



Series SY3000/5000/7000/9000 Body Ported Valve Single Unit

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

Coil specifications

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

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

Rated voltage

DC

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

AC (50/60Hz)

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

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

Electrical entry

24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC				24, 12 VDC/100, 110, 200, 220 VAC
Grommet	L plug connector	M plug connector	MN: Without lead wire	DIN terminal
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: Without connector

24, 12, 6, 5, 3 VDC

M8 connector

WO: Without connector cable

* "LN", "MN" type: with 2 sockets.
* For DIN terminal of SY3000 series, refer to page 1-4-207.
* DIN terminal type "Y" conforming to DIN 43650C is available, too. For details, refer to page 1-4-201.
* For connector cable of M8 connector, refer to page 1-4-209.

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	

One-touch fitting (Metric size)

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

One-touch fitting (Inch size)

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

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

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

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor

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

Bracket

Nil: Without bracket
F1: With foot bracket (2 position single only)
F2: With side bracket

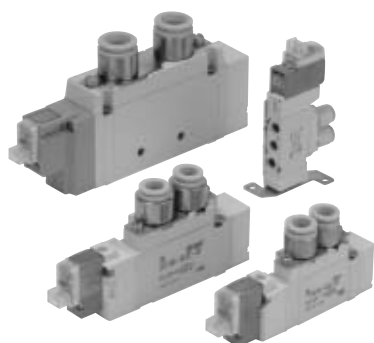
* SY9000 has no bracket.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to catalog on page 1-4-61.)

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. Refer to page 1-7-5.)			
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) <small>Note)</small>		150/30			
Enclosure		Dustproof (* DIN terminal, M8 connector conforms to IP65)			

* Based on IEC529)
 Note) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states 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)

SV
 SZ
 SY
 SYJ
 SX

Made to Order Made to Order Specifications
 (For details, refer to pages 1-4-188 to 202.)

Solenoid Specifications

Electrical entry		Grommet (G), (H) L plug connector (L) M plug connector (M)	DIN terminal (D) M8 connector (W)
Coil rated voltage (V)	DC	24, 12, 6, 5, 3	
	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)
Apparent power (VA)	AC	100 V	1.4 (With indicator light: 1.5)
		110 V	1.6 (With indicator light: 1.7)
		[115 V]	[1.7 (With indicator light: 1.8)]
		200 V	2.3 (With indicator light: 2.4)
		220 V [230 V]	2.5 (With indicator light: 2.6) [2.7 (With indicator light: 2.8)]
Surge voltage suppressor		Diode (DIN terminal is ZNR. G, L or M (Non-polar) is zener diode.)	
Indicator light		LED	

* 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.

Response Time

Note) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)

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

Series SY3000/5000/7000/9000

Flow Characteristics/Weight

Series SY3000

Valve model	Type of actuation		Port size		Flow characteristics						Weight (g)		
			1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grommet	L, M plug connector	W M8 connector
			C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv					
SY3□20 -□-M5	2 position	Single	M5 x 0.8										
		Double											
	3 position	Closed center											
		Exhaust center											
SY3□20 -□-C4	2 position	Single	M5 x 0.8	C4 (One-touch fitting for ø4)									
		Double											
	3 position	Closed center											
		Exhaust center											
SY3□20 -□-C6	2 position	Single	M5 x 0.8	C6 (One-touch fitting for ø6)									
		Double											
	3 position	Closed center											
		Exhaust center											

Note [] : Denotes normal position.



Series SY7000

Valve model	Type of actuation		Port size		Flow characteristics						Weight (g)			
			1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grommet	L, M plug connector	DIN terminal	W M8 connector
			C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv						
SY7□20 -□-02	2 position	Single	1/4											
		Double												
	3 position	Closed center												
		Exhaust center												
SY7□20 -□-C8	2 position	Single	1/4	C8 (One-touch fitting for ø8)										
		Double												
	3 position	Closed center												
		Exhaust center												
SY7□20 -□-C10	2 position	Single	1/4	C10 (One-touch fitting for ø10)										
		Double												
	3 position	Closed center												
		Exhaust center												

Note [] : Denotes normal position.



Series SY5000

Valve model	Type of actuation		Port size		Flow characteristics						Weight (g)			
			1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grommet	L, M plug connector	DIN terminal	W M8 connector
			C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv						
SY5□20 -□-01	2 position	Single	1/8											
		Double												
	3 position	Closed center												
		Exhaust center												
SY5□20 -□-C4	2 position	Single	1/8	C4 (One-touch fitting for ø4)										
		Double												
	3 position	Closed center												
		Exhaust center												
SY5□20 -□-C6	2 position	Single	1/8	C6 (One-touch fitting for ø6)										
		Double												
	3 position	Closed center												
		Exhaust center												
SY5□20 -□-C8	2 position	Single	1/8	C8 (One-touch fitting for ø8)										
		Double												
	3 position	Closed center												
		Exhaust center												

Note [] : Denotes normal position.



Series SY9000

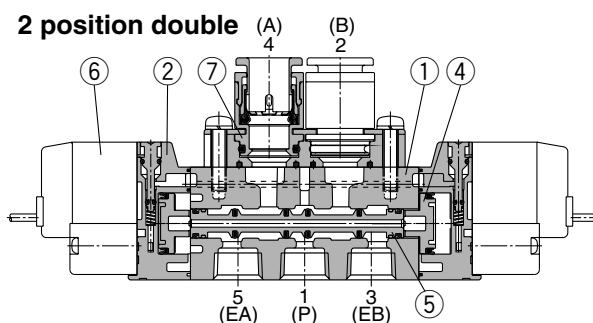
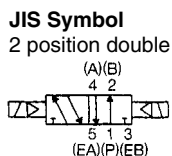
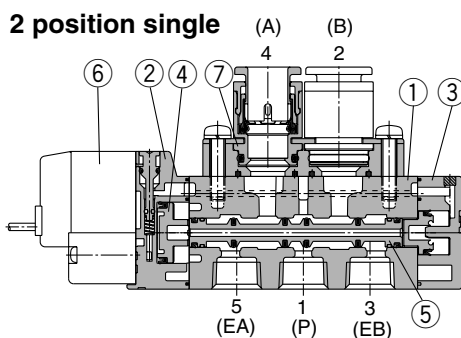
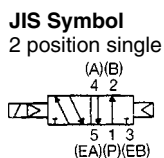
Valve model	Type of actuation		Port size		Flow characteristics						Weight (g)			
			1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grommet	L, M plug connector	DIN terminal	W M8 connector
			C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv						
SY9□20 -□-02	2 position	Single	1/4											
		Double												
	3 position	Closed center												
		Exhaust center												
SY9□20 -□-03	2 position	Single	3/8											
		Double												
	3 position	Closed center												
		Exhaust center												
SY9□20 -□-C8	2 position	Single	1/4	C8 (One-touch fitting for ø8)										
		Double												
	3 position	Closed center												
		Exhaust center												
SY9□20 -□-C10	2 position	Single	1/4	C10 (One-touch fitting for ø10)										
		Double												
	3 position	Closed center												
		Exhaust center												
SY9□20 -□-C12	2 position	Single	1/4	C12 (One-touch fitting for ø12)										
		Double												
	3 position	Closed center												
		Exhaust center												

Note [] : Denotes normal position.

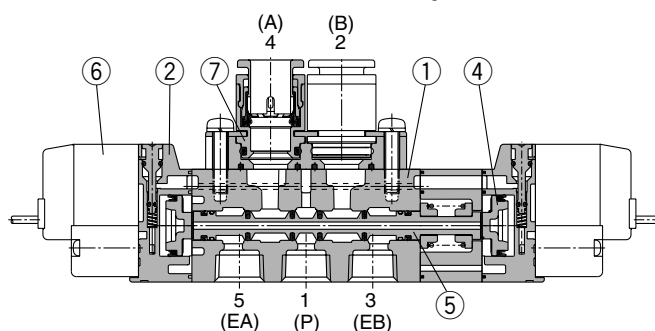
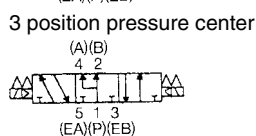
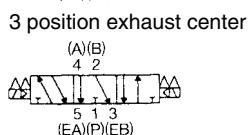
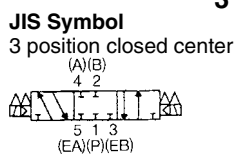


Construction

Series SY



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, HNBR	—

Replacement Parts

No.	Description	Part no.
⑥	Pilot valve assembly	Refer to "How to Order Pilot Valve Assembly" on page 1-4-10.
⑦	M5 port block assembly	Refer to "How to Order Port Block Assembly" on page 1-4-11.

Bracket Assembly Part No.

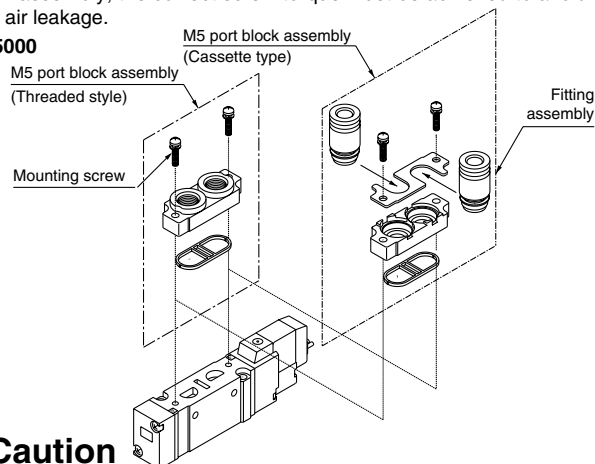
Description	part no.
Bracket (For F1)	SX ³ 000-16-2A (with mounting screw)
Bracket (For F2)	SX ³ 000-16-1A (with mounting screw)

* SY9000 has no bracket.

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 1-4-11 for part no.

How to Order Pilot Valve Assembly

How to Order Connector Assembly for L/M Plug Connector

V111-5-G

Coil specifications

Nil	Standard: DC specifications
A	Standard: AC specifications
T	With power saving circuit (24 VDC, 12 VDC only)

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

Rated voltage

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC
1	100 VDC ^{50/60} Hz
2	200 VAC ^{50/60} Hz
3	110 VAC ^{50/60} Hz [115 VAC ^{50/60} Hz]
4	220 VAC ^{50/60} Hz [230 VAC ^{50/60} Hz]

* For type "W□", DC voltage is only available.

Light/Surge voltage suppressor

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

G	Grommet, 300 mm lead wire	
H	Grommet, 600 mm lead wire	
L	L plug connector	With lead wire
LN		Without lead wire
LO	Without connector	
M	M plug connector	With lead wire
MN		Without lead wire
MO		Without connector
WO	M8 connector Without connector cable	

Note) For connector cable of M8 connector, refer to page 1-4-209.

For DC: SY100-30-4A

For 100 VAC: SY100-30-1A

For 200 VAC: SY100-30-2A

For other voltages of AC: SY100-30-3A

Without lead wire: SY100-30-A

(with connector and 2 of sockets only)

Lead wire length

Nil	300 mm
6	600 mm
10	1000 mm
15	1500 mm
20	2000 mm
25	2500 mm
30	3000 mm
50	5000 mm

How to Order M8 Connector Cable

Straight type

V100-49-1-

Cable length

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

DIN terminal type

V115-5-D

Rated voltage

5	24 VDC
6	12 VDC
1	100 VAC ^{50/60} Hz
2	200 VAC ^{50/60} Hz
3	110 VAC ^{50/60} Hz [115 VAC ^{50/60} Hz]
4	220 VAC ^{50/60} Hz [230 VAC ^{50/60} Hz]

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

Light/Surge voltage suppressor

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

* "DOZ" is not available.

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

D	DIN	With connector
DO	terminal	Without connector

Note) Do not replace V111 (G, H, L, M) to V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

How to Order Port Block Assembly

SY 000—6A—

Series

3	SY3000
5	SY5000
7	SY7000
9	SY9000

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

A, B port size

Thread piping

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

One-touch fitting (Metric size)

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

One-touch fitting (Inch size)

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

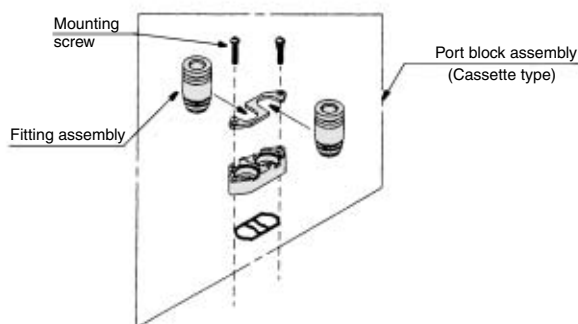
* Only replacement of the fittings assembly is possible.

Metric size

SY3000	One-touch fitting for ø4	VVQ1000-50A-C4
	One-touch fitting for ø6	VVQ1000-50A-C6
SY5000	One-touch fitting for ø4	VVQ1000-51A-C4
	One-touch fitting for ø6	VVQ1000-51A-C6
	One-touch fitting for ø8	VVQ1000-51A-C8
SY7000	One-touch fitting for ø8	VVQ2000-51A-C8
	One-touch fitting for ø10	VVQ2000-51A-C10
SY9000	One-touch fitting for ø8	VVQ4000-50B-C8
	One-touch fitting for ø10	VVQ4000-50B-C10
	One-touch fitting for ø12	VVQ4000-50B-C12

Inch size

SY3000	One-touch fitting for ø 5/32"	VVQ1000-50A-N3
	One-touch fitting for ø 1/4"	VVQ1000-50A-N7
SY5000	One-touch fitting for ø 5/32"	VVQ1000-51A-N3
	One-touch fitting for ø 1/4"	VVQ1000-51A-N7
	One-touch fitting for ø 5/16"	VVQ1000-51A-N9
SY7000	One-touch fitting for ø 5/16"	VVQ2000-51A-N9
	One-touch fitting for ø 3/8"	VVQ2000-51A-N11
SY9000	One-touch fitting for ø 5/16"	VVQ4000-50B-N9
	One-touch fitting for ø 3/8"	VVQ4000-50B-N11



SV

SZ

SY

SYJ

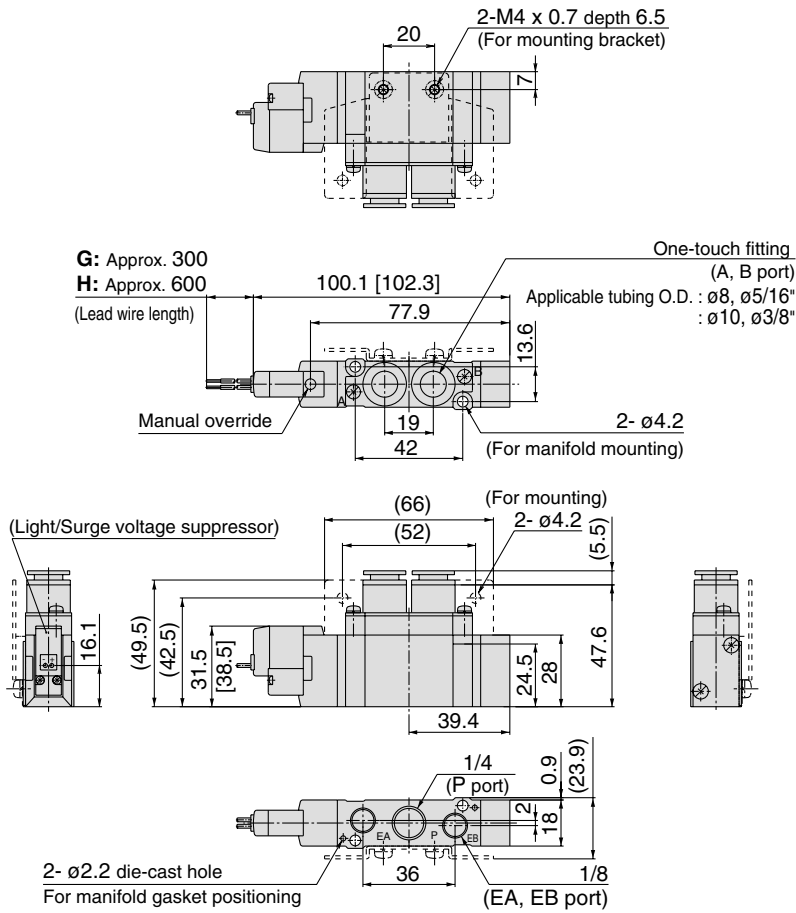
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Dimensions: Series SY7000

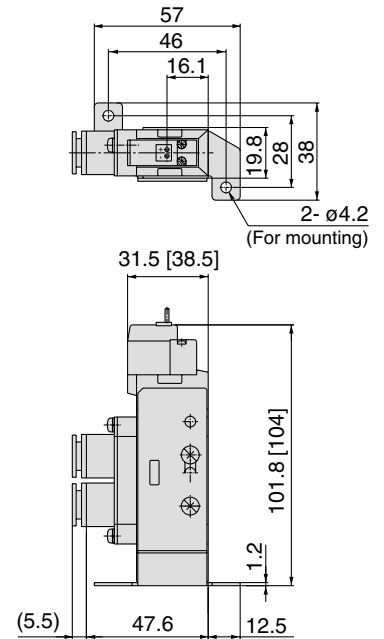


2 position single

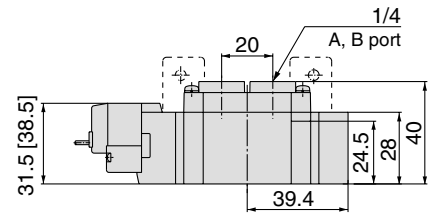
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C10, N11 □(-F2)



SY7120-□_G□□-C8, N9
C10, N11 □(-F1)



SY7120-□_G□□-02□(-F2)



L plug connector (L) :

SY7120-□_L□□-C8, N9
C10, N11 □(-F₂¹)

M plug connector (M) :

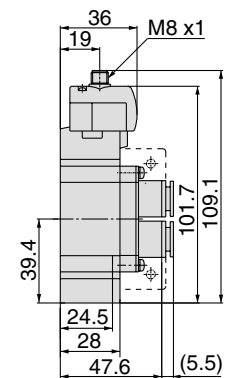
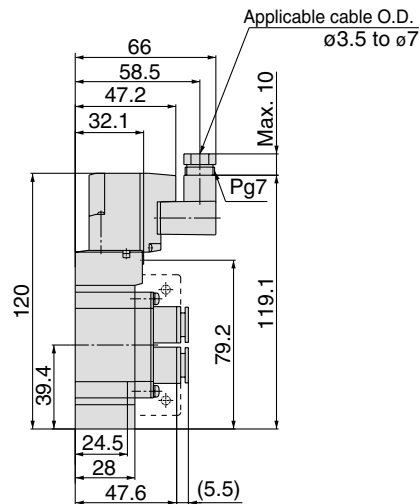
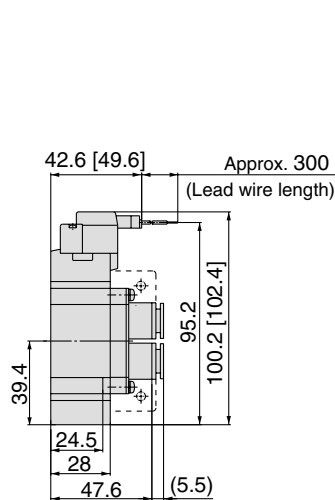
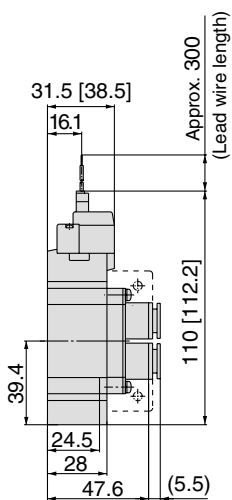
SY7120-□_M□□-C8, N9
C10, N11 □(-F₂¹)

