

# 5 Port Pilot Operated Solenoid Valve Rubber Seal, Plug-in/Non Plug-in Series VFR5000



Plug-in type



Non plug-in type

## Standard Specifications

Valve specifications	Fluid	Air		
	Operating pressure range	2 position single/3 position	0.2 to 0.9 MPa	
		2 position double	0.1 to 0.9 MPa	
	Ambient and fluid temperature	-10 to 50°C (No freezing. Refer to page 5.)		
	Lubrication	Non-lube <sup>(1)</sup>		
	Manual override	Non-locking push type		
	Mounting orientation	Unrestricted		
	Shock/Vibration resistance	300/50m/s <sup>2</sup> <sup>(2)</sup>		
	Enclosure	Dustproof		
	Electricity specifications	Coil rated voltage	100, 200 VAC (50/60 Hz), 24 VDC	
Allowable voltage fluctuation		-15 to -10% of rated voltage		
Apparent power (AC) <sup>(3)</sup>		Inrush	5.6 VA/50 Hz, 5.0 VA/60 Hz	
		Holding	3.4 VA/50 Hz, 2.3 VA/60 Hz	
Power consumption (DC) <sup>(3)</sup>		1.8 W		
Electrical entry		Plug-in type	Conduit terminal	
	Non plug-in type	Grommet terminal, DIN terminal		

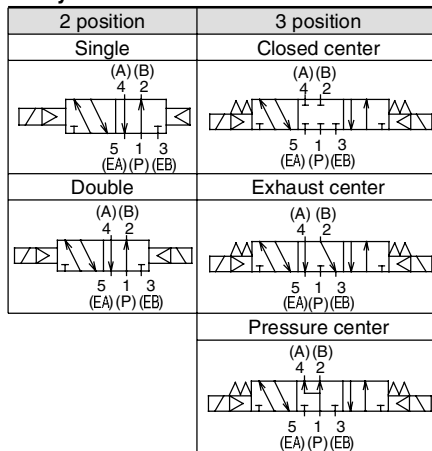


Note 1) Use turbine oil Class 1 (ISO VG32), if lubricated. Note 3) At rated voltage

Note 2) 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)

## JIS Symbol



## Option Specifications

Pilot type	External pilot Note)	
Manual override	Main valve	Direct manual override
	Pilot valve	Non-locking push type A (Extended), Locking type B (Tool required), Locking type C (Lever)
Coil rated voltage	110 to 120, 220, 240 VAC 50/60 Hz	
Porting specifications	Bottom ported	
Option	With light/surge voltage suppressor	



Note) Operating pressure:  
2 position 0 to 0.9 MPa  
3 position 0.15 to 0.9 MPa

Pilot pressure:  
2 position single 0.2 to 0.9 MPa  
2 position double 0.1 to 0.9 MPa  
3 position 0.3 x P + 0.1 to 0.9 MPa  
(P: Operating pressure)

## Model

Type of actuation	Model		Port size	Flow characteristics <sup>(1)</sup>						Max. <sup>(2)</sup> operating cycle (Hz)	Response <sup>(3)</sup> time (ms)	Mass <sup>(4)</sup> (kg)	
	Plug-in	Non plug-in		1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)						
				C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3</sup> /(s·bar)]	b	Cv				
2 position	Single	VFR510□	VFR511□	3/8	17	0.36	4.7	18	0.40	5.0	5	60 or less	1.77 (1.72)
				1/2	20	0.28	5.2	23	0.32	6.2			
	Double	VFR520□	VFR521□	3/8	16	0.37	4.6	18	0.41	5.1	5	60 or less	1.88 (1.83)
				1/2	20	0.27	5.2	23	0.32	6.1			
3 position	Closed center	VFR530□	VFR531□	3/8	15	0.38	4.1	16	0.31	4.3	3	80 or less	1.87 (1.82)
				1/2	17	0.31	4.6	20	0.33	5.4			
				3/4	18	0.28	4.7	21	0.30	5.4			
	Exhaust center	VFR540□	VFR541□	3/8	14	0.38	3.6	17 [16]	0.39 [0.35]	4.8 [4.3]	3	80 or less	1.87 (1.82)
				1/2	17	0.29	4.6	21 [18]	0.31 [0.34]	5.6 [5.0]			
				3/4	18	0.29	4.6	23 [20]	0.27 [0.33]	5.9 [5.2]			
	Pressure center	VFR550□	VFR551□	3/8	16 [9.4]	0.39 [0.40]	4.2 [2.6]	17	0.36	4.5	3	80 or less	1.87 (1.82)
				1/2	18 [9.7]	0.32 [0.45]	5.0 [2.9]	20	0.31	5.3			
				3/4	19 [9.2]	0.35 [0.48]	5.4 [2.8]	21	0.29	5.6			



Note 1) [ ]: Denotes the normal position.

Note 2) Min. operating frequency is once in 30 days.

Note 3) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge voltage suppressor)

Note 4) For VFR5□00-□FZ-06, ( ): VFR5□10-□DZ-06

Gentle Automatic Solution Sdn Bhd

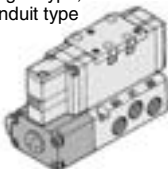
Tel :603-80237743 Fax :603-80239743 Email :sales@gentle.com.my http://www.gentle.com.my

# Series VFR5000

## How to Order

**Electrical entry**

F: Plug-in type, conduit type



**Option**

Nil	None
Z *	With light/surge voltage suppressor

**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	3/8
04	1/2
06	3/4

**Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

**Plug-in** VFR5 0 0 - 5 F - 06

**Non plug-in** VFR5 1 1 - 1 D - 06

**Symbol**

1	2 position single (A)(B)
2	2 position double (A)(B)
3	3 position closed center (A)(B)
4	3 position exhaust center (A)(B)
5	3 position pressure center (A)(B)

**Body option**

0	Standard
1 *	Direct manual override

\* Option

**Pilot type**

Nil	Internal pilot
R *	External pilot

\* Option


**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

**Electrical entry**

E: Grommet terminal



D: DIN terminal



**Pilot valve Manual override**

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

\* Option

**CE-compliant**

Nil	—
Q	CE-compliant *

\* Electrical entry: D and F only

## How to Order Pilot Valve Assembly

SF4 - 1 F - 70 - Q

**Coil rated voltage**

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

\* Option

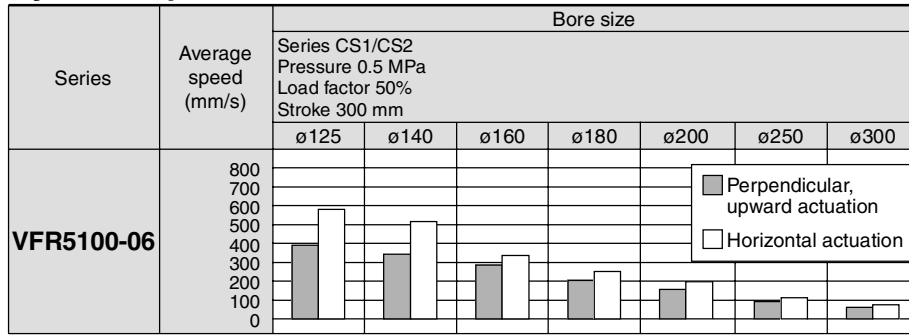
**CE-compliant**

Nil	—
Q	CE-compliant

# 5 Port Pilot Operated Solenoid Valve Rubber Seal, Plug-in/Non Plug-in **Series VFR5000**

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

## Cylinder Speed Chart

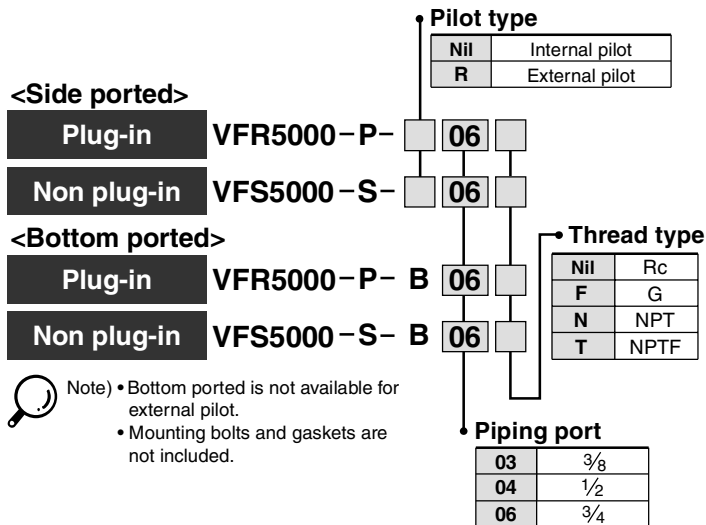


- \* It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
- \* The average velocity of the cylinder is what the stroke is divided by the total stroke time.
- \* Load factor: ((Load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

## Conditions

		Series CS1/CS2
VFR5110-06	Tube x Length	SGP20A x 1 m
	Speed controller	AS500-06
	Silencer	AN500-06

