5 Port Pilot/Metal Seal

Plug-in/Non Plug-in

Series VZS3000

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

Compact and large valve capacity
Cv0.75/Width 18mm

Flexible to increase and decrease manifold stations
(Individual style manifold base)

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

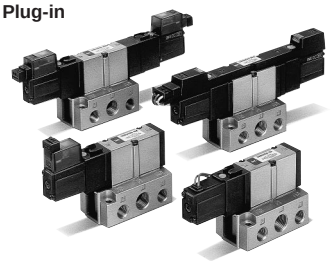
Different variations for connection
Grommet style

L, M plug connector style/Individual take out of A and B sides

K plug connector style/Common take out of A and B sides

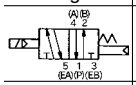
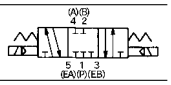
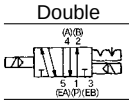
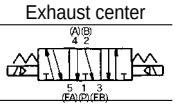
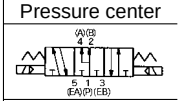
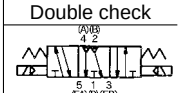
A little power consumption/1.8W DC For serial transmission

Plug-in



Non Plug-in

JIS Symble

2 position	3 position
Single	Closed center
	
Double	Exhaust center
	
	Pressure center
	
	Double check
	

Model

Configuration		Model	Port size	Effective area (mm^2) (Cv factor)	Max. operating(1) cycle(CPM)	Response(2) time (ms)	Weight(3) (kg)
2 position	Single	**VZS3150**	1/8	12.2 (0.68)	1200	18 or less	0.22
			1/4	13.2 (0.73)			
	Double	**VZS3250**	1/8	12.2 (0.68)	1200	13 or less	0.27
			1/4	13.2 (0.73)			
3 position	Closed center	**VZS3350**	1/8	11.3 (0.63)	500	26 or less	0.28
			1/4	11.3 (0.63)			
	Exhaust center	**VZS3450**	1/8	11.3 (0.63)	500	26 or less	0.28
			1/4	11.3 (0.63)			
	Pressure center	**VZS3550**	1/8	11.3 (0.63)	500	26 or less	0.28
			1/4	11.3 (0.63)			
	Perfect	**VZS3650**	1/8	5.4 (0.3)	420	32 or less	0.43
			1/4	5.4 (0.3)			

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. (0.5MPa, Without indicator light and surge voltage suppressor)
Note 3) In case of VZS3□50-□FZ-01
Note 4) Note 1 and Note 2 are based on the controlled clean air.

Standard Specifications

Valve	Fluid		Air and inert gas
	Max. operating pressure		1.0MPa
	Min. operating pressure		0.1MPa
	Proof pressure		1.5MPa
	Ambient and fluid temperature		–10 to 50°C (1)
	Lubrication		Non-lube (2)
	Pilot operator manual override		Non-locking push style (Flush style)
	Impact/Vibration resistance (m/s^2)		150/50 (3)
	Protection structure		Dust proof (Protection class 0) (4)
Solenoid	Rated voltage		100V, 200V AC (50/60Hz), 24V DC
	Allowance voltage		–15% to +10% of rated voltage
	Coil insulation		Class E or equivalent (120°C) (5)
	Apparent power (AC)	Inrush	4.5VA/50Hz, 4.2VA/60Hz
		Holding	3.5VA/50Hz, 3VA/60Hz
	Power consumption (DC)		1.8W
	Electrical entry		Plug-in
			Non plug-in (FZ) Grommet (G), Plug connector (L, M, KZ)

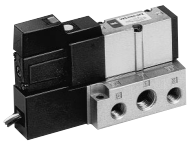
Note 1) Use dry air at low temperature
Note 2) Use turbine oil class 1 (ISO VG32), if lubricated.
Note 3) Impact resistance: Using a drop impact tester, this product has been tested once in each condition, in the axial and perpendicular directions of the main valve and the armature, in both the energized and non-energized states, without exhibiting a malfunction. (Initial value)
Vibration resistance: At frequencies from 8.3 to 2000Hz, this product has been tested 1 sweep in each condition, in the axial and perpendicular directions of the main valve and the armature, in both the energized and non-energized states, without exhibiting a malfunction. (Initial value)
Note 4) Based on JIS C0920
Note 5) Based on JIS C4003

Optional Specifications/Options

Voltage	24V, 48V, 110V, 220V AC (50/60Hz)
	6V, 12V, 48V DC
Manual override	Looking style (Slotted)
Option	With indicator light and surge voltage suppressor (1)

Note 1) Plug-in base/K plug connector is standard with indicator light and surge voltage suppressor.

How to Order



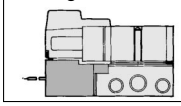
Indicator light and surge voltage suppressor

Z	With indicator light and surge suppressor
S	With surge voltage suppressor

Note) With indicator light and surge voltage suppressor is standard.

