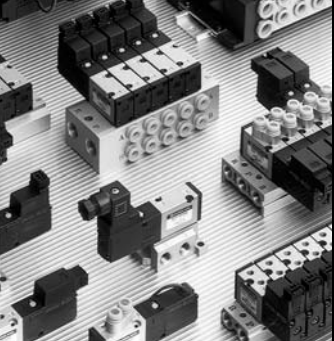




4/5 Port Solenoid Valve Rubber Seal

VZ1000/3000/5000

Solenoid Valve Variations

		Port Size Effective area (mm ²)	Position solenoid	Voltage	Electrical entry	Option/ Indicator light and surge voltage suppressor ⁽¹⁾	Manual override	
Body Ported	VZ1000	M5 : P→A0.6 (0.034) : B→R1.5 (0.083) : P→B1.0 (0.056) : A→R0.9 (0.05)	2 position single 				•Non-locking push style 	1.6-6
	VZ3000	M5 : 3.6 (0.2) C4: 3 (0.17) C6: 3.5 (0.19)	2 position single 				•Non-locking push style 	1.6-13
	VZ5000	1/8 : 11 (0.6) C6: 8.6 (0.48) C8: 9.9 (0.55)	2 position double 3 position closed centre 	(Standard) 100V AC 50/60Hz 200V AC 50/60Hz 24V DC (Option) 24V AC 50/60Hz 48V AC 50/60Hz 110V AC 50/60Hz 220V AC 50/60Hz 6V DC 12V DC 48V DC	• DIN terminal (D) 	• Surge voltage suppressor (D) • Indicator light and surge voltage suppressor (D)	•Locking B style (Slotted) 	1.6-41
Base Mounted	VZ3000	1/8 : 4.5 (0.25)	3 position exhaust centre 				•Locking C style (Lever) 	1.6-22
	VZ5000	1/8 1/4 : 12.6 (0.7)	3 position pressure centre 					1.6-51

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

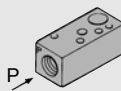
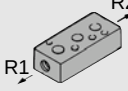
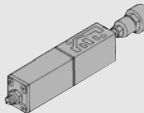
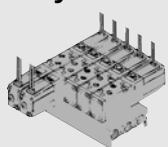
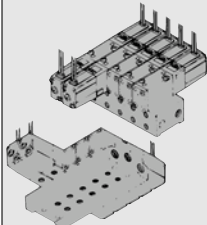
VS

VS7

VQ7

VZ1000/3000/5000

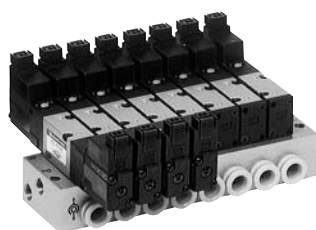
Manifold Variations

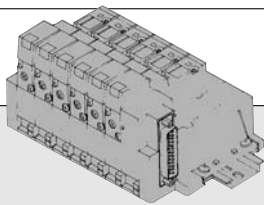
			Standard Manifold							
Valve Series		A, B port position	A, B port size					Manifold option		
			M5	1/8	With One-touch fitting			Individual SUP spacer assembly 	Individual EXH spacer assembly 	Interface regulator 
					Applicable tube O.D.					
					ø4	ø6	ø8			
	VZ1000	Top	●	—	—	—	—	●	●	—
	VZ3000		●	—	●	●	—	●	●	—
	VZ5000		—	●	—	●	●	—	●	—
	VZ3000	Side	●	—	●	●	—	●	●	● (P regulation)
		Bottom	●	—	—	—	—			
	VZ5000	Side	—	●	—	●	●	●	●	● (P regulation)
		Bottom	—	●	—	—	—			

Associated Products

Coaxial Tubing System

- The number of tubes is halved
- Easy piping
- Reduction of installation time for piping
- Applicable for cylinder operating system (to ø 63)
- Prevention of wrong piping





**DIN Rail
Manifold**
Non plug-in

A, B port size				Manifold option	
M5	With One-touch fitting			SUP block valve	EXH block valve
	Tube O.D.				
	ø4	ø6	ø8		
(1) ●	—	—	—	●	●
—	—	—	—	—	—
—	—	—	—	—	—
—	●	●	—	●	●
—	—	—	—	—	—
—	—	●	●	●	●
—	—	—	—	—	—



Note 1) Made to Order

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

VS7

VQ7

VZ1000/3000/5000

⚠ Precautions

Be sure to read before handling. Refer to p.0-33 to 0-36 for Safety Instructions and common precautions.

⚠ Warning

Manual Override

●Manual override is available in 2 styles, non locking push style and locking style. (Locking style is for VZ3000, 5000 only.)

■The non-locking push style must be pressed in the direction of the arrow. The locking style must be turned in the direction of the arrow.

—: Non-locking push style

B: Locking B style (Slotted)

C: Locking C style (Lever)

When operating the locking style manually, apply torque of 0.2Nm or less.

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

⚠ Caution

Indicator Light and Surge Voltage Suppressor

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 board.)

Common Exhaust for Main Valve & 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.1.6-11
VZ3000, VZ300	P.1.6-20, 1.6-32
VZ5000, VZ500	P.1.6-48, 1.6-59

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		B port	A port
Actuation		N.C.	N.O.
Solenoid	Single		
	Double		

(The above JIS symbol shows series VZ300)



VZ1000/3000/5000

How to Use DIN Connector

Connection

- 1) Loosen set screw and pull out connector from the terminal block of solenoid.
- 2) Pull out screw and insert screwdriver to the slit area near the bottom of terminal block to separate block and housing.
- 3) Loosen terminal screw of terminal block, place bare end of lead wire into terminal in accordance with wiring method, and affix it securely with the terminal screw.
- 4) Tighten ground nut to secure the wire.

Change of electrical entry (orientation)

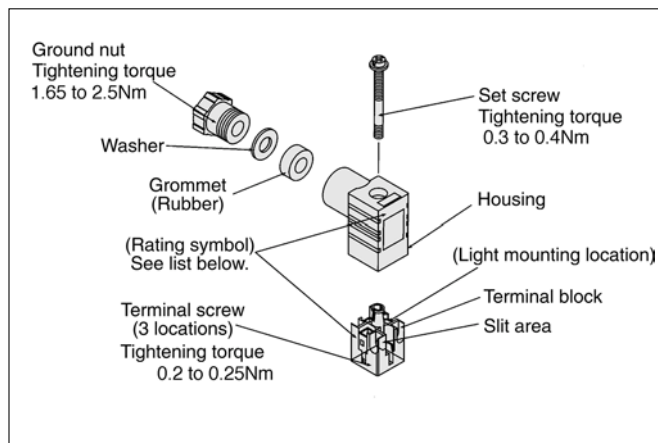
After separating terminal block and housing, mount housing at any position (total 4 directions, per 90 degrees), therefore changing electrical entry.
*In the case of indicator light, avoid damaging the light with lead wire.

Precautions

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

Applicable cable

Cable O.D.: $\phi 3.5$ to $\phi 7$
(Reference) 0.5mm^2 2 core and 3 core wires equivalent to JISC3306.



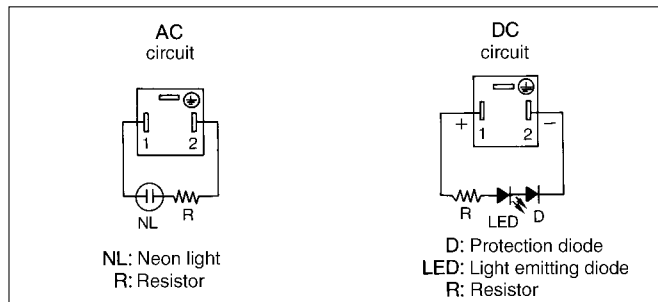
Connector Part No.

Without light	DXT170-176-1
---------------	--------------

With light

Rated voltage	Rating symbol	Part No.
100V AC	100V	DXT170-176-2-01
200V AC	200V	DXT170-176-2-02
110V AC	110V	DXT170-176-2-03
220V AC	220V	DXT170-176-2-04
240V AC	240V	DXT170-176-2-07
6V DC	6VD	DXT170-176-3-51
12V DC	12VD	DXT170-176-3-06
24V DC	24VD	DXT170-176-3-05
48V DC	48VD	DXT170-176-3-53

Connector with light circuit



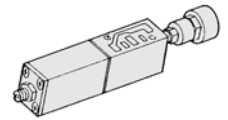
Electrical Wiring of Manifold

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

Connect individually according to electrical entry of the solenoid valve.

Interface Regulator

Installing an interface regulator between a valve and the manifold base reduces the supply pressure to that valve without changing the supply pressure of the other stations.



Specifications

Interface regulator	ARBZ3000	ARBZ5000
Applicable solenoid valve	VZ3000	VZ5000
Regulator port	P	P
Proof pressure	1.5MPa	
Max. operating pressure	1.0MPa	
Set pressure range	0.05 to 0.7MPa ⁽¹⁾	
Ambient and fluid temperature	5 to 60°C ⁽²⁾	
Thread size for connection of pressure gauge	M5 X 0.8	
Weight (kg)	0.06	0.09
Eff. area at exhaust side (mm ²) ⁽³⁾	P→A	5.1
S at P ₁ = 0.7MPa, P ₂ = 0.5MPa	P→B	5.8
Eff. area at supply side (mm ²) ⁽³⁾	A→EA	12.6
S at P ₂ = 0.5MPa	B→EB	12.6

Note 1) Set the pressure within the operating pressure range of the solenoid valve.

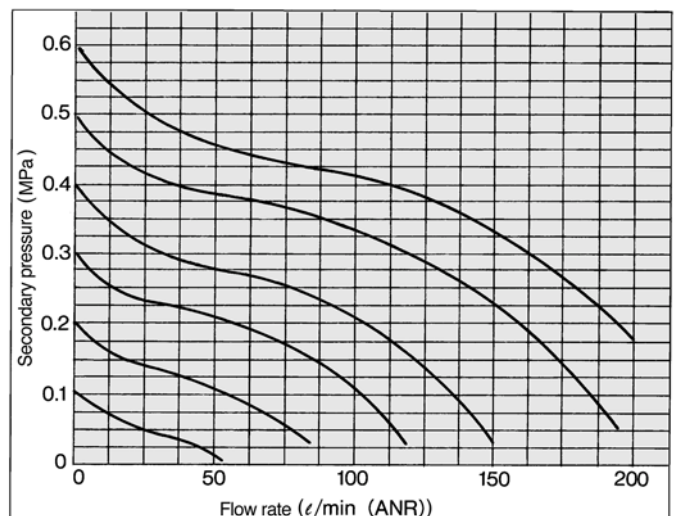
Note 2) The maximum operating temperature for the valve is 50°C

Note 3) The effective area listed is for a single solenoid 2 position valve mounted on a sub-plate.

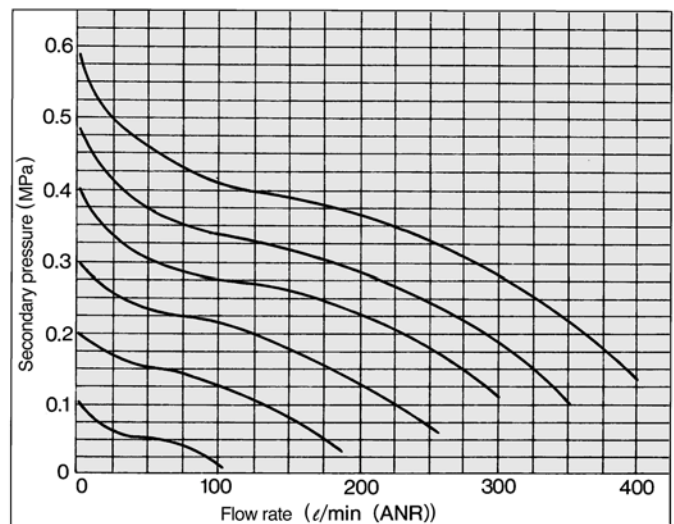
Note 4) The interface regulator is only capable of regulating the "P" port pressure.

Flow Characteristics (P→A): Supply pressure setting 0.7MPa

•ARBZ3000-00-P



•ARBZ5000-00-P



Flow rate

Refer to the p.0-36 for flow rate.

4 Port Solenoid Valve Body Ported Series **VZ1000**

How to Order

Non plug-in **E** VZ1120 — **5** **D** — **M5** — **Q**

Configuration

Rated voltage

Electrical entry

Indicator light/surge voltage suppressor

Port size

Option

Ordering source area code

Code	areas
-	Japan, Asia Australia
E	Europe
N	North America

Configuration

2 position single

(A) (B)

1 2 3 4

(P) (R)

Rated voltage

1	100V AC 50/60Hz
2	200V AC 50/60Hz
3	110V AC 50/60Hz
4	220V AC 50/60Hz
5	24V DC
6	12V DC
9	Others, less than 250VAC and 50VDC

Electrical entry

DIN terminal

D: With connector

DO: Without connector

Option

F: With foot bracket

Note) Bracket is not assembled.

Indicator light and surge voltage suppressor

-	None
Z	With indicator light and surge suppressor
S	With surge voltage suppressor

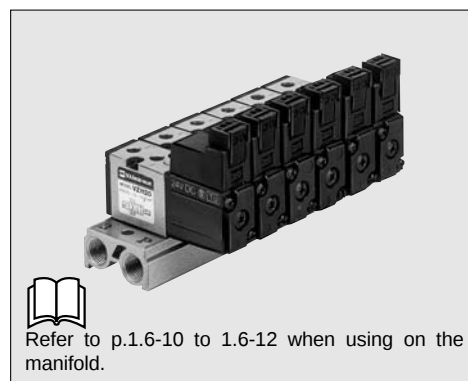
* It is not available for DOZ.

Protective class
class I (Mark: ⚡)

Contact SMC
for other voltages (9)

Option

Description	Part No.	Remark
Foot bracket	DXT170-34-1B	With mounting screw (M3 X 8)



VZ1000

Applicable for Cylinder
Actuation (up to Ø16)
Compact Size
(Width: 15mm)
Low Power Consumption
1.8W DC



Specifications

Valve style	Pilot style 4 port solenoid valve
Fluid	Air
Operating pressure range MPa	0.15 to 0.7
Ambient and fluid temperature °C	Max. 50
Response time (ms) (0.5MPa) ⁽¹⁾	15 or less
Max. operating frequency (Hz)	15
Effective area	See below
Lubrication	Non-lube
Manual override	Non-locking push style
Exhaust throttle	Not available
Mounting position	Free
Impact/Vibration resistance (m/s ²) ⁽²⁾	300/50
Protection	Dust proof



Note 1) According to dynamic performance test of JIS B8375-1981. (Coil temperature 20°C, rated voltage, without surge voltage suppressor)

Note 2) Impact resistance: No malfunction from test using drop impact tester, to axis and right angle directions of main valve and armature, each one time when energized and de-energized. (Value in the initial stage.)

Vibration resistance: No malfunction from test with 45 to 1000Hz 1 sweep, to axis and right angle directions of main valve and armature, each one time when energized and de-energized. (Value in the initial stage.)

Solenoid Specifications

Electrical entry			DIN terminal (D)	
Coil rated voltage (V)	AC50/60Hz		100, 200,110, 220	
	DC		24,12	
Allowable voltage %			-15 to +10% rated voltage	
Power consumption (W) [Current mA]	DC		1.8 (with light 2.1) [24V DC: 75 (with light 87.5)]	
Apparent power VA [Current mA]	AC	Inrush	4.5/50Hz, 4.2/60Hz	100V AC: 45/50Hz, 42/60Hz 200V AC: 22.5/50Hz, 21/60Hz
		Holding	3.5/50Hz, 3/60Hz	100V AC: 35/50Hz, 30/60Hz 200V AC: 17.5/50Hz, 15/60Hz
Surge voltage suppressor			DC: diode, AC: ZNR	
Indicator light			DC: LED (Red), AC: Neon light	

Effective Area and Weight

Valve Model	Configuration	Effective area (mm ²)(Nz/min)		Port size	Weight (g)
VZ1120-□□-M5	2 position single solenoid	P→A	0.6 (33)	M5	90
		B→R	1.5 (81)		
		P→B	1.0 (55)		
		A→R	0.9 (49)		

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

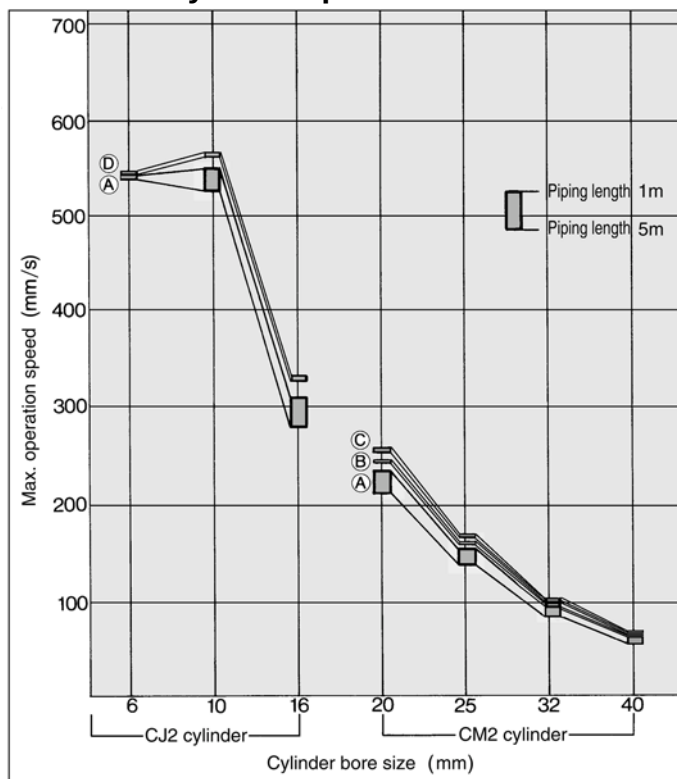
VFS

VS

VS7

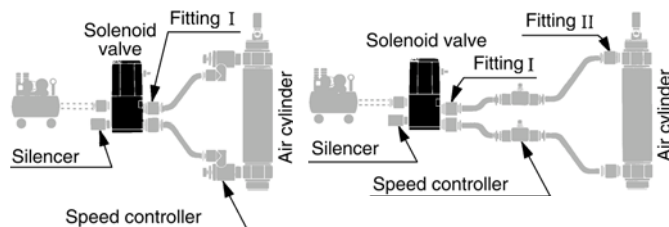
VQ7

Maximum Cylinder Speed



System figure 1

System figure 2

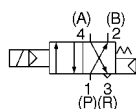


Conditions: Pressure 0.5MPa, Load 50%
(w/ extended cylinder) Cylinder stroke CJ2: 60mm
CM2: 300mm

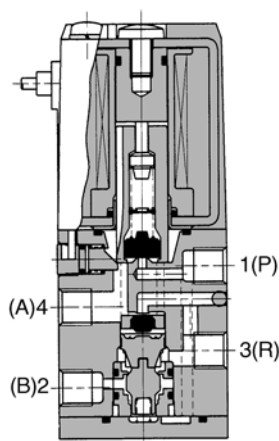
System construction

System	Solenoid valve	Speed controller	Silencer	Fitting (tube O.D. X connecting screw)	
				I	II
A	VZ1120 M5	AS1301F-M5-04 (S=1.5mm ²)	AN120 (S=5mm ²)	ø4 X M5	—
B		AS1301F-M5-06 (S=1.5mm ²)		ø6 X M5	—
C		AS2301F-01-06 (S=2.7mm ²)		ø6 X M5	—
D		AS2001F-06 (S=2.7mm ²)		ø6 X M5	ø6 X M5

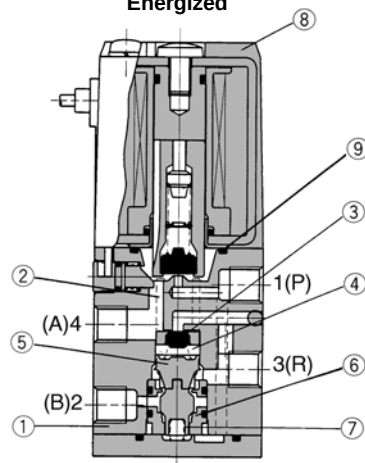
Construction



De-energized



Energized



Component Parts

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

Replacement Parts

No.	Description	Material	Part No.	Remark
⑧	Solenoid assembly	Epoxy, Stainless steel	DXT170-A-□□□	
⑨	O ring	NBR	13 X 11 X 1	Common with series VZ ₅ 000

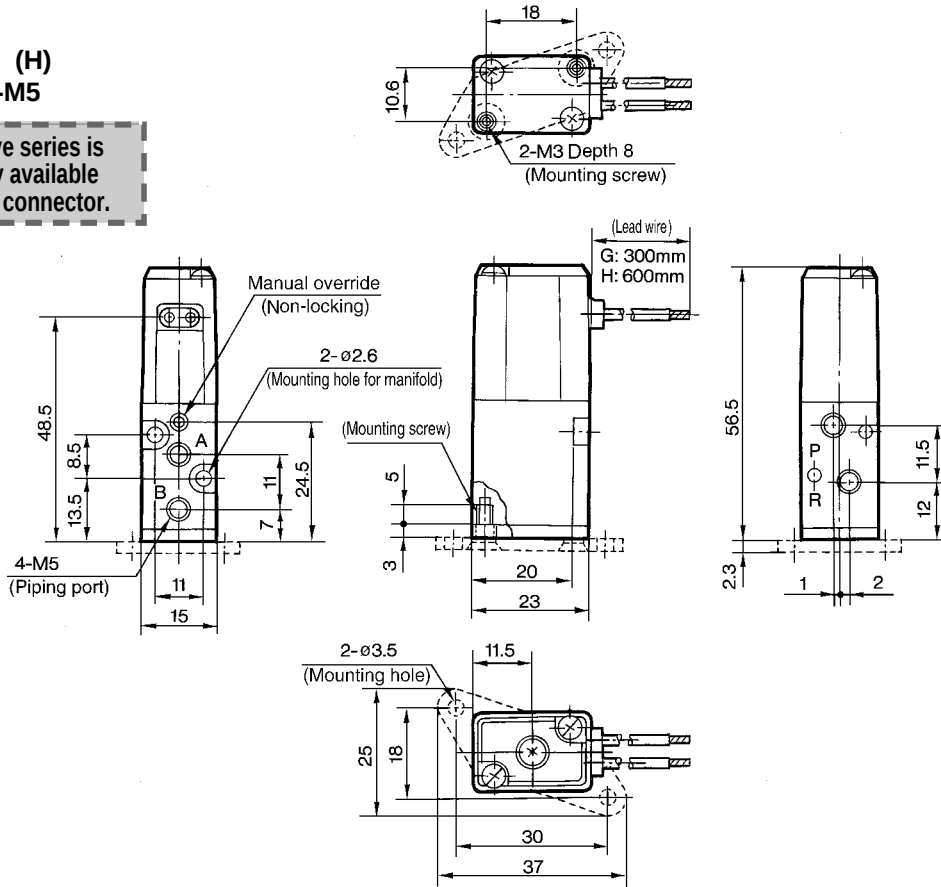
VZ1000



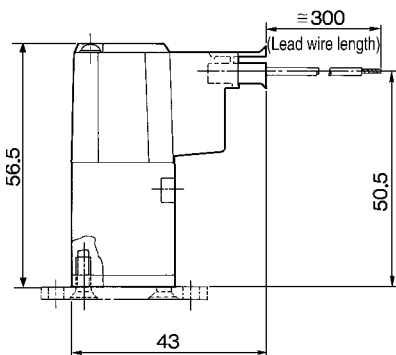
2 Position Single

Grommet(G), (H) VZ1120-□G□-M5

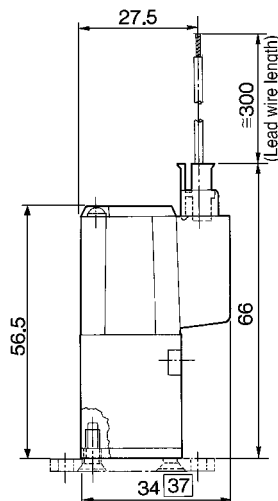
Note: This valve series is now only available with DIN connector.



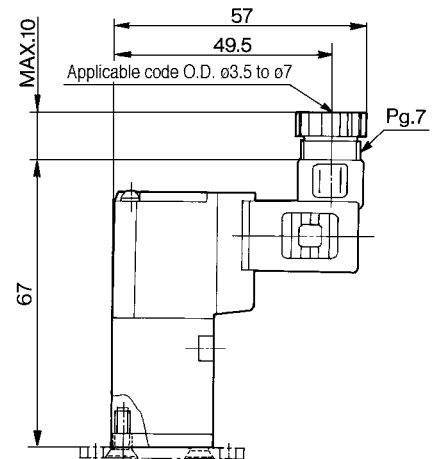
L plug connector (L) VZ1120-□L□-M5



M plug connector (M) VZ1120-□M□-M5



DIN terminal (D) VZ1120-□D□-M5-Q



□ : With indicator light and surge voltage suppressor

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

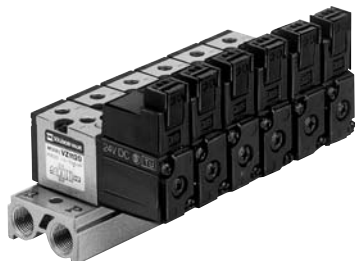
VS7

VQ7

Series VZ1000

Manifold

Standard Manifold



Specifications

Model		20 type
Manifold style		Single base/B mount
P (SUP), R (EXH)		Common SUP and EXH
Valve stations		2 to 20
A, B port position		Valve
Port size	P/R port	1/8
	A/B port	M5
Valve effective area (mm ²) (Nl/min) ⁽¹⁾	VZ1120	P→A: 0.48 (25.5), A→R: 0.85(46.14)



Note 1) Value at manifold base mounted, single operating

How to Order Manifold Base

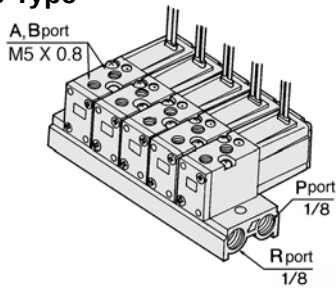
To order valves and blank plate assembly mounted onto the manifold, list valves and blank plate assembly with manifold base.

(Example) VV4Z1-20-031-Q1 pc. (Manifold base)
 VZ1120-5D-M5-Q2 pcs. (Valve)
 DXT170-25-1A1 pc. (Blank plate assembly)

VZ1000

Common SUP/Common EXH  If ≥10 stations, supply air to P port and exhaust from R port on both sides of the manifold.

20 Type



How to Order

E VV4Z1-20-05 1-00F-□-Q

Stations	
02	2 stations
⋮	⋮
20	20 stations

Ordering source area code

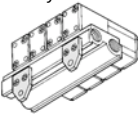
Code	areas
-	Japan, Asia Australia
E	Europe
N	North America

P,R Port thread

-	Rc (Pt)
00F	G (Pf)
00N	NPT
00T	NPTF

Option

F: With foot style bracket



 *The bracket is not assembled.

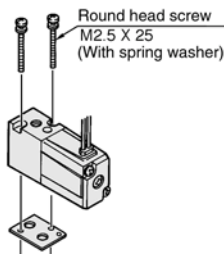
Applicable solenoid valve

VZ1120-□ D □-M5-Q

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

Options/Standard Manifold, Flat Cable Manifold

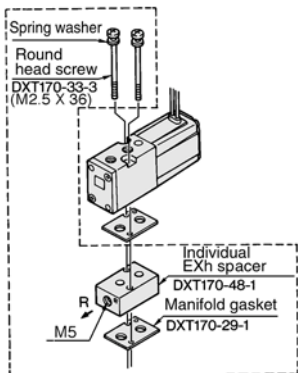
Combinations of Solenoid Valve, Gasket and Manifold Base



Applicable base
VV4Z1-20

Individual EXH Spacer Assembly

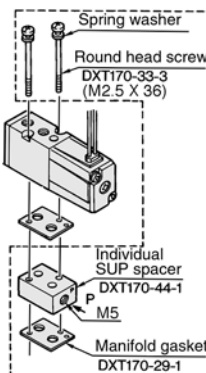
DXT170-48-1A



Applicable base
VV4Z1-20

Individual SUP Spacer Assembly

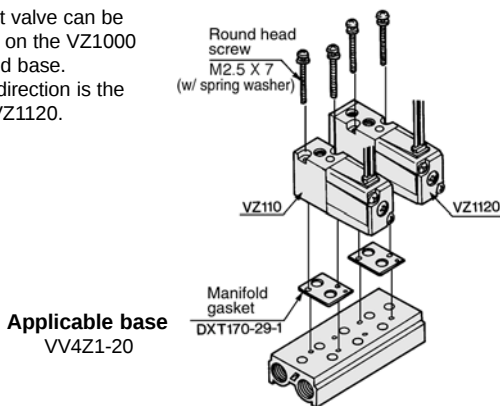
DXT170-44-1A



Applicable base
VV4Z1-20

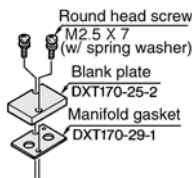
Mixed Mounting of the VZ110 3 Port Valve on the VZ1000 Series Manifold Base

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



Blank Plate Assembly

DXT170-25-1A



Applicable base
VV4Z1-20

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

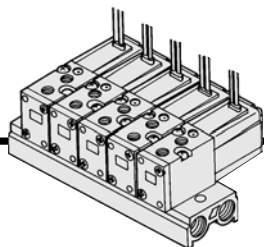
VQD

VFS

VS

VS7

VQ7

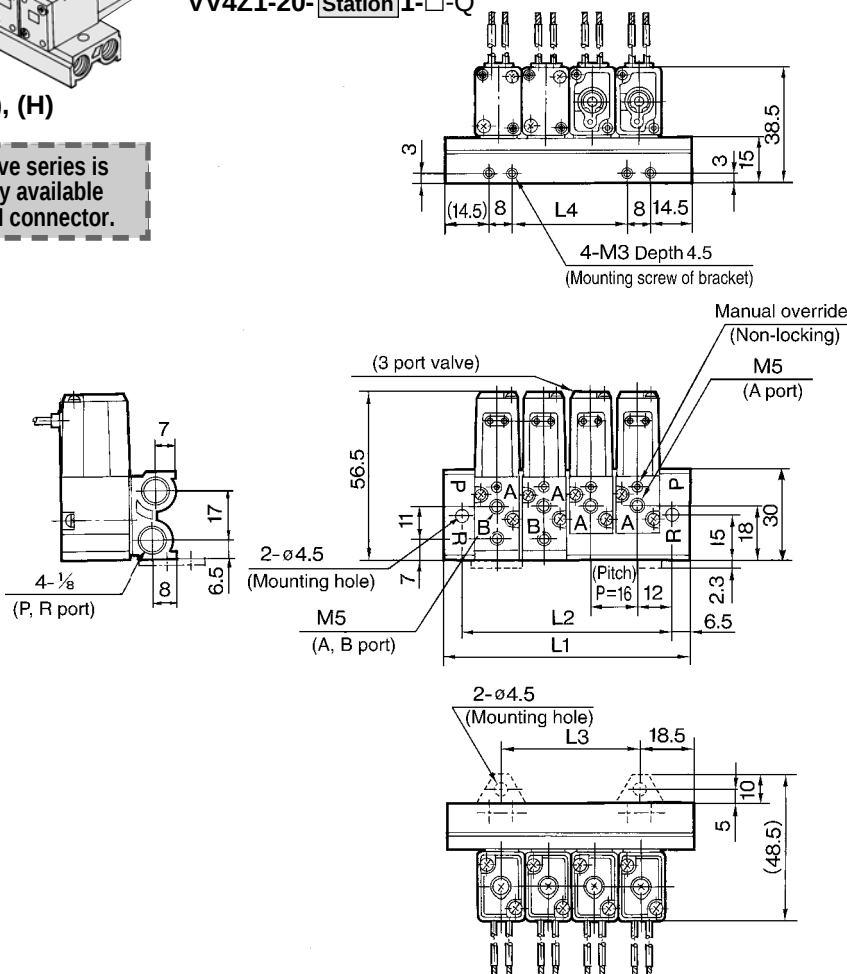


20 Type Manifold

VV4Z1-20- Station 1-□-Q

Grommet(G), (H)

Note: This valve series is now only available with DIN connector.

