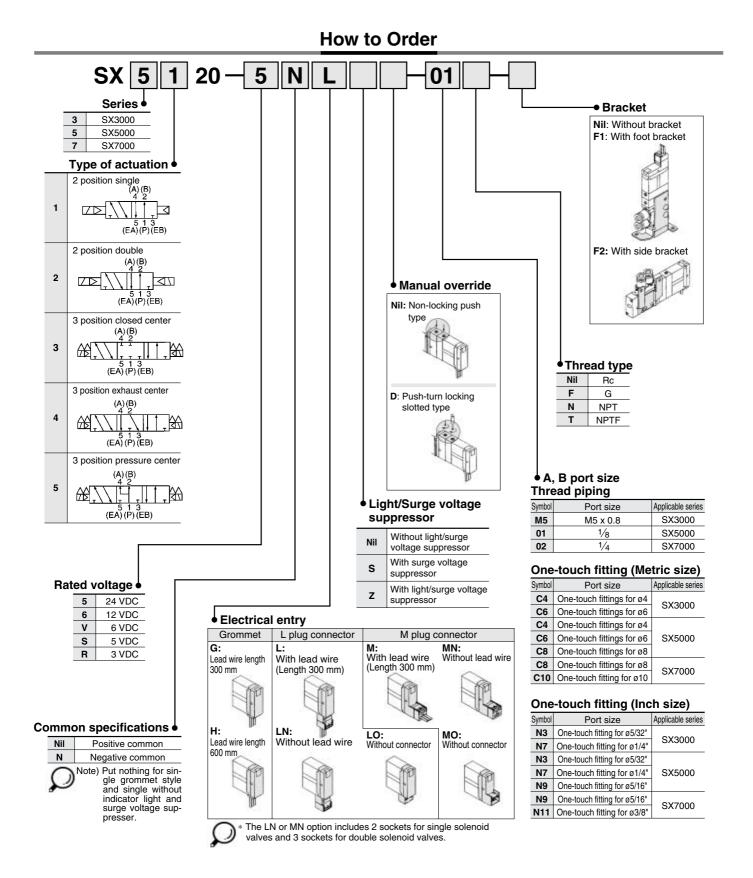


## Series SX3000/5000/7000 Body Ported Valve Single Unit



## Specifications



Made to Order Specifications

(For details, refer to pages 1-6-124 to 1-6-138.)

de to

Se	ries	SX3000	SX5000	SX7000	
Fluid			Air		
Internal pilot	2 position single		0.15 to 0.7		
Operating pressure range	2 position double		0.1 to 0.7		
(MPa)	3 position		0.2 to 0.7		
Ambient and fluid temp	perature (°C)		Max. 50		
Max. operating	2 position single, double	10	5	5	
frequency (Hz)	3 position	3	3	3	
Manual override		Non-locking push type, Push-turn locking slotted type			
Pilot exhaust method		Common exhaust type for main and pilot valve			
Lubrication		Not required			
Mounting orientation		Unrestricted 150/30 Dusttight			
Impact/Vibration resist	ance (m/s <sup>2</sup> ) <sup>Note)</sup>				
Enclosure					
P Note) Impact resis	direction and at	· · ·	the main valve an tes every once fo	d armature in both or 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 at the initial period)

## **Solenoid Specifications**

Electrical entry		Grommet (G)/(H), L plug connector (L), M plug connector (M)		
Coil rated voltage (V)	DC	24, 12, 6, 5, 3		
Allowable voltage fluctua	ation	±10% of rated voltage		
Power consumption (W)	DC	0.6 (With indicator light: 0.65)		
Surge voltage suppress	or	Diode		
Indicator light		LED		

### **Response Time**

Note) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage)

### SX3000

	Response time (ms) (at the pressure of 0.5 MPa)				
Type of actuation		With light/surge voltage suppressor			
	voltage suppressor	S, Z type			
2 position single	12 or less	15 or less			
2 position double	10 or less	13 or less			
3 position	15 or less	20 or less			

### SX5000

	Response time (ms) (at the pressure of 0.5 MPa)				
Type of actuation		With light/surge voltage suppressor			
	voltage suppressor	S, Z type			
2 position single	19 or less	26 or less			
2 position double	18 or less	22 or less			
3 position	32 or less	38 or less			

## SX7000

	Response time (ms) (at	the pressure of 0.5 MPa)	
Type of actuation		With light/surge voltage suppressor	
	voltage suppressor	S, Z type	
2 position single	31 or less	38 or less	
2 position double	27 or less	30 or less	
3 position	50 or less	56 or less	



