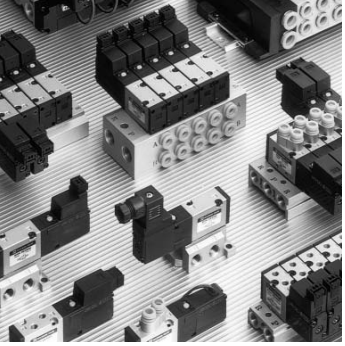


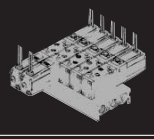
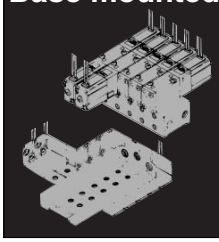
4/5 Port Solenoid Valve
Rubber Seal
Series VZ1000/3000/5000

Series Variations

Series	Sonic conductance C [dm³/(s·bar)]	Type of actuation	Voltage	Electrical entry	With light/surge voltage suppressor (Option) Note)	Manual override	
Body Ported							
VZ1000	Effective area 0.9 mm² {4 → 3 (A → R)}	2 position single	(Standard) 100 VAC 50/60 Hz, 200 VAC 50/60 Hz, 24 VDC (Option) 24 VAC 50/60 Hz, 48 VAC 50/60 Hz, 110 VAC 50/60 Hz, 220 VAC 50/60 Hz, 6 VDC, 12 VDC, 48 VDC	• Grommet (G) • L plug connector (M) • M plug connector (M) • DIN terminal (D) • Plug-in (F) (Manifold use only.)	• With surge voltage suppressor (G)(L) (M)(D) • With light/surge voltage suppressor (L)(M) (D)(F)	• Non-locking push type • Non-locking push type • Locking B type (Slotted) • Locking C type (Manual)	Page 3-3-9
VZ3000	0.47 {4/2 → 5/3 (A/B → EA/EB)}	2 position single 2 position double 3 position closed center					Page 3-3-16
VZ5000	2.4 {4/2 → 5/3 (A/B → EA/EB)}						Page 3-3-53
Base Mounted							
VZ3000	0.83 {4/2 → 5/3 (A/B → EA/EB)}	3 position exhaust center					Page 3-3-29
VZ5000	2.9 {4/2 → 5/3 (A/B → EA/EB)}	3 position pressure center					Page 3-3-67

Note) Plug-in DIN rail manifold and solenoid valve for flat ribbon cable manifold are with light/surge voltage suppressor.

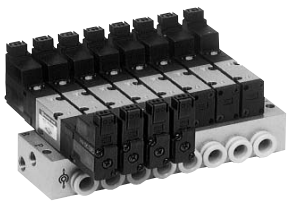
Manifold Variations

Valve series		A, B port location	Manifold Standard								
			A, B port size					Manifold option			
			M5 x 0.8	Rc 1/8	With One-touch fitting			Individual SUP spacer assembly	Individual EXH spacer assembly	Interface regulator	
					Applicable tubing O.D.			(P)	R1 R2		
					ø4	ø6	ø8				
Body ported 	VZ1000	Top	●	—	—	—	—	●	●	—	
	VZ3000		●	—	●	●	—	●	●	—	
	VZ5000		—	●	—	●	●	—	●	—	
Base mounted 	VZ3000	Side	●	—	●	●	—	●	●	● (P port regulation)	
		Bottom	●	—	—	—	—				
	VZ5000	Side	—	●	—	●	●	●	●	● (P port regulation)	
		Bottom	—	●	—	—	—				

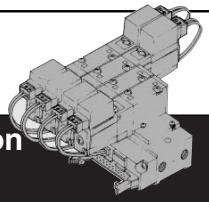
Related Products:

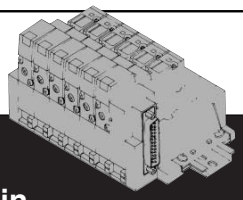
Coaxial Tubing System

- The number of tubes is halved.
- Easy piping
- Piping process reduced.
- Applicable for cylinder operating system (to ø63)
- Prevention of wrong piping



∗ For detailed specifications, please contact SMC.





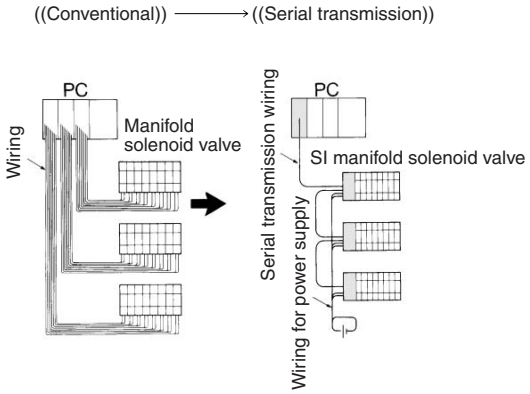
	Flat Ribbon Cable Manifold					DIN Rail Manifold Non Plug-in/Plug-in					
	A, B port size					A, B port size				Manifold option	
	M5 x 0.8	Rc 1/8	With One-touch fitting Applicable tubing O.D.			M5 x 0.8	With One-touch fitting Applicable tubing O.D.			SUP block disk	EXH block disk
			ø4	ø6	ø8		ø4	ø6	ø8		
	●	—	—	—	—	● Note)	—	—	—	●	●
	●	—	●	●	—	—	—	—	—	—	—
	—	●	—	●	●	—	—	—	—	—	—
	●	—	●	—	—	—	●	●	—	●	●
	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	●	●	●	●
	—	—	—	—	—	—	—	—	—	—	—

Note) Made to Order

Serial Transmission System

Solenoid valve-wiring system available for control PC with one cable.

- **The reduction in labor associated with wiring**
  - Through the adoption of a serial transmission system, the labor associated with wiring can be dramatically reduced.
  - Because a PC host directly establishes serial communication, no parallel wiring will be needed.
- **Applicable for dispersed setting**
  - A small scale distribution of up to 512 points in 16 point increments is possible.
- **Easy maintenance**
  - Due to the reduction in labor associated with wiring, maintenance can be performed easily.



⚠Precautions

Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 3-13-2.

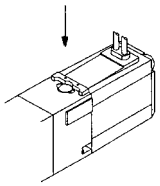
Manual Override Operation

⚠Warning

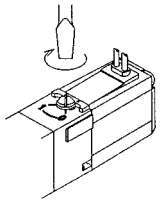
● Manual override is available in 2 types, non-locking push type and locking type.
(Locking type is for VZ3000/5000 only.)

■ Non-locking push type must be pressed in the direction of the arrow.
The locking type must be turned in the direction of the arrow.

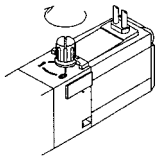
Nil: Non-locking push type



B: Locking type B (Slotted)



C: Locking type C (Manual)



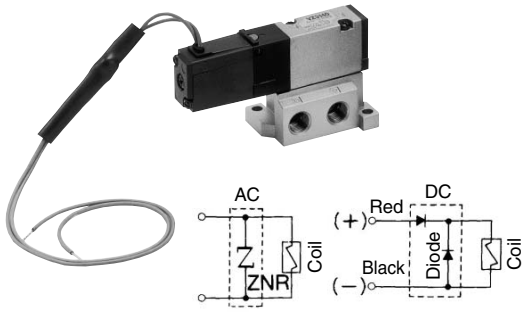
When operating the locking type manually, apply torque of 0.2 N·m or less.

During manual operation, the equipment that is connected will operate. Therefore, make sure there are no hazardous conditions before operation.

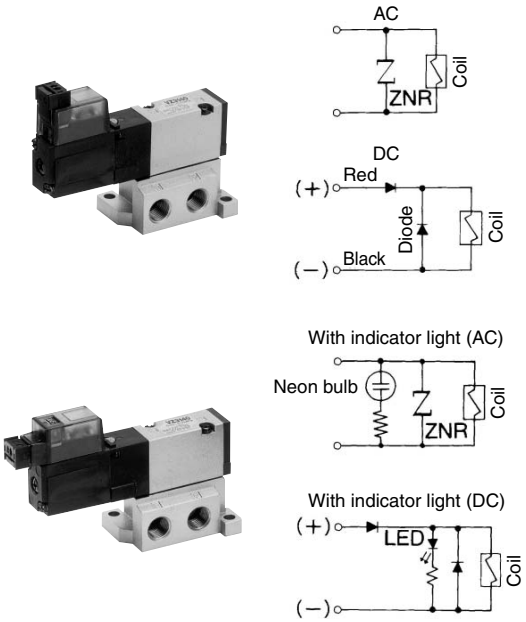
Light/Surge Voltage Suppressor

⚠Caution

Grommet Type

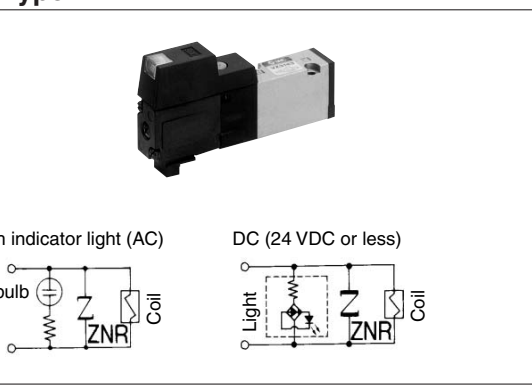


L/M Plug Connector Type



In applications where the supply voltage is DC, correctly connect the – (minus) indications on the connector. Solenoids, whose lead wires have been pre-wired, are positive side red and negative side black.

Plug-in Type

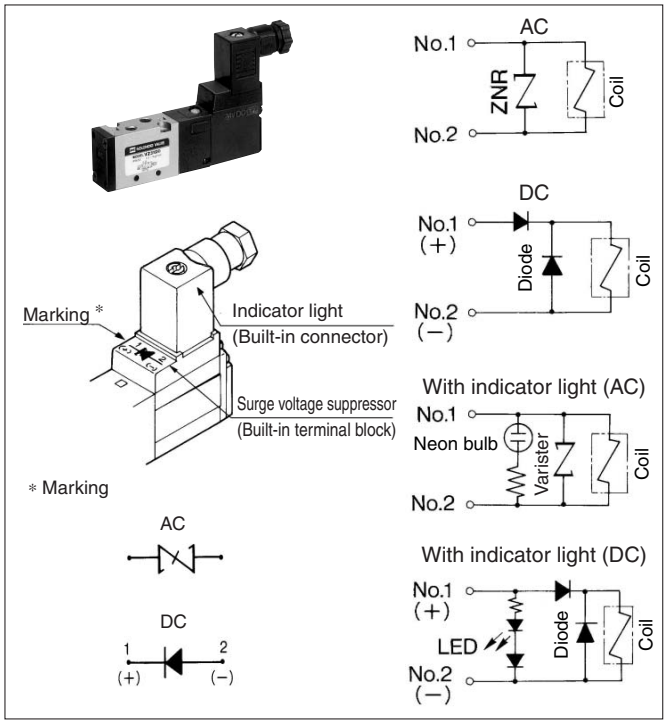


No polarity by adopting non-polar light.

Light/Surge Voltage Suppressor

⚠Caution

DIN terminal



In the case of DC wiring, connect terminal no. 1 of the connector to the positive [+] side, and terminal no. 2 to the negative [–] side. (Refer to the marks on the terminal block.)

Common Exhaust Type for Main and Pilot Valve: VZ3000, VZ5000

Exhaust air from the pilot valve will flow to the main valve exhaust port.

- For use in an environment in which exhaust from the pilot valve is undesirable.
- For use when the intrusion of dust from the surroundings must be prevented. Also, make sure the piping will not restrict the flow from the exhaust port.

Series VZ1000/3000/5000 Mix Mount with 3 Port Valve

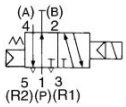
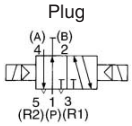
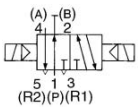
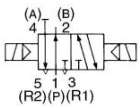
VZ100/300/500 3 port valve can be mounted on VZ1000/3000/5000 manifold. Refer to the following page for "How to Mount".

VZ1000, VZ100·····P. 3-3-9
VZ3000, VZ300·····P. 3-3-16, 3-3-29
VZ5000, VZ500·····P. 3-3-53, 3-3-67

When using a 4/5 port valve as a 3 port valve

VZ1000/3000/5000 are possible for use with normally closed (N.C.) or normally open (N.O.) 3 port valve by closing one of the cylinder ports (A, B) with a plug. However, exhaust port (R) is always open.

It is convenient when a double solenoid 3 port valve is needed.

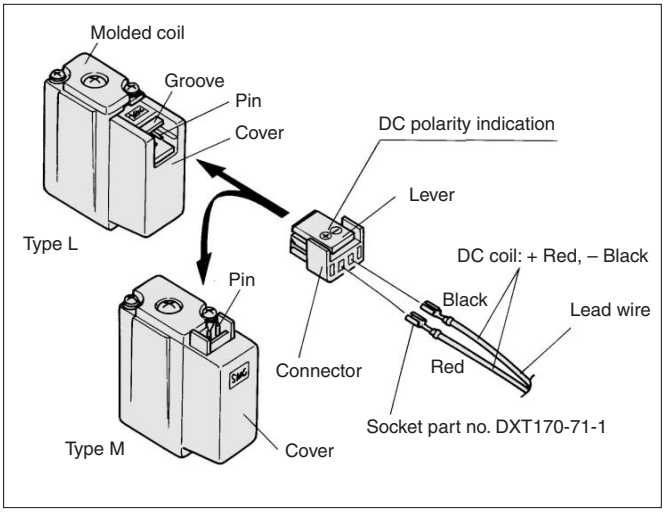
Plug position		2(B) port	4(A) port
Type of actuation		N. C.	N. O.
Number of solenoids	Single	Plug 	Plug 
	Double	Plug 	Plug 

(The above JIS symbol shows series VZ3000.)

How to Use Plug Connector

Attaching and detaching connectors

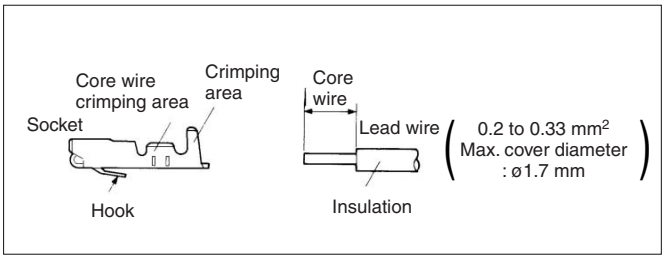
1. To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.
2. To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.



Crimping of lead wires and sockets

Peel 3.2 to 3.7 mm of the tip of lead wire, enter the core wires neatly into a socket and crimp it with a special crimp tool. Be careful so that the cover of lead wire does not enter into the crimping area.

(For special crimping tool, please contact SMC.)



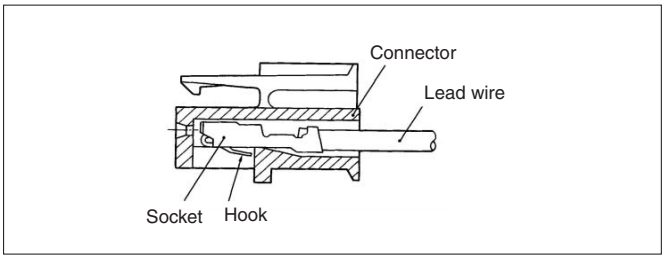
Attaching and detaching lead wires with sockets

1. Attaching

Insert the sockets into the square holes of the connector (with + and – indication) and, continue to push the sockets all the way in until the lock by hooking into the seats in the connector. (When they are pushed in, their hooks open and they are locked automatically.) Then confirm that they are locked by pulling lightly on the lead wires.

2. Detaching

To detach a socket from a connector, pull out the lead wire while pressing the socket's hook with a stick having a thin tip (approx. 1 mm). If the socket will be used again, first spread the hook outward.



Plug Connector Lead Wire Length

⚠Caution

Standard length is 300 mm, but the following lengths are also available.

How to Order Connector Assembly

DXT170−80−□ A−□

Lead wire color

Symbol	Lead wire with socket	Note
Nil	Socket only (2 pcs.)	Without lead wire
1	Blue (2)	For 100 VAC
2	Red (2)	For 200 VAC
3	Gray (2)	Another VAC
4	Red: +, black: −	For DC

Lead wire length

Symbol	Lead wire length L (mm)
Nil	300
6	600
10	1000
15	1500
20	2000
25	2500
30	3000

How to Order

Include the connector assembly part number together with the part number for the plug connector's solenoid valve without connector.

(Example) 2000 mm lead wire length

VZ3220-5MO-M5·····3 pcs.

DXT170-80-4A-20····· 6 pcs.

Connector Assembly with Protective Cover

Connector assembly with protective cover enhances dust protection.

- Effective to prevent short circuit accidents due to penetration of foreign matter into the connector section.
- The material of cover is chloroprene rubber for electricity which is excellent in weathering and electrical insulating properties. But don't splash with cutting oil.
- Simple and unencumbered appearance by adopting round-shaped cord.

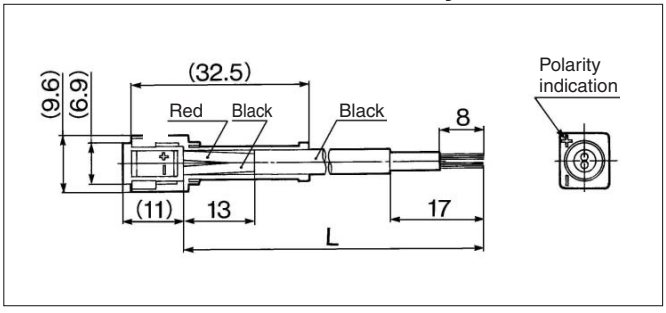
How to Order

DXT170−123−A−□

Lead wire length

Symbol	Lead wire length L (mm)
Nil	300
6	600
10	1000
15	1500
20	2000
25	2500
30	3000

Dimensions: Connector Assembly with Cover



How to Wire DIN Terminal

Connection

1. Loosen the set screw and pull out the connector from the terminal block of the solenoid.
2. Pull out screw and insert a screwdriver to the slit area near the bottom of terminal block to separate block and housing.
3. Loosen the terminal screws (slotted screws) on the terminal block, insert the core of the lead wire into the terminal in accordance with the prescribed connection method, and attach securely with the terminal screws.
4. Tighten the ground nut to secure the wire.

Change of electrical entry (Orientation)

After separating terminal block and housing, the cord entry direction can be changed by attaching the housing in the desired direction (4 directions in 90° increments).

∗ In the case of w/ indicator light, avoid damaging the indicator light with lead wire.

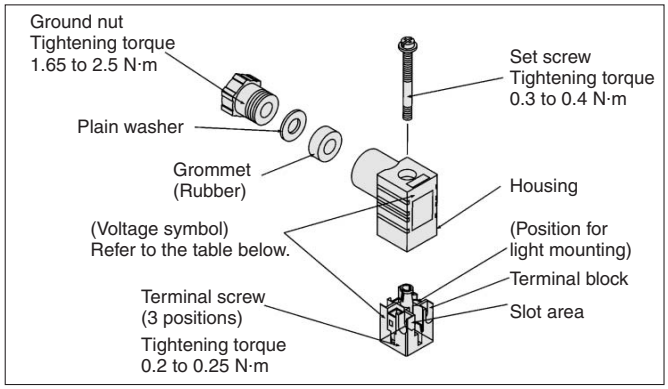
Precautions

Plug a connector in or out vertically, never at an angle.

Applicable cable

O.D.: ø3.5 to ø7

(Reference) 0.5 mm² 2 core and 3 core wires equivalent to JIS C 3306.



DIN Terminal Part no.

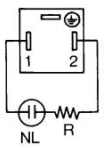
Without indicator light	DXT170-176-1

With Indicator Light

Rated voltage	Voltage symbol	Part no.
100 VAC	100V	DXT170-176-2-01
200 VAC	200V	DXT170-176-2-02
110 VAC	110V	DXT170-176-2-03
220 VAC	220V	DXT170-176-2-04
240 VAC	240V	DXT170-176-2-07
6 VDC	6VD	DXT170-176-3-51
12 VDC	12VD	DXT170-176-3-06
24 VDC	24VD	DXT170-176-3-05
48 VDC	48VD	DXT170-176-3-53

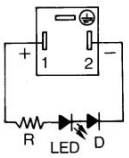
Circuit with Indicator Light

AC circuit diagram



NL: Neon bulb
R: Resistor

DC circuit diagram



D: Protective diode
LED: Emitting diode
R: Resistor

Manifold Electrical Wiring

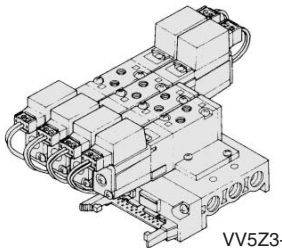
Single B Mount Manifold and Non Plug-in DIN Rail Manifold

Connect individually according to electrical entry of the solenoid valve.

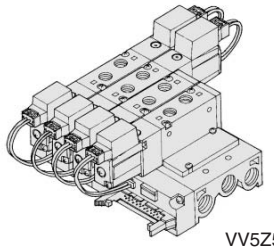
Manifold Electrical Wiring

⚠Caution

Flat Ribbon Cable Manifold



VV5Z3-20P

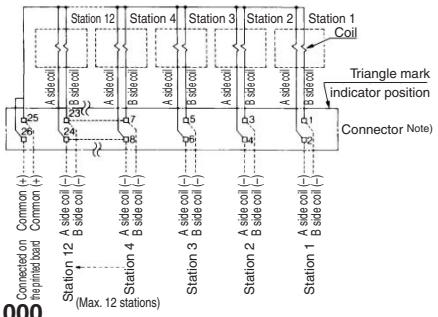


VV5Z5-21P

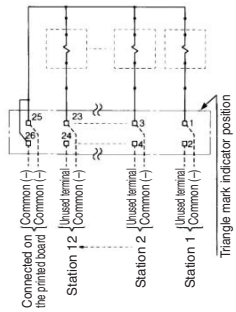
- In the manifold valves, the wiring to the individual valves is provided on a printed circuit board, and the connection to the external wires is consolidated through the use of a flat cable.
- The electrical connection can connect 26 pin MIL connectors with one touch, making it unnecessary to connect wires to the individual valves. As a result, the labor associated is dramatically reduced and a more organized appearance can be achieved.

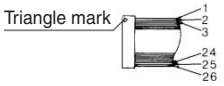
Internal Wiring of Manifold

VZ3000/5000



VZ1000





Reference

Note)
Terminal no. is not indicated on the connector. The terminal no. indicated in the connection schematic of connector, as shown in the reference, means a correlation of 1, 2, 3····26 from the triangle mark side on the flat ribbon cable of connector.

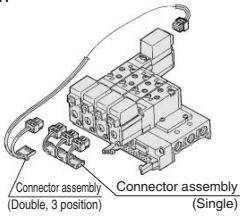
- For more than 5 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid B side.
- The maximum number of stations is 12. If more than 12 stations are required, please consult with SMC.
- The electrical connection is based on positive common [+] specifications. As for negative common [–] specifications, give your instruction to us separately.
- If applicable solenoid valve is VZ3000/5000, pilot valve exhaust style should be common exhaust type for main and pilot valve.

Valve-Connector Assembly No. for Wiring between Units

VZ100/1000 **DXT170 – 127 – □A**

VZ3000/5000 Single **DXT192 – 52 – 1 – □A**

VZ3000/5000 Double, 3 position **DXT192 – 52 – 2 – □A**

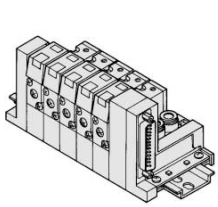


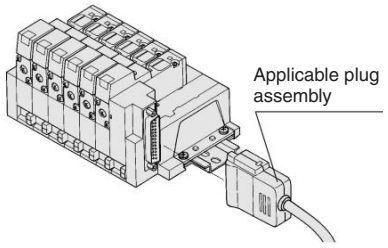
•Lead wire color

Symbol	Color	Note
1	Blue	For 100 VAC
3	Gray	For 110 VAC
4	Red, Blue	For DC

Manifold Electrical Wiring

Plug-in DIN Rail Manifold



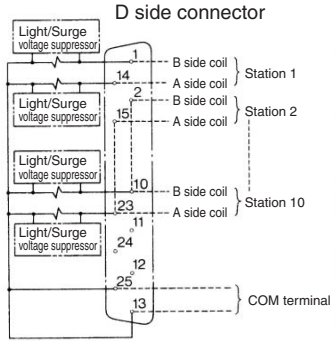


- It is possible to streamline and save labor when wiring by using a D-sub connector with the electrical wiring. The connector is a MIL standard D-sub connector (25 pins), so there is wide interchangeability.

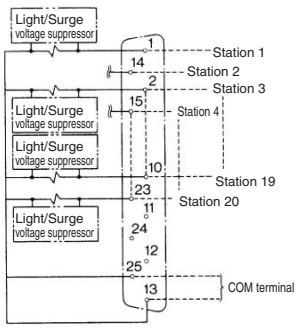
Internal Wiring of Manifold

<One side mount of D-sub connector>

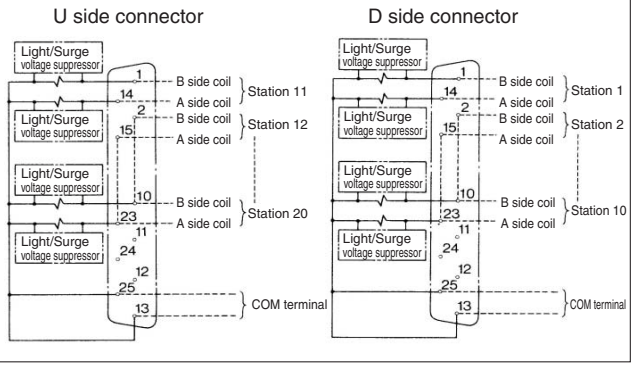
VZ3000/5000



VZ1000



<Both sides mount of D-sub connector: VZ3000/5000 only>



- For more than 5 stations at 1 pc. of D-sub connector, both poles of the common should be wired.
- For single solenoid, connect to the solenoid B side.
- The maximum number of stations is 10 {one side mount of D-sub connector (FD/FU)}, 20 {both sides mount of D-sub connector (FB)}.
- The electrical connection is based on common specifications. Because DC has no polarity, either positive [+] or negative [–] can be used as the common wire.
- Regardless of the D-sub connector mounting position, stations are to be counted from D side as the 1st one.

<Method for securing a DIN rail>

As a rule, a DIN rail must be secured at 5 station intervals as follows: 2 to 5 stations at two locations, 6 to 10 stations at three locations, 11 to 15 stations at four locations, 16 to 20 stations at 5 locations.

Manifold Electrical Wiring

⚠Caution

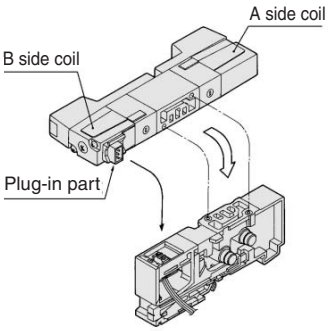
Applicable Plug Assembly (Option)

Assembly part no.	Cable length	Component parts
VVZS3000-21A-1	1.5 m	Plug MIL standard D-sub connector Number of terminals: 25 Cable: 25 cores x 0.3 mm²
VVZS3000-21A-2	3 m	
VVZS3000-21A-3	5 m	
VVZS3000-21A-4	8 m	

Cable Color List of Each Terminal No.

Terminal no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Lead wire color	Black	Brown	Red	Orange	Yellow	Pink	Blue	Purple	Gray	White	White	Yellow	Orange	Yellow	Pink	Blue	Purple	Gray	Orange	Red	Brown	Pink	Gray	Black	White
Dot marking	–	–	–	–	–	–	–	White	Black	Black	Red	Red	Red	Black	Black	White	–	–	Black	White	White	Red	Red	White	–

How to Exchange Plug-in Solenoid Valves



- After loosening the retaining screws of the solenoid valve, pull the solenoid valve body straight out.
  To install the solenoid valve, tighten the retaining screws to the torque given in the table below.

Series	Tightening torque (N·m)
VZ1000	0.32
VZ3000	0.32
VZ5000	0.6

Note) Tightening torque: Staking manifold

How to Order Solenoid Assembly

● **Non plug-in type**

DXT170 – C – 5 – L –

Applicable model

A	Series VZ1000
C	Series VZ3000 / VZ5000

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

Light/Surge voltage suppressor

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

* Indicator light is not available for grommet type.

Electrical entry

G	Grommet (Lead wire: 300 mm)	
H	Grommet (Lead wire: 600 mm)	
L	L plug connector	With lead wire
LN		Without lead wire
LO		Without connector
M	M plug connector	With lead wire
MN		Without lead wire
MO		Without connector
D	DIN terminal	With connector
DO		Without connector

● **Plug-in type**

DXT170 – A – 5 – F

Applicable model

A	Series VZ1000
C	Series VZ3000 / VZ5000

Applicable coil

F	VZ1000 VZ3000/5000 Solenoid B
FN	VZ3000/5000 Solenoid A

Coil rated voltage
Same as non plug-in type

Note) Tightening torque of solenoid assembly mounting screw: 0.32 N·m

Bracket

In the case of Series VZ5000 with bracket, do not use it without bracket.

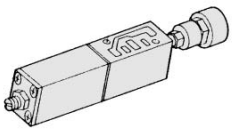
Solenoid Valve Mounting

Install so that there is no slippage of a gasket, nor deformation, then tighten with the following tightening torque.

Model		Thread size	Tightening torque
VZ1000	Bar stock base	M2.5	0.45 N·m
	Stacking type (Type 25) base	M2.5	0.32 N·m
VZ3000	Bar stock base Sub-plate	M2.5	0.45 N·m
	Stacking type (Type 45) base	M2.5	0.32 N·m
VZ5000	Bar stock base Sub-plate	M3	0.8 N·m
	Stacking type (Type 45) base	M3	0.6 N·m

Interface Regulator

Installing an interface regulator between a valve and the manifold base makes it possible to reduce the supply pressure to that valve without changing the supply pressure of the other stations on the manifold.



Specifications

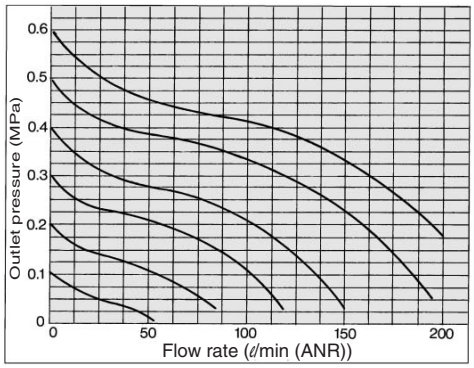
Interface regulator		ARBZ3000	ARBZ5000
Applicable solenoid valve series		VZ3000	VZ5000
Regulating port		P	P
Proof pressure		1.5 MPa	
Maximum operating pressure		1.0 MPa	
Set pressure range		0.05 to 0.7 MPa (1)	
Ambient and fluid temperature		–5 to 60°C (No freezing) (2)	
Port size for connection of pressure gauge		M5 x 0.8	
Weight (kg)		0.06	0.09
Effective area at supply side (mm²) (3) S at P_1 = 0.7 MPa, P_2 = 0.5 MPa	P → A	1.9	5.1
	P → B	2.1	5.8
Effective area at exhaust side (mm²) (3) S at P_2 = 0.5 MPa	A → EA	4.5	12.6
	B → EB	4.5	12.6

Note 1) Set the pressure within the operating pressure range of the solenoid valve.
Note 2) The maximum operating temperature for the valve is 50°C
Note 3) The effective area listed is for a single solenoid 2 position valve mounted on a sub-plate.
Note 4) Interface regulator is only capable of regulating the "P" port pressure.

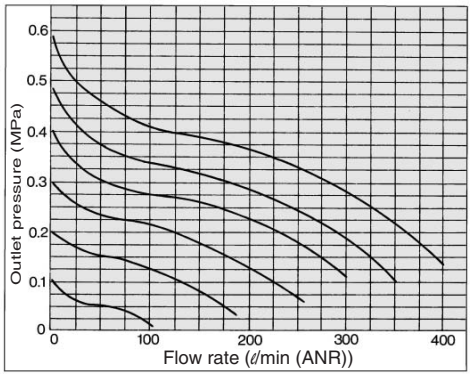
Flow Characteristics

{1(P) → 4(A)} Conditions: Inlet pressure setting 0.7 MPa

- **ARBZ3000-00-P**



- **ARBZ5000-00-P**



How to Calculate the Flow Rate

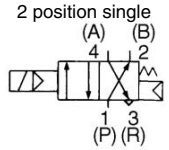
For obtaining the flow rate, refer to page 3-1-10.

4 Port Solenoid Valve
Body Ported
Series VZ1000

How to Order

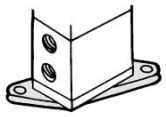
Non plug-in **VZ1120** — **5** (Rated voltage) **L** (Electrical entry) [ ] (Light/Surge voltage suppressor) — **M5** (Port size) — [ ] (Option)

Type of actuation

1	2 position single 

Option

F: With foot bracket



∗ Bracket is not mounted.

Port size

M5 x 0.8

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

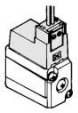
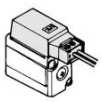
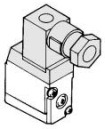
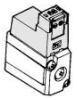
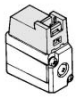
∗ Option

Light/Surge voltage suppressor

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

∗ Not available for “GZ”, “HZ” and “DOZ”

Electrical entry

Grommet	L plug connector	M plug connector		DIN terminal
G: Lead wire length 300 mm	**L**: With lead wire (Length 300 mm)	**M**: With lead wire (Length 300 mm)	**MN**: Without lead wire	**D**: With connector
				
H: Lead wire length 600 mm	**LN**: Without lead wire	**LO**: Without connector	**MO**: Without connector	**DO**: Without connector
				

∗ Type “LN”, “MN”: with 2 sockets.

Refer to pages 3-3-13 to 3-3-16 for manifold use.

Option

Description	Part no.	Note
Foot bracket	DXT170-34-1B	With mounting screw (M3 x 8)

Applicable for cylinder actuation (up to ø16).

Compact size (Width: 15 mm)

Low power consumption: 1.8 W DC

Made to Order Specifications (For details, refer to page 3-3-85.)

Specifications

Valve configuration	Pilot type 4 port solenoid valve
Fluid	Air
Operating pressure range (MPa)	0.15 to 0.7
Ambient and fluid temperature (°C)	–10 to 50 (No freezing. Refer to page 3-13-4.)
Response time (ms) (at the pressure of 0.5 MPa) (1)	15 or less
Max. operating frequency (Hz)	15
Effective area	Refer to the table below.
Lubrication	Not required
Manual override	Non-locking push type
Exhaust throttle	Not available
Mounting orientation	Unrestricted
Shock/Vibration resistance (m/s²) (2)	300/50
Enclosure	Dustproof

Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)

Note 2) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 1000 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)

Solenoid Specifications

∗ Option

Electrical entry			Grommet (G)/(H), L plug connector (L), M plug connector (M), DIN terminal (D)
Coil rated voltage (V)	AC 50/60 Hz		100, 200, 24∗, 48∗, 110∗, 220∗
	DC		24, 6∗, 12∗, 48∗
Allowable voltage fluctuation (%)			–15 to +10% of rated voltage
Power consumption (W) Note) [Current mA]	DC		1.8 (With indicator light 2.1) [24 VDC: 75 (With indicator light 87.5)]
Apparent power (VA) Note) [Current mA]	AC	Inrush	4.5/50 Hz, 4.2/60 Hz [100 VAC: 45/50 Hz, 42/60 Hz; 200 VAC: 22.5/50 Hz, 21/60 Hz]
		Holding	3.5/50 Hz, 3/60 Hz [100 VAC: 35/50 Hz, 30/60 Hz; 200 VAC: 17.5/50 Hz, 15/60 Hz]
Surge voltage suppressor			DC: Diode, AC: ZNR
Indicator light			DC: LED (Red), AC: Neon bulb

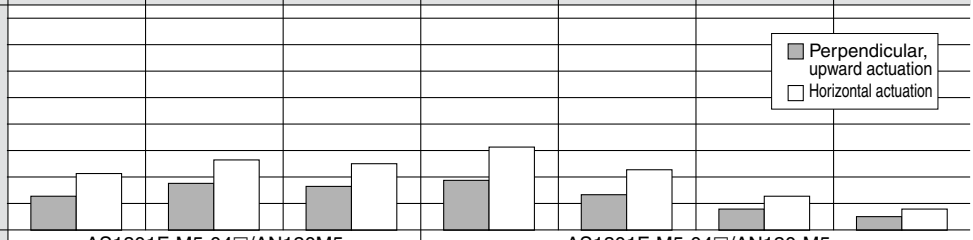
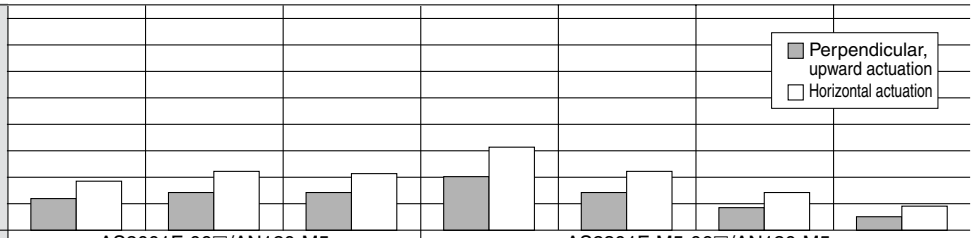
Note) At rated voltage

Effective Area/Weight

Valve model	Type of actuation	Effective area (mm²)		Port size	Weight (g)
VZ1120-□-M5	2 position single solenoid	1 → 4	0.6	M5 x 0.8	90
		2 → 3	1.5		
		1 → 2	1.0		
		4 → 3	0.9		

Cylinder Speed Chart

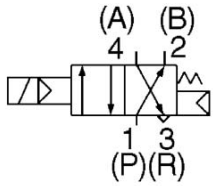
Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

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			
		ø6	ø10	ø16	ø20	ø25	ø32	ø40
VZ1120-□□□-M5□ (Piping: ø4 x 1 m)	800 700 600 500 400 300 200 100							
Speed controller/Silencer		AS1301F-M5-04□/AN120M5			AS1301F-M5-04□/AN120-M5			
VZ1120-□□□-M5□ (Piping: ø6 x 1 m)	800 700 600 500 400 300 200 100							
Speed controller/Silencer		AS2001F-06□/AN120-M5			AS2301F-M5-06□/AN120-M5			

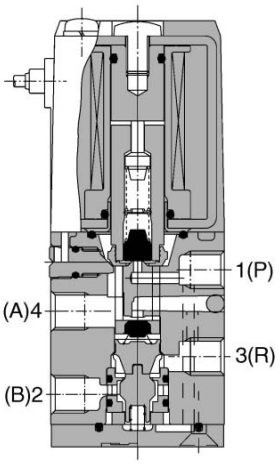
∗ It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
∗ The average velocity of the cylinder is what the stroke is divided by the total stroke time.
∗ Load factor: ((Load weight x 9.8)/Theoretical force) x 100%

VK
VZ
VF
VFR
VP4
VZS
VFS
VS4
VQ7
EVS
VFN

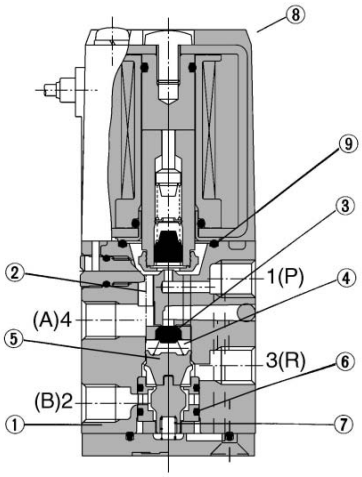
Construction



De-energized



Energized



Component Parts

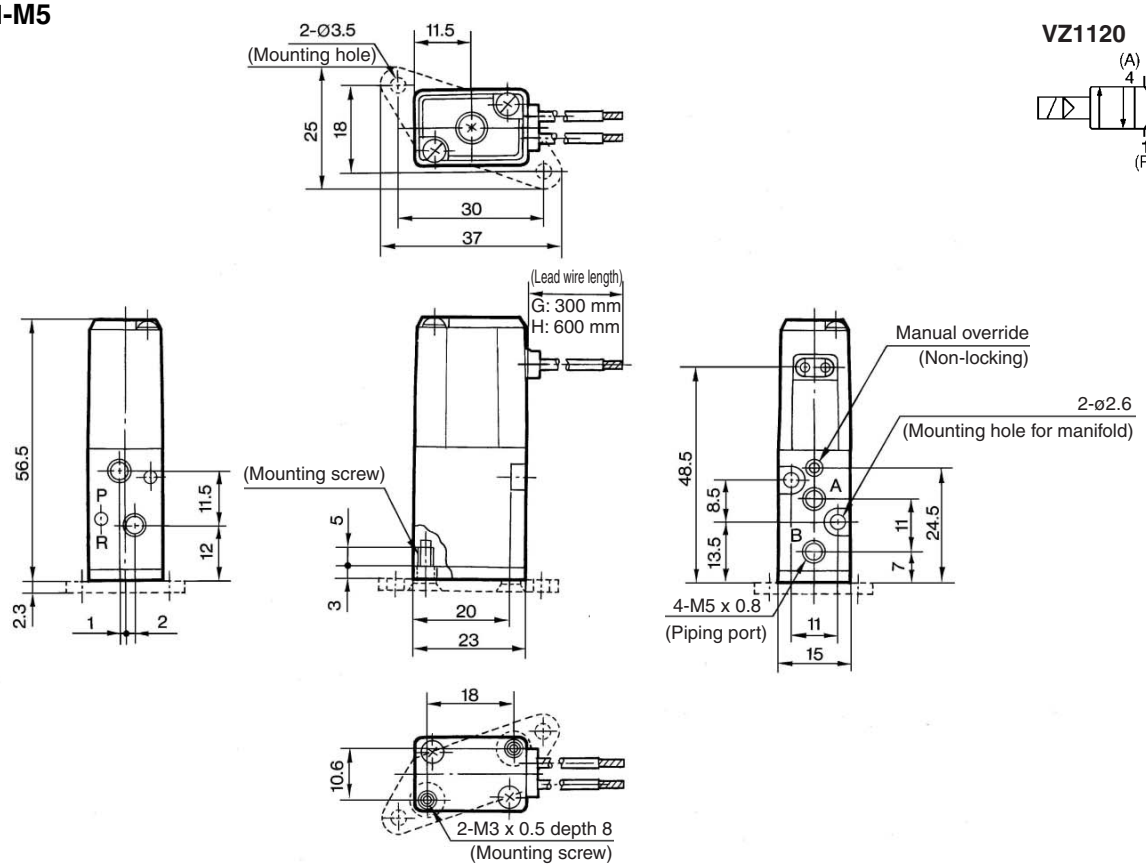
No.	Description	Material	Note
①	Body	ZDC	Platinum silver
②	Push rod	Resin	
③	EXH poppet	NBR	
④	Back up spring	Stainless steel	
⑤	V seal	FKM	
⑥	Retainer assembly	Brass, NBR	
⑦	Poppet spring	Stainless steel	

Replacement Parts

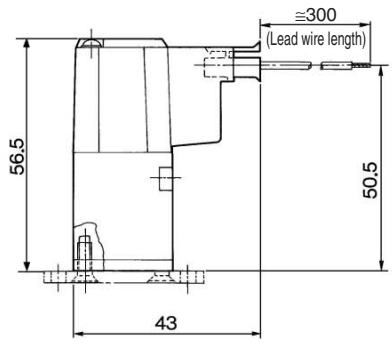
No.	Description	Material	Part no.	Note
⑧	Solenoid assembly	Epoxy/Stainless steel	DXT170-A-□□□	
⑨	O-ring	NBR	13 x 11 x 1	Common with Series VZ$^{3}_{5}$000

2 Position Single

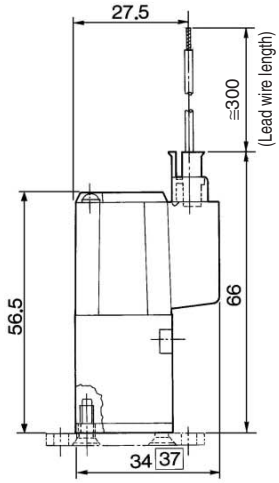
Grommet (G), (H)
VZ1120-□$^{G}_{H}$□-M5



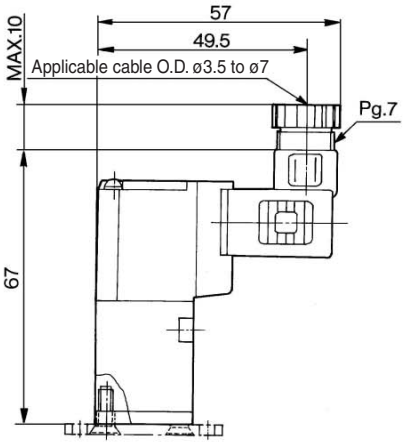
L plug connector (L)
VZ1120-□L□-M5



M plug connector (M)
VZ1120-□M□-M5



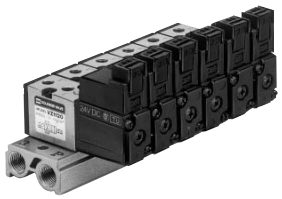
DIN terminal (D)
VZ1120-□D□-M5



□: With light/surge voltage suppressor

Series VZ1000
Manifold Specifications

Manifold Standard



Manifold Specifications

Model		Type 20
Manifold type		Single base/B mount
P(SUP)/R(EXH)		Common SUP/Common EXH
Valve stations		2 to 20 stations
A, B port location		Valve
Port size	1(P), 3(R) port	Rc 1/8
	4(A), 2(B) port	M5 x 0.8
Valve Note) effective area (mm^2)	VZ1120	1 → 4: 0.48, 4 → 3: 0.85

Note) Value at manifold base mounted, single operating

How to Order Manifold

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.
(Example) VV4Z1-20-031·····1 pc. (Manifold base)
∗VZ1120-5G-M5·····2 pcs. (Valve)
∗DXT170-25-1A····· 1 pc. (Blanking plate assembly)
└▸The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Flat Ribbon Cable Manifold

- **One-touch wiring to consolidate connection of external wires.**
- **Clean appearance**
  The flat cable provides wiring on a printed circuit board to the individual valves at the manifold base, enabling the consolidation of external wiring at a touch through a 26 pins MIL connector.

Flat Ribbon Cable Manifold Specifications

Model		Type 21P
Manifold type		Single base/B mount
P(SUP), R(EXH)		Common SUP/Common EXH
Valve stations		3 to 12 stations
A, B port location		Valve
Port size	1(P), 3(R) port	Rc 1/8
	4(A), 2(B) port	M5 x 0.8
Valve (1) effective area (mm^2) (Cv factor)	VZ1120	1 → 4: 0.48, 4 → 3: 0.85
Applicable flat ribbon cable connector		Socket: 26 pins MIL, with strain relief (Conforming to MIL-C-83503)
Internal wiring		+ COM (For – COM specifications, specify them separately.)
Applicable valve model		VZ1120-$^{1}_{3}{}^{}_{5}{}^{}_{6}$MOZ-M5
Rated voltage		100 VAC 50/60 Hz, 110 VAC 50/60 Hz, 24 VDC, 12 VDC

Note 1) Value at manifold base mounted, single operating
Note 2) Withstand voltage specification of wiring unit part is equivalent to JIS C 0704 class 1.

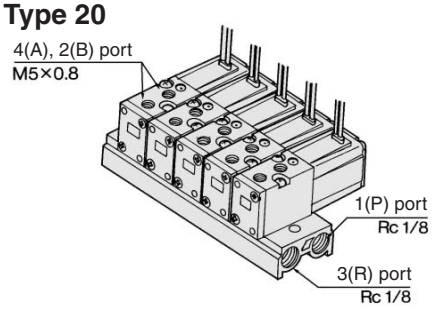
How to Order Manifold

Instruct by specifying the valves, blanking plate assembly and connector assembly to be mounted on the manifold along with the manifold base model no.
(Example) VV4Z1-21P-07·····1 pc. (Manifold base)
∗VZ1120-5MOZ-M5···6 pcs. (Valve)
∗DXT170-25-3A·····1 pc. (Blanking plate assembly)
∗DXT170-127-4A·····6 pcs. (Connector assembly)
└▸The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Common SUP/Common EXH

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 20



How to Order

VV4Z1 − 20 − 05 1 − [ ] [ ]

Stations

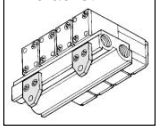
02	2 stations
⋮	⋮
20	20 stations

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Option

F: With foot bracket



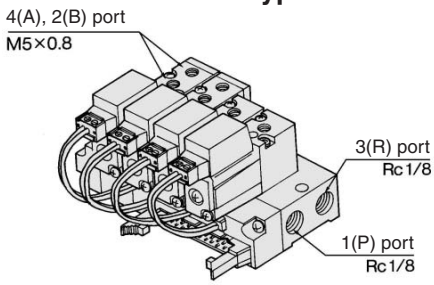
∗ Bracket is not mounted.

Applicable solenoid valve

VZ1120-□(G/L/M/D)-□M5

Applicable blanking plate assembly
DXT170-25-1A
Individual EXH spacer assembly
DXT170-48-1A
Individual SUP spacer assembly
DXT170-44-1A

Flat Ribbon Cable Type 21P



How to Order

VV4Z1 − 21P − 05 [ ]

Stations

03	3 stations
⋮	⋮
12	12 stations

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Applicable solenoid valve

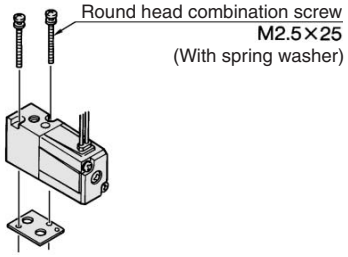
VZ1120-(1/3/5/6)MOZ-M5

Applicable blanking plate assembly
DXT170-25-3A
Applicable connector assembly
DXT170-127-∗A
∗ 1: 100 VAC, 3: 110 VAC, 4: DC

Refer to page 3-3-7 regarding how to order applicable connector assemblies.