DIN terminal (D) :

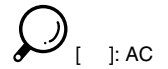
SY7120-□_D□□-C8, N9
C10, N11 □(-F₂¹)

M8 connector (WO) :

SY7120-□_{WO}□□-C8, N9
C10, N11 □(-F₂¹)



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

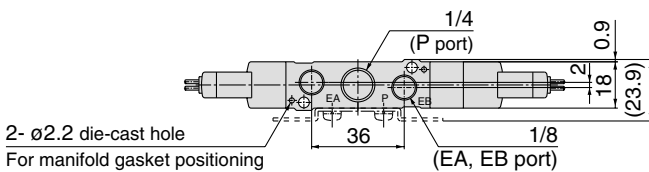
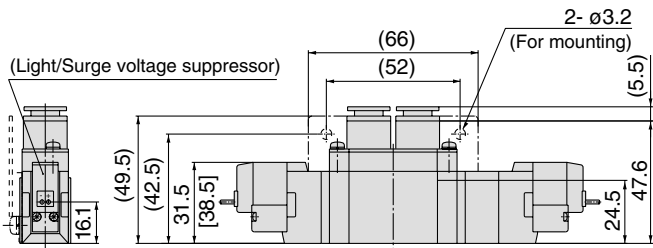
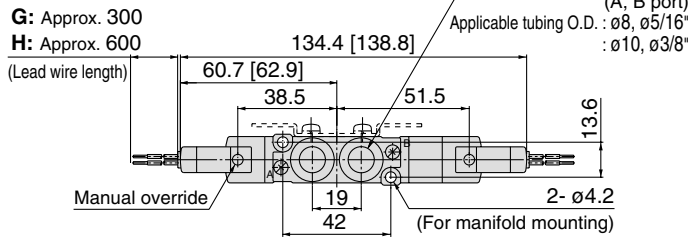
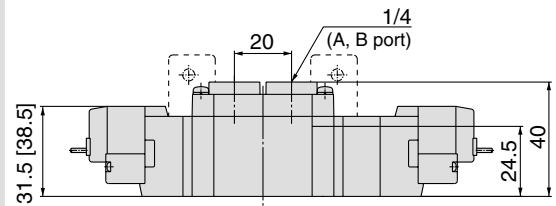
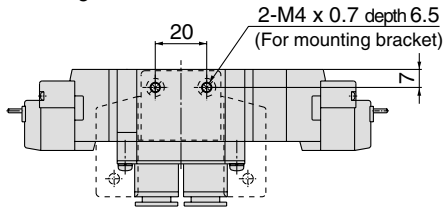


Dimensions: Series SY7000

3 position closed center/exhaust center/pressure center

Grommet (G), (H): SY7³/₅20-□G□□-C8, N9□(-F2)
C10, N11□(-F2)

SY7³/₅20-□H□□-02□(-F2)



L plug connector (L):

SY7³/₅20-□L□□-C8, N9□(-F2)
C10, N11□(-F2)

M plug connector (M):

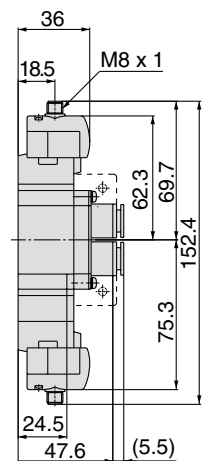
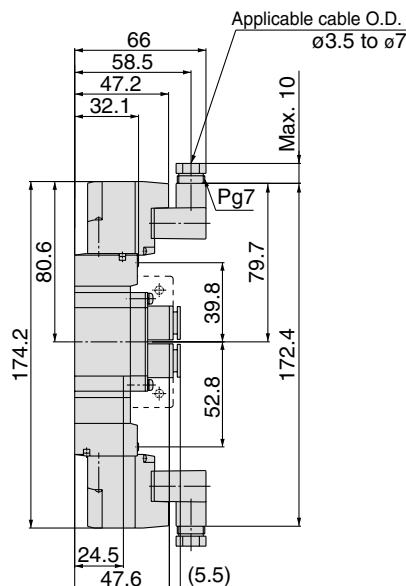
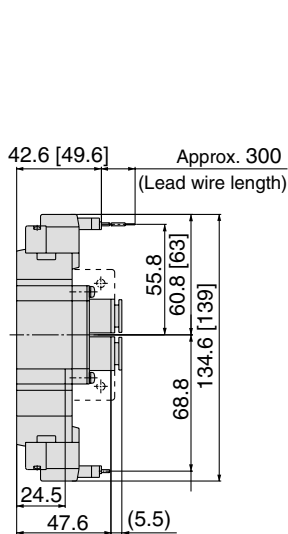
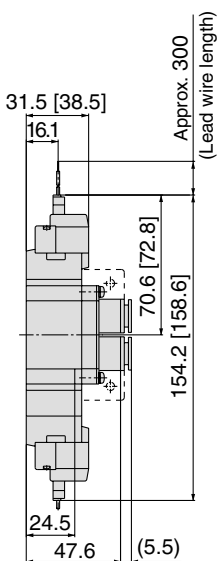
SY7³/₅20-□M□□-C8, N9□(-F2)
C10, N11□(-F2)

DIN terminal (D):

SY7³/₅20-□D□□-C8, N9□(-F2)
C10, N11□(-F2)

M8 connector (WO):

SY7³/₅20-□WO□□-C8, N9□(-F2)
C10, N11□(-F2)



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



Series SY3000/5000/7000/9000 Base Mounted Valve Single Unit

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
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, 12 VDC only)

Rated voltage

DC

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

AC (50/60 Hz)

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

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

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		Electrical entry for D	
Nil	Without light/surge voltage suppressor	Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor	S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor	Z	With light/surge voltage suppressor (Non-polar type)
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.

* "DOZ" is 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 plug connector	DIN terminal (Except SY3000)	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 	D: With connector 	WO: Without connector cable
H: Lead wire length 600 mm 	LN: Without lead wire 	LO: Without connector 	MO: Without connector 	DO: Without connector 	

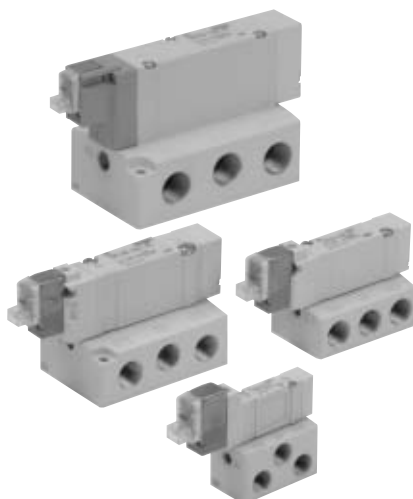
* Power saving circuit is not available in the case of "D", "DO" or "W□" type.

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

* "LN", "MN" type: with 2 sockets.
* For DIN terminal of SY3000 series, refer to page 1-4-207.

* DIN terminal type "Y" conforming to DIN43650C standard is also available. For details, refer to page 1-4-201.
* For connector cable of M8 connector, refer to page 1-4-210.

Specifications



Made to Order Specification
(For details, refer to pages 1-4-188 to 202.)

Series		SY3000	SY5000	SY7000	SY9000
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			
External pilot Operating pressure range (MPa)	Operating pressure range		-100 kPa to 0.7		
	Pilot pressure range	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. Refer to page 1-7-4.)			
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/s ²) ^{Note)}		150/30			
Enclosure		Dustproof (* DIN terminal, M8 connector conforms to IP65)			

* Based on IEC529)

Note) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states 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)

SV

SZ

SY

SYJ

SX

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 light/surge voltage suppressor		With light/surge voltage suppressor	
	Type S, Z	Type R, U	Type S, Z	Type R, U
2 position single	12 or less	15 or less	12 or less	15 or less
2 position double	10 or less	13 or less	10 or less	13 or less
3 position	15 or less	20 or less	16 or less	20 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	Type S, Z	Type R, U
2 position single	19 or less	26 or less	19 or less	26 or less
2 position double	18 or less	22 or less	18 or less	22 or less
3 position	32 or less	38 or less	32 or less	38 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	Type S, Z	Type R, U
2 position single	31 or less	38 or less	33 or less	40 or less
2 position double	27 or less	30 or less	28 or less	35 or less
3 position	50 or less	56 or less	50 or less	56 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	Type S, Z	Type R, U
2 position single	35 or less	41 or less	35 or less	41 or less
2 position double	35 or less	41 or less	35 or less	41 or less
3 position	62 or less	64 or less	62 or less	64 or less

Solenoid Specifications

Electrical entry		Grommet (G), (H) L plug connector: L M plug connector: M DIN terminal (D) M8 connector (W)	
Coil rated voltage (V)	DC	24, 12, 6, 5, 3	
	AC 50/60Hz	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)	
	AC	With power saving circuit 0.1 (With indicator light only)	
Apparent power	AC	100 V	1.4 (With indicator light: 1.5)
		110 V [115 V]	1.6 (With indicator light: 1.7) 1.7 (With indicator light: 1.8)
		200 V	2.3 (With indicator light: 2.4)
		220 V [230 V]	2.5 (With indicator light: 2.6) 2.7 (With indicator light: 2.8)
		Surge voltage suppressor	Diode (Varistor is for DIN terminal and Non-polar type.)
Indicator light		LED (AC of DIN terminal is neon bulb.)	



* 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.

Flow Characteristics/Weight

Series SY3000

Valve model	Type of actuation		Port size	Flow 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										
	3 position	Closed center		0.77	0.28	0.18	0.85	0.30	0.19			
		Exhaust center		0.73	0.31	0.18	1.1 (0.55)	0.26 (0.52)	0.24 (0.16)			
		Pressure center		1.2 (0.51)	0.24 (0.45)	0.29 (0.14)	0.89	0.47	0.24			
				104 (69)	109 (74)	117 (82)						

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

Series SY5000

Valve model	Type of actuation		Port size	Flow 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 (82)	127 (65)
		Double											
	3 position	Closed center		1.8	0.47	0.50	1.8	0.40	0.47				
		Exhaust center		1.4	0.55	0.44	3.0 (1.2)	0.33 (0.48)	0.72 (0.37)				
		Pressure center		3.3 (0.84)	0.36 (0.60)	0.85 (0.28)	1.8	0.40	0.48				
				144 (82)	150 (87)	192 (129)	158 (95)						

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

Series SY7000

Valve model	Type of actuation		Port size	Flow 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 position	Closed center		3.0	0.43	0.80	2.6	0.41	0.72				
		Exhaust center		2.6	0.42	0.71	4.7 (1.7)	0.35 (0.48)	1.1 (0.49)				
		Pressure center		5.3 (2.3)	0.39 (0.49)	1.3 (0.65)	2.2	0.49	0.63				
				239 (110)	245 (116)	287 (158)	253 (124)						
SY7□40-□-03	2 position	Single	3/8	4.9	0.29	1.2	4.5	0.27	1.1	218 (89)	221 (92)	242 (113)	225 (96)
		Double											
	3 position	Closed center		3.0	0.40	0.80	2.6	0.45	0.73				
		Exhaust center		2.6	0.42	0.71	4.8 (1.7)	0.35 (0.48)	1.1 (0.49)				
		Pressure center		5.3 (2.3)	0.31 (0.51)	1.3 (0.64)	2.3	0.45	0.66				
				239 (110)	245 (116)	287 (158)	253 (124)						

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

Series SY9000

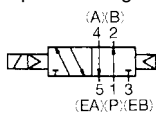
Valve model	Type of actuation		Port size	Flow characteristics ^{Note 1)}						Weight (g) ^{Note 2)}			
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	L plug connector, M plug connector	DIN terminal	W M8 connector
				C (dm ³ /(s·bar))	b	Cv	C (dm ³ /(s·bar))	b	Cv				
SY9□40-□-03	2 position	Single	3/8	7.9	0.34	2.0	9.6	0.43	2.6	469(172)	472(175)	493(196)	476(179)
		Double											
	3 position	Closed center		7.5	0.33	1.8	7.3	0.30	1.7				
		Exhaust center		7.2	0.34	1.7	13 (4.0)	0.23 (0.41)	2.8 (0.95)				
		Pressure center		12 (3.3)	0.26 (0.41)	2.8 (0.84)	6.7	0.40	1.9				
				512(215)	518(221)	560(263)	526(229)						
SY9□40-□-04	2 position	Single	1/2	8.0	0.48	2.2	10	0.29	2.5	448 (151)	453 (156)	472	457(160)
		Double											
	3 position	Closed center		7.6	0.32	1.8	7.3	0.32	1.8				
		Exhaust center		7.3	0.42	2.0	13 (4.7)	0.32 (0.54)	3.6 (1.5)				
		Pressure center		12 (3.3)	0.33 (0.51)	3.3 (0.94)	7.4	0.33	1.9				
				491 (194)	497 (200)	539	505(208)						

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

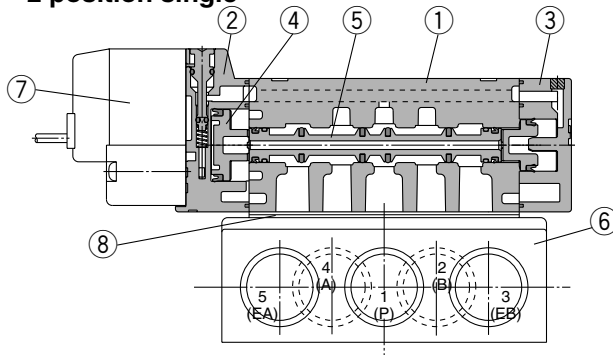
Construction

Series SY

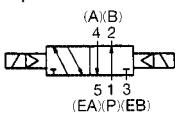
JIS Symbol
2 position single



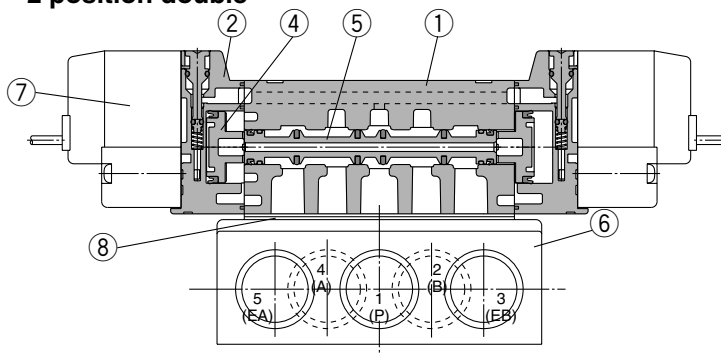
2 position single



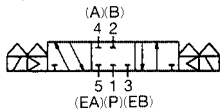
JIS Symbol
2 position double



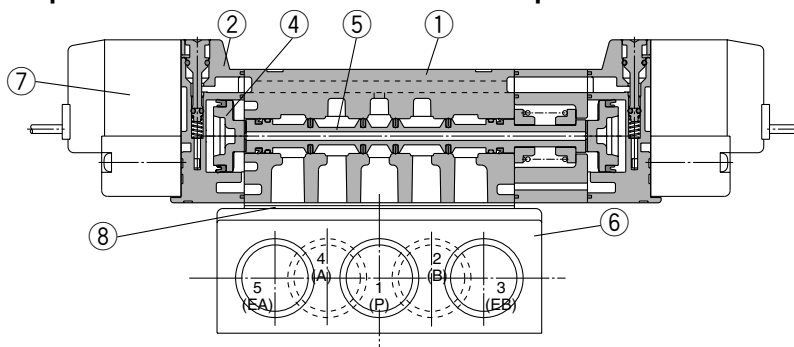
2 position double



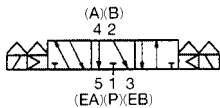
JIS Symbol
3 position closed center



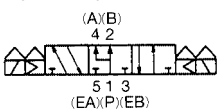
3 position closed center/exhaust center/pressure center



JIS Symbol
3 position exhaust center



JIS Symbol
3 position 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, HNBR	—

Replacement Parts

No.	Description	Part no.				Note
		SY3□40	SY5□40	SY7□40	SY9□40	
⑥	Sub-plate	SY3000-27-1*	SY5000-27-1*	1/4: SY7000-27-1* 3/8: SY7000-27-2*	3/8: SY9000-27-1* 1/2: SY9000-27-2*	Aluminum die-casted
⑦	Pilot valve assembly	Refer to "How to Order Pilot Valve Assembly" on page 1-4-187.				
⑧	Gasket	SY3000-11-25	SY5000-11-15	SY7000-11-11	SY9000-11-2	HNBR
—	Round head combination screw	SY3000-23-4 (M2 x 21)	M3 x 26	M4 x 31	SY9000-18-2 (M3 x 42)	For valve mounting (Matt nickel plated)

* Thread type

⚠ Caution

Mounting screw
tightening torques

M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

How to Order Pilot Valve Assembly



Coil specifications

Nil	Standard: DC specifications
A	Standard: AC specifications
T	With power saving circuit (24 VDC, 12 VDC only)

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

Rated voltage

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC
1	100 VAC $\frac{50}{60}$ Hz
2	200 VAC $\frac{50}{60}$ Hz
3	110 VAC $\frac{50}{60}$ Hz [115 VAC $\frac{50}{60}$ Hz]
4	220 VAC $\frac{50}{60}$ Hz [230 VAC $\frac{50}{60}$ Hz]

* For type "W□", DC voltage is only available.

Light/Surge voltage suppressor

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)

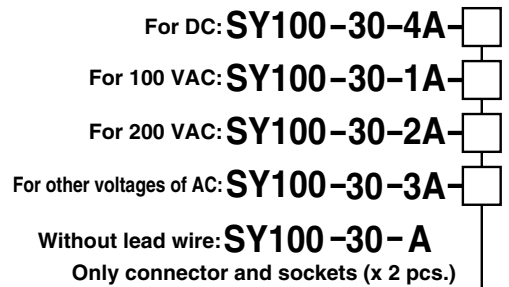
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
* For "R" and "U", DC voltage is only available.
* Power saving circuit is only available in the "Z" type.

Electrical entry

G	Grommet, 300 mm lead wire	
H	Grommet, 600 mm lead wire	
L	L plug connector	With lead wire
LN		Without lead wire
LO	Without connector	
M	M plug connector	With lead wire
MN		Without lead wire
MO		Without connector
WO	M8 connector Without connector cable	

Note) For connector cable of M8 connector, refer to page 1-4-210.

