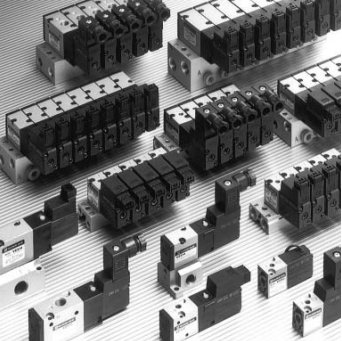
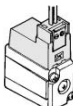
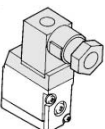
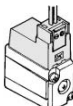
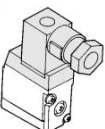




3 Port Solenoid Valve Rubber Seal

Series *VZ100/300/500*

Series Variations

	Series	Port size	Sonic conductance C [dm ³ /(s·bar)]	Type of actuation	Voltage	Electrical entry	With light/surge voltage suppressor (Option)	Manual override
Body Ported	VZ100 	M5 x 0.8	For N.C. P → A: 0.11 A → R: 0.19 For N.O. R → A: 0.19 A → P: 0.13	N. C. N. O.	(Standard) 100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC (Option) 24 VAC 50/60 Hz 48 VAC 50/60 Hz 110 VAC 50/60 Hz 220 VAC 50/60 Hz 6 VDC 12 VDC 48 VDC	• Grommet (G)  • L plug connector (L)  • M plug connector (M)  • DIN terminal (D) 	• With surge voltage suppressor (G) (L) (M) (D) • With light/surge voltage suppressor (L) (M) (D)	• Non-locking push type
	VZ300 	M5 x 0.8	0.66 { 2 → 3 } { (A → R) }					
	VZ500 	1/8	2.5 { 2 → 3 } { (A → R) }					• Non-locking push type • Locking type (Slotted) • Locking type (Manual)
Base Mounted	VZ300 	1/8	1.2 { 2 → 3 } { (A → R) }	N. C. N. O.	(Standard) 100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC (Option) 24 VAC 50/60 Hz 48 VAC 50/60 Hz 110 VAC 50/60 Hz 220 VAC 50/60 Hz 6 VDC 12 VDC 48 VDC	• Grommet (G)  • L plug connector (L)  • M plug connector (M)  • DIN terminal (D) 	• With surge voltage suppressor (G) (L) (M) (D) • With light/surge voltage suppressor (L) (M) (D)	• Non-locking push type • Locking type (Slotted) • Locking type (Manual)
	VZ500 	1/8, 1/4	2.7 { 2 → 3 } { (A → R) }					• Non-locking push type • Locking type (Slotted) • Locking type (Manual)

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

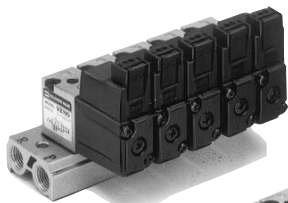
VFN

Series VZ100/300/500

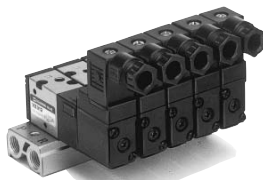
Manifold Variations

Valve series		A port location	P/R port size	A port size							
				M5	1/8	One-touch fitting					
						Applicable tubing O.D.					
						ø4	ø6	ø8	ø5/32"	ø1/4"	ø5/16"
Body Ported	VZ100	Top	M5 x 0.8	●	—	—	—	—	—	—	—
			1/8	●	—	—	—	—	—	—	—
	VZ300	Top	1/8	●	—	—	—	—	—	—	—
			1/8	—	● (Note)	—	—	—	—	—	—
	VZ500	Top	1/4	—	●	—	—	—	—	—	—
			1/4	—	●	—	—	—	—	—	—
Base Mounted	VZ300	Bottom	1/8	●	●	—	—	—	—	—	—
		Side		●	●	●	●	—	●	●	—
	VZ500	Bottom	1/8	—	● (Note)	—	—	—	—	—	—
			1/4	—	●	—	—	—	—	—	—
		Side	1/4	—	●	—	●	●	—	●	●
			1/4	—	●	—	●	●	—	●	●

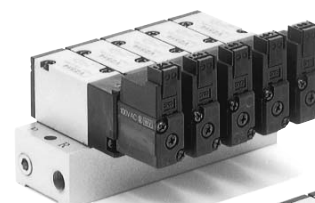
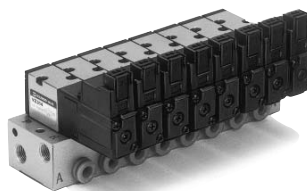
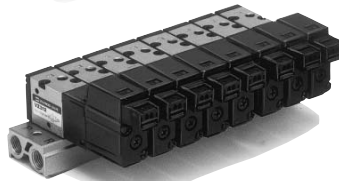
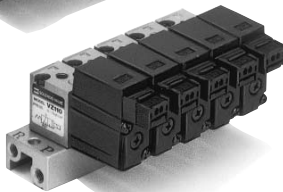
● Note) Internal pilot



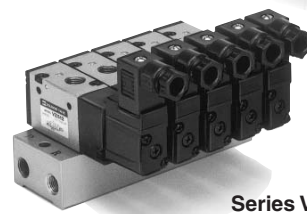
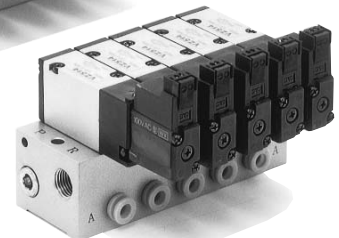
Series VZ100



Series VZ300



Series VZ500



⚠ Precautions

Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 4-18-2.

Manual Override Operation

⚠ Warning

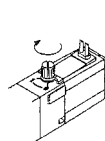
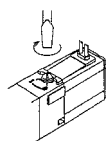
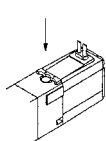
- Manual override is available in 2 types, non-locking push type and locking type.
- (Locking type is for VZ300/500 only.)

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

Nil: Non-locking type

B: Locking type B (Slotted)

C: Locking type C (Manual)

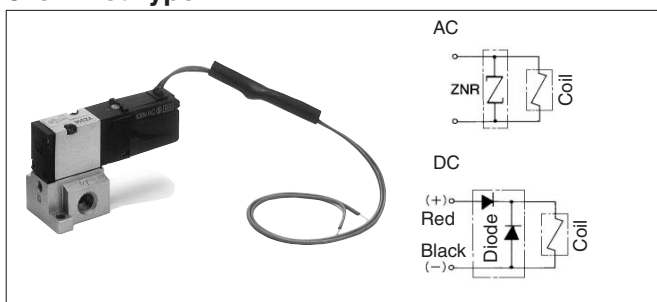


When operating the locking type manually, apply torque of 0.2 N·m or less.

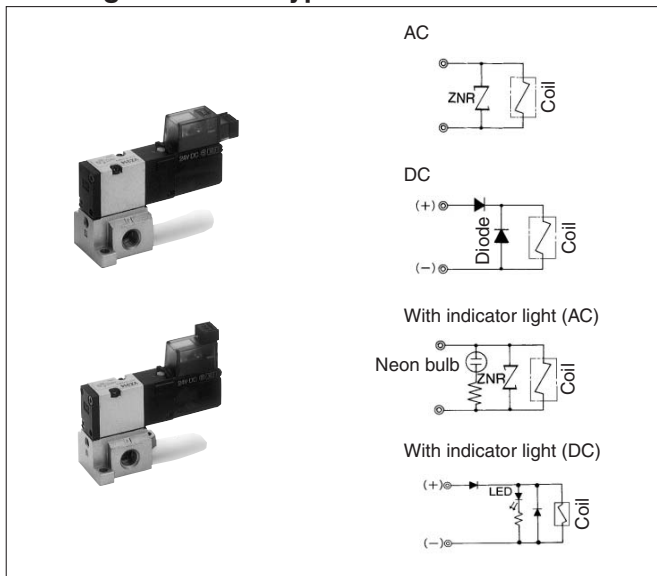
During manual operation, the equipment that is connected will operate. Therefore, make sure there are no hazardous conditions before operation.

Light/Surge Voltage Suppressor

⚠ Caution Grommet Type

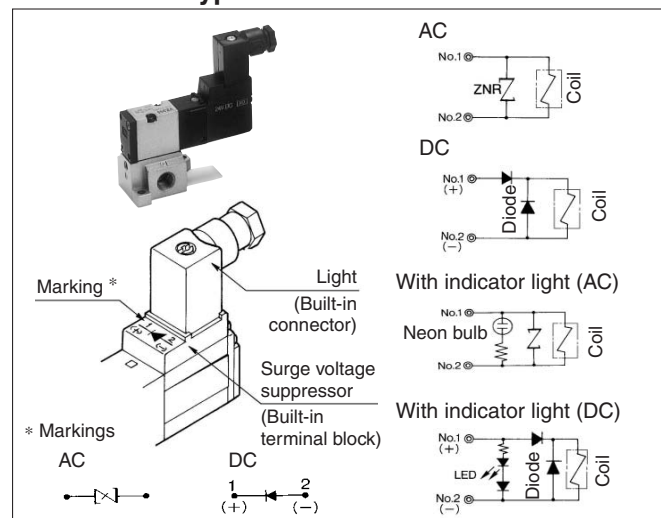


L/M Plug Connector Type



In the case of DC wiring, be sure to connect in line with the polarity indication (positive [+]/negative [-]) on the connector. When the lead wire is pre-wired, positive [+] is red and negative [-] is black respectively.

DIN Terminal Type



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 markings on the terminal block.)

Common Exhaust Type for Main and Pilot

VZ3□²/₄M, VZ5□²/₄M

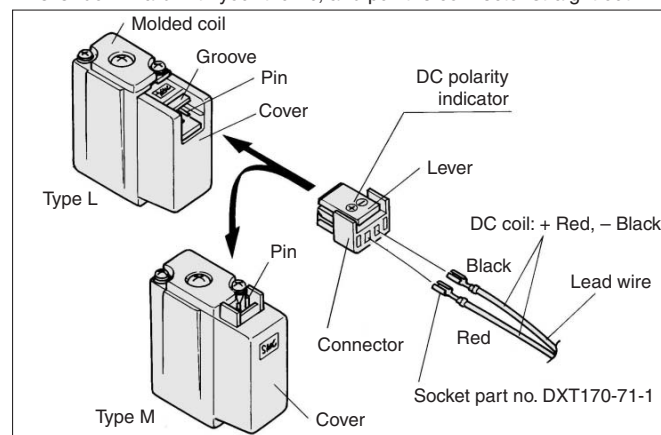
Exhaust air from the pilot valve will flow to the main valve exhaust port.

- 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.

How to Use Plug Connector

Attaching and detaching connectors

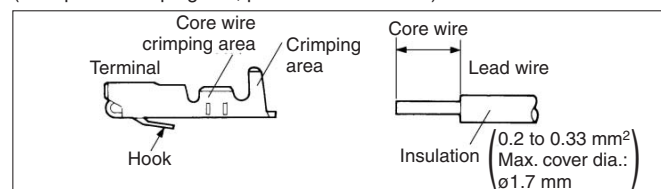
- To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.
- To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb,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



Crimping of lead wires and sockets

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

(For special crimping tool, please contact SMC.)



V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

Series VZ100/300/500

Attaching and Detaching Lead Wires with Sockets

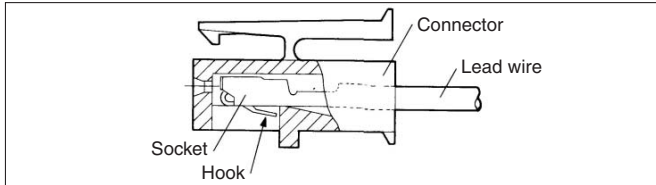
⚠ Caution

1. Attaching

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

2. Detaching

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



How to Use DIN Terminal

Connection

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

Change of electrical entry (Orientation)

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

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

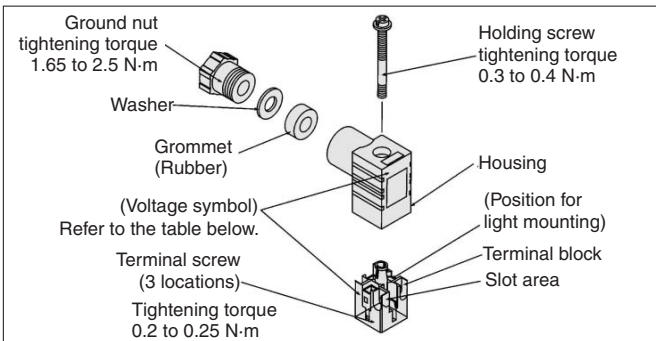
Precautions

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

Applicable cable

O.D.: $\phi 3.5$ to $\phi 7$

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



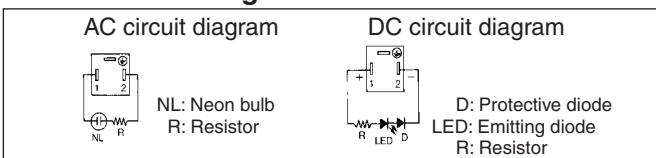
DIN Terminal Part No.

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

With Indicator Light

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

Connector with Light Circuit



Plug Connector Lead Wire Length

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

How to Order Connector Assembly

DXT170-80-□ A-□

Lead wire color

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

Lead wire length

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

How to Order

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

(Example) 2000 mm lead wire length.

VZ312-5M0-M5.....2 pcs.

DXT170-80-4A-20.....2 pcs.

Connector Assembly with Protective Cover

Connector assembly with protective cover enhances dust protection.

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

How to Order

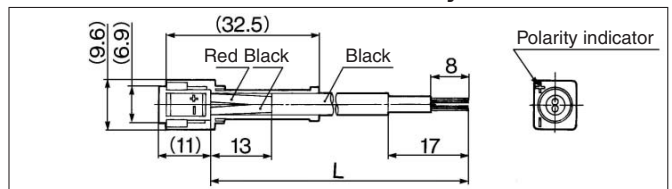
DXT170-123-A-□

Lead wire length

Symbol	Lead wire length L mm
Nil	300
6	600
10	1000
15	1500

Symbol	Lead wire length L mm
20	2000
25	2500
30	3000

Dimensions: Connector Assembly with Cover



How to Order Solenoid Assembly

DXT170-C-5 L □

Applicable model

A	For VZ110
C	For Series VZ300/500
E	For VZ120

Coil rated voltage

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

* Option

Light/Surge voltage suppressor

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

* Indicator light is not available for grommet type.

Electrical entry

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

How to Calculate the Flow Rate

For obtaining the flow rate, refer to page 4-1-6.

3 Port Solenoid Valve Rubber Seal, Body Ported Series VZ100

How to Order

Body ported

VZ1

1

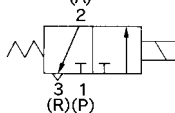
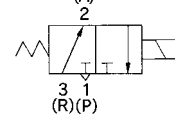
0

5

L

M5

Type of actuation

1	Normally closed (A)  (R)(P)
2	Normally open (A)  (R)(P)

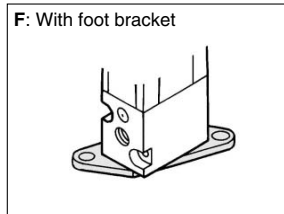
Regarding VZ120, R port is a supply port.

Rated voltage

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

* Option

Option



Note) Bracket is not mounted.

Port size

M5	M5 x 0.8
----	----------

Light/Surge voltage suppressor

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

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

Electrical entry

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

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

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

Series VZ100

Low power consumption:
1.8 W DC

Applicable for vacuum use
-100 kPa



For manifold use, refer to the pages 4-6-8 to 4-6-11.



Made to Order Specifications
(For details, refer to page 4-6-46.)

Option

Description	Part no.	Note
With foot bracket	DXT170-34-1A	Mounting screw (M3 x 6)
Silencer	M5	AN120-M5 (ø8 x 17ℓ) For valve unit (R port), Noise reduction: 21 dB or more, Effective area 5 mm ²

Specifications

Fluid	Air
Operating pressure range	Refer to the table below.
Ambient and fluid temperature (°C)	-10 to 50 (No freezing. Refer to page 4-18-4.)
Response time (ms) ⁽¹⁾	15 or less
Max. operating frequency (Hz)	15
Flow Characteristics	Refer to the table below.
Manual override	Non-locking push type
Lubrication	Not required
Mounting orientation	Unrestricted
Shock/Vibration resistance (m/s ²) ⁽²⁾	300/50
Enclosure	Dustproof



Note 1) Based on dynamic performance test, JIS B 8374-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)

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

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 1000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Solenoid Specifications

* Option

Electrical entry			Grommet (G)/(H), L plug connector (L), M plug connector (M), DIN terminal (D)	
Coil rated voltage (V)	AC50/60 Hz		100, 200, 24*, 48*, 110*, 220*	
	DC		24, 6*, 12*, 48*	
Allowable voltage fluctuation (%)			-15 to +10% of rated voltage	
Power consumption (W) ^{Note)} [Current mA]			1.8 (With indicator light 2.1) [24 VDC: 75 (With indicator light 87.5)]	
Apparent power (VA) ^{Note)} [Current mA]	AC	Inrush	4.5/50 Hz, 4.2/60 Hz [100 VAC: 45/50 Hz, 42/60 Hz 200 VAC: 22.5/50 Hz, 21/60 Hz]	
		Holding	3.5/50 Hz, 3/60 Hz [100 VAC: 35/50 Hz, 30/60 Hz 200 VAC: 17.5/50 Hz, 15/60 Hz]	
Surge voltage suppressor			DC: Diode, AC: ZNR	
Indicator light			DC: LED (Red), AC: Neon bulb	



Note) At rated voltage

Operating Pressure

Model	Type of actuation	Operating pressure range (MPa)	Vacuum specifications (MPa)	Port size	Weight (g) Note)
Body ported	VZ110 N.C.	0 to 0.7	1 (P) port -27 kPa to 0.6	M5 x 0.8	70
	VZ120 N.O.	0 to 0.5	R port -100 kPa to 0 -100 kPa to 0.4		



Note) Weight stands for grommet type

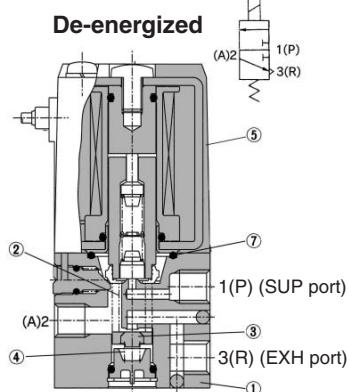
Flow Characteristics

Model	Type of actuation	Port size	Flow characteristics					
			Supply side	N.C.: 1 → 2 (P → A) N.O.: 3 → 2 (R → A)		Exhaust side	N.C.: 2 → 3 (A → R) N.O.: 2 → 1 (A → P)	
				C [dm ³ /(s·bar)]	b		C [dm ³ /(s·bar)]	b
Body ported	VZ110 N.C.	M5 x 0.8	0.11	0.026	0.023	0.19	0.071	0.042
	VZ120 N.O.		0.19	0.071	0.042	0.13	0.18	0.031

Construction

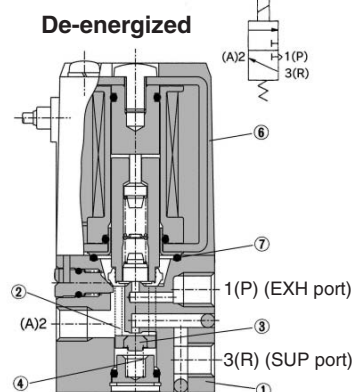
VZ110 (N.C.)

JIS Symbol



VZ120 (N.O.)

