

5 Port Solenoid Valve Body Ported Series VZ3000



How to Order

Body ported VZ3 1 2 0 — 5 L — M5

Configuration *Body option* *Rated voltage* *Electrical entry* *Indicator light and surge voltage suppressor* *Manual override* *A, B port size* *Option*

Configuration

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

Body option

0: Individual pilot exhaust style

3: Common exhaust (pilot and main valve) style

Rated voltage

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

Electrical entry

Grommet	L plug connector	M plug connector	DIN terminal
G: 300mm lead wire	L: 300mm lead wire	M: 300mm lead wire	MN: Without lead wire
H: 600mm lead wire	LN: Without lead wire	LO: Without connector	MO: Without connector
			DO: Without connector

* LN, MN type: With socket (2pcs.)

Option

F: With foot bracket (2 position single style only)

U: With silencer

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

Note) The bracket and silencer are not assembled.

A, B port size

M5	M5 X 0.8
C4	ø4 One-touch fitting
C6	ø6 One-touch fitting

Note) P, R1, R2 port: M5 X 0.8

Manual override

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

B: Locking B style (Slotted)

Indicator light and surge voltage suppressor

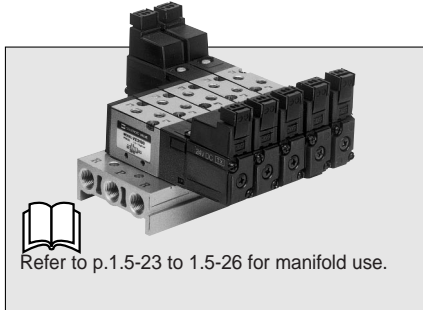
—	None
Z*	With indicator light and surge suppressor
S	With surge voltage suppressor

* Not available for GZ, HZ and DOZ

- SY
- SYJ
- SX
- VK
- VZ**
- VF
- VFR
- VP7
- VP4
- VQ
- VQ4
- VQZ
- VQD
- VZS
- VFS
- VS
- VS7

VZ3000

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



P.1.5-80 to 1.5-88

Option

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

Specifications

Fluid		Air
Operating pressure (MPa)	2 position single	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Ambient and fluid temperature		Max. 50°C
Response time (ms) (0.5MPa) ⁽¹⁾	2 position single/double	20 or less
	3 position	35 or less
	Max. operating frequency Hz	10
Effective area	2 position single/double	3
	3 position	3
Manual override ⁽²⁾	Non-locking push, Locking slotted, Locking lever	
Pilot exhaust	Individual pilot exhaust, Common exhaust (pilot and main valve)	
Lubrication	Non-lube	
Mounting position	Free	
Impact/Vibration resistance (m/s ²) ⁽³⁾	300/50	
Protection	Dust proof	



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

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

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

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

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

Solenoid Specifications

* Option

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



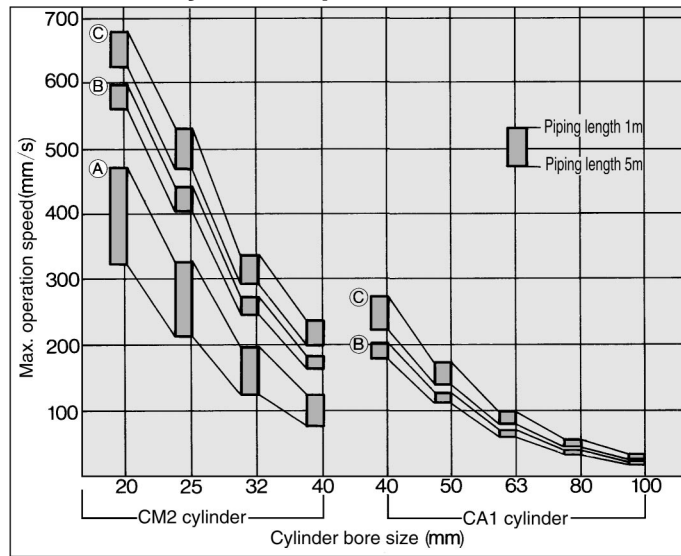
Note 1) At rated voltage

Effective Orifice and Weight

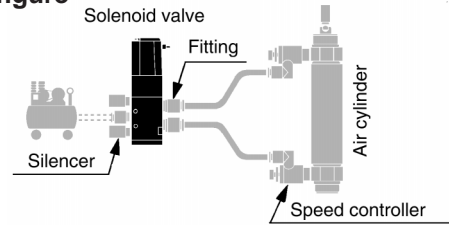
Valve model	Configuration		Port size	Effective area (mm ²) (Cv) ⁽¹⁾	Weight (g)
VZ3□20-□-M5	2 position	Single	M5 X 0.8	3.6 (0.2)	75
		Double		3.6 (0.2)	120
	3 position	Closed center		3.2 (0.18)	130
		Exhaust center		3.6 (0.2)[2.7 (0.15)]	
		Pressure center		P→A, B: 4.0 (0.22) [2.7 (0.15)]	
				A, B→R1, R2: 3.4 (0.19)	
VZ3□20-□-C4	2 position	Single	A, BPort : C4	3 (0.17)	75
		Double	: C4	3 (0.17)	120
	3 position	Closed center	($\phi 4$ One-touch fitting)	3 (0.17)	130
		Exhaust center	(P, RPort : M5 X 0.8)	3 (0.17)[2.4 (0.13)]	
		Pressure center	P→A, B: 3.5 (0.19) [2.9 (0.16)]		
			A, B→R1, R2: 3.1 (0.17)		
VZ3□20-□-C6	2 position	Single	A, BPort : C6	3.5 (0.19)	75
		Double	: C6	3.5 (0.19)	120
	3 position	Closed center	($\phi 6$ One-touch fitting)	3.2 (0.18)	130
		Exhaust center	(P, RPort : M5 X 0.8)	3.2 (0.18)[2.4 (0.13)]	
		Pressure center	P→A, B: 3.8 (0.21) [3.0 (0.17)]		
			A, B→R1, R2: 3.2 (0.18)		

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

Maximum Cylinder Speed



System figure



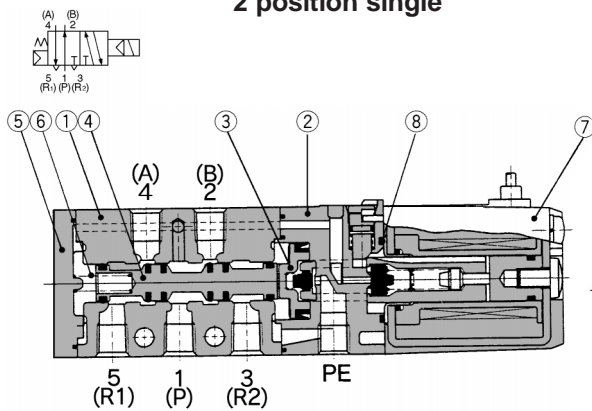
Conditions: Pressure 0.5MPa, Load 50%
(w/ extended cylinder) Cylinder stroke CM2: 300mm
CA1: 500mm