Option/Standard Manifold, Flat Ribbon Cable Manifold

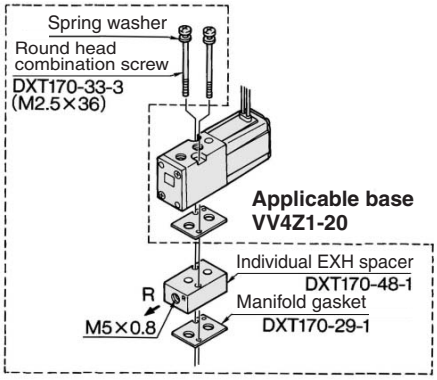
Combinations of Solenoid Valve, Gasket and Manifold



Applicable base
VV4Z1-20
VV4Z1-21P

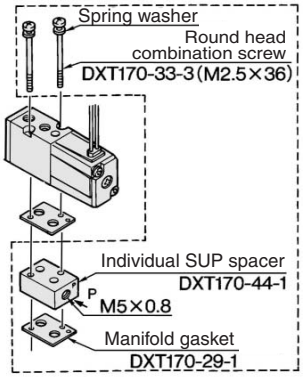
Individual EXH Spacer Assembly

DXT170-48-1A



Individual SUP Spacer Assembly

DXT170-44-1A

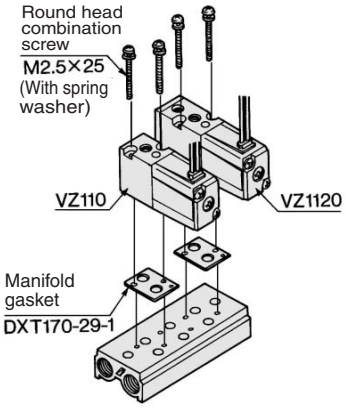


Applicable base
VV4Z1-20

Note) Please contact SMC when using Individual EXH/SUP spacer assembly at 20P.

Mixed Mounting of the VZ110, 3 Port Valve on the Series VZ1000 Manifold Base

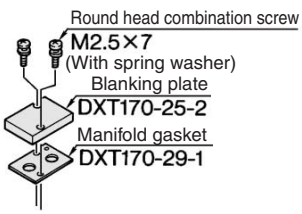
- A VZ110, 3 port valve can be mounted as is on the Series VZ1000 manifold base.
- The mounting direction is the same as the VZ1120.



Applicable base
VV4Z1-20
VV4Z1-21P

Blanking Plate Assembly

DXT170-25-1A



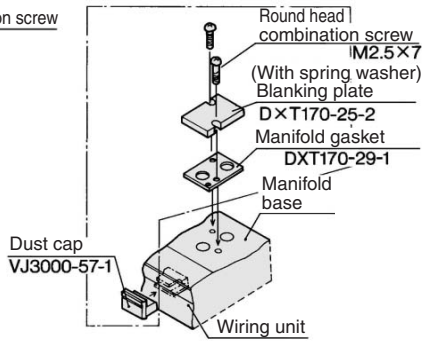
Applicable base
VV4Z1-20

⚠ Caution

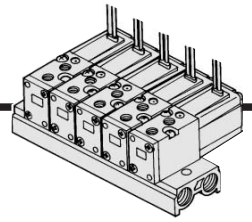
Mounting Screw Tightening Torques

M2.5: 0.45 N·m

DXT170-25-3A



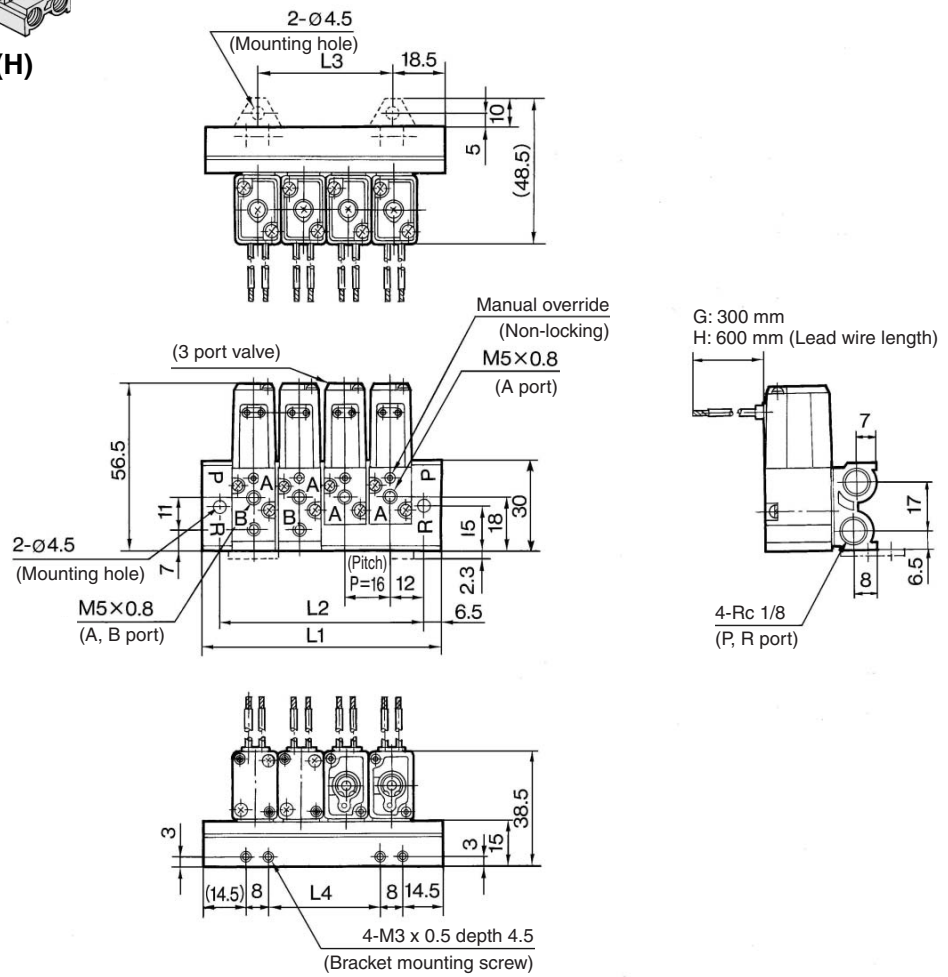
Applicable base
VV4Z1-21P



Type 20 Manifold

VV4Z1-20-Station 1-□

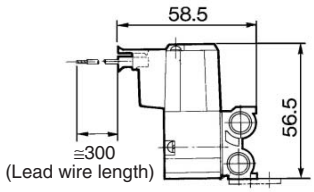
Grommet (G), (H)



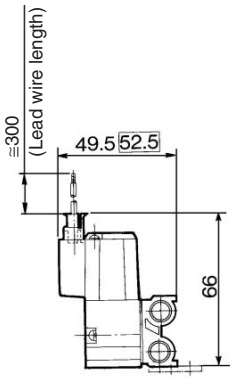
(mm)

Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	53	69	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309	325	341
L2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328
L3	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
L4	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296

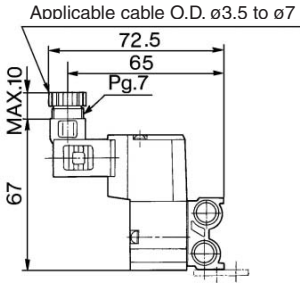
L plug connector (L)



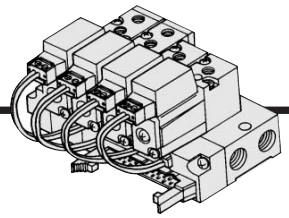
M plug connector (M)



DIN terminal (D)

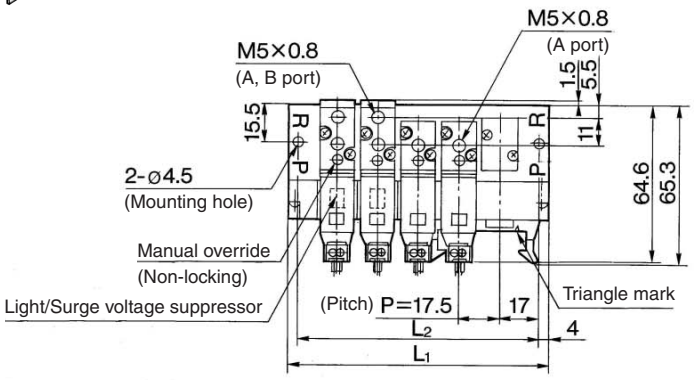


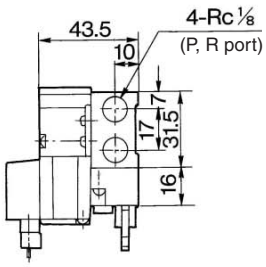
□: With light/surge voltage suppressor

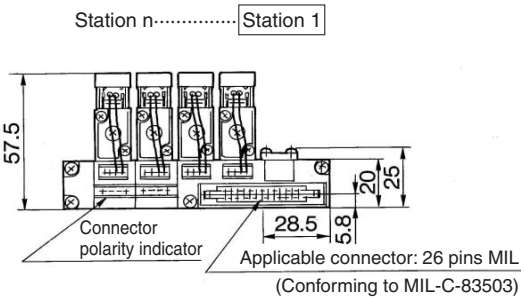


Type 21P Flat Ribbon Cable Manifold

VV4Z1-21P-Station







(mm)

Stations	3	4	5	6	7	8	9	10	11	12
L_1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L_2	69	86.5	104	121.5	139	156.5	174	191.5	209	226.5

5 Port Solenoid Valve
Body Ported
Series VZ3000

How to Order

Body ported **VZ3** [1] [2] [0] [5] [L] [ ] [ ] [M5] [ ]

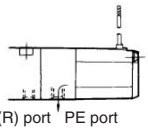
Type of actuation | Body option | Rated voltage | Electrical entry | Light/Surge voltage suppressor | Manual override | 4(A)/2(B) port size | Option

Type of actuation

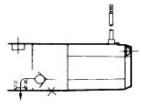
1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Body option

0: Individual exhaust for the pilot valve



3: Common exhaust type for main and pilot valve



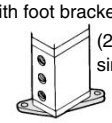
Rated voltage

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

F: With foot bracket (2 position single type only)



U: With silencer

K: With foot bracket and silencer (2 position single only)

Note) The bracket and silencer are not assembled.

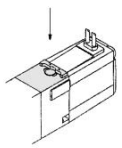
4(A), 2(B) port size

M5	M5 x 0.8
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6

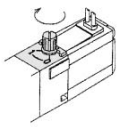
Note) 1(P), 5(R1), 3(R2) port: M5 x 0.8

Manual override

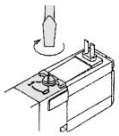
Nil: Non-locking push type



C: Locking type C (Manual)



B: Locking type B (Slotted)

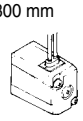
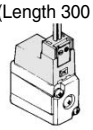
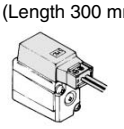
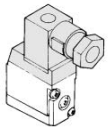
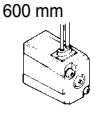
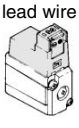
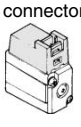
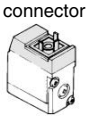


Light/Surge voltage suppressor

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

* Not available for "GZ", "HZ" and "DOZ"

Electrical entry

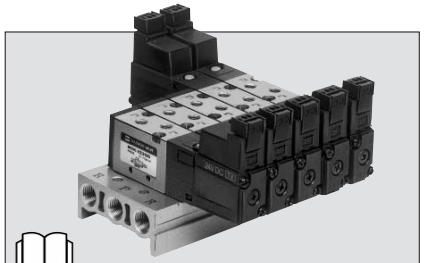
Grommet	L plug connector	M plug connector		DIN terminal
G: Lead wire length 300 mm 	**L**: With lead wire (Length 300 mm) 	**M**: With lead wire (Length 300 mm) 	**MN**: Without lead wire 	**D**: With connector 
H: Lead wire length 600 mm 	**LN**: Without lead wire 	**LO**: Without connector 	**MO**: Without connector 	**DO**: Without connector 

* Type "LN", "MN": With 2 sockets.

Applicable for cylinder actuation (up to ø40).

Compact size (Width: 15 mm)

Low power consumption: 1.8 W DC



Refer to pages 3-3-24 to 3-3-27 for manifold use.

Made to Order Specifications (For details, refer to page 3-3-85.)

Specifications

Fluid		Air
Operating pressure range (MPa)	2 position single	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Ambient and fluid temperature (°C)		–10 to 50°C (No freezing. Refer to page 3-13-4.)
Response time (ms) (1) (at the pressure of 0.5 MPa)	2 position single, double	20 or less
	3 position	35 or less
Max. operating frequency (Hz)	2 position single, double	10
	3 position	3
Effective area		Refer to the table below.
Manual override (2)		Non-locking push type, Locking slotted type, Locking lever type
Pilot exhaust method		Individual pilot exhaust type, Common exhaust (pilot and main valve) type
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance (m/s^2) (3)		300/50
Enclosure		Dustproof

Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)
Note 2) When operating the locking type manually, apply torque of 0.2 N·m or less.
Note 3) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)
Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Solenoid Specifications

∗ Option

Electrical entry			Grommet (G)/(H), L plug connector (L), M plug connector (M), DIN terminal (D)
Coil rated voltage (V)	AC 50/60 Hz		100, 200, 24*, 48*, 110*, 220*
	DC		24, 6*, 12*, 48*
Allowable voltage fluctuation (%)			–15 to +10% of rated voltage
Power consumption (W) Note) [Current mA]	DC		1.8 (With indicator light 2.1) [24 VDC: 75 (With indicator light 87.5)]
Apparent power (VA) Note) [Current mA]	AC	Inrush	4.5/50 Hz, 4.2/60 Hz [100 VAC: 45/50 Hz, 42/60 Hz; 200 VAC: 22.5/50 Hz, 21/60 Hz]
		Holding	3.5/50 Hz, 3/60 Hz [100 VAC: 35/50 Hz, 30/60 Hz; 200 VAC: 17.5/50 Hz, 15/60 Hz]
Surge voltage suppressor			DC: Diode, AC: ZNR
Indicator light			DC: LED (Red), AC: Neon bulb

Note) At rated voltage

Option

Description	Part no.	Note
With foot bracket	DXT170-34-1B	For VZ312$^{0}_{3}$
Silencer	AN120-M5	Noise reduction: 21dB or more (ø8 x 17 mm)

Flow Characteristics/Weight

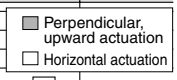
Valve model	Type of actuation		Port size 1, 5, 3 (P, EA, EB)	Port size 4, 2 (A, B)	Flow characteristics Note) 1 → 4/2 (P → A/B) C [dm³/(s·bar)]	b	Cv	4/2 → 5/3 (A/B → EA/EB) C [dm³/(s·bar)]	b	Cv	Weight (g) Grommet
VZ3□20-□-M5	2 position	Single	M5 x 0.8	M5 x 0.8	0.47	0.41	0.13	0.47	0.41	0.13	75
		Double									120
	3 position	Closed center			0.49	0.44	0.13	0.44	0.40	0.12	130
		Exhaust center			0.46	0.37	0.12	0.47 [0.39]	0.43 [0.35]	0.13 [0.10]	
		Pressure center			0.49 [0.39]	0.51 [0.38]	0.14 [0.10]	0.45	0.42	0.12	
VZ3□20-□-C4	2 position	Single	M5 x 0.8	C4 (One-touch fitting for ø4)	0.69	0.39	0.18	0.44	0.39	0.12	75
		Double									120
	3 position	Closed center			0.69	0.40	0.19	0.43	0.40	0.12	130
		Exhaust center			0.56	0.40	0.15	0.41 [0.41]	0.37 [0.37]	0.10 [0.11]	
		Pressure center			0.57[0.41]	0.4 [0.37]	0.15 [0.10]	0.41	0.37	0.10	
VZ3□20-□-C6	2 position	Single	M5 x 0.8	C6 (One-touch fitting for ø6)	0.70	0.36	0.19	0.47	0.40	0.12	75
		Double									120
	3 position	Closed center			0.72	0.37	0.19	0.44	0.34	0.12	130
		Exhaust center			0.67	0.54	0.19	0.41 [0.41]	0.38 [0.38]	0.11 [0.11]	
		Pressure center			0.82 [0.44]	0.41 [0.39]	0.23 [0.12]	0.41	0.36	0.11	

Note) [ ]: Denotes the normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2

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			
		ø6	ø10	ø16	ø20	ø25	ø32	ø40
VZ3120-M5	800							
	700							
	600							
	500							
	400							
	300							
	200							
	100							
	0							



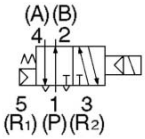
∗ It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
∗ The average velocity of the cylinder is what the stroke is divided by the total stroke time.
∗ Load factor: ((Load weight x 9.8)/Theoretical force) x 100%

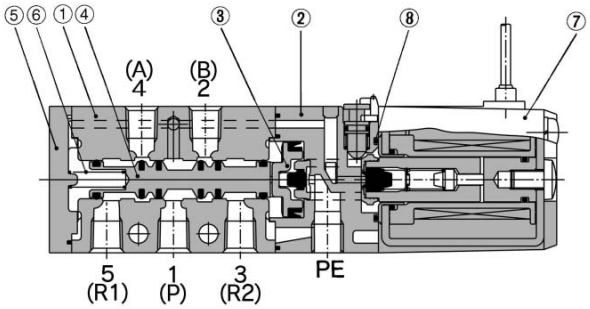
Conditions

Body ported		Series CJ2	Series CM2	Series MB
SZ3120-M5	Tube bore x Length	ø4 x 1 m	ø6 x 1 m	ø8 x 1 m
	Speed controller	AS1301F-04	AS3301F-06	AS3301F-08
	Silencer	AN120-M5	AN110-01	

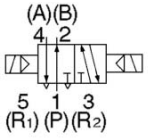
Construction

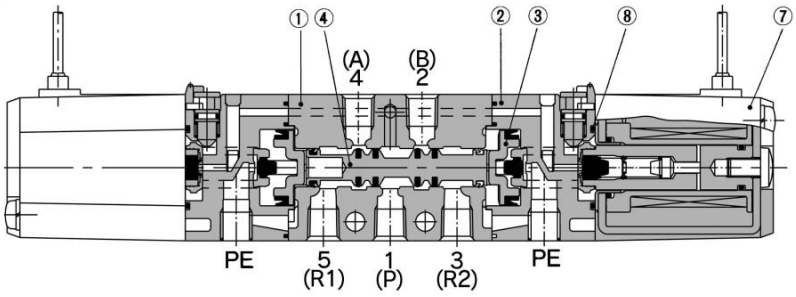
2 position single



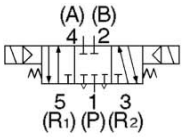


2 position double

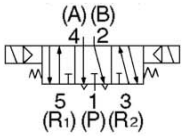




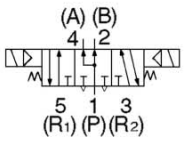
3 position closed center



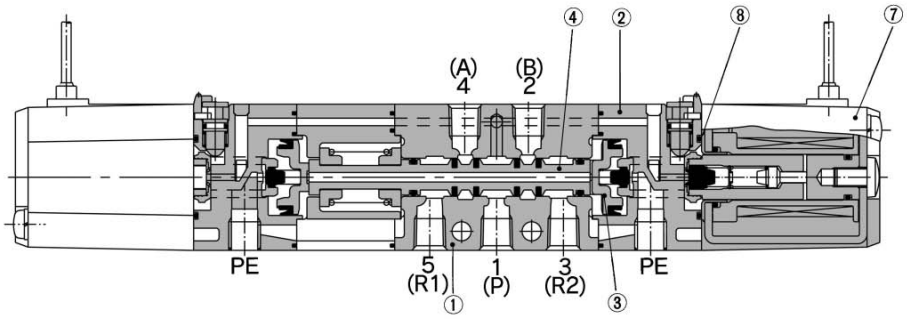
3 position exhaust center



3 position pressure center



3 position closed center/exhaust center/pressure center



(This figure shows a closed center type.)

Component Parts

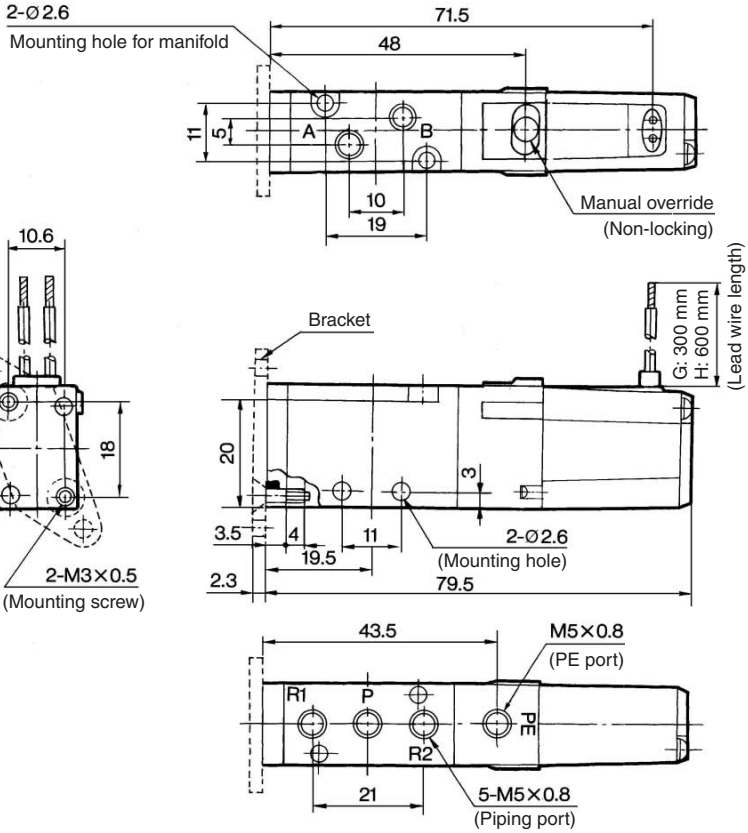
No.	Description	Material	Note
①	Body	Aluminum die-casted	Platinum silver
②	Piston plate	Resin	Black
③	Piston	Resin	
④	Spool valve	Aluminum, HNBR	
⑤	End cover	Resin	
⑥	Spool spring	Stainless steel	

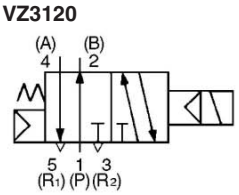
Replacement Parts

No.	Description	Material	Part no.	Note
⑦	Solenoid assembly	Epoxy/Stainless steel	DXT170-C-□□□	
⑧	O-ring	NBR	13 x 11 x 1	Common with Series VZ$\frac{1}{5}$000

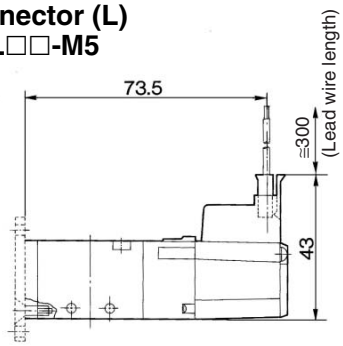
2 Position Single

Grommet (G), (H)
VZ3120-□$^{G}_{H}$□□-M5

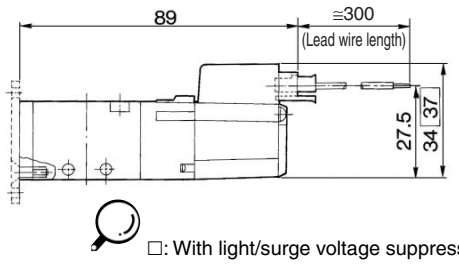




L plug connector (L)
VZ3120-□L□□-M5

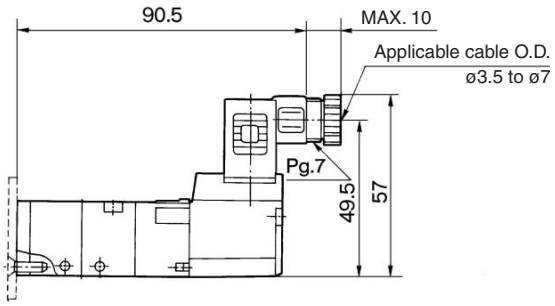


M plug connector (M)
VZ3120-□M□□-M5

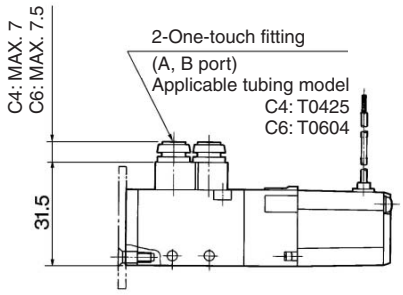


□: With light/surge voltage suppressor

DIN terminal (D)
VZ3120-□D□□-M5



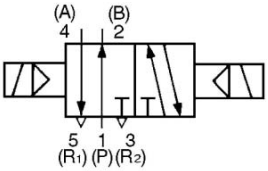
Built-in One-touch fittings
VZ3120-□□□□-$^{C4}_{C6}$



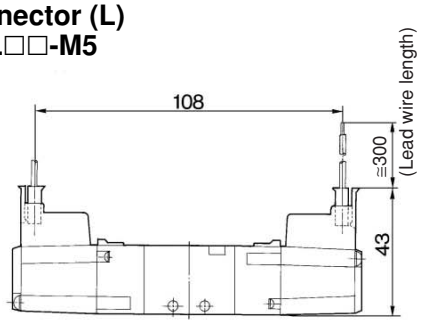
2 Position Double

Grommet (G), (H)
VZ3220-□$^{G}_{H}$□□-M5

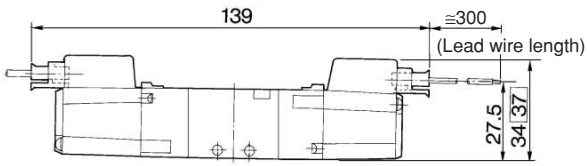
VZ3220



L plug connector (L)
VZ3220-□L□□-M5

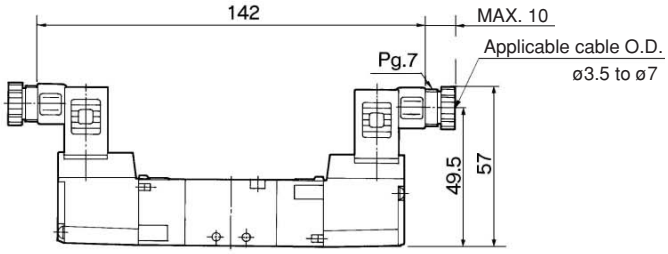


M plug connector (M)
VZ3220-□M□□-M5

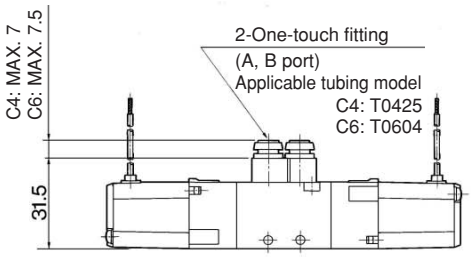


□: With light/surge voltage suppressor

DIN terminal (D)
VZ3220-□D□□-M5

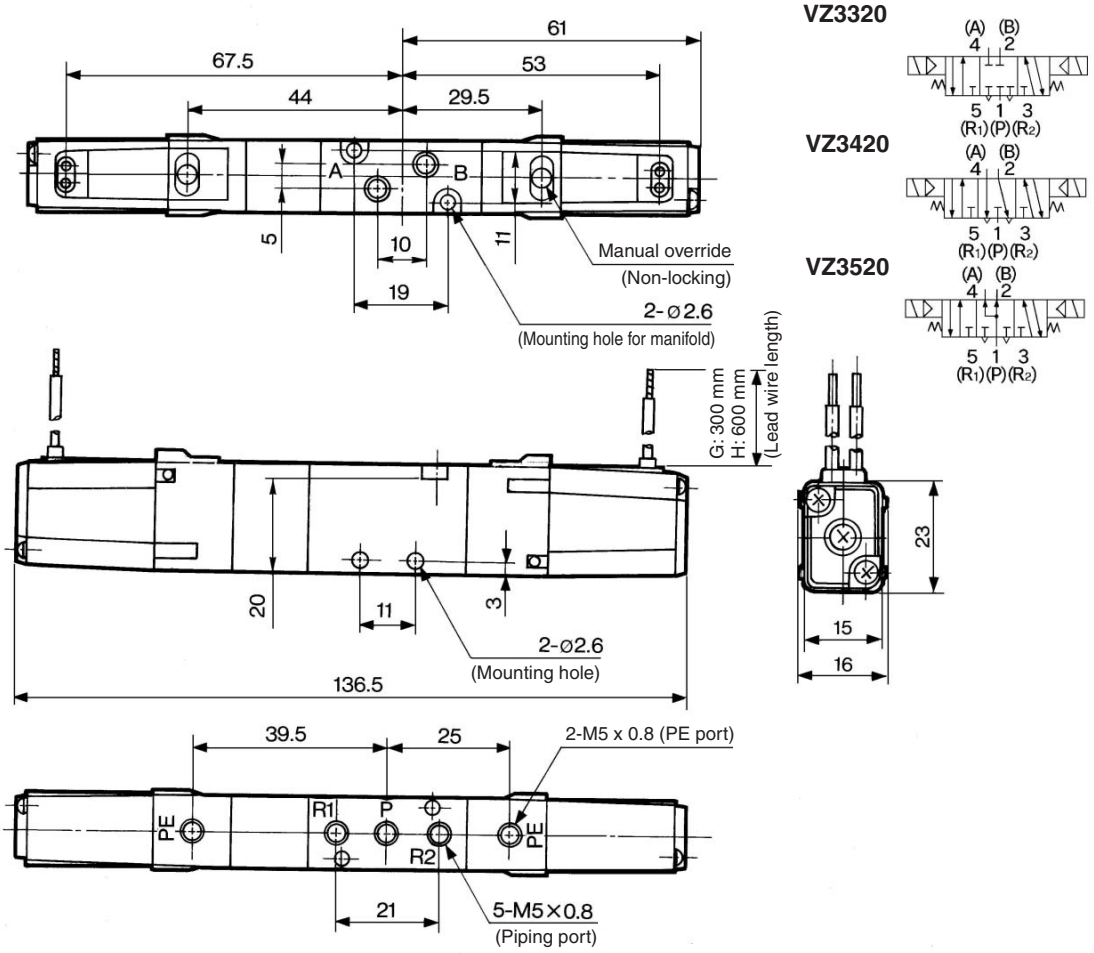


Built-in One-touch fittings
VZ3220-□□□□-$^{C4}_{C6}$

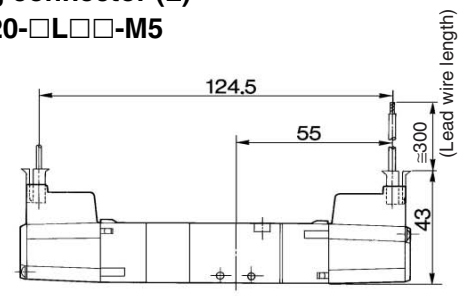


3 Position Closed Center/Exhaust Center/Pressure Center

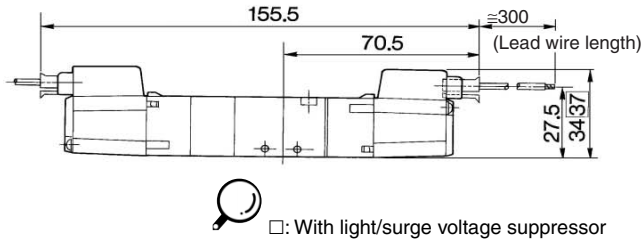
Grommet (G), (H)
VZ3$^{3}_{5}$20-□$^{G}_{H}$□□-M5



L plug connector (L)
VZ3$^{3}_{5}$20-□L□□-M5

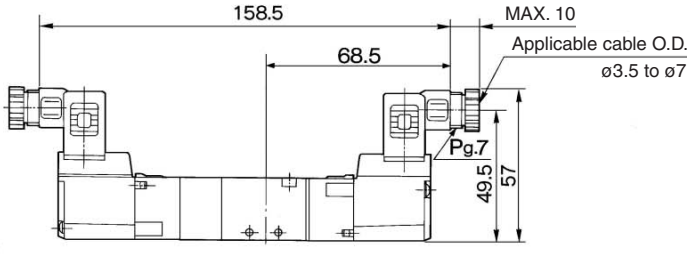


M plug connector (M)
VZ3$^{3}_{5}$20-□M□□-M5

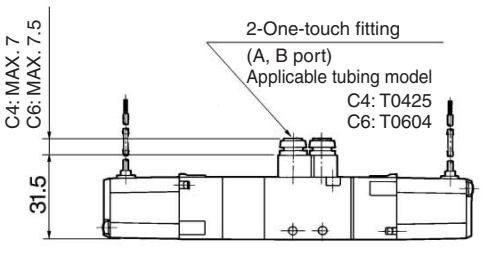


□: With light/surge voltage suppressor

DIN terminal (D)
VZ3$^{3}_{5}$20-□D□□-M5

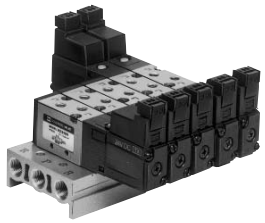


Built-in One-touch fittings
VZ3$^{3}_{5}$20-□□□□-$^{C4}_{C6}$



Series VZ3000/Body Ported
Manifold Specifications

Manifold Standard



Manifold Specifications

Model		Type 20
Manifold type		Single base/B mount
P(SUP)/R(EXH)		Common SUP/Common EXH
Valve stations		2 to 20 stations
4(A), 2(B) port location		Valve
Port size	1(P), 3/5(R) port	Rc 1/8
	4(A), 2(B) port	M5 x 0.8, C4, C6

Flow Characteristics

Manifold			Port size		Flow characteristics					
			1(P), 5/3(R) port	2(B), 4(A) port	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → R)		
					C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported For internal pilot	**Type VV5Z3-20**	**VZ3□2□**	1/8	M5 x 0.8	0.46	0.39	0.12	0.75	0.32	0.19
			1/8	C4	0.62	0.33	0.16	0.83	0.27	0.20
			1/8	C6	0.79	0.36	0.21	0.91	0.36	0.24

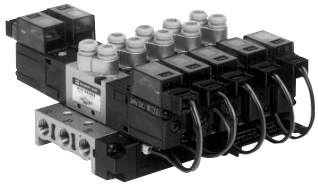
Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.
(Example) VV5Z3-20-031..... 1 pc. (Manifold base)
∗VZ3120-5G-M5..... 2 pcs. (Valve)
∗DXT192-13-1A ..... 1 pc. (Blanking plate assembly)
└→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Flat Ribbon Cable Manifold

- **One-touch wiring to consolidate connection of external wires.**
- **Clean appearance**
  The flat cable provides wiring on a printed circuit board to the individual valves at the manifold base, enabling the consolidation of external wiring at a touch through a 26 pins MIL connector.



Flat Ribbon Cable Manifold Specifications

Model		Type 20P
Manifold type		Single base/B mount
P(SUP), R(EXH)		Common SUP/Common EXH
Valve stations		3 to 12 stations
4(A), 2(B) port location		Valve
Port size	1(P), 3/5(R) port	Rc 1/8
	4(A), 2(B) port	M5 x 0.8, C4, C6
Applicable flat ribbon cable connector		Socket: 26 pins MIL, with strain relief (Conforming to MIL-C-83503)
Internal wiring		+ COM (For – COM specifications, specify them separately.)
Applicable valve model		VZ3□23-$^{1}_{3}_{5}_{6}$MOZ□-$^{M5}_{C4}_{C6}$
Rated voltage		100 VAC 50/60 Hz, 110 VAC 50/60 Hz, 24 VDC, 12 VDC

Note) Withstand voltage specifications of wiring unit part is equivalent to JIS C 0704 class 1.

Flow Characteristics

Manifold			Port size		Flow characteristics					
			1(P), 5/3(R) port	2(B), 4(A) port	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → R)		
					C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported For internal pilot	**Type VV5Z3-20P**	**VZ3□23**	1/8	M5 x 0.8	0.46	0.39	0.12	0.75	0.32	0.19
			1/8	C4	0.62	0.33	0.16	0.83	0.27	0.20
			1/8	C6	0.79	0.36	0.21	0.91	0.36	0.24

Note) Value at manifold base mounted, 2 position single operating

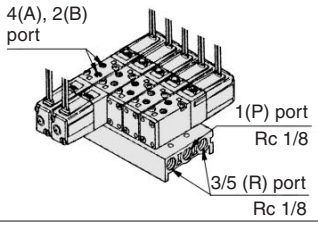
How to Order Manifold

Instruct by specifying the valves, blanking plate assembly and connector assembly to be mounted on the manifold along with the manifold base model no.
(Example) VV5Z3-20P-07..... 1 pc. (Manifold base)
∗VZ3123-5MOZ-C4..... 3 pcs. (Valve)
∗VZ3223-5MOZ-C4..... 3 pcs. (Valve)
∗DXT192-13-3A..... 1 pc. (Blanking plate assembly)
∗DXT192-52-1-4A..... 3 pcs. (Connector assembly)
∗DXT192-52-2-4A..... 3 pcs. (Connector assembly)
└→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Common SUP/Common EXH

Type 20
How to Order

VV5Z3 − 20 − 05 1 − ☐



Stations

02	2 stations
⋮	⋮
20	20 stations

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

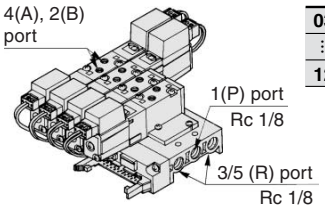
Applicable solenoid valve

VZ3□2□-□ G/L/M/D □□- M5/C4/C6

Applicable blanking plate assembly
DXT192-13-1A
Individual EXH spacer assembly
DXT192-21-1A
Individual SUP spacer assembly
DXT192-40-2A

Flat Ribbon Cable Type 20P
How to Order

VV5Z3 − 20P − 05 ☐



Stations

03	3 stations
⋮	⋮
12	12 stations

P, R port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

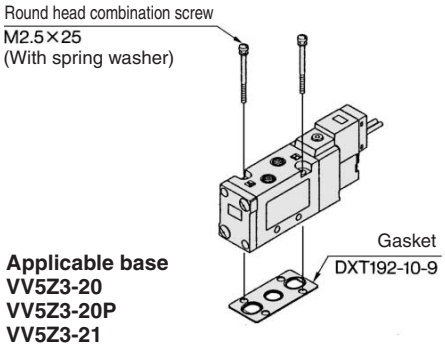
Applicable solenoid valve

VZ3□23- 1/3/5/6 MOZ□- M5/C4/C6

Applicable blanking plate assembly
DXT192-13-3A
Applicable connector assembly
DXT192-52-1-⊠A
(For 2 position single)
DXT192-52-2-⊠A
(For 2 position double, 3 position)
Refer to the page 3-10-33 regarding how to order applicable connector assemblies. (1: 100 VAC, 3: 110 VAC, 4: DC).

Option

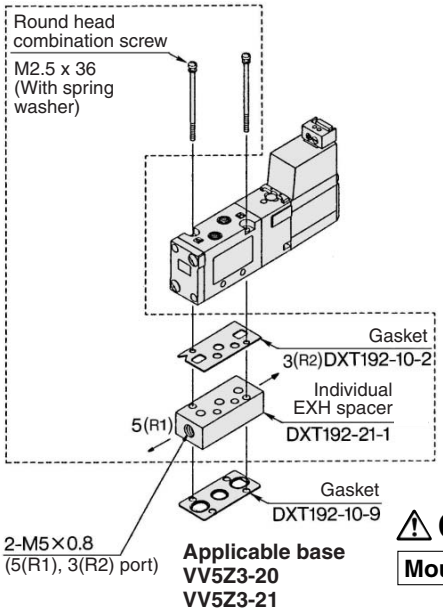
Combinations of Solenoid Valve, Gasket and Manifold Base



Applicable base
VV5Z3-20
VV5Z3-20P
VV5Z3-21

Individual EXH Spacer Assembly

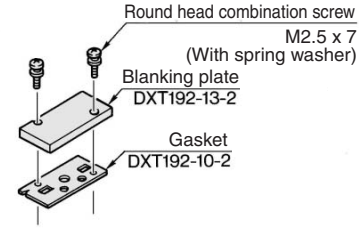
DXT192-21-1A



Applicable base
VV5Z3-20
VV5Z3-21

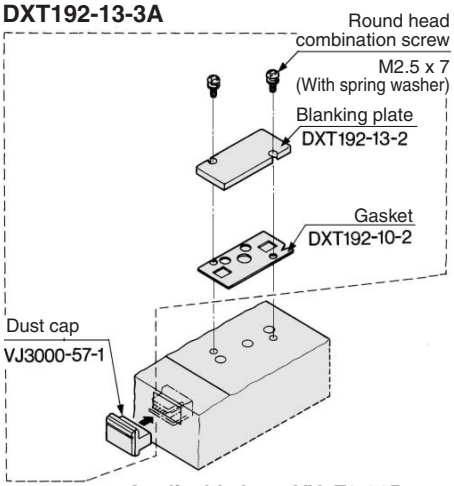
Blanking Plate Assembly

DXT192-13-1A



Applicable base
VV5Z3-20
VV5Z3-21

DXT192-13-3A



Applicable base VV5Z3-20P

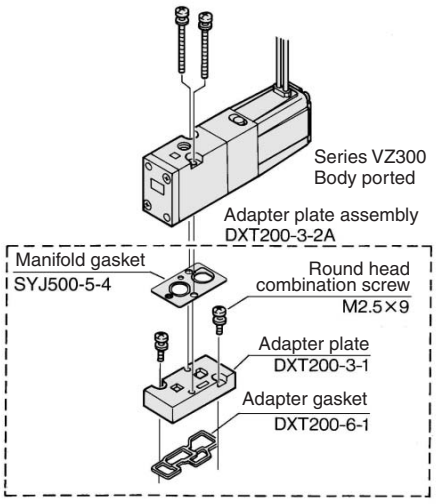
Note) Please contact SMC when using an individual SUP spacer assembly, an individual EXH spacer assembly, or an adapter plate assembly on type 20P.

Option

Installation of the VZ300 Valve on the VZ3000 Manifold

- Use of an adaptor plate makes it possible to mount Series VZ300 on the manifold base of Series VZ3000.
- The mounting direction is shown in the diagram below. Mount the solenoid so that it will be on the same side as the single solenoid of the Series VZ3000.

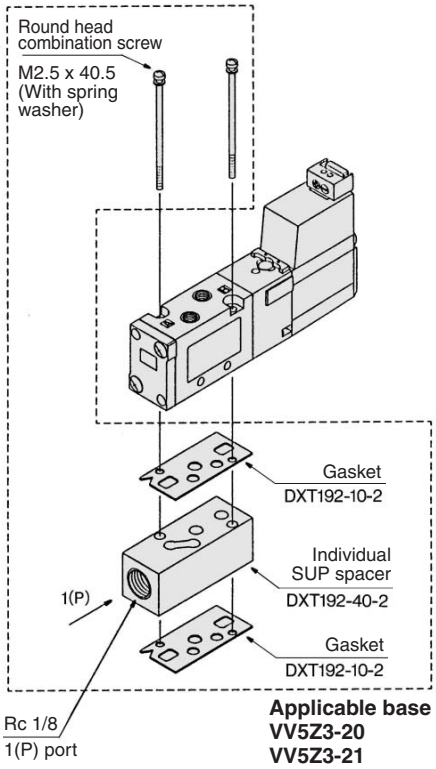
Adapter plate assembly
DXT200-3-2A



Applicable base
VV5Z3-20
VV5Z3-21

Individual SUP Spacer Assembly

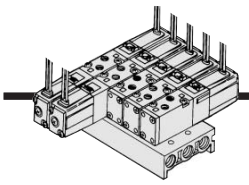
DXT192-40-2A



Applicable base
VV5Z3-20
VV5Z3-21

⚠ Caution

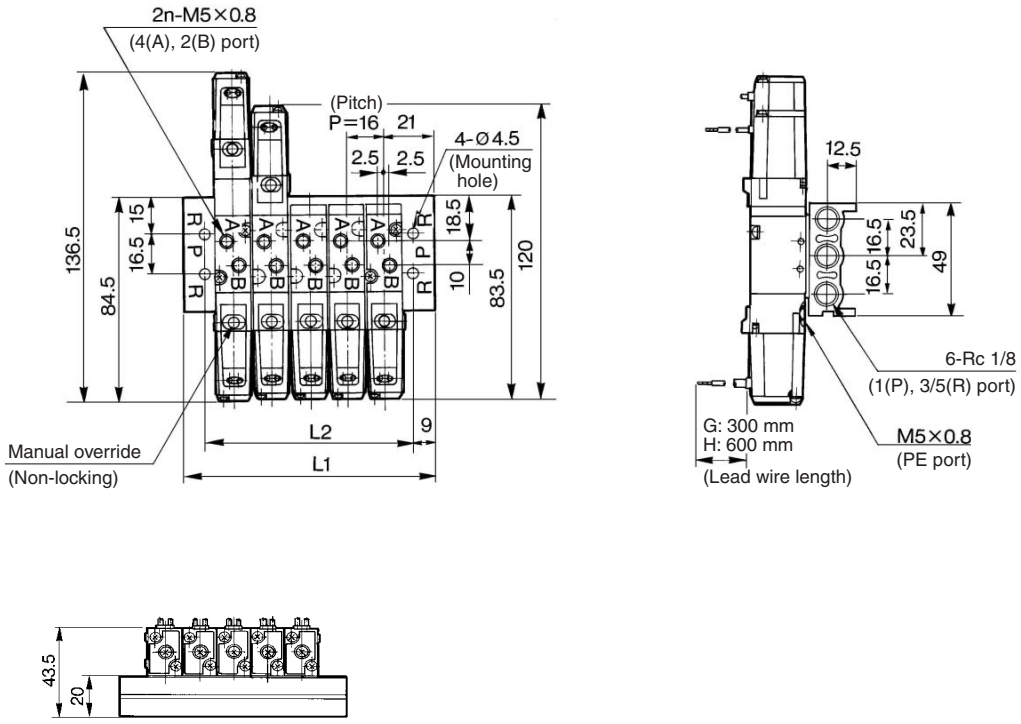
Mounting Screw Tightening Torques **M2.5: 0.45 N·m**



Type 20 Manifold

VV5Z3-20- Station 1

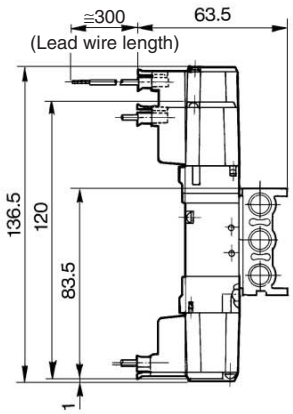
Grommet (G), (H)



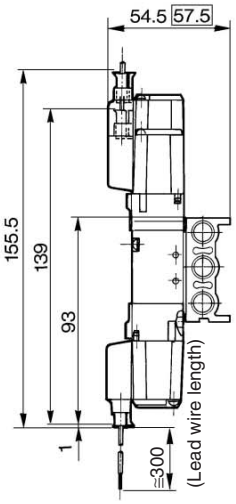
(mm)

Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L_1	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330	346
L_2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328

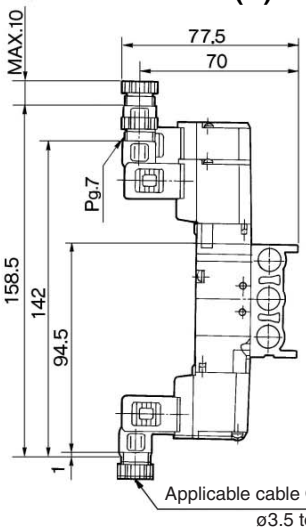
L plug connector (L)



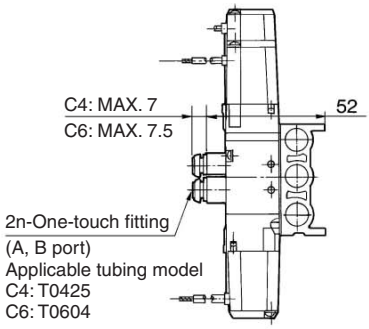
M plug connector (M)



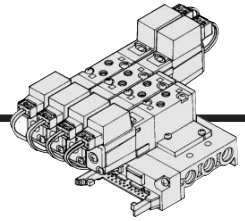
DIN terminal (D)



Built-in One-touch fittings

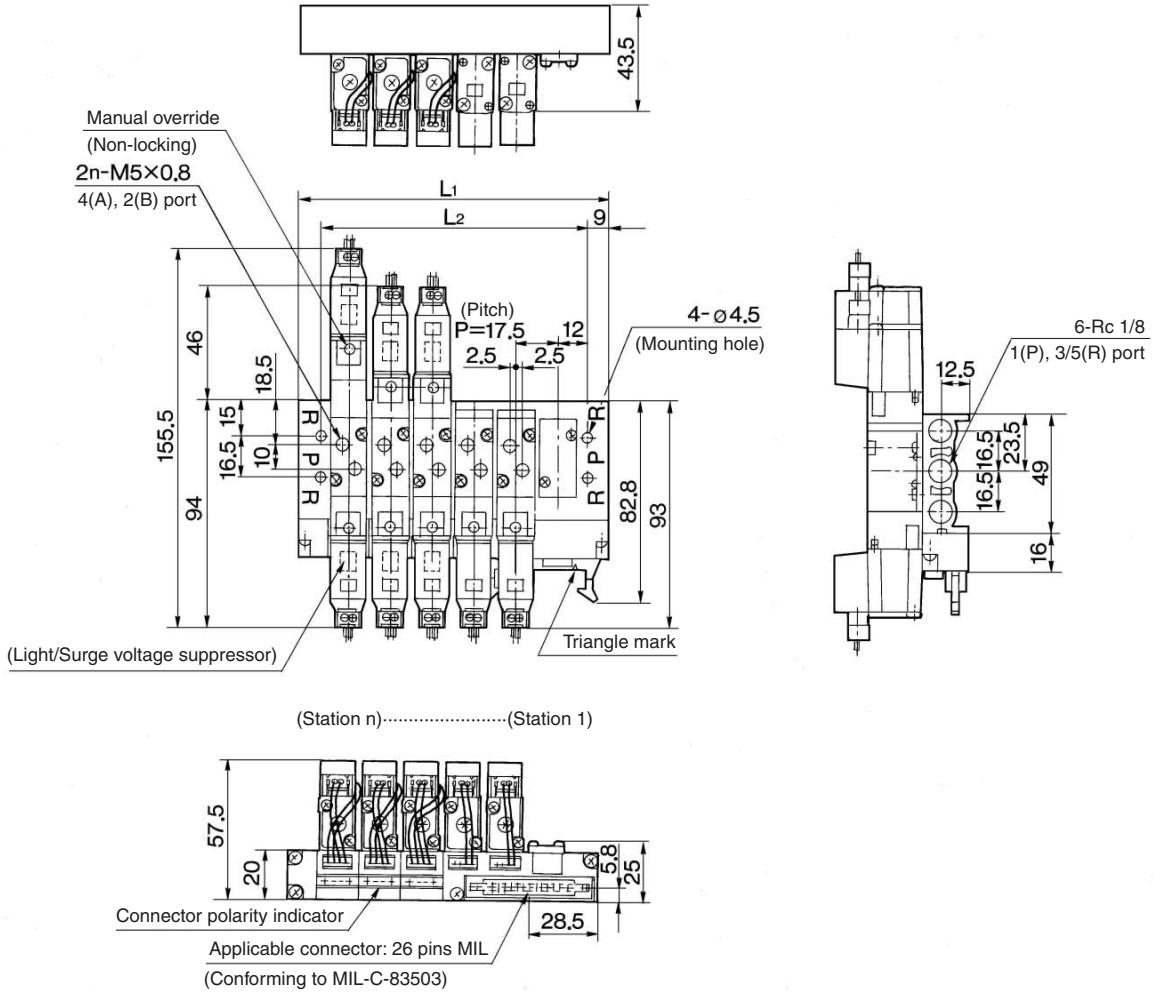


□: With light/surge voltage suppressor



Type 20P Flat Ribbon Cable Manifold

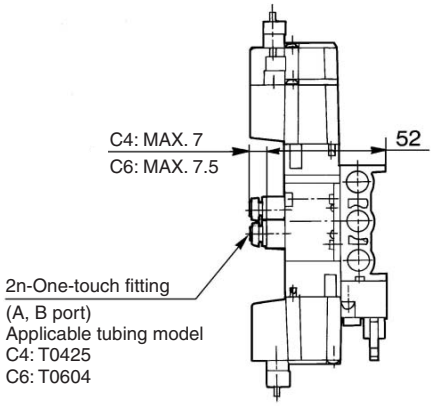
VV5Z3-20P-Station



(mm)

Stations	3	4	5	6	7	8	9	10	11	12
L_1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L_2	59	76.5	94	111.5	129	146.5	164	181.5	199	216.5

Built-in One-touch fittings



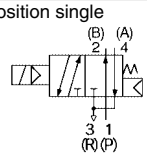
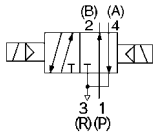
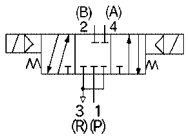
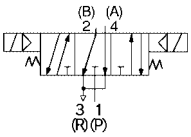
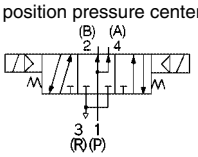
5 Port Solenoid Valve
Base Mounted
Series VZ3000

How to Order

Note) Please contact SMC in the case of without indicator light.