JIS Symbol



Component Parts

No.	Description	Material	Note
①	Body	ZDC	Platinum silver
②	Push rod	Resin	
③	EXH poppet	NBR	
④	N.C. Back up spring	Stainless steel	
	N.O. Poppet spring		

Replacement Parts

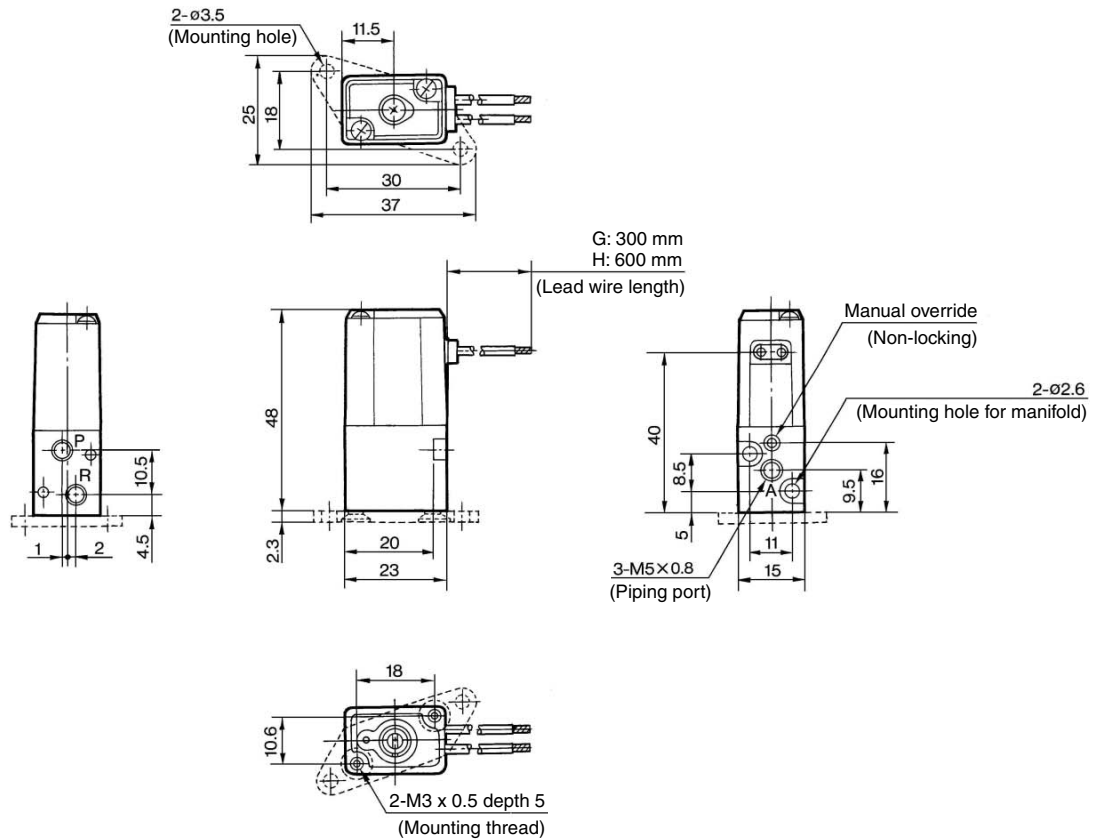
No.	Description	Part no.	Material	Note
⑤	Solenoid assembly	DXT170-A-□□□	Epoxy Stainless steel	VZ110
⑥	Solenoid assembly	DXT170-E-□□□	Epoxy Stainless steel	VZ120
⑦	O-ring	13 x 11 x 1	NBR	Common with Series VZ ₃₀₀

3 Port Solenoid Valve Rubber Seal, Body Ported **Series VZ100**

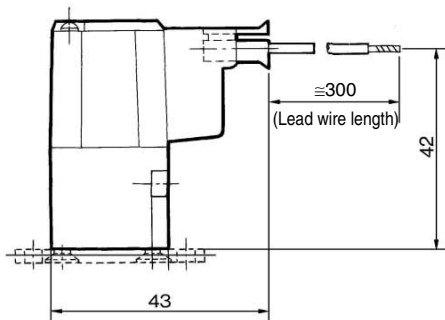


Body Ported

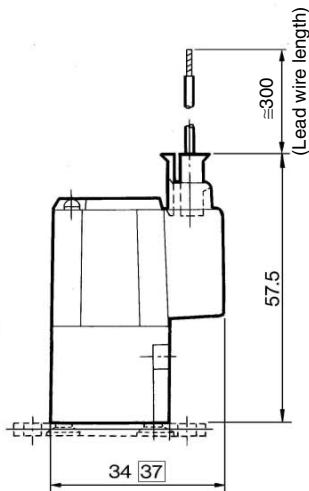
Grommet (G), (H)
VZ1□0-□^G□-M5(-F)



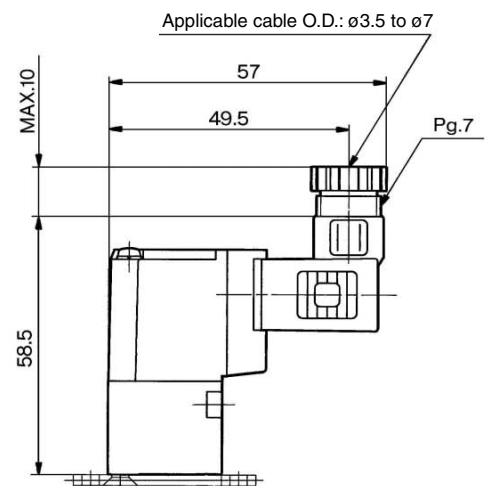
L plug connector (L)
VZ1□0-□L□-M5



M plug connector (M)
VZ1□0-□M□-M5



DIN terminal (D)
VZ1□0-□D□-M5



□: With light/surge voltage suppressor

V100
SY
SYJ
VK
VZ
VT
VP
VG
VP
S070
VQ
VKF
VQZ
VZ
VS
VFN

Series VZ100

Manifold Specifications



Manifold Specifications

Model		VV3Z1-01-□1	VV4Z1-20-□1
Manifold type		Single base/B mount	
P(SUP)/R(EXH)		Common SUP/Common EXH	
Valve stations		2 to 20 stations ⁽¹⁾	
A port	Location	Valve	
Porting specifications	Direction	Top	
Port size	1(P), 3(R) port	M5 x 0.8	Rc 1/8
	2(A) port	M5 x 0.8	



Note 1) If there are more than 10 stations, exhaust from both sides of manifold.

Note 2) Not able to use VZ120 and VZ110 on the same manifold base.

Note 3) In the case of VZ120, supply air to 3 (R) port and exhaust from 1(P) port.

Flow Characteristics

Manifold	Port size		Flow characteristics					
			1 → 2 (P → A)			2 → 3 (A → R)		
	1(P), 3(R) Port	A, B Port	C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv
VV3Z1-01-□1	M5 x 0.8	M5 x 0.8	0.13	0.13	0.03	0.22	0.074	0.048
VV4Z1-20-□1	1/8	M5 x 0.8	0.13	0.1	0.03	0.22	0.15	0.052

How to Order Manifold

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

(Example) VV3Z1-01-031.....1 pc. (Manifold base)

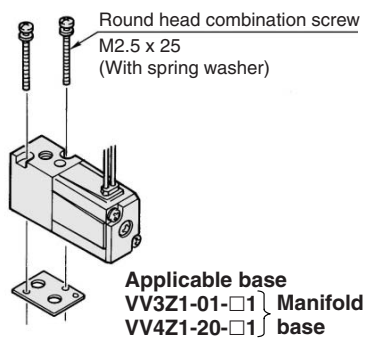
*VZ110-5LZ-M5.....2 pcs. (Valve)

*DXT170-25-1A.....1 pc. (Blanking plate assembly)

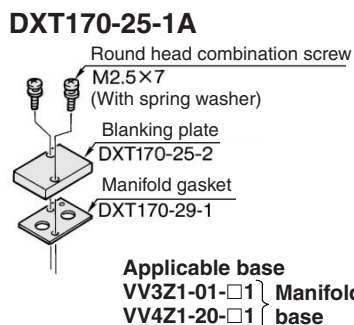
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Option

Combinations of Solenoid Valve, Gasket and Manifold

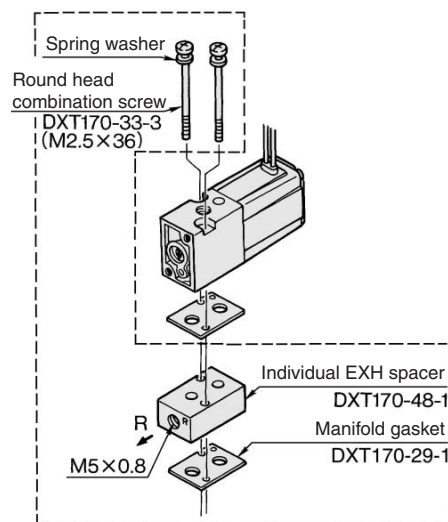


Blanking Plate Assembly



Individual EXH Spacer Assembly

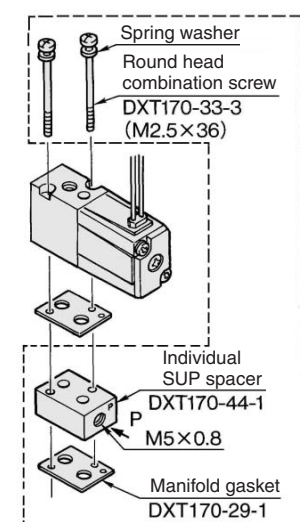
DXT170-48-1A



Applicable base
VV3Z1-01-□1 } Manifold
VV4Z1-20-□1 } base

Individual SUP Spacer Assembly

DXT170-44-1A



Applicable base
VV3Z1-01-□1 } Manifold
VV4Z1-20-□1 } base

Caution Mounting Screw Tightening Torques

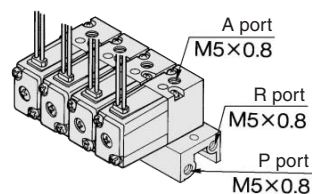
M2.5: 0.45 N·m

Warning

When mounting a solenoid valve on the manifold base or sub-plate, etc., the mounting direction is determined. If mounted in the wrong direction, the equipment to be wired might result in malfunction. Refer to dimensions of this catalog and use caution to the mounting direction.

3 Port Solenoid Valve Rubber Seal, Body Ported **Series VZ100**

Type 01



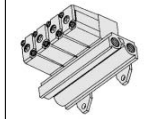
How to Order

VV3Z1 - 01 - 05 1 -

Stations	
02	2 stations
⋮	⋮
20	20 stations

Option

F: With foot bracket



* Bracket is not mounted.

Applicable solenoid valve

VZ110-□□□-M5

VZ120-□□□-M5

Applicable blanking plate assembly

DXT170-25-1A

Individual EXH spacer assembly

DXT170-48-1A

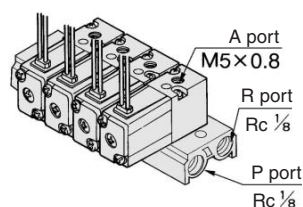
Individual SUP spacer assembly

DXT170-44-1A



- Note) • If there are more than 10 stations, exhaust from both sides of manifold.
• It is not able to use VZ110 and VZ120 on the same manifold base.

Type 20



How to Order

VV4Z1 - 20 - 05 1 -

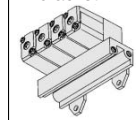
Stations	
02	2 stations
⋮	⋮
20	20 stations

Thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

Option

F: With foot bracket



* Bracket is not mounted.

Applicable solenoid valve

VZ110-□□□-M5

VZ120-□□□-M5

Applicable blanking plate assembly

DXT170-25-1A

Individual EXH Spacer assembly

DXT170-48-1A

Individual SUP Spacer assembly

DXT170-44-1A



- Note) • If there are more than 10 stations, supply air to SUP port on both sides of the manifold and exhaust from EXH port on both sides of the manifold.
• It is not able to use VZ110 and VZ120 on the same manifold base.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

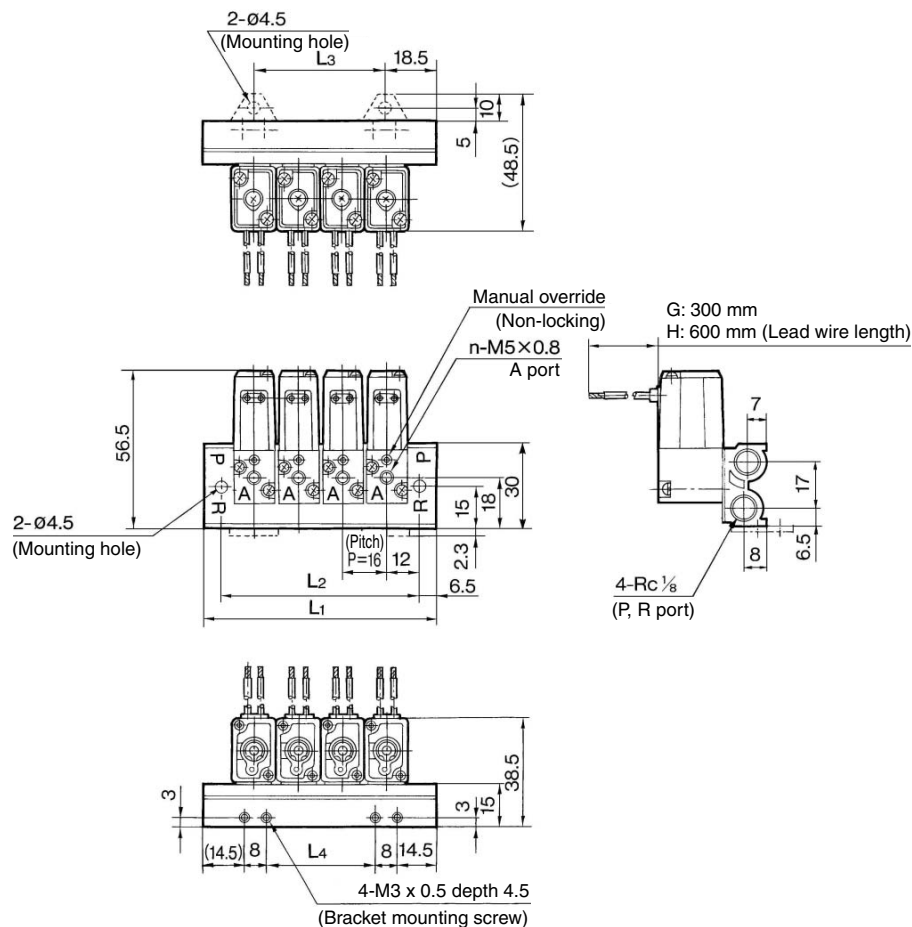
VS

VFN

3 Port Solenoid Valve Rubber Seal, Body Ported **Series VZ100**

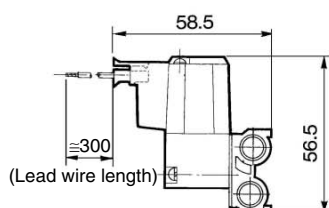
Type 20 Manifold: Top Ported

VV4Z1-20- Stations 1(-F)
Grommet (G), (H)

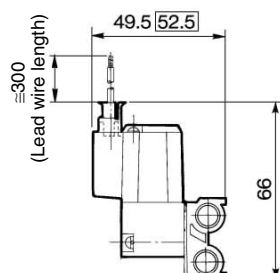


Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁	53	69	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309	325	341
L ₂	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328
L ₃	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
L ₄	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296

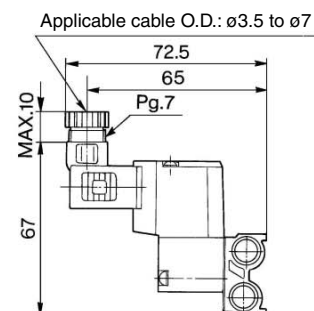
L plug connector (L)



M plug connector (M)



DIN terminal (D)



□: With light/surge voltage suppressor

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN



3 Port Solenoid Valve

Rubber Seal, Body Ported/Base Mounted

Series VZ300

How to Order

Body ported VZ3 1 2 5 L M5

Base mounted VZ3 1 4 5 L

Type of actuation

1 Normally closed (A) 2 Normally open (A)

Body option

Nil: Individual pilot exhaust type M: Common exhaust for the pilot and main valve R: External pilot type (Note)

Rated voltage

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

* Option

Port size M5: M5 x 0.8

Option

F: With foot bracket

Note) • Bracket is not mounted. • Except external pilot.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Port size

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

Manual override

Nil: Non-locking push type B: Locking type B (Slotted) C: Locking type C (Manual)

Light/Surge voltage suppressor

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

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

Electrical entry

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

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

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

Series VZ300

**Low power consumption:
1.8 W DC**

**Applicable for vacuum use
–100 kPa**

VZ300R: External pilot type

**Exhausting equipment for
pilot valve not required.**

VZ300M: Central exhaust type

It is not necessary to take exhaust measures for the pilot valve for environmental protection.

**Possible to use as either a
selector or divider valve**

VZ300R: External pilot type

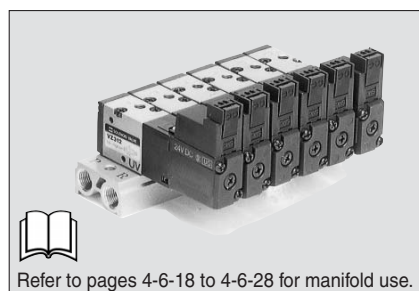
Can be used for universal porting.



Body ported



Base mounted



Refer to pages 4-6-18 to 4-6-28 for manifold use.

Specifications

Fluid	Air	
Operating pressure range (MPa)	Internal pilot	0.15 to 0.7
Ambient and fluid temperature (°C)	–10 to 50 (No freezing. Refer to page 4-18-4.)	
Response time (ms) (at the pressure of 0.5 MPa) ⁽¹⁾	20 or less	
Max. operating frequency (Hz)	10	
Flow characteristics	Refer to the table below.	
Manual override ⁽²⁾	Non-locking push type Locking slotted type, Locking lever type	
Pilot exhaust method	Individual pilot exhaust type, Common exhaust (pilot and main valve) type	
Lubrication	Not required	
Mounting orientation	Unrestricted	
Shock/Vibration resistance (m/s ²) ⁽³⁾	300/50	
Enclosure	Dustproof	

Note 1) Based on dynamic performance test, JIS B 8374-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)

Note 2) When operating the locking type manually, apply torque of 0.2 N·m or less.

Note 3) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 1000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Solenoid Specifications

* Option

Electrical entry	Grommet (G)/(H), L plug connector (L), M plug connector (M), DIN terminal (D)	
Coil rated voltage (V)	AC50/60 Hz	100, 200, 24*, 48*, 110*, 220*
	DC	24, 6*, 12*, 48*
Allowable voltage fluctuation (%)	–15 to +10% of rated voltage	
Power consumption (W) [Current mA] Note	DC	1.8 (With indicator light 2.1) [24 VDC: 75 (With indicator light 87.5)]
Apparent power (VA) [Current mA] Note	Inrush	4.5/50 Hz, 4.2/60 Hz [100 VAC: 45/50 Hz, 42/60 Hz 200 VAC: 22.5/50 Hz, 21/60 Hz]
	Holding	3.5/50 Hz, 3/60 Hz [100 VAC: 35/50 Hz, 30/60 Hz 200 VAC: 17.5/50 Hz, 15/60 Hz]
Surge voltage suppressor	DC: Diode, AC: ZNR	
Indicator light	DC: LED (Red), AC: Neon bulb	

Note) At rated voltage

Flow Characteristics/Weight

Model		Type of actuation	Port size	Flow characteristics						Weight ^(Note) (g)
				1 → 2 (P → A)			2 → 3 (A → R)			
				C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
Body ported	VZ312	N.C.	M5	0.53	0.45	0.14	0.47	0.39	0.12	75
	VZ322	N.O.		0.66	0.45	0.18	0.66	0.45	0.18	
Base mounted (With sub-plate)	VZ314	N.C.	1/8	1.2	0.41	0.32	1.1	0.46	0.32	105 (Without sub-plate: 75)
	VZ324	N.O.		1.3	0.37	0.33	1.2	0.48	0.34	

Note) Weight stands for grommet type.