System construction

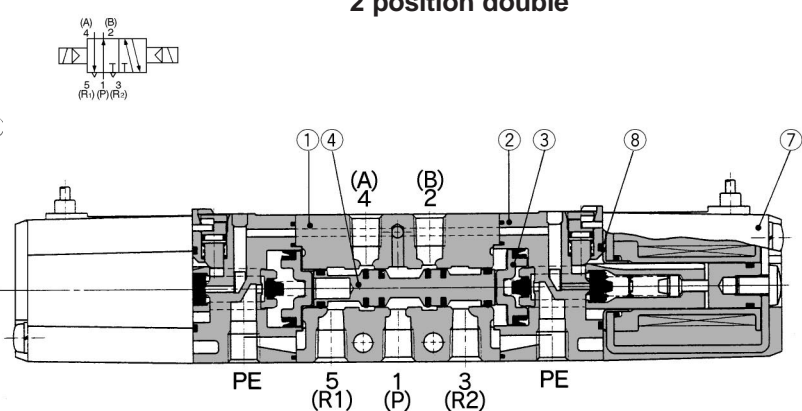
System	Solenoid valve	Speed controller	Silencer	Fitting (tube O.D. X connecting screw)
(A)	VZ3□20-M5	AS2301F-01-04	AN120-M5 (S=5mm ²)	ø4 X M5
(B)	M5 X 0.8	AS2301F-01-06		ø6 X M5
(C)	(S=3.6mm ²)	AS3301F-02-06		

Construction

2 position single

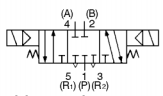


2 position double

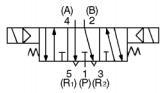


3 position closed center/exhaust center/pressure center

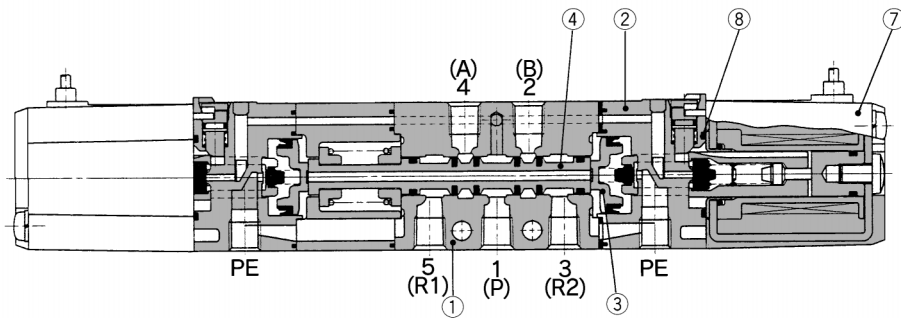
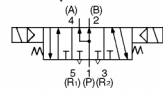
3 position closed center



3 position exhaust center



3 position pressure center



(This figure is closed center)

Component Parts

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

Replacement Parts

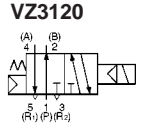
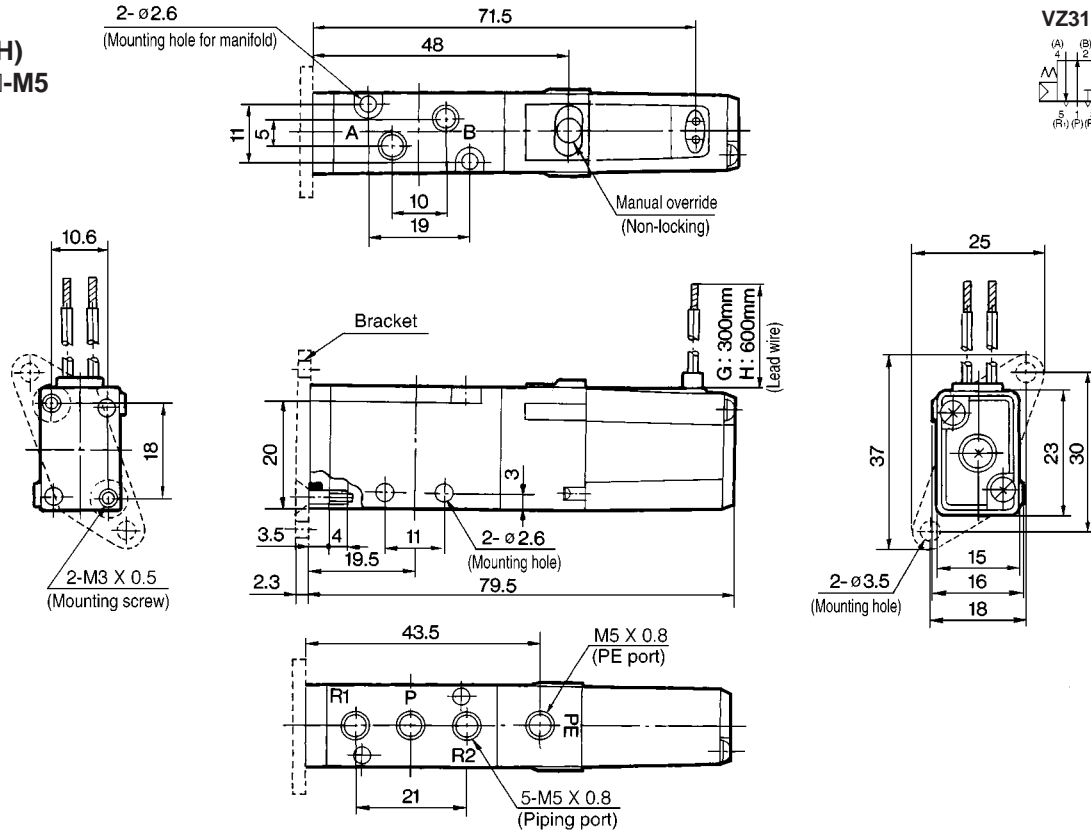
No.	Description	Material	Part No.	Remark
⑦	Solenoid ass'y	Epoxy, stainless steel	DXT170-C-□□□	
⑧	O ring	NBR	13 X 11 X 1	Common with series VZ ₅ 000

