5 Port Pilot Operated Solenoid Valve
Metal Seal, Plug-in/Non Plug-in
Series VZS2000

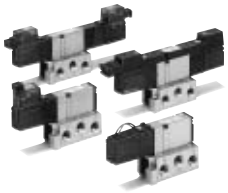
Model

Type of actuation		Model	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. operating cycle (CPM) (1)	Response time (ms) (2)	Weight (kg) (3)
2 position	Single	**VZS2150**	1/8	1.2	0.12	0.28	1.4	0.19	0.33	1200	17 or less	0.14
	Double	**VZS2250**	1/8	1.2	0.12	0.28	1.4	0.19	0.33	1200	13 or less	0.19
3 position	Closed center	**VZS2350**	1/8	0.90	0.23	0.21	1.1	0.17	0.27	600	22 or less	0.2
	Exhaust center	**VZS2450**	1/8	1.1	0.12	0.25	1.3	0.13	0.31	600	22 or less	0.2
	Pressure center	**VZS2550**	1/8	1.2	0.12	0.26	1.4	0.19	0.33	600	22 or less	0.2
	Double check	**VZS2650**	1/8	0.71	—	—	0.81	—	—	500	26 or less	0.3

Note 1) Min. operating cycle is based on JIS B 8375 (One time per 30 days).
Note 2) Response time is based on JIS B 8375-1981. (0.5 MPa, without light/surge voltage suppressor)
Note 3) For VZS2□50-□FZ-01
Note 4) "Note 1" and "Note 2" are with controlled clean air.

Reduction of wiring cost
MIL standard D-sub connector with one-touch connection
(Plug-in type)
Compact and large valve capacity: Width 15 mm
Flexible to increase and decrease manifold stations
(Stacking type manifold base)
High frequency/Long service life (more than 30 mil. times)
Possible to use in non-lubrication and dry air
(Metal seal structure)
Different variations for connection
Grommet type
L, M plug connector type: Individual take out of A and B sides
K plug connector type: Common take out of A and B sides
DIN terminal type: individual take out of A and B sides
A little power consumption: 1.8 WDC
For serial transmission

Plug-in type



Non plug-in type

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 50°C (1)
	Lubrication		Non-lube (2)
	Pilot valve manual override		Non-locking push type (Flush)
	Shock/Vibration resistance (m/s²)		150/50 (3)
	Enclosure		Dustproof (Degrees of protection 0) (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 E or equivalent (120°C) (5)
	Apparent power (AC)	Inrush	4.5 VA/50 Hz, 4.2 VA/60 Hz
		Holding	3.5 VA/50 Hz, 3 VA/60 Hz
	Power consumption (DC)		1.8 W
	Electrical entry		Plug-in type (FZ)
			Non plug-in type Grommet (G), Plug connector (L, M, KZ) DIN terminal (D)

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 8.3 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

Coil rated voltage	24, 48, 110, 220 VAC (50/60 Hz)
	6, 12, 48 VDC
Manual override	Locking type (Tool required)
Option	With light/surge voltage suppressor Note)

Note) Plug-in, K plug connector type is standard with light/surge voltage suppressor.

How to Order

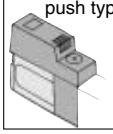
Light/Surge voltage suppressor

Z	With light/surge voltage suppressor
S	With surge voltage suppressor

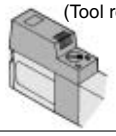
Note) With light/surge voltage suppressor is provided as standard.

Pilot valve manual override

Nil: Non-locking push type (Flush)



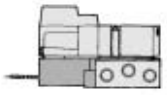
B*: Locking type (Tool required)



* Option

Electrical entry

F: Plug-in type



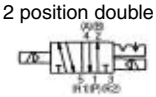
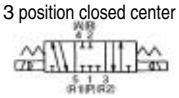
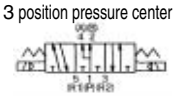
Port size

Nil	Without sub-plate
01	Rc 1/8

Plug-in VZS2 [2] 50 — [1] [F] [Z] [ ] — [01] [ ]

Non plug-in VZS2 [2] 50 — [5] [G] [ ] [ ] — [01] [ ]

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	

Coil rated voltage

1	100 VAC, 50/60 Hz
2	200 VAC, 50/60 Hz
3 *	110 VAC, 50/60 Hz
4 *	220 VAC, 50/60 Hz
5	24 VDC
6 *	12 VDC
9 *	Other

* Option

Option

Nil	None
Z	With light/surge voltage suppressor
S	With surge voltage suppressor

Note) Indicator light is not available for grommet type. With surge voltage suppressor is available for grommet type only. With light/surge voltage suppressor is provided as standard for K plug connector type.

* "DOZ" is not available.

Thread type

Standard	Nil	Rc
Option	N	NPT
	T	NPTF
	F	G

Electrical entry

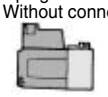
G: Grommet
Lead wire length: 300 mm

H: Grommet
Lead wire length: 600 mm

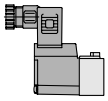
L: L plug connector With lead wire

LN: L plug connector Without lead wire

LO: L plug connector Without connector



D: DIN terminal



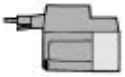
M: M plug connector With lead wire

MN: M plug connector Without lead wire

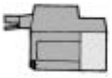
MO: M plug connector Without connector

DO: DIN terminal

KZ: K plug connector With lead wire



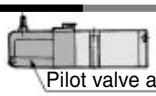
KZN: K plug connector Without lead wire



KZO: K plug connector Without connector

How to Order Pilot Valve Assembly

SCZS2 [A] — [L] [ ] — 2 — [1]



Pilot valve assembly

Series VZS2000

Applicable model

A	Single/ Double, A side
B	Double, B side
3A	3 position A side
3B	3 position B side

Electrical entry, Light/Surge voltage suppressor

Symbol	Electrical entry	Body type
F Note)	Plug-in	Plug-in type
G	Grommet	Non plug-in type
GS	Grommet/With surge voltage suppressor	
L	L plug connector	
LZ	L plug connector, With light /surge voltage suppressor	
M	M plug connector	
MZ	M plug connector, With light /surge voltage suppressor	
K Note)	K plug connector	
D	DIN terminal	
DZ	DIN terminal/With light /surge voltage suppressor	

Note) Since F and K types are attached without lamp cover, it should be arranged separately.

Coil rated voltage

1	100 VAC, 50/60 Hz
2	200 VAC, 50/60 Hz
3 *	110 VAC, 50/60 Hz
4 *	220 VAC, 50/60 Hz
5	24 VDC
6 *	12 VDC
9 *	Other

* Option

Manual override

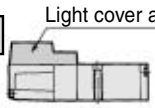
Nil	Non-locking push type (Flush)
B *	Locking type (Tool required)

* Option

How to Order Light Cover Assembly

Plug-in type
K plug connector

AXT171-2 [1] A — [5] [FZ] [ ]



Light cover assembly

VZS2000 Light cover assembly

Applicable model

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

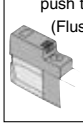
Voltage

1	100 VAC, 50/60 Hz
2	200 VAC, 50/60 Hz
3 *	110 VAC, 50/60 Hz
4 *	220 VAC, 50/60 Hz
5	24 VDC
6 *	12 VDC
9 *	Other

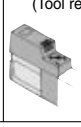
* Option

Pilot valve manual override

Nil: Non-locking push type (Flush)



* **B**: Locking type (Tool required)



* Option

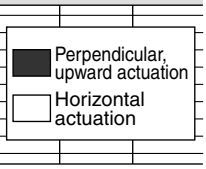
Electrical entry, Light/Surge voltage suppressor

FZ	Plug-in With light/surge voltage suppressor
FS	Plug-in With surge voltage suppressor
KZ	K plug connector With light/surge voltage suppressor
KS	K plug connector With light/surge voltage suppressor

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 CJ2 Pressure 0.5 MPa Load factor 50% Stroke 60 mm			Series CM2 Pressure 0.5 MPa Load factor 50% Stroke 300 mm				Series MB Pressure 0.5 MPa Load factor 50% Stroke 500 mm				
		Ø6	Ø10	Ø16	Ø20	Ø25	Ø32	Ø40	Ø40	Ø50	Ø63	Ø80	Ø100
VZS2150-01	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%

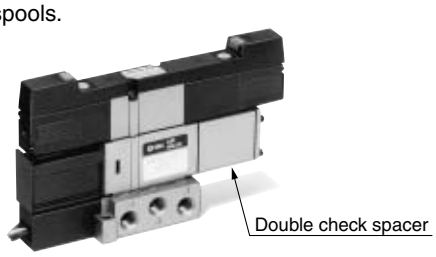
Conditions

		Series CJ2	Series CM2	Series MB
VZS2150-01	Tube bore x Length	T0604 x 1 m		
	Speed controller	AS3001F-06		
	Silencer	AN110-1		

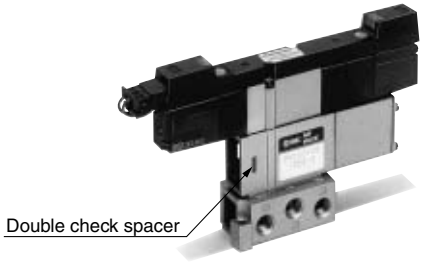
Double Check Spacer/Specifications

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

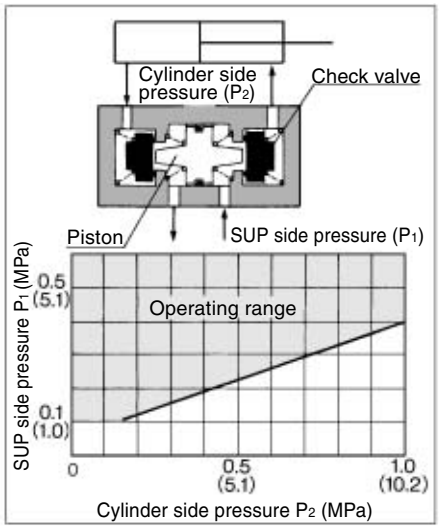
Double check spacer part no.	Plug-in type	Non plug-in type
	VVZS2000-22A-1	**VVZS2000-22A-2**
Applicable valve model	VZS2450-□FZ	VZS2450-□ G L M KZ D

Leakage (Supply pressure: 0.5 MPa	Solenoid one side de-energized	1(P)	5(R1)	100 Ncm³/min or less
			3(R2)	
	Solenoid both sides de-energized	1(P)	5(R1)	100 Ncm³/min or less
			3(R2)	
		4(A)	5(R1)	0
		2(B)	3(R2)	

⚠ Caution

In the case of 3 position double check (VZS2650), 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.

