

5 Port Pilot Operated Solenoid Valve Metal Seal, Plug-in/Non Plug-in

Series VFS6000

Model

Type of actuation	Model		Port size Rc	Flow characteristics						Max. operating cycle (cpm) ⁽¹⁾	Response time (ms) ⁽²⁾	Mass (kg) ⁽³⁾	
	Plug-in	Non plug-in		1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → R1/R2)						
				C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv				
2 position	Single	VFS6100	VFS6110	3/4	29	0.10	6.8	38	0.10	9.0	180	160 or less	2.5
				1	29	0.10	6.8	38	0.10	9.0	180	60 or less	2.75
	Double	VFS6200	VFS6210	3/4	29	0.10	6.8	38	0.10	9.0	180	60 or less	2.75
				1	29	0.10	6.8	38	0.10	9.0	180	60 or less	2.75



- Note 1) Based on JIS B 8375-1981 (once per 30 days) for the min. operating frequency.
 Note 2) According to JIS B 8375-1981. (The value at supply pressure 0.5 MPa.)
 Note 3) The figures in the above list are for without sub-plate. In case of with sub-plate, add 1.65 kg for Rc 3/4 and 1.5 kg for RC 1 respectively.
 Note 4) "Note 1)" and "Note 2)" are with controlled clean air.
 Note 5) The flow characteristics is for the port size Rc 4/3.

Compact yet provides a large flow capacity
 3/4: C: 38 dm³/(s·bar)

Low power consumption: 1.8 W DC

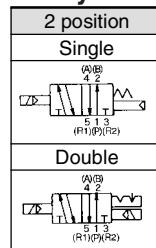
Easy maintenance

2 types of sub-plates:

Plug-in and non plug-in



JIS Symbol



Standard Specifications

Valve specifications	Fluid		Air/Inert gas
	Maximum operating pressure		1.0 MPa
	Minimum operating pressure		0.1 MPa
	Proof pressure		1.5 MPa
	Ambient and fluid temperature		-10 to 60°C ⁽¹⁾
	Lubrication		Non-lube ⁽²⁾
	Pilot valve manual override		Non-locking push type (Flush)
	Shock/Vibration resistance		150/50 m/s ² ⁽³⁾
	Enclosure		Type E: Dustproof (Level 0), Type F: Drip-proof (Level 2), Type D: Splashproof (Level 4) ⁽⁴⁾
	Electricity specifications	Coil rated voltage	
Allowable voltage fluctuation		-15 to +10% of rated voltage	
Coil insulation type		Class B or equivalent (130°C) ⁽⁵⁾	
Apparent power (Power consumption) AC		Inrush	5.6 VA/50 Hz, 5.0 VA/60 Hz
		Holding	3.4 VA (2.1 W)/50 Hz, 2.3 VA (1.5 W)/60 Hz
Power consumption DC		1.8 W (2.04 W: With light/surge voltage suppressor)	
Electrical entry		Plug-in type: Conduit terminal Non plug-in type: Grommet terminal, DIN terminal	



- Note 1) Use dry air at low temperatures.
 Note 2) Use turbine oil Class 1 (ISO VG32), if lubricated.
 Note 3) 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)

Note 4) Based on JIS C 0920. Note 5) Based on JIS C 4003.

Option Specifications

Pilot type		External pilot ^{Note)}
Manual override	Main valve	Direct manual override
Coil rated voltage		110 to 120, 220, 240 VAC (50 Hz/60 Hz) 12, 100 VDC
Porting specifications		Bottom ported
Option		With light/surge voltage suppressor, Non-rotating DIN terminal




