

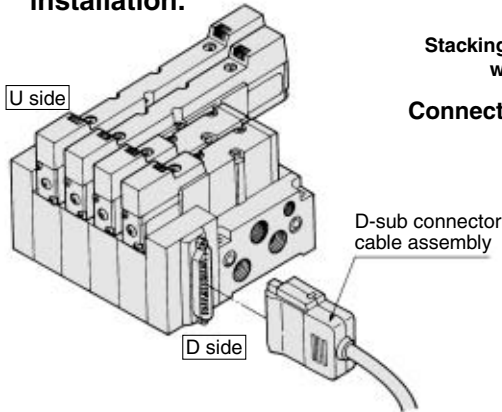
# Series VZS3000

# Manifold Specifications

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

Refer to page 3-7-4 for wiring specifications.

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



**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<br>Applicable tubing O.D.: ø6 |
| C8 | Embedded type One-touch fitting<br>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

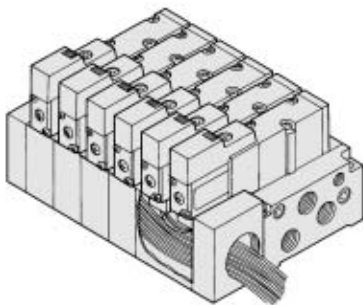
EVS

VFN

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

Refer to page 3-7-4 for wiring specifications.

- 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

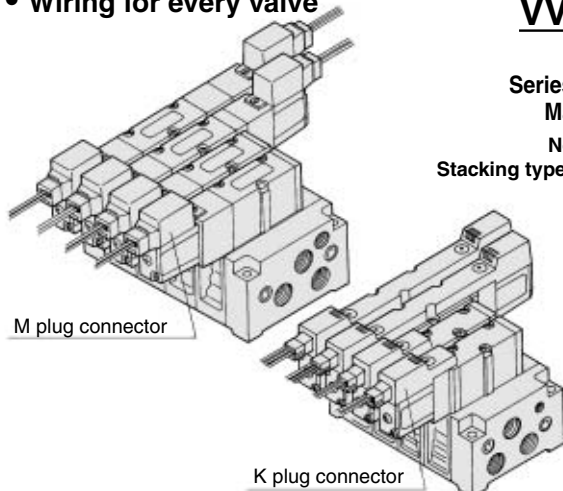
|    |   |
|----|---|
| 01 | Rc 1/8  |
| 02 | Rc 1/4  |
| C6 | Embedded type One-touch fitting<br>Applicable tubing O.D.: ø6 |
| C8 | Embedded type One-touch fitting<br>Applicable tubing O.D.: ø8 |

### 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



**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<br>Applicable tubing O.D.: ø6 |
| C8 | Embedded type One-touch fitting<br>Applicable tubing O.D.: ø8 |


### Symbol

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

# Series VZS3000

## Manifold Specifications

| Base model                                      | Wiring  | Porting specifications |                      | Port size Rc | Stations                 | Applicable valve model |
|---|---|------------------------|----------------------|--------------|--------------------------|------------------------|
|   |   | 4(A), 2(B)<br>Port     | 1(P), 5(R1)<br>3(R2) |              |                          |                        |
| <b>Plug-in type</b><br>VV5ZS3-51F<br>VV5ZS3-51G | <ul style="list-style-type: none"> <li>With D-sub connector</li> <li>With attachment plug lead wire</li> </ul>  | Side                   | 1/4                  | 1/8, 1/4     | *<br>2 to 16<br>stations | VZS3□50-□FZ            |
| <b>Non plug-in type</b><br>VV5ZS3-51            | <ul style="list-style-type: none"> <li>Grommet</li> <li>L plug connector</li> <li>M plug connector</li> <li>K plug connector</li> <li>DIN terminal</li> </ul> |                        |                      |              |                          | C4                     |

 \* With attachment plug lead wire terminal: 15 stations max.

