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5 Port Pilot Operated Solenoid Valve Metal Seal, Plug-in/Non Plug-in Series **VZS3000**

Model

| Type of actuation | Model | Port size Rc | Flow characteristics | | | | | | Max. operating cycle (CPM) ⁽¹⁾ | Response time (ms) ⁽²⁾ | Weight (kg) ⁽³⁾ | |
|-------------------|-----------------|-----------------|------------------------------|-----|------|------------------------------|-----|------|---|-----------------------------------|----------------------------|------|
| | | | 1 → 4/2 (P → A/B) | | | 4/2 → 5/3 (A/B → R1/R2) | | | | | | |
| | | | C [dm ³ /(s·bar)] | b | Cv | C [dm ³ /(s·bar)] | b | Cv | | | | |
| 2 position | Single | VZS3150 | 1/4 | 2.6 | 0.17 | 0.58 | 2.4 | 0.09 | 0.53 | 1200 | 18 or less | 0.22 |
| | Double | VZS3250 | 1/4 | 2.6 | 0.17 | 0.58 | 2.4 | 0.09 | 0.53 | 1200 | 13 or less | 0.27 |
| 3 position | Closed center | VZS3350 | 1/4 | 2.5 | 0.17 | 0.56 | 2.4 | 0.11 | 0.52 | 500 | 26 or less | 0.28 |
| | Exhaust center | VZS3450 | 1/4 | 2.5 | 0.17 | 0.56 | 2.4 | 0.11 | 0.49 | 500 | 26 or less | 0.28 |
| | Pressure center | VZS3550 | 1/4 | 2.8 | 0.12 | 0.60 | 2.4 | 0.16 | 0.53 | 500 | 26 or less | 0.28 |
| | Double check | VZS3650 | 1/4 | 1.1 | — | — | 1.2 | — | — | 420 | 32 or less | 0.43 |



Note 1) Min. operating cycle is based on JIS B 8375 (One time per 30 days).

Note 2) Response time is based on JIS B 8375-1981. (0.5 MPa, without light/surge voltage suppressor)

Note 3) For VZS3□50-□FZ-01

Note 4) "Note 1" and "Note 2" are with controlled clean air.

Reduction of wiring cost
MIL standard D-sub connector
with one-touch connection
(Plug-in type)

Compact and large valve capacity: Width 18 mm
Flexible to increase and decrease manifold stations
(Stacking type manifold base)

High frequency/Long service life (more than 30 mil. times)
Possible to use in non-lubrication and dry air
(Metal seal structure)

Different variations for connection
Grommet type

L, M plug connector type: Individual take out of A and B sides

K plug connector type: Common take out of A and B sides

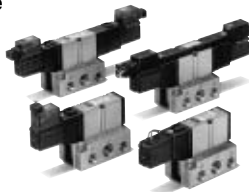
DIN terminal type: Individual take out of A and B sides

A little power consumption:
1.8 W DC

For serial transmission



Plug-in type



Non plug-in type

Standard Specifications

| Specifications | Valve specifications | Electricity specifications |
|--|--|----------------------------|
| Fluid | Air/Inert gas | |
| Maximum operating pressure | 1.0 MPa | |
| Minimum operating pressure | 0.1 MPa | |
| Proof pressure | 1.5 MPa | |
| Ambient and fluid temperature | -10 to 50°C ⁽¹⁾ | |
| Lubrication | Non-lube ⁽²⁾ | |
| Pilot valve manual override | Non-locking push type (Flush) | |
| Shock/Vibration resistance (m/s ²) | 150/50 ⁽³⁾ | |
| Enclosure | Dustproof (Degrees of protection 0) ⁽⁴⁾ | |
| Coil rated voltage | 100, 200 VAC, 50/60 Hz; 24 VDC | |
| Allowable voltage fluctuation | -15 to +10% of rated voltage | |
| Coil insulation type | Class E or equivalent (120°C) ⁽⁵⁾ | |
| Apparent power (AC) | Inrush | 4.5 VA/50 Hz, 4.2 VA/60 Hz |
| | Holding | 3.5 VA/50 Hz, 3 VA/60 Hz |
| Power consumption (DC) | 1.8 W | |
| Electrical entry | Plug-in type (FZ) | |
| | Non plug-in type | |
| | Grommet (G), Plug connector (L, M, KZ) DIN terminal (D) | |



Note 1) Use dry air at low temperatures.

Note 2) Use turbine oil Class 1 (ISO VG32), if lubricated.

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

Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Note 4) Based on JIS C 0920.

Note 5) Based on JIS C 4003.