# Body Ported Series SX3000/5000/7000

## Flow Characteristics/Weight

## Model/Series SX3000

			Davit	aima			Flow char	acteristics			$M_{aight}(x)$	
	Тур	e of	Port	size	1 –	$\rightarrow$ 4/2 (P $\rightarrow$ A/	/B)	4/2 →	5/3 (A/B $\rightarrow$ E	EA/EB)	We	ight (g)
Valve model	actuation		1, 5, 3 (P, EA, EB)	4, 2 (A, B)	C [dm³/(s⋅bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	Grommet	L plug connector M plug connector
	2 position	Single Double			0.61	0.44	0.16	0.64	0.45	0.18	62 70	63 72
		Closed center			0.48	0.46	0.13	0.47	0.43	0.13		
SX3□20-□-M5	3 position	Exhaust center		M5 x 0.8	0.47	0.42	0.13	0.47 [0.44]	0.41 [0.37]	0.13 [0.12]	73	74
		Pressure center			0.50 [0.41]	0.48 [0.35]	0.15 [0.11]	0.47	0.43	0.13		
	2 position	Single			0.72	0.29	0.18	0.64	0.34	0.17	72	73
	1	Double		M5 x 0.8 C4 (One-touch) (fitting for ø4)						-	80	81
SX3□20-□-C4		Closed center			0.59	0.28	0.15	0.59	0.30	0.15	82	
5X320C4	3 position	Exhaust center	INI5 X U.8		0.63	0.35	0.16	0.42 [0.41]	0.34 [0.37]	0.11 [0.11]		84
		Pressure center			0.76 [0.46]	0.42 [0.34]	0.21 [0.12]	0.59	0.29	0.15		
	2 position	Single			0.76	0.30	0.19	0.65	0.39	0.17	68	69
	2 position	Double			0.76	0.30	0.19	0.05	0.39	0.17	76	77
		Closed center		C4	0.76	0.55	0.24	0.60	0.33	0.16		
SX3□20-□-C6	3 position	Exhaust center		(One-touch fitting for Ø6)	0.65	0.32	0.16	0.64 [0.42]	0.31 [0.36]	0.17 [0.11]	[0.11] 78	80
		Pressure center			0.77 [0.49]	0.34 [0.43]	0.21 [0.15]	0.61	0.34	0.16		
	5 posición	Pressure		Virand for 90	0.77 [0.49]	0.34 [0.43]	0.21 [0.15]	0.61		0.16	[ ]: Denotes (	

## Model/Series SX5000

			Bort	size			Flow char	acteristics			14/2	~ ht (~)
Valve model	Тур	e of	Port	size	1 –	$\rightarrow$ 4/2 (P $\rightarrow$ A	/B)	$4/2 \rightarrow$	5/3 (A/B $\rightarrow$ E	EA/EB)	vvei	ght (g)
valve model	actu	ation	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	Grommet	L plug connector M plug connector
	2 position	Single Double			1.9	0.35	0.49	2.4	0.39	0.61	75 83	76 84
		Closed center	1		1.7	0.43	0.45	1.8	0.35	0.46		
SX5⊡20-⊡-01	3 position	Exhaust center		Rc 1⁄8	1.5	0.44	0.41	2.5 [1.5]	0.32 [0.43]	0.59 [0.40]	88	90
		Pressure center			2.2 [0.91]	0.46 [0.58]	0.61 [0.28]	1.8	0.38	0.46		
	2 position	Single	]		0.75	0.43	0.20	0.85	0.64	0.30	83	84
		Double		C4							91	92
		Closed center		-	0.74	0.40	0.19	0.84	0.57	0.28		
SX5□20-□-C4	3 position	Exhaust center		One-touch (fitting for ø4)	0.75	0.36	0.19	0.84 [0.84]	0.64 [0.53]	0.30 [0.27]	96	97
		Pressure center	D- 1/		0.78 [0.71]	0.44 [0.37]	0.21 [0.18]	0.84	0.57	0.27		
	0	Single	Rc 1⁄4		1.5	0.33	0.33	2.0	0.37	0.52	78	79
	2 position	Double						-			86	87
		Closed center		C6	1.3	0.31	0.33	1.6	0.32	0.39		
SX5□20-□-C6	3 position	Exhaust center		One-touch	1.3	0.33	0.33	1.8 [1.4]	0.35 [0.37]	0.44 [0.35]	91	92
		Pressure center			1.7 [0.80]	0.31 [0.47]	0.42 [0.23]	1.7	0.33	0.44		
	2 position	Single			1.9	0.21	0.45	2.3	0.29	0.57	79	80
	1	Double		00	-	-		_			87	88
		Closed center		C8	1.6	0.29	0.39	1.7	0.38	0.46		
SX5□20-□-C8	3 position	Exhaust center		One-touch fitting for ø8	1.4	0.38	0.39	2.0 [1.5]	0.37 [0.41]	0.52 [0.43]	92	93
		Pressure center			2.2 [1.6]	0.32 [0.44]	0.56 [0.44]	1.8	0.41	0.50	1	

