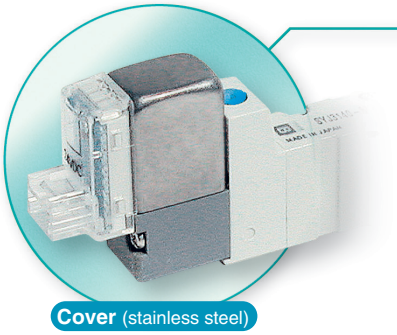
4/5 Port Solenoid Valve



Improved pilot valve

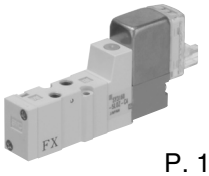
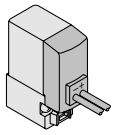
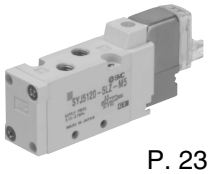
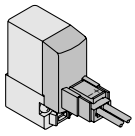
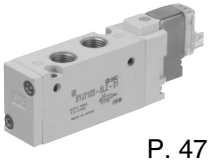
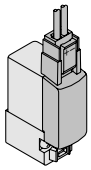
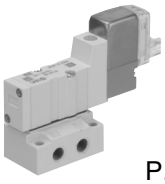
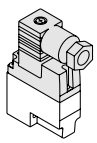
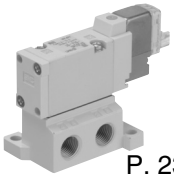
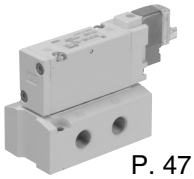
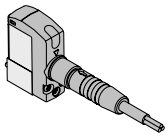
Pilot valve cover is stronger using stainless steel.
Mounting thread is also reinforced from size M1.7 to M2.

● Flow Characteristics

Series	Flow characteristics		
	C [(dm³/s·bar)]	b	Cv
SYJ3000	0.46	0.36	0.12
SYJ5000	0.83	0.32	0.21
SYJ7000	2.9	0.35	0.74

Rubber Seal
4/5 Port Solenoid Valve
Series SYJ3000/5000/7000

Variations

	Series	Sonic conductance: C [dm³/(s·bar)]	Type of actuation	Voltage	Electrical entry	Option: With light/surge voltage suppressor	Manual override
Body ported	**SYJ3000**  P. 1	Effective area 0.9 mm² {4/2 → 5/3 (A/B → EA/EB)}	2 Position • Single • Double	**For DC** ■ 24 VDC, 12 VDC, 6 VDC, 5 VDC, 3 VDC	Grommet 	**For DC** ■ With surge voltage suppressor	■ Non-locking push type
Body ported	**SYJ5000**  P. 23	0.47 {4/2 → 5/3 (A/B → EA/EB)}			L plug connector 	■ With light/ surge voltage suppressor	
Body ported	**SYJ7000**  P. 47	2.4 {4/2 → 5/3 (A/B → EA/EB)}			M plug connector 		
Base mounted	**SYJ3000**  P. 1	0.46 {4/2 → 5/3 (A/B → EA/EB)}	3 Position • Closed center • Exhaust center • Pressure center	**For AC** ■ 100 VAC 50/60 Hz, 110 VAC 50/60 Hz, 200 VAC 50/60 Hz, 220 VAC 50/60 Hz	DIN terminal  (SYJ5000, 7000 only)	**For AC**[Note] ■ With light/surge voltage suppressor	■ Push-turn locking slotted type
Base mounted	**SYJ5000**  P. 23	0.83 {4/2 → 5/3 (A/B → EA/EB)}					■ Push-turn locking lever type
Base mounted	**SYJ7000**  P. 47	2.9 {4/2 → 5/3 (A/B → EA/EB)}			M8 connector 		

Note) All AC voltage models have built-in surge voltage suppressor.