- Note) Operating pressure: 0 to 1.0 MPa
 Pilot pressure: 0.1 to 1.0 MPa


5 Port Pilot Operated Solenoid Valve *Series VFS6000*

Metal Seal, Plug-in/Non Plug-in

How to Order



Plug-in



Non plug-in

Body type

O: Plug-in type sub-plate

F: Plug-in type conduit terminal

Electrical entry

Z: Grommet terminal

D: DIN terminal

Porting specifications

Nil	Side ported
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Port size

Nil	Without sub-plate
06	Rc 3/4
10	Rc 1

Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

* Option

CE-compliant

Nil	—
Q	CE-compliant

Option

Nil	None
Z	With light/surge voltage suppressor

Coil rated voltage

1	100 VAC, 50/60 Hz
2	200 VAC, 50/60 Hz
3*	110 to 120 VAC, 50/60 Hz
4*	220 VAC, 50/60 Hz
5	24 VDC
6*	12 VDC
7*	240 VAC, 50/60 Hz
9*	Other

* Option

Body Option

0	Standard
1*	Direct manual override

* Option

Pilot type

Nil	Internal pilot
R*	External pilot

* Option

Symbol

1: 2 position single

2: 2 position double

Body type

1: Non plug-in type sub-plate


How to Order Pilot Valve Assembly

SF4 - 1 F - 22

Coil rated voltage

1	100 VAC, 50/60 Hz
2	200 VAC, 50/60 Hz
3*	110 to 120 VAC, 50/60 Hz
4*	220 VAC, 50/60 Hz
5	24 VDC
6*	12 VDC
7*	240 VAC, 50/60 Hz
9*	Other

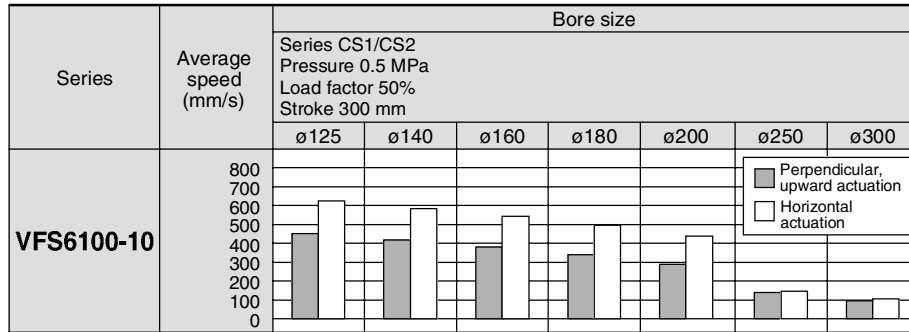
* Option

 * Refer to page 1224 for voltage conversion.

Series VFS6000

Cylinder Speed Chart

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

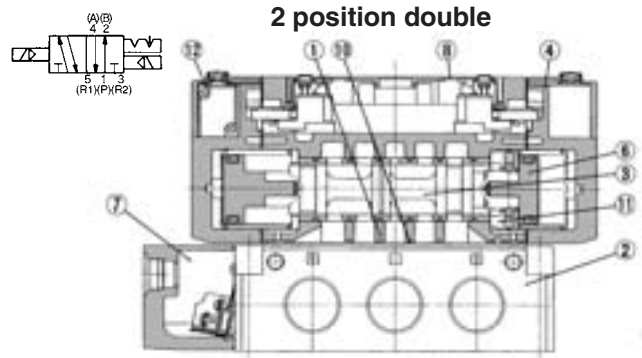
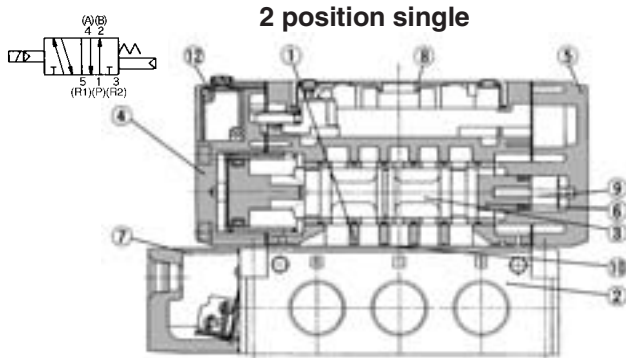


- * It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
- * The average velocity of the cylinder is what the stroke is divided by the total stroke time.
- * Load factor: ((Load weight x 9.8)/Theoretical force) x 100%

