

3 Port Solenoid Valve

Rubber Seal, Body Ported/Base Mounted

Series VZ500

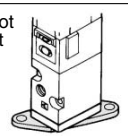
How to Order

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Option

F: With foot bracket



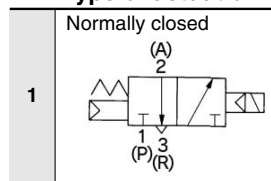
Note) • Bracket is not mounted.
• Except external pilot.

Port size

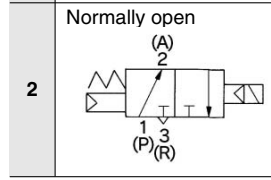
01 1/8

Type of actuation

1 Normally closed

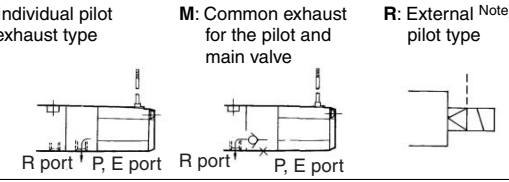


2 Normally open

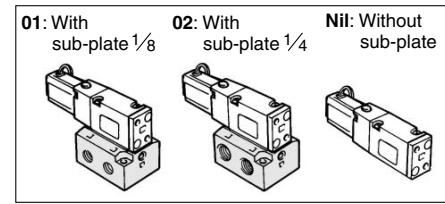


Body option

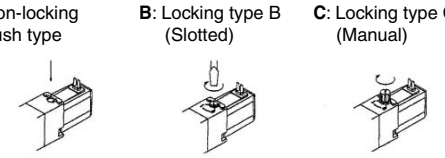
Nil: Individual pilot exhaust type



M: Common exhaust for the pilot and main valve



R: External pilot type



Note) VZ5□2R is for manifold only.


Rated voltage

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


* Option

Manual override


Nil: Non-locking push type



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)	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.

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

Base mounted VZ5 1 4 □ 5 L □ □ □ □ □ □ □

- 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

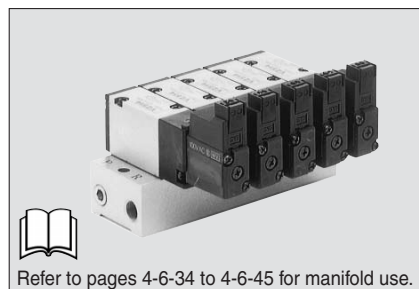
Can be used for universal porting.



Body ported



Base mounted



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

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) [Current mA] Note	AC	Inrush	4.5/50 Hz, 4.2/60 Hz [100 VAC: 45/50 Hz, 42/60 Hz 200 VAC: 22.5/50 Hz, 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 [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(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)

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

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

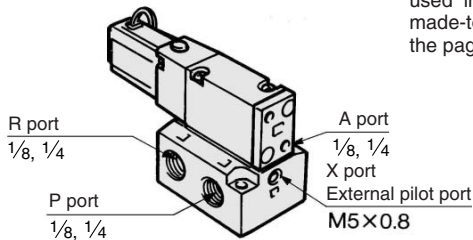
Applicable model	Base mounted (VZ314R, VZ324R)	
Operating pressure range (MPa)	Main pressure	-100 kPa to 0.7
	External pilot pressure	0.15 to 0.7



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

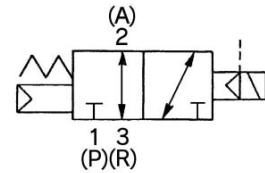
Note 2) In the case of the body ported type, the pilot type (VZ5□2R) is used exclusively on a manifold.

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.