Option Specifications

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



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

VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

VQ7

EVS

VFN

How to Order

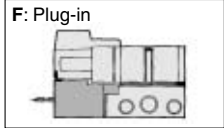
Light/Surge voltage suppressor

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

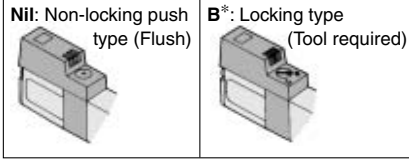
Note) Light/Surge voltage suppressor is provided as standard.



Electrical entry



Pilot valve manual override



* Option

Port size

| | |
|------------|-------------------|
| Nil | Without sub-plate |
| 01 | Rc 1/8 |
| 02 | Rc 1/4 |

Plug-in

VZS3 2 50 - 1 F Z 01

Non plug-in

VZS3 2 50 - 5 G 01

Symbol



| | |
|----------|----------------------------|
| 1 | 2 position single |
| 2 | 2 position double |
| 3 | 3 position closed center |
| 4 | 3 position exhaust center |
| 5 | 3 position pressure center |
| 6 | 3 position double check |

Coil rated voltage

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

* Option

Option

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



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

* "DOZ" is not available.

Thread type

| | | |
|----------|------------|------|
| Standard | Nil | Rc |
| Option | N | NPT |
| | T | NPTF |
| | F | G |

Electrical entry

| | | | | |
|---|---|---|---|-------------------------|
| G: Grommet Lead wire length 300 mm | L: L plug connector With lead wire | LN: L plug connector Without lead wire | LO: L plug connector Without connector | D: DIN terminal |
| H: Grommet Lead wire length 600 mm | M: M plug connector With lead wire | MN: M plug connector Without lead wire | MO: M plug connector Without connector | DO: DIN terminal |
| | KZ: K plug connector With lead wire | KZN: K plug connector Without lead wire | KZO: K plug connector Without connector | |

How to Order Pilot Valve Assembly

SCZS3 A L 2 - 1

Pilot valve assembly

Series VZS3000

Applicable model

| | |
|-----------|--------------------------|
| A | Single/ Double A side |
| B | Double B side |
| 3A | 3 position A side |
| 3B | 3 position B side |

Electrical entry, Light/Surge voltage suppressor

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

Coil rated voltage

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

* Option

Manual override

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

* Option



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

How to Order Light Cover Assembly

AXT171-3 1 A - 5 FZ

Plug-in type K plug connector

VZS3000 Light cover assembly

Applicable model

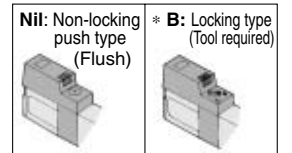
| | |
|----------|----------------------------|
| 1 | 2 position single |
| 2 | 2 position double |
| 3 | 3 position closed center |
| 4 | 3 position exhaust center |
| 5 | 3 position pressure center |
| 6 | 3 position double check |

Voltage

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

* Option

Pilot valve manual override



* Option

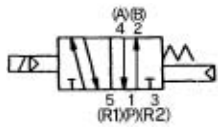
Electrical entry, Light/Surge voltage suppressor

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

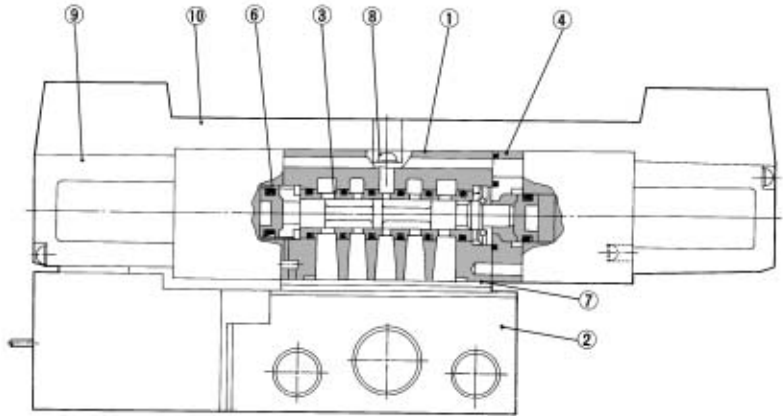
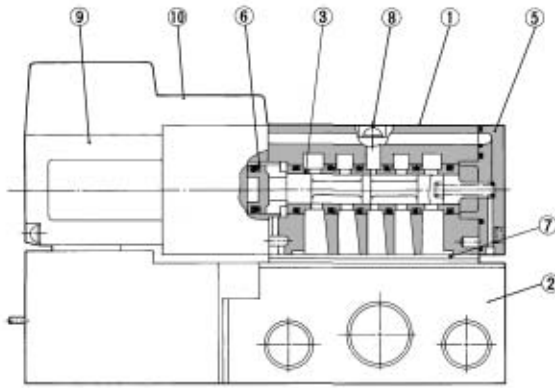
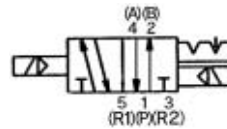
Series VZS3000