VZ3000

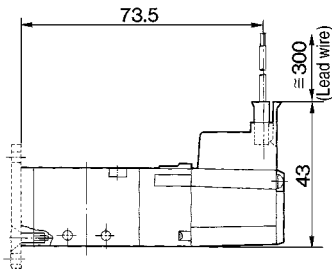
2 Position Single



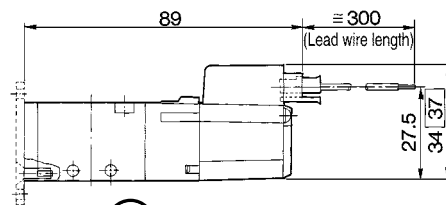
Grommet (G), (H) VZ3120-□G□□-M5



L plug connector (L) VZ3120-□L□□-M5

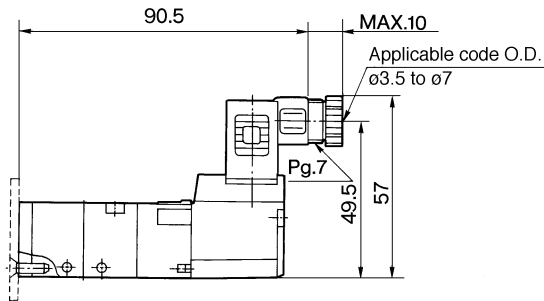


M plug connector (M) VZ3120-□M□□-M5

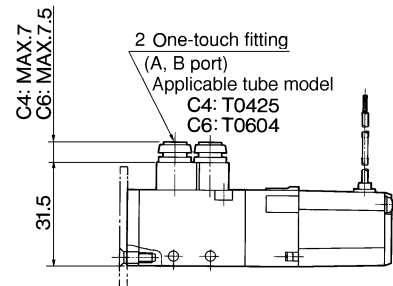


□: With indicator light and surge voltage suppressor

DIN terminal (D) VZ3120-□D□□-M5



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

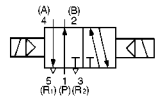


	Grommet (G), (H)	SV5Z31, #1
	L plug connector (L)	SV5Z31, #1+ (#12, #005)
	M plug connector (M)	SV5Z31, #1+ (#12, #006)
	DIN terminal (D)	SV5Z31, #1+ (#12, #007)
	Built-in One-touch fitting	SV5Z31, #1+ (#12, #004)
	With bracket	SV5Z31, (#12, #001)
	Silencer (AN120-115)	SV5Z31, (#12, #002)
	Silencer (AN110-01)	SV5Z31, (#12, #003)

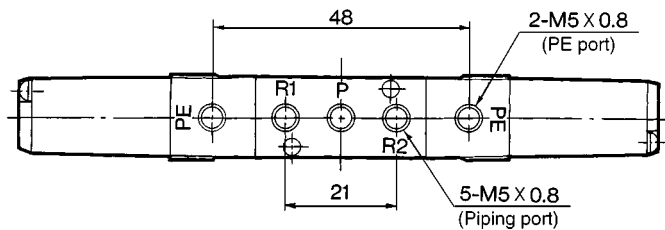
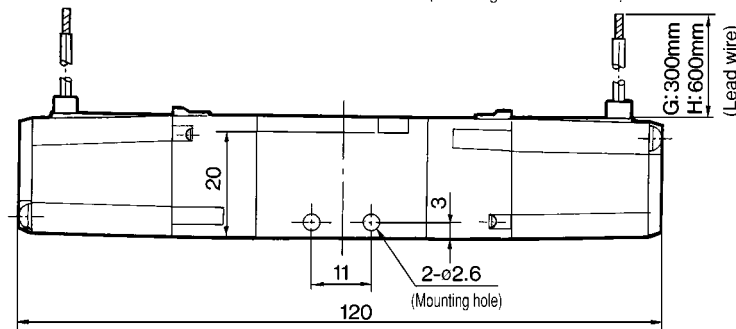
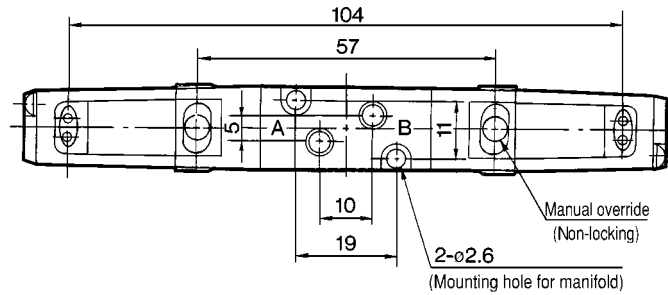


2 Position Double

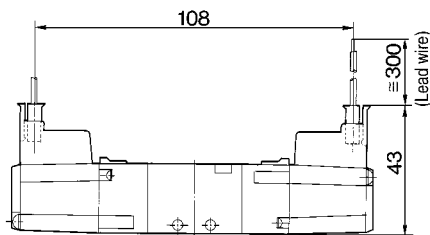
VZ3220



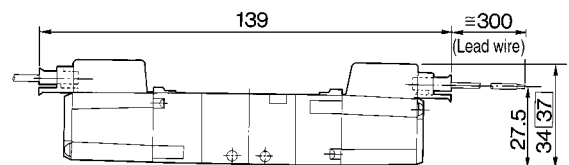
Grommet (G), (H)
VZ3220-□^G□□-M5



L plug connector (L)
VZ3220-□L□□-M5

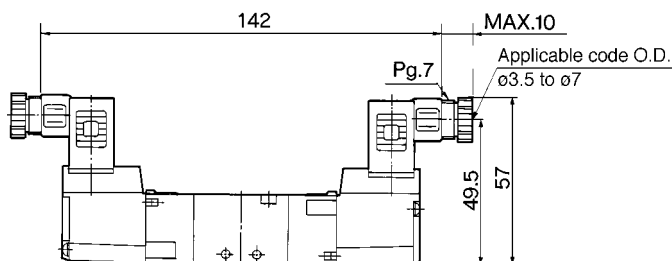


M plug connector (M)
VZ3220-□M□□-M5

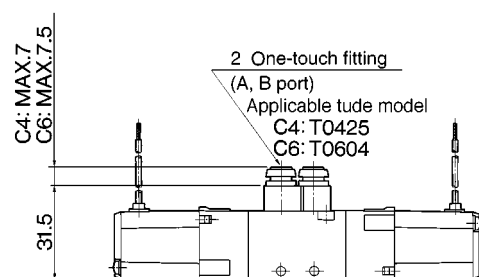


□: With indicator light and surge voltage suppressor

DIN terminal (D)
VZ3220-□D□□-M5



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



- Grommet (G) (H) ————— SV5Z31, #2
- L plug connector (L) ————— SV5Z31, #2+ (#12, #005)
- M plug connector (M) ————— SV5Z31, #2+ (#12, #006)
- DIN terminal (D) ————— SV5Z31, #2+ (#12, #007)
- Built-in One-touch fitting ————— SV5Z31, #2+ (#12, #004)