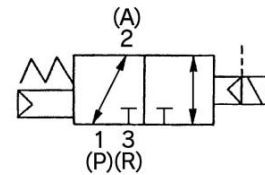


JIS Symbol

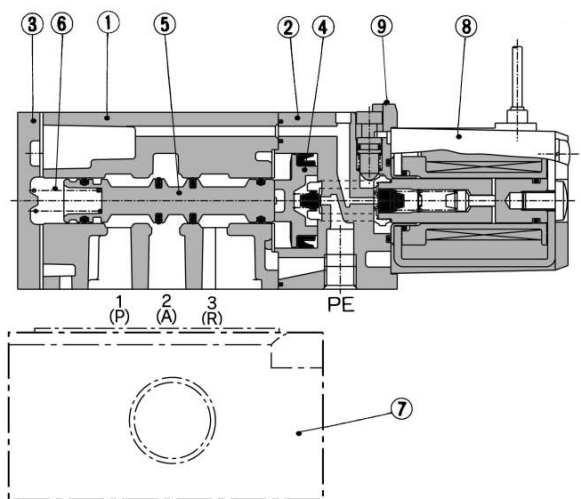
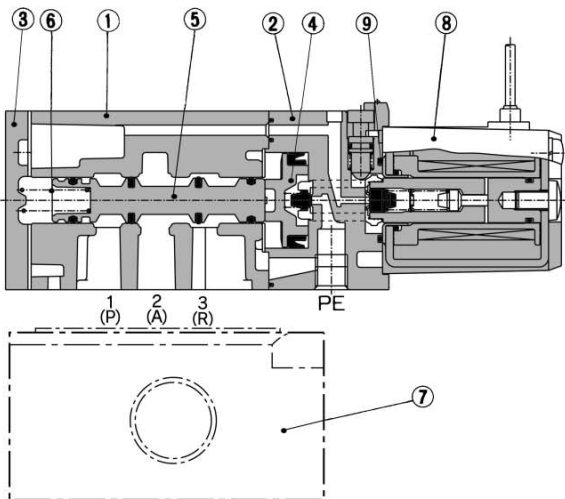
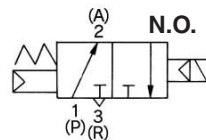
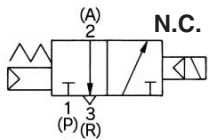
VZ51□R



