

5 Port Pilot Operated Solenoid Valve

Metal Seal, Plug-in/Non Plug-in

Series VFS5000

Model

Type of actuation		Model		Port size Rc	Flow characteristics						Max. operating cycle (cpm) ⁽¹⁾	Response time (ms) ⁽²⁾	Weight (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	VFS5100	VFS5110	3/8	15	0.30	3.7	15	0.30	4.1	600	45 or less	0.88
				1/2	16	0.15	3.7	19	0.15	4.5			
				3/4	17	0.15	3.9	20	0.13	4.7			
	Double	VFS5200	VFS5210	3/8	15	0.30	3.7	15	0.30	4.1	600	25 or less	1.06
				1/2	16	0.15	3.7	19	0.15	4.5			
				3/4	17	0.15	3.9	20	0.13	4.7			
3 position	Closed center	VFS5300	VFS5310	3/8	14	0.25	4.0	14	0.24	4.1	300	55 or less	1.16
				1/2	16	0.25	4.1	16	0.24	4.1			
				3/4	16	0.25	4.1	16	0.23	4.1			
				3/8	14	0.32	3.8	14	0.25	3.5			
				1/2	16	0.17	3.8	16	0.18	4.1			
				3/4	17	0.20	4.2	17	0.13	4.1			
	Exhaust center	VFS5400	VFS5410	3/8	14	0.30	3.7	14	0.31	3.8	300	55 or less	1.14
				1/2	16	0.23	3.9	16	0.22	4.1			
				3/4	18	0.25	4.6	17	0.22	4.3			
	Pressure center	VFS5500	VFS5510	3/8	14	0.30	3.7	14	0.31	3.8	300	55 or less	1.14
				1/2	16	0.23	3.9	16	0.22	4.1			
				3/4	18	0.25	4.6	17	0.22	4.3			
Double check	VFS600	VFS5610	3/8	9.0	—	—	9.0	—	—	180	60 or less	1.99	
			1/2	9.0	—	—	9.0	—	—				
			3/4	9.0	—	—	9.0	—	—				

Note 1) Based on JIS B 8375 (once per 30 days) for the minimum operating frequency. Note 2) Based on JIS B8375-1981. (The value at supply pressure 0.5 MPa.)
 Note 3) The figures in the above list are without sub-plate. In the case of with plug-in sub-plate and, with non plug-in sub-plate add 3/8, 1/2—0.577 kg, 3/4—0.823 kg respectively.
 Note 4) "Note 1)" and "Note 2)" are with controlled clean air.

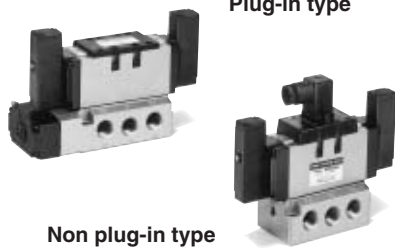
Compact yet provides a large flow capacity
 3/4: C: 20 dm³/(s·bar)

Low power consumption: 1.8 W DC

Easy maintenance

2 types of sub-plates:
 Plug-in and non plug-in

Plug-in type



Non plug-in type

JIS Symbol

2 position	3 position
Single	Closed center
Double	Exhaust center
	Pressure center
	Double check

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: Dripproof (Level 2), Type D: Splashproof (Level 4) ⁽⁴⁾		
	Electricity specifications	Coil rated voltage	100, 200 VAC, 50/60 Hz; 24 VDC	
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
	Pilot valve	Non-locking push type (Extended), Locking type (Tool required), Locking type (Lever)
Coil rated voltage	110 to 120, 220, 240 VAC (50/60 Hz)	
	12, 100 VDC	
Porting specifications	Bottom ported	
Option	With light/surge voltage suppressor, Non-rotating DIN terminal	


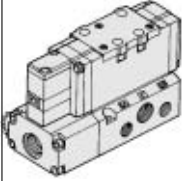
Note) Operating pressure: 0 to 1.0 MPa
 Pilot pressure: 0.1 to 1.0 MPa

VK
 VZ
 VF
 VFR
 VP4
 VZS
VFS
 VS4
 VQ7
 EVS
 VFN

How to Order


Body type

O: Plug-in type sub-plate

Electrical entry

F: Plug-in type conduit terminal



Porting specifications

Nil	Side ported
B*	Bottom ported

* In the case of external pilot (Option), bottom piping is not available.

Port size

Nil	Without sub-plate
03	Rc 3/8
04	Rc 1/2
06	Rc 3/4

Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

* Option

Plug-in VFS5 **1** **0** **0** **2** **F** **04**

Non plug-in VFS5 **1** **1** **0** **5** **D** **06**

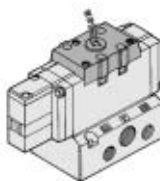
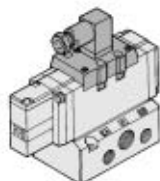
Option

Nil	None
Z	With light/surge voltage suppressor
P*	Non-rotating DIN terminal
ZP*	Light/Surge Voltage Suppressor Non-rotating DIN terminal

* Type "P", "ZP" is available for DIN type only.

Electrical entry

E: Grommet terminal **D:** DIN terminal

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

Pilot type

Nil	Internal pilot
R*	External pilot

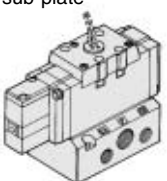
* Option

Symbol

1	2 position single	5	3 position pressure center
2	2 position double	6	3 position double check
3	3 position closed center		
4	3 position exhaust center		

Body type

1: Non plug-in type sub-plate



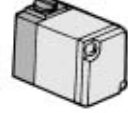



Body option

0	Standard
1*	Direct manual override

* Option

Pilot valve Manual override

Nil:	Non-locking push type (Flush)	
A*:	Non-locking push type (Extended)	
B*:	Locking type (Tool required)	
C*:	Locking type (Lever)	

* Option

How to Order Pilot Valve Assembly

SF4 - **1** F - **30**

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

Manual override

Nil	Non-locking push type (Flush)
A*	Non-locking push type (Extended)
B*	Locking type (Tool required)
C*	Locking type (Lever)

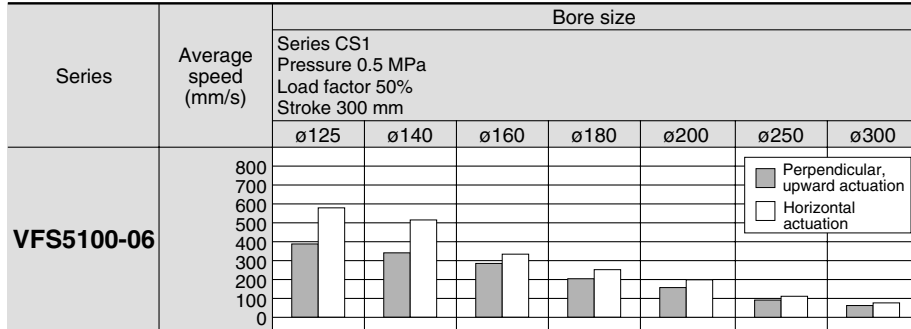
* Option

* Refer to page 3-8-5 for voltage conversion.

5 Port Pilot Operated Solenoid Valve Metal Seal, Plug-in/Non Plug-in Series VFS5000

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%

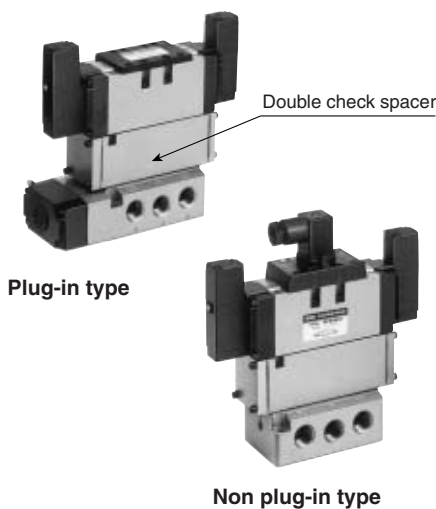
Conditions

		Series CS1
VFS5100-06	Tube bore x Length	SGP20A x 1 m
	Speed controller	AS500-06
	Silencer	AN500-06

Double Check Spacer/Specifications

Can hold an intermediate cylinder position for an extended time

If the double check spacer with a built-in double check valve is combined, it will enable the cylinder to stop in the intermediate stroke and maintain its position for a long time without being affected by the leakage between the spools.



Specifications

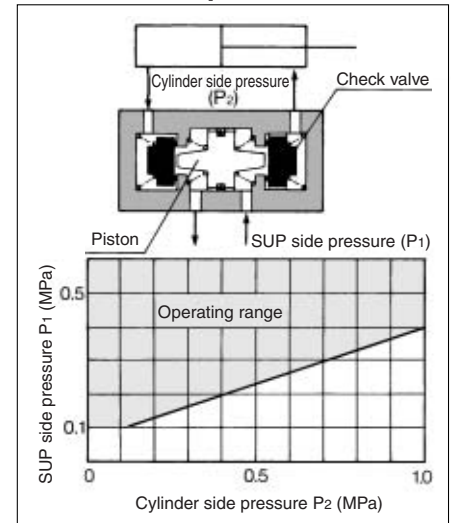
Double check spacer part no.	Plug-in type	Non plug-in type
		VVFS5000-22A-1
Applicable valve model	VFS5400-□F	VFS5410-□D VFS5410-□E
Leakage* (cm ³ /min)	Solenoid one side energized	P R1 320
		R2 or less
	Solenoid both sides de-energized	P R1 320
		R2 or less
	A R1 0	
	B R2	

* Supply pressure: 0.5 MPa

⚠ Caution

- In the case of 3 position double check valve (VFS56□0), check the leakage from piping and fittings in between valve and cylinder by means of synthetic detergent solutions, and ensure that there is no such leakage found there. Also check the leakage from cylinder seal and piston seal. If there is any leakage, sometimes the cylinder, when valve is de-energized, can move without stopping at intermediate position.
- Be aware that if the exhaust side is restricted excessively, the intermediate stopping accuracy will decrease and will lead to improper intermediate stops.

Check Valve Operation



- The combination of VFS51□0, VFS52□0 and a double check spacer can be used as prevention of falling at the stroke end but cannot hold the intermediate position of the cylinder.

VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

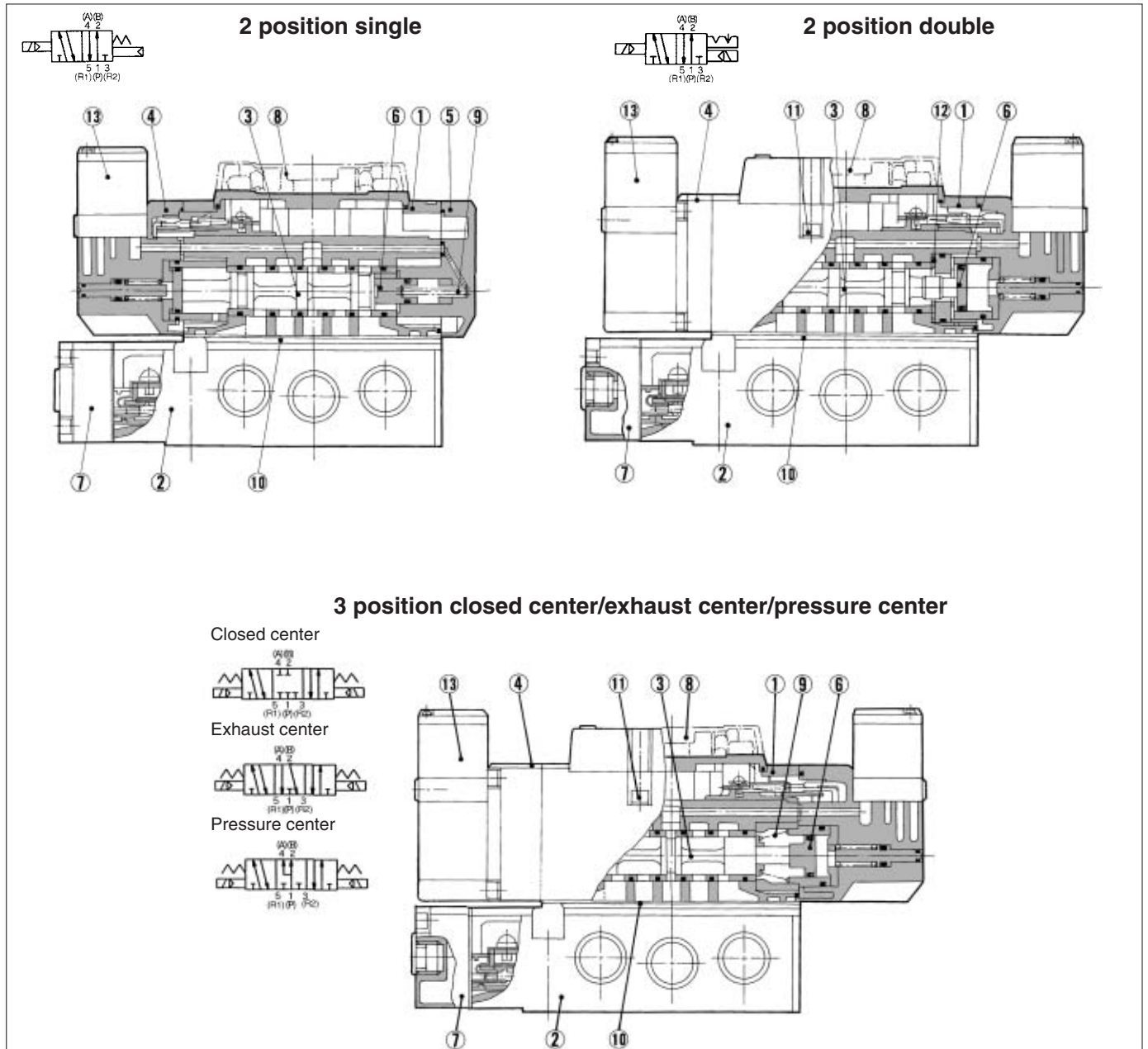
VQ7

EVS

VFN

Series VFS5000

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	—

Sub-plate Assembly Part No.

Plug-in	VFS5000-P ⁰³ ₀₄ ₀₆
Non plug-in	VFS5000-S ⁰³ ₀₄ ₀₆



* Mounting bolt and gasket are not included.

Part no. for mounting bolt and gasket
BG-VFS5000

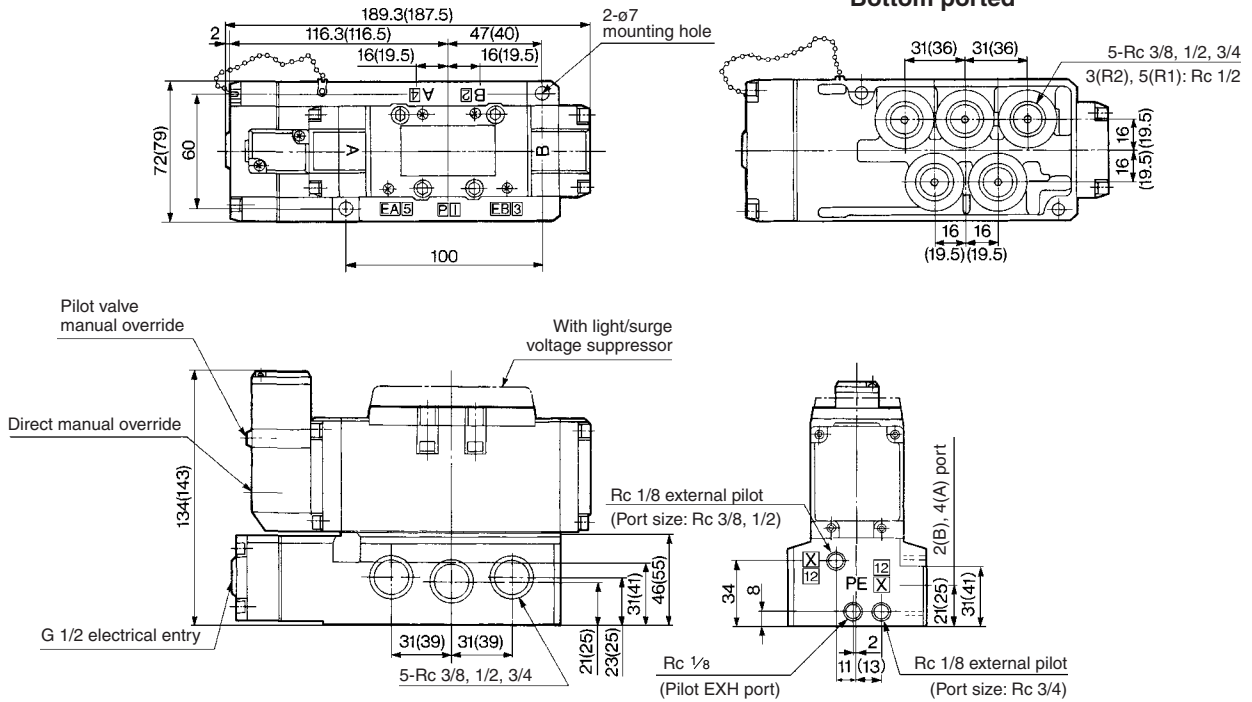
Replacement Parts

No.	Description	Material	Part no.		
			VFS51□□	VFS52□□	VFS53□□/54□□/55□□
⑨	Return spring	Stainless steel	VFS5000-9	—	AXT627-18
⑩	Gasket	NBR	AXT627-10-1	AXT627-10-1	AXT627-10-1
⑪	Hexagon socket head screw	Steel	M5 x 50	M5 x 50	M5 x 50
⑫	Detent assembly	—	—	AXT510-9	—
⑬	Pilot valve assembly	—	Refer to "How to Order Pilot Valve Assembly" on page 3-8-86.		

5 Port Pilot Operated Solenoid Valve Metal Seal, Plug-in/Non Plug-in Series VFS5000

Plug-in 2 position single/double, 3 position closed center/exhaust center/pressure center/double check

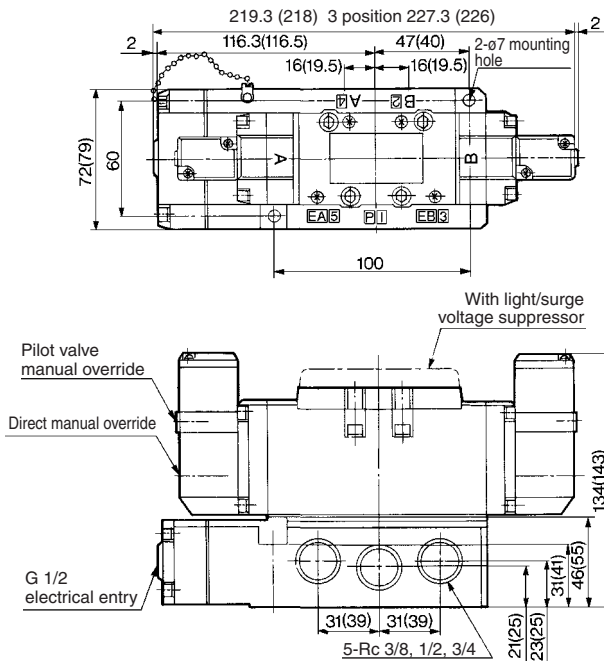
2 position single: VFS5100-□F



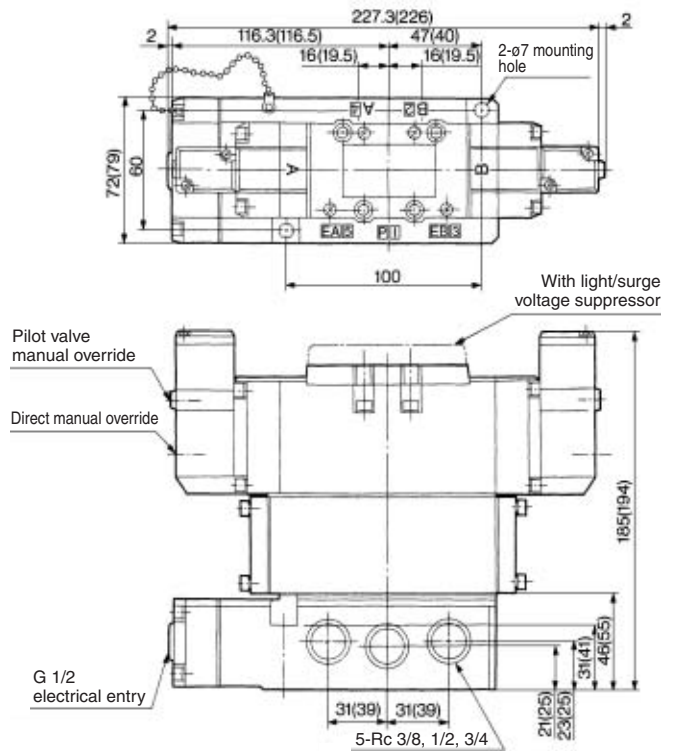
(): Rc 3/4

- 2 position double: VFS5200-□F
- 3 position closed center: VFS5300-□F
- 3 position exhaust center: VFS5400-□F
- 3 position pressure center: VFS5500-□F