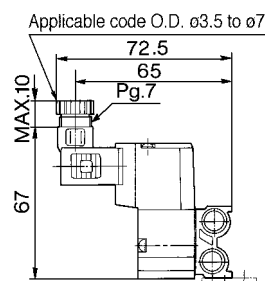
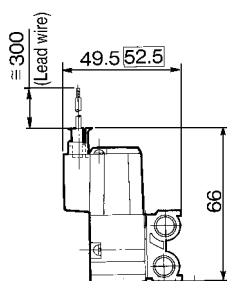
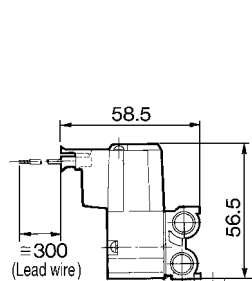


Station	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	53	69	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309	325	341
L2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328
L3	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
L4	8	24	40	56	72	88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

5 Port Solenoid Valve Body Ported Series VZ3000

How to Order

Body ported **E** VZ3 **1** **2** **0** **5** **D** **—** **—** **M5** **—** **Q**

Configuration

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

Body option

0: Individual pilot exhaust style
3: Common exhaust (pilot and main valve) style

Rated voltage

1	100V AC 50/60Hz
2	200V AC 50/60Hz
3	110V AC 50/60Hz
4	220V AC 50/60Hz
5	24V DC
6	12V DC
9	Others, less than 250VAC and 50VDC

Electrical entry

DIN terminal
D: With connector
DO: Without connector

Indicator light and surge voltage suppressor

—: Non-locking push style
Z*: With indicator light and surge suppressor
S: With surge voltage suppressor

Manual override

—: Non-locking push style
B: Locking B style (Slotted)
C: Locking C style (Lever)

A, B port size

M5	M5
C4	ø4 One-touch fitting
C6	ø6 One-touch fitting

Option

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

Ordering source area code

Code	areas
—	Japan, Asia Australia
E	Europe
N	North America

Protective class
class I (Mark: )

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

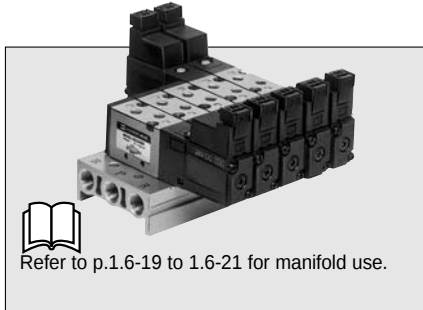
VS

VS7

VQ7

VZ3000

Applicable for Cylinder Actuation (up to $\varnothing 40$)
Compact Size (Width: 15mm)
Low Power Consumption: 1.8W DC



Specifications

Fluid	Air	
Operating pressure (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	Max. 50°C	
Response time (ms) (0.5MPa) ⁽¹⁾	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	See below	
Manual override ⁽²⁾	Non-locking push, Locking slotted, Locking lever	
Pilot exhaust	Individual pilot exhaust, Common exhaust (pilot and main valve)	
Lubrication	Non-lube	
Mounting position	Free	
Impact/Vibration resistance (m/s ²) ⁽³⁾	300/50	
Protection	Dust proof	



Note 1) According to dynamic performance test of JIS B8375-1981.

(Coil temperature 20°C, rated voltage, without surge voltage suppressor)

Note 2) When operating the locking style manually, apply torque of 0.2Nm or less.

Note 3) Impact resistance: No malfunction from test using drop impact tester, to axis and right angle directions of main valve and armature, each one time when energized and de-energized. (Value in the initial stage.)

Vibration resistance: No malfunction from test with 8.3 to 2000Hz 1 sweep, to axis and right angle directions of main valve and armature, each one time when energized and de-energized. (Value in the initial stage.)

Solenoid Specifications

Electrical entry		DIN terminal (D)	
Coil rated voltage (V)	AC50/60Hz	100, 200, 24*, 48*, 110*, 220*	
	DC	24, 6*, 12*, 48*	
Allowable voltage (%)		-15 to +10% of rated voltage	
Power consumption W ⁽¹⁾ [Current mA]	DC	1.8 (with light 2.1)[24V DC: 75 (with light 87.5)]	
Apparent power (VA) ⁽¹⁾ [Current mA]	AC	Inrush	4.5/50Hz, 4.2/60Hz [100V AC: 45/50Hz, 42/60Hz 200V AC: 22.5/50Hz, 21/60Hz]
		Holding	3.5/50Hz, 3/60Hz [100V AC: 35/50Hz, 30/60Hz 200V AC: 17.5/50Hz, 15/60Hz]
Surge voltage suppressor		DC: Diode, AC: ZNR	
Indicator light		DC: LED (red), AC: Neon light	



Note 1) At rated voltage

Effective Orifice and Weight

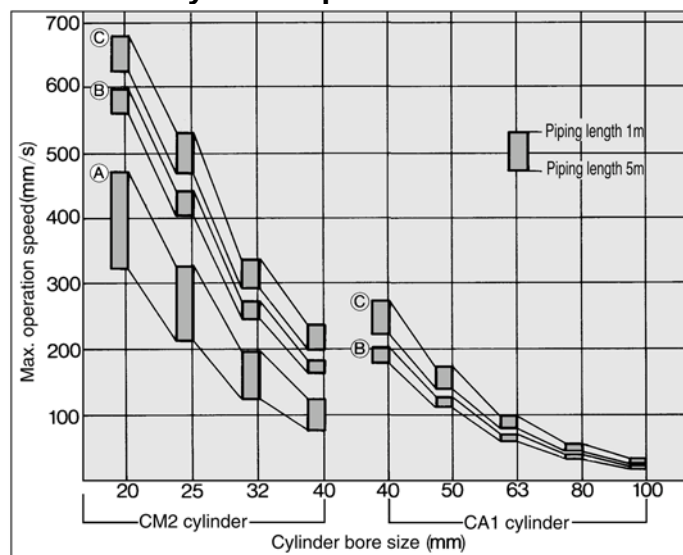
Valve model	Configuration		Port size	Effective area (mm ²) (Nl/min) ⁽¹⁾	Weight (g)
VZ3□20-□-M5-Q	2 position	Single	M5	3.6 (196)	75
		Double		3.6 (196)	120
	3 position	Closed centre		3.2 (177)	130
		Exhaust centre		3.6 (196)[2.7 (177)]	
		Pressure centre		P→A, B: 4.0 (216) [2.7 (147)] A, B→R1, R2: 3.4 (186)	
VZ3□20-□-C4-Q	2 position	Single	A, BPort : C4 ($\varnothing 40$ One-touch fitting) P, RPort : M5	3 (167)	75
		Double		3 (167)	120
	3 position	Closed centre		3 (167)	130
		Exhaust centre		3 (167)[2.4 (127)]	
		Pressure centre		P→A, B: 3.5 (186) [2.9 (157)] A, B→R1, R2: 3.1 (167)	
VZ3□20-□-C6-Q	2 position	Single	A, BPort : C6 ($\varnothing 60$ One-touch fitting) P, RPort : M5	3.5 (186)	75
		Double		3.5 (186)	120
	3 position	Closed centre		3.2 (177)	130
		Exhaust centre		3.2 (177)[2.4 (127)]	
		Pressure centre		P→A, B: 3.8 (206) [3.0 (167)] A, B→R1, R2: 3.2 (177)	

Note 1) [] normal position: Exhaust centre A, B → R1, R2
 Pressure centre P → A, B

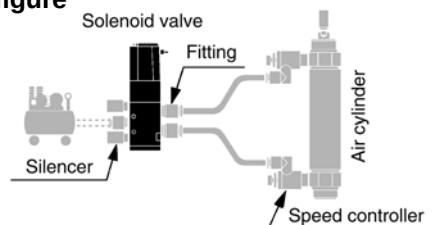
Option

Description	Part No.	Remark
Foot bracket	DXT170-34-1B	VZ312 ⁰ ₃
Silencer	AN120-M5	Noise reduction: 21dB or more ($\varnothing 8 \times 17$)

Maximum Cylinder Speed



System figure



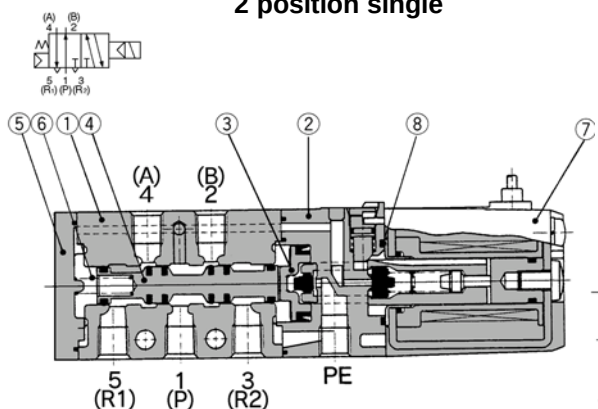
Conditions: Pressure 0.5MPa, Load 50%
(w/ extended cylinder) Cylinder stroke CM2: 300mm
CA1: 500mm

System construction

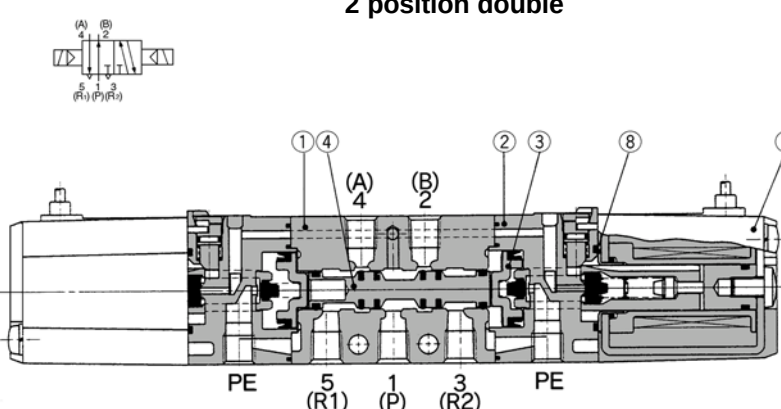
System	Solenoid valve	Speed controller	Silencer	Fitting (tube O.D. X connecting screw)
A	VZ3□20-M5	AS2301F-01-04	AN120-M5 (S=5mm ²)	ø4 X M5
B	M5	AS2301F-01-06		ø6 X M5
C	(S=3.6mm ²)	AS3301F-02-06		

Construction

2 position single

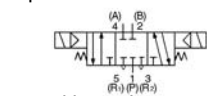


2 position double

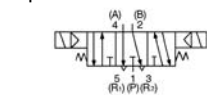


3 position closed centre/exhaust centre/pressure centre

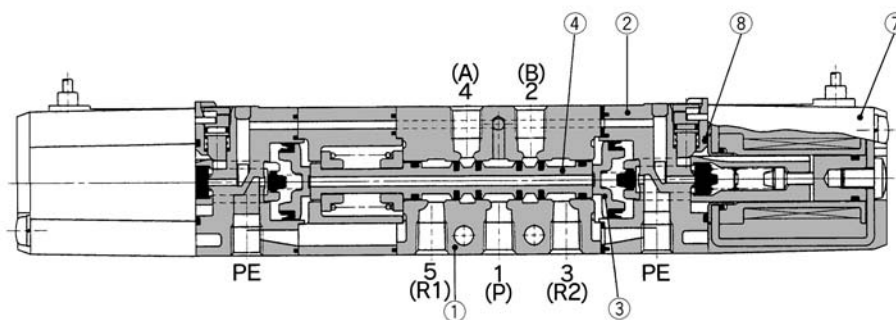
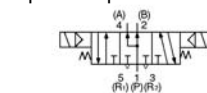
3 position closed centre



3 position exhaust centre



3 position pressure centre



(This figure is closed centre)

Component Parts

No.	Description	Material	Remark
①	Body	Die cast aluminium	Platinum silver
②	Piston plate	Resin	Black
③	Piston	Resin	
④	Spool valve	Aluminium/NBR	
⑤	End cover	Resin	
⑥	Spool spring	Stainless steel	

Replacement Parts

No.	Description	Material	Part No.	Remark
⑦	Solenoid ass'y	Epoxy, stainless steel	DXT170-C-□□□	
⑧	O ring	NBR	13 X 11 X 1	Common with series VZ ₅ 000

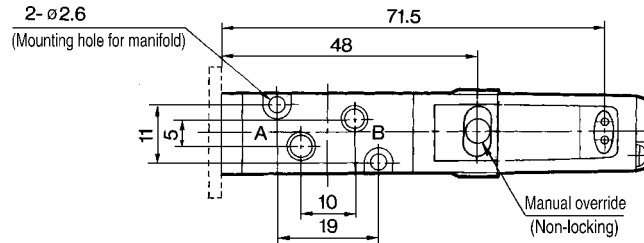
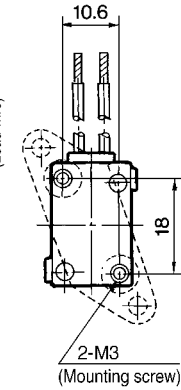
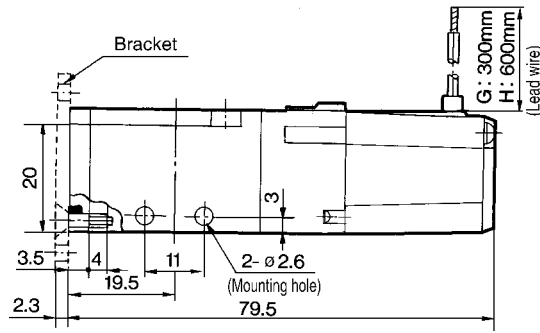
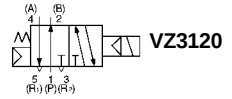
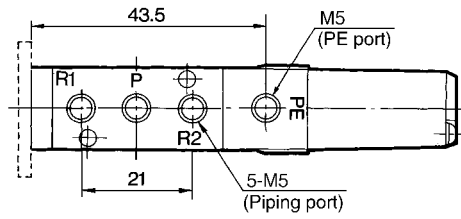
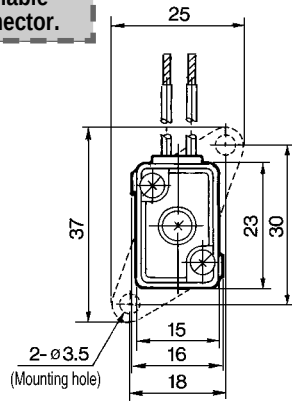
VZ3000

2 Position Single

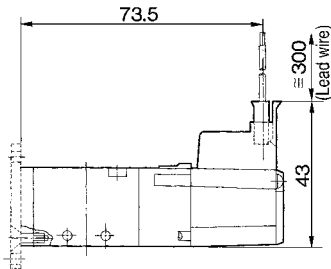


Grommet (G), (H) VZ3120-□G□□-M5

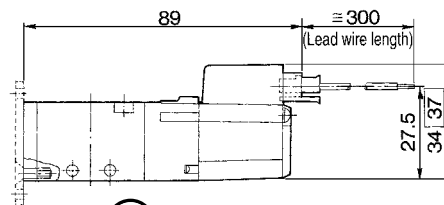
Note: This valve series is now only available with DIN connector.



L plug connector (L) VZ3120-□L□□-M5

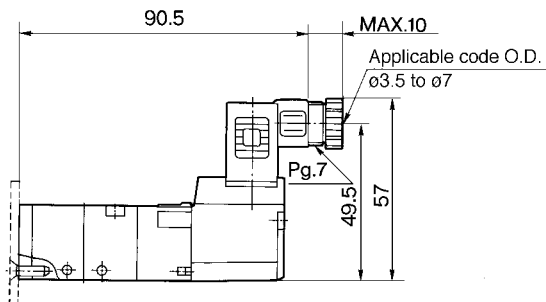


M plug connector (M) VZ3120-□M□□-M5

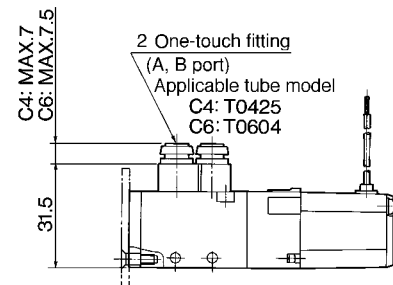


□: With indicator light and surge voltage suppressor

DIN terminal (D) VZ3120-□D□□-M5-Q



Built-in One-touch fitting VZ3120-□□□□-C4 C6

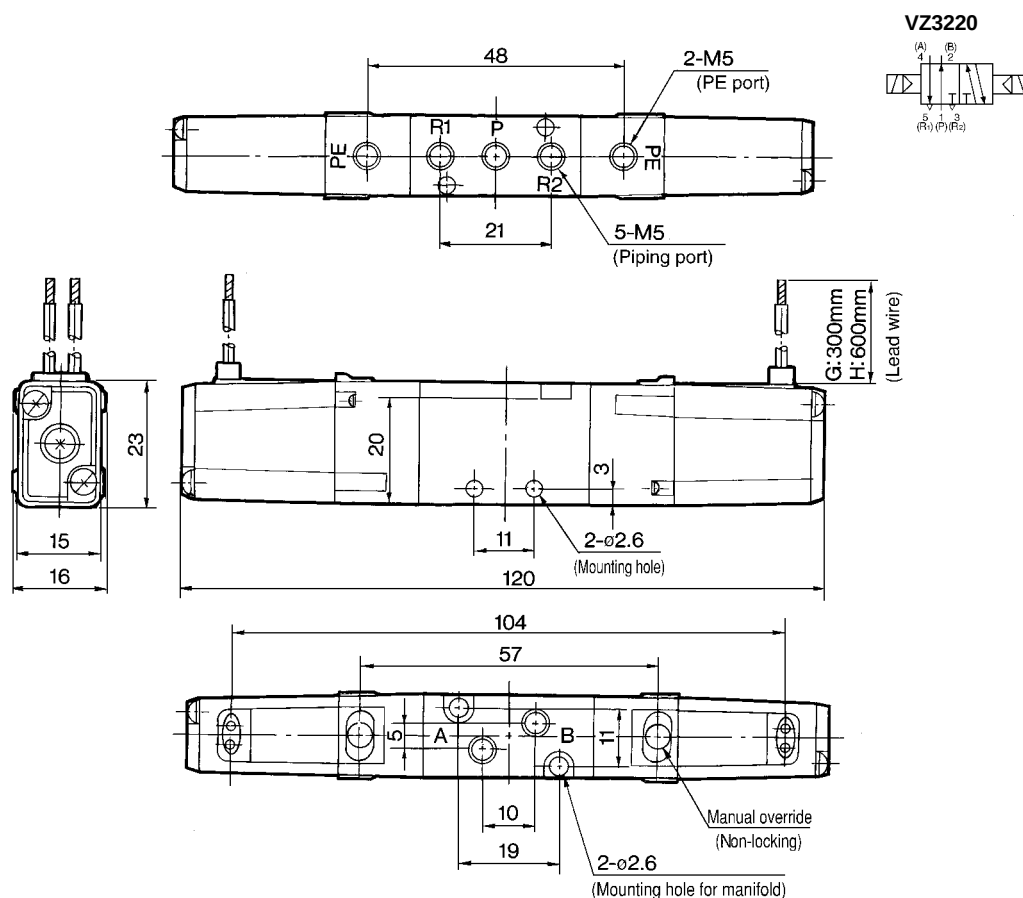




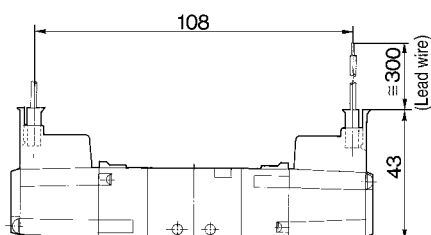
2 Position Double

Grommet (G), (H)
VZ3220-□_G□□-M5

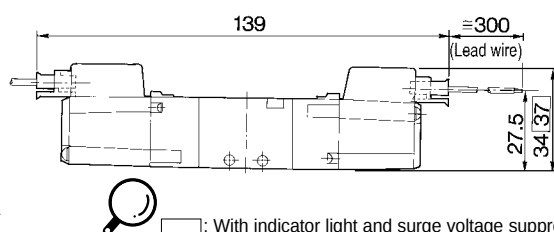
Note: This valve series is now only available with DIN connector.



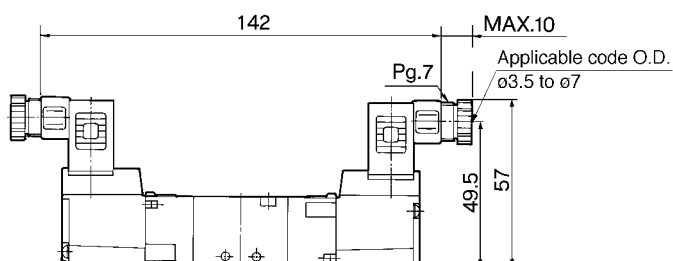
L plug connector (L)
VZ3220-□L□□-M5



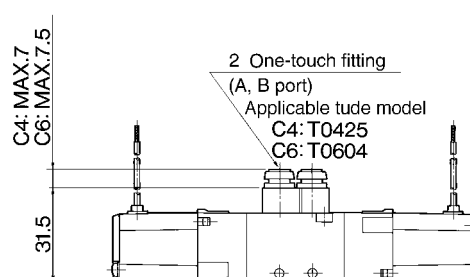
M plug connector (M)
VZ3220-□M□□-M5



DIN terminal (D)
VZ3220-□D□□-M5-Q



Built-in One-touch fitting
VZ3220-□□□□-C4
C6



SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

VS7

VQ7

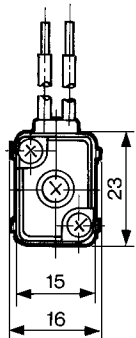
VZ3000



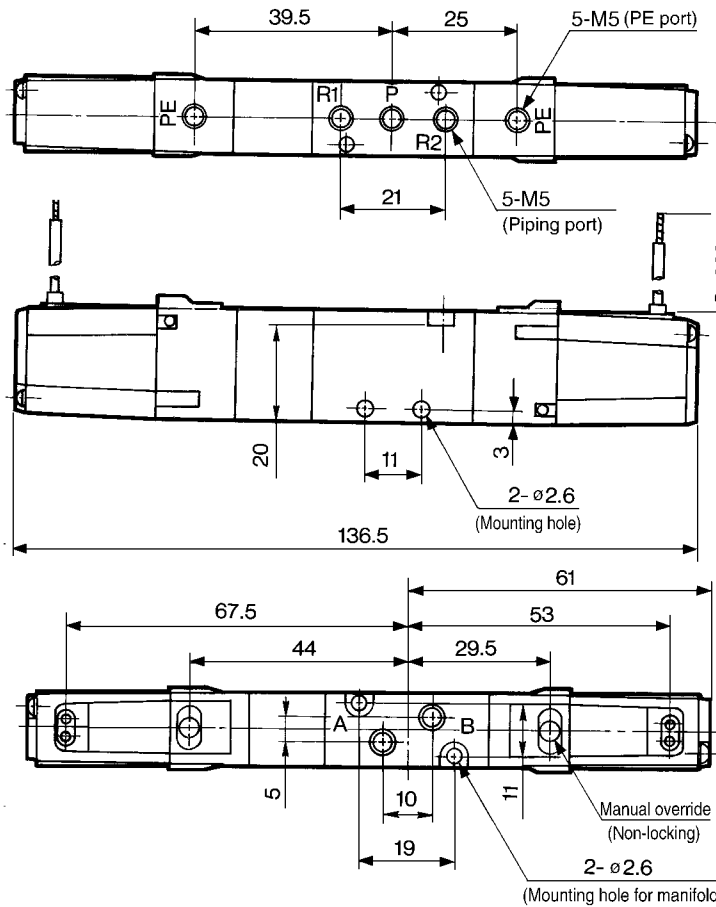
3 Position Closed Centre/Exhaust Centre/Pressure Centre

Grommet (G), (H)

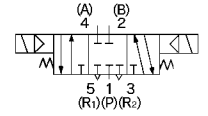
VZ3 $\frac{3}{4}$ 20-□^G□□-M5



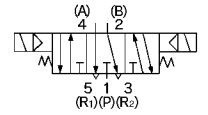
Note: This valve series is now only available with DIN connector.



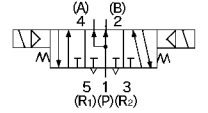
VZ3320



VZ3420

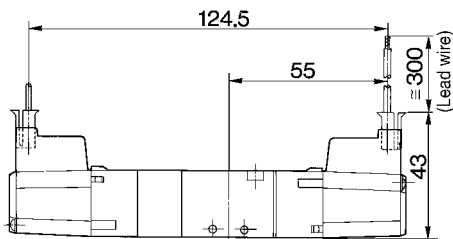


VZ3520



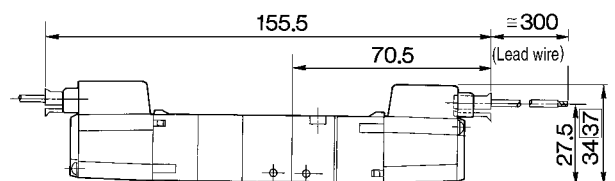
L plug connector (L)

VZ3 $\frac{3}{4}$ 20-□L□□-M5



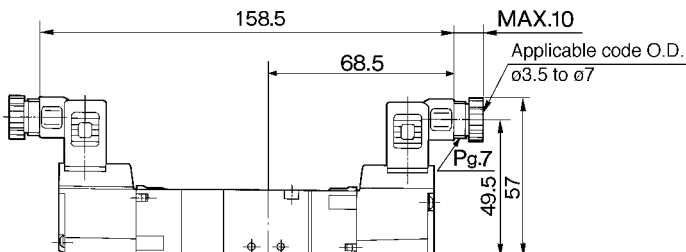
M plug connector (M)

VZ3 $\frac{3}{4}$ 20-□M□□-M5



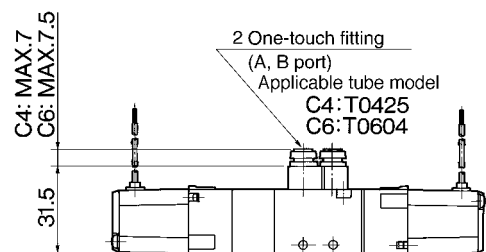
DIN terminal (D)

VZ3 $\frac{3}{4}$ 20-□D□□-M5-Q



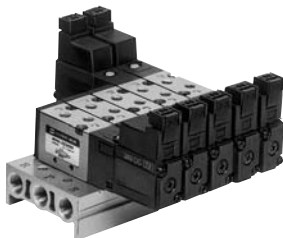
Built-in One-touch fitting

VZ3 $\frac{3}{4}$ 20-□□□□-C4
C6



Series VZ3000/Body Ported Manifold

Standard Manifold



Specifications

Model		20 type
Manifold style		Single base/B mount
P (SUP), R (EXH)		Common SUP and EXH
Valve stations		2 to 20
A, B port position		Valve
Port size	P/R port	1/8
	A/B port	M5, C4, C6
Valve effective area (mm ²) (N ₂ /min) ⁽¹⁾	VZ3□2□	M5: 3.4(186)
		C4: 3(167)
		C6: 3.4(186)



Note 1) Value at manifold base mounted, 2 position single operating

How to Order Manifold Base

To order valves and blank plate assembly mounted onto the manifold, list valves and blank plate assembly with manifold base.

(Sample) VV5Z3-20-031-Q1 pc. (Manifold base)
 VZ3120-5D-M5-Q2 pcs. (Valve)
 DXT192-13-1A.....1 pc. (Blank plate assembly)

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

VS7

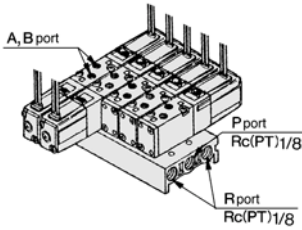
VQ7

VZ3000

Common SUP/Common EXH

20 Type

How to Order



Applicable solenoid valve

VZ3□2□-□ □ □ □- M5
C4-Q
C6

Applicable blank plate assembly
DXT192-13-1A

Individual EXH spacer assembly
DXT192-21-1A

Individual SUP spacer assembly
DXT192-40-2A

E VV5Z3-20-05 1-00F

Ordering source area code

Code	areas
-	Japan, Asia Australia
E	Europe
N	North America

Stations

02	2 stations
...	...
20	20 stations

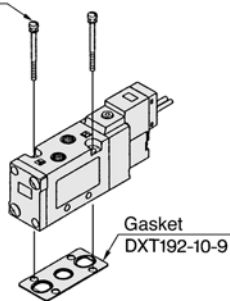
P, R Port thread

-	Rc (PT)
00F	G (PF)
00N	NPT
00T	NPTF

Options

Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

Round head screw
M2.5 X 25
(With spring washer)

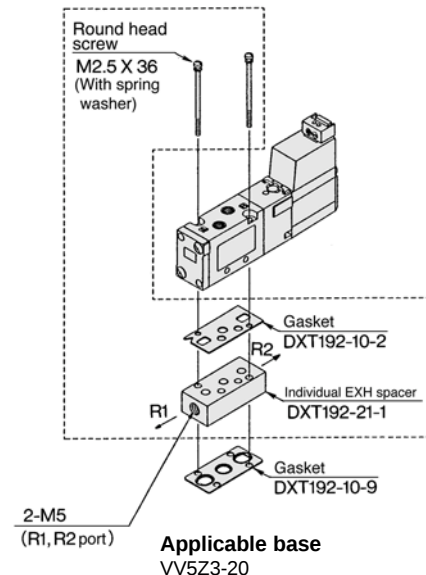


Applicable base

VV5Z3-20
VV5Z3-20P
VV5Z3-21

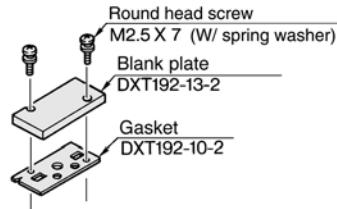
Individual EXH Spacer Assembly

DXT192-21-1A



Blank Plate Assembly

DXT192-13-1A



Applicable base

VV5Z3-20

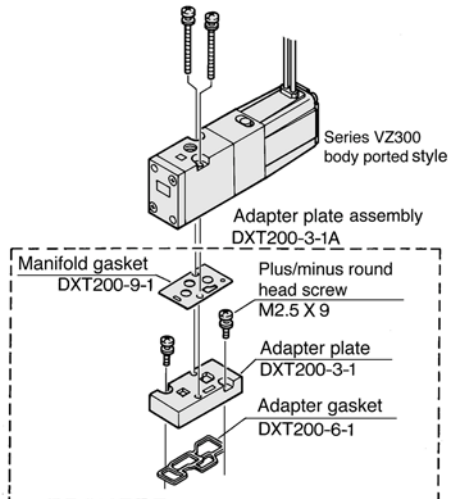
Option

Mounting the VZ300 Series on the VZ3000 Series Manifold



- Mixed mounting of the VZ300 Series on the VZ3000 Series manifold base is possible through the use of an adapter plate.
- 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 VZ3000 Series.