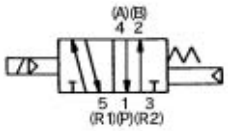
Check Valve Operating Pressure/Characteristics

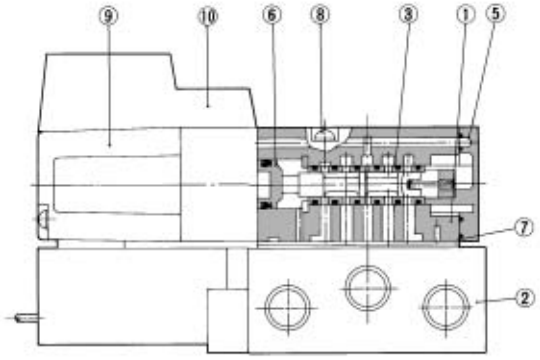


• The combination of VZS2150, VZS2250 and a double check spacer can be used as prevention of falling at the stroke end but cannot hold the intermediate position of the cylinder.

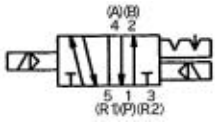
Construction

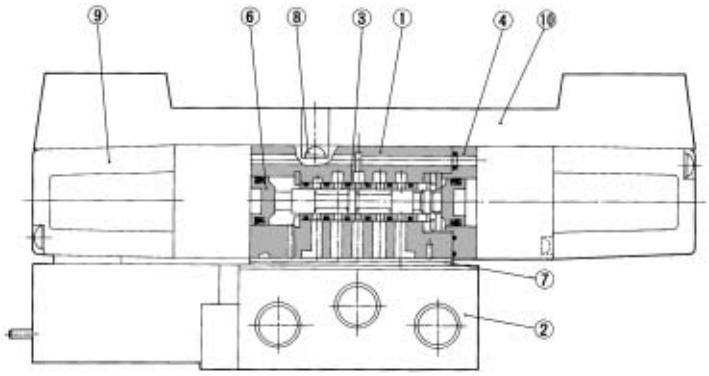
2 position single





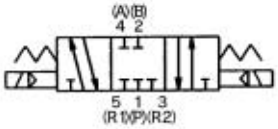
2 position double





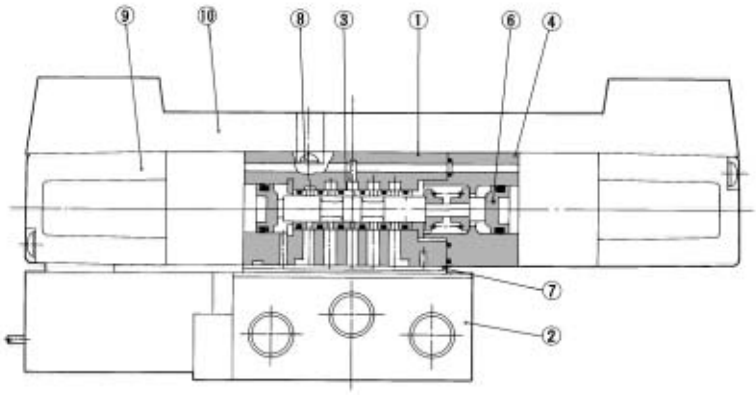
3 position closed center/exhaust center/pressure center

Closed center



Exhaust center

Pressure center



This figure shows a closed center type.

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	—

Sub-plate Assembly

Plug-in	VZS2000-P-01□
Non plug-in	VZS2000-S-01□

∗ Mounting bolt and gasket are not attached.
∗ □: Thread type

Thread Type

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

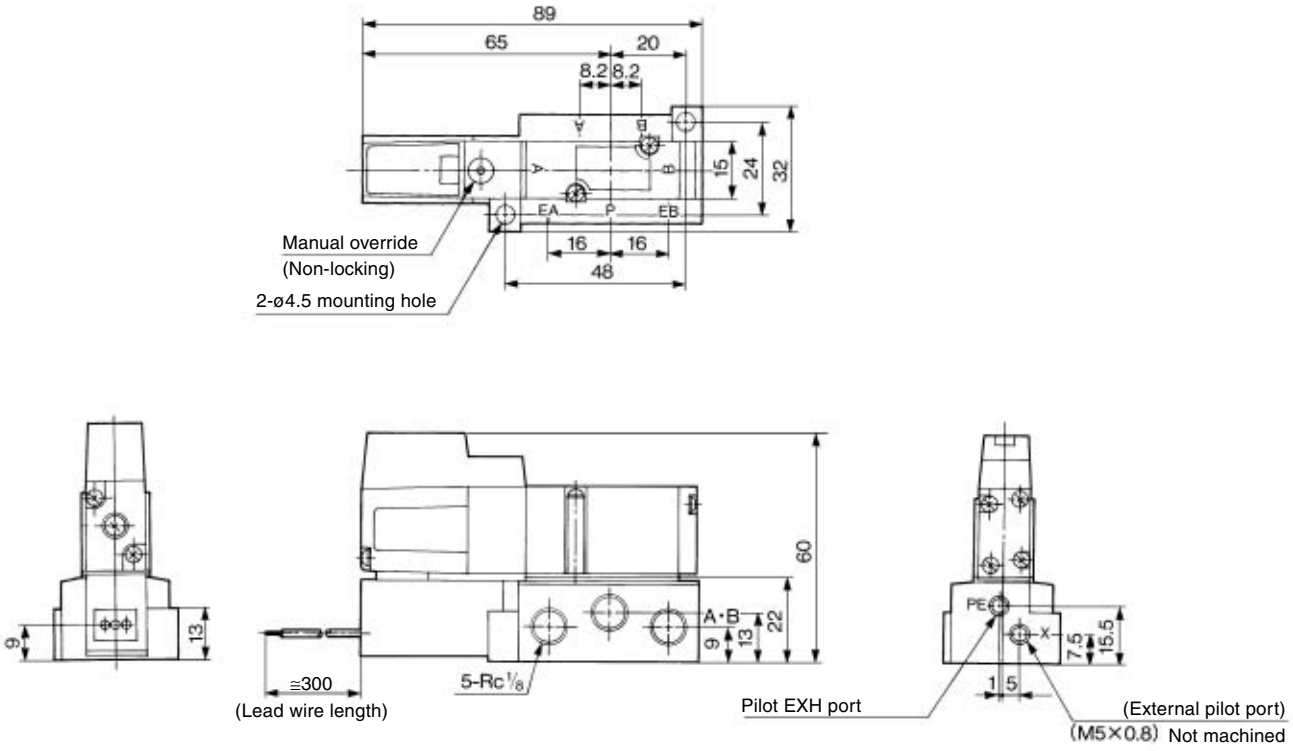
Replacement Parts

No.	Description	Material	Part no.
⑦	Gasket	NBR	BG-VZS2000-1 (Groove gasket 1 pc., Round head combination screw 2 pcs.)
⑧	Round head combination screw	Carbon steel	BG-VZS2000 (Gasket 1 pc., Round head combination screw 2 pcs.) Note)
⑨	Pilot valve assembly	—	Refer to “How to Order Pilot Valve Assembly” on page 3-7-8.
⑩	Light cover assembly	—	Refer to “How to Order Light Cover Assembly” on page 3-7-8.

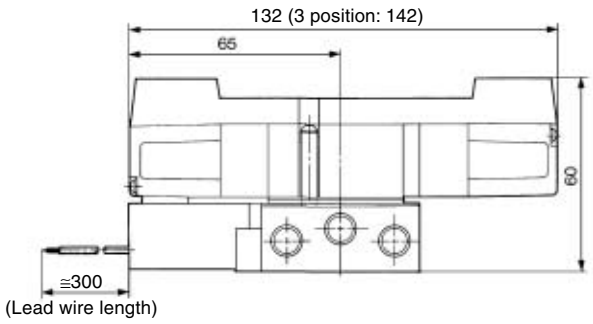
Note) Refer to page 3-7-6.

