

SY3000/5000/7000 Base Mounted Valve Single Unit

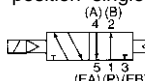
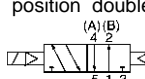
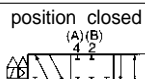
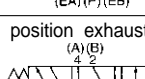
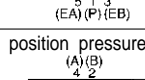
How to Order

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

Series

3	SY3000
5	SY5000
7	SY7000

Configuration

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

Pilot

—	Internal pilot
R	External pilot

AC (50/60Hz)

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

*D and DO only available for 12V in case of DC.
*D and DO only available for SY5000 and SY7000.

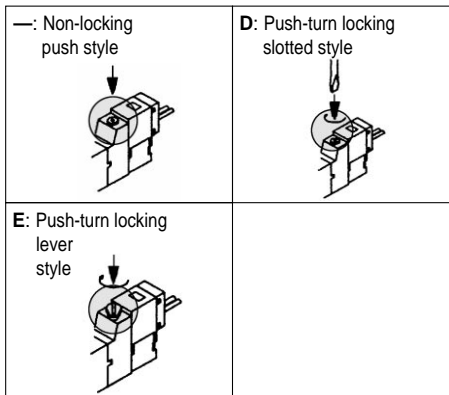
Voltage

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

A/B port size

Symbol	Port size	Applicable series
—	Without subplate	
01	Rc(PT) 1/8 With subplate	SY3000
02	Rc(PT) 1/4 With subplate	SY5000 SY7000
03	Rc(PT) 3/8 With subplate	SY7000

Manual override



Indicator light and surge voltage suppressor

Electrical entry for G, H, L, M

—	W/o indicator light and surge suppressor
S	W/ surge voltage suppressor
Z	W/ indicator light and surge suppressor
R	W/ surge suppressor (Non-polar)
U	W/ indicator light and surge suppressor (Non-polar)

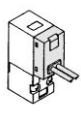
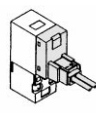
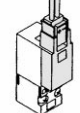
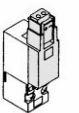
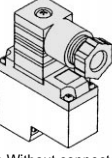
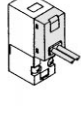
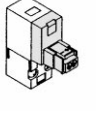
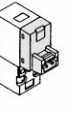
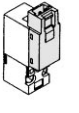
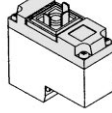
*"R" and "U" types: DC only.
*For AC, there is No "S" specification since it is integrated with converter.

Electrical entry for D

—	W/o indicator light and surge suppressor
S	W/ surge suppressor (Non-polar)
Z	W/ indicator light and surge suppressor (Non-polar)

*"DOZ" is unavailable.
*For AC, there is No "S" specification since it is integrated with converter.

Electrical entry

24V, 12V, 6V, 5V, 3V DC/100V, 110V, 200V, 220V AC				24V, 12V DC 100V, 110V, 200V, 220V AC
Grommet	L plug connector	M plug connector		DIN connector
G: 300mm lead wire 	L: 300mm lead wire 	M: 300mm lead wire 	MN: Without Lead wire 	(SY5000/7000 only) D: With connector 
H: 600mm lead wire 	LN: Without Lead wire 	LO: Without connector 	MO: Without connector 	DO: Without connector 

*"LN" and "MN" include 2 sockets.

*"D", "DO": SY5000/7000 only.

SY3000/5000/7000 Base Mounted Valve



P.1.1-123 to 1.1-136

Specifications

Series		SY3000	SY5000	SY7000
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		
External pilot Operating pressure range (MPa)	Operating pressure range	-100kPa 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		50°C Max.		
Max. operating frequency (Hz)	2 position single, double	10	5	5
	3 position	3	3	3
Manual override		Non-locking push style, Push-turn locking slotted style, Push-turn locking lever style		
Pilot exhaust	Internal pilot	Common exhaust for main and pilot valve		
	External pilot	Individual exhaust for pilot valve		
Lubrication		Not required		
Mounting position		Free		
Impact/Vibration resistance (m/s ²) ⁽¹⁾		150/30 (8.3 to 2000Hz)		
Protection structure		Dust proof (DIN connector IP65)*		



*Equivalent to IEC 529

Note 1) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature, for both energized and de-energized states. (Value in the initial stage.)

Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2,000 Hz. Test was performed at both energize and de-energized states to the axis and right angle directions of the main valve and armature. (Value in the initial stage.)

Solenoid Specification

Electrical entry		Grommet(G)/(H), L plug connector(L), M plug connector(M), DIN connector(D)*	
Coil rated voltage (V)	DC	24, 12, 6, 5, 3	
	AC 50/60 Hz	100, 110, 200, 220*	
Allowable voltage		±10% rated voltage	
Power consumption	DC	0.5(With light: 0.55 (DIN connector with lamp: 0.6))	
Apparent power (VA)	AC	100V	0.9 (With light: 1.0)
		110V	1.0 (With light: 1.1)
		[115V]	[1.1 (With light: 1.2)]
		200V	1.8 (With light: 1.9)
		220V [230V]	1.9 (With light: 2.0) [2.2 (With light: 2.3)]
Surge voltage suppressor		Diode (DIN connector is ZNR. G, L or M (Non-polar) is zener diode.)	
Indicator light		LED (AC of DIN connector is neon lamp.)	



*DIN connector (D) is SY5000, 7000 only.

*Can be used for 110V, 115V, 220V and 230V AC.

Response Time



Note) According to dynamic performance test JIS B8375-1981

(Coil temperature 20°C, at rated voltage, without surge voltage suppressor.)

SY3000

Configuration	Response time (ms) (0.5MPa)		
	Without indicator light and surge voltage suppressor	With indicator light and 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

Configuration	Response time (ms) (0.5MPa)		
	Without indicator light and surge voltage suppressor	With indicator light and 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

Configuration	Response time (ms) (0.5MPa)		
	Without indicator light and surge voltage suppressor	With indicator light and 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

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VP4

VQ

VQ4

VQZ

VQD

VZS

VFS

VS

VS7

Base Mounted Valve

Model/Series SY3000

Valve model	Configuration		Port size	Effective area (mm ²) _(Cv) ⁽¹⁾		Weight (g) ⁽²⁾	
				P→A/B	A/B→EA/EB	Grommet	L, M, plug connector
SY3□40-□-01	2 position	Single	Rc(PT)1/8	4.86 (0.27)	5.4 (0.3)	81 (47)	85 (51)
		Double		4.86 (0.27)	5.4 (0.3)	96 (62)	103 (69)
	3 position	Closed center		4.68 (0.26)	4.86 (0.27)	98 (63)	105 (70)
		Exhaust center		4.86 (0.27)	5.94 (0.33) [3.24 (0.18)]		
		Pressure center		6.66 (0.37) [3.24 (0.18)]	5.22 (0.29)		



Note 1) []: In case of normal position Note 2) (): Without sub-plate

Model/Series SY5000

Valve model	Configuration		Port size	Effective area (mm ²) _(Cv) ⁽¹⁾		Weight (g) ⁽²⁾		
				P→A/B	A/B→EA/EB	Grommet	L, M, plug connector	DIN connector
SY5□40-□-02	2 position	Single	Rc(PT)1/4	12.78 (0.71)	12.6 (0.7)	118 (55)	121 (59)	154 (82)
		Double		12.78 (0.71)	12.6 (0.7)	133 (70)	140 (77)	186 (123)
	3 position	Closed center		7.56 (0.42)	8.1 (0.45)	138 (76)	146 (83)	192 (129)
		Exhaust center		7.92 (0.44)	14.4 (0.8) [9.0 (0.5)]			
		Pressure center		15.84 (0.88) [4.5 (0.25)]	8.64 (0.48)			



Note 1) []: In case of normal position Note 2) (): Without sub-plate

Model/Series SY7000

Valve model	Configuration		Port size	Effective area (mm ²) _(Cv) ⁽¹⁾		Weight (g) ⁽²⁾		
				P→A/B	A/B→EA/EB	Grommet	L, M, plug connector	DIN connector
SY7□40-□-03	2 position	Single	Rc(PT)1/4	23.22 (1.29)	21.6 (1.2)	215 (86)	219 (90)	242 (113)
		Double		23.22 (1.29)	21.6 (1.2)	231 (102)	238 (109)	284 (155)
	3 position	Closed center		14.04 (0.78)	12.24 (0.68)	233 (104)	241 (112)	287 (158)
		Exhaust center		14.04 (0.78)	20.88 (1.16) [12.96 (0.72)]			
		Pressure center		24.48 (1.36) [13.5 (0.75)]	12.42 (0.69)			