Flow Characteristics/Weight

Valve model		Type of actuation		Port size 1, 5, 3 (P, EA, EB)	Port size 4, 2 (A, B)	Flow characteristics Note 1) 1 → 4/2 (P → A/B) C [dm³/(s·bar)]	b	Cv	4/2 → 5/3 (A/B → EA/EB) C [dm³/(s·bar)]	b	Cv	Weight (g) Note 2, 3) Grommet	L/M plug connector	DIN terminal	M8 connector
Body ported	SYJ5□20-□-M5	2 position	Single	M5 x 0.8	M5 x 0.8	0.47	0.41	0.13	0.47	0.41	0.13	46	47	68	51
			Double									64	66	108	74
		3 position	Closed center			0.49	0.44	0.13	0.44	0.40	0.12	75	77	119	85
			Exhaust center			0.46	0.37	0.12	0.47 [0.39]	0.43 [0.35]	0.13 [0.10]				
			Pressure center			0.49 [0.39]	0.51 [0.38]	0.14 [0.10]	0.45	0.42	0.12				
	SYJ5□20-□-C4	2 position	Single	M5 x 0.8	C4 (One-touch fitting for ø4)	0.69	0.39	0.18	0.44	0.39	0.12	53	54	75	58
			Double									71	73	115	81
		3 position	Closed center			0.69	0.40	0.19	0.43	0.40	0.12	82	84	126	72
			Exhaust center			0.56	0.40	0.15	0.41 [0.41]	0.37 [0.37]	0.10 [0.11]				
			Pressure center			0.57 [0.41]	0.4 [0.37]	0.15 [0.10]	0.41	0.37	0.10				
	SYJ5□20-□-C6	2 position	Single	M5 x 0.8	C6 (One-touch fitting for ø6)	0.70	0.36	0.19	0.47	0.40	0.12	53	54	75	58
			Double									71	73	115	81
		3 position	Closed center			0.72	0.37	0.19	0.44	0.34	0.12	82	84	126	92
			Exhaust center			0.67	0.54	0.19	0.41 [0.41]	0.38 [0.38]	0.11 [0.11]				
			Pressure center			0.82 [0.44]	0.41 [0.39]	0.23 [0.12]	0.41	0.36	0.11				
Base mounted	SYJ5□40-□-01	2 position	Single	1/8	1/8	0.79	0.21	0.19	0.83	0.32	0.21	80 (49)	81 (47)	102 (68)	51
			Double									98 (64)	100 (66)	142 (108)	74
		3 position	Closed center			0.80	0.28	0.18	0.86	0.34	0.20	109 (75)	111 (77)	153 (119)	85
			Exhaust center			0.71	0.26	0.18	1.1 [0.60]	0.24 [0.44]	0.26 [0.18]				
			Pressure center			0.99 [0.47]	0.29 [0.38]	0.24 [0.12]	0.72	0.38	0.18				

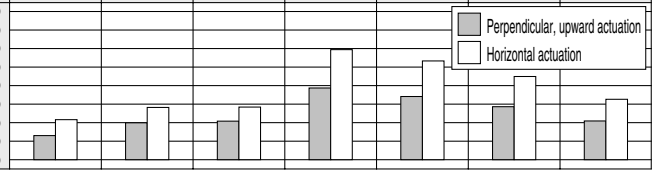
Note 1) [ ]: denotes the normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2
Note 2) ( ): Without sub-plate.
Note 3) For DC voltages. For AC voltages add 3 g to the weight of the single solenoid and 6 g to the weight of the double solenoid and 3 position types.

Cylinder Speed Chart

Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

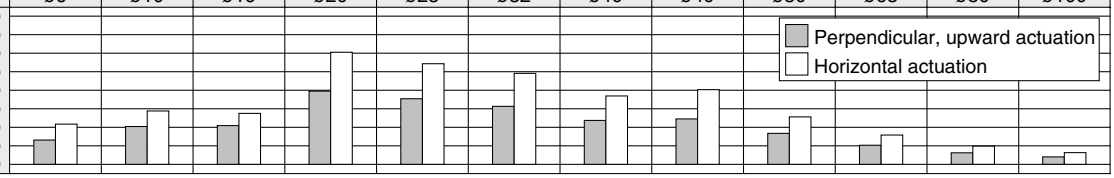
Body Ported

Series	Average speed (mm/s)	Bore size: Series CJ2 Pressure 0.5 MPa Load rate: 50% Stroke 60 mm			Series CM2 Pressure 0.5 MPa Load rate: 50% Stroke 300 mm			
		ø6	ø10	ø16	ø20	ø25	ø32	ø40
SYJ5120-M5	800							
	700							
	600							
	500							
	400							
	300							
	200							
	100							
	0							