Plug-in **2 position single/double, 3 position closed center/exhaust center/pressure center/double check**

2 position single: VZS2150-□FZ-01

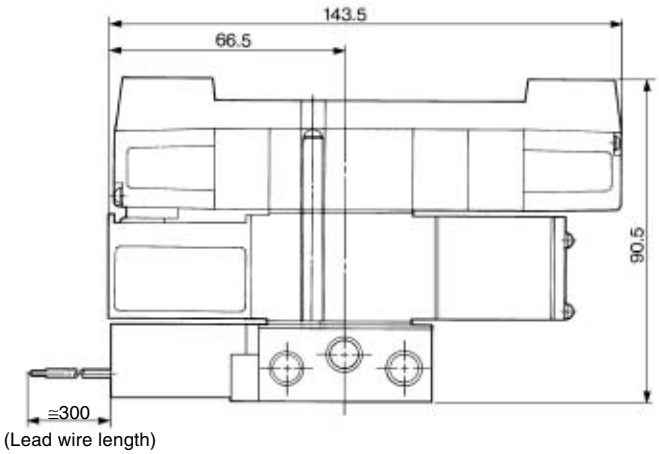


2 position double : VZS2250-□FZ-01
3 position closed center : VZS2350-□FZ-01
3 position exhaust center : VZS2450-□FZ-01
3 position pressure center: VZS2550-□FZ-01



∗ Other dimensions are the same as the single type.

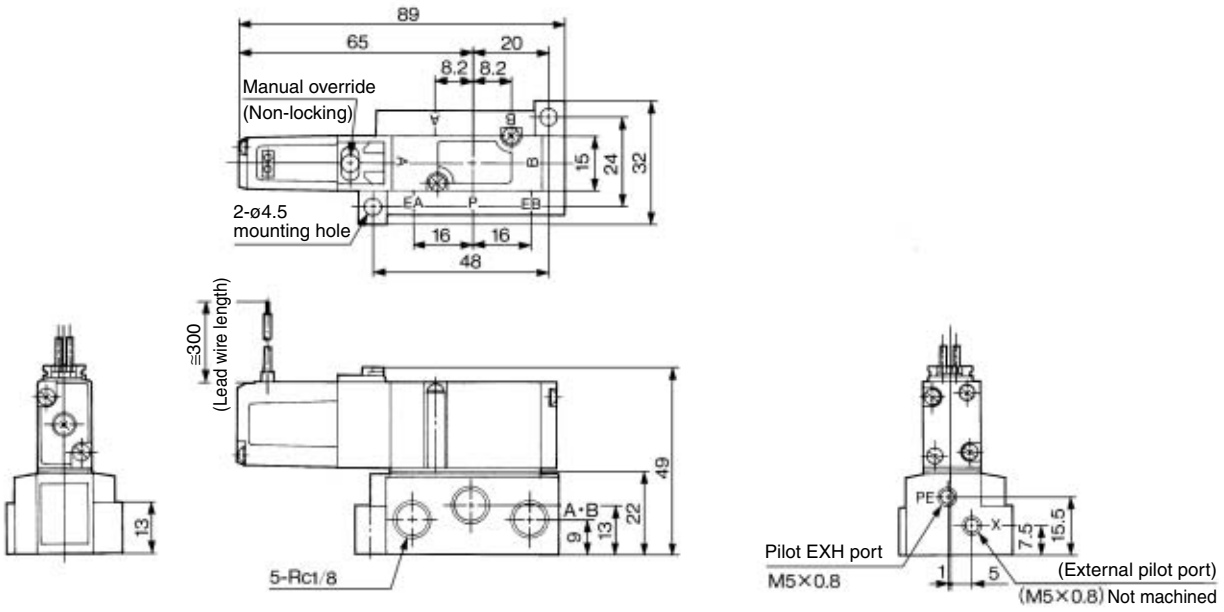
3 position double check: VZS2650-□FZ-01



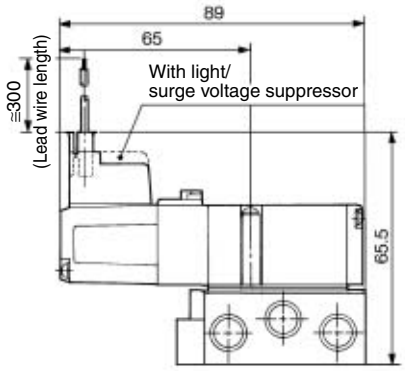
∗ Other dimensions are the same as the single type.

Non Plug-in 2 position single

Grommet: VZS2150-□ G/H(S)-01

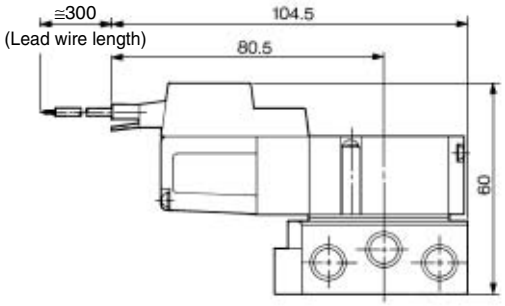


L plug connector: VZS2150-□L(Z)-01



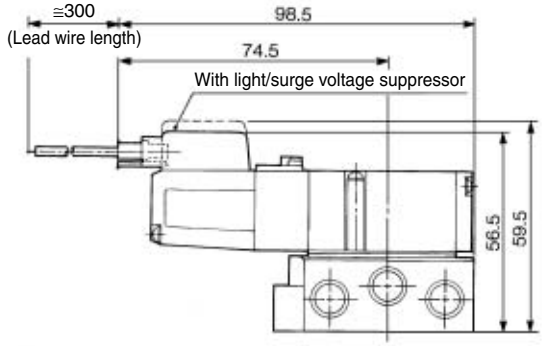
∗ Other dimensions are the same as the grommet type.

K plug connector: VZS2150-□KZ-01



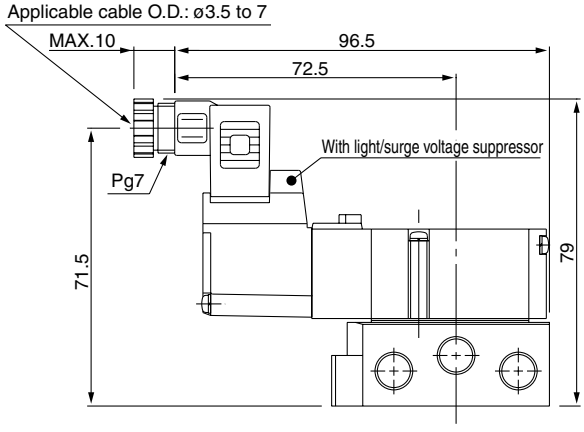
∗ Other dimensions are the same as the grommet type.

M plug connector: VZS2150-□M(Z)-01



∗ Other dimensions are the same as the grommet type.

DIN terminal: VZS2150-□D(Z)-01

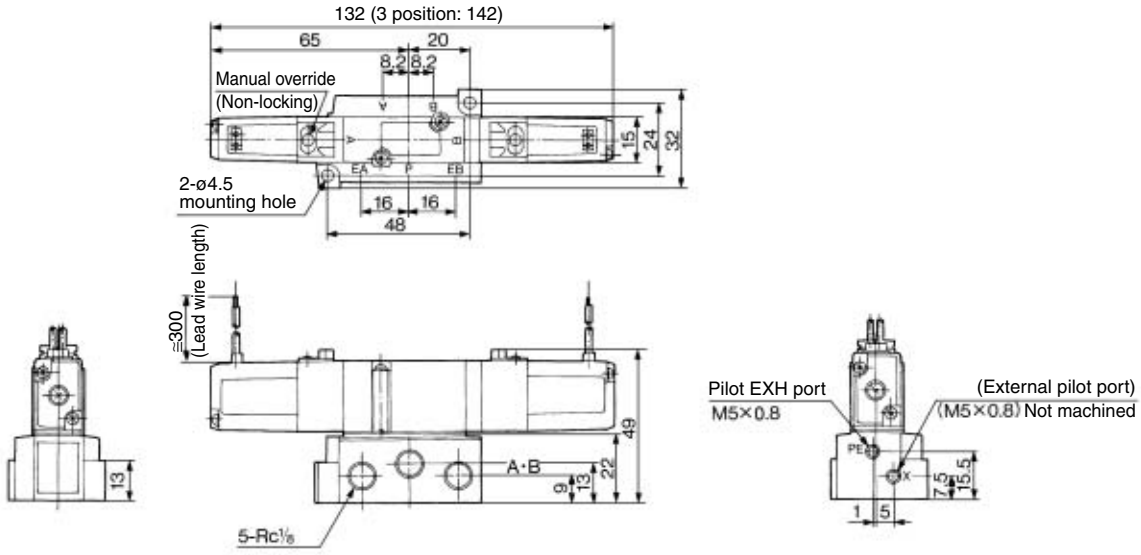


∗ Other dimensions are the same as the grommet type.

