

# Series VFS3000 Manifold Specifications Stacking Type

## Keeps environmental air clean from pilot exhaust

Use of the VV5FS3-31 manifold can exhaust intensively the pilot exhaust gas to the base side, and can prevent environmental aggravation due to noise and oil mist.



VV5FS3-31

Part no. for mounting bolt and gasket  
**BG-VFS3030**

## Specifications

Manifold base type	Stacking type
Stations	Max. 15 stations

## Port Specifications

Symbol	Passage		Porting specifications: Rc		
	1(P)	3(R2), 5(R1)	Base	Valve	Base
1	Common	Common	Side: 3/8	Top: 1/4, 3/8	Side: 3/8

## Option

Blanking plate	VVFS3000-10A-1	With gasket, screw
SUP block disk	AXT636-10A	—
EXH block disk	AXT636-11A	—



Note) Individual SUP or EXH is possible with bottom porting of SUP or EXH. For your order, please indicate it in the manifold specification sheet.

## How to Order Manifold Base

**VV5FS3 - 31 - 05 1 - 03**

Series VFS3000  
Manifold

### Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

\* Option

P, EA, EB port size  
03-Rc 3/8

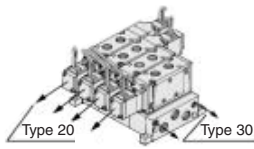
### Symbol

### Stations

02	2 stations
⋮	⋮
15	15 stations

Symbol	Passage		Porting specifications
	1(P)	3(R2), 5(R1)	2(B), 4(A)
1	Common Rc 3/8	Common Rc 3/8	Top Rc 1/4, Rc 3/8

### Base model

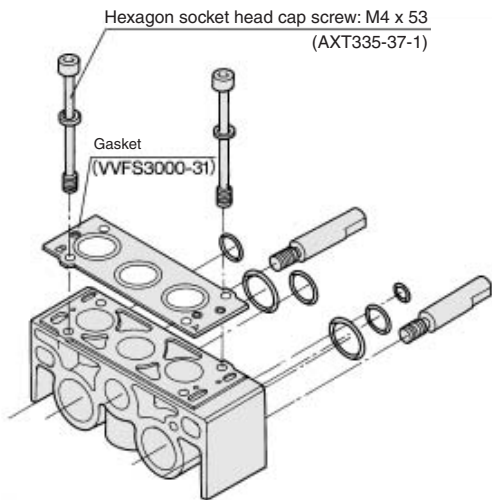
Model	Pilot exhaust	Applicable valve model
31	Pilot common EXH 	VFS3□20-□□-02 VFS3□30-□□-02



Note) Also VFS3□20 is possible to manifold. In this case, it uses an individual pilot exhaust.

## Exploded View of Manifold

### Manifold block assembly VVFS3000-1A-30



• For increasing the manifold bases, please prepare the manifold block assembly no.

## 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>

(Manifold base)	VV5FS3-31-061-03	1
(2 position single)	VFS3130-1D-02	3
(2 position double)	VFS3230-1D-02	2
(Blanking plate)	VVFS3000-10A-1	1

VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

VQ7

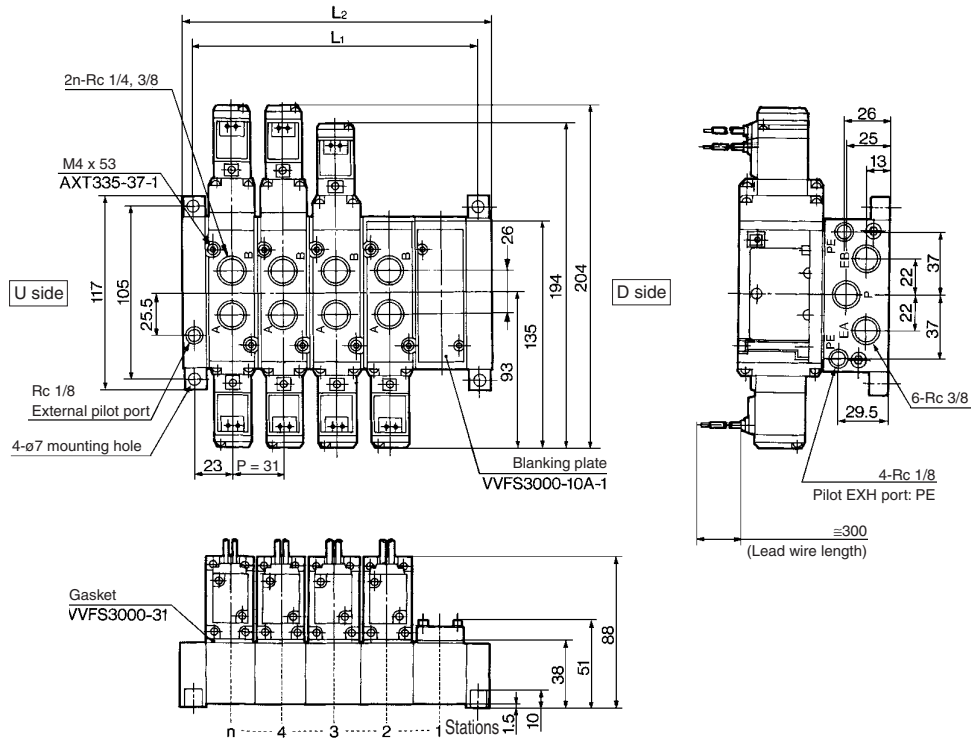
EVS

VFN

# Series VFS3000

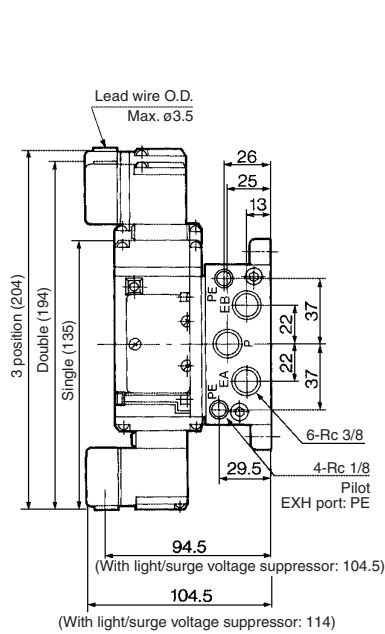
## Type 31 Manifold Pilot common exhaust: VVFS3000-31- Station 1-03

