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

Model

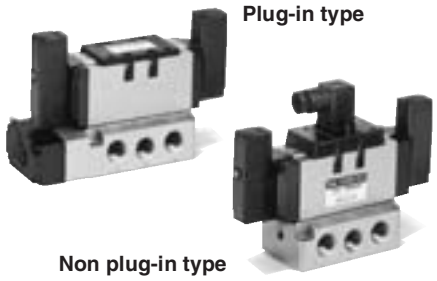
Type of actuation		Model: Plug-in	Model: Non plug-in	Port size Rc	Flow characteristics: 1 → 4/2 (P → A/B) C [dm³/(s·bar)]	b	Cv	Flow characteristics: 4/2 → 5/3 (A/B → R1/R2) C [dm³/(s·bar)]	b	Cv	Max.[1] operating cycle (cpm)	Response[2] time (ms)	Mass[3] (kg)
2 position	Single	**VFS5100**	**VFS5110**	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			
	Exhaust center	**VFS5400**	**VFS5410**	3/8	14	0.32	3.8	14	0.25	3.5	300	55 or less	1.14
				1/2	16	0.17	3.8	16	0.18	4.1			
				3/4	17	0.20	4.2	17	0.13	4.1			
	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	**VFS5600**	**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 Rc 3/8, 1/2—0.744 kg, Rc 3/4—0.966 kg and Rc 3/8, 1/2—0.577 kg, Rc 3/4—0.823 kg respectively.
Note 4) "Note 1) " and "Note 2) " are with controlled clean air.

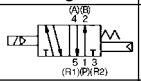
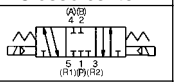
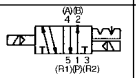
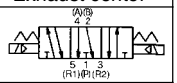
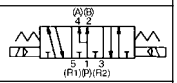
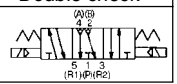
Compact yet provides a large flow capacity
3/4: C: 20 dm³/(s·bar)

Low power consumption: 1.8 W DC

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



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/s² [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

Gentle Automatic Solution Sdn Bhd
Tel :603-80237743 Fax :603-80239743 Email :sales@gentle.com.my http://www.gentle.com.my

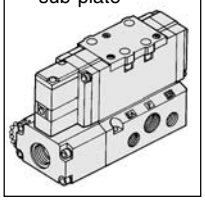
How to Order

Plug-in VFS5 1 0 0 □ – 2 F □ □ – □ 04 □ – □

Non plug-in VFS5 1 1 0 □ – 5 D □ □ – □ 06 □ – □

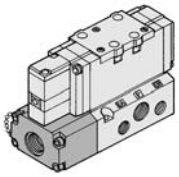
Body type

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

CE-compliant

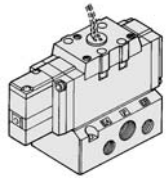
Nil	—
Q	CE-compliant

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 type

Nil	Internal pilot
R*	External pilot

* Option

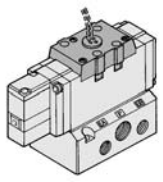
Coil rated voltage

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

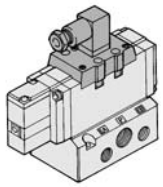
* Option

Electrical entry

E: Grommet terminal



D: DIN terminal



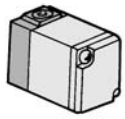
Option

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

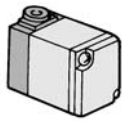
* Type "P", "ZP" is available for DIN type only.

Pilot valve Manual override

Nil: Non-locking push type (Flush)

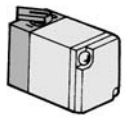


A*: Non-locking push type (Extended)



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

** Refer to page 1224 for voltage conversion.

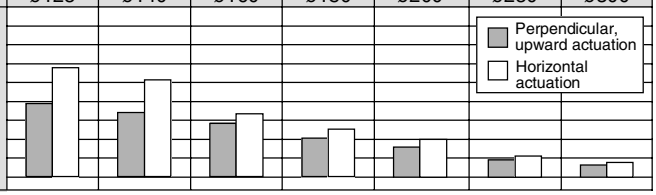
Manual override

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

* Option

Cylinder Speed Chart

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

Series	Average speed (mm/s)	Bore size Series CS1/CS2 Pressure 0.5 MPa Load factor 50% Stroke 300 mm						
		ø125	ø140	ø160	ø180	ø200	ø250	ø300
VFS5100-06	800 700 600 500 400 300 200 100 0							

* 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%

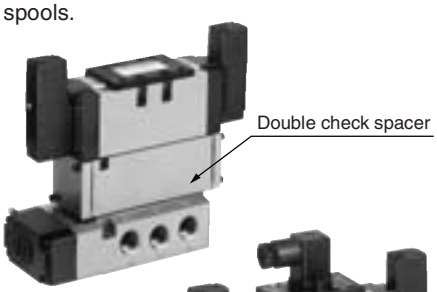
Conditions

		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.



Plug-in type

Non plug-in type

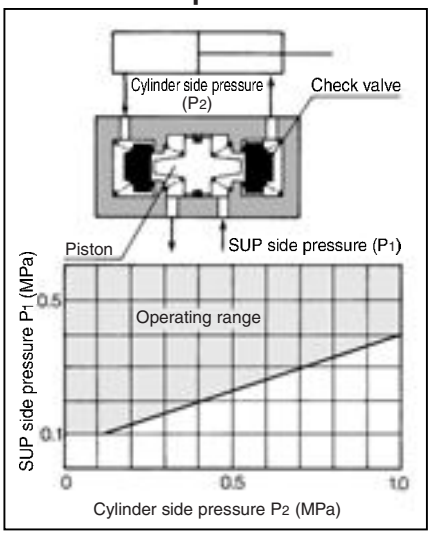
Specifications

Double check spacer part no.	Plug-in type	Non plug-in type
	VVFS5000-22A-1	**VVFS5000-22A-2**
Applicable valve model	VFS5400-□F	VFS5410-□D VFS5410-□E

⚠ Caution

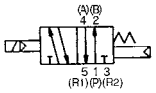
- In the case of 3 position double check valve (VFS56□0), check the leakage from piping and fittings in between valve and cylinder by means of synthetic detergent solutions, and ensure that there is no such leakage found there. Also check the leakage from cylinder seal and piston seal. If there is any 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

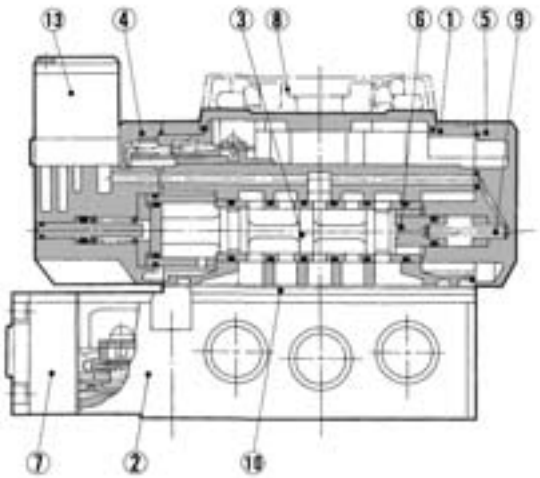


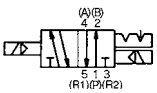
- The combination of VFS51$^{0}_{1}$0, VFS52$^{0}_{1}$0 and a double check spacer can be used as prevention of falling at the stroke end but cannot hold the intermediate position of the cylinder.