Non Plug-in 2 position double, 3 position closed center/exhaust center/pressure center

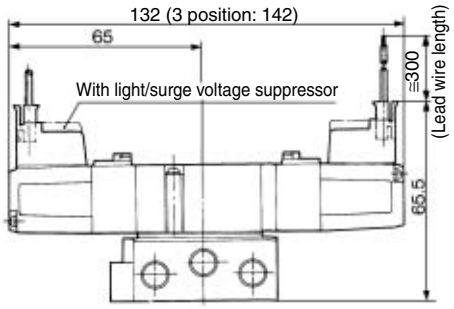
Grommet

2 position double: VZS2250-□$^{G}_{H}$(S)-01
3 position exhaust center: VZS2450-□$^{G}_{H}$(S)-01
3 position closed center: VZS2350-□$^{G}_{H}$(S)-01
3 position pressure center: VZS2550-□$^{G}_{H}$(S)-01



L plug connector

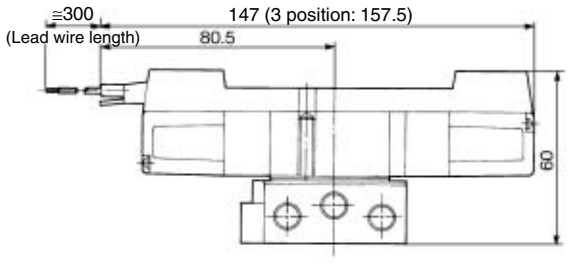
2 position double: VZS2250-□L(Z)-01
3 position closed center: VZS2350-□L(Z)-01
3 position exhaust center: VZS2450-□L(Z)-01
3 position pressure center: VZS2550-□L(Z)-01



∗ Other dimensions are the same as the grommet type.

K plug connector

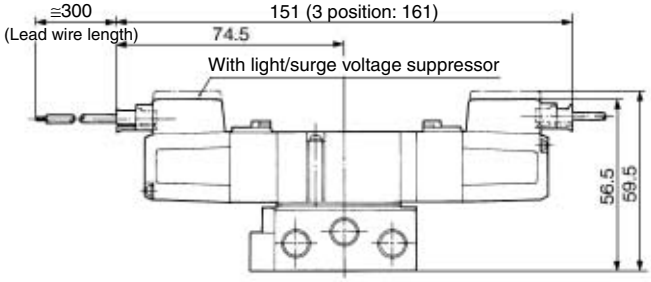
2 position double: VZS2250-□KZ-01
3 position closed center: VZS2350-□KZ-01
3 position exhaust center: VZS2450-□KZ-01
3 position pressure center: VZS2550-□KZ-01



∗ Other dimensions are the same as the grommet type.

M plug connector

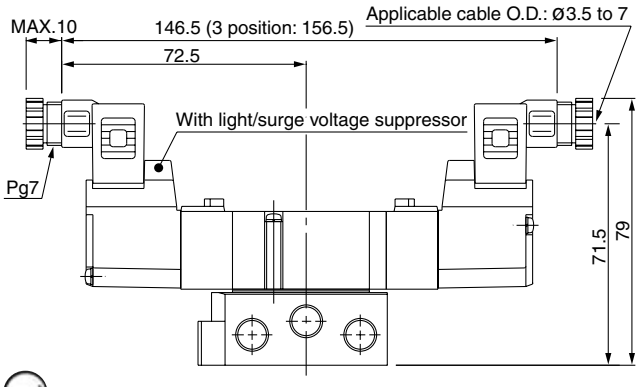
2 position double: VZS2250-□M(Z)-01
3 position closed center: VZS2350-□M(Z)-01
3 position exhaust center: VZS2450-□M(Z)-01
3 position pressure center: VZS2550-□M(Z)-01



∗ Other dimensions are the same as the grommet type.

DIN terminal

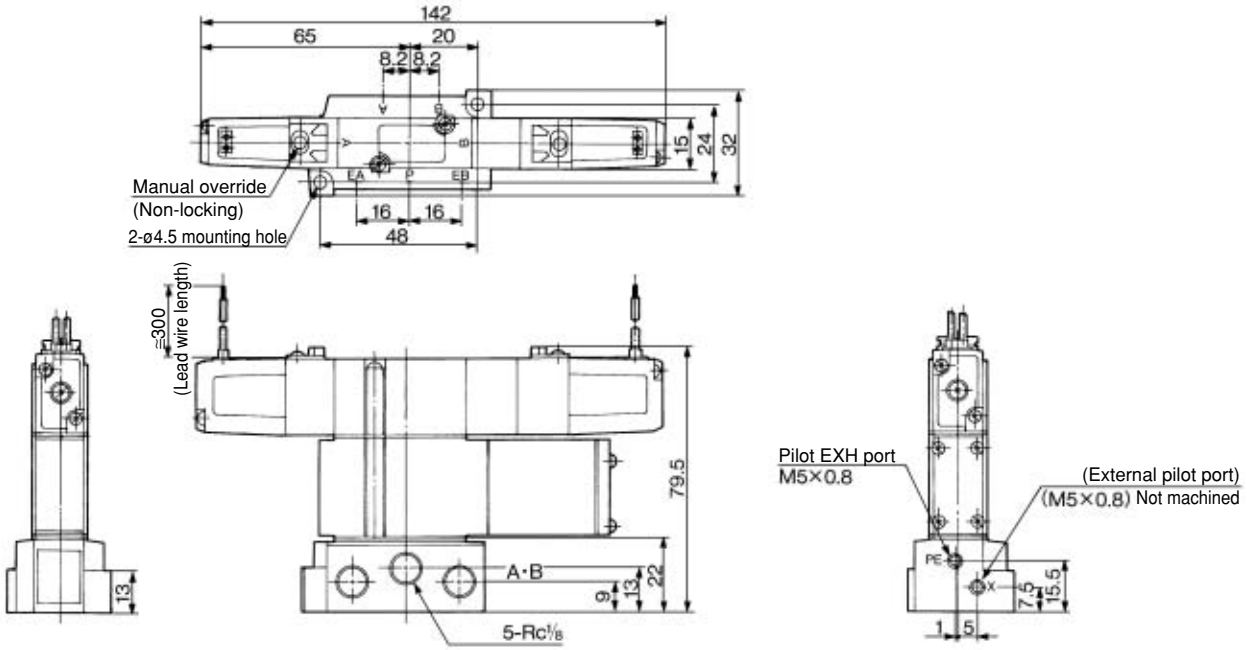
2 position double: VZS2250-□D(Z)-01
3 position closed center: VZS2350-□D(Z)-01
3 position exhaust center: VZS2450-□D(Z)-01
3 position pressure center: VZS2550-□D(Z)-01



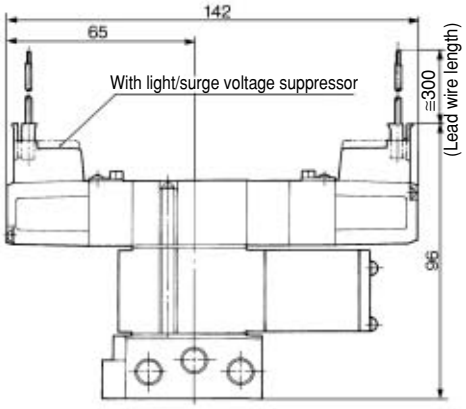
∗ Other dimensions are the same as the grommet type.

Non Plug-in 3 position double check

Grommet: VZS2650-□G/H(S)-01

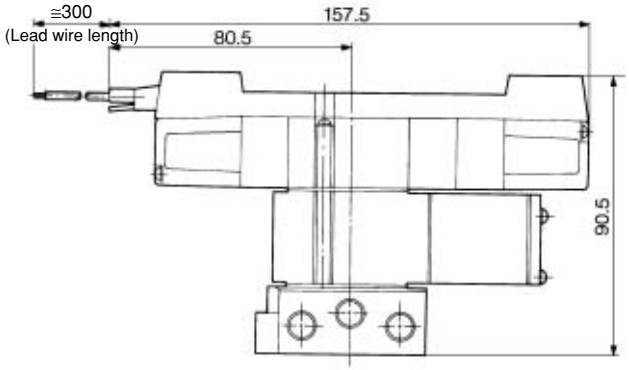


L plug connector: VZS2650-□L(Z)-01



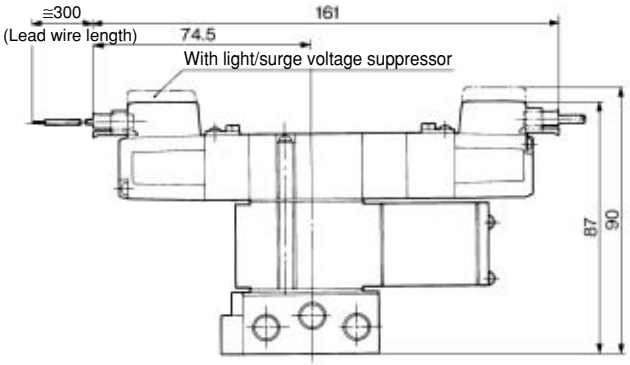
∗ Other dimensions are the same as the grommet type.

K plug connector: VZS2650-□KZ-01



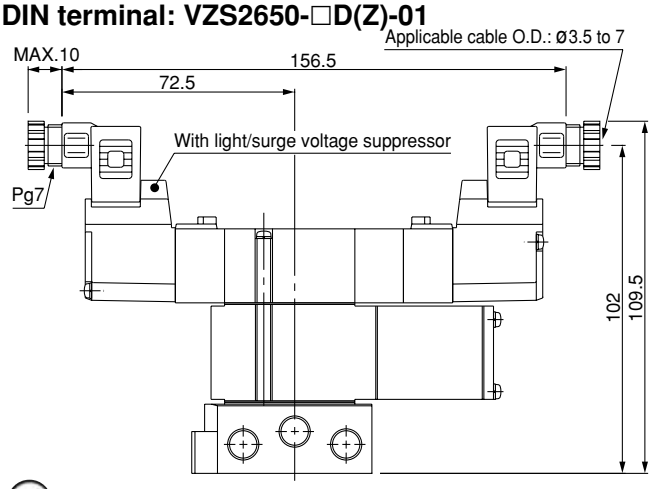
∗ Other dimensions are the same as the grommet type.