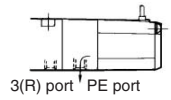
		Type of actuation	Body option	Rated voltage	Electrical entry	Light/Surge voltage suppressor	Manual override	Port size	Thread type
Plug-in	VZ3	1	4 3	5	F	Z Note)			
Non plug-in	VZ3	1	4 0	5	L				

Type of actuation

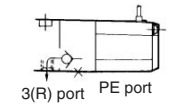
1	2 position single	
2	2 position double	
3	3 position closed center	
4	3 position exhaust center	
5	3 position pressure center	

Body option

0: Individual exhaust for the pilot valve



3: Common exhaust type for main and pilot valve

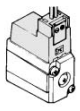
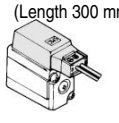
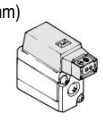
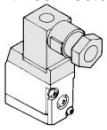
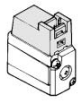
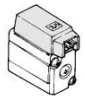


Rated voltage

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

Electrical entry

Grommet	L plug connector	M plug connector		DIN terminal
G: Lead wire length 300 mm	**L**: With lead wire (Length 300 mm)	**M**: With lead wire (Length 300 mm)	**MN**: Without lead wire	**D**: With connector
				
H: Lead wire length 600 mm	**LN**: Without lead wire	**LO**: Without connector	**MO**: Without connector	**DO**: Without connector
				

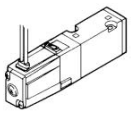
* Type "LN", "MN": With 2 sockets.

Thread type

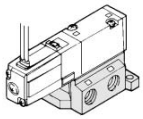
Nil	Rc
F	G
N	NPT
T	NPTF

Port size

Nil: Without sub-plate

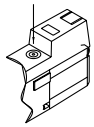


01: Rc 1/8 With sub-plate

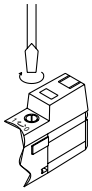


Manual override/Plug-in type

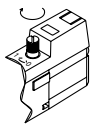
Nil: Non-locking push type



B: Locking type B (Slotted)



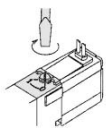
C: Locking type C (Manual)



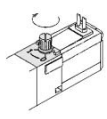
Manual override/Non plug-in type

Nil: Non-locking push type

B: Locking type B (Slotted)



C: Locking type C (Manual)



Light/Surge voltage suppressor

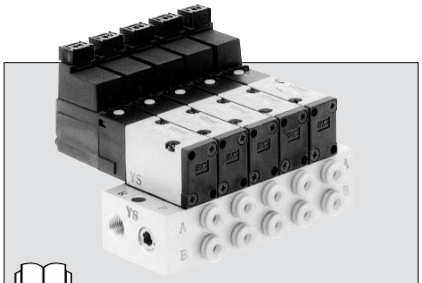
Nil	None
Z*	With light/surge voltage suppressor
S	With surge voltage suppressor

* Not available for "GZ", "HZ" and "DOZ"

Applicable for cylinder actuation (up to ø40).

Compact size (Width: 15 mm)

Low power consumption: 1.8 W DC



Refer to pages 3-3-37 to 3-3-52 for manifold use.

Made to Order **Made to Order Specifications (For details, refer to page 3-3-85.)**

Specifications

Fluid		Air
Operating pressure range (MPa)	2 position single	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Ambient and fluid temperature (°C)		–10 to 50°C (No freezing. Refer to page 3-13-4.)
Response time (ms) (1) (at the pressure of 0.5 MPa)	2 position single, double	20 or less
	3 position	35 or less
Max. operating frequency (Hz)	2 position single, double	10
	3 position	3
Manual override (2)		Non-locking push type, Locking slotted type, Locking lever type
Pilot exhaust method		Individual pilot exhaust type, Common exhaust (pilot and main valve) type
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance (m/s^2) (3)		300/50
Enclosure		Dustproof

Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)
Note 2) When operating the locking type manually, apply torque of 0.2 N·m or less.
Note 3) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)
Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

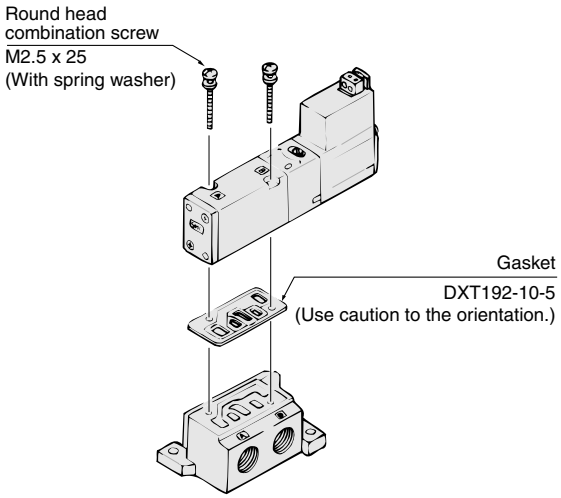
Solenoid Specifications

∗ Option

Electrical entry			Grommet (G)/(H), L plug connector (L), M plug connector (M), DIN terminal (D)
Coil rated voltage (V)	AC 50/60 Hz		100, 200, 24∗, 48∗, 110∗, 220∗
	DC		24, 6∗, 12∗, 48∗
Allowable voltage fluctuation (%)			–15 to +10% of rated voltage
Power consumption (W) (1) [Current mA]	DC		1.8 (With indicator light 2.1) [24 VDC: 75 (With indicator light 87.5)]
Apparent power (VA) (1) [Current mA] Note)	AC	Inrush	4.5/50 Hz, 4.2/60 Hz [100 VAC: 45/50 Hz, 42/60 Hz; 200 VAC: 22.5/50 Hz, 15/60 Hz]
		Holding	3.5/50 Hz, 3/60 Hz [100 VAC: 35/50 Hz, 30/60 Hz; 200 VAC: 17.5/50 Hz, 15/60 Hz]
Surge voltage suppressor			DC: Diode, AC: ZNR (2)
Indicator light			DC: LED (Red), AC: Neon bulb

Note 1) At rated voltage
Note 2) Plug-in should be ZNR.

Combinations of Solenoid Valve and Gasket



Flow Characteristics/Weight

Valve model	Type of actuation		Port size 1, 5, 3 (P, EA, EB)	Port size 4, 2 (A, B)	Flow characteristics (1) 1 → 4/2 (P → A /B) C [dm³/(s·bar)]	b	Cv	4/2 → 5/3 (A/B → EA/EB) C [dm³/(s·bar)]	b	Cv	Weight (g) Grommet
VZ3□40-□-01	2 position	Single	Rc 1/8	Rc 1/8	0.79	0.21	0.19	0.83	0.32	0.21	125 (75)
		Double									170 (120)
	3 position	Closed center			0.80	0.28	0.18	0.86	0.34	0.20	180 (130)
		Exhaust center			0.71	0.26	0.18	1.1 [0.60]	0.24 [0.44]	0.26 [0.18]	
		Pressure center			0.99 [0.47]	0.29 [0.38]	0.24 [0.12]	0.72	0.38	0.18	

Note 1) [ ]: Denotes the normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2
Note 2) ( ): Without sub-plate.

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 CM2, Pressure 0.5 MPa, Load factor 50%, Stroke 300 mm	ø20	ø25	ø32	ø40
VZ314□-□□□□-01□ (Piping: ø4 x 1 m)	800 / 700 / 600 / 500 / 400 / 300 / 200 / 100	Perpendicular, upward actuation / Horizontal actuation				
Speed controller/Silencer			AS2301F-□01-04□/AN110-01			

VZ314□-□□□□-01□ (Piping: ø6 x 1 m)	800 / 700 / 600 / 500 / 400 / 300 / 200 / 100	Perpendicular, upward actuation / Horizontal actuation				
Speed controller/Silencer			AS3301F-□02-06□/AN110-01			

Series	Average speed (mm/s)	Bore size: Series CA1, Pressure 0.5 MPa, Load factor 50%, Stroke 400 mm	ø40	ø50	ø63	ø80	ø100
VZ314□-□□□□-01□ (Piping: ø6 x 1 m)	800 / 700 / 600 / 500 / 400 / 300 / 200 / 100	Perpendicular, upward actuation / Horizontal actuation					
Speed controller/Silencer			AS3301F-□02-06□/AN110-01				

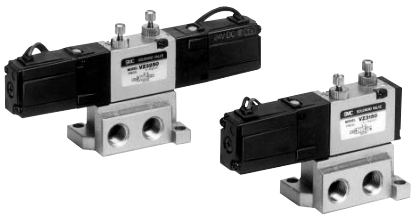
VZ314□-□□□□-01□ (Piping:ø8 x 1 m)	800 / 700 / 600 / 500 / 400 / 300 / 200 / 100	Perpendicular, upward actuation / Horizontal actuation				
Speed controller/Silencer			AS3301F-□02-08□/AN110-01			

∗ 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%

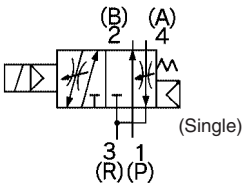
Built-in Speed Controllers

VZ3□5□

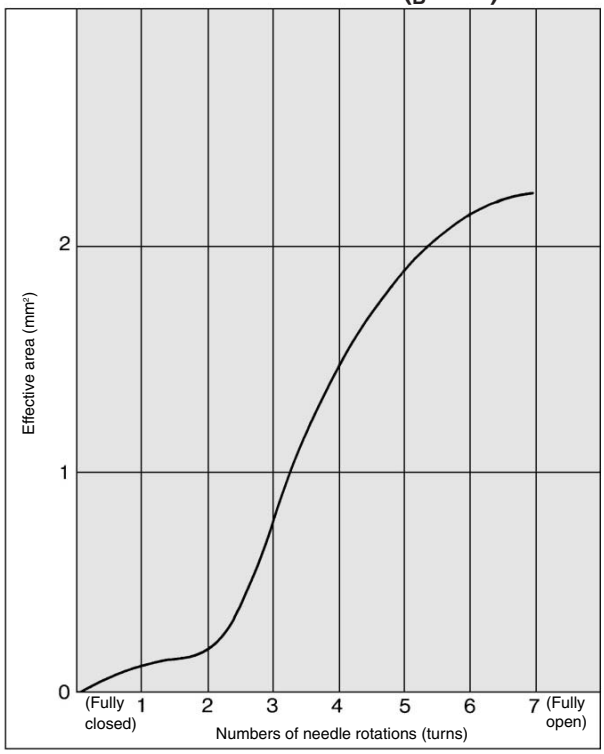
- An exhaust throttle valve is built into the solenoid valve itself, enabling a simple speed adjustment of the cylinder.
- If it is mounted on a manifold base, the exhaust air will converge in the common EXH port at the manifold base, thus simplifying the handling of the exhaust air.



JIS Symbol



Throttle Valve Characteristics ($\frac{A}{B}$ → R)



Note) • To use the VZ3□53, open the throttle valve one turn or more from the fully closed position.
• To adjust the throttle valve apply torque of 0.3 N·m or less.
• Be careful not to open the throttle valve excessively as this could cause the throttle valve to fly out.

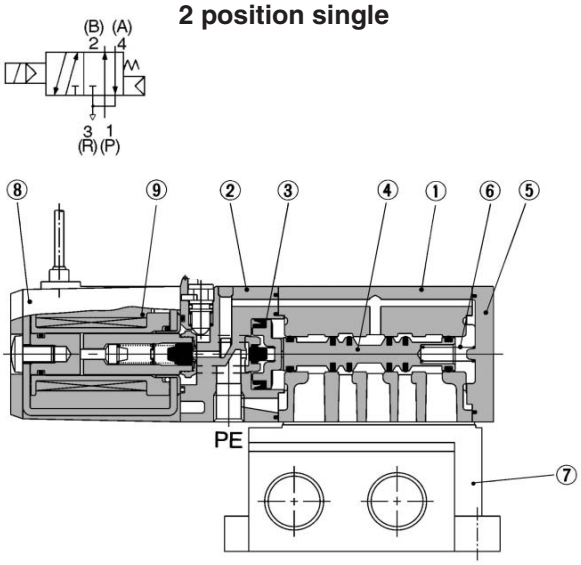
How to Order Valve with Built-in Speed Controller

Non plug-in **VZ3 □ 5 □ □ □ □ □ □**

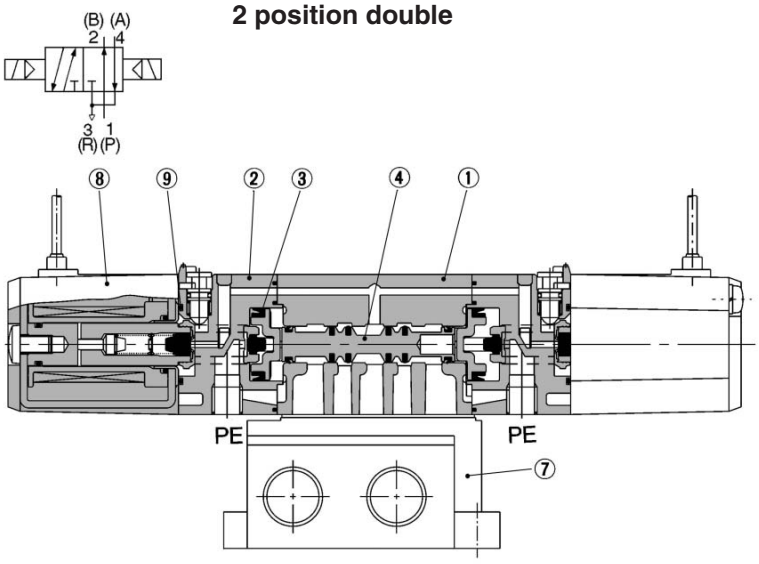
- Type of actuation
- Body option
- Rated voltage
- Electrical entry
- Light/Surge voltage suppressor
- Manual override
- Port size
- Thread type

Construction

2 position single

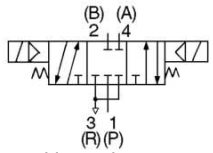


2 position double

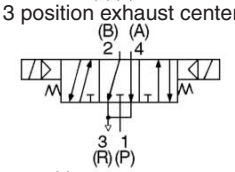


3 position closed center/exhaust center/pressure center

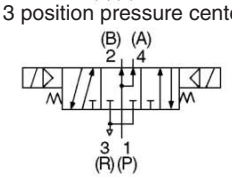
3 position closed center

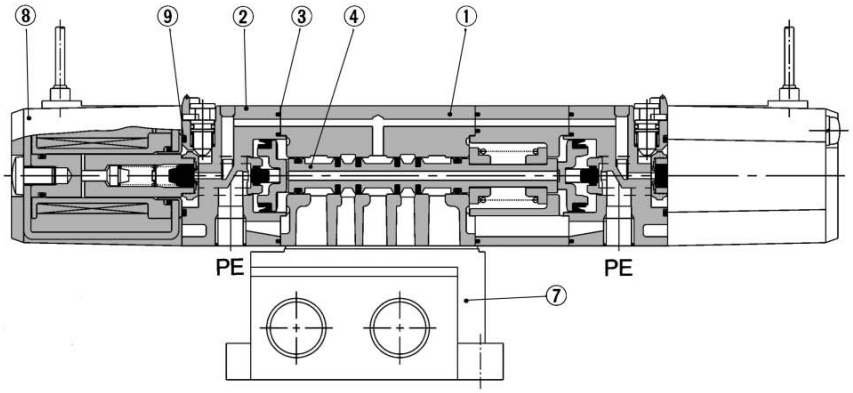


3 position exhaust center



3 position pressure center





(This figure shows a closed center type.)

Component Parts

No.	Description	Material	Note
①	Body	Aluminum die-casted	Platinum silver
②	Piston plate	Resin	Black
③	Piston	Resin	
④	Spool valve	Aluminum, HNBR	
⑤	End cover	Resin	
⑥	Spool spring	Stainless steel	

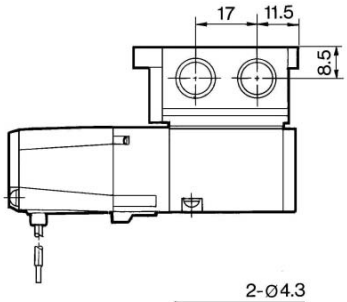
Replacement Parts

No.	Description	Material	Part no.	Note
⑦	Sub-plate	Aluminum die-casted	DXT192-14-1∗P	Platinum silver
⑧	Solenoid assembly	Epoxy/Stainless steel	DXT170-C-□□□	
⑨	O-ring	NBR	13 x 11 x 1	Common with Series VZ$\frac{1}{5}$000

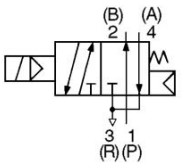
∗ Thread type
Nil: Rc
F: G
N: NPT
T: NPTF

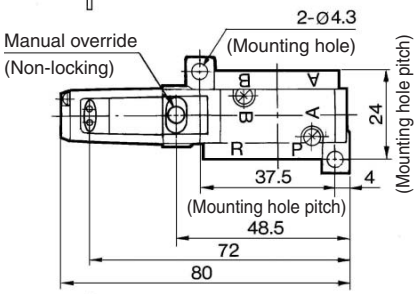
2 Position Single

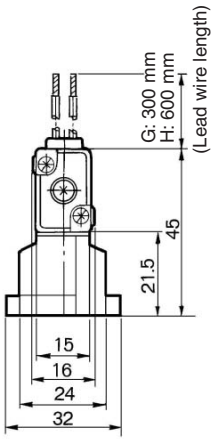
Grommet (G), (H)
VZ3140-□ G H □□-01

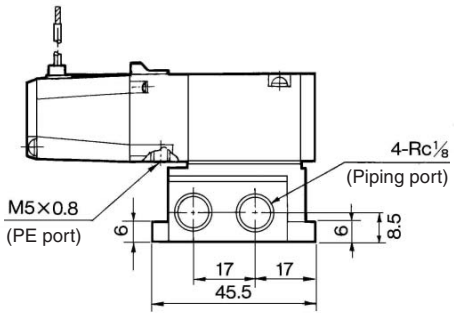


VZ3140

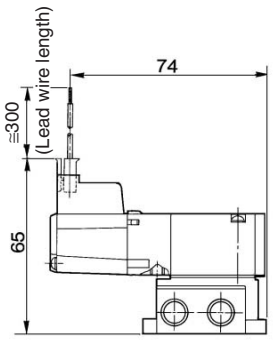




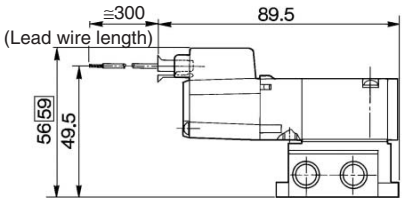




L plug connector (L)
VZ3140-□L□□-01

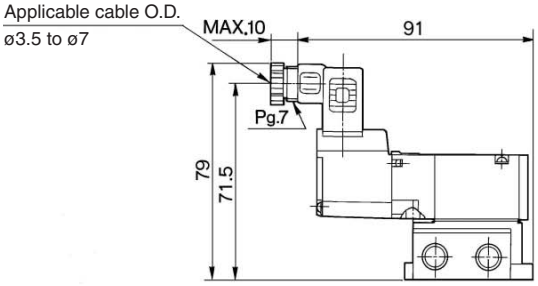


M plug connector (M)
VZ3140-□M□□-01

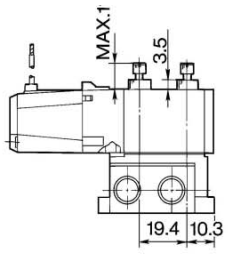


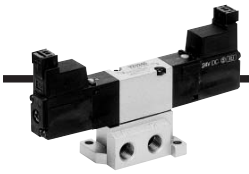
□: With light/surge voltage suppressor

DIN terminal (D)
VZ3140-□D□□-01



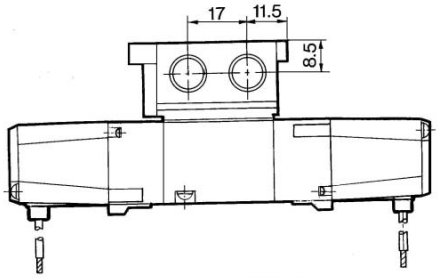
Built-in speed controllers
VZ3150-□□□□

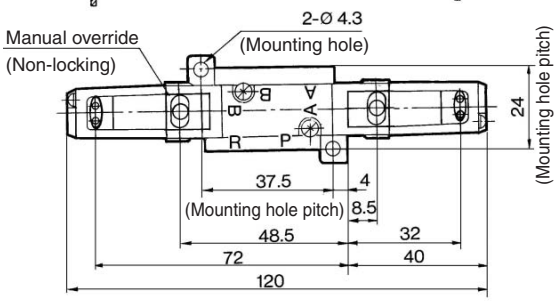


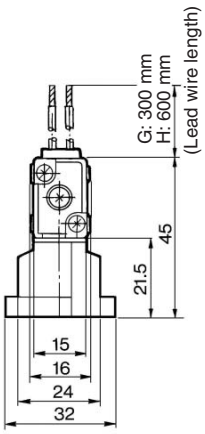


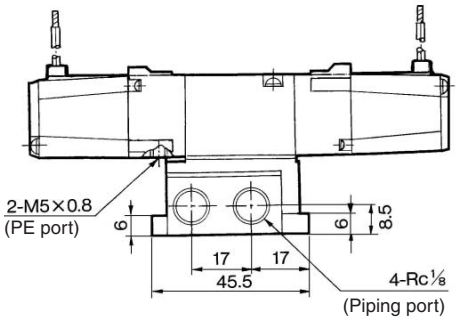
2 Position Double

Grommet (G), (H)
VZ3240-□$^{G}_{H}$□□-01

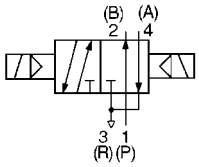




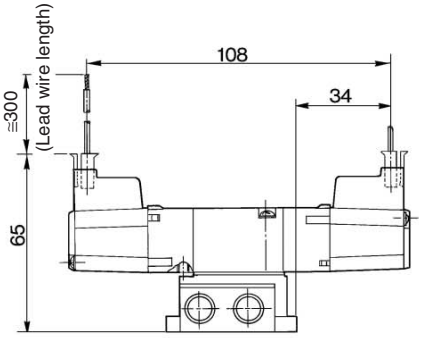




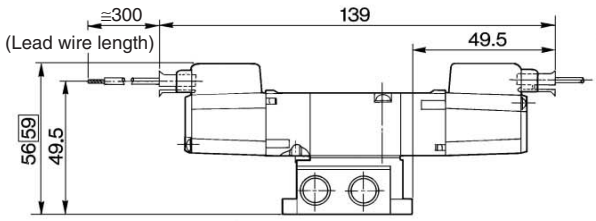
VZ3240



L plug connector (L)
VZ3240-□L□□-01

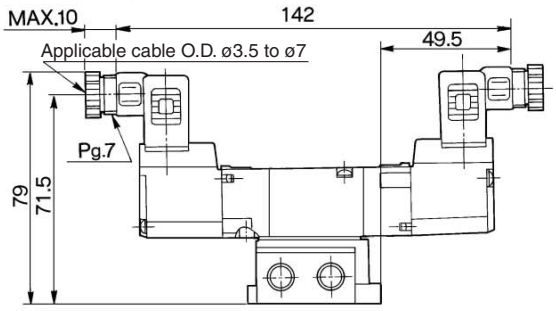


M plug connector (M)
VZ3240-□M□□-01

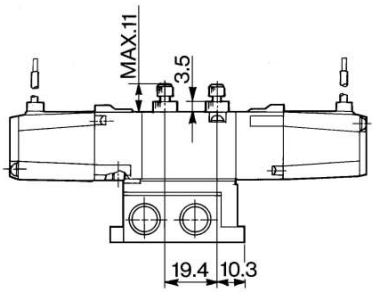


□: With light/surge voltage suppressor

DIN terminal (D)
VZ3240-□D□□-01

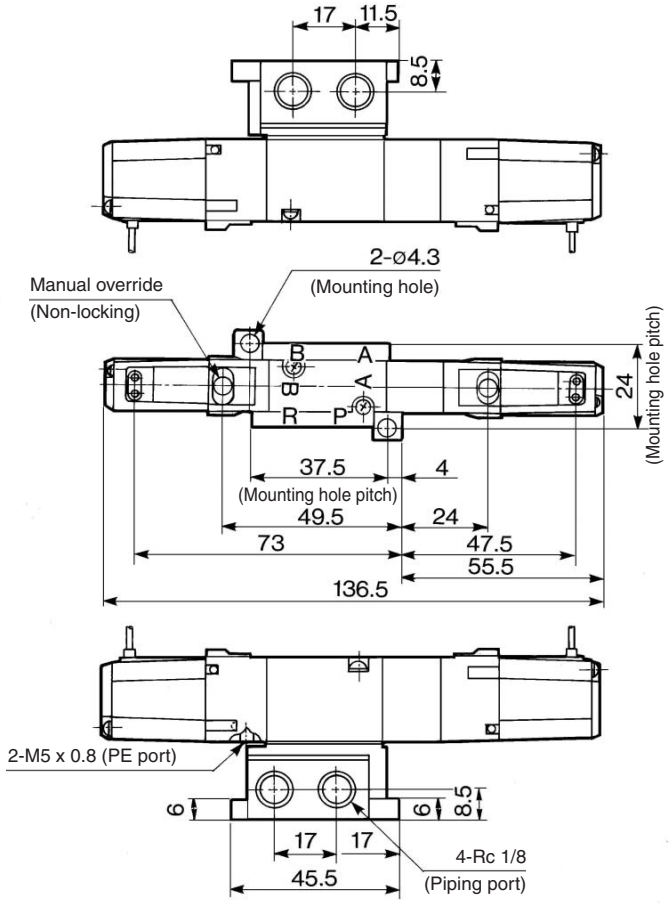


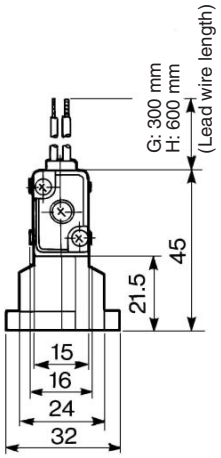
Built-in speed controllers
VZ3250-□□□□



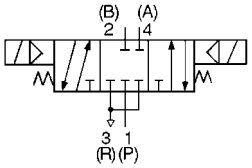
3 Position Closed Center/Exhaust Center/Pressure Center

Grommet (G), (H)
VZ3$^{3}_{5}$20-□$^{G}_{H}$□□-01

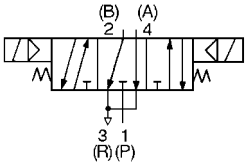




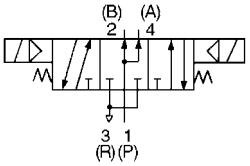
VZ3340



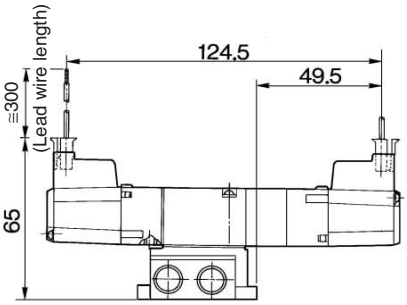
VZ3440



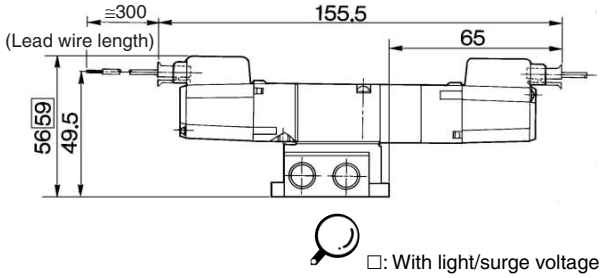
VZ3540



L plug connector (L)
VZ3$^{3}_{5}$40-□L□□-01

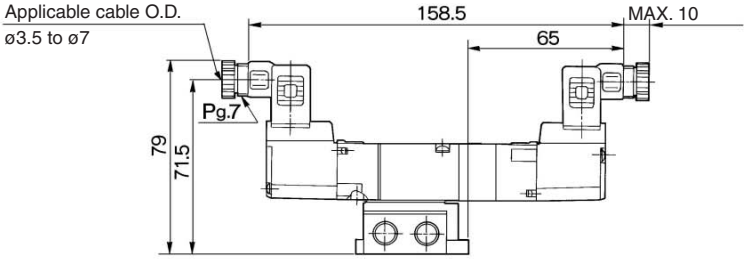


M plug connector (M)
VZ3$^{3}_{5}$40-□M□□-01

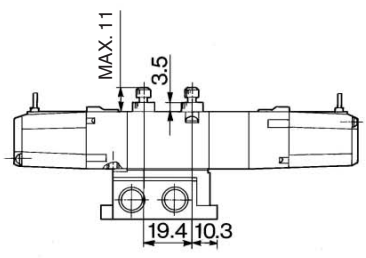


□: With light/surge voltage suppressor

DIN terminal (D)
VZ3$^{3}_{5}$40-□D□□-01



Built-in speed controllers
VZ3$^{3}_{5}$50-□□□□



Series VZ3000/Base Mounted
Manifold Specifications

Manifold Standard

Manifold Specifications

Model		Type 40	Type 41	Type 42	Type 43
Manifold type		Single base/B mount			
P(SUP)/R(EXH)		Common SUP/Common EXH			
Valve stations		2 to 20 stations			
4(A), 2(B) port Porting specifications	Position	Base	Base		
	Direction	Bottom	Side		
Port size	1(P), 3/5(R) port	Rc 1/8		Rc 1/4	Rc 1/8
	4(A), 2(B) port	M5 x 0.8		Rc 1/8 C6 (One-touch fitting for ø6) B7 (One-touch fitting for 1/4")	C4 (One-touch fitting for ø4) B3 (One-touch fitting for 5/32")

Flow Characteristics

Manifold		Port size 1(P), 5/3(R) port	Port size 2(B), 4(A) port	Flow characteristics 1 → 4/2 (P → A/B) C [dm³/(s·bar)]	b	Cv	Flow characteristics 4/2 → 5/3 (A/B → R) C [dm³/(s·bar)]	b	Cv
VV5Z3-40	**VZ3□4□**	1/8	M5 x 0.8	0.55	0.35	0.15	0.64	0.26	0.16
VV5Z3-41		1/8	M5 x 0.8	0.59	0.35	0.16	0.68	0.23	0.17
VV5Z3-42-01		1/4	1/8	0.74	0.22	0.18	0.82	0.31	0.21
VV5Z3-42-C6		1/4	C6	0.71	0.24	0.17	0.80	0.29	0.20
VV5Z3-43		1/8	C4	0.55	0.29	0.14	0.74	0.32	0.19

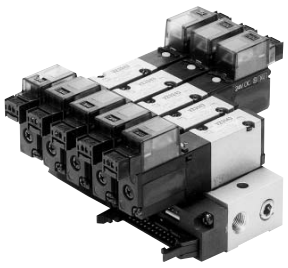
Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.
(Example) VV5Z3-40-031-M5·····1 pc. (Manifold base)
∗VZ3140-5G-M5·····2 pcs. (Valve)
∗DXT192-13-1A·····1 pc. (Blanking plate assembly)
VV5Z3-43-031-C4·····1 pc. (Manifold base)
∗VZ3140-5LZ·····1 pc. (Valve)
∗VZ3240-5LZ·····1 pc. (Valve)
∗DXT192-13-1A·····1 pc. (Blanking plate assembly)
→The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Flat Ribbon Cable Manifold

- **One-touch wiring to consolidate connection of external wires.**
- **Clean appearance**
  The flat cable provides wiring on a printed circuit board to the individual valves at the manifold base, enabling the consolidation of external wiring at a touch through a 26 pins MIL connector.



Flat Ribbon Cable Manifold Specifications

Model		Type 41P	Type 43P
Manifold type		Single base/B mount	
P(SUP), R(EXH)		Common SUP/Common EXH	
Valve stations		3 to 12 stations	
4(A), 2(B) port location	Position	Base	
	Direction	Side	
Port size	1(P), 3/5(R) port	Rc 1/8	Rc 1/8
	4(A), 2(B) port	M5 x 0.8	C4 (One-touch fitting for ø4)
Applicable flat ribbon cable connector		Socket: 26 pins MIL, with strain relief (Conforming to MIL-C-83503)	
Internal wiring		+COM specifications (For –COM specifications, specify them separately.)	
Applicable valve model		VZ3□43-$\frac{1}{3}\frac{3}{5}\frac{}{6}$MOZ□-VZ3□53-$\frac{1}{3}\frac{3}{5}\frac{}{6}$MOZ□	
Rated voltage		100 VAC 50/60 Hz, 110 VAC 50/60 Hz, 24 VDC, 12 VDC	

Note) Withstand voltage specifications of wiring unit part is equivalent to JIS C 0704 class 1.

Flow Characteristics

Manifold		Port size 1(P), 5/3(R) port	Port size 2(B), 4(A) port	Flow characteristics 1 → 4/2 (P → A/B) C [dm³/(s·bar)]	b	Cv	Flow characteristics 4/2 → 5/3 (A/B → R) C [dm³/(s·bar)]	b	Cv
VV5Z3-41P	**SYJ5□43**	1/8	M5 x 0.8	0.59	0.35	0.16	0.68	0.23	0.17
VV5Z3-43P		1/8	C4	0.59	0.29	0.14	0.74	0.32	0.19

Note) Value at manifold base mounted, 2 position single operating

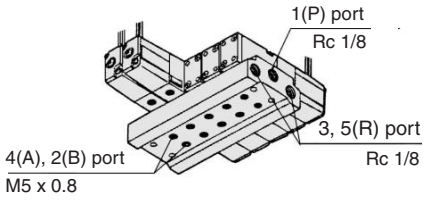
How to Order Manifold

Instruct by specifying the valves, blanking plate assembly and connector assembly to be mounted on the manifold along with the manifold base model no.
(Example) VV5Z3-43P-07-C4·····1 pc. (Manifold base)
∗VZ3143-5MOZ····· 3 pcs. (Valve)
∗VZ3243-5MOZ····· 3 pcs. (Valve)
∗DXT192-13-3A····· 1 pc. (Blanking plate assembly)
∗DXT192-52-1-4A····· 3 pcs. (Connector assembly)
∗DXT192-52-2-4A····· 3 pcs. (Connector assembly)
→The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Common SUP/Common EXH

Note) For more than 8 stations, supply air to both sides of 1(P) port and exhaust air from both sides of 3/5(R) port.

Type 40



How to Order

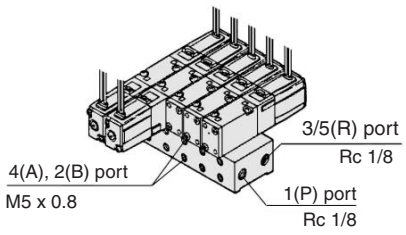
VV5Z3 − 40 − 05 2 − M5 □

Stations	
02	2 stations
⋮	⋮
20	20 stations

4(A), 2(B) port size	
M5	M5 x 0.8

1(P), 3/5(R) port thread type	
Nil	Rc
F	G
N	NPT
Z	NPTE

Type 41



How to Order

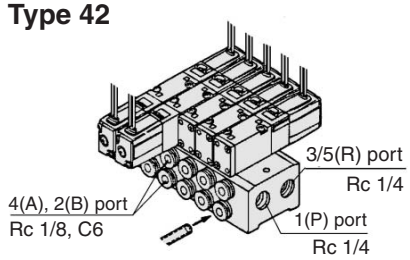
VV5Z3 − 41 − 05 1 − M5 □

Stations	
02	2 stations
⋮	⋮
20	20 stations

4(A), 2(B) port size	
M5	M5 x 0.8

1(P), 3/5(R) port thread type	
Nil	Rc
F	G
N	NPT
Z	NPTE

Type 42



How to Order

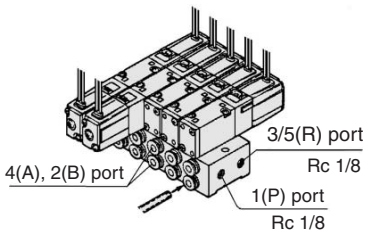
VV5Z3 − 42 − 05 1 − C6 □

Stations	
02	2 stations
⋮	⋮
20	20 stations

4(A), 2(B) port size	
01	Rc 1/8
C6	One-touch fitting for ø6
B7	One-touch fitting for 1/4"

1(P), 3/5(R) port thread type	
Nil	Rc
F	G
N	NPT
Z	NPTE

Type 43



How to Order

VV5Z3 − 43 − 05 1 − C4 □

Stations	
02	2 stations
⋮	⋮
20	20 stations

4(A), 2(B) port size	
C4	One-touch fitting for ø4
B3	One-touch fitting for 5/32"

1(P), 3/5(R) port thread type	
Nil	Rc
F	G
N	NPT
Z	NPTE

Applicable solenoid valve

VZ3□4□-□ G L M D □□

VZ3□5□-□ G L M D □□

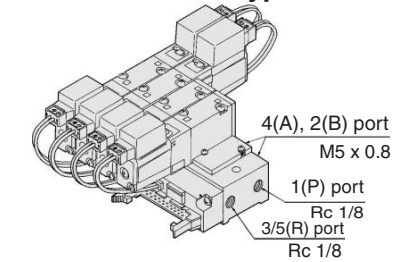
Applicable blanking plate assembly
DXT192-13-1A

Applicable individual EXH spacer assembly
DXT192-21-1A

Applicable individual SUP spacer assembly
(Except VV5Z3-40 type)
DXT192-40-1A

Applicable interface regulator
ARBZ3000-00-P

Flat ribbon cable type 41P



How to Order

VV5Z3 − 41P − 05 − M5 □

Stations	
03	3 stations
⋮	⋮
12	12 stations

4(A), 2(B) port size	
M5	M5 x 0.8

1(P), 3/5(R) port thread type	
Nil	Rc
F	G
N	NPT
Z	NPTE

Applicable solenoid valve

VZ3□43- 1 3 5 6 MOZ□

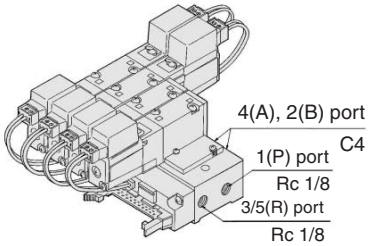
VZ3□53- 1 3 5 6 MOZ□

Applicable blanking plate assembly
DXT192-13-3A

Applicable connector assembly
DXT192-52-1-∗A
(For 2 position single)
DXT192-52-2-∗A
(For 2 position double, 3 position)
∗ 1: 100 VAC, 3: 110 VAC, 4: DC

For "How to order applicable connector assemblies", refer to page 3-3-7.

Flat ribbon cable type 43P



How to Order

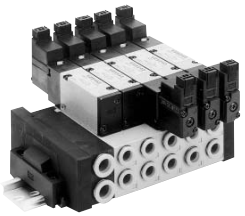
VV5Z3 − 43P − 05 − C4 □

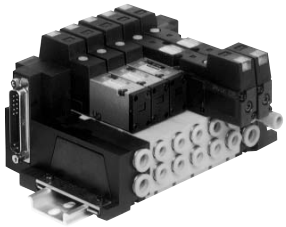
Stations	
03	3 stations
⋮	⋮
12	12 stations

4(A), 2(B) port size	
C4	One-touch fitting for ø4
B3	One-touch fitting for 5/32"

1(P), 3/5(R) port thread type	
Nil	Rc
F	G
N	NPT
Z	NPTE

DIN Rail Manifold





Manifold Specifications

Model		Type 45	Type 45F
Manifold type		Stacking type non plug-in type	Stacking type plug-in type
P(SUP), R(EXH)		Common SUP/Common EXH	
Valve stations		2 to 20 stations	
A, B port Porting specifications	Location	Base	
	Direction	Side	
Port size	1(P), 3/5(R) port	C8 (One-touch fitting for ø8)	
	4(A), 2(B) port	C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6)	
Connector		—	MIL-C-24308 Applicable for JIS-X-5101 D-sub connector
Internal wiring		—	COM Note)

Note) It is available at +COM or –COM.

Flow Characteristics

Manifold		Port size		Flow characteristics					
		1(P), 5/3(R) port	2(B), 4(A) port	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → R)		
				C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
VV5Z3-45	VZ3□4□	C8	C4	0.59	0.28	0.15	0.83	0.34	0.22
		C8	C6	0.76	0.23	0.18	0.86	0.29	0.22

Note) Value at manifold base mounted, 2 position single operating

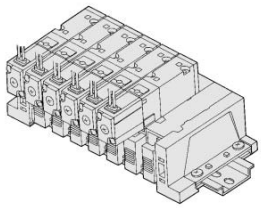
How to Order Manifold

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.
(Example) VV5Z3-45FD-06-C6C·· 1 pc. (Manifold base)
∗VZ3143-5FZ·····2 pcs. (Valve)
∗VZ3243-5FZ·····3 pcs. (Valve)
∗VZ3000-69-1A ·····1 pc. (Blanking plate assembly)
└▸The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

DIN Rail Manifold

Common SUP/Common EXH

Type 45 (Non plug-in type)



How to Order

VV5Z3 − 45 − 05 D − C6 C − [ ]

Stations

02	2 stations
⋮	⋮
20	20 stations

SUP/EXH block mounting position

U	U side: 2 to 10 stations
D	D side: 2 to 10 stations
B	Both sides: 2 to 20 stations
M ∗	Special specifications

∗ For special specifications, indicate separately by the manifold specification sheet.

4(A), 2(B) port size

C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
M∗	Mixed

∗ In the case of mixed specifications (M), indicate separately on the manifold specification sheet.

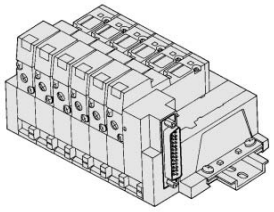
Applicable solenoid valve
VZ3□4□-□ G L M D □□
VZ3□5□-□ G L M D □□

Applicable blanking plate assembly
VZ3000-69-2A

DIN rail length specified

Nil	Standard length	
3	For 3 stations	(Specify a longer rail than the standard length.)
⋮	⋮	
20	For 20 stations	

Type 45F (Plug-in type)



How to Order

VV5Z3 −45F D − 05 [ ] − C6 C − [ ]

Connector mounting direction

U	U side: 2 to 10 stations
D	D side: 2 to 10 stations
B	Both sides: 11 to 20 stations

Stations

02	2 stations
⋮	⋮
20	20 stations

SUP/EXH block mounting position

Nil	For 2 to 10 stations : One side (Same as direction of connector mount) For 11 to 20 stations: Both sides
B	For 2 to 10 stations: Both sides
M ∗	Special specifications

∗ For special specifications, indicate separately by the manifold specification sheet.

4(A), 2(B) port size

C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
M ∗	Mixed

∗ In the case of mixed specifications (M), indicate separately on the manifold specification sheet.

Applicable solenoid valve
VZ3□43-□FZ□

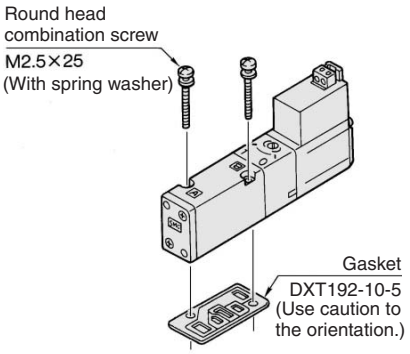
Applicable blanking plate assembly
VZ3000-69-1A

DIN rail length specified

Nil	Standard length	
3	For 3 stations	(Specify a longer rail than the standard length.)
⋮	⋮	
20	For 20 stations	

Option/Standard Manifold, Flat Ribbon Cable Manifold

Combinations of Solenoid Valve, Manifold Gasket and Manifold Base



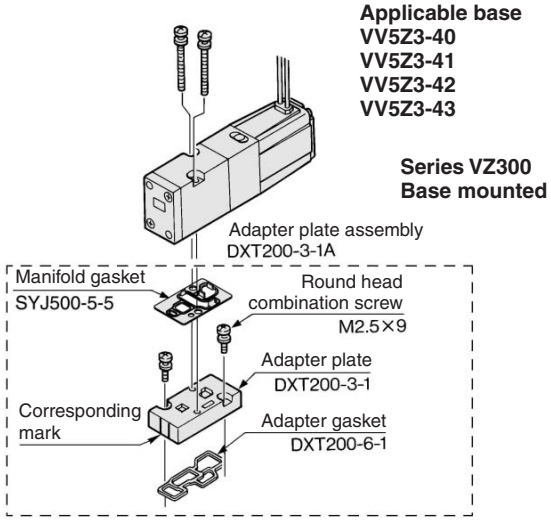
Applicable base
VV5Z3-40
VV5Z3-41
VV5Z3-42
VV5Z3-43
VV5Z3-41P
VV5Z3-43P

Installation of the VZ300 Valve on the VZ3000 Manifold

- Use of an adaptor plate makes it possible to mount Series VZ300 on the manifold base of Series VZ3000.
- The mounting direction is shown in the diagram below. Mount the solenoid so that it will be on the same side as the single solenoid of the Series VZ3000.
- 2(A) port of 3 port valve should be 2(B) port of manifold base.