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

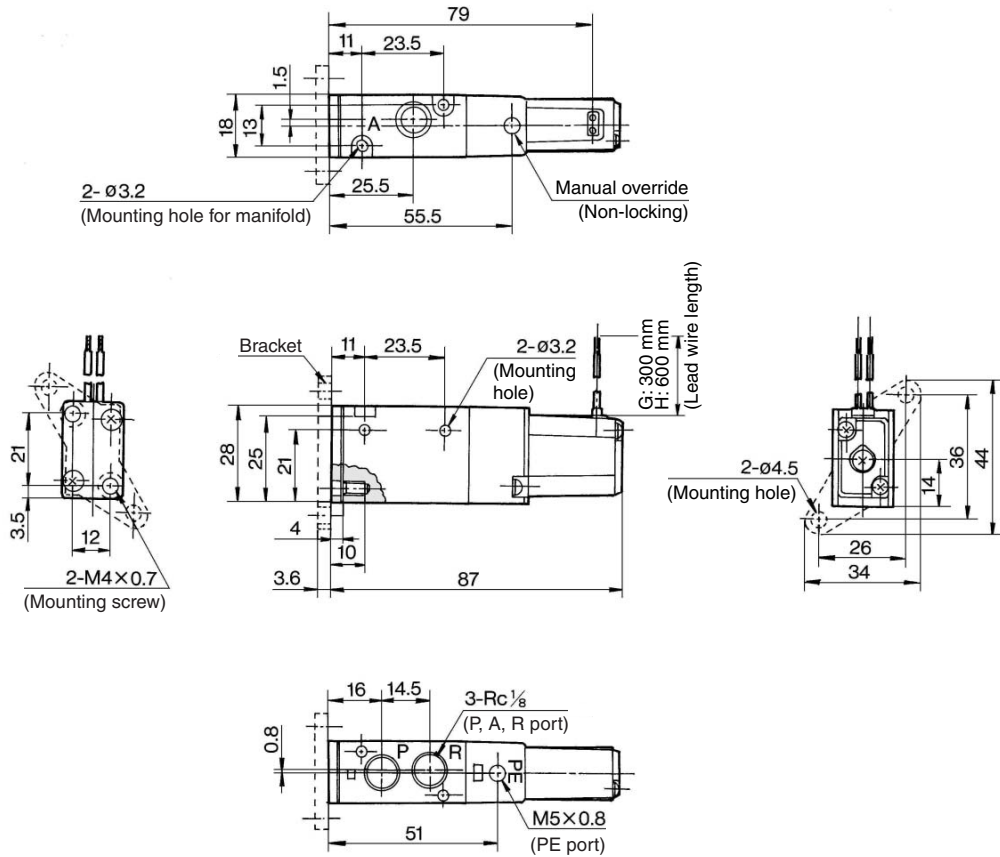
VFN

Series VZ500



Body Ported

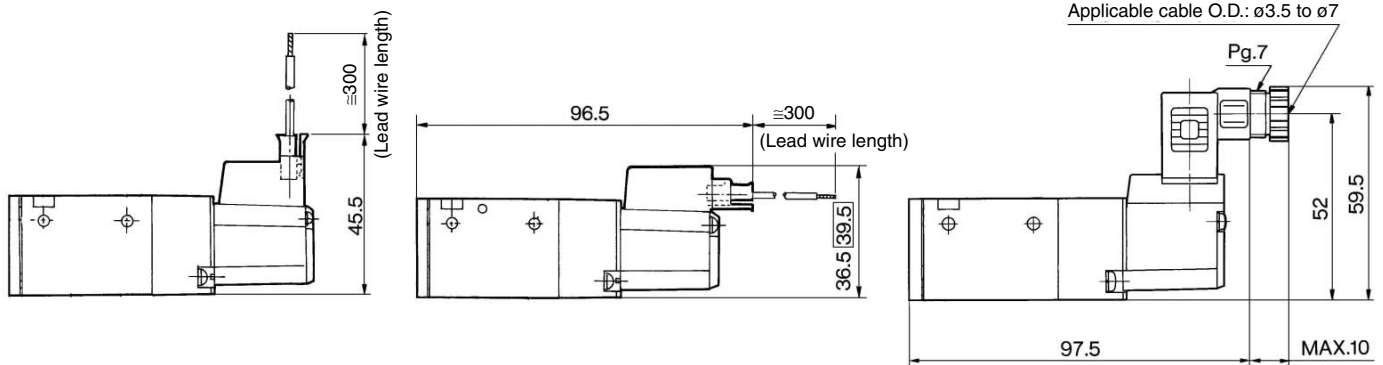
Grommet (G), (H)
 VZ5□2-□^G□□-01(-F)