Adapter plate assembly DXT200-3-1A

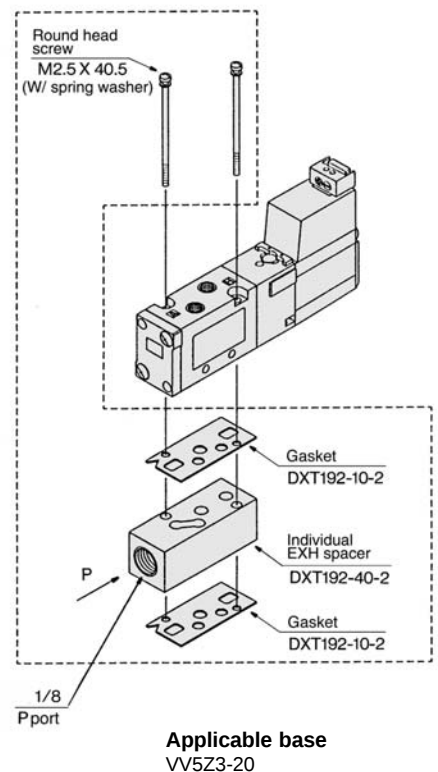


Applicable base

VV5Z3-20

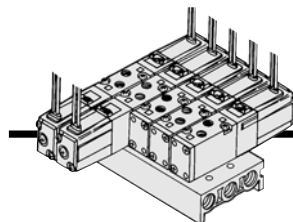
Individual SUP Spacer Assembly

DXT192-40-2A



Applicable base

VV5Z3-20

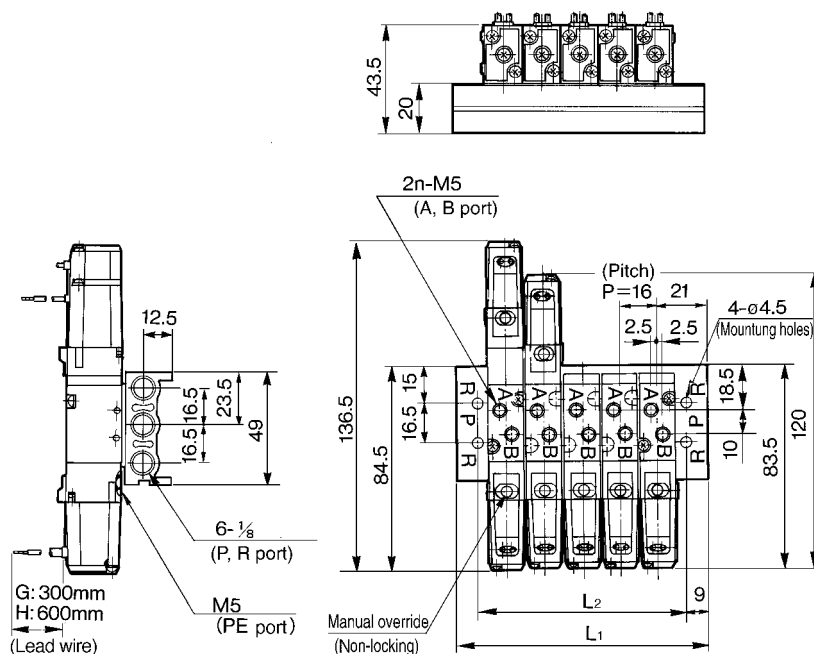


20 Type Manifold

VV5Z3-20-Station 1-Q

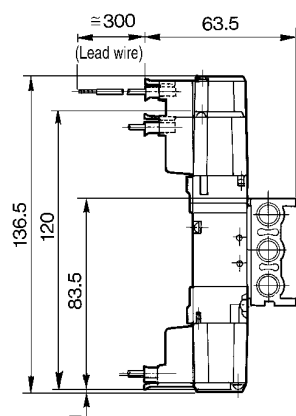
Grommet (G), (H)

Note: This valve series is now only available with DIN connector.

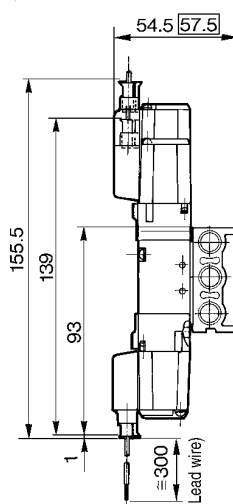


Station	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330	346
L2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328

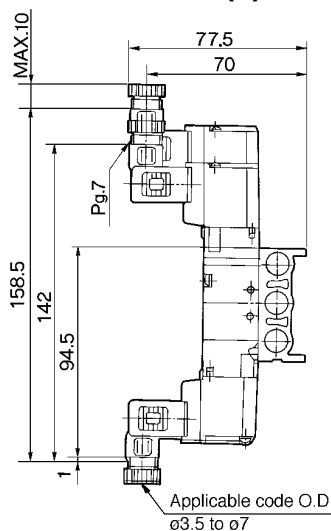
L plug connector (L)



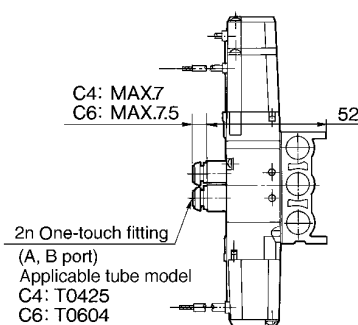
M plug connector (M)



DIN terminal (D)



Built-in One-touch fitting



□: With indicator light and surge voltage suppressor

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

VS7

VQ7

5 Port Solenoid Valve Base Mounted Series VZ3000

How to Order

Non plug-in **E** VZ3 **1** **4** **0** **5** **D** **□** **□** **□** **□** **—Q**

Configuration

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

Body option

0: Individual pilot exhaust style
R port P, E port
3: Common exhaust (pilot and main valve) style
R port P, E port

Rated voltage

1	100V AC 50/60Hz
2	200V AC 50/60Hz
3	110V AC 50/60Hz
4	220V AC 50/60Hz
5	24V DC
6	12V DC
9	Others, less than 250VAC and 50VDC

Electrical entry

DIN terminal
D: With connector
DO: Without connector

Indicator light and surge voltage suppressor

—	None
Z*	With indicator light and surge suppressor
S	With surge voltage suppressor

*Not available for DOZ

Manual override/Non plug-in

—: Non- locking push style
B: Locking B style (Slotted)
C: Locking C style (Lever)

Port size

—: Without sub-plate
01: 1/8 With sub-plate

P,R Port thread

—	Rc (PT)
F	G (PF)
N	NPT
T	NPTF

Ordering source area code

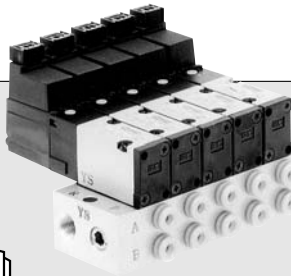
Code	areas
—	Japan, Asia Australia
E	Europe
N	North America

Order Note
Contact SMC for other voltages (9)

Protective class
class I (Mark: ⚡)

VZ3000

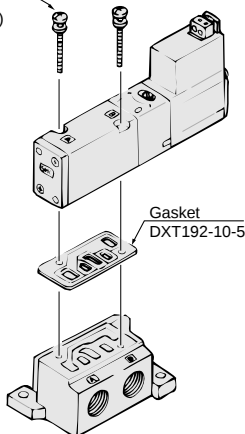
**Applicable for Cylinder
Actuation (up to $\varnothing 40$)
Compact Size (Width: 15mm)
Low Power Consumption:
1.8W DC**



Refer to p.1.6-29 to 1.6-34 for manifold use.

Combinations of Solenoid Valve and Gasket

Round head screw
M2.5 X 25
(With spring washer)



Gasket
DXT192-10-5

Specifications

Fluid		Air
Operating pressure (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)		Max. 50
Response time (ms) (0.5MPa) ⁽¹⁾	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, Locking slotted, Locking lever
Pilot exhaust		Individual pilot exhaust, Common exhaust (pilot and main valve)
Lubrication		Non-lube
Mounting position		Free
Impact/Vibration resistance (m/s ²) ⁽³⁾		300/50
Protection		Dust proof



Note 1) According to dynamic performance test of JIS B8375-1981.

(Coil temperature 20°C, rated voltage, without surge voltage suppressor)

Note 2) When operating the locking style manually, apply torque of 0.2Nm or less.

Note 3) Impact resistance: No malfunction from test using drop impact tester, to axis and right angle directions of main valve and armature, each one time when energized and de-energized. (Value in the initial stage.)

Vibration resistance: No malfunction from test with 8.3 to 2000Hz 1 sweep, to axis and right angle directions of main valve and armature, each one time when energized and de-energized. (Value in the initial stage.)

Solenoid Specifications

Electrical entry			DIN terminal (D)			
Coil rated voltage (V)	AC50/60Hz		100, 200,110, 220			
	DC		24,12			
Allowable voltage (%)			-15 to +10% of rated voltage			
Power consumption W ⁽¹⁾ [Current mA]		DC	1.8 (with light 2.1)[24V DC: 75 (with light 87.5)]			
Apparent power VA ⁽¹⁾ [Current mA]	AC	Inrush	4.5/50Hz, 4.2/60Hz <table><tr><td>100V AC: 45/50Hz, 42/60Hz</td></tr><tr><td>200V AC: 22.5/50Hz, 15/60Hz</td></tr></table>		100V AC: 45/50Hz, 42/60Hz	200V AC: 22.5/50Hz, 15/60Hz
		100V AC: 45/50Hz, 42/60Hz				
200V AC: 22.5/50Hz, 15/60Hz						
		Holding	3.5/50Hz, 3/60Hz <table><tr><td>100V AC: 35/50Hz, 30/60Hz</td></tr><tr><td>200V AC: 17.5/50Hz, 15/60Hz</td></tr></table>		100V AC: 35/50Hz, 30/60Hz	200V AC: 17.5/50Hz, 15/60Hz
100V AC: 35/50Hz, 30/60Hz						
200V AC: 17.5/50Hz, 15/60Hz						
Surge voltage suppressor			DC: Diode, AC: ZNR ⁽²⁾			
Indicator light			DC: LED (red), AC: Neon light			



Note 1) At rated voltage

Note 2) Plug-in should be ZNR

Effective Area and Weight

Valve model	Configuration		Port size	Effective area (mm ²) (Nl/min) ⁽¹⁾	Weight (g) ⁽²⁾	
VZ3□40-□□-01-Q	2 position	Single	1/8	4.5 (245)	125 (75)	
		Double		4.5 (245)	170 (120)	
	3 position	Closed centre		3.4 (186)	180 (130)	
		Exhaust centre		4.5 (245)[2.7 (147)]		
		Pressure centre		P→A, B: 5.3 (285) [3.1 (167)]		
				A, B→R1, R2: 4.0 (216)		



Note 1) [] normal position: Exhaust centre A, B → R1, R2, Pressure centre P → A, B

Note 2) (): Without sub-plate

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

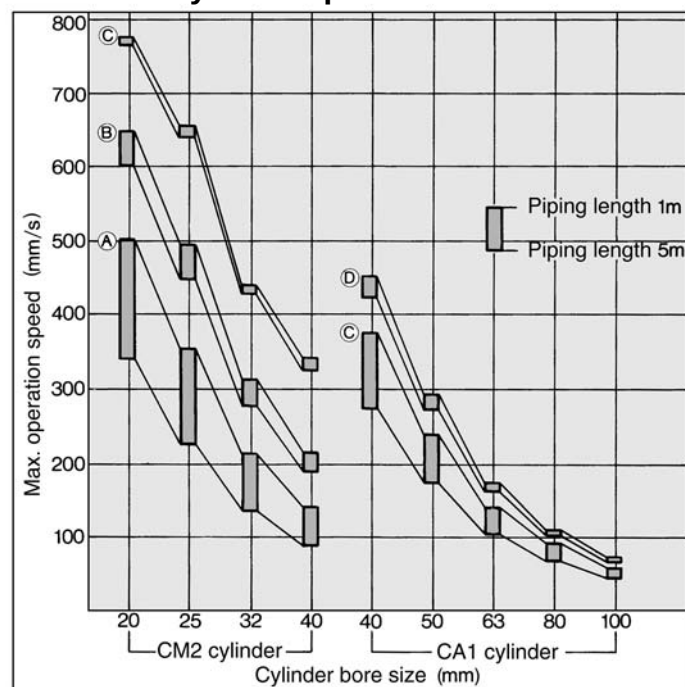
VFS

VS

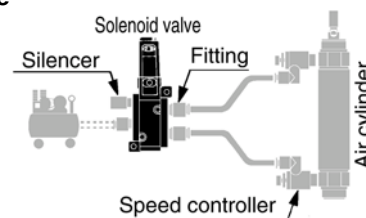
VS7

VQ7

Maximum Cylinder Speed



System figure

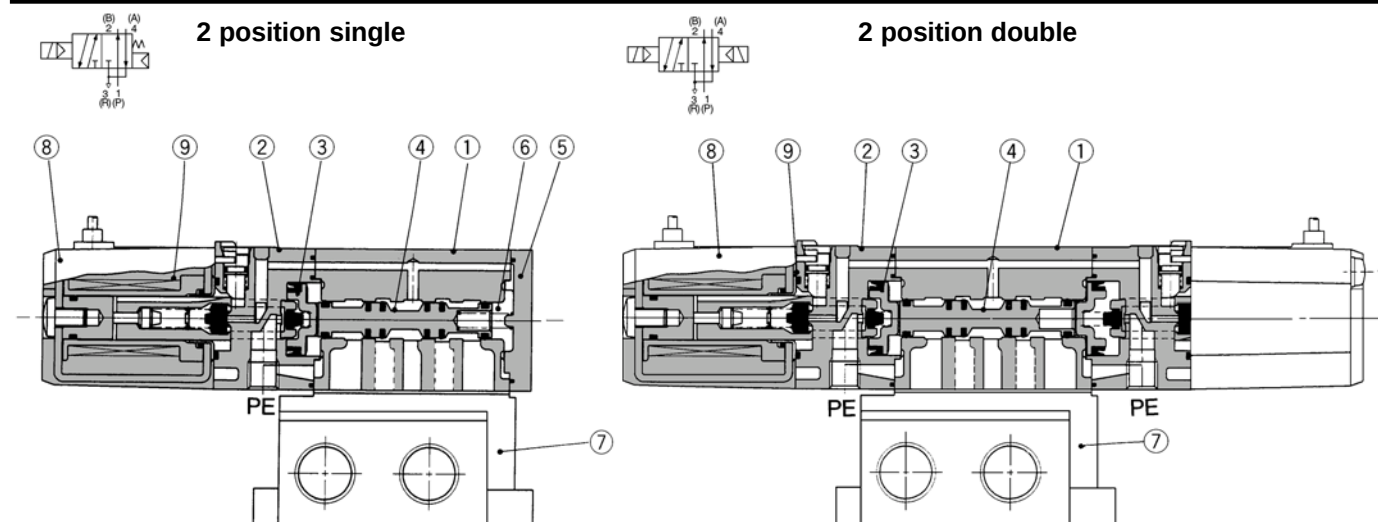


Conditions: Pressure 0.5MPa, Load 50%
(w/ extended cylinder) Cylinder stroke CM2: 300mm
CA1: 500mm

System construction

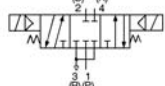
System	Solenoid valve	Speed controller	Silencer	Fitting (tube O.D.X connecting screw)
A	VZ3□40-01 1/8 (S=4.5mm ²)	AS2301F-01-04	AN110-01 (S=35mm ²)	ø4 X 1/8
B		AS2301F-01-06		ø6 X 1/8
C		AS3301F-02-06		ø6 X 1/8
D		AS3301F-02-08		ø8 X 1/8

Construction

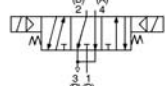


3 position closed centre/exhaust centre/pressure centre

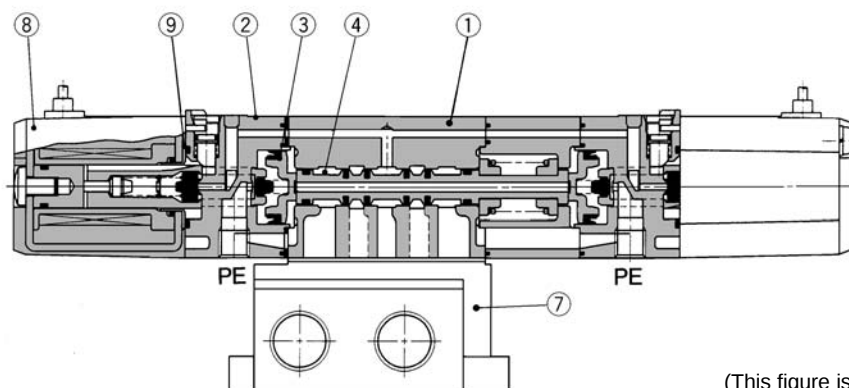
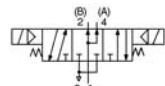
3 position closed centre



3 position exhaust centre



3 position pressure centre



(This figure is a closed centre.)

Component Parts

No.	Description	Material	Remark
①	Body	Die cast aluminium	Platinum silver
②	Piston plate	Resin	Black
③	Piston	Resin	
④	Spool valve	Aluminium/NBR	
⑤	End cover	Resin	
⑥	Spool spring	Stainless steel	

Replacement Parts

No.	Description	Material	Part No.	Remark
⑦	Sub-plate	Die cast aluminium	DXT192-14-1P	Platinum silver
⑧	Solenoid assembly	Epoxy/stainless steel	DXT170-C-□□□	
⑨	O ring	NBR	13 X 11 X 1	Common with series VZ $\frac{1}{3}$ 000

SV
SY
SYJ
SX
VK
VZ
VF
VFR
VP7

VQC
SQ
VQ
VQ4
VQ5
VQZ
VQD
VFS
VS
VS7
VQ7

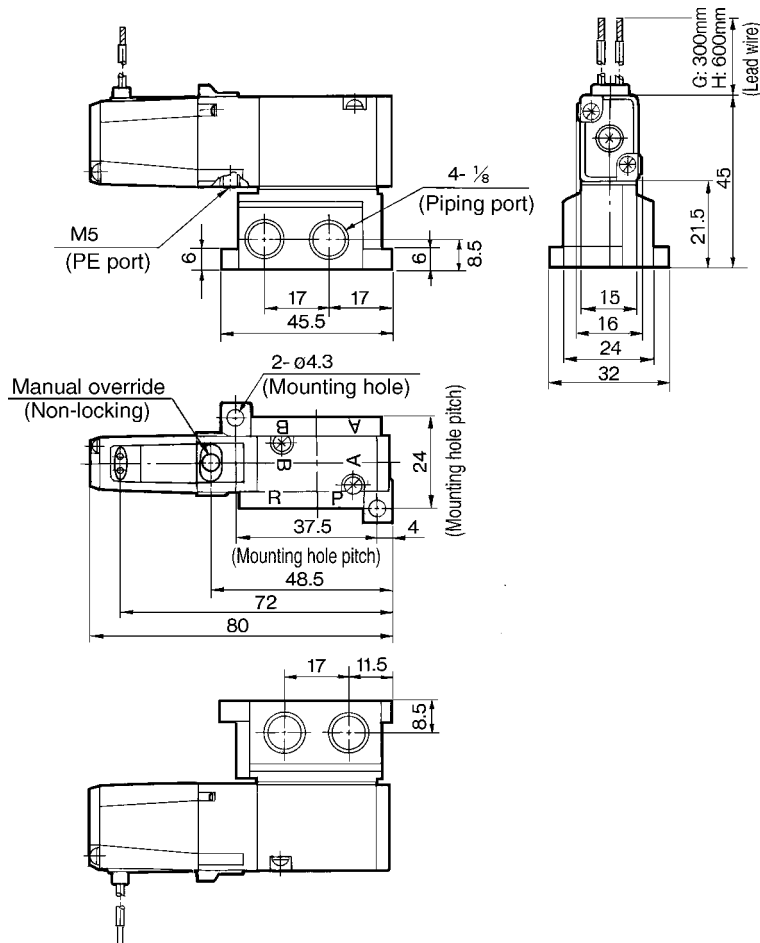
VZ3000



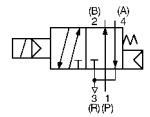
2 Position Single

Grommet (G), (H)
VZ3140-□ G □ □ -01

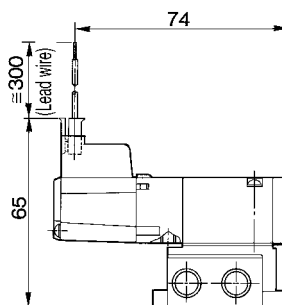
Note: This valve series is
now only available
with DIN connector.



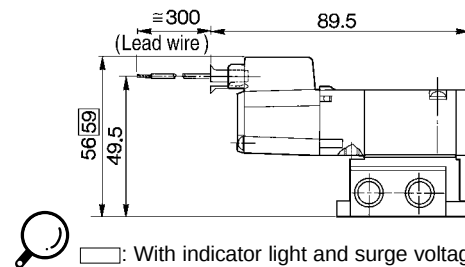
VZ3140



L plug connector (L)
VZ3140-□ L □ □ -01



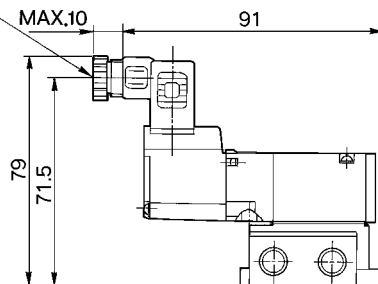
M plug connector (M)
VZ3140-□ M □ □ -01



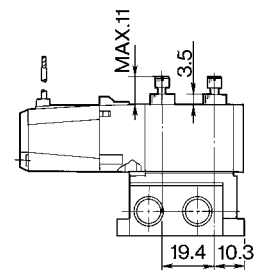
□: With indicator light and surge voltage suppressor

DIN terminal (D)
VZ3140-□ D □ □ -01-Q

Applicable code O.D.
ø3.5 to ø7



Built-in throttle valve
VZ3150-□ □ □ □

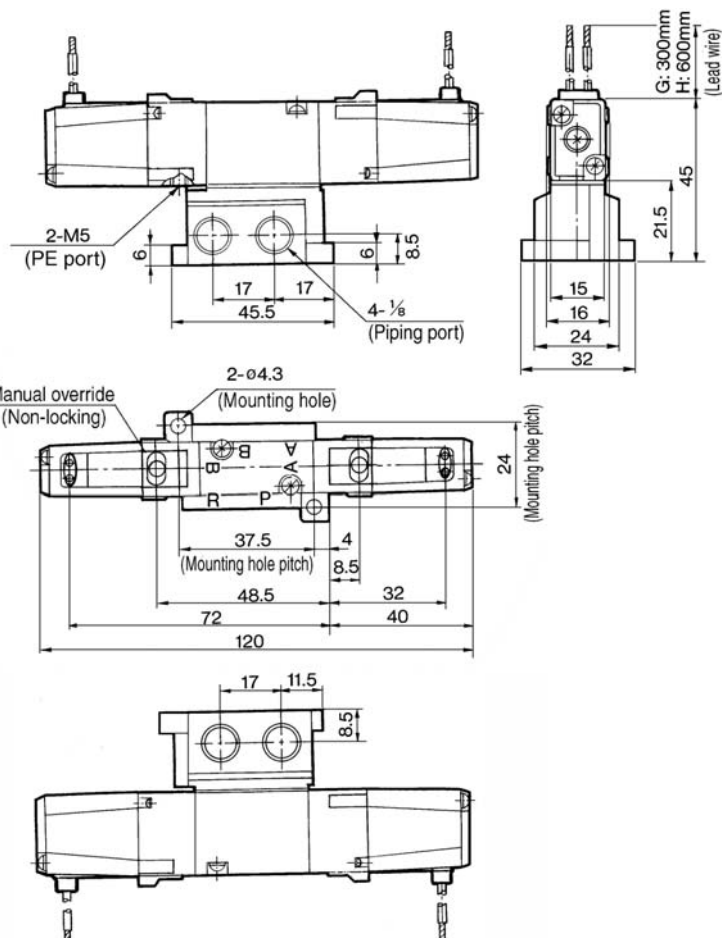




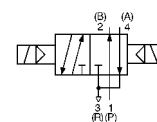
2 Position Double

Grommet (G), (H)
VZ3240-□ G □ □-01

Note: This valve series is now only available with DIN connector.

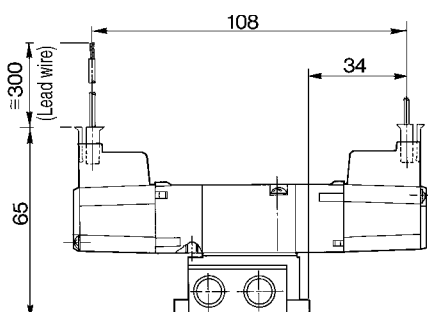


VZ3240

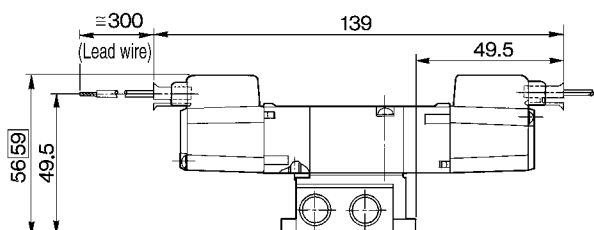


SV
SY
SYJ
SX
VK
VZ
VF
VFR
VP7

L plug connector (L)
VZ3240-□ L □ □-01

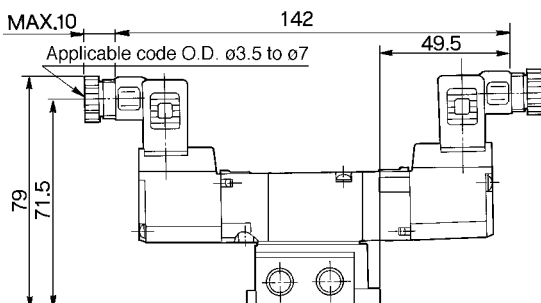


M plug connector (M)
VZ3240-□ M □ □-01

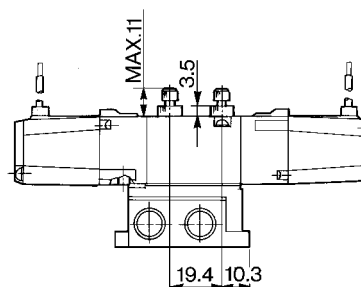


□: With indicator light and surge voltage suppressor

DIN terminal (D)
VZ3240-□ D □ □-01-Q



Built-in throttle valve
VZ3250-□ □ □ □



VQC
SQ
VQ
VQ4
VQ5
VQZ
VQD
VFS
VS
VS7
VQ7

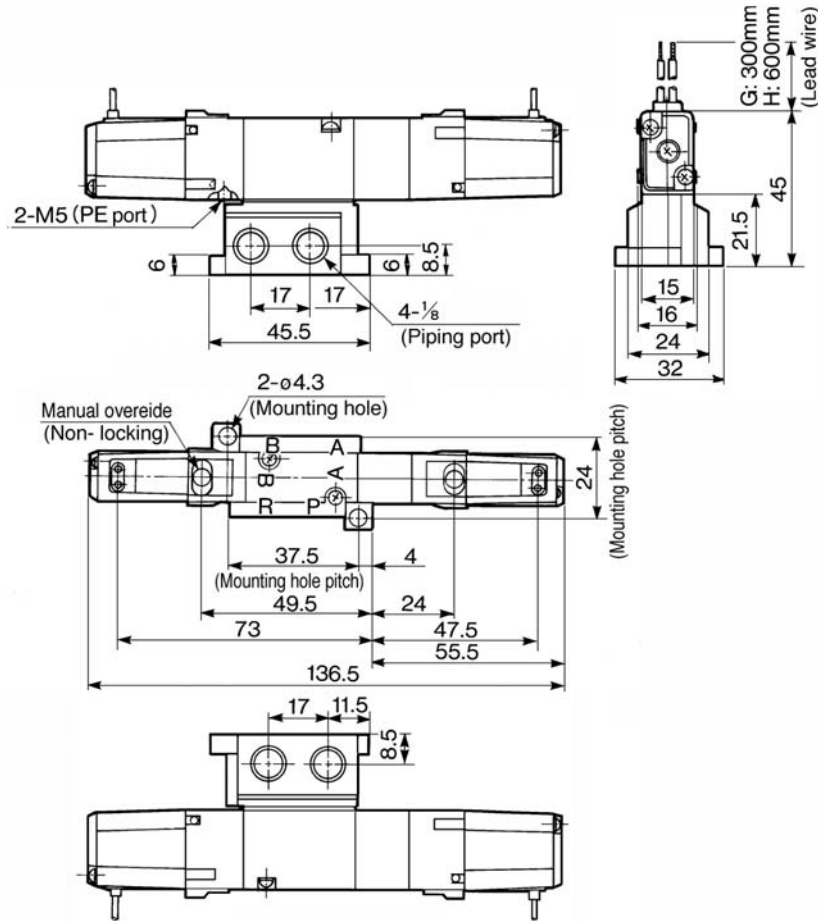
VZ3000



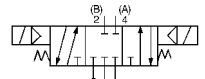
3 Position Closed Centre/Exhaust Centre/Pressure Centre

Grommet (G), (H)
VZ3³/₅40-□ G □□-01

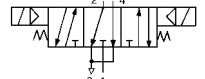
Note: This valve series is now only available with DIN connector.



