

5 Port Pilot Operated Solenoid Valve Rubber Seal

Series VF3000

Compact and lightweight:
26.4 mm width

Compact yet provides a large flow capacity:
Sonic conductance
C: 3.1 dm³/(s·bar)
{4/2 → 5/3 (A/B → EA/EB)}

Low power consumption:
1.8 W (DC)



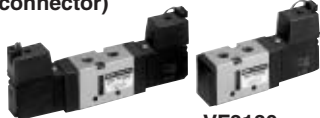
VF3230 (DIN terminal) VF3122 (Grommet with bracket)



VF3230 (Grommet) VF3130 (Grommet)



VF3330 (M plug connector) VF3130 (M plug connector)

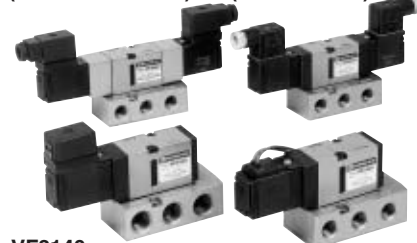


VF3230 (L plug connector) VF3130 (L plug connector)

Body ported



VF3540 (Conduit terminal) VF3240 (DIN terminal)



VF3140 (Grommet terminal) VF3140 (Grommet)



VF3240 (L plug connector) VF3240 (M plug connector)

Base Mounted (With sub-plate)

Specifications

Fluid	Air	
Operating pressure range	2 position single/3 position	0.15 to 0.9 MPa
	2 position double	0.1 to 0.9 MPa
Ambient and fluid temperature	-10 to 50°C (No freezing. Refer to page 3-13-4.)	
Response time ⁽¹⁾	2 position single/double	20 ms or less (at the pressure of 0.5 MPa)
	3 position	40 ms or less (at the pressure of 0.5 MPa)
Max. operating frequency	2 position single/double	10 Hz
	3 position	3 Hz
Lubrication	Not required	
Manual override	Non-locking push, Locking slotted, Locking knob	
Mounting orientation	Unrestricted	
Shock/Vibration resistance ⁽²⁾	300/50 m/s ²	
Enclosure	Dustproof	
Pilot valve EXH	Individual exhaust, Common exhaust for main valve and pilot valve	



Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)

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

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 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)

Electrical entry	Grommet, Grommet terminal, Conduit terminal DIN terminal, L plug connector, M plug connector		
Coil rated voltage (V)	AC 50/60 Hz	100, 200, 12*, 24*, 48*, 110*, 220*, 240*	
	DC	24, 6*, 12*, 48*, 100*, 110*	
Allowable voltage fluctuation	-15 to +10% of rated voltage		
Apparent power ^{Note)}	AC	Inrush	5.6 VA (50 Hz), 5.0 VA (60 Hz)
		Holding	3.4 VA (50 Hz), 2.3 VA (60 Hz)
Power consumption ^{Note)}	DC	1.8 W, 2 W (With indicator light)	
Light/Surge voltage suppressor	AC	ZNR (Varistor), Neon bulb (LED 100 V or less)	
	DC	ZNR (Varistor), LED (Neon bulb 100 V or more)	



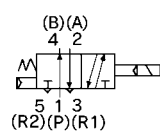
* Option Note) At rated voltage

Option

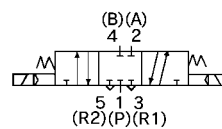
Description	Part no.	Applicable valve model
Bracket	DXT031-40-3A	For VF3122 only
Silencer	AN110-01	R 1/8

JIS Symbol

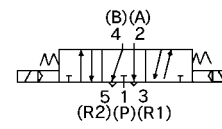
Single
VF3130



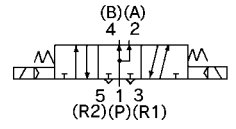
Closed center
VF3330



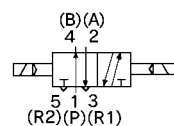
Exhaust center
VF3430



Pressure center
VF3530



Double
VF3230



Series VF3000

Flow Characteristics/Weight

Model ⁽¹⁾	Type of actuation	Port size ⁽²⁾	Flow characteristics						Weight ⁽⁴⁾ (kg)		
			1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)					
			C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv			
Body ported	VF3122-□□-01-F	2 position single	1/8	3.0	0.38	0.78	2.8	0.30	0.67	0.24	
				3.0	0.38	0.78	2.8	0.30	0.67	0.21	
				3.0	0.38	0.78	2.8	0.30	0.67	0.29	
	VF3□30-□□-01	2 position double		2.4	0.31	0.64	1.8	0.37	0.46	0.44	
				2.6	0.37	0.70	3.0 [2.5]	0.32 [0.28]	0.76 [0.62]	0.44	
				3.0 [1.4]	0.42 [0.44]	0.83 [0.39]	2.4	0.27	0.59	0.44	
	VF3122-□□-02-F	2 position single	1/4	4.0	0.36	1.0	3.1	0.32	0.75	0.24	
				4.0	0.36	1.0	3.1	0.32	0.75	0.21	
				4.0	0.36	1.0	3.1	0.32	0.75	0.29	
	VF3□30-□□-02	2 position double		2.4	0.45	0.68	1.9	0.37	0.47	0.44	
				3.0	0.42	0.82	3.1 [2.7]	0.36 [0.29]	0.79 [0.66]	0.44	
				5.5 [1.4]	0.37 [0.50]	1.4 [0.40]	2.6	0.32	0.64	0.44	
Base mounted ⁽³⁾	VF3□40-□□-02	2 position single	1/4	2.8	0.14	0.64	2.5	0.18	0.57	0.38	
				2.8	0.14	0.64	2.5	0.18	0.57	0.47	
				2.1	0.22	0.49	1.6	0.26	0.41	0.61	
		3 position closed center		2.3	0.21	0.53	2.8 [2.1]	0.23 [0.26]	0.66 [0.50]	0.61	
				3 position exhaust center	2.9 [1.1]	0.16 [0.45]	0.67 [0.32]	2.1	0.23	0.49	0.61
					3 position pressure center	3.1	0.24	0.76	2.6	0.23	0.62
	VF3□40-□□-03	2 position single	3/8			3.1	0.24	0.76	2.6	0.23	0.62
				2.2		0.33	0.57	1.6	0.34	0.40	0.61
				2.6	0.27	0.61	2.8 [2.3]	0.30 [0.28]	0.68 [0.55]	0.61	
		2 position double		3.4 [1.3]	0.29 [0.48]	0.80 [0.38]	2.2	0.31	0.52	0.61	
				3 position closed center							
					3 position exhaust center						
3 position pressure center											