Construction

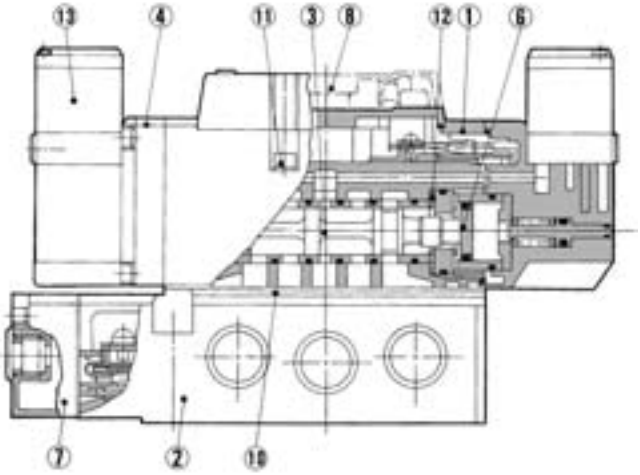


2 position single



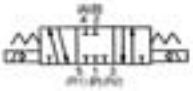


2 position double



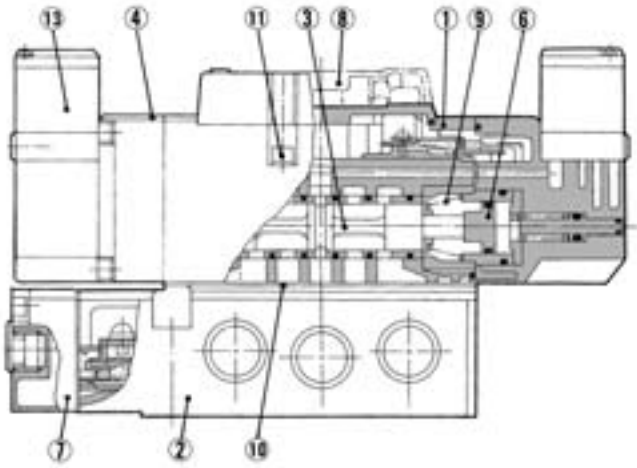
3 position closed center/exhaust center/pressure center

Closed center



Exhaust center

Pressure center



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**	Resin	Black
5	**End plate**	Resin	Black
6	**Piston**	Resin	—
7	**Junction cover**	Resin	—
8	**Light cover**	Resin	—
9	**Return spring**	Stainless steel	—
10	**Gasket**	NBR	—
11	**Hexagon socket head screw**	Steel	—
12	**Detent assembly**	—	—
13	**Pilot valve assembly**	—	—

* Refer to “How to Order Pilot Valve Assembly” on page 1203.

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.

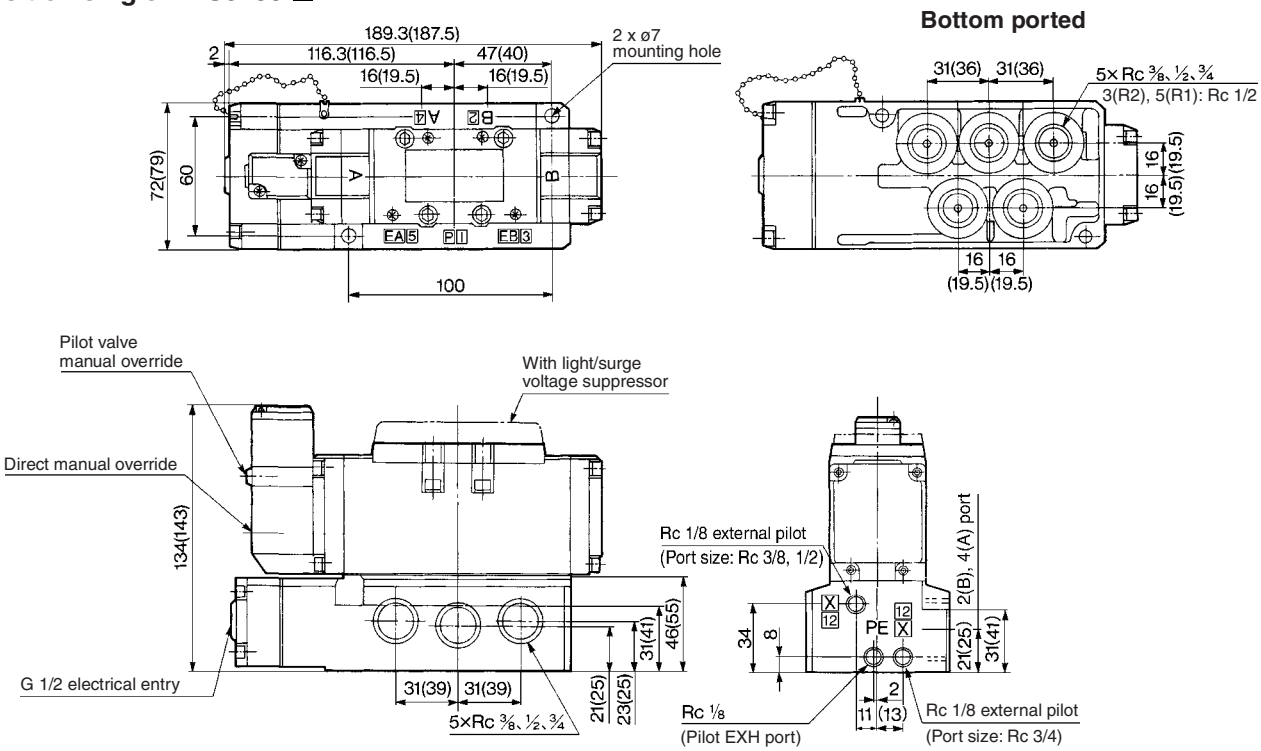
Sub-plate Assembly (For External Pilot) Part No.

Plug-in	VFS5000-P-R$^{03}_{04}_{06}$
Non plug-in	VFS5000-S-R$^{03}_{04}_{06}$

Part no. for mounting bolt and gasket
BG-VFS5000

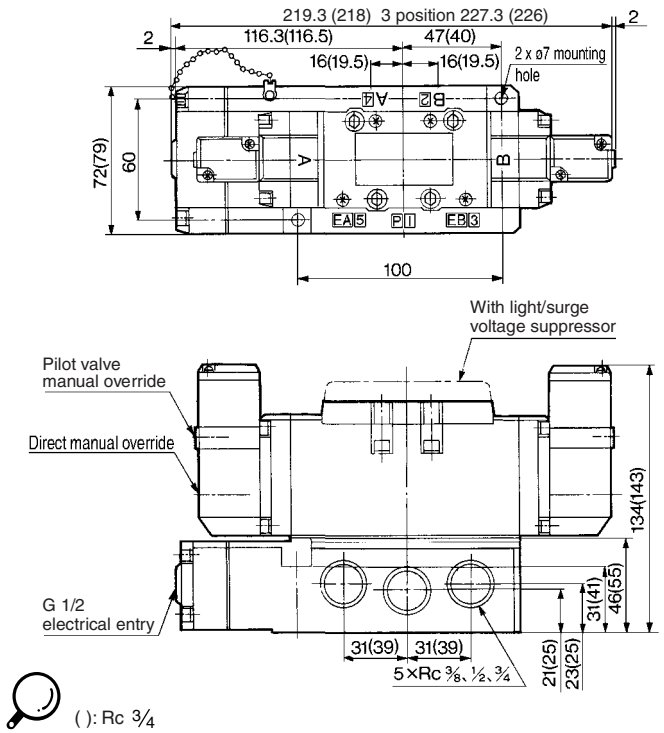
Plug-in — 2 Position single/Double/3 Position closed center/Exhaust center/Pressure center/Double check