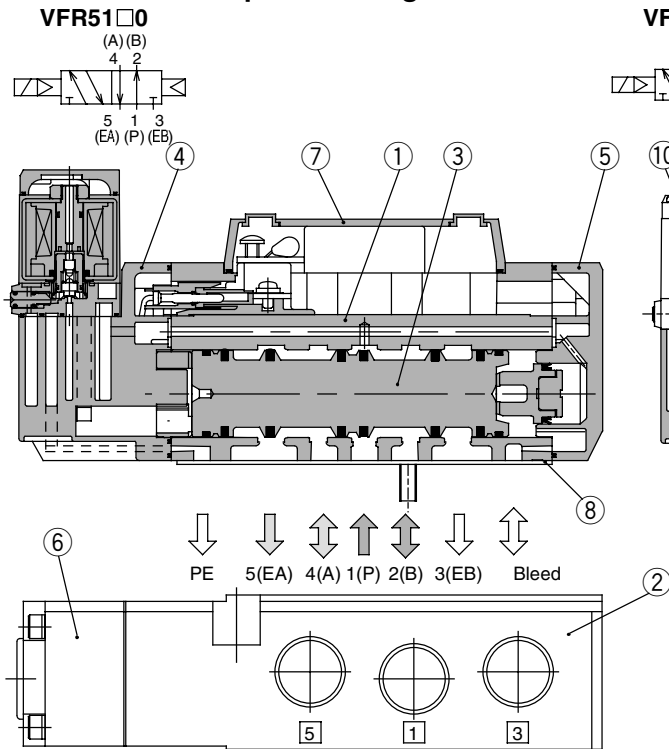
## How to Order Sub-plate Assembly



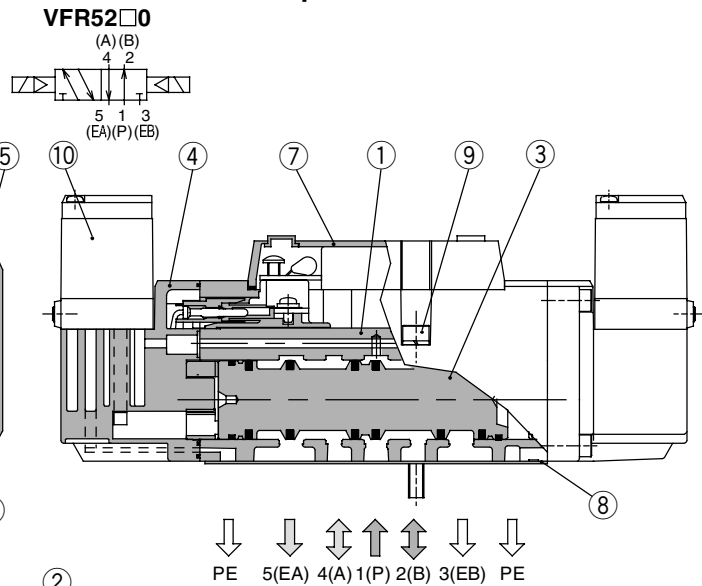
# Series VFR5000

## Construction

### 2 position single

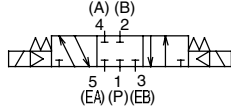


### 2 position double

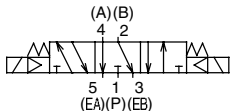


### 3 position closed center/exhaust center/pressure center

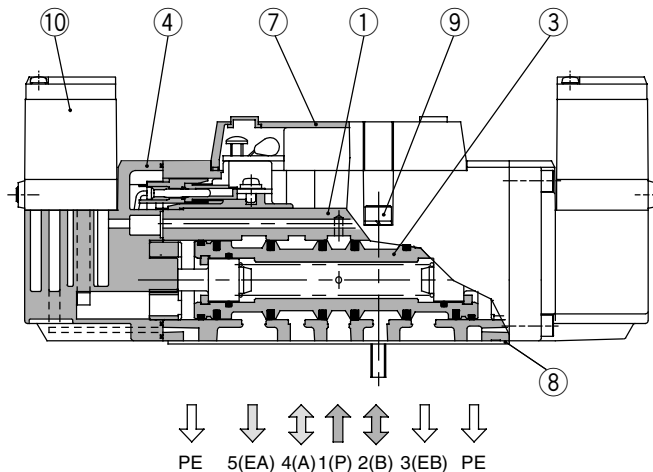
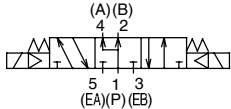
#### Closed center: VFR53□0



#### Exhaust center: VFR54□0



#### Pressure center: VFR55□0



This figure shows a closed center type.

## Component Parts

No.	Description	Material	Note
1	Body	Aluminum die-casted	Platinum silver
2	Sub-plate	Aluminum die-casted	Platinum silver
3	Spool valve	Aluminum, NBR	
4	Adapter plate	Resin	Black

## Component Parts

No.	Description	Material	Note
5	End plate	Resin	Black
6	Junction cover	Resin	Black
7	Light cover	Resin	

## Replacement Parts

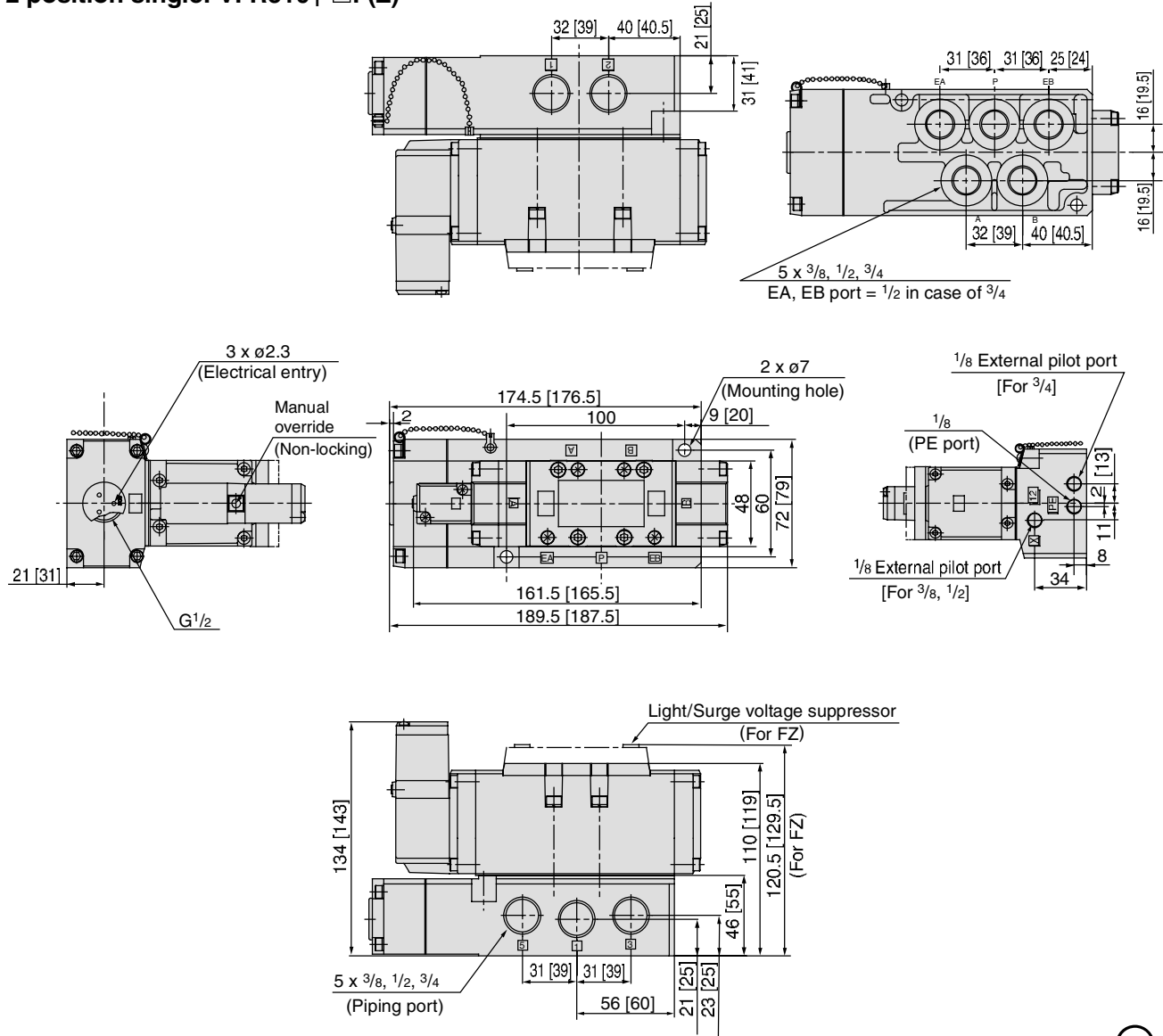
No.	Description	Material	Part no.		
			VFR51□□	VFR52□□	VFR53□□/54□□/55□□
8	Gasket	NBR	AXT627-10-1	AXT627-10-1	AXT627-10-1
9	Hexagon socket head screw	Steel	AXT627-42-1 (M5 x 50)	AXT627-42-1 (M5 x 50)	AXT627-42-1 (M5 x 50)
10	Pilot valve assembly	—	Refer to "How to Order Pilot Valve Assembly" on page 1298.		