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VP4

VQ

VQ4

VQZ

VQD

VZS

VFS

VS

VS7

VZ3000

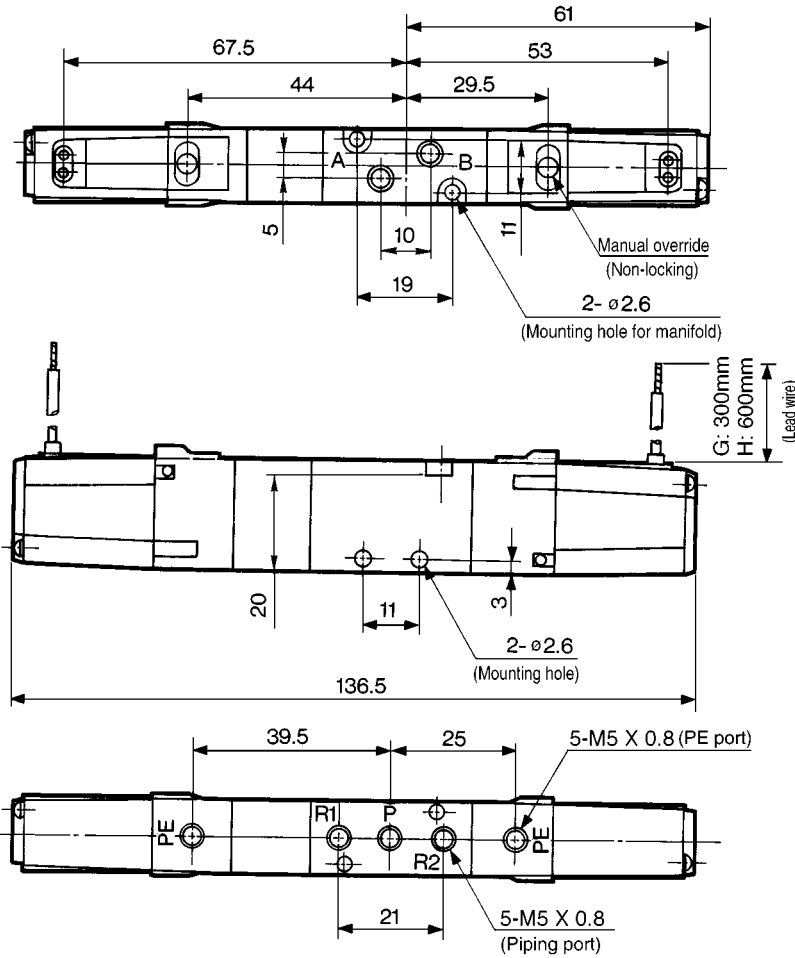


3 Position Closed Center/Exhaust Center/Pressure Center

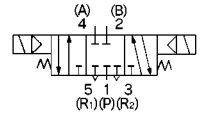


Grommet (G), (H)

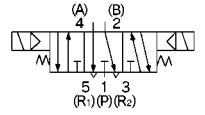
VZ3 $\frac{3}{4}$ 20-□^G□□-M5



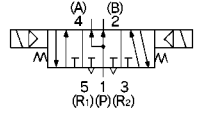
VZ3320



VZ3420

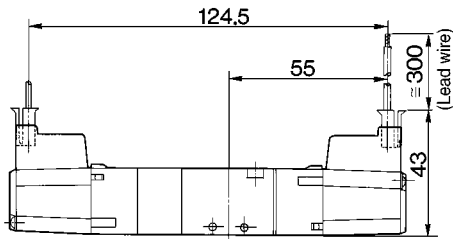


VZ3520



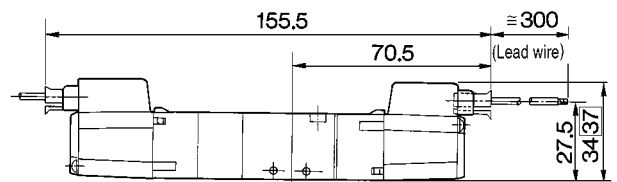
L plug connector (L)

VZ3 $\frac{3}{4}$ 20-□L□□-M5



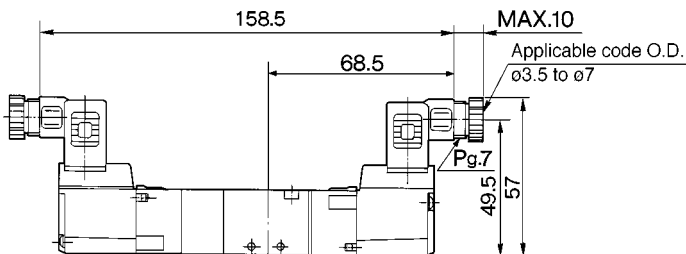
M plug connector (M)

VZ3 $\frac{3}{4}$ 20-□M□□-M5



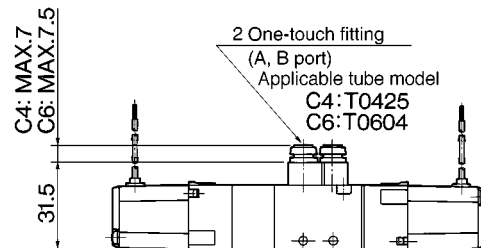
DIN terminal (D)

VZ3 $\frac{3}{4}$ 20-□D□□-M5



Built-in One-touch fitting

VZ3 $\frac{3}{4}$ 20-□□□□-C4
C6



- Grommet (G) (H) ————— SV5Z31, #3
- L plug connector (L) ————— SV5Z31, #3+ (#12, #005)
- M plug connector (M) ————— SV5Z31, #3+ (#12, #006)
- DIN terminal (D) ————— SV5Z31, #3+ (#12, #007)
- Built-in One-touch fitting ————— SV5Z31, #3+ (#12, #004)

5 Port Solenoid Valve Base Mounted Series VZ3000



How to Order

Plug-in VZ3 1 4 3 — 5 F^{Note)} Z

Non plug-in VZ3 1 4 0 — 5 L

Configuration

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

Body option

0: Individual pilot exhaust style

 R port P, E port

3: Common exhaust (pilot and main valve) style

 R port P, E port

Rated voltage

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

* Option

Electrical entry

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

*LN, MN type: With socket (2pcs.)