# Body Ported Series SX3000/5000/7000

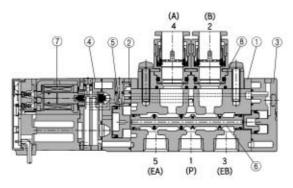
## Construction

## **Series SX**

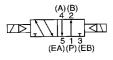
JIS Symbol 2 position single



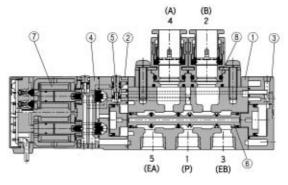
## 2 position single



#### JIS Symbol 2 position double



2 position double



## How to Order Connector Assembly for L/M Plug Connector

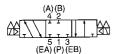
Positive common	spec	ifications
For single solenoid:	SX1	00-40-4S-
For double solenoid, 3 position:	SX1	00-40-4D-
Negative common	n spec	cifications
For single solenoid:	SX1	00-41-4S-
For double solenoid, 3 position:	SX1	00-41-4D-
Le	ead wi	ire length •
Le	ead wi Nil	ire length
Le		<u> </u>
Le 	Nil	300 mm
Le 	Nil 6	300 mm 600 mm
	Nil 6 10	300 mm 600 mm 1000 mm
	Nil 6 10 15	300 mm 600 mm 1000 mm 1500 mm
	Nil 6 10 15 20	300 mm 600 mm 1000 mm 1500 mm 2000 mm
	Nil 6 10 15 20 25	300 mm 600 mm 1000 mm 1500 mm 2000 mm 2500 mm

For detailed information on connector assembly, refer to page 1-6-8.

## 3 position closed center/exhaust center/pressure center

JIS Symbol

3 position closed center



3 position exhaust center



3 position pressure center (A)(B)

## 

## **Component Parts**

No.	Description	Material	Note
1	Body	Aluminum die-casted (SX3000: Zinc die-casted)	White
2	Adapter plate	Resin	White
3	End plate	Resin	White
4	Pilot body	Resin	White
(5)	Piston	Resin	_
6	Spool valve assembly	Aluminum, HNBR	—
$\overline{\mathcal{O}}$	Molded coil	Resin	Gray

## **Replacement Parts**

No.	Description	Part no.
(8)	Port block assembly	See "How to Order Port Block Assembly" on page 1-6-7.

## Bracket Assembly No.

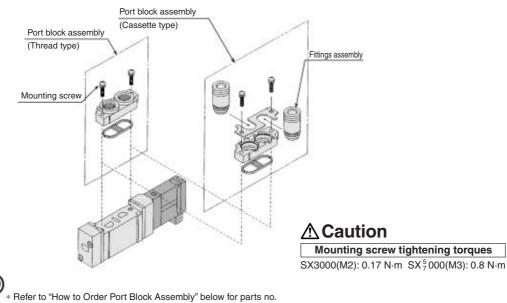
Description	Part no.
Bracket (For F1)	SX 5000-16-1A (With mounting screw)
Bracket (For F2)	SX <sup>3</sup> / <sub>7</sub> 000-16-2A (With mounting screw)



## How to Change Port Block Assembly

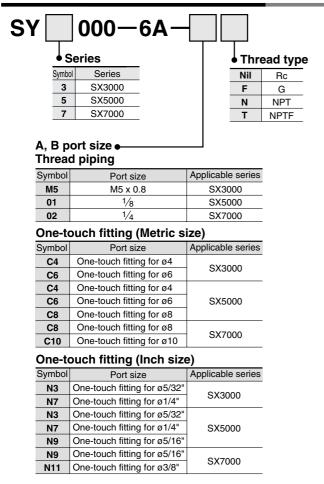
The cylinder port block assembly can easily be changed. When changing block assembly, correct screw torque must be achieved. Cut off the air supply to confirm that no air is left in the manifold before starting operation. Remaining air or inappropriate installation may cause an accident.

## • For SX5000



SV
SZ
SY
SYJ
SX

## How to Order Port Block Assembly



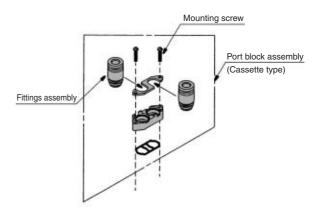
\* Only replacement of the fittings assembly is possible.