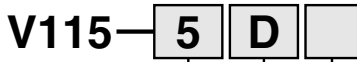
How to Order Connector Assembly for L/M Plug Connector



Lead wire length

Nil	300 mm
6	600 mm
10	1000 mm
15	1500 mm
20	2000 mm
25	2500 mm
30	3000 mm
50	5000 mm

DIN terminal type



Rated voltage

5	24 VDC
6	12 VDC
1	100 VAC $\frac{50}{60}$ Hz
2	200 VAC $\frac{50}{60}$ Hz
3	110 VAC $\frac{50}{60}$ Hz [115 VAC $\frac{50}{60}$ Hz]
4	220 VAC $\frac{50}{60}$ Hz [230 VAC $\frac{50}{60}$ Hz]

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

Light/Surge voltage suppressor

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

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

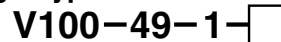
Electrical entry

D	DIN terminal	With connector
DO	terminal	Without connector

Note) Do not replace V111 (G, H, L, M) to V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

How to Order M8 Connector Cable

Straight type



Cable length

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

How to Order Interface Regulator

Series SY3000

ARBY3000-05-P-2

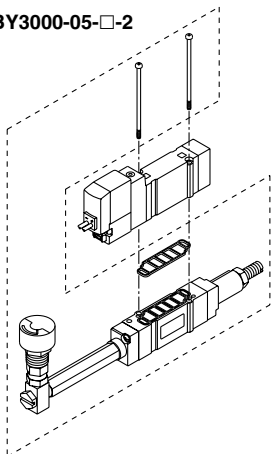
Pressure gauge
connection port

Regulating port

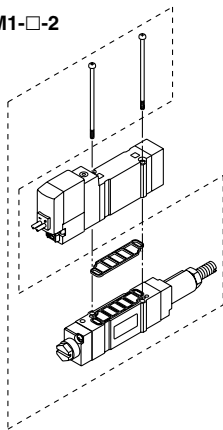
05	Pressure gauge (G15-10-01)
M1	Plug (M-5P)

P	P port
A1	A port (P controlled type, A port regulation)
B1	B port (P controlled type, B port regulation)

ARBY3000-05-□-2



ARBY3000-M1-□-2



Series SY5000

ARBY5000-00-P-2

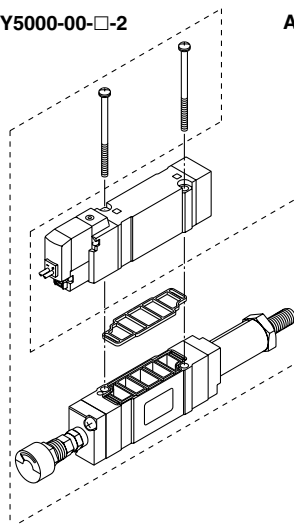
Pressure gauge
connection port

Regulating port

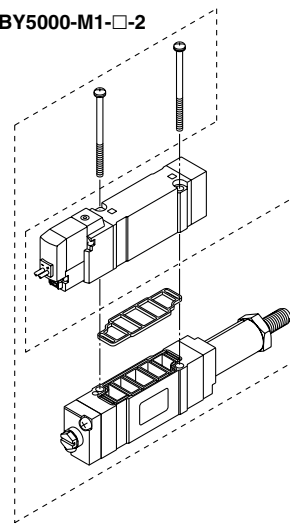
00	Pressure gauge (G15-10-01)
M1	Plug (M-5P)

P	P port
A1	A port (P controlled type, A port regulation)
B1	B port (P controlled type, B port regulation)

ARBY5000-00-□-2



ARBY5000-M1-□-2



Series SY7000

ARBY7000-00-P-2

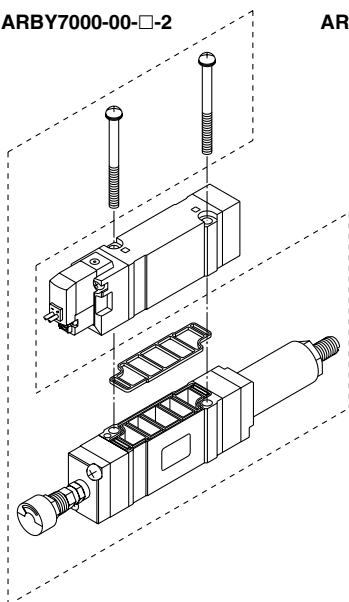
Pressure gauge
connection port

Regulating port

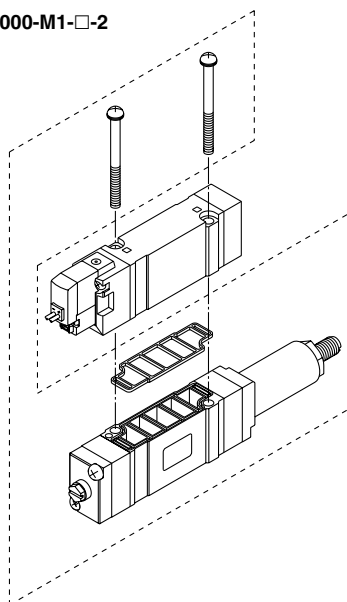
00	Pressure gauge (G15-10-01)
M1	Plug (M-5P)

P	P port
A1	A port (P controlled type, A port regulation)
B1	B port (P controlled type, B port regulation)

ARBY7000-00-□-2



ARBY7000-M1-□-2



Accessory

Series	Round head combination screw	Gasket
ARBY3000	SY3000-23-10 (M2 x 36)	SX3000-57-4
ARBY5000	M3 x 48.5, Matt nickel plated	SX5000-57-6
ARBY7000	M4 x 57, Matt nickel plated	SX7000-57-4

⚠ Caution

Mounting screw
tightening torques

M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

SV

SZ

SY

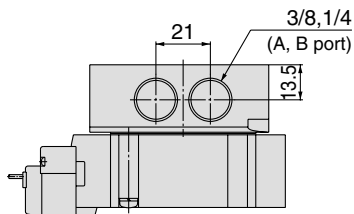
SYJ

SX

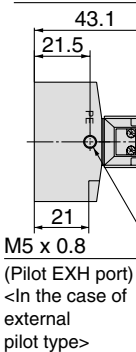
Dimensions: Series SY7000

2 position single

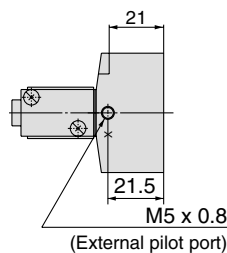
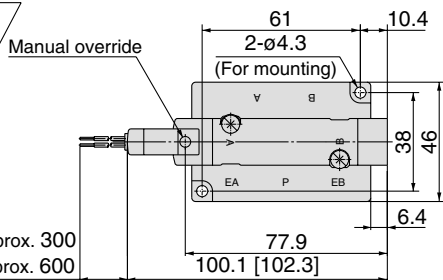
Grommet (G), (H): SY7140(R)-□_G□□-02□□



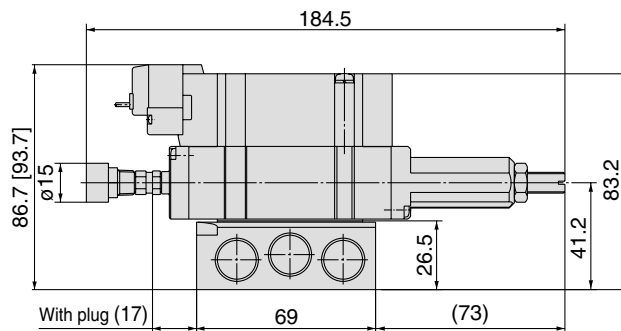
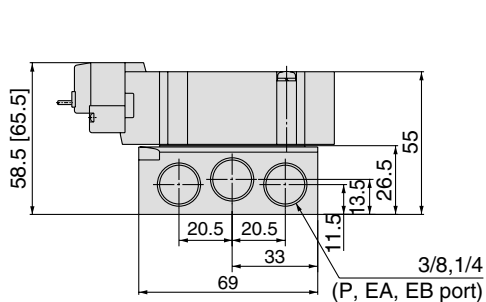
(Light/Surge voltage suppressor)



G: Approx. 300
H: Approx. 600
(Lead wire length)



With interface regulator

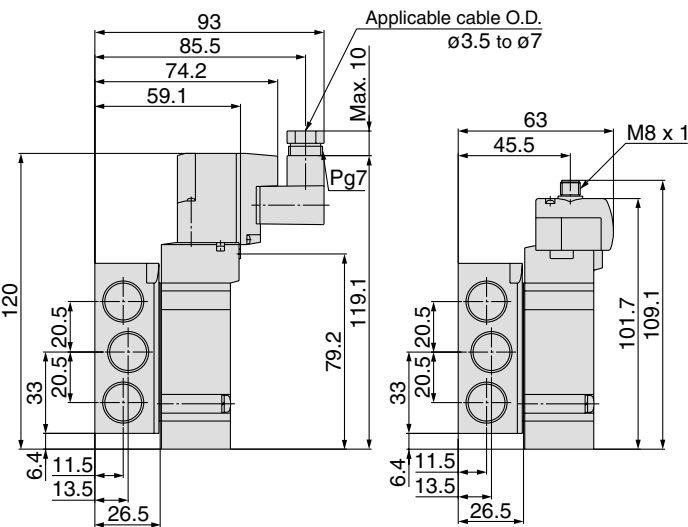
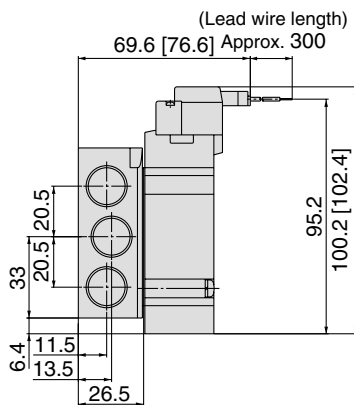
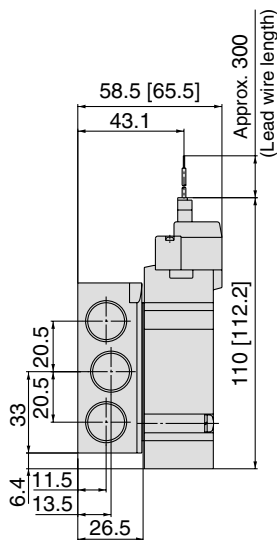


L plug connector (L): SY7140(R)-□L□□-02□□

M plug connector (M): SY7140(R)-□M□□-02□□

DIN terminal (D): SY7140(R)-□D□□-02□□

M8 connector (WO): SY7140(R)-□WO□□-02□□



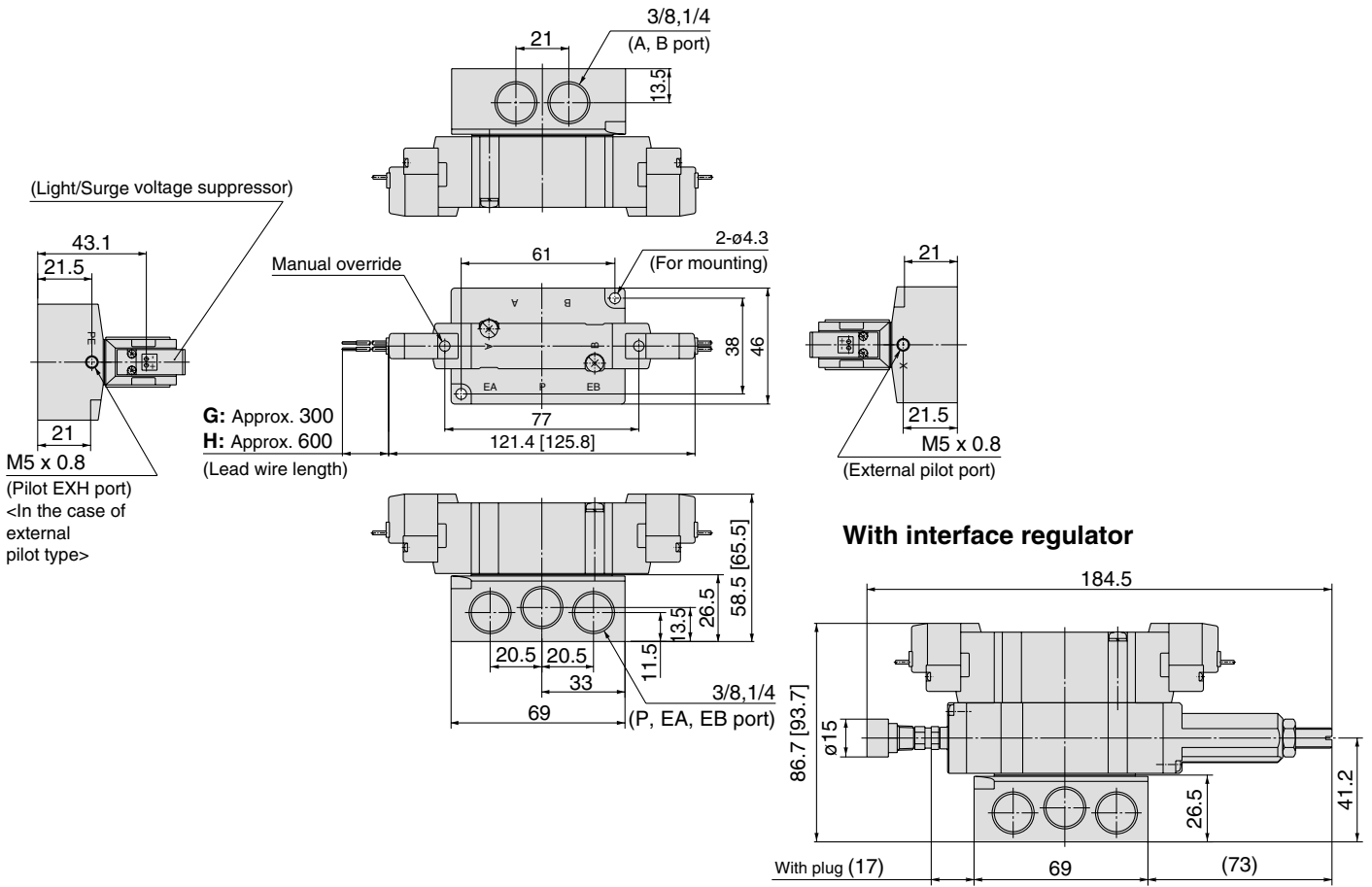
Note) Refer to page 1-4-210 for dimensions of connector types.

Dimensions: Series SY7000



2 position double

Grommet (G), (H): SY7240(R)-□G□□-02□□
 H□□□-03□□



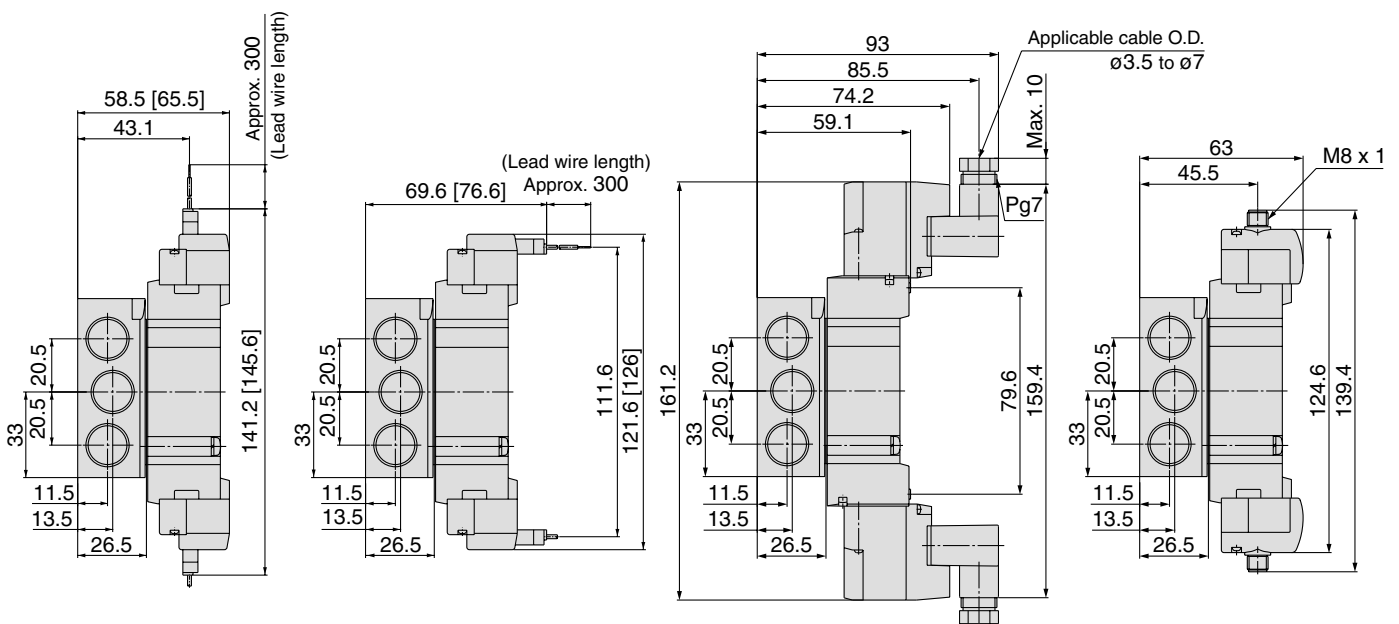
- SV
- SZ
- SY**
- SYJ
- SX

L plug connector: L
 SY7240(R)-□L□□-02□□
 H□□□-03□□

M plug connector: M
 SY7240(R)-□M□□-02□□
 H□□□-03□□

DIN terminal (D):
 SY7240(R)-□D□□-02□□
 H□□□-03□□

M8 connector (WO):
 SY7240(R)-□WO□□-02□□
 H□□□-03□□

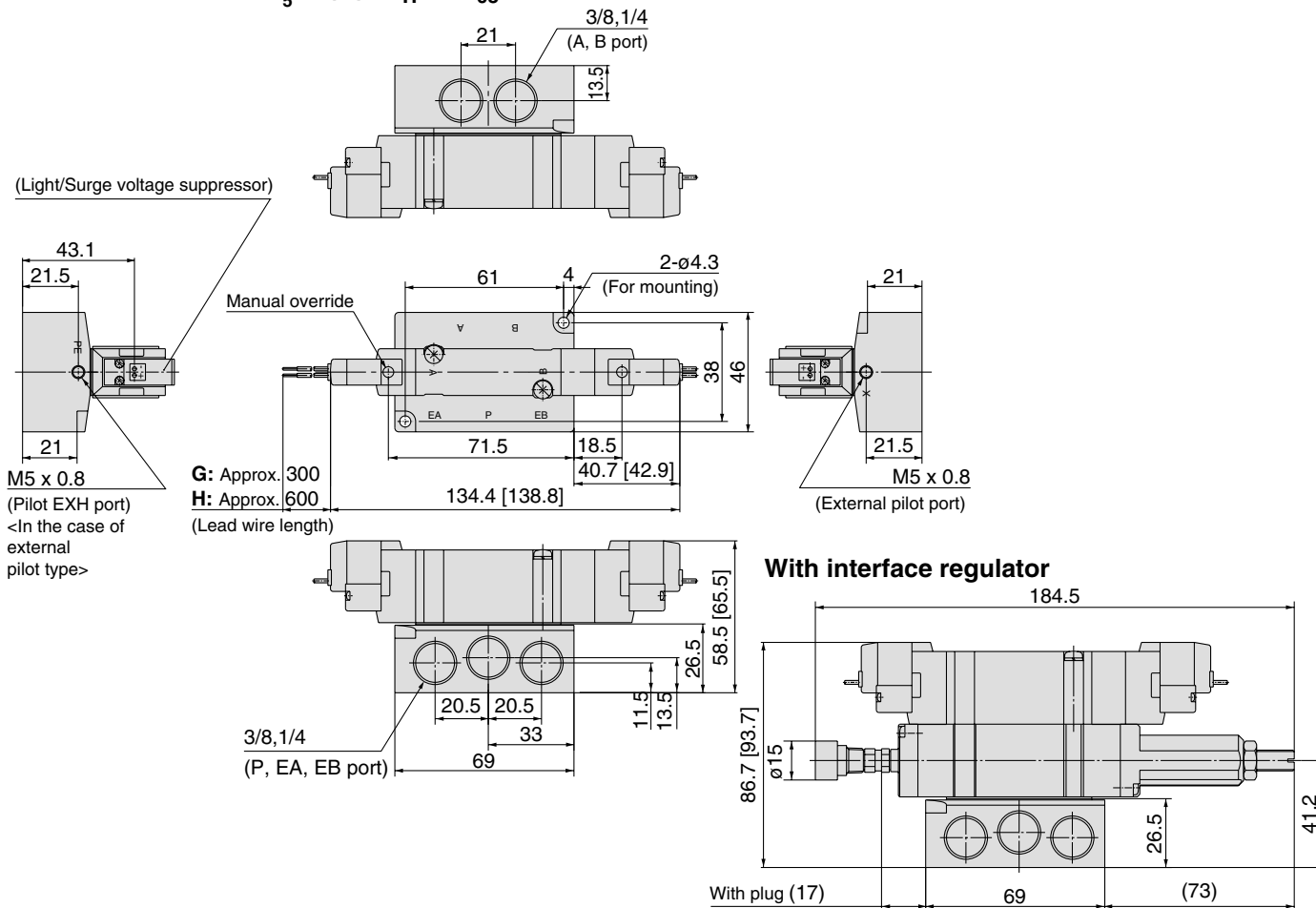


Note) Refer to page 1-4-210 for dimensions of connector types.