Port Size

—: Without sub-plate
 01: Rc(PT)1/8 With sub-plate

Manual override/Plug-in

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

Manual override/Non plug-in

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

Indicator light and surge voltage suppressor

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

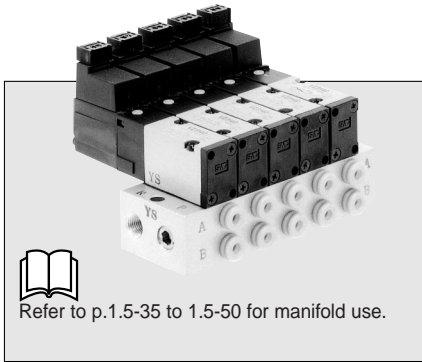
*Not available for GZ, HZ and DOZ

Note) Contact SMC in case of without light

- SY
- SYJ
- SX
- VK
- VZ**
- VF
- VFR
- VP7
- VP4
- VQ
- VQ4
- VQZ
- VQD
- VZS
- VFS
- VS
- VS7

VZ3000

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



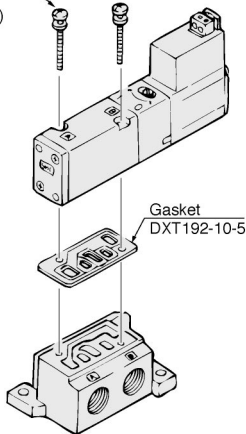
Refer to p.1.5-35 to 1.5-50 for manifold use.



P.1.5-80 to 1.5-88

Combinations of Solenoid Valve and Gasket

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



Specifications

Fluid		Air
Operating pressure (MPa)	2 position single	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.15 to 0.7
Ambient and fluid temperature (°C)		Max. 50
Response time (ms) (0.5MPa) ⁽¹⁾	2 position single/double	20 or less
	3 position	35 or less
Max. operating frequency (Hz)	2 position single/double	10
	3 position	3
Manual override ⁽²⁾	Non-locking push, Locking slotted, Locking lever	
Pilot exhaust	Individual pilot exhaust, Common exhaust (pilot and main valve)	
Lubrication	Non-lube	
Mounting position	Free	
Impact/Vibration resistance (m/s ²) ⁽³⁾	300/50	
Protection	Dust proof	



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

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

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

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

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

Solenoid Specifications

* Option

Electrical entry	Grommet (G)/(H), L plug connector (L), M plug connector (M), DIN terminal (D)			
Coil rated voltage (V)	AC50/60Hz	100, 200, 24*, 48*, 110*, 220*		
	DC	24, 6*, 12*, 48*		
Allowable voltage (%)	-15 to +10% of rated voltage			
Power consumption W ⁽¹⁾ [Current mA]	DC	1.8 (with light 2.1)[24V DC: 75 (with light 87.5)]		
Apparent power VA ⁽¹⁾ [Current mA]	AC	Inrush	4.5/50Hz, 4.2/60Hz	100V AC: 45/50Hz, 42/60Hz 200V AC: 22.5/50Hz, 15/60Hz
		Holding	3.5/50Hz, 3/60Hz	100V AC: 35/50Hz, 30/60Hz 200V AC: 17.5/50Hz, 15/60Hz
Surge voltage suppressor	DC: Diode, AC: ZNR ⁽²⁾			
Indicator light	DC: LED (red), AC: Neon light			



Note 1) At rated voltage

Note 2) Plug-in should be ZNR

Effective Area and Weight

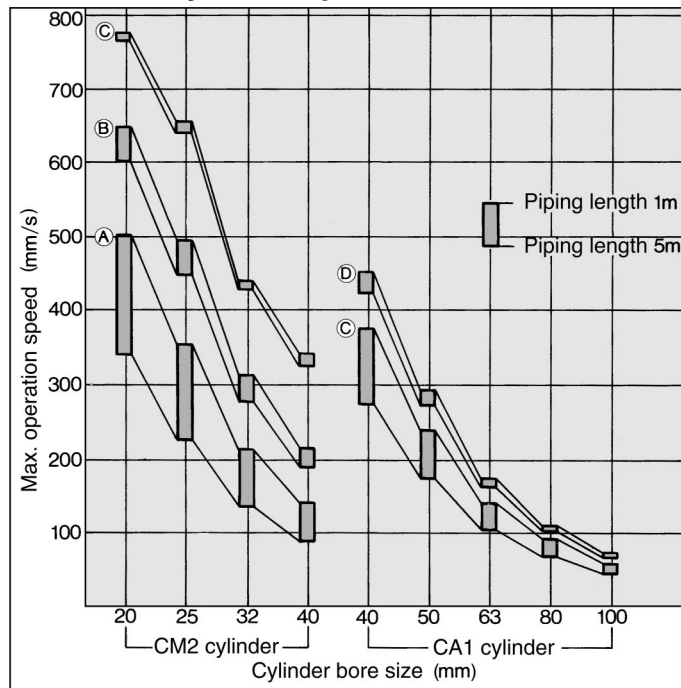
Valve model	Configuration	Port size	Effective area (mm ²) (Cv) ⁽¹⁾	Weight (g) ⁽²⁾	
VZ3□40-□□-01	2 position	Rc(PT) $\frac{1}{8}$	Single	4.5 (0.25)	125 (75)
			Double	4.5 (0.25)	170 (120)
	3 position		Closed center	3.4 (0.19)	180 (130)
			Exhaust center	4.5 (0.25)[2.7 (0.15)]	
			Pressure center	P→A, B: 5.3 (0.29) [3.1 (0.17)]	
				A, B→R1, R2: 4.0 (0.22)	



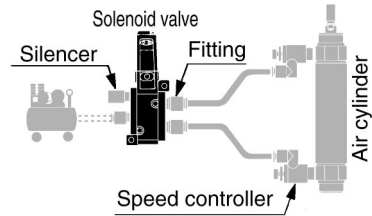
Note 1) [] normal position: Exhaust center A, B → R1, R2, Pressure center P → A, B