Construction

2 position single

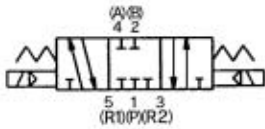


2 position double

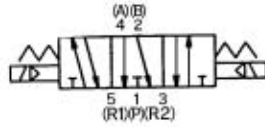


3 position closed center/exhaust center/pressure center

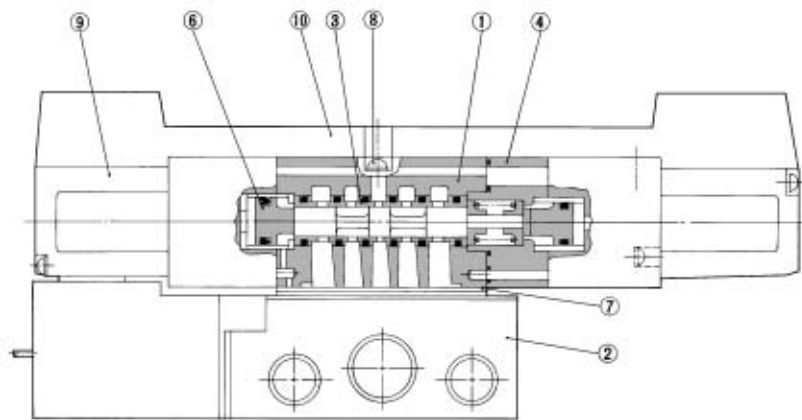
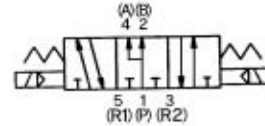
Closed center



Exhaust center



Pressure center



This figure shows a closed center type.

Component Parts

| No. | Description | Material | Note |
|-----|---------------|---------------------|-----------------|
| ① | Body | Aluminum die-casted | Platinum silver |
| ② | Sub-plate | Aluminum die-casted | Platinum silver |
| ③ | Spool/Sleeve | Stainless steel | — |
| ④ | Adapter plate | Resin | Black |
| ⑤ | End plate | Resin | Black |
| ⑥ | Piston | Resin | — |

Replacement Parts

| No. | Description | Material | Part no. |
|-----|------------------------------|--------------|--|
| ⑦ | Gasket | NBR | BG-VZS3000-1 (Groove gasket 1 pc. Round head combination screw 2 pcs.) |
| ⑧ | Round head combination screw | Carbon steel | BG-VZS3000 (Gasket 1 pc., Round head combination screw 3 pcs.) <small>Note</small> |
| ⑨ | Pilot valve assembly | — | Refer to "How to Order Pilot Valve Assembly" on page 3-7-24. |
| ⑩ | Light cover assembly | — | Refer to "How to Order Light Cover Assembly" on page 3-7-24. |

Note) Refer to page 3-7-6.

Sub-plate Assembly

| | |
|-------------|---|
| Plug-in | VZS3000-P ⁰¹ ₀₂ □ |
| Non plug-in | VZS3000-S ⁰¹ ₀₂ □ |

* Mounting bolt and gasket are not attached.

