Series *VZS3000*
Manifold Specifications

Plug-in Type: Stacking Type Manifold Base with D-sub Connector

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

U side

D-sub connector cable assembly
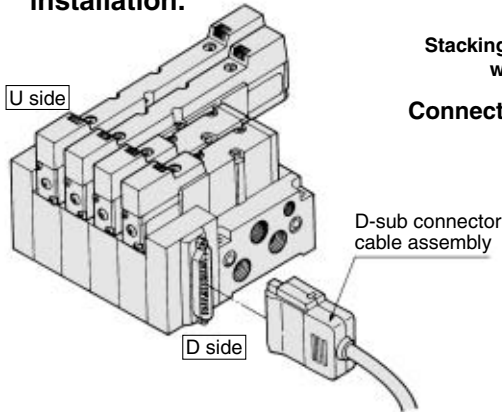
D side

VV5ZS3 – 51F D **– 06** 1 **– 02** □

Series VZS3000 Manifold

Plug-in type Stacking type manifold base with D-sub connector

Connector mounting direction

Symbol	Connector mounting position	Applicable stations
D	D side	2 to 8
U	U side	2 to 8
B	Both sides	9 to 16

Stations

02	2 stations
⋮	⋮
16 *	16 stations

* Max. 16 stations.

Thread type

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

Port size

01	Rc 1/8
02	Rc 1/4
C6	Embedded type One-touch fitting Applicable tubing O.D.: ø6
C8	Embedded type One-touch fitting Applicable tubing O.D.: ø8

Symbol

Symbol	Passage		Porting specifications
	1(P)	5(R1), 3(R2)	4(A), 2(B)
1	Common	Common	Side

Plug-in Type: Stacking Type Manifold Base with Attachment Plug Lead Wire

- **The insert plug is attached to the manifold block and lead wire is plugged in with valve side. Please connect with corresponding power side.**
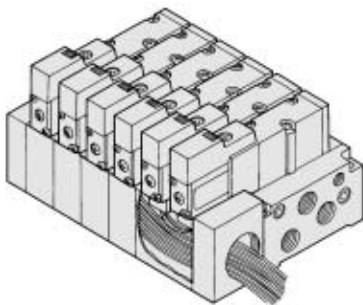
VV5ZS3 – 51G – 06 1 **– C6** □

Series VZS3000 Manifold

Plug-in type Stacking type manifold base with attachment plug lead wire

Stations

02	2 stations
⋮	⋮
15 *	15 stations

* Max. 15 stations.

Thread type

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

Port size
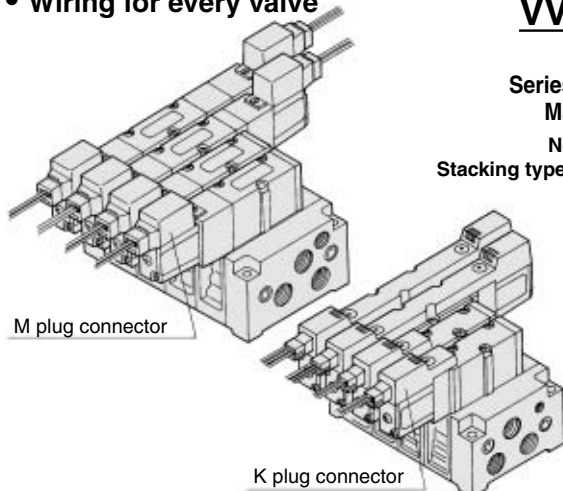
01	Rc 1/8
02	Rc 1/4
C6	Embedded type One-touch fitting Applicable tubing O.D.: ø6
C8	Embedded type One-touch fitting Applicable tubing O.D.: ø8

Symbol

Symbol	Passage		Porting specifications
	1(P)	5(R1), 3(R2)	4(A), 2(B)
1	Common	Common	Side

Non Plug-in Type: Stacking Type Manifold Base

- **Wiring for every valve**

M plug connector

K plug connector

VV5ZS3 – 51 – 06 1 **– C8** □

Series VZS3000 Manifold

Non plug-in type Stacking type manifold base

Stations

02	2 stations
⋮	⋮
24	24 stations

* Max. 24 stations.

Thread type

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

Port size

01	Rc 1/8
02	Rc 1/4
C6	Embedded type One-touch fitting Applicable tubing O.D.: ø6
C8	Embedded type One-touch fitting Applicable tubing O.D.: ø8

Symbol

Symbol	Passage		Porting specifications
	1(P)	5(R1), 3(R2)	4(A), 2(B)
1	Common	Common	Side

VK
VZ
VF
VFR
VP4
VZS
VFS
VS4
VQ7
EVS
VFN

Series *VZS3000*

Manifold Specifications

Base model	Wiring	Porting specifications 4(A), 2(B) Port	Port size Rc 1(P), 5(R1) 3(R2)	Port size Rc 4(A) 2(B)	Stations	Applicable valve model
Plug-in type VV5ZS3-51F VV5ZS3-51G	• With D-sub connector • With attachment plug lead wire	Side	1/4	1/8, 1/4	2 to 16 stations *	VZS3□50-□FZ
Non plug-in type VV5ZS3-51	• Grommet • L plug connector • M plug connector • K plug connector • DIN terminal	Side	1/4	C4 C6	2 to 24 stations	VZS3□50-□ G L M KZ D

🔍 * With attachment plug lead wire teminal: 15 stations max.