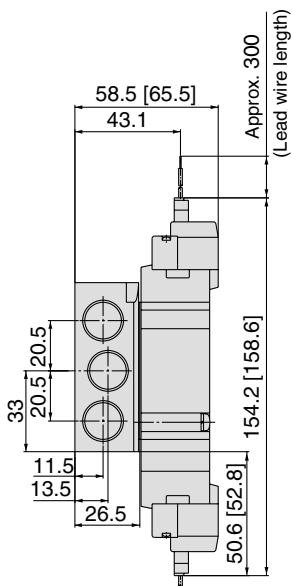
Dimensions: Series SY7000

3 position closed center/exhaust center/pressure center

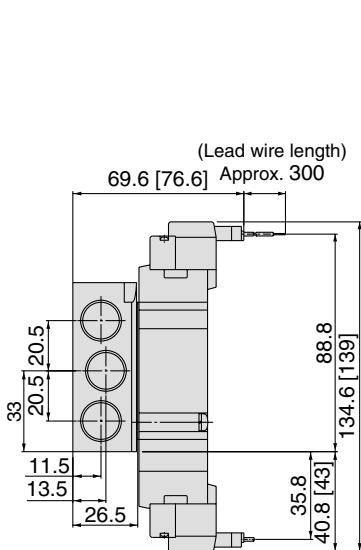
Grommet (G), (H): SY7³/₅40(R)-□G□□-02□□



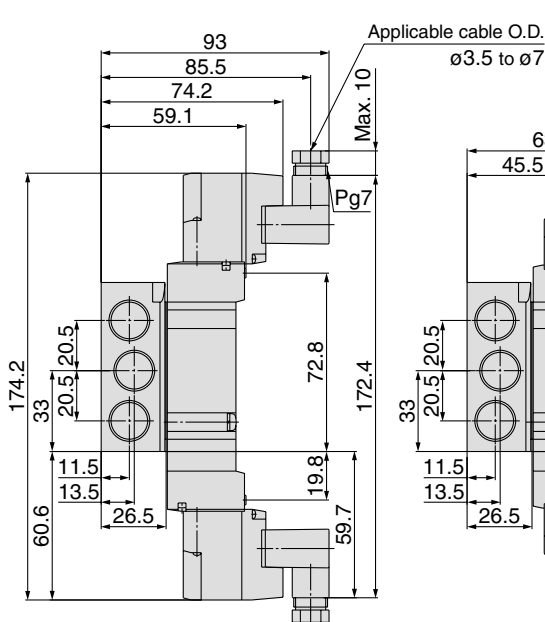
L plug connector: L
SY7³/₅40(R)-□L□□-02□□



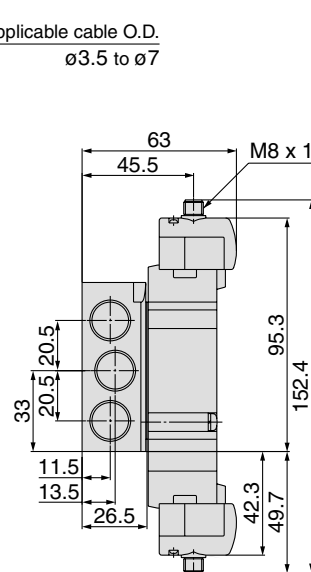
M plug connector: M
SY7³/₅40(R)-□M□□-02□□



DIN terminal (D):
SY7³/₅40(R)-□D□□-02□□



M8 connector (WO):
SY7³/₅40(R)-□WO□□-02□□

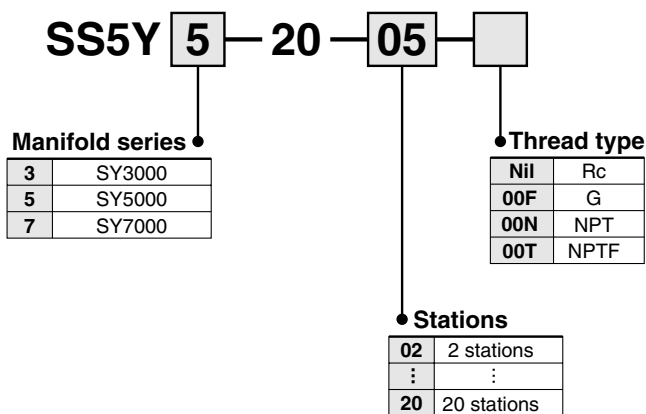



Note) Refer to page 1-4-210 for dimensions of connector types.

Series SY3000/5000/7000 Body Ported Manifold Bar Stock Type Individual Wiring

Type **20**

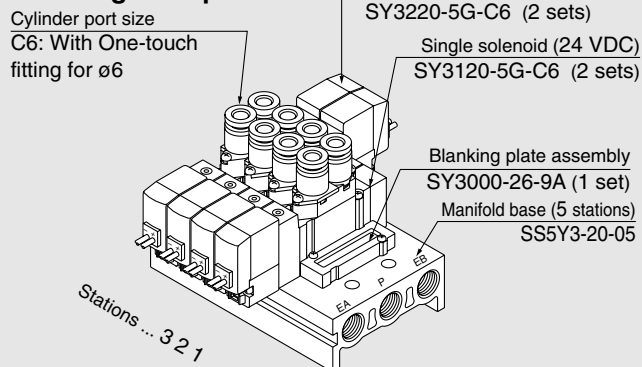
How to Order Manifold



 * This also includes the number of blanking plate assemblies.

How to Order Valve Manifold Assembly

Ordering example



- | | |
|----------------|--|
| SS5Y3-20-05 | 1 set (Type 20, 5 stations 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.

How to Order Valves

SY 5 1 20 [] 5 L [] [] 01 []

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 (24 VDC, 12 VDC only)



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

Rated voltage

DC		AC (50/60 Hz)	
5	24 VDC	1	100 VAC
6	12 VDC	2	200 VAC
V	6 VDC	3	110 VAC [115 VAC]
S	5 VDC	4	220 VAC [230 VAC]
R	3 VDC		



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

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

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



* "DOZ" is not available.

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

A, B port size
Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
01	1/8	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	
C4	One-touch fitting for ø4	
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	

One-touch fitting (Inch size)

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

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)	D: With connector	WO: Without connector cable
H: Lead wire length 600 mm	LN: Without lead wire	MN: Without lead wire	DO: Without connector	
	LO: Without connector	MO: Without connector		



* "LN", "MN" type: with 2 sockets.
* For DIN terminal of SY3000 series, refer to page 1-4-207.
* DIN terminal type "Y" conforming to DIN4365C standard is also available. For details, refer to catalog on page 1-4-201.
* For connector cable of M8 connector, refer to page 1-4-209.



Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary.
(For details, refer to catalog in page 1-4-61.)

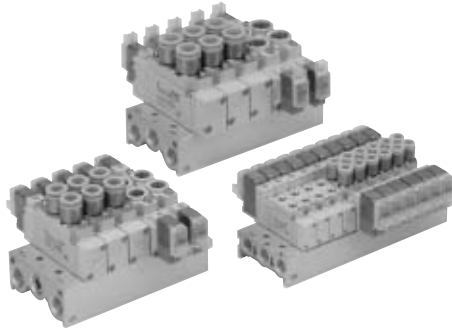
SV

SZ

SY


SYJ

SX



Manifold Specifications


Model	SS5Y3-20	SS5Y5-20	SS5Y7-20	
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 ^{Note 1)}			
A, B port location	Valve			
Port size	P, EA, EB port	1/8	1/4	1/4
	A, B port	M5 x 0.8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	1/8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	1/4 C8 (One-touch fitting for ø8) C10 (One-touch fitting for ø10)
Manifold base weight W (g) n: Stations	W = 13n + 35	W = 36n + 64	W = 43n + 64	

 Note 1) For more than 10 stations (more than 5 stations in the 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 1-4-61.

Flow Characteristics

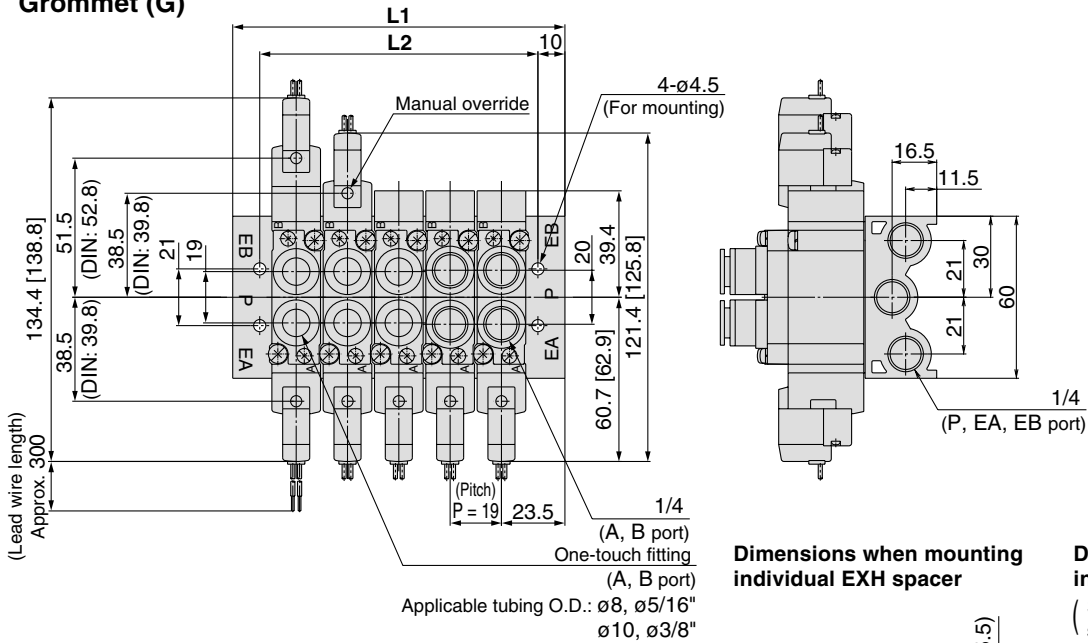
Model	Port size		Flow characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C (dm ³ /(s·bar))	b	Cv	C (dm ³ /(s·bar))	b	Cv
SS5Y3-20	1/8	C6	0.72	0.29	0.18	0.80	0.36	0.21
SS5Y5-20	1/4	C8	1.9	0.28	0.48	2.2	0.20	0.53
SS5Y7-20	1/4	C10	3.6	0.31	0.93	3.6	0.27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

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



SY7000: SS5Y7-20-Stations -

Grommet (G)

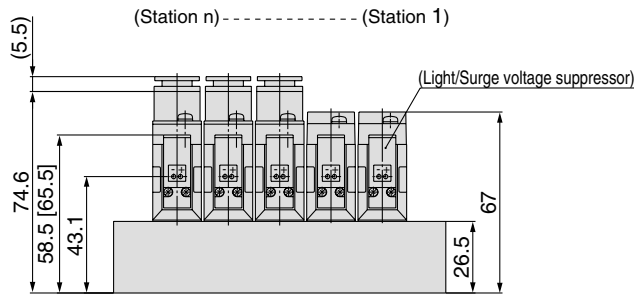
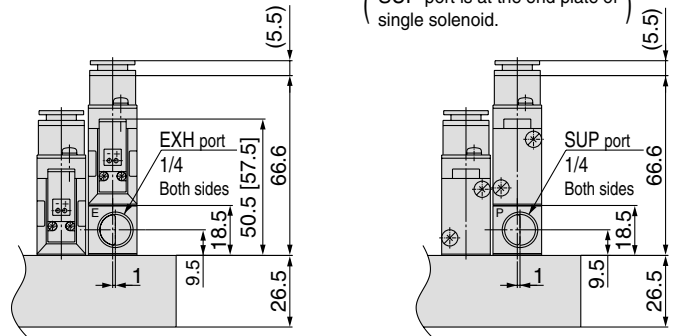


- SV
- SZ
- SY
- SYJ
- SX

Dimensions when mounting individual EXH spacer

Dimensions when mounting individual SUP spacer

(SUP port is at the end plate of single solenoid.)

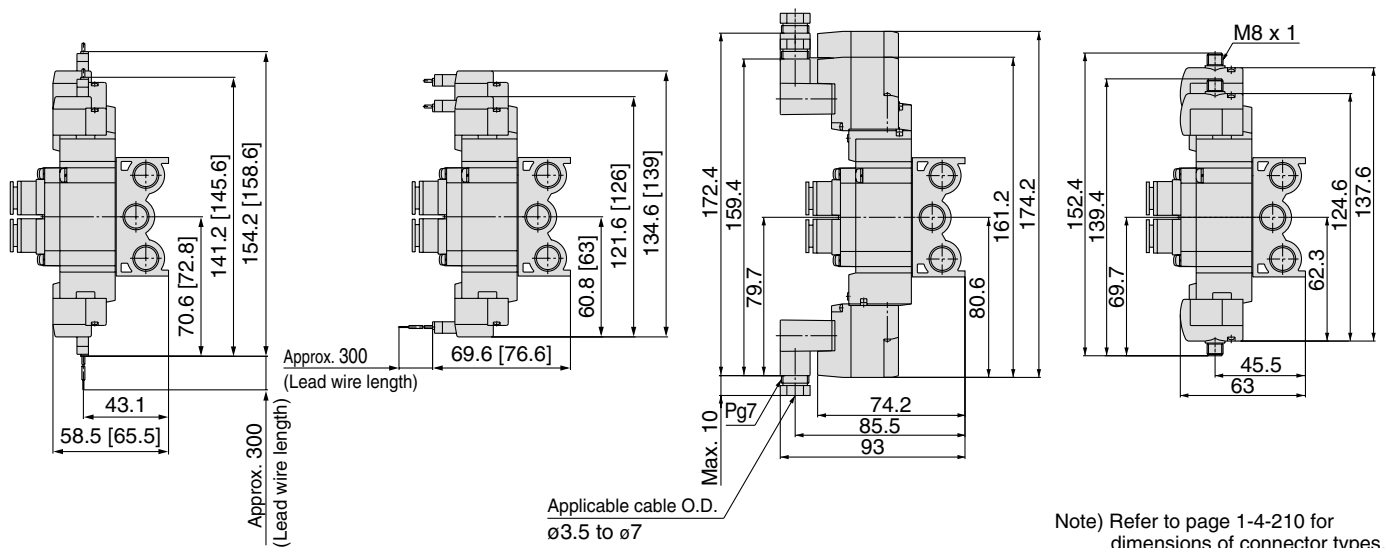


L plug connector (L)

M plug connector (M)

DIN terminal (D)

M8 connector (WO)



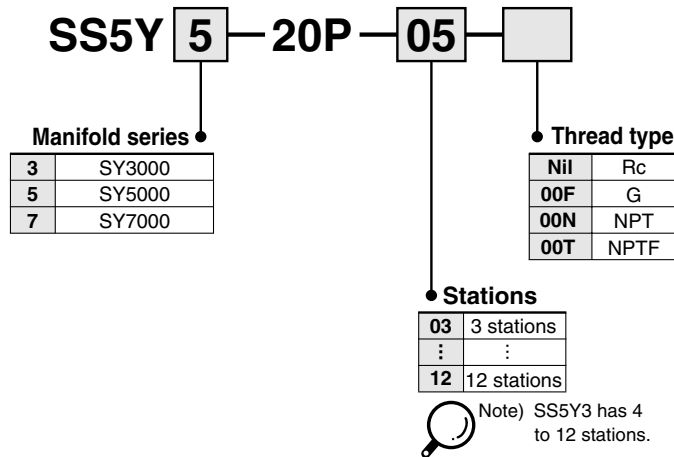
Note) Refer to page 1-4-210 for dimensions of connector types.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	66	85	104	123	142	161	180	199	218	237	256	275	294	313	332	351	370	389	408
L2	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388

Series SY3000/5000/7000 Body Ported Manifold Bar Stock Type Flat Ribbon Cable

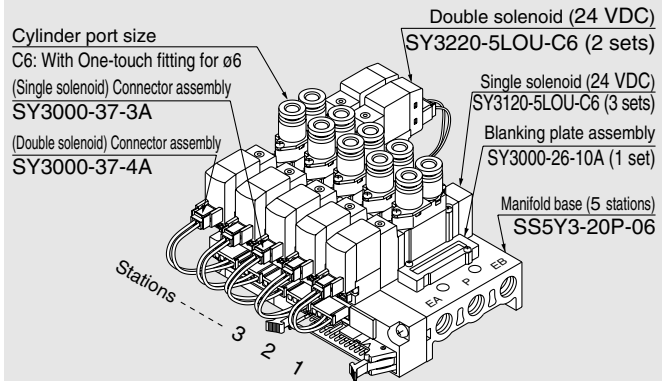
Type **20P**

How to Order Manifold



How to Order Valve Manifold Assembly

Ordering example



SS5Y3-20P-06	1 set (Type 20P, 6 stations 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.

How to Order Valves

Rated voltage

5	24 VDC
6	12 VDC

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

Rated voltage

1	100 VAC
3	110 VAC (115 VAC)

Manual override

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

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.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

A, B port size Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
01	1/8	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	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"	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 bolt for manifold and gasket are not attached. Order them separately, if necessary.
(For details, refer to page 1-4-61.)

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.

For DC: SY **5** **1** **20** — **5** LO **Z** **01**

For AC: SY **5** **1** **20** — **1** LO **Z** **01**

SV

SZ

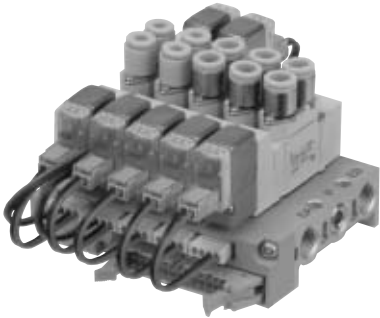
SY

SYJ

SX

- 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	SS5Y5-20P	SS5Y7-20P
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		
Port size	P, EA, EB port	1/8	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)
Manifold base weight W (g) n: Stations	W = 19n + 45	W = 43n + 77	W = 51n + 81
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	12, 24 VDC 100, 110 VAC		

Note 1) For more than 10 stations (more than 5 stations in the 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 1-4-61.

Flow Characteristics

Model	Port size		Flow 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.