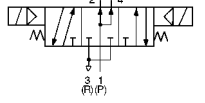
VZ3240



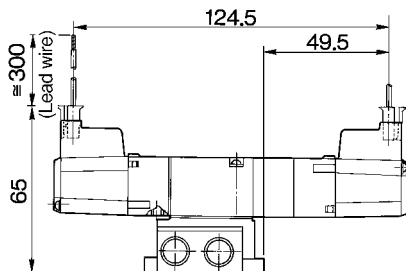
VZ3440



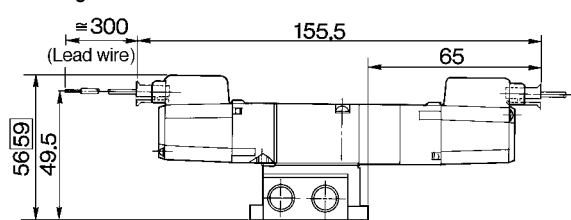
VZ3540



L plug connector (L)
VZ3³/₅40-□ L □□-01

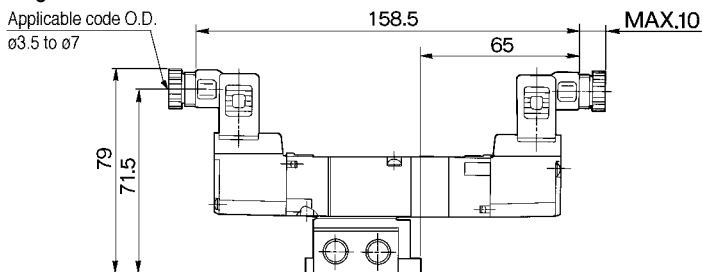


M plug connector (M)
VZ3³/₅40-□ M □□-01

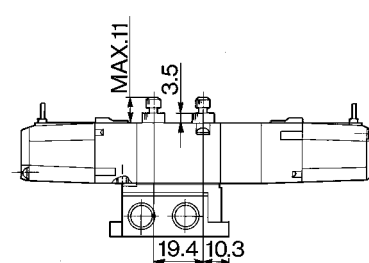


□: With indicator light and surge voltage suppressor

DIN terminal (D)
VZ3³/₅40-□ D □□-01-Q



Built-in throttle valve
VZ3³/₅50-□□□□



Series VZ3000/Base Mounted Manifold

Standard Manifold



Specifications

Model		40 type	41 type	42 type	43 type
Manifold style		Single base/B mount			
P (SUP), R (EXH)		Common SUP and EXH			
Valve stations		2 to 20			
A, B port	Position	Base	Base		
	Direction	Bottom	Side		
Port size	P/R port	1/8		1/4	1/8
	A/B port	M5		C6 (1/8 One-touch fitting)	C4 (1/4 One-touch fitting)
Valve effective area (mm ²) (Nl/min) ⁽¹⁾	Non plug-in base mounted style VZ3□4□	3.0 (167)	2.9 (157)	3.8 (206)	3.2 (177)



Note 1) Value at manifold base mounted, 2 position single operating

How to Order Manifold Base

To order valves, blank plate assembly and connector assembly mounted onto the manifold, list valves and blank plate assembly with manifold base.

(Sample) VV5Z3-40-031-M5.....1 pc. (Manifold base) VV5Z3-43-031-C4 ..1 pc. (Manifold base)

VZ3140-5D-M5-Q2 pcs. (Valve) VZ3140-5DZ-Q.....1 pcs. (Valve)

DXT192-13-1A1 pc. (Blank plate assembly) VZ3240-5DZ-Q.....1 pcs. (Valve)

DXT192-13-3A1 pc. (Blank plate assembly)

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

VS7

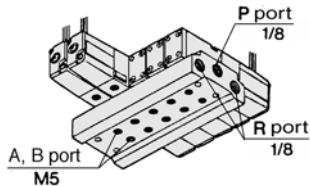
VQ7

VZ3000

Common SUP/Common EXH

If ≥ 8 stations, supply air to P port and exhaust from R port on both sides of the manifold.

40 Type



How to Order

E VV5Z3-40-**05** 2-M5

- Ordering source area code**

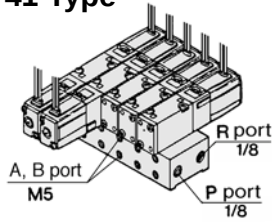
Code	Areas
-	Japan, Asia, Australia
E	Europe
N	North America
- Stations**

02	2 stations
⋮	⋮
20	20 stations
- P, R Port thread**

-	Rc (PT)
F	G (PF)
N	NPT
T	NPTF
- A, B port size**

M5	M5
----	----

41 Type



How to Order

E VV5Z3-41-**05** 1-M5

- Ordering source area code**

Code	Areas
-	Japan, Asia, Australia
E	Europe
N	North America
- Stations**

02	2 stations
⋮	⋮
20	20 stations
- P, R Port thread**

-	Rc (PT)
F	G (PF)
N	NPT
T	NPTF
- A, B port size**

M5	M5
----	----

Applicable solenoid valve

VZ3□4□-□□□□-Q

VZ3□5□-□□□□-Q

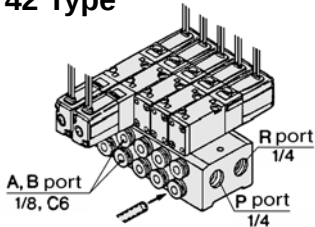
Applicable blank plate assembly
DXT192-13-1A

Individual EXH spacer assembly
DXT192-21-1A

Individual SUP spacer assembly (except for VV5Z3-40 type)
DXT192-40-1A

Applicable interface regulator
ARBZ3000-00-P

42 Type



How to Order

E VV5Z3-42-**05** 1-C6

- Ordering source area code**

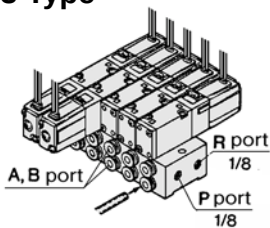
Code	Areas
-	Japan, Asia, Australia
E	Europe
N	North America
- Stations**

02	2 stations
⋮	⋮
20	20 stations
- P, R Port thread**

-	Rc (PT)
F	G (PF)
N	NPT
T	NPTF
- A, B port size**

01	1/8
C6	ø6 One-touch fitting

43 Type



How to Order

E VV5Z3-43-**05** 1-C4

- Ordering source area code**

Code	Areas
-	Japan, Asia, Australia
E	Europe
N	North America
- Stations**

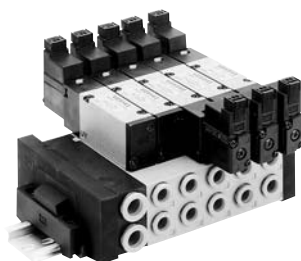
02	2 stations
⋮	⋮
20	20 stations
- P, R Port thread**

-	Rc (PT)
F	G (PF)
N	NPT
T	NPTF
- A, B port size**

C4	ø4 One-touch fitting
----	----------------------

Protective class class I (Mark:)

DIN Rail Manifold



Specifications

Model		45 type
Manifold style		Stacking non plug-in
P (SUP), R (EXH)		Common SUP and EXH
Valve stations		2 to 20
A, B port	Position	Base
	Direction	Side
Port size	P/R port	C8 (ø8 One-touch fitting)
	A/B port	C4 (ø4 One-touch fitting) C6 (ø6 One-touch fitting)
Valve effective area (mm ²) (Nl/min) ⁽¹⁾	VZ3□43	C4: 3.2 (177) C6: 3.8 (206)
Connector		—
Internal wiring		—

Note 1) Value at manifold base mounted, 2 position single operating

How to Order Manifold Base

To order valves and blank plate assembly and connector assembly mounted onto the manifold, list valves and blank plate assembly with manifold base.

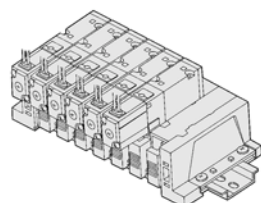
(Sample) VV5Z3-45D-06C1 pc. (Manifold base) VZ3243-5DZ-Q3 pcs. (Valve)
VZ3143-5DZ-Q2 pcs. (Valve) VZ3000-69-1A1 pc. (Blank plate assembly)

DIN Rail Manifold

Common SUP/Common EXH

45 Type (Non plug-in)

How to Order



E **VV5Z3** - **45** - **05** **D** - **C6** **C** -

Stations	
02	2 stations
⋮	⋮
20	20 stations

SUP/EXH block mounting position	
U	U side: 2 to 10stations
D	D side: 2 to 10stations
B	Both sides: 2 to 20stations
M*	Special specification

*For a special specification, use the manifold specification sheet or the like to provide instructions.

A, B port size	
C4	ø4 One-touch fitting
C6	ø6 One-touch fitting
M*	Mix

*For a special specification, use the manifold specification sheet or the like to provide instructions.

Applicable solenoid valve

VZ3□4□-□□□□-Q

VZ3□5□-□□□□-Q

Applicable blank plate assembly

VZ3000-69-2A

DIN rail length

Standard	
—	For 3 stations
3	Specify a rail that is longer than the standard length.
⋮	⋮
20	For 20

Ordering source area code

Code	Areas
—	Japan, Asia, Australia
E	Europe
N	North America

Protective class class I (Mark:)

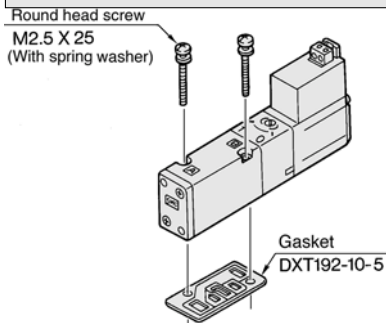
SV
SY
SYJ
SX
VK
VZ
VF
VFR
VP7

VQC
SQ
VQ
VQ4
VQ5
VQZ
VQD
VFS
VS
VS7
VQ7

VZ3000

Option/Standard Manifold, Flat Cable Manifold

Combinations of Solenoid Valve, Manifold Gasket and Manifold Base



Applicable base

VV5Z3-40
VV5Z3-41
VV5Z3-42
VV5Z3-43

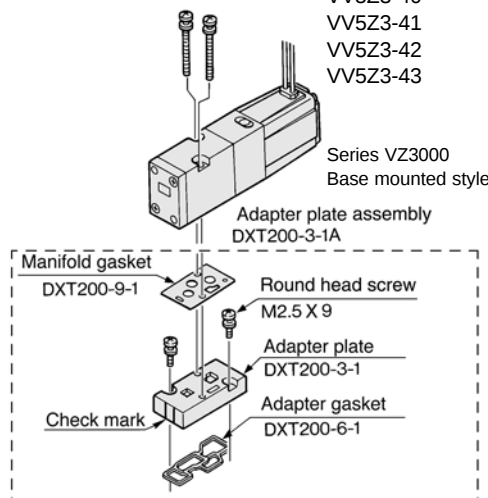
Mounting the VZ300 Series on the VZ3000 Series Manifold

- Mixed mounting of the VZ300 Series on the VZ3000 Series manifold base is possible through the use of an adapter plate.
- 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 VZ3000 Series.
- A port of 3 port valve should be B port of manifold base.

Adapter plate assembly DXT200-3-1A

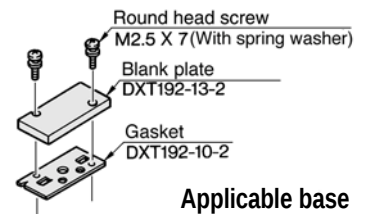
Applicable base

VV5Z3-40
VV5Z3-41
VV5Z3-42
VV5Z3-43



Blank Plate Assembly

DXT192-13-1A

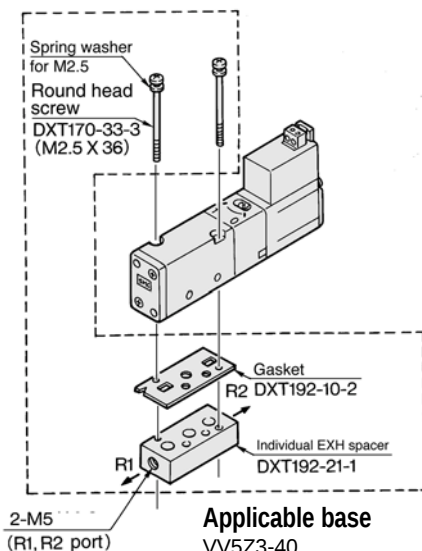


Applicable base

VV5Z3-40
VV5Z3-41
VV5Z3-42
VV5Z3-43

Individual EXH Spacer Assembly

DXT192-21-1A

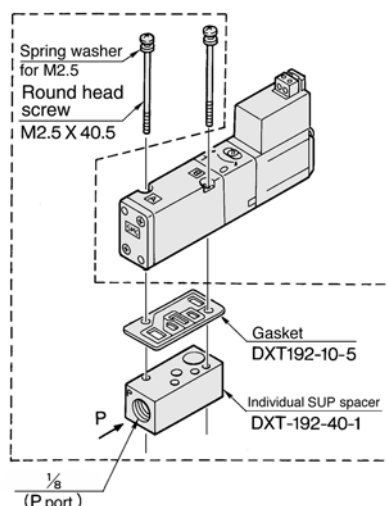


Applicable base

VV5Z3-40
VV5Z3-41
VV5Z3-42
VV5Z3-43

Individual SUP Spacer Assembly

DXT192-40-1A



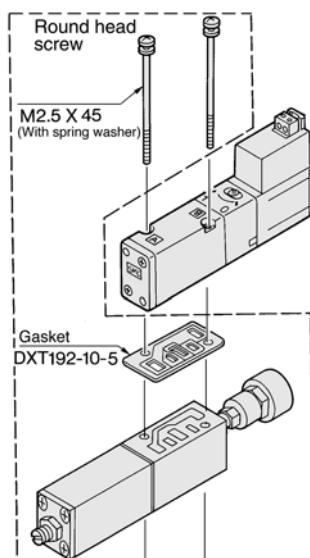
Applicable base

VV5Z3-41
VV5Z3-42
VV5Z3-43

Interface Regulator (P regulation)

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

ARBZ3000-00-P



Applicable base

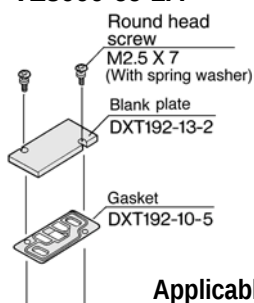
VV5Z3-40
VV5Z3-41
VV5Z3-42
VV5Z3-43

Refer to p.1.6-8 to use.

Option/DIN Rail Manifold

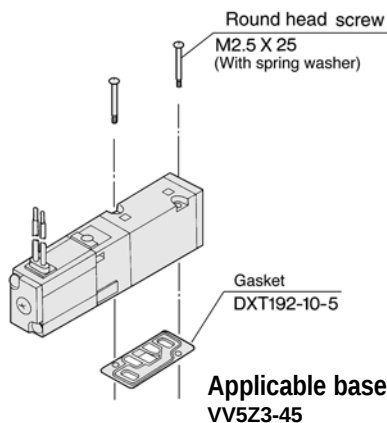
Blank Plate Assembly

VZ3000-69-2A



Applicable base
VV5Z3-45

Combinations of Solenoid Valve, Gasket and Manifold Base



SUP Block Valve

By placing a SUP block valve in the pressure supply passage of the manifold base, two or more high or low pressures can be supplied by a single manifold.

VZ3000-79-1A



EXH Block Valve

By placing an EXH block valve in the exhaust passage of the manifold base, the exhaust air of the valve can be separated so as not to affect other valves.

VZ3000-79-1A



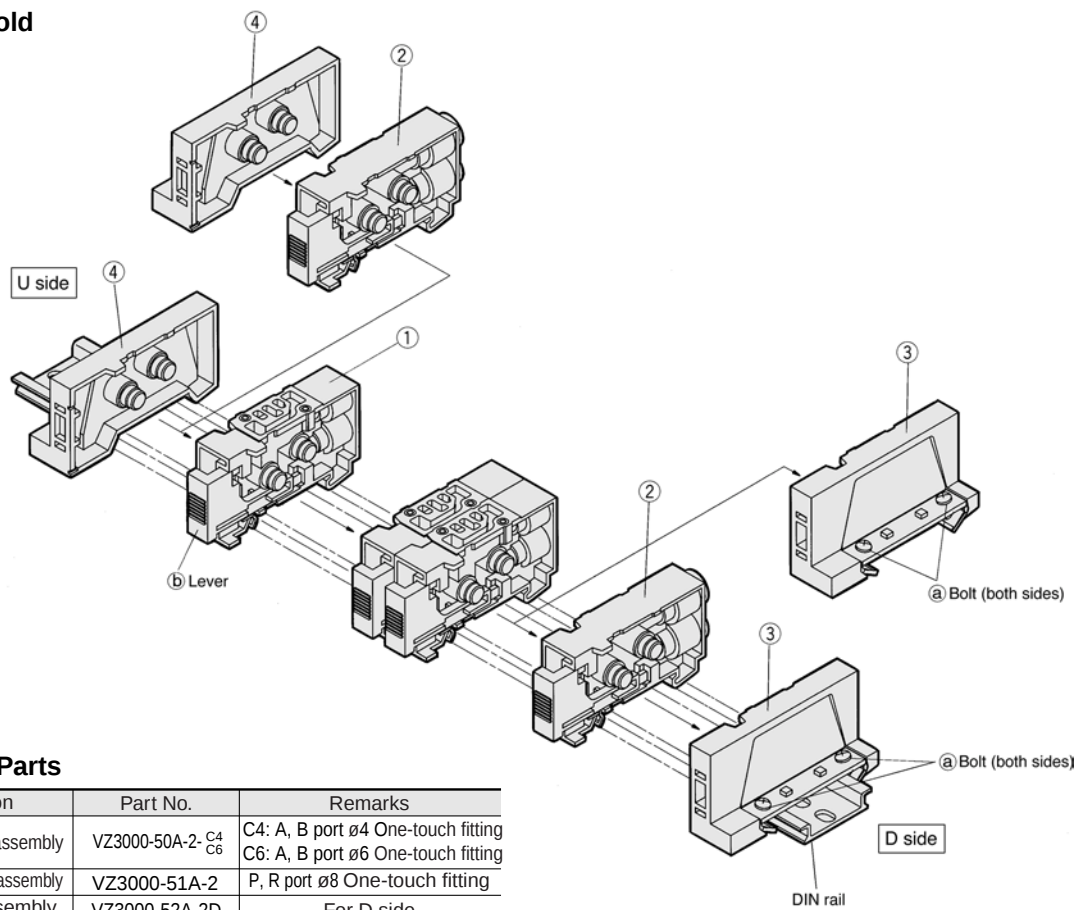
SV
SY
SYJ
SX
VK
VZ
VF
VFR
VP7

VQC
SQ
VQ
VQ4
VQ5
VQZ
VQD
VFS
VS
VS7
VQ7

VZ3000

Exploded View/DIN Rail Manifold

45 Type Manifold



Replacement Parts

No.	Description	Part No.	Remarks
①	Manifold block assembly	VZ3000-50A-2- C4 C6	C4: A, B port $\phi 4$ One-touch fitting C6: A, B port $\phi 6$ One-touch fitting
②	SUP/EXH block assembly	VZ3000-51A-2	P, R port $\phi 8$ One-touch fitting
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

Manifold bases can be added at any location.

- 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 ass'y on the DIN rail as shown in the figure 2.
- 4 Press block ass'y and tighten bolt (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.

Figure 1

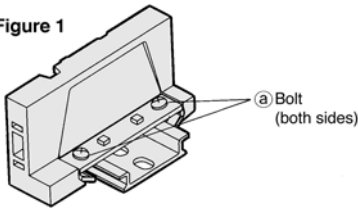
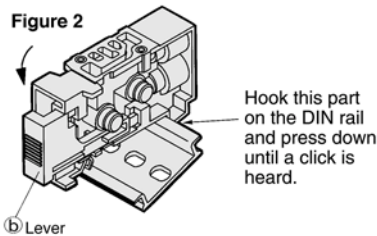
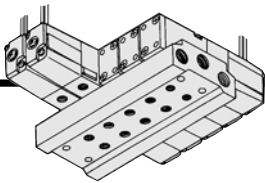


Figure 2



VZ3000

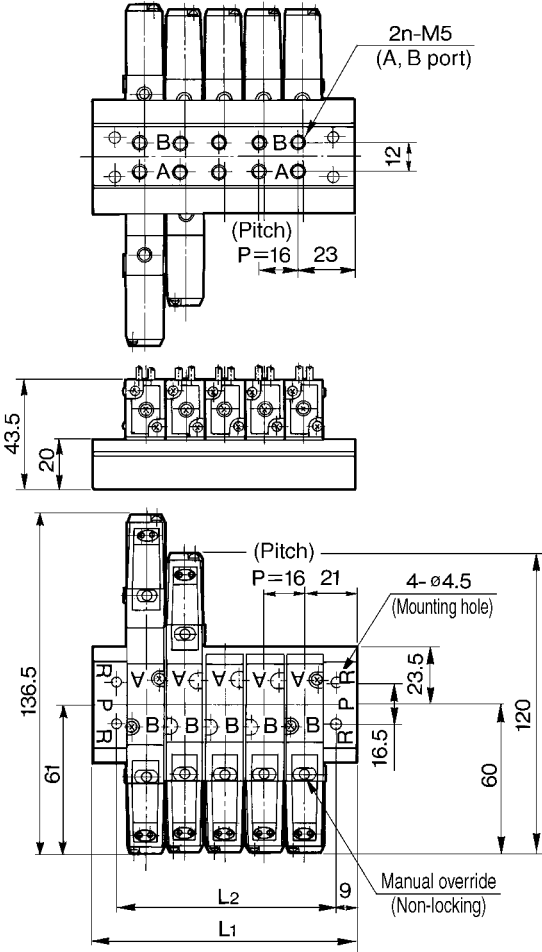


40 Type Manifold: Bottom Ported

VV5Z3-40-Station 2-M5

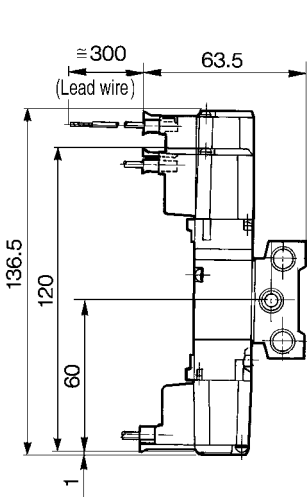
Grommet (G), (H)

Note: This valve series is now only available with DIN connector.

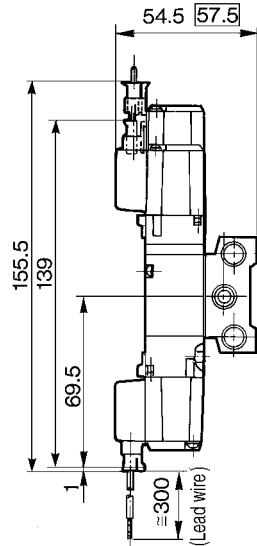


Station	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330	316
L2	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328

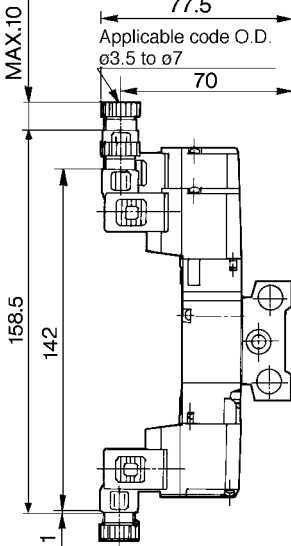
L plug connector (L)



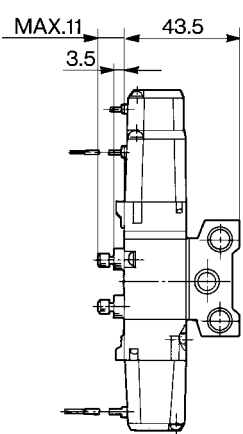
M plug connector (M)



DIN terminal (D)



Built-in throttle valve



: With indicator light and surge voltage suppressor

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

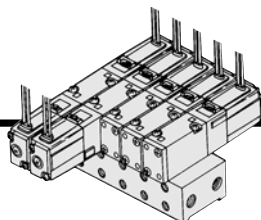
VQD

VFS

VS

VS7

VQ7

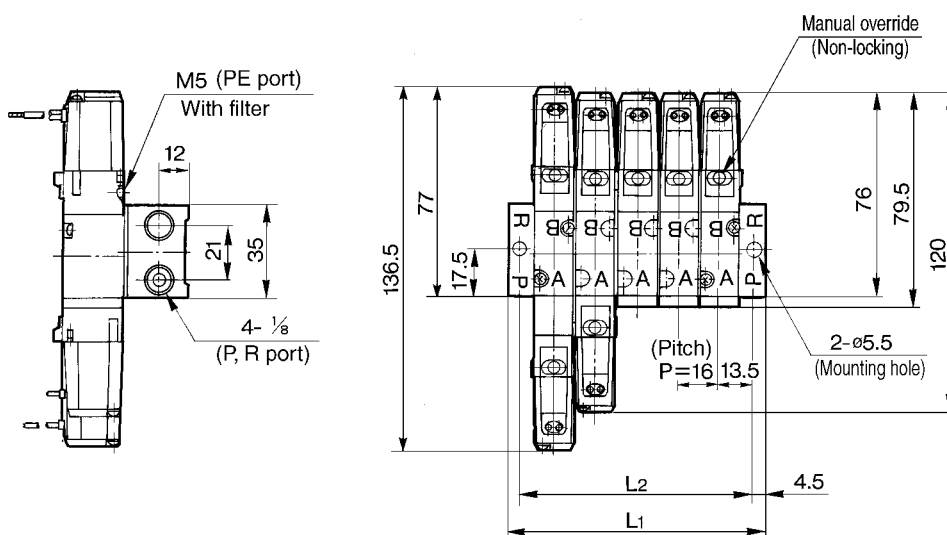
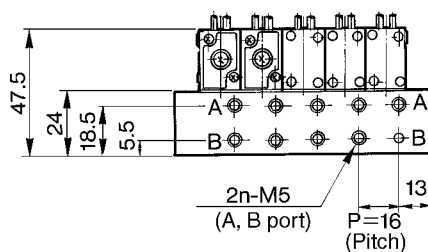


41 Type Manifold: Side Ported

VV5Z3-41- Station 1-M5

Grommet (G), (H)

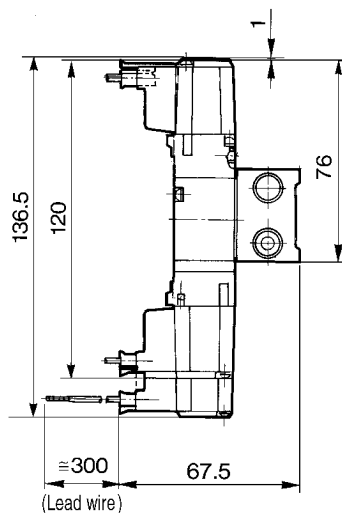
Note: This valve series is now only available with DIN connector.



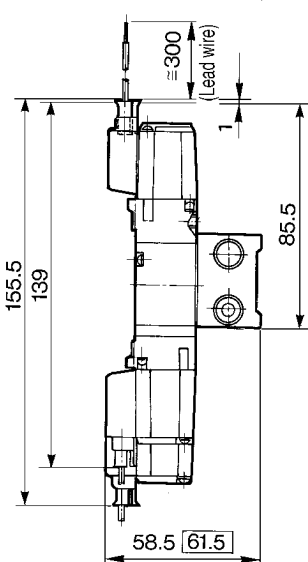
Station	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
L2	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331

(mm)

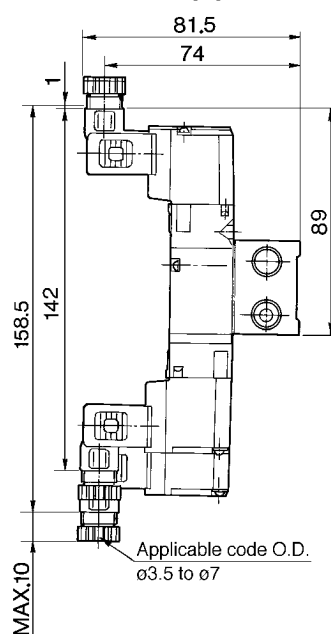
L plug connector (L)



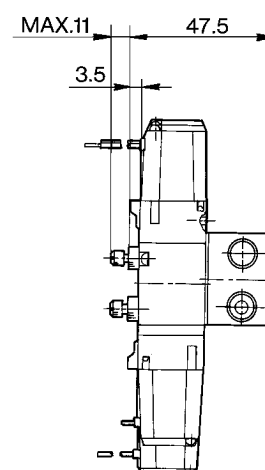
M plug connector (M)



DIN terminal (D)

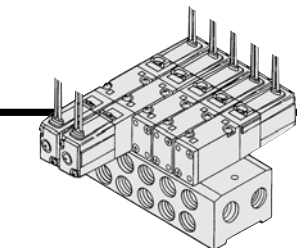


Built-in throttle valve



□: With indicator light and surge voltage suppressor

VZ3000

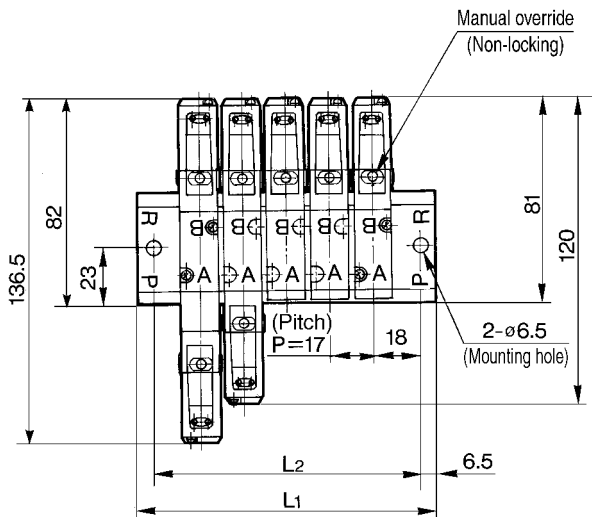
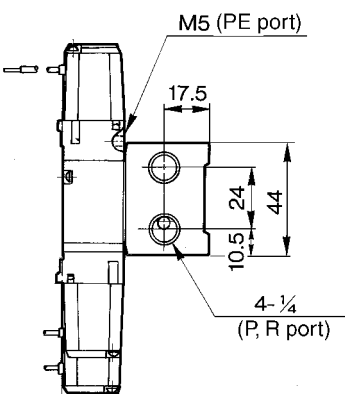
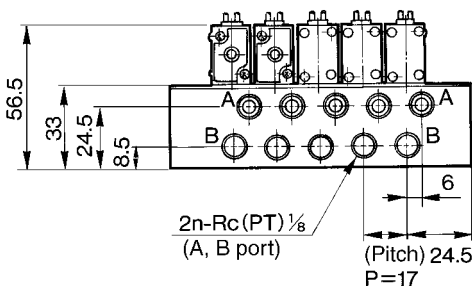


42 Type Manifold: Side Ported

VV5Z3-42- Station 1-01

Grommet (G), (H)

Note: This valve series is now only available with DIN connector.