### Metric size

metho 5		
SX3000	One-touch fitting for ø4	VVQ1000-50A-C4
573000	One-touch fitting for ø6	VVQ1000-50A-C6
	One-touch fitting for ø4	VVQ1000-51A-C4
SX5000	One-touch fitting for ø6	VVQ1000-51A-C6
	One-touch fitting for ø8	VVQ1000-51A-C8
0.17000	One-touch fitting for ø8	VVQ2000-51A-C8
SX7000	One-touch fitting for ø10	VVQ2000-51A-C10

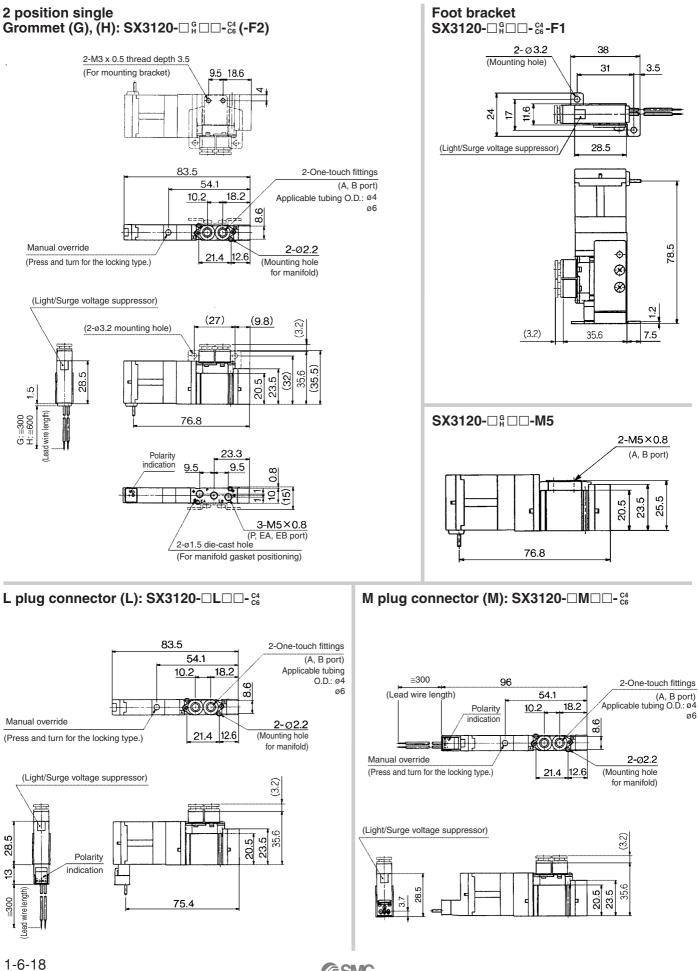
#### Inch size

One-touch fitting for ø5/32"	VVQ1000-50A-N3					
One-touch fitting for ø1/4"	VVQ1000-50A-N7					
One-touch fitting for ø5/32"	VVQ1000-51A-N3					
One-touch fitting for ø1/4"	VVQ1000-50A-N7					
One-touch fitting for ø5/16"	VVQ1000-50A-N9					
One-touch fitting for ø5/16"	VVQ2000-51A-N9					
One-touch fitting for ø3/8"	VVQ2000-51A-N11					
	One-touch fitting for ø1/4" One-touch fitting for ø5/32" One-touch fitting for ø1/4" One-touch fitting for ø5/16" One-touch fitting for ø5/16"					

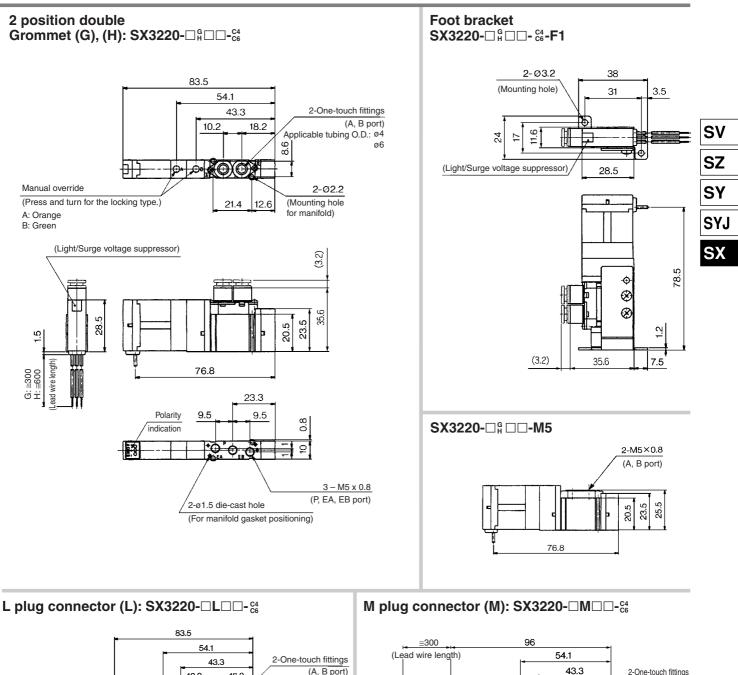


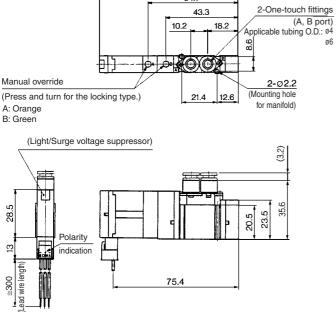
## **Body Ported** Series SX3000/5000/7000