M plug connector: VZS2650-□M(Z)-01



∗ Other dimensions are the same as the grommet type.

DIN terminal: VZS2650-□D(Z)-01



∗ Other dimensions are the same as the grommet type.

Manifold Specifications

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

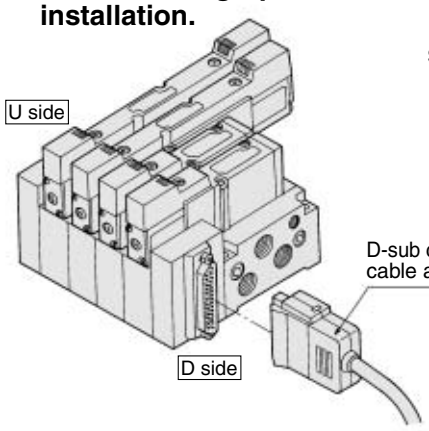
Refer to page 3-7-4 for wiring specifications.

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

VV5ZS2 – 51F D – 06 1 – 01

Series VZS2000 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.

Symbol

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

Port size

01	Rc 1/8
C4	Embedded type One-touch fitting Applicable tubing O.D.: ø4
C6	Embedded type One-touch fitting Applicable tubing O.D.: ø6

Thread type

Standard	Nil	Rc
Option	N	NPT
	T	NPTF
	F	G

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

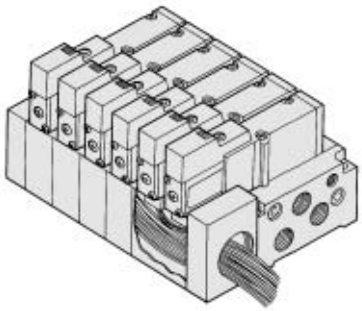
Refer to page 3-7-4 for wiring specifications.

- **The insert plug is attached to the manifold block and lead wire is plugged in with valve side. Please connect with corresponding power side.**

VV5ZS2 – 51G – 06 1 – C6

Series VZS2000 Manifold

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



Stations

02	2 stations
⋮	⋮
15 *	15 stations

* Max. 15 stations.

Symbol

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

Port size

01	Rc 1/8
C4	Embedded type One-touch fitting Applicable tubing O.D.: ø4
C6	Embedded type One-touch fitting Applicable tubing O.D.: ø6

Thread type

Standard	Nil	Rc
Option	N	NPT
	T	NPTF
	F	G

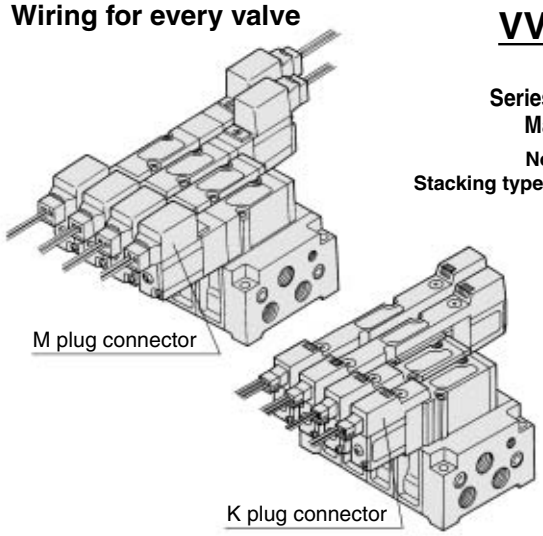
Non Plug-in Type: Stacking Type Manifold Base

- **Wiring for every valve**

VV5ZS2 – 51 – 06 1 – C4

Series VZS2000 Manifold

Non plug-in type Stacking type manifold base



Stations

02	2 stations
⋮	⋮
24 *	24 stations

* Max. 24 stations.

Symbol

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

Port size

01	Rc 1/8
C4	Embedded type One-touch fitting Applicable tubing O.D.: ø4
C6	Embedded type One-touch fitting Applicable tubing O.D.: ø6

Thread type

Standard	Nil	Rc
Option	N	NPT
	T	NPTF
	F	G

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 solenoid valve
Plug-in type VV5ZS2-51F VV5ZS2-51G	• With D-sub connector • With attachment plug lead wire	Side	1/8	1/8	2 to 16* stations	VZS2□50-□FZ
Non plug-in type VV5ZS2-51	• Grommet • L plug connector • M plug connector • K plug connector • DIN terminal			C4 C6	2 to 24 stations	VZS2□50-□ G L M KZ D

* With attachment plug lead wire: 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)]	1.3	1.4	1.4	1.4	1.4
	b	0.12	0.12	0.12	0.12	0.14
	Cv	0.31	0.33	0.33	0.35	0.36
4/2 → 5/3 (A/B → R1/R2)	C [dm³/(s·bar)]	1.5	1.6	1.6	1.6	1.5
	b	0.12	0.11	0.11	0.10	0.11
	Cv	0.37	0.36	0.36	0.36	0.35

How to Order Manifold Assembly

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

(Example)

- Plug-in type (At 6 stations)
  (Manifold base) VV5ZS2-51FD-061-01···1
  (2 position single) VZS2150-5FZ·····3
  (2 position double) VZS2250-5FZ ·····2
  (Blanking plate) VVZS2000-10A-1 ·····1

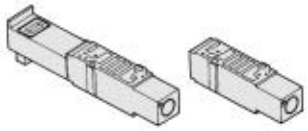
- Non plug-in type (At 6 stations)
  (Manifold base) VV5ZS2-51-061-01····1
  (2 position single) VZS2150-5G ·····5
  (3 position exhaust center) VZS2450-5G···1
  (Individual EXH spacer) VVZS2000-R-01-2···1

Manifold Option Parts Assembly

Individual SUP spacer

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

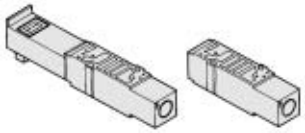
Body type		Plug-in type	Non plug-in type
Part no.	Rc 1/8	VVZS2000-P-01-1	VVZS2000-P-01-2



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 1/8	VVZS2000-R-01-1	VVZS2000-R-01-2



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.	VVZS2000-26A	

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.	VVZS2000-26A	

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.	VVZS2000-10A-1	VVZS2000-10A-2

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.

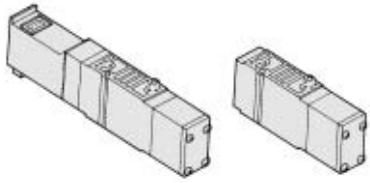
Body type	Plug-in type	Non plug-in type
Part no.	ARBZS2000-00-P-1	ARBZS2000-00-P-2

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.

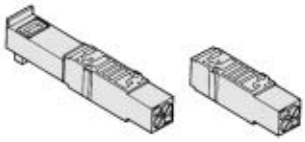
Body type	Plug-in type	Non plug-in type
Part no.	VVZS2000-22A-1	VVZS2000-22A-2



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.	VVZS2000-20A-1	VVZS2000-20A-2

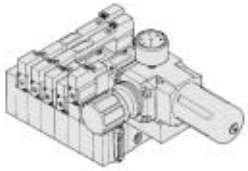


Manifold Option

With control unit

Plug-in type/Non plug-in type

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

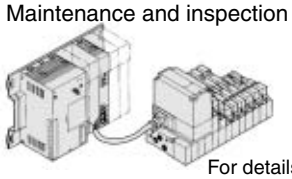


For details, refer to pages 3-7-19 and 3-7-20.

With serial interface unit for serial transmission

Plug-in type

- Solenoid valve wiring process reduced considerably.
- Disperse installation possible.
  Manifold solenoid valve: 32 stations (512 point) max.
- Maintenance and inspection are easy.

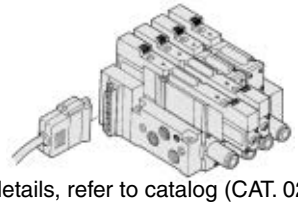


For details, refer to catalog (CAT. 02-6, 7, 8, 9).