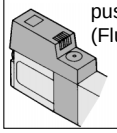
Electrical entry

F: Plug-in

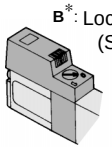


Pilot valve manual override

—: Non-locking push style (Flush)



B*: Locking style (Slotted)



*Option

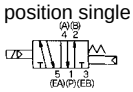
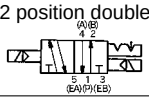
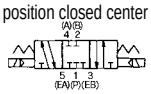
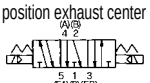
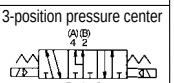
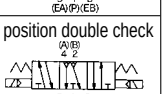
Port size

—	Without subplate
01	Rc (PT) 1/8
02	Rc (PT) 1/4

Plug-in VZS3 [2] 50 — [1] F [Z] [ ] — [01] [ ]

Non plug-in VZS3 [2] 50 — [5] [G] [ ] [ ] — [01] [ ]

Configuration

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	100V AC 50/60Hz
2	200V AC 50/60Hz
3*	110V AC 50/60Hz
4*	220V AC 50/60Hz
5	24V DC
6*	12V DC
9*	Others

*Option

Option

—	None
Z	With indicator light/surge suppressor
S	With surge voltage suppressor

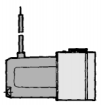
Note) Grommet style is only with surge voltage suppressor.
K plug connector style is standard with indicator light and surge voltage suppressor.

Thread

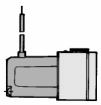
Standard	—	Rc (PT)
Option	**N**	NPT
	T	NPTF
	F	G (PF)

Electrical entry

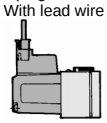
G: Grommet 300mm lead wire



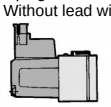
H: Grommet 600mm lead wire



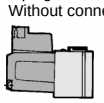
L: L plug connector With lead wire



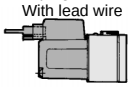
LN: L plug connector Without lead wire



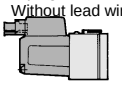
LO: L plug connector Without connector



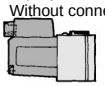
M: M plug connector With lead wire



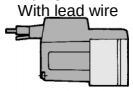
MN: M plug connector Without lead wire



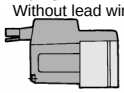
MO: M plug connector Without connector



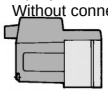
KZ: K plug connector With lead wire



KZN: K plug connector Without lead wire

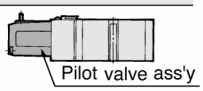


KZO: K plug connector Without connector



How to Order Pilot Valve Assembly

SCZS3 [A] — [L] [ ] — 2 — [1]



Pilot valve ass'y

Series VZS3000

Applicalbe model

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

Manual override

—	Non-locking push style (Flush)
B*	Looking style (Slotted)

*Option

Voltage

1	100V AC 50/60Hz
2	200V AC 50/60Hz
3*	110V AC 50/60Hz
4*	220V AC 50/60Hz
5	24V DC
6*	12V DC
9*	Others

*Option

Electrical entry/Indicator light and surge voltage suppressor

Symbol	Electrical entry	Body type
F(1)	Plug-in	Plug-in base
G	Grommet	Non plug-in base
GS	Grommet/With surge voltage suppressor	
L	L plug connector	
LZ	L plug connector/Indicator light and surge suppressor	
M	M plug connector	
MZ	M plug connector/Indicator light and surge suppressor	
K(1)	K plug connector	

Note 1) Since F and K types are attached without lamp cover, it should be arranged separately.

How to Order Light Cover Assembly

Plug-in Base
K Plug Connector

AXT171-3 [1] A — [5] [FZ] [ ]

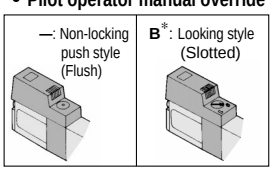
Light cover ass'y

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

Pilot operator manual override



*Option

Voltage

1	100V AC 50/60Hz
2	200V AC 50/60Hz
3*	110V AC 50/60Hz
4*	220V AC 50/60Hz
5	24V DC
6*	12V DC
9*	Others

*Option

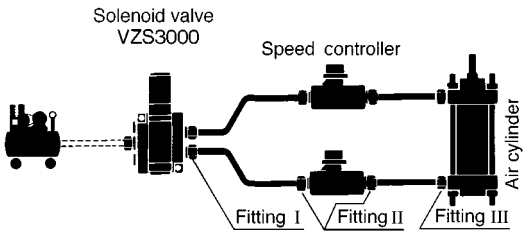
Electrical entry/Indicator light and surge suppressor

FZ	Plug-in/With indicator light and surge suppressor
FS	Plug-in/ With surge suppressor
KZ	K plug connector/With indicator light and surge suppressor
KS	K plug connector/ With surge suppressor