Note 2) (): Without sub-plate

Maximum Cylinder Speed



System figure



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

System construction

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

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VP4

VQ

VQ4

VQZ

VQD

VZS

VFS

VS

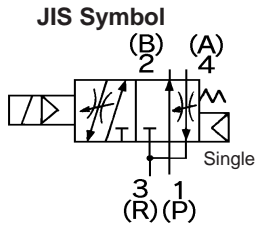
VS7

VZ3000

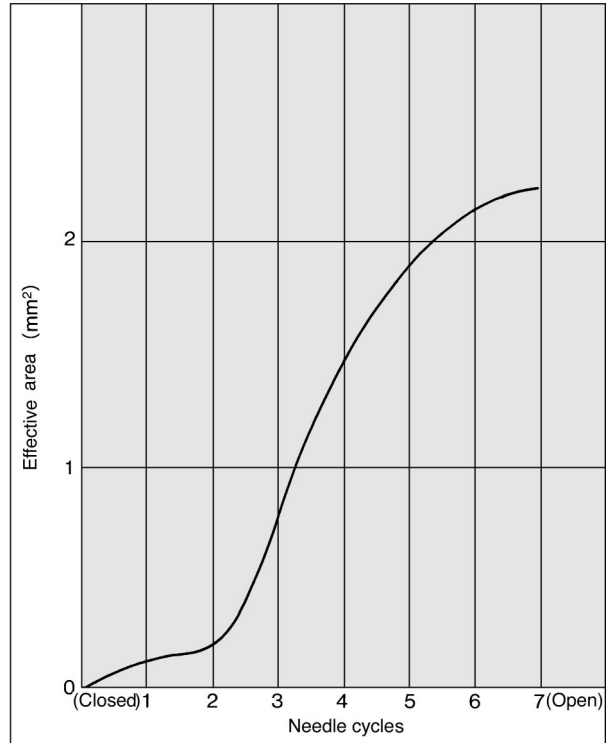
Built-in Throttle Valve

VZ3□5□

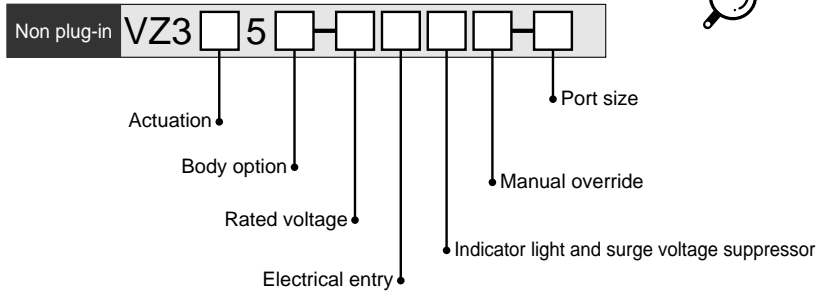
- An exhaust throttle valve is built into the solenoid valve itself, enabling a simple speed adjustment of the cylinder.
- If it is mounted on a manifold base, the exhaust air will converge in the common exhaust port at the manifold base, thus simplifying the handling of the exhaust air.



Throttle Valve Characteristics ($P_A \rightarrow R$)

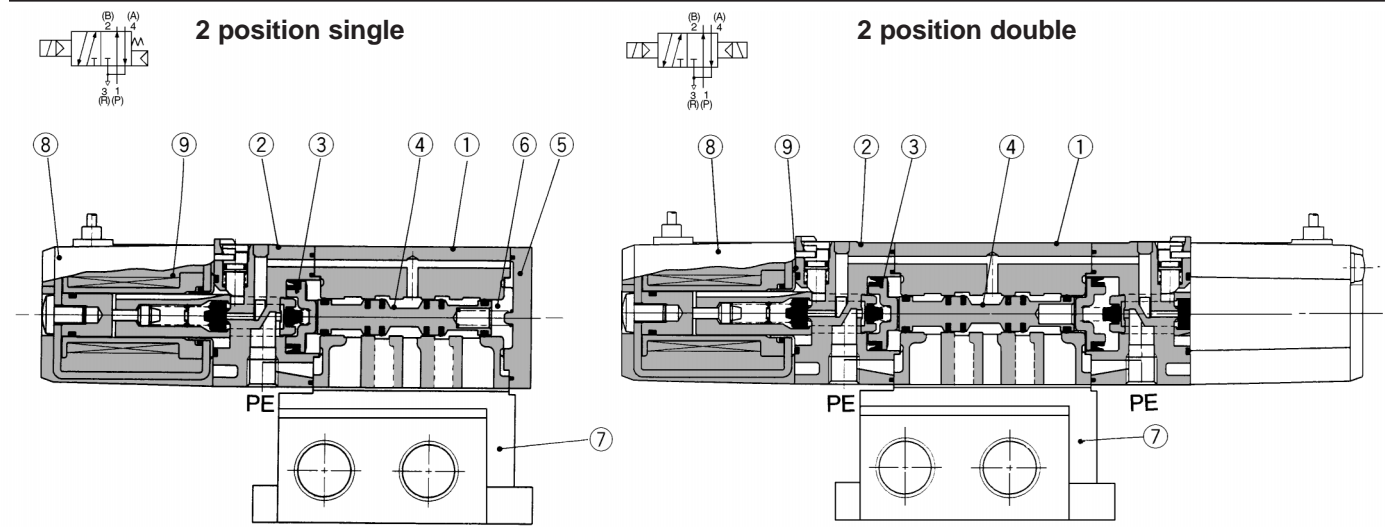


How to Order Built-in Throttle Valve Style



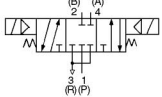
- Note)
- To use the VZ3□53, open the throttle valve one turn or more from the fully closed position.
 - To adjust the throttle valve apply torque of 0.3Nm or less.
 - Be careful not to open the throttle valve excessively as this could cause the throttle valve to fly out.

Construction

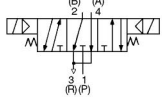


3 position closed center/exhaust center/pressure center

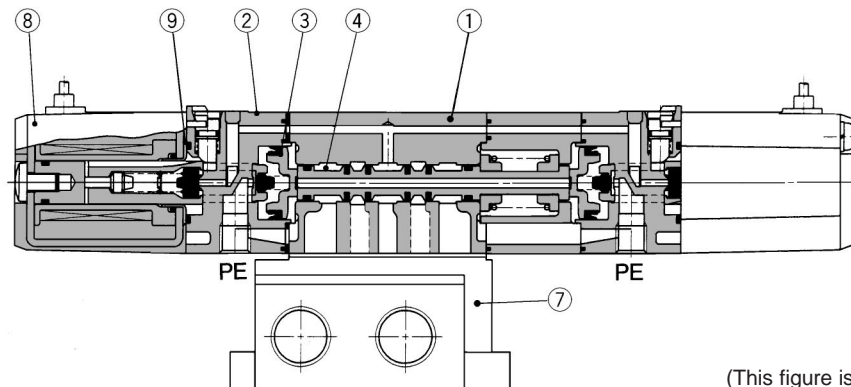
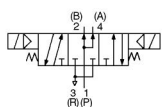
3 position closed center



3 position exhaust center



3 position pressure center



(This figure is a closed center.)