# 5 Port Pilot Operated Solenoid Valve *Series VFR5000*

Rubber Seal, Plug-in/Non Plug-in

## Plug-in: 2 Position Single/Double, 3 Position Closed Center/Exhaust Center/Pressure Center

### 2 position single: VFR510<sup>0</sup><sub>1</sub>-□F(Z)



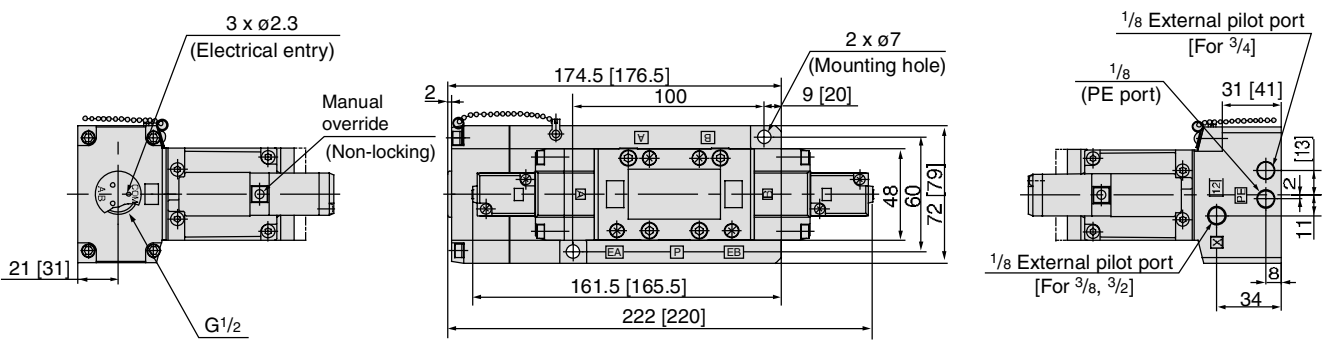
[ ] = 3/4

### 2 position double: VFR520<sup>0</sup><sub>1</sub>-□F(Z)

### 3 position closed center: VFR530<sup>0</sup><sub>1</sub>-□F(Z)

### 3 position exhaust center: VFR540<sup>0</sup><sub>1</sub>-□F(Z)

### 3 position pressure center: VFR550<sup>0</sup><sub>1</sub>-□F(Z)

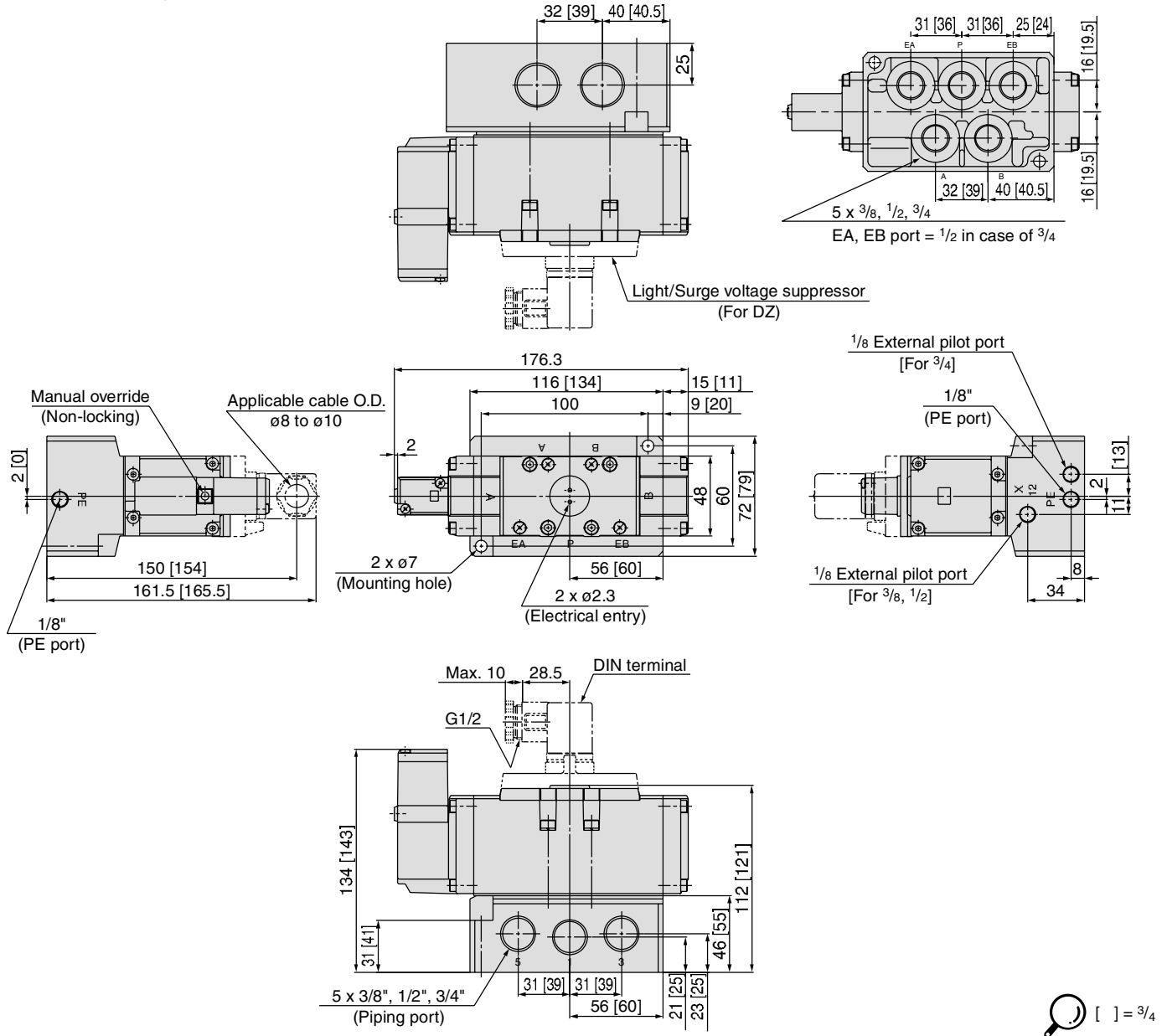


\* Other dimensions are the same as the single type. [ ] = 3/4

# Series VFR5000

## Plug-in: 2 Position Single/Double, 3 Position Closed Center/Exhaust Center/Pressure Center

2 position single: VFR511<sup>0</sup>-□E, VFR511<sup>0</sup>-□D(Z)

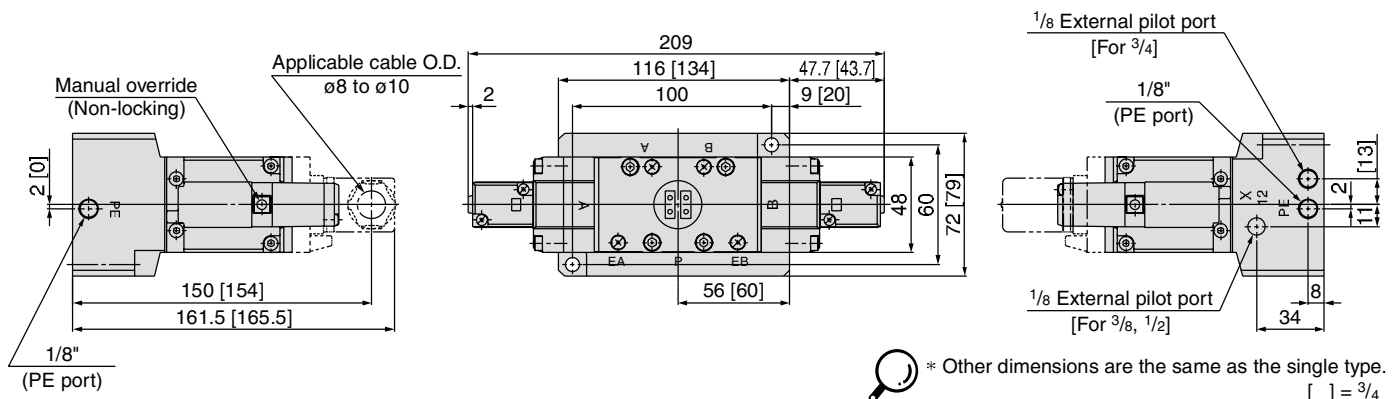


2 position double: VFR521<sup>0</sup>-□E, VFR521<sup>0</sup>-□D(Z)

3 position closed center: VFR531<sup>0</sup>-□E, VFR531<sup>0</sup>-□D(Z)

3 position exhaust center: VFR541<sup>0</sup>-□E, VFR541<sup>0</sup>-□D(Z)

3 position pressure center: VFR551<sup>0</sup>-□E, VFR551<sup>0</sup>-□D(Z)



# Series VFR5000 Manifold Specifications

## Manifold Specifications

Base model	Wiring	Porting specifications		Port size Rc		Stations	Applicable valve model
		A, B port	Side/Bottom	P, EA, EB	A, B		
Plug-in type VV5FR5-01□(-Q)	<ul style="list-style-type: none"> <li>With terminal block</li> <li>With multi-connector</li> <li>With D-sub connector</li> </ul>	Side/Bottom	3/4	1/2, 3/4	2 to 10	VFR5□0□-□F(-Q)	
					2 to 8		
Non plug-in type VV5FR5-10(-Q)	<ul style="list-style-type: none"> <li>Grommet terminal</li> <li>DIN terminal</li> </ul>				2 to 10	VFR5□1□-□E VFR5□1□-□D(-Q)	



## How to Order Manifold Assembly

Instruct by specifying the valves, blanking plate and manifold option parts assembly to be mounted on the manifold along with the manifold base model no.