How to Order Connector Assembly

For 12, 24 VDC

For DC	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

For 100 VAC

For DC	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

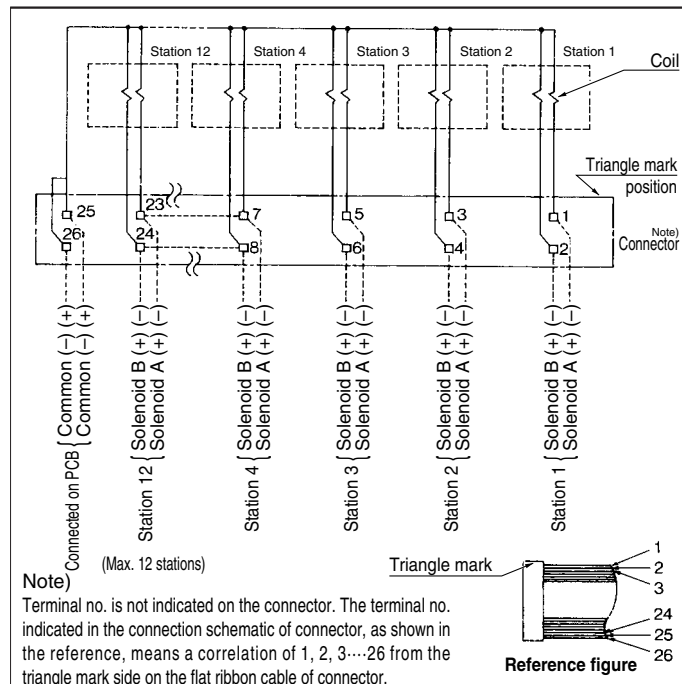
For 100 VAC (115 VAC)

For DC	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

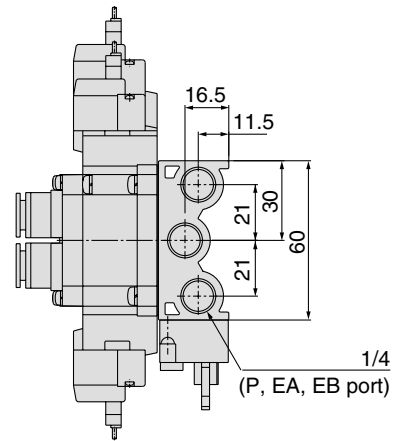
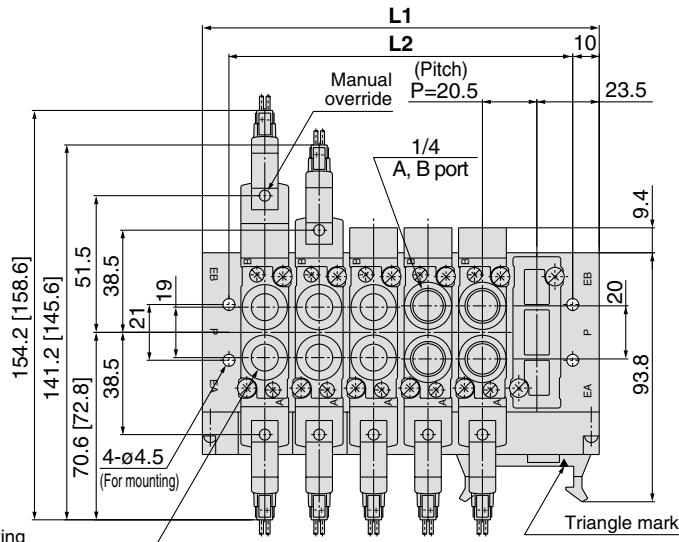
- For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.

Internal Wiring of Manifold (Non-polar Type)

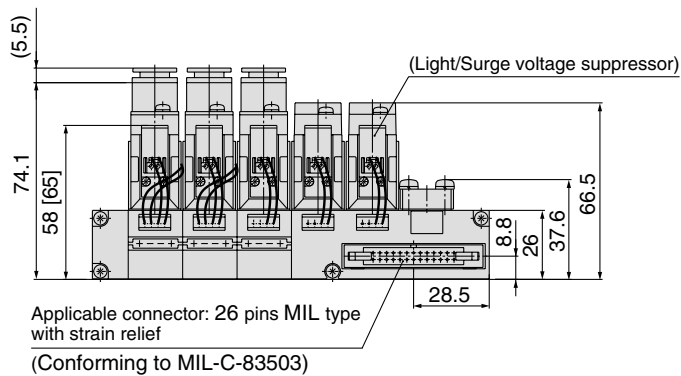


- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid A side.
- The maximum number of stations that can be accommodated is 12. For more stations, please contact SMC.

SY7000: SS5Y7-20P- Stations



One-touch fitting
 A, B port
 Applicable tubing O.D.: ø8, ø5/16"
 ø10, ø3/8" (Station n) ----- (Station 1)



SV

SZ

SY

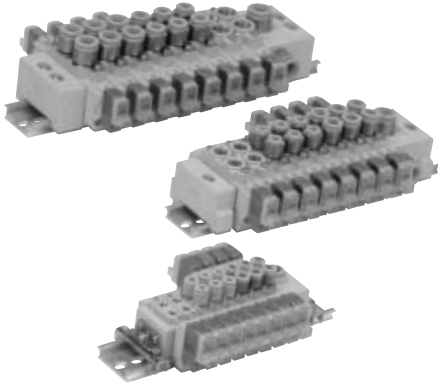
SYJ

SX

Stations n	3	4	5	6	7	8	9	10	11	12
L1	88	108.5	129	149.5	170	190.5	211	231.5	252	272.5
L2	68	88.5	109	129.5	150	170.5	191	211.5	232	252.5

Type **60**

Series SY3000/5000/7000 Body Ported Manifold Cassette Type



How to Order Manifold

SS5Y **3** — 60 — **05** **D** — [Option]

Series

3	SY3000
5	SY5000
7	SY7000

Valve stations

02	2 stations
⋮	⋮
20	20 stations

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

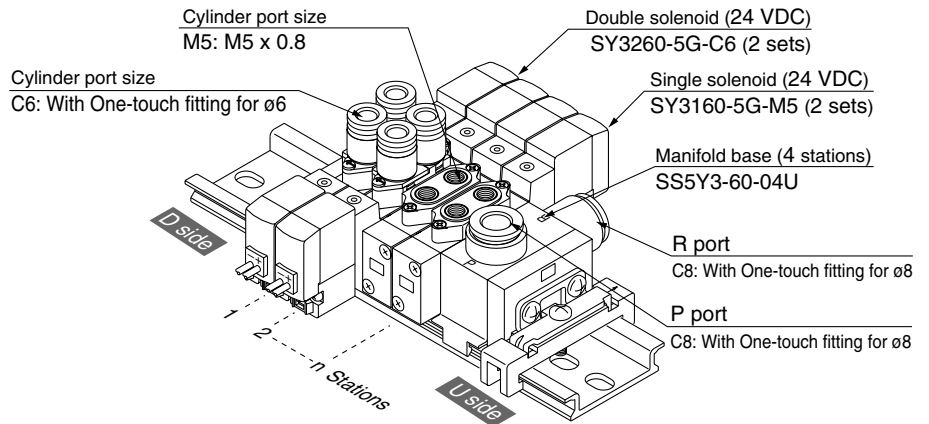
SUP/EXH block assembly mounting position

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

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

How to Order Valve Manifold Assembly

Ordering example



SS5Y3-60-04U
* SY3260-5G-C6
* SY3160-5G-M5


1 set (Type 60, 4 stations manifold base part no.)
2 sets (Double solenoid part no.)
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	SS5Y5-60	SS5Y7-60
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)	C10 (One-touch fitting for ø10)	C12 (One-touch fitting for ø12)
	A, B port	M5 x 0.8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	1/8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	1/4 C8 (One-touch fitting for ø8) C10 (One-touch fitting for ø10)
Manifold base weight W (g) ^{Note 2)} (n: Number of SUP/EXH blocks, m: Weight of DIN rail)		W = 13n + m + 36	W = 41.2n + m + 77.6	W = 65.4n + m + 128.2

 Note 1) In cases such as those where many valves are operated simultaneously, use “-stationB (SUP/EXH block on both sides)” (both sides SUP/EXH), applying pressure to the P ports on both sides and exhausting from the R ports on both sides.

Note 2) For DIN rail weight, refer to page 1-4-72.

Flow Characteristics

Model	Port size		Flow 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	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	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	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.

SV

SZ

SY

SYJ

SX

How to Order Valves

SY 3 1 60 — **5 L** — **C6**

Series

3	SY3000
5	SY5000
7	SY7000

Type of actuation

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

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", "DO" or "W□" type.

Rated voltage

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

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

* DC specifications of type "D", "DO" is only available with 12 and 24 VDC.
 * "D", "DO" only available for SY5000, SY7000.
 * For type "W□", DC voltage is only available.

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	SY7000
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"	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"	SY7000
N9	One-touch fitting for ø5/16"	SY7000
N11	One-touch fitting for ø3/8"	SY7000

Manual override

<p>Nil: Non-locking push type</p>	<p>D: Push-turn locking slotted type</p>	<p>E: Push-turn locking lever type</p>
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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 (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)

* 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 (SY5000, 7000)	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 	D: With connector 	WO: Without connector cable
H: Lead wire length 600 mm 	LN: Without lead wire 	LO: Without connector 	MO: Without connector 	DO: Without connector 	

* "LN", "MN" type: with 2 sockets.
 * For connector cable of M8 connector, refer to page 1-4-210.

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		Dustproof (* DIN terminal, M8 connector conforms to IP65)		

-  Note) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states 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 IEC529

Solenoid Specifications

Electrical entry		Grommet (G), (H) L plug connector (L) M plug connector (M) DIN terminal (D) M8 connector (W)	
Coil rated voltage (V)	DC	24 , 12 , 6 , 5 , 3	
	AC 50/60Hz	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)
Apparent power* VA	AC	100V	1.4 (With indicator light: 1.5)
		110V [115V]	1.6 (With indicator light: 1.7) [1.7 (With indicator light: 1.8)]
		200V	2.3 (With indicator light: 2.4)
		220V [230V]	2.5 (With indicator light: 2.6) [2.7 (With indicator light: 2.8)]
Surge voltage suppressor		Diode (Varistor is for DIN terminal and non-polar)	
Indicator light		LED (AC of DIN connector is neon bulb.)	

-  * 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.

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

SV

SZ

SY


SYJ

SX

Weight

Series SY3000

Valve model	Type of actuation		Port size	Weight (g)		
			A, B	Grommet	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.

Series SY7000

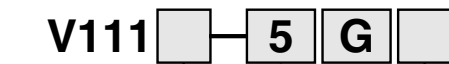
Valve model	Type of actuation		Port size	Weight (g)			
			A, B	Grommet	L, M plug connector	DIN terminal	M8 Connector
SY7□60-□-02	2 position	Single	1/4	103	105	126	109
		Double		125	128	170	136
	3 position	Closed center		133	136	178	144
		Exhaust center					
		Pressure center					
SY7□60-□-C8	2 position	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					

Series SY5000

Valve model	Type of actuation		Port size	Weight (g)			
			A, B	Grommet	L, M plug connector	DIN terminal	M8 Connector
SY5□60-□-01	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					

How to Order Pilot Valve Assembly

How to Order Connector Assembly for L/M Plug Connector



Coil specifications

Nil	Standard: DC specifications
A	Standard: AC specifications
T	With power saving circuit (24 VDC, 12 VDC only)

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

Rated voltage

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC
1	100 VAC ^{50/60} Hz
2	200 VAC ^{50/60} Hz
3	110 VAC ^{50/60} Hz [115 VAC ^{50/60} Hz]
4	220 VAC ^{50/60} Hz [230 VAC ^{50/60} Hz]

* For type "W□", DC voltage is only available.

Light/Surge voltage suppressor

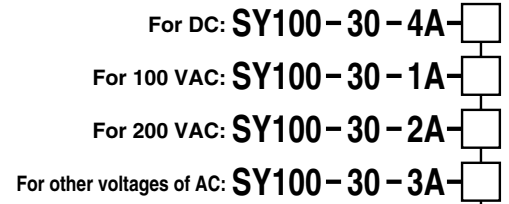
Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

* 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

G	Grommet, 300 mm lead wire	
H	Grommet, 600 mm lead wire	
L	L plug connector	With lead wire
LN		Without lead wire
LO		Without connector
M	M plug connector	With lead wire
MN		Without lead wire
MO		Without connector
WO	M8 connector	Without connector cable

Note) For connector cable of M8 connector, refer to page 1-4-210.



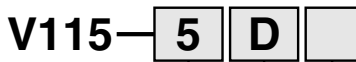
Without lead wire: SY100-30-A
Only connector and sockets (x 2 pcs.)

Lead wire length

Nil	300 mm
6	600 mm
10	1000 mm
15	1500 mm
20	2000 mm
25	2500 mm
30	3000 mm
50	5000 mm

- SV
- SZ
- SY
- SYJ
- SX

■ DIN terminal type



Rated voltage

5	24 VDC
6	12 VDC
1	100 VAC ^{50/60} Hz
2	200 VAC ^{50/60} Hz
3	110 VAC ^{50/60} Hz [115 VAC ^{50/60} Hz]
4	220 VAC ^{50/60} Hz [230 VAC ^{50/60} Hz]

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

Light/Surge voltage suppressor

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

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

Electrical entry

D	DIN terminal	With connector
DO	DIN terminal	Without connector

Note) Do not replace V111 (G, H, L, M) to V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

How to Order M8 Connector Cable

■ Straight type

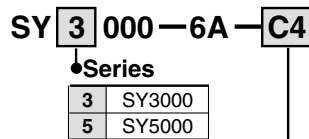


Cable length

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

How to Order Port Block Assembly

Series SY3000



A, B port size Thread piping

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

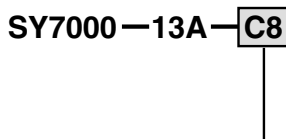
One-touch fitting (Metric size)

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

One-touch fitting (Inch size)

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

Series SY7000



A, B port size Thread piping

Symbol	Port size	Applicable series
O2	1/4	SY7000

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	

One-touch fitting (Inch size)

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

How to Change Port Block Assembly

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

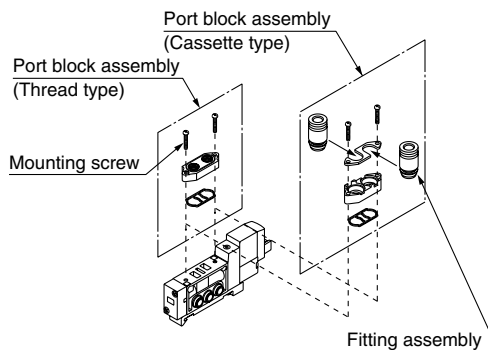
With the one-touch fitting port block assembly, it is only necessary to change the fitting and not the whole block. Refer to following part numbers.

One-touch fitting (Metric size)

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

One-touch fitting (Inch size)

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



⚠ Caution

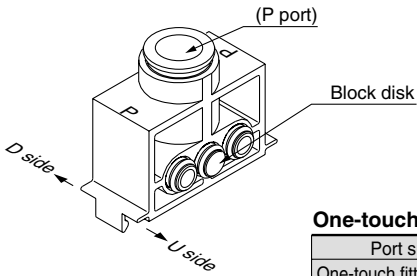
Mounting screw tightening torques

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

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

Manifold Option

Individual SUP block assembly



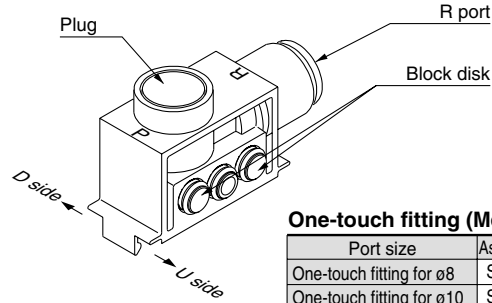
One-touch fitting (Metric size)

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

One-touch fitting (Inch size)

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

Individual EXH block assembly



One-touch fitting (Metric size)

Port size	Assembly part no.	Applicable series
One-touch fitting for ø8	SY3000-55-1B	SY3000
One-touch fitting for ø10	SY5000-55-1B	SY5000
One-touch fitting for ø12	SY7000-55-1B	SY7000

One-touch fitting (Inch size)

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

SV

SZ

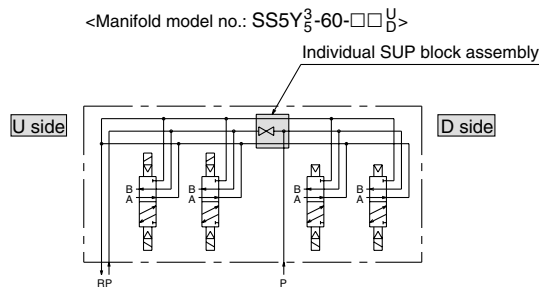
SY

SYJ

SX

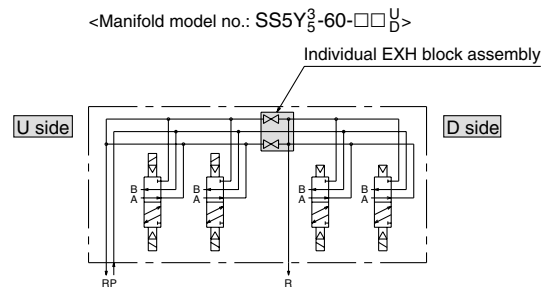
[When supplying the manifold with 2 different supply pressures.]

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



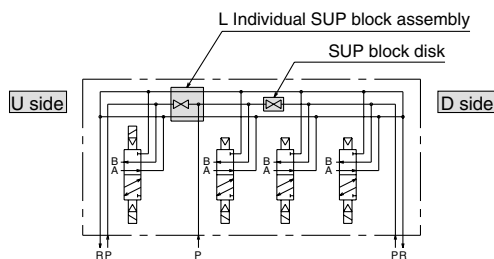
[When 2 different EXH passages are required.]

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



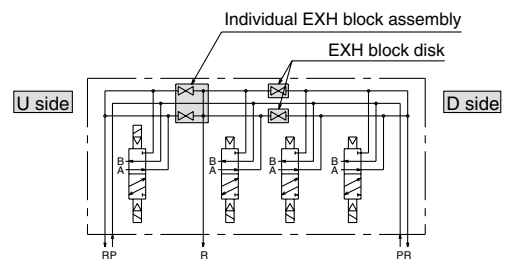
[When a different supply pressure is required for only a middle valve.]

Specify arrangement of individual SUP block assembly and SUP block disk on the manifold specification sheet. (Applicable manifold model no.: SS5Y□-60-□□B)



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

Specify arrangement of individual EXH block assembly and EXH block disk on the manifold specification sheet. (Applicable manifold model no.: SS5Y□-60-□□B)



Manifold Option

■ SUP block disk

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



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

■ EXH block disk

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



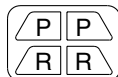
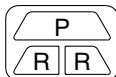
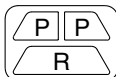
Series	Part no.
SY3000	SY3000-52-2A
SY5000	SY5000-52-4A
SY7000	SY7000-70-2A

■ Label for block disk

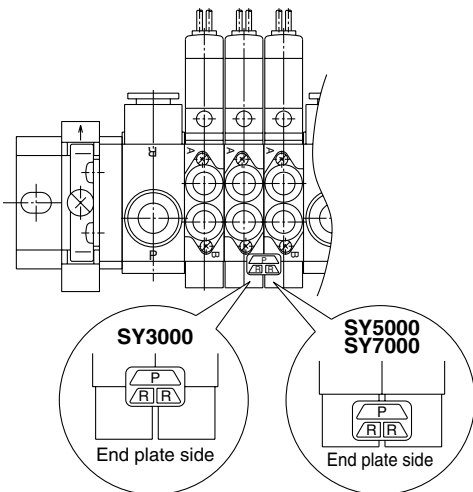
The labels shown below are used on manifold stations containing SUP/EXH block disk(s) to show their location. (3 pcs. each)

VZ3000-123-1A

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

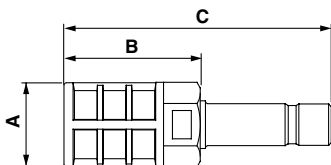


* When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.



■ Silencer with One-touch fitting

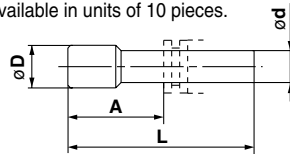
The silencer plugs directly into the One-touch fittings of the manifold.