2 position single: VFS5100-□F



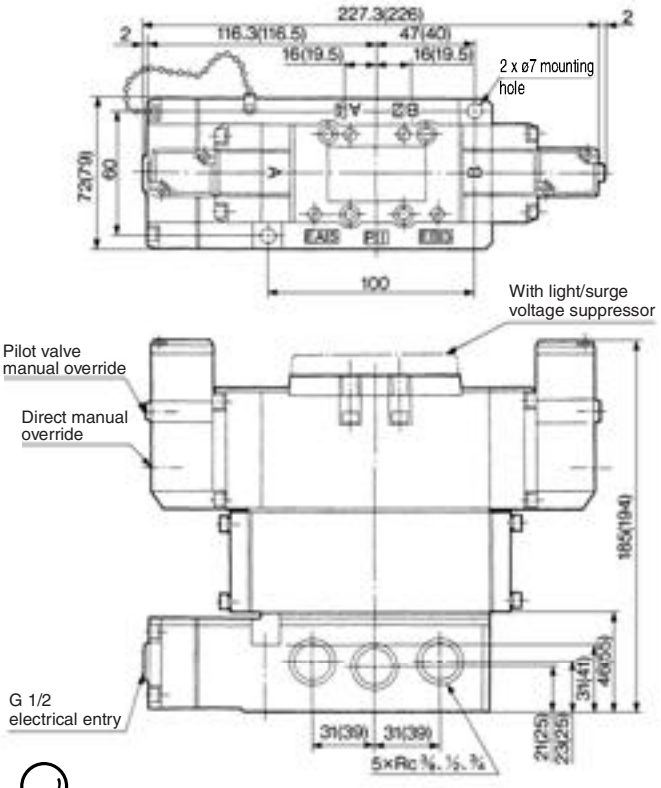
( ): Rc 3/4

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



( ): Rc 3/4

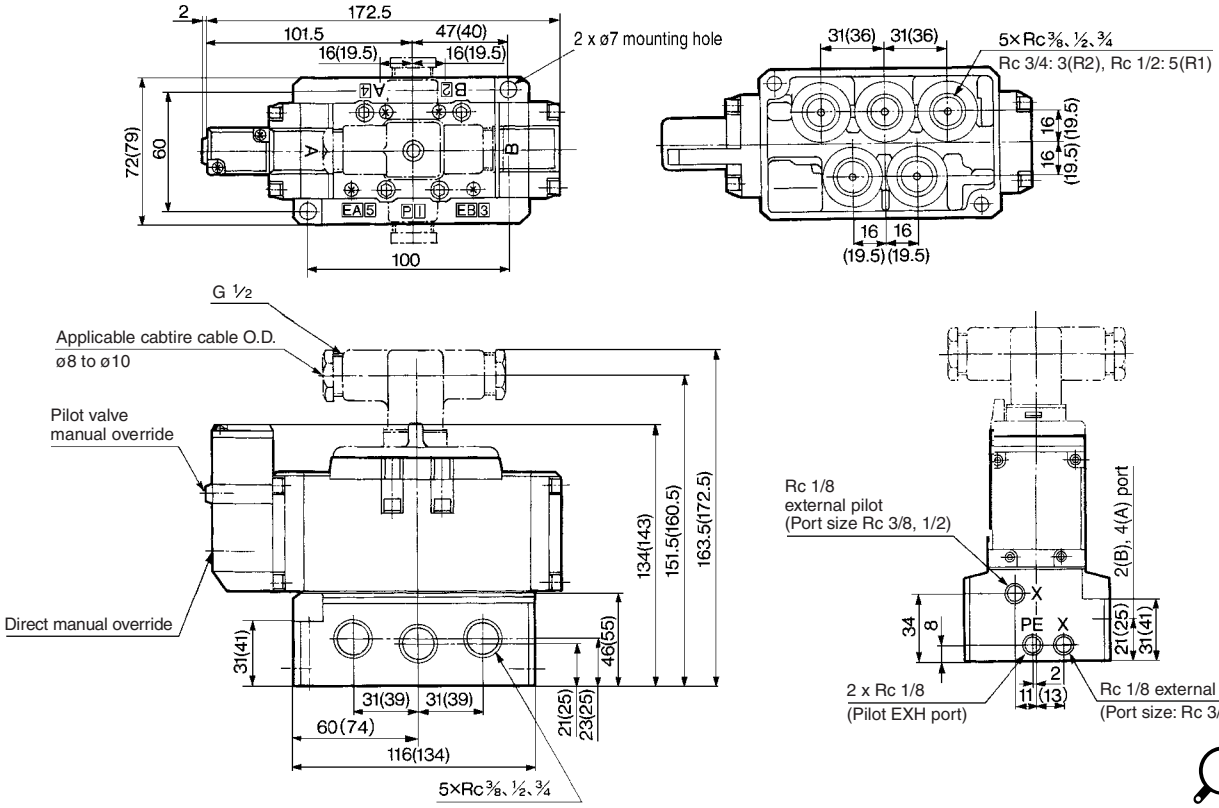
3 position double check: VFS5600-□F



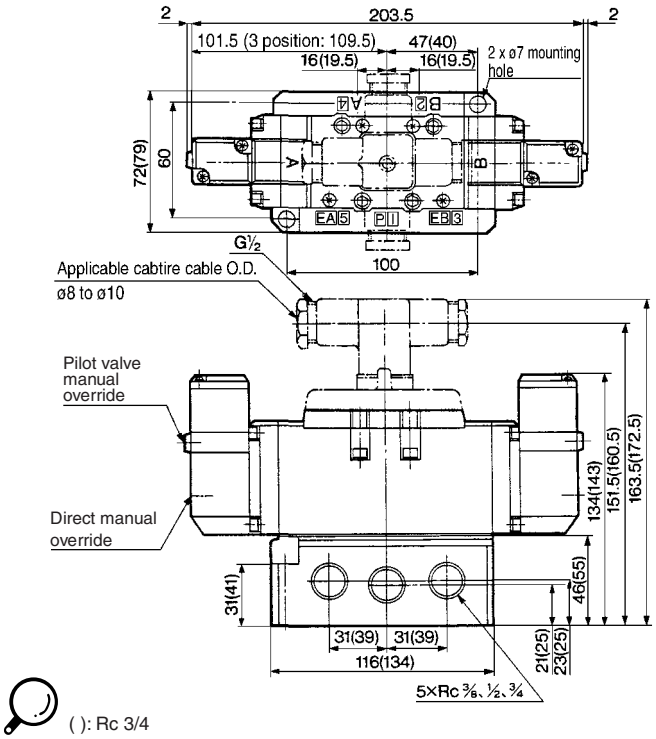
( ): Rc 3/4

Non Plug-in — 2 Position single/Double/3 Position closed center/Exhaust center/Pressure center/Double check

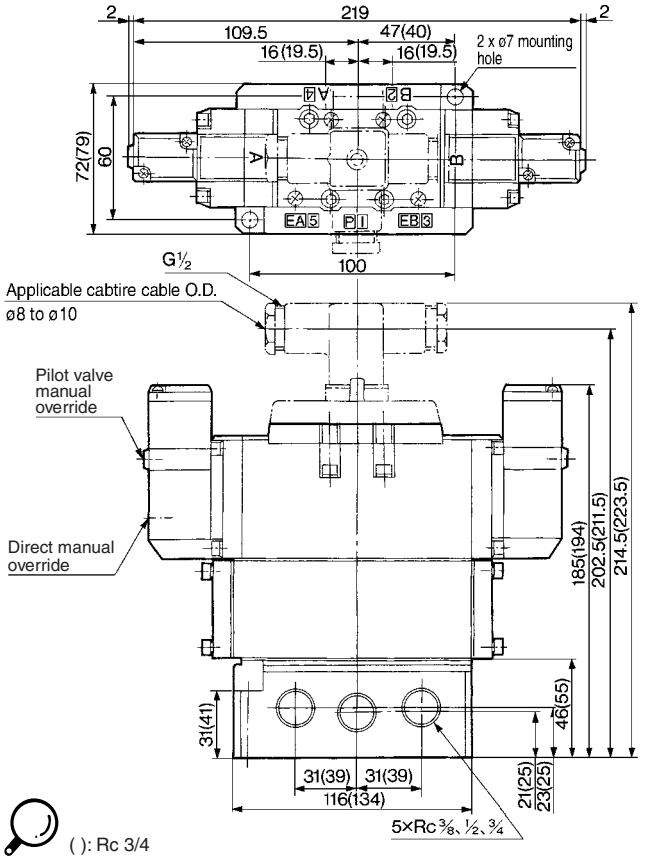
2 position single: VFS5110-□E, VFS5110-□D



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



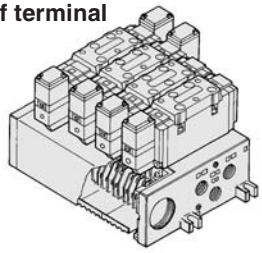
3 position double check: VFS5610-□E, VFS5610-□D



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 – CE-compliant

Series VFS5000 Manifold

Plug-in type with terminal block

Stations

02	2 stations
⋮	⋮
10	10 stations

Symbol

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

* Option

Port size

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

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

CE-compliant

Nil	—
Q	CE-compliant

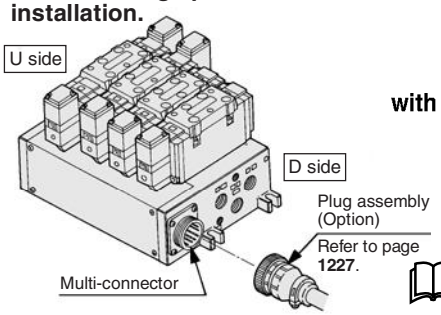
Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

* Option

Plug-in Type: With Multi-connector (Wiring specifications: Refer to page 1227.)

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



VV5FS5 – 01C D – 05 2 – 04 – CE-compliant

Series VFS5000 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

Symbol

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

* Option

Port size

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

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

CE-compliant

Nil	—
Q	CE-compliant

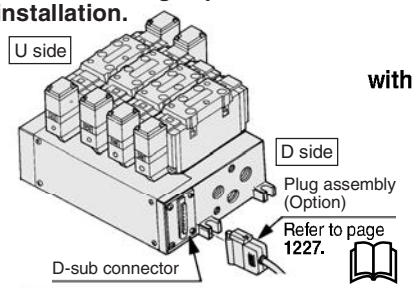
Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

* Option

Plug-in Type: With D-sub Connector (Wiring specifications: Refer to page 1227.)

