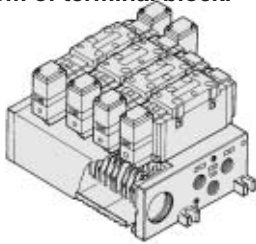## Series *VFS5000*
Manifold Specifications

Plug-in Type: With Terminal Block

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

VV5FS5 − 01T − 06 1 − 04 ☐

Series VFS5000 Manifold

Plug-in type with terminal block

Stations

02	2 stations
⋮	⋮
10	10 stations

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.

Thread type

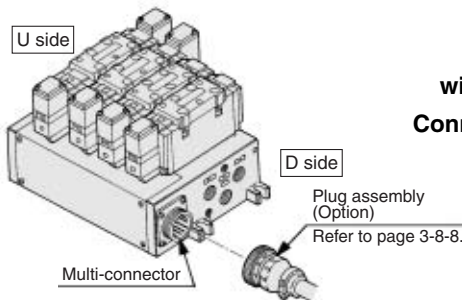| Nil	Rc
N*	NPT
T*	NPTF
F*	G

∗ 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

D side

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

Multi-connector

VV5FS5 − 01C D − 05 2 − 04 ☐

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.

Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

∗ Option

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

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

U side

D side

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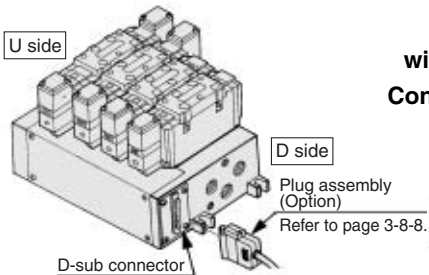
D-sub connector

VV5FS5 − 01F D − 06 1 − 04 ☐

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.

Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

∗ Option

Non Plug-in Type: Grommet Terminal, DIN Terminal

• Wiring for every valve.

DIN terminal

Grommet terminal
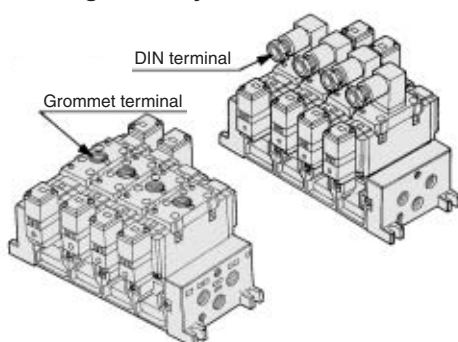
VV5FS5 − 10 − 05 2 − 04 ☐

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.

Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

∗ Option

SMC

Manifold Specifications

Base model	Wiring	Porting specifications A, B port	Port size Rc P, R1, R2	Port size Rc A, B	Stations	Applicable valve model
Plug-in type VV5FS5-01□	• With terminal block • With multi-connector • With D-sub connector	Side/ Bottom	Rc ¾	Rc ½, ¾	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.

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

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)]	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 [dm³/(s·bar)]	7.0	7.0	7.0
		b	0.20	0.20	0.20
		Cv	1.8	1.8	1.8

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

Manifold Option Parts Assembly

Individual SUP spacer

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

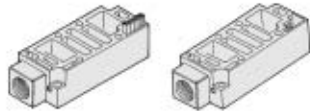| Body type	Plug-in type	Non plug-in type
Part no.	VVFS5000-P-04-1	VVFS5000-P-04-2
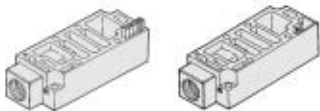
Individual EXH spacer

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

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

SUP block disk

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

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

EXH block disk

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

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

EXH block disk   SUP block disk

Throttle valve spacer

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

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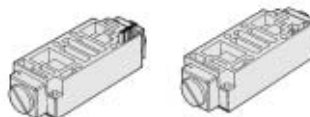
Double check spacer

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

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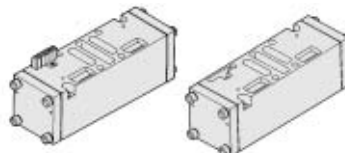
Interface regulator

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

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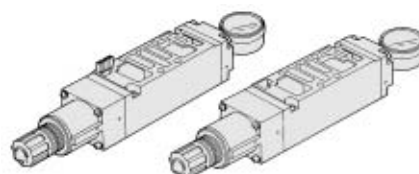
Blanking plate