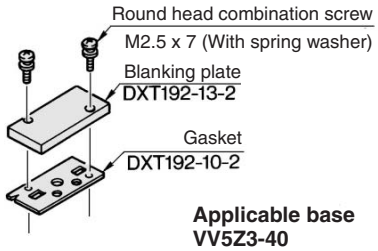
Adapter Plate Assembly DXT200-3-1A

Applicable base
VV5Z3-40
VV5Z3-41
VV5Z3-42
VV5Z3-43



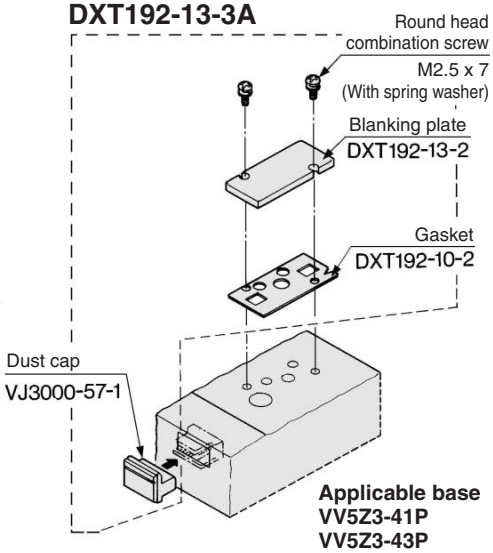
Blanking Plate Assembly

DXT192-13-1A



Applicable base
VV5Z3-40
VV5Z3-41
VV5Z3-42
VV5Z3-43

DXT192-13-3A

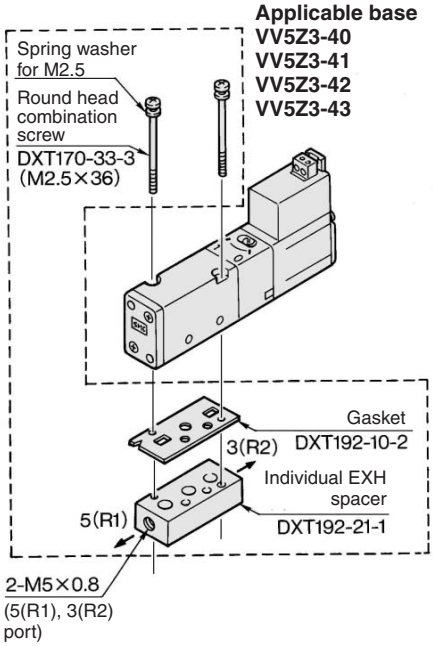


Applicable base
VV5Z3-41P
VV5Z3-43P

Individual EXH Spacer Assembly

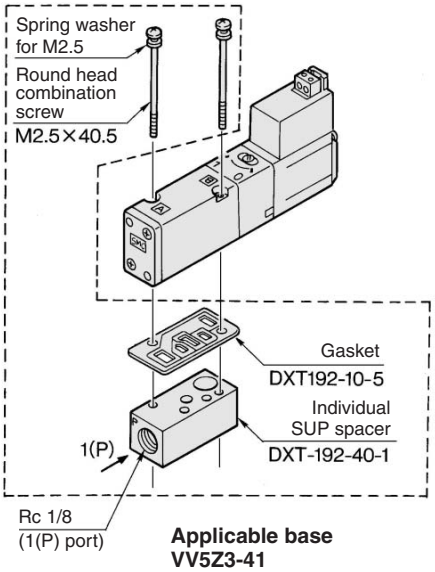
DXT192-21-1A

Applicable base
VV5Z3-40
VV5Z3-41
VV5Z3-42
VV5Z3-43



Individual SUP Spacer Assembly

DXT192-40-1A

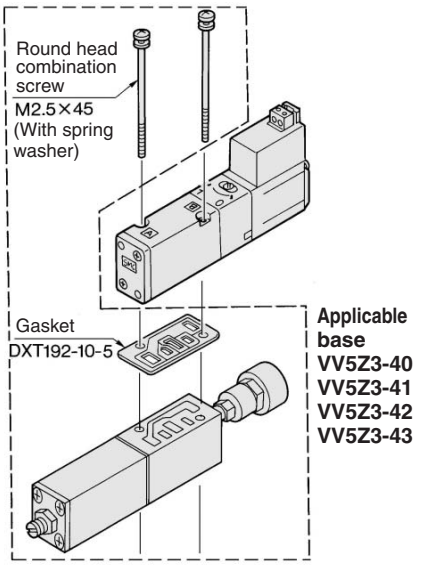


Applicable base
VV5Z3-41
VV5Z3-42
VV5Z3-43

Interface regulator (P port regulation)

Interface regulator can be placed on top of the manifold base to reduce the pressure of each of the valves.

ARBZ3000-00-P



Applicable base
VV5Z3-40
VV5Z3-41
VV5Z3-42
VV5Z3-43

Before using, refer to page 3-3-8.

Note) Please contact SMC when using an individual EXH spacer assembly, an individual SUP spacer assembly, an adapter plate assembly, or an interface regulator on 41P and 43P types.

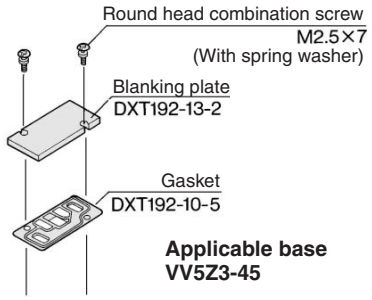
⚠ Caution

Mounting Screw Tightening Torques **M2.5: 0.45 N·m**

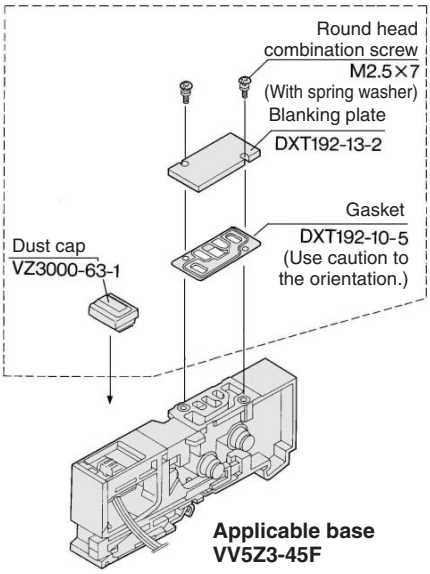
Option/DIN Rail Manifold

Blanking Plate Assembly

VZ3000-69-2A



VZ3000-69-1A

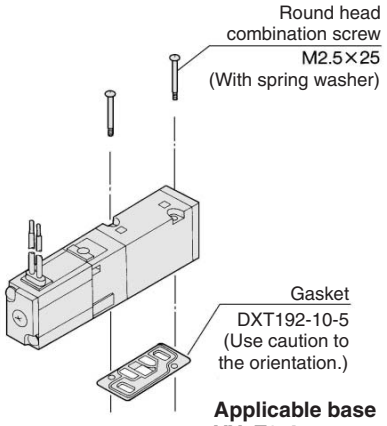


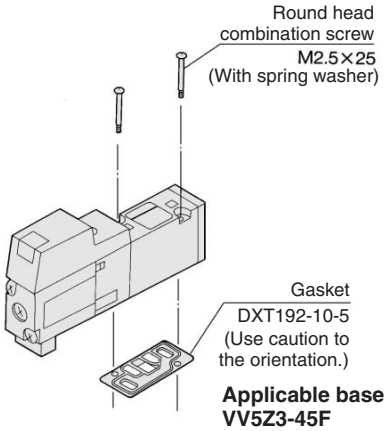
⚠ Caution

Mounting Screw Tightening Torques

M2.5: 0.32 N·m
(For stacking type manifold)

Combination of Solenoid Valve, Gasket and Manifold Base





SUP Block Disk

By installing a SUP block disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold.

VZ3000-79-1A

EXH Block Disk

By installing an EXH block disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve.

VZ3000-79-1A

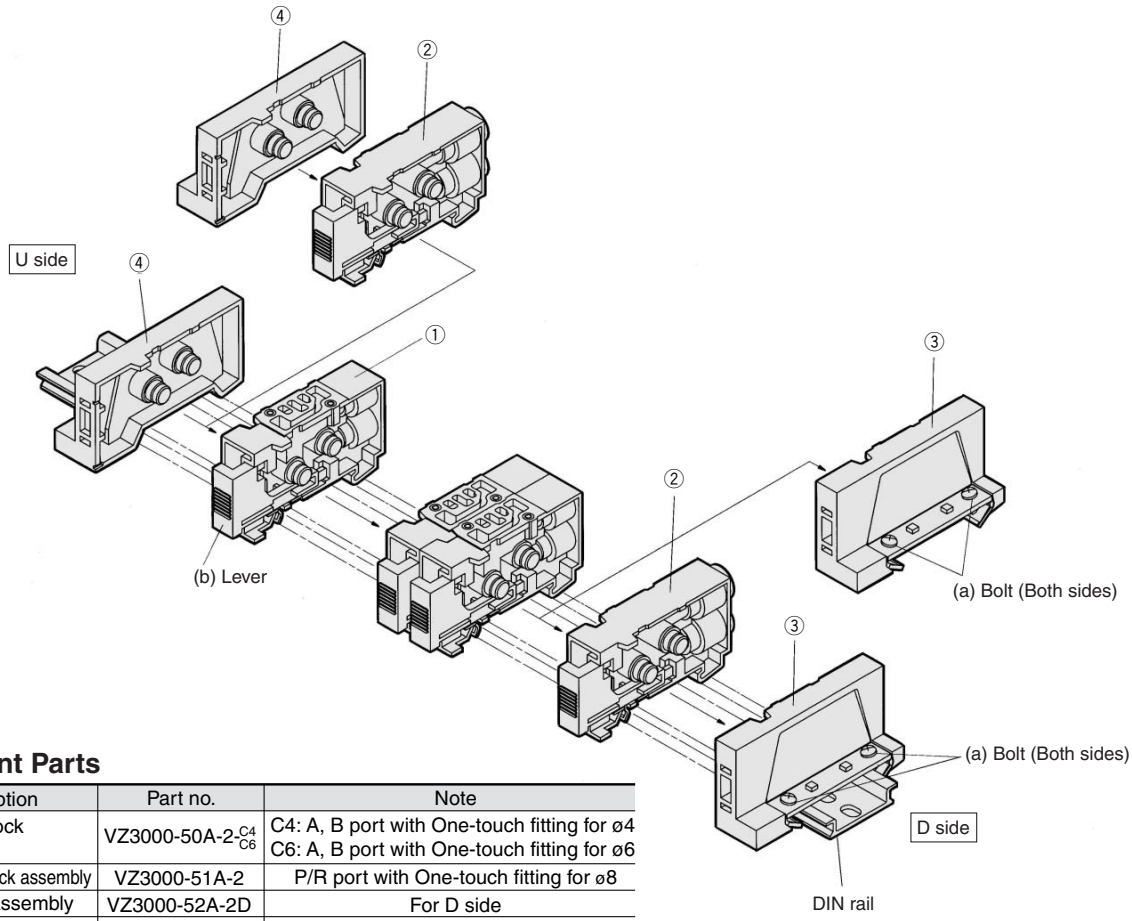
Applicable Plug Assembly (D-sub connector cable assembly)

Cable length	Assembly part no.	Component parts
1.5 m	VVZS3000-21A-1	Plug MIL standard Number of terminals: 25 Cable: 25 cores x 0.3 mm²
3 m	VVZS3000-21A-2	
5 m	VVZS3000-21A-3	
8 m	VVZS3000-21A-4	

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

Exploded View/DIN Rail Manifold

Type 45 Manifold



Replacement Parts

No.	Description	Part no.	Note
①	Manifold block assembly	VZ3000-50A-2-$^{C4}_{C6}$	C4: A, B port with One-touch fitting for ø4 C6: A, B port with One-touch fitting for ø6
②	SUP/EXH block assembly	VZ3000-51A-2	P/R port with One-touch fitting for ø8
③	End block assembly	VZ3000-52A-2D	For D side
④	End block assembly	VZ3000-52A-2U	For U side

How to Increase Manifold Base

Station expansion is possible at any position.

(1) Loosen (both) bolts (a), which are securing the manifold onto the DIN rail, 1 to 2 turns.
(To remove the manifold base from the DIN rail, loosen the bolts 4 to 5 turns.)

(2) Press lever (b) to disconnect the manifold block assembly at the location in which you wish to place an additional manifold block assembly. (However, there are no levers between ① and ④ or between ② and ④. They can be disconnected by merely pulling them apart.)

(3) Mount additional manifold block assembly on the DIN rail as shown in the Fig. (2).

(4) Press the block assemblies and tighten the bolts (a) to fix them to the DIN rail.

Note) When there are 10 or fewer manifold block assemblies, and more are added to make a total of 11 or more, a supply/exhaust block assembly must also be added.

Fig. (1)

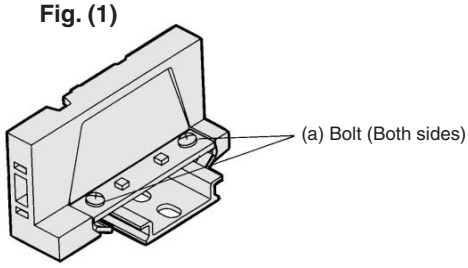
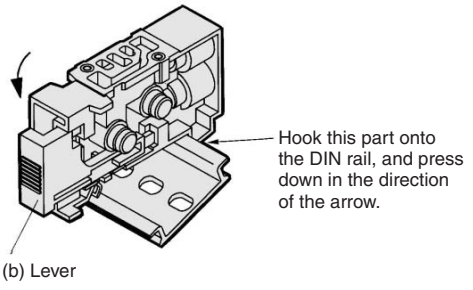
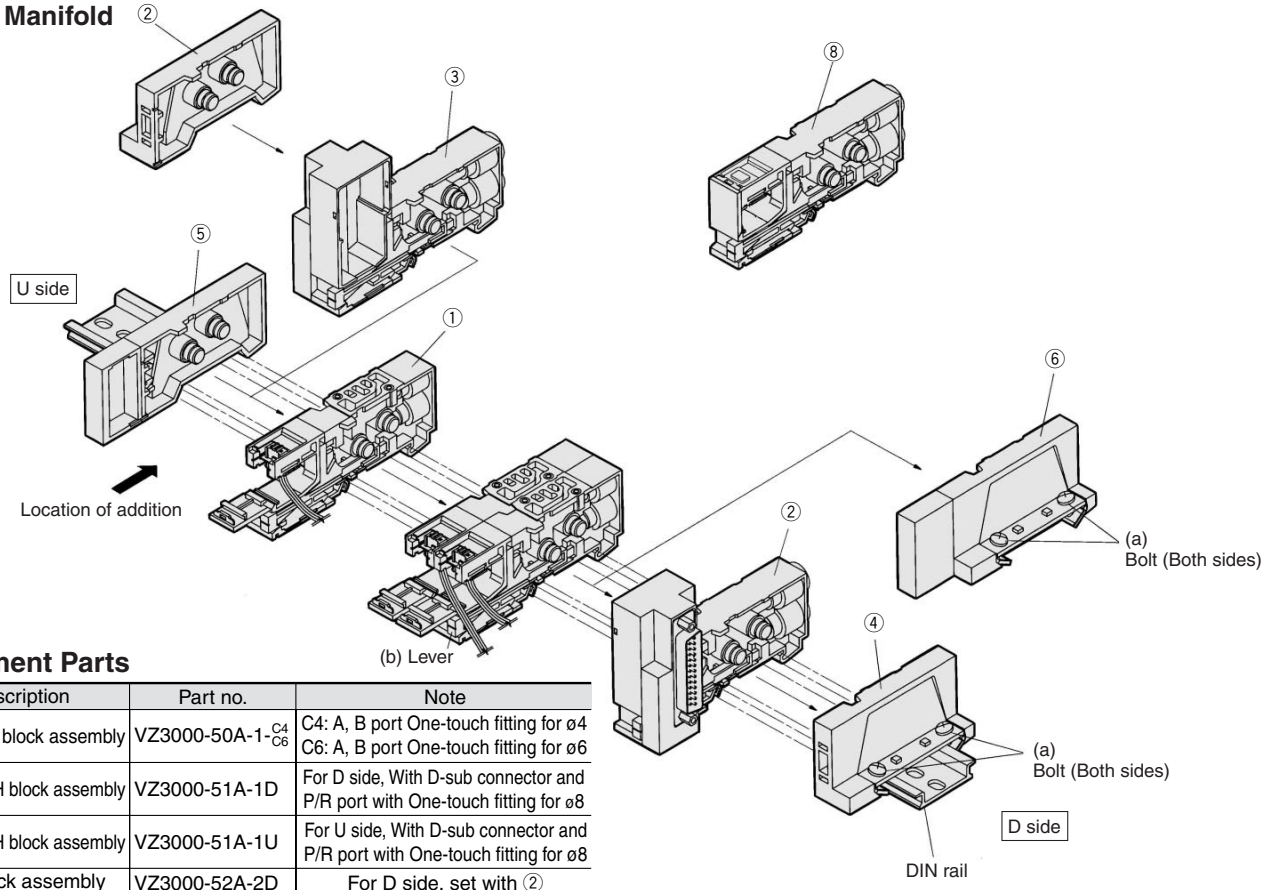


Fig. (2)



Exploded View/DIN Rail Manifold

Type 45F Manifold



Replacement Parts

No.	Description	Part no.	Note
①	Manifold block assembly	VZ3000-50A-1-$^{C4}_{C6}$	C4: A, B port One-touch fitting for ø4 C6: A, B port One-touch fitting for ø6
②	SUP/EXH block assembly	VZ3000-51A-1D	For D side, With D-sub connector and P/R port with One-touch fitting for ø8
③	SUP/EXH block assembly	VZ3000-51A-1U	For U side, With D-sub connector and P/R port with One-touch fitting for ø8
④	End block assembly	VZ3000-52A-2D	For D side, set with ②
⑤	End block assembly	VZ3000-52A-1U	For U side
⑥	End block assembly	VZ3000-52A-1D	For D side
⑦	End block assembly	VZ3000-52A-2U	For U side, set with ③
⑧	SUP/EXH block assembly	VZ3000-51A-1M	Without D-sub connector For indicated location

How to Increase Manifold Base

To add a manifold block assembly, add it to the U side so that the terminal number of the D-sub connector and the valve link position will be in accordance with the circuit diagram.

(1) Loosen (both) bolts (a), which are securing the manifold onto the DIN rail, 1 to 2 turns.
(To remove the manifold base from the DIN rail, loosen the bolts 4 to 5 turns.)

(2) Using a flat screwdriver, press lever (b) to disengage the link of the manifold block assembly on the U side or the D side from the SUP/EXH block assembly or from the end block assembly. (However, there are no levers between ⑤ and ①. They can be disconnected by merely pulling them apart.)

(3) Remove the housing cover from the D-sub connector portion of the SUP/EXH block assembly. (Refer to Fig. (1).)

(4) Following the procedure shown in Fig. (2), mount the manifold block assembly to be added onto the DIN rail. As shown in Fig. (3), insert the pin of the lead wire assembly into the D-sub connector, and attach the round crimped terminal to the screw that connects the wires.

(5) Press the block assemblies and tighten the bolts (a) to fix them to the DIN rail.

Note) When there are 10 or fewer manifold block assemblies, and more are added to make a total of 11 or more, a supply/exhaust block assembly must also be added.

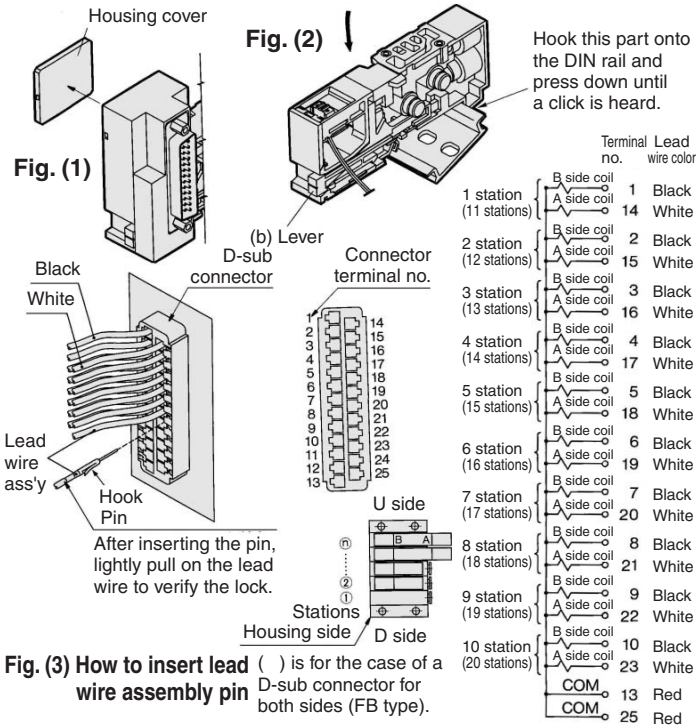
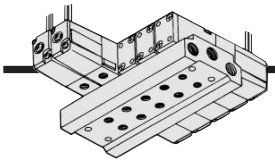


Fig. (3) How to insert lead wire assembly pin

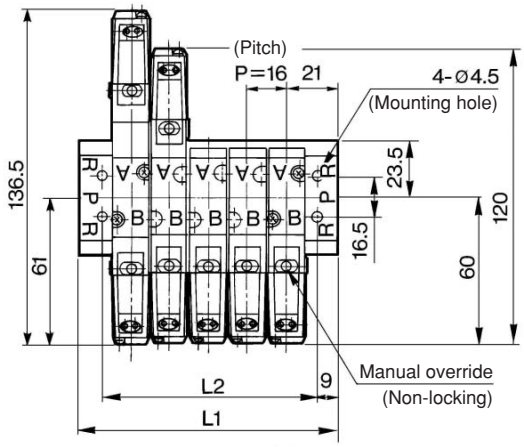
( ) is for the case of a D-sub connector for both sides (FB type).

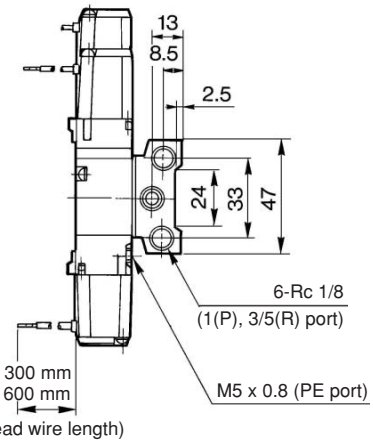


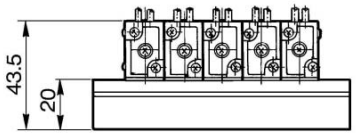
Type 40 Manifold: Bottom Ported

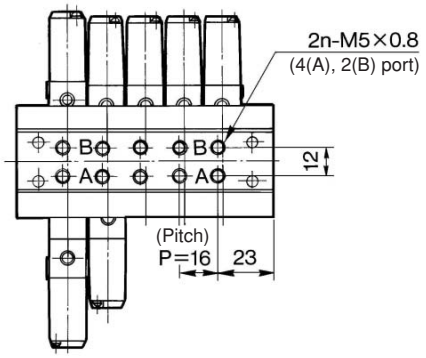
VV5Z3-40- Station **2-M5**

Grommet (G), (H)





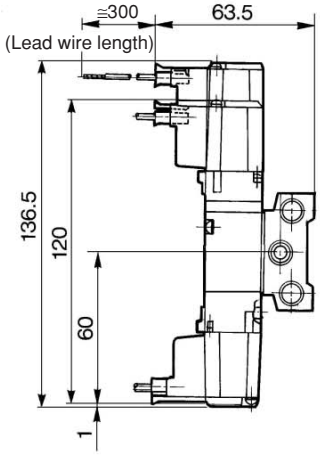




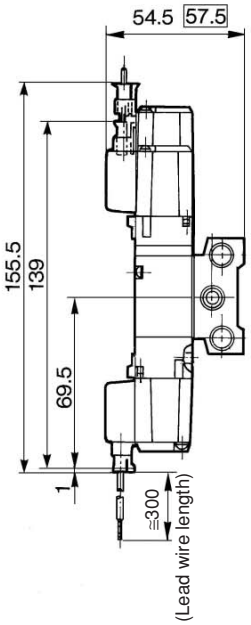
(mm)

Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L_1	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330	316
L_2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328

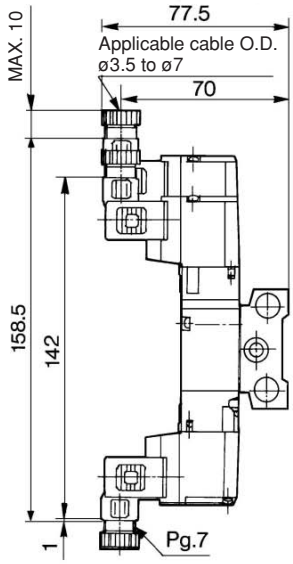
L plug connector (L)



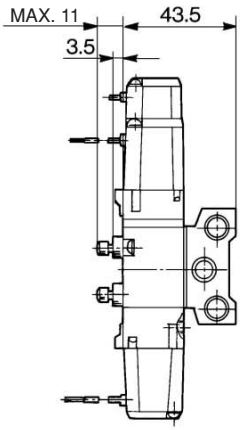
M plug connector (M)



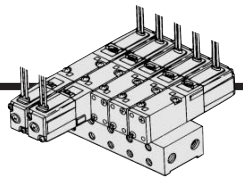
DIN terminal (D)



Built-in speed controllers



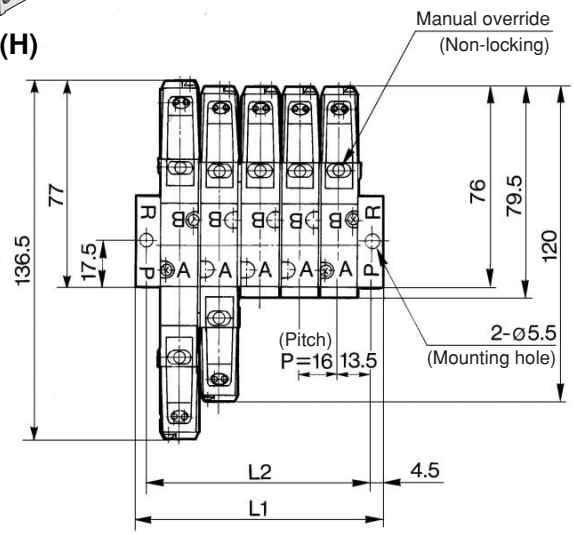
□: With light/surge voltage suppressor

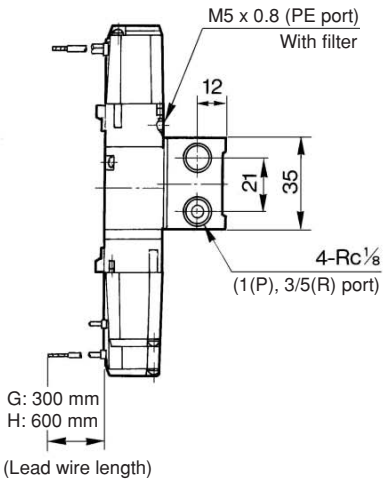


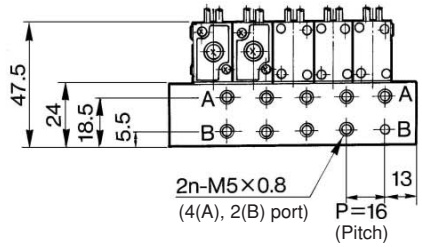
Type 41 Manifold: Side Ported

VV5Z3-41-Station 1-M5

Grommet (G), (H)



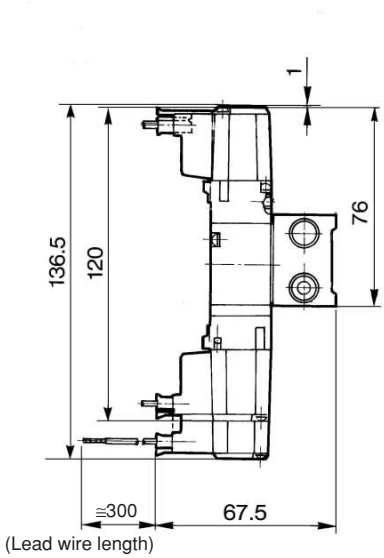




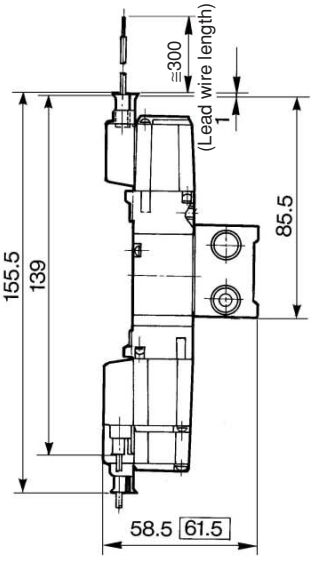
(mm)

Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L_1	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
L_2	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331

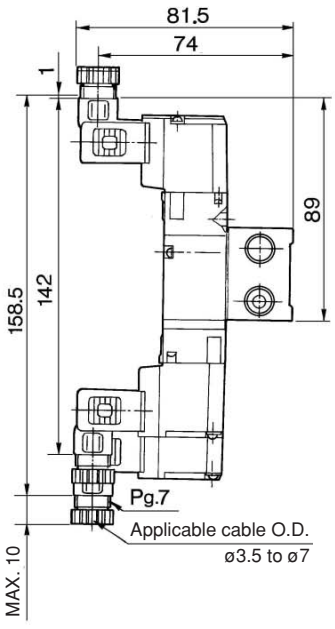
L plug connector (L)



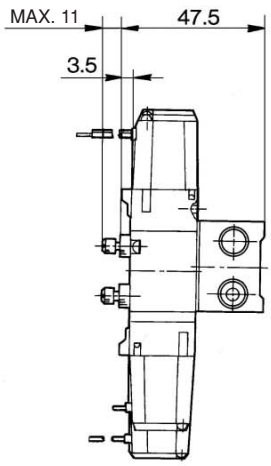
M plug connector (M)



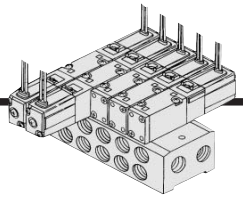
DIN terminal (D)



Built-in speed controllers



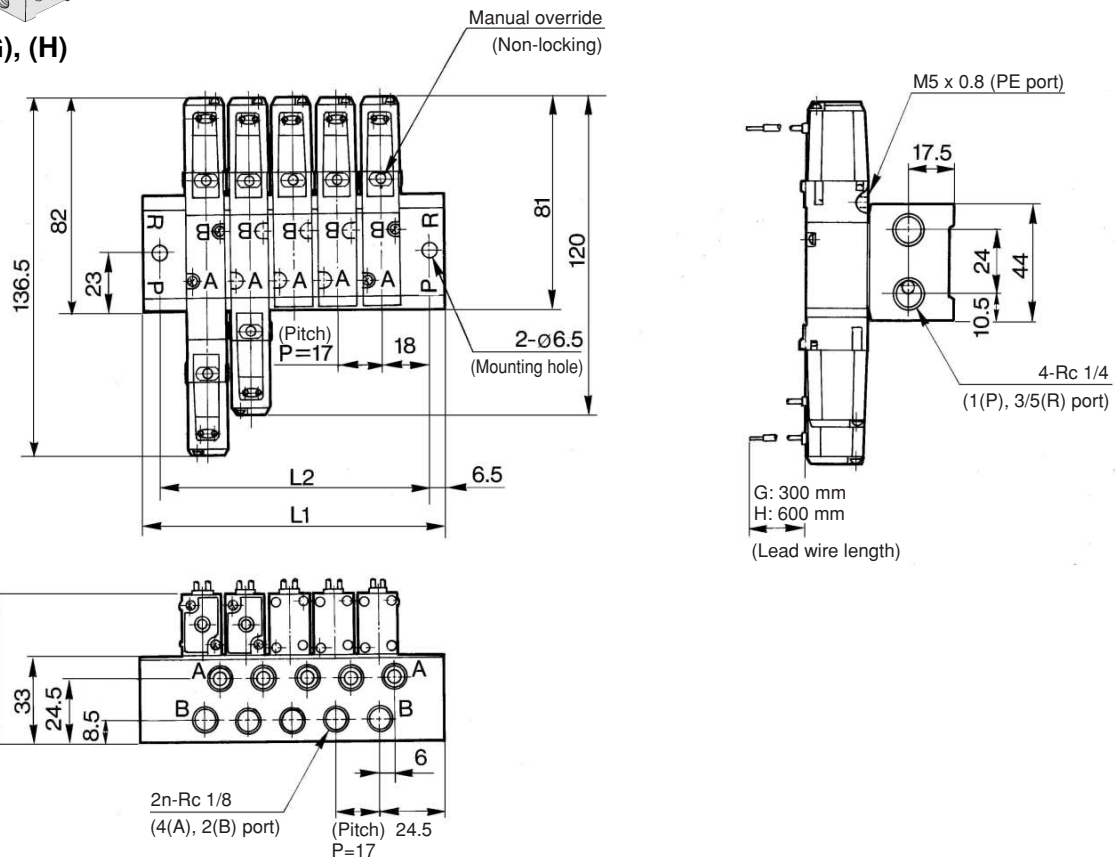
□: With light/surge voltage suppressor



Type 42 Manifold: Side Ported

VV5Z3-42-Station 1-01

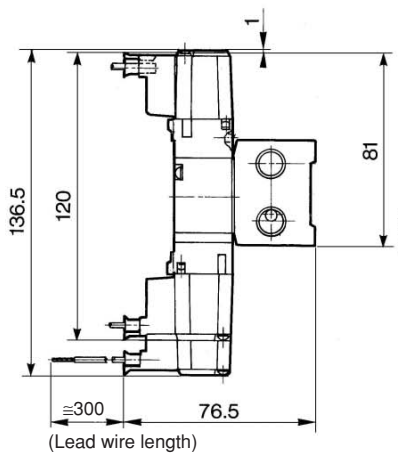
Grommet (G), (H)



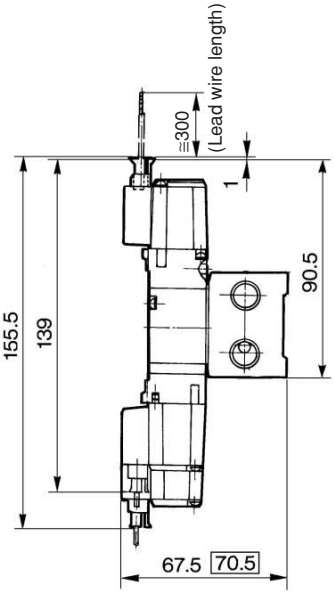
(mm)

Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L_1	66	83	100	117	134	151	168	185	202	219	236	253	270	287	304	321	338	355	372
L_2	53	70	87	104	121	138	155	172	189	206	223	240	257	274	291	308	325	342	359

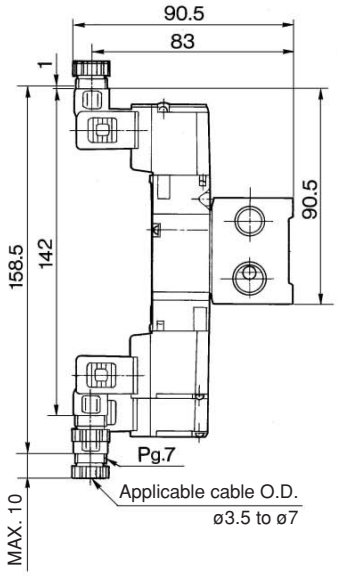
L plug connector (L)



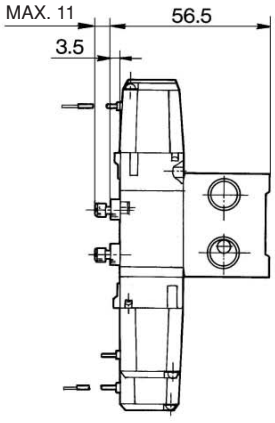
M plug connector (M)



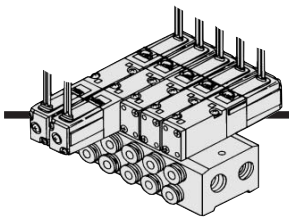
DIN terminal (D)



Built-in speed controllers



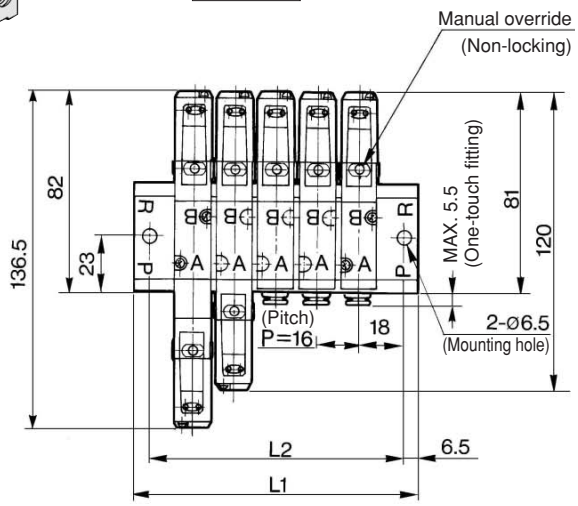
□: With light/surge voltage suppressor

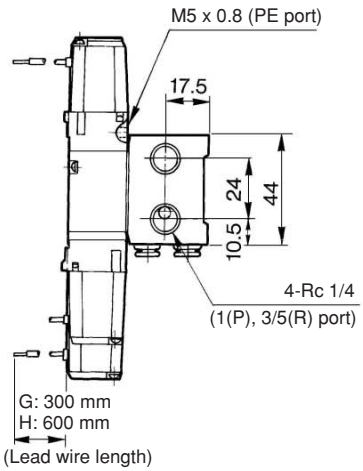


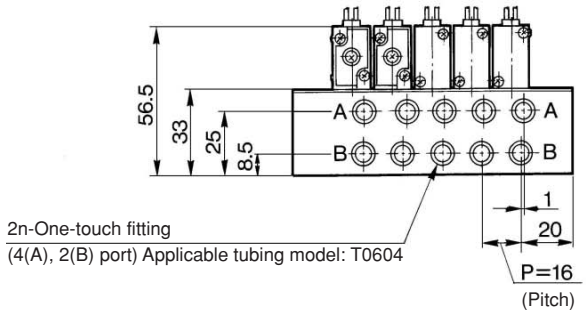
Type 42 Manifold: Side Ported

VV5Z3-42-[Station]1-C6

Grommet (G), (H)



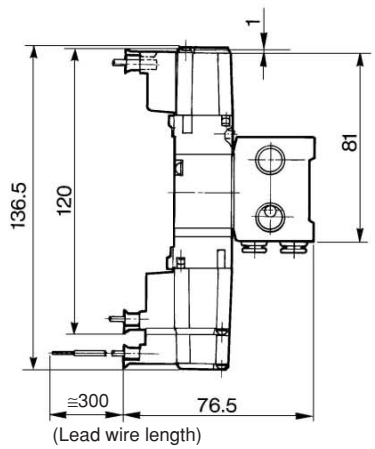




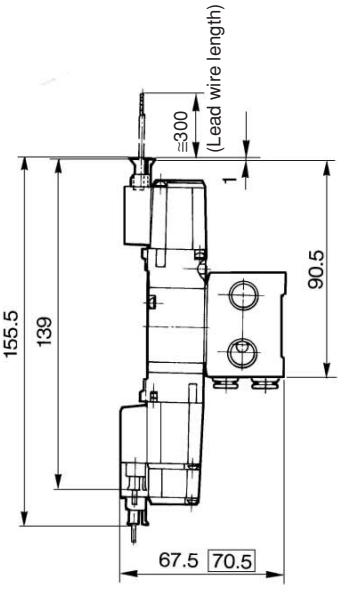
(mm)

Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L_1	65	81	97	113	129	145	161	177	193	209	225	241	257	273	289	305	321	337	353
L_2	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340

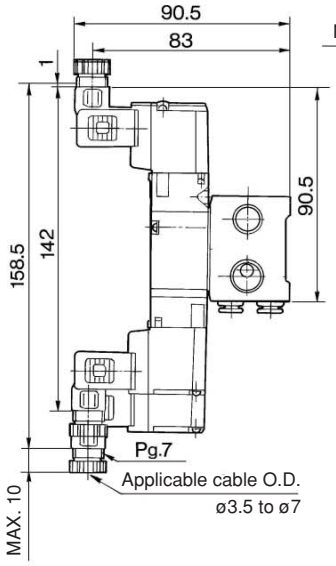
L plug connector (L)



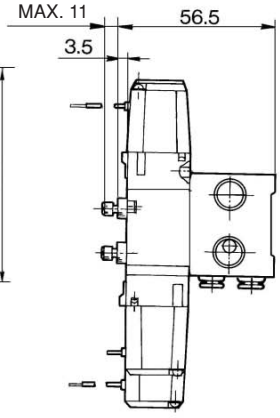
M plug connector (M)



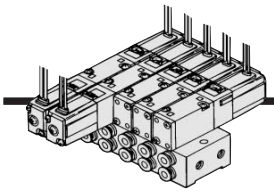
DIN terminal (D)



Built-in speed controllers



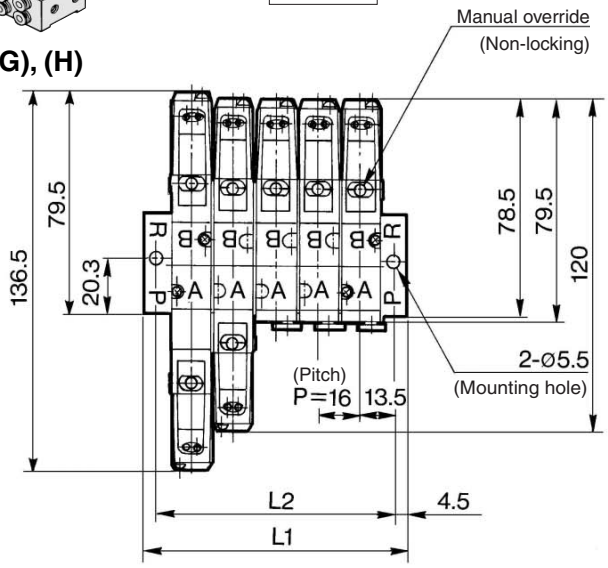
□: With light/surge voltage suppressor

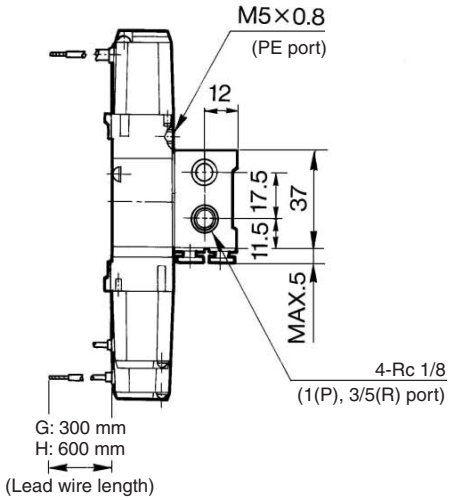


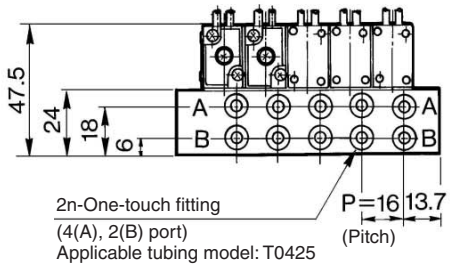
Type 43 Manifold: Side Ported

VV5Z3-43-[Station]1-C4

Grommet (G), (H)



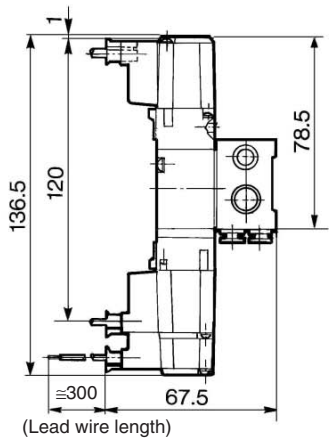




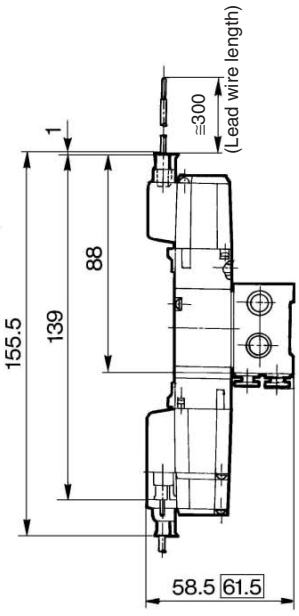
(mm)

Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L_1	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
L_2	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331

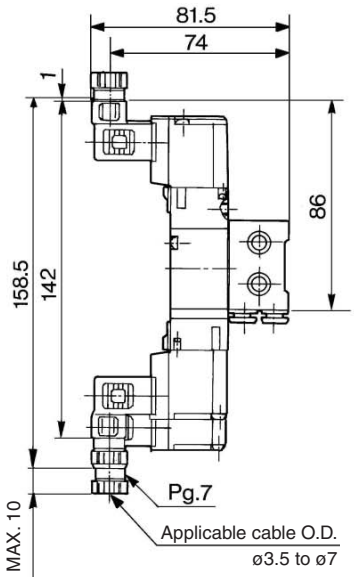
L plug connector (L)



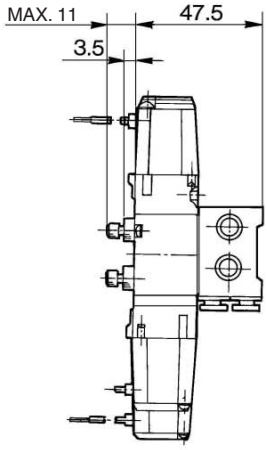
M plug connector (M)



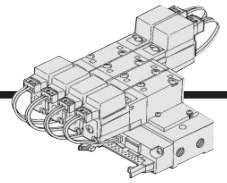
DIN terminal (D)



Built-in speed controllers

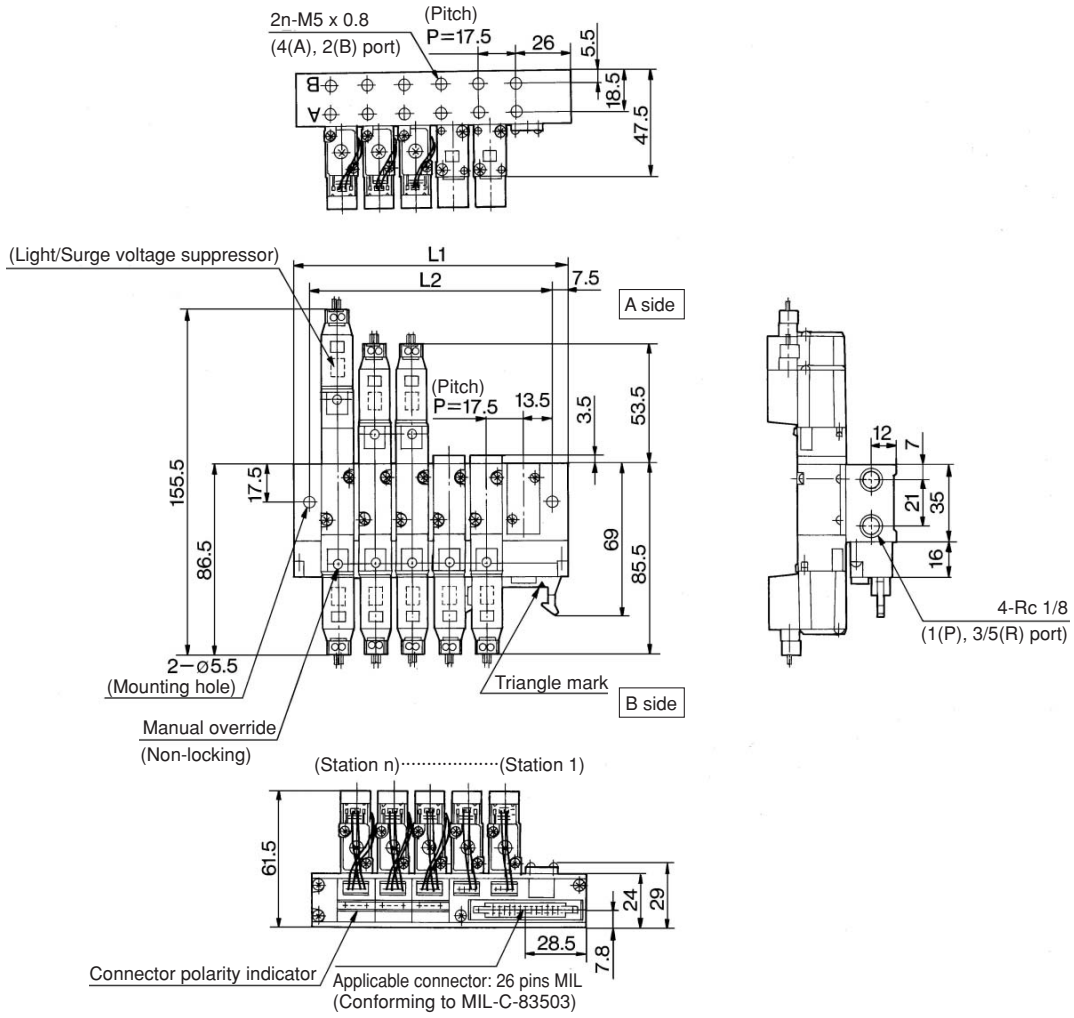


□: With light/surge voltage suppressor

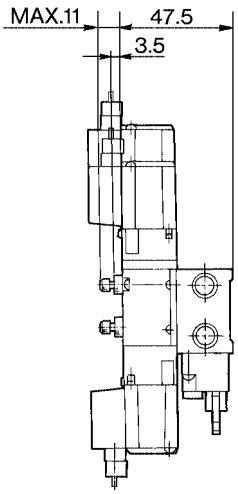


Type 41P Flat Ribbon Cable Manifold: Side Ported

VV5Z3-41P-Station-M5

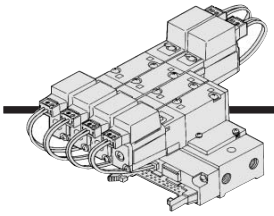


Built-in speed controllers



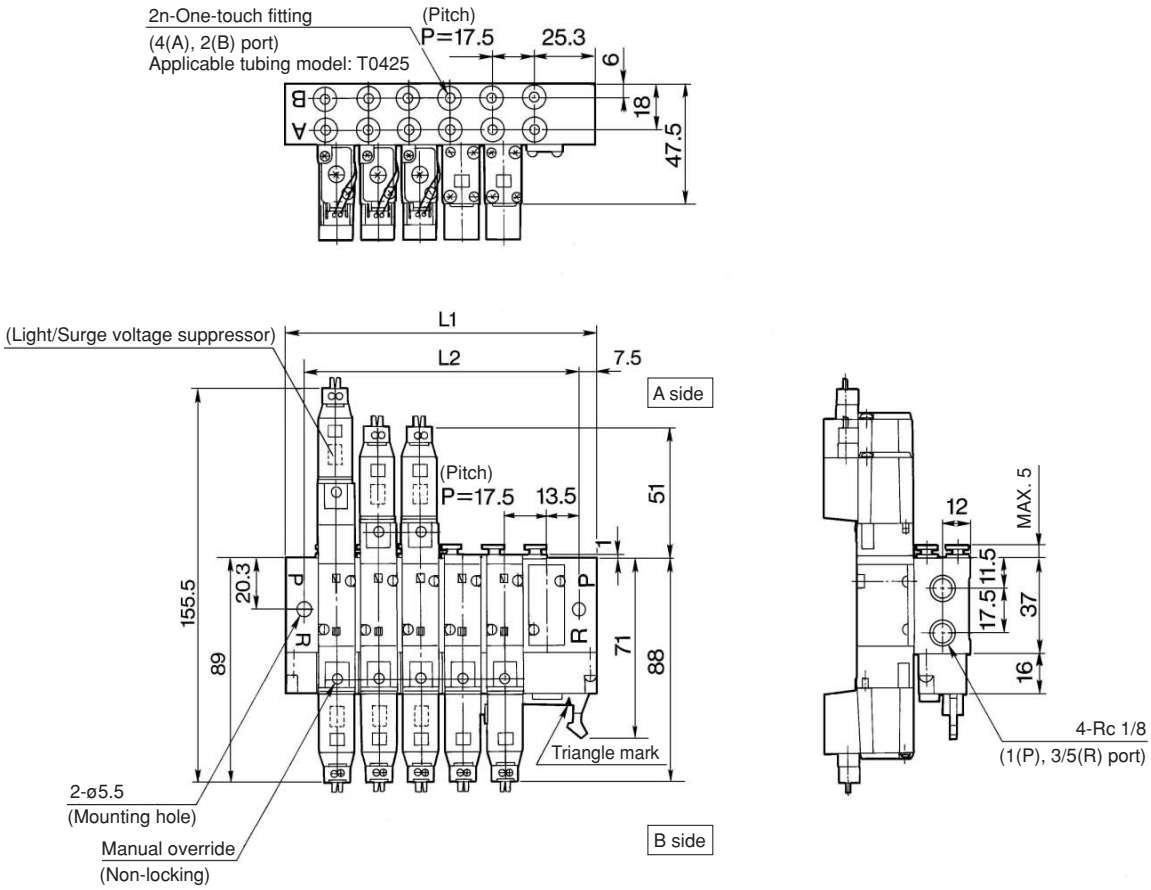
(mm)