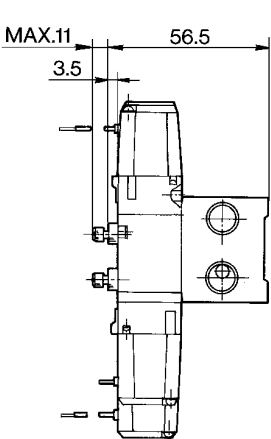
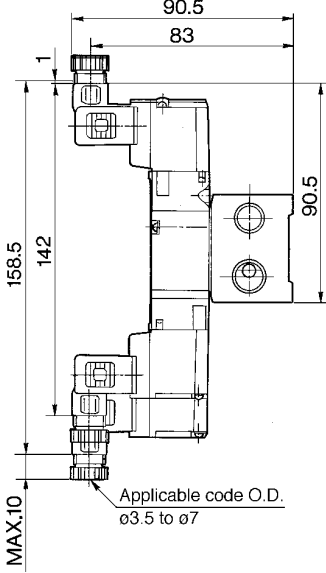
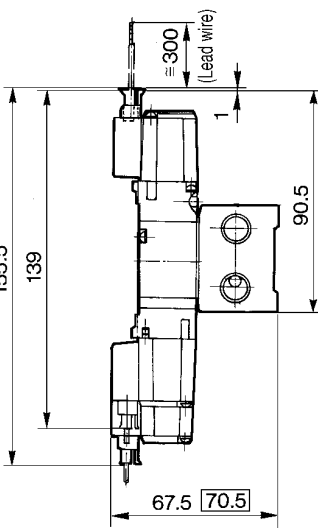
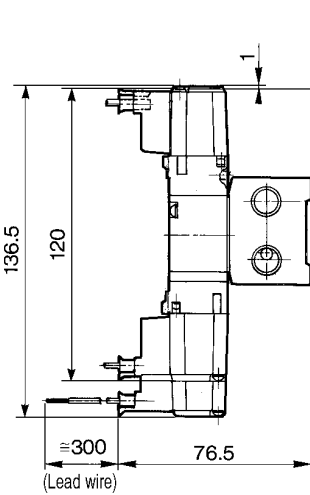
Station	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	66	83	100	117	134	151	168	185	202	219	236	253	270	287	304	321	338	355	372
L2	53	70	87	104	121	138	155	172	189	206	223	240	257	274	291	308	325	342	359

L plug connector (L)

M plug connector (M)

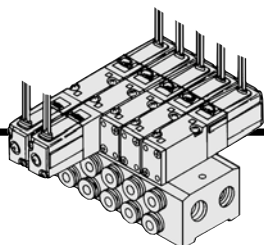
DIN terminal (D)

Built-in throttle valve



☐: With indicator light and surge voltage suppressor

- SV
- SY
- SYJ
- SX
- VK
- VZ**
- VF
- VFR
- VP7
- VQC
- SQ
- VQ
- VQ4
- VQ5
- VQZ
- VQD
- VFS
- VS
- VS7
- VQ7

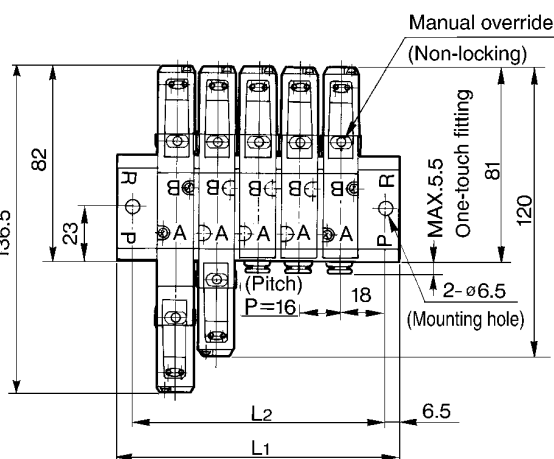
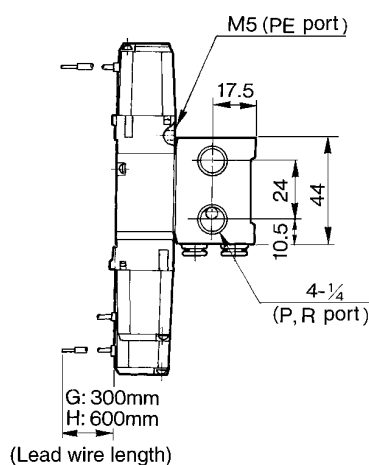
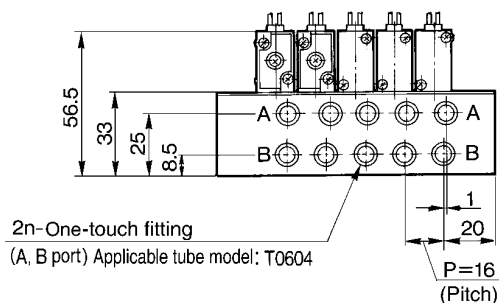


42 Type Manifold: Side Ported

VV5Z3-42- Station 1-C6

Grommet (G), (H)

Note: This valve series is now only available with DIN connector.



Station	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	65	81	97	113	129	145	161	177	193	209	225	241	257	273	289	305	321	337	353
L2	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340

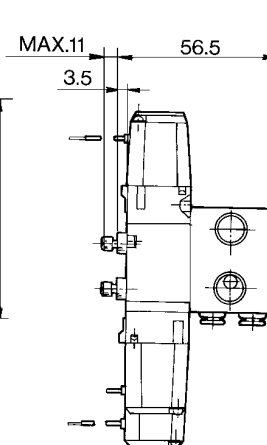
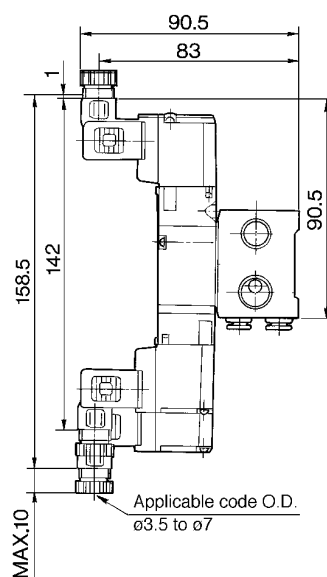
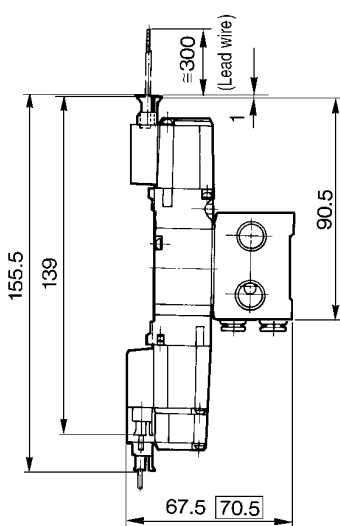
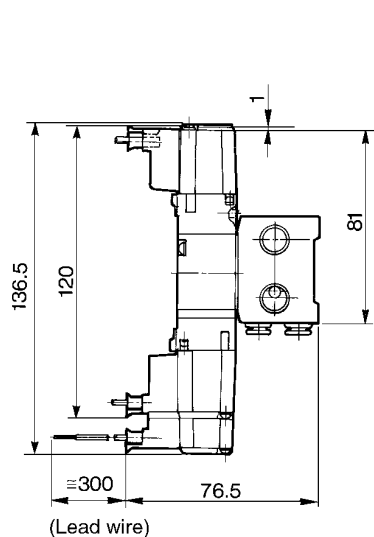
(mm)

L plug connector (L)

M plug connector (M)

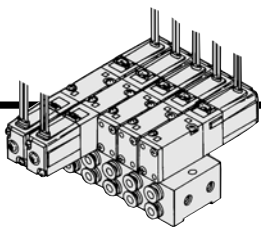
DIN terminal (D)

Built-in throttle valve



□: With indicator light and surge voltage suppressor

VZ3000

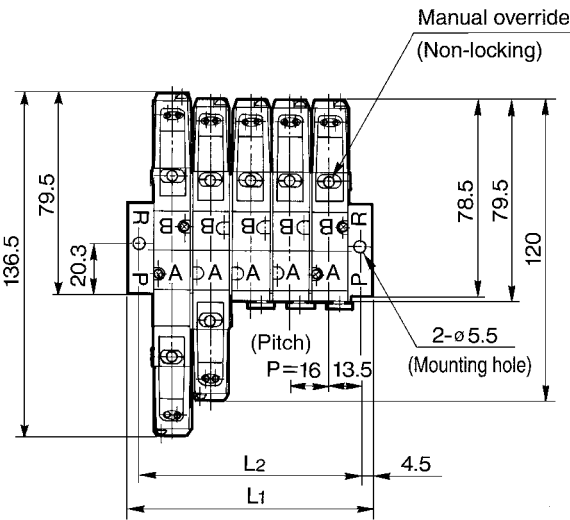
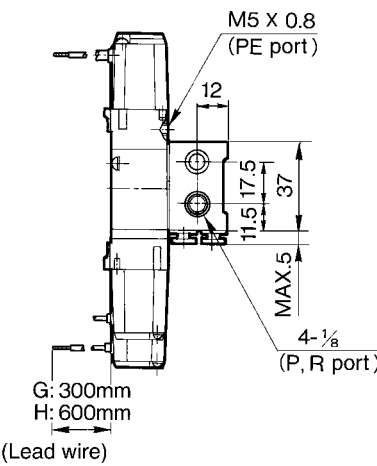
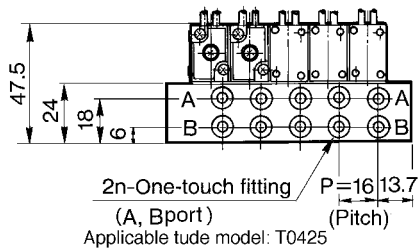


43 Type Manifold: Side Ported

VV5Z3-43-Station 1-C4

Grommet (G), (H)

Note: This valve series is now only available with DIN connector.



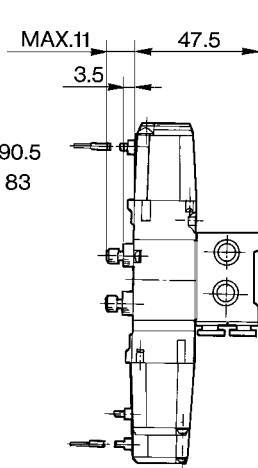
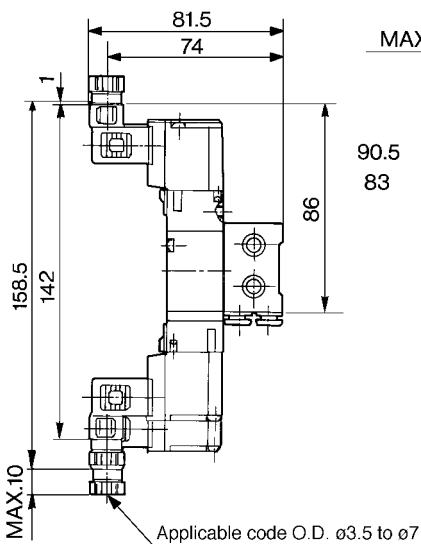
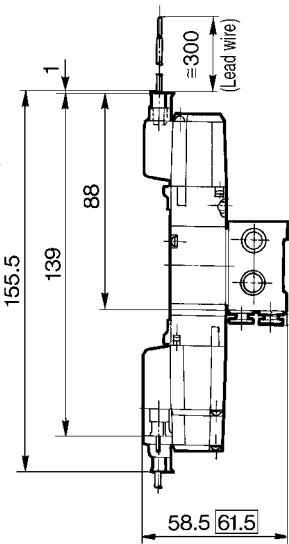
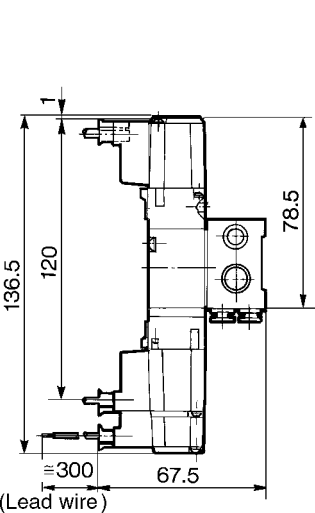
Station	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
L2	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331

L plug connector (L)

M plug connector (M)

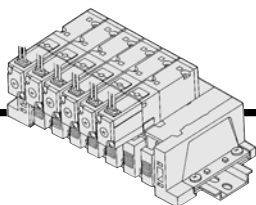
DIN terminal (D)

Built-in throttle valve



□: With indicator light and surge voltage suppressor

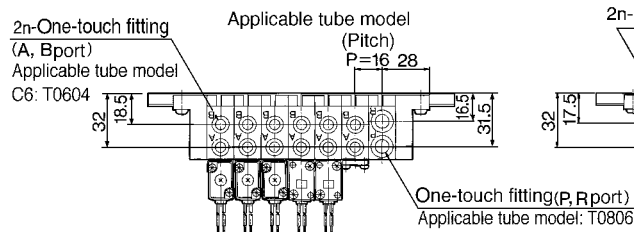
- SV
- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VQC
- SQ
- VQ
- VQ4
- VQ5
- VQZ
- VQD
- VFS
- VS
- VS7
- VQ7



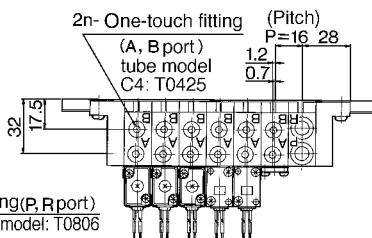
45 Type DIN Rail Manifold (Non Plug-in): Side Ported

VV5Z3-45-Station D- C4C
C6C

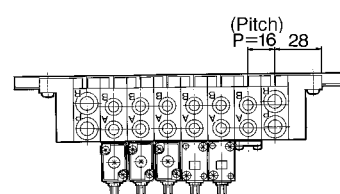
Grommet (G) (H)



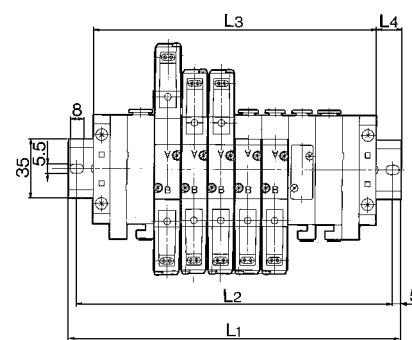
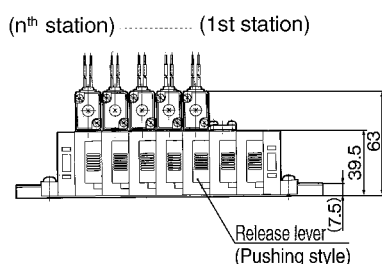
C4



VV5Z3-45-Station B- C4C
C6C

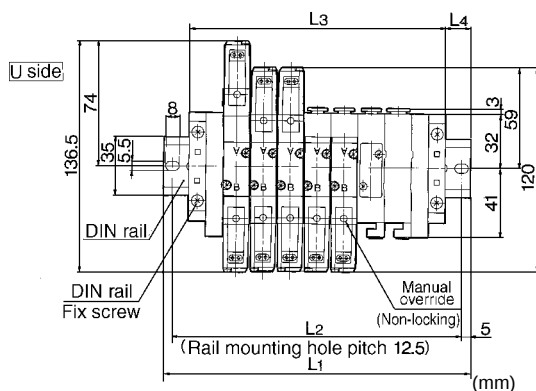


Note: This valve series is now only available with DIN connector.



D side

G: 300
H: 600
(Lead wire)



Station	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)

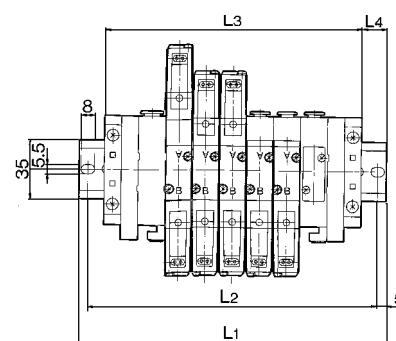
Station	11	12	13	14	15	16	17	18	19	20
L1	273	298	310.5	323	335.5	360.5	373	385.5	398	423
L2	262.5	287.5	300	312.5	325	350	362.5	375	387.5	412.5
L3	248	264	280	296	312	328	344	360	376	392
L4	12.5	17	15.5	13.5	12	16.5	14.5	13	11	15.5

(mm)

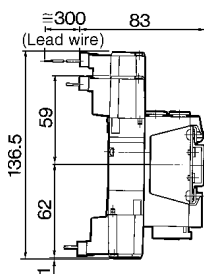
Station	2	3	4	5	6	7	8	9	10
L1	110.5	135.5	148	160.5	185.5	198	210.5	223	248
L2	100	125	137.5	150	175	187.5	200	212.5	237.5
L3	88	104	120	136	152	168	184	200	216
L4	11.5	16	14	12.5	17	15	13.5	11.5	16

(mm)

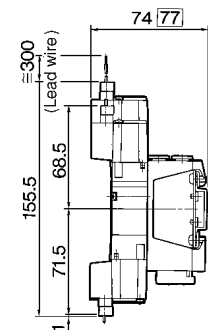
VV5Z3-45-Station U- C4C
C6C



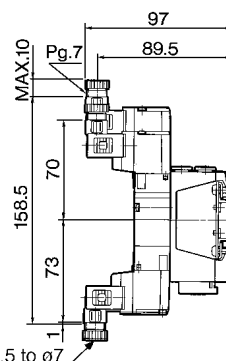
L plug connector (L)



M plug connector (M)



DIN terminal (D)



Applicable code: ø3.5 to ø7

With indicator light and surge voltage suppressor

Station	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

(mm)

5 Port Solenoid Valve Body Ported Series VZ5000

How to Order

Body ported **E** VZ5 **1** **2** **0** **5** **D** **01** **Q**

Configuration

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

Body option

0: Individual pilot exhaust style
3: Common exhaust (pilot and main valve) style

Rated voltage

1	100V AC 50/60Hz
2	200V AC 50/60Hz
3	110V AC 50/60Hz
4	220V AC 50/60Hz
5	24V DC
6	12V DC
9	Others, less than 250VAC and 50VDC

Electrical entry

DIN terminal
D: With connector
DO: Without connector

Indicator light and surge voltage suppressor

-	None
Z*	With indicator light and surge suppressor
S	With surge voltage suppressor

Manual override

-: Non-locking push style
B: Locking B style (Slotted)
C: Locking C style (Lever)

A, B Port size

01	Rc(PT) 1/8
C6	ø6 One-touch fitting
C8	ø8 One-touch fitting

P, R1, R2 port: Rc(PT)1/8

P, R Port thread

-	Rc (PT)
F	G (PF)
N	NPT
T	NPTF

Option

F: With foot bracket (2 position single only)

If use of a foot bracket is expected, please indicate that option when placing the initial order since the standard body can not be retrofitted with a foot bracket.

Ordering source area code

Code	areas
-	Japan, Asia Australia
E	Europe
N	North America

Order Made Contact SMC for other voltages (9)

Protective class
class I (Mark: ⚡)

SV
SY
SYJ
SX
VK
VZ
VF
VFR
VP7
VQC
SQ
VQ
VQ4
VQ5
VQZ
VQD
VFS
VS
VS7
VQ7

VZ5000

Applicable for Cylinder Actuation (up to ø50)
Compact Size (Width: 18mm)
Low Power Consumption: 1.8W DC



Specifications

Fluid	Air	
Operating pressure (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	Max. 50 °C	
Response time (ms) (0.5MPa) ⁽¹⁾	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	See below	
Manual override ⁽²⁾	Non-locking push, Locking slotted, Locking lever	
Pilot exhaust	Individual pilot exhaust, Common exhaust (pilot and main valve)	
Lubrication	Non-lube	
Mounting position	Free	
Impact/Vibration resistance (m/s ²) ⁽³⁾	300/50	
Protection function	Dust proof	



Note 1) According to dynamic performance test of JIS B8375-1981.

(Coil temperature 20°C, rated voltage, without surge voltage suppressor)

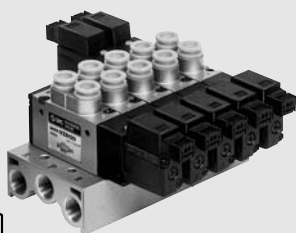
Note 2) When operating the locking style manually, apply torque of 0.2Nm or less.

Note 3) Impact resistance: No malfunction from test using drop impact tester, to axis and right angle directions of main valve and armature, each one time when energized and de-energized. (Value in the initial stage.)

Vibration resistance: No malfunction from test with 8.3 to 2000Hz 1 sweep, to axis and right angle directions of main valve and armature, each one time when energized and de-energized. (Value in the initial stage.)

Solenoid Specifications

Electrical entry			DIN terminal (D)	
Coil rated voltage (V)	AC50/60Hz		100, 200,110, 220	
	DC		24,12	
Allowable voltage (%)			−15 to +10% of rated voltage	
Power consumption W ⁽¹⁾ [Current mA]		DC	1.8 (with light 2.1)[24V DC: 75 (with light 87.5)]	
Apparent power (VA) ⁽¹⁾ [Current mA]	AC	Inrush	4.5/50Hz, 4.2/60Hz	100V AC: 45/50Hz, 42/60Hz 200V AC: 22.5/50Hz, 21/60Hz
		Holding	3.5/50Hz, 3/60Hz	100V AC: 35/50Hz, 30/60Hz 200V AC: 17.5/50Hz, 15/60Hz
Surge voltage suppressor			DC: Diode, AC: ZNR	
Indicator light			DC: LED (red), AC: Neon light	



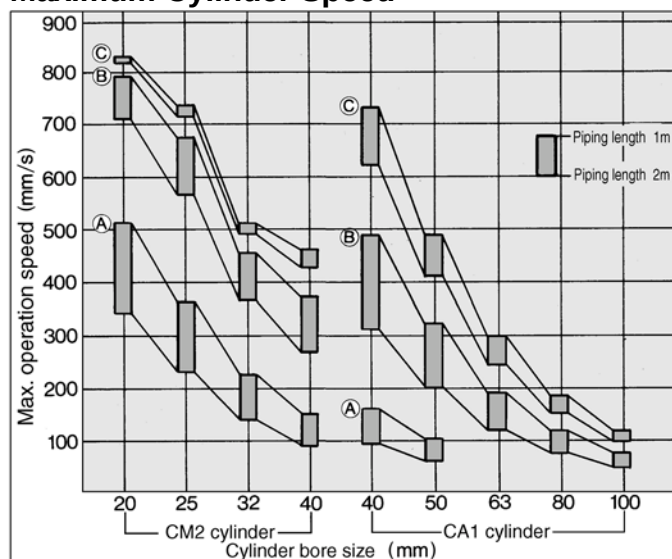
Refer to p.1.6-47 to 1.6-50 for manifold use.

Effective Area and Weight

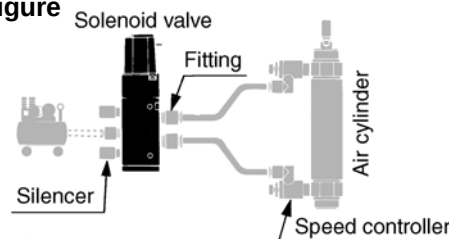
Valve model	Configuration		Port size	Effective area (mm ²) (Nl/min) ⁽¹⁾	Weight (g)
VZ5□20-□-01-Q	2 position	Single	1/8	11 (588)	120
		Double		11 (588)	160
	3 position	Closed centre		8.5 (461)	160
		Exhaust centre		9 (490)[6.5 (353)]	
		Pressure centre		P→A, B: 13.5 (736) [7 (382)] A, B→R1, R2: 7 (382)	
VZ5□20-□-C6-Q	2 position	Single	A, BPort : C6 (ø6 One-touch fitting) P, R port : 1/8	8.6 (471)	120
		Double		8.6 (471)	160
	3 position	Closed centre		7.1 (382)	160
		Exhaust centre		8.4 (461)[6.2 (333)]	
		Pressure centre		P→A, B: 7.7 (412) [5.5 (294)] A, B→R1, R2: 7.1 (382)	
VZ5□20-□-C8-Q	2 position	Single	A, BPort : C8 (ø6 One-touch fitting) P, R port : 1/8	9.9 (539)	120
		Double		9.9 (539)	160
	3 position	Closed centre		8.2 (451)	160
		Exhaust centre		9.7 (530)[6.7 (559)]	
		Pressure centre		P→A, B: 9.3 (510) [5.6 (409)] A, B→R1, R2: 7.6 (412)	

Note 1) [] normal position: Exhaust centre A, B → R1, R2,
Pressure centre P → A, B

Maximum Cylinder Speed



System figure

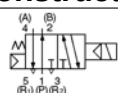


Conditions: Pressure 0.5MPa, Load 50%
(w/ extended cylinder) Cylinder stroke CM2: 300mm
CA1: 500mm

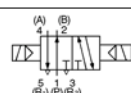
System construction

System	Solenoid valve	Speed controller	Silencer	Fitting (tube O.D.X connecting screw)
A		AS2301F-01-04		ø4 X 1/8
B	VZ5□20-1 1/8 (S=11mm ²)	AS3301F-02-06 03	AN110-01 (S=35mm ²)	ø6 X 1/8
C		AS3301F-02-08 03		ø8 X 1/8

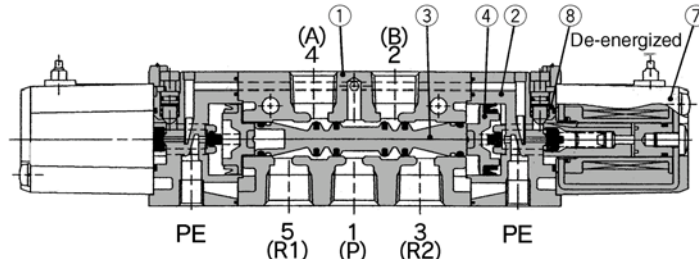
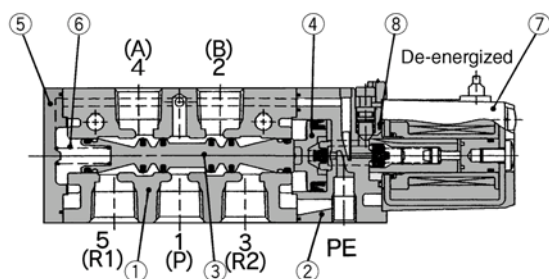
Construction



2 position single

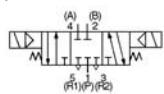


2 position double

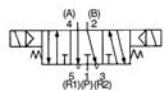


3 position closed centre/exhaust centre/pressure centre

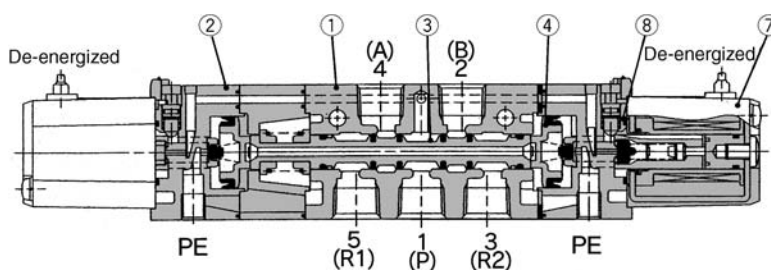
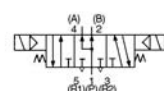
3 position closed centre



3 position exhaust centre



3 position pressure centre



(This figure is closed centre.)

Component Parts

No.	Description	Material	Remark
①	Body	Die cast aluminium	Platinum silver
②	Piston plate	Resin	Black
③	Spool valve	Aluminium/NBR	
④	Piston	Resin	
⑤	End cover	Die cast aluminium	Black painted
⑥	Spool spring	Stainless steel	

Replacement Parts

No.	Description	Material	Parts No.	Remark
⑦	Solenoid assembly	Epoxy/Stainless steel	DXT170-C-□□□	
⑧	O ring	NBR	13 X 11 X 1	Common with series VZ 1/31000

VZ5000



2 Position Single

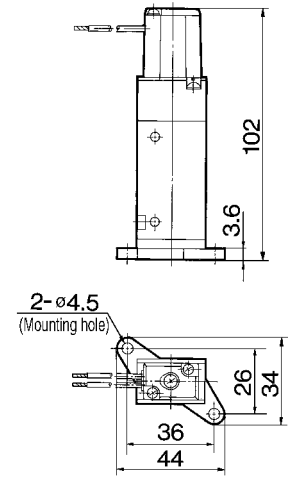
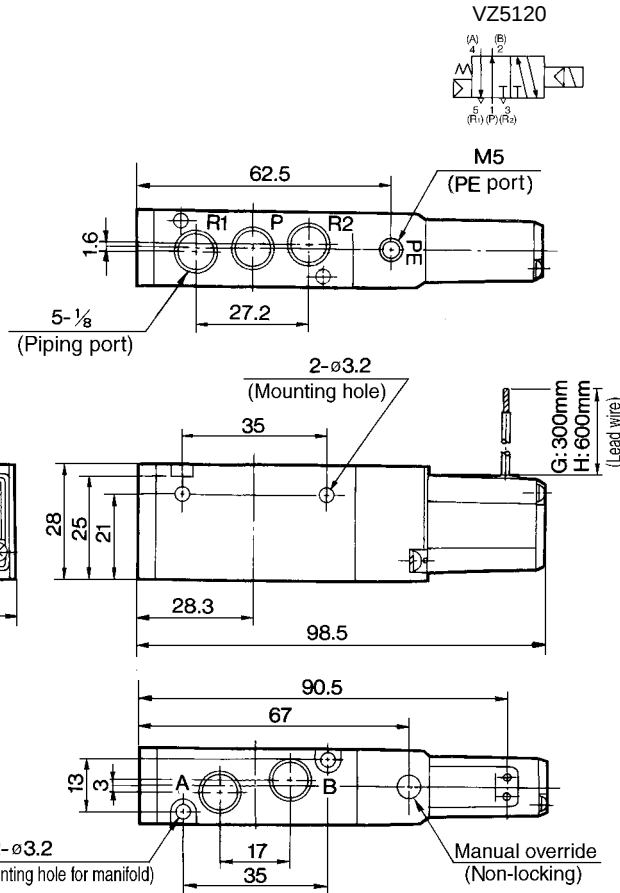
Foot bracket

VZ5120 - □ □ □ □ -01-F

Grommet (G), (H)

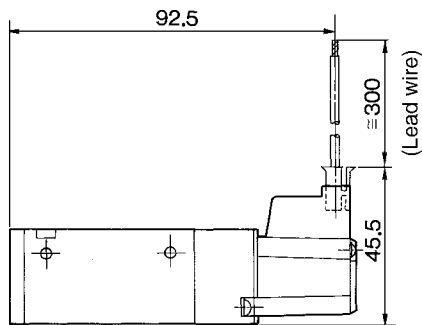
VZ5120 - □ □ □ □ -01

Note: This valve series is now only available with DIN connector.