L plug connector (L)
 VZ5□2-□L□□-01

M plug connector (M)
 VZ5□2-□M□□-01

DIN terminal (D)
 VZ5□2-□D□□-01



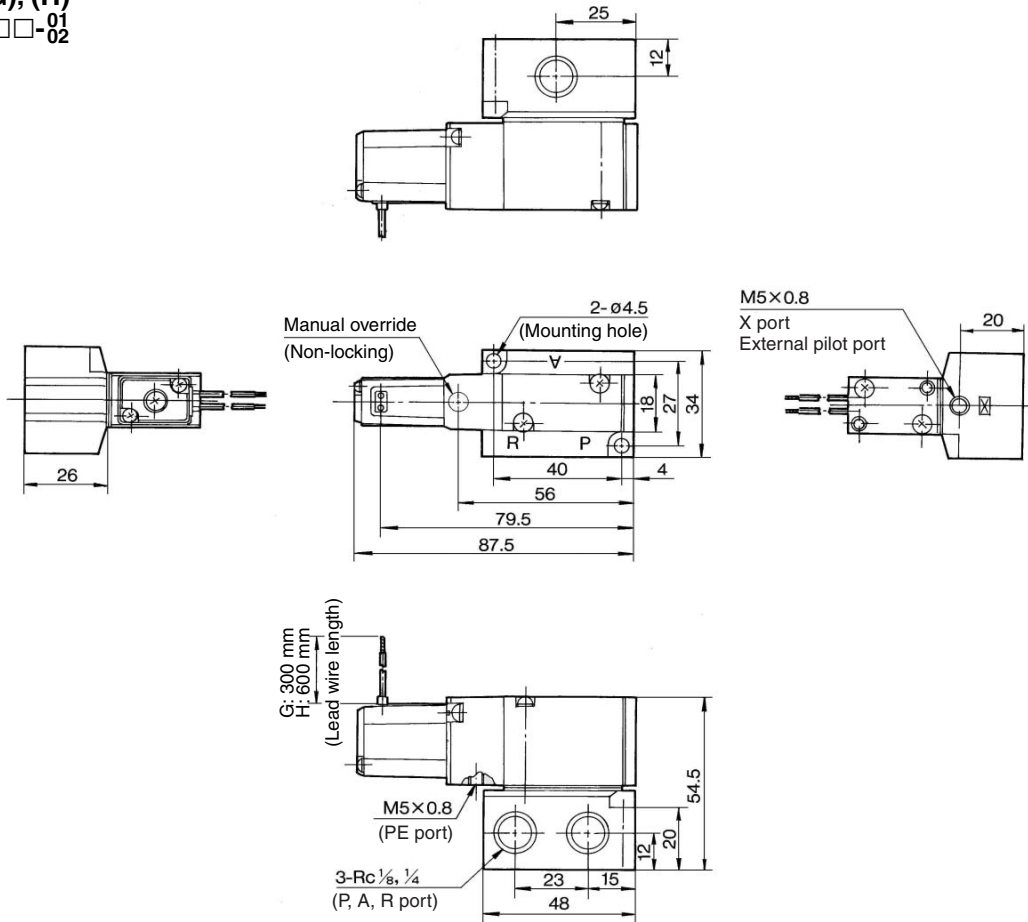
□: With light/surge voltage suppressor

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

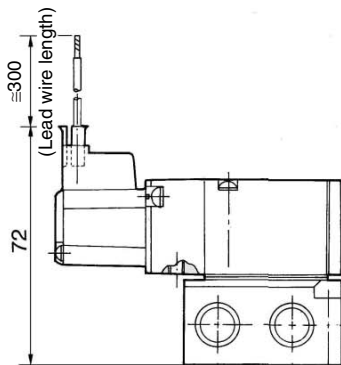


Base Mounted (With sub-plate)

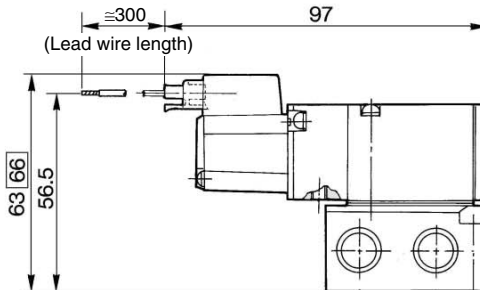
Grommet (G), (H)
VZ5□4-□G□□-01/02



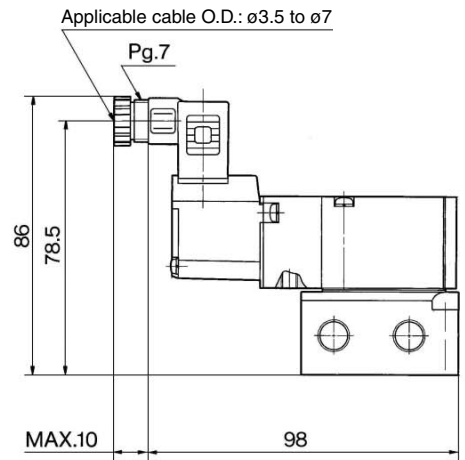
L plug connector (L)
VZ5□4-□L□□-01/02



M plug connector (M)
VZ5□4-□M□□-01/02



DIN terminal (D)
VZ5□4-□D□□-01/02



□: 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.