Flow Characteristics at the Number of Manifold Stations (Operated single/double type individually)

Passage/Stations		Station 1	Station 5	Station 10	Station 15	Station 20
1 → 4/2 (P → A/B)	C [dm³/(s·bar)]	2.7	2.7	2.7	2.7	2.6
	b	0.15	0.16	0.16	0.15	0.20
	Cv	0.62	0.61	0.61	0.61	0.63
4/2 → 5/3 (A/B → R1/R2)	C [dm³/(s·bar)]	2.8	2.8	2.9	2.9	2.9
	b	0.10	0.12	0.12	0.12	0.12
	Cv	0.65	0.66	0.66	0.66	0.66

How to Order Manifold Assembly

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

(Example)
- Plug-in type (At 6 stations)
  (Manifold base) VV5ZS3-51FD-061-01······1
  (2 position single) VZS3150-5FZ··········3
  (2 position double) VZS3250-5FZ·········2
  (Blanking plate) VVZS3000-10A-1········1
- Non plug-in type (At 6 stations)
  (Manifold base) VV5ZS3-51-061-01······1
  (2 position single) VZS3150-5G···········5
  (3 position exhaust center) VZS3450-5G····1
  (Individual EXH spacer) VVZS3000-R-02-2···1

Manifold Option Parts Assembly

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

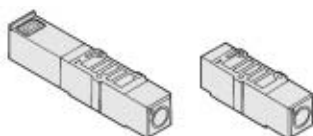| Body type		Plug-in type	Non plug-in type
Part no.	Rc 1/8	VVZS3000-P-01-1	VVZS3000-P-01-2
	Rc 1/4	VVZS3000-P-02-1	VVZS3000-P-02-2
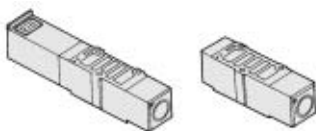
Individual EXH spacer
An individual EXH spacer set on manifold block can form EXH port for every valve.

Body type		Plug-in type	Non plug-in type
Part no.	Rc 1/4	VVZS3000-R-02-1	VVZS3000-R-02-2

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.	AXT625-12A	

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 in between stations to separate valve exhaust.

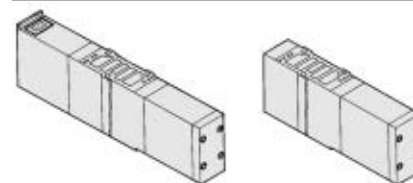| Body type	Plug-in type	Non plug-in type
Part no.	AXT625-12A	

Interface regulator (P port regulation)
Spacer Interface regulators can be placed on top of the manifold block to reduce the pressure of each of the valves.

Body type	Plug-in type	Non plug-in type
Part no.	ARBZS3000-00-P-1	ARBZS3000-00-P-2

🔍 Note)• Apply pressure from the P port of the base to operate the interface regulator.
• To use concurrently with a double check spacer, assemble in the following order: the valve, the interface regulator, and the double check spacer.

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.	VVZS3000-22A-1	VVZS3000-22A-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.
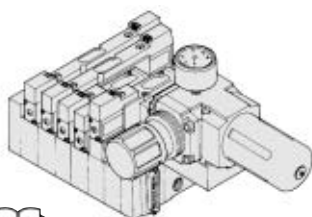
| Body type	Plug-in type	Non plug-in type
Part no.	VVZS3000-10A-1	VVZS3000-10A-2

Manifold Option

With control unit
Plug-in base type/Non plug-in base type
- Filter, regulation valve, pressure switch and air release valve all combine to form one unit.
- Piping processes are eliminated.

📖 For details, refer to pages 3-7-35 and 3-7-36.

With serial interface unit for serial transmission
Plug-in base type
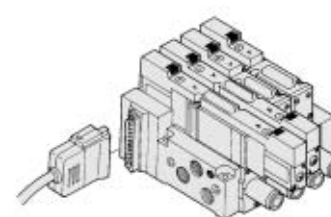- Solenoid valve wiring process reduced considerably.
- Disperse installation possible.
  Manifold solenoid valve: 32 stations (512 points) max.
- Maintenance and inspection are easy.
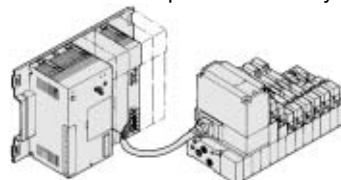
For details, please contact SMC.

With coaxial fitting
Plug-in base type/Non plug-in base type
- Piping man-hours reduced
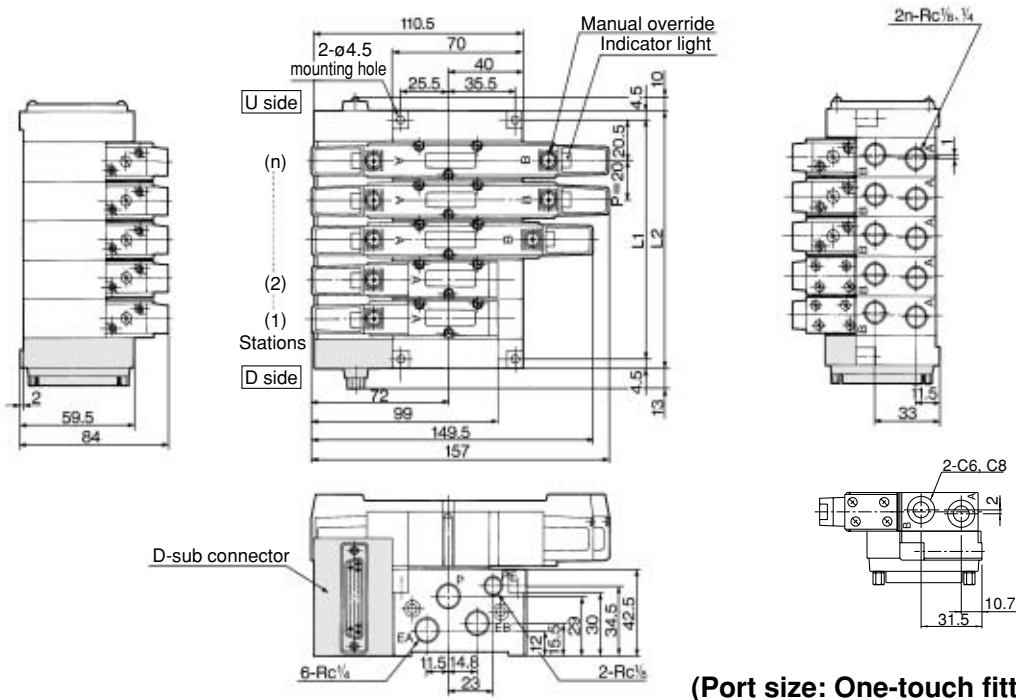- One-touch piping
- 1/2 the number of tubes