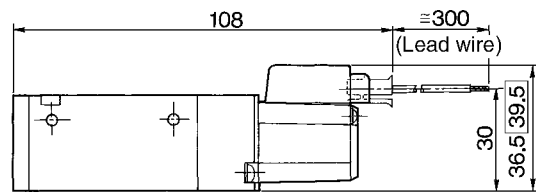
L plug connector (L)

VZ5120- □ L □ □ -01



M plug connector (M)

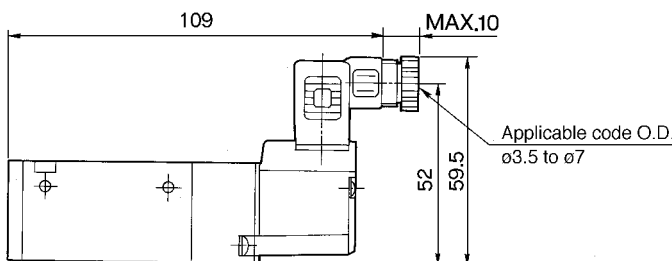
VZ5120- □ M □ □ -01



□ : With indicator light and surge voltage suppressor

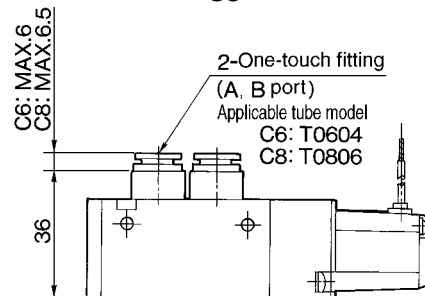
DIN terminal (D)

VZ5120 - □ D □ □ -01-Q



Built-in One-touch fitting

VZ5120 - □ □ □ □ - C6
C8



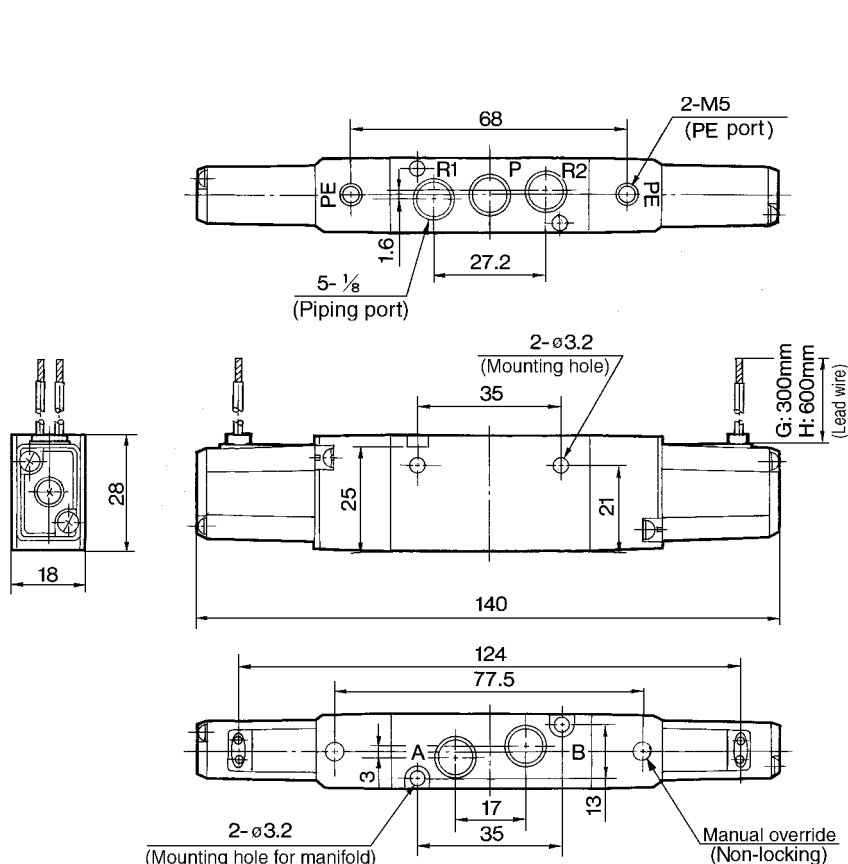


2 Position Double

Grommet (G), (H)

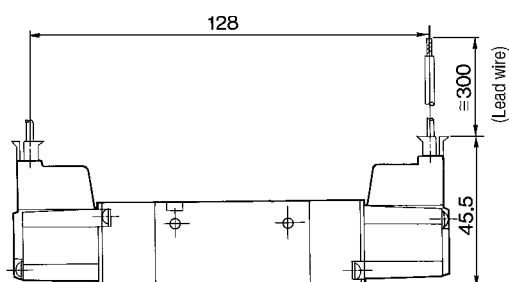
VZ5220 - □ G □ □ -01

Note: This valve series is now only available with DIN connector.



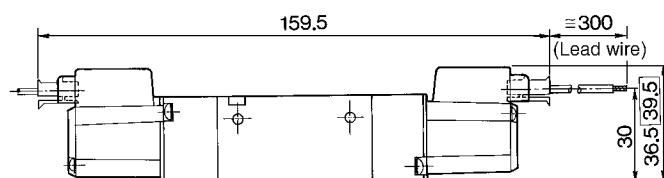
L plug connector (L)

VZ5220 - □ L □ □ -01



M plug connector (M)

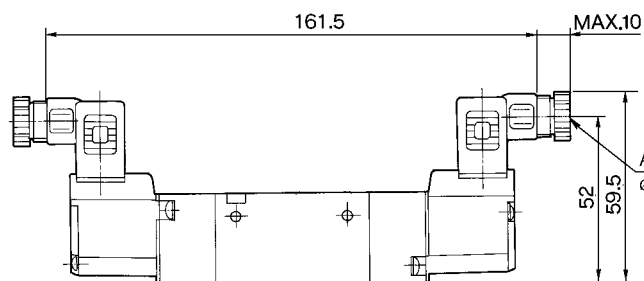
VZ5220 - □ M □ □ -01



□ : With indicator light and surge voltage suppressor

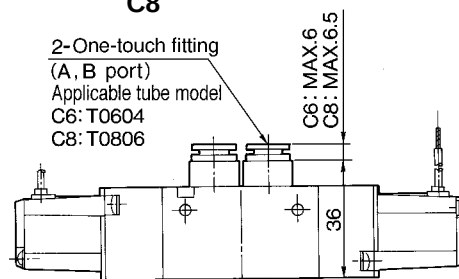
DIN terminal (D)

VZ5220 - □ D □ □ -01-Q



Built-in One-touch fitting

VZ5220- □ □ □ □ - C6
C8



SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

VS7

VQ7

VZ5000

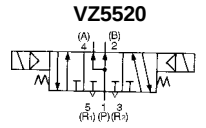
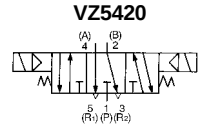
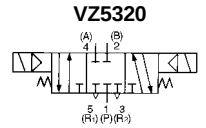
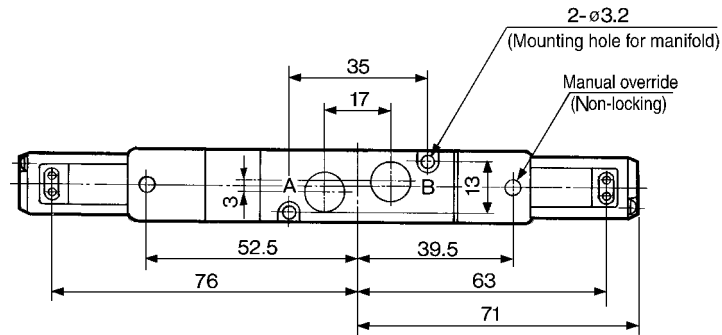
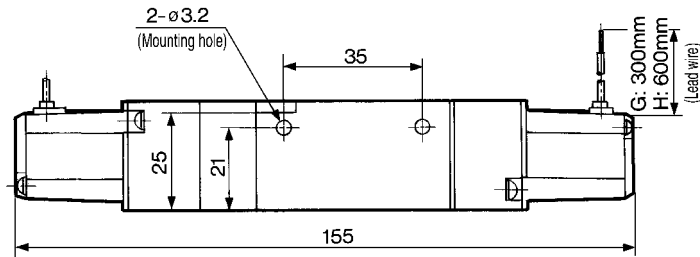
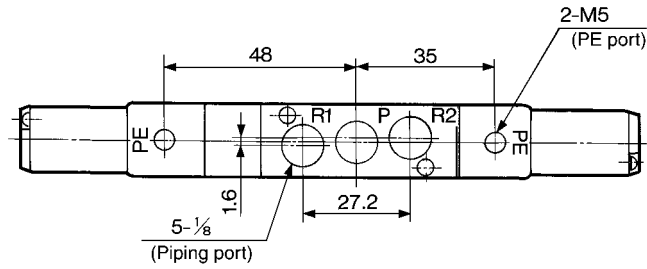
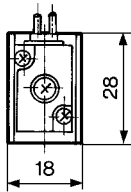


3 Position Closed Centre/Exhaust Centre/Pressure Centre

Grommet (G), (H)

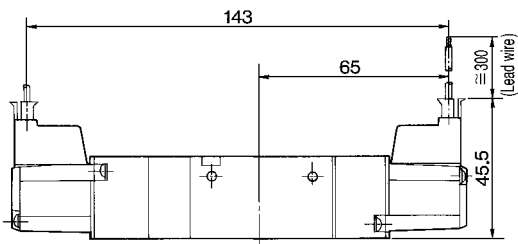
VZ5 $\frac{3}{4}$ 20- □ G □ □ -01

Note: This valve series is now only available with DIN connector.



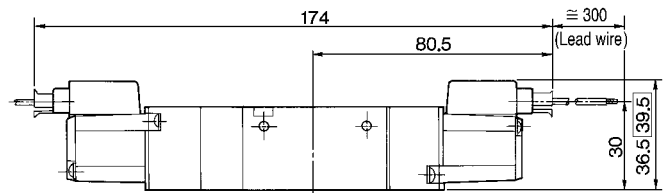
L plug connector (L)

VZ5 $\frac{3}{4}$ 20- □ L □ □ -01



M plug connector (M)

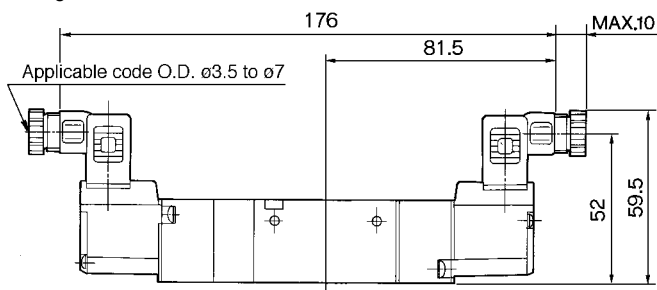
VZ5 $\frac{3}{4}$ 20- □ M □ □ -01



□: With indicator light and surge voltage suppressor

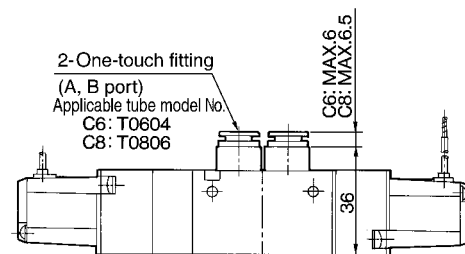
DIN terminal (D)

VZ5 $\frac{3}{4}$ 20- □ D □ □ -01-Q



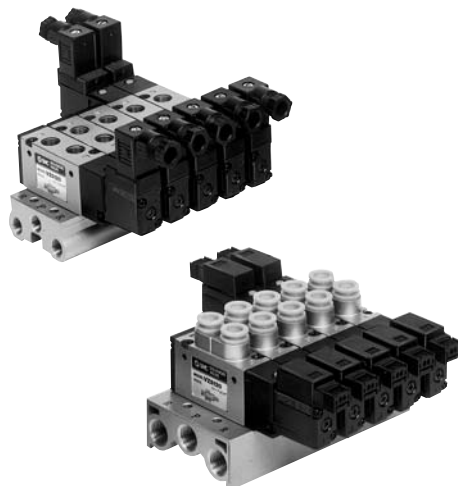
Built-in One-touch fitting

VZ5 $\frac{3}{4}$ 20- □ □ □ □ - C6 C8



Series VZ5000/Body Ported Manifold

Standard Manifold



Specifications

Model		20 type	21 type
Manifold style		Single base/B mount	
P (SUP), R (EXH)		Common SUP and EXH	
Valve stations		2 to 15	2 to 20
A, B port position		Valve	
Port size	P/R port	1/8	1/4
	A/B port	1/8, C6, C8	
Valve effective area (mm ²) (Nl/min) ⁽¹⁾	VZ5□2□	1/8: 11 (589)	1/8: 11 (589)
		C6: 8.6 (472)	C6: 8.6 (472)
		C8: 9.9 (540)	C8: 9.9 (540)



Note 1) Value at manifold base mounted, 2 position single operating

How to Order Manifold Base

To order valves, blank plate assembly and connector assembly mounted onto the manifold, list valves and blank plate assembly with manifold base.

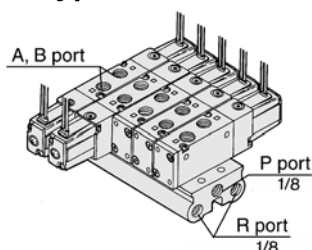
(Sample) VV5Z5-20-031-1 pc. (Manifold base)

VZ5120-5D-01-Q2 pcs. (Valve)

DXT199-22-1A1 pc. (Blank plate assembly)

Common SUP/Common EXH

20 Type



How to Order

E VV5Z5-20-05 1-00F

Ordering source area code

Code	areas
-	Japan, Asia Australia
E	Europe
N	North America

Stations

02	2 stations
⋮	⋮
15	15 stations

P, R Port thread

-	Rc (PT)
00F	G (PF)
00N	NPT
00T	NPTF

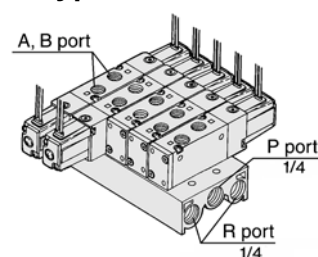
Applicable solenoid valve

VZ5□2□-□ □ □ □-⁰¹_{C6}-Q

Note) If there are more than 6 stations, supply air to P port and exhaust from R port on both sides of the manifold.

Applicable blank plate assembly
DXT199-22-1A

21 Type



How to Order

E VV5Z5-21-05 1-00F

Ordering source area code

Code	areas
-	Japan, Asia Australia
E	Europe
N	North America

Stations

02	2 stations
⋮	⋮
20	20 stations

P, R Port thread

-	Rc (PT)
00F	G (PF)
00N	NPT
00T	NPTF

Applicable individual EXH spacer assembly
DXT199-29-1A



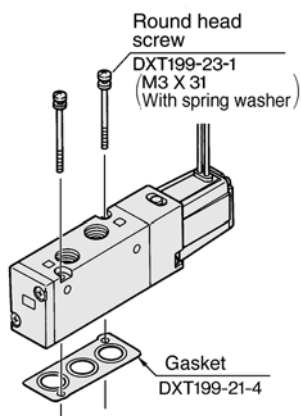
Note) If there are more than 10 stations, supply air to P port and exhaust from R port on both sides of the manifold.



Protective class
class I (Mark: )

Option

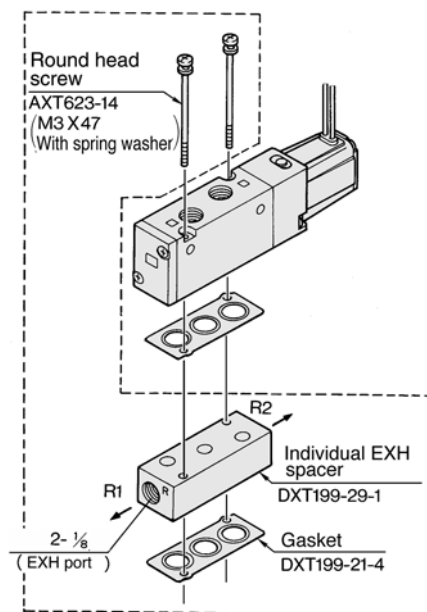
Combinations of Solenoid Valve, Manifold Gasket and Manifold Base



Applicable base

VV5Z5-20
VV5Z5-21

Individual EXH Spacer Assembly DXT199-29-1A



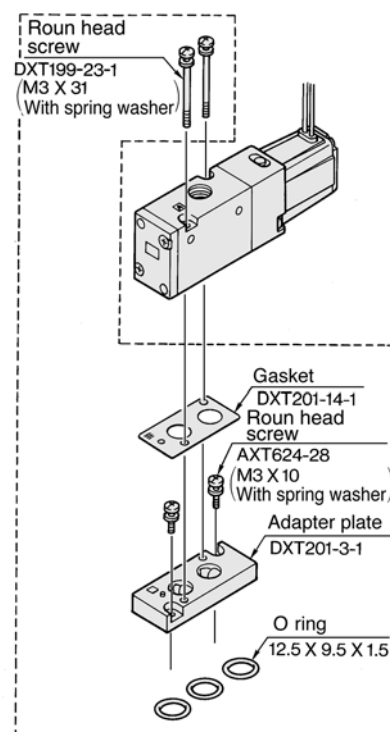
Applicable base

VV5Z5-20
VV5Z5-21

Mounting the VZ500 Series on the VZ5000 Series Manifold:

- Mixed mounting of the VZ500 Series on the VZ5000 Series manifold base is possible through the use of an adapter plate.
- 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 VZ5000 Series.

Adapter Plate Assembly DXT201-3-1A

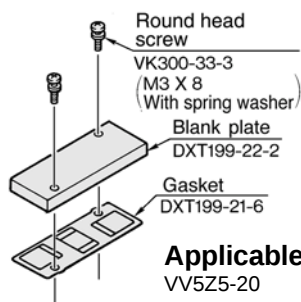


Applicable base

VV5Z5-20
VV5Z5-21

Blank Plate Assembly

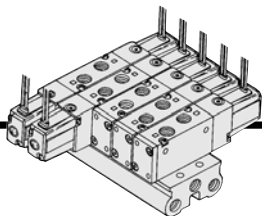
DXT199-22-1A



Applicable base

VV5Z5-20
VV5Z5-21

VZ5000

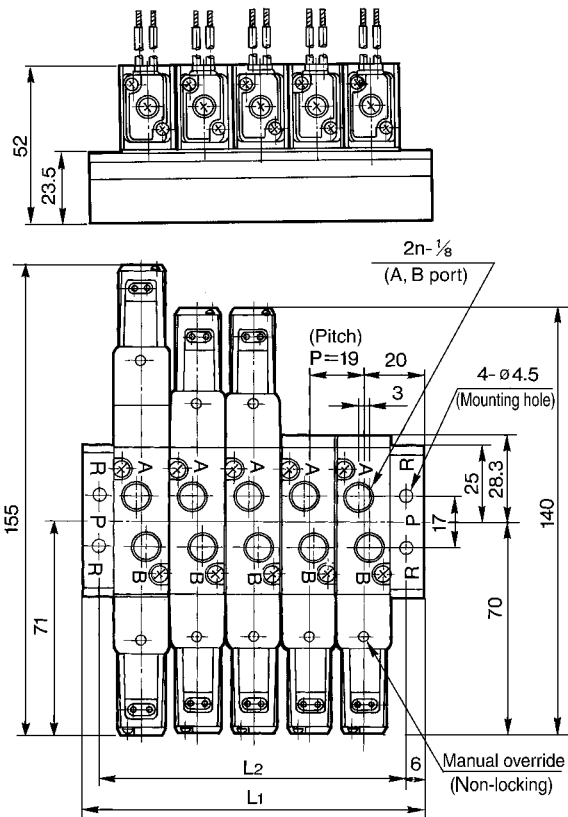
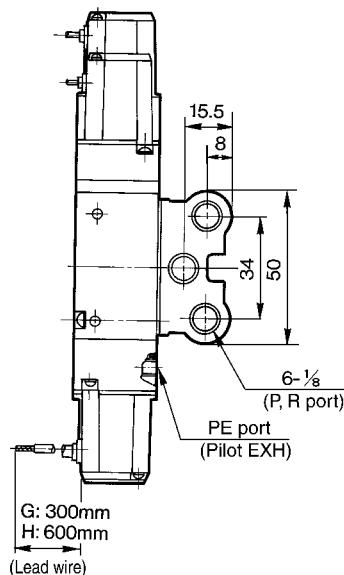


20 Type Manifold

VV5Z5-20- Station 1

Grommet (G), (H)

Note: This valve series is now only available with DIN connector.



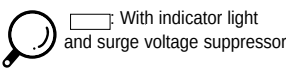
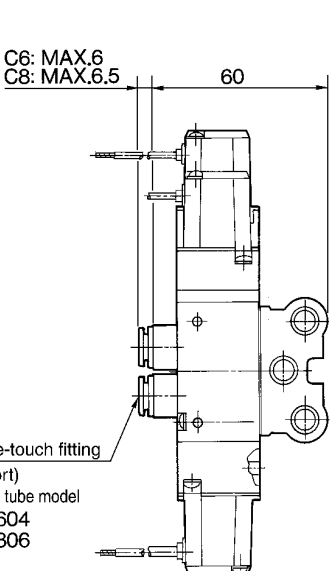
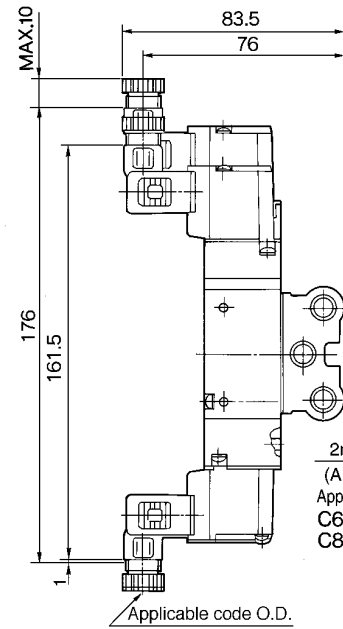
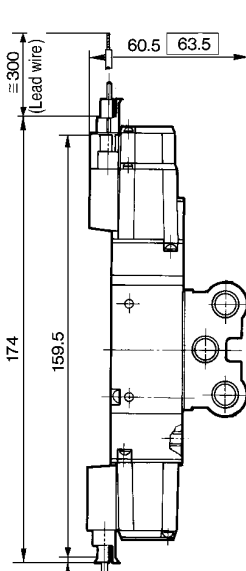
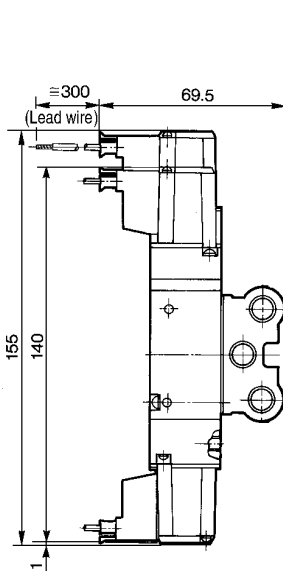
(mm)														
Station	2	3	4	5	6	7	8	9	10	11	12	13	14	15
L1	59	78	97	116	135	154	173	192	211	230	249	268	287	306
L2	47	66	85	104	123	142	161	180	199	218	237	256	275	294

L plug connector (L)

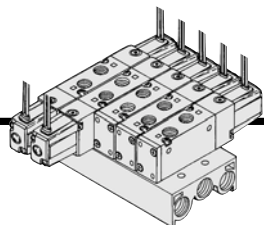
M plug connector (M)

DIN terminal (D)

Built-in One-touch fitting



- SV
- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VQC
- SQ
- VQ
- VQ4
- VQ5
- VQZ
- VQD
- VFS
- VS
- VS7
- VQ7

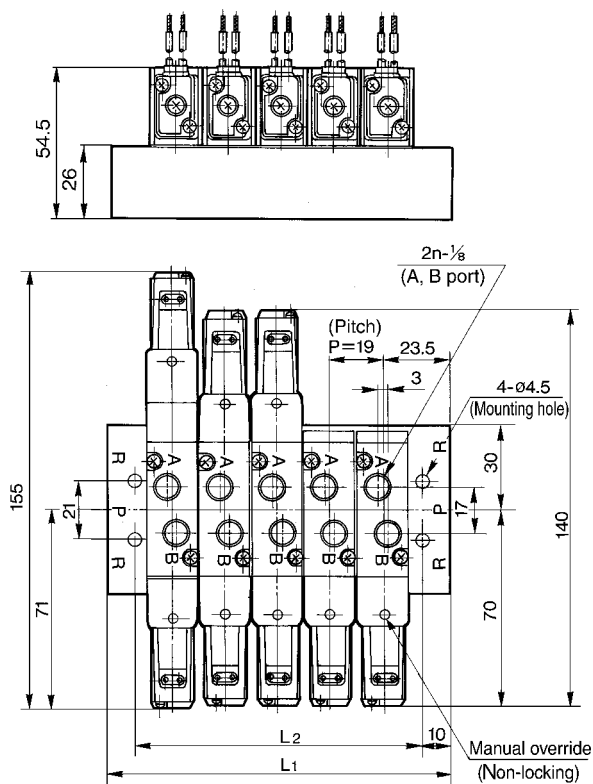
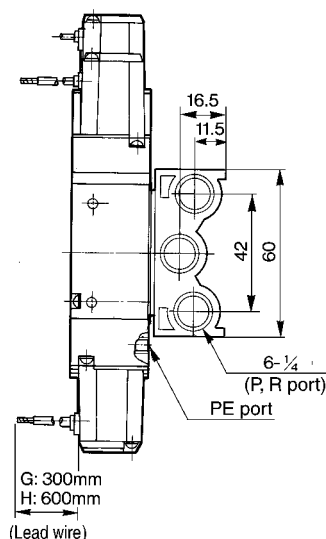


21 Type Manifold

VV5Z5-21- Station 1

Grommet (G), (H)

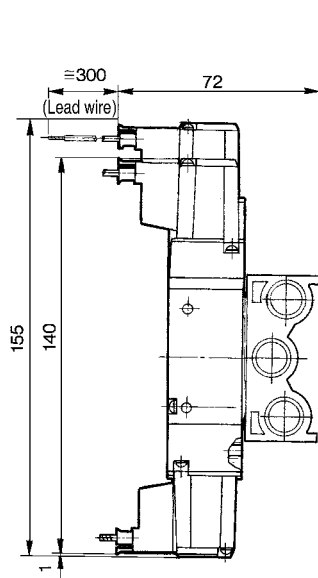
Note: This valve series is now only available with DIN connector.



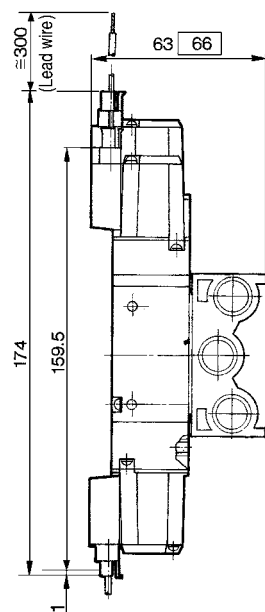
Station	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	66	85	104	123	142	161	180	199	218	237	256	275	294	313	332	351	370	389	408
L2	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388

(mm)

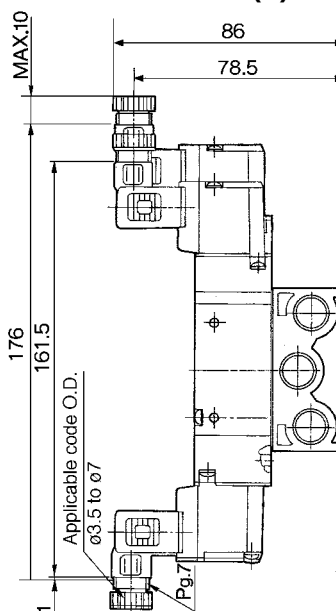
L plug connector (L)



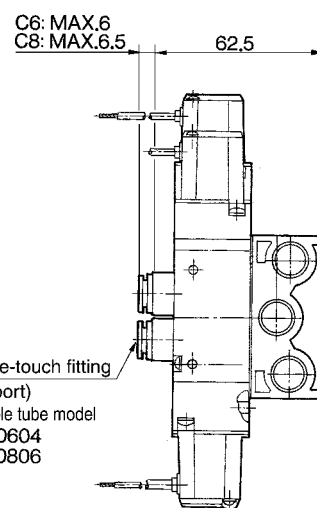
M plug connector (M)



DIN terminal (D)



Built-in One-touch fitting



□: With indicator light and surge voltage suppressor

5 Port Solenoid Valve Base Mounted Series VZ5000

How to Order

Non plug-in **E** VZ5 **1** **4** **0** **5** **D** **□** **□** **□** **□** **Q**

Ordering source area code

Configuration

Body option

Rated voltage

Electrical entry

Indicator light and surge voltage suppressor

Manual override

Port size

Thread

P,R Port thread

-	Rc (PT)
F	G (PF)
N	NPT
T	NPTF

Configuration

1 2 position single

2 2 position double

3 3 position closed centre

4 3 position exhaust centre

5 3 position pressure centre

Body option

0: Individual pilot exhaust style

3: Common exhaust (pilot and main valve) style

Rated voltage

1	100V AC 50/60Hz
2	200V AC 50/60Hz
3	110V AC 50/60Hz
4	220V AC 50/60Hz
5	24V DC
6	12V DC
9	Others, less than 250VAC and 50VDC

Electrical entry

DIN terminal

D: With connector

DO: Without connector

Manual override/Non plug-in

—: Non-locking push style

C: Locking C style (Lever)

B: Locking B style (Slotted)

Indicator light and surge voltage suppressor

—	None
Z*	With indicator light and surge suppressor
S	With surge voltage suppressor

*Not available for DOZ

Protective class class I (Mark: ⚡)

Ordering source area code

Code	areas
-	Japan, Asia Australia
E	Europe
N	North America

Port size

—: Without sub-plate

01: 1/8⁽¹⁾ With sub-plate

02: 1/4 With sub-plate

Note 1) R1, R2 port: 1/4

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

VS7

VQ7

VZ5000

Applicable for Cylinder Actuation (up to ø50)
Compact Size (Width: 18mm)
Low Power Consumption: 1.8 WDC



Specifications

Fluid		Air
Operating pressure (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		Max. 50°C
Response time (ms) {0.5MPa} ⁽¹⁾	2 position single/double	20 or less
	3 position	50 or less
Max. operating frequency (Hz)	2 position single/double	10
	3 position	3
Manual override ⁽²⁾		Non-locking push, Locking slotted, Locking lever
Pilot exhaust		Individual pilot exhaust, Common exhaust (pilot and main valve)
Lubrication		Non-lube
Mounting position		Free
Impact/Vibration resistance (m/s ²) ⁽³⁾		300/50
Protection		Dust proof



Note 1) According to dynamic performance test of JIS B8375-1981.

(Coil temperature 20°C, rated voltage, without surge voltage suppressor)

Note 2) When operating the locking style manually, apply torque of 0.2Nm or less.

Note 3) Impact resistance: No malfunction from test using drop impact tester, to axis and right angle directions of main valve and armature, each one time when energized and de-energized. (Value in the initial stage.)

Vibration resistance: No malfunction from test with 8.3 to 2000Hz 1 sweep, to axis and right angle directions of main valve and armature, each one time when energized and de-energized. (Value in the initial stage.)

Solenoid Specifications

Electrical entry			DIN terminal (D)			
Coil rated voltage (V)	AC50/60Hz		100, 200,110, 220			
	DC		24,12			
Allowable voltage (%)			−15 to +10% of rated voltage			
Power consumption (W)	[Current mA]	DC	1.8 (with light 2.1)[24V DC: 75 (with light 87.5)]			
Apparent power (VA) [Current mA]	AC	Inrush	4.5/50Hz, 4.2/60Hz <table><tr><td>100V AC: 45/50Hz, 42/60Hz</td></tr><tr><td>200V AC: 22.5/50Hz, 21/60Hz</td></tr></table>		100V AC: 45/50Hz, 42/60Hz	200V AC: 22.5/50Hz, 21/60Hz
		100V AC: 45/50Hz, 42/60Hz				
200V AC: 22.5/50Hz, 21/60Hz						
		Holding	3.5/50Hz, 3/60Hz <table><tr><td>100V AC: 35/50Hz, 30/60Hz</td></tr><tr><td>200V AC: 17.5/50Hz, 15/60Hz</td></tr></table>		100V AC: 35/50Hz, 30/60Hz	200V AC: 17.5/50Hz, 15/60Hz
100V AC: 35/50Hz, 30/60Hz						
200V AC: 17.5/50Hz, 15/60Hz						
Surge voltage suppressor			DC: Diode, AC: ZNR ⁽²⁾			
Indicator light			DC: LED (red), AC: Neon light			



Refer to p.1.6-58 to 1.6-61 for manifold use.