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

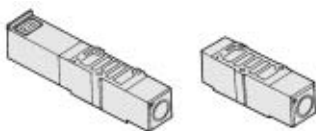
| Passage/Stations           |                              | Station 1 | Station 5 | Station 10 | Station 15 | Station 20 |
|----------------------------|------------------------------|-----------|-----------|------------|------------|------------|
| 1 → 4/2<br>(P → A/B)       | C [dm <sup>3</sup> /(s·bar)] | 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<br>(A/B → R1/R2) | C [dm <sup>3</sup> /(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       |

## Manifold Option Parts Assembly

### Individual SUP spacer

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

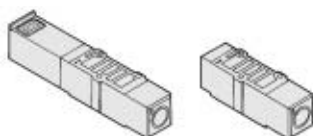
| Body type | Plug-in type | Non plug-in type |                 |
|-----------|--------------|------------------|-----------------|
| Part no.  | Rc 1/8       | VVZS3000-P-01-1  | VVZS3000-P-01-2 |
|           | Rc 1/4       | VVZS3000-P-02-1  | VVZS3000-P-02-2 |



### 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 |

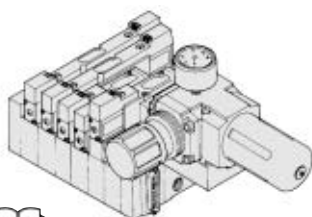


-  (Note) • Apply pressure from the P port of the base to operate the interface regulator.
- To use concurrently with a double check spacer, assemble in the following order: the valve, the interface regulator, and the double check spacer.

## Manifold Option

### With control unit

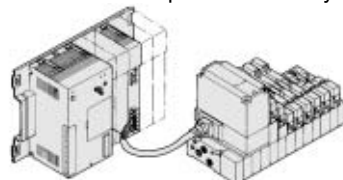
- Plug-in base type/Non plug-in base type
- Filter, regulation valve, pressure switch and air release valve all combine to form one unit.
  - Piping processes are eliminated.



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.

## How to Order Manifold Assembly

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

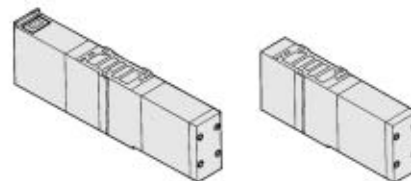
### (Example)

- 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

### 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

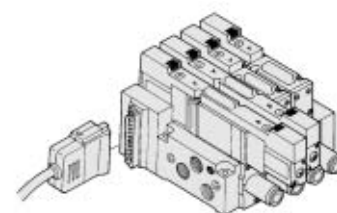
It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