Component Parts

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

Replacement Parts

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

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VP4

VQ

VQ4

VQZ

VQD

VZS

VFS

VS

VS7

VZ3000

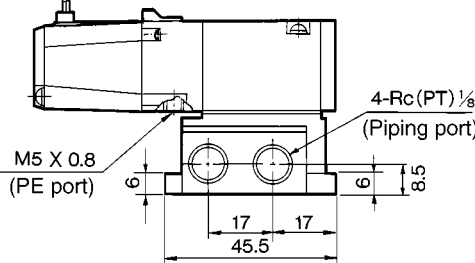
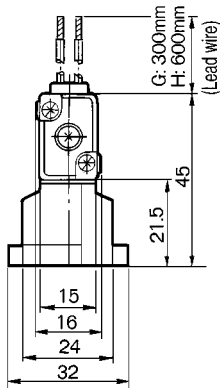
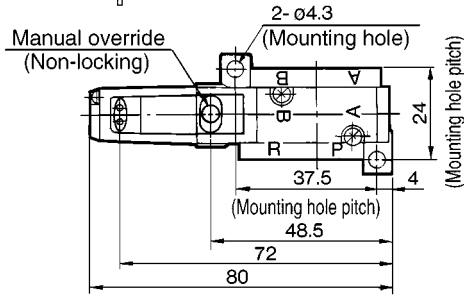
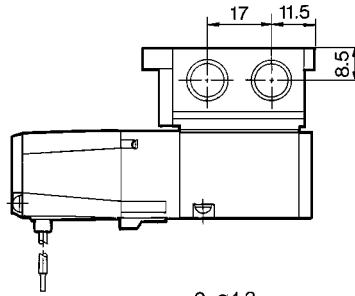
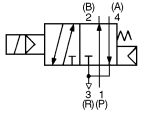


2 Position Single

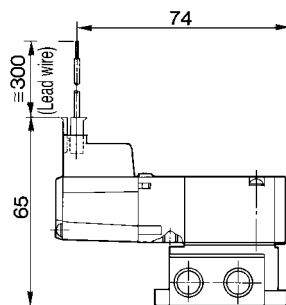


Grommet (G), (H)
VZ3140-□ G □□-01

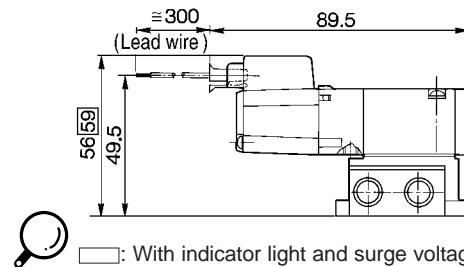
VZ3140



L plug connector (L)
VZ3140-□ L □□-01



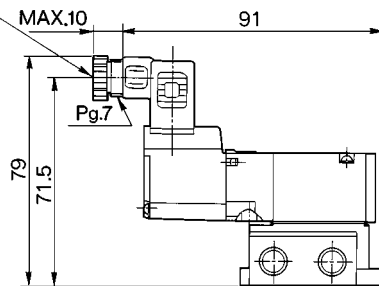
M plug connector (M)
VZ3140-□ M □□-01



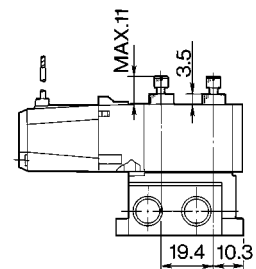
□: With indicator light and surge voltage suppressor

DIN terminal (D)
VZ3140-□ D □□-01

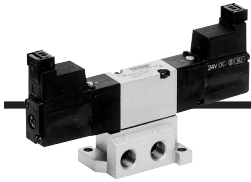
Applicable code O.D.
ø3.5 to ø7



Built-in throttle valve
VZ3150-□□□□

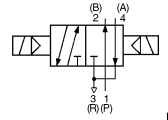


- Grommet (G) (H) ————— SV5Z31, #1+#11
- L plug connector (L) ————— SV5Z31, #1+#11+ (#12, #005)
- M plug connector (M) ————— SV5Z31, #1+#11+ (#12, #006)
- DIN terminal (D) ————— SV5Z31, #1+#11+ (#12, #007)

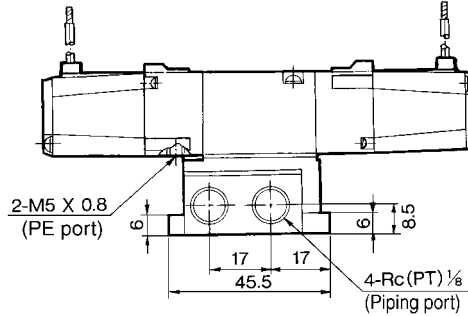
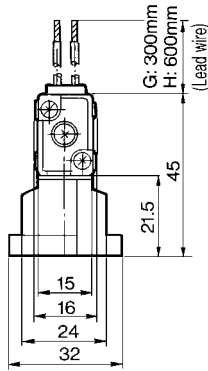
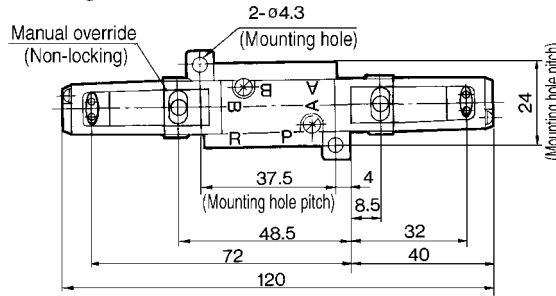
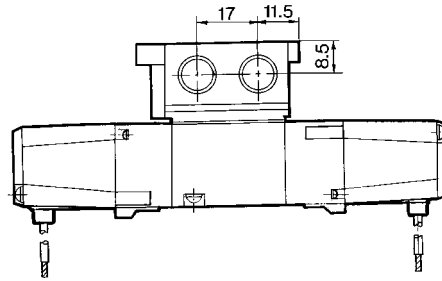