Base Mounted

Series	Average speed (mm/s)	Bore size: Series CJ2 Pressure 0.5 MPa Load rate: 50% Stroke 60 mm			Series CM2 Pressure 0.5 MPa Load rate: 50% Stroke 300 mm				Series MB/CA2 Pressure 0.5 MPa Load rate: 50% Stroke 500 mm				
		ø6	ø10	ø16	ø20	ø25	ø32	ø40	ø40	ø50	ø63	ø80	ø100
SYJ5140-01	800												
	700												
	600												
	500												
	400												
	300												
	200												
	100												
	0												



∗ Cylinder is in extending. Speed controller is meter-out, which is directly connected with cylinder and its needle is fully opened.
∗ Average speed of cylinder is obtained by dividing the full stroke time by the stroke.
∗ Load factor: ((Load weight x 9.8) /Theoretical force) x 100%

Conditions

Body ported		Series CJ2	Series CM2	Series MB/CA2
SYJ5120-M5	Tubing bore x Length	ø4 x 1 m	ø6 x 1 m	ø8 x 1 m
	Speed controller	AS1301F-04	AS3301F-06	AS3301F-08
	Silencer	AN120-M5	AN110-01	

Base mounted		Series CJ2	Series CM2	Series MB/CA2
SYJ5140-01	Tubing bore x Length	ø4 x 1 m	ø6 x 1 m	
	Speed controller	AS2301F-04	AS3001F-06	
	Silencer	AN101-01	AN101-01	

How to Order

Type of actuation

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

Light/surge voltage suppressor

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

Nil	Without light/surge voltage suppressor
S	With surge voltage suppresor
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 type "R" and "U", DC voltage is only available.
∗ Power saving circuit is only available in the "Z" type.

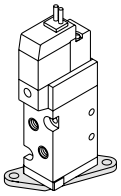
Electrical entry for D

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.

Bracket

Nil: Without bracket
F: With bracket



Note) The mounting bracket is supplied unattached.

Rated voltage

DC

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

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

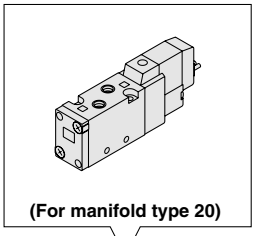
AC (50/60 Hz)

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

∗ For type W□, DC voltage is only available.

A, B port size

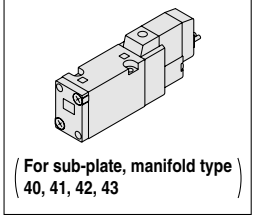
M5	M5 x 0.8
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
N3	One-touch fitting for ø5/32"
N7	One-touch fitting for ø1/4"



(For manifold type 20)

Body ported SYJ5 1 2 0 □ — 5 L □ □ — M5 — □

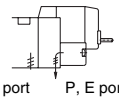
Base mounted SYJ5 2 4 0 □ — 5 L □ □ — □ □



(For sub-plate, manifold type 40, 41, 42, 43)

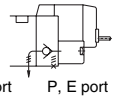
Body option

0: Pilot valve individual exhaust for the pilot valve



R port P, E port

3: Common exhaust type for main and pilot valve



R port P, E port

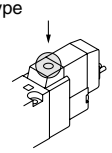
Coil specifications

Nil	Standard
T	With power saving circuit <24 V, 12 VDC only>

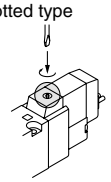
∗ Power saving circuit is not available in the case of D, DO or W□ type.

Manual override

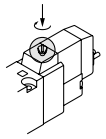
Nil: Non-locking push type



D: Push-turn locking slotted type



E: Push-turn locking lever type

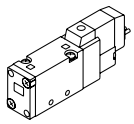


Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

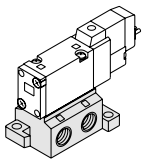
Port size

Nil: Without sub-plate



(With gasket and screws)

01: 1/8 With sub-plate



Electrical entry

24, 12, 6, 5, 3 VDC 100,110, 200, 220 VAC			24,12 VDC 100,110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm	**L:** With lead wire (Length 300 mm)	**M:** With lead wire (Length 300 mm) **MN:** Without lead wire	**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	**W□:** With connector cable Note 1)

Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to back page 10.

∗ LN, MN type: with 2 sockets.
∗ DIN terminal type "Y" which conforms to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 80.
∗ For connector cable of M8 connector, refer to back page 10.