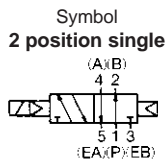


Note 1) []: In case of normal position Note 2) (): Without sub-plate

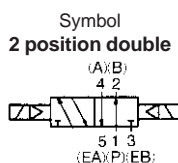
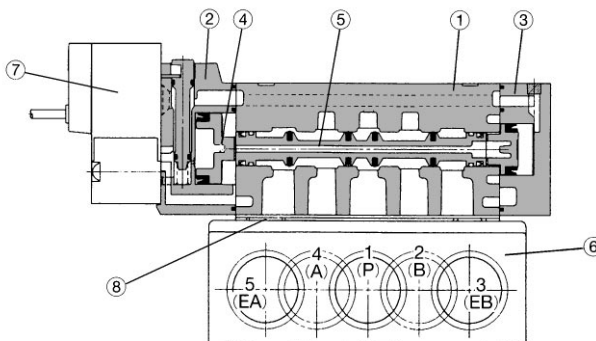
SY3000/5000/7000 Base Mounted Valve

Construction

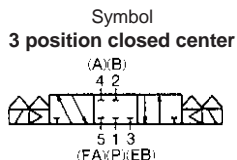
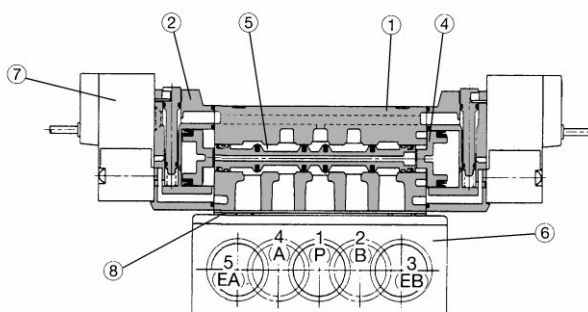
Series SY



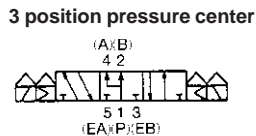
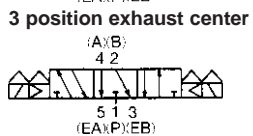
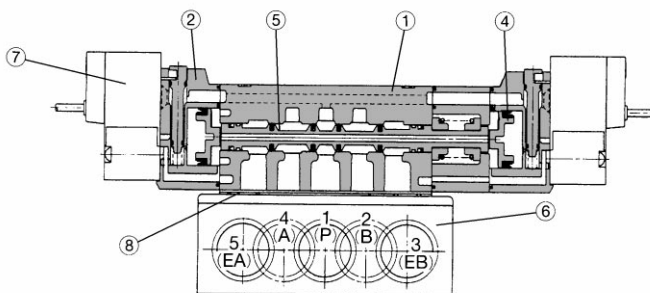
2 position single



2 position double



3 position closed center/exhaust center/pressure center



(In case of closed center)

Component Parts

No.	Description	Material	Note
①	Body	Aluminum die cast	White
②	Adaptor plate	Resin	White
③	End plate	Resin	White
④	Piston	Resin	-
⑤	Spool ass'y	Aluminum/NBR	-

Replacement Parts

No.	Description	Part No.			Note
		SY3□40	SY5□40	SY7□40	
⑥	Sub-plate	SY3000-27-1	SY5000-27-1	Rc(PT)1/4: SY7000-27-1 Rc(PT)3/8: SY7000-27-2	Aluminum die cast
⑦	Pilot valve ass'y	See "How to Order Pilot Valve Assembly" on p.1.1-28.			
⑧	Gasket	SY3000-11-8	SY5000-11-2	SY7000-11-2	NBR
-	Mounting bolt	SY3000-23-4 (M2 X 21)	M3 X 26	M4 X 31	For valve mounting (Mat nickel plated)

⚠ Caution

Torque for mounting screws
M2: 0.15 Nm
M3: 0.6 Nm
M4: 1.4 Nm

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VP4

VQ

VQ4

VQZ

VQD

VZS

VFS

VS

VS7

Base Mounted Valve

How to Order Pilot Valve Assembly

SY114—5 G

Voltage

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

Electrical entry

G	Grommet (300mm lead wire)	
H	Grommet (600mm 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

Indicator light and surge voltage suppressor

—	Without indicator light and surge voltage suppressor
S	With surge voltage suppressor
Z	With indicator light and surge voltage suppressor
R	With surge voltage suppressor (Non-polar)
U	With indicator light and surge voltage suppressor (Non-polar)

“R” and “U” types DC only.
For AC, there is No “S” specification since it is integrated with converter.