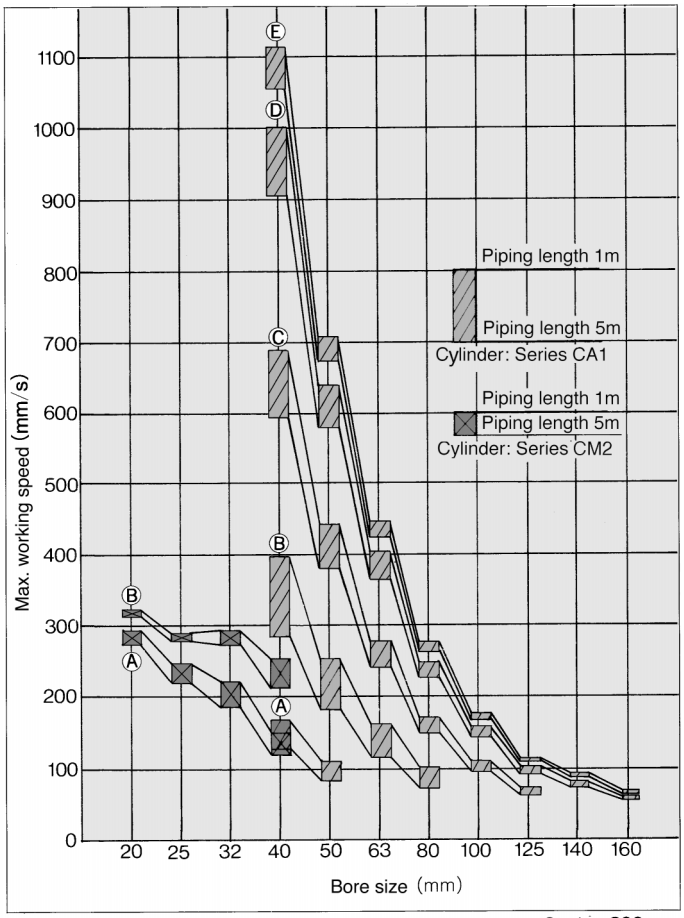
Cylinder Speed

Condition: Supply pressure Load factor 50%

System diagram



CM2, CA1 Cylinder speed



Stroke 300mm

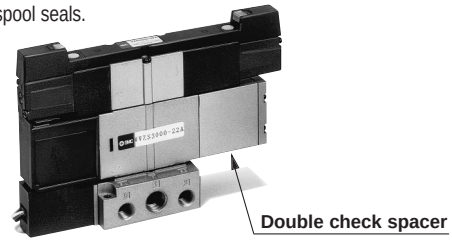
System

System	Solenoid valve	Speed Controller	Silencer	Fittng (Tube O. D. X Port size) I	II	III
Ⓐ	VZS3□50-01	AS2000-01	AN110-01	ø4 X 1/8	ø4X 1/8	ø4 X 1/8 to 1/4
Ⓑ	Rc (PT) 1/8	AS3000-02	AN110-01	ø6 X 1/8	ø6 X 1/8	ø6 X 1/8 to 3/8
Ⓒ	(S=12.2mm²)	AS3000-02	AN110-01	ø8 X 1/8	ø8 X 1/8	ø8 X 1/8 to 3/8
Ⓓ	VZS3□50-02 Rc (PT) 1/4	AS4000-02	AN110-01	ø10 X 1/4	ø10 X 1/4	ø10 X 1/8 to 1/4
Ⓔ	(S=13.2mm²)	AS4000-02	AN110-01	ø12 X 1/4	ø12 X 1/4	ø12 X 1/8 to 3/8

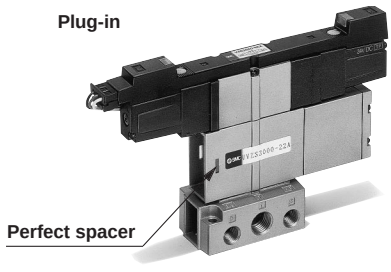
Double Check Spacer/Specifications

Holding cylinder intermediate position for a long time

The concurrent use of double check spacer with built-in double check valve can stop cylinder or intermediate position and hold it without being affected by air leakage spool seals.



Plug-in



Non plug-in

Specifications

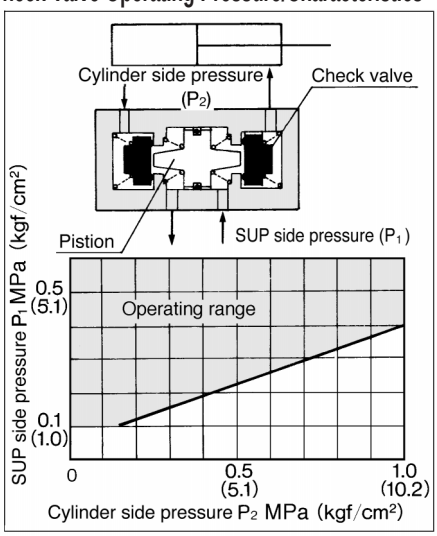
Double check spacer part No.	Plug-in	Non plug-in
	VVZS3000-22A-1	VVZS3000-22A-2
Applicable solenoid valve	VZS3450-□FZ	VZS3450-□ G L M KZ

Leakage (Supply pressure 5MPa)	Solenoid one side de-energized	P	EA	210Ncm³/min or less
			EB	
	Solenoid both sides de-energized	P	EA	210Ncm³/min or less
			EB	
		A	EA	0
		B	EB	

⚠ Precaution

In the case of 3 position double check (VZS3650), check the leakage from piping and fittings in between valve and cylinder by means of synthetic detergent solutions, and ensure that there is no such leakage found there. Also check the leakage from cylinder seal and piston seal. If there is any leakage, sometimes the cylinder, when valve is de-energized, can move without stopping at intermediate position.

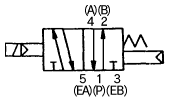
Check Valve Operating Pressure/Characteristics

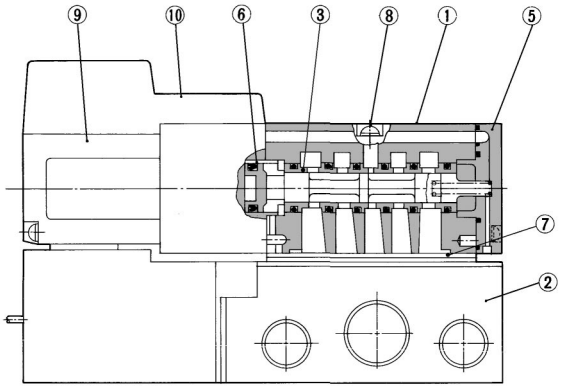


● If a VZS3150 or a VZS3250 is combined with a double check spacer, it can be used at the stroke end for drop prevention, although it is not possible to hold an intermediate positions on the cylinder.