With coaxial fitting

Plug-in type/Non plug-in type

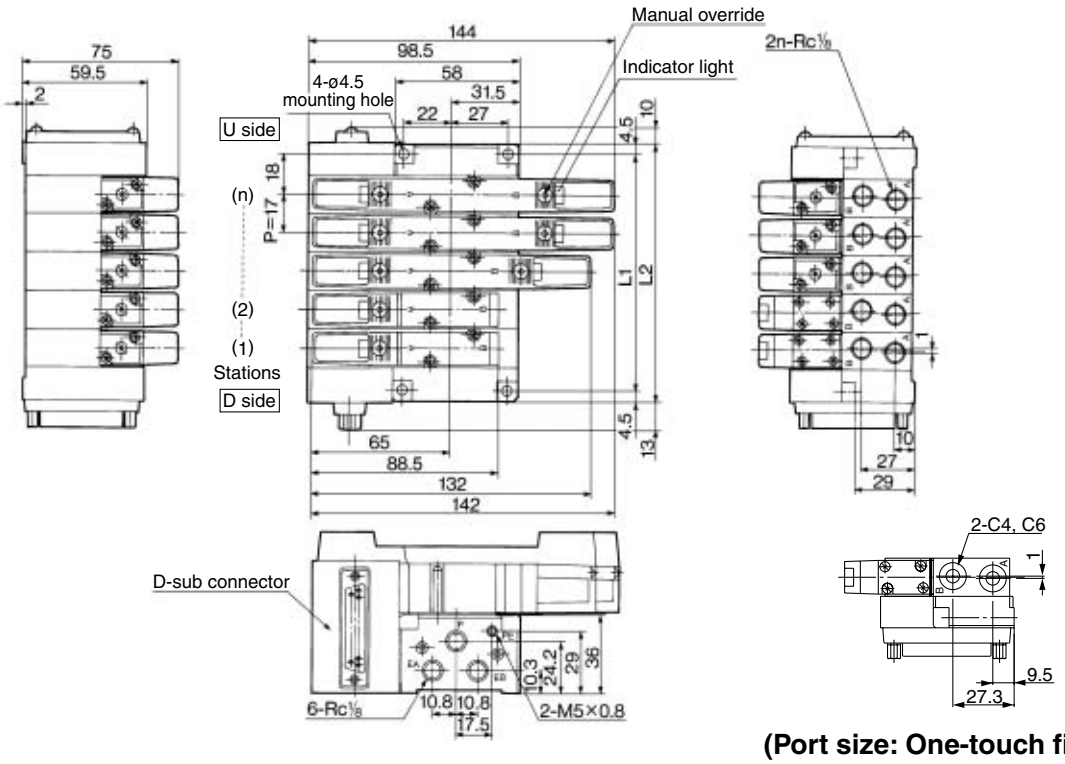
- Piping man-hours reduced
- One-touch piping
- 1/2 the number of tubes



For details, refer to catalog (CAT. 02-5).

Manifold Plug-in type

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

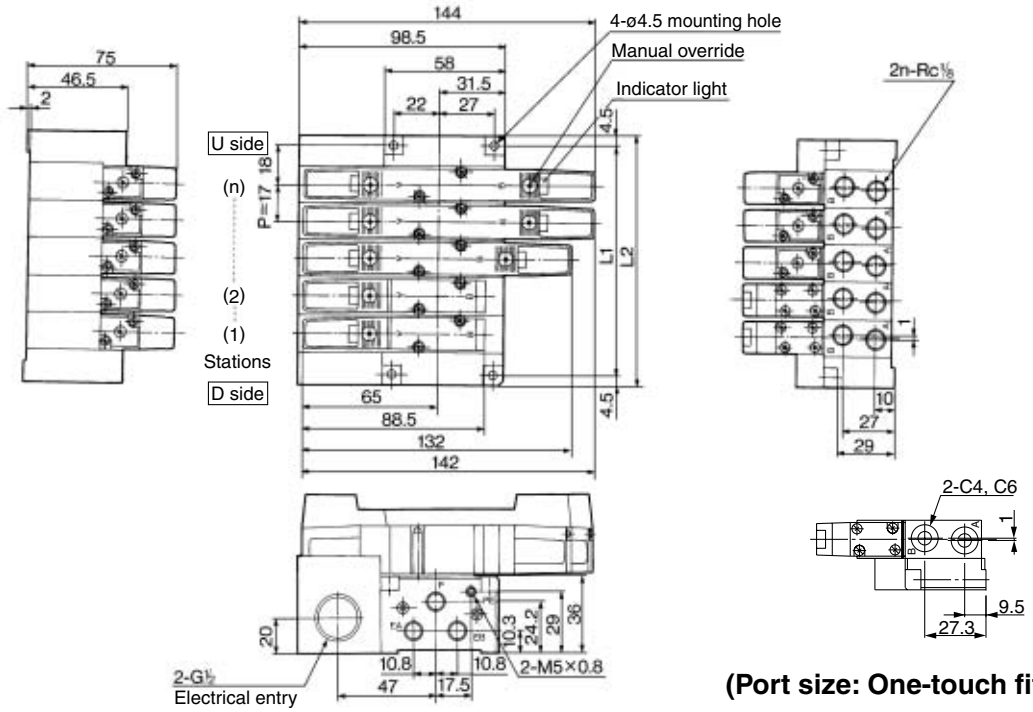


(Port size: One-touch fitting type)

n: Stations

L \ Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Formula
L1	53	70	87	104	121	138	155	172	189	206	223	240	257	274	291	17n + 19
L2	62	79	96	113	130	147	164	181	198	215	232	249	266	283	300	17n + 28

With attachment plug lead wire: VV5ZS2-51G- Station 1- Port size



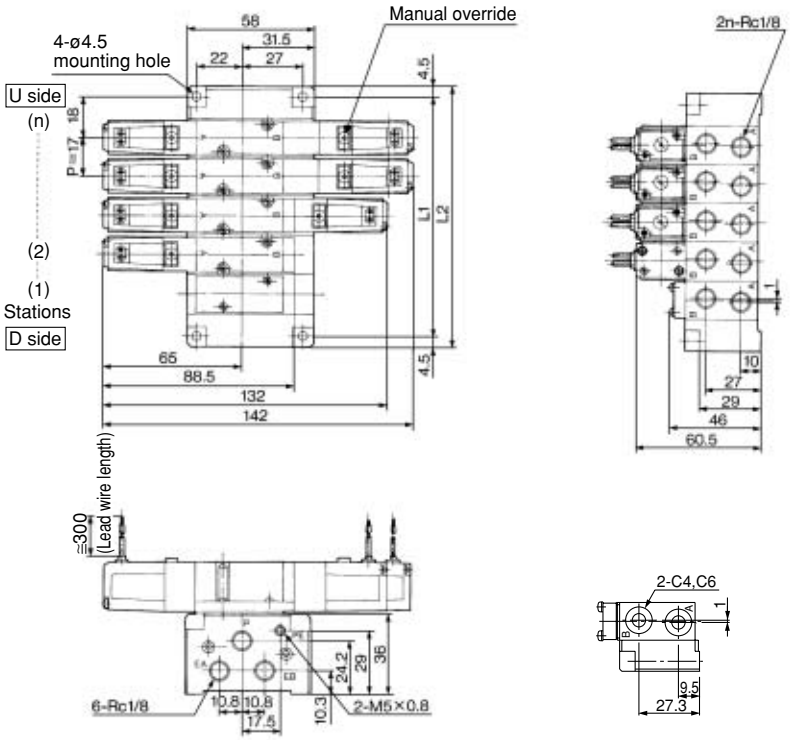
(Port size: One-touch fitting type)

n: Stations

L \ Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Formula
L1	53	70	87	104	121	138	155	172	189	206	223	240	257	274	17n + 19
L2	62	79	96	113	130	147	164	181	198	215	232	249	266	283	17n + 28

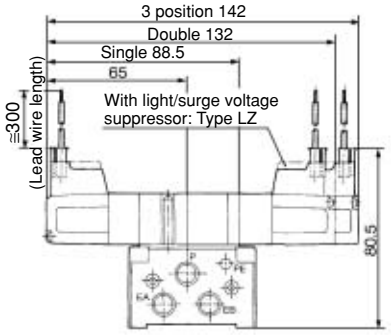
Manifold Non plug-in type

VV5ZS2-51- Station 1- Port size
Grommet (G)

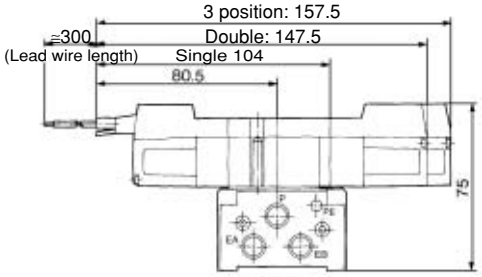


(Port size: One-touch fitting type)

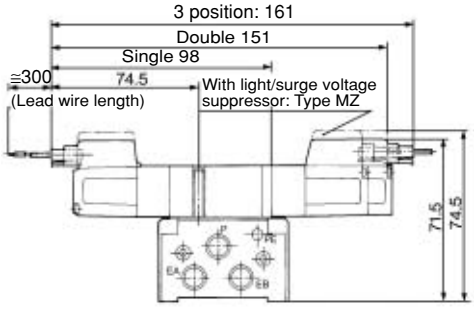
Plug connector (L)



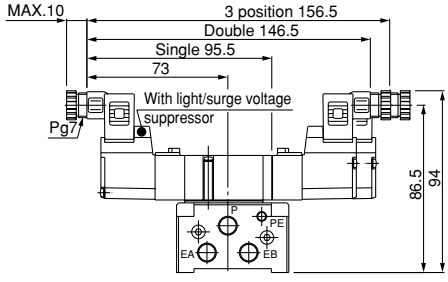
Plug connector (K)



Plug connector (M)



DIN terminal (D)

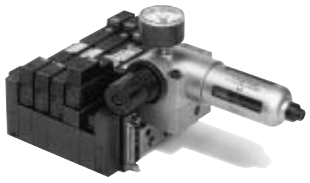


n: Stations

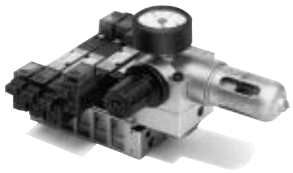
L \ Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Formula
L_1	53	70	87	104	121	138	155	172	189	206	223	240	257	274	291	308	325	342	359	376	393	410	427	17n + 19
L_2	62	79	96	113	130	147	164	181	198	215	232	249	266	283	300	317	334	351	368	385	402	419	436	17n + 28