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

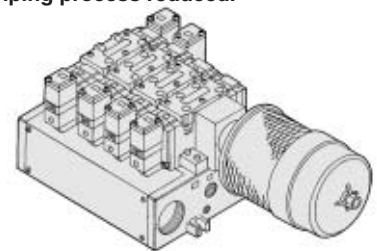| Body type	Plug-in type	Non plug-in type
Part no.	VVFS5000-10A	

Manifold Option

With exhaust cleaner

Plug-in type/Non plug-in type

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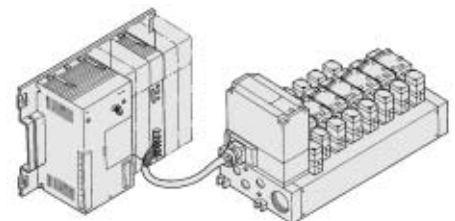• **Piping process reduced.**

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

With serial interface unit for serial transmission

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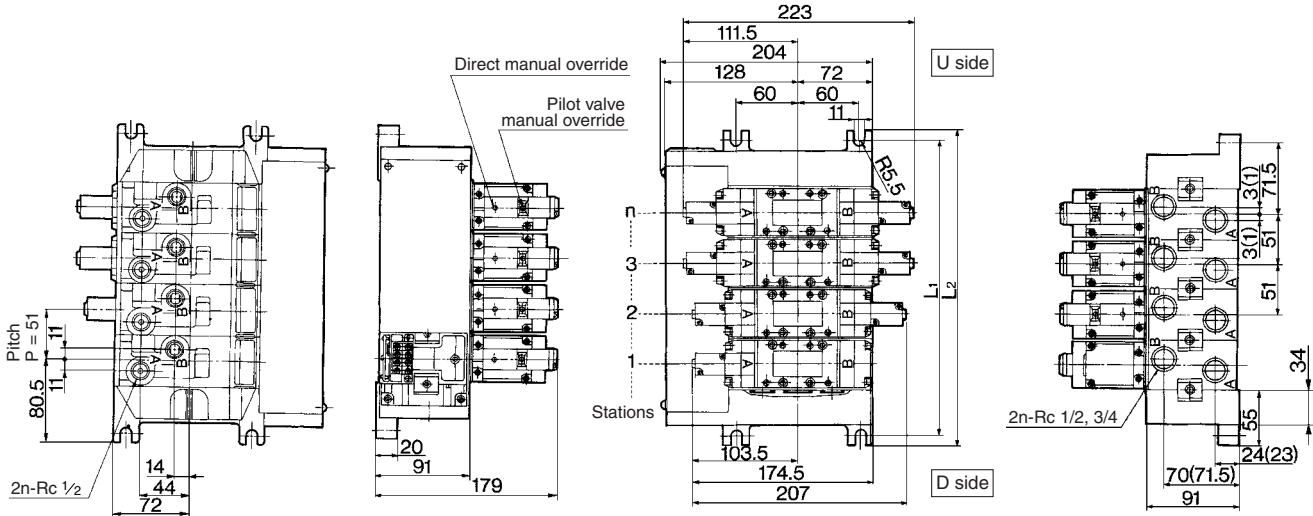• **Maintenance and inspection are easy.**

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

SMC

Manifold Plug-in type, Non plug-in type

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

Direct manual override

Pilot valve manual override

U side

D side

Stations

223
111.5
204
128
72
60 60
11
R5.5
103.5
174.5
207

Pitch P = 51
80.5 11 11
14
44
72
20
91
179
2n-Rc 1/2

3(1)
71.5
3(1)
51
51
34
55
24(23)
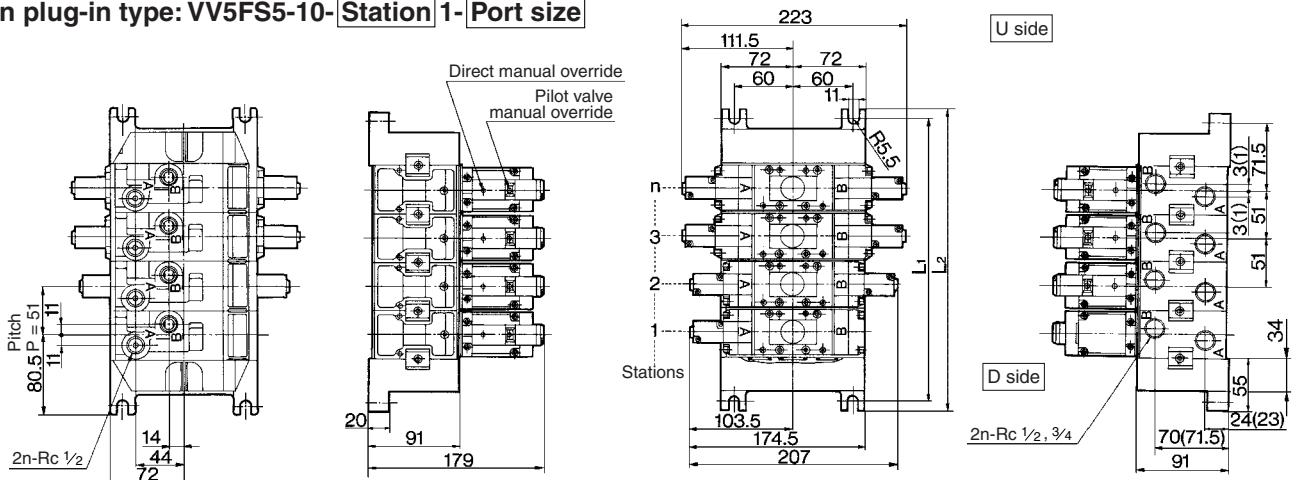70(71.5)
91
2n-Rc 1/2, 3/4