Effective Area and Weight

Valve model	Configuration		Port size	Effective area (mm ²) (Nl/min) ⁽¹⁾	Weight (g) ⁽²⁾
VZ5□40-□□-01	2 position	Single	⁽³⁾ 1/8 1/4	12.6 (687)	200 (120)
		Double		12.6 (687)	240 (160)
	3 position	Closed centre		8.5 (461)	240 (160)
		Exhaust centre		9 (491)[6.5(353)]	
		Pressure centre		P→A,B: 13.5(736) [7 (383)]	
				A, B→R1, R2: 7(383)	

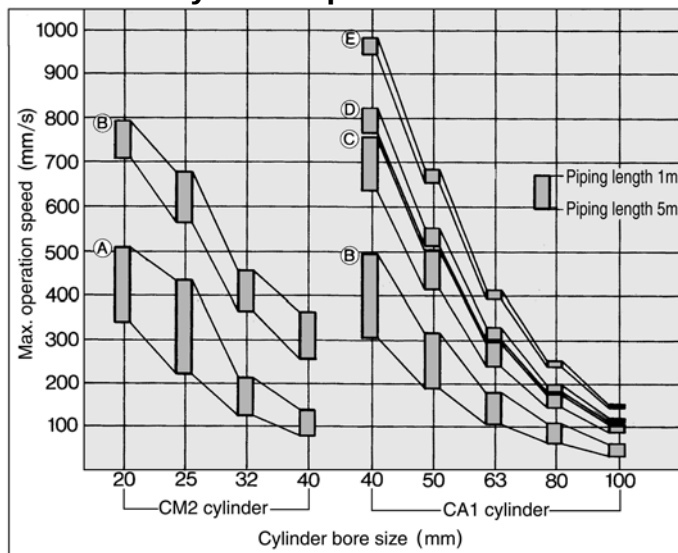


Note 1) [] normal position: Exhaust centre A, B → R1, R2, Pressure centre P → A, B

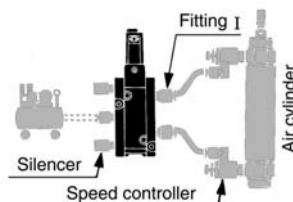
Note 2) (): Without sub-plate

Note 3) If P, A, B ports are 1/8, R1 and R2 port should be 1/4.

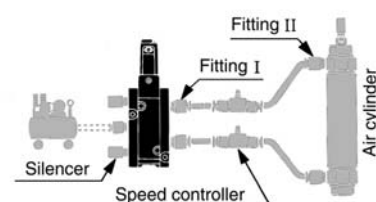
Maximum Cylinder Speed



System figure 1



System figure 2

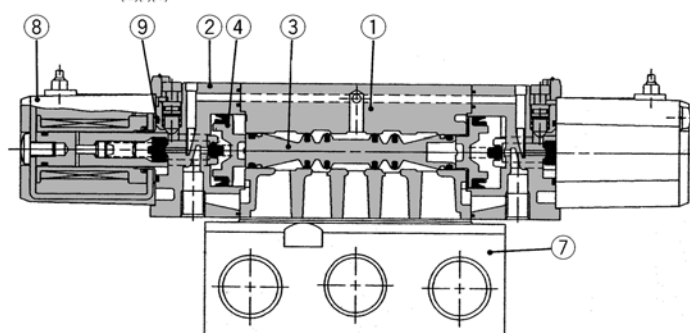
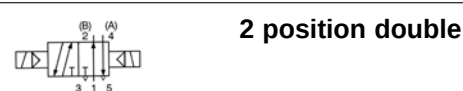
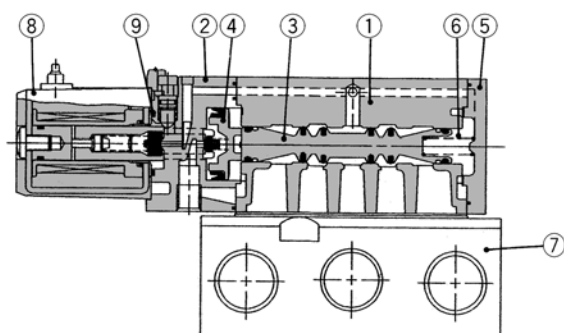
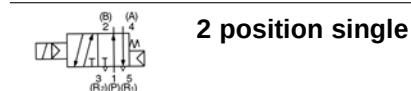


Conditions: Pressure 0.5MPa, Load 50%
(w/ extended cylinder) Cylinder stroke CM2: 300mm
CA1: 500mm

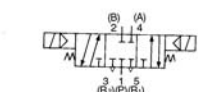
System construction

System	Solenoid valve	Speed controller	Silencer	Fitting (tube O.D.X connecting screw)		System figure
				I	II	
A	VZ5□40-01 1/8 (S=12.6mm ²)	AS2301F-01-04	AN110-01 (S=35mm ²)	ø4 X 1/8	—	1
B	VZ5□40-02 1/4 (S=12.6mm ²)	AS3301F-02-06	AN200-02 (S=35mm ²)	ø6 X 1/4	—	
C		AS3301F-03-08		ø8 X 1/4	—	
D		AS3301F-03-10		ø10 X 1/4	—	
E		AS4001F-12		ø12 X 1/4	ø12 X 1/2	2

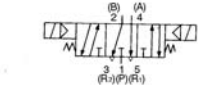
Construction



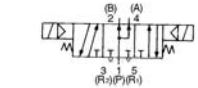
3 position closed centre



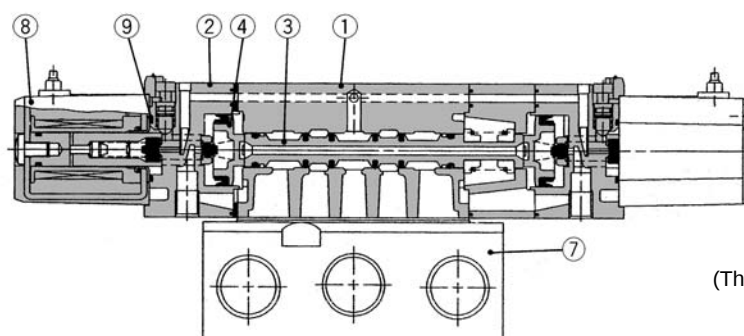
3 position exhaust centre



3 position pressure centre



3 position closed centre/exhaust centre/pressure centre



(This figure is closed centre.)

Component Parts

No.	Description	Material	Remark
①	Body	Die cast aluminium	Platinum silver
②	Piston plate	Resin	Black
③	Spool valve	Aluminium/NBR	
④	Piston	Resin	
⑤	End cover	Die cast aluminium	Black painted
⑥	Spool spring	Stainless steel	

Replacement Parts

No.	Description	Material	Parts No.	Remark
⑦	Sub-plate	Die cast aluminium	DXT199-7-1P	1/8
			DXT199-7-2P	1/4
⑧	Solenoid assembly	Epoxy, stainless steel	DXT170-C-□□□	
⑨	O ring	NBR	13 X 11 X 1	Common with series VZ3000

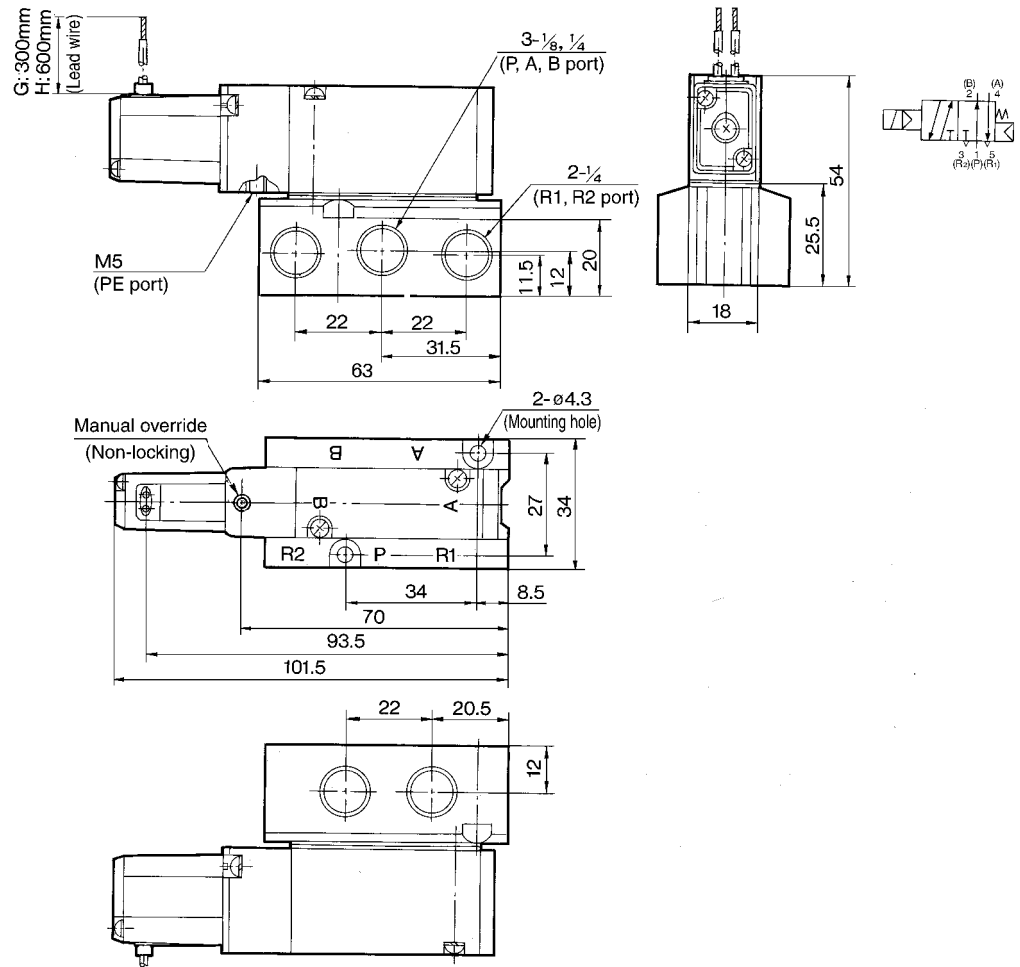
VZ5000



2 Position Single

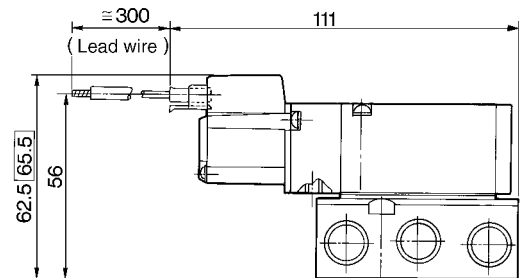
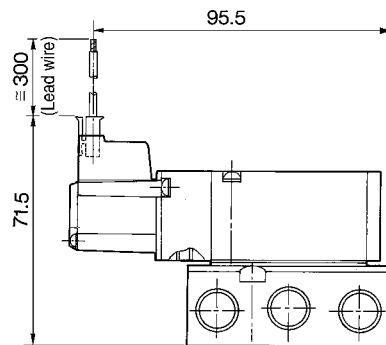
Grommet (G), (H)
VZ5140-□G□□-01
VZ5140-□H□□-02

Note: This valve series is now only available with DIN connector.

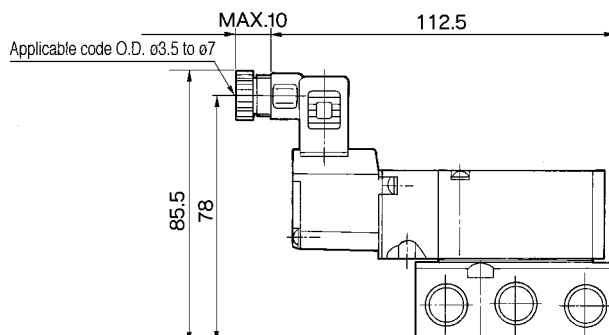


L plug connector (L)
VZ5140-□L□□-01
VZ5140-□L□□-02

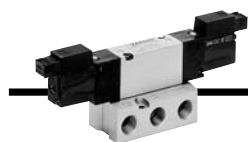
M plug connector (M)
VZ5140-□M□□-01
VZ5140-□M□□-02



DIN terminal (D)
VZ5140-□D□□-01
VZ5140-□D□□-02 -Q



□: With indicator light and surge voltage suppressor

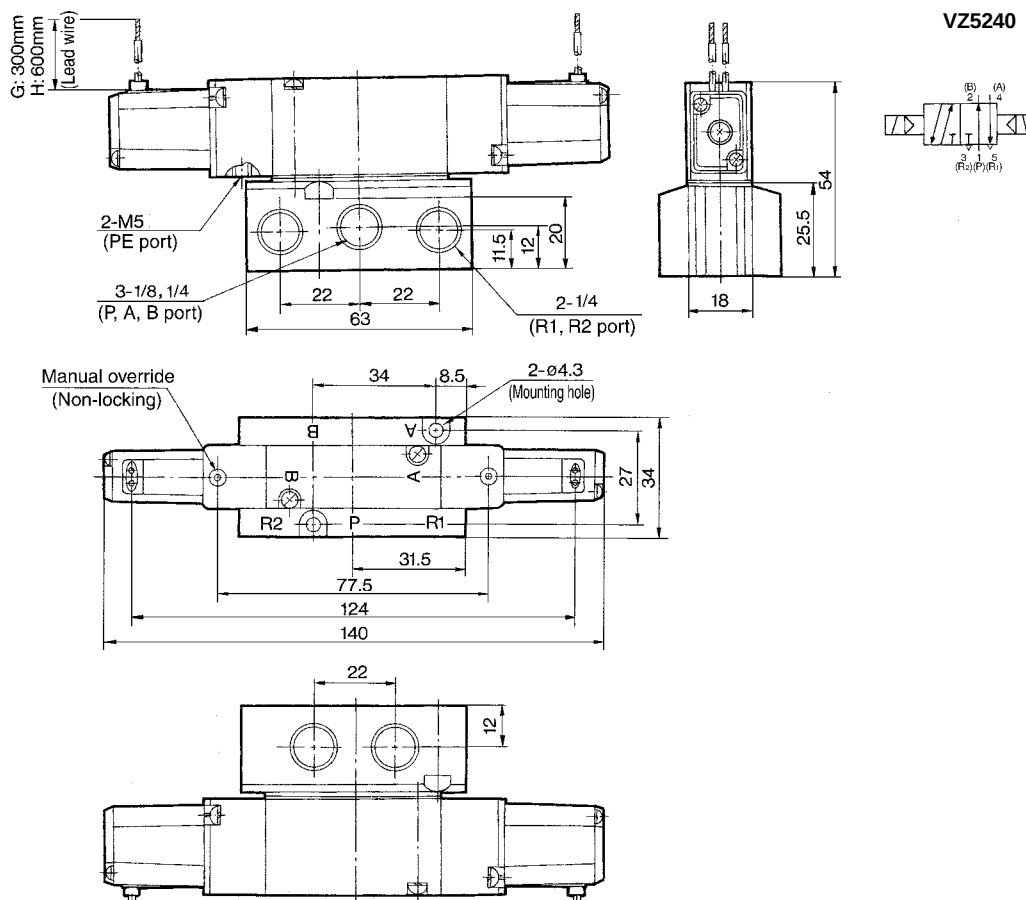


2 Position Double

Grommet (G), (H)

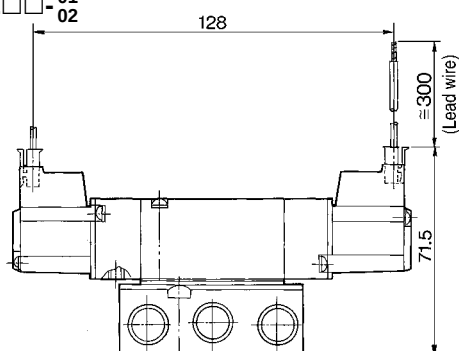
VZ5240-□G□□-01
H□□-02

Note: This valve series is now only available with DIN connector.



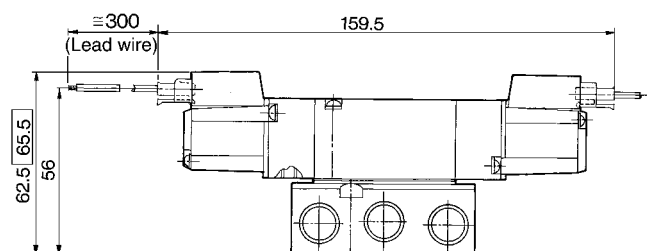
L plug connector (L)

VZ5240-□L□□-01
02



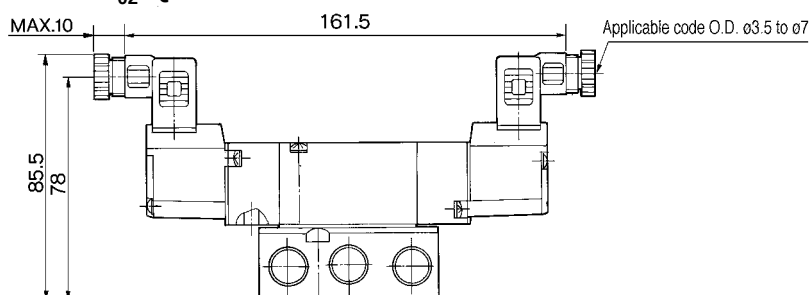
M plug connector (M)

VZ5240-□M□□-01
02



DIN terminal (D)

VZ5240-□D□□-01
02-Q



SV
SY
SYJ
SX
VK
VZ
VF
VFR
VP7

VQC
SQ
VQ
VQ4
VQ5
VQZ
VQD
VFS
VS
VS7
VQ7

VZ5000

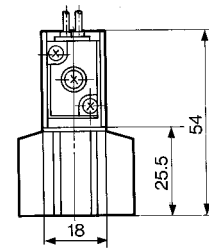
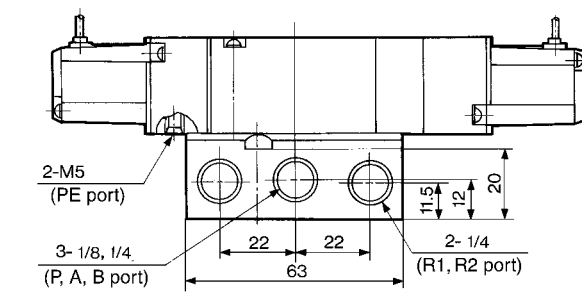


3 Position Closed Centre/Exhaust Centre/Pressure Centre

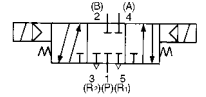
Grommet (G), (H)

VZ5 $\frac{3}{4}$ 40-□G□□-01
5 H□□-02

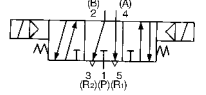
Note: This valve series is now only available with DIN connector.



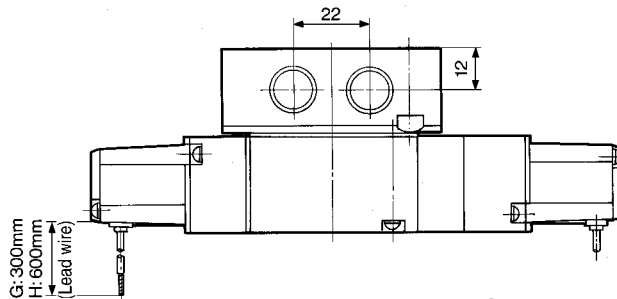
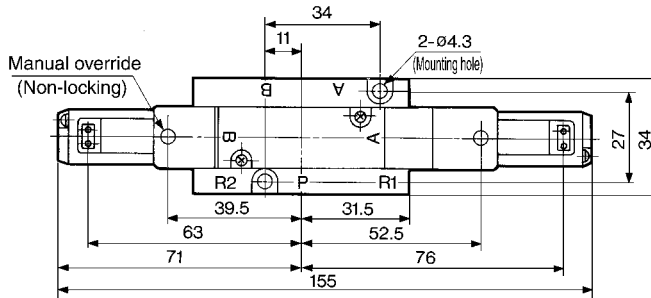
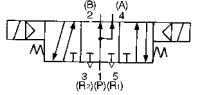
VZ5340



VZ5440

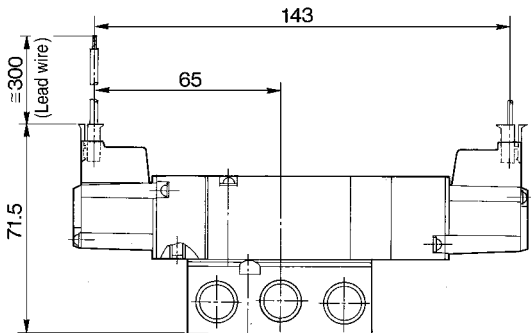


VZ5540



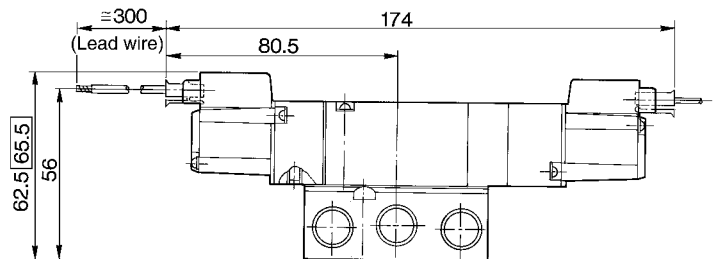
L plug connector (L)

VZ5 $\frac{3}{4}$ 40-□L□□-01
5 □□□-02



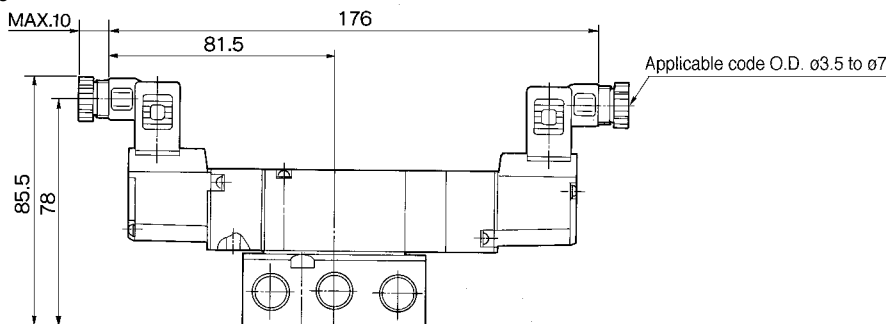
M plug connector (M)

VZ5 $\frac{3}{4}$ 40-□M□□-01
5 □□□-02



DIN terminal (D)

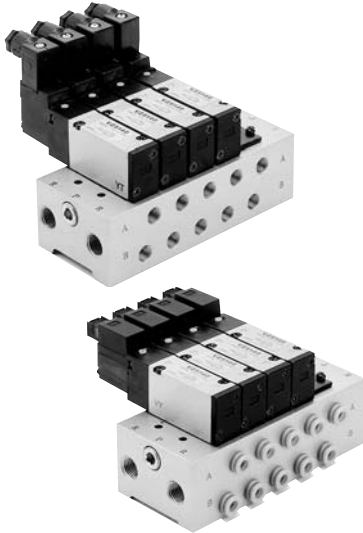
VZ5 $\frac{3}{4}$ 40-□D□□-01
5 □□□-02 -Q



□: With indicator light and surge voltage suppressor

Series VZ5000/Base Mounted Manifold

Standard Manifold



Specifications

Model		40 type	41 type	42 type
Manifold style		Single base/B mount		
P (SUP), R (EXH)		Common SUP and EXH		
Valve stations		2 to 20		
A, B port	Position	Base	Base	
	Direction	Bottom	Side	
Port size	P/R port	1/4		
	A/B port	1/8		C6 (ø6 One-touch fitting)
				C8 (ø8 One-touch fitting)
Valve effective area (mm ²)(Nl/min) ⁽¹⁾	VZ5□4□	11.9(648)	9.5(520)	8.5(461)
				9.7(530)



Note 1) Value at manifold base mounted, 2 position single operating

How to Order Manifold Base

To order valves and blank plate assembly mounted onto the manifold, list valves and blank plate assembly with manifold base.

(Sample) VV5Z5-41-031-01.....1 pc. (Manifold base)
 VZ5140-5D-Q.....2 pcs. (Valve)
 DXT199-22-1.....1 pc. (Blank plate assembly)

SV

SY

SYJ

SX

VK

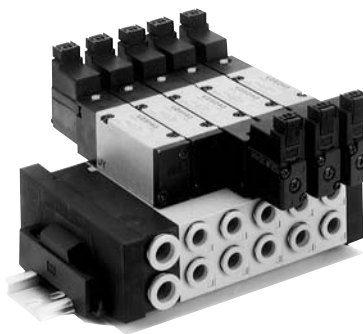
VZ

VF

VFR

VP7

DIN Rail Manifold



Specifications

Model		45 type
Manifold style		Stacking non plug-in
P (SUP), R (EXH)		Common SUP and EXH
Valve stations		2 to 20
A, B port	Position	Base
	Direction	Side
Port size	P/R port	C10 (ø10 One-touch fitting)
	A/B port	C6 (ø6 One-touch fitting) C8 (ø8 One-touch fitting)
Valve effective area (mm ²) (Nl/min) ⁽¹⁾	VZ5□43	C6: 9.3 (510) C8: 10.6 (579)
Connector		—
Internal wiring		—



Note 1) Value at manifold base mounted, 2 position single operating

How to Order Manifold Base

To order valves and blank plate assembly mounted onto the manifold, list valves and blank plate assembly with manifold base.

(Sample) VV5Z5-45D-06-C8C.....1 pc. (Manifold base)
 VZ5143-5DZ-Q.....2 pcs. (Valve)
 VZ5243-5DZ-Q.....3 pcs. (Valve)
 VZ5000-65-1A.....1 pc. (Blank plate assembly)

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

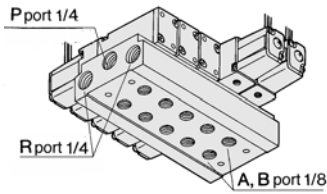
VS7

VQ7

VZ5000

Common SUP/Common EXH

40 Type



How to Order

E VV5Z5 - 40 - **05** 2 - **01**

Ordering source area code

Code	areas
-	Japan,Asia Australia
E	Europe
N	North America

Stations

02	2 stations
⋮	⋮
20	20 stations

A, B port size

01	1/8
----	-----

P,R Port thread

-	Rc (PT)
F	G (PF)
N	NPT
T	NPTF



Note) If there are more than 10 stations, supply air to P port and exhaust from R port on both sides of the manifold.

Applicable solenoid valve

VZ5□4□-□ □□□-Q

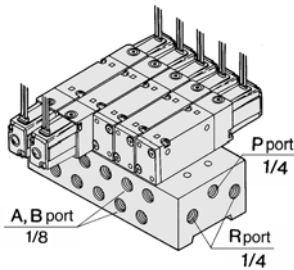
Applicable blank plate assembly
DXT199-22-1A

Applicable individual EXH spacer assembly
DXT199-29-2A

Applicable individual SUP spacer assembly
DXT199-35-1A

Applicable interface regulator
ARBZ5000-00-P

41 Type



How to Order

E VV5Z5 - 41 - **05** 1 - **01**

Ordering source area code

Code	areas
-	Japan,Asia Australia
E	Europe
N	North America

Stations

02	2 stations
⋮	⋮
20	20 stations

A, B port size

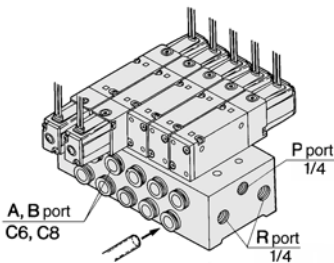
01	1/8
----	-----

P,R Port thread

-	Rc (PT)
F	G (PF)
N	NPT
T	NPTF

Note) If there are more than 8 stations, supply air to P port and exhaust from R port on both sides of the manifold.

42 Type



How to Order

E VV5Z5 - 42 - **05** 1 - **C6**

Ordering source area code

Code	areas
-	Japan,Asia Australia
E	Europe
N	North America

Stations

02	2 stations
⋮	⋮
20	20 stations

A, B port size

C6	ø6 One-touch fitting
C8	ø8 One-touch fitting

P,R Port thread

-	Rc (PT)
F	G (PF)
N	NPT
T	NPTF

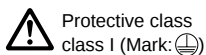
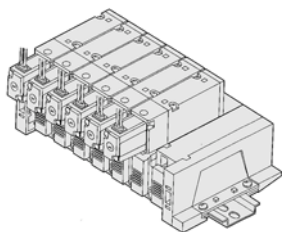


Note) If there are more than 8 stations, supply air to P port and exhaust from R port on both sides of the manifold.

DIN Rail Manifold

Common SUP/Common EXH

45 Type (Non plug-in style) How to Order



Protective class
class I (Mark: ⊕)

E VV5Z5 - 45 - **05** **D** - **C8** **C** -

Stations

02	2 stations
⋮	⋮
20	20 stations

Ordering source area code

Code	areas
-	Japan,Asia Australia
E	Europe
N	North America

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 specification

*For a special specification, use the manifold specification sheet or the like to provide instructions.

A, B port size

C6	ø6 One-touch fitting
C8	ø8 One-touch fitting
M*	Mix

*For a mixed specification, use the manifold specification sheet or the like to provide instructions.

DIN rail length

	Standard
-	Standard
3	For 3 stations
⋮	⋮
20	For 20 stations

Specify a rail that is longer than the standard length.