2. Solenoid Valve: External Pilot Specifications

● Applicable for individual use of body ported external pilot type

Applicable solenoid valve series

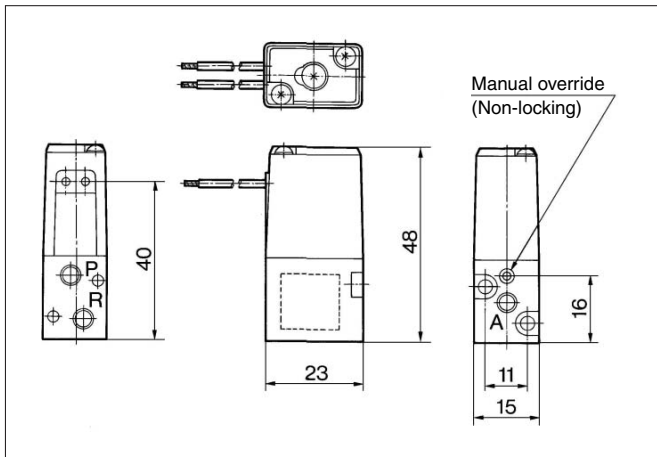
VZ300/500

Model no.

VZ₅³ 2R - (-) - X20

• Entry is the same as standard products.

Dimensions: VZ110-□G-M5-X1



Specifications

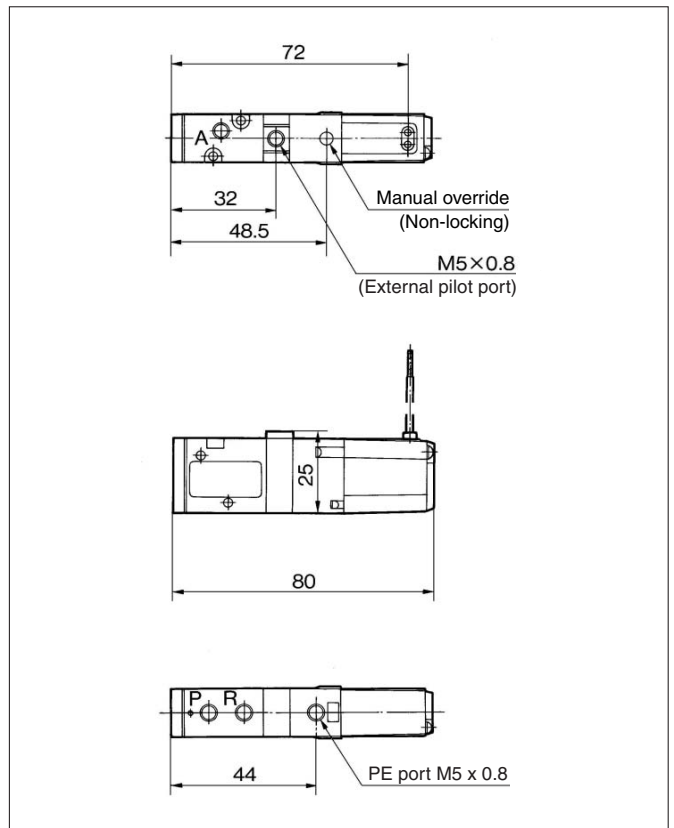
Operating pressure range (MPa)	Main pressure	-100 kPa to 0.7
	External pilot pressure	0.15 to 0.7
Pilot exhaust method	Pilot valve individual exhaust	