<Example> Plug-in type with terminal block: 6 stations

VV5FR5-10T-061-04 ..... 1 set (Manifold part number)  
 \*VFR5100-5FZ ..... 3 sets (2 position single)  
 \*VFR5200-5FZ ..... 2 sets (2 position double)  
 \*VVFS5000-10A ..... 1 set (Blanking plate assembly part no.)

↳ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Valve arrangement is counted from the D side.  
 When ordering, specify the part nos. in order from the 1st. station in the D side.  
 When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

<Example> Non plug-in type: 6 stations

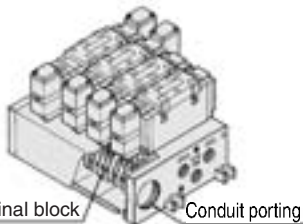
VV5FR5-10-061-04 ..... 1 set (Manifold part number)  
 \*VFR5110-5D ..... 5 sets (2 position single)  
 \*VFR5410-5D ..... 1 set (3 position exhaust center)  
 \*VVFS5000-R-04-2 ..... 1 set (Individual EXH spacer)

↳ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Valve arrangement is counted from the D side.  
 When ordering, specify the part nos. in order from the 1st. station in the D side.  
 When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

## 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.



**VV5FR5-01T-061-04**

Series VFR5000 Manifold  
 Plug-in type with terminal block

**Stations**

02	2 stations
⋮	⋮
10	10 stations

**Symbol**

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

\* Option

**Port size**

Symbol	P, EA, EB	A, B *
04		1/2
06	3/4	3/4
M		Mixed

\* For bottom ported: 1/2 only.

**CE-compliant**

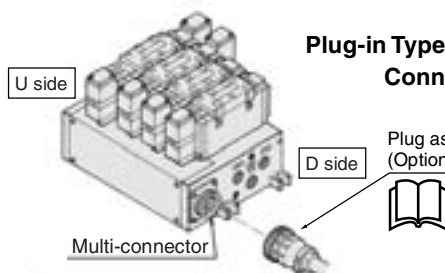
Nil	—
Q	CE-compliant

**Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

## Plug-in Type: With Multi-connector (For wiring specifications, refer to page 1326.)

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



**VV5FR5-01CD-051-04**

Series VFR5000 Manifold  
 Plug-in Type with multi-connector  
 Connector mounting direction

**Stations**

02	2 stations
⋮	⋮
08 *	8 stations

\* Max: 8 stations

**Symbol**

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

\* Option

**Port size**

Symbol	P, EA, EB	A, B *
04		1/2
06	3/4	3/4
M		Mixed

\* For bottom ported: 1/2 only.

**CE-compliant**

Nil	—
Q	CE-compliant

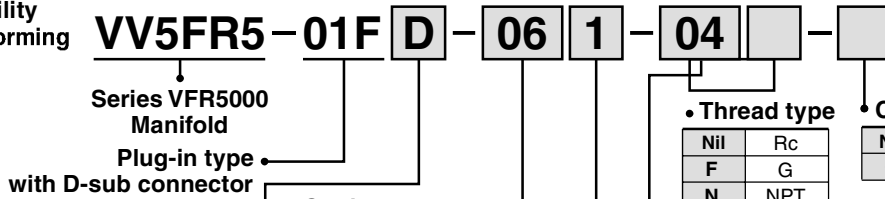
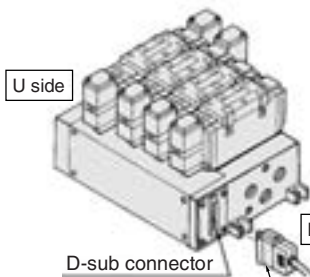
**Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

# Series VFR5000

## Plug-in Type: With D-sub Connector (For wiring specifications, refer to page 1326.)

- Wide range of interchangeability (D-sub connector (25P) conforming to MIL standard)
- Quick wiring permits easier installation.



Connector mounting direction

D	D side mounting
U	U side mounting

Stations

02	2 stations
⋮	⋮
08*	8 stations

\* Max: 8 stations

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

CE-compliant

Nil	—
Q	CE-compliant

Symbol

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

\* Option

Port size

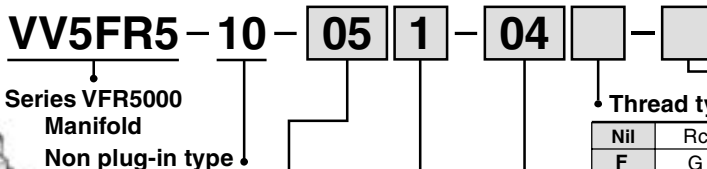
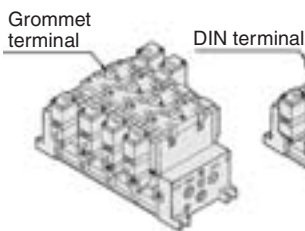
Symbol	P, EA, EB	A, B*
04	3/4	1/2
06		3/4
M		Mixed

\* For bottom ported: 1/2 only.

Refer to page 1326.

## Non Plug-in Type: Grommet Terminal, DIN Terminal

- Wiring for every valve



Stations

02	2 stations
⋮	⋮
10	10 stations

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

CE-compliant

Nil	—
Q	CE-compliant

Symbol

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

\* Option

Port size

Symbol	P, EA, EB	A, B*
04	3/4	1/2
06		3/4
M		Mixed

\* For bottom ported: 1/2 only.

Note) Manifold base is common for Series VFS5000. Terminal block is not required.



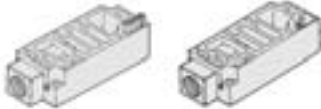
# 5 Port Pilot Operated Solenoid Valve Rubber Seal, Plug-in/Non Plug-in *Series VFR5000*

## Manifold/Option Parts Assembly

### Individual SUP spacer

Supply port can be located at each valve individually after individual SUP spacer is mounted on manifold block.

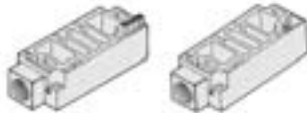
Body type	Plug-in type	Non plug-in type
Part no.	VVFS5000-P-04-1	VVFS5000-P-04-2



### Individual EXH spacer

Exhaust port can be located at each valve individually after individual EXH spacer is mounted on manifold block. (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 2 or more pressures (high and low) are supplied to one manifold, insert a disk between the stations which are supplied different pressures.

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

### EXH block disk

Use exhaust blocks to eliminate back flow to other stations. Use supply disks to operate two pressures on the same manifold.

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



EXH block disk



SUP block disk

### Throttle valve spacer

Mount interface speed control on manifold block. Cylinder speed can be controlled by metered out flow.

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

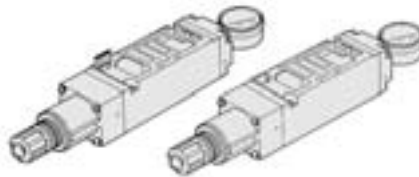


### Interface regulator

When interface regulator is mounted on manifold block, regulation to that valve is possible.

(Refer to "Flow Characteristics" on page 1324 before operation.)

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

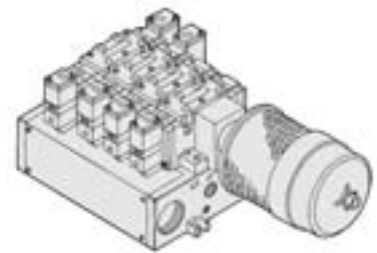
It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

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

## Manifold Option

### With exhaust cleaner Plug-in type/Non plug-in type

- High noise reduction effect: 35 dB or more
- Drainage and mist are collected (99.9% or more).
- Piping work is reduced.