Manifold with Control Unit

- **Control unit (Filter, Regulator, Pressure switch, Air release valve) are all standardized to 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 4(A), 2(B) port	Port size 1(P), 5(R1) 3 (R2)	Port size 4(A) 2(B)	Stations	Applicable valve model
Plug-in type VV5ZS2-51F VV5ZS2-51G	• With D-sub connector • With attachment plug lead wire	Side	Rc 1/8	Rc 1/8	2 to 16* stations	VZS2□50-□FZ
Non plug-in type VV5ZS2-51	• Grommet • L plug connector • M plug connector • K plug connector	Side	Rc 1/8	C4 C6	2 to 24 stations	VZS2□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	10 μm
Regulator	
Set pressure (Outlet pressure)	0.05 to 0.7 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	MP2-1 (With control unit/Filter regulator)
	VVZS2000-15A (With pressure switch)
	VVZS2000-24A-10-1/2 (Release valve)
Filter element	XTO-1889-10
Pressure switch	Plug-in type VVZS2000-14A
	Non plug-in type IS1000-00-X204

VK VZ VF VFR VP4 VZS VFS VS4 VQ7 EVS VFN

How to Order

VV5ZS2 – 51F D – 08 1 – 01 – AP 5

Series VZS2000 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		
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

Port size

01	Rc 1/8
C4	Embedded type One-touch fitting Applicable tubing O.D.: ø4
C6	Embedded type One-touch fitting Applicable tubing O.D.: ø6

Thread type

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

Control unit type

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.

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.

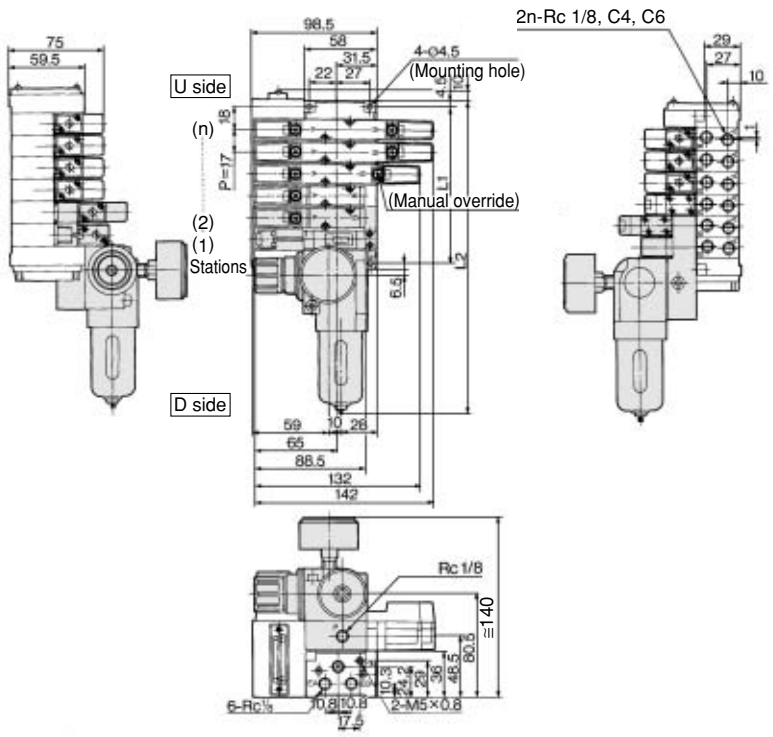
Please indicate manifold base type, corresponding valve, and option parts.

<Example>
- Plug-in base type with D-sub connector
  (Manifold base) VV5ZS2-51FD-091-01-MP5···· 1
  (2 position single) VZS2150-5FZ····· 5
  (2 position double) VZS2250-5FZ····· 2
  * 2 stations are needed to mount control unit.
- Non plug-in type
  (Manifold base) VV5ZS2-51-071-01-M5····· 1
  (2 position single) VZS2150-5MZ····· 5
  * 2 stations are needed to mount control unit.

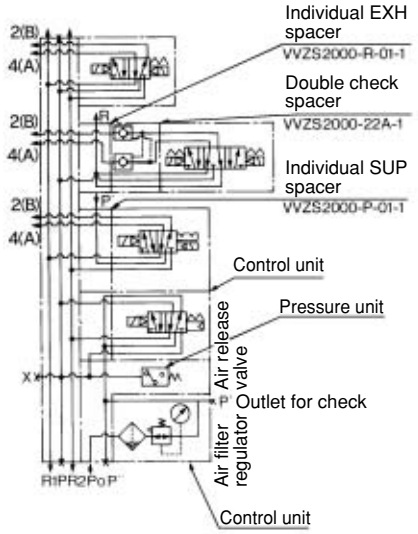
Manifold with Control Unit Plug-in type, Non plug-in type

Plug-in base type:

VV5ZS2-51F□- Station 1- Port size - Classification of control unit



Example for manifold

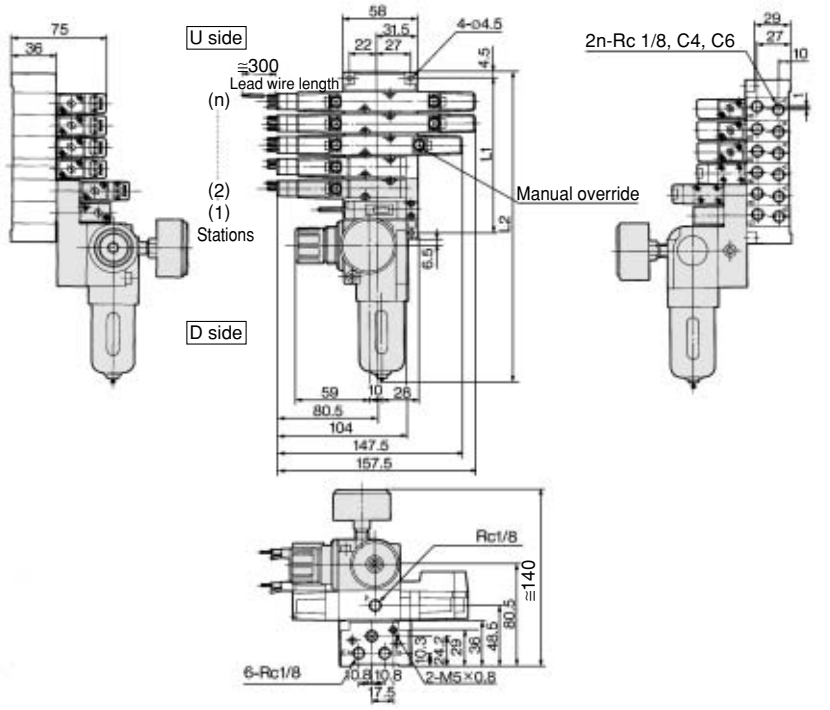


n: Stations

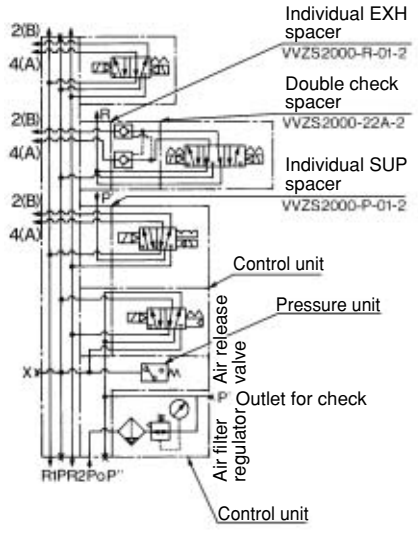
L \ Stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Formula
L1	70	87	104	121	138	155	172	189	206	223	240	257	274	291	17n + 19
L2 (MP)	195.5	212.5	229.5	246.5	263.5	280.5	297.5	314.5	331.5	348.5	365.5	382.5	399.5	416.5	17n + 144.5
L2 (AP)	215.5	232.5	249.5	266.5	283.5	300.5	317.5	334.5	351.5	368.5	385.5	402.5	419.5	436.5	17n + 164.5

Non plug-in base type:

VV5ZS2-51- Station 1- Port size - Classification of control unit



Example for manifold

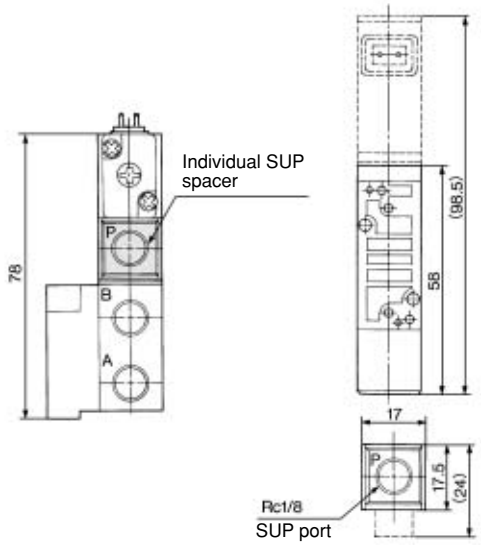


n: Stations

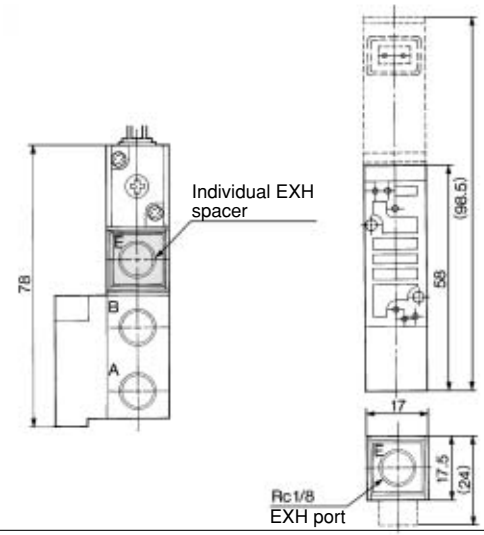
L \ Stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Formula
L1	70	87	104	121	138	155	172	189	206	223	240	257	274	291	308	325	342	359	376	393	410	427	17n + 19
L2 (MP)	195.5	212.5	229.5	246.5	263.5	280.5	297.5	314.5	331.5	348.5	365.5	382.5	399.5	416.5	433.5	450.5	467.5	484.5	501.5	518.5	535.5	552.5	17n + 144.5
L2 (AP)	215.5	232.5	249.5	266.5	283.5	300.5	317.5	334.5	351.5	368.5	385.5	402.5	419.5	436.5	453.5	470.5	487.5	504.5	521.5	538.5	555.5	572.5	17n + 164.5