□: Thread type

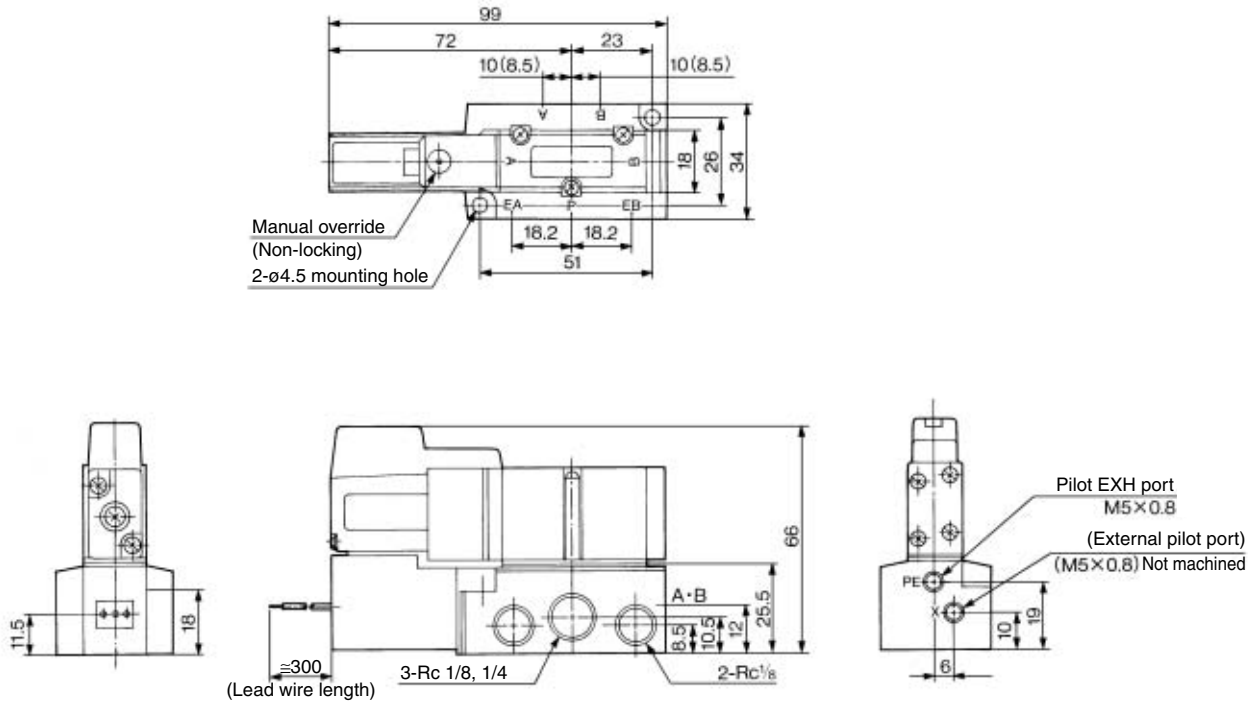
Thread Type

| | | |
|----------|-----|------|
| Standard | Nil | Rc |
| | N | NPT |
| Option | T | NPTF |
| | F | G |

5 Port Pilot Operated Solenoid Valve Metal Seal, Plug-in/Non Plug-in Series VZS3000

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

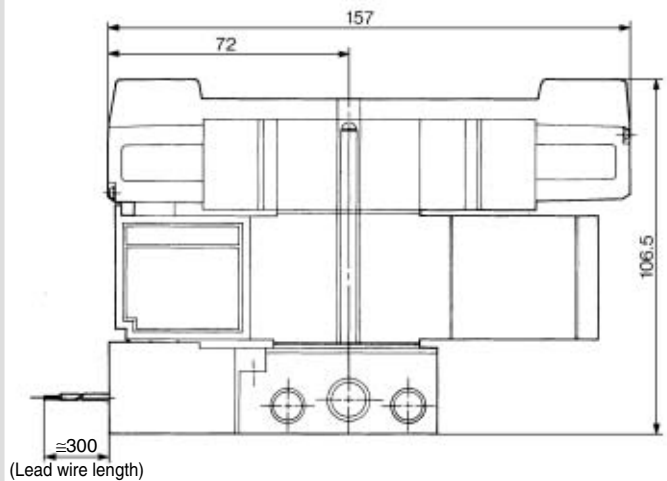
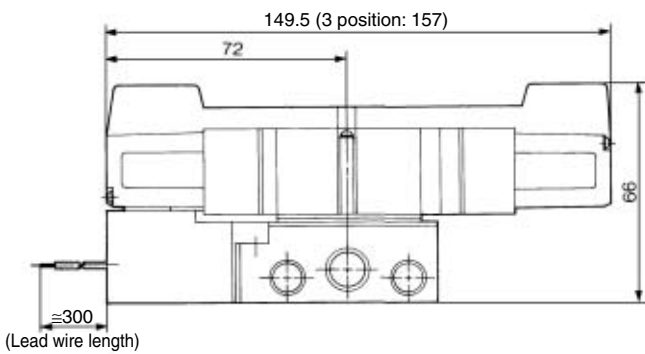
2 position single: VZS3150-□FZ-⁰¹/₀₂



- VK
- VZ
- VF
- VFR
- VP4
- VZS**
- VFS
- VS4
- VQ7
- EVS
- VFN

2 position double: VZS3250-□FZ-⁰¹/₀₂
 3 position closed center: VZS3350-□FZ-⁰¹/₀₂
 3 position exhaust center: VZS3450-□FZ-⁰¹/₀₂
 3 position pressure center: VZS3550-□FZ-⁰¹/₀₂

