Rubber Seal 5 Port Solenoid Valve

Series SYJ5000

Specifications





Body ported



Base mounted

Base mounted (with sub-plate)

(B) (A)

(R)(P)

3 1 (R)(P)

3 position closed center

(B)(A)

2 position single

2 position double

JIS Symbol

Body ported 2 position single

(A)(B)

5 1 3 (R1)(P)(R2)

2 position double

3 position closed center

(A)(B)

5 1 3 (R1)(P)(R2)

Fluid		Air		
Operating process renge	2 position single	0.15 to 0.7		
Operating pressure range MPa	2 position double	0.1 to 0.7		
iii u	3 position	0.15 to 0.7		
Ambient and fluid tempera	ture (°C)	-10 to 50 (No freezing. Refer to back page 3.)		
Response time (ms) Note 1)	2 position single, double	25 or less		
(at 0.5 MPa)	3 position	40 or less		
Max. operating frequency	2 position single, double	5		
(Hz)	3 position	3		
Manual override (Manual o	peration)	Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type		
Pilot exhaust method		Individual exhaust for the pilot valve, Common exhaust for the pilot and main valv		
Lubrication		Not required		
Mounting orientation		Unrestricted		
Shock/Vibration resistance (m/s²) Note 2)		150/30		
Enclosure		Dust proof (* DIN terminal, M8 connector conforms to IP65.)		

Based on IEC60529

Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge voltage suppressor) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Value in the initial state)
Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Tewas performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

Solenoid Specifications

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



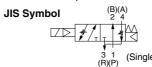
In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.
For 115 VDC and 230 VDC, the allowable voltage is -15% to +5% of rated voltage.
S, Z and T type (with power saving circuit) should be used within the following allowable voltage fluctuation range due to a voltage drop caused by the internal circuit.

S and Z type: 24 VDC: -7% to +10%, 12 VDC: -4% to +10%
T type: 24 VDC: -8% to +10%, 12 VDC: -6% to +10%

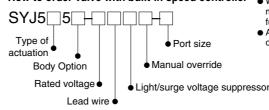
Built-in Speed Controller

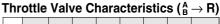
SYJ5□5□

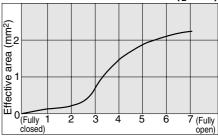
- Built-in exhaust flow controls enable simple cylinder speed adjustments.
- When mounted on the manifold, the common exhaust discharges the pilot and main valve exhaust through a common EXH port to enable simple exhausting.



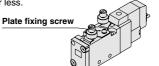
How to order valve with built-in speed controller



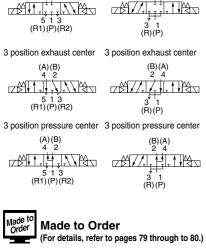




- When using SYJ5□53 model the speed controller must be opend more than 1 complete rotation from fully closed in order to function proerly.
- Adjust the speed controller with a torque of 0.3 N·m



Note) Do not loosen plate fixing screw.



Flow Characteristics/Weight

				Port	Port size Flow characteristics Note 1)						Weight (g) Note 2, 3)				
١	Valve model Type of actuation		1, 5, 3	4, 2	$1 \rightarrow 4/2 \text{ (P} \rightarrow A/B)$ 4/2 -			4/2 → 5/3 (A/B → EA/EB)		0	L/M plug	DIN	M8		
			(P, EA, EB)	(A, B)	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	Grommet	connector	terminal	connector	
		2 position	Single			0.47	0.41	0.13	0.47	0.41	0.13	46	47	68	51
		2 position	Double		M5 x 0.8	0.17	0.41	0.10	0.47	0.41	0.13	64	66	108	74
	SYJ5□20-□-M5		Closed center	M5 x 0.8			0.44	0.13	0.44	0.40	0.12	75			
		3 position	Exhaust center			0.46	0.37	0.12	0.47 [0.39]	0.43 [0.35]	0.13 [0.10]		77	119	85
			Pressure center			0.49 [0.39]	0.51 [0.38]	0.14 [0.10]	0.45	0.42	0.12				
柡		2 position	Single]	C4 (One-touch fitting for ø4)	0.69	0.39	0.18	0.44	0.39	0.12	53	54	75	58
Body ported		2 position	Double									71	73	115	81
٥	SYJ5□20-□-C4		Closed center	M5 x 0.8		0.69	0.40	0.19	0.43	0.40	0.12		84	126	72
β		3 position	Exhaust center	İ			0.40	0.15	0.41 [0.41]						
m			Pressure center			0.57 [0.41]	0.4 [0.37]	0.15 [0.10]	0.41	0.37	0.10				
		2 position	Single	gle			0.36	0.19	0.47	0.40	0.12	53	54	75	58
		£ position	Double		C6							71	73	115	81
	SYJ5□20-□-C6		Closed center	M5 x 0.8	5 x 0.8 (One-touch fitting for ø6)	0.72	0.37	0.19	0.44	0.34	0.12	82	84 126		
		3 position	Exhaust center				0.54	0.19	0.41 [0.41]					126	92
			Pressure center			0.82 [0.44]	0.41 [0.39]	0.23 [0.12]	0.41	0.36	0.11				
E E		2 position	Single	gle		0.79	0.21	0.19	0.83	0.32	0.21	80 (49)	81 (47)	102 (68)	51
mounted		- position	Double				-				98 (64)	98 (64)	100 (66)	142 (108)	74
2	SYJ5□40-□-01		Closed center sition Exhaust center	1/8	1/8	0.80	0.28	0.18	0.86	0.34	0.20				
Base		3 position				0.71	0.26	0.18	1.1 [0.60]			109 (75)	111 (77)	153 (119)	85
Ba			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 \rightarrow 5/3, Pressure center: 1 \rightarrow 4/2