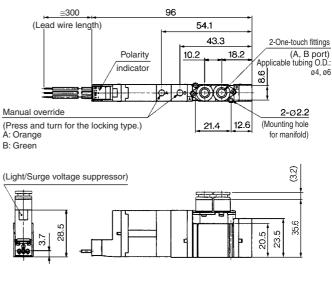
## **Dimensions: Series SX3000**



**SMC** 



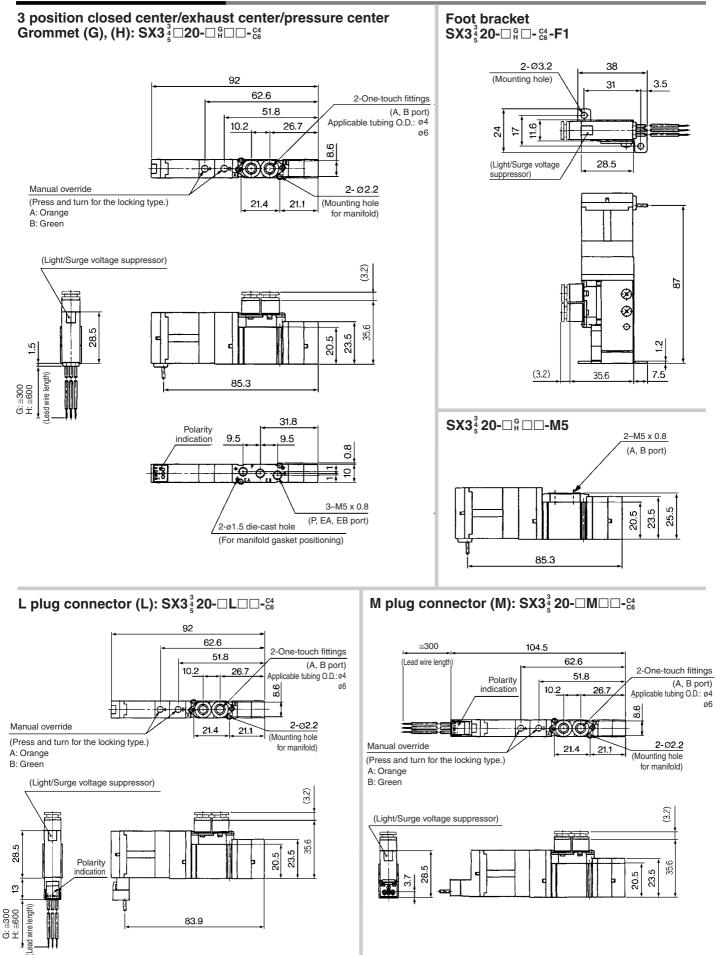




# Body Ported Series SX3000/5000/7000

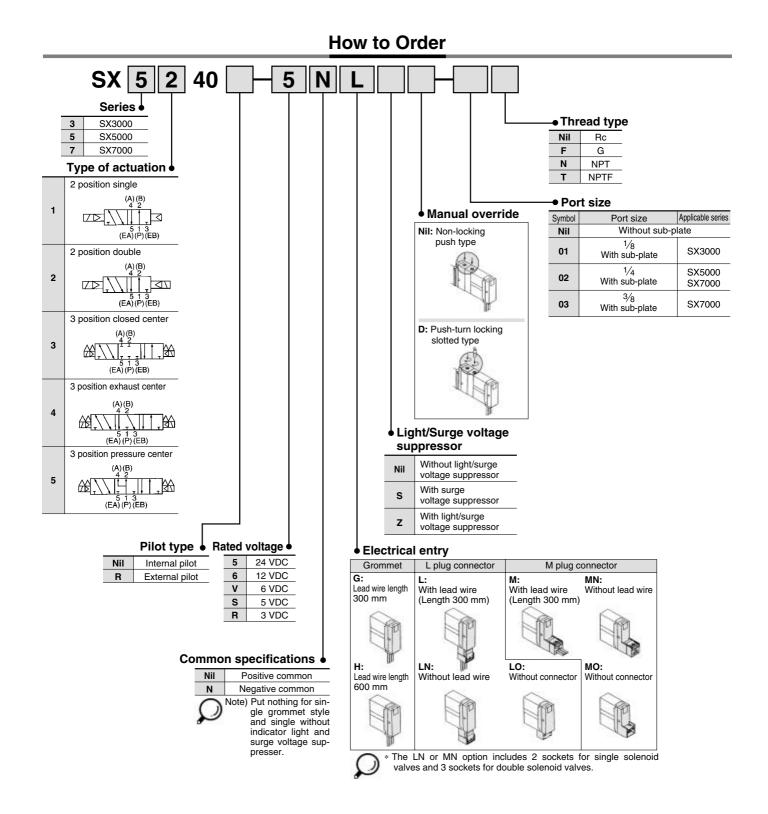
## **Dimensions: Series SX3000**

1-6-20

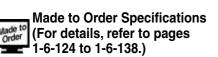




## Series SX3000/5000/7000 Base Mounted Valve Single Unit







Specifications	
----------------	--

Sei	ries		SX3000	SX5000	SX7000			
Fluid			Air					
Internal pilot	2 position	single	0.15 to 0.7					
Operating pressure range	2 position	double		0.1 to 0.7				
(MPa)	3 position			0.2 to 0.7				
External pilot	Operating p	ressure range		-100 kPa to 0.7				
External pilot Operating pressure range	Pilot	2 position single		0.25 to 0.7				
(MPa)	pressure	2 position double		0.25 to 0.7				
(IVII d)	range	3 position		0.25 to 0.7				
Ambient and fluid temperature (°C)			Max. 50					
Max. operating frequency (Hz)	2 position single, double		10	5	5			
Max. operating frequency (frz)	3 position		3	3	3			
Manual override			Non-locking push type, Push-turn locking slotted type					
Pilot exhaust method	Internal pilot		Common exhaust type for main and pilot valve					
Pliot exhaust method	External pilot		Pilot valve individual exhaust					
Lubrication			Not required					
Mounting orientation			Unrestricted					
Impact/Vibration resist	ance (m/s²)	Note)	150/30					
Enclosure			Dusttight					
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)

### **Solenoid Specifications**

	Grommet (G)/(H), L plug connector (L), M plug connector (M)			
DC	24, 12, 6, 5, 3			
ion	±10% of rated voltage			
DC	0.6 (With indicator light: 0.65)			
	Diode			
	LED			
	ion			

### **Response Time**

Note) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage)

### SX3000

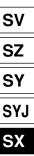
	Response time (ms) (at the pressure of 0.5 MPa)						
Type of actuation	Without light/surge	With light/surge voltage suppressor					
	voltage suppressor	S, Z type					
2 position single	12 or less	15 or less					
2 position double	10 or less	13 or less					
3 position	15 or less	20 or less					

### SX5000

	Response time (ms) (at the pressure of 0.5 MPa)						