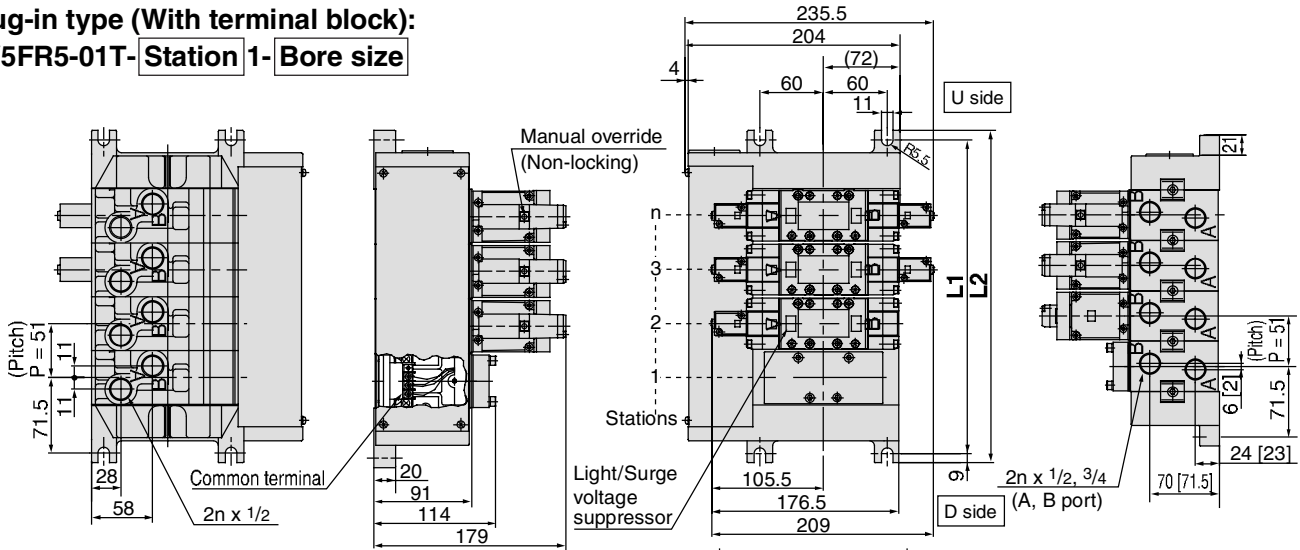
For details, refer to page 1308.

# Series VFR5000

## Manifold: Plug-in Type/Non Plug-in Type

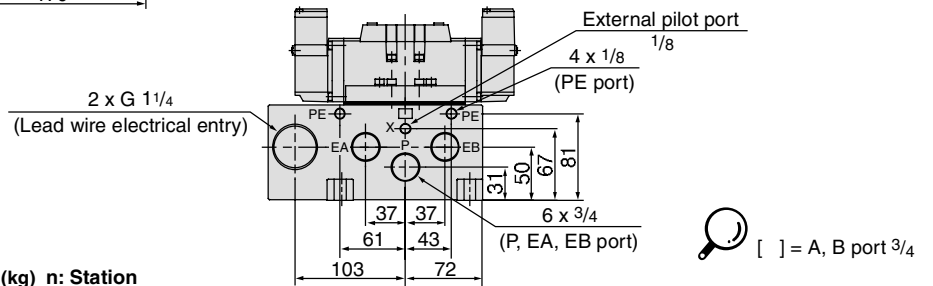
### Plug-in type (With terminal block):

#### VV5FR5-01T- Station 1- Bore size



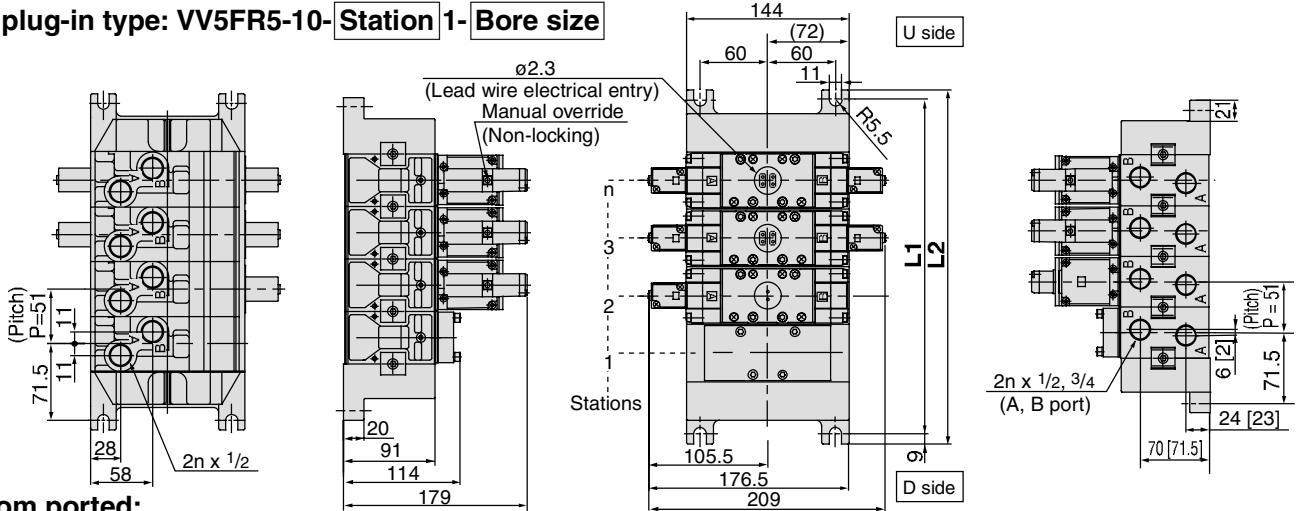
### Bottom ported:

#### VV5FR5-01T- Station 2- Bore size



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

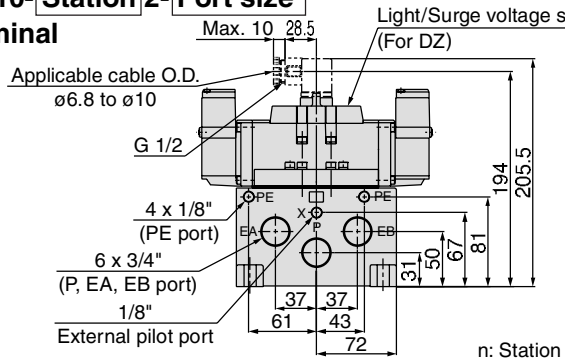
### Non plug-in type: VV5FR5-10- Station 1- Bore size



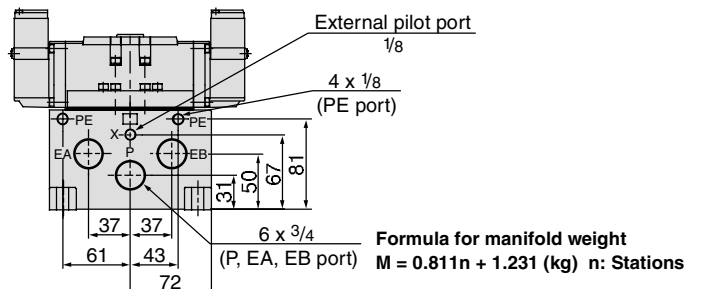
### Bottom ported:

#### VV5FR5-10- Station 2- Port size

##### DIN terminal



##### Grommet with terminal



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

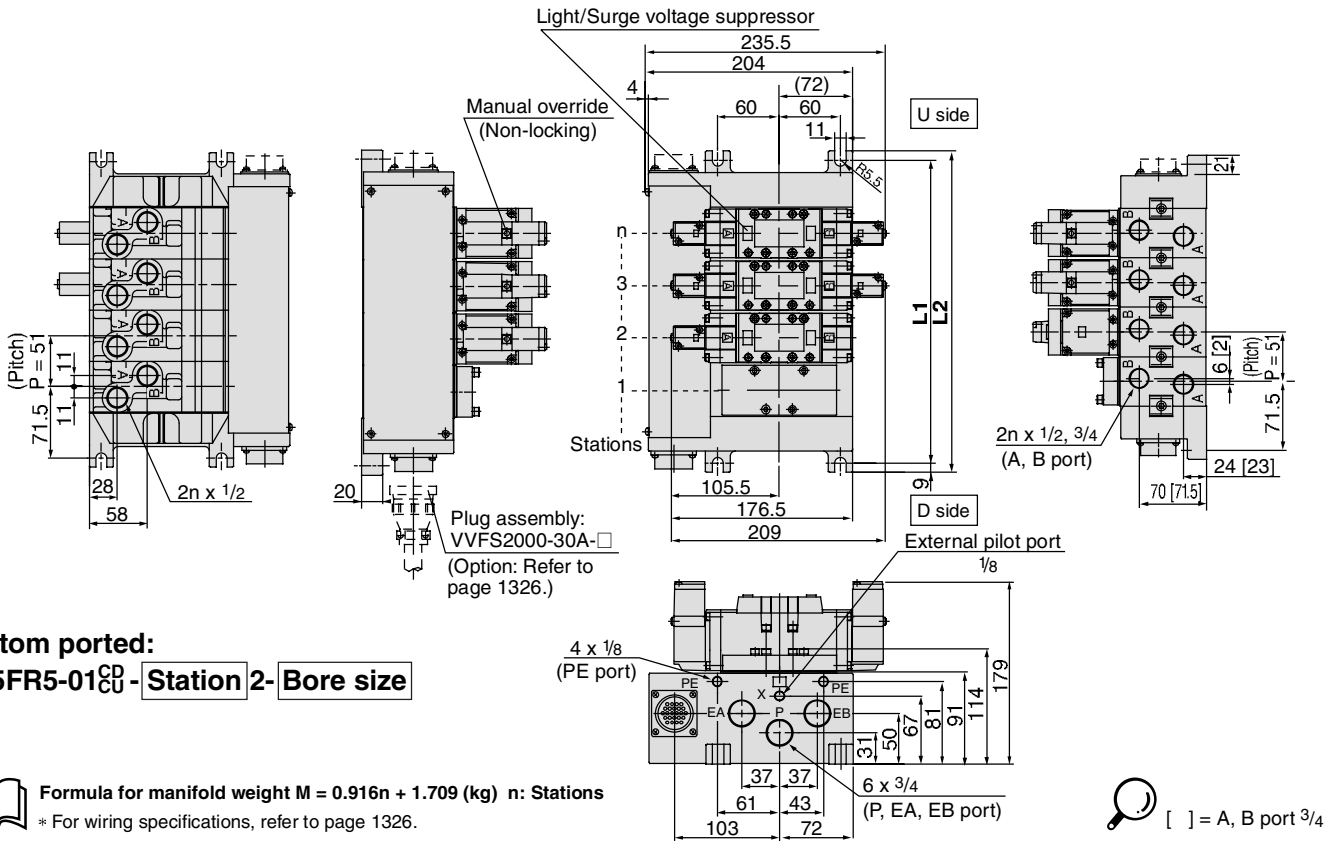
Stations	2	3	4	5	6	7	8	9	10	Formula
L <sub>1</sub>	194	245	296	347	398	449	500	551	602	L <sub>1</sub> = 51 x n + 92
L <sub>2</sub>	212	263	314	365	416	467	518	569	620	L <sub>2</sub> = 51 x n + 110