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

2-Rc 1/8 (External pilot)
4-Rc 1/8 (Pilot EXH)
2-G 1 1/4 Electrical entry
PE PE
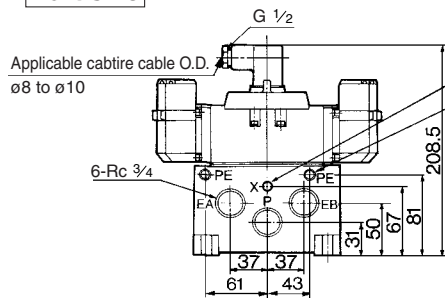EA X P EB
6-Rc 3/4
31 50 67 81 179
103
37 37
61 43
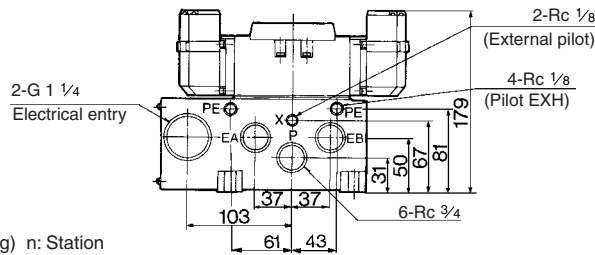
Formula for manifold weight M = 0.911n + 1.621 (kg) n: Station

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

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

Direct manual override

Pilot valve manual override

U side

D side

Stations

223
111.5
72 72
60 60
11
R5.5
103.5
174.5
207

Pitch P = 51
80.5 11 11
14
44
72
20
91
179
2n-Rc 1/2

3(1)
71.5
3(1)
51
51
34
55
24(23)
70(71.5)
91
2n-Rc 1/2, 3/4

DIN terminal
VV5FS5-10- Station 2- Port size

G 1/2
Applicable cabtire cable O.D. ø8 to ø10
2-Rc 1/8 (External pilot)
4-Rc 1/8 (Pilot EXH)
6-Rc 3/4
PE PE
EA X P EB
208.5
31 50 67 81
37 37
61 43

Grommet with terminal

2-Rc 1/8 (External pilot)
4-Rc 1/8 (Pilot EXH)
PE PE
EA X P EB
6-Rc 3/4
31 50 67 81 179
37 37
61 43
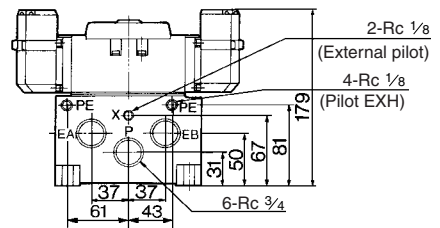
Formula for manifold weight M = 0.811n + 1.231 (kg) n: Station

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

L \ Stations	2	3	4	5	6	7	8	9	10	Formula
L₁	194	245	296	347	398	449	500	551	602	$L_1 = 51 \times n + 92$
L₂	212	263	314	365	416	467	518	569	620	$L_2 = 51 \times n + 110$

VK
VZ
VF
VFR
VP4
VZS
VFS
VS4
VQ7
EVS
VFN

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

Direct manual override
Pilot valve manual override

U side

Stations

Plug assembly VVFS2000-30A-□
(Option: Refer to page 3-8-8.)