Grommet: G

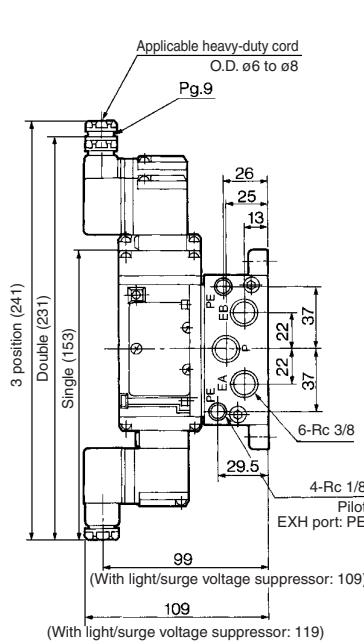


Formula for manifold weight  $M = 0.184n + 0.16$  (kg) n: Station

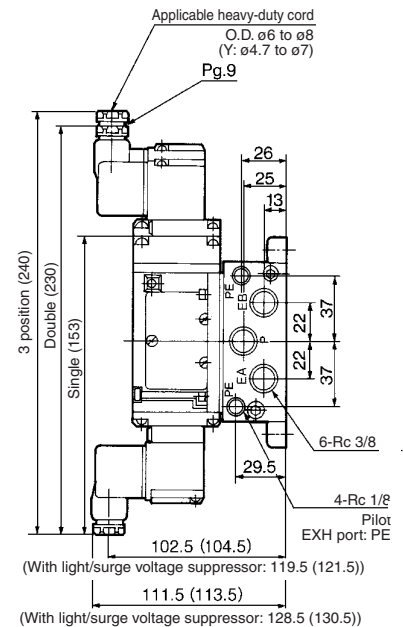
Grommet terminal: E/EZ



Conduit terminal: T/TZ



DIN terminal: D/DZ/Y/YZ



( ): Y, YZ  
n: Station

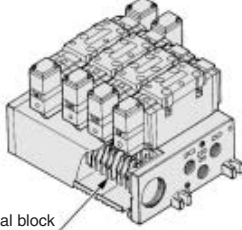
L	Stations	2	3	4	5	6	7	8	9	10	Formula
L <sub>1</sub>		77	108	139	170	201	232	263	294	325	L <sub>1</sub> = 31 x n + 15
L <sub>2</sub>		92	123	154	185	216	247	278	309	340	L <sub>2</sub> = 31 x n + 30

# Series VFS3000

# 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.



Terminal block

**VV5FS3 - 01T - 06 1 - 02**

Series VFS3000  
Manifold  
Plug-in type  
with terminal block

### Stations

02	2 stations
⋮	⋮
10	10 stations

### Port size

Symbol	P, EA, EB	A, B
02	Rc 1/2	Rc 1/4
03	Rc 1/2	Rc 3/8
M		Mixed

### Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

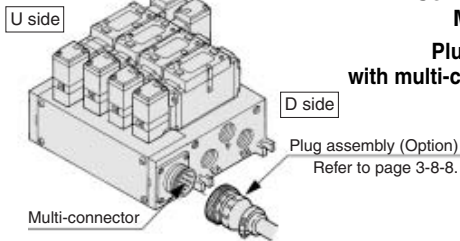
\* Option

### Symbol

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

## 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.



U side

Plug assembly (Option)  
Refer to page 3-8-8.

Multi-connector

**VV5FS3 - 01C D - 05 2 - 02**

Series VFS3000  
Manifold  
Plug-in type  
with multi-connector

### Connector mounting direction

D	D side mounting
U	U side mounting

### Stations

02	2 stations
⋮	⋮
08*	8 stations

\* Max. 8 stations

### Port size

Symbol	P, EA, EB	A, B
02	Rc 1/2	Rc 1/4
03	Rc 1/2	Rc 3/8
M		Mixed

### Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

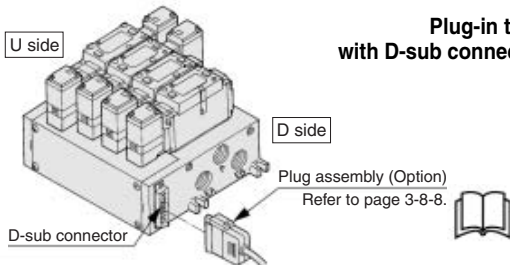
\* Option

### Symbol

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

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

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



U side

Plug assembly (Option)  
Refer to page 3-8-8.

D-sub connector

**VV5FS3 - 01F D - 06 1 - 02**

Series VFS3000  
Manifold  
Plug-in type  
with D-sub connector

### Connector mounting direction

D	D side mounting
U	U side mounting

### Stations

02	2 stations
⋮	⋮
08*	8 stations

\* Max. 8 stations

### Port size

Symbol	P, EA, EB	A, B
02	Rc 1/2	Rc 1/4
03	Rc 1/2	Rc 3/8
M		Mixed

### Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

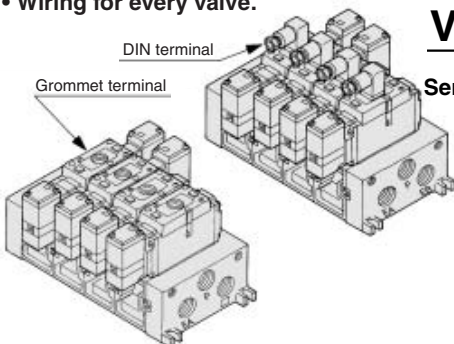
\* Option

### Symbol

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

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

- Wiring for every valve.