[ ] = A, B port 3/4

# 5 Port Pilot Operated Solenoid Valve Rubber Seal, Plug-in/Non Plug-in *Series VFR5000*

## Manifold/Plug-in type: With Multi-connector/With D-sub connector

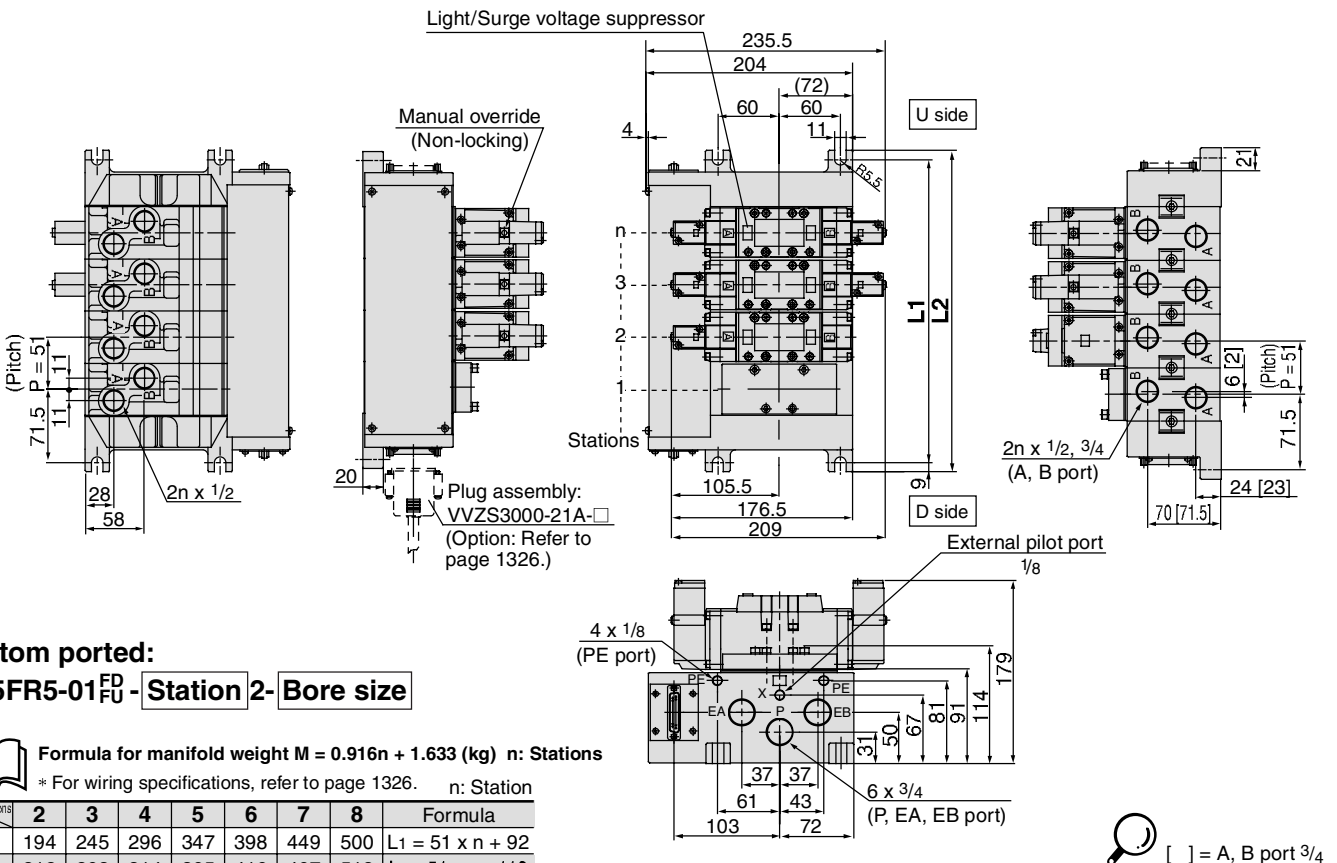
Plug-in type/With multi-connector: **VV5FR5-01CD- Station 1- Bore size**, **VV5FR5-01CU- Station 1- Bore size**



**Bottom ported:**  
**VV5FR5-01CD - Station 2- Bore size**

**Formula for manifold weight  $M = 0.916n + 1.709$  (kg) n: Stations**  
\* For wiring specifications, refer to page 1326.

Plug-in type/With D-sub connector: **VV5FR5-01FD- Station 1- Bore size**, **VV5FR5-01FU- Station 1- Bore size**



**Bottom ported:**  
**VV5FR5-01FD - Station 2- Bore size**

**Formula for manifold weight  $M = 0.916n + 1.633$  (kg) n: Stations**  
\* For wiring specifications, refer to page 1326.

Stations	2	3	4	5	6	7	8	Formula
L1	194	245	296	347	398	449	500	$L1 = 51 \times n + 92$
L2	212	263	314	365	416	467	518	$L2 = 51 \times n + 110$

# Series VFR5000

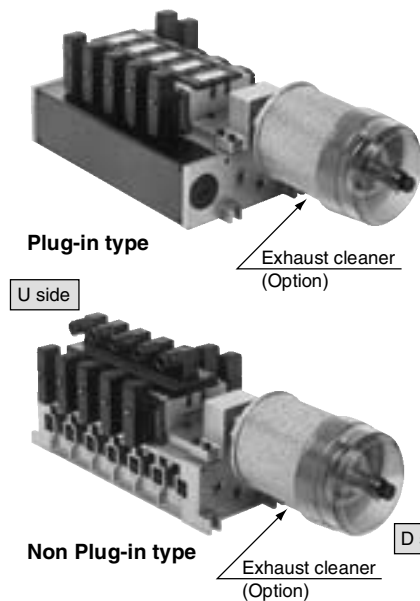
## Manifold with Exhaust Cleaner

- Protection of work environment
- Reduction of valve exhaust noise of 35 dB or more
- Drainage and mist are collected. (99.9% or more)
- Piping work is reduced.

### Manifold Specifications

Manifold	Plug-in type: VV5FR5-01□(-Q)	Non plug-in type: VV5FR5-10(-Q)
Wiring	With terminal block With multi-connector With D-sub connector	DIN terminal Grommet terminal
Applicable valve model	VFR5□00-□F(-Q)	VFR5□10-□D(-Q), VFR5□10-□E
Porting specifications	Common SUP/Common EXH	
	A, B port	Side: 1/2, 3/4, Bottom: 1/2 (Option)
	P port	Side: 3/4 EXH: 1 1/2
Stations	2 to 10 <sup>(1)</sup>	
Applicable exhaust cleaners	AMC810-14 (Connecting port R 1 1/2) <sup>(2)</sup>	

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



### How to Order

**VV5FR5 - 10 - 06 1 - 04 - CD -**

Series VFR5000 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	

Stations

02	2 stations
:	:
10	10 stations

CE-compliant

Nil	—
Q	CE-compliant

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
F	G
N	NPT
T	NPTF

Port size

Symbol	P, EA, EB	A, B *
04	3/4	1/2
06		3/4
M		Mixed

\* For bottom ported: 1/2 only.

Symbol

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

\* Option

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

## How to Order Manifold Assembly

Instruct by specifying the valves and blanking plate to be mounted on the manifold along with the manifold base model no.