For details, please contact SMC.

SMC

Manifold **Plug-in type**

With D-sub connector: VV5ZS2-51F□- | Station | 1- | Port size |

110.5
70
2-ø4.5 mounting hole
Manual override
Indicator light
25.5
40
35.5
2n-Rc⅛, ¼
U side
(n)
4.5
10
P=20 20.5
L1
L2
(2)
(1)
Stations
D side
4.5
13
72
99
149.5
157
59.5
84
2

D-sub connector
6-Rc¼
11.5 14.8
23
2-Rc⅛
12
15.5
29
30
34.5
42.5

2-C6, C8
31.5
10.7
2

(Port size: One-touch fitting type)

n: Stations

L Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Formula
L1	61	81	101	121	141	161	181	201	221	241	261	281	301	321	341	20n + 21
L2	70	90	110	130	150	170	190	210	230	250	270	290	310	330	350	20n + 30

Insert plug with lead wire: VV5ZS2-51G- | Station | 1- | Port size |

110.5
70
2-ø4.5 mounting hole
Manual override
25.5
40
35.5
Indicator light
4.5
2n-Rc ⅛, ¼
U side
(n)
P=20 20.5
L1
L2
(2)
(1)
Stations
D side
4.5
72
99
149.5
157
2
46.5
84
11.5

2-G½
(Electrical entry)
50
11.5 14.8
23
2-Rc⅛
6-Rc¼
20
12
15.5
29
30
34.5
42.5

2-C6, C8
31.5
10.7
2
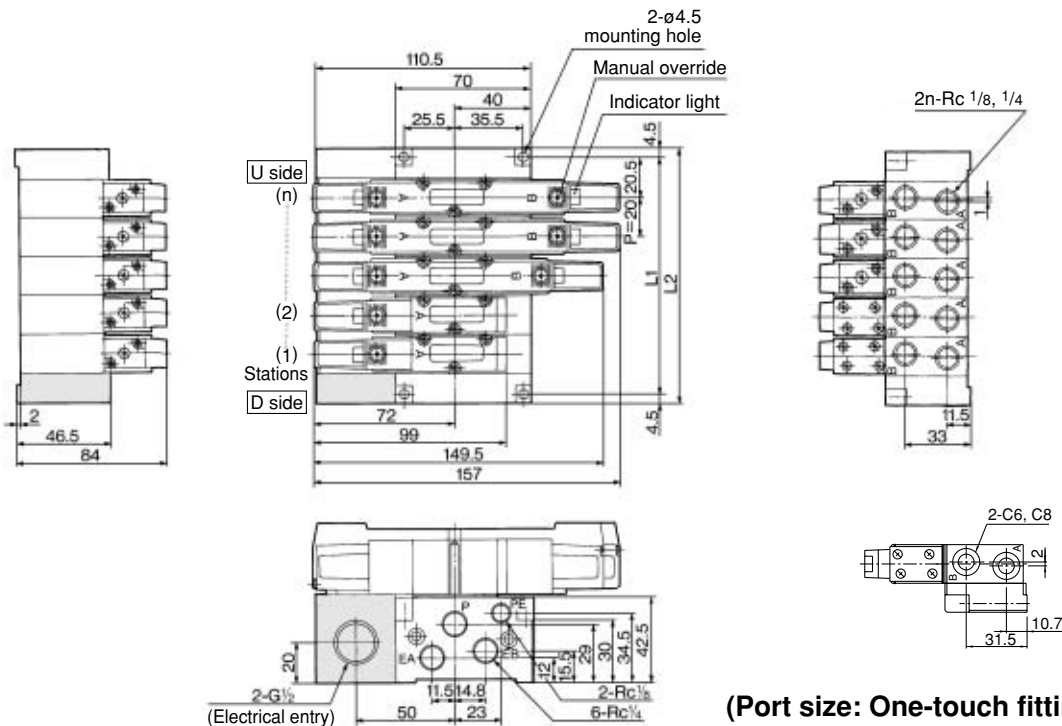
(Port size: One-touch fitting type)

n: Stations

L Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Formula
L1	61	81	101	121	141	161	181	201	221	241	261	281	301	321	20n + 21
L2	70	90	110	130	150	170	190	210	230	250	270	290	310	330	20n + 30

VK
VZ
VF
VFR
VP4
VZS
VFS
VS4
VQ7
EVS
VFN

Manifold | **Non plug-in type**

VV5ZS3-51- [Station] **1-** [Port size]
Grommet (G)

70
40
25.5 | 35.5
2-ø4.5
mounting hole
4.5

Manual
override
U side
(n)