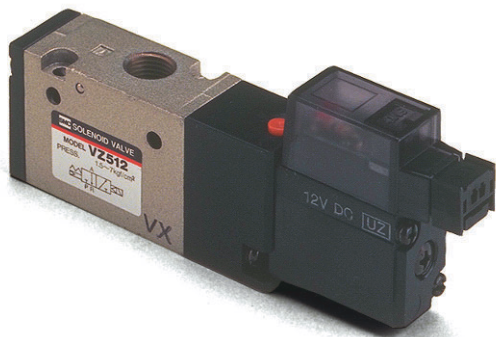
Dimensions

VZ300: 8 mm longer in total length

VZ500: 8 mm longer in total length

Dimensions: VZ312R-□G-M5-X20





3/2 PILOT OPERATED SOLENOID / SPRING VALVE

- ✓ N/O or N/C Option
- ✓ 1/8 Body Ported, Sub Base or Manifold Mounted (1 to 10 Stations)
- ✓ Cv 0.5
- ✓ Optional Lamp and Surge Voltage Suppressor
- ⚠ Solenoid Coils are integral and must not be removed
- ⚠ These valves are supplied without leads which must be ordered separately (see Accessories Section)

TECHNICAL SPECIFICATIONS

Fluid	Air
Operating Pressure Range	20 ~ 100PSI (1.5-7kgf/cm ²)
Ambient and Fluid Temperature	Max 50°C / 122°F
Response Time	20ms or less
Max Operating Frequency	50 Cycles per Second
Manual Override	Non-Locking Push Type
Pilot Exhaust	Individual, Common
Lubrication	Not Required; If Lubrication is provided, use SMC Lubricant
Enclosure	Dust Proof

Model	Type of Actuation	Effective Orifice mm ² (Cv Factor)
Body Ported Type	(N)VZ512	NC
	(N)VZ522	NO
Base Mounted Type (with Subplate)	(N)VZ514	NC
	(N)VZ524	NO

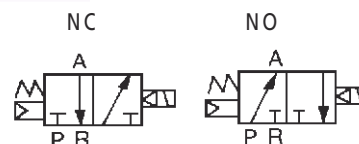
SOLENOID SPECIFICATIONS

Electrical Entry	Grommet (G), Plug Connector (M)	
Voltages	AC	240Hz, 110V50/60Hz, 24V50/60Hz
	DC	12V, 24V
Allowable Voltage	-15~+10% of rated voltage	
Coil Insulation	Class E or equivalent (120°C)	
Temperature Rise	45°C or less / 115°F or less	
Power Consumption DC	1.8W/2.1W (W/LED)	
Apparent Power AC	Inrush	4.5VA/50Hz, 4.2VA/60Hz
	Holding	3.5VA/50Hz, 3VA/60Hz
Surge Voltage Suppressor	DC: Diode, AC: ZNR	
Indicator Light	DC: LED (Red), AC: Neon lamp	



SAFETY
Observe operating pressure ranges - see technical specifications for details

SYMBOLS



ACCESSORIES

(N)VZ500 SOLENOID VALVE

- DXT170-123-A-30 Plug with 3m lead
- DXT201-19-1A Bracket

HOW TO ORDER

(N)VZ500 SOLENOID VALVE



BODY OPTION

- 12 ...3/2 NC Body Ported
- 22 ...3/2 NO Body Ported
- 14 ...3/2 NC Base Mounted
- 24 ...3/2 NO Base Mounted

BODY OPTION

-Individual Pilot Exhaust
- MCommon Exhaust for Main and Pilot Valve
- RExternal Pilot

PORTING

-Without Sub Plate
- 01T ...1/8" Sub Plate
- 02T ...1/4" Sub Plate
- 01T ...1/8 (Body Ported)

OPTIONS

-Without Bracket
- FFoot Bracket

ELECTRICAL ENTRY

- DDIN Connector
- GGrommet (300mm lead)
- HGrommet (600mm Lead)
- LL Type Plug Connector with Lead Wire (300mm)
- M M Type Plug Connector with Lead Wire (300mm)
- LO ...L Type Plug Connector w/o Connector
- MO ...M Type Plug Connector w/o Connector

