/Individual Wiring

SY3000/5000/7000 Series



[Option]
Note) AC-type models that are
CE-compliant have DIN
terminals only.

How to Order Manifold

Type 41/Compact type

SS5Y **5** - **41** - **05** - **C8** □ - □

Manifold series

3	SY3000
5	SY5000

Stations

02	2 stations
:	:
20	20 stations

* This also includes the number of blanking plate assemblies.

Thread type

Nll	Rc
F	G
N	NPT
T	NPTF

* Except for M5

CE-compliant

Nll	—
Q	CE-compliant

Note) AC-type models that are CE-compliant have DIN terminals only.

A, B port size Thread piping

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

One-touch fitting (Metric size)

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

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø $\frac{3}{32}$ "	SY3000
N7	One-touch fitting for ø $\frac{1}{4}$ "	SY3000
N7	One-touch fitting for ø $\frac{1}{4}$ "	SY5000
N9	One-touch fitting for ø $\frac{5}{16}$ "	SY5000

Type 42/External pilot capable

SS5Y **5** - **42** - **05** - **C8** □ - □

Manifold series

3	SY3000
5	SY5000
7	SY7000

Stations

02	2 stations
:	:
20	20 stations

* This also includes the number of blanking plate assemblies.

Thread type

Nll	Rc
F	G
N	NPT
T	NPTF

CE-compliant

Nll	—
Q	CE-compliant

Note) AC-type models that are CE-compliant have DIN terminals only.

A, B port size Thread piping

Symbol	Port size	Applicable series
01	1/8	SY3000
02	1/4	SY5000
02	1/4	SY7000

One-touch fitting (Metric size)

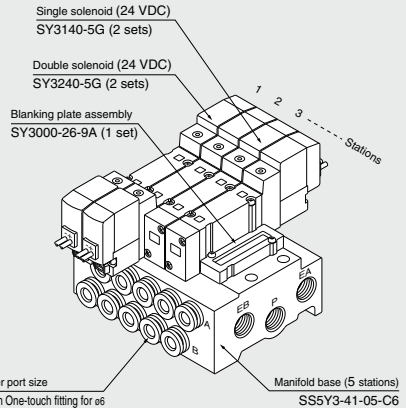
Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	SY5000
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	SY7000

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø $\frac{3}{32}$ "	SY3000
N7	One-touch fitting for ø $\frac{1}{4}$ "	SY3000
N7	One-touch fitting for ø $\frac{1}{4}$ "	SY5000
N9	One-touch fitting for ø $\frac{5}{16}$ "	SY5000
N11	One-touch fitting for ø $\frac{3}{8}$ "	SY7000

How to Order Manifold Assembly (Example)

Example



SS5Y3-41-05-C6 ... 1 set (Type 41, 5-station manifold base part no.)

* **SY3240-5G ... 2 sets (Double solenoid part no.)**

* **SY3140-5G ... 2 sets (Single solenoid part no.)**

* **SY3000-26-9A ... 1 set (Blanking plate assembly part no.)**

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

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



How to Order Valve

(Note) AC-type models that are CE-compliant have DIN terminals only.

SY **5** **2** **40** - **5** **L** - -

Series

3	SY3000
5	SY5000
7	SY7000

Type of actuation

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

Pilot type

Nil	Internal pilot
R	External pilot

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

* Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

Rated voltage

For DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

For AC (50/60 Hz)

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

* DC specifications of Type D, Y, DO and YO is only available with 12 and 24 VDC.
 * For type W□, DC voltage is only available.
 (Note) AC-type models that are CE-compliant have DIN terminals only.

CE-compliant

Nil	—
Q	CE-compliant

(Note) AC-type models that are CE-compliant have DIN terminals only.

Made to Order

Nil	—
X90	Main valve fluororubber (Refer to page 624.)

Manual override

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

Light/Surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
 * For "R" and "U", DC voltage is only available.
 * Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

* DOZ and YOZ are not available.
 * For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

(Note) When ordering single unit of the base mounted type solenoid valve, the mounting screws and gaskets for the manifold are included.

Electrical entry

		24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
		Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
		G: Lead wire length 300 mm lead	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	(SY5000/7000 only) D: With connector	WO: Without connector cable
		H: Lead wire length 600 mm	LN: Without lead wire	MN: Without lead wire	DO: Without connector	WC: With connector cable ^{Note 2)}
			LO: Without connector	MO: Without connector	Y: With connector	
					YO: Without connector	
					— ^{Note 1)}	
Manifold mounting	SY3000	●	●	●	●	●
	SY5000	●	●	●	●	●
	SY7000	●	●	●	●	●
CE-compliant	DC	●	●	●	●	●
	AC	—	—	—	●	—

Note 1) The DIN terminal of the SY3000 series cannot be mounted on a standard manifold. For details, refer to page 639.