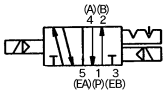
Construction

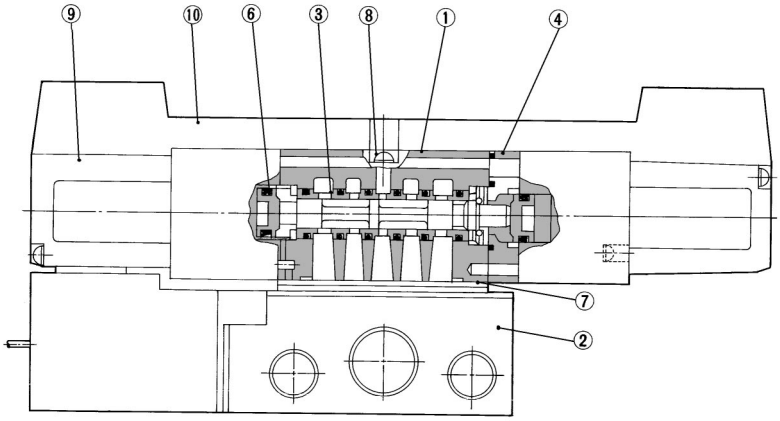
2 position single





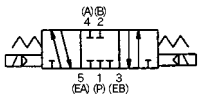
2 position double



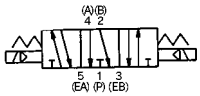


3 position closed center/exhaust center/pressure center

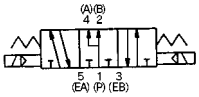
Closed center

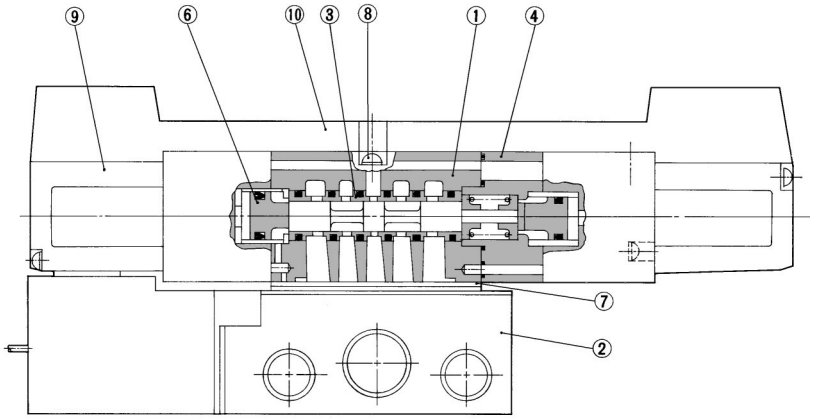


Exhaust center



Pressure center





In case of closed center type

Component Parts

No.	Description	Material	Note
①	Body	Alminum die cast	Platinum silver
②	Sub-plate	Alminum die cast	Platinum silver
③	Spool, Sleeve	Stainless steel	—
④	Adaptor plate	Resin	Black
⑤	End plate	Resin	Black
⑥	Piston	Resin	—

Sub-plate Assembly part No.

Plug-in	VZS3000-P-$^{01}_{02}$
Non plug-in	VZS3000-S-$^{01}_{02}$

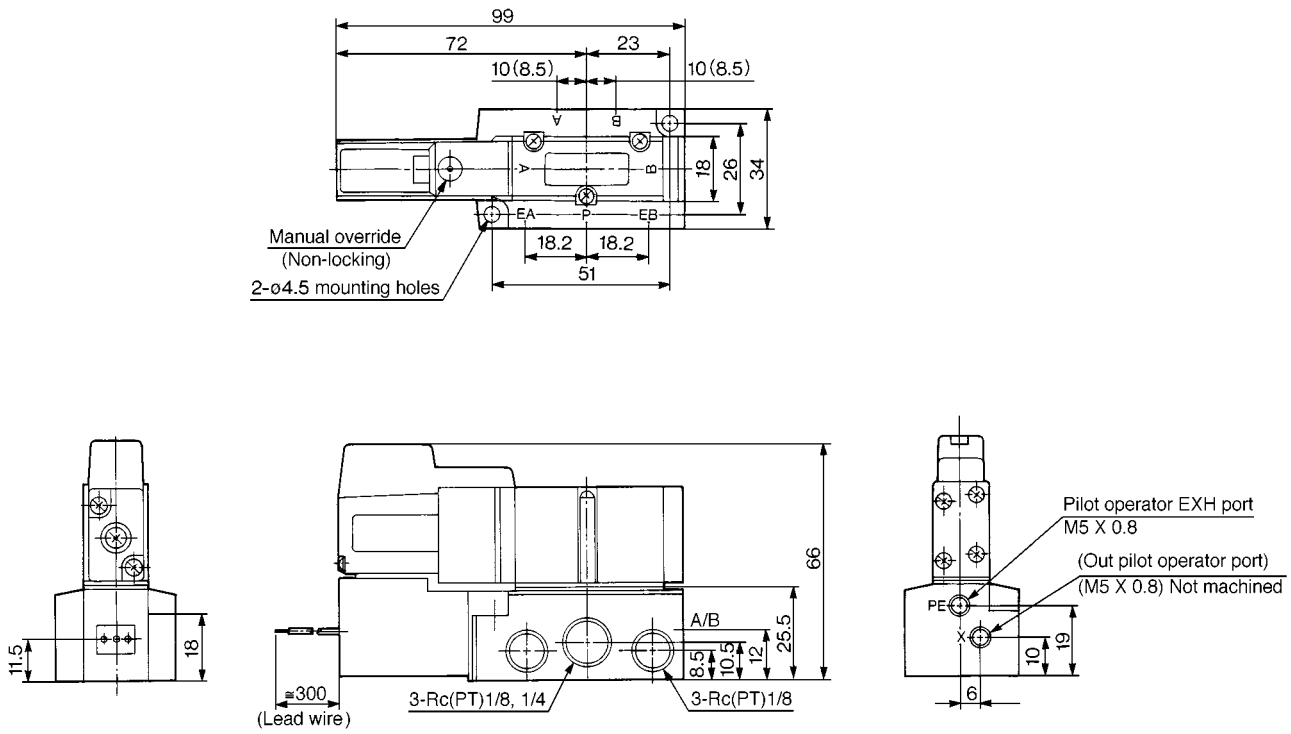
∗Mounting bolt and gasket are not attached.