2n-Rc ½

D side

2n-Rc ½, ¾

4-Rc ⅛
(Pilot EXH)

2-Rc ⅛
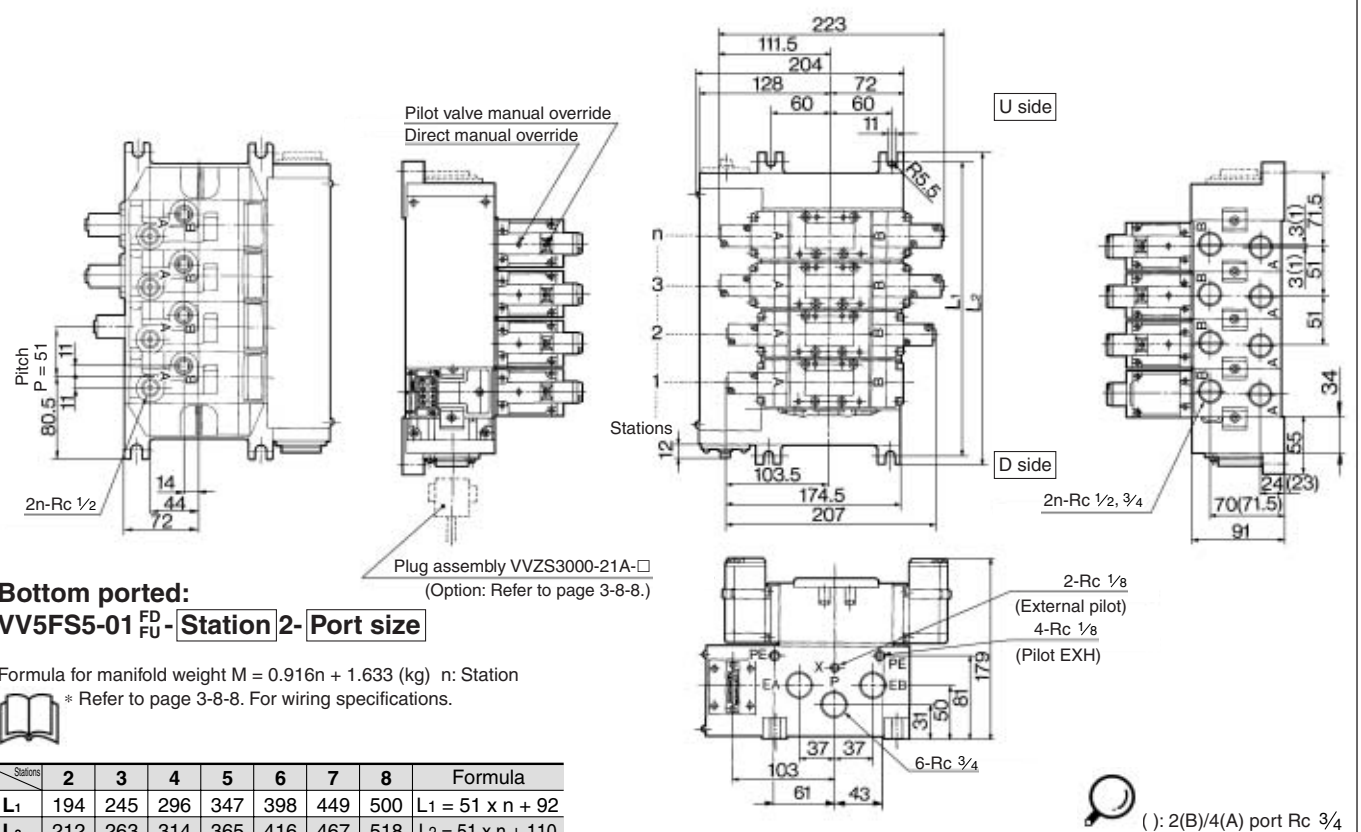(External pilot)