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



### 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

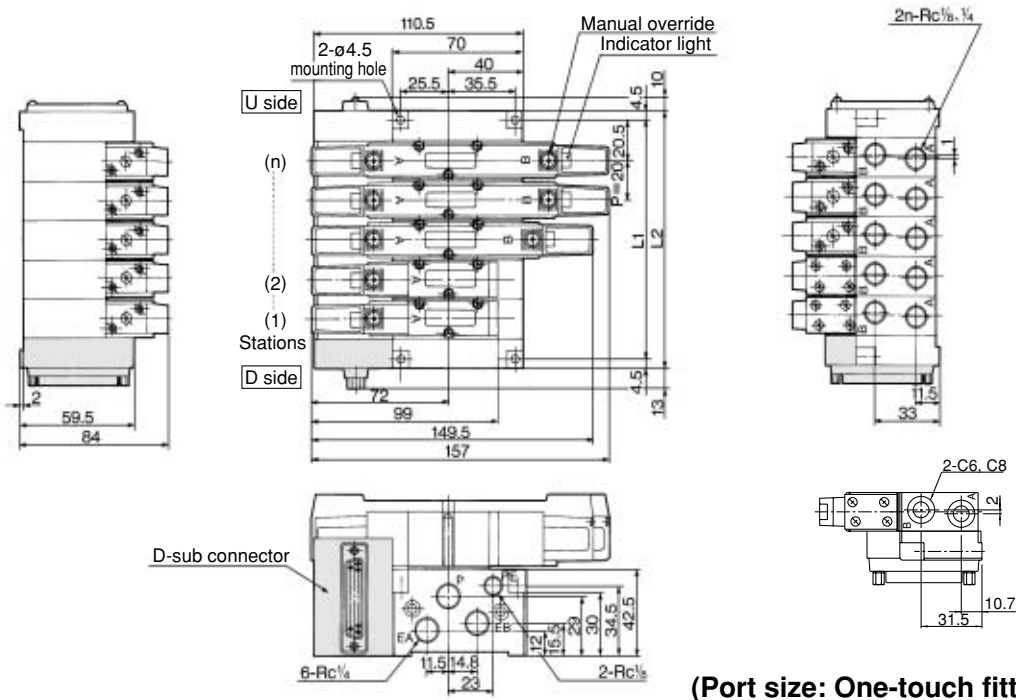


For details, please contact SMC.

# 5 Port Pilot Operated Solenoid Valve Metal Seal, Plug-in/Non Plug-in Series VZS3000

## Manifold Plug-in type

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

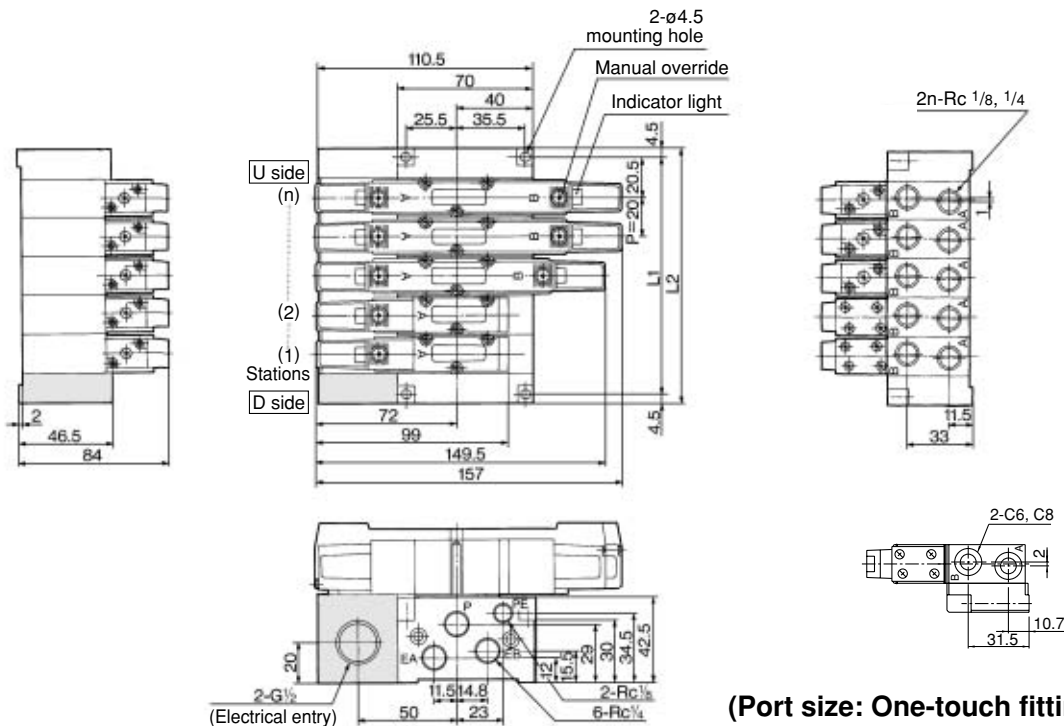


(Port size: One-touch fitting type)

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



(Port size: One-touch fitting type)