How to Order Connector Assembly

DC : SY100-30-4A
 100V AC : SY100-30-1A
 200V AC : SY100-30-2A
 Other AC : SY100-30-3A
 Without lead wire: SY100-30-A

(Only connector and sockets (2 pcs.))

Lead wire length

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

SY115—5 D

Voltage

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

Electrical entry

D	DIN	With connector
DO	connector	Without connector

Indicator light and surge voltage suppressor

—	Without indicator light and surge voltage suppressor
S	With surge voltage suppressor (Non-polar)
Z	With indicator light and surge voltage suppressor (Non-polar)

* “DOZ” is unavailable.
* For AC, there is No “S” specification since it is integrated with converter.

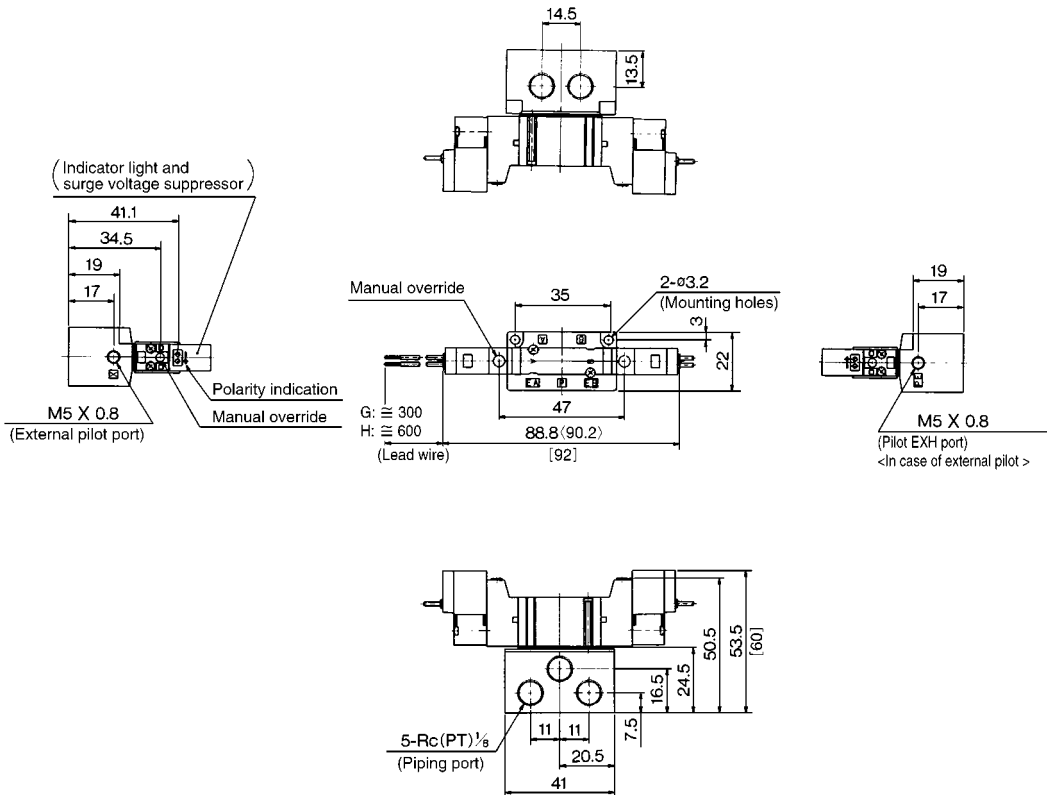
Base Mounted Valve

Dimensions/Series SY3000

Note) []: Values for AC
< >: Values with surge voltage suppressor.

2 position double

Grommet (G), (H): SY3240(R)-□^G_H□□-01



L plug connector (L): SY3240(R)-□L□□-01

M plug connector (M): SY3240(R)-□M□□-01