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

■ Plug (white)

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



Dimensions

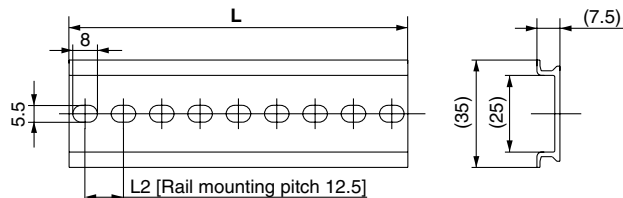
Applicable fittings size ød	Model	A	L	D
4	KQ2P-04	16	32	6
6	KQ2P-06	18	35	8
8	KQ2P-08	20.5	39	10
10	KQ2P-10	22	43	12
12	KQ2P-12	24	45.5	14
5/32"	KQ2P-03	16	32	6
1/4"	KQ2P-07	18	35	8.5
5/16"	KQ2P-09	20.5	39	10
3/8"	KQ2P-11	22	43	11.5

■ 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

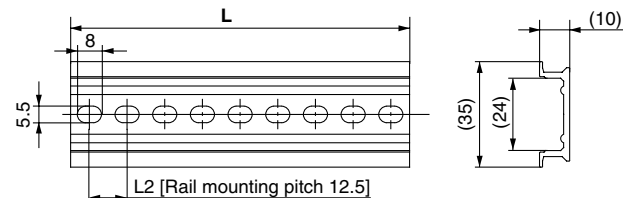
No.	20	21	22	23	24	25	26	27	28	29
L dimension	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5
Weight (g)	62.6	64.9	67.1	69.4	71.6	73.9	76.1	78.4	80.6	82.9

■ 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

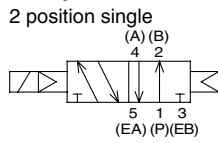
No.	20	21	22	23	24	25	26	27	28	29
L dimension	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5
Weight (g)	88	91.2	94.4	97.5	100.7	103.9	107	110.2	113.3	116.5

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

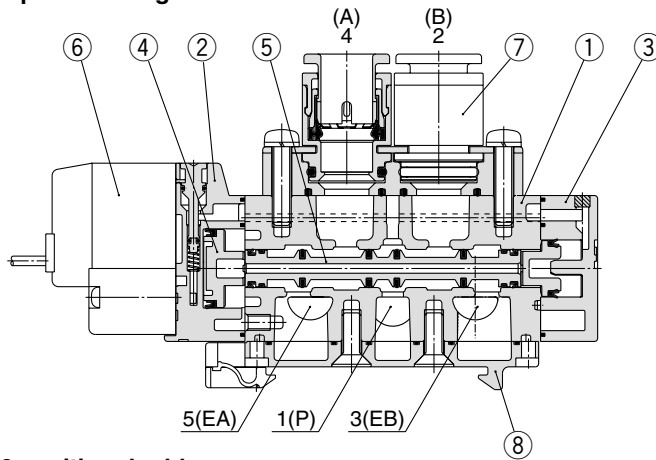
Construction

Series SY

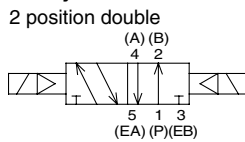
JIS Symbol



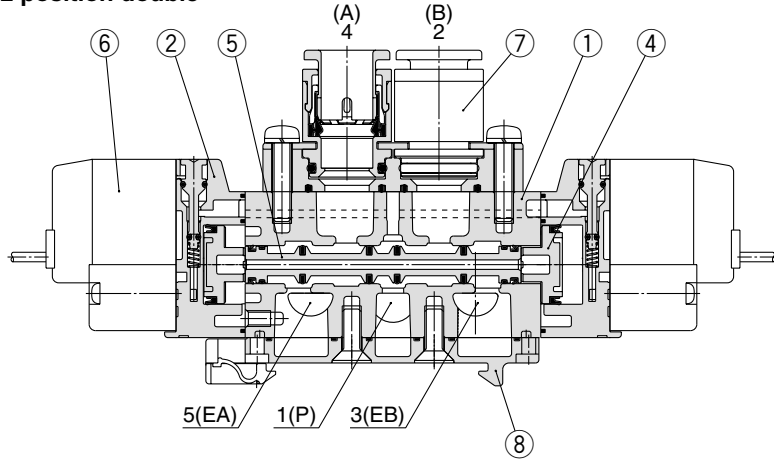
2 position single



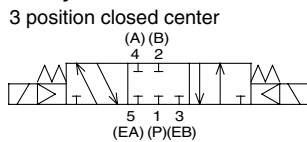
JIS Symbol



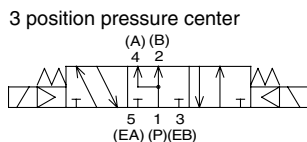
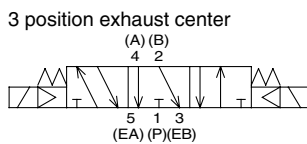
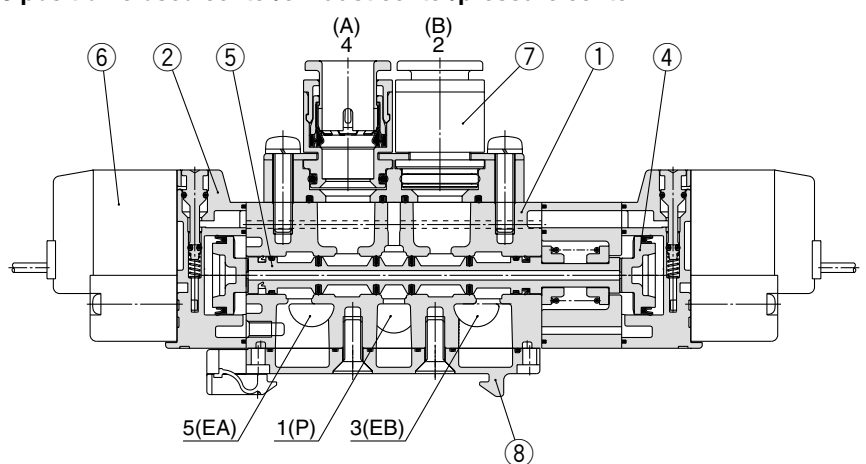
2 position double



JIS Symbol



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
③	End plate	Resin	White
④	Piston	Resin	—
⑤	Spool valve assembly	Aluminum/NBR	—

Replacement Parts

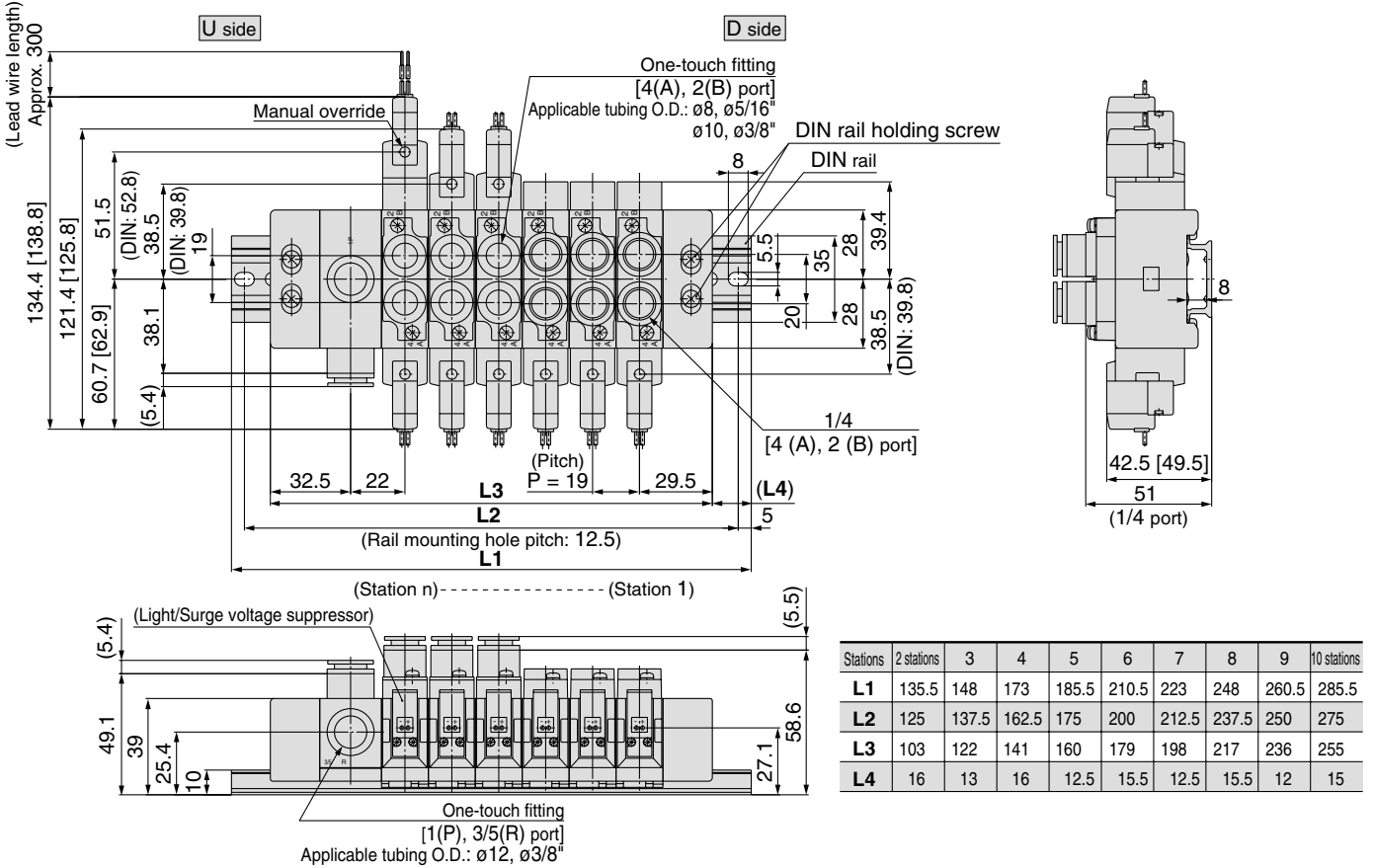
No.	Description	Part no.
⑥	Pilot valve assembly	Refer to "How to Order Pilot Valve Assembly" on page 1-4-69.
⑦	Port block assembly	Refer to "How to Order Port Block Assembly" on page 1-4-70.
⑧	Bottom cover assembly ^{Note)}	SY3000-41-2A (with screw, gasket)
		SY5000-41-2A (with screw, gasket)

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

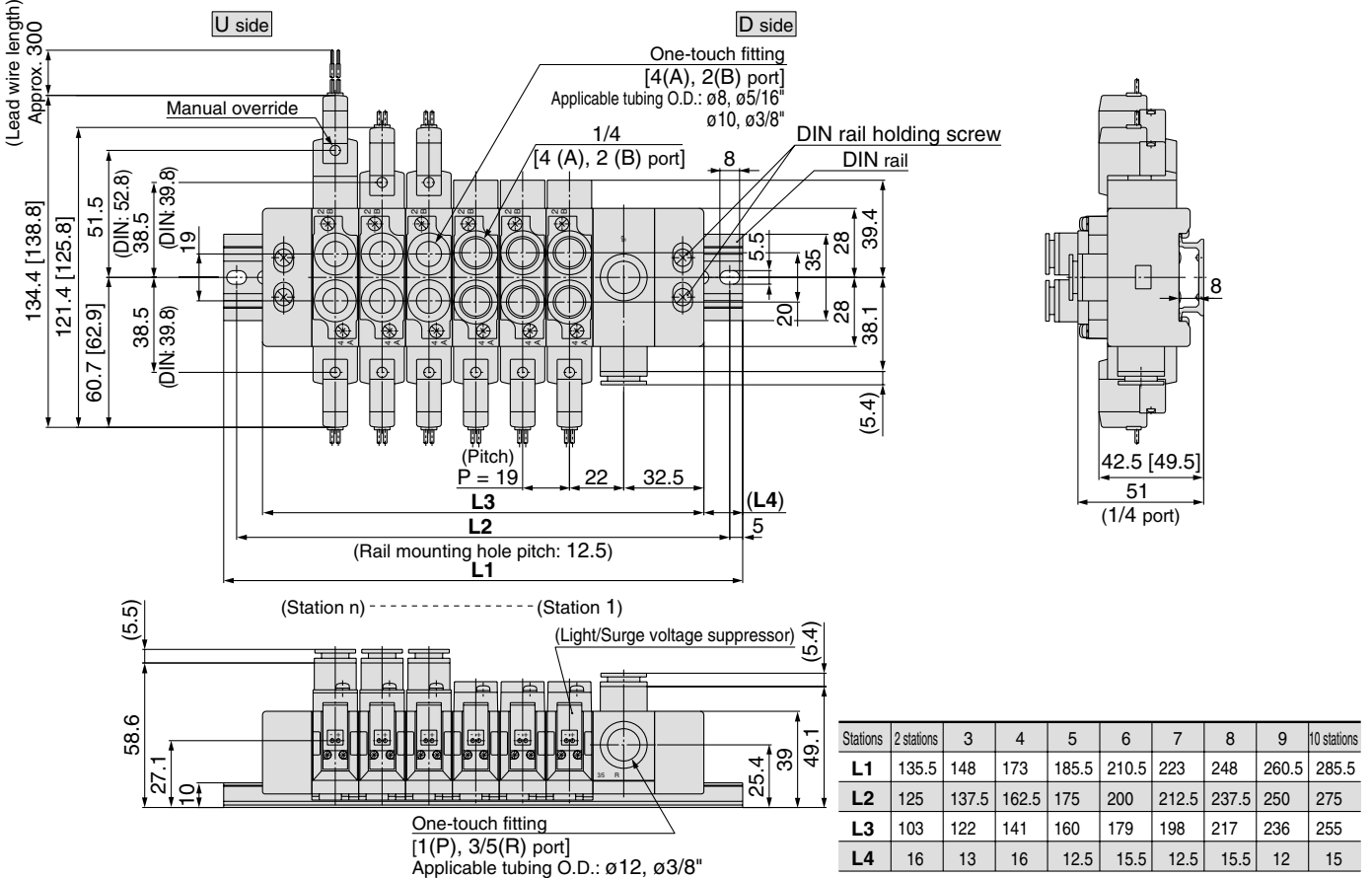
- SV
- SZ
- SY**
- SYJ
- SX

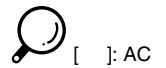
Dimensions

SS5Y7-60- Stations U

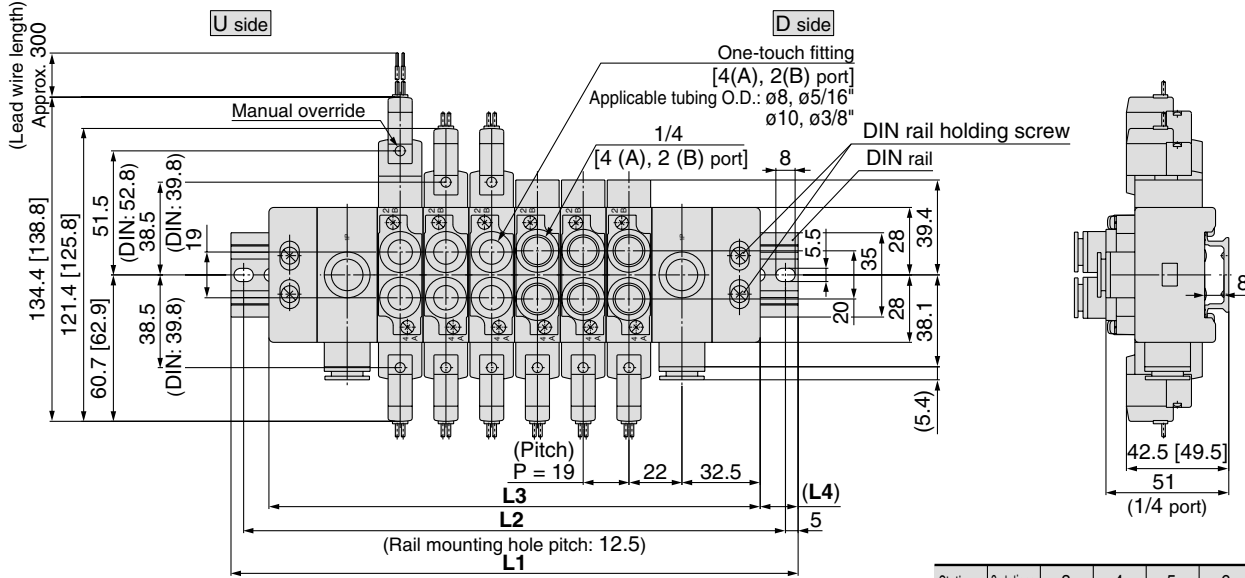


SS5Y7-60- Stations D

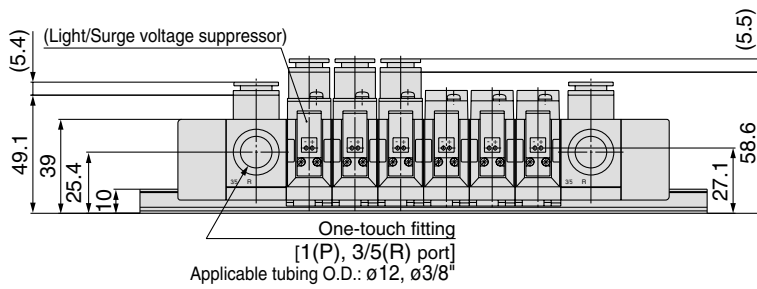




SS5Y7-60- Stations B



(Station n) ----- (Station 1)



Stations	2 stations	3	4	5	6	7	8 stations
L1	160.5	173	198	210.5	235.5	248	273
L2	150	162.5	187.5	200	225	237.5	262.5
L3	128	147	166	185	204	223	242
L4	16	13	16	12.5	15.5	12.5	15.5

Stations	9 stations	10	11	12	13	14	15 stations
L1	285.5	310.5	323	348	360.5	385.5	410.5
L2	275	300	312.5	337.5	350	375	400
L3	261	280	299	318	337	356	375
L4	12	15	12	15	11.5	14.5	17.5

Stations	16 stations	17	18	19	20 stations
L1	423	448	460.5	485.5	498
L2	412.5	437.5	450	475	487.5
L3	394	413	432	451	470
L4	14.5	17.5	14	17	14

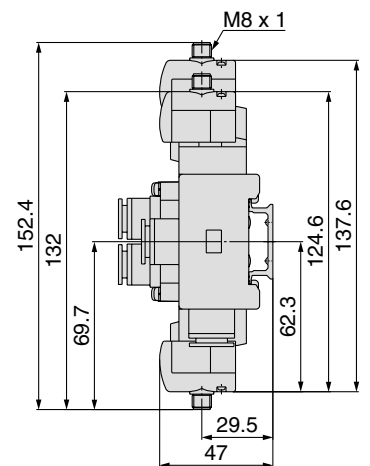
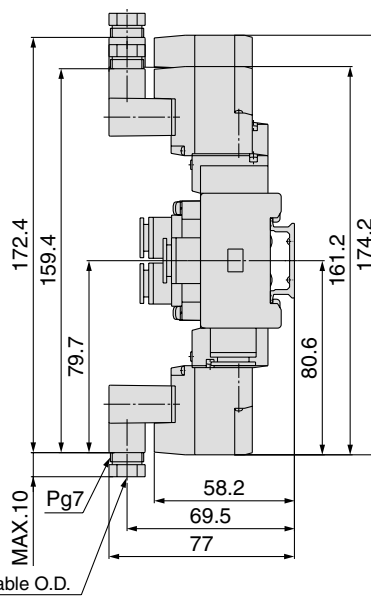
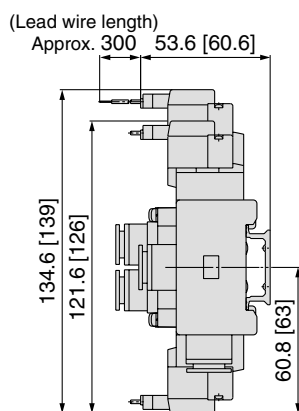
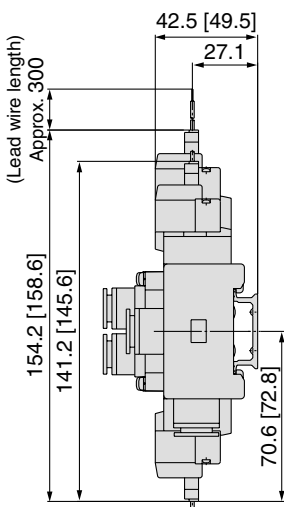
- SV
- SZ
- SY
- SYJ
- SX