Stations	3	4	5	6	7	8	9	10	11	12
L_1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L_2	62	79.5	97	114.5	132	149.5	167	184.5	202	219.5



Type 43P Flat Ribbon Cable Manifold: Side Ported

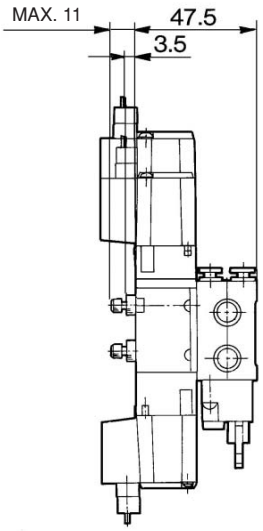
VV5Z3-43P-Station-C4

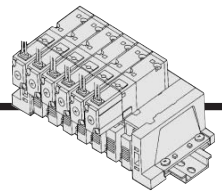


Built-in speed controllers

(mm)

Stations	3	4	5	6	7	8	9	10	11	12
L_1	77	94.5	112	129.5	147	164.5	182	199.5	217	234.5
L_2	62	79.5	97	114.5	132	149.5	167	184.5	202	219.5

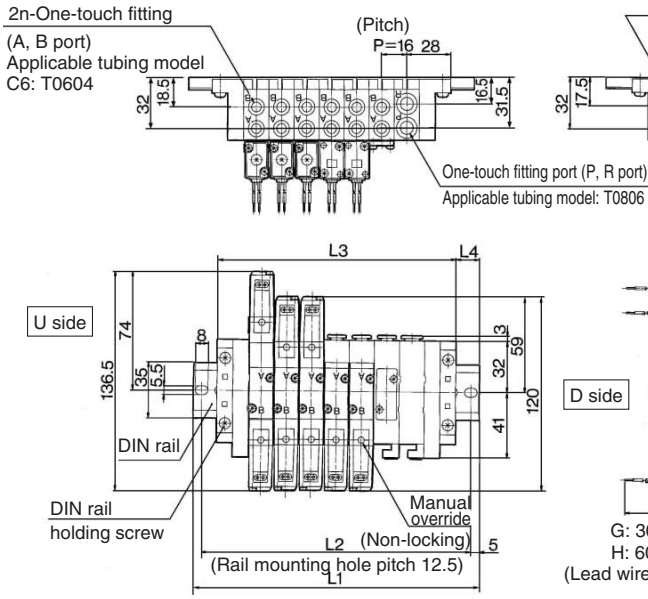


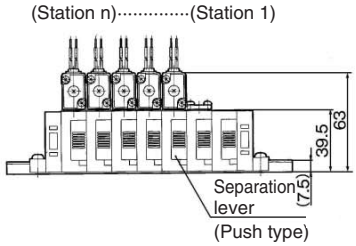


Type 45 DIN Rail Manifold (Non Plug-in): Side Ported

VV5Z3-45-[Station]D-[C4C / C6C]

Grommet (G), (H)

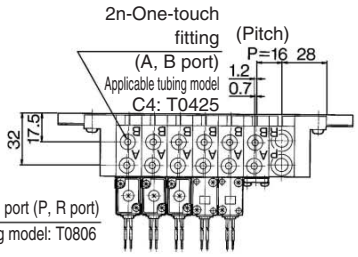




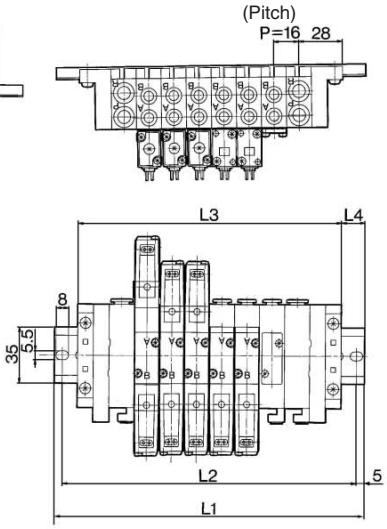
(mm)

Stations	2	3	4	5	6	7	8	9	10
L_1	110.5	135.5	148	160.5	185.5	198	210.5	223	248
L_2	100	125	137.5	150	175	187.5	200	212.5	237.5
L_3	88	104	120	136	152	168	184	200	216
L_4	11.5	16	14	12.5	17	15	13.5	11.5	16

C4



VV5Z3-45-[Station]B-[C4C / C6C]



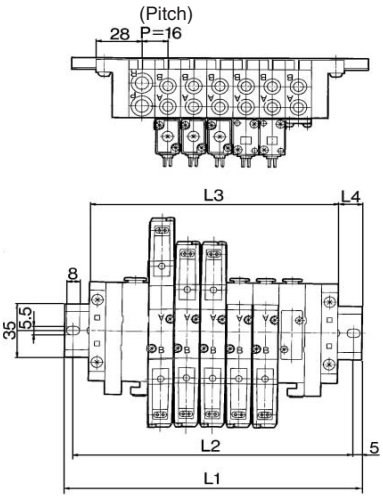
(mm)

Stations	2	3	4	5	6	7	8	9	10
L_1	135.5	148	160.5	185.5	198	210.5	223	248	260.5
L_2	125	137.5	150	175	187.5	200	212.5	237.5	250
L_3	104	120	136	152	168	184	200	216	232
L_4	16	14	12.5	17	15	13.5	11.5	16	14

(mm)

Stations	11	12	13	14	15	16	17	18	19	20
L_1	273	298	310.5	323	335.5	360.5	373	385.5	398	423
L_2	262.5	287.5	300	312.5	325	350	362.5	375	387.5	412.5
L_3	248	264	280	296	312	328	344	360	376	392
L_4	12.5	17	15.5	13.5	12	16.5	14.5	13	11	15.5

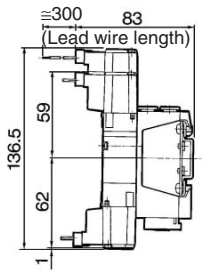
VV5Z3-45-[Station]U-[C4C / C6C]



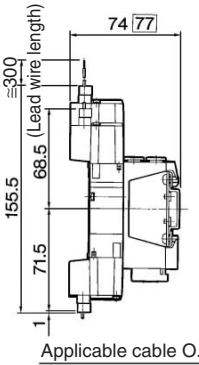
(mm)

Stations	2	3	4	5	6	7	8	9	10
L_1	110.5	135.5	148	160.5	185.5	198	210.5	223	248
L_2	100	125	137.5	150	175	187.5	200	212.5	237.5
L_3	88	104	120	136	152	168	184	200	216
L_4	11.5	16	14	12.5	17	15	13.5	11.5	16

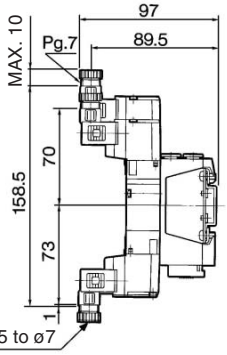
L plug connector (L)



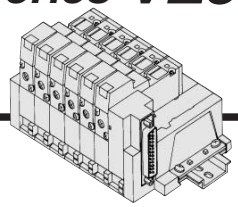
M plug connector (M)



DIN terminal (D)

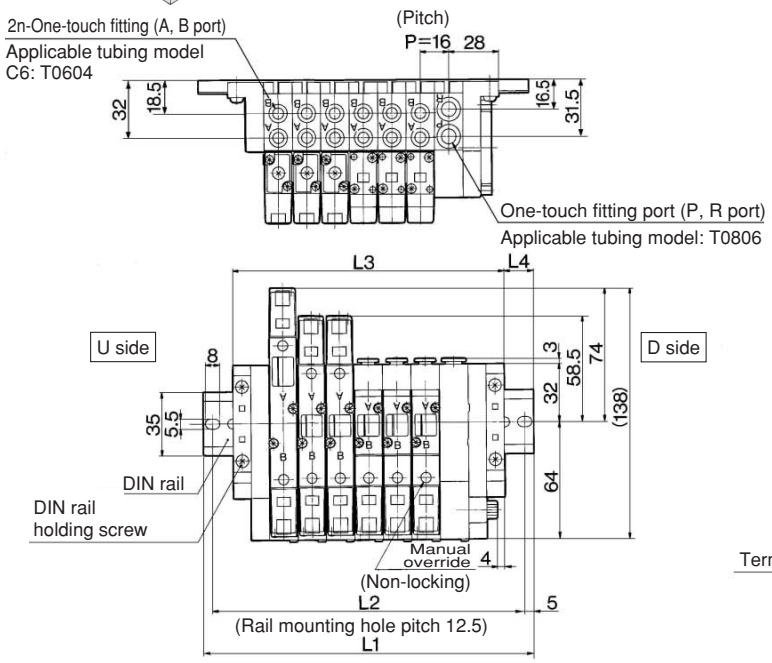


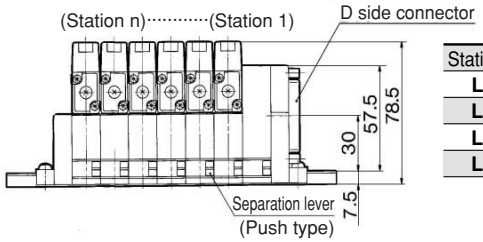
□: With light/surge voltage suppressor



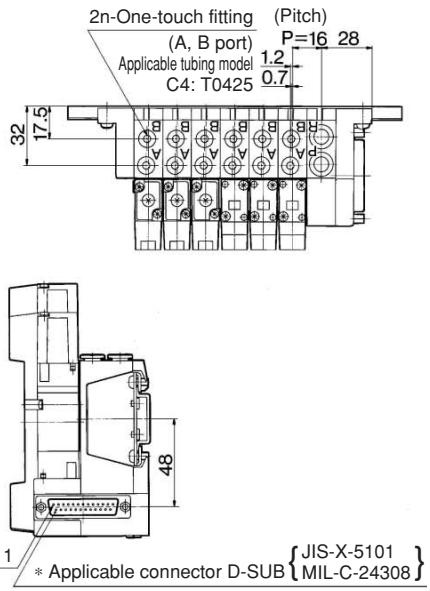
Type 45F DIN Rail Manifold (Non Plug-in): Side Ported

VV5Z3-45FD-Station-C4C/C6C





C4

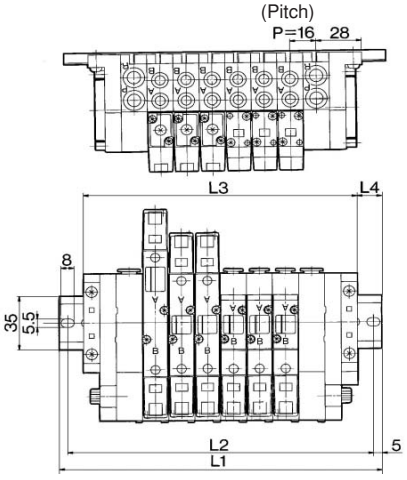


(mm)

Stations	2	3	4	5	6	7	8	9	10
L_1	110.5	135.5	148	160.5	185.5	198	210.5	223	248
L_2	100	125	137.5	150	175	187.5	200	212.5	237.5
L_3	88	104	120	136	152	168	184	200	216
L_4	11.5	16	14	12.5	17	15	13.5	11.5	16

VV5Z3-45F$^{U}_{D}$-Station B-C4C/C6C (2 to 10 stations)

VV5Z3-45FB-Station-C4C/C6C (11 to 20 stations)



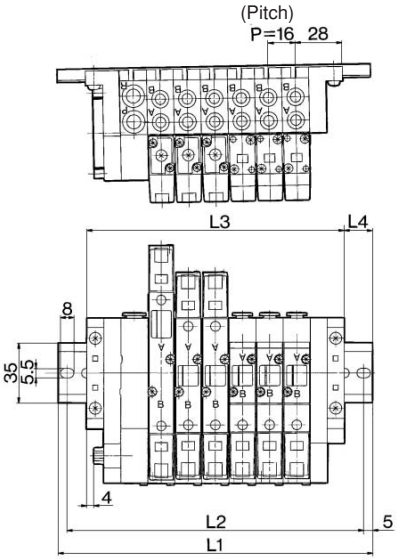
(mm)

Stations	2	3	4	5	6	7	8	9	10
L_1	135.5	148	160.5	185.5	198	210.5	223	248	260.5
L_2	125	137.5	150	175	187.5	200	212.5	237.5	250
L_3	104	120	136	152	168	184	200	216	232
L_4	16	14	12.5	17	15	13.5	11.5	16	14

(mm)

Stations	11	12	13	14	15	16	17	18	19	20
L_1	273	298	310.5	323	335.5	360.5	373	385.5	398	423
L_2	262.5	287.5	300	312.5	325	350	362.5	375	387.5	412.5
L_3	248	264	280	296	312	328	344	360	376	392
L_4	12.5	17	15.5	13.5	12	16.5	14.5	13	11	15.5

VV5Z3-45FU-Station-C4C/C6C



(mm)

Stations	2	3	4	5	6	7	8	9	10
L_1	110.5	135.5	148	160.5	185.5	198	210.5	223	248
L_2	100	125	137.5	150	175	187.5	200	212.5	237.5
L_3	88	104	120	136	152	168	184	200	216
L_4	11.5	16	14	12.5	17	15	13.5	11.5	16

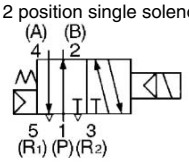
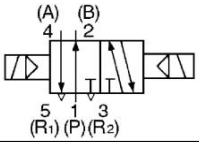
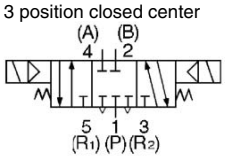
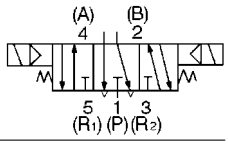
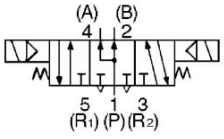
5 Port Solenoid Valve
Body Ported
Series VZ5000

How to Order

Body ported **VZ5** [1] [2] [0] — [5] [L] [ ] [ ] [01] [ ] — [ ]

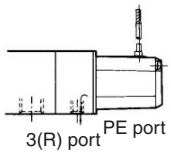
(Type of actuation · Body option · Rated voltage · Electrical entry · With light/surge voltage suppressor · Manual override · 4(A)/2(B) port size · Thread type · Option)

Type of actuation

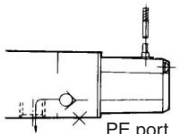
1	2 position single solenoid 
2	2 position double solenoid 
3	3 position closed center 
4	3 position exhaust center 
5	3 position pressure center 

Body option

0: Individual exhaust for the pilot valve



3: Common exhaust type for main and pilot valve

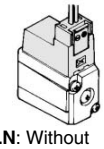
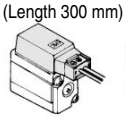
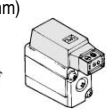
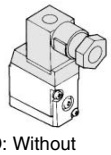
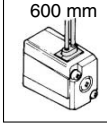
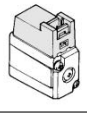


Rated voltage

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

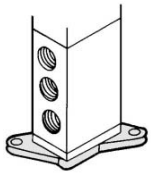
Electrical entry

Grommet	L plug connector	M plug connector		DIN terminal
G: Lead wire length 300 mm 	**L**: With lead wire (Length 300 mm) 	**M**: With lead wire (Length 300 mm) 	**MN**: Without lead wire 	**D**: With connector 
H: Lead wire length 600 mm 	**LN**: Without lead wire 	**LO**: Without connector 	**MO**: Without connector 	**DO**: Without connector 

* Type "LN", "MN": With 2 sockets.

Option

F: With foot bracket (2 position single type only)



Note) Do not remove the factory installed bracket from models with the bracket option.

Thread type

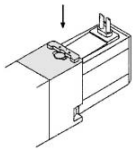
Nil	Rc
F	G
N	NPT
T	NPTF

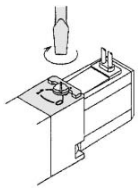
4(A), 2(B) port size

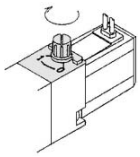
01	Rc 1/8
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8

Note) P, R1, R2 port: Rc 1/8

Manual override

Nil: Non-locking push type 

B: Locking type B (Slotted) 

C: Locking type C (Manual) 

Light/Surge voltage suppressor

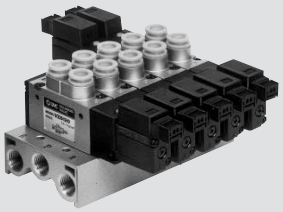
Nil	None
Z*	With light/surge voltage suppressor
S	With surge voltage suppressor

* Not available for "GZ", "HZ" and "DOZ"

Applicable for cylinder actuation (up to ø50).

Compact size (Width: 18 mm)

Low power consumption: 1.8 W DC



Refer to pages 3-3-60 to 3-3-65 for manifold use.

Made to Order Specifications (For details, refer to page 3-3-85.)

Specifications

Fluid		Air
Operating pressure range (MPa)	2 position single	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Ambient and fluid temperature (°C)		–10 to 50°C (No freezing. Refer to page 3-13-4.)
Response time (ms) (1) (at the pressure of 0.5 MPa)	2 position single, double	20 or less
	3 position	50 or less
Max. operating frequency (Hz)	2 position single, double	10
	3 position	3
Effective area		Refer to the table below.
Manual override (2)		Non-locking push type, Locking slotted type, Locking lever type
Pilot exhaust method		Individual pilot exhaust type, Common exhaust (pilot and main valve) type
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance (m/s^2) (3)		300/50
Enclosure		Dustproof

Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)
Note 2) When operating the locking type manually, apply torque of 0.2 N·m or less.
Note 3) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)
Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Solenoid Specifications

∗ Option

Electrical entry			Grommet (G)/(H), L plug connector (L), M plug connector (M), DIN terminal (D)
Coil rated voltage (V)	AC 50/60 Hz		100, 200, 24*, 48*, 110*, 220*
	DC		24, 6*, 12*, 48*
Allowable voltage fluctuation (%)			–15 to +10% of rated voltage
Power consumption (W) Note) [Current mA]	DC		1.8 (With indicator light 2.1) [24 VDC: 75 (With indicator light 87.5)]
Apparent power (VA) Note) [Current mA]	AC	Inrush	4.5/50 Hz, 4.2/60 Hz [100 VAC: 45/50 Hz, 42/60 Hz; 200 VAC: 22.5/50 Hz, 21/60 Hz]
		Holding	3.5/50 Hz, 3/60 Hz [100 VAC: 35/50 Hz, 30/60 Hz; 200 VAC: 17.5/50 Hz, 15/60 Hz]
Surge voltage suppressor			DC: Diode, AC: ZNR
Indicator light			DC: LED (Red), AC: Neon bulb

Note) At rated voltage

Flow Characteristics/Weight

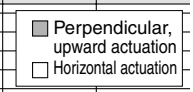
Valve model	Type of actuation		Port size 1, 5, 3 (P, EA, EB)	Port size 4, 2 (A, B)	Flow characteristics Note) 1 → 4/2 (P → A/B) C [dm³/(s·bar)]	b	Cv	4/2 → 5/3 (A/B → EA/EB) C [dm³/(s·bar)]	b	Cv	Weight (g) Grommet
VZ5□20-□-01	2 position	Single	Rc 1/8	Rc 1/8	2.2	0.36	0.58	2.4	0.34	0.63	120
		Double									160
	3 position	Closed center			1.8	0.37	0.45	2.0	0.35	0.49	160
		Exhaust center			1.2	0.50	0.34	3.0[1.3]	0.35[0.52]	0.73[0.39]	
		Pressure center			3.0 [0.83]	0.37[0.50]	0.78[0.25]	1.8	0.37	0.45	
VZ5□20-□-C6	2 position	Single	Rc 1/8	C6 (One-touch fitting for ø6)	1.6	0.33	0.4	2.2	0.32	0.53	120
		Double									160
	3 position	Closed center			1.4	0.27	0.35	1.9	0.33	0.49	160
		Exhaust center			1.1	0.37	0.27	2.5[1.3]	0.32[0.54]	0.61[0.38]	
		Pressure center			1.8 [0.78]	0.36[0.40]	0.45[0.22]	1.6	0.30	0.39	
VZ5□20-□-C8	2 position	Single	Rc 1/8	C8 (One-touch fitting for ø8)	2.0	0.39	0.52	2.3	0.34	0.61	120
		Double									160
	3 position	Closed center			1.7	0.35	0.42	2.0	0.29	0.49	160
		Exhaust center			1.2	0.38	0.33	2.6[1.3]	0.35[0.49]	0.67[0.38]	
		Pressure center			1.9 [0.86]	0.57[0.46]	0.59[0.25]	1.7	0.39	0.42	

Note) [ ]: Denotes the normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2

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 ø6	ø10	ø16	Series CM2 Pressure 0.5 MPa Load factor 50% Stroke 300 mm ø20	ø25	ø32	ø40	Series MB, CA1 Note) Pressure 0.5 MPa Load factor 50% Stroke 500 mm ø40	ø50	ø63	ø80	ø100
VZ5120-01	800												
	700												
	600												
	500												
	400				398	364	360	301	487	379	252	157	103
	300	130	204	235	605	560	558	475	749	610	386	252	159
	200	214	286	310									
	100												
	0												



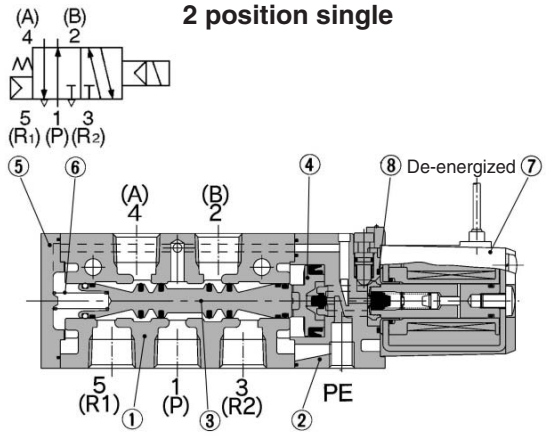
∗ It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
∗ The average velocity of the cylinder is what the stroke is divided by the total stroke time.
∗ Load factor: ((Load weight x 9.8)/Theoretical force) x 100%
Note) The Series CA1 has been changed to the Series CA2.

Conditions

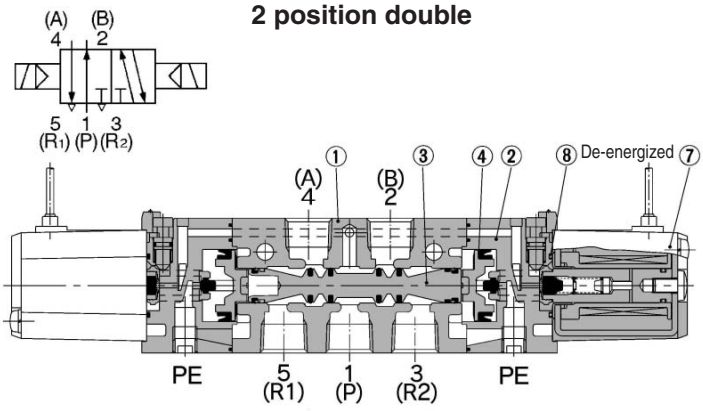
Body ported		Series CJ2	Series CM2	Series MB
VZ5120-01	Tube bore x Length	ø6 x 1 m	ø6 x 1 m	ø12 x 1 m
	Speed controller	AS2301F-06	AS3301F-06	AS4001F-12
	Silencer	AN110-01	AN200-02	

Construction

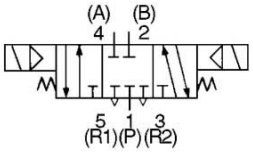
2 position single



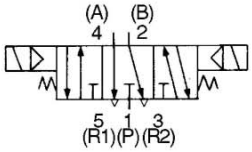
2 position double



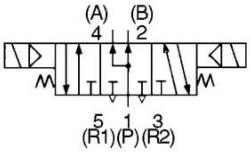
3 position closed center



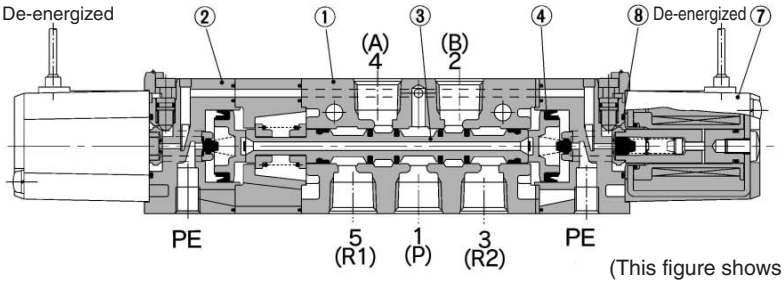
3 position exhaust center



3 position pressure center



3 position closed center/exhaust center/pressure center



(This figure shows a closed center type.)

Component Parts

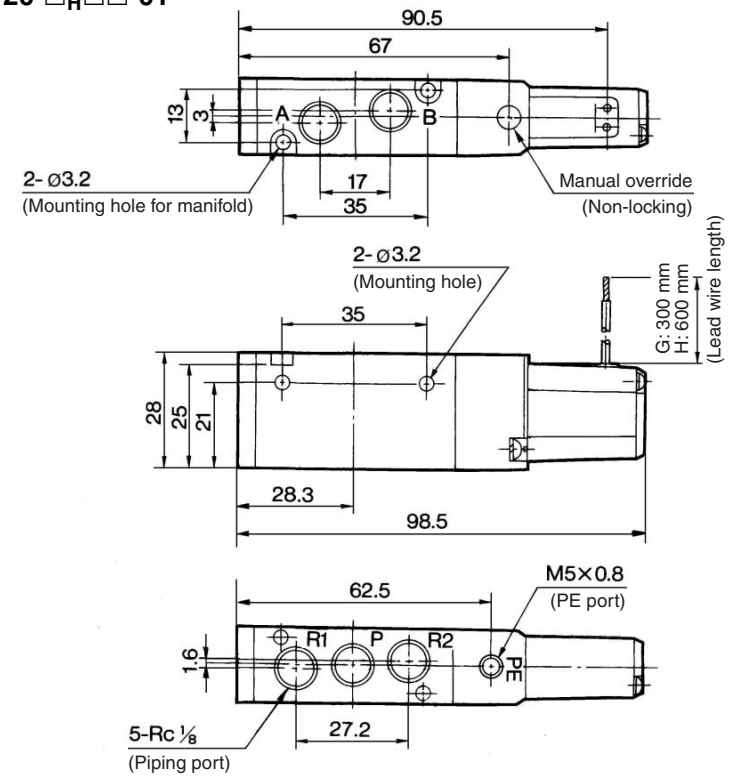
No.	Description	Material	Note
①	Body	Aluminum die-casted	Platinum silver
②	Piston plate	Resin	Black
③	Piston	Resin	
④	Spool valve	Aluminum, HNBR	
⑤	End cover	Resin	Black painted
⑥	Spool spring	Stainless steel	

Replacement Parts

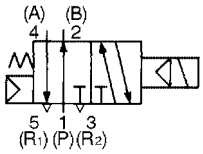
No.	Description	Material	Part no.	Note
⑦	Solenoid assembly	Epoxy/Stainless steel	DXT170-C-□□□	
⑧	O-ring	NBR	13 x 11 x 1	Common with Series VZ$\frac{1}{3}$000

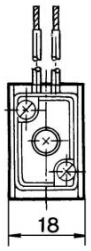
2 Position Single

Grommet (G), (H)
VZ5120-□$^{G}_{H}$□□-01

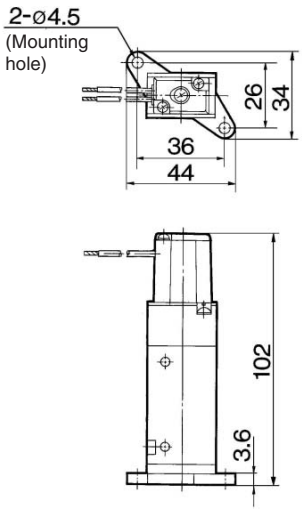


VZ5120

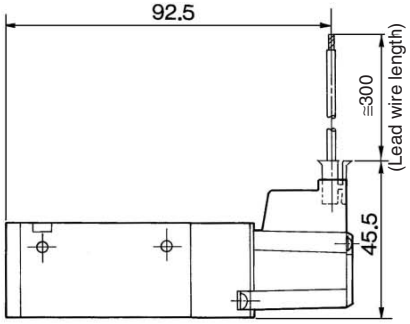




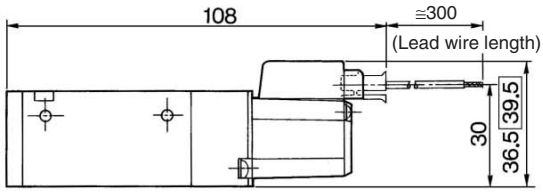
Foot bracket
VZ5120-□$^{G}_{H}$□□-01-F



L plug connector (L)
VZ5120-□L□□-01

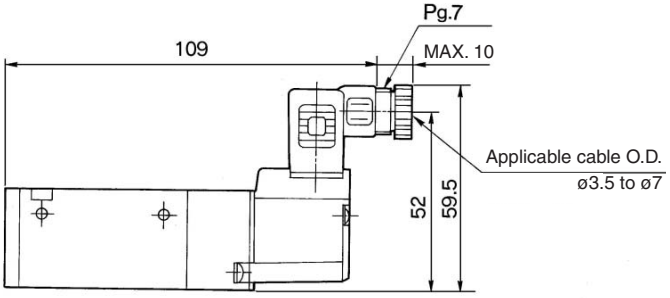


M plug connector (M)
VZ5120-□M□□-01

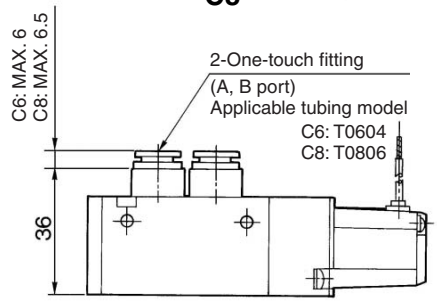


□: With light/surge voltage suppressor

DIN terminal (D)
VZ5120-□D□□-01

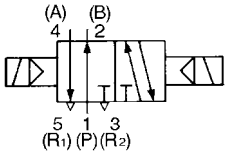


Built-in One-touch fittings
VZ5120-□□□□-C6
C8

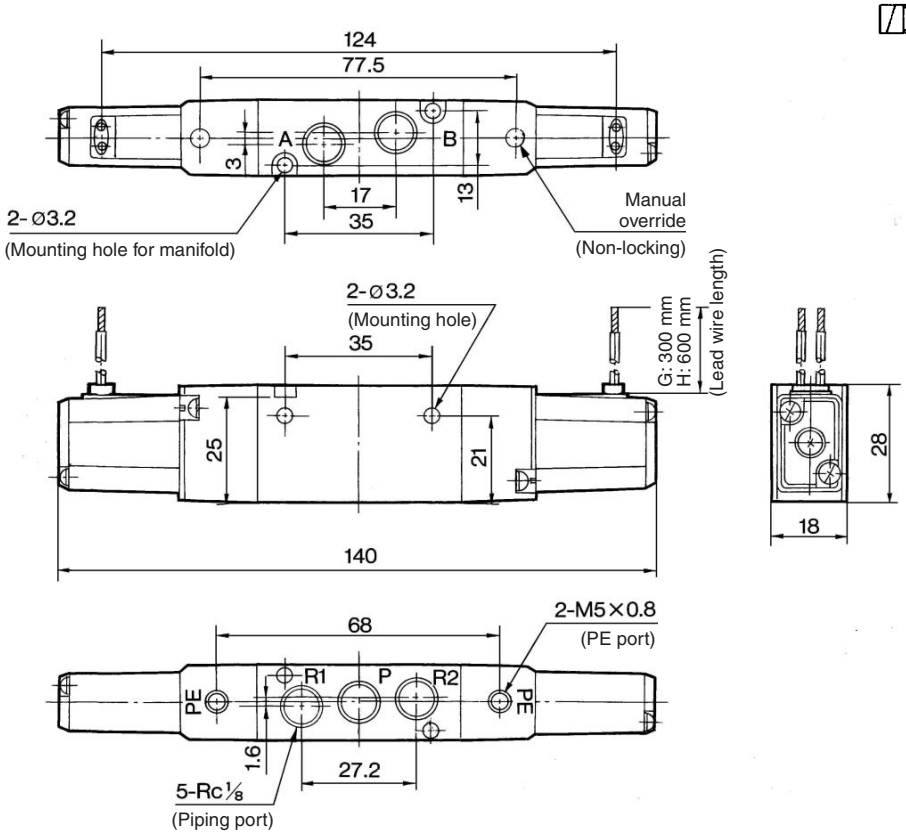


2 Position Double

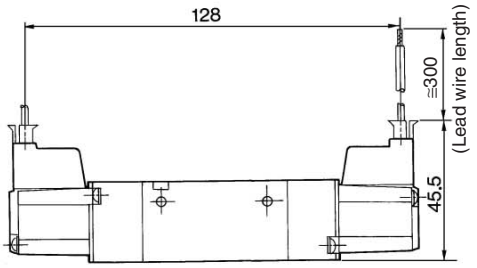
VZ5220



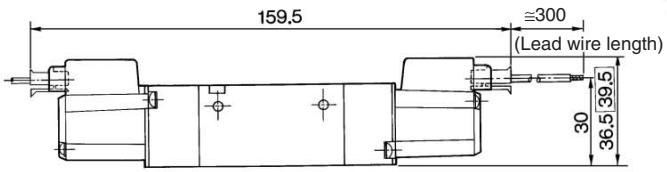
Grommet (G), (H)
VZ5220-□$^{G}_{H}$□□-01



L plug connector (L)
VZ5220-□L□□-01

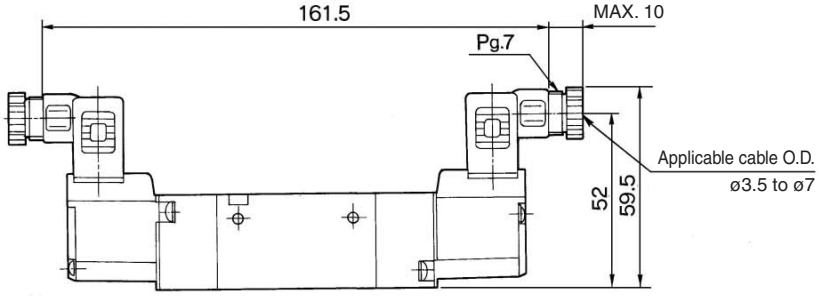


M plug connector (M)
VZ5220-□M□□-01

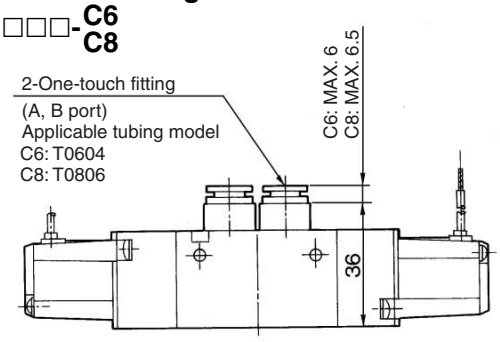


□: With light/surge voltage suppressor

DIN terminal (D)
VZ5220-□D□□-01

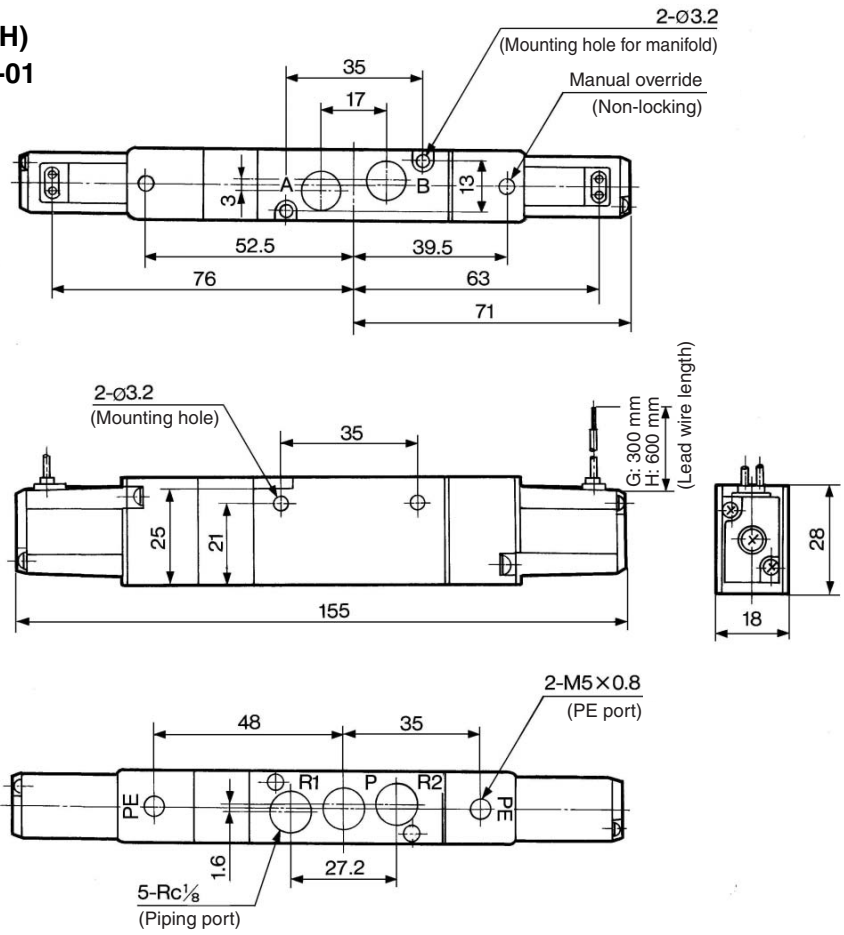


Built-in One-touch fittings
VZ5220-□□□□-C6 C8

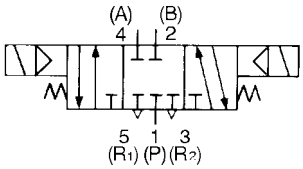


3 Position Closed Center/Exhaust Center/Pressure Center

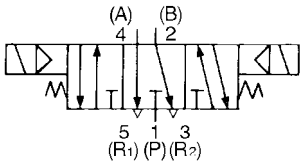
Grommet (G), (H)
VZ5$^{3}_{5}$20-□$^{G}_{H}$□□-01



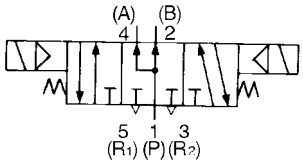
VZ5320



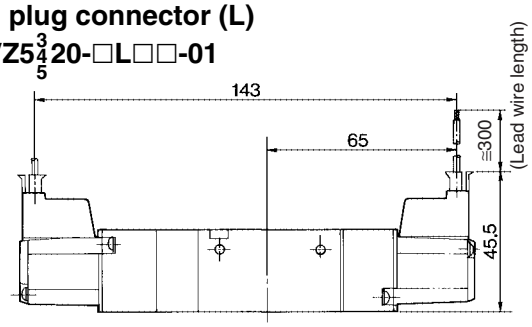
VZ5420



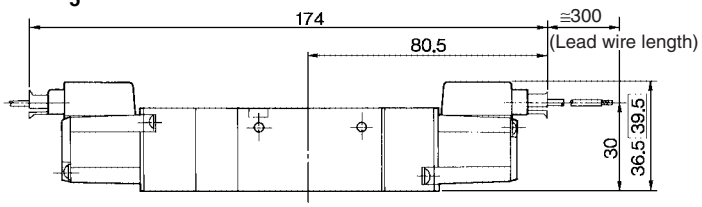
VZ5520



L plug connector (L)
VZ5$^{3}_{5}$20-□L□□-01

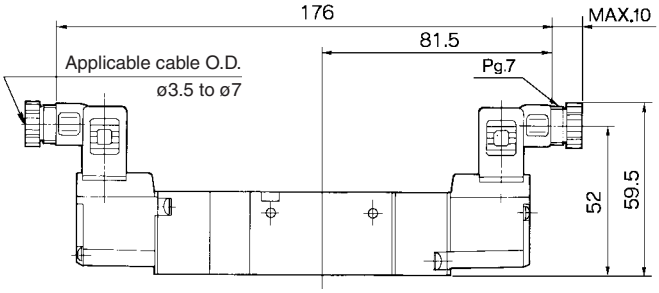


M plug connector (M)
VZ5$^{3}_{5}$20-□M□□-01

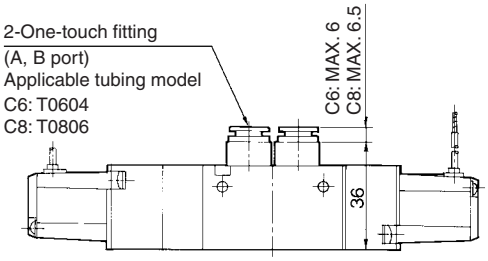


□: With light/surge voltage suppressor

DIN terminal (D)
VZ5$^{3}_{5}$20-□D□□-01

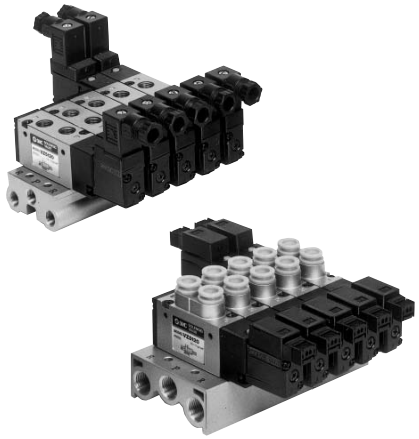


Built-in One-touch fittings
VZ5$^{3}_{5}$20-□□□□-$^{C6}_{C8}$



Series VZ5000/Body ported
Manifold Specifications

Manifold Standard



Manifold Specifications

Model		Type 20	Type 21
Manifold type		Single base/B mount	
P(SUP)/R(EXH)		Common SUP/Common EXH	
Valve stations		2 to 15 stations	2 to 20 stations
4(A), 2(B) port location		Valve	
Port size	1(P), 3/5(R) port	Rc 1/8	Rc 1/4
	4(A), 2(B) port	Rc 1/8 , C6, C8	

Flow Characteristics

Manifold		Port size		Flow characteristics					
		1(P), 5/3(R) port	2(B), 4(A) port	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → R)		
				C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
VV5Z5-20-01	**VZ5□2□**	1/8	1/8	2.2	0.35	0.57	2.3	0.26	0.55
VV5Z5-20-C6		1/8	C6	1.4	0.32	0.37	2.0	0.25	0.49
VV5Z5-20-C8		1/8	C8	1.7	0.38	0.45	2.1	0.25	0.51
VV5Z5-21-01		1/4	1/8	2.1	0.36	0.55	2.3	0.26	0.54
VV5Z5-21-C6		1/4	C6	1.4	0.32	0.36	2.1	0.24	0.50
VV5Z5-21-C8		1/4	C8	1.8	0.37	0.50	2.1	0.20	0.50

Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.
(Example) VV5Z5-20-031·····1 pc. (Manifold base)
∗VZ5120-5G-01·····2 pcs. (Valve)
∗DXT199-22-1A·····1 pc. (Blanking plate assembly)
└▸The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Flat Ribbon Cable Manifold

- **One-touch wiring to consolidate connection of external wires.**
- **Clean appearance**
  The flat cable provides wiring on a printed circuit board to the individual valves at the manifold base, enabling the consolidation of external wiring at a touch through a 26 pins MIL connector.

Flat Ribbon Cable Manifold Specifications

Model		Type 21P
Manifold type		Single base/B mount
P(SUP), R(EXH)		Common SUP/Common EXH
Valve stations		3 to 12 stations
4(A), 2(B) port location		Valve
Port size	1(P), 3/5(R) port	Rc 1/4
	4(A), 2(B) port	Rc 1/8 , C6, C8
Applicable flat ribbon cable connector		Socket: 26 pins MIL, with strain relief (Conforming to MIL-C-83503)
Internal wiring		+COM (For –COM, please contact SMC separately.)
Applicable solenoid valve		VZ5□23-$^{1}_{3}{}^{}_{5}{}^{}_{6}$MOZ□-VZ3□-$^{01}_{C6}{}^{}_{C8}$
Rated voltage		100 VAC 50/60 Hz, 110 VAC 50/60 Hz, 24 VDC, 12 VDC

Note) Withstand voltage specification of wiring unit part is equivalent to JIS C 0704 class 1.

Flow Characteristics

Manifold		Port size		Flow characteristics					
		1(P), 5/3(R) port	2(B), 4(A) port	1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → R)		
				C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
VV5Z5-21P-01	**VZ5□23**	1/4	1/8	2.1	0.36	0.55	2.3	0.26	0.54
VV5Z5-21P-C6		1/4	C6	1.4	0.32	0.36	2.1	0.24	0.50
VV5Z5-21P-C8		1/4	C8	1.8	0.37	0.50	2.1	0.20	0.50

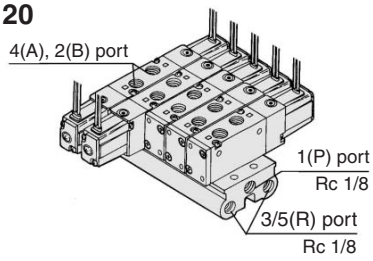
Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold

Instruct by specifying the valves, blanking plate assembly and connector assembly to be mounted on the manifold along with the manifold base model no.
(Example) VV5Z5-21P-07·····1 pc. (Manifold base)
∗VZ5123-5MOZ-C8···· 3 pcs. (Valve)
∗VZ5223-5MOZ-C8···· 3 pcs. (Valve)
∗DXT199-22-3A····· 1 pc. (Blanking plate assembly)
∗DXT192-52-1-4A····· 3 pcs. (Connector assembly)
∗DXT192-52-2-4A····· 3 pcs. (Connector assembly)
└▸The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Common SUP/Common EXH

Type 20



How to Order

VV5Z5 − 20 − 05 1 − ☐

Stations	
02	2 stations
⋮	⋮
15	15 stations

P, R port thread type	
Nil	Rc
00F	G
00N	NPT
00T	NPTF

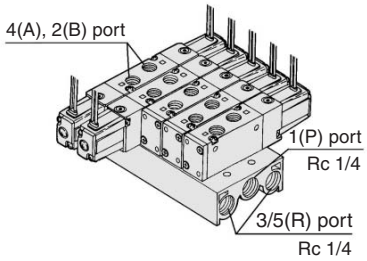
Note) For more than 6 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Applicable solenoid valve

VZ5□2□-□ G/L/M/D □□-01/C6/C8

Applicable blanking plate assembly
DXT199-22-1A
Applicable individual EXH spacer assembly
DXT199-29-1A

Type 21



How to Order

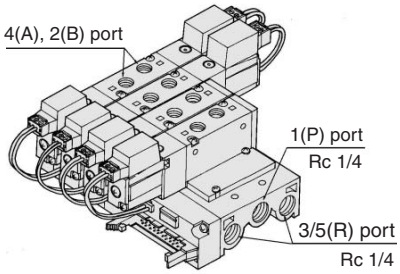
VV5Z5 − 21 − 05 1 − ☐

Stations	
02	2 stations
⋮	⋮
20	20 stations

P, R port thread type	
Nil	Rc
00F	G
00N	NPT
00T	NPTF

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Flat Ribbon Cable Type 21P



How to Order

VV5Z5 − 21P − 05 − ☐

Stations	
03	3 stations
⋮	⋮
12	12 stations

P, R port thread type	
Nil	Rc
00F	G
00N	NPT
00T	NPTF

Applicable solenoid valve

VZ5□23-1/3/5/6 MOZ□-01/C6/C8

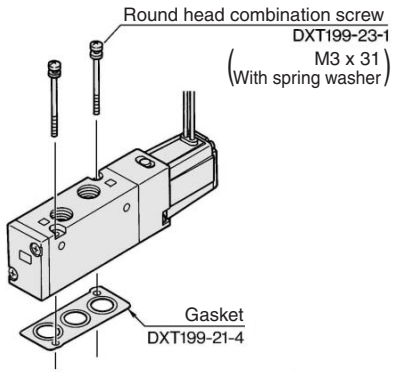
Applicable blanking plate assembly
DXT199-22-3A
Applicable connector assembly
DXT192-52-1-✻A
(For 2 position single)
DXT192-52-1-✻A
(For 2 position double, 3 position)
✻ 1: 100 VAC, 3: 110 VAC, 4: DC

For "How to order applicable connector assemblies", refer to page 3-3-7.