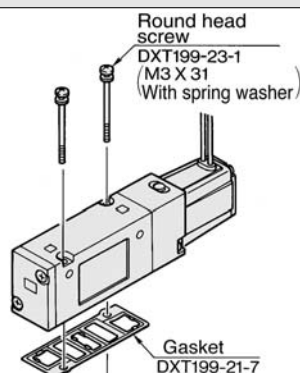
Applicable solenoid valve

VZ5□4□-□ □□□-Q

Applicable blank plate assembly
VZ5000-65-2A

Option/Standard Manifold

Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

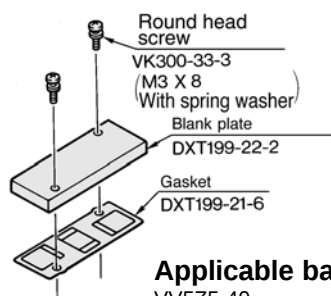


Applicable base

VV5Z5-40
VV5Z5-41
VV5Z5-42

Blank Plate Assembly

DXT199-22-1A

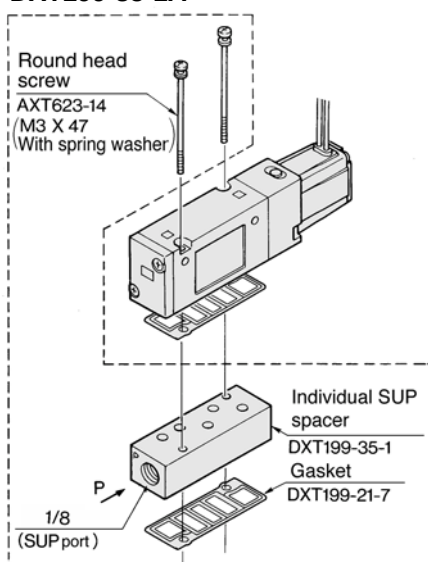


Applicable base

VV5Z5-40
VV5Z5-41
VV5Z5-42

Individual SUP Spacer Assembly

DXT199-35-1A

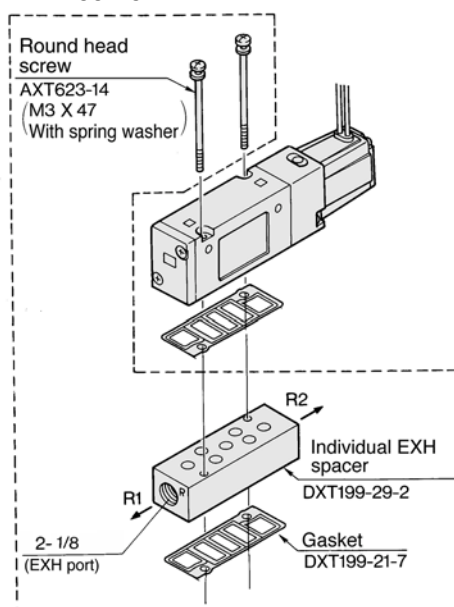


Applicable base

VV5Z5-40
VV5Z5-41
VV5Z5-42

Individual EXH Spacer Assembly

DXT199-29-2A



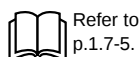
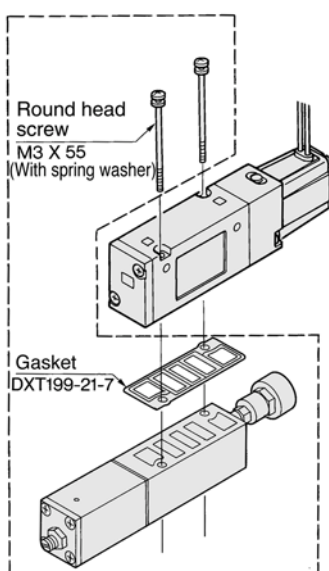
Applicable base

VV5Z5-40
VV5Z5-41
VV5Z5-42

Interface Regulator (P 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



Applicable base

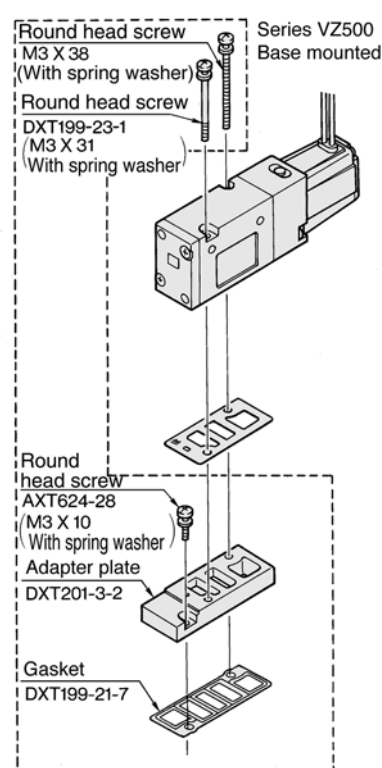
VV5Z5-40
VV5Z5-41
VV5Z5-42

Mounting the VZ500 Series on the VZ5000 Series Manifold:

- Mixed mounting of the VZ500 Series on the VZ5000 Series manifold base is possible through the use of an adapter plate.
- 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 VZ5000 Series.
- In case of base mounting, A port of 3 port valve should be B port of manifold base.

Adapter Plate Assembly

DXT201-3-2A



Applicable base

VV5Z5-40
VV5Z5-41
VV5Z5-42

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

VS7

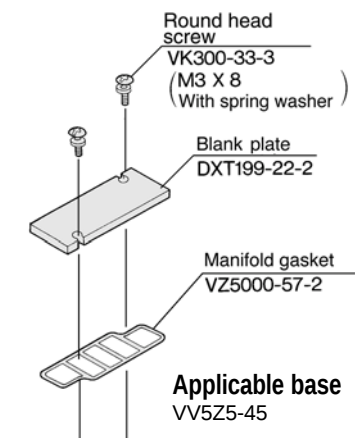
VQ7

VZ5000

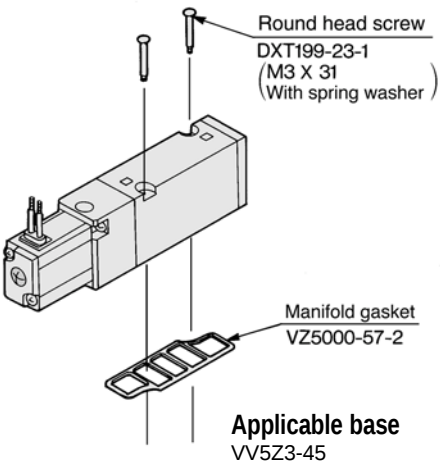
Option/DIN Rail Manifold

Blank Plate Assembly

VZ5000-65-2A



Combinations of Solenoid Valve, Gasket and Manifold Base



SUP Block Valve

By placing a SUP block valve in the pressure supply passage of the manifold base, two or more types of high and low pressures can be supplied by a single manifold.

VZ5000-68-1A



EXH Block Valve

By placing an EXH block valve in the exhaust passage of the manifold base, the exhaust air of the valve can be separated so as not to affect other valves.

VZ5000-68-1A

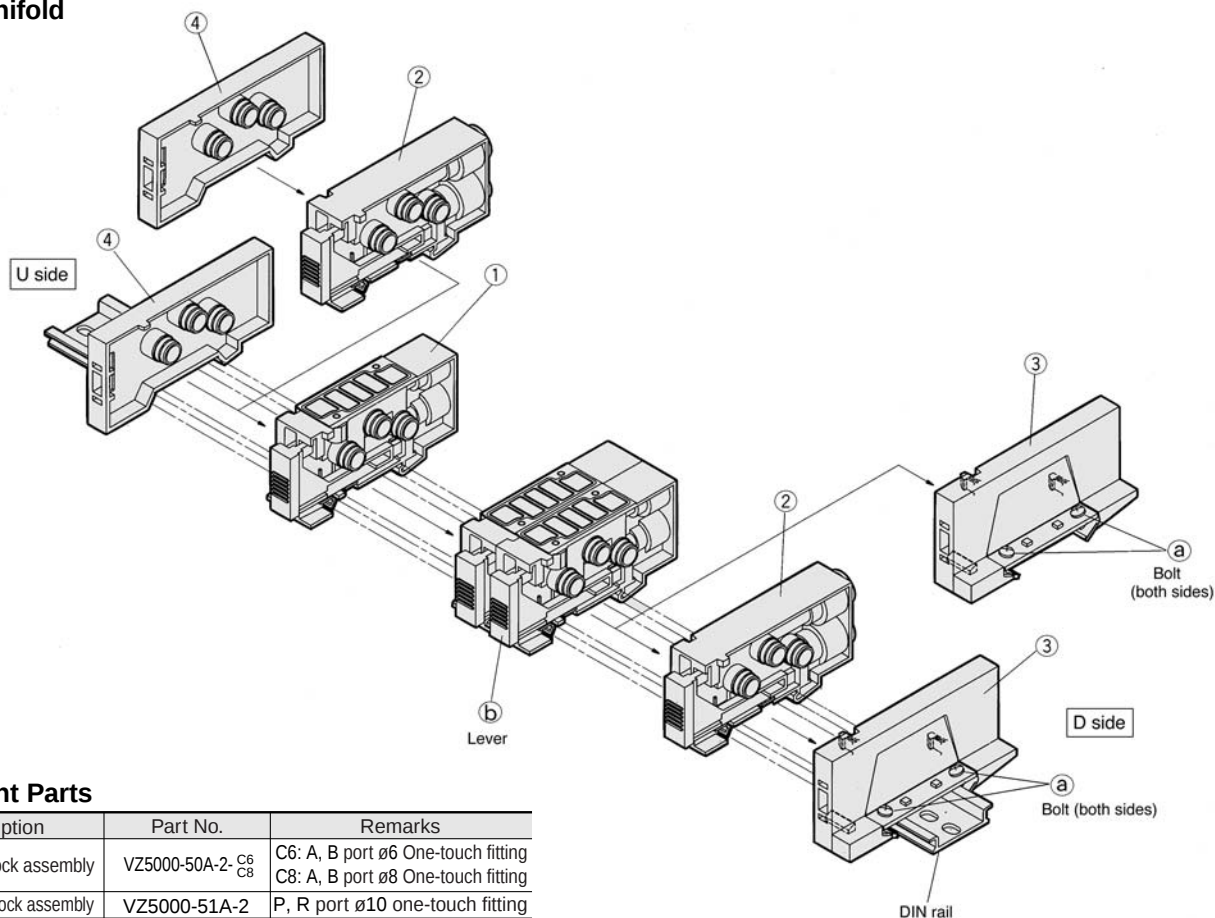


Applicable Plug Assembly (D-sub Connector Cable Assembly)

Cable length	Assembly No.	Component parts
1m	GVVZS3000-21A-1S (1m)	Applicable for plug MIL standard D-sub connector 25 Pin Cable 25 core X 0.3mm ²
3m	GVVZS3000-21A-2S (3m)	
5m	GVVZS3000-21A-3S (5m)	
8m	GVVZS3000-21A-4S (8m)	

Exploded View/DIN Rail Manifold

45 Type Manifold



Replacement Parts

No.	Description	Part No.	Remarks
①	Manifold block assembly	VZ5000-50A-2- C6 C8	C6: A, B port $\phi 6$ One-touch fitting C8: A, B port $\phi 8$ One-touch fitting
②	SUP/EXH block assembly	VZ5000-51A-2	P, R port $\phi 10$ one-touch fitting
③	End block assembly	VZ5000-52A-2D	For D side
④	End block assembly	VZ5000-52A-2U	For U side

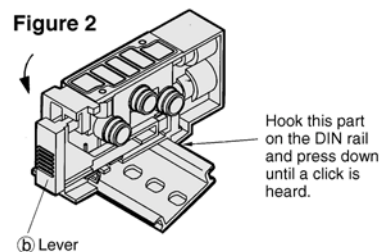
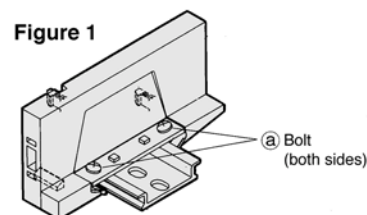
How to Increase Manifold Base

Manifold bases can be added at any location.

- 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.)
- 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.)
- Mount additional manifold block ass'y on the DIN rail as shown in the figure 2.
- Press block ass'y and tighten bolt (a) to fix them to the DIN rail.



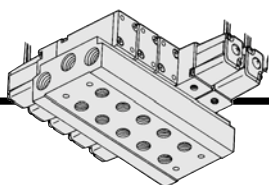
Note) • When there are 10 or fewer manifold block assemblies, and more are added to make a total of 11 or more, a supply/exhaust block assembly must also be added.



SV
SY
SYJ
SX
VK
VZ
VF
VFR
VP7

VQC
SQ
VQ
VQ4
VQ5

VQZ
VQD
VFS
VS
VS7
VQ7

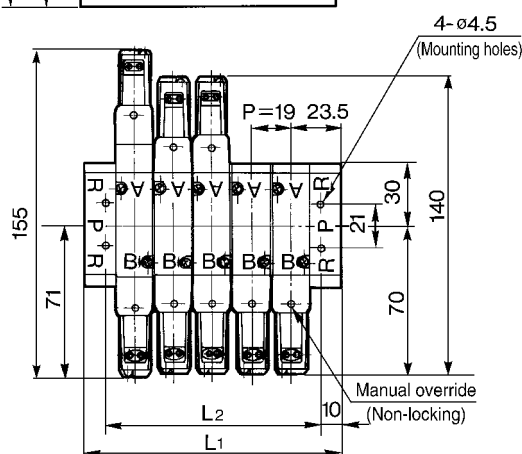
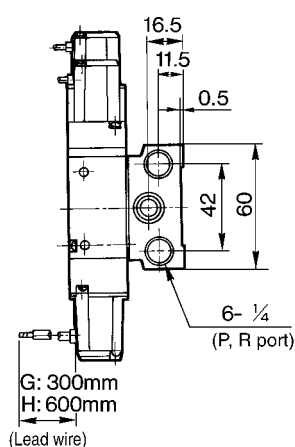
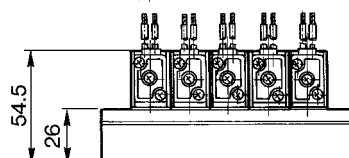
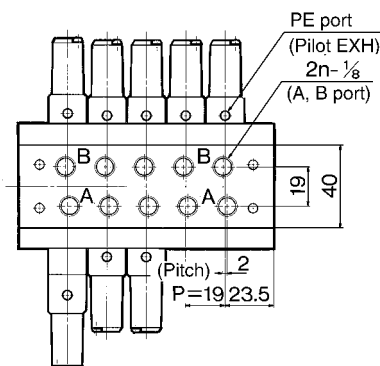


40 Type Manifold: Bottom Ported

VV5Z5-40- Station 2-01

Grommet (G), (H)

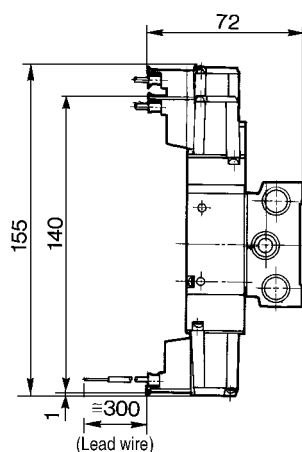
Note: This valve series is now only available with DIN connector.



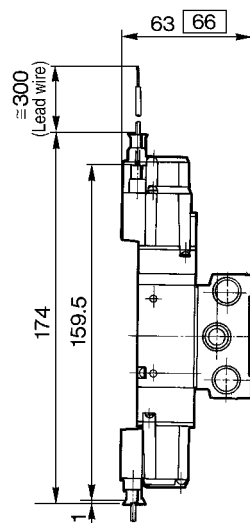
Station	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	66	85	104	123	142	161	180	199	218	237	256	275	294	313	332	351	370	389	408
L2	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388

(mm)

L plug connector (L)

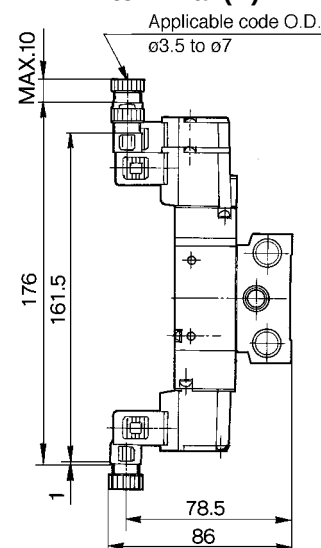


M plug connector (M)

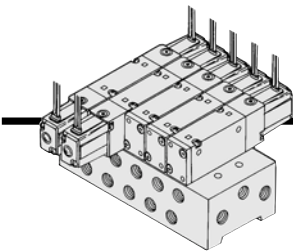


□ : With indicator light and surge voltage suppressor

DIN terminal (D)



VZ5000

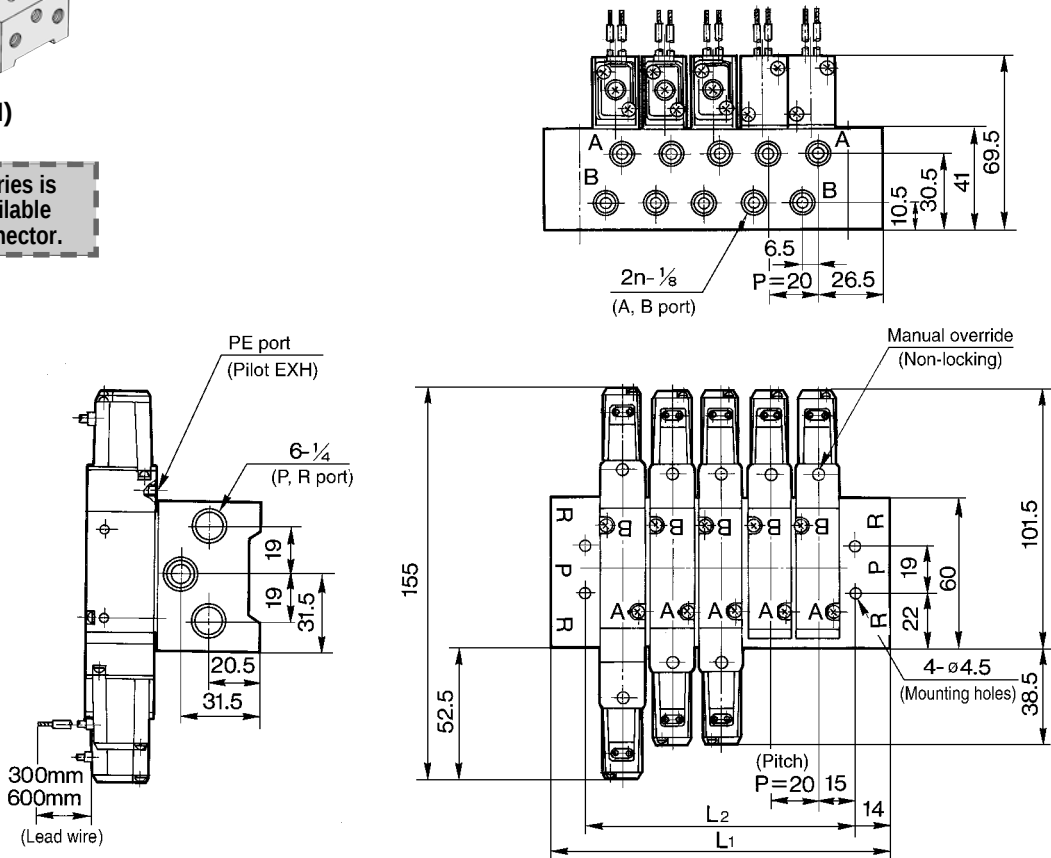


41 Type Manifold: Side Ported

VV5Z5-41- Station 1-01

Grommet (G), (H)

Note: This valve series is now only available with DIN connector.

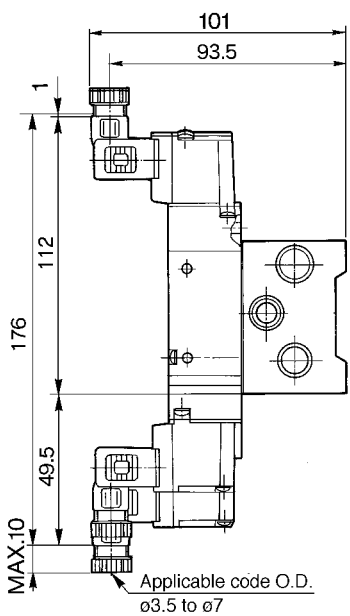
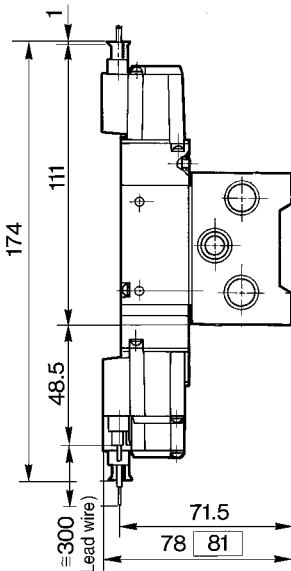
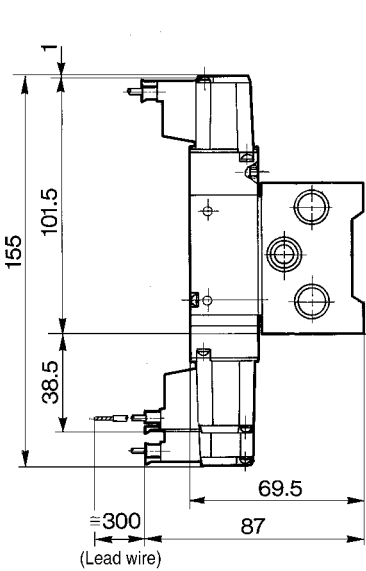


Station	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	78	98	118	138	158	178	198	218	238	258	278	298	318	338	358	378	398	418	438
L2	50	70	90	110	130	150	170	190	210	230	250	270	290	310	330	350	370	390	410

L plug connector (L)

M plug connector (M)

DIN terminal (D)



□: With indicator light and surge voltage suppressor

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

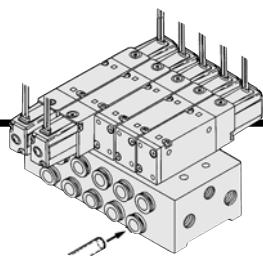
VQD

VFS

VS

VS7

VQ7

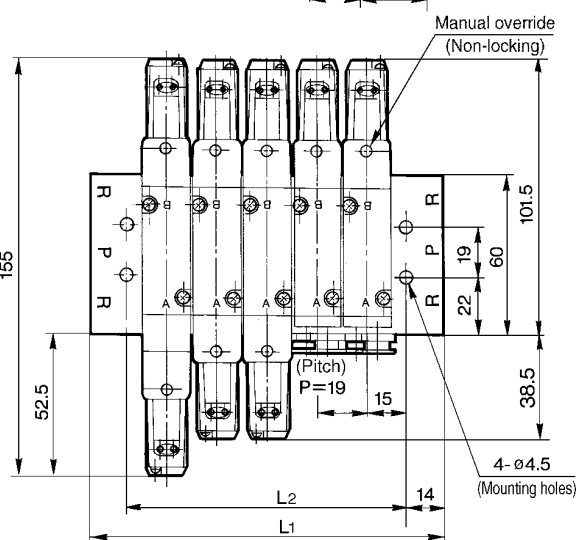
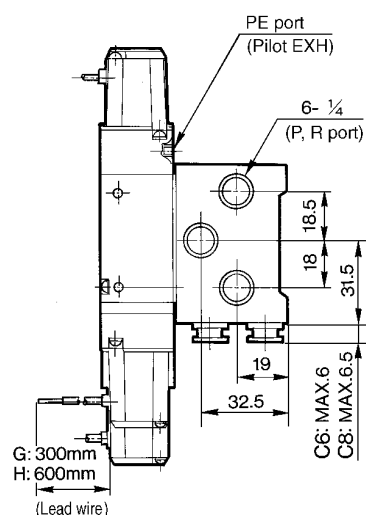
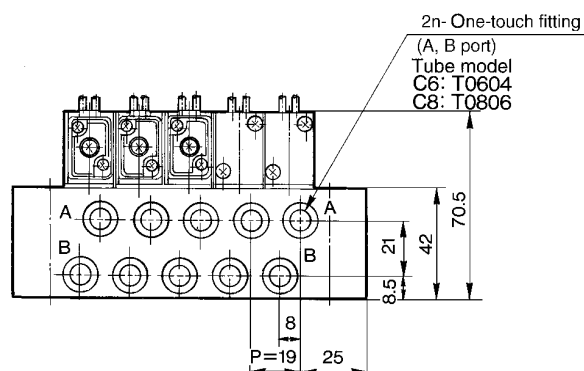


42 Type Manifold: Side Ported

VV5Z5-42- Station 1- C6
C8

Grommet (G), (H)

Note: This valve series is now only available with DIN connector.

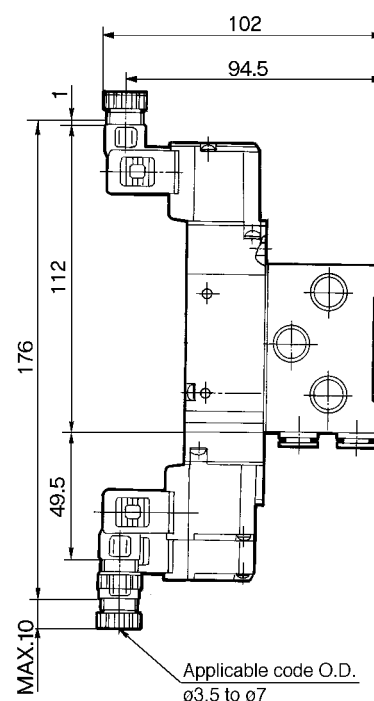
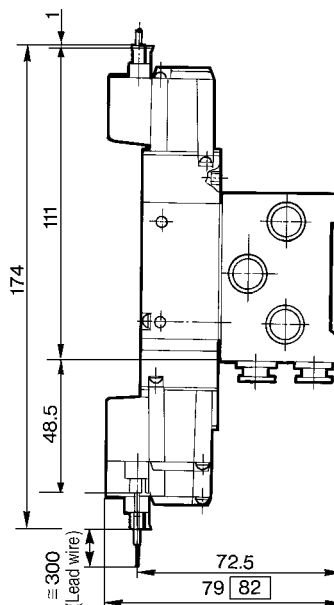
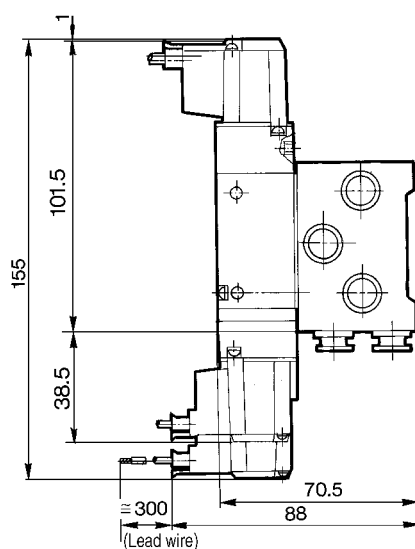


Station	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	77	96	115	134	153	172	191	210	229	248	267	286	305	324	343	362	381	400	419
L2	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

L plug connector (L)

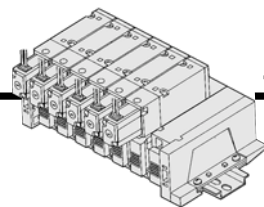
M plug connector (M)

DIN terminal (D)



□: With indicator light and surge voltage suppressor

VZ5000



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

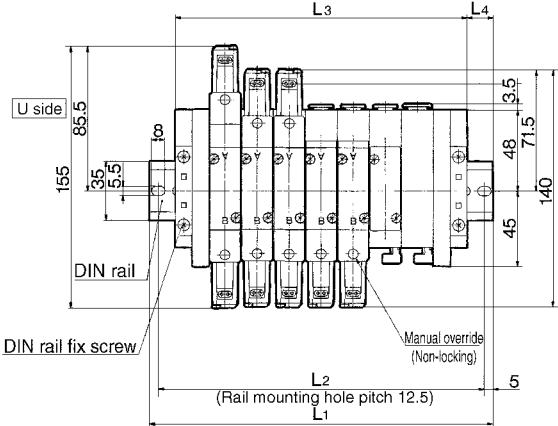
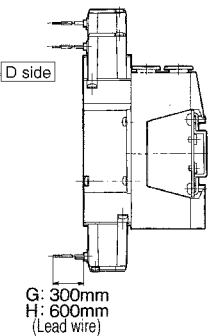
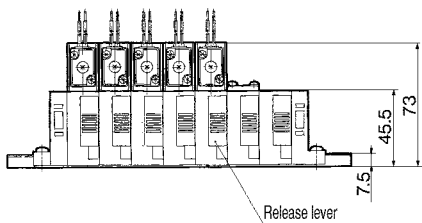
VV5Z5-45-Station D- C6C
C8C

VV5Z5-45-Station B- C6C
C8C

Grommet (G), (H)

Note: This valve series is now only available with DIN connector.

(nth station) (1st station)



2n-One-touch fitting
(A, B port) Tube model No.
C6: T0604
C8: T0806

(Pitch)
P=19 29.5

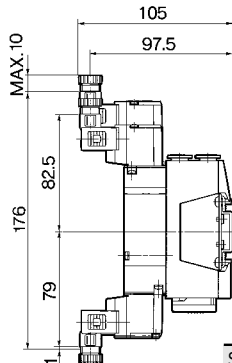
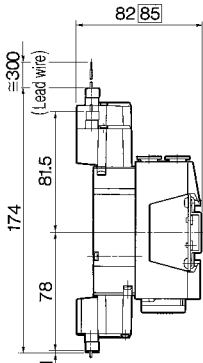
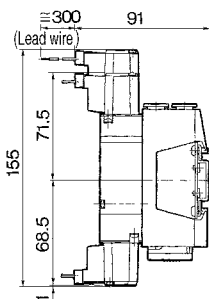
One-touch fitting
(P, R port) Tube model
T1075

Station	2	3	4	5	6	7	8	9	10
L1	123	148	160.5	185.5	198	223	235.5	260.5	273
L2	112.5	137.5	150	175	187.5	212.5	225	250	262.5
L3	97	116	135	154	173	192	211	230	249
L4	13	16	13	16	12.5	15.5	12.5	15.5	12

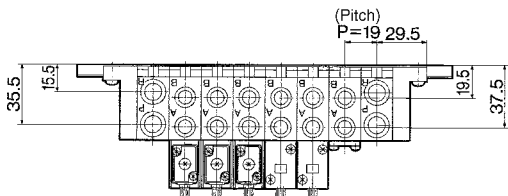
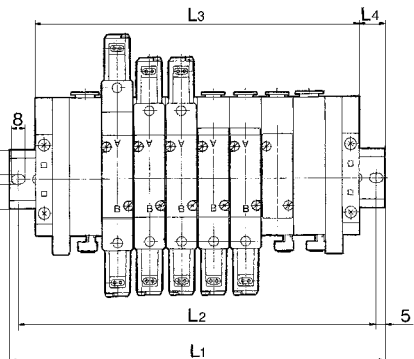
L plug connector (L)

M plug connector (M)

DIN terminal (D)



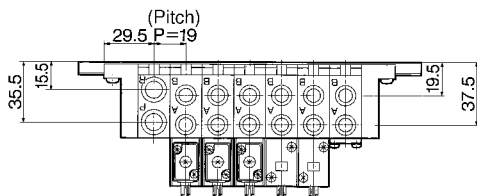
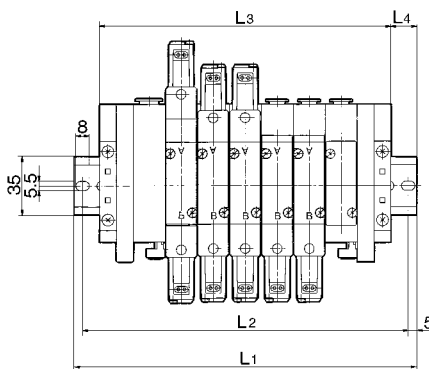
Applicable code O.D. ø3.5 to ø7



Station	2	3	4	5	6	7	8	9	10
L1	148	160.5	185.5	198	223	235.5	260.5	273	298
L2	137.5	150	175	187.5	212.5	225	250	262.5	287.5
L3	116	135	154	173	192	211	230	249	268
L4	16	13	16	12.5	15.5	12.5	15.5	12	15

Station	11	12	13	14	15	16	17	18	19	20
L1	310.5	335.5	348	373	385.5	410.5	423	448	473	485.5
L2	300	325	337.5	362.5	375	400	412.5	437.5	462.5	475
L3	287	306	325	344	363	382	401	420	439	458
L4	12	15	11.5	14.5	11.5	14.5	11	14	17	14

VV5Z5-45-Station U- C4C
C6C



Station	2	3	4	5	6	7	8	9	10
L1	123	148	160.5	185.5	198	223	235.5	260.5	273
L2	112.5	137.5	150	175	187.5	212.5	225	250	262.5
L3	97	116	135	154	173	192	211	230	249
L4	13	16	13	16	12.5	15.5	12.5	15.5	12