3 position double check: VFS5600-□F



(): Rc 3/4



(): Rc 3/4

VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

VQ7

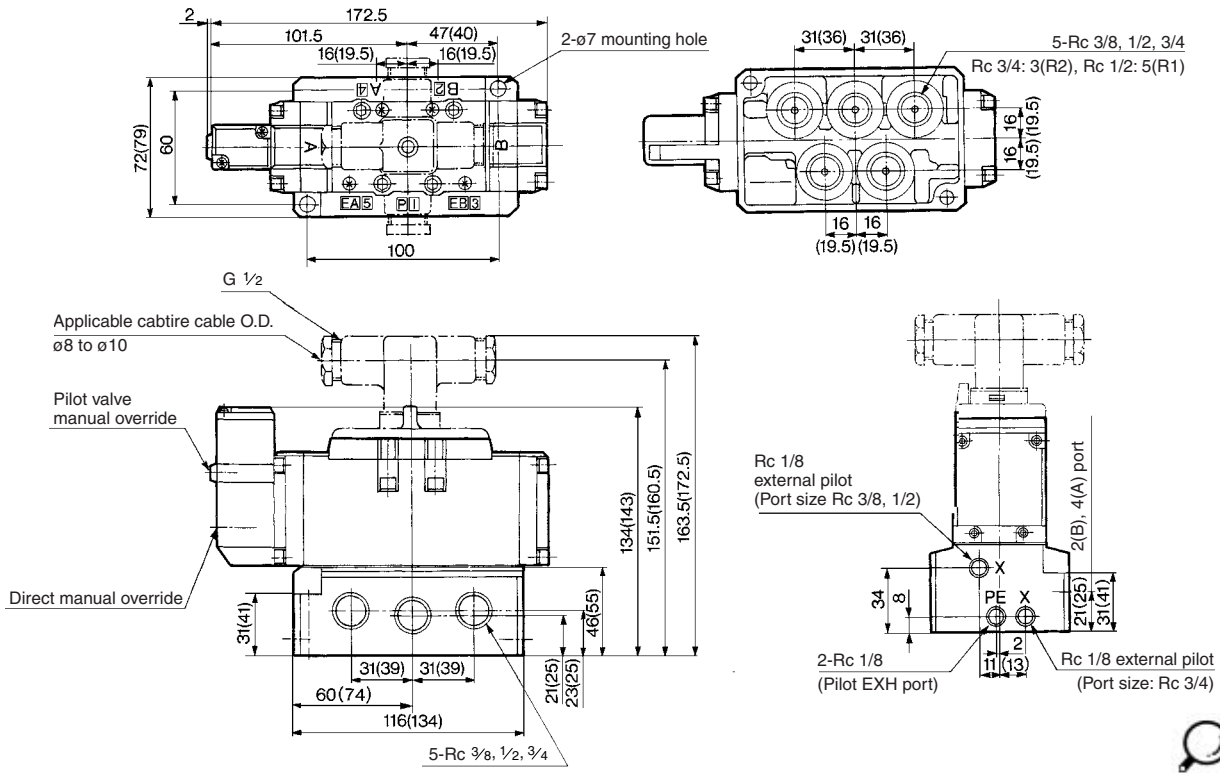
EVS

VFN

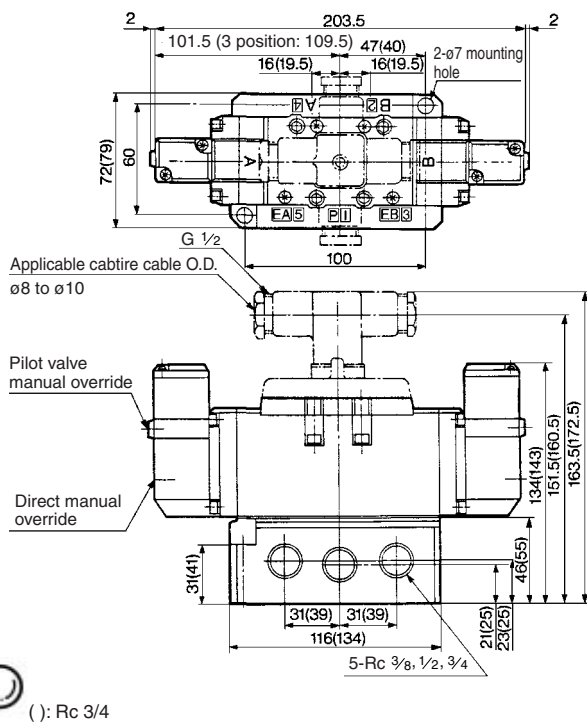
Series VFS5000

Non Plug-in 2 position single/double, 3 position closed center/exhaust center/pressure center/double check

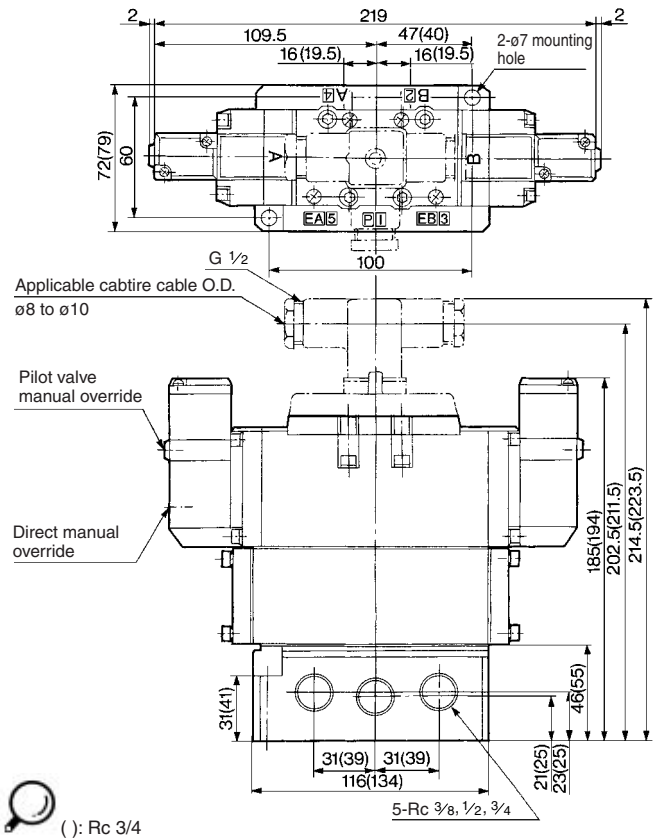
2 position single: VFS5110-□E, VFS5110-□D



2 position double: VFS5210-□E, VFS5210-□D 3 position closed center: VFS5310-□E, VFS5310-□D 3 position exhaust center: VFS5410-□E, VFS5410-□D 3 position pressure center: VFS5510-□E, VFS5510-□D



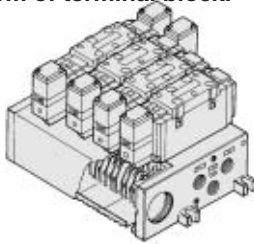
3 position double check: VFS5610-□E, VFS5610-□D



Series VFS5000 Manifold Specifications

Plug-in Type: With Terminal Block

- Since lead wires of solenoid valve are connected with the terminals on upper surface of terminal block, corresponding lead wires from power source can be wired at the bottom of terminal block.



VV5FS5 - 01T - 06 1 - 04

Series VFS5000 Manifold
Plug-in type with terminal block

Stations

02	2 stations
⋮	⋮
10	10 stations

Port size

Symbol	P, R1, R2	A, B
04	Rc 3/4	Rc 1/2
06		Rc 3/4
M		Mixed

Thread type

	Rc
Nil	Rc
N*	NPT
T*	NPTF
F*	G

* Option

Symbol

Symbol	Passage		Porting specifications (A, B)
	P	R1, R2	
1	Common	Common	Side
2			Bottom*

* Option

Port size note: For bottom ported, Rc 1/2 is only available.

VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

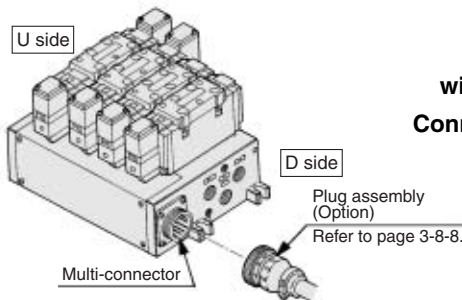
VQ7

EVS

VFN

Plug-in Type: With Multi-connector (Wiring specifications: Refer to page 3-8-8.)

- Master connection of power and solenoid valves.
- Quick wiring permits easier installation.



VV5FS5 - 01C D - 05 2 - 04

Series VFS5000 Manifold
Plug-in type with multi-connector

Stations

02	2 stations
⋮	⋮
08	8 stations
⋮	⋮
	* Max. 8 stations

Port size

Symbol	P, R1, R2	A, B
04	Rc 3/4	Rc 1/2
06		Rc 3/4
M		Mixed

Thread type

	Rc
Nil	Rc
N*	NPT
T*	NPTF
F*	G

* Option

Symbol

Symbol	Passage		Porting specifications (A, B)
	P	R1, R2	
1	Common	Common	Side
2			Bottom*

* Option

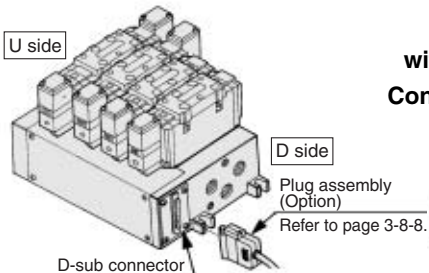
Connector mounting direction

D	D side mounting
U	U side mounting

Port size note: For bottom ported, Rc 1/2 is only available.

Plug-in Type: With D-sub Connector (Wiring specifications: Refer to page 3-8-8.)

- Wide range of interchangeability (MIL Spec. D-sub connector terminal 25 pcs attached.)
- Quick wiring permits easier installation.



VV5FS5 - 01F D - 06 1 - 04

Series VFS5000 Manifold
Plug-in type with D-sub connector

Stations

02	2 stations
⋮	⋮
08	8 stations
⋮	⋮
	* Max. 8 stations

Port size

Symbol	P, R1, R2	A, B
04	Rc 3/4	Rc 1/2
06		Rc 3/4
M		Mixed

Thread type

	Rc
Nil	Rc
N*	NPT
T*	NPTF
F*	G

* Option

Symbol

Symbol	Passage		Porting specifications (A, B)
	P	R1, R2	
1	Common	Common	Side
2			Bottom*

* Option

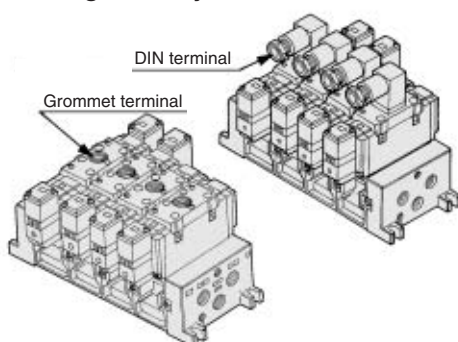
Connector mounting direction

D	D side mounting
U	U side mounting

Port size note: For bottom ported, Rc 1/2 is only available.