3 position double check: VZS3650-□FZ-⁰¹/₀₂



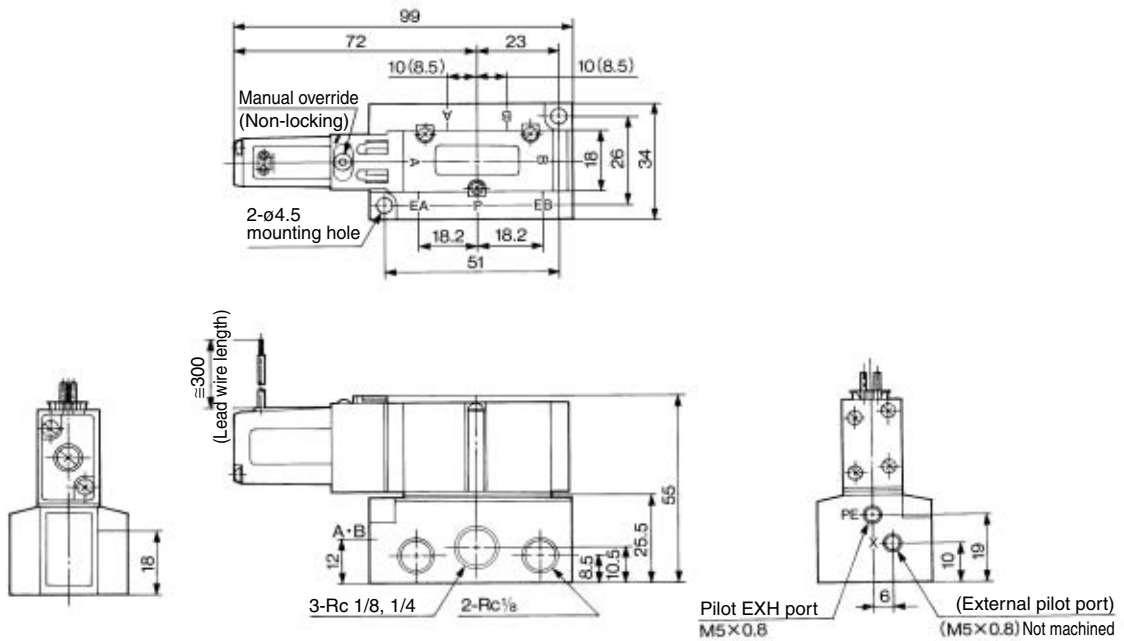
* Other dimensions are the same as the single type.

* Other dimensions are the same as the single type.

Series VZS3000

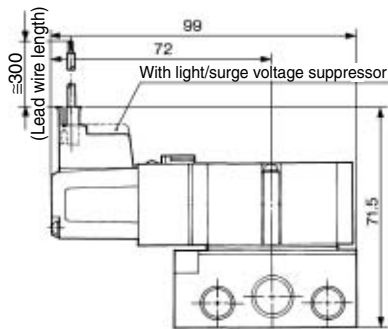
Non Plug-in 2 position single

Grommet: VZS3150-□_H(S)⁰¹/₀₂



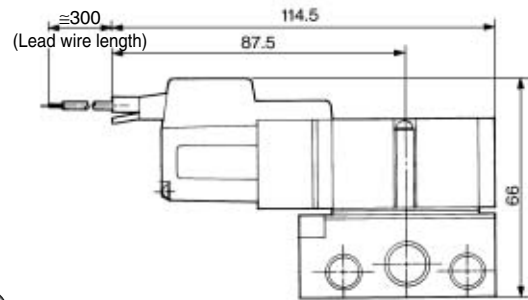
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L plug connector: VZS3150-□L(Z)⁰¹/₀₂



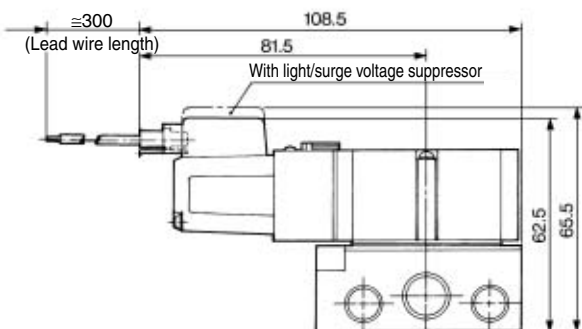
* Other dimensions are the same as the grommet type.