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



VV5FS5 – 01F D – 06 1 – 04 – CE-compliant

Series VFS5000 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

Symbol

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

* Option

Port size

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

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

CE-compliant

Nil	—
Q	CE-compliant

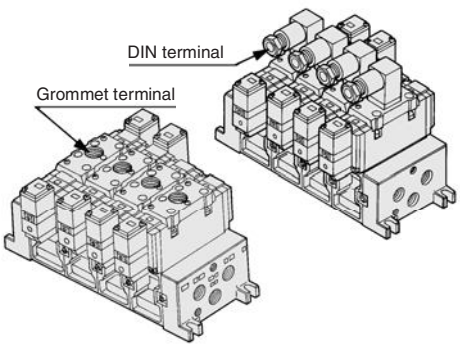
Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

* Option

Non Plug-in Type: Grommet Terminal, DIN Terminal

- **Wiring for every valve.**



VV5FS5 – 10 – 05 2 – 04 – CE-compliant

Series VFS5000 Manifold

Non plug-in type

Stations

02	2 stations
⋮	⋮
10	10 stations

Symbol

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

* Option

Port size

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

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

CE-compliant

Nil	—
Q	CE-compliant

Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

* Option

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 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□**	• 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**	• 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 [dm³/(s·bar)]	15.0	15.0	15.0
		b	0.20	0.20	0.20
		Cv	4.0	4.0	4.0
	4/2 → 5/3 (A/B → R1/R2)	C [dm³/(s·bar)]	16.0	16.0	16.0
		b	0.20	0.20	0.20
		Cv	4.2	4.2	4.2

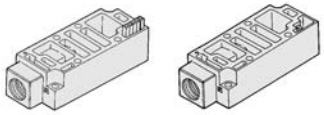
* Port size: Rc 1/2, 3/4

Manifold Option Parts Assembly

Individual SUP spacer

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

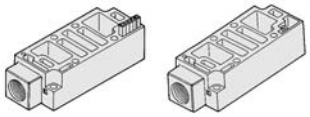
Body type	Plug-in type	Non plug-in type
Part no.	VVFS5000-P-04-1	VVFS5000-P-04-2



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 plate

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

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

EXH block plate

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 plate in between stations to separate valve exhaust.

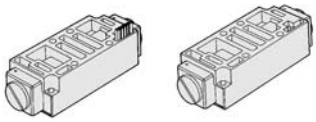
Body type	Plug-in type	Non plug-in type
Part no.	AXT512-14-1A	

EXH block plate SUP block plate

Throttle valve spacer

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

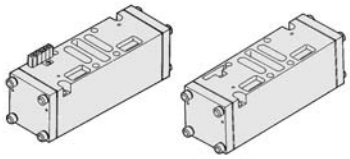
Body type	Plug-in type	Non plug-in type
Part no.	VVFS5000-20A-1	VVFS5000-20A-2



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.

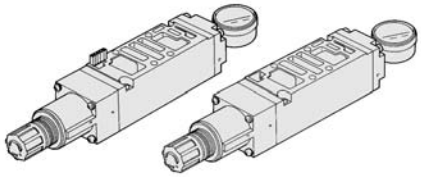
Body type	Plug-in type	Non plug-in type
Part no.	VVFS5000-22A-1	VVFS5000-22A-2



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 1225).

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.

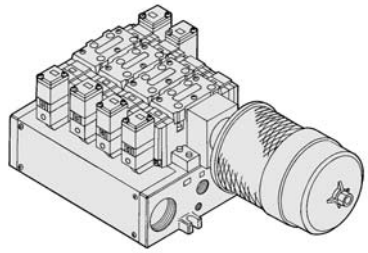
Body type	Plug-in type	Non plug-in type
Part no.	VVFS5000-10A	

Manifold Option

With exhaust cleaner

Plug-in type/Non plug-in type

- **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 1212.

Made to Order
Manifold with serial transmission kit

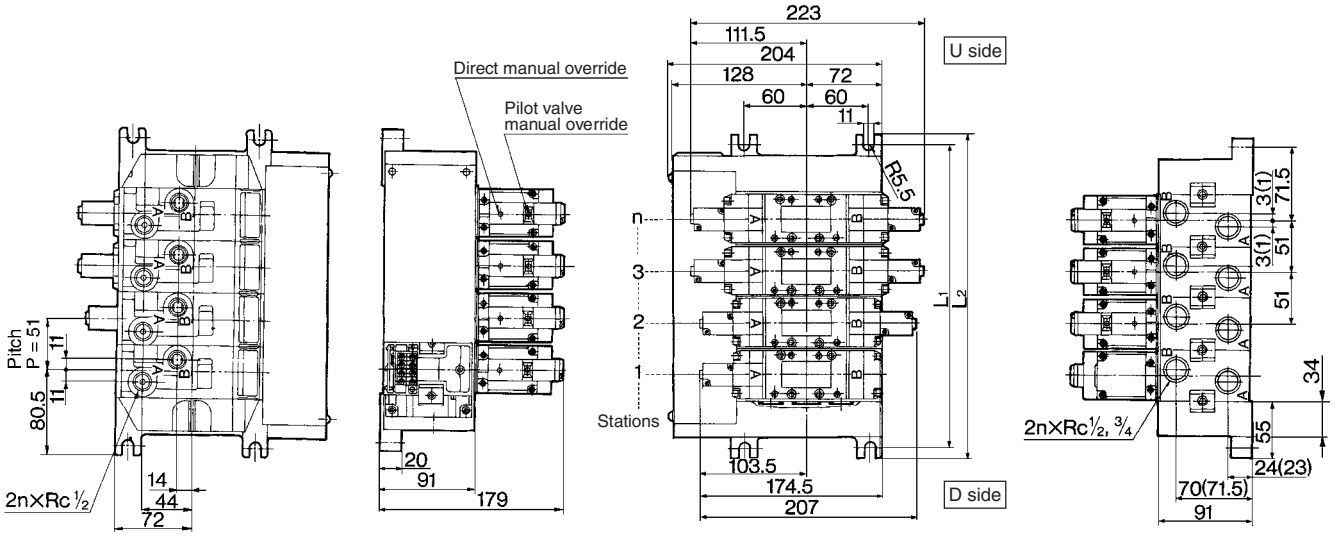
Plug-in type

- **Solenoid valve wiring process reduced considerably.**

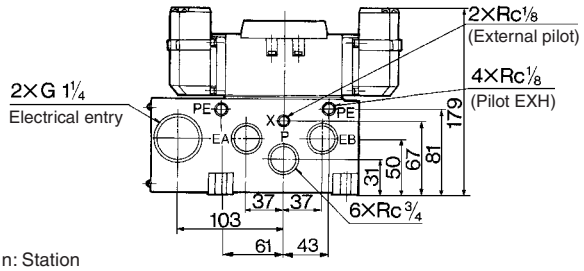
For details, refer to page 1214.

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

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



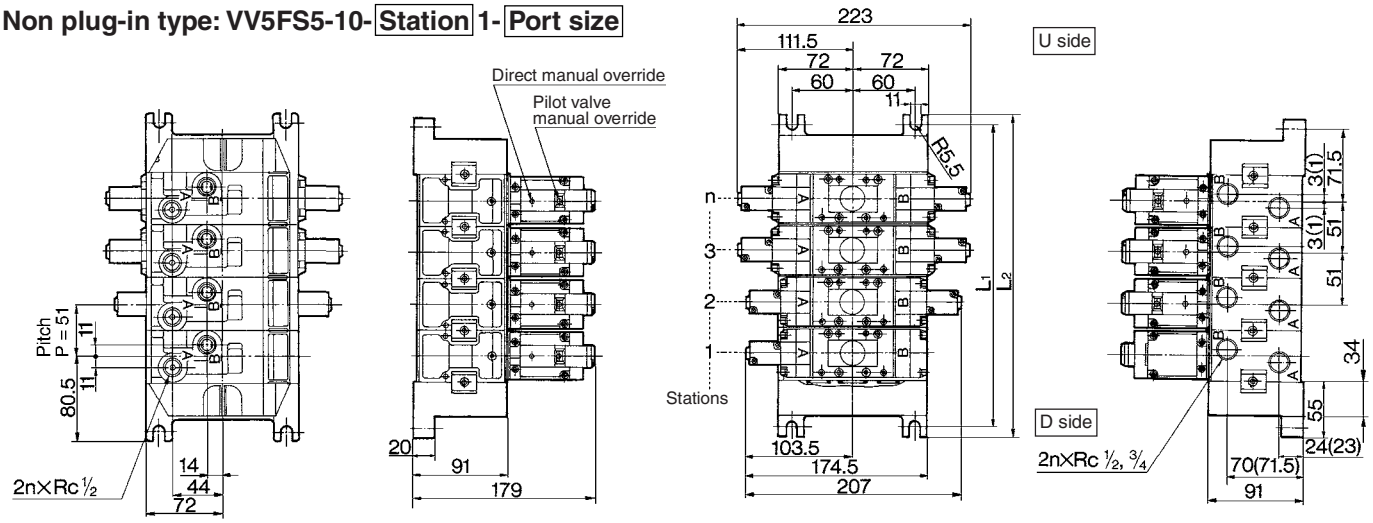
Bottom ported: VV5FS5-01T-[Station]2-[Port size]