<Example> Plug-in type with terminal block: 6 stations

VV5FR5-01T-061-04-CD	1 set (Manifold part no.)
*VFR5100-5FZ	3 sets (2 position single part no.)
*VFR5200-5FZ	2 sets (2 position double part no.)
*VVFS5000-10A	1 set (Blanking plate assembly part no.)
*AMC810-14	1 set (Exhaust cleaner part no.)

↳ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Valve arrangement is counted from the D side.  
When ordering, specify the part nos. in order from the 1st. station in the D side.  
When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

<Example> Non plug-in type: 6 stations

VV5FR5-10-061-04-CU	1 set (Manifold part no.)
*VFR5110-5E	3 sets (2 position single part no.)
*VFR5210-5E	2 sets (2 position double part no.)
*VVFS5000-10A	1 set (Blanking plate assembly part no.)
*AMC810-14	1 set (Exhaust cleaner part no.)

↳ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Valve arrangement is counted from the D side.  
When ordering, specify the part nos. in order from the 1st. station in the D side.  
When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

### Caution

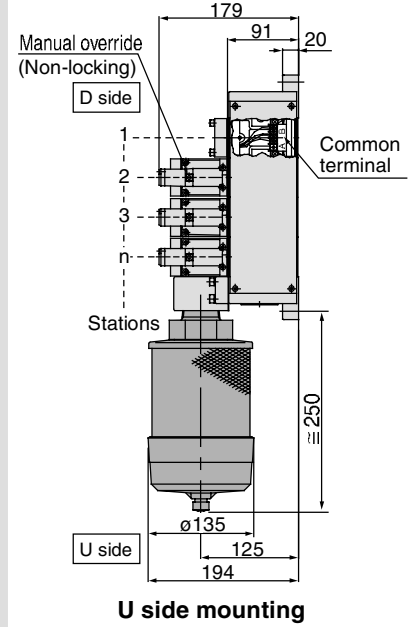
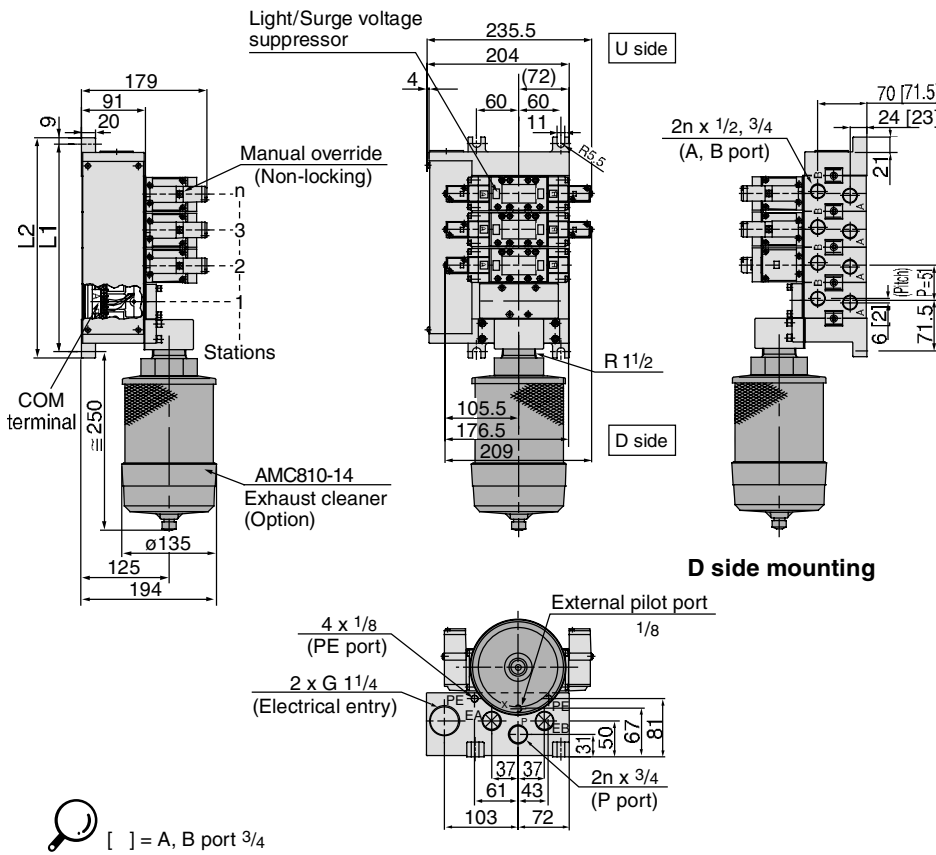
When using exhaust cleaner, mount it downwards.

# 5 Port Pilot Operated Solenoid Valve *Series VFR5000*

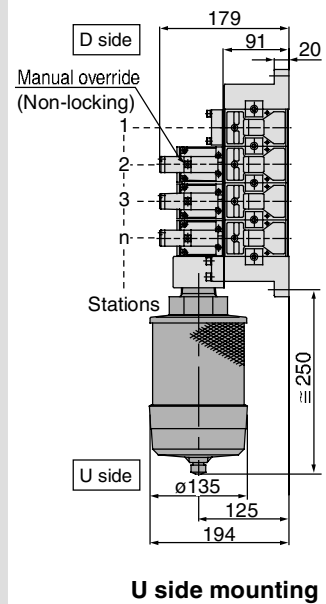
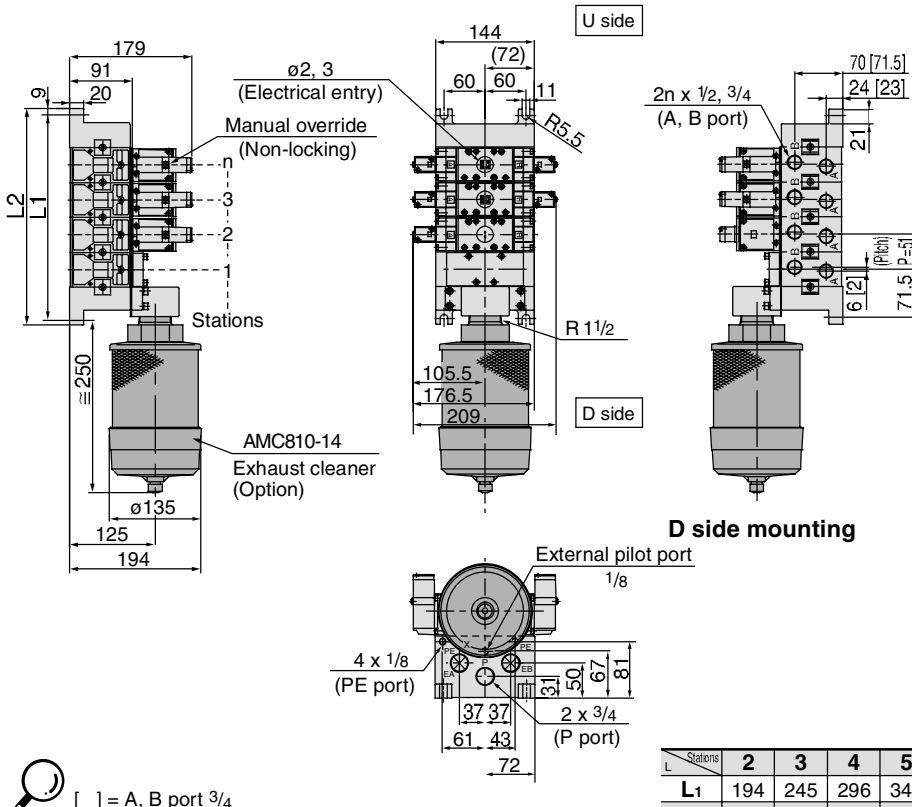
Rubber Seal, Plug-in/Non Plug-in

## Manifold with Exhaust Cleaner: Plug-in Type/Non Plug-in Type

Plug-in type: **VV5FR5-01T** - Station 1 - Port size -  $\frac{CD}{CU}$



Non plug-in type: **VV5FR5-10** - Station 1 - Port size -  $\frac{CD}{CU}$

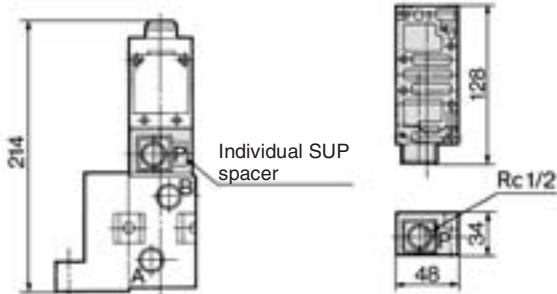


n: Stations										
Stations	2	3	4	5	6	7	8	9	10	Formula
L <sub>1</sub>	194	245	296	347	398	449	500	551	602	L <sub>1</sub> = 51 x n + 92
L <sub>2</sub>	212	263	314	365	416	467	518	569	620	L <sub>2</sub> = 51 x n + 110