Note 2) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 642.

* LN, MN type: with 2 sockets.

* "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 638.

* For connector cable of M8 connector, refer to page 641.

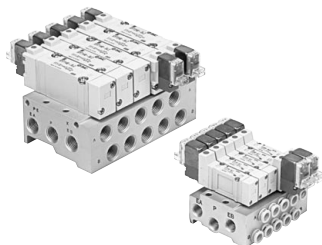
* M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 623 for details.

* Refer to page 638 for the lead wire length of L and M plug connectors.

* Refer to page 639 for the connector assembly with cover for L and M plug connectors.



Manifold Specifications



Model	SS5Y3-41(-Q)		SS5Y3-42(-Q)		SS5Y5-41(-Q)		SS5Y5-42(-Q)		SS5Y7-42(-Q)	
Applicable valve	SY3□40				SY5□40					
Manifold type	Single base/B mount									
P(SUP)/R(EXH)	Common SUP, Common EXH									
Valve stations	2 to 20 stations ^{Note 1)}									
A, B port	Base									
Porting specifications	Side									
	P, EA, EB port	1/8			1/4			1/4		
Port size	A, B port	M5 x 0.8,	1/8	1/8	1/8	1/4	1/4	1/4	1/4	1/4
		C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	C8 (One-touch fitting for ø8) C10 (One-touch fitting for ø10)	C10 (One-touch fitting for ø10)			
Manifold base weight W (g) n: Stations	W = 30n + 50	W = 37n + 63	W = 61n + 101	W = 79n + 127	W = 100n + 151					

Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.

Note 2) Refer to "Manifold Option" on page 530.

Flow Rate Characteristics

Model	Port size		Flow rate characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C (dm ³ /s(bar))	b	Cv	C (dm ³ /s(bar))	b	Cv
SS5Y3-41(-Q)	1/8	C6	0.75	0.19	0.18	0.81	0.23	0.20
SS5Y3-42(-Q)	1/8	C6	0.75	0.20	0.18	0.82	0.20	0.20
SS5Y5-41(-Q)	1/4	C8	1.8	0.23	0.44	1.9	0.16	0.45
SS5Y5-42(-Q)	1/4	C8	1.9	0.20	0.46	1.9	0.12	0.43
SS5Y7-42(-Q)	1/4	C10	3.0	0.25	0.75	3.0	0.12	0.66

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

Type **41P**
Type **42P**

5 Port Solenoid Valve Base Mounted Manifold Bar Stock Type/Flat Ribbon Cable **SY3000/5000/7000 Series**

Note) CE-compliant:
For DC only. [Option]



How to Order Manifold

Type 41P/Compact type

SS5Y 5 - 41P - 05 - C8 - [] - []

Manifold series ●

3	SY3000
5	SY5000

Stations ●

03	3 stations
:	:
12	12 stations

* SS5Y3 has 4 to 12 stations.
* This also includes the number of blanking plate assemblies.

● A, B port size
Thread piping

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

Thread type ●

	Nil	Rc	CE-compliant ●
F	F	G	Nil
N	NPT	Q	CE-compliant
T	NPTF	Q	CE-compliant: For DC only.

One-touch fitting (Metric size)

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

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø ⁹ / ₃₂	SY3000
N7	One-touch fitting for ø ¹ / ₄ "	SY3000
N7	One-touch fitting for ø ¹ / ₄ "	SY5000
N9	One-touch fitting for ø ⁵ / ₁₆	SY5000

Type 42P/Common external pilot capable

SS5Y 5 - 42P - 05 - C8 - [] - []

Manifold series ●

3	SY3000
5	SY5000
7	SY7000

Stations ●

03	3 stations
:	:
12	12 stations

* SS5Y3 has 4 to 12 stations.
* This also includes the number of blanking plate assemblies.

● A, B port size
Thread piping

Symbol	Port size	Applicable series
01	1/8	SY3000
02	1/4	SY5000
02	1/4	SY7000

Thread type ●

	Nil	Rc	CE-compliant ●
F	F	G	Nil
N	NPT	Q	CE-compliant
T	NPTF	Q	CE-compliant: For-DC only.