Non Plug-in Type: Grommet Terminal, DIN Terminal

- Wiring for every valve.



VV5FS5 - 10 - 05 2 - 04

Series VFS5000 Manifold
Non plug-in type

Stations

02	2 stations
⋮	⋮
10	10 stations

Port size

Symbol	P, R1, R2	A, B
04	Rc 3/4	Rc 1/2
06		Rc 3/4
M		Mixed

Thread type

	Rc
Nil	Rc
N*	NPT
T*	NPTF
F*	G

* Option

Symbol

Symbol	Passage		Porting specifications (A, B)
	P	R1, R2	
1	Common	Common	Side
2			Bottom*

* Option

Port size note: For bottom ported, Rc 1/2 is only available.

Series VFS5000

How to Order Manifold Assembly

Please indicate manifold base type, corresponding valve, and option parts.

<Example>

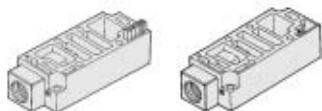
- Plug-in type with terminal block: 6 stations (Manifold base) VV5FS5-01T-061-04 1 (2 position single) VFS5100-5FZ 3 (2 position double) VFS5200-5FZ 2 (Blanking plate) VVFS5000-10A 1
- Non plug-in type: 6 stations (Manifold base) VV5FS5-10-061-04 1 (2 position single) VFS5110-5D 5 (3 position exhaust center) VFS5410-5D ... 1 (Individual EXH center) VVFS5000-R-04-2 1

Manifold Option Parts Assembly

Individual SUP spacer

An individual SUP spacer set on manifold block can form SUP port for every valve.

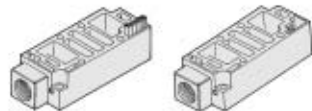
Body type	Plug-in type	Non plug-in type
Part no.	VVFS5000-P-04-1	VVFS5000-P-04-2



Individual EXH spacer

An individual EXH spacer set on manifold block can form EXH port for every valve. (common EXH type)

Body type	Plug-in type	Non plug-in type
Part no.	VVFS5000-R-04-1	VVFS5000-R-04-2



SUP block disk

When supplying manifold with more than two different pressures, high and low, insert a block disk in between stations subjected to different pressures.

Body type	Plug-in type	Non plug-in type
Part no.	AXT628-12A	

EXH block disk

When valve exhaust affects the other stations on the circuit or when a reverse pressure valve is used on a standard manifold valve, insert EXH block disk in between stations to separate valve exhaust.

Body type	Plug-in type	Non plug-in type
Part no.	AXT512-14-1A	



EXH block disk



SUP block disk

Manifold Specifications

Base model	Wiring	Porting specifications	Port size Rc		Stations	Applicable valve model
		A, B port	P, R1, R2	A, B		
Plug-in type VV5FS5-01□	<ul style="list-style-type: none"> • With terminal block • With multi-connector • With D-sub connector 	Side/Bottom	Rc 3/4	Rc 1/2, 3/4	2 to 10*	VFS5□00-□F
Non plug-in type VV5FS5-10	<ul style="list-style-type: none"> • DIN terminal • Grommet terminal 					VFS5□10-□D VFS5□10-□E



*With multi-connector, or with D-sub connector: 8 stations max.

Flow Characteristics at the Number of Manifold Stations (Operated individually)

Model	Passage/Stations	Station 1	Station 5	Station 10	
VV5FS5	1 → 4/2 (P → A/B)	C [dm ³ /(s·bar)]	6.0	6.0	6.0
		b	0.20	0.20	0.20
		Cv	1.4	1.4	1.4
	4/2 → 5/3 (A/B → R1/R2)	C [dm ³ /(s·bar)]	7.0	7.0	7.0
		b	0.20	0.20	0.20
		Cv	1.8	1.8	1.8



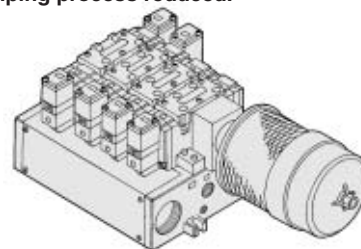
* Port size: Rc 1/2, 3/4

Manifold Option

With exhaust cleaner

Plug-in type/Non plug-in type

- Valve exhaust noise dampening: 35 dB or more.
- Oil mist collection: Rate of collection 99.9% or more.
- Piping process reduced.

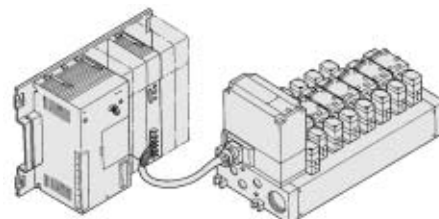


For details, refer to page 3-8-95.

With serial interface unit for serial transmission

Plug-in type

- Solenoid valve wiring process reduced considerably.
- Disperse installation possible. Manifold solenoid valve: 8 stations max. 32 positions (512 solenoids).
- Maintenance and inspection are easy.

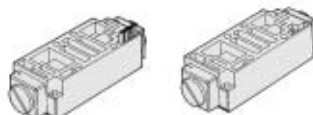


For details, refer to "Serial Transmission" catalog separately.

Throttle valve spacer

Needle valve set on the manifold block can control cylinder speed by throttling exhaust.

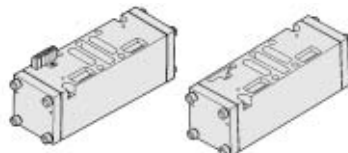
Body type	Plug-in type	Non plug-in type
Part no.	VVFS5000-20A-1	VVFS5000-20A-2



Double check spacer

If the double check spacer with a built-in double check valve is combined, it will enable the cylinder to stop in the intermediate stroke and maintain its position for a long time without being affected by the leakage between the spools.

Body type	Plug-in type	Non plug-in type
Part no.	VVFS5000-22A-1	VVFS5000-22A-2

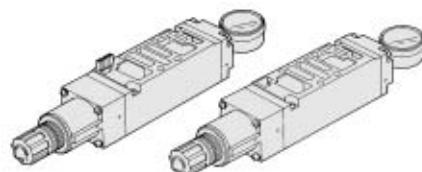


Interface regulator



Interface regulator set on manifold block can regulate the pressure to each valve. (In the event of using, refer to "Flow Characteristics" on page 3-8-6).

Body type	Plug-in type	Non plug-in type
P port regulation	ARBF5050-00-P-1	ARBF5050-00-P-2
A port regulation	ARBF5050-00-A-1	ARBF5050-00-A-2
B port regulation	ARBF5050-00-B-1	ARBF5050-00-B-2



Blanking plate

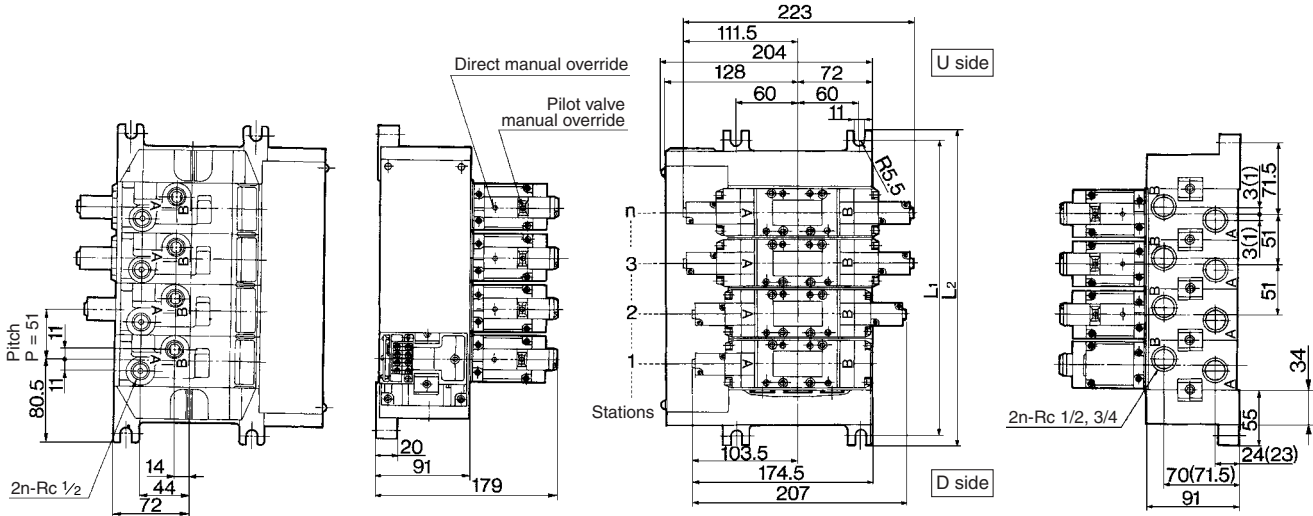
It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

Body type	Plug-in type	Non plug-in type
Part no.	VVFS5000-10A	

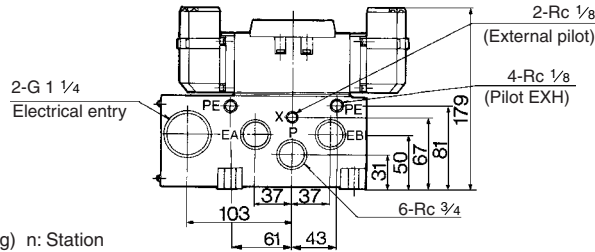
5 Port Pilot Operated Solenoid Valve Metal Seal, Plug-in/Non Plug-in Series VFS5000