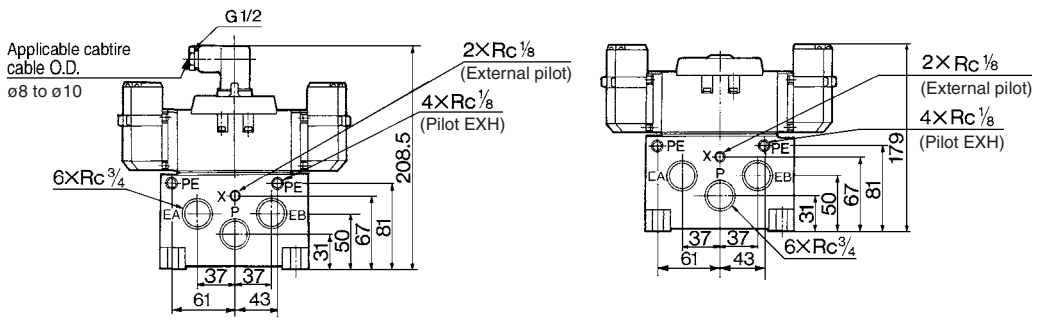
Formula for manifold weight M = 0.911n + 1.621 (kg) n: Station

( ): 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]



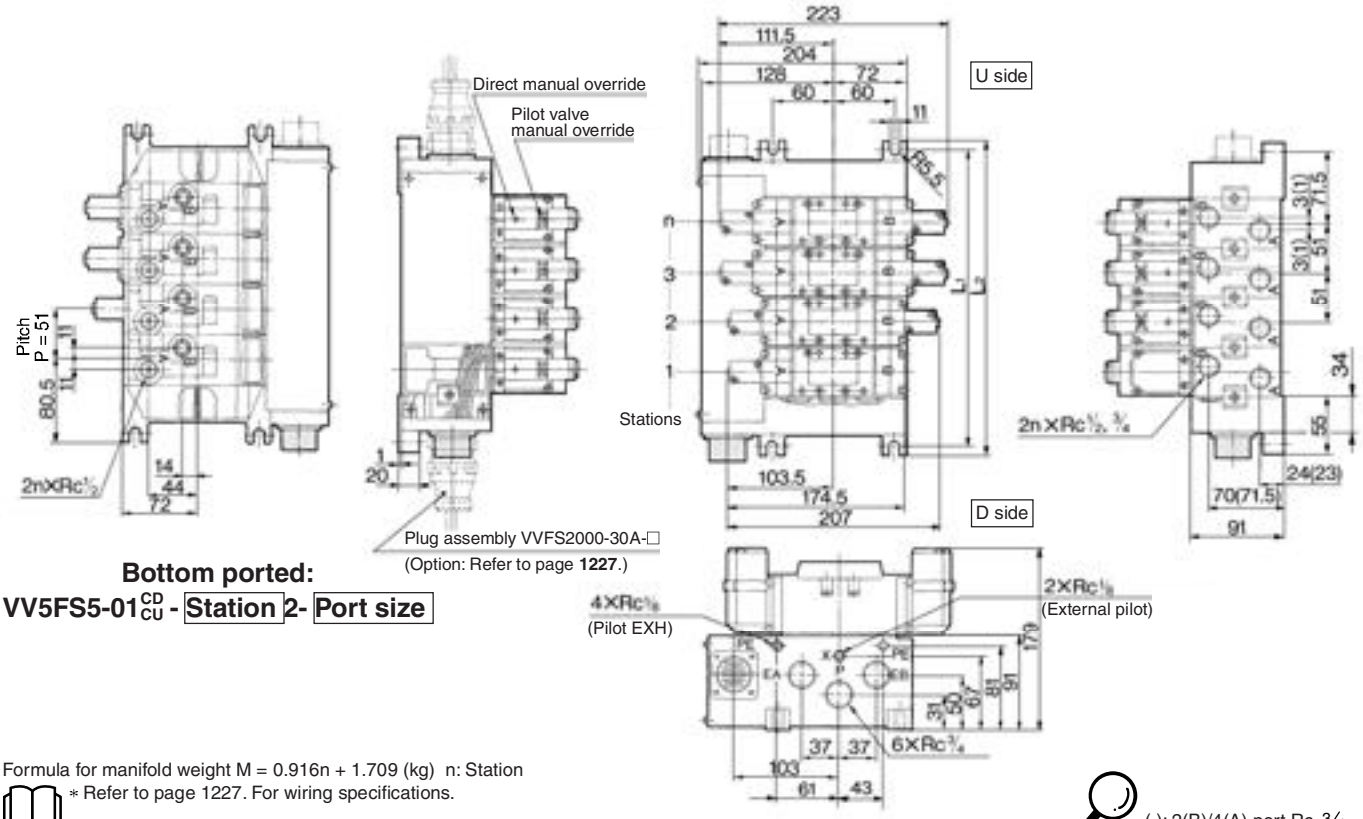
L \ Stations	2	3	4	5	6	7	8	9	10	Formula
L1	194	245	296	347	398	449	500	551	602	L1 = 51 x n + 92
L2	212	263	314	365	416	467	518	569	620	L2 = 51 x n + 110

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

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

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



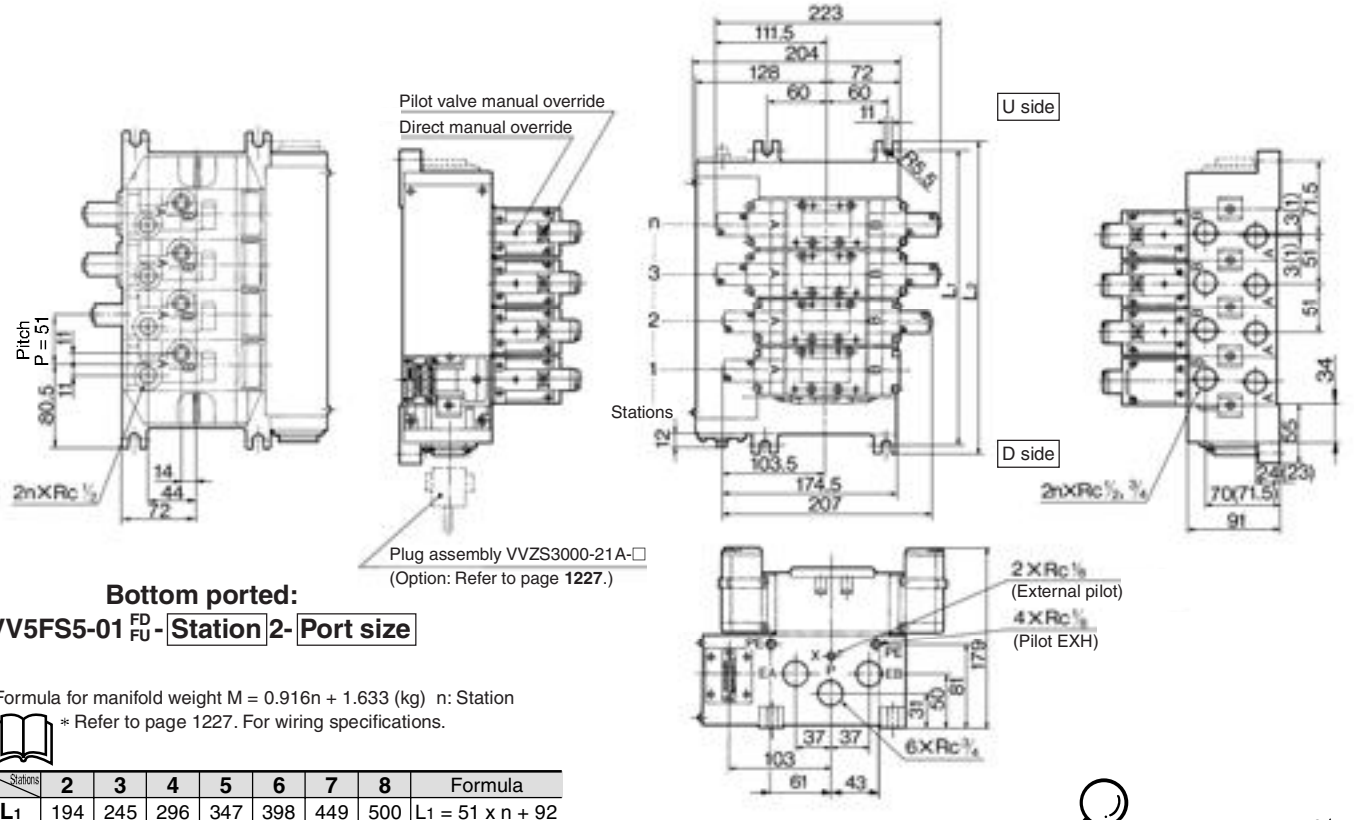
Bottom ported:
VV5FS5-01 CD/CU - Station 2- Port size