Type of actuation	Without light/surge	With light/surge voltage suppressor					
	voltage suppressor	S, Z type					
2 position single	19 or less	26 or less					
2 position double	18 or less	22 or less					
3 position	32 or less	38 or less					

### SX7000

	Response time (ms) (at the pressure of 0.5 MPa)						
Type of actuation		With light/surge voltage suppresso					
	voltage suppressor	S, Z type					
2 position single	31 or less	38 or less					
2 position double	27 or less	30 or less					
3 position	50 or less	56 or less					



## **Base Mounted**

## Series SX3000/5000/7000

## Flow Characteristics/Weight

## Model/Series SX3000

				Flow characteristics (1)							Maight (g) (2)	
Male a secondal	Tuno	factuation	Port size	$1 \rightarrow 4/2 \ (P \rightarrow A/B)$			$4/2 \rightarrow 5/3 (A/B \rightarrow EA/EB)$			Weight (g) (2)		
Valve model	Type of actuation		Port size	C [dm³/(s·bar)]	b	Cv	C [dm³/(s⋅bar)]	b	Cv	Grommet	L plug connector M plug connector	
	2 position	Single Double		1.0	0.30	0.24	1.1	0.30	0.26	100 (66) 108 (74)	101 (67) 110 (75)	
		Closed center	Rc ½	0.77	0.28	0.18	0.85	0.30	0.19			
SX3□40-□-01	3 position	Exhaust center		0.73	0.31	0.18	1.1 [0.55]	0.26 [0.52]	0.24 [0.16]	111 (76)	112 (78)	
		Pressure center		1.2 [0.51]	0.24 [0.45]	0.29 [0.14]	0.89	0.47	0.24	· · · · ·		

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

## Model/Series SX5000

	Type of actuation			Flow characteristics (1)							Maight (g) (2)	
Valve model			Port size	$1 \rightarrow 4/2 \ (P \rightarrow A/B)$			$4/2 \rightarrow 5/3 (A/B \rightarrow EA/EB)$			Weight (g) (2)		
			Port size	C [dm³/(s·bar)]	b	Cv	C [dm³/(s⋅bar)]	b	Cv	Grommet	L plug connector M plug connector	
	2 position	Single		2.4	0.41	0.64	2.8	0.29	0.66	136 (74)	137 (75)	
		Double		2.4	0.41	0.04	2.0	0.23	0.00	144 (82)	145 (83)	
		Closed center		1.8	0.47	0.50	1.8	0.40	0.47			
	3 position	Exhaust center	Rc 1⁄4	1.4	0.55	0.44	3.0 [1.2]	0.33 [0.48]	0.72 [0.37]	149 (87)	151 (89)	
		Pressure center		3.3 [0.84]	0.36 [0.60]	0.85 [0.28]	1.8	0.40	0.48		- ()	
SX5⊡40-⊡-02	3 position	Closed center Exhaust center Pressure center	Rc 1/4	1.8 1.4	0.47	0.50	1.8 3.0 [1.2]	0.40 0.33 [0.48]	0.47 0.72 [0.37]			