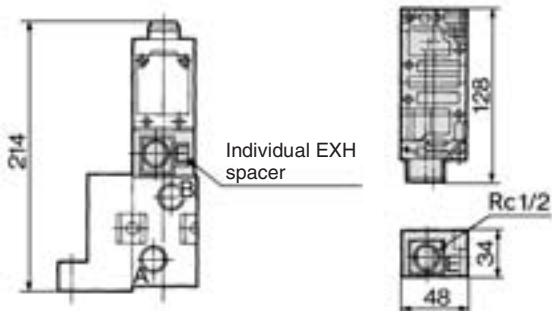
# Series VFR5000

## Manifold Option Parts Assembly/Plug-in Type, Non Plug-in Type

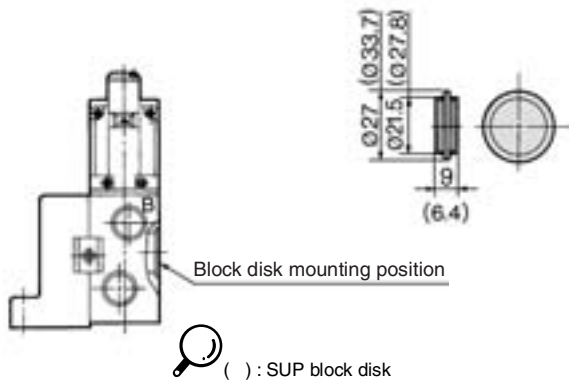
**Individual SUP spacer**  
**VVFS5000-P-04-1 (Plug-in type)**  
**VVFS5000-P-04-2 (Non plug-in type)**



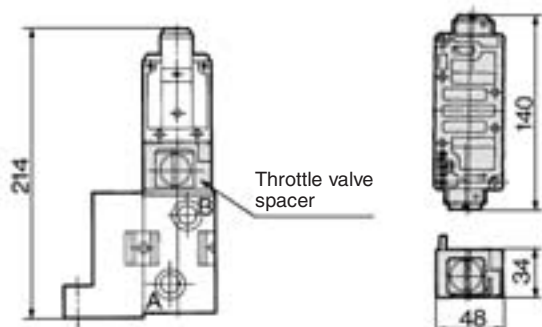
**Individual EXH spacer**  
**VVFS5000-R-04-1 (Plug-in type)**  
**VVFS5000-R-04-2 (Non plug-in type)**



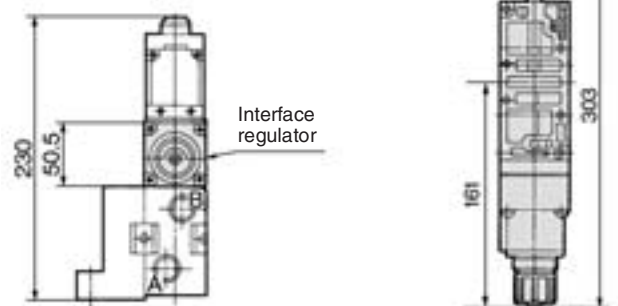
**SUP block disk: AXT628-12A**  
**EXH block disk: AXT512-14-1A**



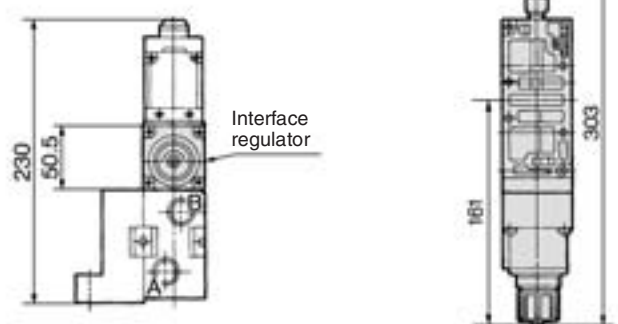
**Throttle valve spacer**  
**VVFS5000-20A-1 (Plug-in type)**  
**VVFS5000-20A-2 (Non plug-in type)**



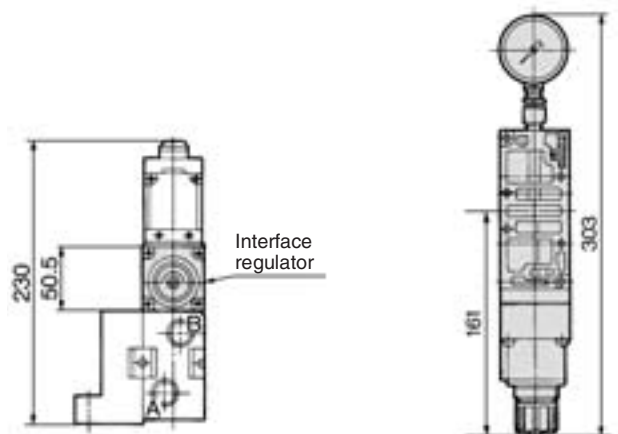
**Interface regulator/P port regulation**  
**ARBF5050-00-P-1 (Plug-in type)**  
**ARBF5050-00-P-2 (Non plug-in type)**



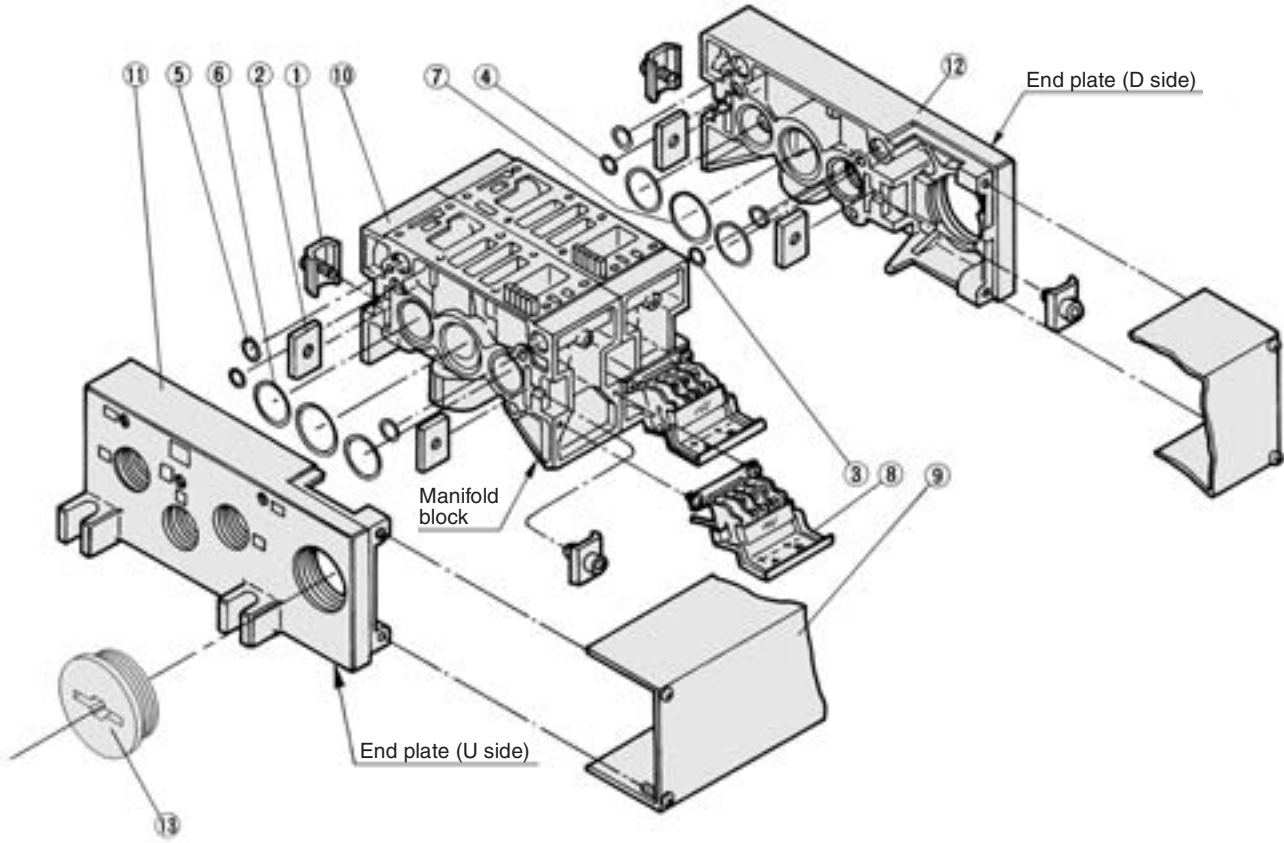
**Interface regulator/A port regulation**  
**ARBF5050-00-A-1 (Plug-in type)**  
**ARBF5050-00-A-2 (Non plug-in type)**



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



**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 block assembly	—	VFR5000-21-1A
9	Junction cover assembly	For 01T	VVFS5000-4A- <a href="#">Stations</a>
13	Rubber plug	NBR	AXT336-9

- When requiring replacement manifold stations, order replacement parts assembly no. ⑩: manifold block assembly part.  
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	VFR5000-20-1A- <sup>04</sup> / <sub>06</sub>	Manifold block ⑩, Metal joint ①, ②, Terminal block ⑧, O-ring ③, ④, ⑤, ⑥, ⑦, Receptacle assembly	Plug-in type
		VVFS5000-1A-2- <sup>04</sup> / <sub>06</sub>	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

\* Contact SMC for CE-compliant products.