P=20
20.5

L1
L2

2n-Rc 1/8, 1/4

(2)
(1)
Stations

D side
72
99
149.5
157

33
42.5
52
71
11.5

≦300
(Lead wire length)

2-C6, C8
2

34.5
42.5
30
29
15.3
12

6-Rc¼
11.5 | 14.8
23
2-Rc⅛

31.5
10.7
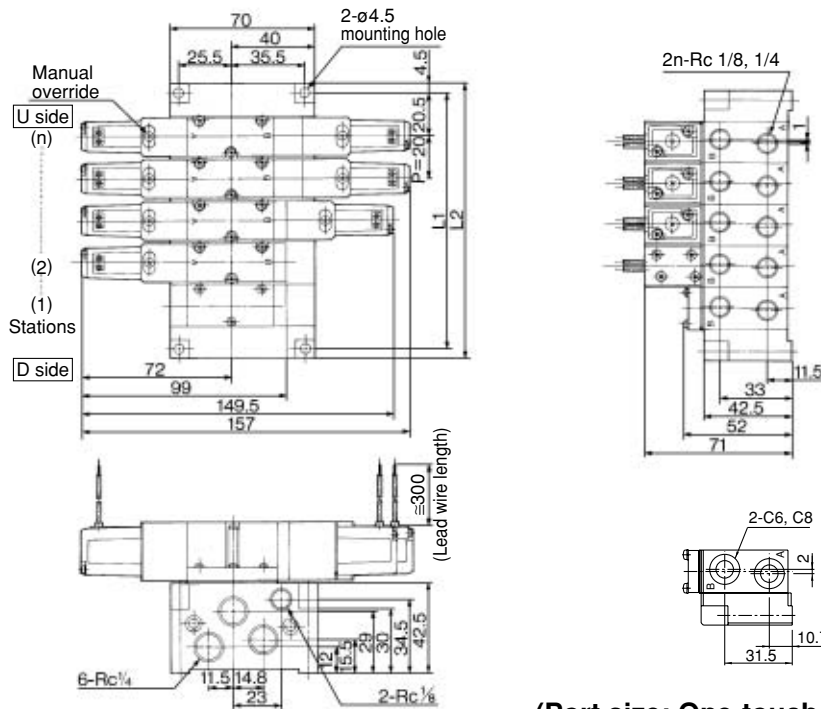
(Port size: One-touch fitting type)

Plug connector (L)
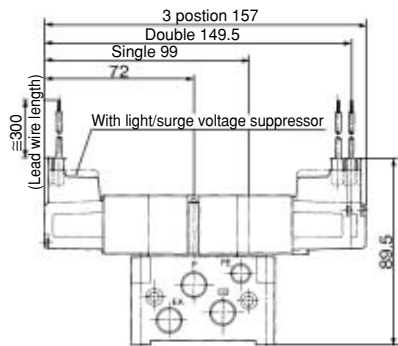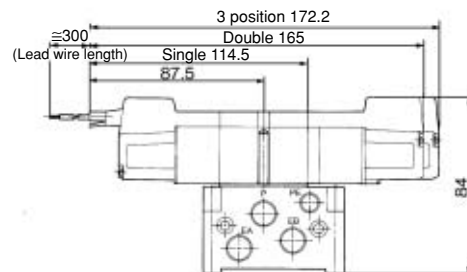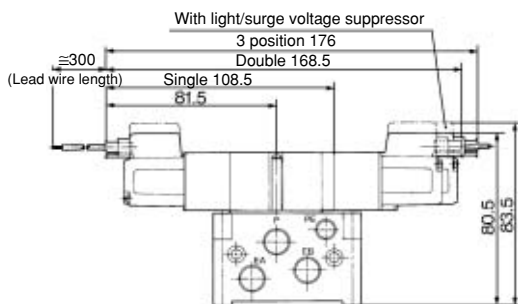
3 postion 157
Double 149.5
Single 99
72

≦300
(Lead wire length)

With light/surge voltage suppressor

89.5

Plug connector (K)

3 position 172.2
Double 165
Single 114.5
87.5

≦300
(Lead wire length)

84

Plug connector (M)

With light/surge voltage suppressor
3 position 176
Double 168.5
Single 108.5
81.5

≦300
(Lead wire length)

80.5
83.5

DIN terminal (D)

3 position 171.5
Double 164
Single 106
79
MAX.10

With light/surge voltage suppressor
Pg7

95.4
103
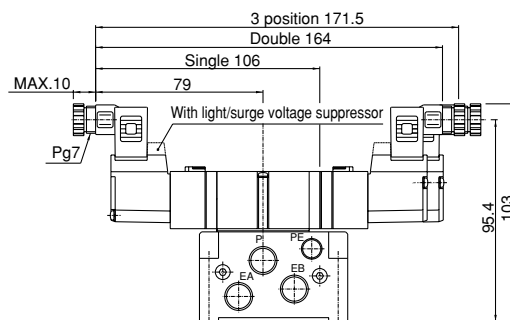
n: Stations

L \ Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Formula
L1	61	81	101	121	141	161	181	201	221	241	261	281	301	321	341	361	381	401	421	441	461	481	501	20n + 21
L2	70	90	110	130	150	170	190	210	230	250	270	290	310	330	350	370	390	410	430	450	470	490	510	20n + 30

SMC

Manifold with Control Unit

- **Control unit (Filter, Regulator, Pressure switch, Air release valve) are all standardized in the one unit, and can be mounted on the manifold base without any attachments.**
- **Piping processes are eliminated.**
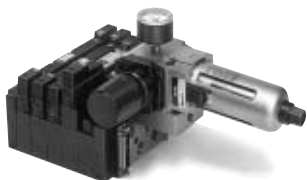
Plug-in type
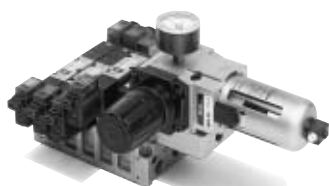
Non plug-in type

⚠ Caution

When using an air filter with auto-drain or manual override drain, mount the filter vertically.