Formula for manifold weight M = 0.916n + 1.709 (kg) n: Station

∗ Refer to page 1227. For wiring specifications.

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

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

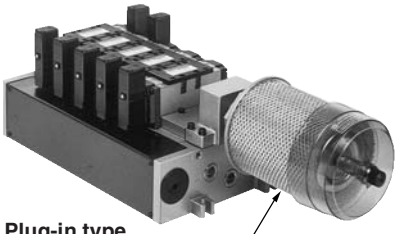
∗ Refer to page 1227. For wiring specifications.

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

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

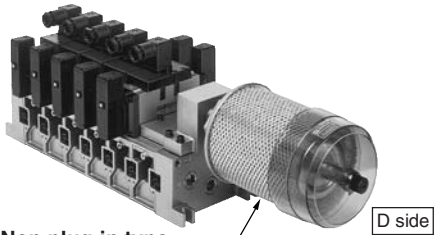
Manifold with Exhaust Cleaner

- **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

U side



Non plug-in type

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	Side: 1/2, 3/4, Bottom: 1/2 (Option)	
	1(P), 3(R2), 5(R1)	P: 3/4, EXH: 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	

Stations

02	2 stations
⋮	⋮
10	10 stations

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

Symbol

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

* Option

Port size

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

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

Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

* Option

Exhaust cleaner mounting direction

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

CE-compliant

Nil	—
Q	CE-compliant

How to Order Manifold Assembly [Example]

Add the valve and option part numbers in order starting from the first station on the D side.

<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**

→ The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the solenoid valve.

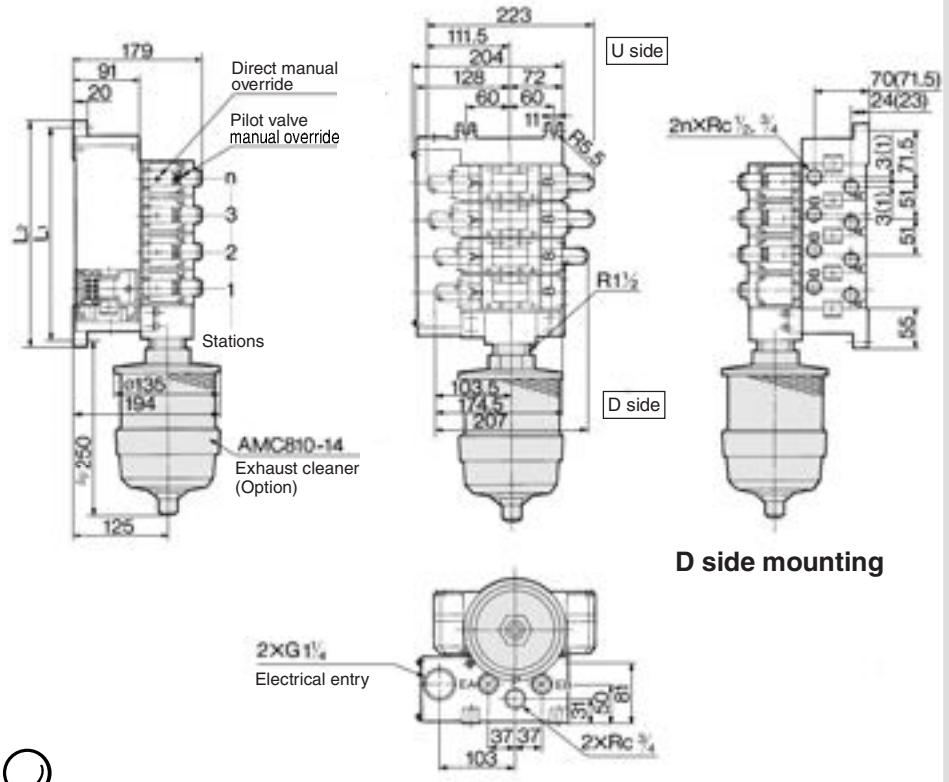
⚠ Caution

When using an exhaust cleaner, mount it downwards.

* Refer to Best Pneumatics Vol. 6 for Exhaust Cleaner details.

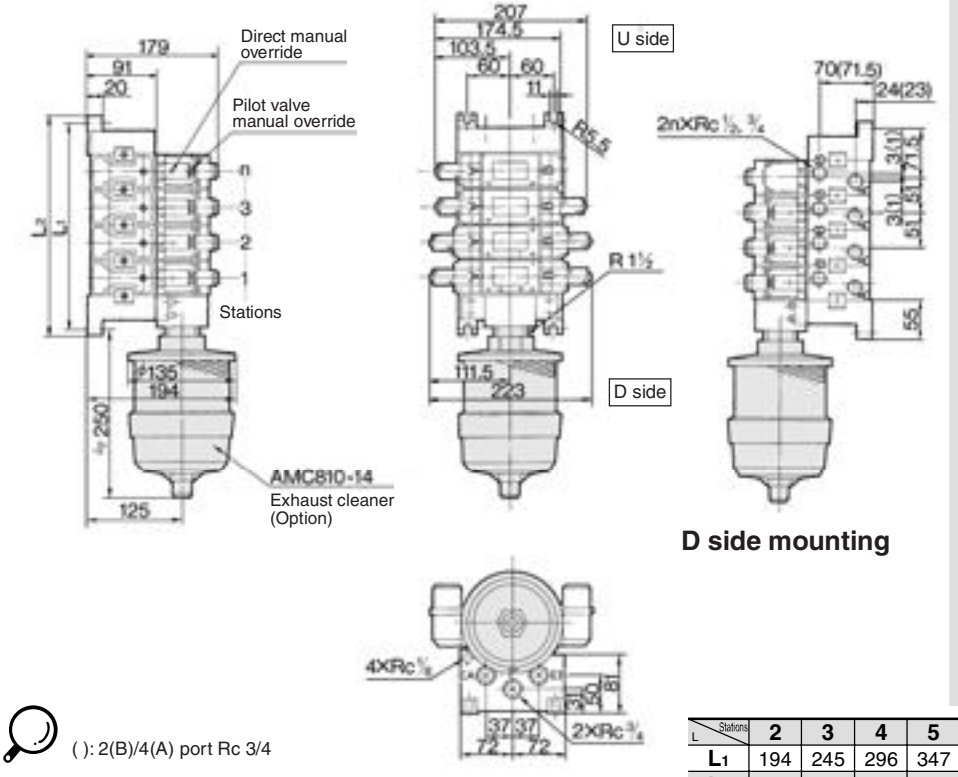
Manifold with Exhaust Cleaner — Plug-in type, Non plug-in type

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



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

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



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

n: Stations

L \ Stations	2	3	4	5	6	7	8	9	10	Formula
L1	194	245	296	347	398	449	500	551	602	L1 = 51 x n + 92
L2	212	263	314	365	416	467	518	569	620	L2 = 51 x n + 110

Made to Order

Serial Transmission Kit Manifold: EX123/124 Integrated Type (For Output)
Serial Transmission System

How to Order

How to Order Manifold

VV5FS5 − 01S U V − 08 1 − 04 □ − X199

Plug-in type
Serial transmission kit

SI unit mounting position

D	D side mounting
U	U side mounting

Stations

2	2 stations
⋮	⋮
10	10 stations

Note 1) Max. 10 stations. Add 1 station for serial unit mounting.
Note 2) Max. 10 Stations: For single and double mixed wiring. (No. of valves: 9)
Max. 9 stations: For standard double wiring (No. of valves: 8)

Thread type

Nil	Rc
N	NPT
T	NPTF
F	G

Port size

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

∗ For bottom ported: Rc 1/8 only

SI unit can be mounted on either U or D side.