Option

Description	Part no.	Note
Foot bracket	DXT170-34-1B	With screw (For VZ3□2)



Made to Order Specifications
(For details, refer to page 4-6-46.)

3 Port Solenoid Valve Rubber Seal, Body Ported/Base Mounted **Series VZ300**

External Pilot

VZ300R

Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port. It can be used in the vacuum (up to -100 kPa) or low pressure line with 0.15 MPa or less.

Specifications

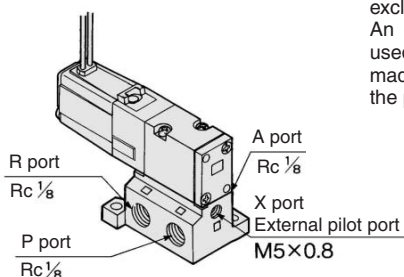
Applicable model	Base mounted (VZ314R/324R)	
Operating pressure range (MPa)	Main pressure	-100 kPa to 0.7
	External pilot pressure	0.15 to 0.7



Note 1) For manifold base, refer to page 4-6-18.

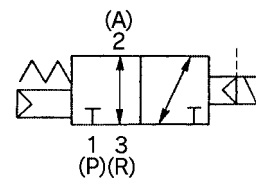
Note 2) In the case of the body ported type, the pilot type (VZ3□2R) is used exclusively on a manifold.

An external pilot style that can be used individually is available as a made-to-order. For details, refer to the page 4-6-46.

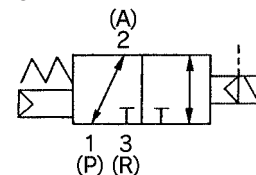


JIS Symbol

VZ31□R

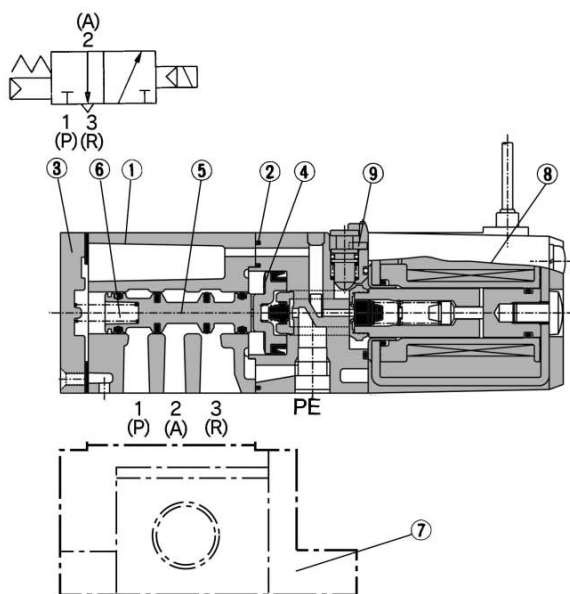


VZ32□R

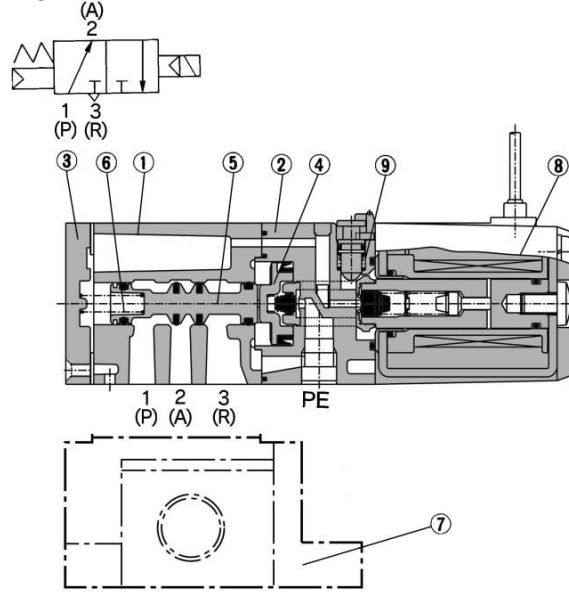


Construction

N.C.



N.O.



Component Parts

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

Replacement Parts

No.	Description	Material	Part no.	Note
⑦	Sub-plate	Aluminum die-casted	DXT200-13-1□P	
⑧	Solenoid assembly	Epoxy/Stainless steel	DXT170-C-□□□	
⑨	O-ring	NBR	13 x 11 x 1	Common with VZ100

Sub-plate part no.: DXT200-13-1□P

Thread type	
Nil	Rc
F	G
N	NPT
T	NPTF

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

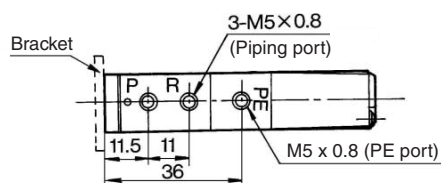
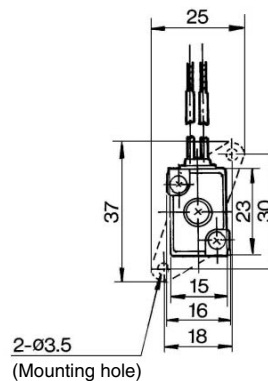
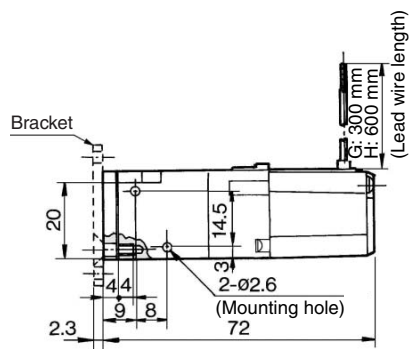
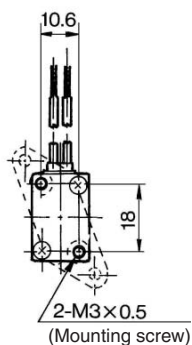
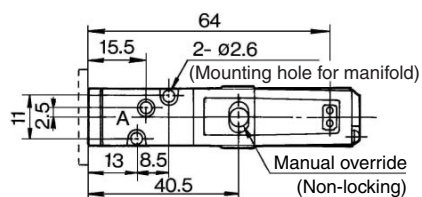
Series VZ300



Body Ported

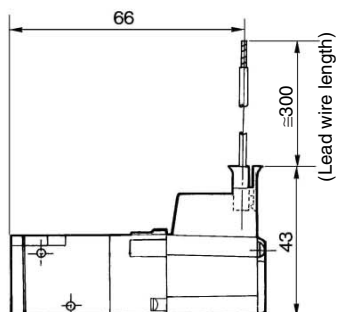
Grommet (G), (H)

VZ3□2-□^G□-M5(-F)



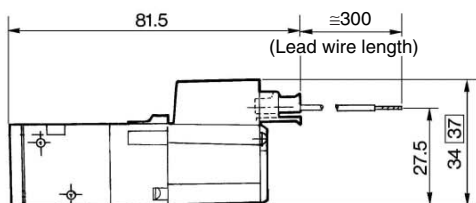
L plug connector (L)

VZ3□2-□L□□-M5



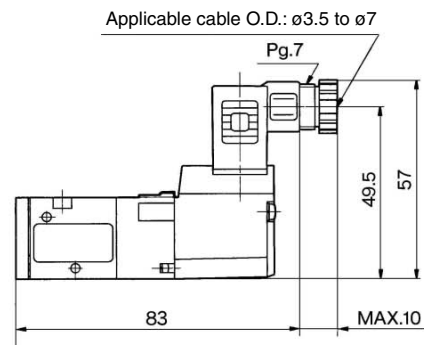
M plug connector (M)

VZ3□2-□M□□-M5



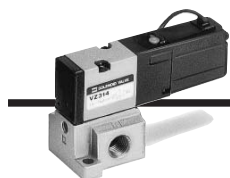
DIN terminal (D)

VZ3□2-□D□□-M5



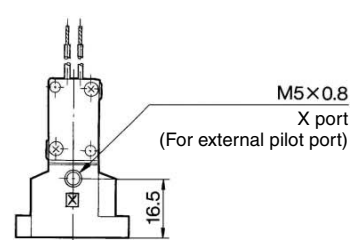
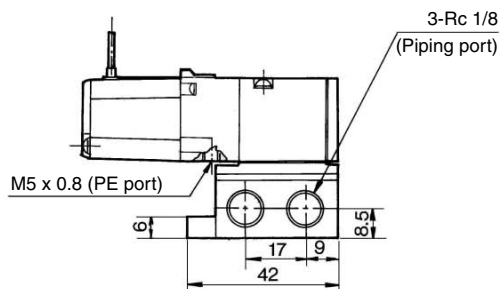
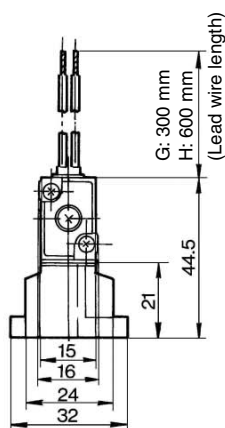
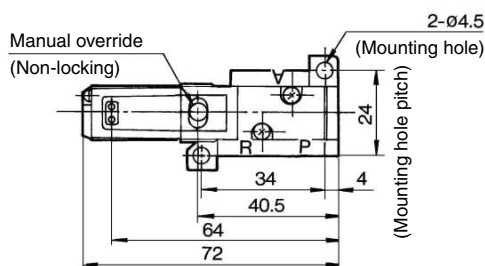
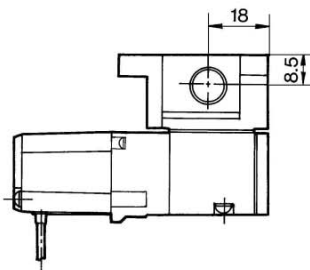
□: With light/surge voltage suppressor

3 Port Solenoid Valve Rubber Seal, Body Ported/Base Mounted **Series VZ300**

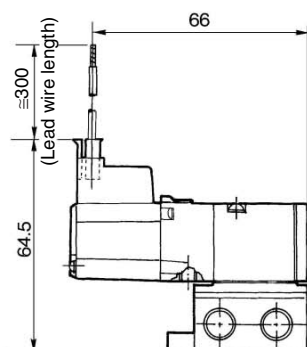


Base Mounted (With sub-plate)

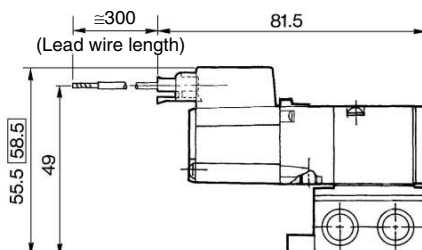
Grommet (G), (H)
VZ3□4-□^G□□-01



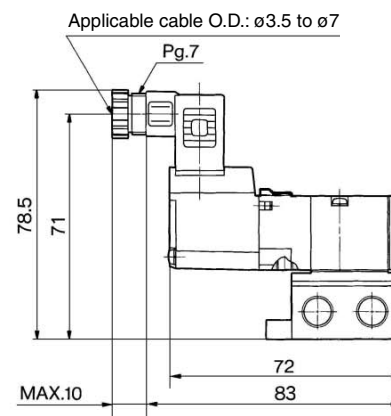
L plug connector (L)
VZ3□4-□L□□-01



M plug connector (M)
VZ3□4-□M□□-01



DIN terminal (D)
VZ3□4-□D□□-01



□: With light/surge voltage suppressor

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

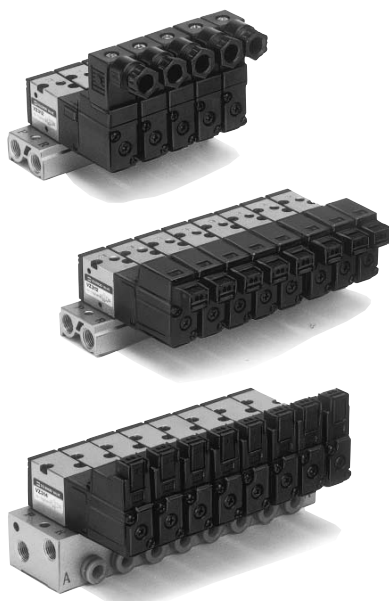
VZ

VS

VFN

Series VZ300

Manifold Specifications



Manifold Specifications

Model	For internal pilot	20-□1	40-□2	40-□1
	For external pilot	21R-□1	40R-□2	40R-□1
Manifold type		Single base/B mount		
P(SUP)/R(EXH)		Common SUP/Common EXH		
Valve stations		2 to 20 stations		
A port porting specifications	Location	Valve	Base	
	Direction	Top	Bottom	Side
	1(P), 3(R) port	Rc 1/8	Rc 1/8	Rc 1/8
Port size	2(A) port	M5 x 0.8	M5 x 0.8 1/8	M5 x 0.8, Rc 1/8, C4 (One-touch fitting for ø4), C6 (One-touch fitting for ø6)
	X port ^{Note)}	M5 x 0.8	M5 x 0.8	M5 x 0.8



Note) Only for external pilot

Flow Characteristics

Manifold			Port size		Flow characteristics					
					1 → 2 (P → A)			2 → 3 (A → R)		
			1(P), 3(R) port	2(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported For internal pilot	VV3Z3-20-□1	VZ3□2	1/8	M5 x 0.8	0.47	0.43	0.13	0.74	0.32	0.19
Base mounted For internal pilot	VV3Z3-40-□2	VZ3□4	1/8	M5 x 0.8	0.71	0.52	0.21	0.81	0.28	0.20
	VV3Z3-40-□1		1/8	1/8	0.98	0.36	0.25	0.92	0.24	0.22
			1/8	M5 x 0.8	0.71	0.49	0.2	0.80	0.23	0.19
			1/8	1/8	1.00	0.37	0.26	0.96	0.25	0.24
			1/8	C4	0.68	0.35	0.17	1.00	0.25	0.24
			1/8	C6	1.00	0.27	0.25	1.00	0.30	0.26
Body ported For external pilot	VV3Z3-21R-□1	VZ3□2R	1/8	M5 x 0.8	0.47	0.43	0.13	0.74	0.32	0.19
Base mounted For external pilot	VV3Z3-40R-□2	VZ3□4R	1/8	M5 x 0.8	0.71	0.52	0.21	0.81	0.28	0.20
	VV3Z3-40R-□1		1/8	1/8	0.98	0.36	0.25	0.92	0.24	0.22
			1/8	M5 x 0.8	0.71	0.49	0.2	0.80	0.23	0.19
			1/8	1/8	1.00	0.37	0.26	0.96	0.25	0.24
			1/8	C4	0.68	0.35	0.17	1.00	0.25	0.24
			1/8	C6	1.00	0.27	0.25	1.00	0.30	0.26

How to Order Manifold

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

(Example)

VV3Z3-20-031.....1 pc. (Manifold base)

*VZ312-5LZ-M5...2 pcs. (Valve)

*DXT200-8-6A.....1 pc. (Blanking plate assembly)

VV3Z3-40R-031-C6.....1 pc. (Manifold base)

*VZ314R-5G.....2 pcs. (Valve)

*DXT200-8-3A.....1 pc. (Blanking plate assembly)

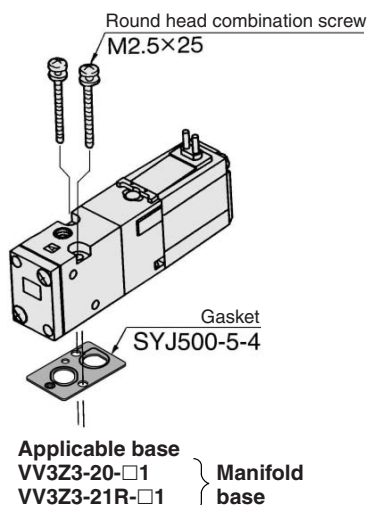
↳ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

3 Port Solenoid Valve Rubber Seal, Body Ported/Base Mounted **Series VZ300**

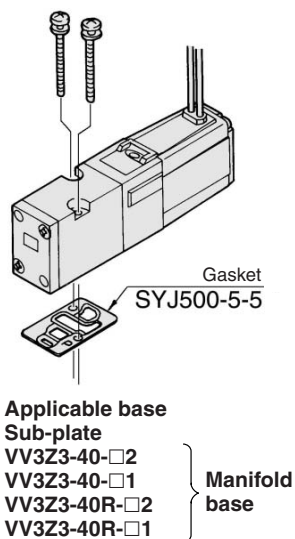
Option

Combinations of Solenoid Valve, Manifold Gasket and Manifold

Body ported (VZ3□2)

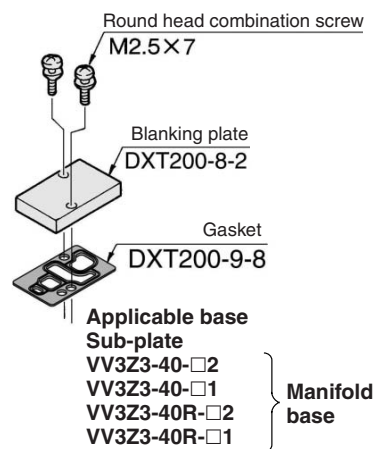


Base mounted (VZ3□4)

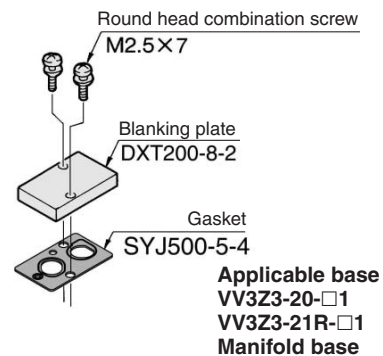


Blanking Plate Assembly

Part no.: DXT-200-8-3A



Part no.: DXT200-8-6A



⚠ Caution

Mounting Screw Tightening Torques

M2.5: 0.45 N·m

⚠ Warning

When mounting a solenoid valve on the manifold base or sub-plate, etc., the mounting direction is determined. If mounted in the wrong direction, the equipment to be wired might result in malfunction. Refer to dimensions of this catalog and use caution to the mounting direction.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

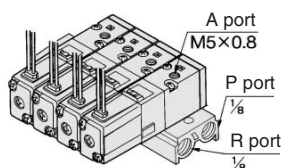
VS

VFN

Series VZ300

Manifold for Internal Pilot

20-□1



How to Order

VV3Z3-20-05 1-□-□

Stations	
02	2 stations
⋮	⋮
20	20 stations

P/R port Thread type	
Nil	Rc
00F	G
00N	NPT
00T	NPTF

Option	
F	Foot bracket
* Bracket is not mounted.	

Applicable solenoid valve

VZ312-□□□□-M5
VZ312M-□□□□-M5
VZ322-□□□□-M5
VZ322M-□□□□-M5

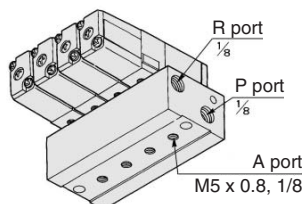
Applicable blanking plate assembly

DXT200-8-6A



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

40-□2



How to Order

VV3Z3-40-05 2-M5 □

Stations	
02	2 stations
⋮	⋮
20	20 stations

A port side	
M5	M5 x 0.8
01	1/8

P/R port Thread type	
Nil	Rc
F	G
N	NPT
Z	NPTF

Applicable solenoid valve

VZ314-□□□□
VZ314M-□□□□
VZ324-□□□□
VZ324M-□□□□

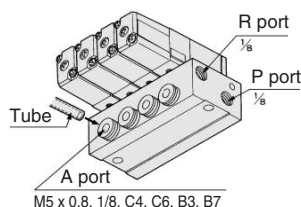
Applicable blanking plate assembly

DXT200-8-3A



Note) For more than 9 stations, supply air to both sides of P port and exhaust air from both sides of R port.