Note) For more than 10 stations, supply air to both sides of 1(P) port and exhaust air from both sides of 3 and 5(R) port.

Option

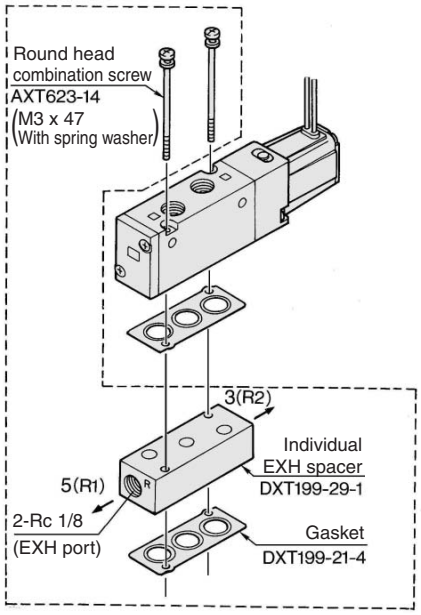
Combinations of Solenoid Valve, Manifold Gasket and Manifold Base



Applicable base
VV5Z5-20
VV5Z5-21
VV5Z5-21P

Individual EXH Spacer Assembly

DXT199-29-1A



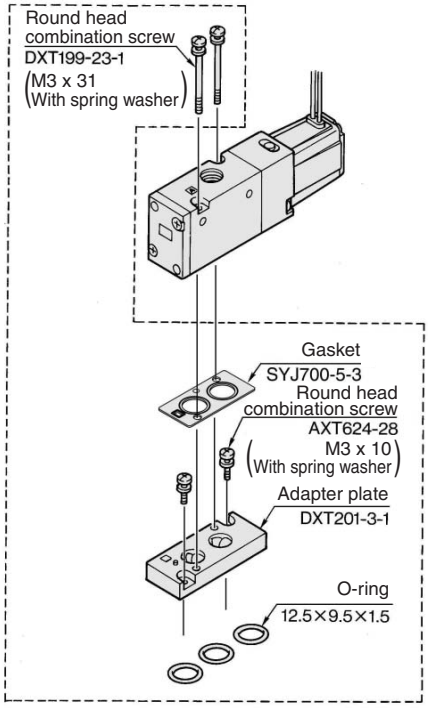
Applicable base
VV5Z5-20
VV5Z5-21

Note) Please contact SMC when using an individual EXH spacer assembly, an individual or an adapter plate assembly on VV5Z5-21P.

Installation of the VZ500 Valve on the VZ5000 Manifold

- Use of an adaptor plate makes it possible to mount Series VZ500 on the manifold base of Series VZ5000.
- The mounting direction is shown in the diagram below. Mount the solenoid so that it will be on the same side as the single solenoid of the Series VZ5000.

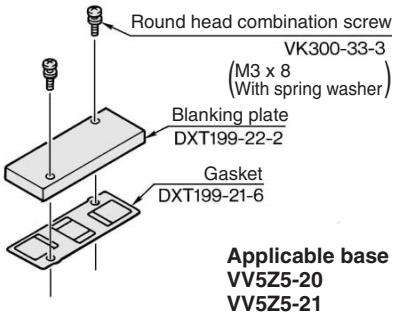
Adapter plate assembly
DXT201-3-1A



Applicable base
VV5Z5-20
VV5Z5-21

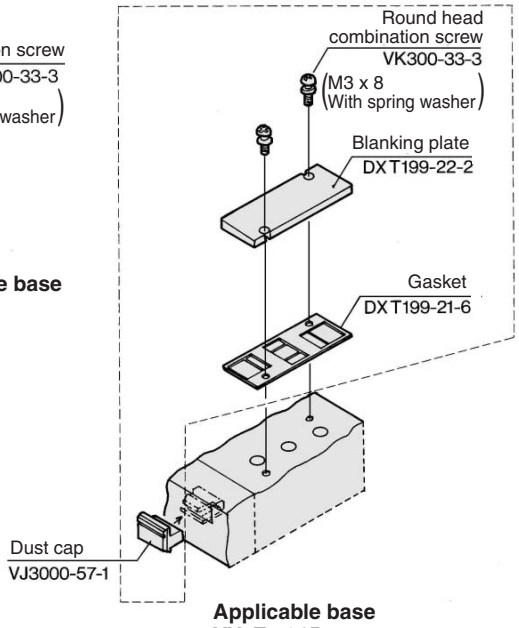
Blanking Plate Assembly

DXT199-22-1A



Applicable base
VV5Z5-20
VV5Z5-21

DXT199-22-3A

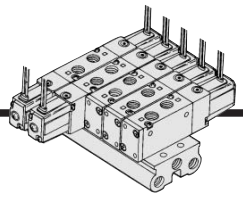


Applicable base
VV5Z5-21P

⚠ Caution

Mounting Screw Tightening Torques

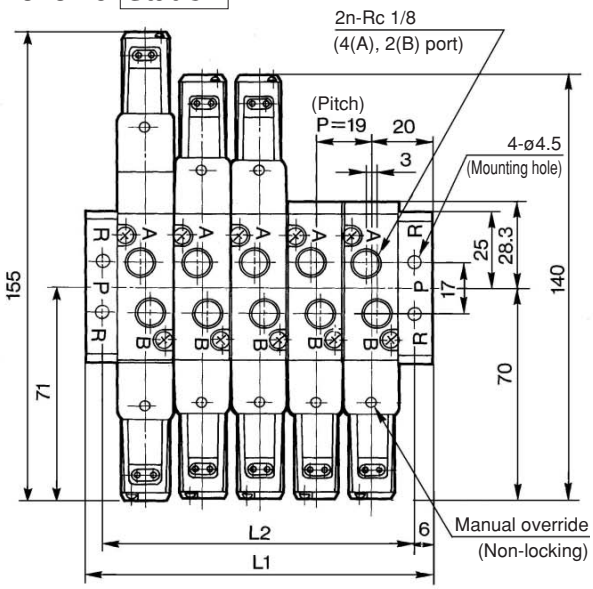
M3: 0.8 N·m

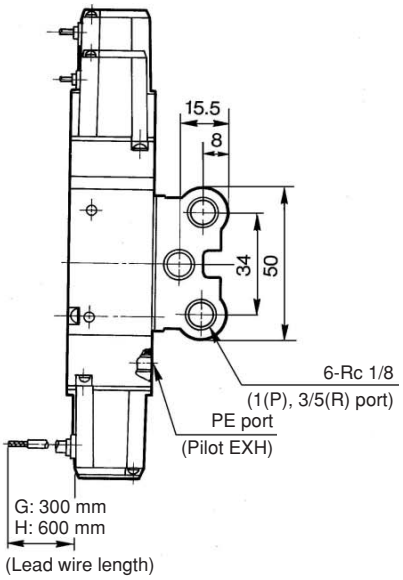


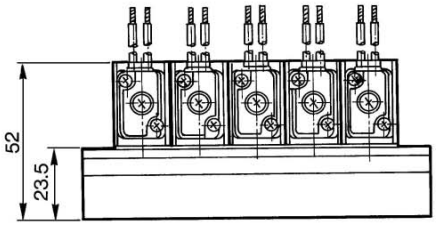
Type 20 Manifold

VV5Z5-20- Station 1

Grommet (G), (H)



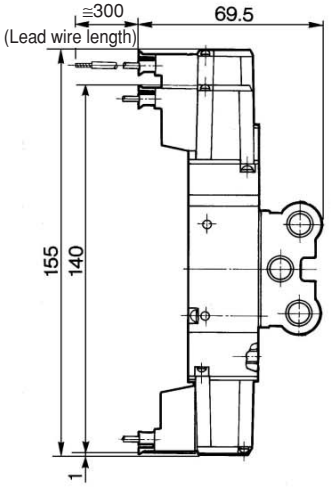




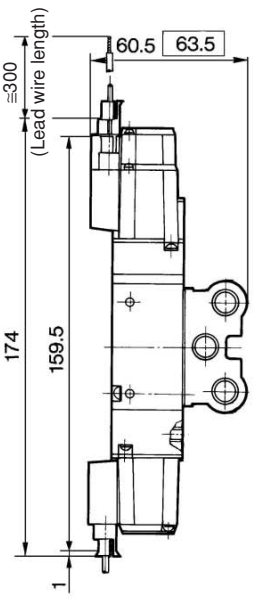
(mm)

Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15
L_1	59	78	97	116	135	154	173	192	211	230	249	268	287	306
L_2	47	66	85	104	123	142	161	180	199	218	237	256	275	294

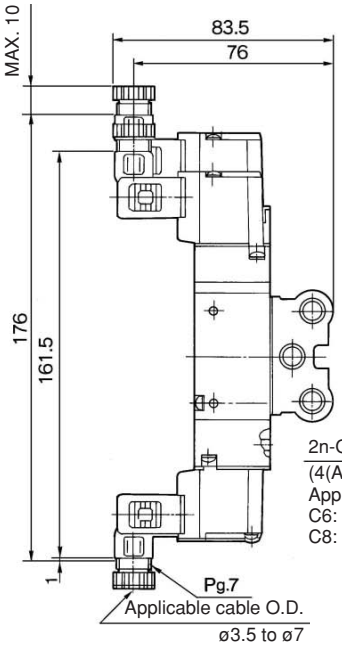
L plug connector (L)



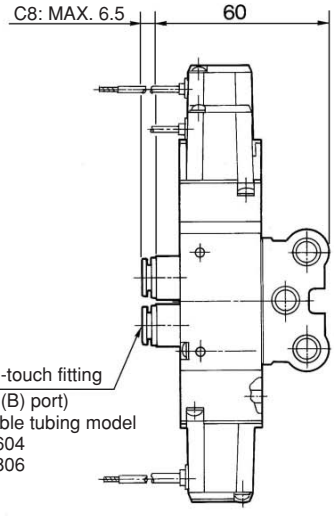
M plug connector (M)



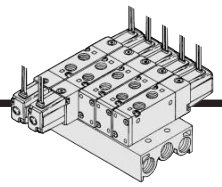
DIN terminal (D)



Built-in One-touch fittings



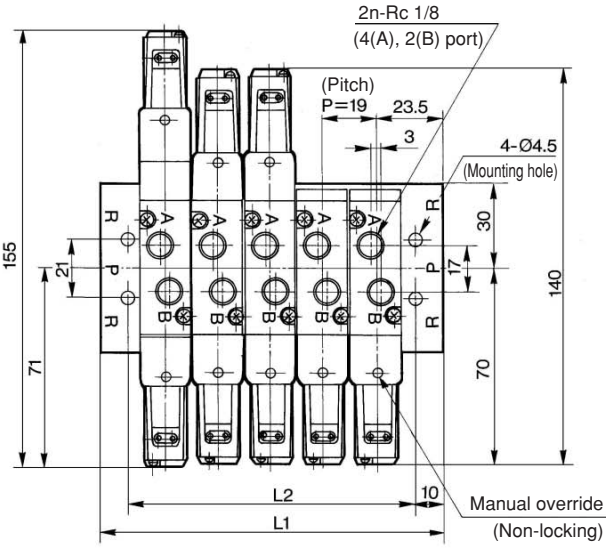
□: With light/surge voltage suppressor

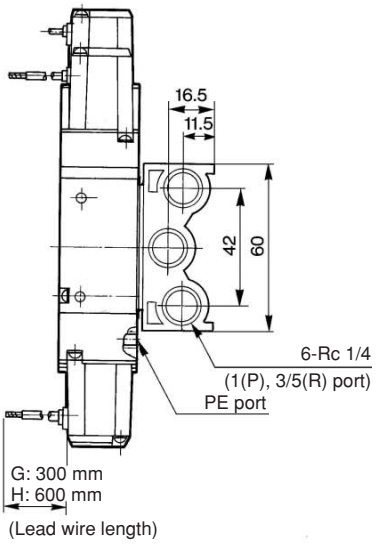


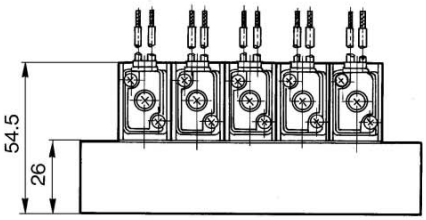
Type 21 Manifold

VV5Z5-21- Station 1

Grommet (G), (H)



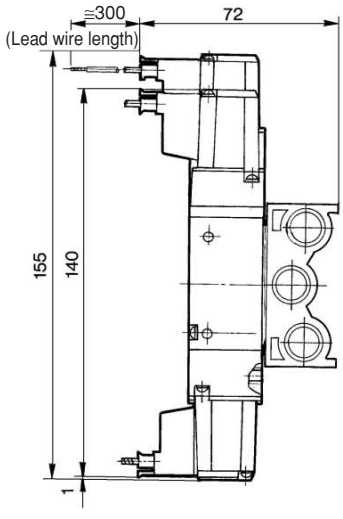




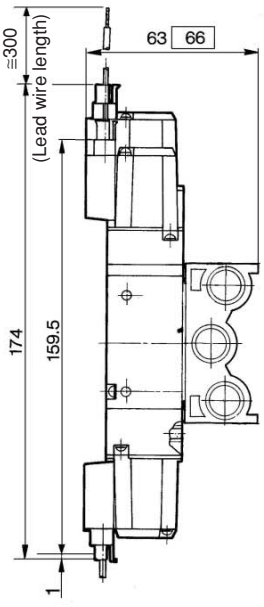
(mm)

Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L_1	66	85	104	123	142	161	180	199	218	237	256	275	294	313	332	351	370	389	408
L_2	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388

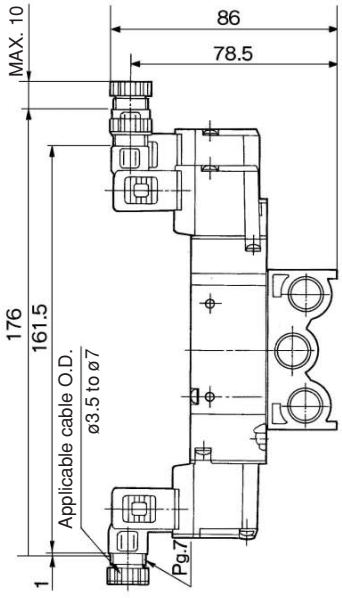
L plug connector (L)



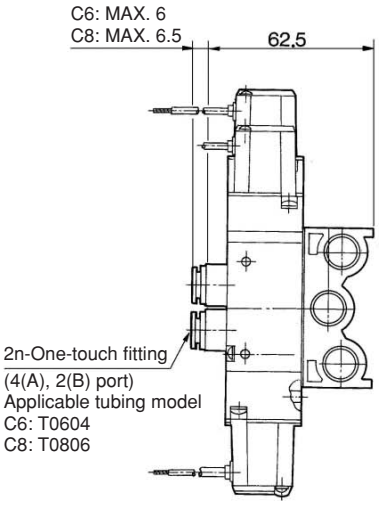
M plug connector (M)



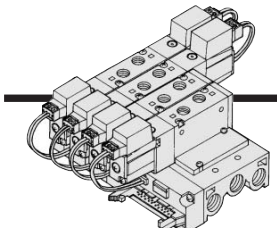
DIN terminal (D)



Built-in One-touch fittings

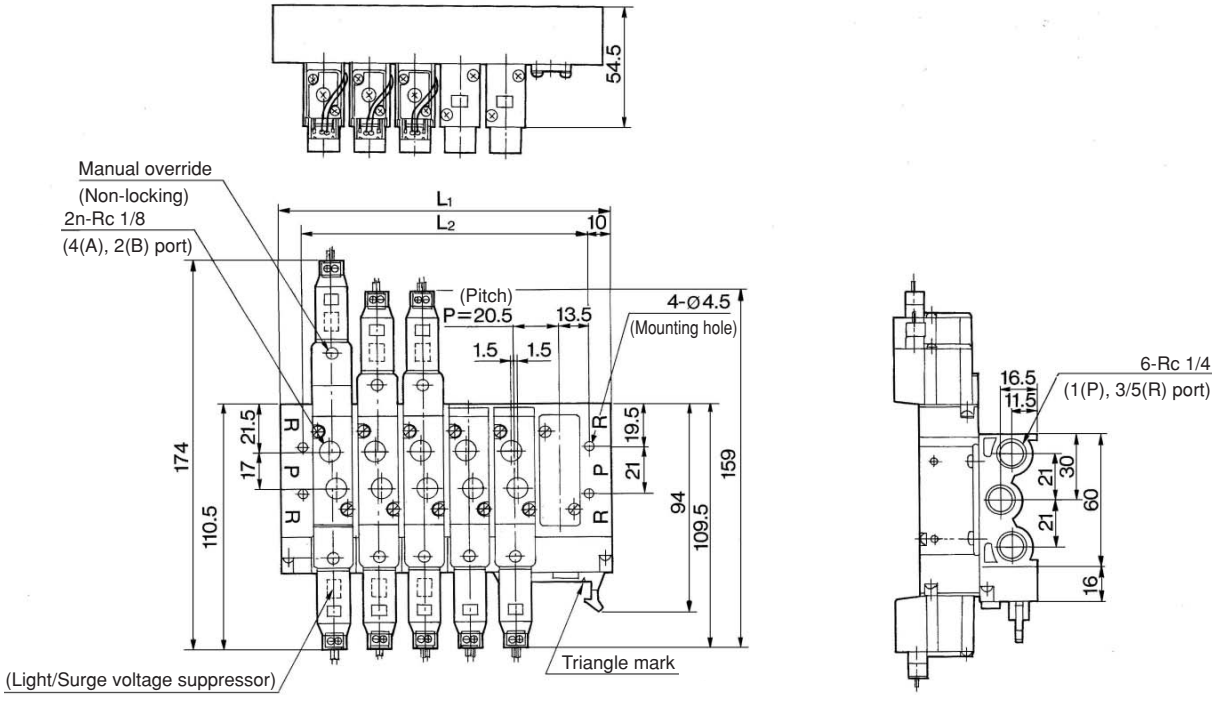


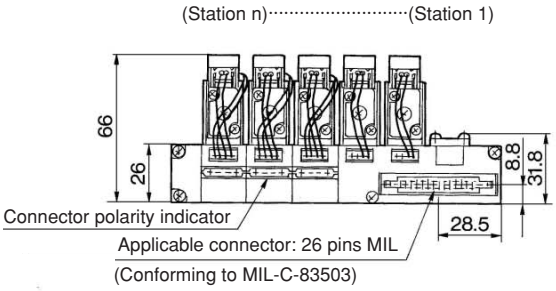
□: With light/surge voltage suppressor



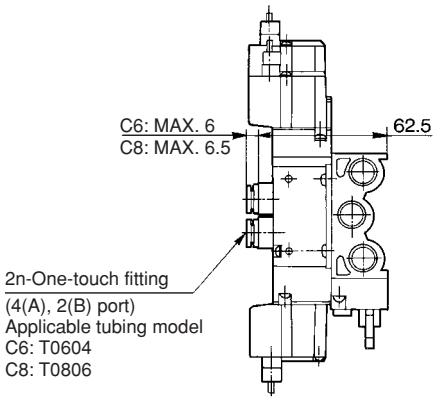
Type 21P Manifold

VV5Z5-21P- Station





Built-in One-touch fittings



(mm)

Stations	3	4	5	6	7	8	9	10	11	12
L_1	88	108.5	129	149.5	170	190.5	211	231.5	252	272.5
L_2	68	109	109	129.5	150	170.5	191	211.5	232	252.5

5 Port Solenoid Valve
Base Mounted
Series VZ5000

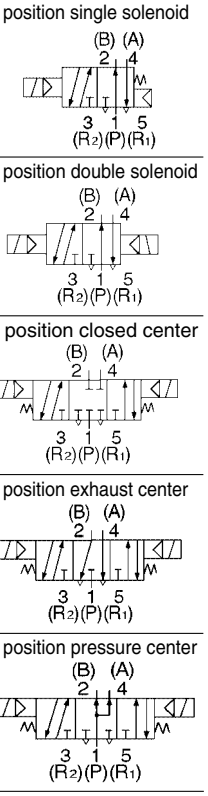
How to Order

	Type of actuation	Body option	Rated voltage	Electrical entry	Light/Surge voltage suppressor	Manual override	Port size	Thread type
Plug-in	VZ5 1	4 3	5	F	Z Note)			
Non plug-in	VZ5 1	4 0	5	L				

Note) Please contact SMC in the case of without indicator light.

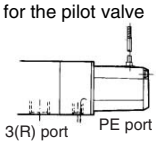
Type of actuation

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

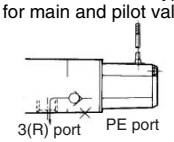


Body option

0: Individual exhaust for the pilot valve



3: Common exhaust type for main and pilot valve



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

Electrical entry

Grommet	L plug connector	M plug connector		DIN terminal
G: Lead wire length 300 mm	**L**: With lead wire (Length 300 mm)	**M**: With lead wire (Length 300 mm)	**MN**: Without lead wire	**D**: With connector
H: Lead wire length 600 mm	**LN**: Without lead wire	**LO**: Without connector	**MO**: Without connector	**DO**: Without connector

* Type "LN", "MN": With 2 sockets.

Thread type

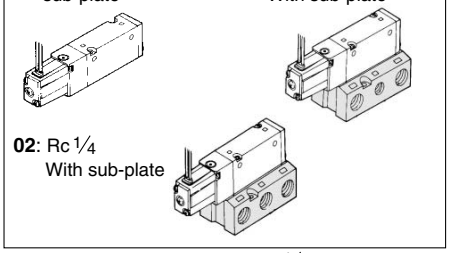
Nil	Rc
F	G
N	NPT
T	NPTF

Port size

Nil: Without sub-plate

01: Rc 1/8 With sub-plate Note)

02: Rc 1/4 With sub-plate



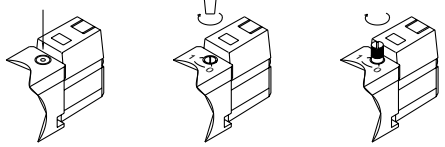
Note) 5(R1), 3(R2) port: Rc1/4

Manual override/Plug-in type

Nil: Non-locking push type

B: Locking type B (Slotted)

C: Locking type C (Manual)

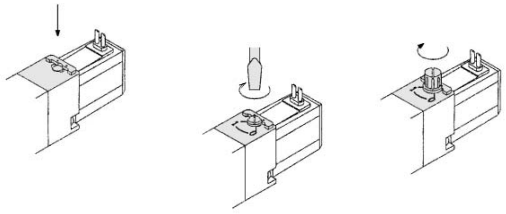


Manual override/Non plug-in type

Nil: Non-locking push type

B: Locking type B (Slotted)

C: Locking type C (Manual)



Light/Surge voltage suppressor

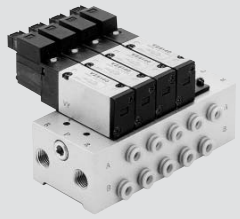
Nil	None
Z*	With light/surge voltage suppressor
S	With surge voltage suppressor

* Not available for "GZ", "HZ" and "DOZ"

Applicable for cylinder actuation (up to ø50).

Compact size (Width: 18 mm)

Low power consumption: 1.8 W DC



Refer to pages 3-3-74 to 3-3-84 for manifold use.

Made to Order Specifications (For details, refer to page 3-3-85.)

Specifications

Fluid		Air
Operating pressure range (MPa)	2 position single	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Ambient and fluid temperature (°C)		–10 to 50°C (No freezing. Refer to page 3-13-4.)
Response time (ms)(1) (at the pressure of 0.5 MPa)	2 position single, double	20 or less
	3 position	50 or less
Max. operating frequency (Hz)	2 position single, double	10
	3 position	3
Effective area		Refer to the table below.
Manual override (2)		Non-locking push type, Locking slotted type, Locking lever type
Pilot exhaust		Individual pilot exhaust, Common exhaust (pilot and main valve) Common exhaust port for the pilot and main valve
Lubrication		Not required
Mounting orientation		Unrestricted
Impact /Vibration resistance (m/s²)(3)		300/50
Enclosure		Dustproof

Note 1) Based on dynamic performance test, JIS B 8374-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)
Note 2) When operating the locking type manually, apply torque of 0.2 N·m or less.
Note 3) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)
Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Solenoid Specifications

Electrical entry			Grommet (G)/(H), L plug connector (L), M plug connector (M), DIN terminal (D)
Coil rated voltage (V)	AC 50/60 Hz		100, 200, 24*, 48*, 110*, 220*
	DC		24, 6*, 12*, 48*
Allowable voltage fluctuation (%)			–15 to +10% of rated voltage
Power consumption (W) (1) [Current mA]	DC		1.8 (With indicator light 2.1) [24 VDC: 75 (With indicator light 87.5)]
Apparent power (VA) (1) [Current mA]	AC	Inrush	4.5/50 Hz, 4.2/60 Hz [100 VAC: 45/50 Hz, 42/60 Hz; 200 VAC: 22.5/50 Hz, 21/60 Hz]
		Holding	3.5/50 Hz, 3/60 Hz [100 VAC: 35/50 Hz, 30/60 Hz; 200 VAC: 17.5/50 Hz, 15/60 Hz]
Surge voltage suppressor			DC: Diode, AC: ZNR (2)
Indicator light			DC: LED (Red), AC: Neon bulb

Note 1) At rated voltage
Note 2) Plug-in should be ZNR

Flow Characteristics/Weight

Valve model	Type of actuation		Port size 1, 5, 3 (P, EA, EB)	Port size 4, 2 (A, B)	Flow characteristics (1) 1 → 4/2 (P → A/B) C [dm³/(s·bar)]	b	Cv	Flow characteristics (1) 4/2 → 5/3 (A/B → EA/EB) C [dm³/(s·bar)]	b	Cv	Weight (g) (2) Grommet
VZ5□40-□-01	2 position	Single	Rc 1/8	Rc 1/8	2.3	0.45	0.57	2.8	0.37	0.71	200(120)
		Double									240(160)
	3 position	Closed center			1.9	0.36	0.48	2.1	0.46	0.57	240(160)
		Exhaust center			1.2	0.48	0.35	3.4[1.3]	0.36[0.57]	0.86[0.41]	
		Pressure center			3.3[0.85]	0.43[0.54]	0.78[0.25]	2.1	0.45	0.56	
VZ5□40-□-02	2 position	Single	Rc 1/4	Rc 1/4	2.3	0.41	0.61	2.9	0.35	0.74	200(120)
		Double									240(160)
	3 position	Closed center			1.9	0.46	0.50	2.2	0.44	0.60	240(160)
		Exhaust center			1.3	0.45	0.35	3.7[1.4]	0.27[0.56]	0.87[0.43]	
		Pressure center			3.6[0.83]	0.23[0.55]	0.84[0.25]	2.1	0.47	0.58	

Note 1) [ ]: Denotes the normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2
Note 2) ( ): Without sub-plate.

Cylinder Speed Chart

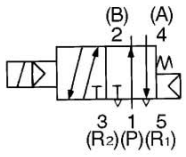
Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

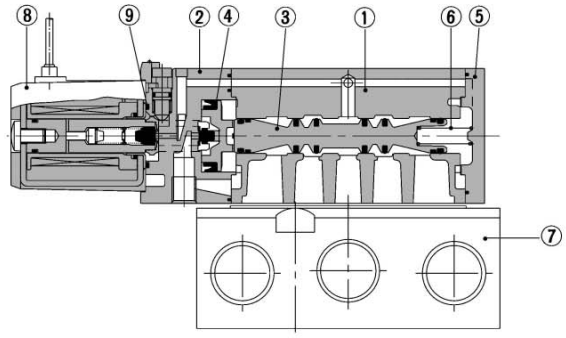
Series	Average speed (mm/s)	Bore size: Series CA1 Note) The CA1 series has been changed to the CA2 series. Pressure 0.5 MPa, Load factor 50%, Stroke 500 mm	ø40	ø50	ø63	ø80	ø100
VZ514□-□□□□-02□ (Piping: ø6 x 1 m)	800 / 700 / 600 / 500 / 400 / 300 / 200 / 100	Perpendicular, upward actuation / Horizontal actuation					
Speed controller/Silencer			AS3301F-□02-06□/AN200-2				
VZ514□-□□□□-02□ (Piping: ø8 x 1 m)	800 / 700 / 600 / 500 / 400 / 300 / 200 / 100	Perpendicular, upward actuation / Horizontal actuation					
Speed controller/Silencer			AS3301F-□02-08□/AN200-2				
VZ514□-□□□□-02□ (Piping: ø10 x 1 m)	800 / 700 / 600 / 500 / 400 / 300 / 200 / 100	Perpendicular, upward actuation / Horizontal actuation					
Speed controller/Silencer			AS3301F-□02-10□/AN200-2				
VZ514□-□□□□-02□ (Piping: ø12 x 1 m)	800 / 700 / 600 / 500 / 400 / 300 / 200 / 100	Perpendicular, upward actuation / Horizontal actuation					
Speed controller/Silencer			AS4001F-□02-12□/AN200-2				

∗ 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%

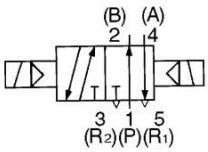
Construction

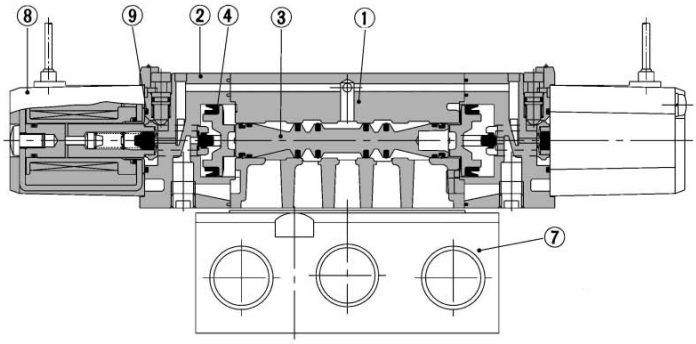
2 position single



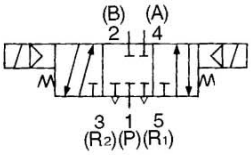


2 position double

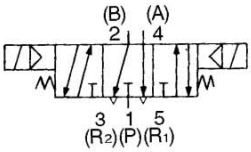




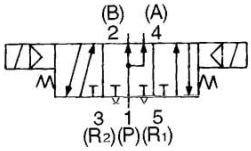
3 position closed center



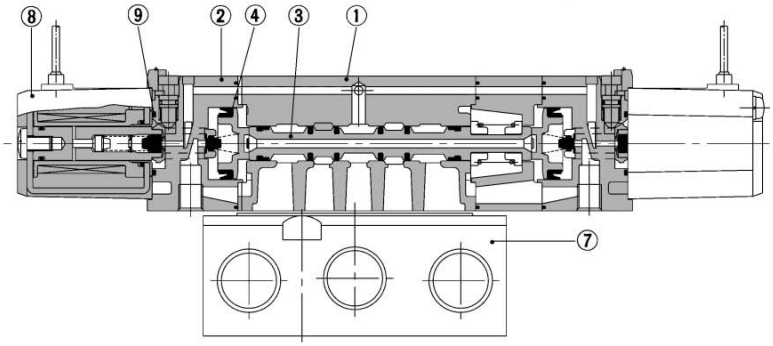
3 position exhaust center



3 position pressure center



3 position 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	Piston plate	Resin	Black
③	Piston	Aluminum, HNBR	
④	Spool valve	Resin	
⑤	End cover	Resin	Black painted
⑥	Spool spring	Stainless steel	

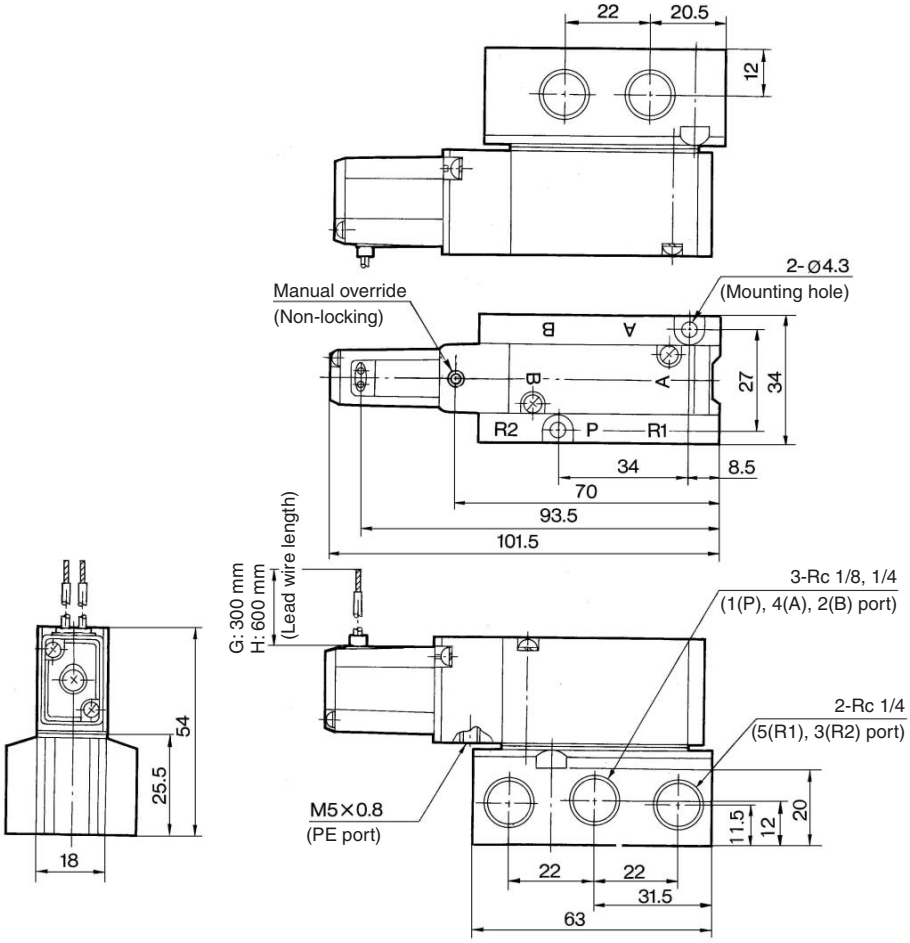
Replacement Parts

No.	Description	Material	Part no.	Note
⑦	Sub-plate	Aluminum die-casted	DXT199-7-1∗P	Rc 1/8
			DXT199-7-2∗P	Rc 1/4
⑧	Solenoid assembly	Epoxy/Stainless steel	DXT170-C-□□□	
⑨	O-ring	NBR	13 x 11 x 1	Common with Series VZ$^{1}_{3}$000

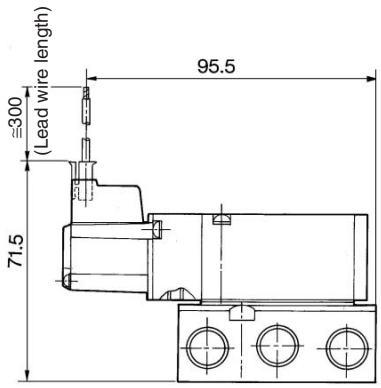
∗ Thread type
Nil: Rc
F: G
N: NPT
T: NPTF

2 Position Single

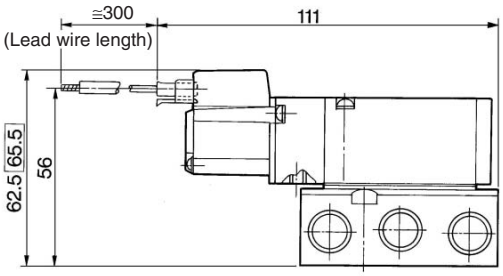
Grommet (G), (H)
VZ5140-□$^{G}_{H}$□□-$^{01}_{02}$



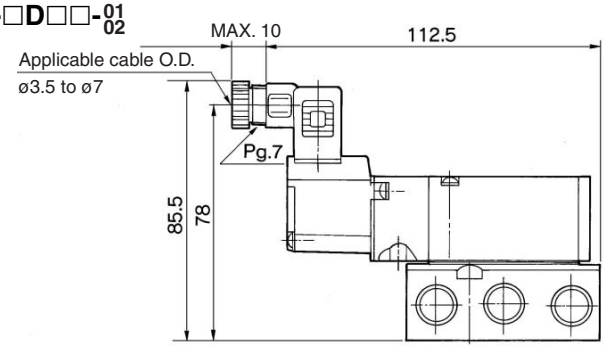
L plug connector (L)
VZ5140-□L□□-$^{01}_{02}$



M plug connector (M)
VZ5140-□M□□-$^{01}_{02}$



DIN terminal (D)
VZ5140-□D□□-$^{01}_{02}$

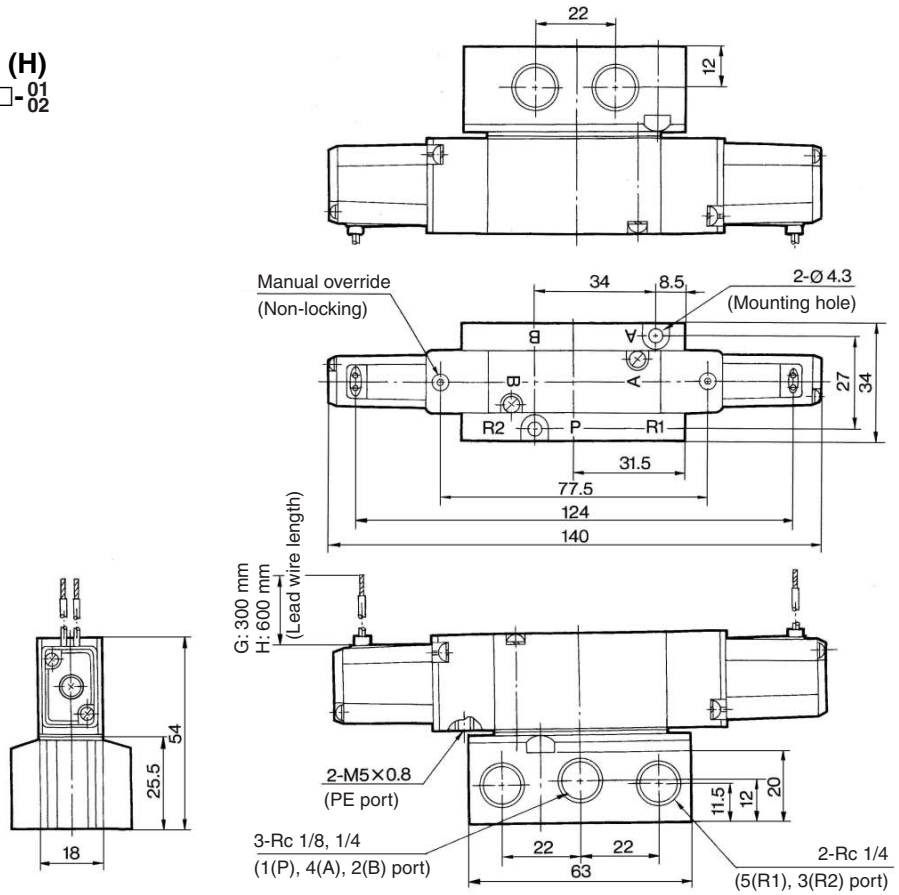


□: With light/surge voltage suppressor

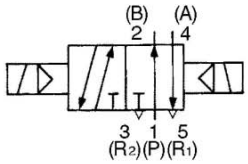
VK
VZ
VF
VFR
VP4
VZS
VFS
VS4
VQ7
EVS
VFN

2 Position Double

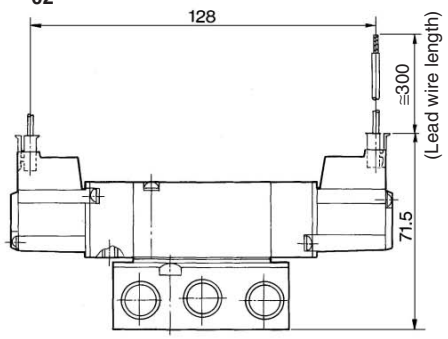
Grommet (G), (H)
VZ5240-□$^{G}_{H}$□□-$^{01}_{02}$



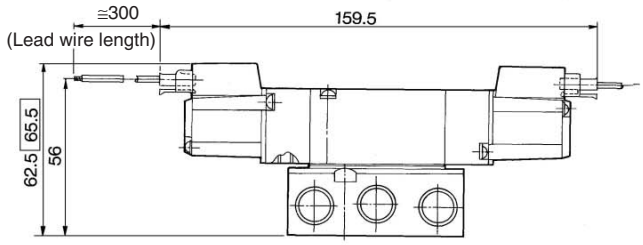
VZ5240



L plug connector (L)
VZ5240-□L□□-$^{01}_{02}$

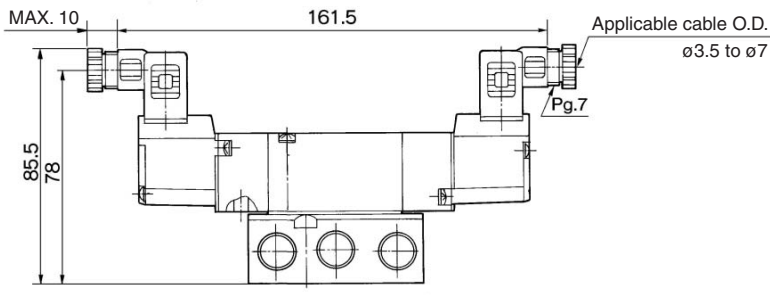


M plug connector (M)
VZ5240-□M□□-$^{01}_{02}$



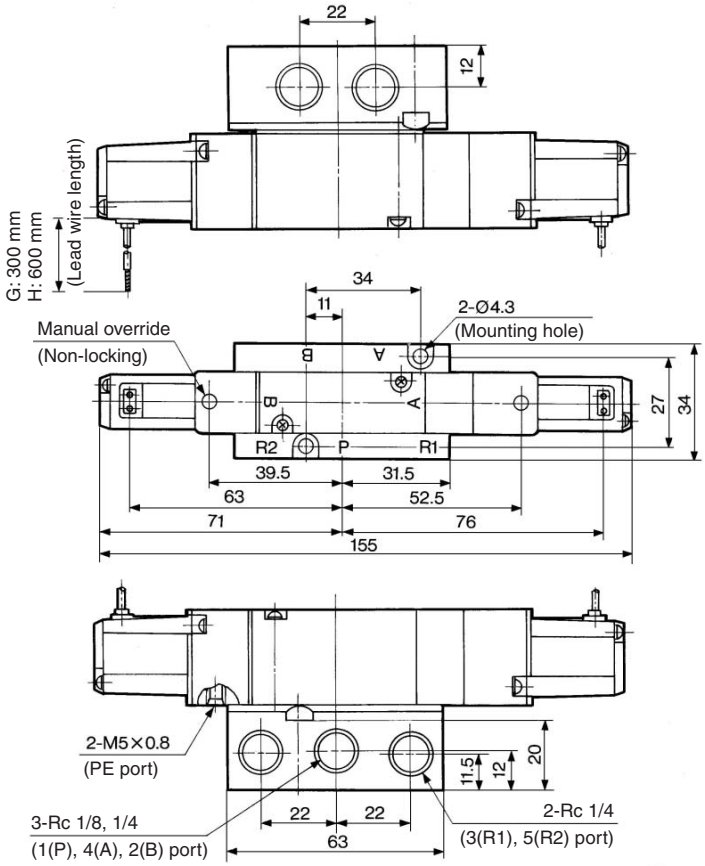
□: With light/surge voltage suppressor

DIN terminal (D)
VZ5240-□D□□-$^{01}_{02}$

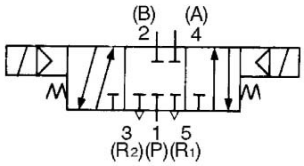


3 Position Closed Center/Exhaust Center/Pressure Center

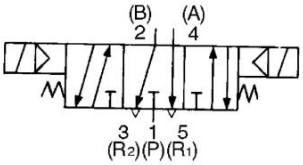
Grommet (G), (H)
VZ5$^{3}_{4}_{5}$40-$\square^{G}_{H}\square\square$-$^{01}_{02}$



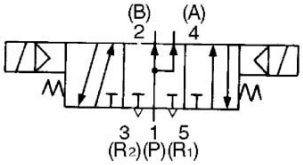
VZ5340



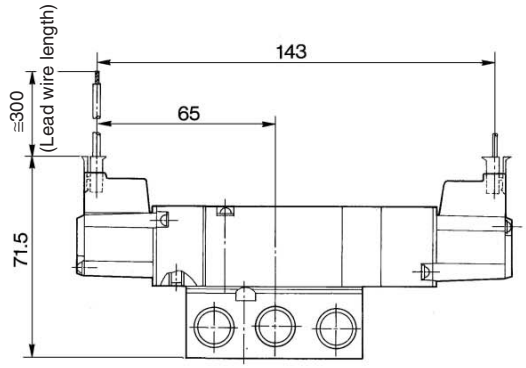
VZ5440



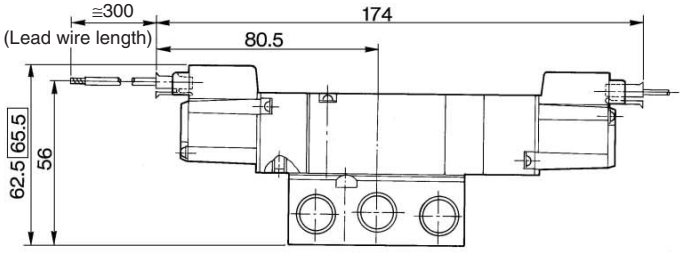
VZ5540



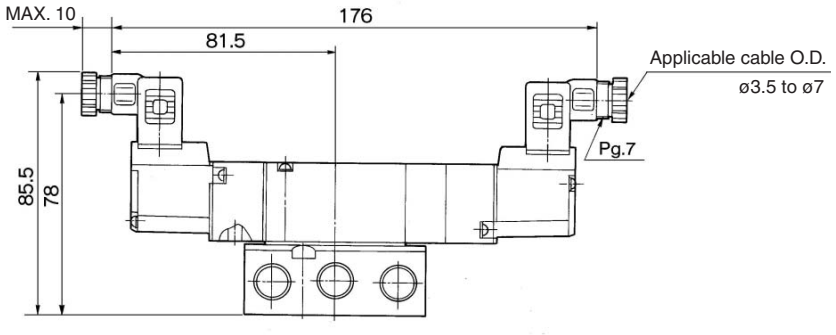
L plug connector (L)
VZ5$^{3}_{4}_{5}$40-$\square$L$\square\square$-$^{01}_{02}$



M plug connector (M)
VZ5$^{3}_{4}_{5}$40-$\square$M$\square\square$-$^{01}_{02}$



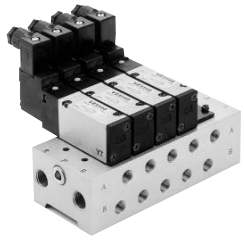
DIN terminal (D)
VZ5$^{3}_{4}_{5}$40-$\square$D$\square\square$-$^{01}_{02}$

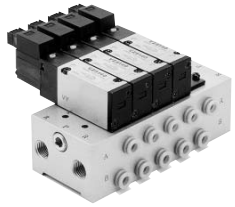


□: With light/surge voltage suppressor

Series VZ5000/Base Mounted
Manifold Specifications

Manifold Standard





Manifold Specifications

Model		Type 40	Type 41	Type 42
Manifold type		Single base/B mount		
P(SUP), R(EXH)		Common SUP and EXH		
Valve stations		2 to 20		
4(A), 2(B) port porting specifications	Position	Base	Base	
	Direction	Bottom	Side	
Port size	1(P), 3/5(R) port	Rc 1/4		
	4(A), 2(B) port	Rc 1/8		01(Rc 1/8) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8) B7 (One-touch fitting for 1/4") C9 (One-touch fitting for 5/16")

Flow Characteristics

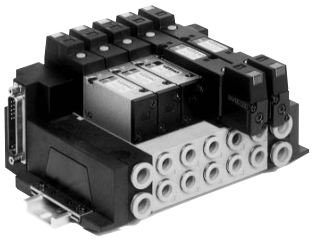
Manifold		Port size		Flow characteristics					
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → R)		
		1(P), 5/3(R) port	2(B), 4(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
VV5Z5-40	**VZ5□4□**	1/4	1/8	2.1	0.28	0.51	2.5	0.23	0.59
VV5Z5-41		1/4	1/8	2.0	0.30	0.50	2.2	0.30	0.55
VV5Z5-42-C6		1/4	C6	1.5	0.32	0.38	2.2	0.23	0.52
VV5Z5-42-C8		1/4	C8	1.9	0.24	0.46	2.2	0.26	0.53

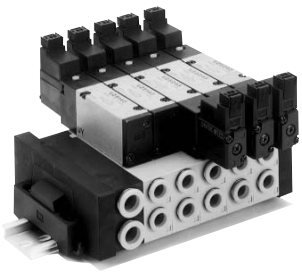
Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.
(Example) VV5Z5-41-031-01····1 pc. (Manifold base)
∗VZ5140-5G·····2 pcs. (Valve)
∗DXT199-22-1A····· 1 pc. (Blanking plate assembly)
└▸The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

DIN Rail Manifold





Manifold Specifications

Model		Type 45	Type 45F
Manifold type		Stacking type non plug-in type	Stacking type plug-in type
P(SUP), R(EXH)		Common SUP and EXH	
Valve stations		2 to 20	
4(A), 2(B) port Porting specifications	Position	Base	
	Direction	Side	
Port size	1(P), 3/5(R) port	C10 (One-touch fitting for ø10)	
	4(A), 2(B) port	C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	
Connector		—	MIL-C-24308 Applicable for D-sub JIS-X-5101 connector
Internal wiring		—	COM Note)

Note) It is available at +COM or –COM.