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

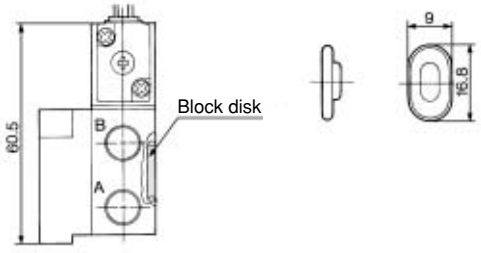
Individual SUP spacer
Plug-in type: VVZS2000-P-01-1
Non plug-in type: VVZS-2000-P-01-2



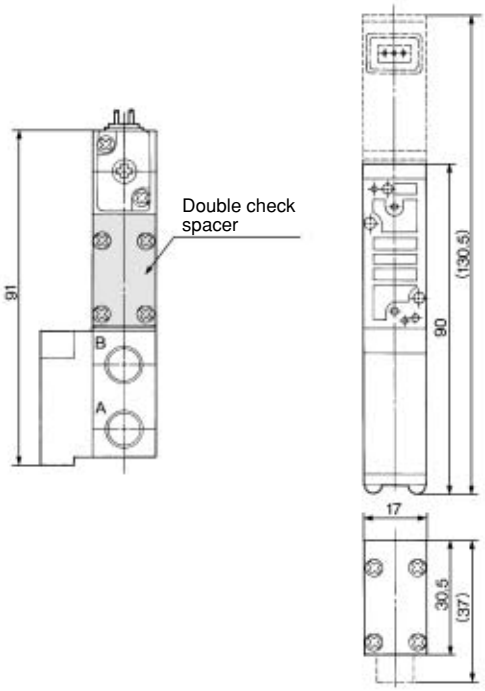
Individual EXH spacer
Plug-in type: VVZS2000-R-01-1
Non plug-in type: VVZS2000-R-01-2



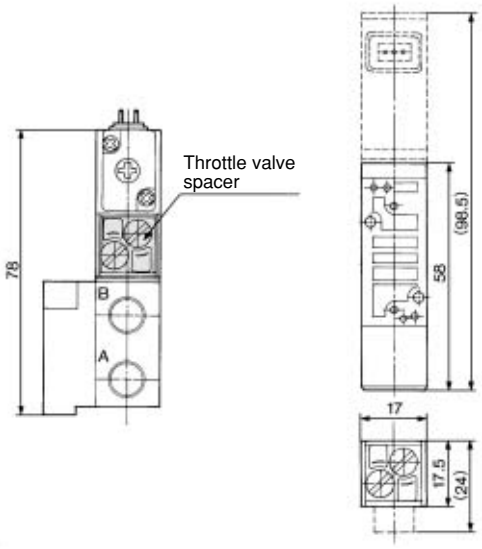
SUP block disk
EXH blocking plate : VVZS2000-26A



Double check spacer
Plug-in type: VVZS2000-22A-1
Non plug-in type: VVZS2000-22A-2

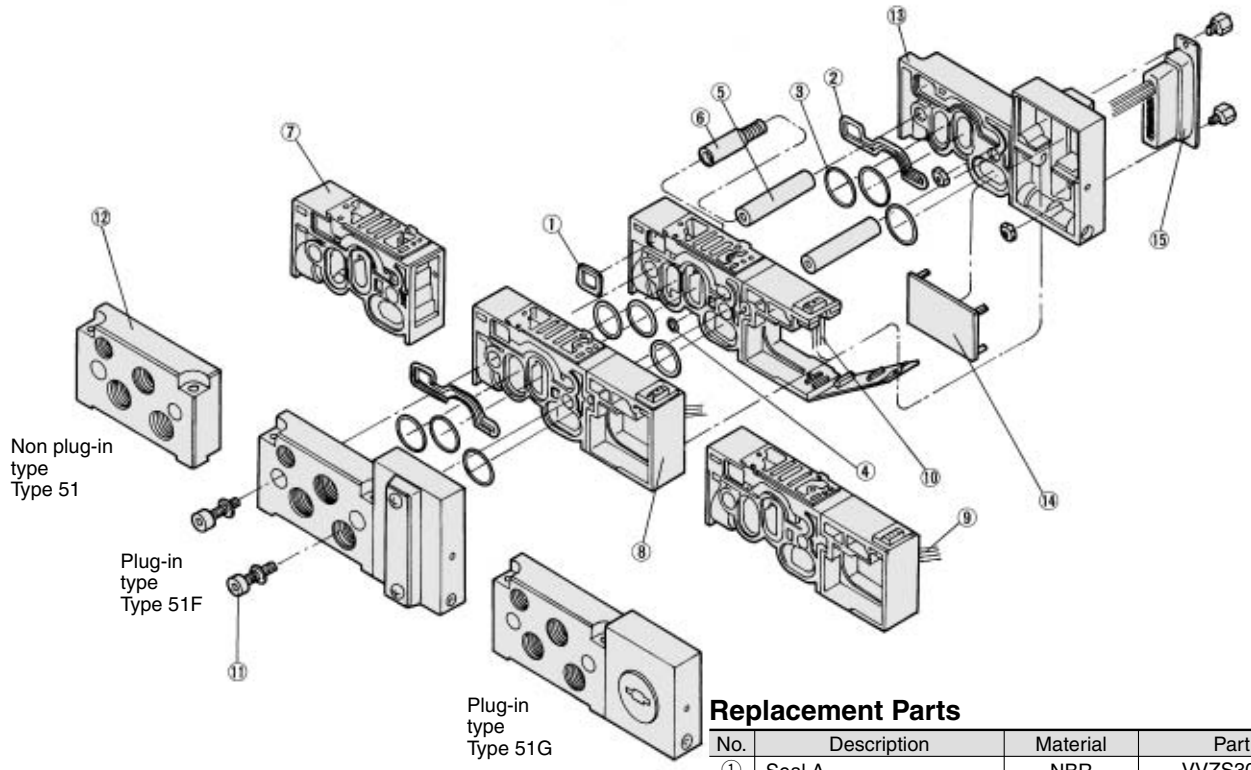


Throttle valve spacer
Plug-in type: VVZS2000-20A-1
Non plug-in type: VVZS2000-20A-2



( ): Plug-in base type

Exploded View of Manifold



Replacement Parts

No.	Description	Material	Part no.
①	Seal A	NBR	VVZS3000-4-1
②	Seal B	NBR	VVZS2000-4
③	O-ring	NBR	14.4 x 12 x 1.2
④	O-ring	NBR	7.5 x 4.5 x 1.5
⑤	Tie-rod	Carbon steel	VVZS2000-11-n (1)
⑥	Tie-rod for station addition	Carbon steel	VVZS2000-11-1-1 (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	VVZS2000-1A-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 type: Type 51	VVZS2000-1A-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*	VVZS2000-1A-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, -C4: Embedded type One-touch fitting for ø4, -C6: Embedded type One-touch fitting for ø6.
Note 2) Refer to page 3-7-5 for the model of D-sub connector type manifold block assembly.

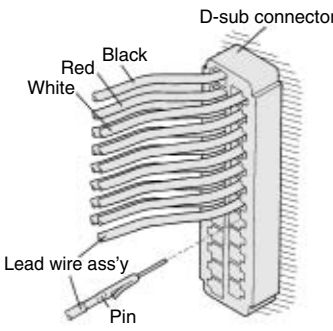
How to Increase Manifold Base

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.

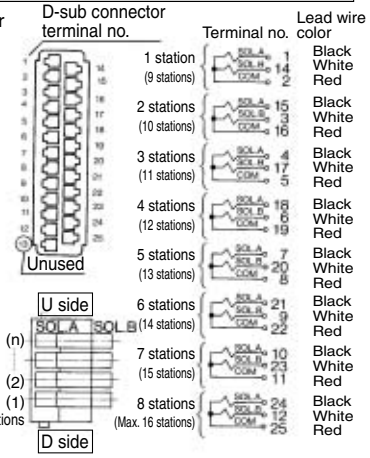
Note 1) Be careful that the packing and the O-ring do not fall out of the groove.
Note 2) The tightening torque of bolt ⑪ should be 2 to 2.2 N.

Insertion Method for Pin of D-Sub Connector



Confirm an insertion of the lead wire ass'y 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^{D}_{U}). 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).