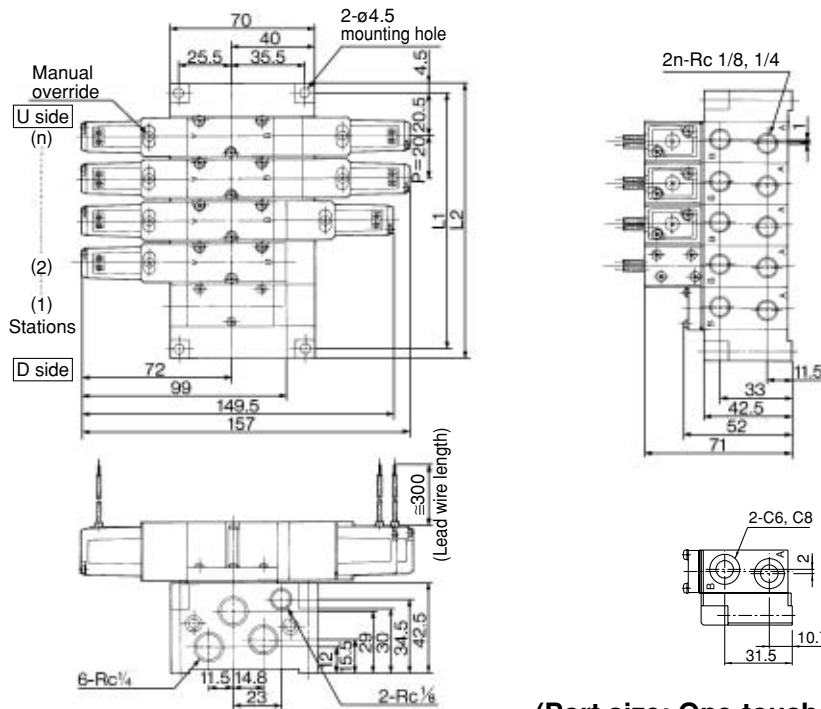
n: Stations

| 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 |

# Series VZS3000

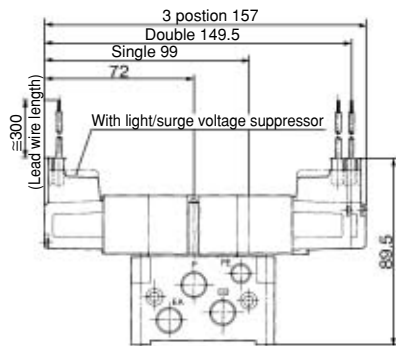
## Manifold Non plug-in type

VV5ZS3-51- Station 1- Port size  
Grommet (G)

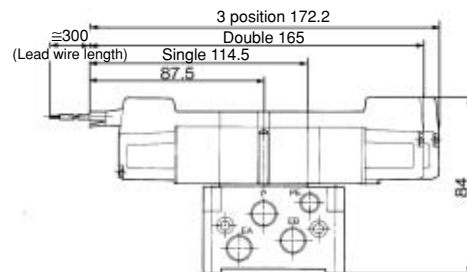


(Port size: One-touch fitting type)

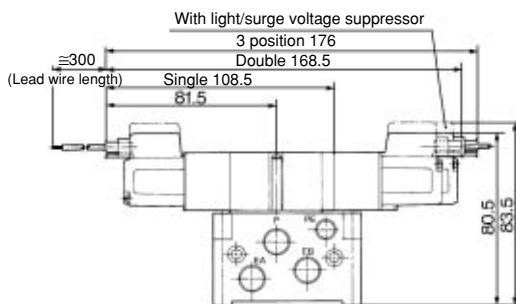
### Plug connector (L)



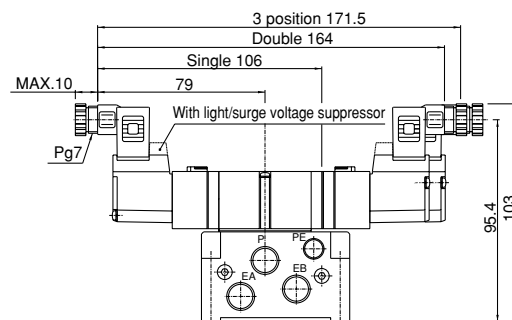
### Plug connector (K)



### Plug connector (M)



### DIN terminal (D)



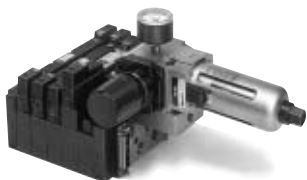
n: Stations

| 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 |

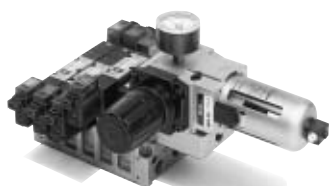
# 5 Port Pilot Operated Solenoid Valve Metal Seal, Plug-in/Non Plug-in Series VZS3000