( ): 2(B)/4(A) port Rc ¾
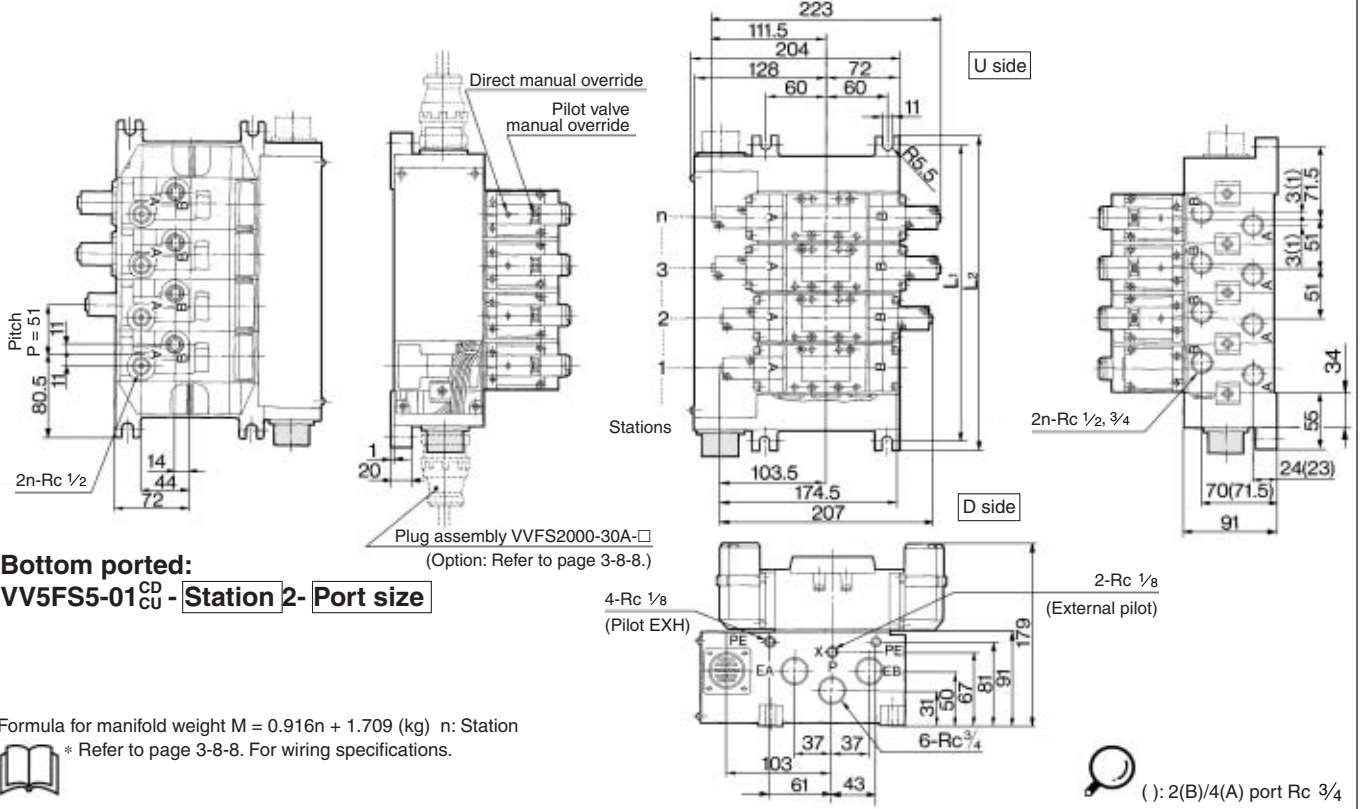
Bottom ported:
VV5FS5-01 CD CU - ** Station **2- Port size

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

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

Pilot valve manual override
Direct manual override

U side

Stations

Plug assembly VVZS3000-21A-□
(Option: Refer to page 3-8-8.)

2n-Rc ½

D side

2n-Rc ½, ¾

2-Rc ⅛
(External pilot)
4-Rc ⅛
(Pilot EXH)

6-Rc ¾

( ): 2(B)/4(A) port Rc ¾

Bottom ported:
**VV5FS5-01 FD FU - ** Station **2-** Port size

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

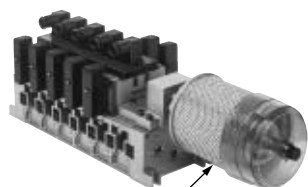| L	Stations	2	3	4	5	6	7	8	Formula
L_1		194	245	296	347	398	449	500	$L_1 = 51 \times n + 92$
L_2		212	263	314	365	416	467	518	$L_2 = 51 \times n + 110$

Manifold with Exhaust Cleaner

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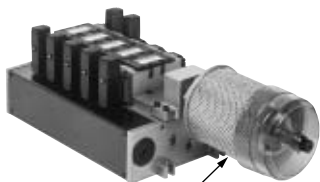
Plug-in type

Exhaust cleaner (Option)

U side

Non plug-in type

Exhaust cleaner (Option)

D side

Manifold Specifications

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

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

How to Order

VV5FS5 — **10** **06** **1** **04** — **CD**

Series VFS5000 Manifold

Base type/Electrical entry

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

Connector mounting direction

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

Stations

02	2 stations
⋮	⋮
10	10 stations

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

Exhaust cleaner mounting direction

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

Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

* Option

Port size

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

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

Symbol

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

* Option

⚠Caution

When using an exhaust cleaner, mount it downwards.