Conditions

		Series CS1/CS2
VFS6100-10	Tube bore x Length	SGP25A x 1 m
	Speed controller	AS600-10
	Silencer	AN600-10

Construction



Component Parts

No.	Description	Material	Note
1	Body	Aluminum die-casted	Platinum silver
2	Sub-plate	Aluminum die-casted	Platinum silver
3	Spool/Sleeve	Stainless steel	—
4	Adapter plate	Aluminum die-casted	Black
5	End plate	Aluminum die-casted	Black
6	Piston	Resin	—
7	Junction cover	Resin	—
8	Light cover	Resin	—
9	Return spring	Stainless steel	—
10	Gasket	NBR	—
11	Detent assembly	—	—
12	Pilot valve assembly	—	—

* Refer to "How to Order Pilot Valve Assembly" on page 1219.

Sub-plate Assembly Part No.

Plug-in	VFS6000-P- ⁰⁶ / ₁₀
Non plug-in	VFS6000-S- ⁰⁶ / ₁₀

* Mounting bolt and gasket are not included.

Sub-plate Assembly (For External Pilot) Part No.

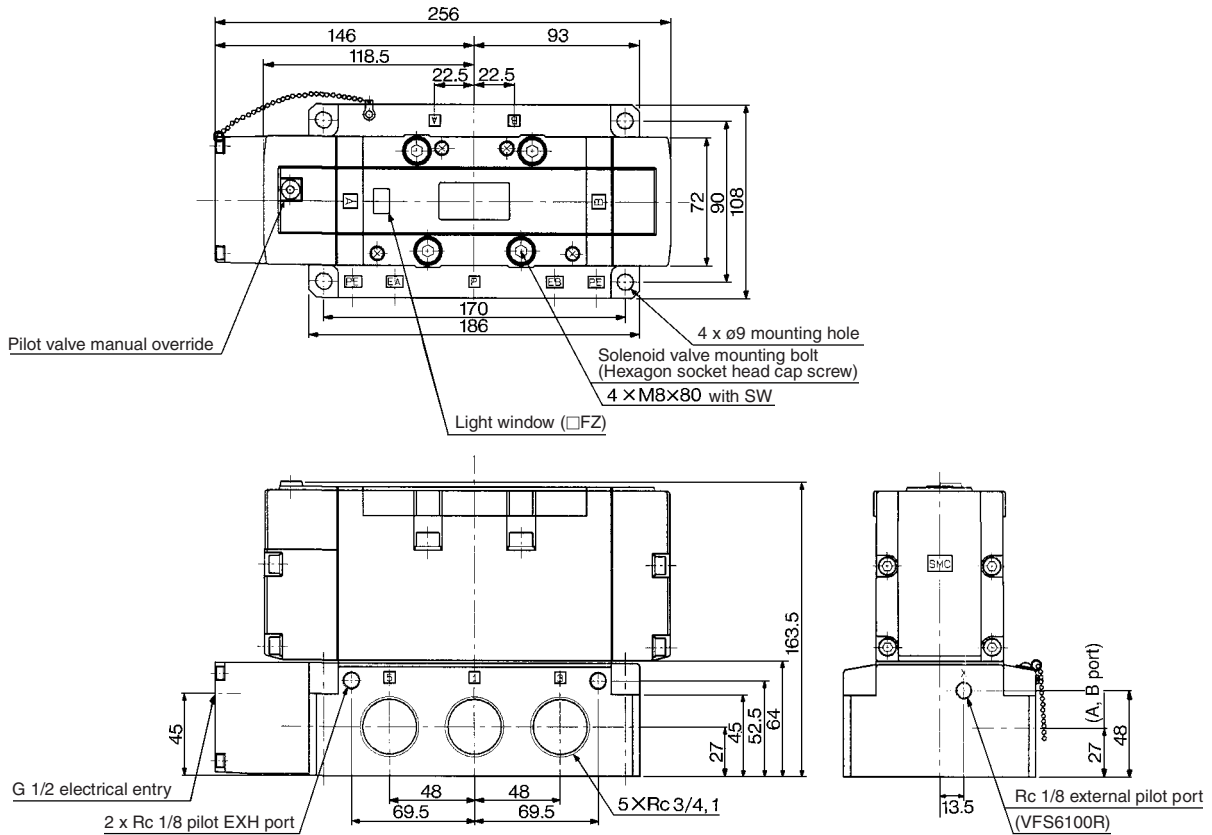
Plug-in	VFS6000-P-R- ⁰¹ / ₀₂
Non plug-in	VFS6000-S-R- ⁰¹ / ₀₂