One-touch fitting (Metric size)

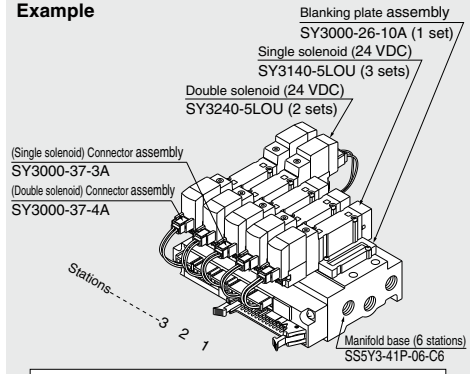
Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	SY3000
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	SY5000
C10	One-touch fitting for ø10	SY7000

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø ⁹ / ₃₂	SY3000
N7	One-touch fitting for ø ¹ / ₄ "	SY3000
N7	One-touch fitting for ø ¹ / ₄ "	SY5000
N9	One-touch fitting for ø ⁵ / ₁₆	SY5000
N11	One-touch fitting for ø ³ / ₈ "	SY7000

How to Order Manifold Assembly (Example)

Example



- SS5Y3-41P-06-C6... 1 set (Type 41P, 6-station manifold base part no.)**
 * **SX3000-26-10A..... 1 set (Blanking plate assembly part no.)**
 * **SY3140-5LOU..... 3 sets (Single solenoid part no.)**
 * **SY3240-5LOU..... 2 sets (Double solenoid part no.)**
 * **SY3000-37-3A..... 3 sets (Connector assembly part no.)**
 * **SY3000-37-4A..... 2 sets (Connector assembly part no.)**
- The asterisk denotes the symbol for assembly.
Prefix it to the part nos. of the solenoid valve, etc.

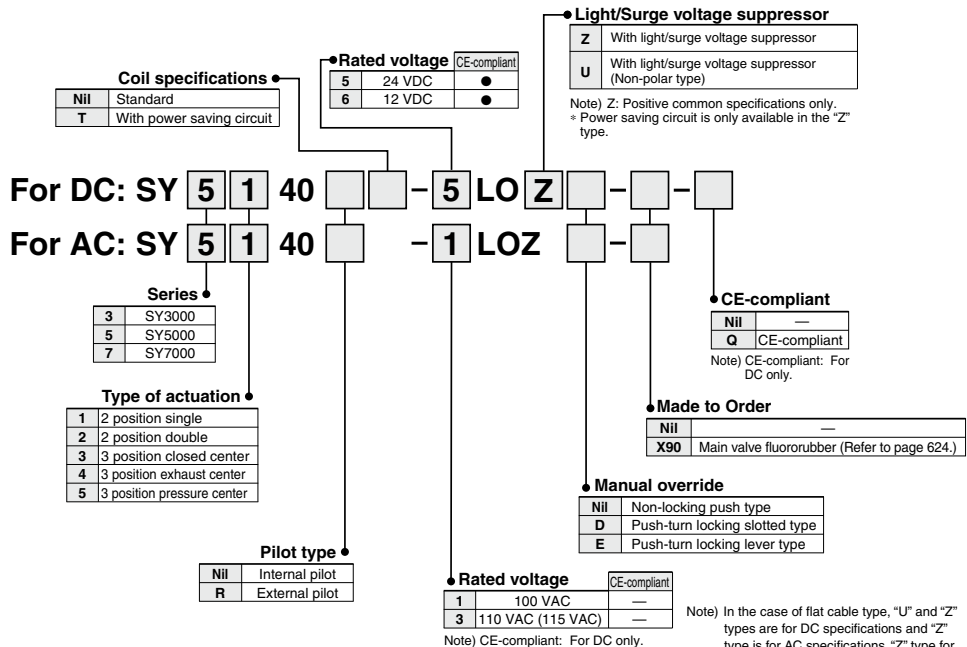
Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

Note) Please indicate the connector assembly part no. (page 507) that connects the valve and the manifold.



Note) CE-compliant:
For DC only. [Option]

How to Order Valve



SY
S0700
S0700

Note) When ordering single unit of the base mounted type solenoid valve, the mounting screws and gaskets for the manifold are included.

Note) In the case of flat cable type, "U" and "Z" types are for DC specifications and "Z" type is for AC specifications. "Z" type for DC is positive common specification only. For the other combination, please contact SMC.

Note) Since the electrical entry is "LO", select an appropriate connector assembly part no.

Connector Assembly

For 12, 24 VDC

Specifications	For SY3000	For SY5000/7000
For single solenoid	SY3000-37-3A	SY5000-37-3A
Double solenoid, 3 position type	SY3000-37-4A	SY5000-37-4A
Single with spacer assembly	SY5000-37-3A	SY5000-37-5A
Double, 3 position with spacer assembly	SY3000-37-6A	SY5000-37-6A

Note) Spacer assembly indicates Individual SUP/EXH spacer.