- Note 1) For common exhaust type for main and pilot valve, model number will be VVF3□43, VF3□43
 Note 2) In the case of body ported, exhaust port is only Rc 1/8.
 Note 3) With sub-plate
 Note 4) Weight stands for grommet type.
 Note 5) [] : Denotes normal position.

How to Order Pilot Valve Assembly

SF4 - **1** **DZ** **□** - 50
 (A) (B) (C)

(A) Coil rated voltage

1	100 VAC, 50/60 Hz
2	200 VAC, 50/60 Hz
3 *	110 to 120 VAC, 50/60 Hz
4 *	220 VAC, 50/60 Hz
5	24 VDC
6 *	12 VDC
7 *	240 VAC, 50/60 Hz
9 *	Other

(C) Manual override

Nil	Non-locking push type
B	Locking type B
C	Locking type C

* Option

(B) Electrical entry, Light/Surge voltage suppressor

Symbol	Electrical entry	Light/Surge voltage suppressor
G	Grommet	None
GS		With surge voltage suppressor
H		None
HS		With surge voltage suppressor
E	Grommet terminal	None
EZ		With light/surge voltage suppressor
T	Conduit terminal	None
TZ		With light/surge voltage suppressor
D	DIN terminal	None
DZ		With light/surge voltage suppressor
DO		None
DOZ		With light/surge voltage suppressor
L	L plug connector	None
LZ		With light/surge voltage suppressor
LN		None
LNZ		With light/surge voltage suppressor
LO		None
LOZ		With light/surge voltage suppressor
M	M plug connector	None
MZ		With light/surge voltage suppressor
MN		None
MNZ		With light/surge voltage suppressor
MO		None
MOZ		With light/surge voltage suppressor

* Interchangeable with the previous model, "DXT154-A-□□□□".

Manifold

Model ^(Note)	Manifold type			
	Type	EXH	A, B (CYL) port	
VF3□30-□□-01-02	B mount	Type 30	Common	Valve
VF3□40-□□		Type 40	Common	Base
VF3□50-□□		Type 50	Individual	Base
VF3□60-□□-01-02	S mount	Type 60, 61	Common	Valve
VF3□70-□□-01-02		Type 70, 71	Individual	Valve

Note) For common exhaust type for main and pilot valve, model number will be VF3□33, VF3□43, VF3□63.

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How to Order

Body option

0	Standard
3*	Common exhaust type for main and pilot valve

* Option

Port size (P, A, B port)

01	1/8
02	1/4

Rt, R2, Rc 1/8

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Body ported single solenoid with bracket

VF3122 — 1 G — 02 — F

Body ported For type 30 manifold

VF3 1 3 0 — 1 G — 02

Base mounted For type 40 manifold

VF3 1 4 0 — 1 G — 02

For type 50 manifold

VF3 1 50 — 1 G — 02

Option

F	With bracket
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* Not installed when delivered.

Port size

Nil	Sub-plate None
02	1/4
03	3/8

For type 60, 61 manifold

VF3 1 6 0 — 1 G — 02

For type 70, 71 manifold

VF3 1 6 0 — 1 G — 02

Port size (A, B port)

01	1/8
02	1/4

R port of "VF3□70" 1/4 is Rc.

Type of actuation

1	Single solenoid
2	Double solenoid
3	Closed center
4	Exhaust center
5	Pressure center

Rated voltage

1	100 VAC, 50/60 Hz
2	200 VAC, 50/60 Hz
3*	110 V to 120 VAC, 50/60 Hz
4*	220 VAC, 50/60 Hz
5	24 VDC
6*	12 VDC
7*	240 VAC, 50/60 Hz
9*	Other

* Option
L, M plug connector: Max. 220 VAC

Manual override

Nil	Non-locking push type
B	Locking type B
C	Locking type C

Body type

6	For type 60 and 61 manifolds
7	For type 70 and 71 manifolds

Body option

0	Standard
Note) 3*	Common exhaust type for main and pilot valve

* Option
Note) VF3□63 only

Light/Surge voltage suppressor

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

* Indicator light is not available for grommet type. W/surge voltage suppressor is available for grommet type only.