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

## Model/Series SX7000

				Flow characteristics (1)							Weight (g) (2)	
Valve model	Type of actuation		Dort oizo	$1 \rightarrow 4/2 \ (P \rightarrow A/B)$			$4/2 \rightarrow 5/3 (A/B \rightarrow EA/EB)$			vveight (g) (2)		
valve model	Type c	n actuation	Port size	C [dm³/(s⋅bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	Grommet	L plug connector M plug connector	
	2 position	Single Double		4.1	0.41	1.1	4.1	0.29	1.0	222 (100) 229 (107)	223 (101) 231 (109)	
		Closed center		3.0	0.43	0.80	2.6	0.41	0.72			
SX7□40-□-02	3 position		Rc 1⁄4	2.6	0.42	0.71	4.7 [1.7]	0.35 [0.48]	1.1 [0.49]	238 (116)	240 (118)	
	Ľ	Pressure center		5.3 [2.3]	0.39 [0.49]	1.3 [0.65]	2.2	0.49	0.63			
	2 position	Single Double		4.9	0.29	1.2	4.5	0.27	1.1	222 (100) 229 (107)	223 (101) 231 (109)	
		Closed center		3.0	0.40	0.80	2.6	0.45	0.73			
SX7⊡40-⊡-03	3 position	Exhaust center	Rc 3⁄8	2.6	0.42	0.71	4.8 [1.7]	0.35 [0.48]	1.1 [0.49]	238 (116)	240 (118)	
	Pressure center		5.3 [2.3]	0.31 [0.51]	1.3 [0.64]	2.3	0.45	0.66		. ,		

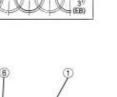


Note 1) [ ]: Denotes the normal position. Note 2) ( ): Without sub-plate.

## **Base Mounted** Series SX3000/5000/7000

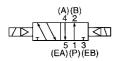
## How to Order **Connector Assembly** for L/M Plug Connector

Positive commo For single solenoid: For double solenoid, 3 position:	SX SX	100-40-4S 100-40-4D	]
Negative commo		100-41-4S-	
For single solenoid:		느ㅋㅋㅋ	SV
For double solenoid, 3 position:	SX	100-41-4D-	SZ
	Lead v	wire length •	52
	Nil	300 mm	SY
	6	600 mm	01
	10	1000 mm	SYJ
	15	1500 mm	515
	20	2000 mm	<b>O</b> V
	25	2500 mm	SX
	30	3000 mm	
	50	5000 mm	
		nation on connector page 1-6-8.	



(B)

JIS Symbol 2 position double



2 position double

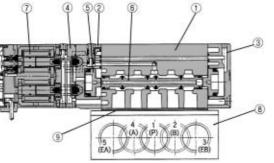
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2 position single

(5) 4

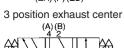
6

(EA)



## 3 position closed center/exhaust center/pressure center

JIS Symbol 3 position closed center (A)(B) Ѩ Æ (EA) (P) (EB)





3 position pressure center



## **Component Parts**

No.	Description	Material	Note					
1	Body	Aluminum die-casted (SX3000: Zinc die-casted)	White					
2	Adapter plate	Resin	White					
3	End plate	Resin	White					
4	Pilot body	Resin	White					
(5)	Piston	Resin	—					
6	Spool valve assembly	Aluminum, HNBR	_					
$\overline{\mathcal{O}}$	Molded coil	Resin	Gray					

1

15 (EA);

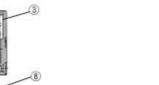
(This figure shows a closed center type.)

## **Replacement Parts**

	•							
No.	Description	Part no.			Note			
		SX3□40	SX5⊡40	SX7□40	Note			
8	Sub-plate	SY3000-27-1	SY5000-27-1	<sup>1</sup> / <sub>4</sub> Rc: SY7000-27-1 <sup>3</sup> / <sub>8</sub> Rc: SY7000-27-2	Aluminum die-casted			
9	Gasket	SY3000-11-25	SY5000-11-15	SY7000-11-11	HNBR			
_	Round head combination screw	SX3000-22-2 (M2 x 24)	M3 x 30	M4 x 35	For valve mounting (Matt nickel plated)			

## **∧** Caution

Mounting Screw Tightening Torques M2: 0.17 N·m M3: 0.8 N·m M4: 1.4 N·m

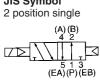


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(8)