L plug connector (L)

M plug connector (M)

DIN terminal (D)

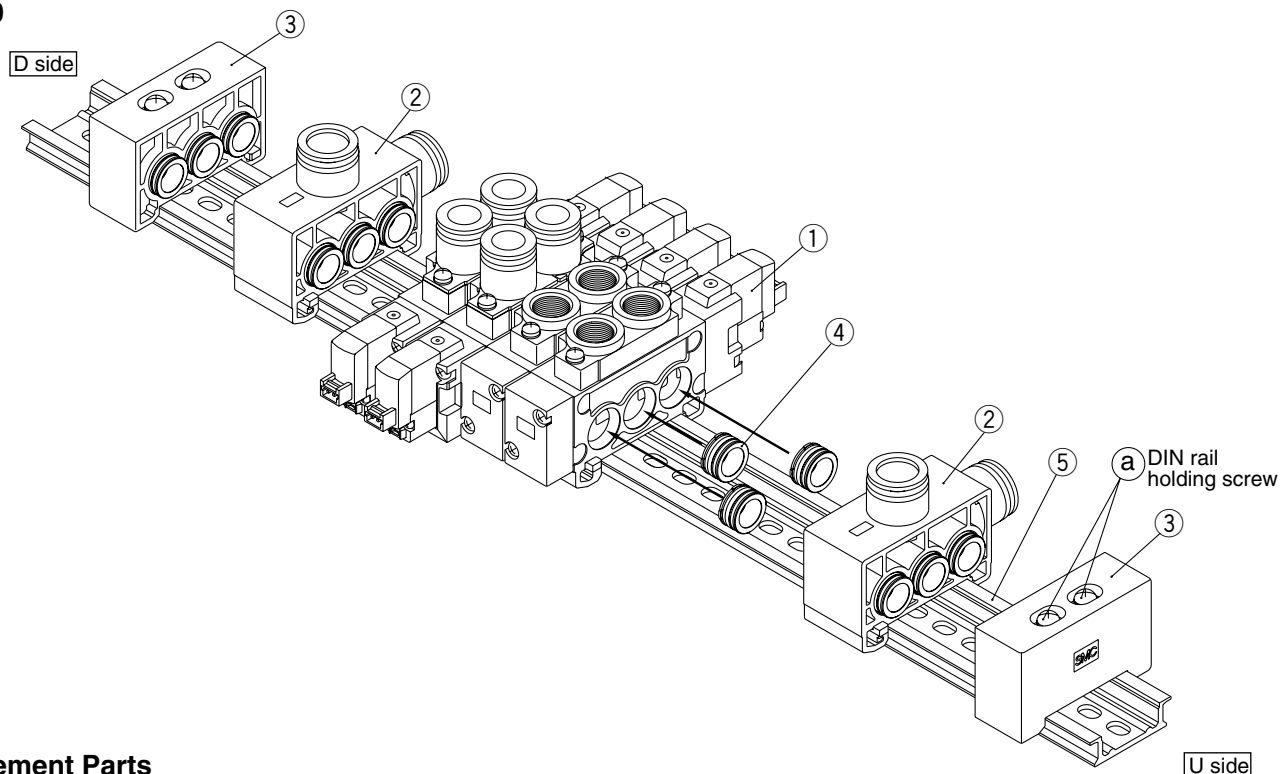
M8 connector (WO)



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

DIN Rail Manifold Exploded View

SY7000 Type 60



Replacement Parts

No.	Description	Part no.	Note
①	Valve	SY7□60-□□-□	□ at the end of part number denotes A. B port size: 02, C8, C10, N9, N11. Includes bushing assembly (SY5000-52-1A) 3 pcs.
②	SUP/EXH block assembly	SY7000-75- $\frac{1}{3}$ A	
③	End block assembly	SY7000-56-1A	In common for D side and U side (Bushing assembly: Not available for SY7000-70-1A.)
④	Bushing assembly	SY7000-70-1A	
⑤	DIN rail	VZ1000-11-4-□	Refer to page 1-4-72.

How to Increase Additional Valves to the DIN Rail

Valves can be added at any station on the rail.

- 1 Loosen the rail holding screw (a) at both of 2 locations which holds the manifold base either in the U side or D side.
When removing the end block assembly from the DIN rail, loosen the holding screws for DIN rail at first, then slide it to the edge of the rail.
- 2 Separate the valves at the point where more valves are to be added.
- 3 Mount the additional valves on the DIN rail as shown in Fig. (1).
- 4 Connect them together while pressing the block assemblies toward each others, and tighten the 2 holding screws (a) for DIN rail alternately (2 to 3 times) with the prescribed torque (1.4 N-m) to fix them to the DIN rail.

⚠ Caution

Tightening torque

SY7000: 1.4 N-m

(While lightly holding the blocks after fixing an end block on one side, tighten the other end block for better sealing after no gap between valves is confirmed.)

- Bushing assembly must be seated properly to each valve block in order to prevent air leaks from occurring.
- Refer to the Fig. (2) when dismantling the valve from the DIN rail.

Fig. (1) Manifold mounting procedure

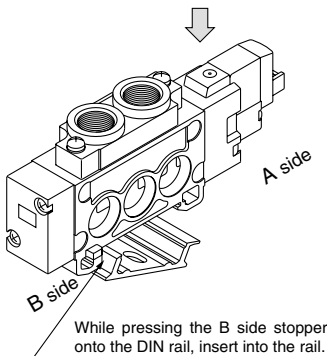
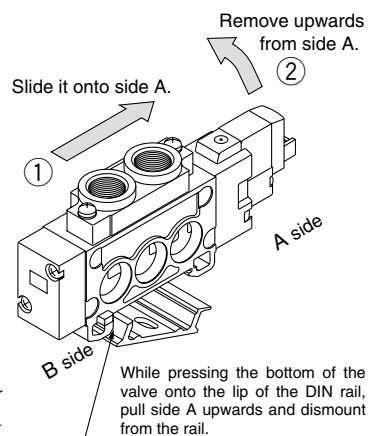


Fig. (2) Manifold dismantling procedure



⚠ Caution

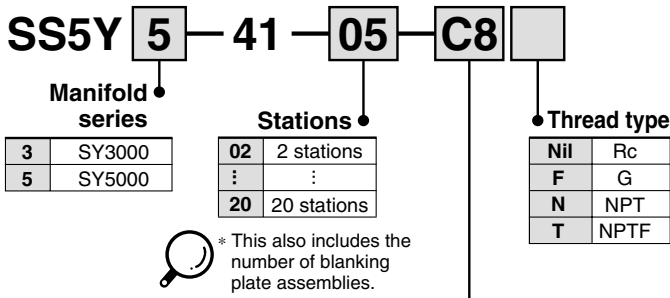
When clamping screw (a) of the end block is not sufficiently tightened during reassembly, air leakage may result. Before supplying air, check that there are no gaps between valves and that the end block is firmly secured to the DIN rail in order to ensure air supply without leakage.

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

Series SY3000/5000/7000 Base Mounted Monifold Bar Stock Type Individual Wiring

How to Order Manifold

Type 41 (Compact type)



A, B port size Thread piping

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

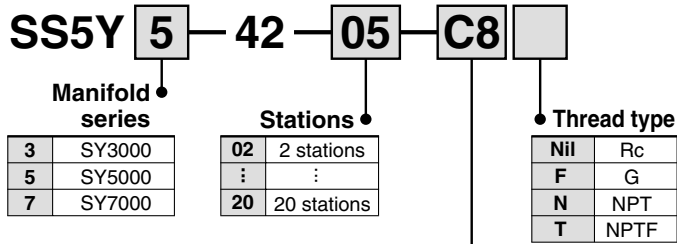
One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	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 ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	SY3000
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	SY5000

Type 42 (External pilot capable type)



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)

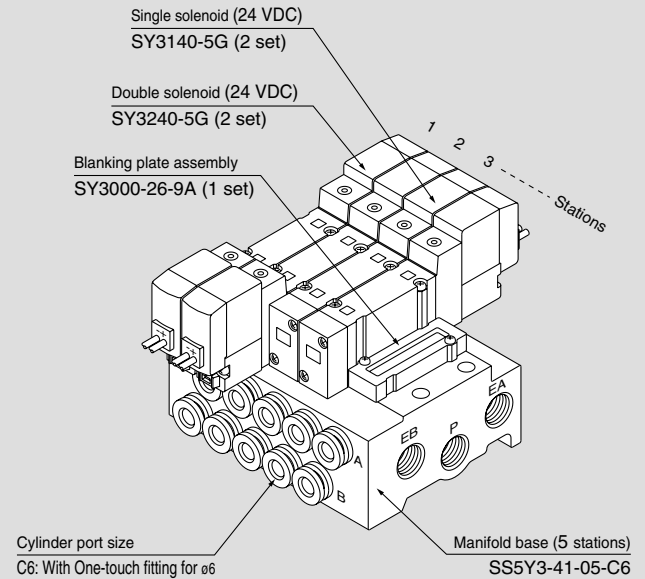
Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	SY3000
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	SY5000
C10	One-touch fitting for ø10	SY7000

One-touch fitting (Inch size)

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

How to Order Valve Manifold Assembly

Ordering example



SS5Y3-41-05-C6 1 set (Type 41, 5 stations 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 Valves

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", "DO" or "W□" type.

Rated voltage

DC

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

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" and "DO" is only available with 12 and 24 VDC.
* For type "W□", DC voltage is only available.

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

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

* "DOZ" is 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 lead H: Lead wire length 600 mm	L: With lead wire (Length 300 mm) LN: Without lead wire LO: Without	M: With lead wire (Length 300 mm) MN: Without lead	D: With connector DO: Without connector	WO: Without connector cable

* "LN", "MN" type: with 2 sockets.
* DIN terminal type "Y" conforming to DIN43650C standard is also available. For details, refer to catalog on page 1-4-201.
* For connector cable of M8 connector, refer to page 1-4-210.

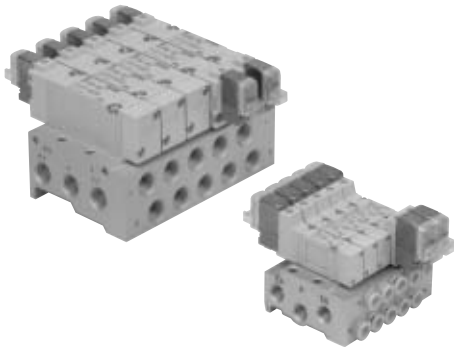
SV

SZ

SY

SYJ

SX



Manifold Specifications

Model	SS5Y3-41	SS5Y3-42	SS5Y5-41	SS5Y5-42	SS5Y7-42	
Applicable valve	SY3□40		SY5□40		SY7□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	Direction					
	Side					
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)	1/8 C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	1/4 C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	1/4 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 the 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 1-4-114.

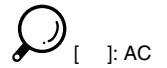
Flow Characteristics

Model	Port size		Flow 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	1/8	C6	0.75	0.19	0.18	0.81	0.23	0.20
SS5Y3-42	1/8	C6	0.75	0.20	0.18	0.82	0.20	0.20
SS5Y5-41	1/4	C8	1.8	0.23	0.44	1.9	0.16	0.45
SS5Y5-42	1/4	C8	1.9	0.20	0.46	1.9	0.12	0.43
SS5Y7-42	1/4	C10	3.0	0.25	0.75	3.0	0.12	0.66

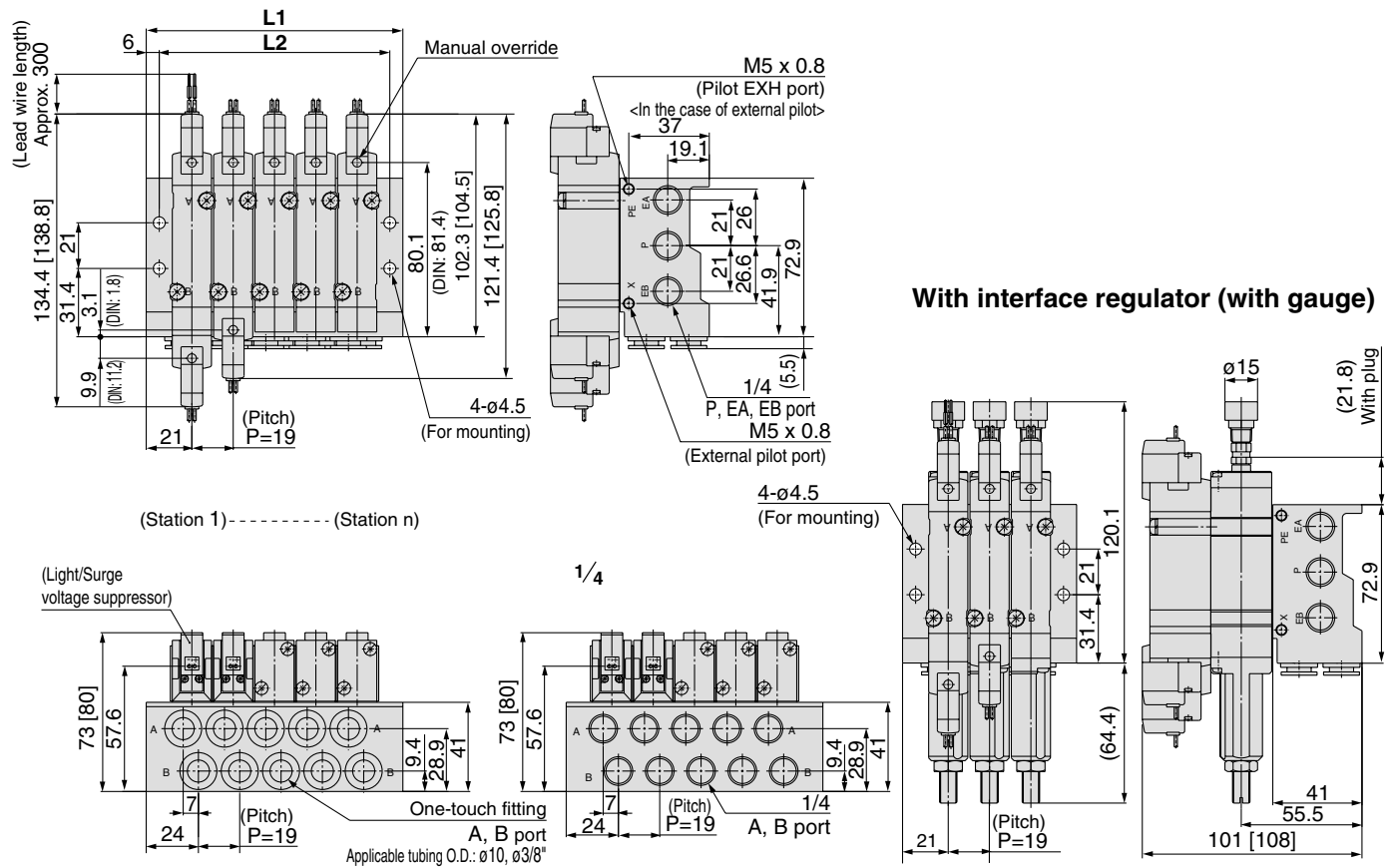


Note) The value is for manifold base with 5 stations and individually operated 2 position type.

SY7000: SS5Y7-42- Stations -02, C10, N11



Grommet (G)



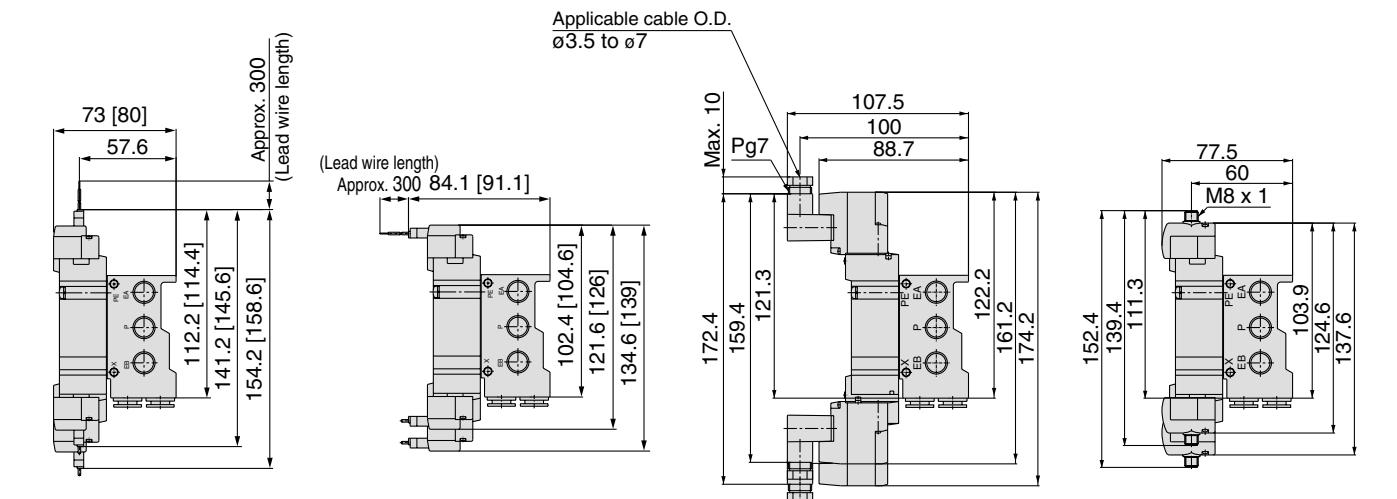
- SV
- SZ
- SY**
- SYJ
- SX

L plug connector (L)

M plug connector (M)

DIN terminal (D)

M8 connector (WO)



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

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	61	80	99	118	137	156	175	194	213	232	251	270	289	308	327	346	365	384	403
L2	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

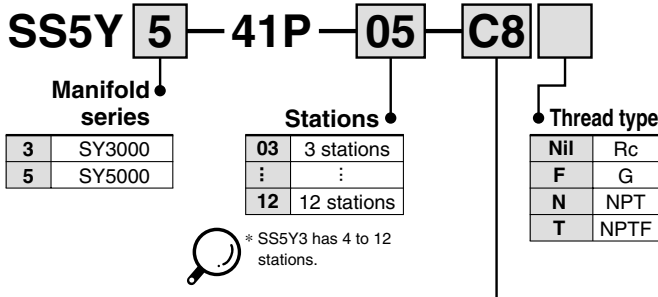
Type **41P**

Type **42P**

Series SY3000/5000/7000 Base Mounted Monifold Bar Stock Type Flat Ribbon Cable

How to Order Manifold

Type 41P (Compact type)



A, B port size Thread piping

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

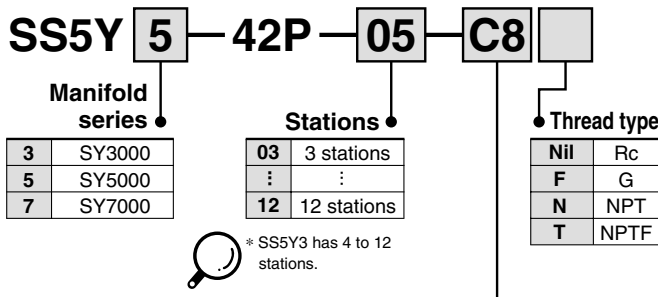
One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	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 ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	SY3000
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	SY5000

Type 42P (Common external pilot type)



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)