Electrical entry

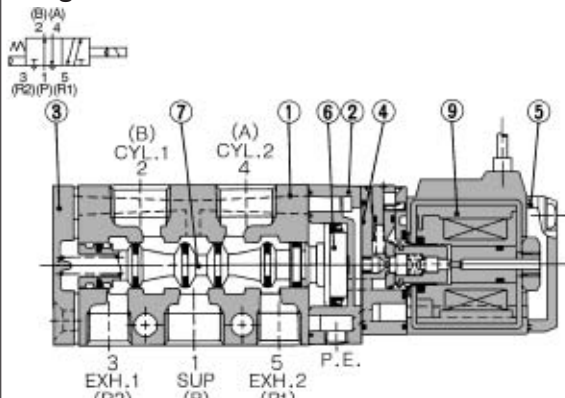
G	Grommet (Lead wire: 300 mm)	
H	Grommet (Lead wire: 600 mm)	
E	Grommet terminal	
T	Conduit terminal	
D	DIN terminal	With connector
DO		Without connector
L	L plug connector	With lead wire
LN		Without lead wire
LO	M plug connector	Without connector
M		With lead wire
MN	Without lead wire	
MO	Without connector	

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

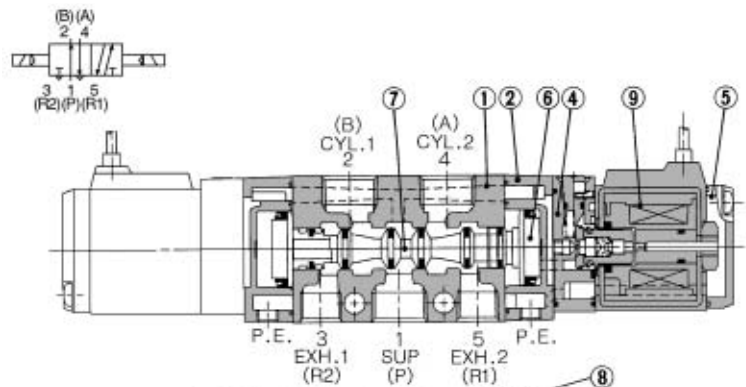
Series VF3000

Construction

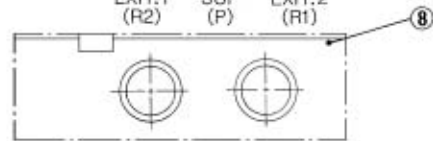
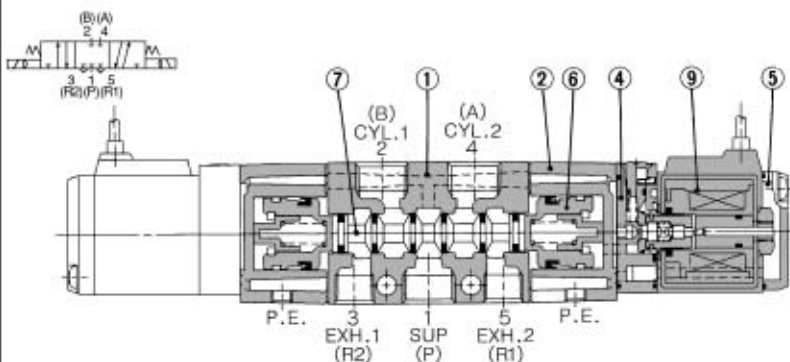
Single solenoid



Double solenoid



3 position closed center




Component Parts

No.	Description	Material	Note
①	Body	Aluminum die-casted	Platinum silver
②	Adapter plate	Resin ⁽¹⁾	Black ⁽³⁾
③	End cover	Aluminum die-casted	Black
④	Pilot body	Resin	
⑤	Pilot cover	Resin	
⑥	Piston	Resin ⁽²⁾	
⑦	Spool valve	Aluminum, NBR	

Replacement Parts

No.	Description	Part no.	Note
⑧	Sub-plate	DXT031-41-3□P	3/8 Aluminum die-casted
		DXT031-41-4□P	1/4 Aluminum die-casted
⑨	Pilot valve assembly	SF4-□□□-50	Refer to "How to Order" on page 3-4-14.

-  Note 1) 3 position: Zinc die-casted
 Note 2) 3 position: Aluminum
 Note 3) 3 position: Metallic paint

Sub-plate Part No.

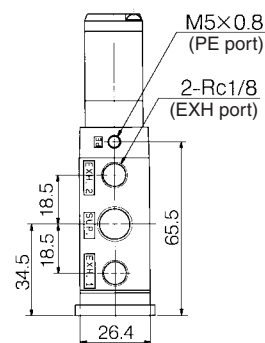
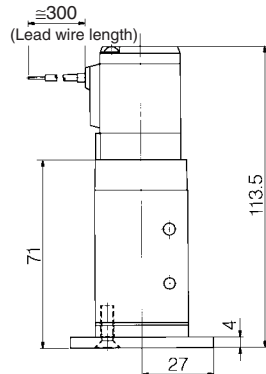
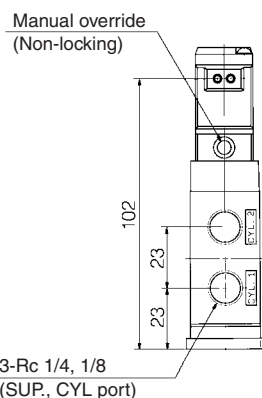
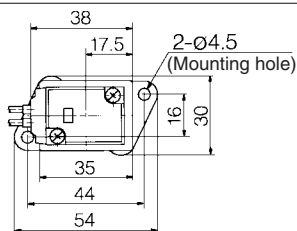
DXT031-41-3□P