Part no. for mounting bolt and gasket	BG-VFS6000
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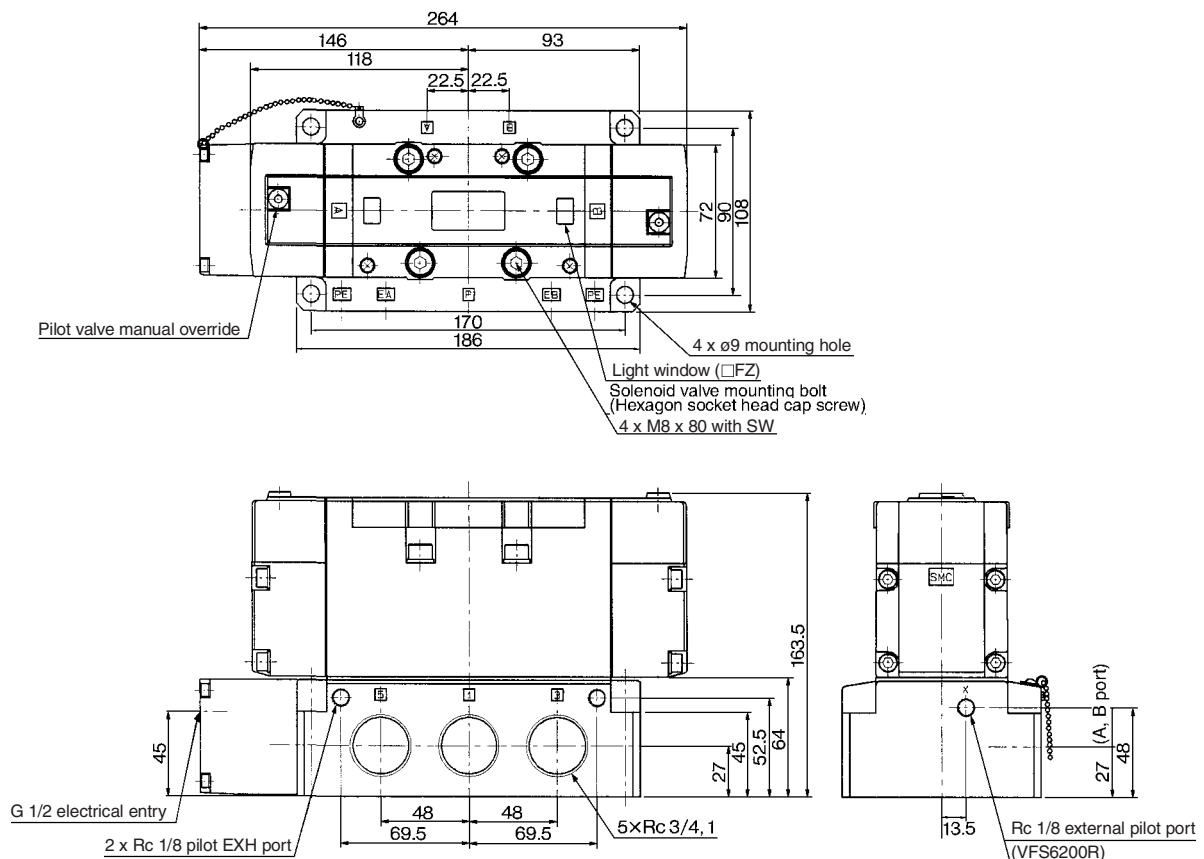
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Plug-in — 2 Position single/Double