VOLTAGE

- 1100V AC
- 3110V AC
- 4220V AC
- 524V DC
- 612V DC

LAMP & SURGE VOLTAGE SUPPRESSOR

-Without
- ZWith (Except Grommet Type & 24V AC)
- SWith Surge Suppressor

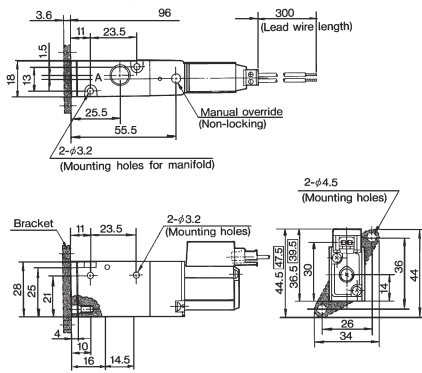
DIMENSIONS
SEE NEXT PAGE



FOR FURTHER TECHNICAL
DETAILS ON THIS
PRODUCT, REQUEST
CATALOG REFERENCE
E120

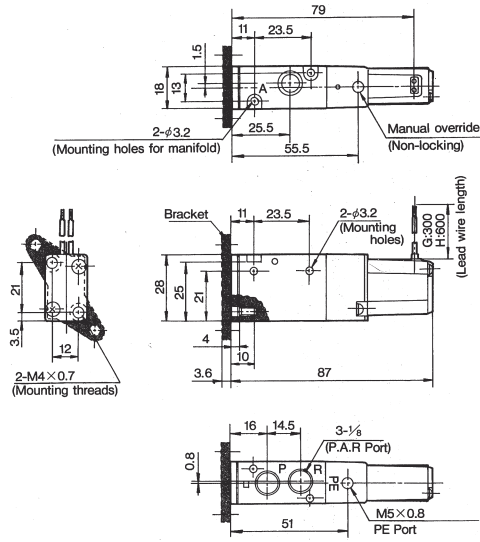
DIMENSIONS

SERIES (N)VZ500 BODY PORTED MN PLUG TYPE



DIMENSIONS

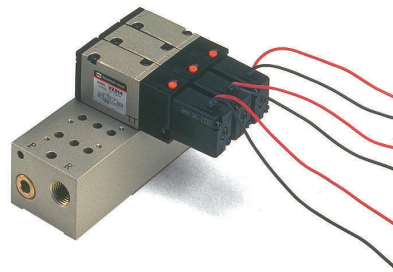
SERIES (N)VZ500 BODY PORTED GROMMET TYPE



SERIES (N)VZ500 MANIFOLDS

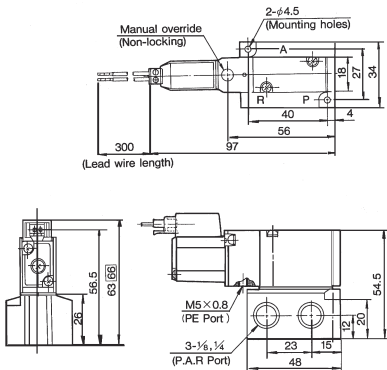
A Single Sub Base and 3 Different Manifold Design.

- (i) Side Entry Single Sub-base for use with the Base Mounted Valve (Type 40).
- (ii) 2-10 Station Type 21 Manifold for use with the Body Ported Valve (Type 20).
- (iii) 2-10 Station Type 41 Side Entry Manifold for use with the Base Mounted Valve (Type 40).
- (iv) 2 - 10 Station Type 41 Bottom Entry Manifold for use with the Base Mounted Valve (Type 40).



DIMENSIONS

SINGLE SUB-BASE SIDE PORTED TYPE M



SEE INSIDE FRONT COVER FOR
DETAILS OF YOUR LOCAL SALES OFFICE



FOR FURTHER TECHNICAL
DETAILS ON THIS
PRODUCT, REQUEST
CATALOG REFERENCE
E120