Manifold Plug-in type, Non plug-in type

Plug-in type (With terminal block): VV5FS5-01T-Station 1- Port size



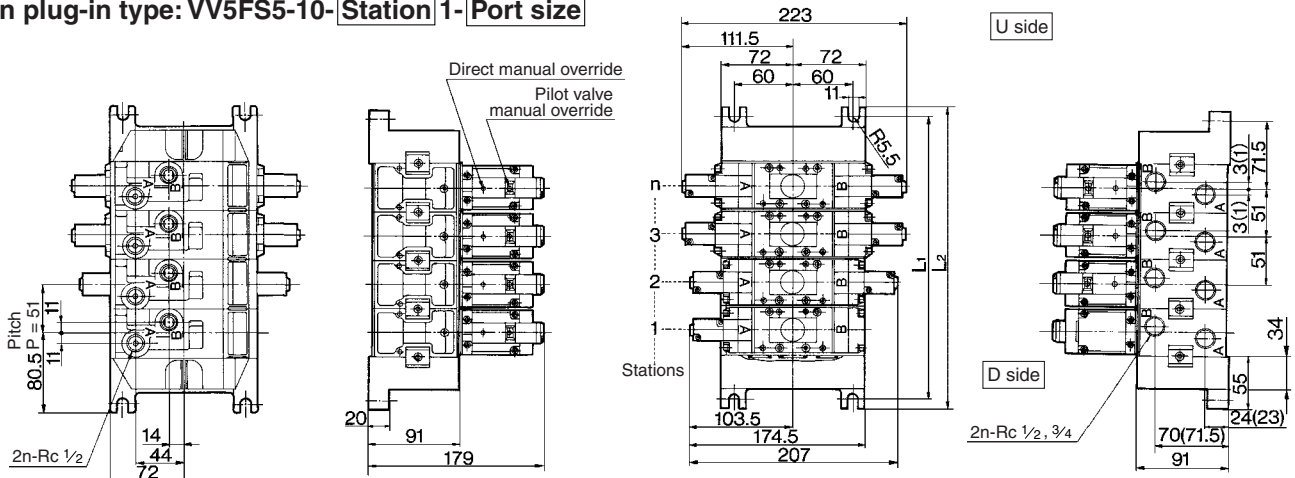
Bottom ported: VV5FS5-01T-Station 2- Port size



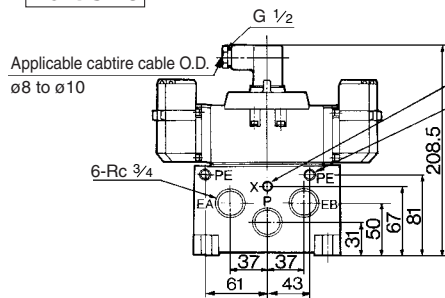
Formula for manifold weight $M = 0.911n + 1.621$ (kg) n: Station

(): 2(B)/4(A) port Rc 3/4

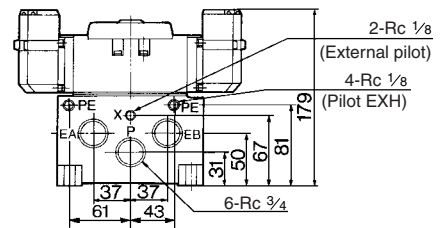
Non plug-in type: VV5FS5-10-Station 1- Port size



DIN terminal VV5FS5-10-Station 2- Port size



Grommet with terminal



Formula for manifold weight $M = 0.811n + 1.231$ (kg) n: Station

Stations	2	3	4	5	6	7	8	9	10	Formula
L ₁	194	245	296	347	398	449	500	551	602	L ₁ = 51 x n + 92
L ₂	212	263	314	365	416	467	518	569	620	L ₂ = 51 x n + 110

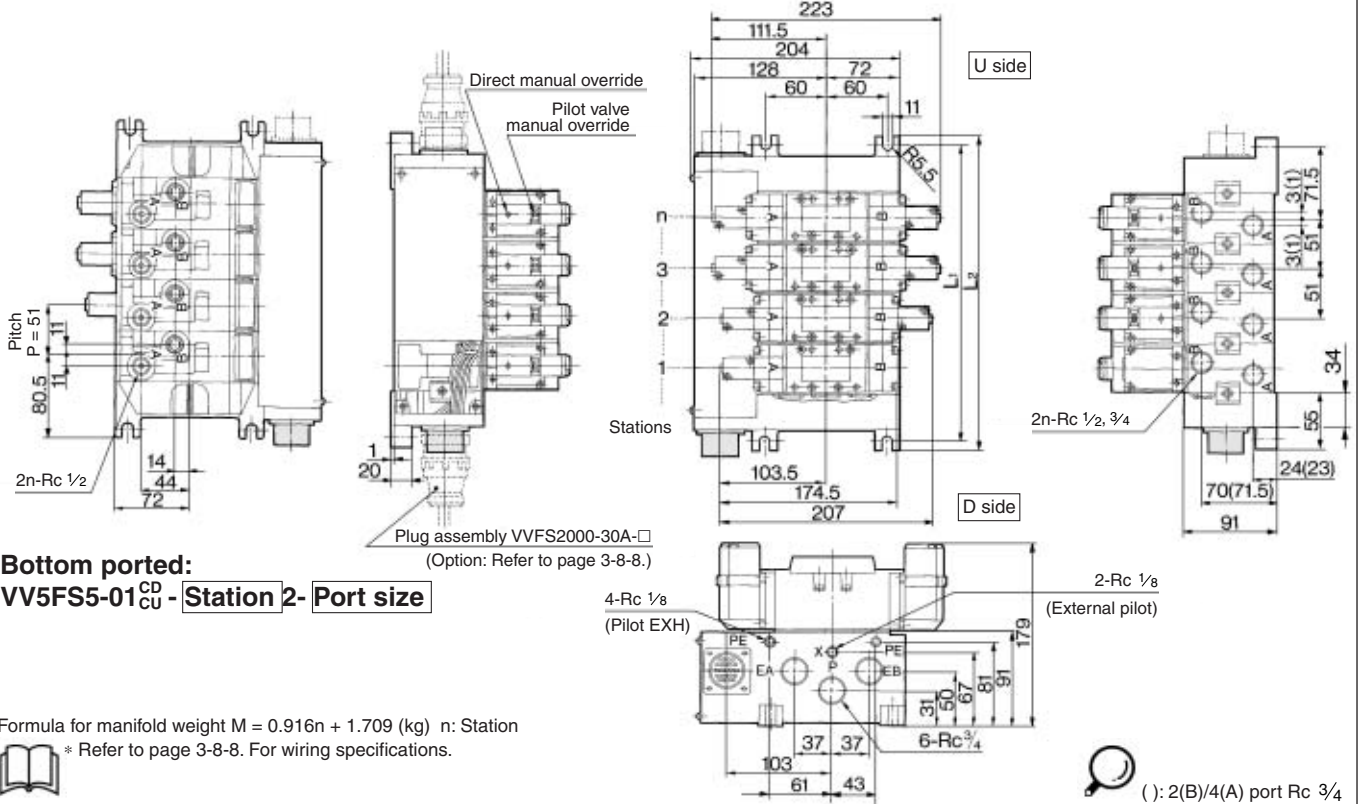
(): 2(B)/4(A) port Rc 3/4

- VK
- VZ
- VF
- VFR
- VP4
- VZS
- VFS
- VS4
- VQ7
- EVS
- VFN

Series VFS5000

Manifold Plug-in type with multi-connector/D-sub connector

Plug-in type with multi-connector: VV5FS5-01CD - Station 1 - Port size, VV5FS5-01CU - Station 1 - Port size

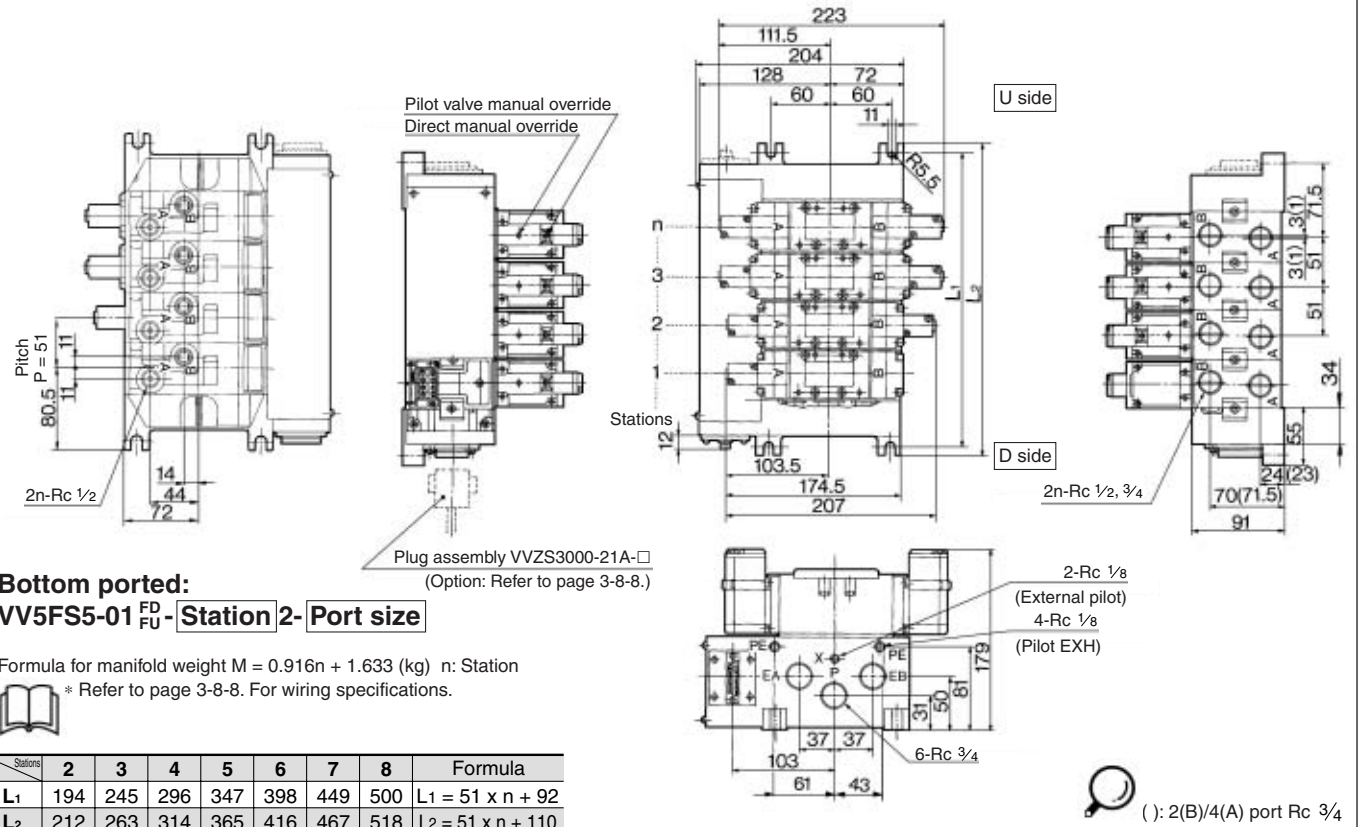


Bottom ported:
VV5FS5-01^{CD}/_{CU} - Station 2 - Port size

Formula for manifold weight $M = 0.916n + 1.709$ (kg) n: Station
* Refer to page 3-8-8. For wiring specifications.



Plug-in type with D-sub connector: VV5FS5-01FD - Station 1 - Port size, VV5FS5-01FU - Station 1 - Port size



Bottom ported:
VV5FS5-01^{FD}/_{FU} - Station 2 - Port size

Formula for manifold weight $M = 0.916n + 1.633$ (kg) n: Station
* Refer to page 3-8-8. For wiring specifications.