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

With Bracket/Body Ported: 2 Position Single Solenoid

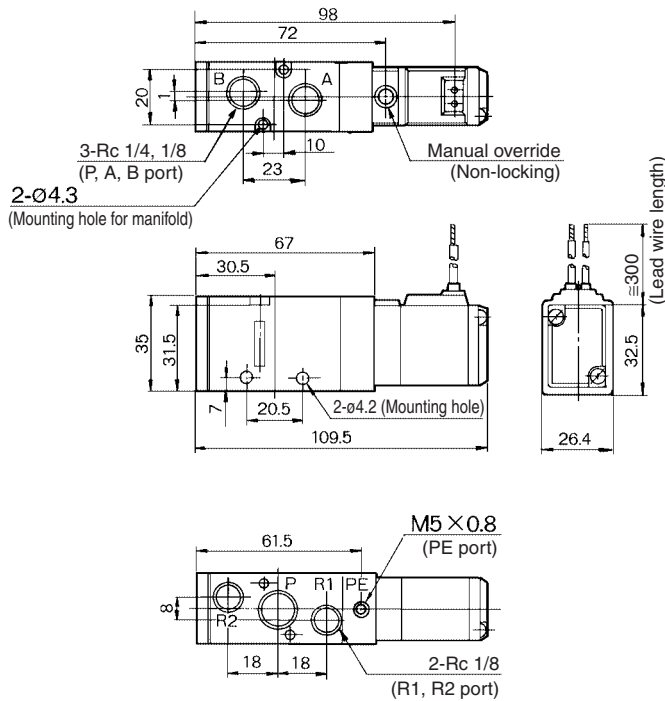
Grommet: VF3122-□G-0¹/₂F



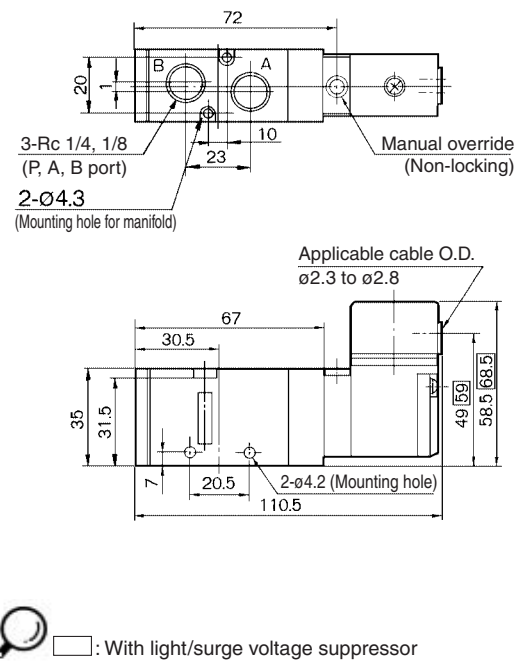
5 Port Pilot Operated Solenoid Valve Rubber Seal Series VF3000