## 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 |           | Port size   |  | Stations              | Applicable valve model |
|---|---|------------------------|-----------|-------------|--|-----------------------|------------------------|
|   |   | A, B port              | P, EA, EB | A, B        |  |                       |                        |
| <b>Plug-in type</b><br>VV5ZS3-51F<br>VV5ZS3-51G | <ul style="list-style-type: none"> <li>With D-sub connector</li> <li>With attachment plug lead wire</li> </ul>                          | Side                   | Rc 1/4    | Rc 1/8, 1/4 |  | *<br>2 to 16 stations | VZS3□50-□FZ            |
| <b>Non plug-in type</b><br>VV5ZS3-51            | <ul style="list-style-type: none"> <li>Grommet</li> <li>L plug connector</li> <li>M plug connector</li> <li>K plug connector</li> </ul> |                        |           | C6          |  |                       | 2 to 24 stations       |

\* 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<br>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<br>(With control unit/Filter regulator) |
|                 | VVZS2000-15A<br>(With pressure switch)        |
|                 | VVZS3000-24A-10-1/2<br>(Release valve)        |
| Filter element  | 111511-5B                                     |
| Pressure switch | Plug-in type<br>VVZS2000-14A                  |
|                 | Non plug-in type<br>IS1000-00-X204            |

## How to Order

**VV5ZS3-51F D-08 1-01 □ AP 5**

### Series VZS3000 Manifold

#### Base type/Electrical entry

|            |  |
|------------|--|
| <b>51F</b> | Plug-in type:<br>Stacking type manifold base<br>with D-sub connector           |
| <b>51G</b> | Plug-in type:<br>Stacking type manifold base<br>with attachment plug lead wire |
| <b>51</b>  | Non plug-in type:<br>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              |
|        |                |                 | 9 to 16             |
| U      | U side         |                 |                     |
| B      | Both sides     |                 |                     |

#### Stations

|           |             |
|-----------|-------------|
| <b>02</b> | 2 stations  |
| ⋮         | ⋮           |
| <b>24</b> | 24 stations |

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

#### Symbol

| Symbol   | Passage |              | Porting specifications |
|----------|---------|--------------|------------------------|
|          | 1(P)    | 5(R1), 3(R2) | 4(A), 2(B)             |
| <b>1</b> | Common  | Common       | Side                   |

#### Thread type

| Standard | Nil      | Rc   |
|----------|----------|------|
|          | <b>N</b> | NPT  |
| Option   | <b>T</b> | NPTF |
|          | <b>F</b> | G    |

#### Port size

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

#### Coil voltage of air release valve

|           |                   |
|-----------|-------------------|
| Nil       | None              |
| <b>1</b>  | 100 VAC, 50/60 Hz |
| <b>2</b>  | 200 VAC, 50/60 Hz |
| <b>5</b>  | 24 VDC            |
| <b>9*</b> | 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

| Symbol   | Nil | A | AP | M | MP | F | G | C | E |
|--|-----|---|----|---|----|---|---|---|---|
| Control equipment  |     |   |    |   |    |   |   |   |   |
| 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

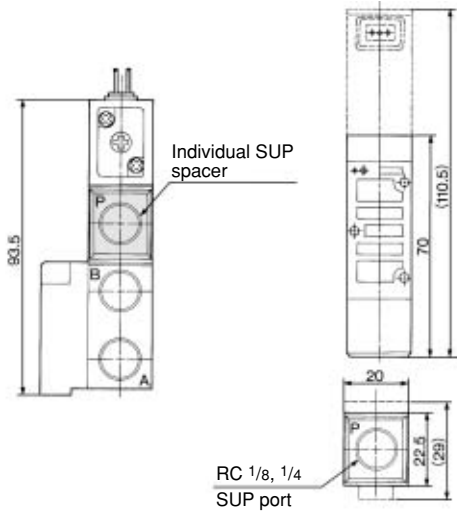
\* 2 stations are needed to mount control unit.