K plug connector: VZS3150-□KZ⁰¹/₀₂



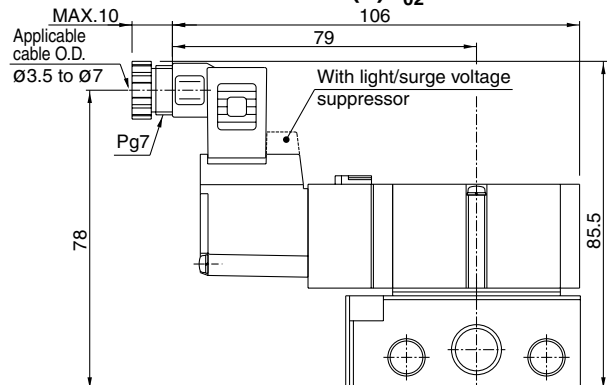
* Other dimensions are the same as the grommet type.

M plug connector: VZS3150-□M(Z)⁰¹/₀₂



* Other dimensions are the same as the grommet type.

DIN terminal: VZS3150-□D(Z)⁰¹/₀₂



* Other dimensions are the same as the grommet type.

5 Port Pilot Operated Solenoid Valve Metal Seal, Plug-in/Non Plug-in Series VZS3000

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

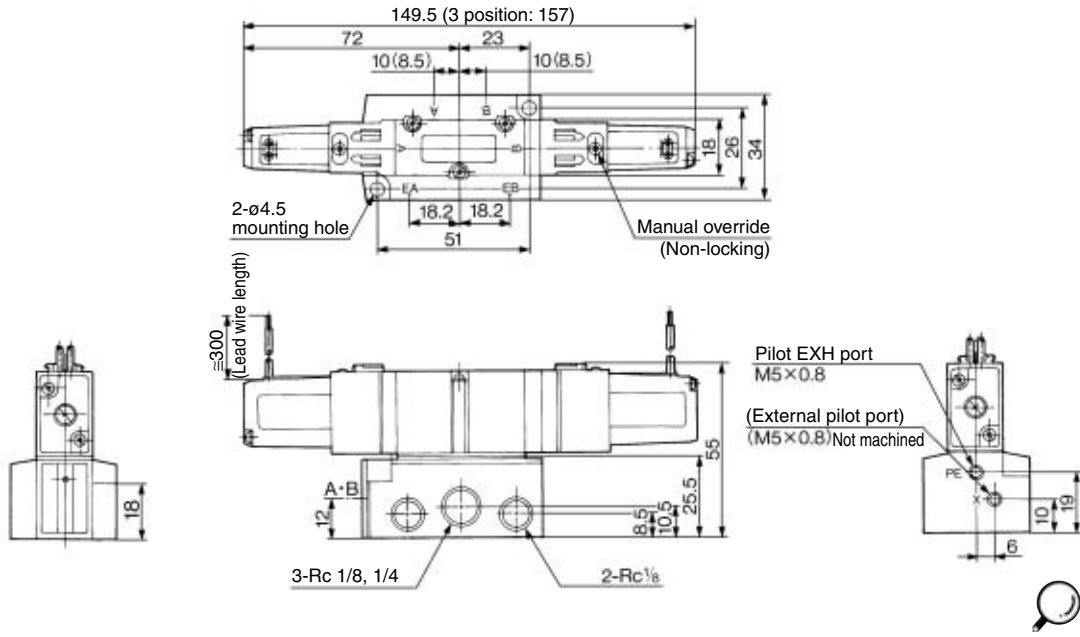
Grommet

2 position double: VZS3250-□ $G_H(S)$ - 01_{02}

3 position exhaust center: VZS3450-□ $G_H(S)$ - 01_{02}

3 position closed center: VZS3350-□ $G_H(S)$ - 01_{02}

3 position pressure center: VZS3550-□ $G_H(S)$ - 01_{02}



- VK
- VZ
- VF
- VFR
- VP4
- VZS
- VFS
- VS4
- VQ7
- EVS
- VFN

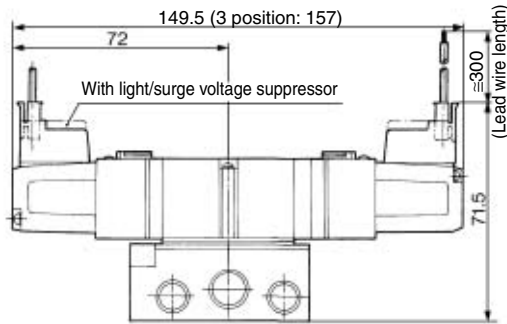
L plug connector

2 position double: VZS3250-□L(Z)- 01_{02}

3 position closed center: VZS3350-□L(Z)- 01_{02}