Body Ported: 2 Position Single Solenoid

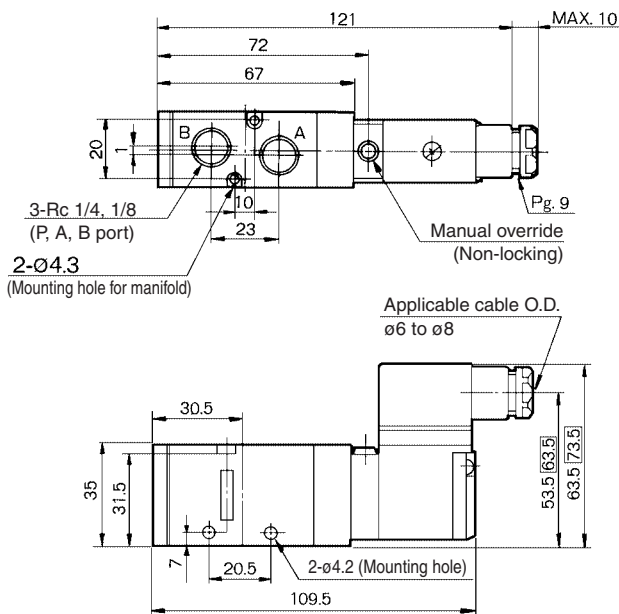
Grommet: VF3130-□G-01/02



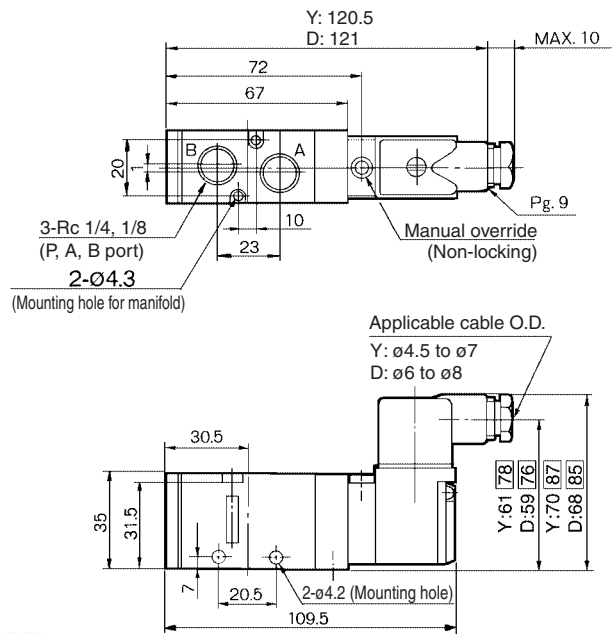
Grommet terminal: VF3130-□E-01/02



Conduit terminal: VF3130-□T-01/02



DIN terminal: VF3130-□D-01/02
VF3130-□Y-01/02



VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

VQ7

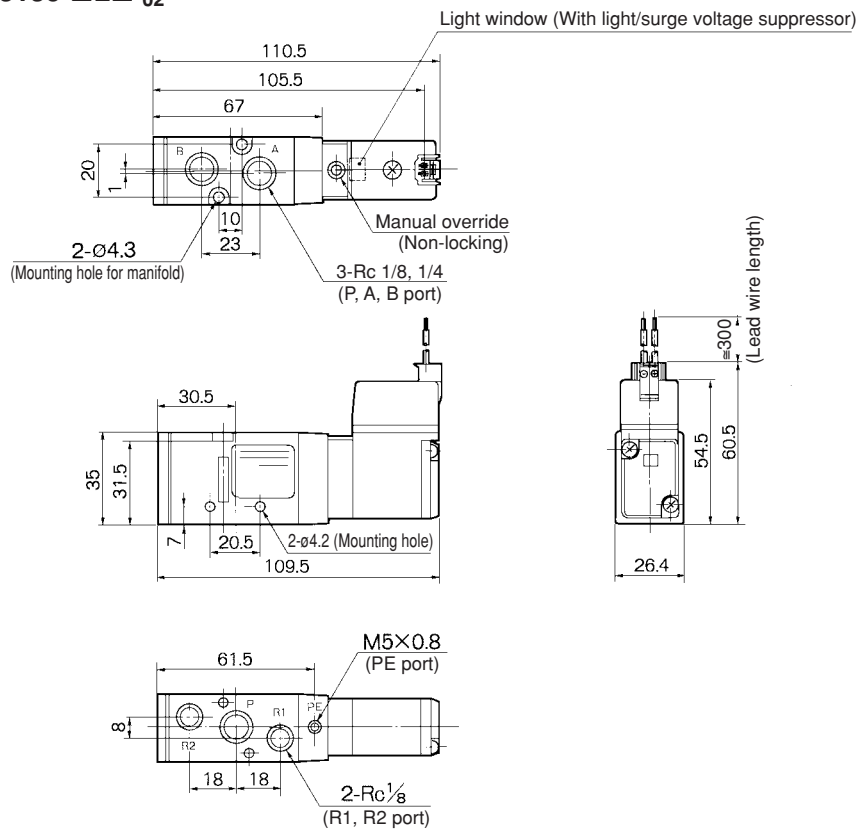
EVS

VFN