40-□1



How to Order

VV3Z3-40-05 1-C6 □

Stations	
02	2 stations
⋮	⋮
20	20 stations

A port side	
M5	M5 x 0.8
01	1/8
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
B3	One-touch fitting for ø5/32"
B7	One-touch fitting for ø1/4

P/R port Thread type	
Nil	Rc
F	G
N	NPT
T	NPTF

Applicable solenoid valve

VZ314-□□□□
VZ314M-□□□□
VZ324-□□□□
VZ324M-□□□□

Applicable blanking plate assembly

DXT200-8-3A

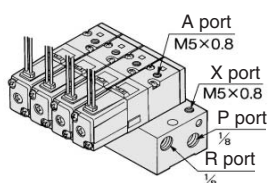


Note) For more than 9 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Manifold for External Pilot

Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port. It can be used in the vacuum (up to -100 kPa) or low pressure line with 0.15 MPa or less.

21R-□1



How to Order

VV3Z3-21R-05 1-□-□

Stations	
02	2 stations
⋮	⋮
20	20 stations

P/R port Thread type	
Nil	Rc
00F	G
00N	NPT
00T	NPTF

Applicable solenoid valve

VZ312R-□□□□-M5
VZ322R-□□□□-M5

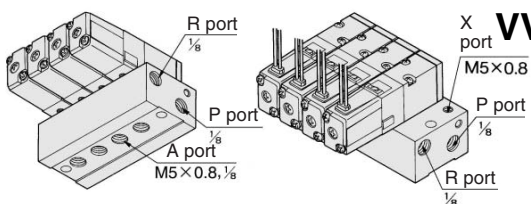
Applicable blanking plate assembly

DXT200-8-6A



Note) For more than 9 stations, supply air to both sides of P port and exhaust air from both sides of R port.

40R-□2



How to Order

VV3Z3-40R-05 2-01 □

Stations	
02	2 stations
⋮	⋮
20	20 stations

A port side	
M5	M5 x 0.8
01	1/8

P/R port Thread type	
Nil	Rc
F	G
N	NPT
T	NPTF

Applicable solenoid valve

VZ314R-□□□□
VZ324R-□□□□

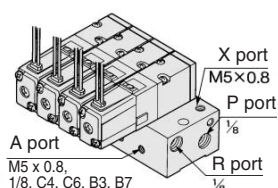
Applicable blanking plate assembly

DXT200-8-3A



Note) For more than 9 stations, supply air to both sides of P port and exhaust air from both sides of R port.

40R-□1



How to Order

VV3Z3-40R-05 1-M5 □

Stations	
02	2 stations
⋮	⋮
20	20 stations

A port side	
M5	M5 x 0.8
01	1/8
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
B3	One-touch fitting for ø5/32"
B7	One-touch fitting for ø1/4

P/R port Thread type	
Nil	Rc
F	G
N	NPT
T	NPTF

Applicable solenoid valve

VZ314R-□□□□
VZ324R-□□□□

Applicable blanking plate assembly

DXT200-8-3A

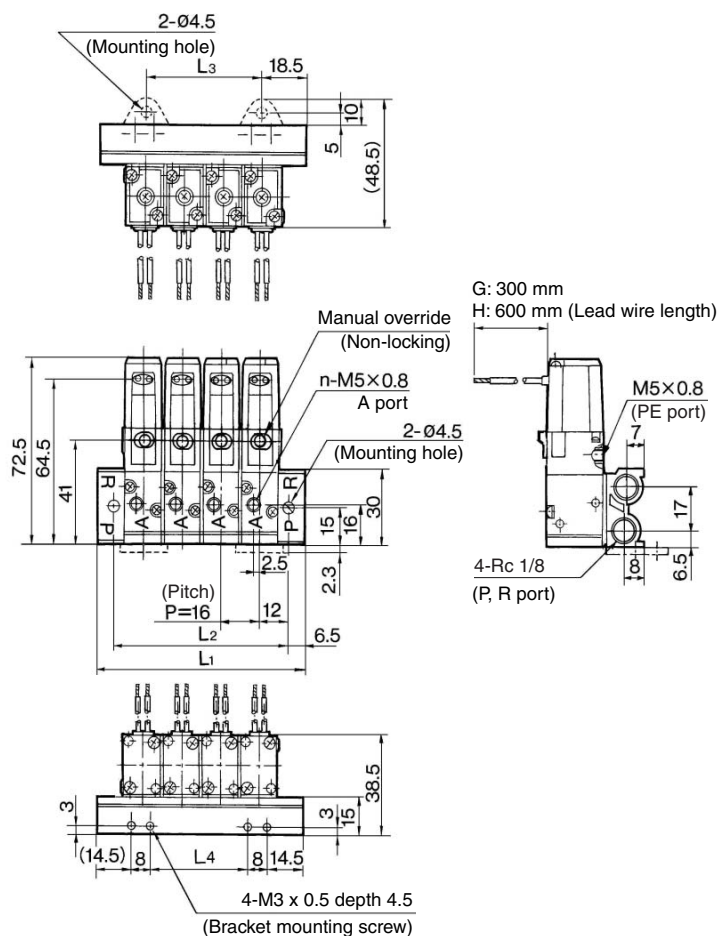


Note) For more than 9 stations, supply air to both sides of P port and exhaust air from both sides of R port.

3 Port Solenoid Valve Rubber Seal, Body Ported/Base Mounted **Series VZ300**

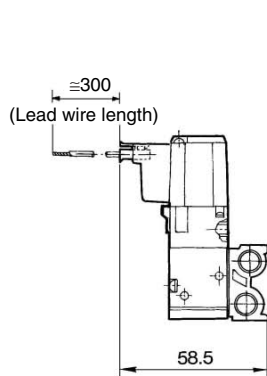
For Internal Pilot Type 20 Manifold: Top Ported

VV3Z3-20-**Stations** 1(-F)
Grommet (G), (H)

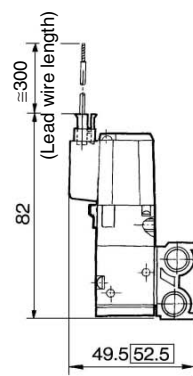


Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁	53	69	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309	325	341
L ₂	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328
L ₃	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
L ₄	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296

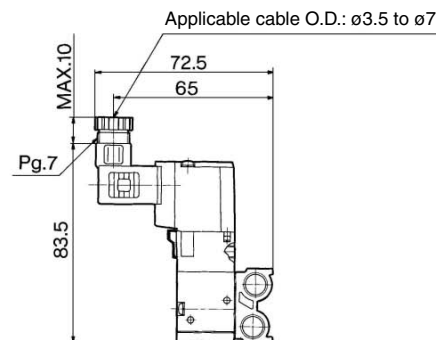
L plug connector (L)



M plug connector (M)



DIN terminal (D)



□: With light/surge voltage suppressor

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

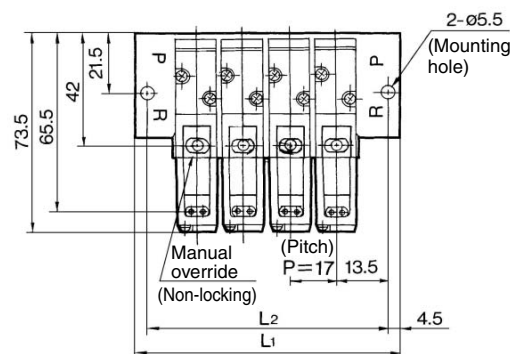
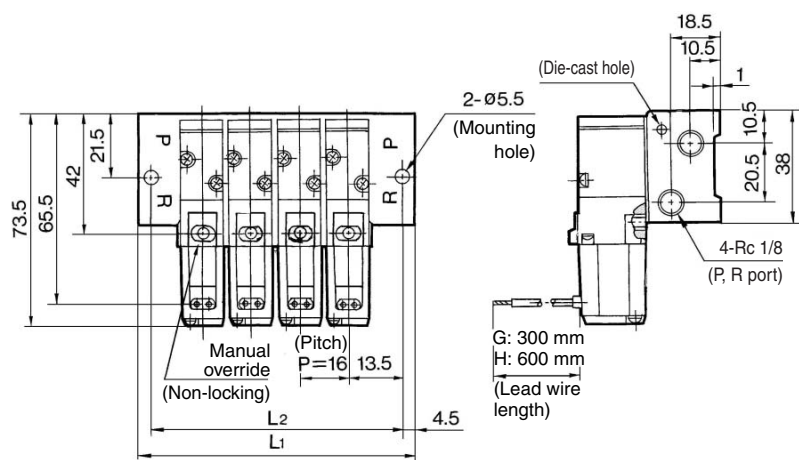
VFN

3 Port Solenoid Valve Rubber Seal, Body Ported/Base Mounted **Series VZ300**

For Internal Pilot Type 40 Manifold: Side Ported

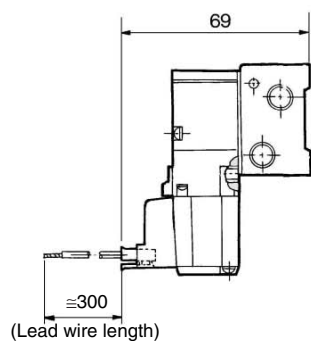
VV3Z3-40- **Stations** 1-M5/01
Grommet (G), (H)

Rc 1/8

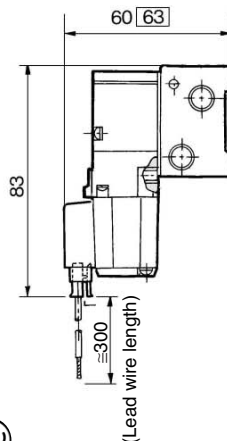


Port size	Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
M5	L1	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
	L2	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331
Rc 1/8	L1	53	70	87	104	121	138	155	172	189	206	223	240	257	274	291	308	325	342	359
	L2	44	61	78	95	112	129	146	163	180	197	214	231	248	265	282	299	316	333	350

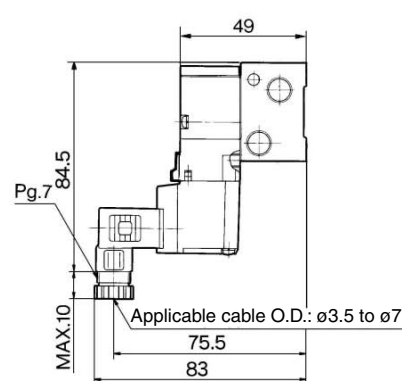
L plug connector (L)



M plug connector (M)



DIN terminal (D)



□: With light/surge voltage suppressor

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

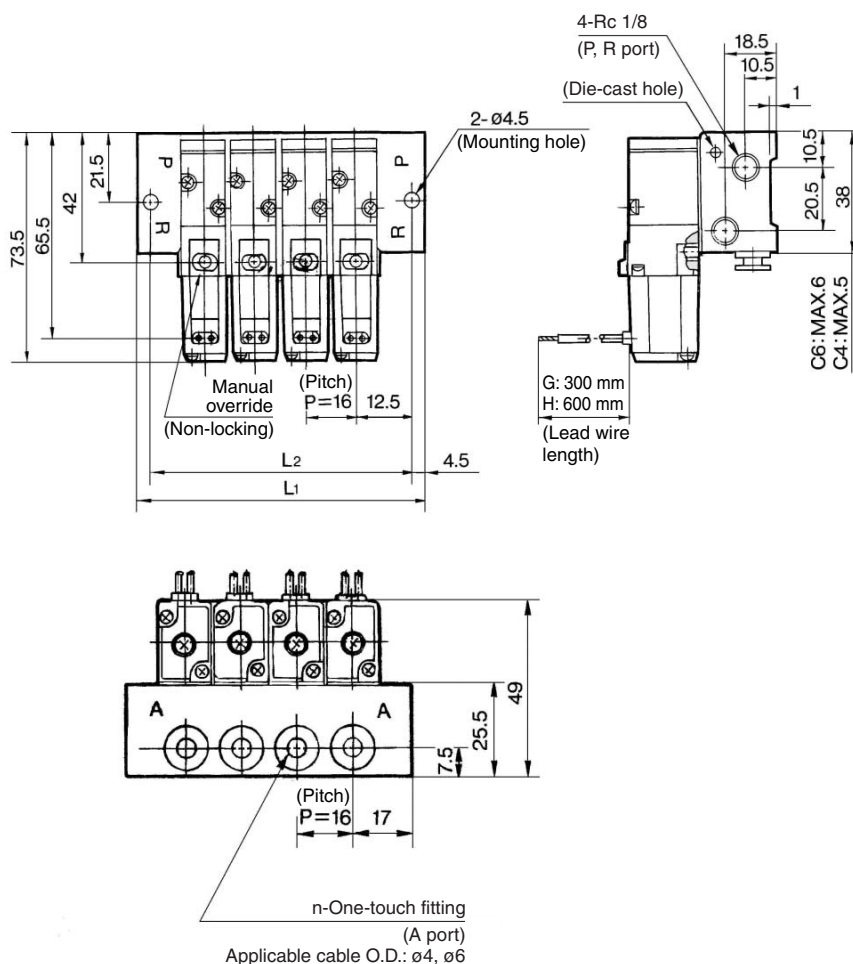
VS

VFN

Series VZ300

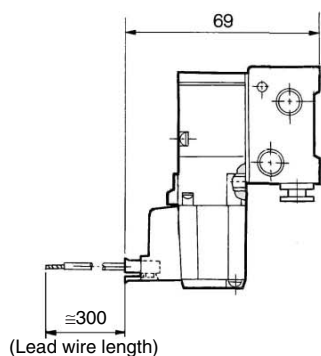
For Internal Pilot
Type 40 Manifold: Side Ported

VV3Z3-40- Stations 1-C4/C6
Grommet (G), (H)

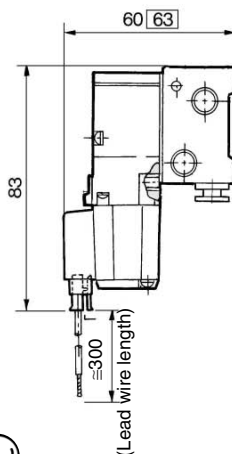


Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	50	66	82	98	114	130	146	162	178	194	210	226	242	258	274	290	306	322	338
L2	41	57	73	89	105	121	137	153	169	185	201	217	233	249	265	281	297	313	329

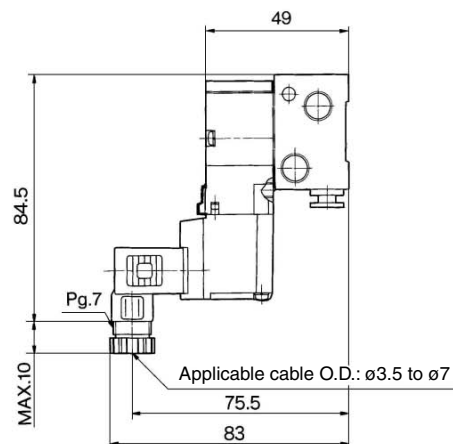
L plug connector (L)



M plug connector (M)



DIN terminal (D)

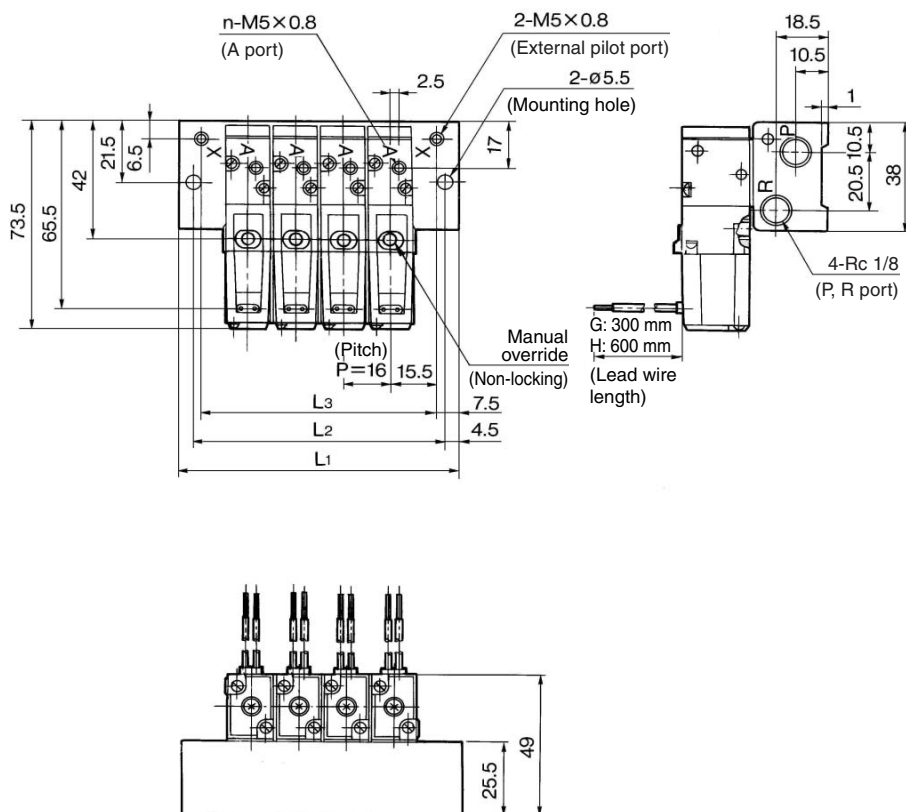


□: With light/surge voltage suppressor

3 Port Solenoid Valve Rubber Seal, Body Ported/Base Mounted **Series VZ300**

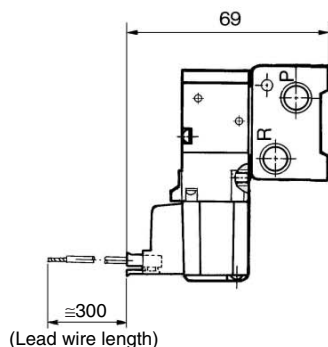
**For External Pilot
Type 21R Manifold: Top Ported**

VV3Z3-21R- Stations 1
Grommet (G), (H)

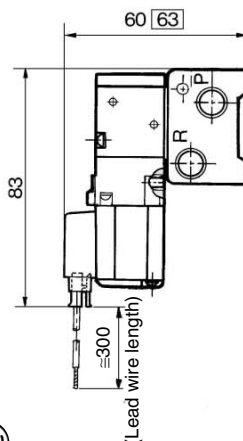


Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	62	78	94	110	126	142	158	174	190	206	222	238	254	270	286	302	318	334	350
L2	53	69	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309	325	341
L3	47	63	79	95	111	127	143	159	175	191	207	223	239	255	271	287	303	319	335

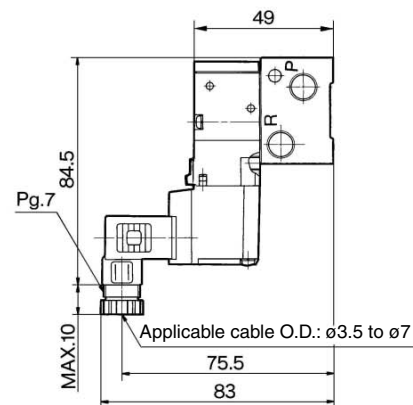
L plug connector (L)



M plug connector (M)



DIN terminal (D)