Manifold Specifications

Base model	Wiring	Porting specifications A, B port	Port size P, EA, EB	Port size A, B	Stations	Applicable valve model
Plug-in type **VV5ZS3-51F** **VV5ZS3-51G**	• With D-sub connector • With attachment plug lead wire	Side	Rc ¼	Rc ⅛, ¼	* 2 to 16 stations	VZS3□50-□FZ
Non plug-in type **VV5ZS3-51**	• Grommet • L plug connector • M plug connector • K plug connector	Side	Rc ¼	C6 C8	2 to 24 stations	VZS3□50- G L M KZ

🔍 * With attachment plug lead wire: 15 stations max.

Control Unit Specifications

Air filter (With auto-drain/With manual drain)	
Filtration degree	5 μm
Regulator	
Set pressure (Outlet pressure)	0.05 to 0.85 MPa
Pressure switch	
Set pressure range: OFF	0.1 to 0.4 MPa
Differential pressure	0.08 MPa
Contact	1a
Max. switch capacity	2 VA AC, 2 W DC
Max. operating current	24 VAC, DC or less: 50 mA / 100 VAC, DC: 20 mA
Operating voltage	100 VAC, DC or less
Air release valve (Single only)	
Operating pressure range	0.1 to 1.0 MPa

Control Unit/Option

Blanking plate	MP2-2 (With control unit/Filter regulator)
	VVZS2000-15A (With pressure switch)
	VVZS3000-24A-10-½ (Release valve)
Filter element	111511-5B
Pressure switch	Plug-in type VVZS2000-14A
	Non plug-in type IS1000-00-X204

Side tabs: VK / VZ / VF / VFR / VP4 / **VZS** / VFS / VS4 / VQ7 / EVS / VFN

How to Order

VV5ZS3 – 51F D – 08 1 – 01 [ ] AP 5

Series VZS3000 Manifold

Base type/Electrical entry

51F	Plug-in type: Stacking type manifold base with D-sub connector
51G	Plug-in type: Stacking type manifold base with attachment plug lead wire
51	Non plug-in type: Stacking type manifold base

Connector mounting direction

Symbol	With connector	Applicable base	Applicable stations
Nil	None	51	2 to 24
		51G	2 to 15
D	D side	51F	2 to 8
U	U side	51F	2 to 8
B	Both sides		9 to 16

Stations

02	2 stations
⋮	⋮
24	24 stations

Note) Maximum stations
51F···16 stations
51G···15 stations
51·····24 stations

Symbol

Symbol	Passage 1(P)	Passage 5(R1), 3(R2)	Porting specifications 4(A), 2(B)
1	Common	Common	Side

Thread type

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

Port size

01	Rc ⅛
02	Rc ¼
C6	Embedded type One-touch fitting Applicable tubing O.D.: ø6
C8	Embedded type One-touch fitting Applicable tubing O.D.: ø8

Coil voltage of air release valve

Nil	None
1	100 VAC, 50/60 Hz
2	200 VAC, 50/60 Hz
5	24 VDC
9 *	Other

* Option

Note) How to take out the lead wire of air release valve is the same method as the other valve equipped on the same manifold.

Control unit types

Control equipment \ Symbol	Nil	A	AP	M	MP	F	G	C	E
Air filter regulator with auto-drain	—	●	●	—	—	●	—	—	—
Air filter regulator with manual drain	—	—	—	●	●	—	●	—	—
Air release valve	—	●	●	●	●	—	—	●	●
Pressure switch	—	—	●	—	●	—	—	—	—
Blanking plate (Air release valve)	—	—	—	—	—	●	●	—	—
Blanking plate (Filter regulator)	—	—	—	—	—	—	—	●	—
Blanking plate (Pressure switch)	—	●	—	●	—	●	●	●	—
Number of manifold blocks required for mounting (Stations)	—	2							1

🔍 Note) Operating voltage of pressure switch: 100 VAC, 100 VDC or less.

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

<Example>
• Plug-in type with D-sub connector
(Manifold base) VV5ZS3-51FD-091-01-MP5····1
(2 position single) VZS3150-5FZ·····················5
(2 position double) VZS3250-5FZ····················2
* 2 stations are needed to mount control unit.