Combination symbol

Symbol	Port specification		Piping specification A, B
	P	R1, R2	
1	Common	Common	Side
2∗			Bottom

∗ Option

Applicable models

Symbol	SI unit part no.		Description
	For U side mouning	For D side mouning	
0	—	—	Without SI unit
F1	EX123U-SUW1	EX123D-SUW1	NKE Corporation: Uni-wire System (16 outputs)
H	EX123U-SUH1	EX123D-SUH1	NKE Corporation: Uni-wire H System (16 outputs)
J1	EX123U-SSL1	EX123D-SSL1	SUNX Corporation: S-LINK System (16 outputs)
J2	EX123U-SSL2	EX123D-SSL2	SUNX Corporation: S-LINK System (8 outputs)
Q	EX124U-SDN1	EX124D-SDN1	DevieNet (2 power supply systems)
R1	EX124U-SCS1	EX124D-SCS1	OMRON Corporation: CompoBus/S (16 outputs) (2 power supply systems)
R2	EX124U-SCS2	EX124D-SCS2	OMRON Corporation: CompoBus/S (8 outputs) (2 power supply systems)
V	EX124U-SMJ1	EX124D-SMJ1	CC-Link (2 power supply systems)

Refer to pages 1653 to 1655 for the details of the EX123/124 integrated type (for output) serial transmission system.

● Correspondence of SI unit output numbers and solenoid valve coils

<Wiring Example 1> Double wiring (Standard)

D side

SI unit output no.	1	2	3	4	5	6	7	8	9
	Double	Double	Single	Single	Single	Double	Single	Single	SI unit
	A B	A B	A B	A B	A B	A B	A B	A B	
	0 1	2 3	4 5	6 7	8 9	10 11	12 13	14 15	

U side

<Wiring Example 2> Single/Double mixed wiring (Option)

D side

SI unit output no.	1	2	3	4	5	6	7	8	9	10
	Double	Double	Single	Single	Single	Double	Single	Double	Single	SI unit
	A B	A B	A	A	A	A B	A	A B	A	
	0 1	2 3	4	5	6	7 8	9	10 11	11	

U side

∗ Mixed wiring is available as an option. Use the manifold specification sheet to specify this.

How to Order Valves

VFS5 □ 00 □ − 5 F □ □

Symbol

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

Pilot type

Nil	Internal pilot
R	External pilot

24 VDC

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

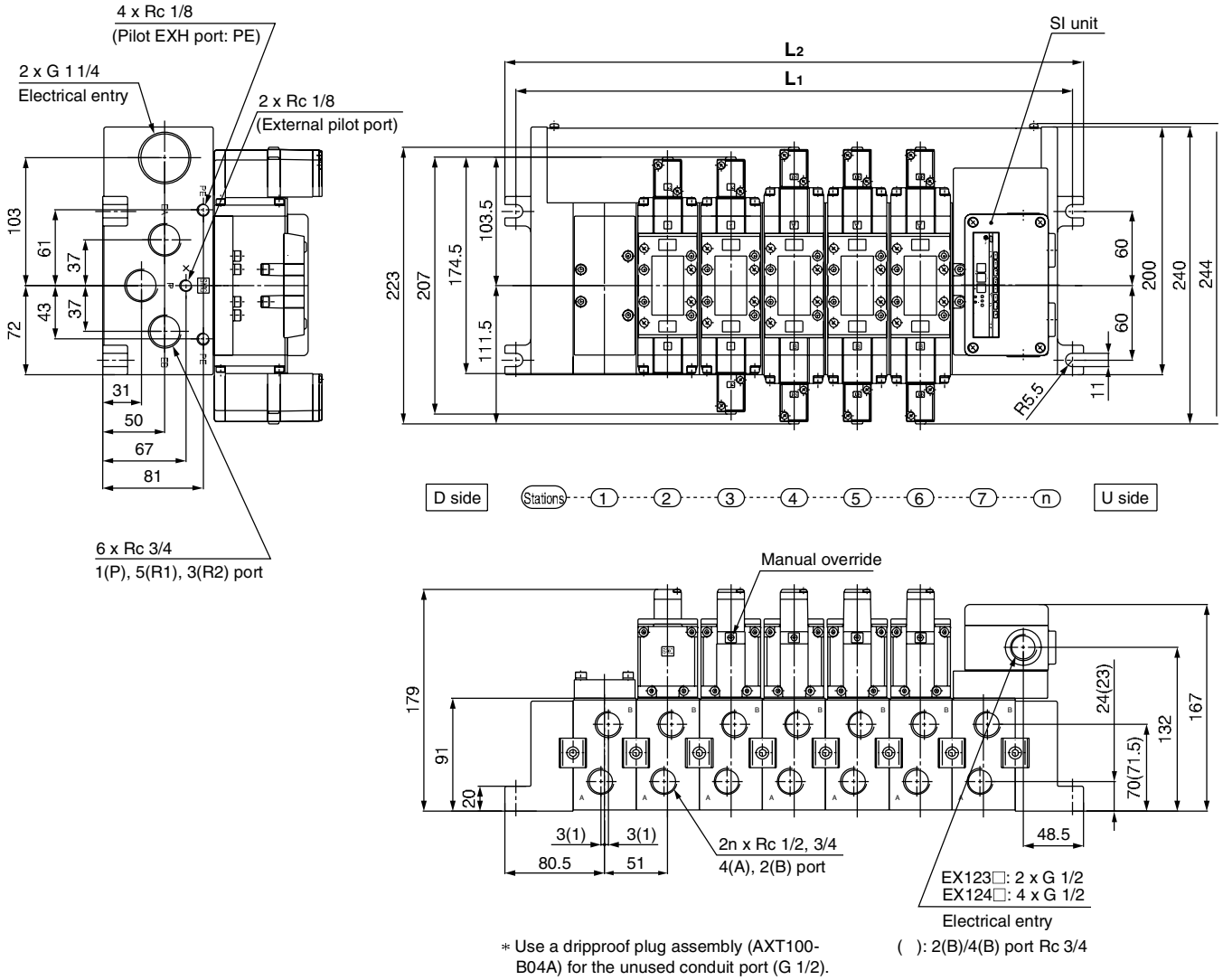
Nil	None
Z	With light/surge voltage suppressor

Coil rated voltage

Nil	None

Serial Transmission Kit Manifold: EX123/124 Integrated Type (For Output) Serial Transmission System

VV5FS5-01S Mounting position Model - Stations Symbol - Port size Thread **-X199**



∗ Use a dripproof plug assembly (AXT100-B04A) for the unused conduit port (G 1/2).

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

Dimensions

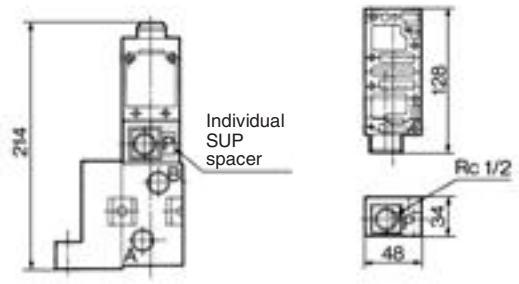
Formula $L_1 = 51n + 92$ $L_2 = 51n + 110$
n: Stations (Max. 10 stations)

L \ n	2	3	4	5	6	7	8	9	10
L_1	194	245	296	347	398	449	500	551	602
L_2	212	263	314	365	416	467	518	569	620

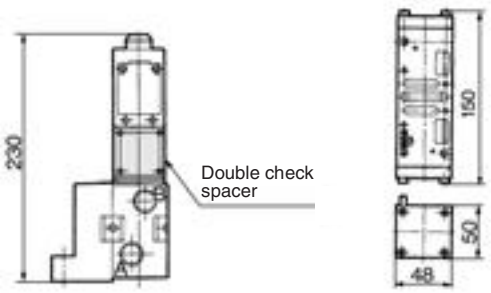
Note) Actual number of manifold base stations: Add 1 SI unit mounting station to the number of valve stations.

