

Rubber Seal 4/5 Port Solenoid Valve Series SYJ3000



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Specifications

Fluid	Air	
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)	-10 to 50 (No freezing. Refer to back page 3.)	
Response time (ms) ^{Note 1)} (at 0.5 MPa)	2 position single, double	15 or less
	3 position	30 or less
Max. operating frequency (Hz)	2 position single, double	10
	3 position	3
Manual override (Manual operation)	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 valve	
Lubrication	Not required	
Mounting orientation	Unrestricted	
Shock/Vibration resistance (m/s ²) ^{Note 2)}	150/30	
Enclosure	Dust proof (* M8 connector conforms to IP65.)	



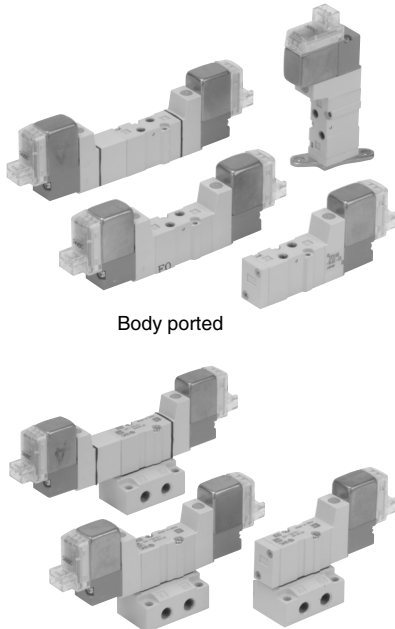
* Based on IEC60529

Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge voltage suppressor)

Note 2) 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. Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

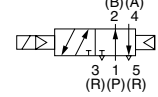


Body ported

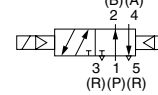
Base mounted

JIS Symbol 5 port

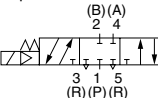
2 position single



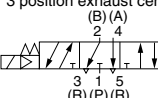
2 position double



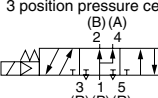
3 position closed center



3 position exhaust center

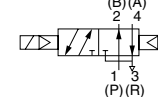


3 position pressure center

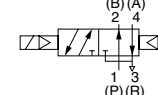


4 port (manifold)

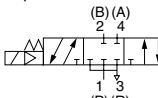
2 position single



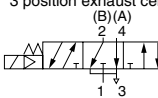
2 position double



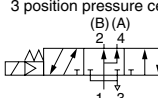
3 position closed center



3 position exhaust center



3 position pressure center



Solenoid Specifications

Electrical entry	Gromet (G), (H), L plug connector (L), M plug connector (M), 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 light: 0.4) With power saving circuit 0.1 (With light only)
	AC	100 V 0.78 (With light: 0.81) 110 V [115 V] 0.86 (With light: 0.89) [0.94 (With light: 0.97)] 200 V 1.18 (With light: 1.22) 220 V [230 V] 1.30 (With light: 1.34) [1.42 (With light: 1.46)]
Apparent power VA *		
Surge voltage suppressor	Diode (Non-polarity type: Valistor)	
Indicator light	LED	



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

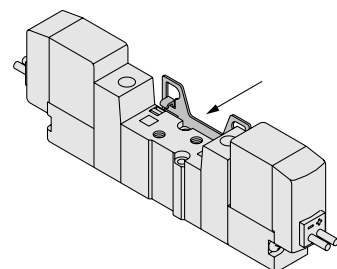
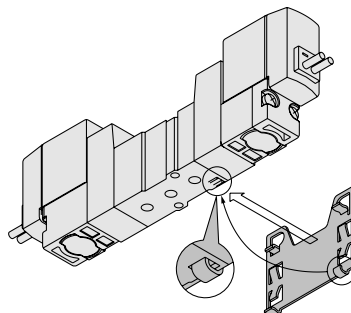
* For 115 VDC and 230 VDC, the allowable voltage is -15% to +5% of rated voltage.

* 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%

Bracket Mounting

① Insert the lower hook of the mounting bracket into the groove on the bottom of the valve as shown.

② Press the valve and mounting bracket together until the upper hook of the bracket snaps into place in the groove on top of the valve.



Made to Order
(For details, refer to page 79.)

Flow Characteristics/Weight

Valve model		Type of actuation		Port size		Weight (g) ^{Note 3, 4)}			Effective area (mm ²)	Flow characteristics ^{Note 2)}												
				1, 5, 3 (P, EA, EB)	4, 2 (A, B)	Grommet	L/M plug connector	M8 connector		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							
5 port Base mounted (with sub-plate)	SYJ314□	2 position	Single	M5 x 0.8	M5 x 0.8	62 (36)	63 (37)	67 (41)	—	0.46	0.36	0.12	0.46	0.35	0.12							
	SYJ324□		Double			79 (53)	81 (55)	89 (63)														
	3 position	SYJ334□	Closed center			82 (56)	84 (58)	92 (66)								—	0.47	0.33	0.12	0.47	0.31	0.12
		SYJ344□	Exhaust center													—	0.36	0.39	0.10	0.59 [0.40]	0.43 [0.33]	0.16 [0.11]
		SYJ354□	Pressure center													—	0.58 [0.32]	0.42 [0.33]	0.16 [0.080]	0.46	0.32	0.11
5 port Body ported	SYJ312□	2 position	Single	M3 x 0.5	M3 x 0.5	36	37	41	0.9													
	SYJ322□		Double			53	55	63														
	3 position	SYJ332□	Closed center			56	58	66								—	—	—	—	—	—	
		SYJ342□	Exhaust center													—	—	—	—	—	—	
		SYJ352□	Pressure center													—	—	—	—	—	—	
^{Note 1)} 4 Port Base mounted (For manifold base only)	SYJ313□	2 position	Single	1/8	M5 x 0.8	36	37	41	—													
	SYJ323□		Double			53	55	63														
	3 position	SYJ333□	Closed center			56	58	66								—	—	—	—	—	—	
		SYJ343□	Exhaust center													—	—	—	—	—	—	
		SYJ353□	Pressure center													—	—	—	—	—	—	



Note 1) Dedicated for manifold base. For details, refer to page 11.