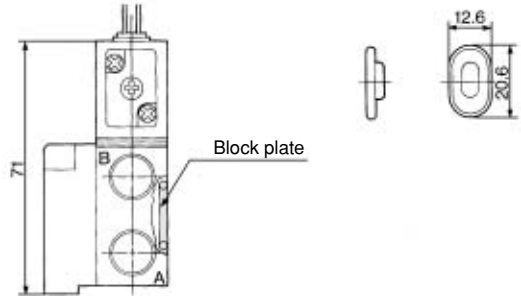
# 5 Port Pilot Operated Solenoid Valve Metal Seal, Plug-in/Non Plug-in Series VZS3000

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

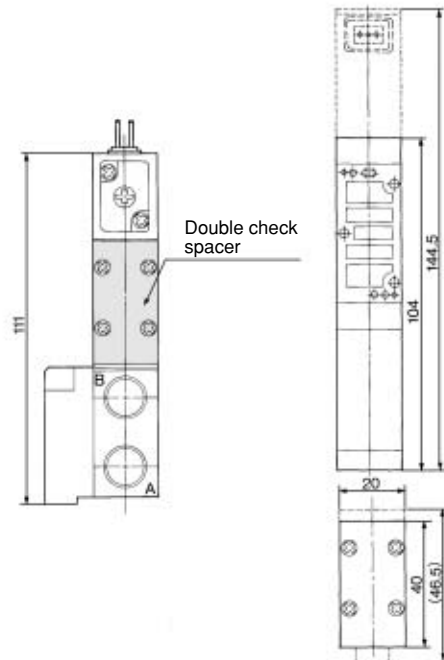
**Individual SUP spacer**  
 Plug-in type: VVZS3000-P-01-1  
 Non plug-in type: VVZS3000-P-02-2



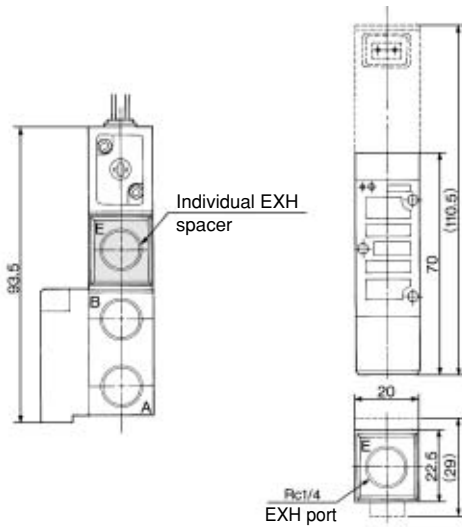
**SUP block disk** : AXT625-12A  
**EXH blocking plate**