Flow Characteristics

Manifold		Port size		Flow characteristics					
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → R)		
		1(P), 5/3(R) port	2(B), 4(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
VV5Z5-45	**VZ5□4□**	C10	C6	1.5	0.31	0.38	2.2	0.17	0.52
		C10	C8	2.1	0.26	0.51	2.2	0.15	0.52

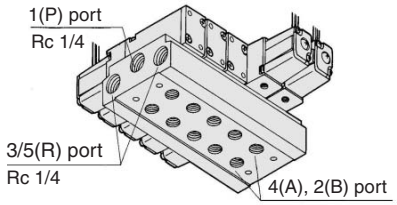
Note) Value at manifold base mounted, 2 position single operating

How to Order Manifold

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.
(Example) VV5Z5-45FD-06-C8C····1 pc. (Manifold base)
∗VZ5143-5FZ·····2 pcs. (Valve)
∗VZ5243-5FZ·····3 pcs. (Valve)
∗VZ5000-65-1A·····1 pc. (Blanking plate assembly)
└▸The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Common SUP/Common EXH

Type 40



How to Order

VV5Z5 − 40 − 05 2 − 01 □

Stations

02	2 stations
⋮	⋮
20	20 stations

4(A), 2(B) Port size

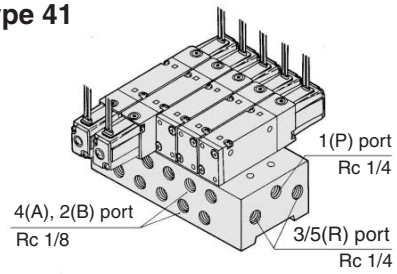
01	Rc 1/8

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Note) For more than 10 stations, supply air to both sides of 1(P) port and exhaust air from both sides of 3 and 5(R) port.

Type 41



How to Order

VV5Z5 − 41 − 05 1 − 01 □

Stations

02	2 stations
⋮	⋮
20	20 stations

4(A), 2(B) Port size

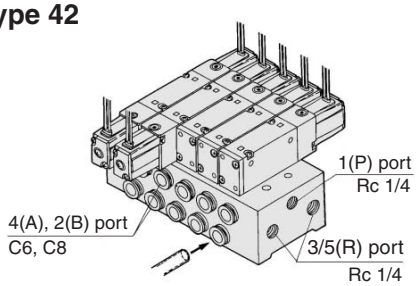
01	Rc 1/8

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 42



How to Order

VV5Z5 − 42 − 05 1 − C6 □

Stations

02	2 stations
⋮	⋮
20	20 stations

A, B port size

C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
B7	One-touch fitting for 1/4"
B9	One-touch fitting for 5/16"

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Note) For more than 8 stations, supply air to both sides of 1(P) port and exhaust air from both sides of 3 and 5(R) port.

Applicable solenoid valve
VZ5□4□-□G/L/M/D□□

Applicable blanking plate assembly
DXT199-22-1A

Applicable individual EXH spacer assembly
DXT199-29-2A

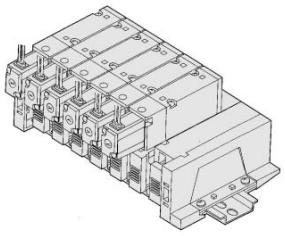
Applicable individual SUP spacer assembly
DXT199-35-1A

Applicable interface regulator
ARBZ5000-00-P

DIN Rail Manifold

Common SUP/Common EXH

Type 45 (Non plug-in type)



How to Order

VV5Z5 − 45 − 05 D − C8 C − □

Stations

02	2 stations
⋮	⋮
20	20 stations

SUP/EXH block mounting position

Symbol	Position	Applicable stations
U	U side	2 to 10 stations
D	D side	2 to 10 stations
B	Both sides	2 to 20 stations
M *	Special specifications	Special specifications

* For special specifications, indicate separately by the manifold specification sheet.

4 (A), 2 (B) port size

C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
M *	Mixed

* In the case of mixed specifications (M), indicate separately on the manifold specification sheet.

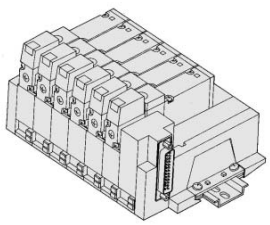
DIN rail length specified

Nil	Standard length	
3	For 3 stations	(Specify a longer rail than the standard length.)
⋮	⋮	
20	For 20 stations	

Applicable solenoid valve
VZ5□4□-□G/L/M/D□□

Applicable blanking plate assembly
VZ5000-65-2A

Type 45F (Plug-in type)



How to Order

VV5Z5 −45F D − 05 □ − C8 C − □

Connector mounting direction

Symbol	Mounting direction	Applicable stations
U	U side	2 to 10 stations
D	D side	
B	Both sides	11 to 10 stations

Stations

02	2 stations
⋮	⋮
20	20 stations

SUP/EXH block mounting position

Nil	For 2 to 10 stations : One side (Same as direction of connector mount) For 11 to 20 stations: Both sides
B	For 2 to 10 stations: Both sides
M *	Special specifications

* For special specifications, indicate separately by the manifold specification sheet.

4(A), 2(B) port size

C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
M *	Mixed

* In the case of mixed specifications (M), indicate separately on the manifold specification sheet.

DIN rail length specified

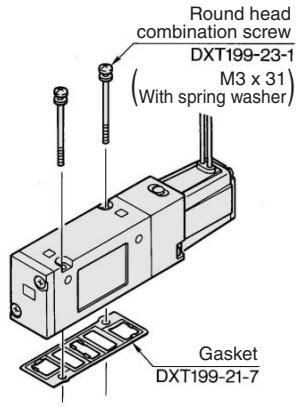
Nil	Standard length	
3	For 3 stations	(Specify a longer rail than the standard length.)
⋮	⋮	
20	For 20 stations	

Applicable solenoid valve
VZ5□43-□FZ□

Applicable blanking plate assembly
VZ5000-65-1A

Option/Standard Manifold

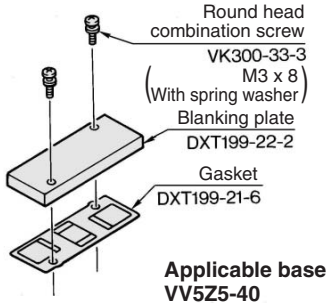
Combinations of Solenoid Valve, Manifold Gasket and Manifold Base



Applicable base
VV5Z5-40
VV5Z5-41
VV5Z5-42

Blanking Plate Assembly

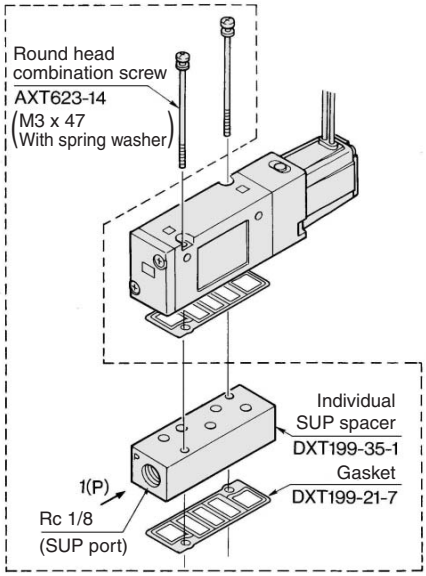
DXT199-22-1A



Applicable base
VV5Z5-40
VV5Z5-41
VV5Z5-42

Individual SUP Spacer Assembly

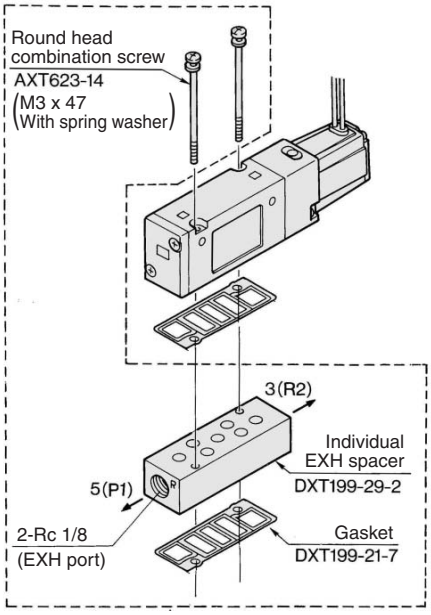
DXT199-35-1A



Applicable base
VV5Z5-40
VV5Z5-41
VV5Z5-42

Individual EXH Spacer Assembly

DXT199-29-2A

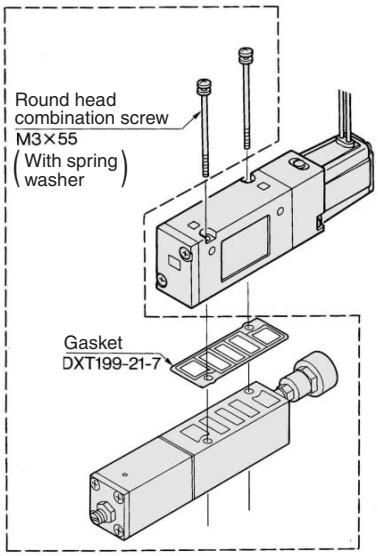


Applicable base
VV5Z5-40
VV5Z5-41
VV5Z5-42

Interface Regulator (P port regulation)

Interface style regulators can be placed on top of the manifold base to reduce the pressure of each of the valves.

ARBZ5000-00-P



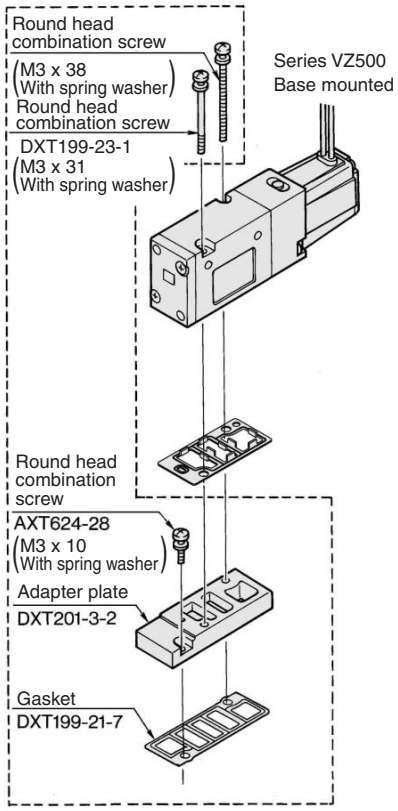
Before using, refer to page 3-3-8.

Applicable base
VV5Z5-40
VV5Z5-41
VV5Z5-42

Installation of the VZ500 Valve on the VZ5000 Manifold

- Use of an adaptor plate makes it possible to mount Series VZ500 on the manifold base of Series VZ5000.
- The mounting direction is shown in the diagram below. Mount the solenoid so that it will be on the same side as the single solenoid of the Series VZ5000.
- In the case of base mounting, 2(A) port of 3 port valve should be 2(B) port of manifold base.

Adapter Plate Assembly
DXT201-3-2A



Applicable base
VV5Z5-40
VV5Z5-41
VV5Z5-42

⚠Caution

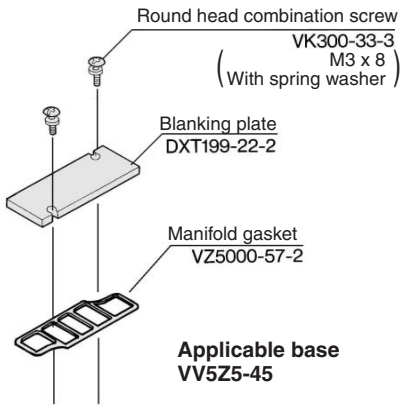
Mounting Screw Tightening Torques

M3: 0.8 N·m

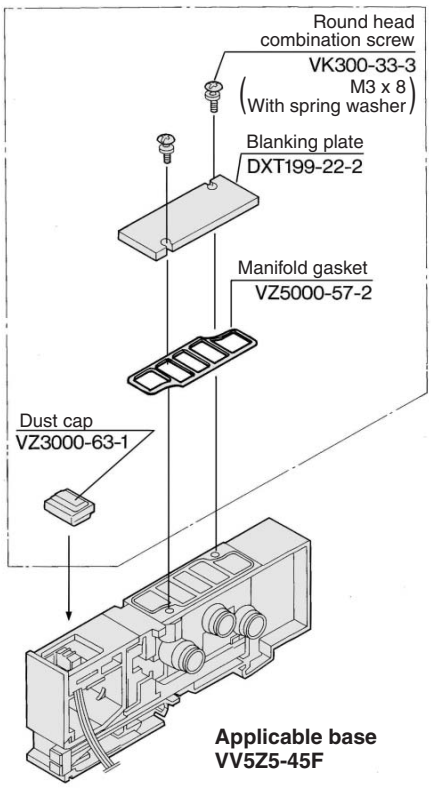
Option/DIN Rail Manifold

Blanking Plate Assembly

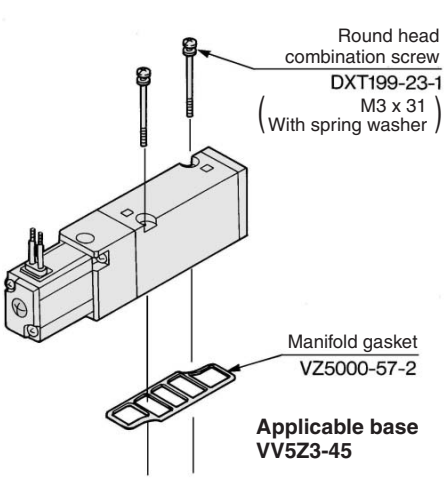
VZ5000-65-2A

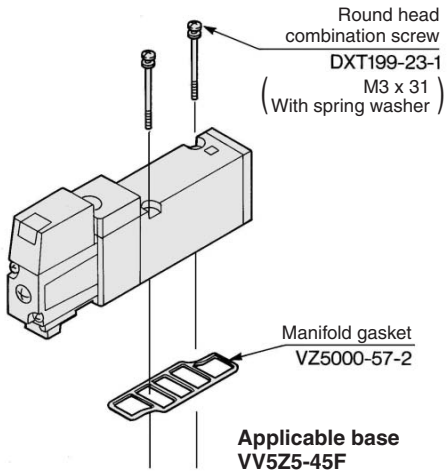


VZ5000-65-1A



Combination of Solenoid Valve, Gasket and Manifold Base





SUP Block Disk

By installing a SUP block disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold.

VZ5000-68-1A

EXH Block Disk

By installing an EXH block disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve.

VZ5000-68-1A

Applicable Plug Assembly (D-sub connector cable assembly)

Cable length	Assembly part no.	Component parts
1.5 m	VVZS3000-21A-1	Plug MIL standard D-sub connector Number of terminals: 25 Cable: 25 cores x 0.3 mm^2
3 m	VVZS3000-21A-2	
5 m	VVZS3000-21A-3	
8 m	VVZS3000-21A-4	

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

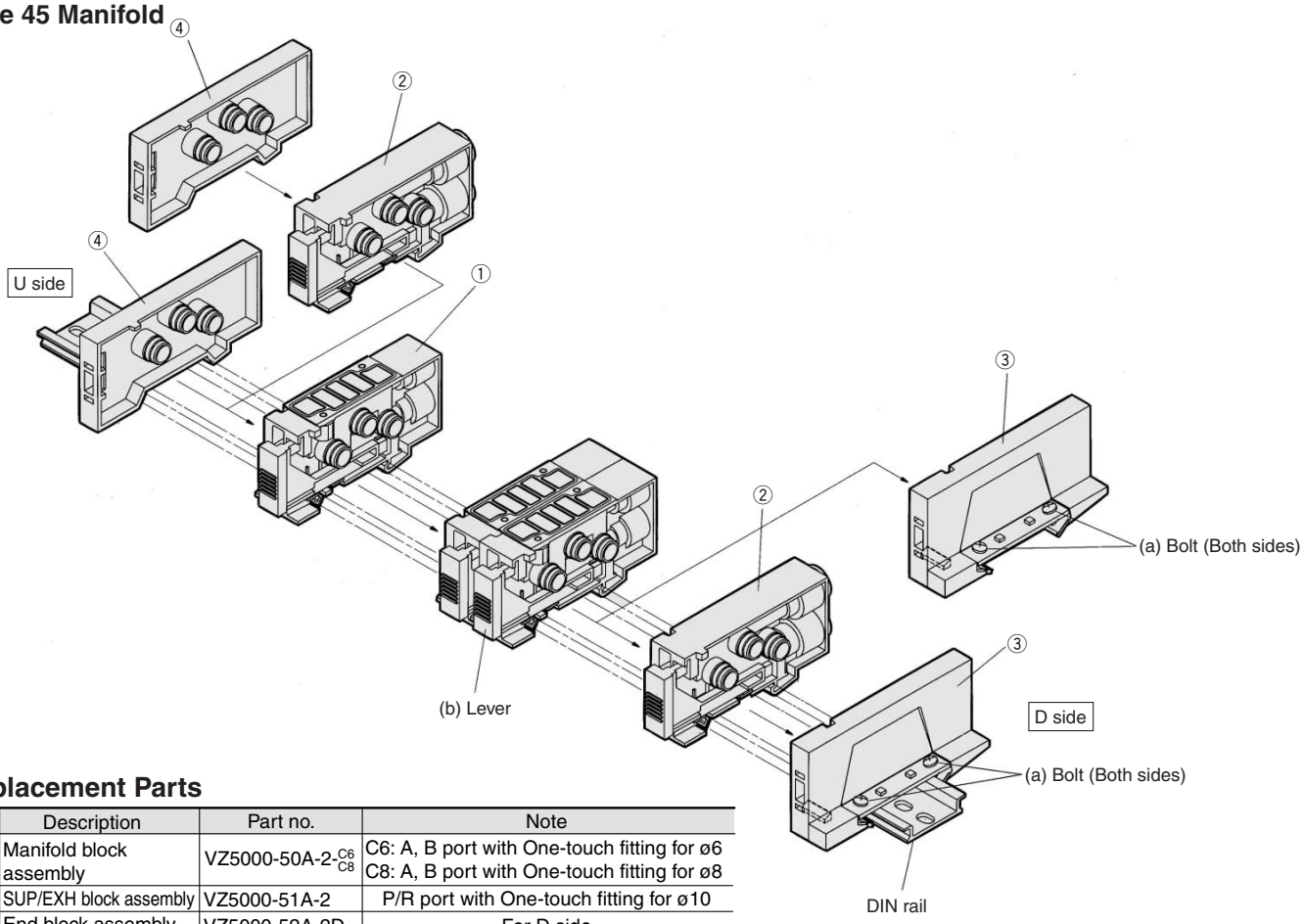
⚠ Caution

Mounting Screw Tightening Torques

M2.5: 0.32 N·m
(For stacking type manifold)

Exploded View/DIN Rail Manifold

Type 45 Manifold



Replacement Parts

No.	Description	Part no.	Note
①	Manifold block assembly	VZ5000-50A-2-$^{C6}_{C8}$	C6: A, B port with One-touch fitting for ø6 C8: A, B port with One-touch fitting for ø8
②	SUP/EXH block assembly	VZ5000-51A-2	P/R port with One-touch fitting for ø10
③	End block assembly	VZ5000-52A-2D	For D side
④	End block assembly	VZ5000-52A-2U	For U side

How to Increase Manifold Base

Station expansion is possible at any position.

(1) Loosen (both) bolts (a), which are securing the manifold onto the DIN rail, 1 to 2 turns.
(To remove the manifold base from the DIN rail, loosen the bolts 4 to 5 turns.)

(2) Press lever (b) to disconnect the manifold block assembly at the location in which you wish to place an additional manifold block assembly. (However, there are no levers between ① and ④ or between ③ and ④. They can be disconnected by merely pulling them apart.)

(3) Mount additional manifold block assembly on the DIN rail as shown in the Fig. (2).

(4) Press the block assemblies and tighten the bolts (a) to fix them to the DIN rail.

Note) When there are 10 or fewer manifold block assemblies, and more are added to make a total of 11 or more, a supply/exhaust block assembly must also be added.

Fig. (1)

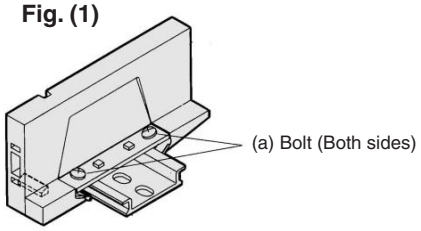
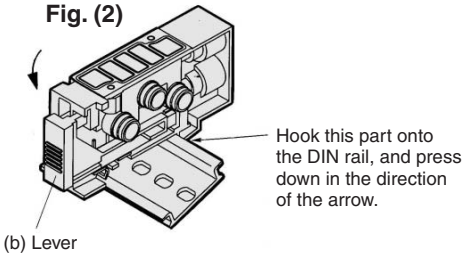
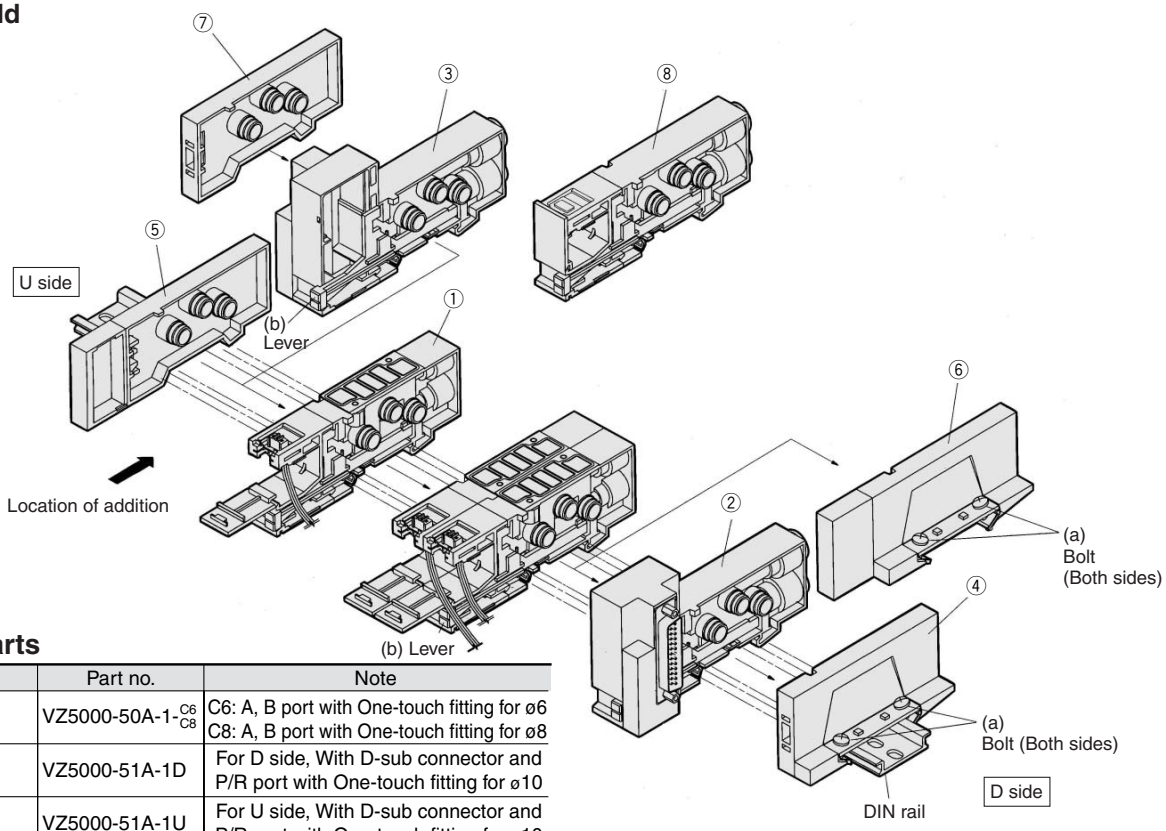


Fig. (2)



Exploded View/DIN Rail Manifold

Type 45F Manifold



Replacement Parts

No.	Description	Part no.	Note
①	Manifold block assembly	VZ5000-50A-1-$^{C6}_{C8}$	C6: A, B port with One-touch fitting for ø6 C8: A, B port with One-touch fitting for ø8
②	SUP/EXH block assembly	VZ5000-51A-1D	For D side, With D-sub connector and P/R port with One-touch fitting for ø10
③	SUP/EXH block assembly	VZ5000-51A-1U	For U side, With D-sub connector and P/R port with One-touch fitting for ø10
④	End block assembly	VZ5000-52A-2D	For D side, set with ②
⑤	End block assembly	VZ5000-52A-1U	For U side
⑥	End block assembly	VZ5000-52A-1D	For D side
⑦	End block assembly	VZ5000-52A-2U	For U side, set with ③
⑧	SUP/EXH block assembly	VZ5000-51A-1M	Without D-sub connector, For indicated location P/R port with One-touch fitting for ø10

How to Increase Manifold Base

To add a manifold block assembly, add it to the U side so that the terminal number of the D-sub connector and the valve link position will be in accordance with the circuit diagram.

(1) Loosen (both) bolts (a), which are securing the manifold onto the DIN rail, 1 to 2 turns. (To remove the manifold base from the DIN rail, loosen the bolts 4 to 5 turns.)

(2) Using a flat screwdriver, press lever (b) to disengage the link of the manifold block assembly on the U side or the D side from the SUP/EXH block assembly or from the end block assembly. (However, there are no levers between ⑤ and ①. They can be disconnected by merely pulling them apart.)

(3) Remove the housing cover from the D-sub connector portion of the SUP/EXH block assembly. (Refer to Fig. (1).)

(4) Following the procedure shown in Fig. (2), mount the manifold block assembly to be added onto the DIN rail. As shown in Fig. (3), insert the pin of the lead wire assembly into the D-sub connector, and attach the round crimped terminal to the screw that connects the wires.

(5) Press the block assemblies and tighten the bolts (a) to fix them to the DIN rail.

Note) When there are 10 or fewer manifold block assemblies, and more are added to make a total of 11 or more, a supply/exhaust block assembly must also be added.

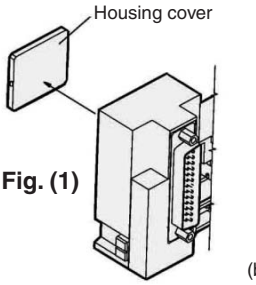


Fig. (1)

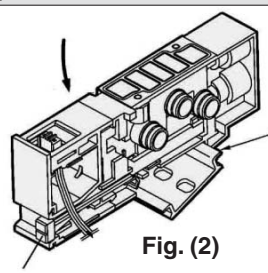
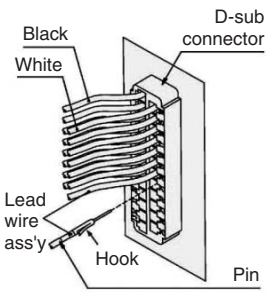
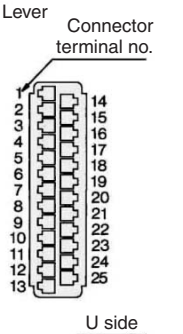


Fig. (2)





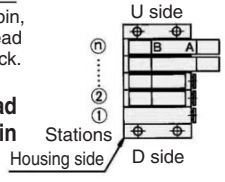
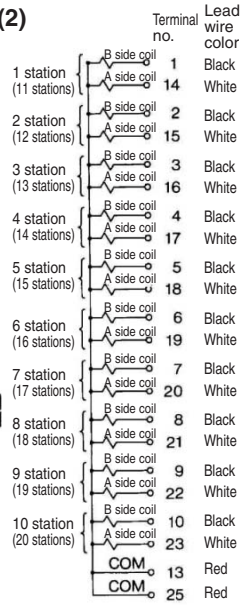
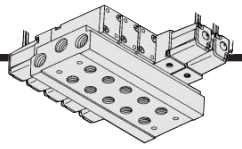


Fig. (3) How to insert lead wire assembly pin

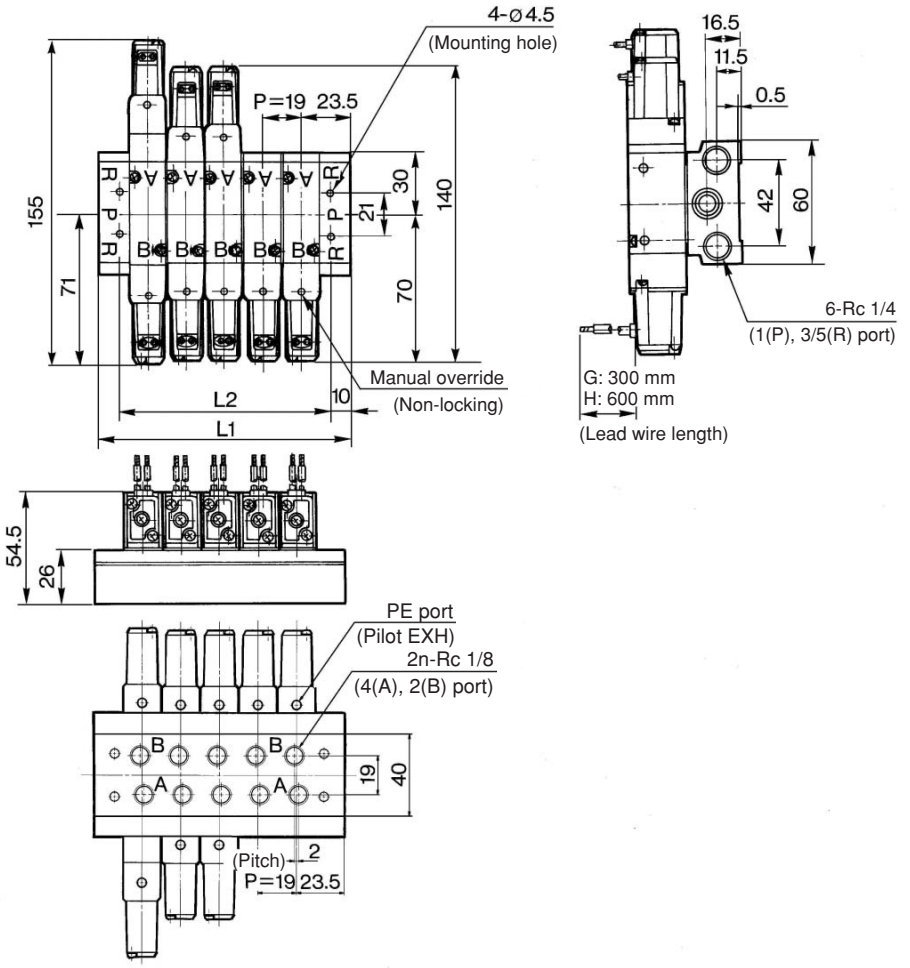




Type 40 Manifold: Bottom Ported

VV5Z5-40-[Station]2-01

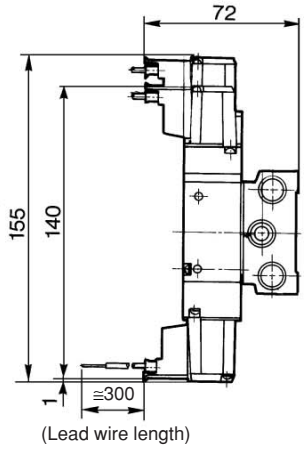
Grommet (G), (H)



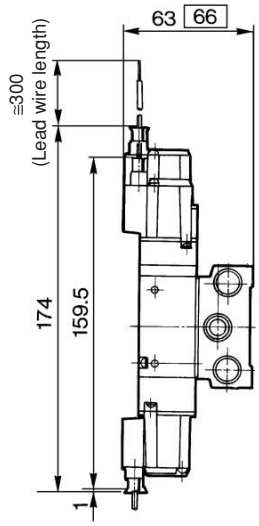
(mm)

Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L_1	66	85	104	123	142	161	180	199	218	237	256	275	294	313	332	351	370	389	408
L_2	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388

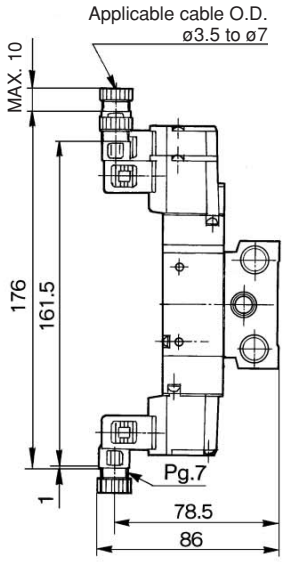
L plug connector (L)



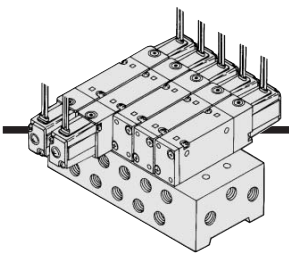
M plug connector (M)



DIN terminal (D)



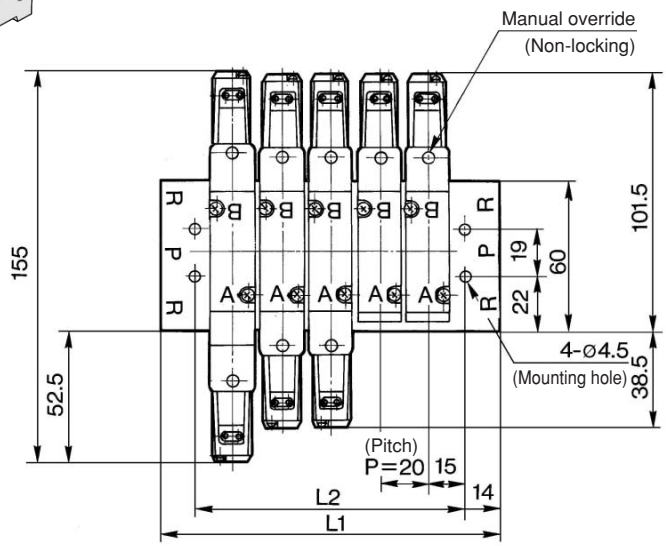
□: With light/surge voltage suppressor

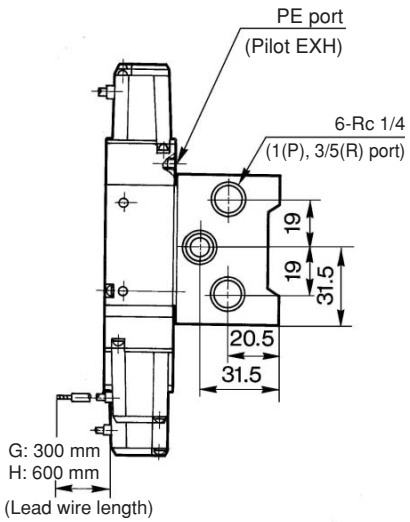


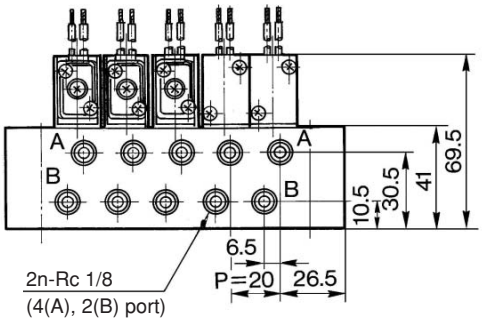
Type 41 Manifold: Side Ported

VV5Z5-41-Station 1-01

Grommet (G), (H)



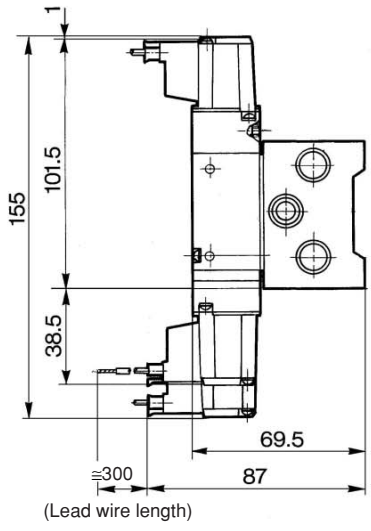




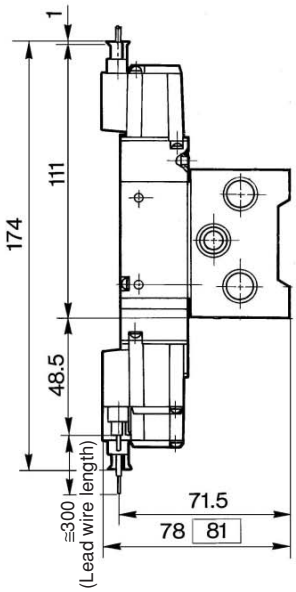
(mm)

Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L_1	78	98	118	138	158	178	198	218	238	258	278	298	318	338	358	378	398	418	438
L_2	50	70	90	110	130	150	170	190	210	230	250	270	290	310	330	350	370	390	410

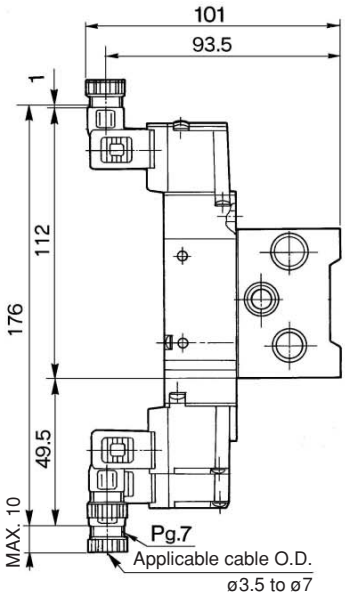
L plug connector (L)



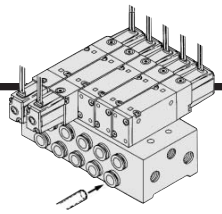
M plug connector (M)



DIN terminal (D)



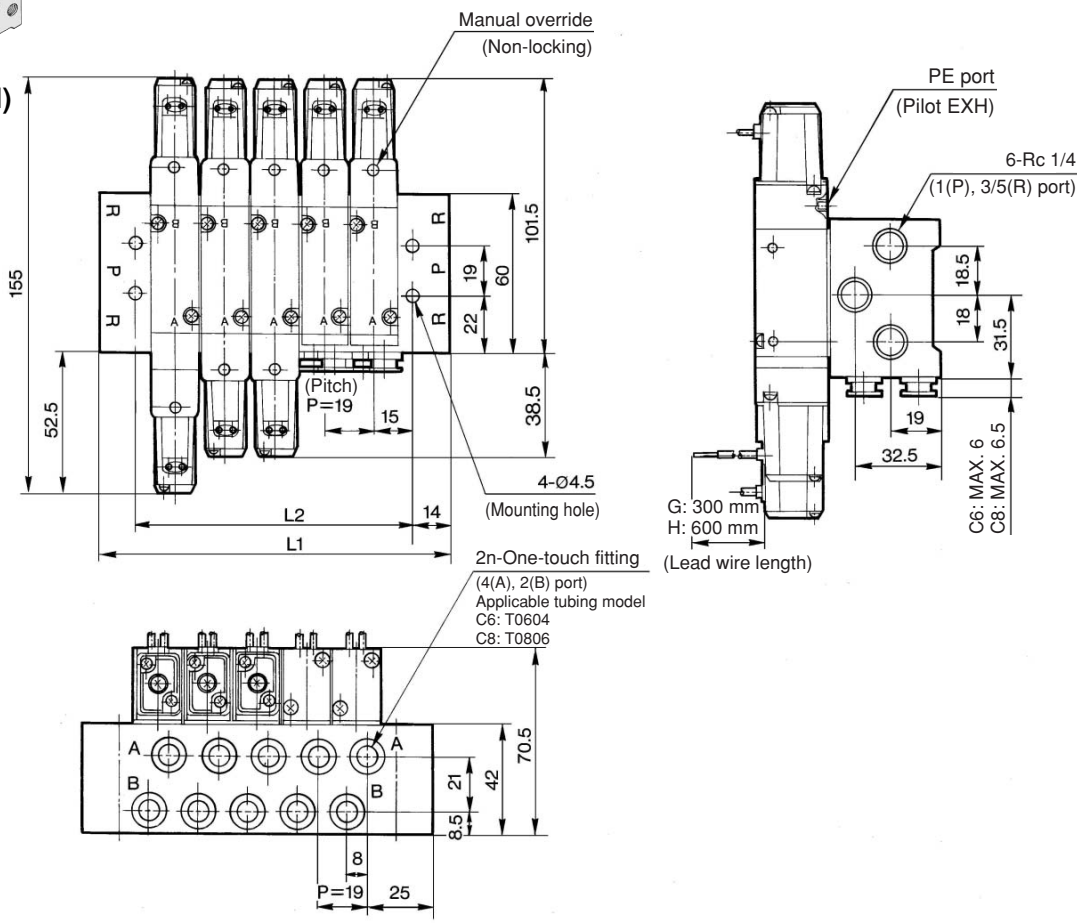
□: With light/surge voltage suppressor



Type 42 Manifold: Side Ported

VV5Z5-42- Station **1-** C6 / C8

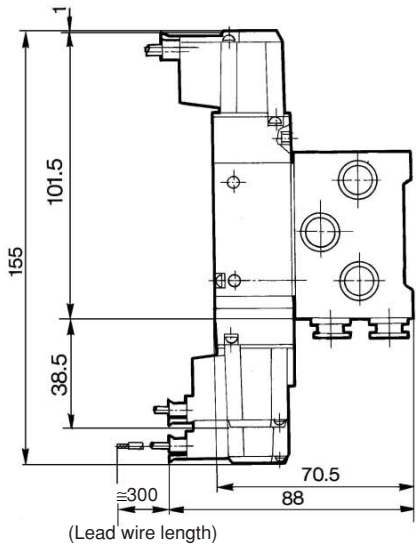
Grommet (G), (H)



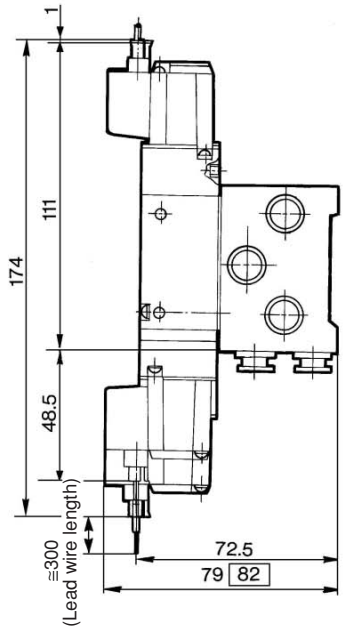
(mm)

Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L_1	77	96	115	134	153	172	191	210	229	248	267	286	305	324	343	362	381	400	419
L_2	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

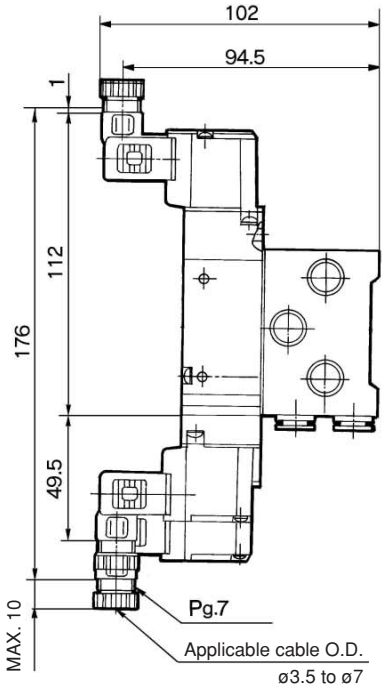
L plug connector (L)



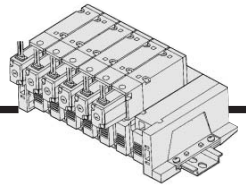
M plug connector (M)



DIN terminal (D)



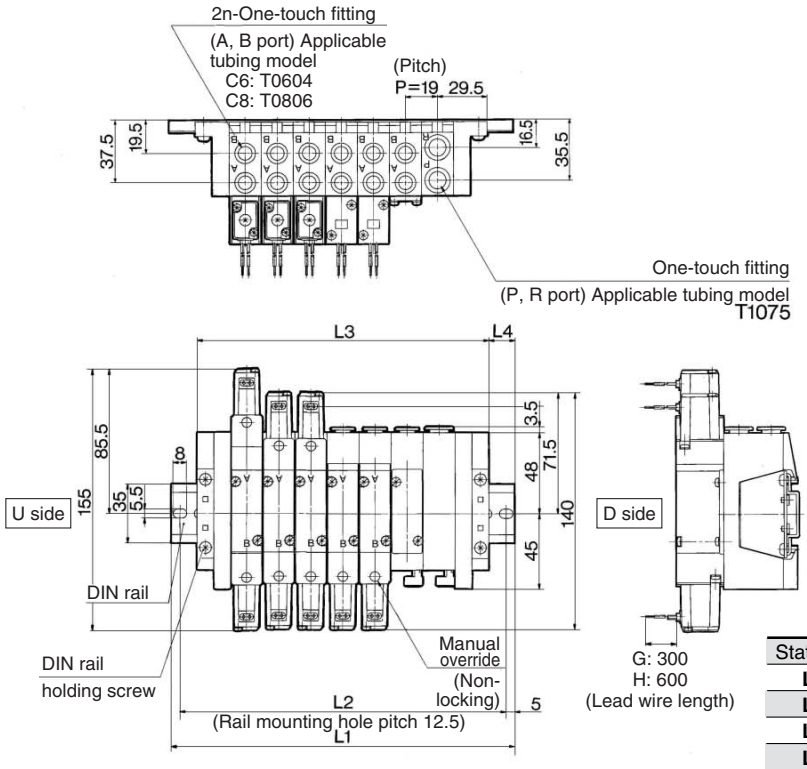
□: With light/surge voltage suppressor



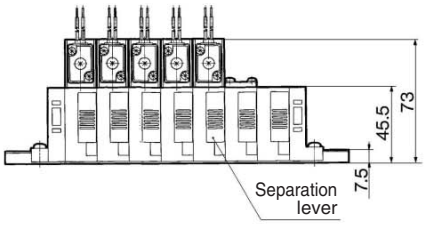
Type 45 DIN Rail Manifold (Non Plug-in): Side Ported

VV5Z5-45-Station D-C6C C8C

Grommet (G), (H)



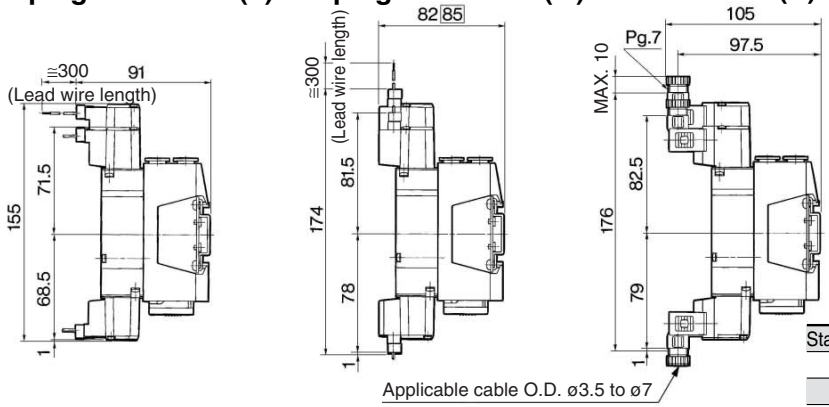
(Station n)·····(Station 1)



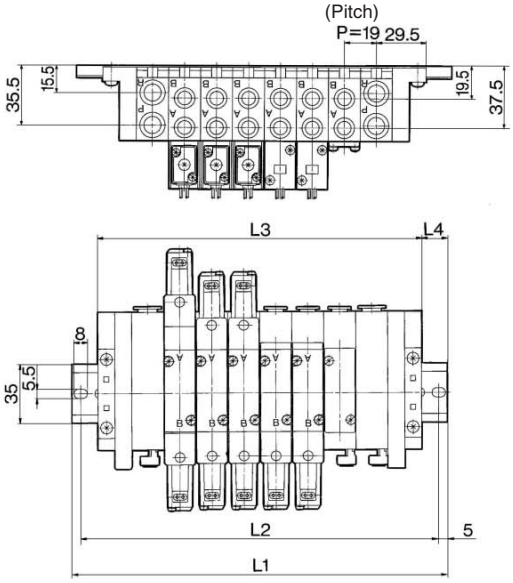
(mm)