□: With light/surge voltage suppressor

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

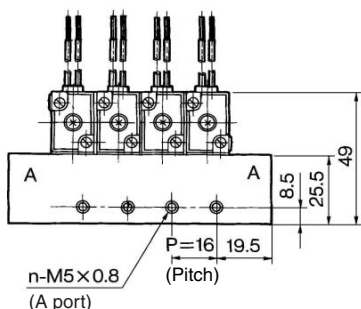
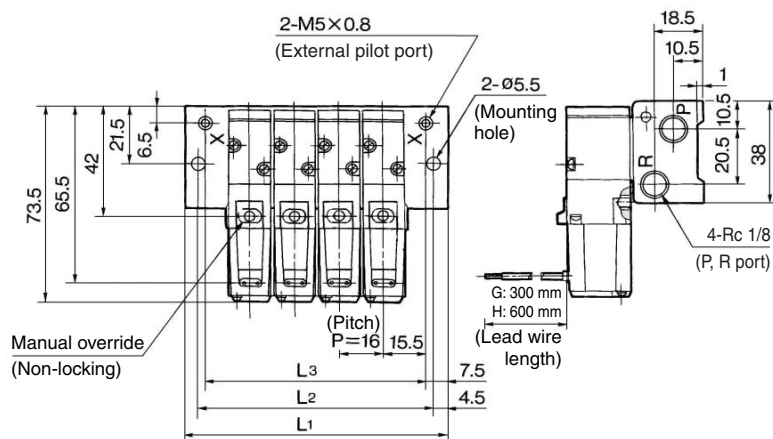
VS

VFN

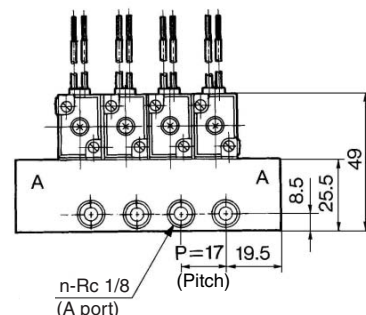
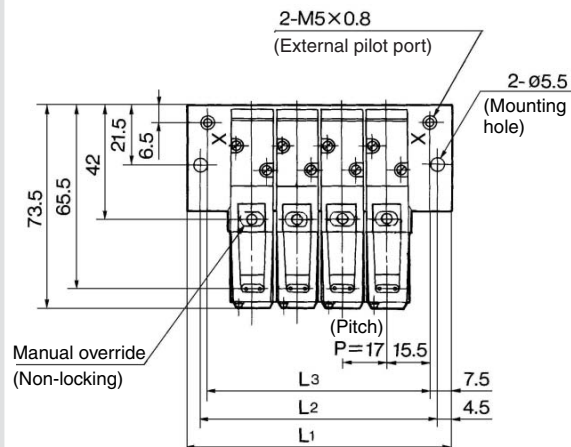
3 Port Solenoid Valve Rubber Seal, Body Ported/Base Mounted **Series VZ300**

For External Pilot Type 40R Manifold: Bottom Ported

VV3Z3-40R- Stations 1-M5/01
Grommet (G), (H)

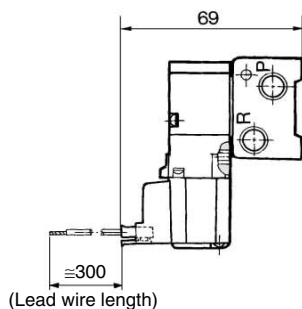


Rc 1/8

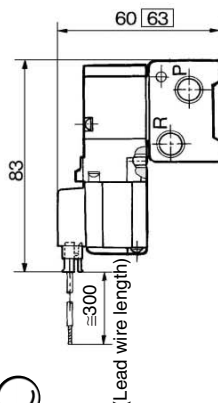


Port size	Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
M5	L1	62	78	94	110	126	142	158	174	190	206	222	238	254	270	286	302	318	334	350
	L2	53	69	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309	325	341
	L3	47	63	79	95	111	127	143	159	175	191	207	223	239	255	271	287	303	319	335
Rc 1/8	L1	63	80	97	114	131	148	165	182	199	216	233	250	267	284	301	318	335	352	369
	L2	54	71	88	105	122	139	156	173	190	207	224	241	258	275	292	309	326	343	360
	L3	48	65	82	99	116	133	150	167	184	201	218	235	252	269	286	303	320	337	354

L plug connector (L)

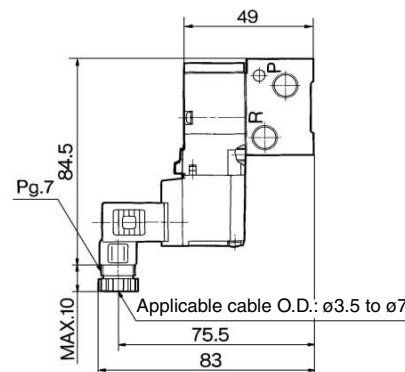


M plug connector (M)



□: With light/surge voltage suppressor

DIN terminal (D)



V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

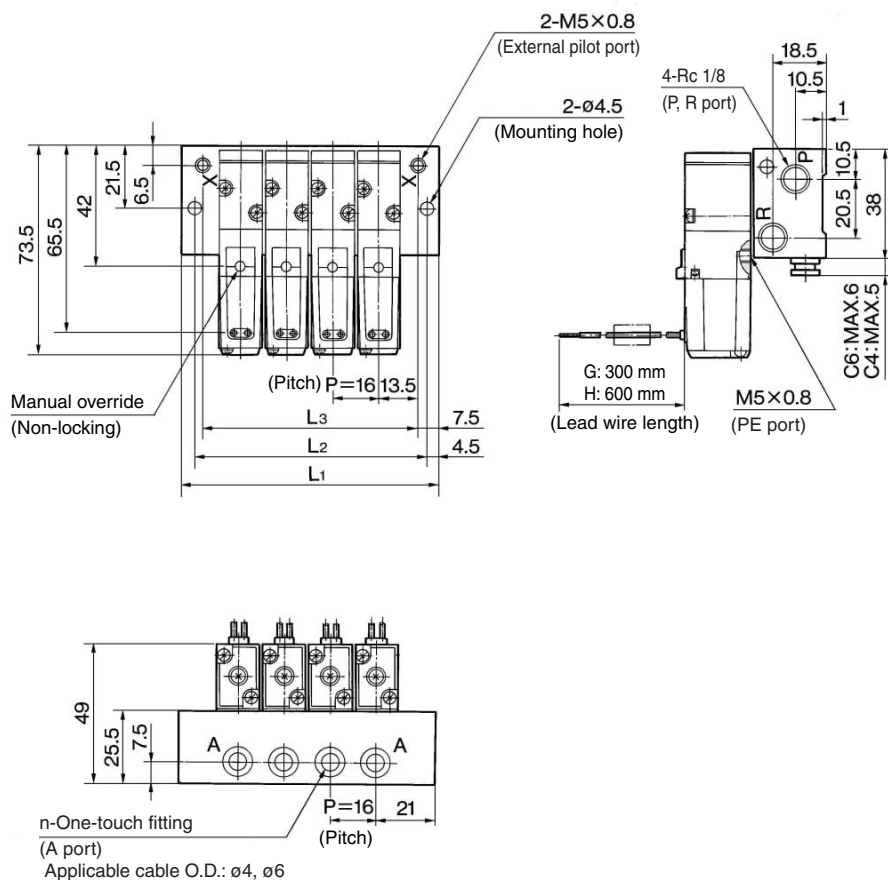
VS

VFN

Series VZ300

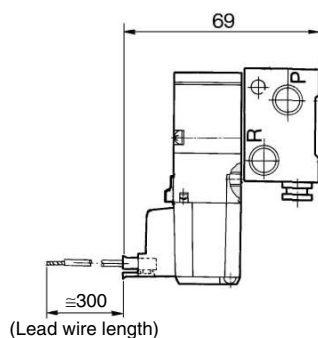
For External Pilot
Type 40R Manifold: Side Ported

VV3Z3-40R- Stations 1-C4/C6
Grommet (G), (H)

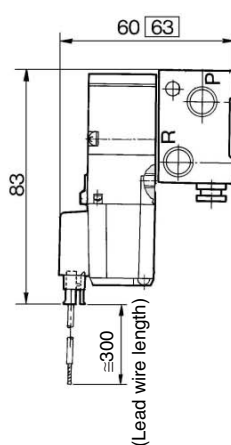


Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330	346
L ₂	49	65	81	97	113	129	145	161	177	193	209	225	241	257	273	289	305	321	337
L ₃	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331

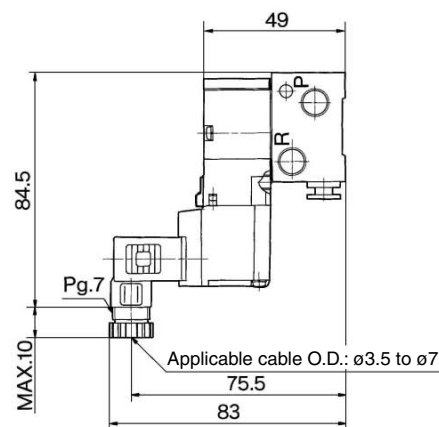
L plug connector (L)



M plug connector (M)



DIN terminal (D)



□: With light/surge voltage suppressor

3 Port Solenoid Valve

Rubber Seal, Body Ported/Base Mounted

Series VZ500

How to Order

Body ported VZ5 **1** **2** **5** **L** **01**

Base mounted VZ5 **1** **4** **5** **L**

Type of actuation

1 Normally closed

2 Normally open

Body option

Nil: Individual pilot exhaust type

M: Common exhaust for the pilot and main valve

R: External pilot type

Rated voltage

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

* Option

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Port size

01 1/8

Option

F: With foot bracket

Note) • Bracket is not mounted.
• Except external pilot.

Port size

01: With sub-plate 1/8

02: With sub-plate 1/4

Nil: Without sub-plate

Manual override

Nil: Non-locking push type

B: Locking type B (Slotted)

C: Locking type C (Manual)

Light/Surge voltage suppressor

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

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

Electrical entry

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

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

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

Series VZ500

**Low power consumption:
1.8 W DC**

**Applicable for vacuum use
–100 kPa**

500R: External pilot type

**Exhausting equipment for
pilot valve not required.**

500M: Central exhaust type

It is not necessary to take exhaust measures for the pilot valve for environmental protection.

**Possible to use as either a
selector or divider valve**

500R: External pilot type

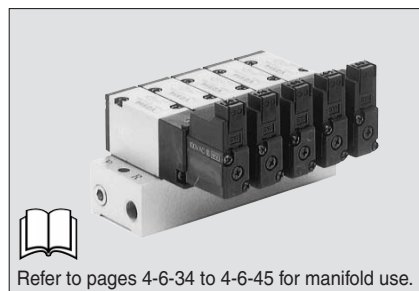
Can be used for universal porting.



Body ported



Base mounted



Refer to pages 4-6-34 to 4-6-45 for manifold use.



Made to Order Specifications
(For details, refer to page 4-6-46.)

Specifications

Fluid	Air	
Operating pressure range (MPa)	Internal pilot	0.15 to 0.7
Ambient and fluid temperature (°C)	–10 to 50 (No freezing. Refer to page 4-18-4.)	
Response time (ms) (at the pressure of 0.5 MPa) ⁽¹⁾	20 or less	
Max. operating frequency (Hz)	10	
Flow characteristics	Refer to the table below.	
Manual override ⁽²⁾	Non-locking push type Locking slotted type, Locking lever type	
Pilot exhaust method	Individual pilot exhaust type, Common exhaust (pilot and main valve) type	
Lubrication	Not required	
Mounting orientation	Unrestricted	
Shock/Vibration resistance (m/s ²) ⁽³⁾	300/50	
Enclosure	Dustproof	



Note 1) Based on dynamic performance test, JIS B 8374-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)

Note 2) When operating the locking type manually, apply torque of 0.2 N·m or less.

Note 3) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Solenoid Specifications

* Option

Electrical entry	Grommet (G)/(H), L plug connector (L), M plug connector (M), DIN terminal (D)	
Coil rated voltage (V)	AC50/60 Hz	100, 200, 24*, 48*, 110*, 220*
	DC	24, 6*, 12*, 48*
Allowable voltage fluctuation (%)	–15 to +10% of rated voltage	
Power consumption (W) [Current mA] Note)	DC	1.8 (With indicator light 2.1) [24 VDC: 75 (With indicator light 87.5)]
Apparent power (VA) ^{Note)} [Current mA]	Inrush	4.5/50 Hz, 4.2/60 Hz [100 VAC: 45/50 Hz, 42/60 Hz 200 VAC: 22.5/50 Hz, 21/60 Hz]
	Holding	3.5/50 Hz, 3/60 Hz [100 VAC: 35/50 Hz, 30/60 Hz 200 VAC: 17.5/50 Hz, 15/60 Hz]
Surge voltage suppressor	DC: Diode, AC: ZNR	
Indicator light	DC: LED (Red), AC: Neon bulb	



Note) At rated voltage

Flow Characteristics/Weight

Model		Type of actuation	Port size	Flow characteristics						Weight (g) Note)
				1 → 2 (P → A)			2 → 3 (A → R)			
				C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
Body ported	VZ512	N.C.	1/8	2.8	0.43	0.77	2.5	0.51	0.76	110
	VZ522	N.O.		2.7	0.38	0.72	2.4	0.42	0.69	
Base mounted (With sub-plate)	VZ514	N.C.	1/8	2.9	0.32	0.71	2.7	0.34	0.69	160 (Without sub-plate: 110)
	VZ524	N.O.		2.8	0.21	0.71	2.3	0.45	0.63	
	VZ514	N.C.	1/4	3.0	0.31	0.74	2.6	0.33	0.66	
	VZ524	N.O.		2.7	0.31	0.68	2.3	0.48	0.64	



Note) Weight stands for grommet type.

Option

Description	Part no.	Note
Foot bracket	DXT201-19-1A	With screw (For VZ5□2)

3 Port Solenoid Valve Rubber Seal, Body Ported/Base Mounted **Series VZ500**

External Pilot

VZ500R

Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port. It can be used in the vacuum (up to -100 kPa) or low pressure line with 0.15 MPa or less.

Specifications

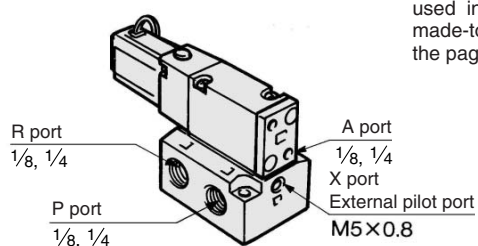
Applicable model	Base mounted (VZ314R, VZ324R)	
Operating pressure range (MPa)	Main pressure	-100 kPa to 0.7
	External pilot pressure	0.15 to 0.7



Note 1) For manifold base, refer to page 4-6-34.

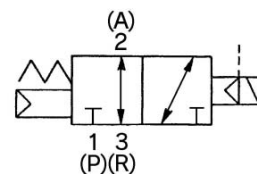
Note 2) In the case of the body ported type, the pilot type (VZ5□2R) is used exclusively on a manifold.

An external pilot style that can be used individually is available as a made-to-order. For details, refer to the page 4-6-46.

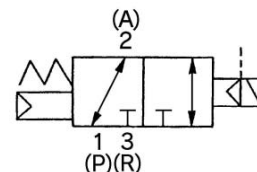


JIS Symbol

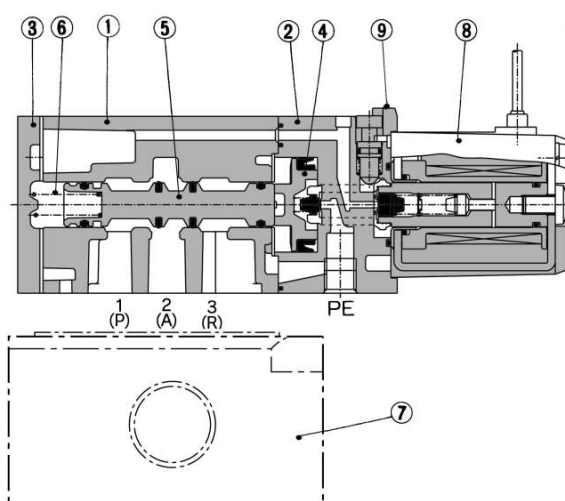
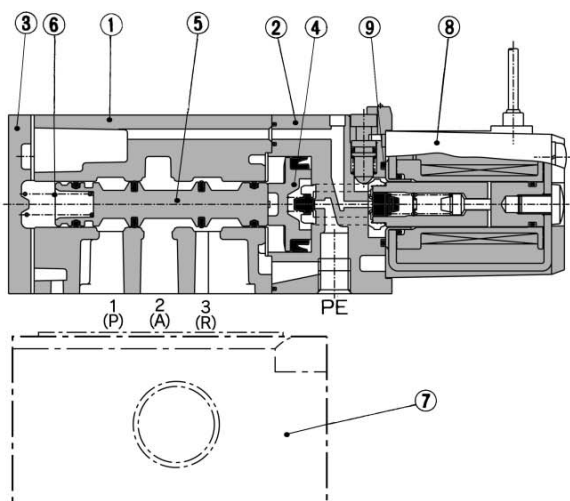
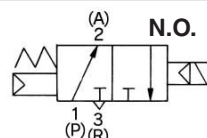
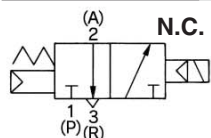
VZ51□R



VZ52□R



Construction



Component Parts

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

Replacement Parts

No.	Description	Material	Part no.	Note
⑦	Sub-plate	Aluminum die-casted	DXT201-2-1□P DXT201-2-2□P	1/8 1/4
⑧	Solenoid assembly	Epoxy/Stainless steel		
⑨	O-ring	NBR	13 x 11 x 1	Common with VZ100

Sub-plate part no.: DXT201-2- $\frac{1}{2}$ □P

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

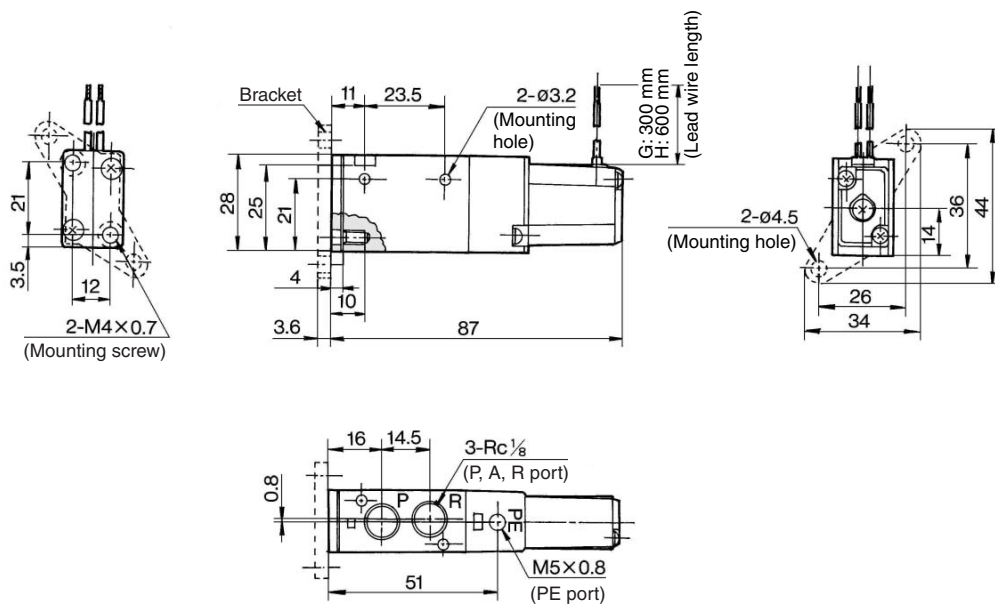
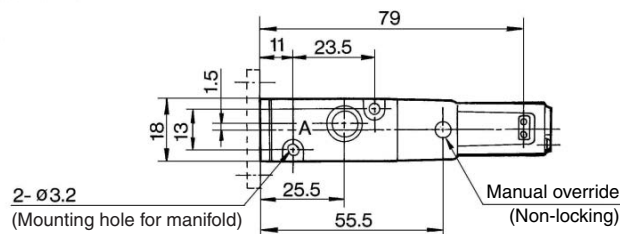
Series VZ500