3 position exhaust center: VZS3450-□L(Z)- 01_{02}

3 position pressure center: VZS3550-□L(Z)- 01_{02}



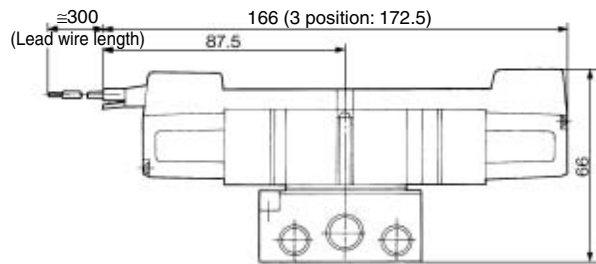
K plug connector

2 position double: VZS3250-□KZ- 01_{02}

3 position closed center: VZS3350-□KZ- 01_{02}

3 position exhaust center: VZS3450-□KZ- 01_{02}

3 position pressure center: VZS3550-□KZ- 01_{02}



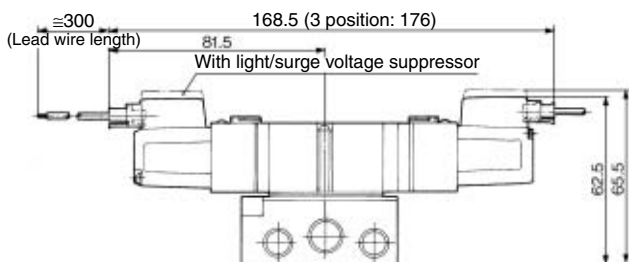
M plug connector

2 position double: VZS3250-□M(Z)- 01_{02}

3 position closed center: VZS3350-□M(Z)- 01_{02}

3 position exhaust center: VZS3450-□M(Z)- 01_{02}

3 position pressure center: VZS3550-□M(Z)- 01_{02}



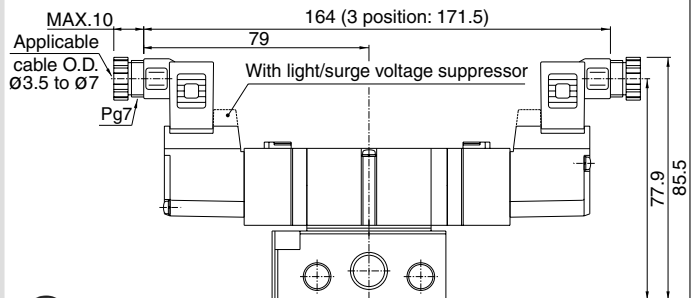
DIN terminal

2 position double: VZS3250-□D(Z)- 01_{02}

3 position closed center: VZS3350-□D(Z)- 01_{02}

3 position exhaust center: VZS3450-□D(Z)- 01_{02}

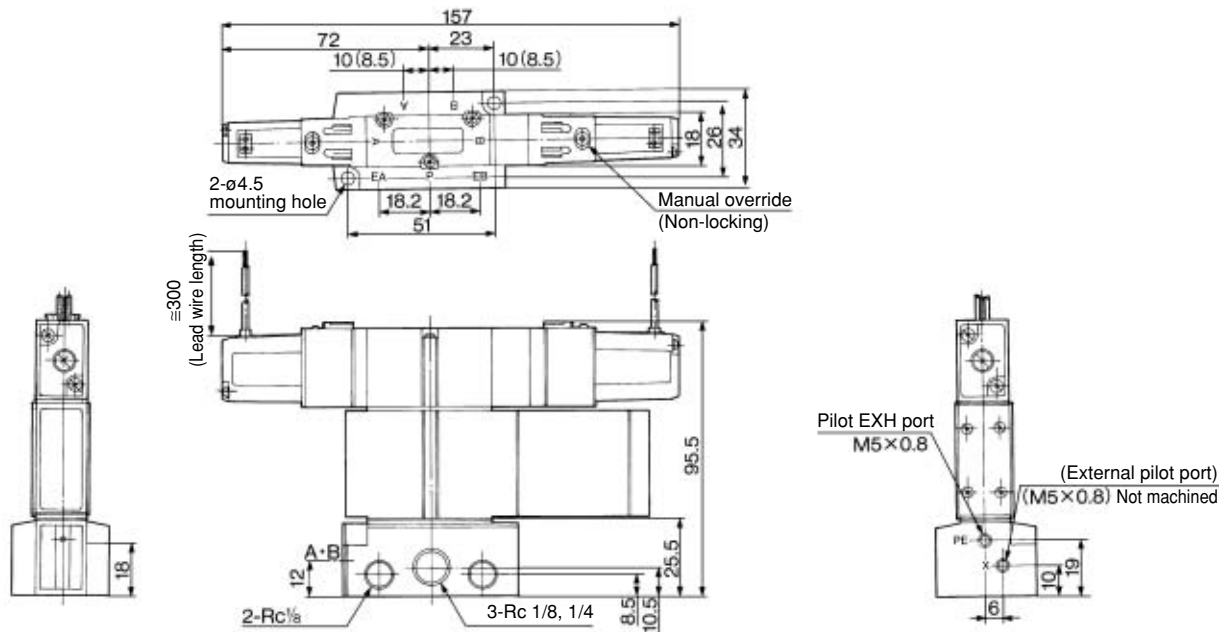
3 position pressure center: VZS3550-□D(Z)- 01_{02}