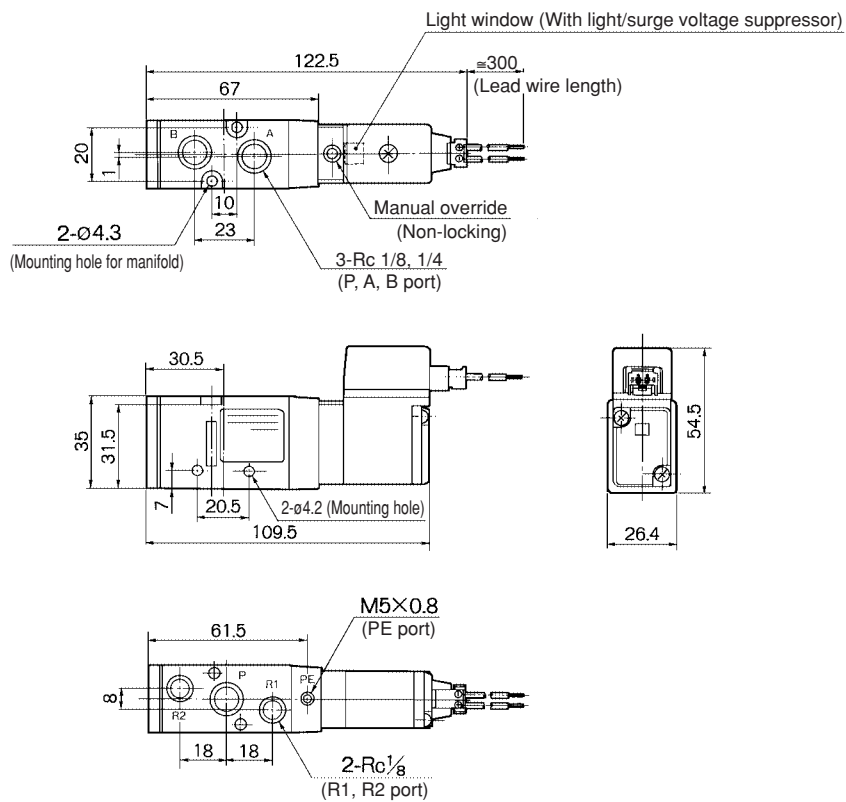
Series VF3000

Body Ported: 2 Position Single Solenoid

L plug connector: VF3130-□L□-01/02



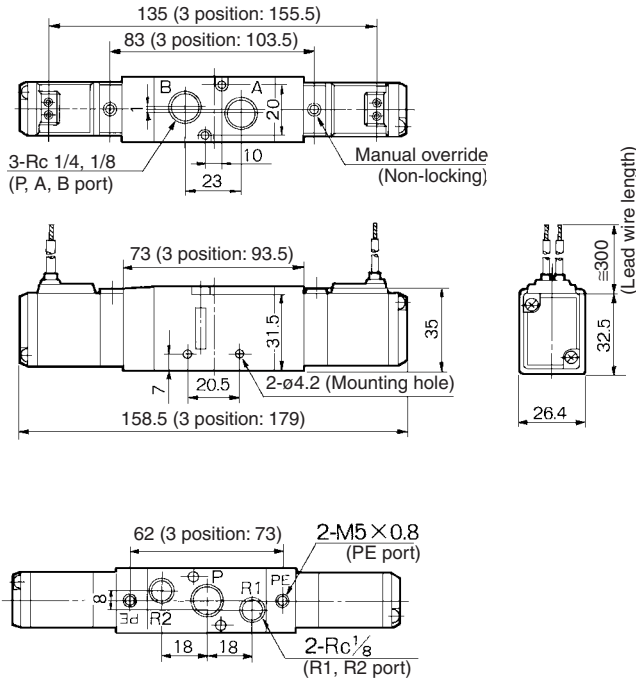
M plug connector: VF3130-□M□-01/02



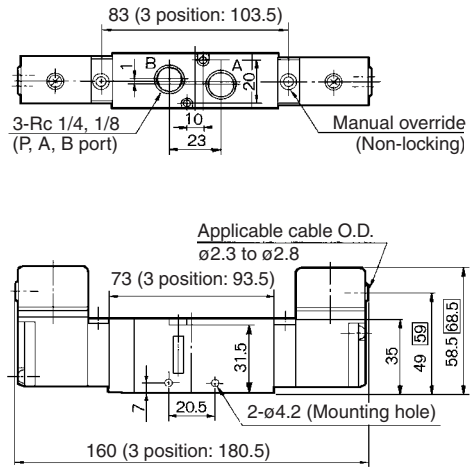
5 Port Pilot Operated Solenoid Valve Rubber Seal Series VF3000

Body Ported: 2 Position Double solenoid, 3 Position Closed Center/Exhaust Center/Pressure Center