• Non plug-in type
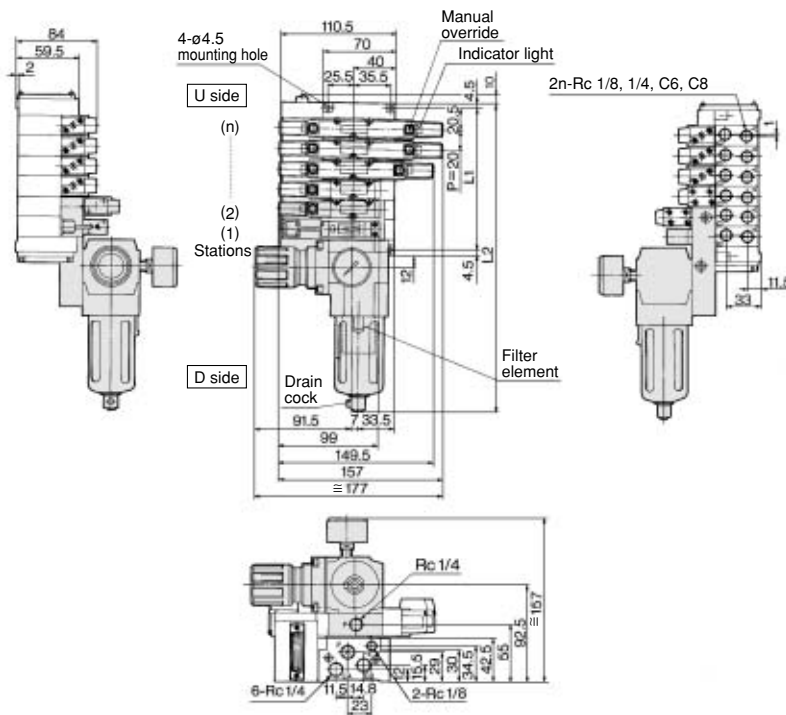(Manifold base) VV5ZS3-50-071-01-M5········1
(2 position single) VZS3150-5G·····················5
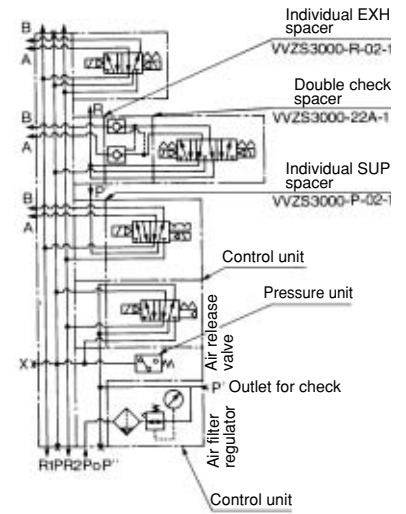* 2 stations are needed to mount control unit.

Manifold with Control Unit | Plug-in type, Non plug-in type

Plug-in type
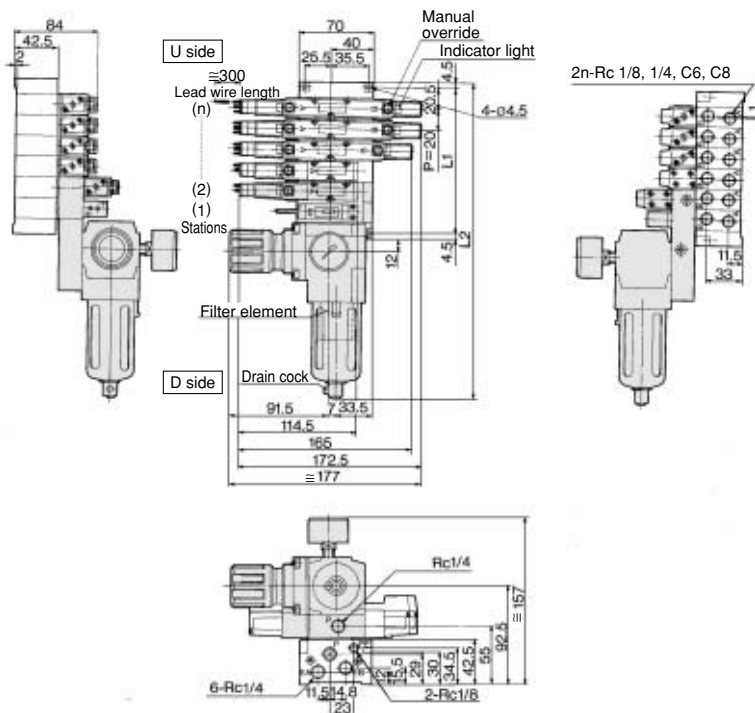**VV5ZS3-51F□-** | Station | 1- | Port size | - | Classification of control unit

U side
(n)
(2)
(1)
Stations
D side

Manual override
Indicator light
2n-Rc 1/8, 1/4, C6, C8
4-ø4.5 mounting hole
Drain cock
Filter element
Rc 1/4
6-Rc 1/4
2-Rc 1/8

Example for manifold

Individual EXH spacer
VVZS3000-R-02-1
Double check spacer
VVZS3000-22A-1
Individual SUP spacer
VVZS3000-P-02-1
Control unit
Pressure unit
Air release valve
Outlet for check
Air filter regulator
Control unit
R1PR2PoP'

n: Stations

L \ Stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Formula
L1	81	101	121	141	161	181	201	221	241	261	281	301	321	341	20n + 21
L2 (MP)	236	256	276	296	316	336	356	376	396	416	436	456	476	496	20n + 176
L2 (AP)	292.5	312.5	332.5	352.5	372.5	392.5	412.5	432.5	452.5	472.5	492.5	512.5	532.5	552.5	20n + 232.5

Non plug-in type
VV5ZS3-51- | Station | 1- | Port size | - | Classification of control unit

U side
≅300 Lead wire length (n)
(2)
(1)
Stations
D side

Manual override
Indicator light
2n-Rc 1/8, 1/4, C6, C8
4-ø4.5
Filter element
Drain cock
Rc1/4
6-Rc1/4
2-Rc1/8

Example for manifold

Individual EXH spacer
VVZS3000-R-02-2
Double check spacer
VVZS3000-22A-2
Individual SUP spacer
VVZS3000-P-02-2
Control unit
Pressure unit
Air release valve
Outlet for check
Air filter regulator
Control unit
2(B)
4(A)
(R1)P(R2)PoP'
5 3 1
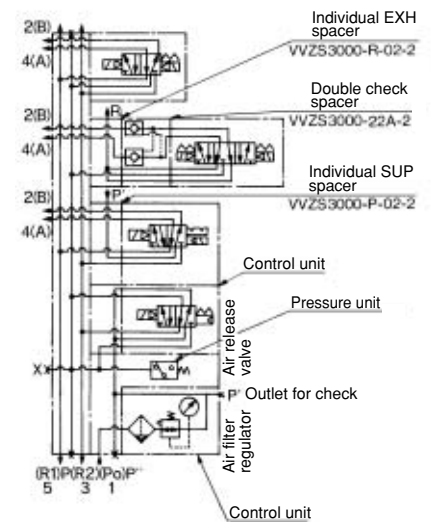
n: Stations