Series VZS3000

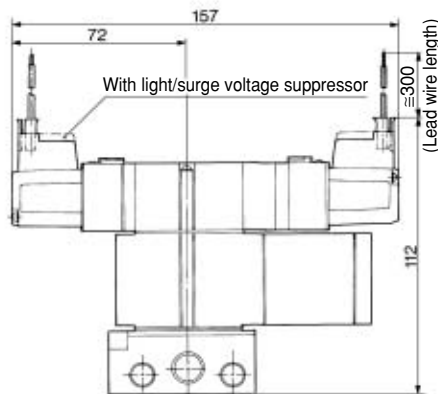
Non Plug-in 3 position double check

Grommet: VZS3650-□^G_H(S)-⁰¹₀₂



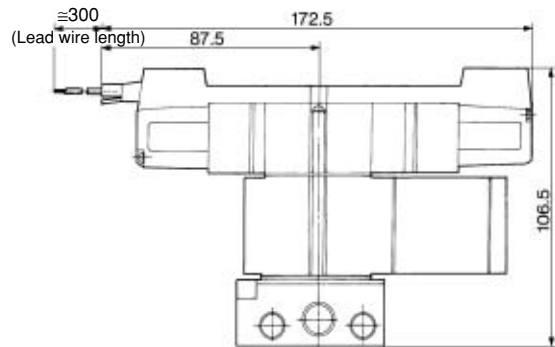
() : Rc 1/8

L plug connector: VZS3650-□^L(Z)-⁰¹₀₂



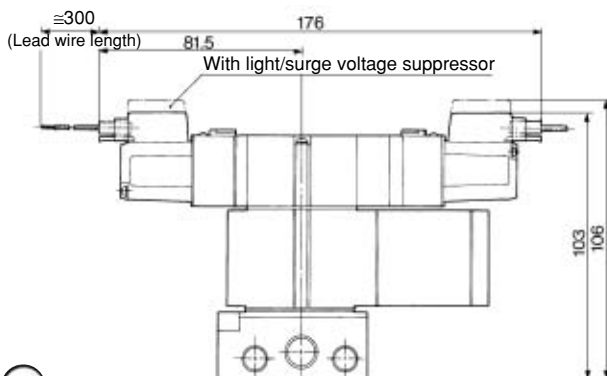
* Other dimensions are the same as the grommet type.

K plug connector: VZS3650-□^{KZ}-⁰¹₀₂



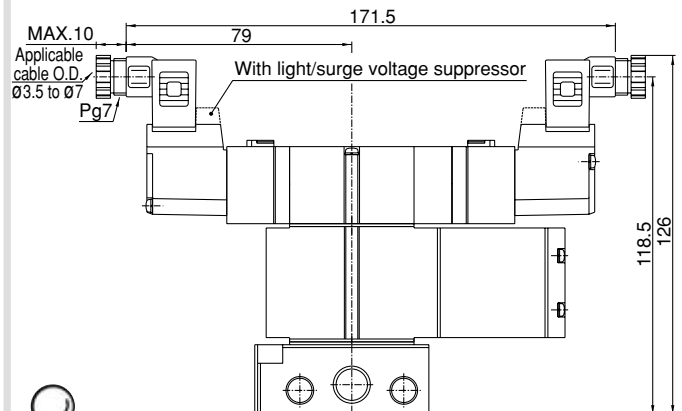
* Other dimensions are the same as the grommet type.

M plug connector: VZS3650-□^M(Z)-⁰¹₀₂



* Other dimensions are the same as the grommet type.

DIN terminal: VZS3650-□^D(Z)-⁰¹₀₂



* Other dimensions are the same as the grommet type.