Replacement Parts

No.	Description	Material	Part No.
⑦	Gasket	NBR	BG-VZS3000(Gasket 1pc., ⊕⊖Round head screw 3pcs.)
⑧	⊕⊖Round head screw	Carbon steel	
⑨	Pilot valve assembly	—	Refer to “How to order pilot valve assembly on p.1.14-24.
⑩	Light cover assembly	—	Refer to “How to order light cover assembly on p.1.14-24.

Plug-in 2 Position Single/Double, 3 Position Closed Center/Exhaust Center/Double check

2 position single: VZS3150-□FZ-$^{01}_{02}$



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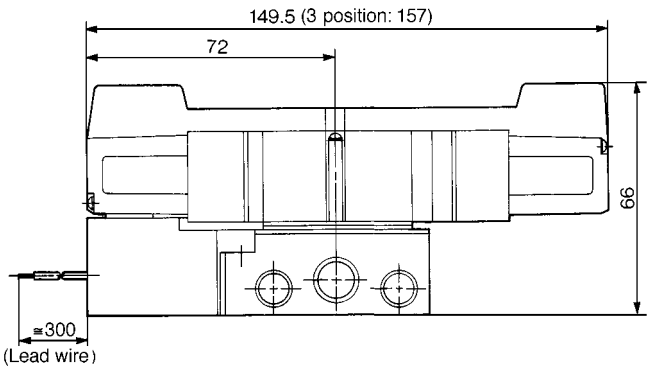
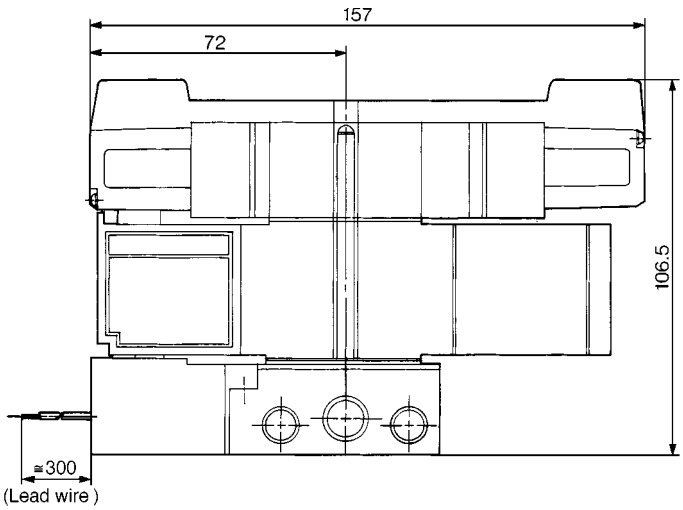
2 position double: VZS3250-□FZ-$^{01}_{02}$
3 position closed center: VZS3350-□FZ-$^{01}_{02}$
3 position exhaust center: VZS3450-□FZ-$^{01}_{02}$
3 position pressure center: VZS3550-□FZ-$^{01}_{02}$



∗Other dimensions are the same as the single style.