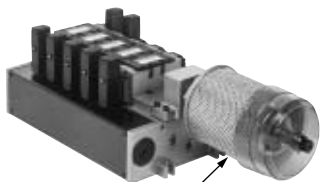


Stations	2	3	4	5	6	7	8	Formula
L ₁	194	245	296	347	398	449	500	$L_1 = 51 \times n + 92$
L ₂	212	263	314	365	416	467	518	$L_2 = 51 \times n + 110$

5 Port Pilot Operated Solenoid Valve Metal Seal, Plug-in/Non Plug-in Series VFS5000

Manifold with Exhaust Cleaner

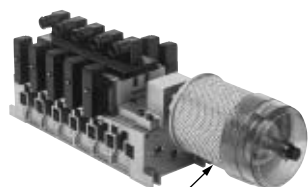
- Serves to protect working environment.
- Valve exhaust noise dampening: 35 dB or more.
- Collection rate of drainage and oil mist: 99.9% or more.
- Piping work is reduced.



Plug-in type

Exhaust cleaner
(Option)

U side



Non plug-in type

Exhaust cleaner
(Option)

D side

Manifold Specifications

Manifold	Plug-in type: VV5FS5-01□	Non plug-in type: VV5FS5-10
Wiring	With terminal blocks With multi-connector With D-sub connector	DIN terminal Grommet terminal
Applicable valve model	VFS5□00-□F	VFS5□10-□D, VFS5□10-□E
Porting specifications Rc	Common SUP/Common EXH	
	2(B), 4(A) port 1(P), 3(R2), 5(R1) port	Side: Rc 1/2, 3/4, Bottom: Rc 1/2 (Option) P: Rc 3/4, EXH: Rc 1 1/2
Stations	2 to 10 ⁽¹⁾	
Applicable exhaust cleaners	AMC810-14 (Connecting port size R 1 1/2) ⁽²⁾	

- Note 1) With multi-connector, or with D-sub connector: 8 stations max.
Note 2) Exhaust cleaner: Not attached.

How to Order

VV5FS5 - 10 - 06 1 - 04 - CD

Series VFS5000
Manifold

Base type/Electrical entry

01T	Plug-in type with terminal block
01C	Plug-in type with multi-connector
01F	Plug-in type with D-sub connector
10	Non plug-in type

Connector mounting direction

Symbol	With connector	Applicable base
Nil	None	01T, 10
D	D side mounting	01C, 01F
U	U side mounting	01C, 01F

Stations

02	2 stations
⋮	⋮
10	10 stations

Base type 01T, 10: 2 to 10 stations
Base type 01C, 01F: 2 to 8 stations

Exhaust cleaner mounting direction

Symbol	Exhaust cleaner mounting direction
CD	D side / D side mounting
CU	U side / U side mounting

Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

* Option

Port size

Symbol	P	A, B
04	Rc 1/2	Rc 1/2
06	Rc 3/4	Rc 3/4
M		Mixed

* For bottom ported, Rc 1/2 is only available.

Symbol

Symbol	Passage		Porting specifications (A, B)
	P	R1, R2	
1	Common	Common	Side
2			Bottom*

* Option

Caution

When using an exhaust cleaner, mount it downwards.



* Refer to Best Pneumatics Vol. 5 for Exhaust Cleaner details.

Please indicate manifold base type, corresponding valve, and option parts.

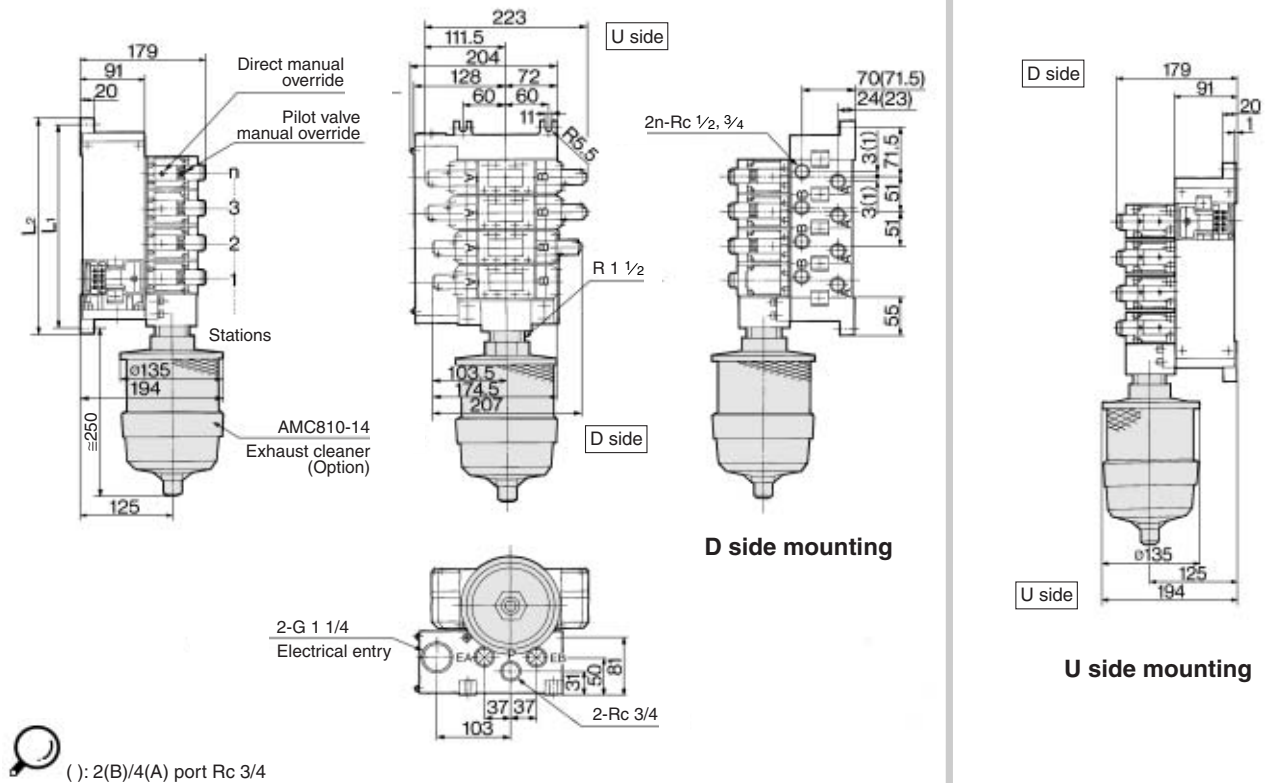
<Example>

- Plug-in type with terminal block (6 stations)
 - (Manifold base) VV5FS5-01T-061-04-CD 1
 - (2 position single) VFS5100-5FZ 3
 - (2 position double) VFS5200-5FZ 2
 - (Blanking plate) VVFS5000-10A 1
 - (Exhaust cleaner) AMC810-14 1
- Non plug-in type (6 stations)
 - (Manifold base) VV5FS5-10-061-04-CU 1
 - (2 position single) VFS5110-5E 3
 - (2 position double) VFS5210-5E 2
 - (Blanking plate) VVFS5000-10A 1
 - (Exhaust cleaner) AMC810-14 1

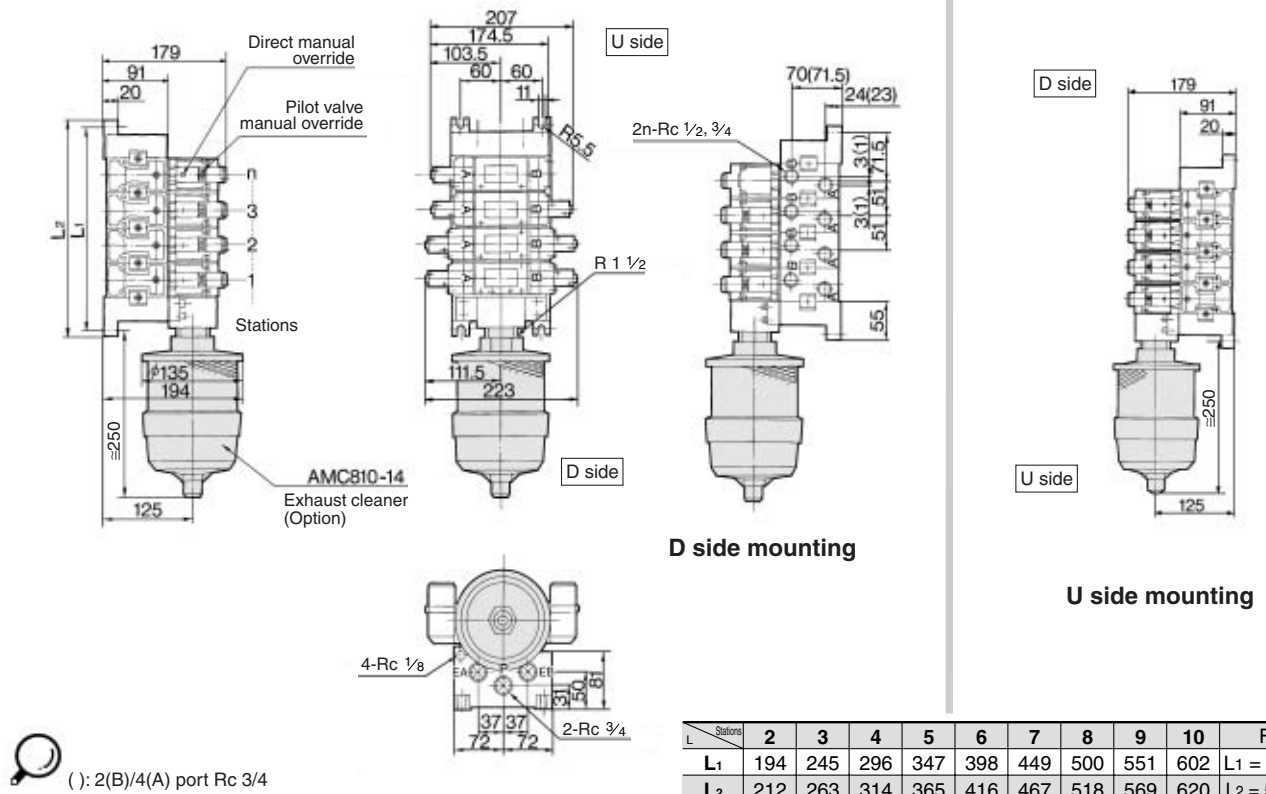
Series VFS5000

Manifold with Exhaust Cleaner Plug-in type, Non plug-in type

Plug-in type: VV5FS5-01T-Station 1-Port size -^{CD}_{CU}



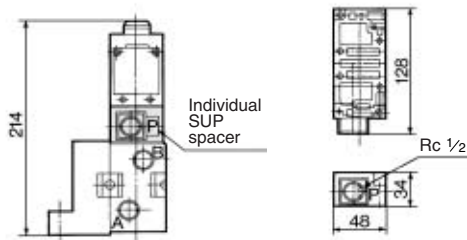
Non plug-in type: VV5FS5-10-Station 1-Port size -^{CD}_{CU}