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



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

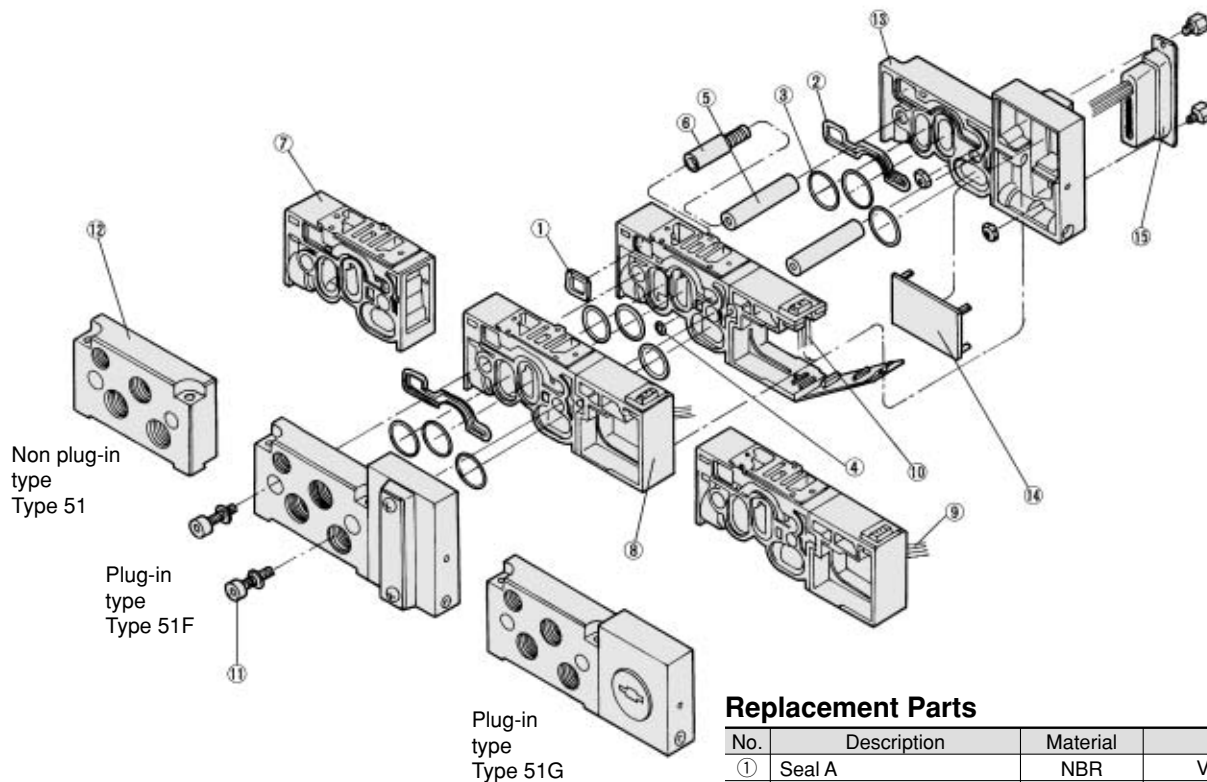


- VK
- VZ
- VF
- VFR
- VP4
- VZS**
- VFS
- VS4
- VQ7
- EVS
- VFN

( ) : Plug-in type

# Series VZS3000

## Exploded View of Manifold



### 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 <sup>(1)</sup>   |
| ⑥   | Tie-rod for station addition | Carbon steel | VVZS3000-5-1-1 <sup>(2)</sup> |

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<br>With attachment plug lead wire: Type 51G | VVZS3000-4-1-Port size <sup>(1)</sup>                      | Manifold block ⑦, Junction box ⑧, Lead wire assembly ⑨<br>Tie-rod ⑥, O-ring ③, ④, Seal A ① |
|                         | Non plug-in base type: Type 51                           | VVZS3000-1A-2-Port size <sup>(1)</sup>                     | Manifold block ⑦, Tie-rod ⑥, O-ring ③, ④, Seal A ①   |
|                         | Plug-in type<br>With D-sub connector: Type 51F*          | VVZS3000-1A-3-Port size <sup>(1)</sup> (-1) <sup>(2)</sup> | Manifold block ⑦, Junction box ⑧, Lead wire assembly ⑩<br>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.)

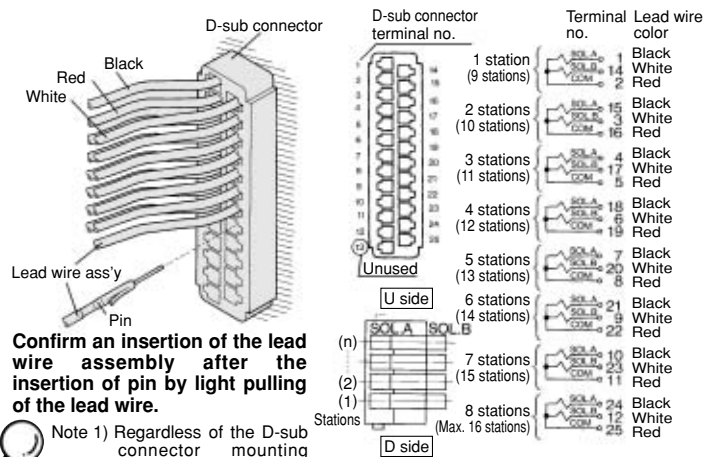
3. For a style with a D-sub connector, open the cover ⑭ and insert the pin of lead wire assembly ⑩ as shown in the right figure.

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<sub>U</sub><sup>D</sup>). 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).