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

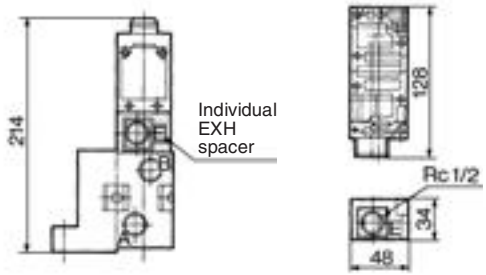
Individual SUP spacer:
VVFS5000-P-04-1 (Plug-in type)
VVFS5000-P-04-2 (Non plug-in type)



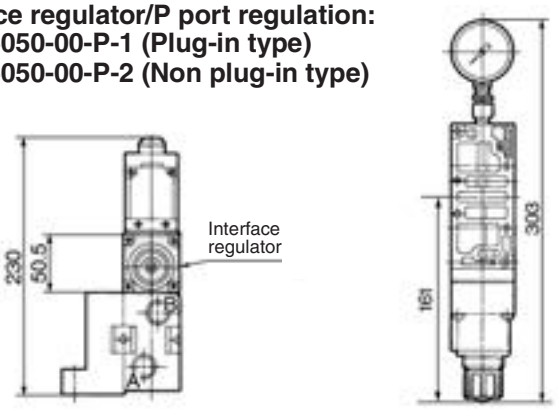
Double check spacer:
VVFS5000-22A-1 (Plug-in type)
VVFS5000-22A-2 (Non plug-in type)



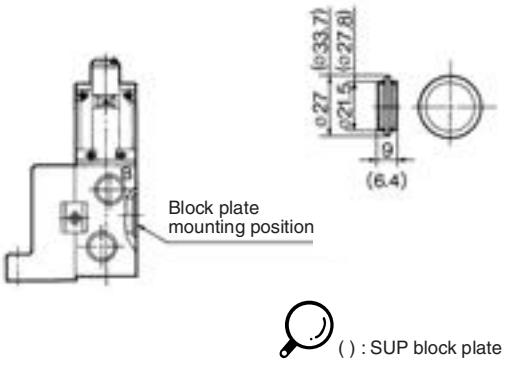
Individual EXH spacer:
VVFS5000-R-04-1 (Plug-in type)
VVFS5000-R-04-2 (Non plug-in type)



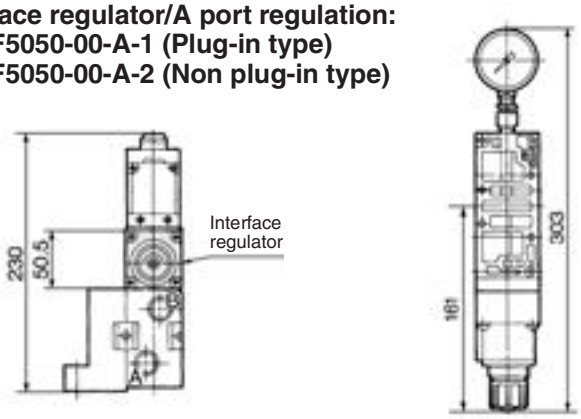
Interface regulator/P port regulation:
ARBF5050-00-P-1 (Plug-in type)
ARBF5050-00-P-2 (Non plug-in type)



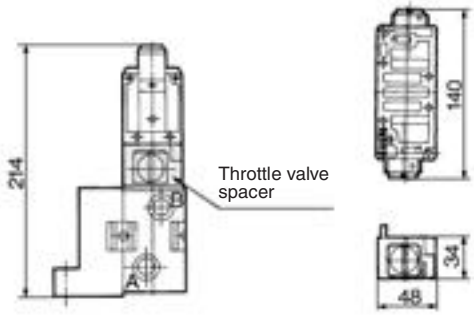
SUP block plate: AXT628-12A
EXH block plate: AXT512-14-1A



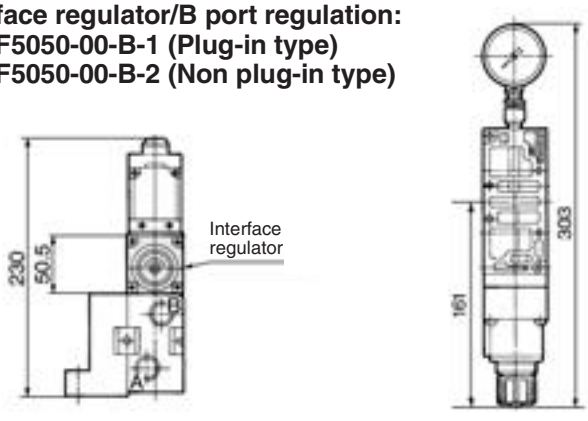
Interface regulator/A port regulation:
ARBF5050-00-A-1 (Plug-in type)
ARBF5050-00-A-2 (Non plug-in type)



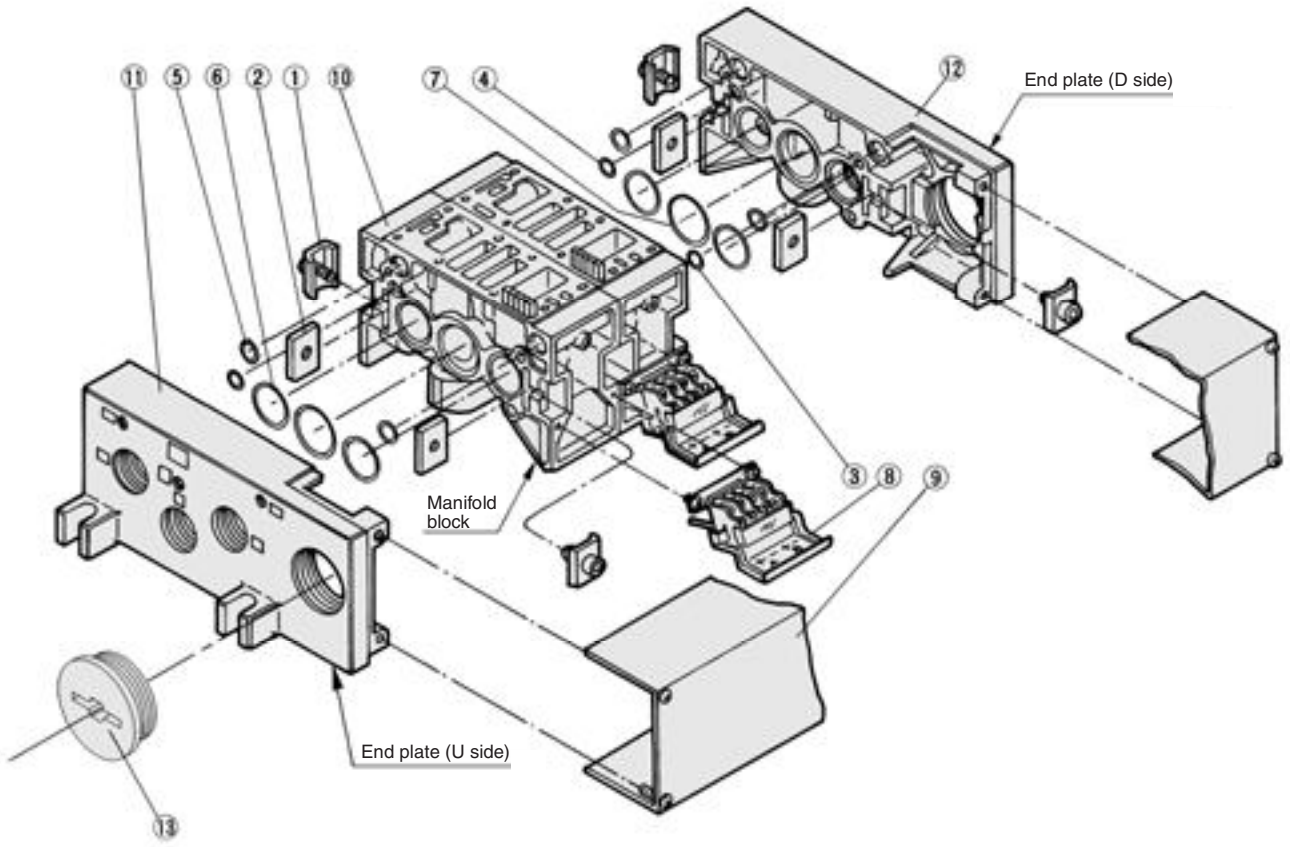
Throttle valve spacer:
VVFS5000-20A-1 (Plug-in type)
VVFS5000-20A-2 (Non plug-in type)



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



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