Stations	2	3	4	5	6	7	8	9	10
L_1	123	148	160.5	185.5	198	223	235.5	260.5	273
L_2	112.5	137.5	150	175	187.5	212.5	225	250	262.5
L_3	97	116	135	154	173	192	211	230	249
L_4	13	16	13	16	12.5	15.5	12.5	15.5	12

L plug connector (L) M plug connector (M) DIN terminal (D)



VV5Z5-45-Station B-C6C C8C



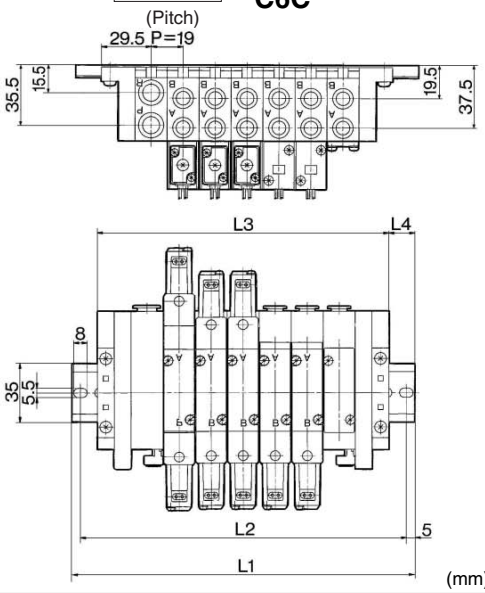
(mm)

Stations	2	3	4	5	6	7	8	9	10
L_1	148	160.5	185.5	198	223	235.5	260.5	273	298
L_2	137.5	150	175	187.5	212.5	225	250	262.5	287.5
L_3	116	135	154	173	192	211	230	249	268
L_4	16	13	16	12.5	15.5	12.5	15.5	12	15

(mm)

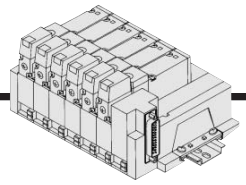
Stations	11	12	13	14	15	16	17	18	19	20
L_1	310.5	335.5	348	373	385.5	410.5	423	448	473	485.5
L_2	300	325	337.5	362.5	375	400	412.5	437.5	462.5	475
L_3	287	306	325	344	363	382	401	420	439	458
L_4	12	15	11.5	14.5	11.5	14.5	11	14	17	14

VV5Z5-45-Station U-C4C C6C



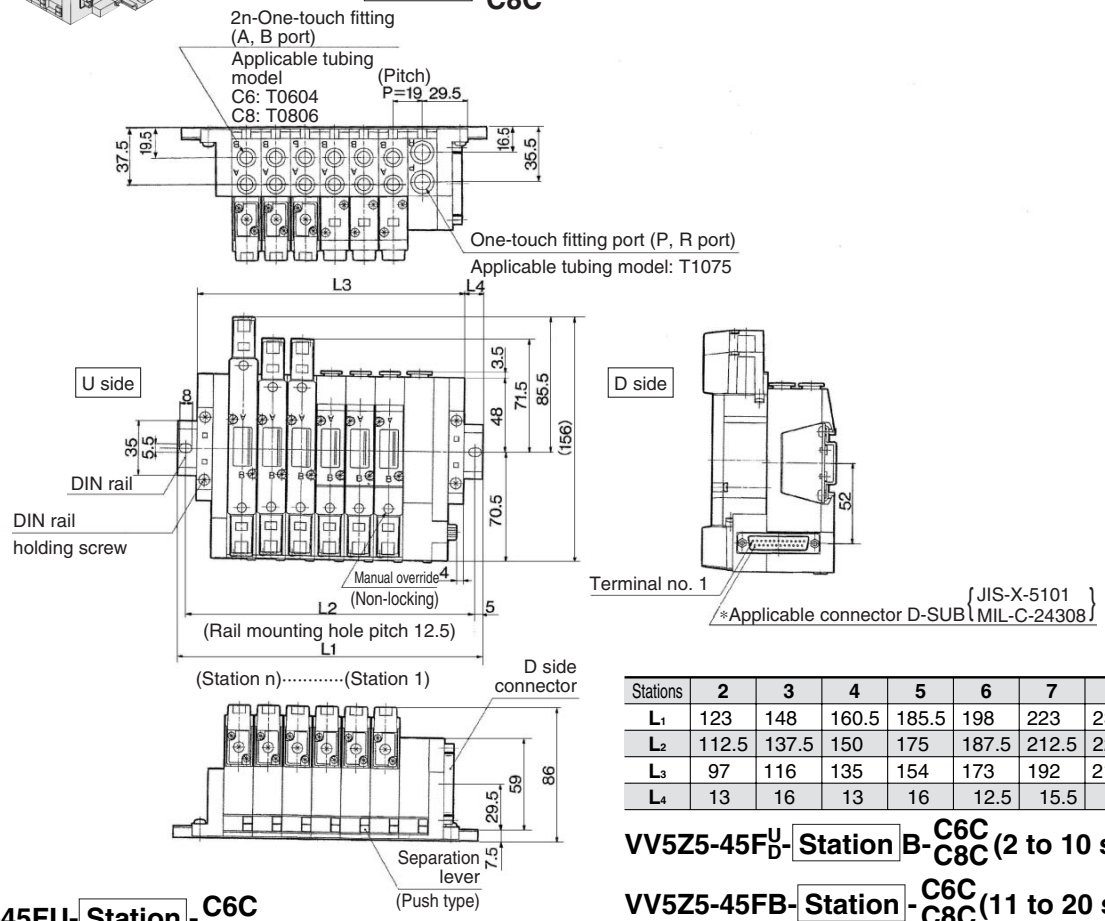
(mm)

Stations	2	3	4	5	6	7	8	9	10
L_1	123	148	160.5	185.5	198	223	235.5	260.5	273
L_2	112.5	137.5	150	175	187.5	212.5	225	250	262.5
L_3	97	116	135	154	173	192	211	230	249
L_4	13	16	13	16	12.5	15.5	12.5	15.5	12



Type 45F DIN Rail Manifold (Plug-in): Side Ported

VV5Z5-45FD-[Station]-C6C/C8C

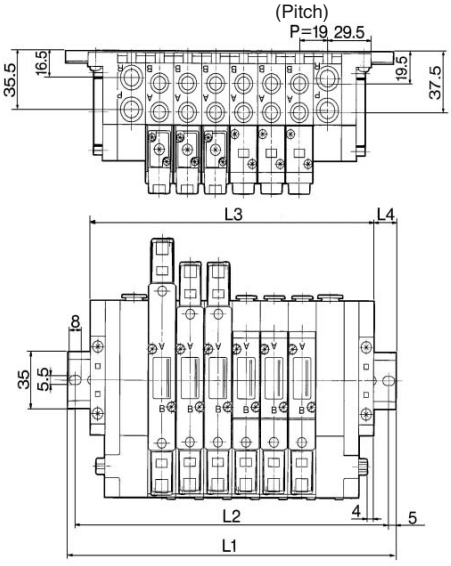


(mm)

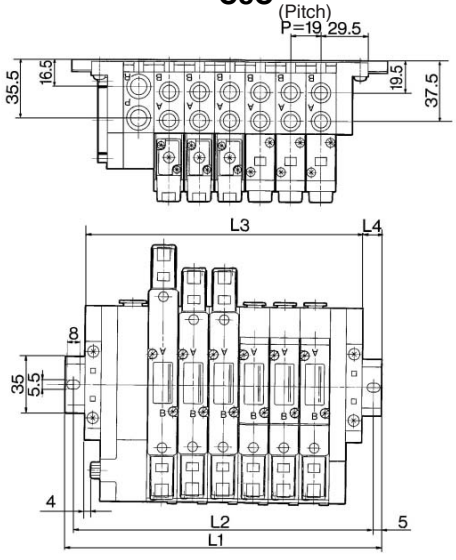
Stations	2	3	4	5	6	7	8	9	10
L_1	123	148	160.5	185.5	198	223	235.5	260.5	273
L_2	112.5	137.5	150	175	187.5	212.5	225	250	262.5
L_3	97	116	135	154	173	192	211	230	249
L_4	13	16	13	16	12.5	15.5	12.5	15.5	12

VV5Z5-45F$^{U}_{D}$-[Station]B-C6C/C8C (2 to 10 stations)

VV5Z5-45FB-[Station]-C6C/C8C (11 to 20 stations)



VV5Z5-45FU-[Station]-C6C/C8C



(mm)

Stations	2	3	4	5	6	7	8	9	10
L_1	123	148	160.5	185.5	198	223	235.5	260.5	273
L_2	112.5	137.5	150	175	187.5	212.5	225	250	262.5
L_3	97	116	135	154	173	192	211	230	249
L_4	13	16	13	16	12.5	15.5	12.5	15.5	12

(mm)

Stations	2	3	4	5	6	7	8	9	10
L_1	148	160.5	185.5	198	223	235.5	260.5	273	298
L_2	137.5	150	175	187.5	212.5	225	250	262.5	287.5
L_3	116	135	154	173	192	211	230	249	268
L_4	16	13	16	12.5	15.5	12.5	15.5	12	15

(mm)

Stations	11	12	13	14	15	16	17	18	19	20
L_1	310.5	335.5	348	373	385.5	410.5	423	448	473	485.5
L_2	300	325	337.5	362.5	375	400	412.5	437.5	462.5	475
L_3	287	306	325	344	363	382	401	420	439	458
L_4	12	15	11.5	14.5	11.5	14.5	11	14	17	14

Made to Order Specifications:

Please contact SMC for detailed specifications, dimensions, and delivery.

1. Solenoid Valve: External Pilot Specifications

Applicable solenoid valve series

VZ3000/5000
(Non plug-in type only)

Model no.

VZ $\frac{3}{5}$ □□ 0– □□□□□(–□) – X20

Entry is the same as standard products.

Specifications

Operating pressure range (MPa)	Main pressure	–100 kPa to 0.7
	External pilot pressure	0.15 to 0.7
Pilot exhaust method		Pilot valve individual exhaust

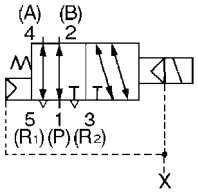
Dimensions

VZ3000: 8 mm longer
VZ5000: 8 mm longer

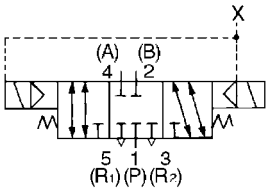
JIS Symbol

Body ported

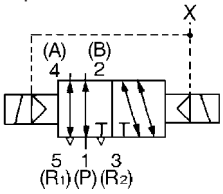
2 position single



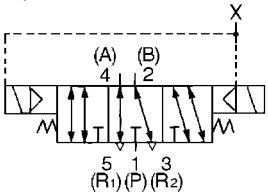
3 position closed center



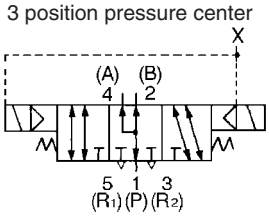
2 position double



3 position exhaust center



3 position pressure center



Made to Order Specifications:

Please contact SMC for detailed specifications, dimensions, and delivery.

2. Solenoid Valve: Special Manual Override

Applicable solenoid valve series

VZ3000
(Non plug-in type only)

Model no.

VZ3 □□□–□□□A(–□)

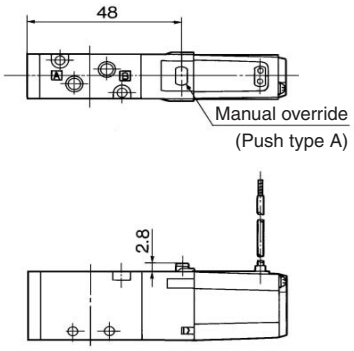
Entry is the same as standard products.

Manual override

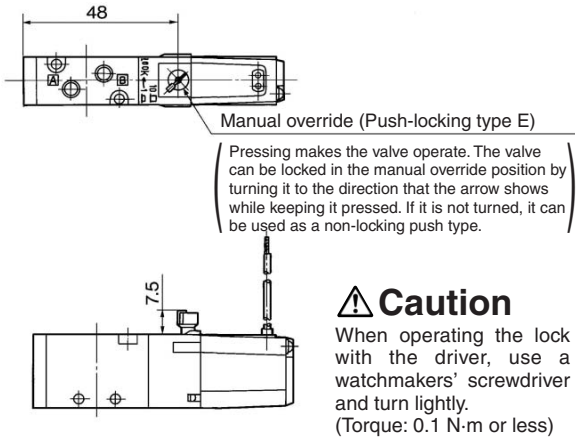
A	Push type A
E	Push-locking type E

Dimensions: Single

Push type A



Push-locking type E



⚠Caution

When operating the lock with the driver, use a watchmakers' screwdriver and turn lightly.
(Torque: 0.1 N·m or less)

Note) Because the manual override unit protrudes, the manual override could activate unintentionally if the protrusion is touched or an object falls on it. Therefore, take the proper preventative measures.

3. Solenoid Valve: Opposite Mount of Solenoid Assembly

Applicable solenoid valve series

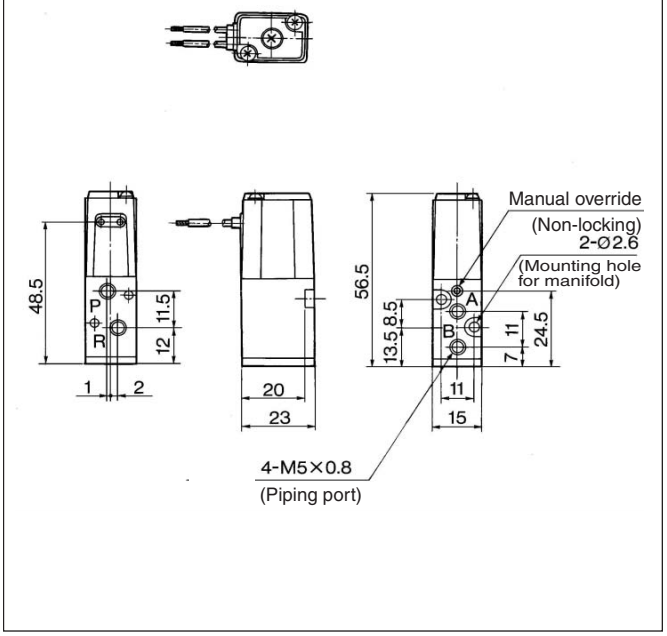
VZ1000/3000/5000
(Non plug-in type only)

Model no.

VZ1/3/5 □□□–□□□□(–□)–X1

Entry is the same as standard products.

Dimensions: VZ1120-□G-M5-X1



Made to Order Specifications:

Please contact SMC for detailed specifications, dimensions, and delivery.

4. Manifold: Common SUP/Individual EXH Type

Applicable solenoid valve series
VZ3000

Common SUP/Individual EXH type
VV5Z3-21-□3

Specification

Common SUP/Individual EXH type	
1(P) port	Rc 1/8
3/5(R) port	M5 x 0.8
4(A), 2(B) port	Valve

Model no.

VV5Z3 − 21 − 05 3 − □

Stations

02	2 stations
⋮	⋮
20	20 stations

P port thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Applicable solenoid valve
VZ3□2□-□ G/L/M □□- M5/C4/C6

Applicable blanking plate assembly
DXT192-13-1A

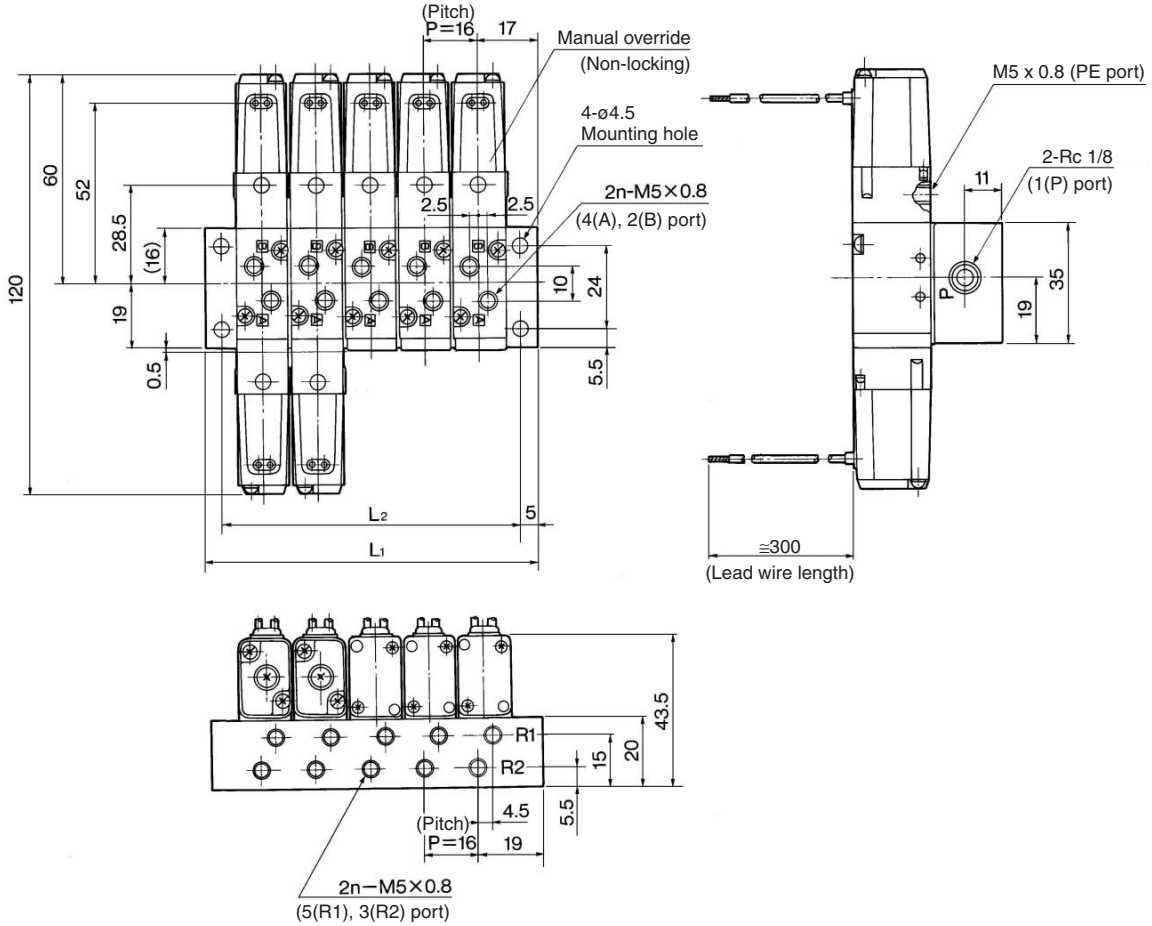
Applicable throttle valve
DXT154-34-1A

Applicable silencer
AN120-M5

Note) Refer to page 3-3-25 for manifold option.

Dimensions: Grommet Type

Note) To use the VZ3□23 with a throttle valve mounted on it, open the throttle valve one turn or more from the fully closed position.



(mm)

Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L_1	50	66	82	98	114	130	146	162	178	194	210	226	242	258	274	290	306	322	338
L_2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328

Made to Order Specifications:

Please contact SMC for detailed specifications, dimensions, and delivery.

5. DIN Rail Manifold

Applicable solenoid valve series

VZ1000

How to Order Applicable Solenoid Valves

Plug-in VZ1120 — 5 F Z (Note) — M5

Non plug-in VZ1120 — 5 L □ — M5

Same as page 3-3-9

Note) Please contact SMC in the case of without indicator light.

Manifold Specifications

Model		Type 25	Type 25F
Manifold type		Stacking type, non plug-in type	Stacking type, plug-in type
P(SUP), R(EXH)		Common SUP and EXH	
Valve stations		2 to 20 stations	2 to 20 stations
4(A), 2(B) port location		Valve	
Port size	1(P), 3/5(R) port	C6 (One-touch fitting for ø6)	
	4(A), 2(B) port	M5 x 0.8	
Valve effective [1] area (mm^2)	VZ1120	1 → 2: 0.48, 4 → 3: 0.85	
Connector		—	MIL-C-24308 Applicable for JIS-X-5101 D-sub connector
Internal wiring		—	COM specifications [2]

Note 1) Value at manifold base mounted, 2 position single operating
Note 2) It is available at +COM or –COM.

How to Order Manifold

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

(Example) VV4Z1-25FD-06-00C····1 pc. (Manifold base)
∗VZ1120-5FZ-M5·····5 pcs. (Valve)
∗VZ1000-10-1A·····1 pc. (Blanking plate assembly)

└→The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Made to Order Specifications:

Please contact SMC for detailed specifications, dimensions, and delivery.

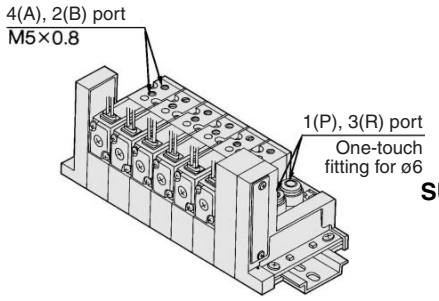
5. DIN Rail Manifold

DIN Rail Manifold

Common SUP/Common EXH

Note) For more than 11 stations, supply air to both sides of 1(P) port and exhaust air from both sides of 3(R) port.

Type 25 (Non plug-in type)



How to Order

VV4Z1 − 25 − 05 D − 00C −

Stations

02	2 stations
⋮	⋮
20	20 stations

SUP/EXH block mounting position

U	U side: 2 to 10 stations
D	D side: 2 to 10 stations
B	Both sides: 2 to 20 stations
M	Special combination

Applicable solenoid valve

VZ1120-□ G L M D □-M5

VZ110-□ G L M D □-M5 (3 port valve)

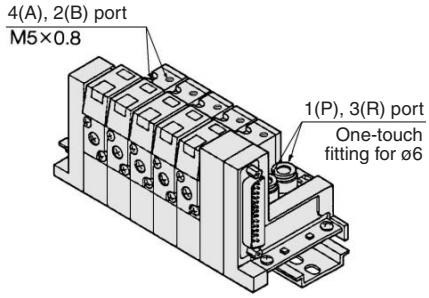
Applicable blanking plate assembly

VZ1000-10-2A

DIN rail length specified

Nil	Standard length	
3	For 3 stations	(Specify a longer rail than the standard length.)
⋮	⋮	
20	For 20 stations	

Type 25F (Plug-in type)



How to Order

VV4Z1 −25F − 05 − 00C −

Connector mounting direction

U	U side
D	D side

Stations

02	2 stations
⋮	⋮
20	20 stations

SUP/EXH block mounting position

Nil	For 2 to 10 stations : One side (Same as direction of connector mount) For 11 to 20 stations: Both sides
B	For 2 to 10 stations: Both sides
M *	Special combination

Applicable solenoid valve

VZ1120-□-FZ-M5

VZ110-□FZ-M5 (3 port valve)

Applicable blanking plate assembly

VZ1000-10-1A

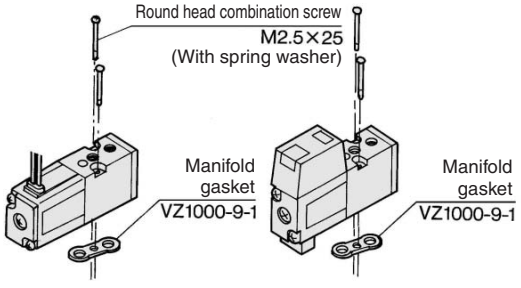
DIN rail length specified

Nil	Standard length	
3	For 3 stations	(Specify a longer rail than the standard length.)
⋮	⋮	
20	For 20 stations	

Option/DIN Rail Manifold

Note) 25 type is able to use with individual SUP spacer and individual EXH spacer assembly. Refer to page 3-3-14.

Combination of Solenoid Valve, Gasket and Manifold base

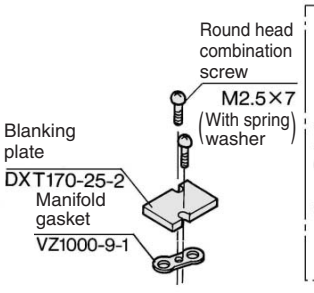


Applicable base VV4Z1-25

Applicable base VV4Z1-25F

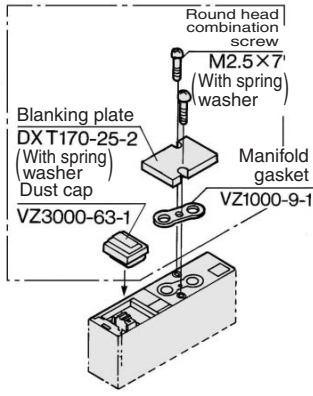
Blanking Plate Assembly

VZ1000-10-2A



Applicable base VV4Z1-25

VZ1000-10-1A



Applicable base VV4Z1-25F

EXH Block Disk

VZ1000-13-1A

By installing an EXH block disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve.

SUP Block Disk

VZ1000-13-1A

By installing a SUP block disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold.

Mix Mount with 3 Port Valve

3 port valve VZ110 can be mounted on VV4Z1-25 and VV4Z1-25F.

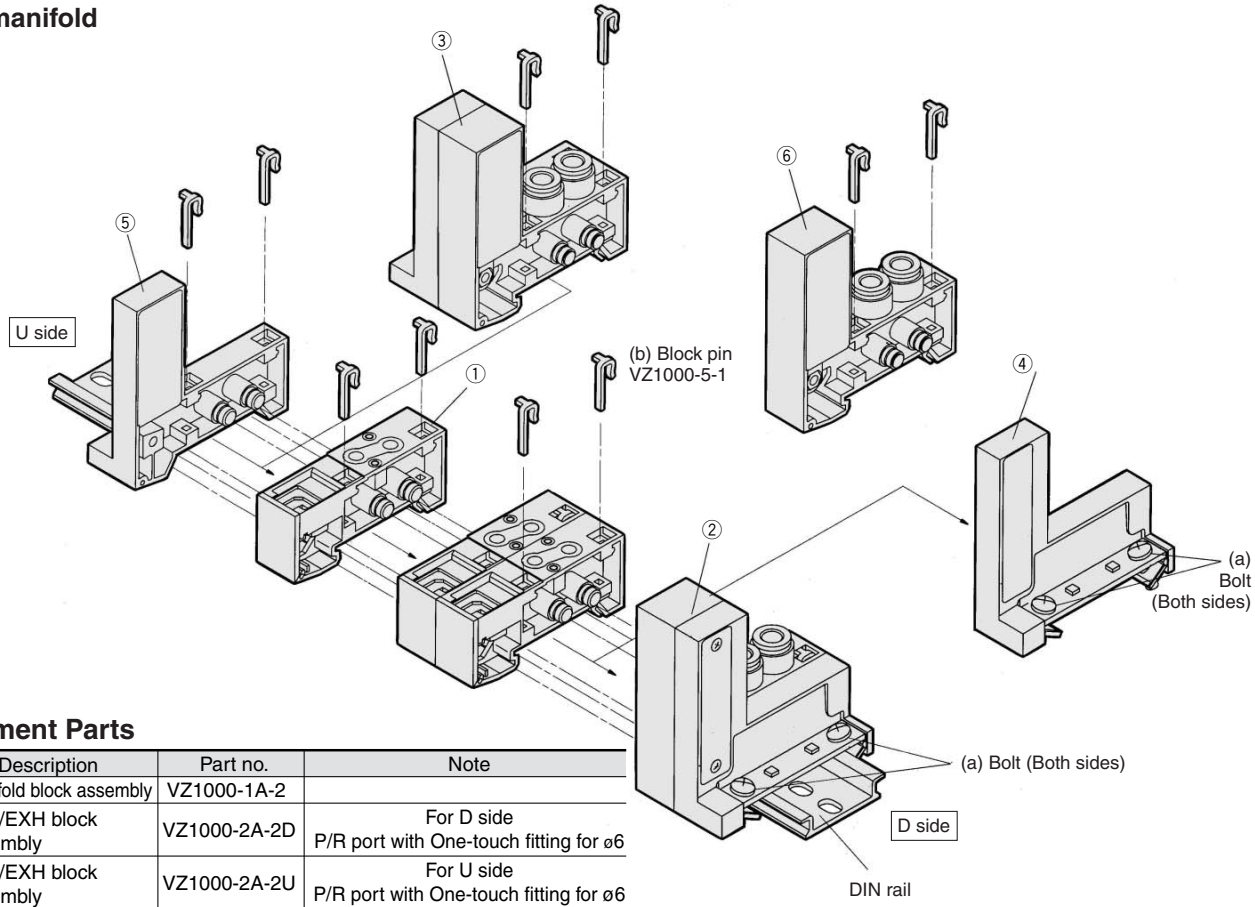
⚠ Caution

Mounting Screw Tightening Torques

M2.5: 0.32 N·m
(For stacking type manifold)

Exploded View/DIN Rail Manifold

Type 25 manifold



Replacement Parts

No.	Description	Part no.	Note
①	Manifold block assembly	VZ1000-1A-2	
②	SUP/EXH block assembly	VZ1000-2A-2D	For D side P/R port with One-touch fitting for ø6
③	SUP/EXH block assembly	VZ1000-2A-2U	For U side P/R port with One-touch fitting for ø6
④	End block assembly	VZ1000-3A-1D	For D side
⑤	End block assembly	VZ1000-3A-1U	For U side
⑥	SUP/EXH block assembly	VZ1000-2A-1M	Without D-sub connector For indicated location, P/R port with One-touch fitting for ø6

Note) Block pin (2 pcs.) is attached for ①, ③, ⑤, ⑥.

How to Increase Manifold Base

Station expansion is possible at any position.

(1) Loosen (both) bolts (a), which are securing the manifold onto the DIN rail, 1 to 2 turns. (To remove the manifold base from the DIN rail, loosen the bolts 4 to 5 turns.)

(2) Following the procedure shown in Fig. (2), pull the block pin (b) from the manifold block assembly at the location in which you wish to place an additional assembly.

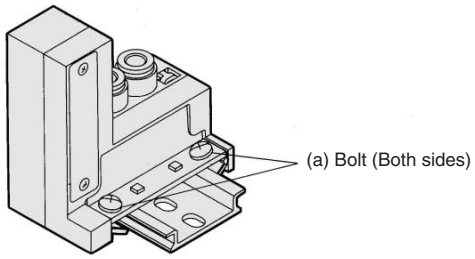
(3) Mount additional manifold block assembly on the DIN rail as shown in the Fig. (3).

(4) Press the block assemblies and insert the block pin (b) to fix them to the DIN rail.

(5) Tighten bolt (a) to fix the manifold to the DIN rail.

Note) When there are 10 or fewer manifold block assemblies, and more are added to make a total of 11 or more, a supply/exhaust block assembly must also be added.

Fig. (1)



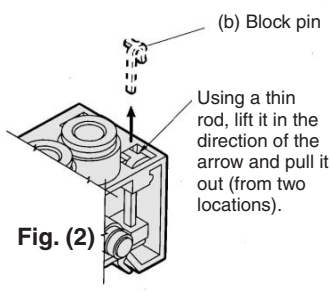


Fig. (2)

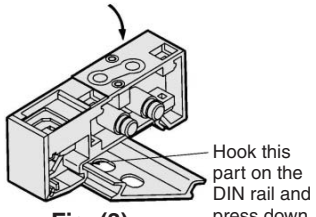
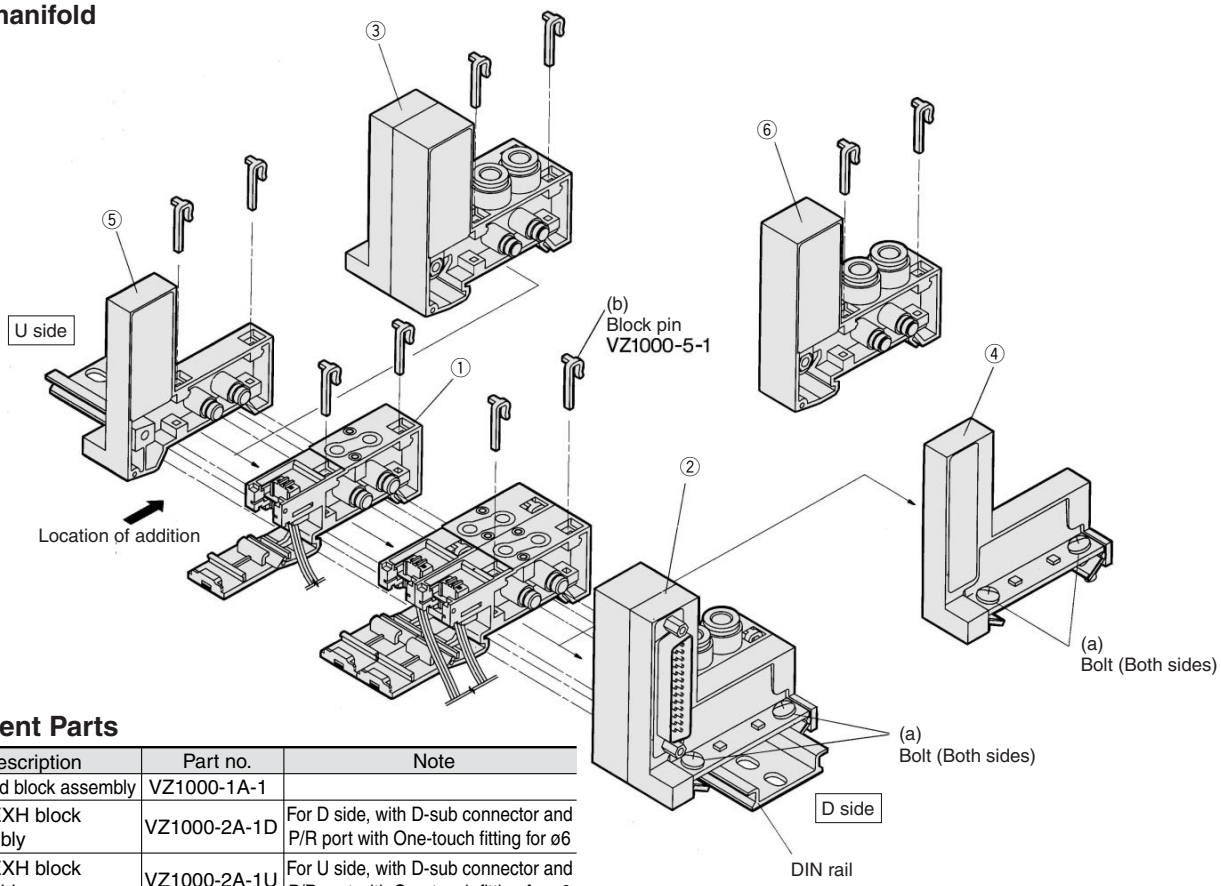


Fig. (3)

Exploded View/DIN Rail Manifold

Type 25F manifold



Replacement Parts

No.	Description	Part no.	Note
①	Manifold block assembly	VZ1000-1A-1	
②	SUP/EXH block assembly	VZ1000-2A-1D	For D side, with D-sub connector and P/R port with One-touch fitting for ø6
③	SUP/EXH block assembly	VZ1000-2A-1U	For U side, with D-sub connector and P/R port with One-touch fitting for ø6
④	End block assembly	VZ1000-3A-1D	For D side
⑤	End block assembly	VZ1000-3A-1U	For U side
⑥	SUP/EXH block assembly	VZ1000-2A-1M	Without D-sub connector For indicated location, P/R port with One-touch fitting for ø6

Note) Block pin (2 pcs.) is attached for ①, ③, ⑤, ⑥.

How to Increase Manifold Base

To add a manifold block assembly, add it to the U side so that the terminal number of the D-sub connector and the valve link position will be in accordance with the circuit diagram.

(1) Loosen (both) bolts (a), which are securing the manifold onto the DIN rail, 1 to 2 turns. (To remove the manifold base from the DIN rail, loosen the bolts 4 to 5 turns.)

(2) Following the procedure shown in Fig. (1), pull out the block pin (b) from the block assembly that links the manifold block assembly of the U side and the D side with the end block assembly or the supply/exhaust end block assembly.

(3) Remove the housing cover from the D-sub connector portion of the supply/exhaust block assembly. (Refer to Fig. (3).)

(4) Following the procedure shown in Fig. (2), mount the manifold block assembly to be added onto the DIN rail. As shown in Fig. (4), insert the pin of the lead wire assembly into the D-sub connector, and attach the round crimped terminal to the screw that connects the wires.

(5) Press block assembly and insert block pin (b). to fix them to the DIN rail.

(6) Tighten bolt (a) to fix the manifold to the DIN rail.

Note) When there are 10 or fewer manifold block assemblies, and more are added to make a total of 11 or more, a supply/exhaust block assembly must also be added.

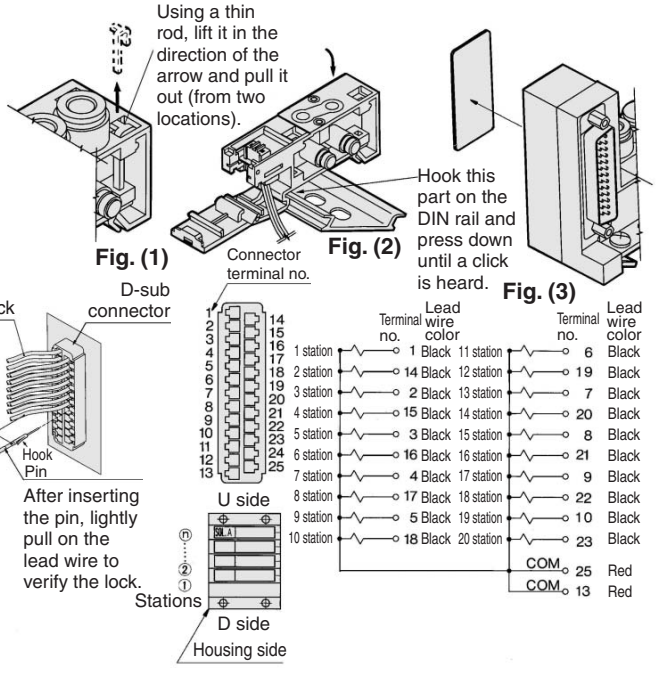
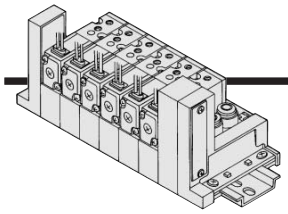


Fig. (4) How to insert lead wire assembly pin.

Made to Order Specifications:

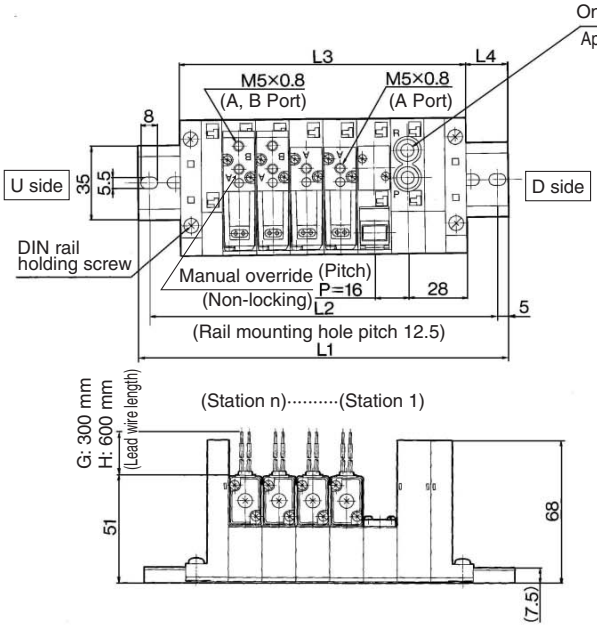
Please contact SMC for detailed specifications, dimensions, and delivery.

5. DIN Rail Manifold



Type 25 DIN Rail Manifold (Non plug-in)

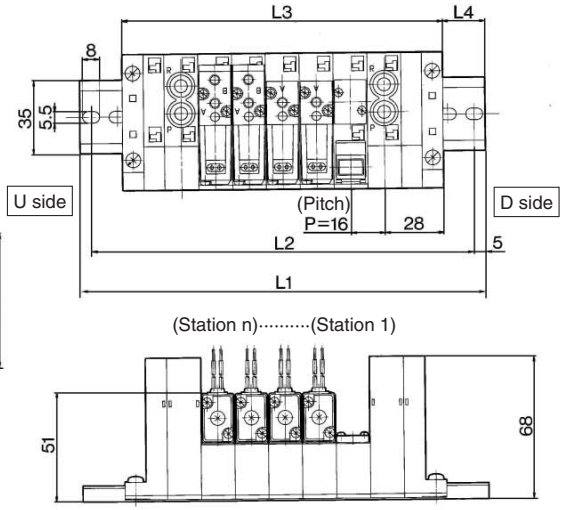
VV4Z1-25-Station D-00C



(mm)

Stations	2	3	4	5	6	7	8	9	10
L_1	110.5	135.5	148	160.5	185.5	198	210.5	223	248
L_2	100	125	137.5	150	175	187.5	200	212.5	237.5
L_3	88	104	120	136	152	168	184	200	216
L_4	11.5	16	14	12.5	17	15	13.5	11.5	16

VV4Z1-25-Station B-00C



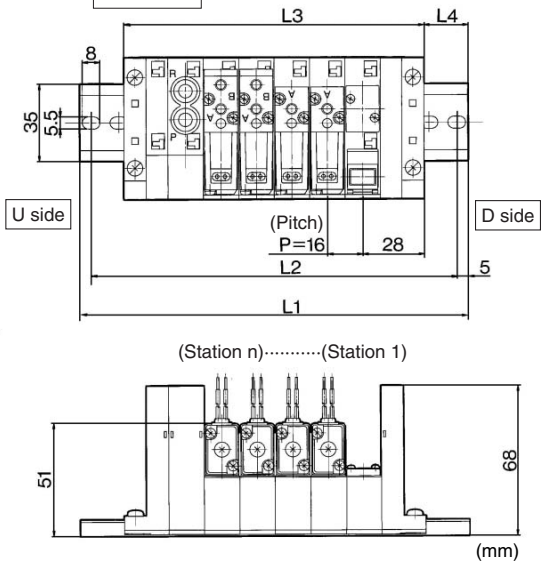
(mm)

Stations	2	3	4	5	6	7	8	9	10
L_1	135.5	148	160.5	185.5	198	210.5	223	248	260.5
L_2	125	137.5	150	175	187.5	200	212.5	237.5	250
L_3	104	120	136	152	168	184	200	216	232
L_4	16	14	12.5	17	15	13.5	11.5	16	14

(mm)

Stations	11	12	13	14	15	16	17	18	19	20
L_1	273	298	310.5	323	335.5	360.5	373	385.5	398	423
L_2	262.5	287.5	300	312.5	325	350	362.5	375	387.5	412.5
L_3	248	264	280	296	312	328	344	360	376	392
L_4	12.5	17	15.5	13.5	12	16.5	14.5	13	11	15.5

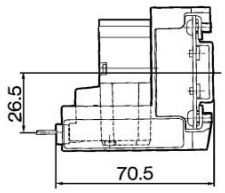
VV4Z1-25-Station U-00C



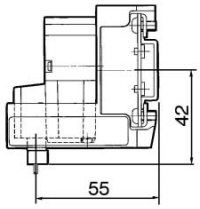
(mm)

Stations	2	3	4	5	6	7	8	9	10
L_1	110.5	135.5	148	160.5	185.5	198	210.5	223	248
L_2	100	125	137.5	150	175	187.5	200	212.5	237.5
L_3	88	104	120	136	152	168	184	200	216
L_4	11.5	16	14	12.5	17	15	13.5	11.5	16

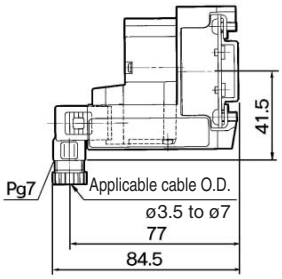
L plug connector (L)



M plug connector (M)



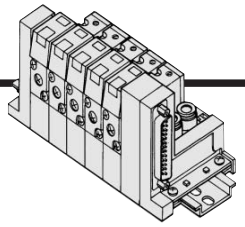
DIN terminal (D)



Made to Order Specifications:

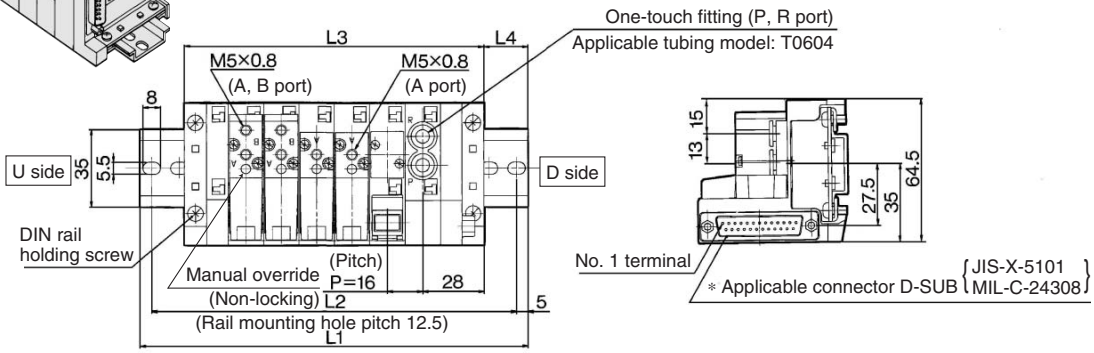
Please contact SMC for detailed specifications, dimensions, and delivery.

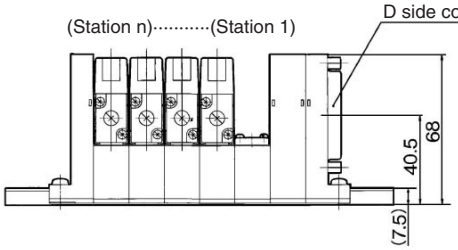
6. DIN Rail Manifold



Type 25F DIN Rail Manifold (Plug-in)

VV4Z1-25FD-Station-00C (2 to 10 stations)

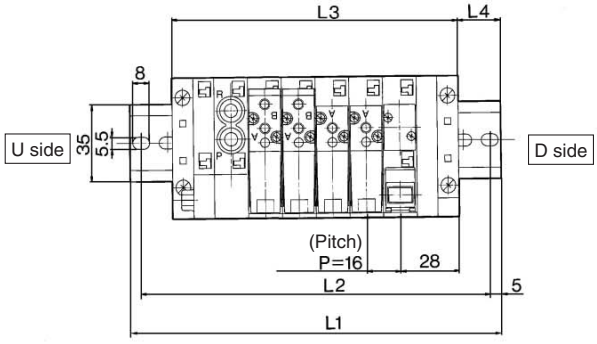


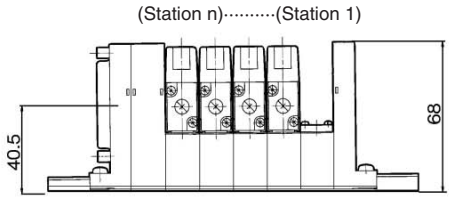


(mm)

Stations	2	3	4	5	6	7	8	9	10
L1	110.5	135.5	148	160.5	185.5	198	210.5	223	248
L2	100	125	137.5	150	175	187.5	200	212.5	237.5
L3	88	104	120	136	152	168	184	200	216
L4	11.5	16	14	12.5	17	15	13.5	11.5	16

VV4Z1-25FU-Station-00C (2 to 10 stations)



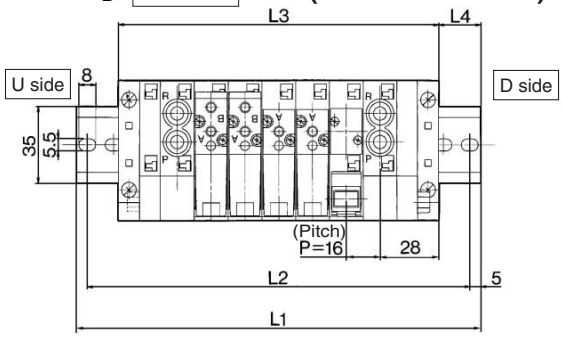


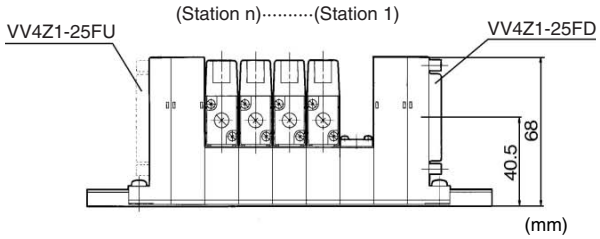
(mm)

Stations	2	3	4	5	6	7	8	9	10
L1	110.5	135.5	148	160.5	185.5	198	210.5	223	248
L2	100	125	137.5	150	175	187.5	200	212.5	237.5
L3	88	104	120	136	152	168	184	200	216
L4	11.5	16	14	12.5	17	15	13.5	11.5	16

VV4Z1-25F$\frac{U}{D}$-Station B-00C (2 to 10 stations)

VV4Z1-25F$\frac{U}{D}$-Station-00C (11 to 20 stations)





(mm)

Stations	2	3	4	5	6	7	8	9	10
L1	135.5	148	160.5	185.5	198	210.5	223	248	260.5
L2	125	137.5	150	175	187.5	200	212.5	237.5	250
L3	104	120	136	152	168	184	200	216	232
L4	16	14	12.5	17	15	13.5	11.5	16	14

(mm)

Stations	11	12	13	14	15	16	17	18	19	20
L1	273	298	310.5	323	333.5	360.5	373	385.5	398	423
L2	262.5	287.5	300	312.5	325	350	362.5	375	387.5	412.5
L3	248	264	280	296	312	328	344	360	376	392
L4	12.5	17	15.5	13.5	12	16.5	14.5	13	11	15.5