Body Ported

Grommet (G), (H)

VZ5□2-□_H□□-01(-F)



L plug connector (L)

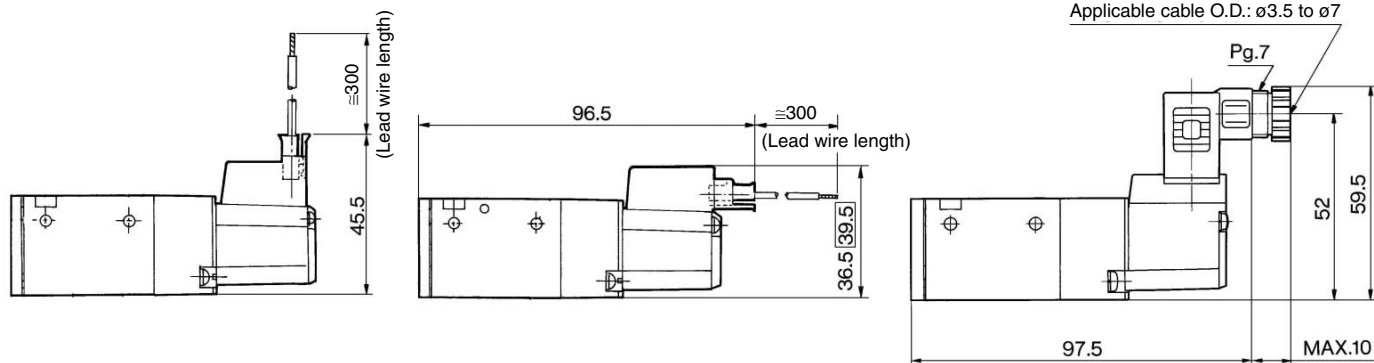
VZ5□2-□L□□-01

M plug connector (M)

VZ5□2-□M□□-01

DIN terminal (D)

VZ5□2-□D□□-01



□: With light/surge voltage suppressor

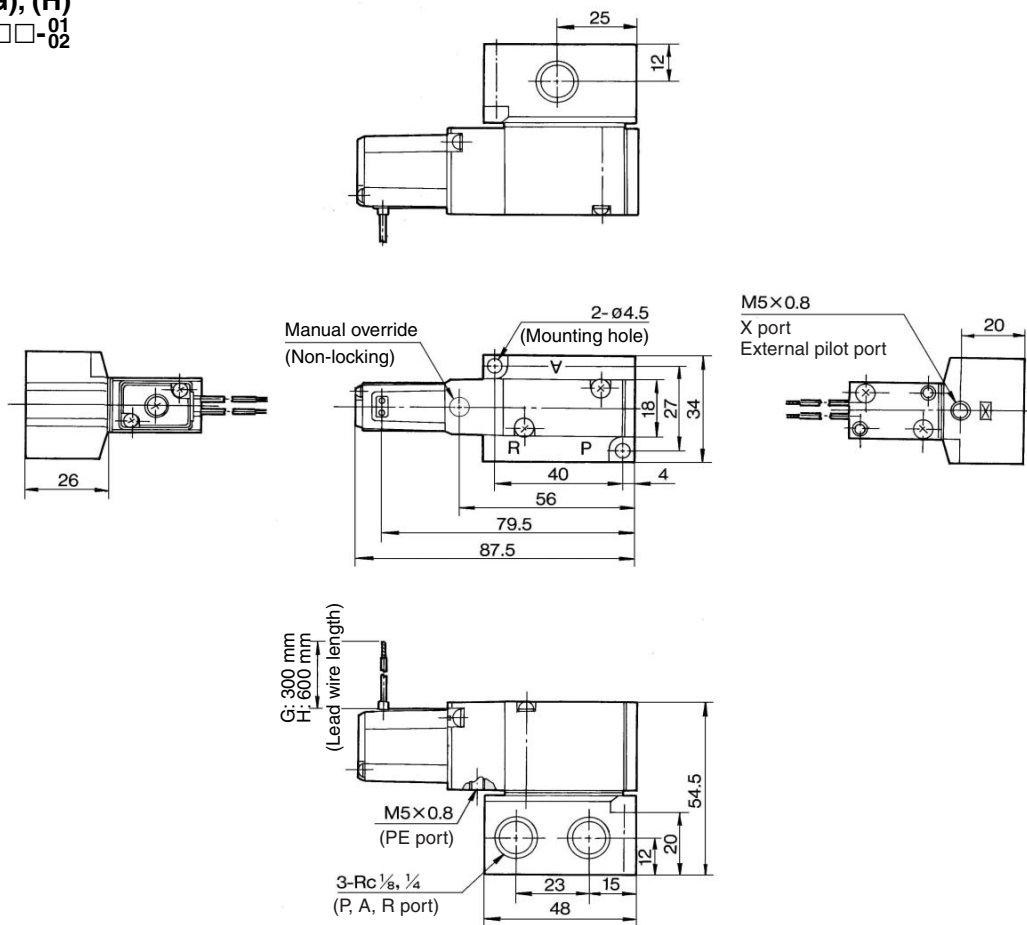
3 Port Solenoid Valve Rubber Seal, Body Ported/Base Mounted **Series VZ500**



Base Mounted (With sub-plate)

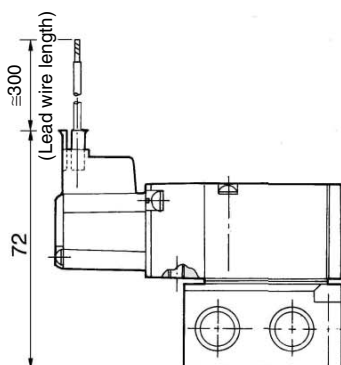
Grommet (G), (H)

VZ5□4-□^G□□-⁰¹₀₂



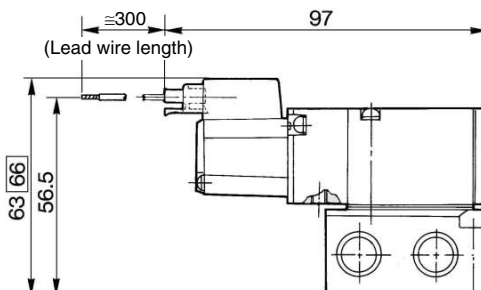
L plug connector (L)

VZ5□4-□□^L□□-⁰¹₀₂



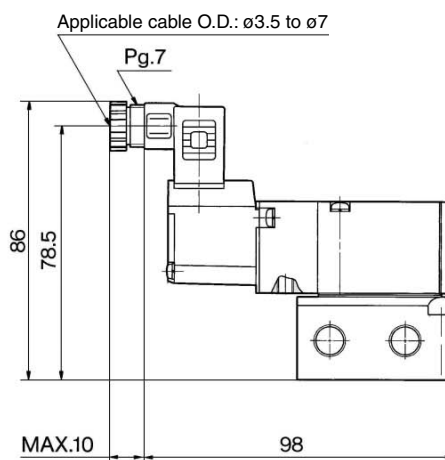
M plug connector (M)

VZ5□4-□□^M□□-⁰¹₀₂



DIN terminal (D)

VZ5□4-□□^D□□-⁰¹₀₂



□: With light/surge voltage suppressor

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

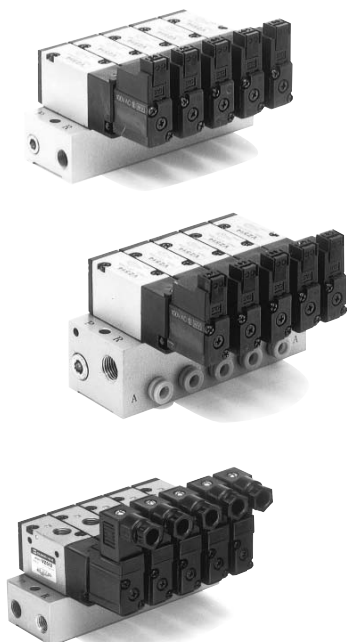
VZ

VS

VFN

Series VZ500

Manifold Specifications



Flow Characteristics

Manifold			Port size		Flow characteristics					
					1 → 2 (P → A)			2 → 3 (A → R)		
			1(P), 3(R) port	2(A) port	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv
Body ported For internal pilot	VV3Z5-20-□1	VZ5□2	1/8	1/8	2.2	0.34	0.55	2.3	0.27	0.59
	VV3Z5-21-□1		1/4	1/8	2.2	.39	0.59	2.4	0.32	0.62
Base mounted For internal pilot	VV3Z5-40-□2	VZ5□4	1/8	1/8	2.1	0.35	0.59	2.3	0.27	0.54
	VV3Z5-41-□2		1/4	1/8	2.2	0.35	0.59	2.4	0.36	0.66
	VV3Z5-41-□1		1/4	1/8	2.0	0.27	0.47	2.2	0.32	0.56
			1/4	C6	1.6	0.32	0.39	2.2	0.27	0.54
			1/4	C8	2.1	0.24	0.51	2.3	0.31	0.59
Body ported For external pilot	VV3Z5-21R-□1	VZ5□2R	1/4	1/8	2.2	0.34	0.55	2.4	0.32	0.62
Base mounted For external pilot	VV3Z5-41R-□2	VZ5□4R	1/4	1/8	2.2	0.35	0.59	2.4	0.36	0.66
	VV3Z5-41R-□1		1/4	1/8	2.0	0.27	0.47	2.2	0.32	0.56
			1/4	C6	1.6	0.32	0.39	2.2	0.27	0.54
			1/4	C8	2.1	0.24	0.51	2.3	0.31	0.59



Note) Value at manifold base mounted

How to Order Manifold

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

(Example)

VV3Z5-20-031.....1 pc. (Manifold base)

VV3Z8-41R-031-01.....1 pc. (Manifold base)

*VZ512-5LZ-01.....2 pcs. (Valve)

*VZ514R-5G.....2 pcs. (Valve)

*DXT201-15-6A.....1 pc. (Blanking plate assembly)

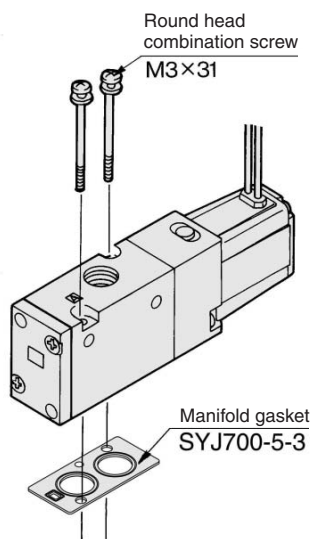
*DXT201-15-4A.....1 pc. (Blanking plate assembly)

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

Option

Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

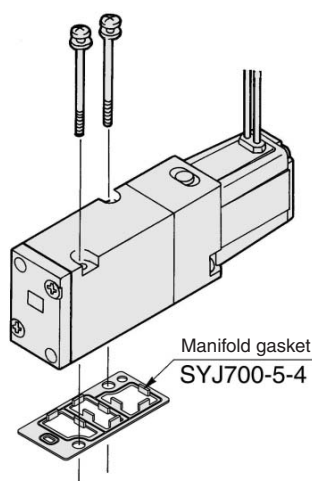
Body ported (VZ5□2)



Applicable base
VV3Z5-20-□1
VV3Z5-21-□1
VV3Z5-21R-□1

Manifold base

Base mounted (VZ5□4)



Applicable base
Sub-plate

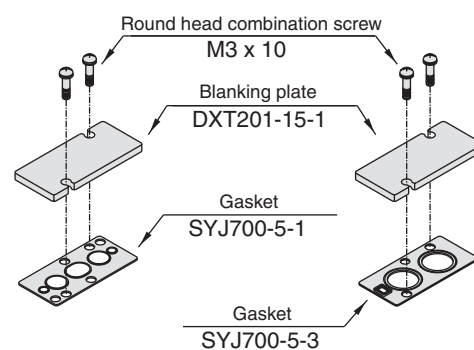
VV3Z5-40-□2
VV3Z5-41-□2
VV3Z5-41-□1
VV3Z5-41R-□2
VV3Z5-41R-□1

Manifold base

Blanking Plate Assembly

Part no.:
DXT201-15-4A
(In common for body ported type and base mounted type)

Part no.:
DXT201-15-6A
(For shipping assembled manifold base for body ported type)



Applicable Blanking Plate Assembly

Manifold base	Blanking plate assembly part no.
VV3Z5-20	DXT201-15-6A
VV3Z5-21(R)	
VV3Z5-40	DXT201-15-4A
VV3Z5-41(R)	

Note) Only in the case of assembled with manifold base at the time of shipment.

* For shipping blanking plate assembly alone, DXT201-15-4A (In common use for body ported type, base mounted type)

⚠ Caution

Mounting Screw Tightening Torques

M3: 0.8 N·m
4-6-34

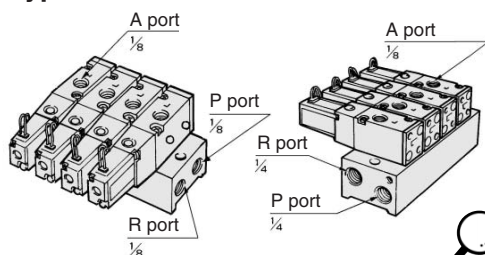
⚠ Warning

When mounting a solenoid valve on the manifold base or sub-plate, etc., the mounting direction is determined. If mounted in the wrong direction, the equipment to be wired might result in malfunction. Refer to dimensions of this catalog and use caution to the mounting direction.

3 Port Solenoid Valve Rubber Seal, Body Ported/Base Mounted **Series VZ500**

Manifold for Internal Pilot

Type 20/21



How to Order

VV3Z5-20-05 1-

Manifold	
20	Type 20
21	Type 21

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

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

Applicable solenoid valve

VZ512-□□□□-01□
VZ512M-□□□□-01□
VZ522-□□□□-01□
VZ522M-□□□□-01□

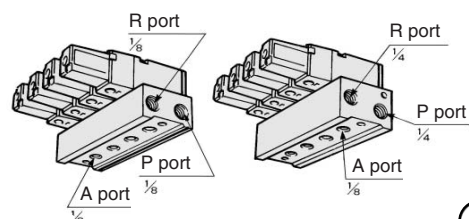
Applicable blanking plate assembly

DXT201-15-4A



Note) If there are more than 6 stations for type 20, or more than 9 stations for 21 type, supply air to both sides of P port and exhaust air from both sides of R port.

Type 40/41 (Bottom ported)



How to Order

VV3Z5-40-05 2-01

Manifold	
40	Type 40
41	Type 41

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

P/R port thread type	
Nil	Rc
F	G
N	NPT
Z	NPTF

Applicable solenoid valve

VZ514-□□□□
VZ514M-□□□□
VZ524-□□□□
VZ524M-□□□□

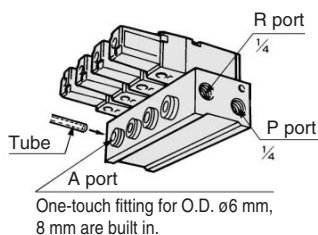
Applicable blanking plate assembly

DXT201-15-4A



Note) If there are more than 6 stations for type 40, or more than 9 stations for 41 type, supply air to both sides of P port and exhaust air from both sides of R port.

Type 41 (Side ported)



How to Order

VV3Z5-41-05 1-C6

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

A port side	
01	1/8
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
B7	One-touch fitting for ø1/4
B9	One-touch fitting for ø5/16

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

Applicable solenoid valve

VZ514-□□□□
VZ514M-□□□□
VZ524-□□□□
VZ524M-□□□□

Applicable blanking plate assembly

DXT201-15-4A

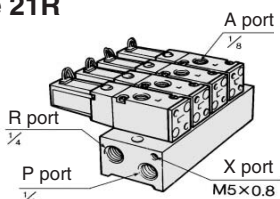


Note) For more than 9 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Manifold for External Pilot

Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port. It can be used in the vacuum (up to -100 kPa) or low pressure line with 0.15 MPa or less.

Type 21R



How to Order

VV3Z5-21R-05 1-

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

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

Applicable solenoid valve

VZ512R-□□□□-M5
VZ522R-□□□□-M5

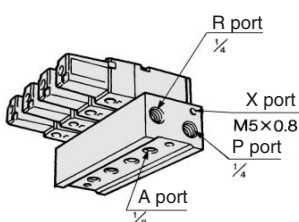
Applicable blanking plate assembly

DXT201-15-4A



Note) For more than 9 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 41R (Bottom ported)



How to Order

VV3Z5-41R-05 2-01

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

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

Applicable solenoid valve

VZ514R-□□□□
VZ524R-□□□□

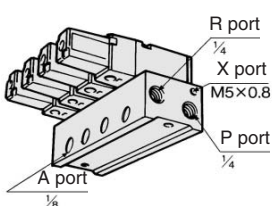
Applicable blanking plate assembly

DXT201-15-4A



Note) For more than 9 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 41R (Side ported)



How to Order

VV3Z5-41R-05 1-01

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

A port side	
01	1/8
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
B7	One-touch fitting for ø1/4
B9	One-touch fitting for ø5/16

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

Applicable solenoid valve

VZ514R-□□□□
VZ524R-□□□□

Applicable blanking plate assembly

DXT201-15-4A

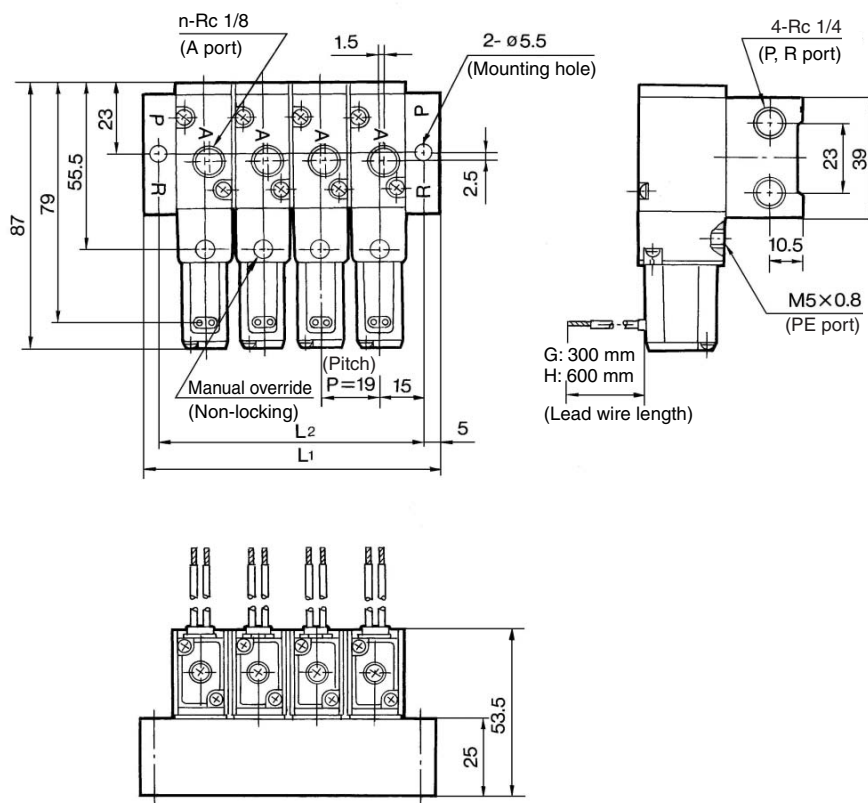


Note) For more than 9 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Series VZ500

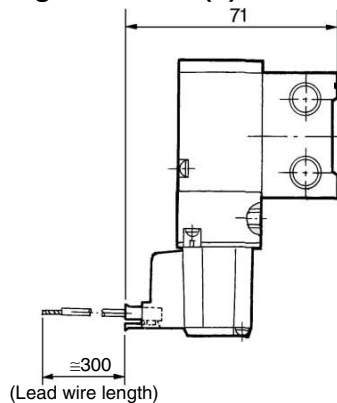
For Internal Pilot
Type 20 Manifold: Top Ported