Note 2) (): Without sub-plate.

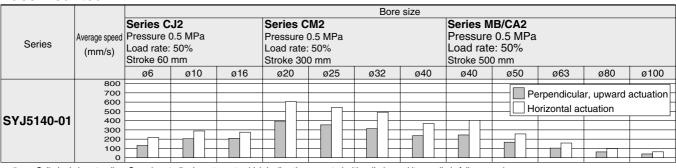
Note 3) For DC voltages. For AC voltages add 3 g to the weight of the single solenoid and 6 g to the weight of the double solenoid and 3 position types.

Cylinder Speed Chart

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

Body Port	ed	Sizing Program.								
			Bore size							
		Series C	J2		Series C	M2				
	Average speed	Pressure ().5 MPa		Pressure 0.5 MPa					
Series	(mm/s)	Load rate:	50%		Load rate: 50%					
	(,0)	Stroke 60	mm		Stroke 300 mm					
		ø6	ø10	ø16	ø20	ø25	ø32	ø40		
	800						Domesticales	and the state of the		
	700						Perpendicular, upward actua			
60							Horizontal actu	ation H		
01/1-/00 1	500							1		
SYJ5120-M5										
	300									
	200					+				
	100		\vdash			\vdash		\vdash		
	0									

Base Mounted



* 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

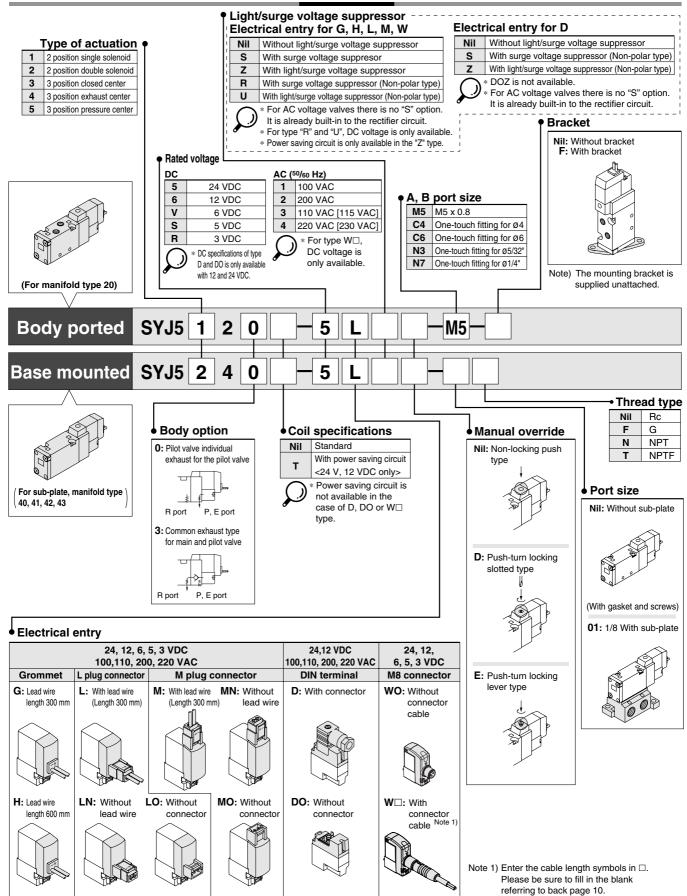
	Body ported	Series CJ2	Series CM2	Series MB/CA2
	Tubing bore x Length	ø4 x 1 m	ø6 x 1 m	ø8 x 1 m
SYJ5120-M5	Speed controller	AS1301F-04	AS3301F-06	AS3301F-08
	Silencer	AN120-M5	AN1	10-01

E	Base mounted	Series CJ2	Series CM2 Series MB/CA2
	Tubing bore x Length	ø4 x 1 m	ø6 x 1 m
SYJ5140-01	5140-01 Speed controller		AS3001F-06
	Silencer	AN101-01	AN101-01



Series SYJ5000

How to Order



* 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.