2 position single: VFS6100-□F



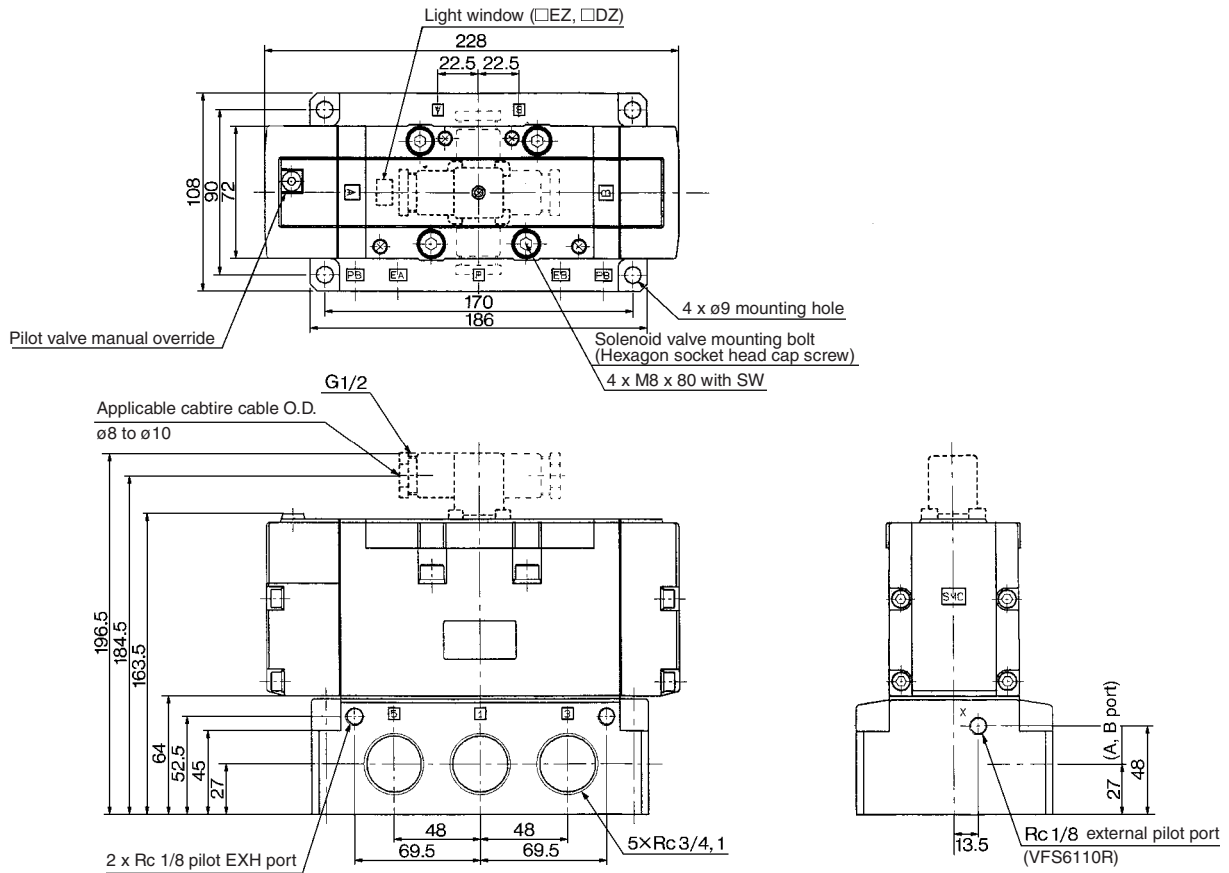
2 position double: VFS6200-□F



Series VFS6000

Non Plug-in — 2 Position single/Double

2 position single: VFS6110-□E, VFS6110-□D



2 position double: VFS6210-□E, VFS6210-□D