VV3Z5-20- Stations 1
Grommet (G), (H)

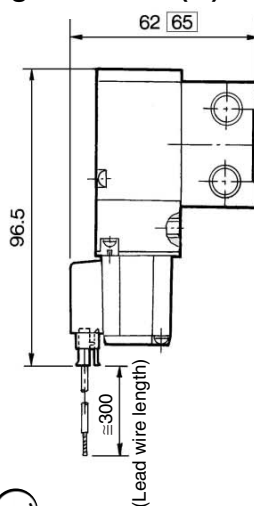


Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁	59	78	97	116	135	154	173	192	211	230	249	268	287	306	325	344	363	382	401
L ₂	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

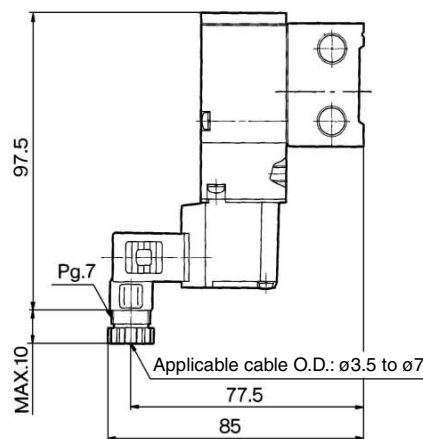
L plug connector (L)



M plug connector (M)



DIN terminal (D)

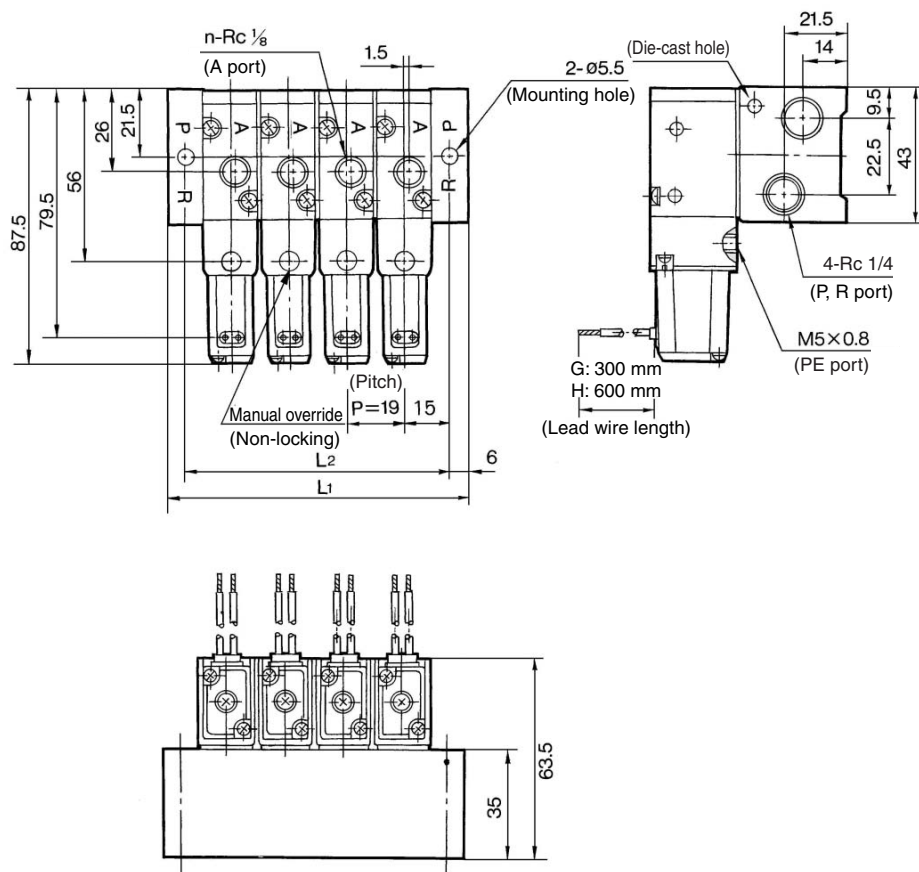


□: With light/surge voltage suppressor

3 Port Solenoid Valve Rubber Seal, Body Ported/Base Mounted **Series VZ500**

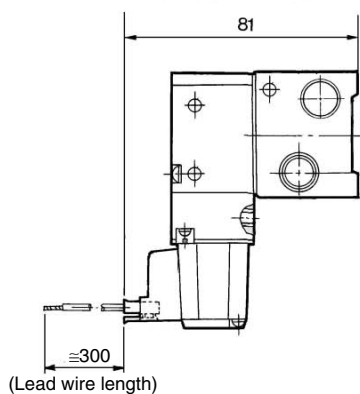
For Internal Pilot
Type 21 Manifold: Top Ported

VV3Z5-21- **Stations 1**
Grommet (G), (H)

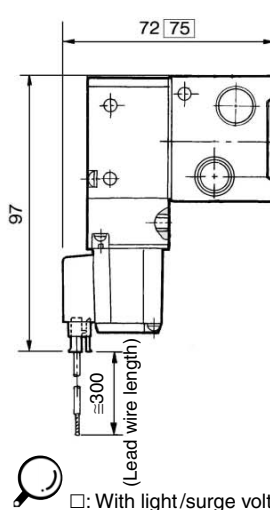


Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L_1	61	80	99	118	137	156	175	194	213	232	251	270	289	308	327	346	365	384	403
L_2	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

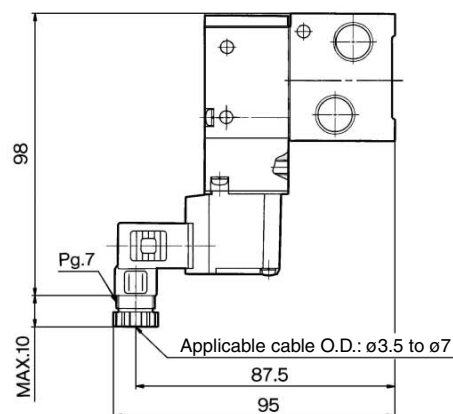
L plug connector (L)



M plug connector (M)



DIN terminal (D)



V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

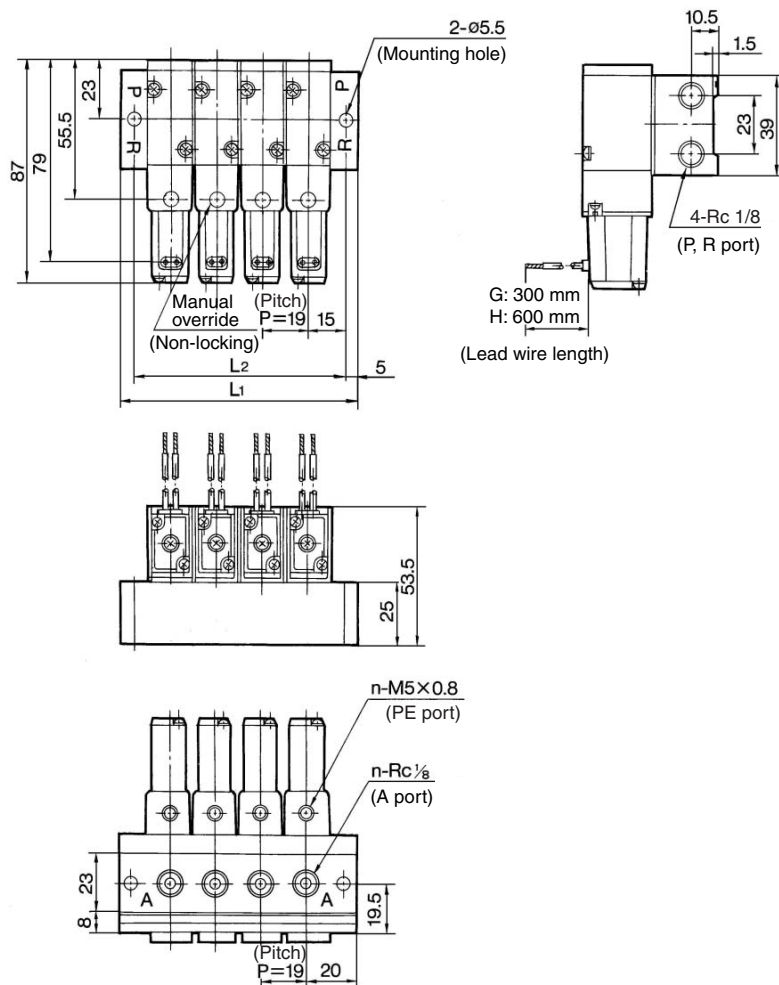
VS

VFN

Series VZ500

For Internal Pilot
Type 40 Manifold: Bottom Ported

VV3Z5-40- Stations 2-01
Grommet (G), (H)

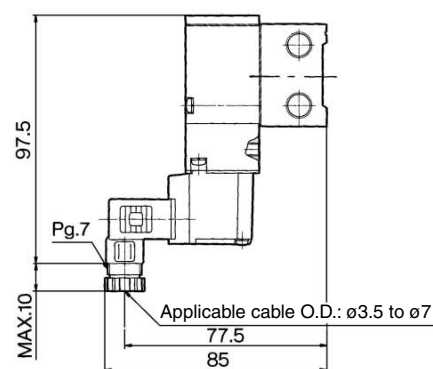
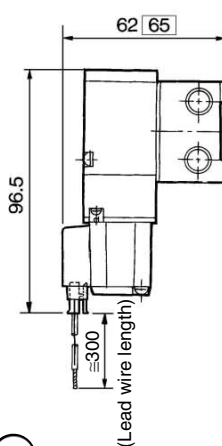
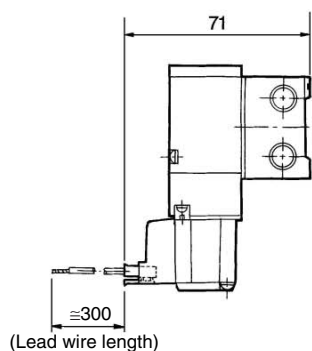


Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁	59	78	97	116	135	154	173	192	211	230	249	268	287	306	325	344	363	382	401
L ₂	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

L plug connector (L)

M plug connector (M)

DIN terminal (D)

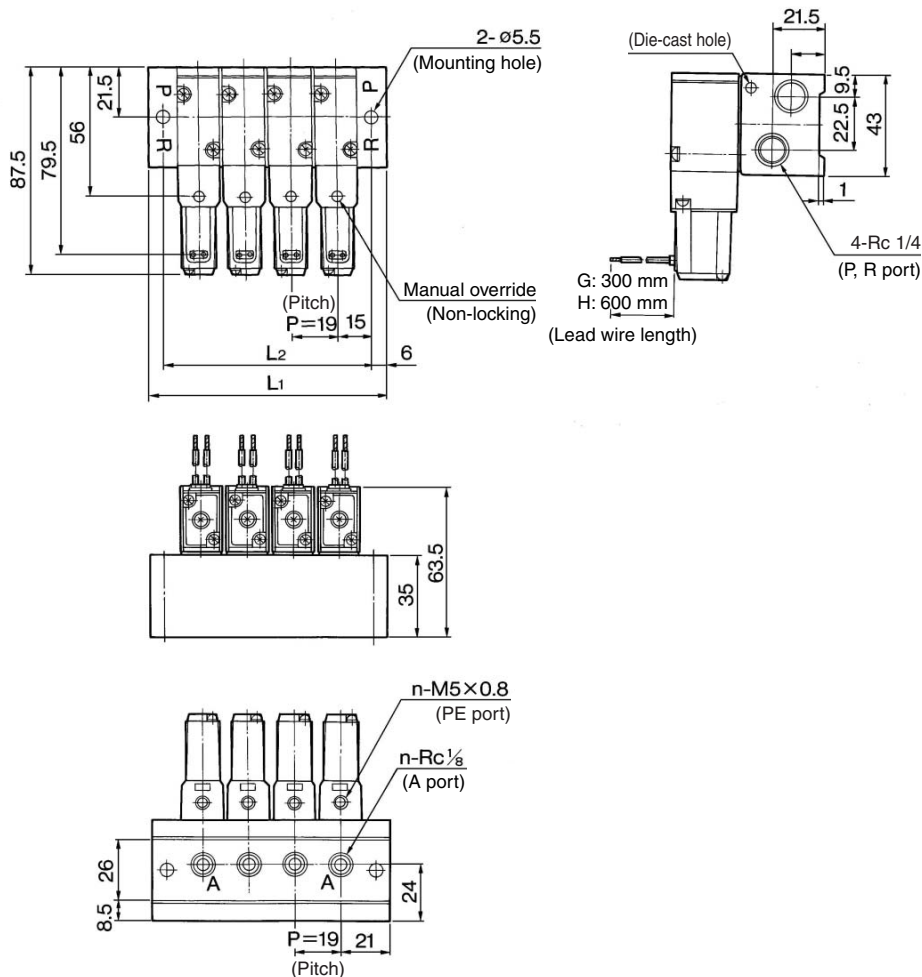


□: With light/surge voltage suppressor

3 Port Solenoid Valve Rubber Seal, Body Ported/Base Mounted **Series VZ500**

For Internal Pilot
Type 41 Manifold: Bottom Ported

VV3Z5-41- Stations 2-01
Grommet (G), (H)

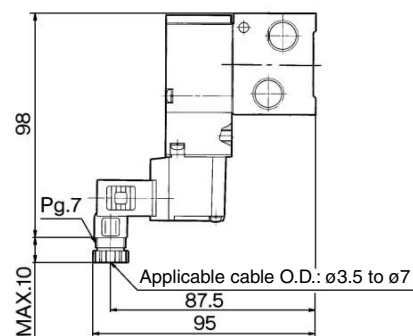
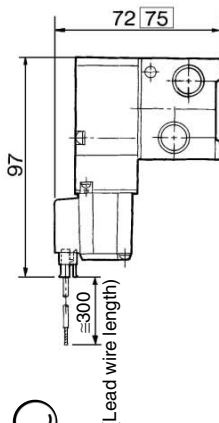
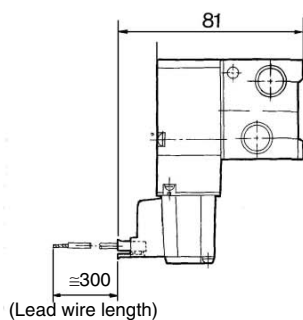


Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁	61	80	99	118	137	156	175	194	213	232	251	270	289	308	327	346	365	384	403
L ₂	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

L plug connector (L)

M plug connector (M)

DIN terminal (D)



□: With light/surge voltage suppressor

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

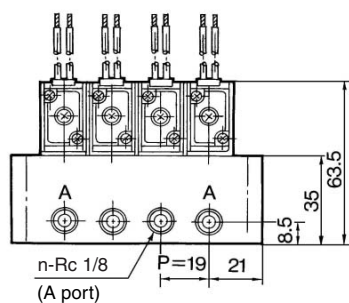
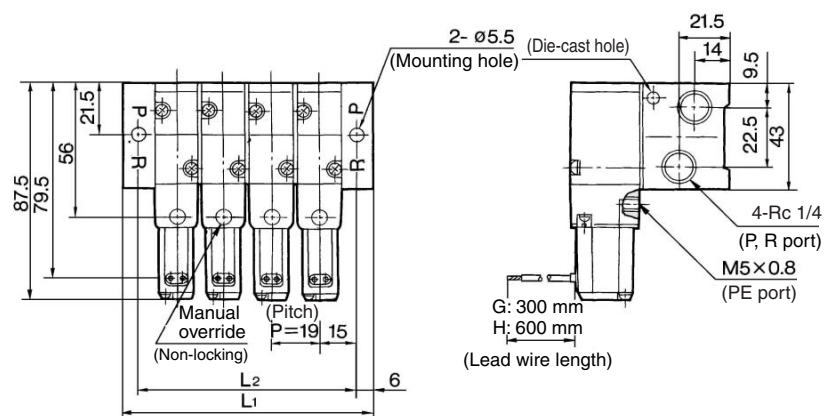
VS

VFN

Series VZ500

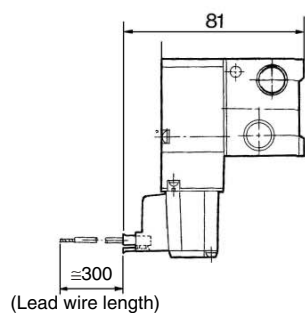
For Internal Pilot
Type 41 Manifold: Side Ported

VV3Z5-41- Stations 1-01
Grommet (G), (H)

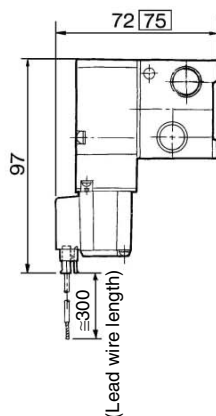


Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁	61	80	99	118	137	156	175	194	213	232	251	270	289	308	327	346	365	384	403
L ₂	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

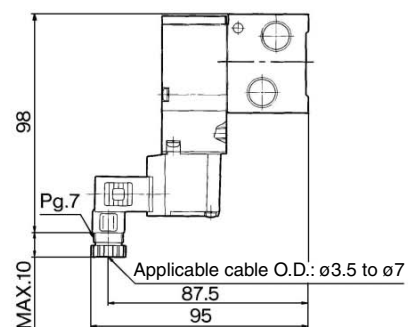
L plug connector (L)



M plug connector (M)



DIN terminal (D)

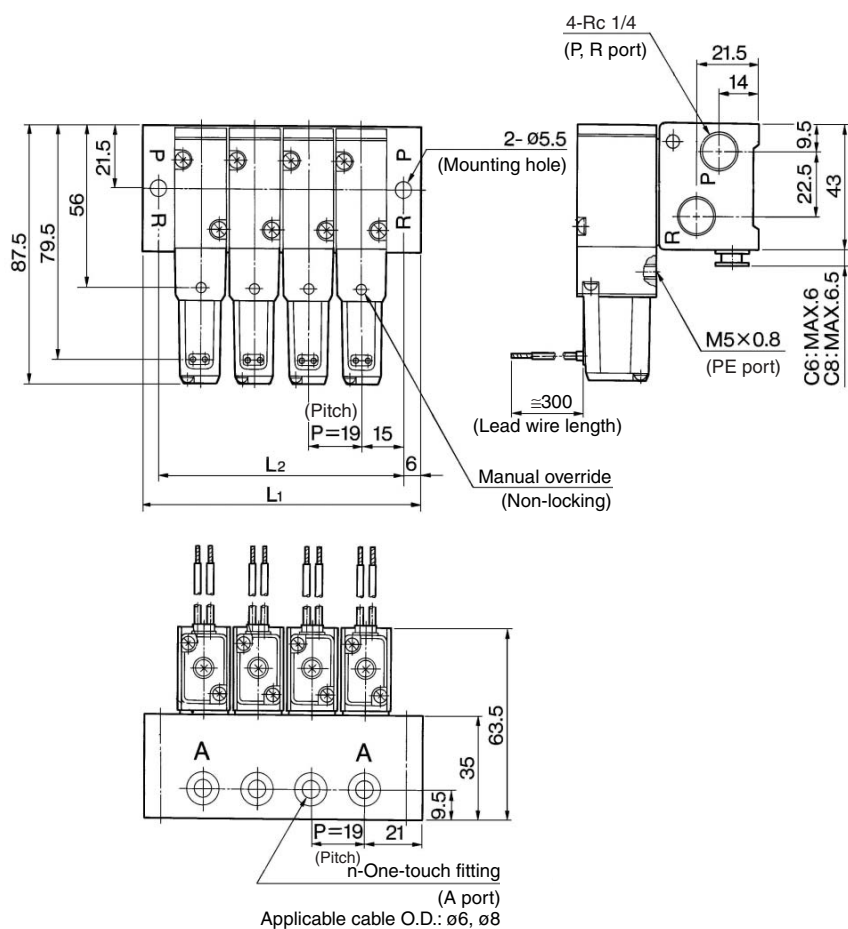


□: With light/surge voltage suppressor

3 Port Solenoid Valve Rubber Seal, Body Ported/Base Mounted **Series VZ500**

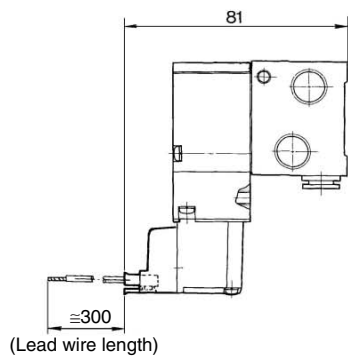
**For Internal Pilot
Type 41 Manifold: Side Ported**