For 100 VAC

Specifications	For SY3000	For SY5000/7000
For single solenoid	SY3000-37-32A	SY5000-37-15A
Double solenoid, 3 position type	SY3000-37-33A	SY5000-37-16A
Single with spacer assembly	SY5000-37-15A	SY5000-37-17A
Double, 3 position with spacer assembly	SY3000-37-34A	SY5000-37-18A

For 100 VAC (115 VAC)

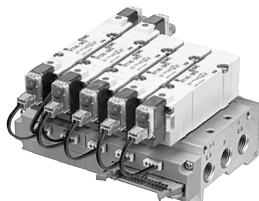
Specifications	For SY3000	For SY5000/7000
For single solenoid	SY3000-37-35A	SY5000-37-19A
Double solenoid, 3 position type	SY3000-37-36A	SY5000-37-20A
Single with spacer assembly	SY5000-37-19A	SY5000-37-21A
Double, 3 position with spacer assembly	SY3000-37-37A	SY5000-37-22A

Flat Ribbon Cable Manifold Specifications

• **Multiple valve wiring is simplified through the use of the flat cable connector.**

• **Clean appearance**

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



Model	SS5Y3-41P(-Q)	SS5Y3-42P(-Q)	SS5Y5-41P(-Q)	SS5Y5-42P(-Q)	SS5Y7-42P(-Q)
Applicable valve	SY3□40		SY5□40		SY7□40
Manifold type	Single base/B mount				
P(SUP)/R(EXH)	Common SUP, Common EXH				
Valve stations	4 to 12 stations ⁽¹⁾		3 to 12 stations ^(Note 1)		
A, B port	Location	Base			
	Porting specifications	Side			
Port size	P, EA, EB port	1/8		1/4	
	A, B port	1/8	1/8	1/4	1/4
Manifold base weight W (g), n: Stations	MS x 0.8	1/8	1/8	1/4	1/4
	C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	C8 (One-touch fitting for ø8) C8 (One-touch fitting for ø8)	C10 (One-touch fitting for ø10)
Manifold base weight W (g), n: Stations	W = 39n + 83	W = 48n + 99	W = 67n + 118	W = 88n + 151	W = 109n + 174
Applicable flat ribbon cable connector	Flat ribbon cable connector, Socket: 26 pins MIL type with strain relief, Conforming to MIL-C-83503				
Internal wiring	In common between +COM and -COM (Z type: +COM only).				
Rated voltage ^(Note 4)	12, 24 VDC, 100, 110 VAC				

Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.

Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.

Note 3) Refer to "Manifold Option" on page 530.

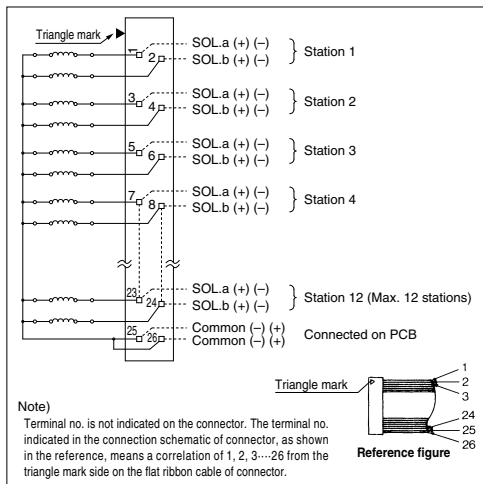
Note 4) CE-compliant: For DC only.

Flow Rate Characteristics

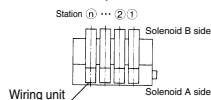
Model	Port size		Flow rate characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C (dm ³ /(s·bar))	b	Cv	C (dm ³ /(s·bar))	b	Cv
SS5Y3-41P	1/8	C6	0.75	0.19	0.18	0.81	0.23	0.20
SS5Y3-42P	1/8	C6	0.75	0.20	0.18	0.82	0.20	0.20
SS5Y5-41P	1/4	C8	1.8	0.23	0.44	1.9	0.16	0.45
SS5Y5-42P	1/4	C8	1.9	0.20	0.46	1.9	0.12	0.43
SS5Y7-42P	1/4	C10	3.0	0.25	0.75	3.0	0.12	0.66

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

Internal Wiring of Manifold



- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid A side.
- The maximum number of stations that can be accommodated is 12. For more stations, please contact SMC.



Caution

- For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.