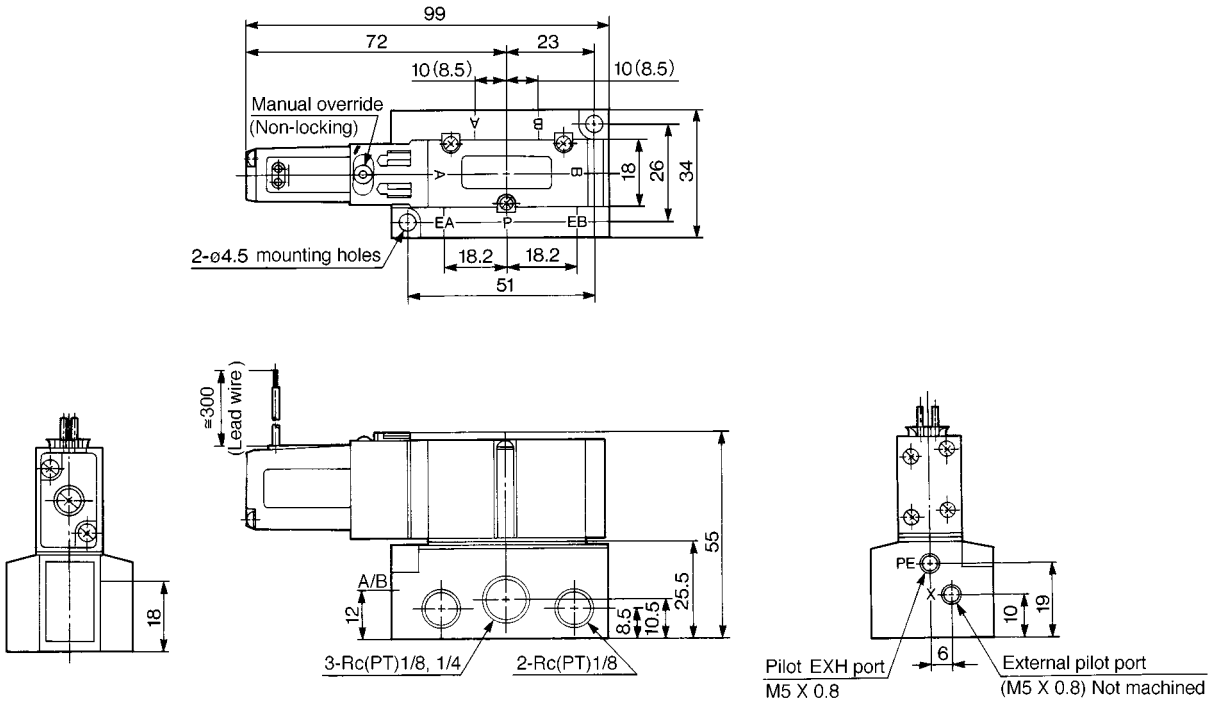
3 position double check: VZS3650-□FZ-$^{01}_{02}$



∗Other dimensions are the same as the single style.

Non Plug-in 2 Position Single

Grommet: VZS3150-□G-$^{01}_{02}$



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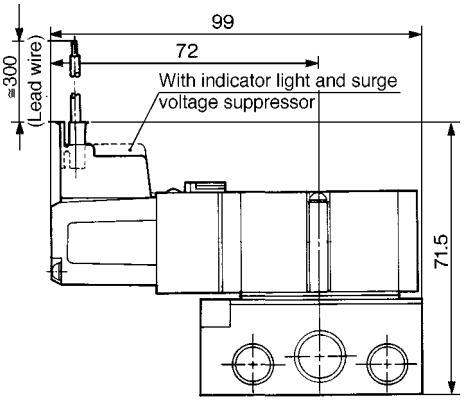
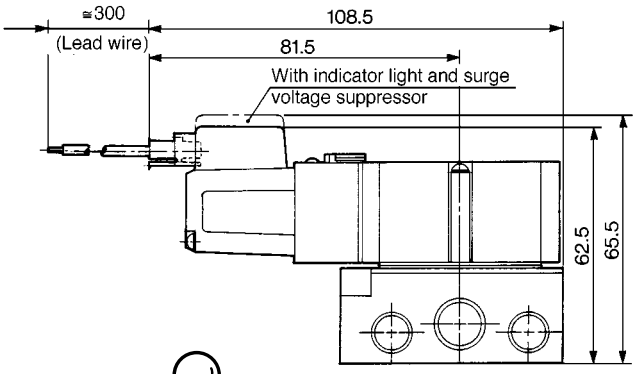
L plug connector: VZS3150-□L(Z)-$^{01}_{02}$



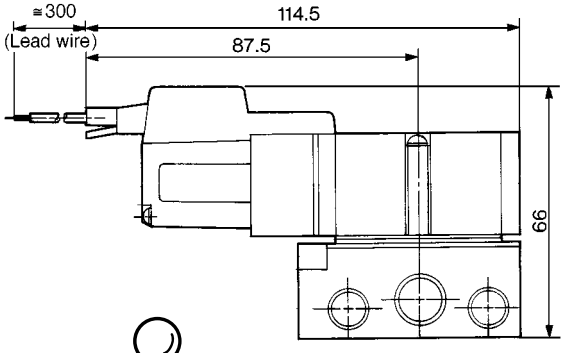
∗Other dimensions are the same as the single style.

M plug connector: VZS3150-□M(Z)-$^{01}_{02}$



∗Other dimensions are the same as the grommet style.

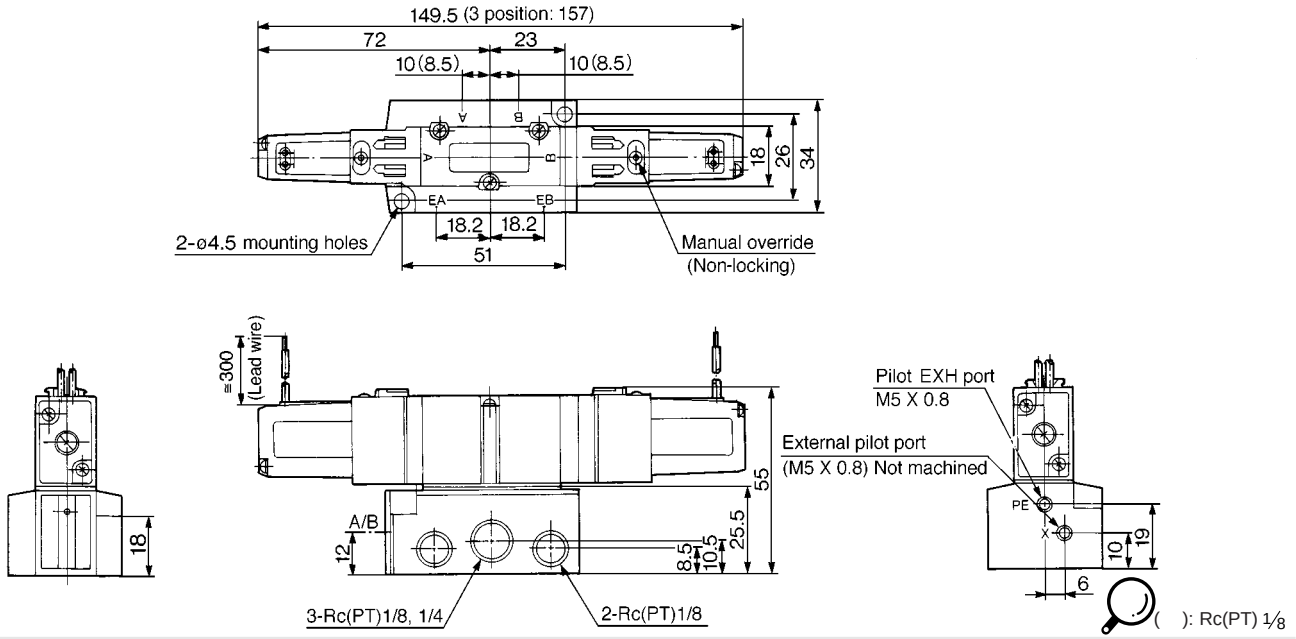
K plug connector: VZS3150-□K(Z)-$^{01}_{02}$