**VV3Z5-41- Stations 1-C6, C8
Grommet (G), (H)**

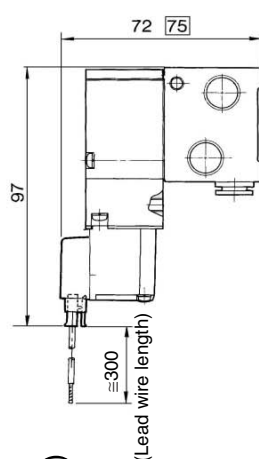


Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁	61	80	99	118	137	156	175	194	213	232	251	270	289	308	327	346	365	384	403
L ₂	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

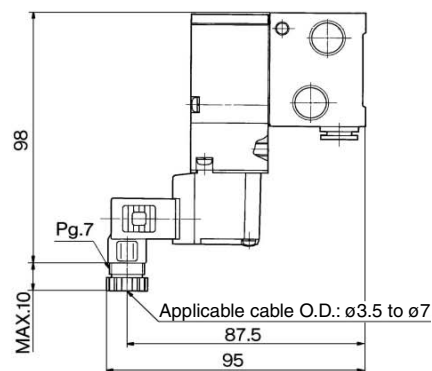
L plug connector (L)



M plug connector (M)



DIN terminal (D)



□: With light/surge voltage suppressor

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

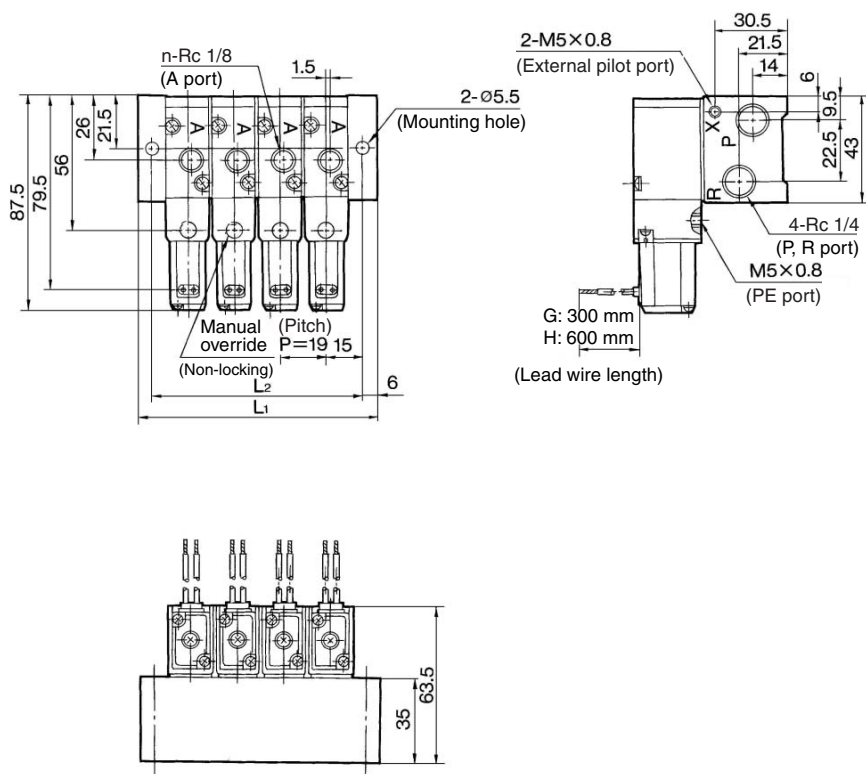
VS

VFN

Series VZ500

For Internal Pilot
Type 21R Manifold: Top Ported

VV3Z5-21R- Stations 1
Grommet (G), (H)

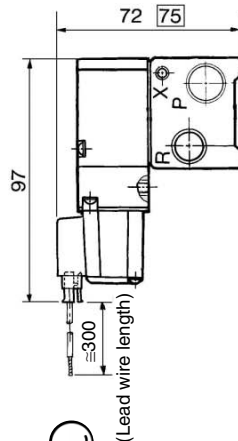
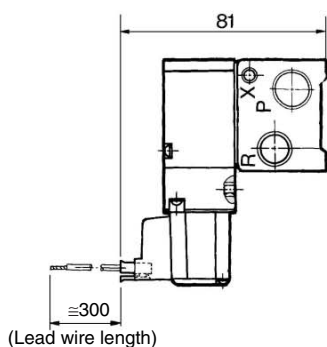


Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁	61	80	99	118	137	156	175	194	213	232	251	270	289	308	327	346	365	384	403
L ₂	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

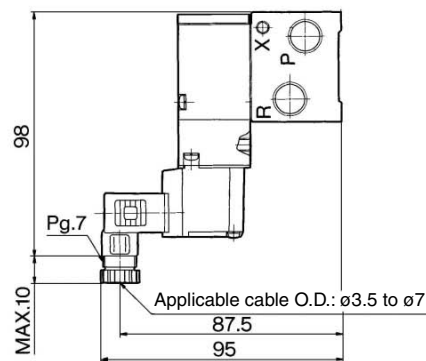
L plug connector (L)

M plug connector (M)

DIN terminal (D)



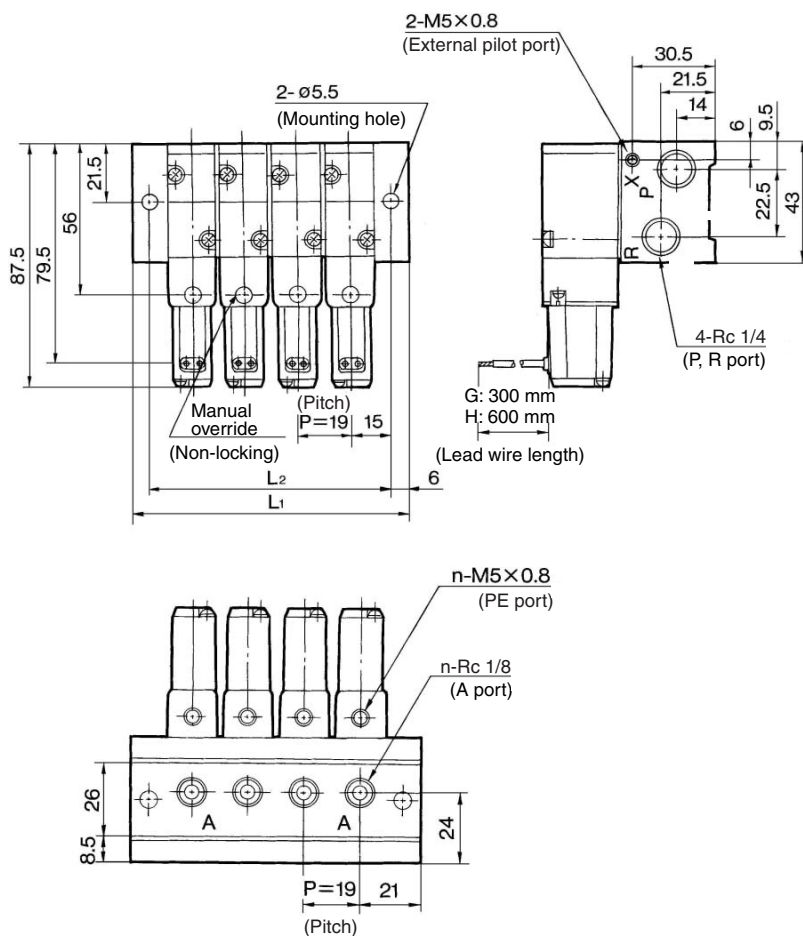
□: With light/surge voltage suppressor



3 Port Solenoid Valve Rubber Seal, Body Ported/Base Mounted **Series VZ500**

For Internal Pilot Type 41R Manifold: Bottom Ported

VV3Z5-41R- Stations 2-01
Grommet (G), (H)

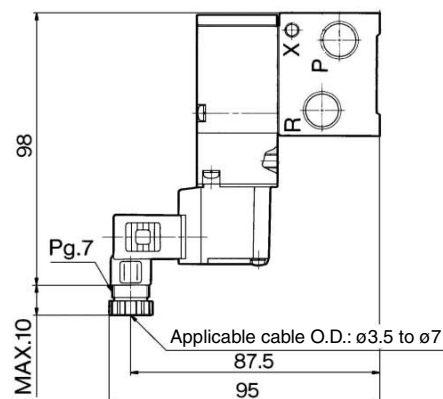
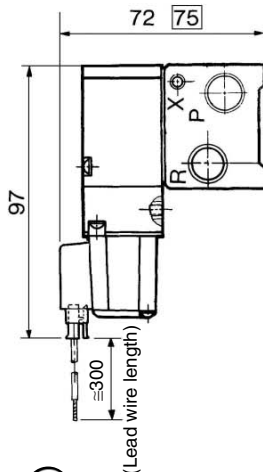
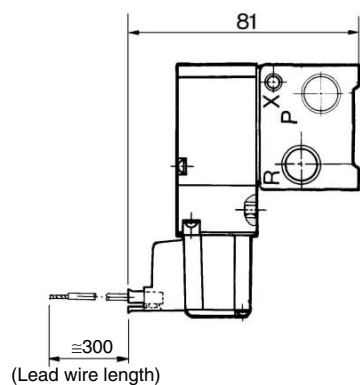


Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁	61	80	99	118	137	156	175	194	213	232	251	270	289	308	327	346	365	384	403
L ₂	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

L plug connector (L)

M plug connector (M)

DIN terminal (D)



□: With light/surge voltage suppressor

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

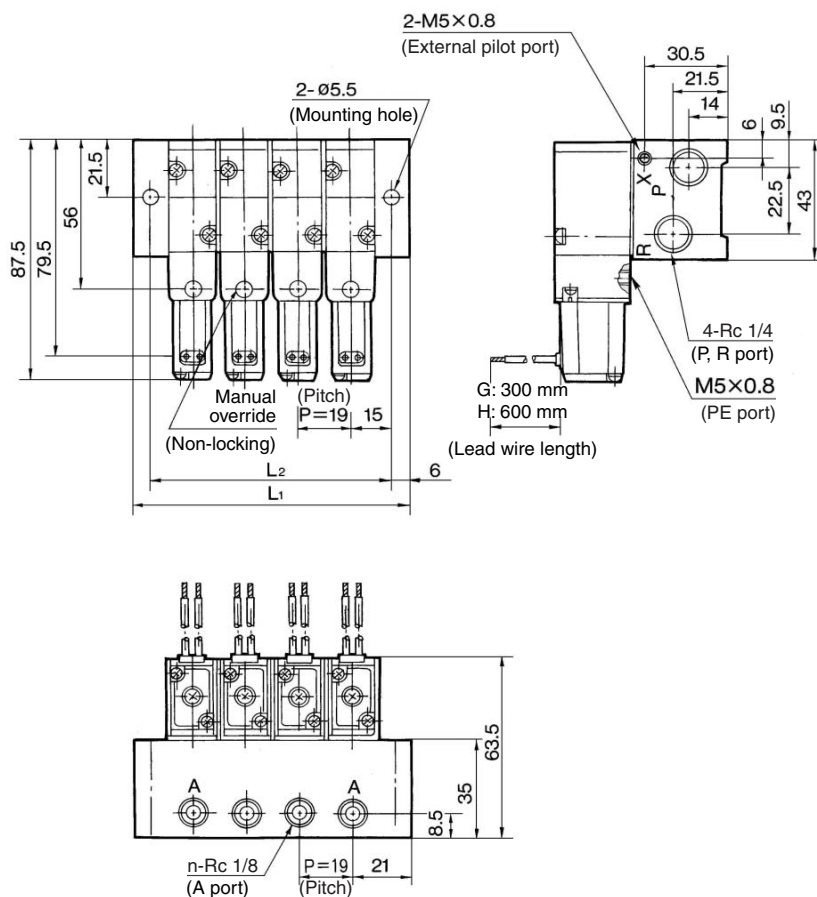
VS

VFN

Series VZ500

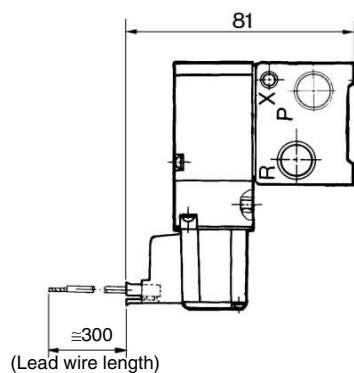
For Internal Pilot
Type 41R Manifold: Side Ported

VV3Z5-41R- Stations 1-01
Grommet (G), (H)

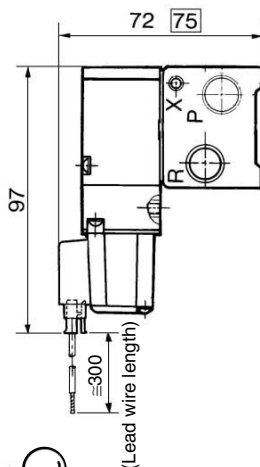


Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁	61	80	99	118	137	156	175	194	213	232	251	270	289	308	327	346	365	384	403
L ₂	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

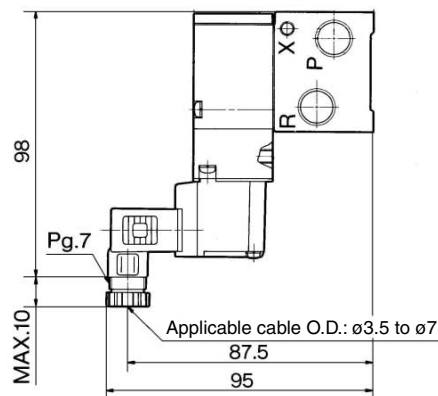
L plug connector (L)



M plug connector (M)



DIN terminal (D)

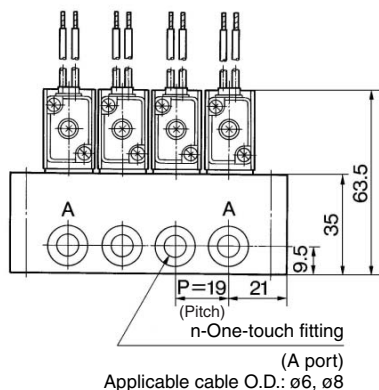
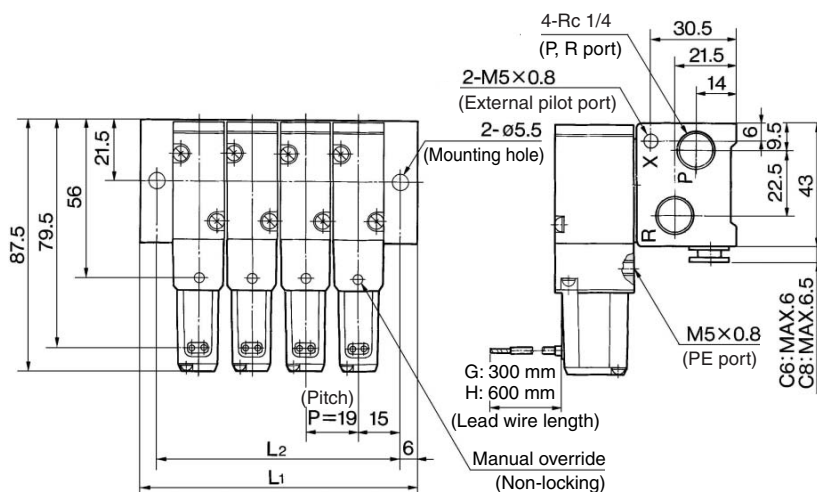


□: With light/surge voltage suppressor

3 Port Solenoid Valve Rubber Seal, Body Ported/Base Mounted **Series VZ500**

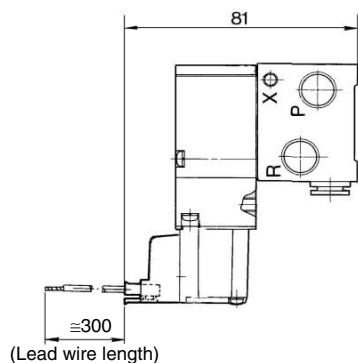
**For Internal Pilot
Type 41R Manifold: Side Ported**

**VV3Z5-41R- Stations 1-C6/C8
Grommet (G), (H)**

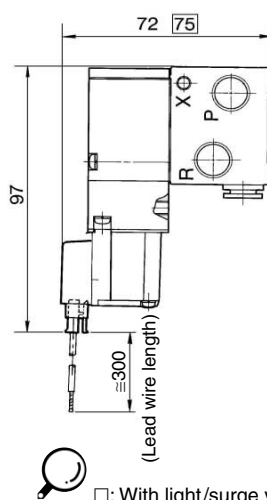


Stations n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁	61	80	99	118	137	156	175	194	213	232	251	270	289	308	327	346	365	384	403
L ₂	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391

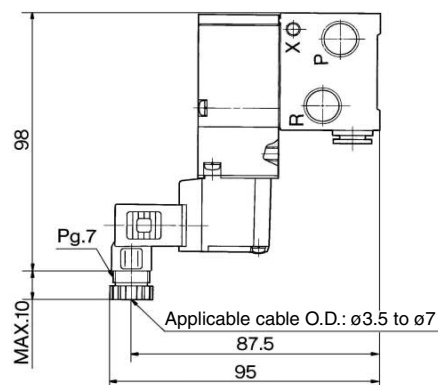
L plug connector (L)



M plug connector (M)



DIN terminal (D)



□: With light/surge voltage suppressor

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

Series VZ

Made to Order Specifications:

1. Solenoid Valve: Opposite Mounting of Solenoid Assembly

Applicable solenoid valve series

VZ100/300/500

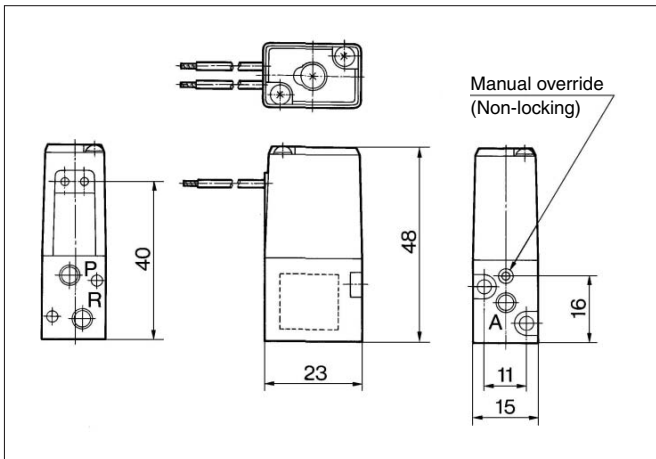
Model no.

VZ1 0 () - X1

VZ₅³ () - X1

• Entry is the same as standard products.

Dimensions: VZ110-□G-M5-X1



2. Solenoid Valve: External Pilot Specifications

● Applicable for individual use of body ported external pilot type

Applicable solenoid valve series

VZ300/500

Model no.

VZ₅³ 2R () - X20

• Entry is the same as standard products.

Specifications

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

Dimensions

VZ300: 8 mm longer in total length

VZ500: 8 mm longer in total length

Dimensions: VZ312R-□G-M5-X20