Grommet: VF3□30-□G-⁰¹/₀₂

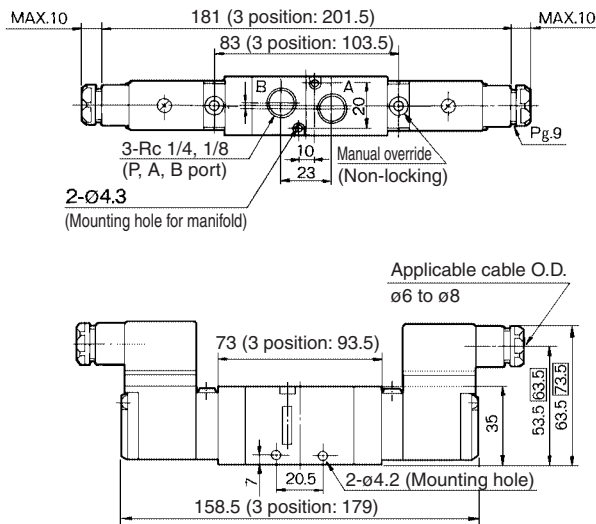


Grommet terminal: VF3□30-□E-⁰¹/₀₂



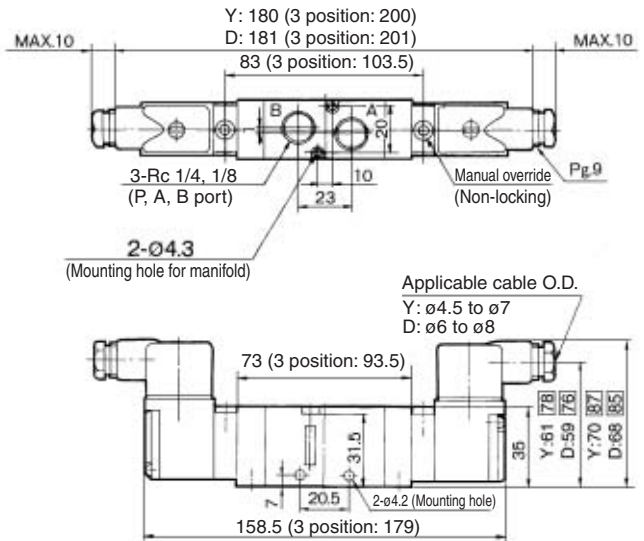
□ : With light/surge voltage suppressor

Conduit terminal: VF3□30-□T-⁰¹/₀₂



□ : With light/surge voltage suppressor

DIN terminal: VF3□30-□D-⁰¹/₀₂
VF3□30-□Y-⁰¹/₀₂



□ : With light/surge voltage suppressor

VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

VQ7

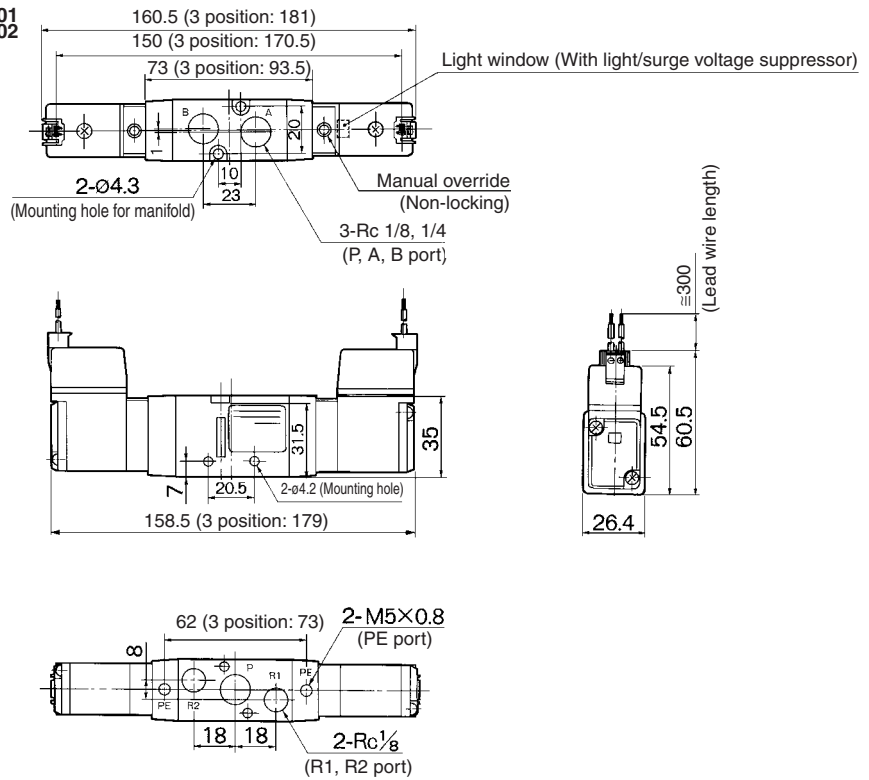
EVS

VFN

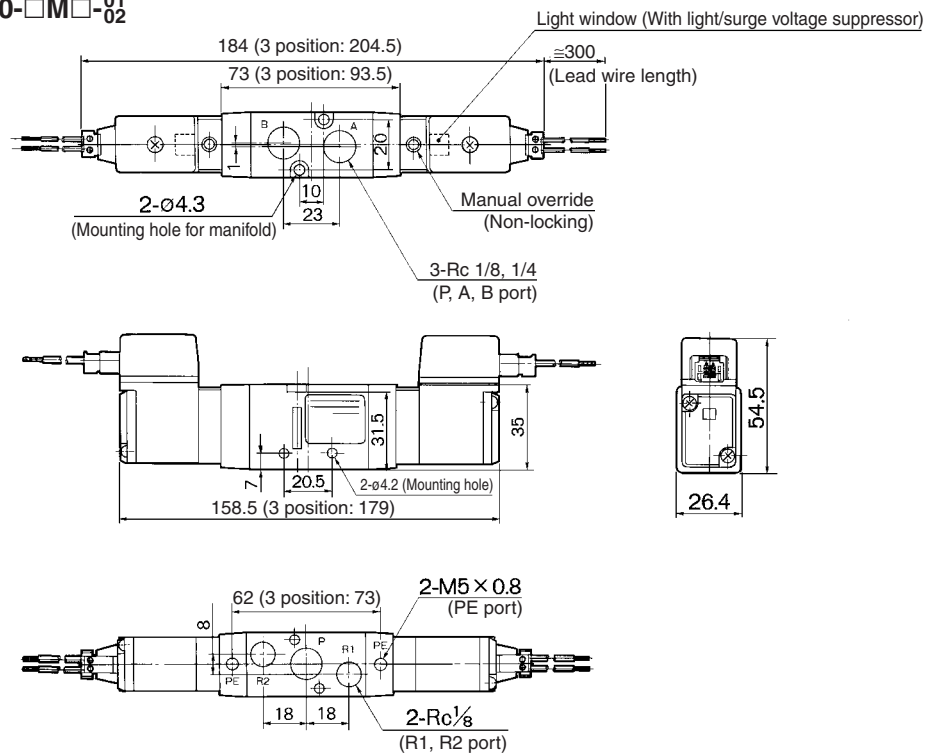
Series VF3000

Body Ported: 2 Position Double Solenoid, 3 Position Closed Center/Exhaust Center/Pressure Center