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

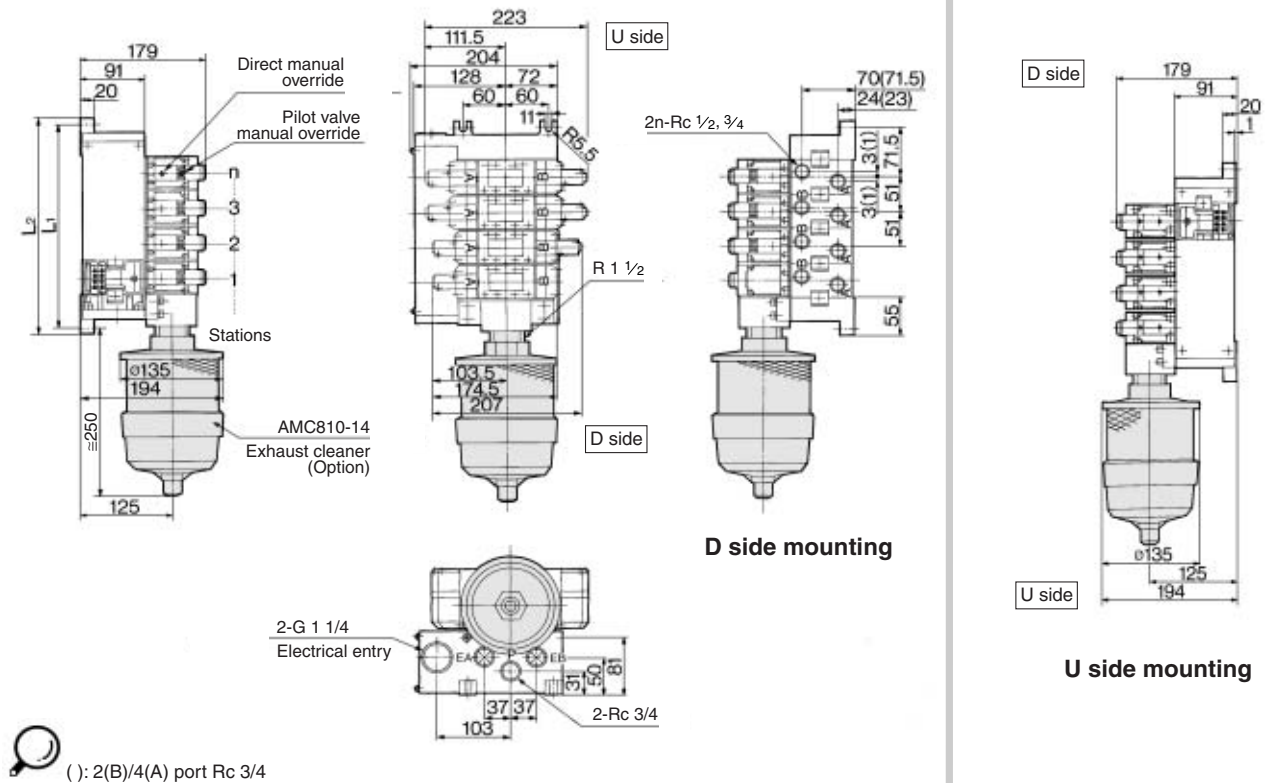Please indicate manifold base type, corresponding valve, and option parts.

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

VK
VZ
VF
VFR
VP4
VZS
VFS
VS4
VQ7
EVS
VFN

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

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

Direct manual override
Pilot valve manual override
Stations
AMC810-14 Exhaust cleaner (Option)

U side

R 1 ½

2n-Rc ½, ¾

R 1 ½

D side

2-G 1 1/4 Electrical entry

2-Rc 3/4

D side mounting

D side

U side

U side mounting

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

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

Direct manual override
Pilot valve manual override
Stations
AMC810-14 Exhaust cleaner (Option)

U side

R 1 ½

2n-Rc ½, ¾

D side

4-Rc ⅛

2-Rc ¾

D side mounting

D side

U side

U side mounting

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

n: Stations

L \ Stations	2	3	4	5	6	7	8	9	10	Formula
L_1	194	245	296	347	398	449	500	551	602	$L_1 = 51 \times n + 92$
L_2	212	263	314	365	416	467	518	569	620	$L_2 = 51 \times n + 110$

⊗SMC

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

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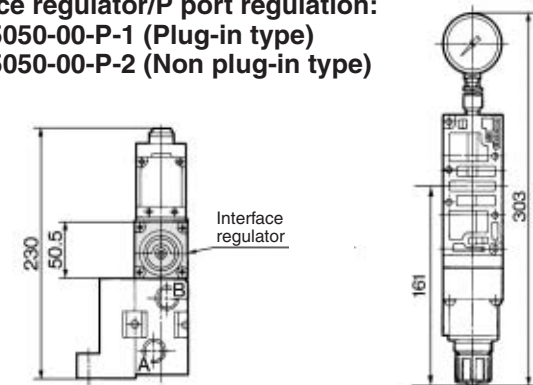**VVFS5000-P-04-2 (Non plug-in type)**