Note 2) [] denotes the normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2

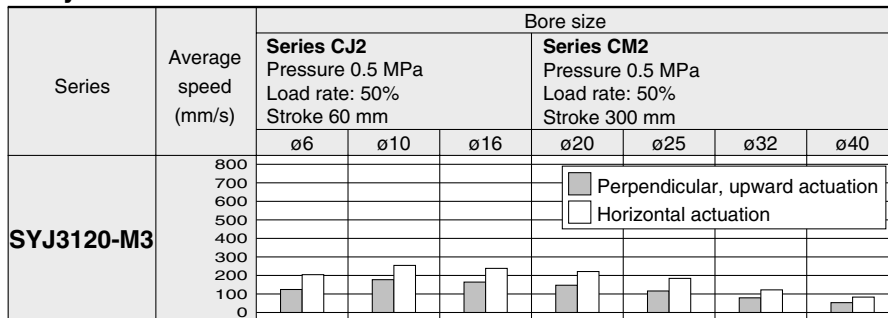
Note 3) (): Without sub-plate.

Note 4) 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.

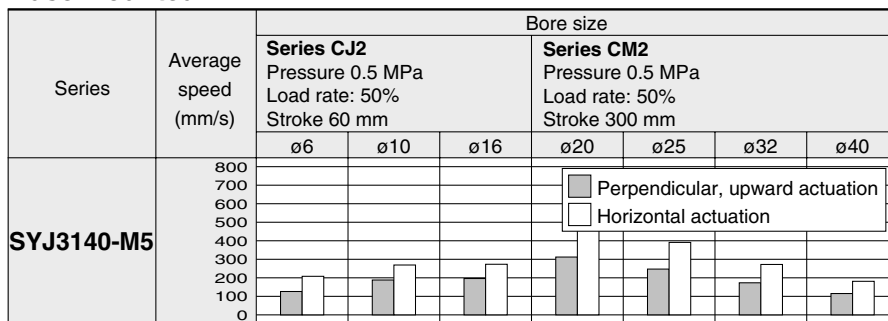
Cylinder Speed Chart

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

Body Ported



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
SYJ3120-M3	Tubing bore x Length	ø4 x 1 m	
	Speed controller	AS1301F-04	
	Silencer	AN120-M5	

Base mounted		Series CJ2	Series CM2
SYJ3140-M5	Tubing bore x Length	ø6 x 1 m	
	Speed controller	AS2001F-06	AS2301F-06
	Silencer	AN120-M5	

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

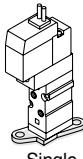
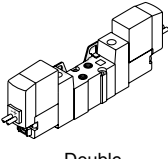
Light/surge voltage suppressor

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 type "R" and "U", DC voltage is only available.
 * Power saving circuit is only available in the "Z" type.

Bracket

Nil: Without bracket
F: With bracket

Single Double

* Brackets cannot be retrofitted.

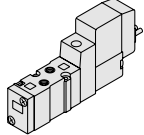
Note) • The double solenoid mounting bracket is supplied unattached.
 • To order the double solenoid bracket for use with a single solenoid valve, order the single solenoid valve without a bracket and order the bracket (VJ3000-13-1) separately.
 (Example) SYJ3120-5M-M3 VJ3000-13-1

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		

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

5 port



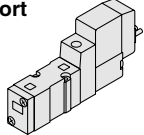
(Type 20 Manifold)

Body ported SYJ3 1 2 0 □ — 5 M □ □ — M3 □

Base mounted (4 port) SYJ3 2 3 0 □ — 5 M □ □ (Manifold use only)

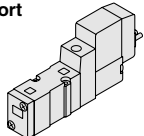
Base mounted (5 port) SYJ3 2 4 0 □ — 5 M □ □

4 port



(For manifold type 31, S31, 32, S32)

5 port



(For sub-plate, manifold type 41, S41, 46, S46)

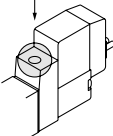
Coil specifications

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

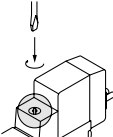
* Power saving circuit is not available in the case of W□ type.

Manual override

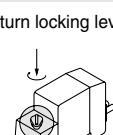
Nil: Non-locking push type



D: Push-turn locking slotted type

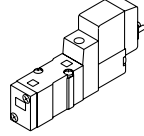


E: Push-turn locking lever type



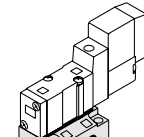
Port size

Nil: Without sub-plate



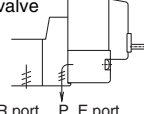
(With gasket and screws)

M5: With M5 port sub-plate



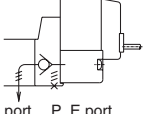
Body option

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

Electrical entry

24, 12, 6, 5, 3 VDC 100, 110, 200, 220 VAC				24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector		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	WO: Without connector cable
H: Lead wire length 600 mm	LN: Without lead wire	LO: Without connector	MO: Without connector	W□: With connector cable (Note 1)

* LN, MN type: with 2 sockets.
 * For connector cable of M8 connector, refer to back page 10.
 Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to back page 10.

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 15.)