2 Position Double

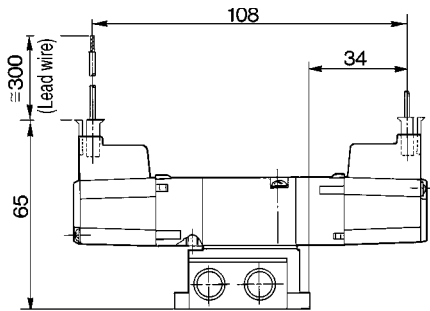
VZ3240



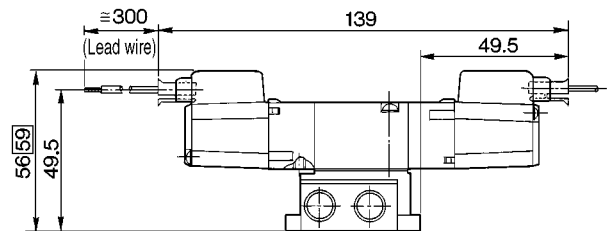
Grommet (G), (H)
VZ3240-□ G □□-01



L plug connector (L)
VZ3240-□ L □□-01

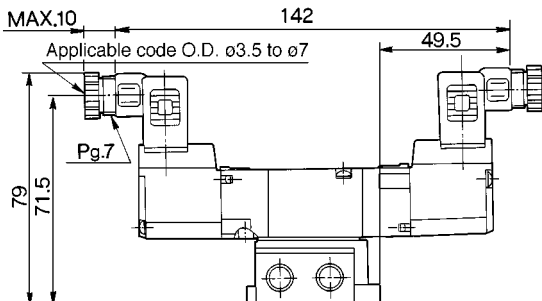


M plug connector (M)
VZ3240-□ M □□-01

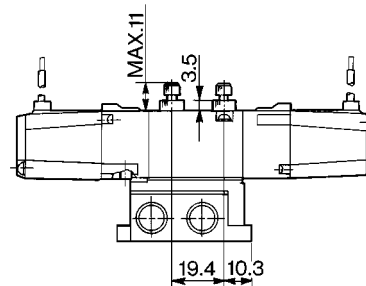


□: With indicator light and surge voltage suppressor

DIN terminal (D)
VZ3240-□ D □□-01



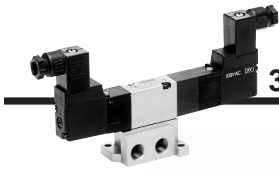
Built-in throttle valve
VZ3250-□□□□



- Grommet (G) (H) ————— SV5Z31, #2+#11
- L plug connector (L) ————— SV5Z31, #2+#11+ (#12, #005)
- M plug connector (M) ————— SV5Z31, #2+#11+ (#12, #006)
- DIN terminal (D) ————— SV5Z31, #2+#11+ (#12, #007)

SY
SYJ
SX
VK
VZ
VF
VFR
VP7
VP4
VQ
VQ4
VQZ
VQD
VZS
VFS
VS
VS7

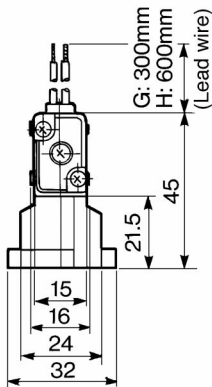
VZ3000



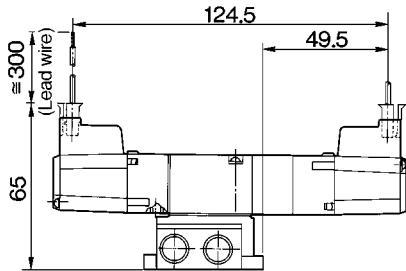
3 Position Closed Center/Exhaust Center/Pressure Center



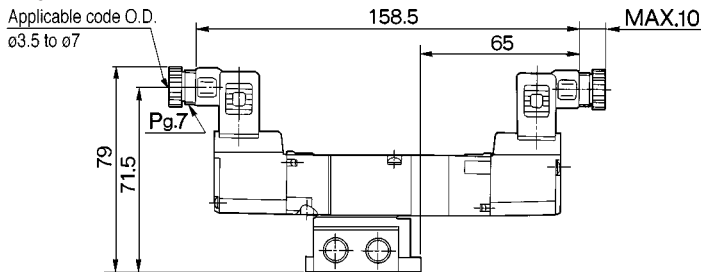
Grommet (G), (H)
VZ3³/₄40-□ G □□-01



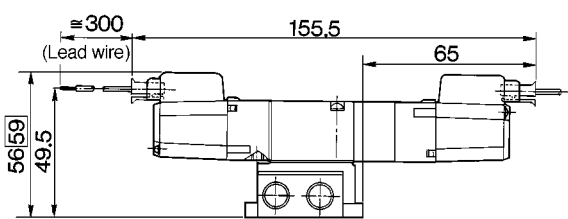
L plug connector (L)
VZ3³/₄40-□ L □□-01



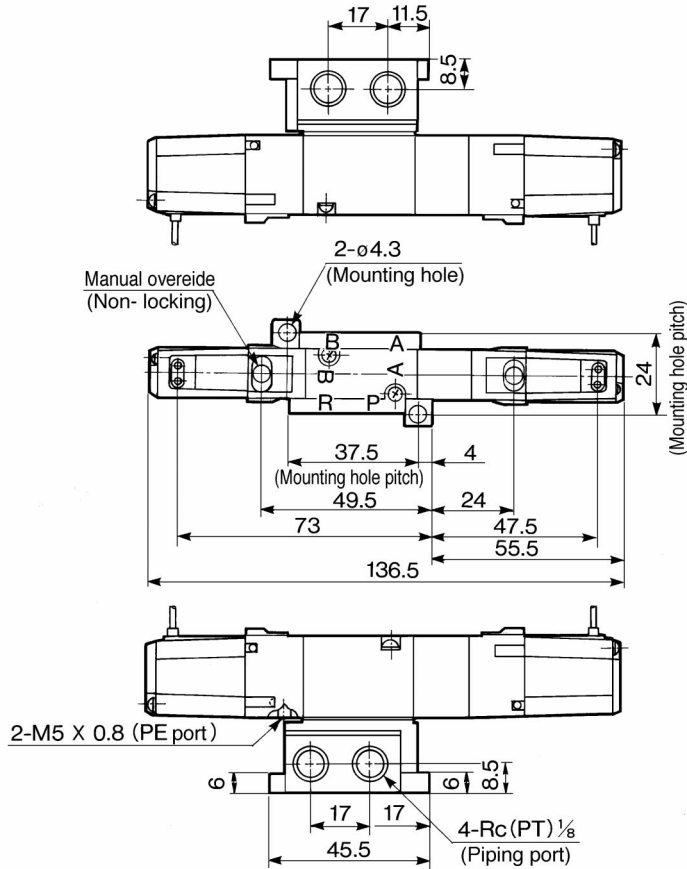
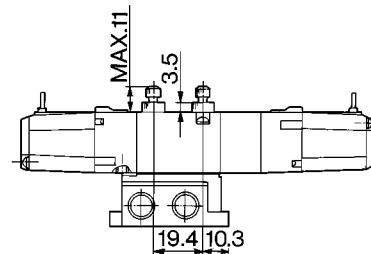
DIN terminal (D)
VZ3³/₄40-□ D □□-01



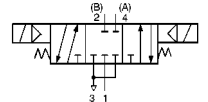
M plug connector (M)
VZ3³/₄40-□ M □□-01



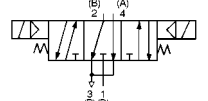
Built-in throttle valve
VZ3³/₄50-□□□□



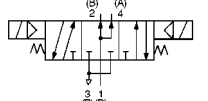
VZ3240



VZ3440



VZ3540



□: With indicator light and surge voltage suppressor

- Grommet (G) (H) ————— SV5Z31, #3+#11
- L plug connector (L) ————— SV5Z31, #3+#11+ (#12, #005)
- M plug connector (M) ————— SV5Z31, #3+#11+ (#12, #006)
- DIN terminal (D) ————— SV5Z31, #3+#11+ (#12, #007)