Individual SUP spacer

Rc ½

214 · 128 · 48 · 34
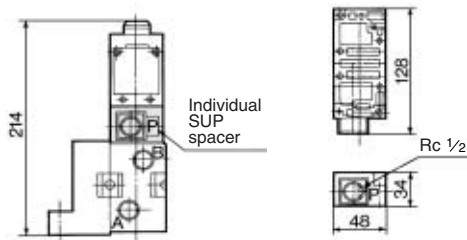
Double check spacer:
VVFS5000-22A-1 (Plug-in type)
VVFS5000-22A-2 (Non plug-in type)

Double check spacer

230 · 150 · 48 · 50
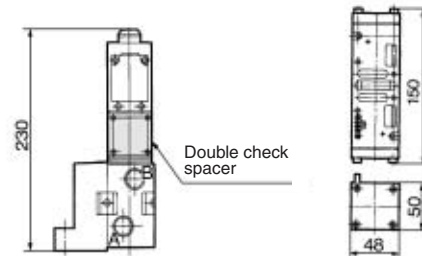
Individual EXH spacer:
VVFS5000-R-04-1 (Plug-in type)
VVFS5000-R-04-2 (Non plug-in type)

Individual EXH spacer

Rc ½

214 · 128 · 48 · 34
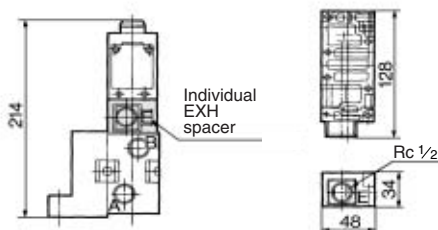
Interface regulator/P port regulation:
ARBF5050-00-P-1 (Plug-in type)
ARBF5050-00-P-2 (Non plug-in type)

Interface regulator

230 · 50.5 · 303 · 161

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

Block disk mounting position

ø33.7) (ø27.8)
ø27 (ø21.5)
9
(6.4)

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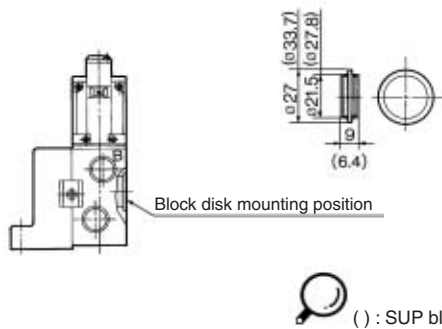
Interface regulator/A port regulation:
ARBF5050-00-A-1 (Plug-in type)
ARBF5050-00-A-2 (Non plug-in type)

Interface regulator

230 · 50.5 · 303 · 161
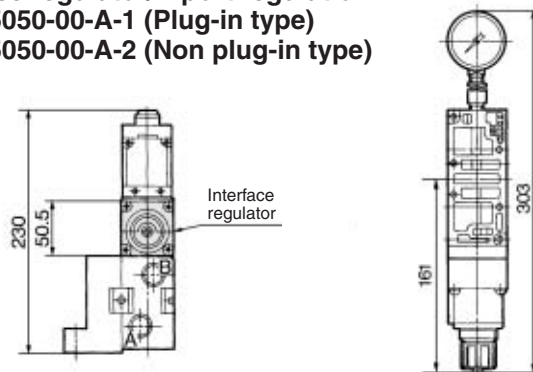
Throttle valve spacer:
VVFS5000-20A-1 (Plug-in type)
VVFS5000-20A-2 (Non plug-in type)