### **Series SX** JIS Symbol

Construction





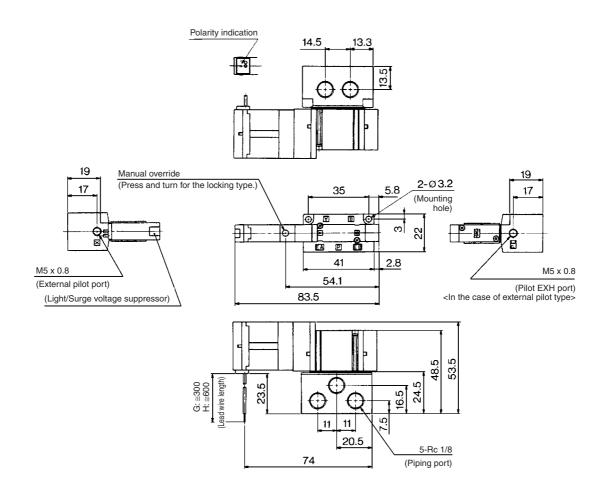
**Base Mounted** 

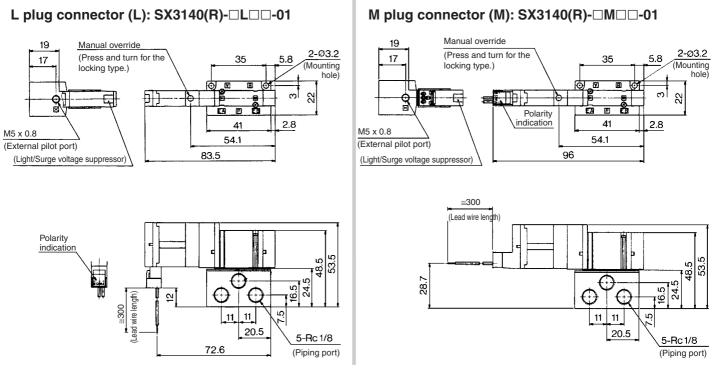
## Series SX3000/5000/7000

## **Dimensions: Series SX3000**

## 2 position single

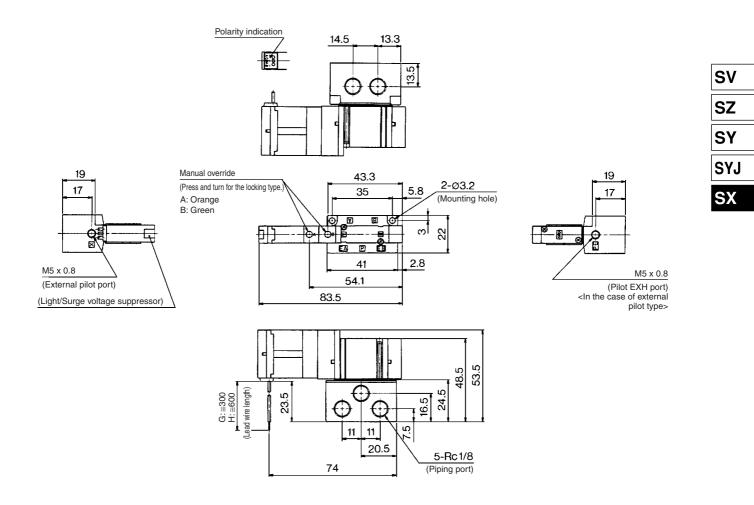
Grommet (G), (H): SX3140(R)-□ H □□-01

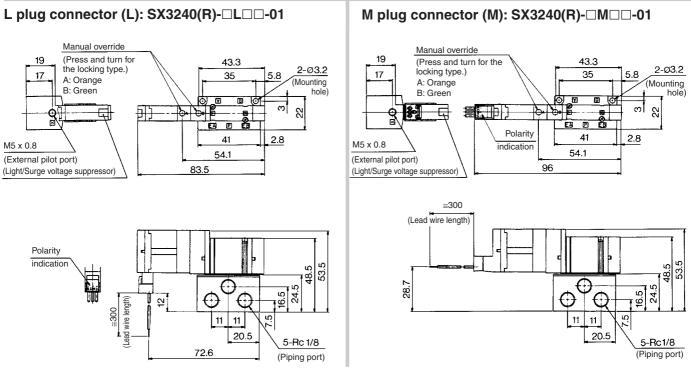




**SMC** 

## 2 position double Grommet (G), (H): SX3240(R)-□∺□□-01





**SMC** 

**Base Mounted** 

## Series SX3000/5000/7000

## **Dimensions: Series SX3000**

## 3 position closed center/exhaust center/pressure center Grommet (G), (H): SX3 $\frac{3}{4}$ 40(R)- $\Box_{H}^{G}$ $\Box$ -01