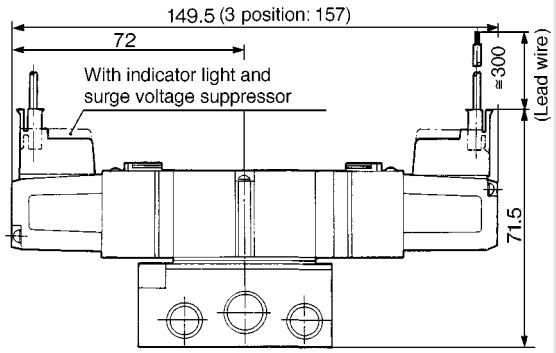
∗Other dimensions are the same as the single style.

Non Plug-in 2 Position Double/3 Position Closed Center/Exhaust Center/Pressure Center

Grommet: 2 position double VZS3250-□G-$^{01}_{02}$
3 position closed center VZS3350-□G-$^{01}_{02}$
3 position exhaust center VZS3450-□G-$^{01}_{02}$
3 position pressure center VZS3550-□G-$^{01}_{02}$

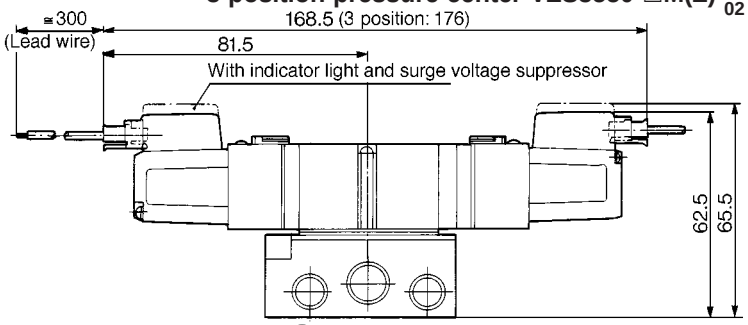


L plug connector:
2 position double VZS3250-□L(Z) -$^{01}_{02}$
3 position closed center VZS3350-□L(Z) -$^{01}_{02}$
3 position exhaust center VZS3450-□L(Z)-$^{01}_{02}$
3 position pressure center VZS3550-□L(Z)-$^{01}_{02}$



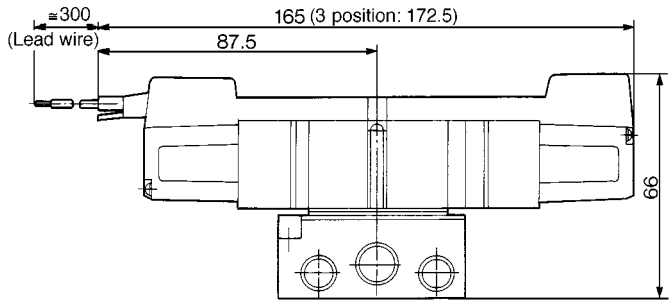
∗Other dimensions are the same as the grommet style.

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)-$^{01}_{02}$



∗Other dimensions are the same as the grommet style.