DIN terminal

Grommet terminal

**VV5FS3 - 10 - 05 2 - 02**

Series VFS3000  
Manifold  
Non plug-in type

### Stations

02	2 stations
⋮	⋮
10	10 stations

### Port size

Symbol	P, EA, EB	A, B
02	Rc 1/2	Rc 1/4
03	Rc 1/2	Rc 3/8
M		Mixed

### Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

\* Option

### Symbol

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

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

# Series VFS3000

## 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) VV5FS3-01T-061-02 ..... 1 (2 position single) VFS3100-5FZ ..... 3 (2 position double) VFS3200-5FZ ..... 2 (Blanking plate) VVFS3000-10A ..... 1

<Example>

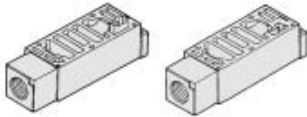
- Non plug-in type: 6 stations (Manifold base) VV5FS3-10-061-03 ..... 1 (2 position single) VFS3110-5D ..... 5 (3 position exhaust center) VFS3410-5D ..... 1 (Individual EXH spacer) VVFS3000-R-03-2 ... 1

## Manifold Option Parts Assembly

### Individual SUP spacer

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

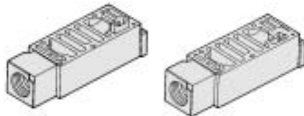
Body type	Plug-in type	Non plug-in type
Part no.	VVFS3000-P-03-1	VVFS3000-P-03-2



### 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.	VVFS3000-R-03-1	VVFS3000-R-03-2



### \* 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.	AXT636-1A	

### \* EXH block disk

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

Body type	Plug-in type	Non plug-in type
Part no.	AXT636-1A	



## Manifold Specifications

Base model	Wiring	Porting specifications	Port size Rc		Stations	Applicable valve model
		A, B port	P, EA, EB	A, B		
<b>Plug-in type VV5FS3-01</b> □	<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	1/2 <sup>(1)</sup>	1/4, 3/8	2 to 10 <sup>(2)</sup>	VFS3□00-□F
<b>Non plug-in type VV5FS3-10</b>	<ul style="list-style-type: none"> <li>• DIN terminal</li> <li>• Grommet terminal</li> </ul>					VFS3□10-□D VFS3□10-□E



Note 1) Appropriate silencer for EA, EB port: "AN403-04" (O.D. ø27).

Note 2) 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
VV5FS3	1 → 4/2 (P → A/B)	C [dm <sup>3</sup> /(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 <sup>3</sup> /(s-bar)]	7.0	7.0	7.0
		b	0.20	0.20	0.20
		Cv	1.8	1.8	1.8

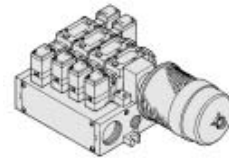
\* Port size: Rc 3/8

## 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.

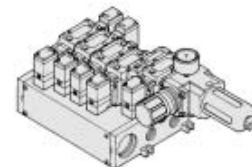


For details, refer to page 3-8-63.

### With control unit

Plug-in type/Non Plug-in type

- Filter, regulation valve, pressure switch and air release valve are all combined to form one unit.
- Piping processes are eliminated.

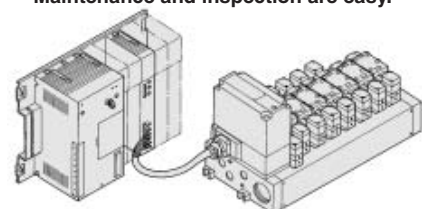


For details, refer to page 3-8-65.