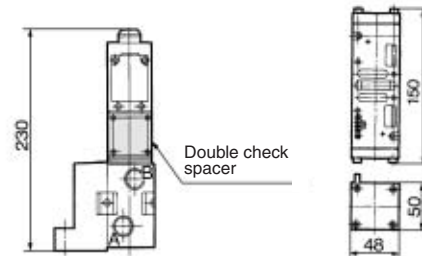
5 Port Pilot Operated Solenoid Valve Metal Seal, Plug-in/Non Plug-in Series VFS5000

Manifold Option Parts Plug-in type, Non plug-in type

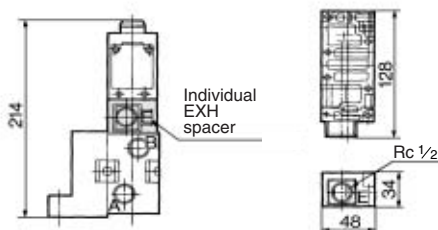
Individual SUP spacer:
VVFS5000-P-04-1 (Plug-in type)
VVFS5000-P-04-2 (Non plug-in type)



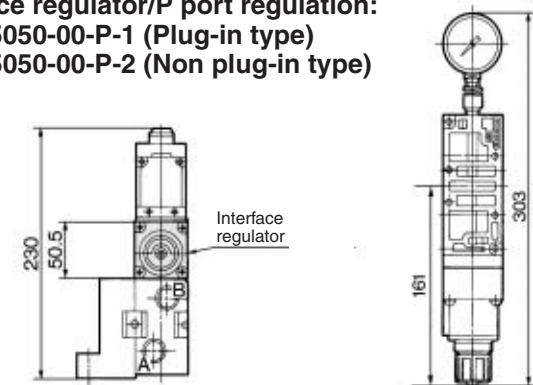
Double check spacer:
VVFS5000-22A-1 (Plug-in type)
VVFS5000-22A-2 (Non plug-in type)



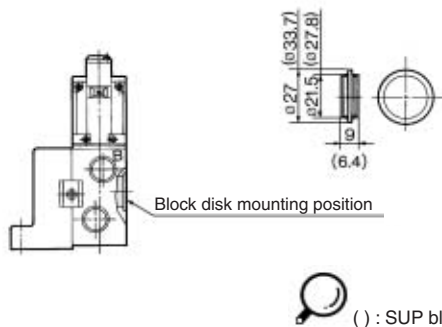
Individual EXH spacer:
VVFS5000-R-04-1 (Plug-in type)
VVFS5000-R-04-2 (Non plug-in type)



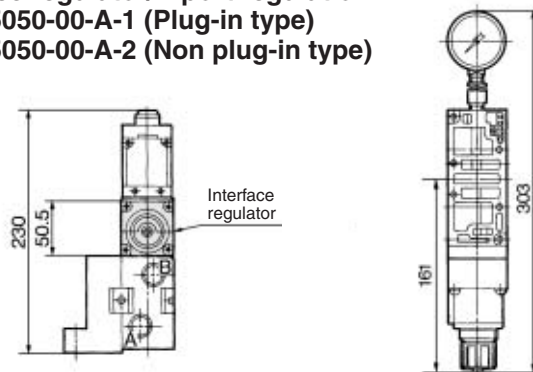
Interface regulator/P port regulation:
ARBF5050-00-P-1 (Plug-in type)
ARBF5050-00-P-2 (Non plug-in type)



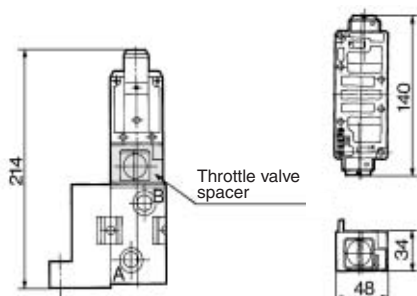
SUP block disk: AXT628-12A
EXH block disk: AXT512-14-1A



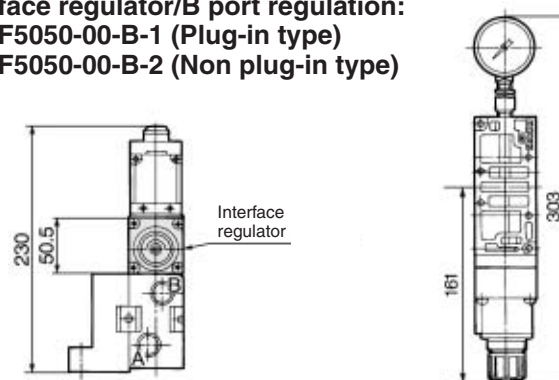
Interface regulator/A port regulation:
ARBF5050-00-A-1 (Plug-in type)
ARBF5050-00-A-2 (Non plug-in type)



Throttle valve spacer:
VVFS5000-20A-1 (Plug-in type)
VVFS5000-20A-2 (Non plug-in type)



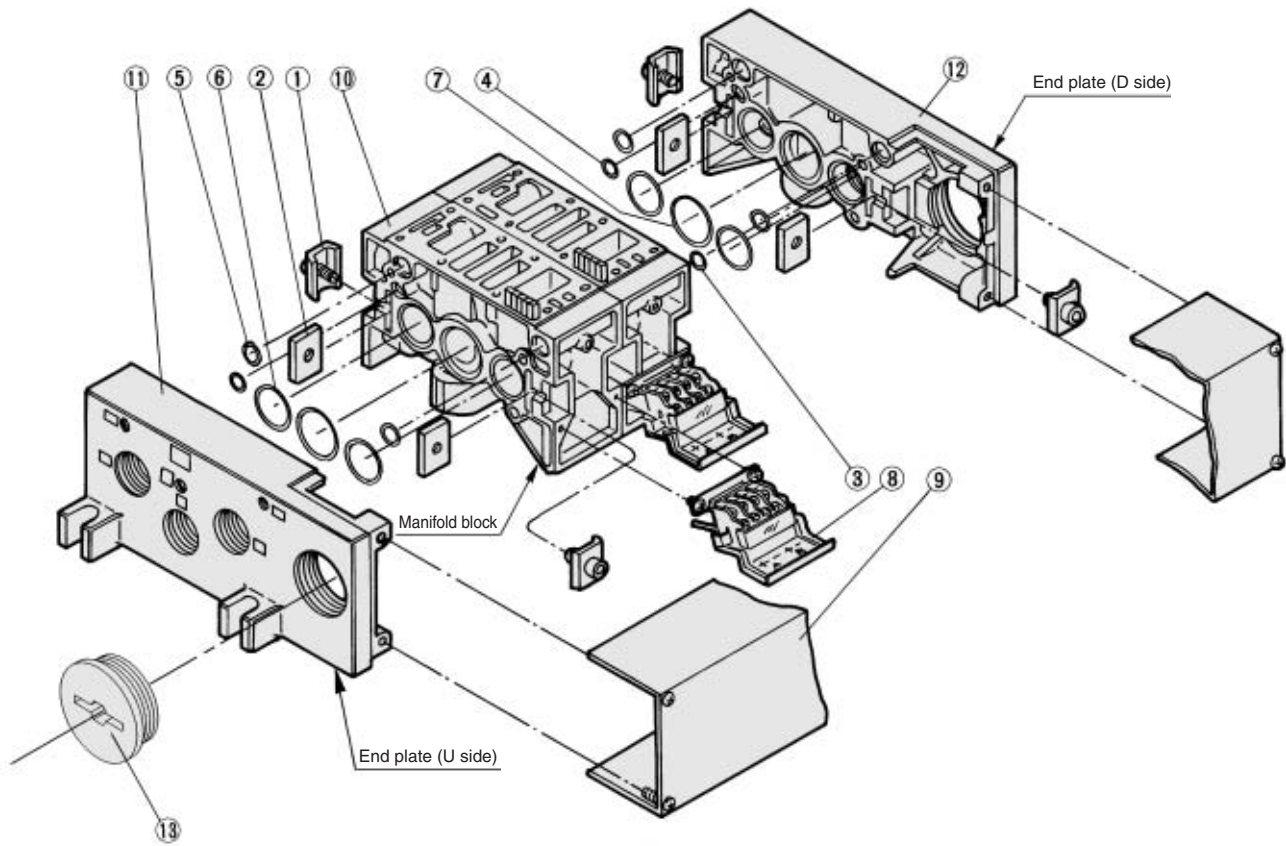
Interface regulator/B port regulation:
ARBF5050-00-B-1 (Plug-in type)
ARBF5050-00-B-2 (Non plug-in type)



- VK
- VZ
- VF
- VFR
- VP4
- VZS
- VFS**
- VS4
- VQ7
- EVS
- VFN

Series VFS5000

Manifold Base Construction Plug-in type, Non plug-in type



Replacement Parts

No.	Description	Material	Part no.
①	Connection fitting A	Steel plate	AXT628-6-1A
②	Connection fitting B	Steel plate	AXT628-6-2
③	O-ring	NBR	AS568-006
④	O-ring	NBR	AS568-010
⑤	O-ring	NBR	AS568-013
⑥	O-ring	NBR	AS568-022
⑦	O-ring	NBR	AS568-026
⑧	Terminal assembly	—	AXT628-5-1A
⑨	Junction cover assembly	For 01T	VVFS5000-4A- [Stations]
		For 01SU	AZ738-31A- [Stations]
⑬	Rubber plug	NBR	AXT336-9

- For increasing the manifold bases, please order the manifold block assembly number of the principal part assembly ⑩.
For plug-in type: The manifold base with terminal stand (integrated with a junction cover) is required with the ⑨ junction cover assembly.

Replacement Parts: Sub Assembly



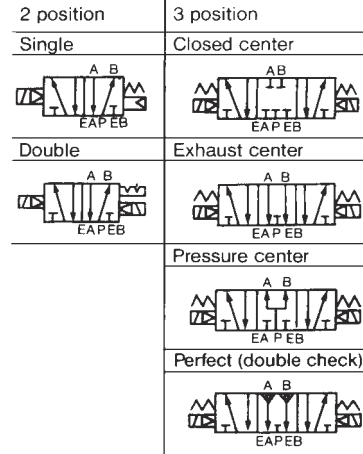
Note) Manifold Base/Construction: Plug-in type with terminal block.