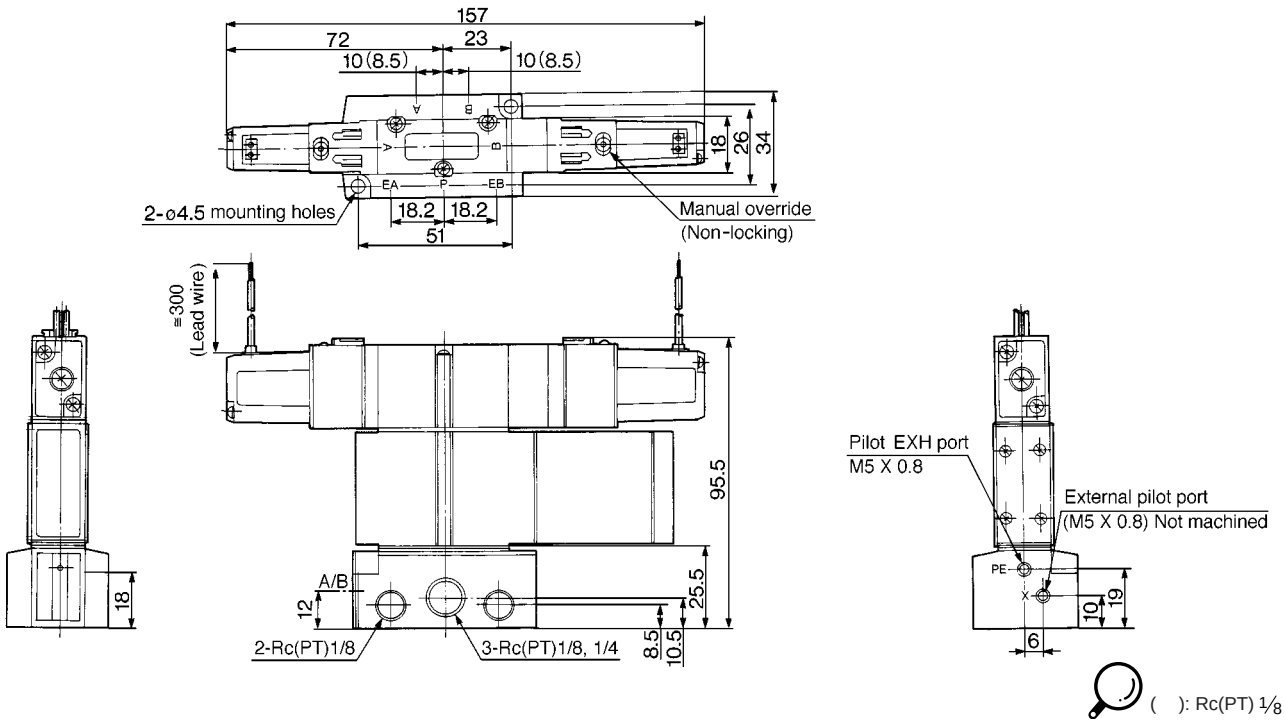
K plug connector: 2 position double VZS3250-□KZ-$^{01}_{02}$
3 position closed center VZS3350-□KZ-$^{01}_{02}$
3 position exhaust center VZS3450-□KZ-$^{01}_{02}$
3 position pressure center VZS3550-□KZ-$^{01}_{02}$



∗Other dimensions are the same as the grommet style.

Non Plug-in 3 Position Double Check

Grommet: VZS3650-□G-$^{01}_{02}$



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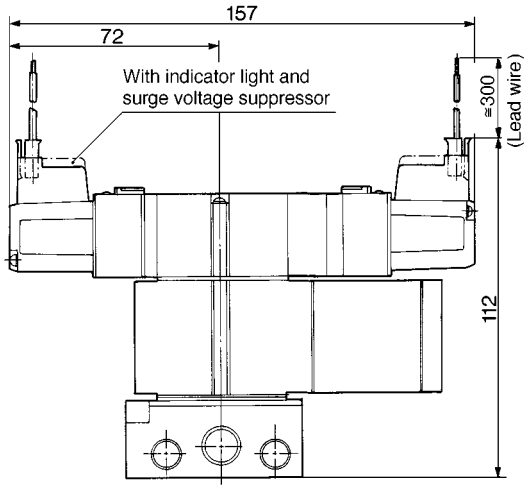
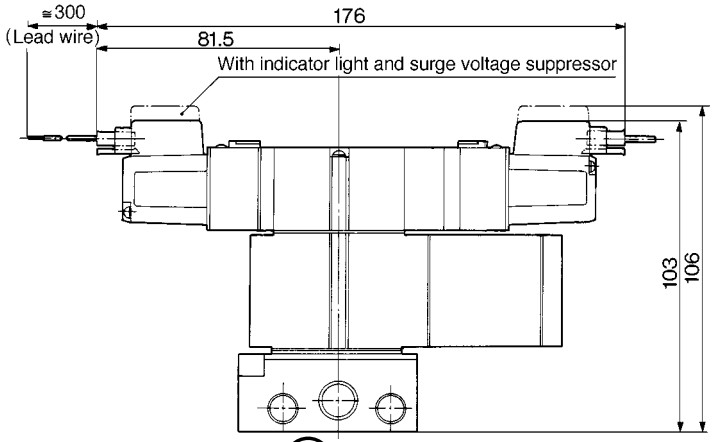
L plug connector: VZS3650-□L(Z)-$^{01}_{02}$



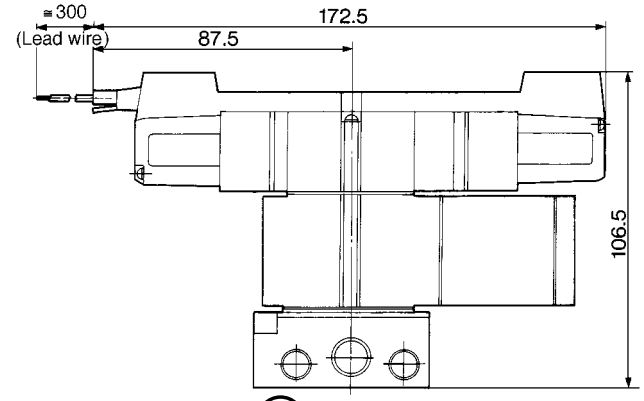
∗Other dimensions are the same as the grommet style.

M plug connector: VZS3650-□M(Z)-$^{01}_{02}$



∗Other dimensions are the same as the grommet style.

M plug connector: VZS3650-□KZ-$^{01}_{02}$



∗Other dimensions are the same as the grommet style.