### 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.

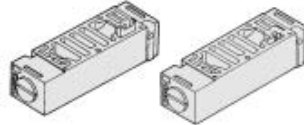


For details, refer to "Serial Transmission" catalog separately.

### Throttle valve spacer

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

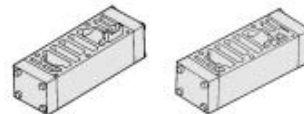
Body type	Plug-in type	Non plug-in type
Part no.	VVFS3000-20A-1	VVFS3000-20A-2



### 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.	VVFS3000-22A-1	VVFS3000-22A-2

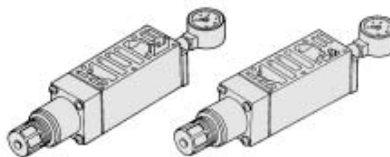


### Interface regulator



Interface regulator set on manifold block can regulate the pressure to each valve. (Refer to page 3-8-6 for "Flow Characteristics".)

Body type	Plug-in type	Non plug-in type
P port regulation	ARBF3050-00-P-1	ARBF3050-00-P-2
A port regulation	ARBF3050-00-A-1	ARBF3050-00-A-2
B port regulation	ARBF3050-00-B-1	ARBF3050-00-B-2



### Blanking plate

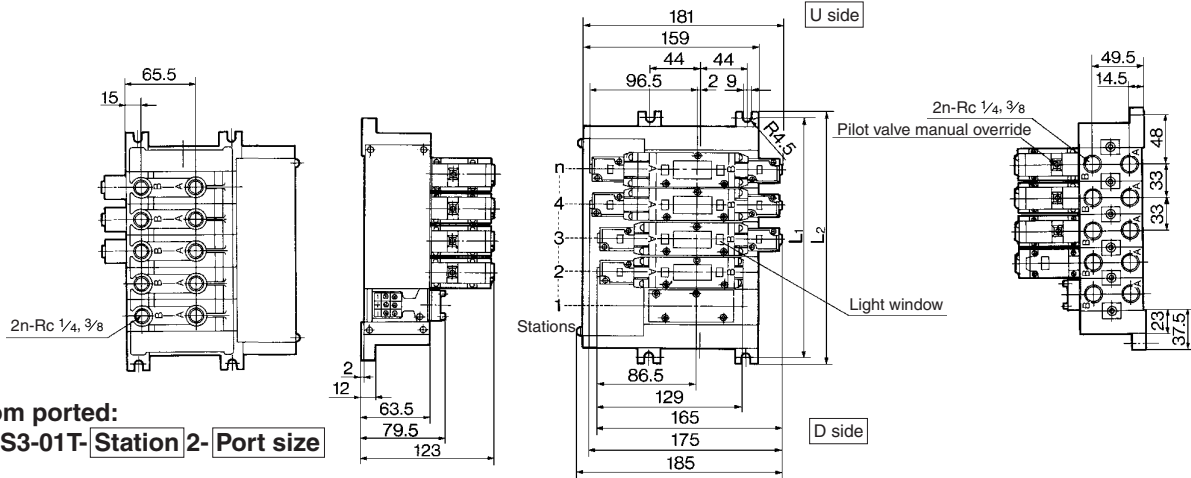
It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

Body type	Plug-in type	Non plug-in type
Part no.	VVFS3000-10A	

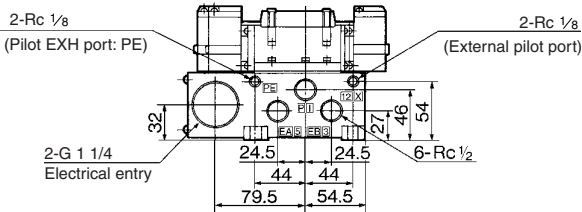
# 5 Port Pilot Operated Solenoid Valve Metal Seal, Plug-in/Non Plug-in Series VFS3000