L \ Stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Formula
L1	81	101	121	141	161	181	201	221	241	261	281	301	321	341	361	381	401	421	441	461	481	501	20n + 21
L2 (MP)	236	256	276	296	316	336	356	376	396	416	436	456	476	496	516	536	556	576	596	616	636	656	20n + 176
L2 (AP)	292.5	312.5	332.5	352.5	372.5	392.5	412.5	432.5	452.5	472.5	492.5	512.5	532.5	552.5	572.5	592.5	612.5	632.5	652.5	672.5	692.5	712.5	20n + 232.5

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

Individual SUP spacer
Plug-in type: VVZS3000-P-$^{01}_{02}$-1
**Non plug-in type: VVZS3000-P-$^{01}_{02}$-2**

Individual SUP spacer

93.5

(110.5)

70

20

22.5 (29)

RC 1/8, 1/4
SUP port

Individual EXH spacer
Plug-in type: VVZS3000-R-02-1
Non plug-in type: VVZS3000-R-02-2

Individual EXH spacer

93.5

(110.5)

70

20

22.5 (29)

Rc1/4
EXH port
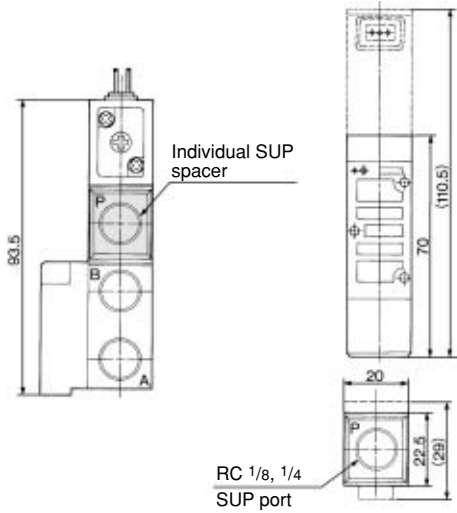
SUP block disk
EXH blocking plate : AXT625-12A

Block plate

71

12.6

20.6
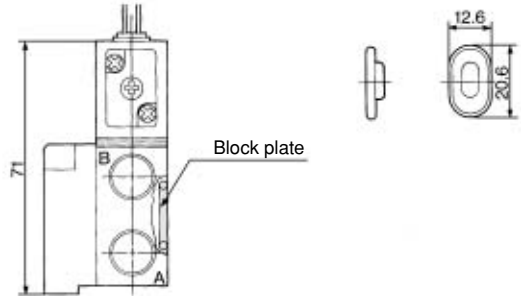
Double check spacer
Plug-in type: VVZS3000-22A-1
Non-plug-in type: VVZS3000-22A-2

Double check spacer

111

144.5

104

20

40 (46.5)
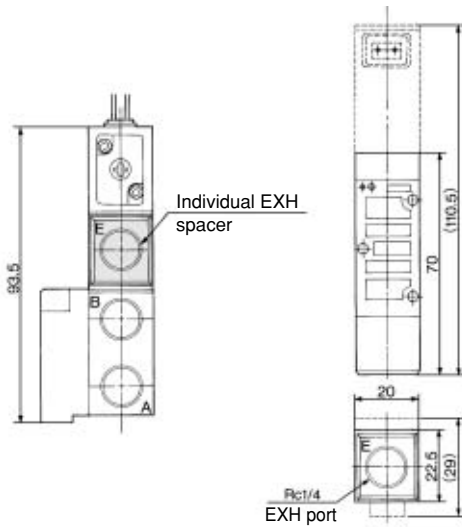
| VK |
| VZ |
| VF |
| VFR |
| VP4 |
| **VZS** |
| VFS |
| VS4 |
| VQ7 |
| EVS |
| VFN |