Throttle valve spacer

214 · 140 · 48 · 34
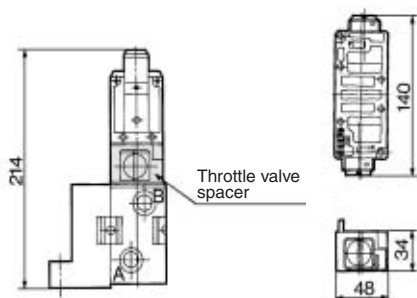
Interface regulator/B port regulation:
ARBF5050-00-B-1 (Plug-in type)
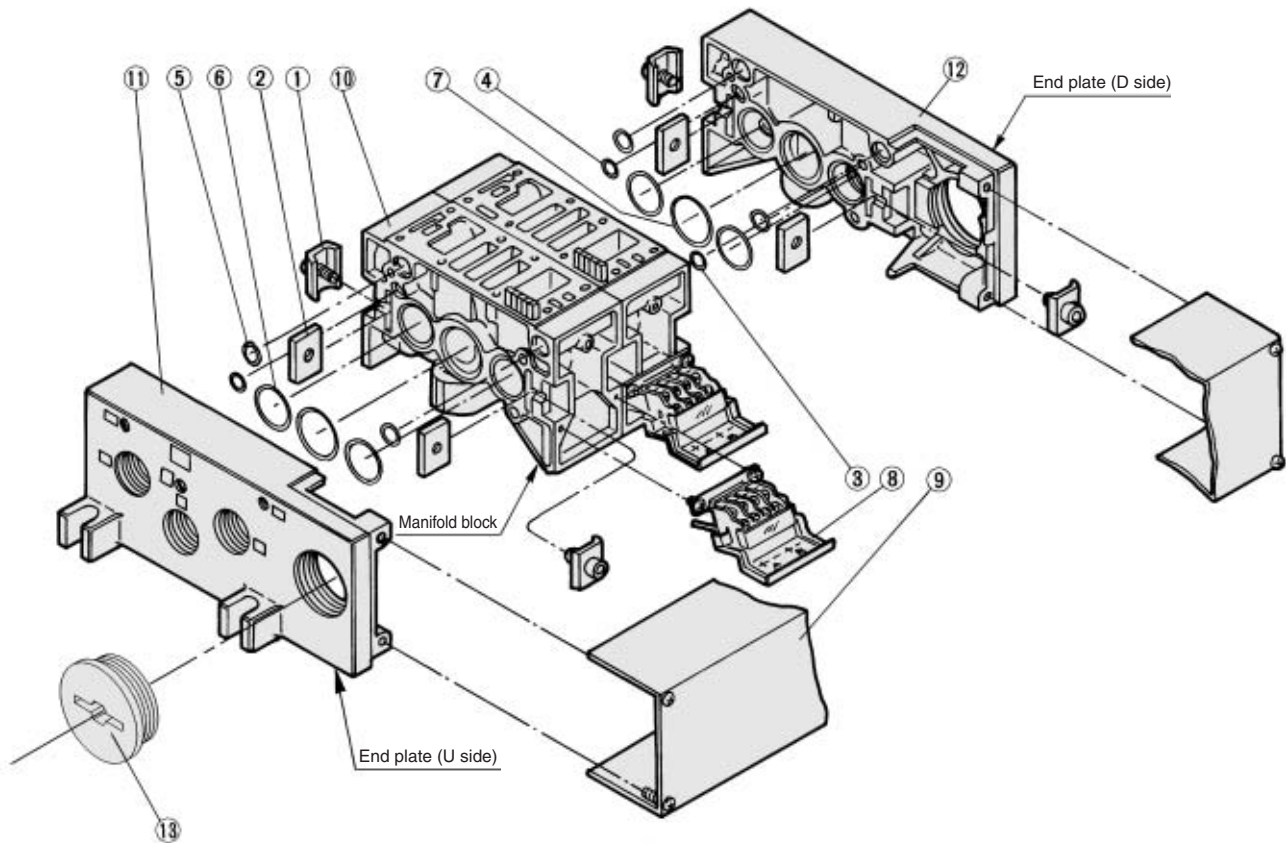**ARBF5050-00-B-2 (Non plug-in type)**

Interface regulator

230 · 50.5 · 303 · 161
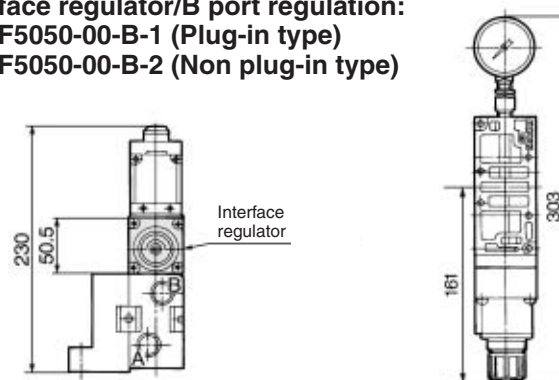
VK
VZ
VF
VFR
VP4
VZS
VFS
VS4
VQ7
EVS
VFN

Series **VFS5000**

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

End plate (D side)

Manifold block

End plate (U side)

⑬

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.

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

Replacement Parts: Sub Assembly

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

SMC