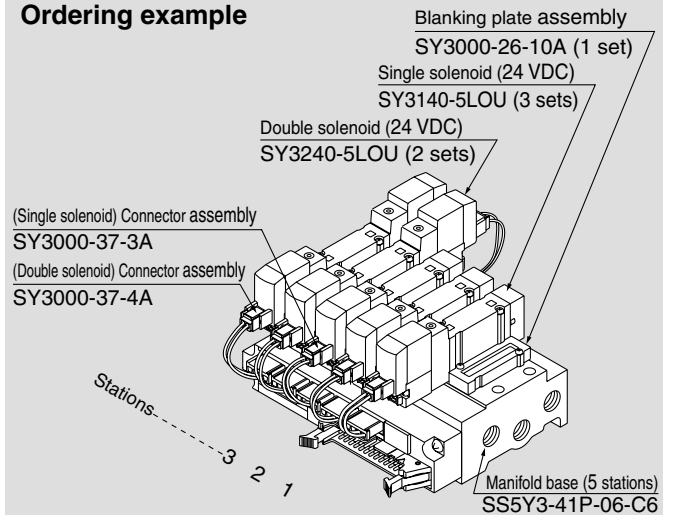
Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	SY3000
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	SY5000
C10	One-touch fitting for ø10	SY7000

One-touch fitting (Inch size)

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

How to Order Valve Manifold Assembly

Ordering example

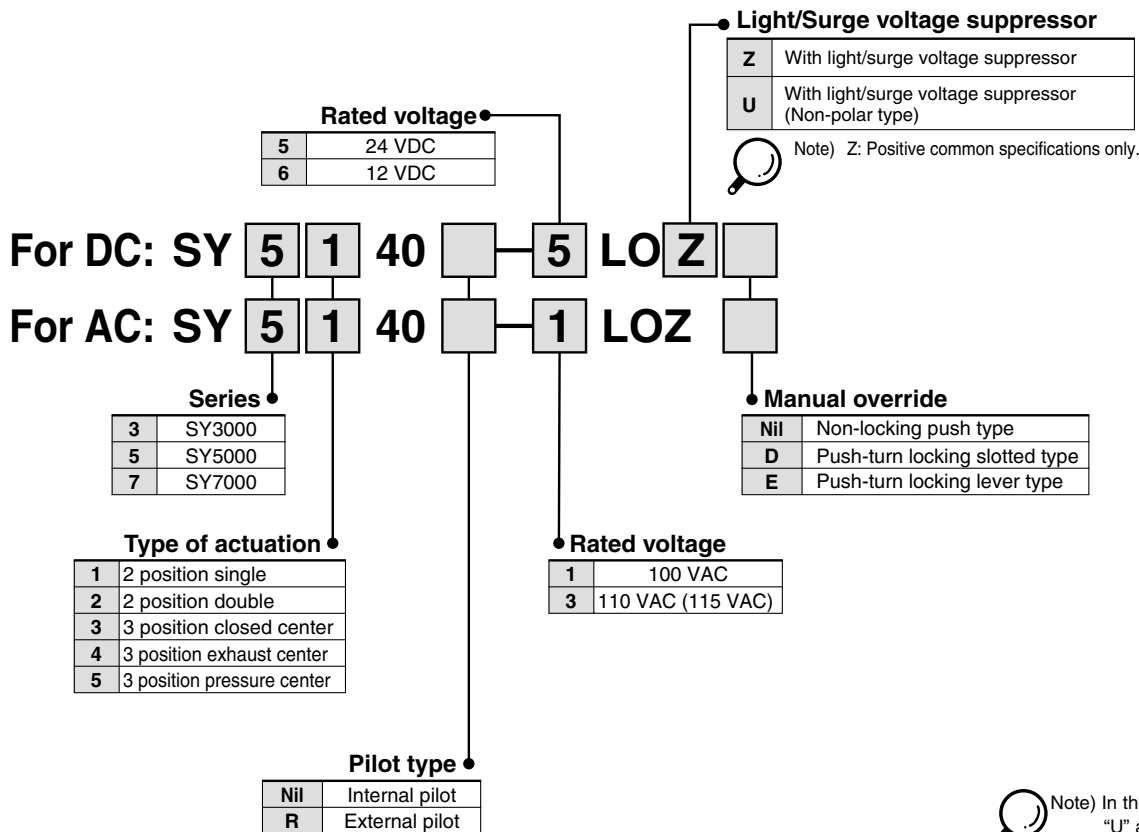


- SS5Y3-41P-06-C6** 1 set (Type 41, 6 stations manifold base part no.)
 * **SX3000-26-10A** 1 set (Blanking plate assembly part no.)
 * **SY3140-5LOU** 3 sets (Single solenoid part no.)
 * **SY3240-5LOU** 2 sets (Double solenoid part no.)
 * **SY3000-37-3A** 3 sets (Connector assembly part no.)
 * **SY3000-37-4A** 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.

How to Order Valves



SV

SZ

SY

SYJ

SX

How to Order Connector Assembly

For 12/24 VDC

For DC	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

For 100 VAC

For DC	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)

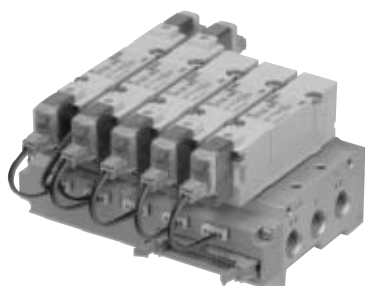
For DC	For SY3000	For SY5000/7000
For single solenoid	SY3000-37-35A	SY5000-37-19A
Double solenoid, 3 position type	SY3000-37-36A	SY5000-37-20A
Single with spacer assembly	SY5000-37-19A	SY5000-37-21A
Double, 3 position with spacer assembly	SY3000-37-37A	SY5000-37-22A

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.

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	SS5Y3-42P	SS5Y5-41P	SS5Y5-42P	SS5Y7-42P
Applicable valve	SY3□40		SY5□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 Poring specifications	Base				
	Side				
Port size	P, EA, EB port	1/8		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)	1/8 C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	1/4 C8 (One-touch fitting for ø8) C8 (One-touch fitting for ø8)
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	12, 24 VDC, 100, 110 VAC				

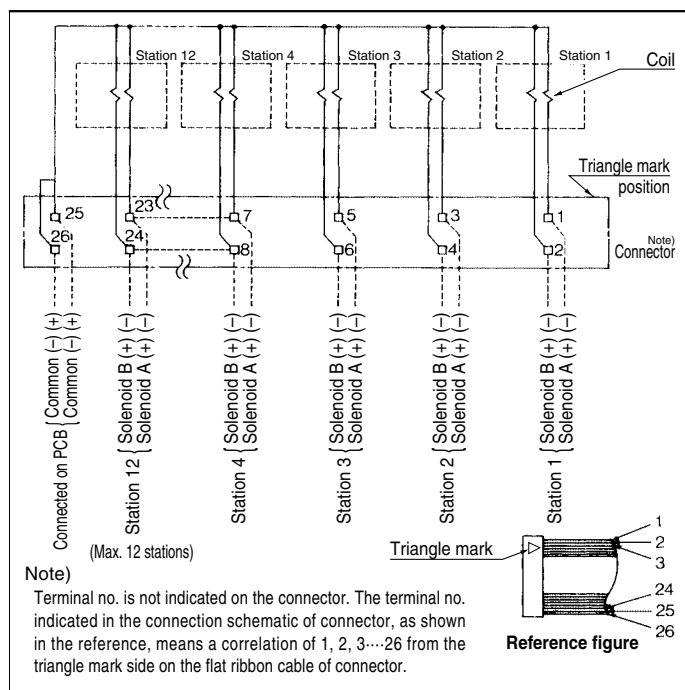
- Note 1) For more than 10 stations (more than 5 stations in the case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.
- Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.
- Note 3) Refer to "Manifold Option" on page 1-4-114.

Flow Characteristics

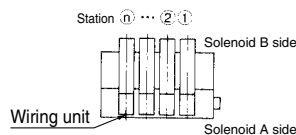
Model	Port size		Flow characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C (dm³/(s·bar))	b	Cv	C (dm³/(s·bar))	b	Cv
SS5Y3-41P	1/8	C6	0.75	0.19	0.18	0.81	0.23	0.20
SS5Y3-42P	1/8	C6	0.75	0.20	0.18	0.82	0.20	0.20
SS5Y5-41P	1/4	C8	1.8	0.23	0.44	1.9	0.16	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 (Non-polar type)



- 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

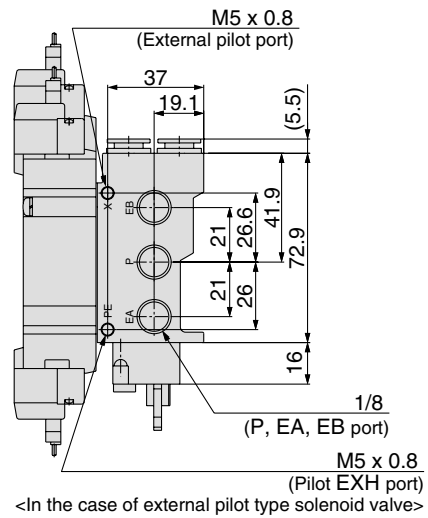
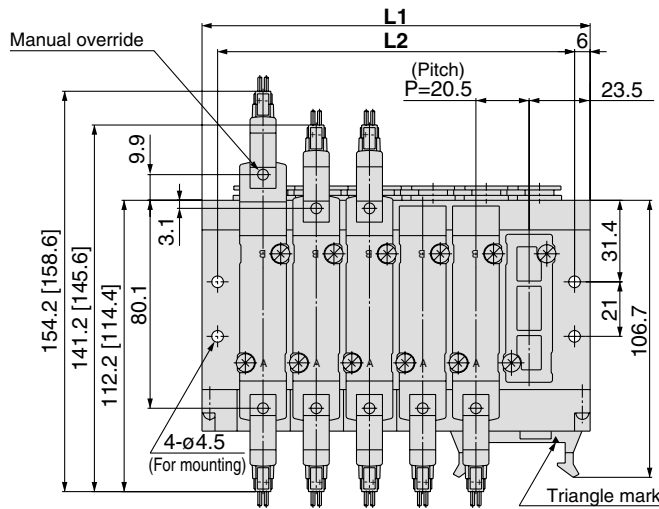
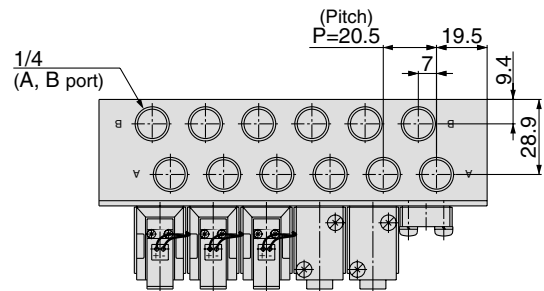
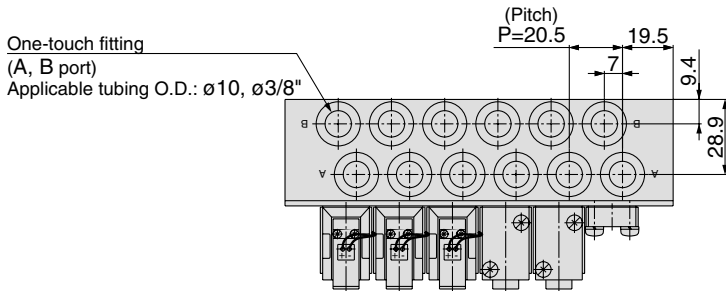
- For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.

SY7000: SS5Y7-42P- Stations -02, C10, N11



Grommet (G)

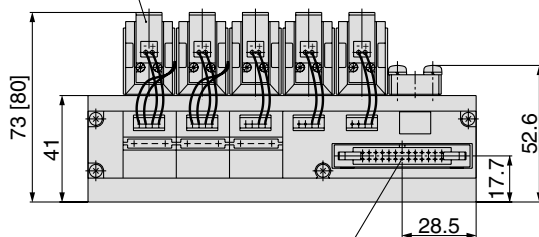
For 1/4



- SV
- SZ
- SY
- SYJ
- SX

(Station n)------(Station 1)

(Light/Surge voltage suppressor)

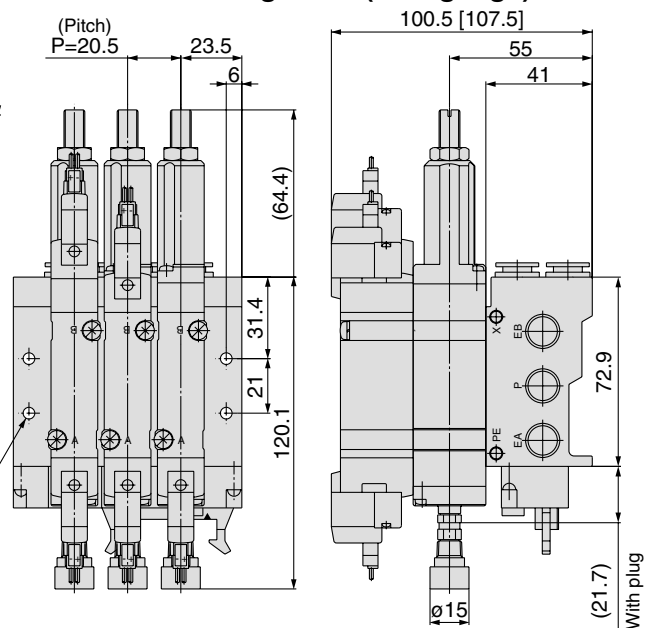


Applicable connector: 26 pins MIL type
With strain relief
(Conforming to MIL-C-83503)

Stations n	3	4	5	6	7	8	9	10	11	12
L1	88	108.5	129	149.5	170	190.5	211	231.5	252	272.5
L2	76	96.5	117	137.5	158	178.5	199	219.5	240	260.5

With interface regulator (with gauge)

4-ø4.5
(For mounting)



Made to Order Specifications:

Series SY5000/7000/9000, SY500

DIN Terminal* (DIN 43650C)

* DIN terminal type conforming to DIN 43650C (DIN pitch 8 mm) standard.

How to Order Valves

Series

5	SY500
---	-------

Type of actuation

1	Normally open
2	Normally closed

Type

3	Body ported
5	Base mounted

Rated voltage

DC	
5	24 VDC
6	12 VDC
AC (50/60 Hz)	
1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

Light/Surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With indicator light and surge voltage suppressor

Manual override

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

A port size

Symbol	Port size
Nil	Base mounted
01	1/8
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
N3	One-touch fitting for ø5/32"
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Electrical entry

Y: With connector
YO: Without connector

For body ported Thread piping

Symbol	Port size	Applicable series
01	1/8	SY5000
02	1/8	SY7000
03	3/8	SY9000

One-touch fitting (Metric size)

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

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	SY7000
N9	One-touch fitting for ø5/16"	
N9	One-touch fitting for ø5/16"	SY9000
N11	One-touch fitting for ø3/8"	
N11	One-touch fitting for ø3/8"	

Base Mounted

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

Note When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to catalog on page 1-4-61.)

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

- SV
- SZ
- SY
- SYJ
- SX

How to Order Pilot Valve Assembly

V115-5Y

Rated voltage

DC	
5	24 VDC
6	12 VDC
AC (50/60 Hz)	
1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

Light/Surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor

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

Electrical entry

Y	DIN	With connector
YO	terminal	Without connector

DIN Terminal Part No.

Without light	SY100-82-1	
With indicator light		
Rated voltage	Voltage symbol	No.
24 VDC	24VN	SY100-82-3-05
12 VDC	12VN	SY100-82-3-06
100 VAC	100VN	SY100-82-3-01
200 VAC	200VN	SY100-82-3-02
110 VAC (115 VAC)	110VN	SY100-82-3-03
220 VAC (230 VAC)	220VN	SY100-82-3-04

Caution

- Use caution in wiring because it won't meet the IP65 (enclosure) standard if you use the other cord than prescribed heavy-duty cord of size (ø3.5 to ø7.5). Also be sure to tighten the ground nut and holding screw with the prescribed torque range. Tighten the ground nut and set screw within the specified range of torque. For how to use DIN terminal. (wiring procedures, procedures for changing electrical entries, precautions, applicable cable circuit diagram), refer to page 1-4-207.
- Type D, DIN terminal with 9.4 mm pitch between terminals if not interchangeable.
- To distinguish from the Type D, DIN connector, "N" is listed at the end of voltage symbol. (For connector parts without lights, "N" is not indicated. Please refer to the name plate to distinguish.)
- Dimensions are completely the same as type D DIN terminal.
- When exchanging the pilot valve assembly only, "SY115-□D" is interchangeable with "SY115-□Y". Do not replace SY114 (G, L, M) to SY115 (DIN terminal), and vice versa.

Made to Order Specifications:

Series SY3000/5000/7000/9000

Body Ported

External Pilot/Fluoro Rubber

* for Main Value



Body Ported External Pilot

Applicable solenoid valves: Series SY3□₆₀²⁰, SY5□₆₀²⁰, SY7□₆₀²⁰

Model no. **SY**³₅⁷□₆₀²⁰ - □ - □ - □ - □ - □ - □ - X20

● Entry is the same as standard products.

Operating Pressure Range MPa

Operating pressure range	-100 kPa to 0.7
Pilot pressure range	0.25 to 0.7

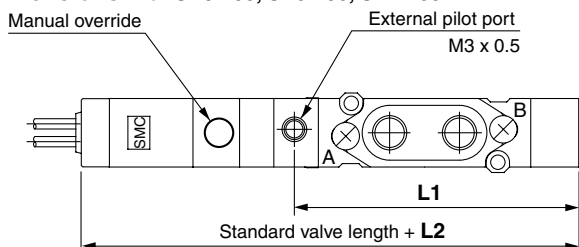
Dimensions: For SY3□₆₀²⁰60, SY5□₆₀²⁰60, SY7□₆₀²⁰60

Dimensions SY3000 becomes 6.5 mm longer.
SY5000 and SY7000 becomes 10 mm longer.

External Pilot Port

Series	Port size
SY3000	M3 x 0.5
SY ⁵ 000	M5 x 0.8

Dimensions: For SY3□₆₀, SY5□₆₀, SY7□₆₀

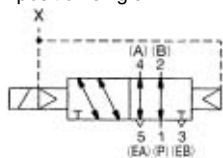


Dimensions/External Pilot Port Position

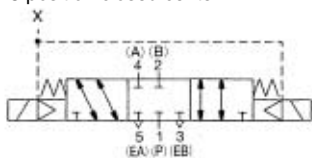
Series	L1 dimensions	L2 dimensions
SY3000	41.5	6.5
SY5000	60.4	9
SY7000	71.9	9

JIS Symbol

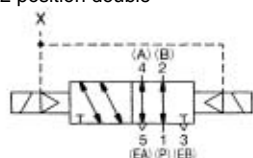
Body ported
2 position single



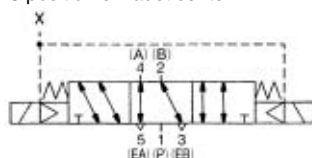
3 position closed center



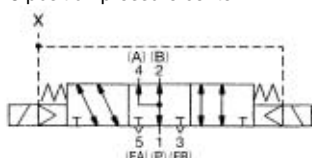
2 position double



3 position exhaust center



3 position pressure center



Main Valve Fluoro Rubber Specifications

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

- When using a lubricant other than the recommended turbine oil, and there is a possibility of malfunction due to swelling of the spool valve seals.

Applicable solenoid valves: Series SY3□₆₀²⁰, SY5□₆₀²⁰, SY7□₆₀²⁰, SY9□₆₀²⁰

Model no. **SY**³₅⁷₉□₆₀²⁰ - □ - □ - □ - □ - □ - □ - X90

● Entry is the same as standard products.

Specifications and performance are the same as standard products.