No.	Description	Assembly part no.	Component parts	Applicable manifold base
⑩	Manifold block assembly	VVFS5000-1A-1- ⁰⁴ / ₀₆	Manifold block ⑩, Metal joint ①, ②, Terminal ⑧, O-ring ③, ④, ⑤, ⑥, ⑦, Receptacle assembly	Plug-in type
		VVFS5000-1A-2- ⁰⁴ / ₀₆	Manifold block ⑩, Metal joint ①, ②, O-ring ③, ④, ⑤, ⑥, ⑦	Non plug-in type
⑪	End plate (U side) assembly	VVFS5000-2A-1	End plate (U) ⑪, Metal joint ①, ②	Plug-in type
		VVFS5000-2A-2	End plate (U) ⑪, Metal joint ①, ②	Non plug-in type
⑫	End plate (D side) assembly	VVFS5000-3A-1	End plate (D) ⑫, Metal joint ①, ②, O-ring ③, ④, ⑤, ⑥, ⑦	Plug-in type
		VVFS5000-3A-2	End plate (D) ⑫, Metal joint ①, ②, O-ring ③, ④, ⑤, ⑥, ⑦	Non plug-in type

MODEL NVFS5000

Position	Number Of Solenoid	Type Plug-In	Port Size (NPTF)	Cv Factor	Response Time (ms)
2 Position	Single	NVFS5100	3/8	4.4	45 or less
			1/2	5.4	
			3/4	5.7	
2 Position	Double	NVFS5200	3/8	4.4	25 or less
			1/2	5.4	
			3/4	5.7	
3 Position	Closed Center	NVFS5300	3/8	3.7	55 or less
			1/2	4.6	
			3/4	4.8	
	Exhaust Center	NVFS5400	3/8	3.9	55 or less
			1/2	4.8	
			3/4	5	
Pressure Center	NVFS5500	3/8	3.9	55 or less	
		1/2	4.8		
		3/4	4.9		
Perfect (Double Check)	NVFS5600	3/8	2.2	60 or less	
		1/2	2.7		
		3/4	2.8		

SYMBOLS



TECHNICAL SPECIFICATIONS STANDARD

	Fluid	Air and Inert Gas	
Valve	Max Operating Pressure	150 PSI (1MPa)	
	Min Operating Pressure	15 PSI (0.15MPa)	
	Ambient & Fluid Temperature	Note 1) 14~140°F (-10~60°C)	
	Lubrication	Note 2) Not Required	
	Pilot Operator Manual Override	Non Locking Push Type (Flush)	
	Protection Construction	Dust Proof	
Electrical	Rated Voltage	AC 110VAC50/60Hz, 220V50/60Hz, 24V50/60Hz	
		DC 12V, 24V	
	Allowable Voltage Range	-15 ~ 10% Rated Voltage	
	Coil Insulation	Class B or Equivalent	
	Apparent Power AC (Power Consumption)	InRush	5.0VA/60Hz, 5.6VA/50Hz
		Holding	2.3VA(1.5W)/60Hz, 3.4VA(2.1W)/50Hz
	Power Consumption DC	1.8W	
Electrical Entry	Plug In	Conduit Terminal (Base Access)	

TECHNICAL SPECIFICATIONS OPTIONAL

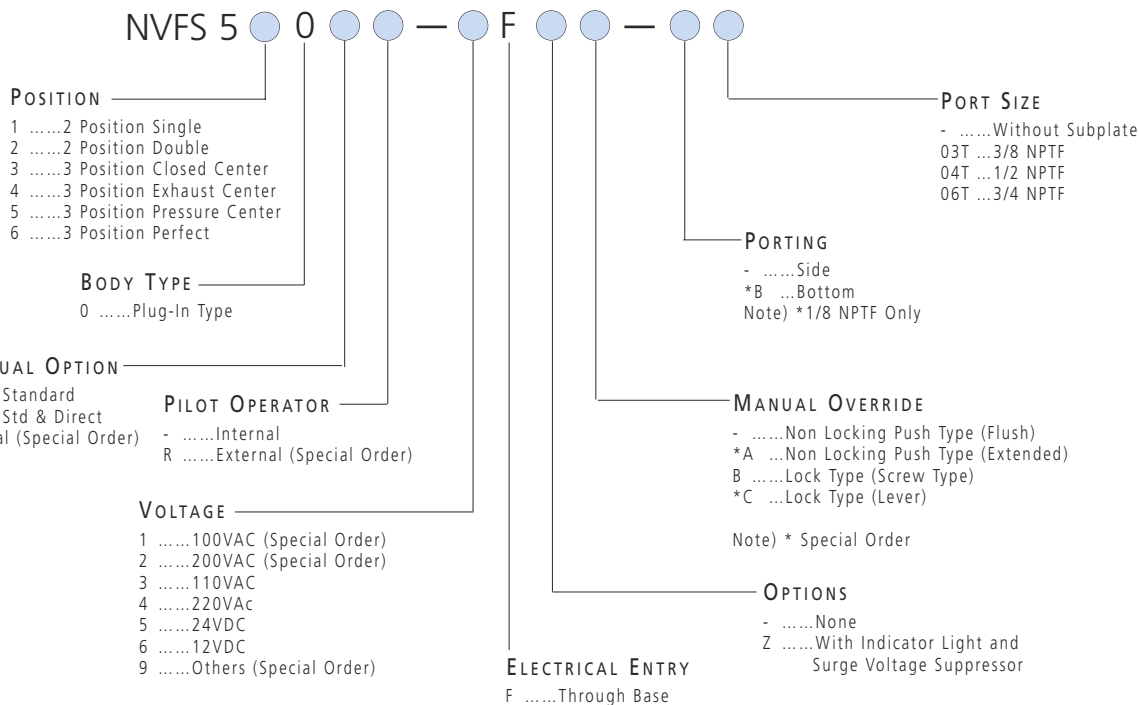
	Pilot Type	External Pilot Type
Manual Override	Main Valve	Direct Manual Override Type
	Pilot Operator	Non Locking Push Type (Extended), Lock Type (Tool), Lock Type (Lever)
Voltage	AC	100V50/60Hz, 200V50/60Hz
	DC	6V, 48V, 100V
Porting		Bottom Ported Subplate
Option		W/Indicator Light & Surge Voltage Suppressor

Note 1) Use Dry Air at Low Temperature

Note 2) Use Turbine Oil No 1 (ISOVG32), if lubricated



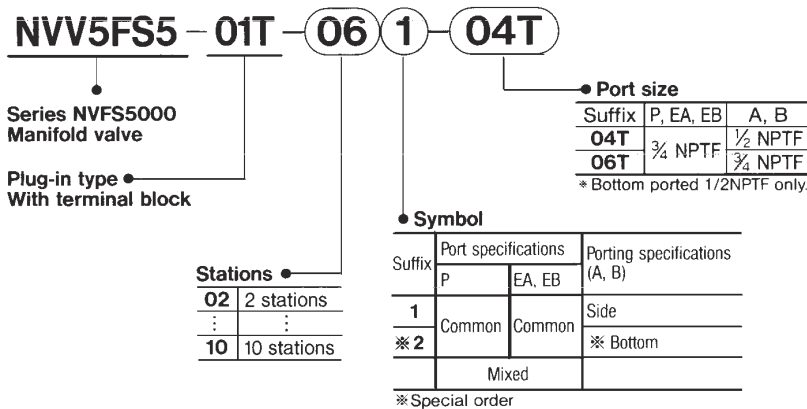
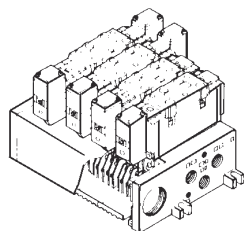
**How To
ORDER
NVFS5000**



**How To
ORDER
MANIFOLD**

Plug-in Type: With Terminal Block

● Lead wires of solenoid valve are connected with the terminals on upper surface of terminal block, corresponding lead wires from power source can be wired at the bottom of terminal block.



FOR FURTHER TECHNICAL
DETAILS ON THIS
PRODUCT, REQUEST
CATALOG REFERENCE
N233

HOW TO
ORDER

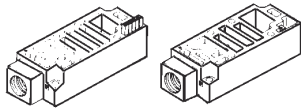
MANIFOLD / OPTION PARTS ASSEMBLY

Manifold / Option Part's Ass'y

SUP Relocation spacer

An individual SUP spacer on manifold block can form individual P port for the valve.

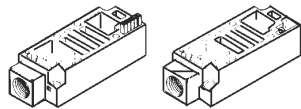
Body type	Plug-in type
Part No.	NVVFS5000-P-04T-1



EXH Relocation spacer

An individual EXH spacer on manifold block can form individual R port for the valve.

Body type	Plug-in type
Part No.	NVVFS5000-R-04T-1



SUP gallery block disc

When supplying manifold with more than one pressure, insert block disc in between stations subjected to different pressures.

Body type	Plug-in type
Part No.	AXT628-12A



SUP block disc

EXH gallery block disc

When valve exhaust affects the other stations on the circuit or when externally piloted, dual pressure valve is used on a standard manifold, insert EXH block disc(s) in between stations to separate valve exhaust.

Body type	Plug-in type
Part No.	AXT512-14-1A

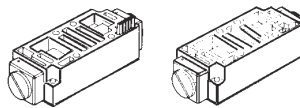


EXH block disc

Interface speed control

Needle valve on the manifold block can control cylinder speed by throttling exhaust.

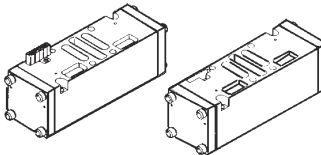
Body type	Plug-in type
Part No.	NVVFS5000-20A-1



Double Check "Perfect" spacer

The concurrent use of perfect spacer with built-in double check valve can stop the cylinder at mid-position and hold for extended time without being affected by normal air leakage across the spool seals.

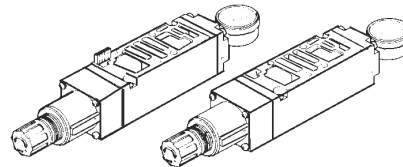
Body type	Plug-in type
Part No.	NVVFS5000-22A-1



Interface regulator

Spacer type regulating valve on manifold block can regulate the pressure to the valve.

Body type	Plug-in type
Pressure Regulation P	NARBF5000-N0-P-1
Pressure Regulation A	NARBF5000-N0-A-1
Pressure Regulation B	NARBF5000-N0-B-1



Blank plate

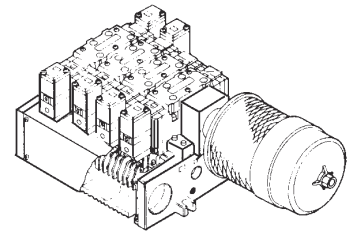
When disassembling valve for maintenance purposes or when spare manifold stations are required, install Blank plate on the manifold block.

Body type	Plug-in type
Part No.	VVFS5000-10A

Manifold Options

With Exhaust Cleaner Plug-in type

- Valve exhaust noise damping: 35dB or more.
- Oil mist collection: Rate of collection 99.9% or more.
- Piping process reduced.



For more information, Please refer to catalog N233