( ): Plug-in type

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Exploded View of Manifold

Non plug-in
type
Type 51

Plug-in
type
Type 51F

Plug-in
type
Type 51G
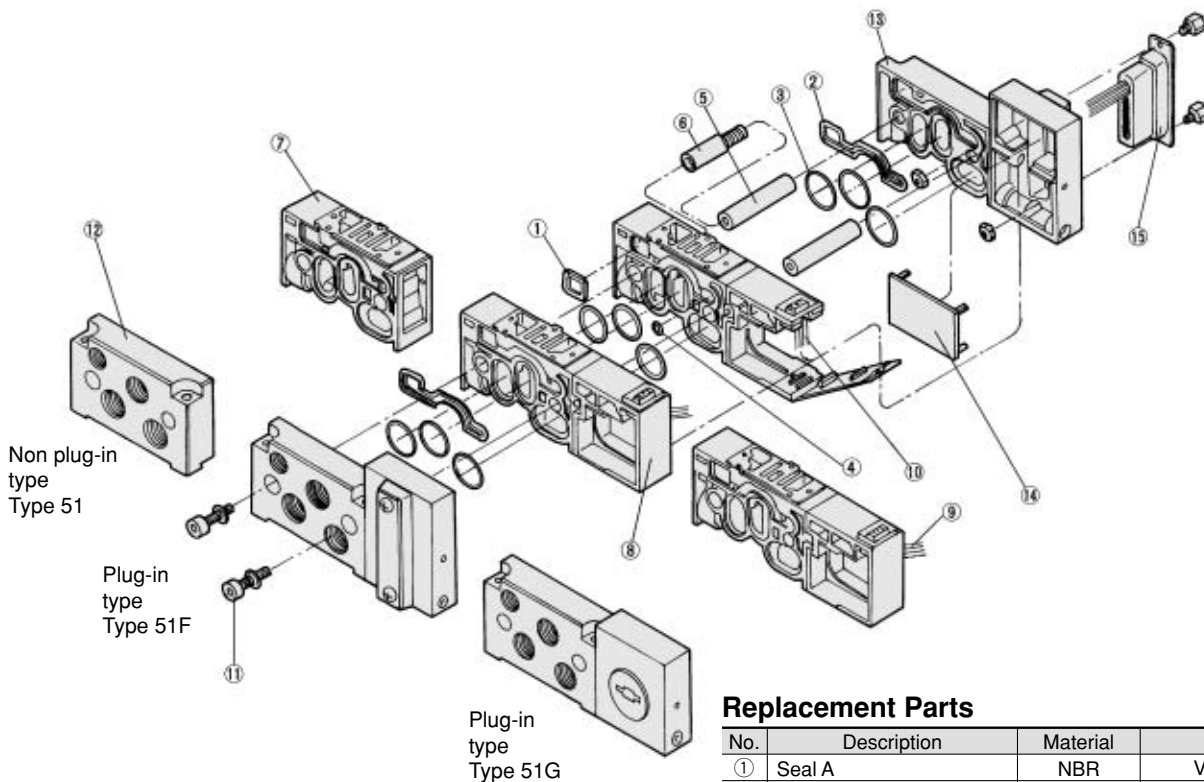
Replacement Parts

No.	Description	Material	Part no.
①	Seal A	NBR	VVZS3000-4-1
②	Seal B	NBR	VVZS3000-4-2
③	O-ring	NBR	18 x 15 x 1.5
④	O-ring	NBR	7.5 x 4.5 x 1.5
⑤	Tie-rod	Carbon steel	VVZS3000-5-n [1]
⑥	Tie-rod for station addition	Carbon steel	VVZS3000-5-1-1 [2]

Note 1) n: Stations
Note 2) Manifold block assembly is attached with tie-rod for increasing stations.

Description	Applicable manifold base	Assembly part no.	Component parts
Manifold block assembly	Plug-in type With attachment plug lead wire: Type 51G	VVZS3000-4-1-Port size [1]	Manifold block ⑦, Junction box ⑧, Lead wire assembly ⑨ Tie-rod ⑥, O-ring ③, ④, Seal A ①
	Non plug-in base type: Type 51	VVZS3000-1A-2-Port size [1]	Manifold block ⑦, Tie-rod ⑥, O-ring ③, ④, Seal A ①
	Plug-in type With D-sub connector: Type 51F*	VVZS3000-1A-3-Port size [1] (-1) [2]	Manifold block ⑦, Junction box ⑧, Lead wire assembly ⑩ Tie-rod ⑥, O-ring ③, ④, Seal A ①

Note 1) Bore -01: Rc 1/8, -C6: Embedded type One-touch fitting for ø6, -C8: Embedded type One-touch fitting for ø8.
Note 2) Refer to page 3-7-5 for the model of D-sub connector type manifold block assembly.

How to Increase Manifold Base

Arrange an applied manifold block assembly.

1. Loosen the bolt ⑪ and remove the end plate ⑫ or ⑬ in the side added with manifold block.

2. Joint the tie-rod ⑥ to increase stations and add manifold block assembly. (Put packing B ② on the surface contacting to the end plate.)

3. For a style with a D-sub connector, open the cover ⑭ and insert the pin of lead wire assembly ⑩ as shown in the right figure.
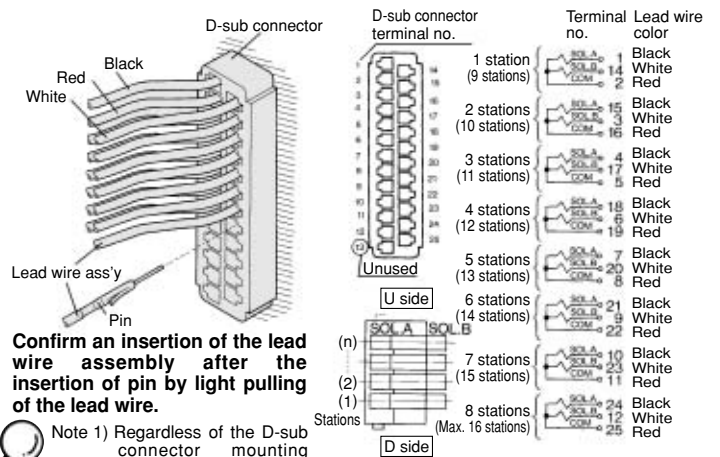
4. Mount the end plate ⑫ and ⑬ and tighten the bolt ⑪.

Note 1) Be careful that the packing and the O-ring do not fall out of the groove.
Note 2) The tightening torque of bolt ⑪ should be 2 to 2.2 N.

Insertion Method for Pin of D-Sub Connector

Confirm an insertion of the lead wire assembly after the insertion of pin by light pulling of the lead wire.

Note 1) Regardless of the D-sub connector mounting position, stations are to be counted from D side as the 1st one.
Note 2) D-sub connector can use up to 8 stations in on side fitting (Type F_U^D). More than 9 stations are for both sides fitting (Type FB).

( ) is for the case of a D-sub connector for both sides (Type FB).

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