## Manifold Plug-in type, Non plug-in type

### Plug-in type (With terminal block): VV5FS3-01T- Station 1- Port size

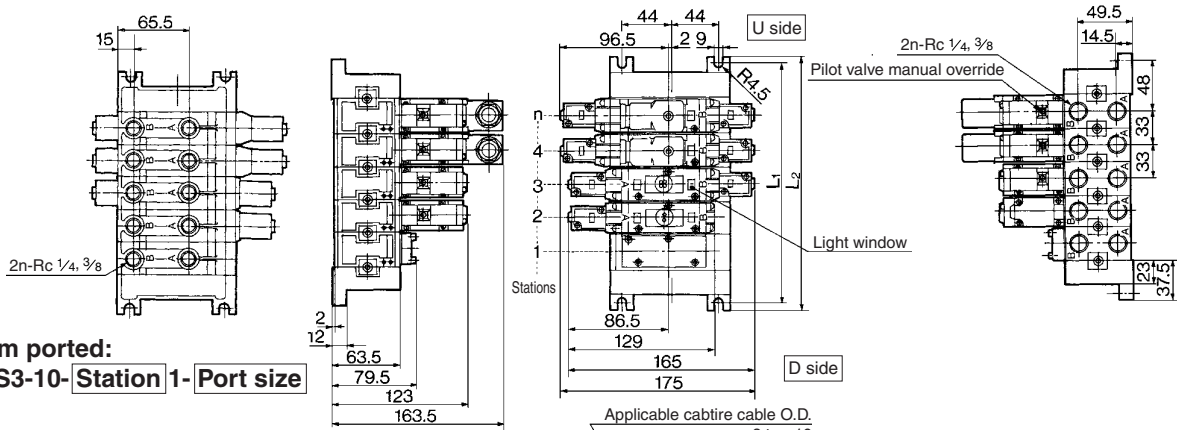


### Bottom ported: VV5FS3-01T- Station 2- Port size

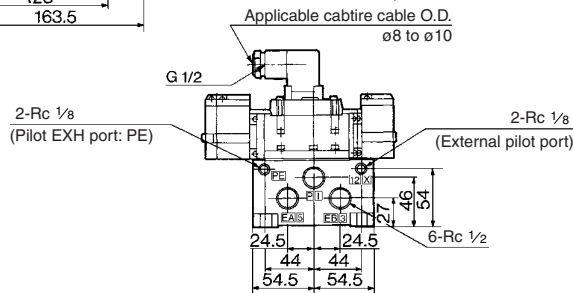


Formula for manifold weight  $M = 0.405n + 0.665$  (kg) n: Station

### Non plug-in type: VV5FS3-10- Station 1- Port size



### Bottom ported: VV5FS3-10- Station 1- Port size



Formula for manifold weight  $M = 0.309n + 0.532$  (kg)

n: Stations

Stations	2	3	4	5	6	7	8	9	10	Formula
L <sub>1</sub>	129	162	195	228	261	294	327	360	393	L <sub>1</sub> = 33 x n + 63
L <sub>2</sub>	141	174	207	240	273	306	339	372	405	L <sub>2</sub> = 33 x n + 75

VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

VQ7

EVS

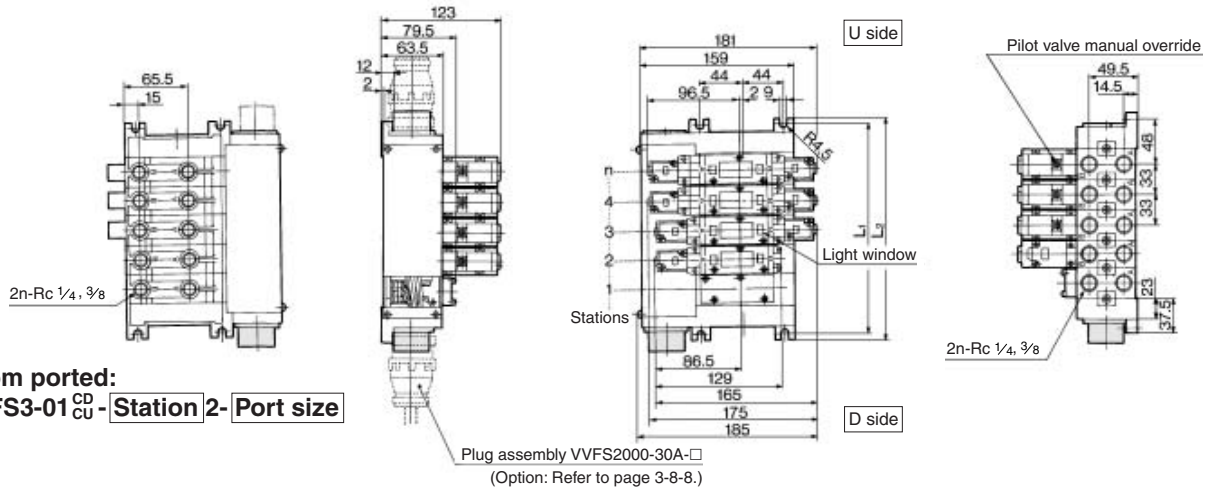
VFN



# Series VFS3000

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

Plug-in type with multi-connector: VV5FS3-01CD-Station 1-Port size, VV5FS3-01CU-Station 1-Port size

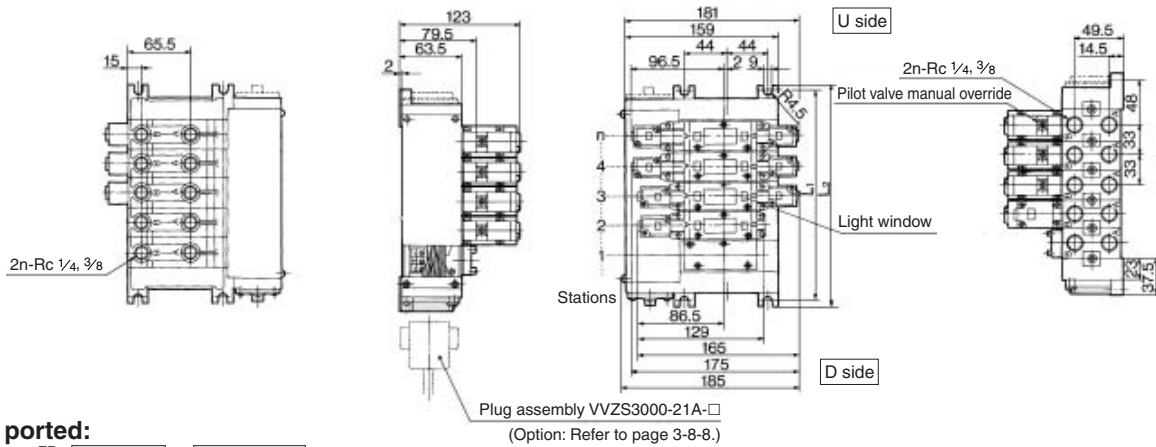


Bottom ported:  
VV5FS3-01<sup>CD</sup><sub>CU</sub>-Station 2-Port size

Formula for manifold weight  $M = 0.41n + 0.753$  (kg) n: Station  
\* Wiring specifications: Refer to page 3-8-8.



Plug-in type with D-sub connector: VV5FS3-01FD-Station 1-Port size, VV5FS3-01FU-Station 1-Port size



Bottom ported:  
VV5FS3-01<sup>FD</sup><sub>FU</sub>-Station 2-Port size

Formula for manifold weight  $M = 0.41n + 0.677$  (kg) n: Station  
\* Wiring specifications: Refer to page 3-8-8.



Stations	2	3	4	5	6	7	8	Formula
L <sub>1</sub>	129	162	195	228	261	294	327	$L_1 = 33 \times n + 63$
L <sub>2</sub>	141	174	207	240	273	306	339	$L_2 = 33 \times n + 75$