L plug connector: VF3□30-□L□-01



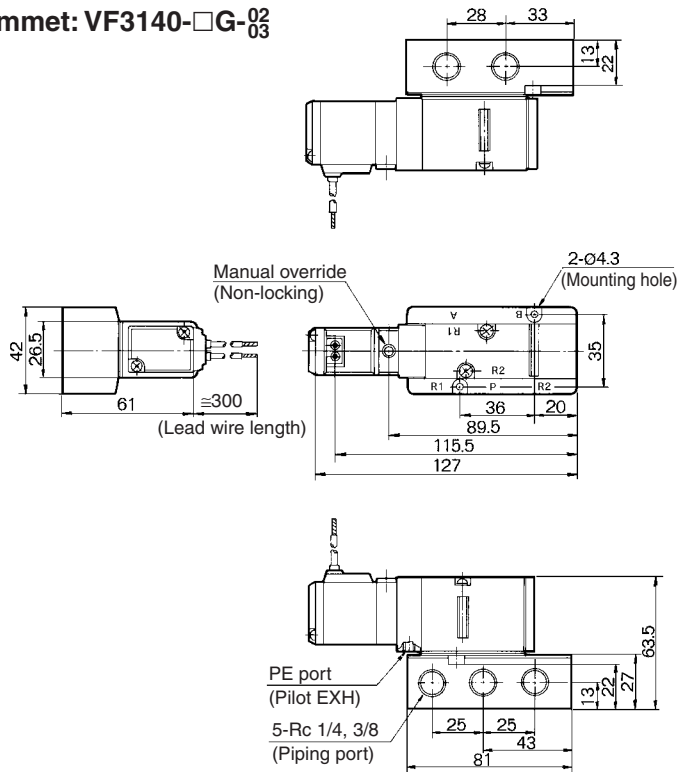
M plug connector: VF3□30-□M□-01



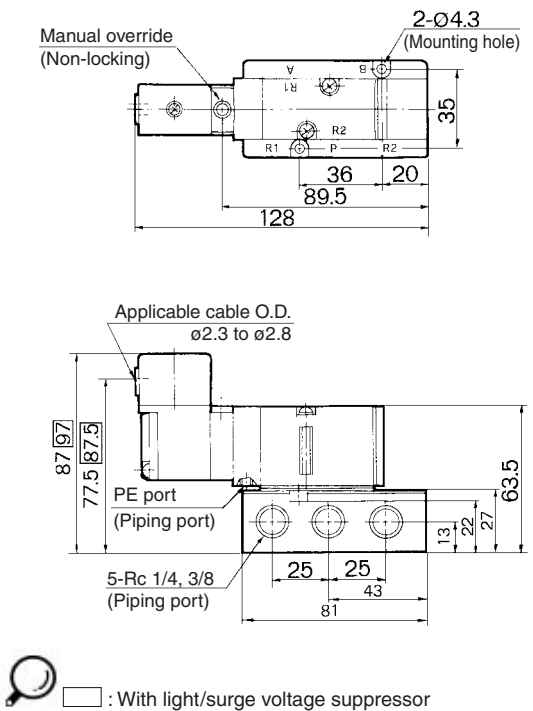
5 Port Pilot Operated Solenoid Valve Rubber Seal Series VF3000

Base Mounted (With sub-plate): 2 Position Single Solenoid

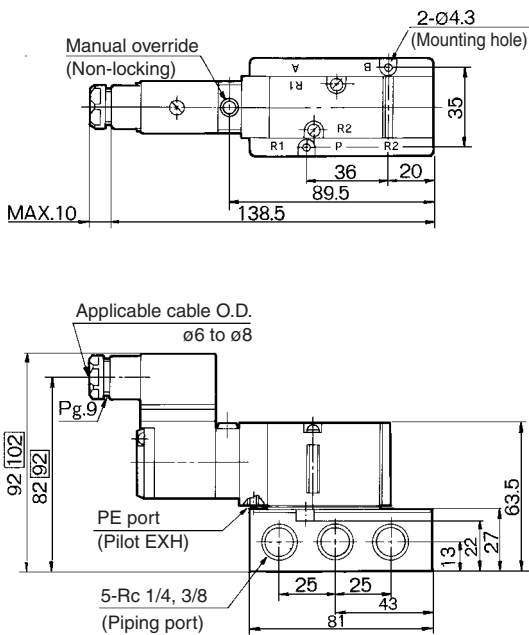
Grommet: VF3140-□G-02/03



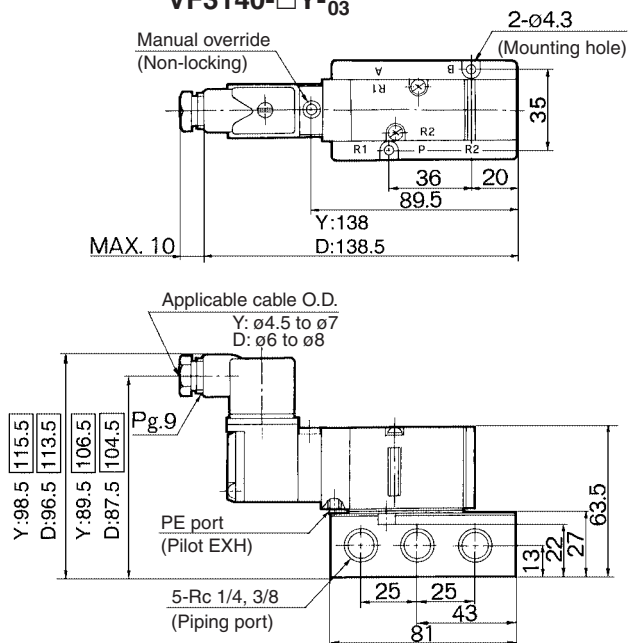
Grommet terminal: VF3140-□E-02/03



Conduit terminal: VF3140-□T-02/03



**DIN terminal: VF3140-□D-02/03
VF3140-□Y-02/03**



□ : With light/surge voltage suppressor

□ : With light/surge voltage suppressor

VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

VQ7

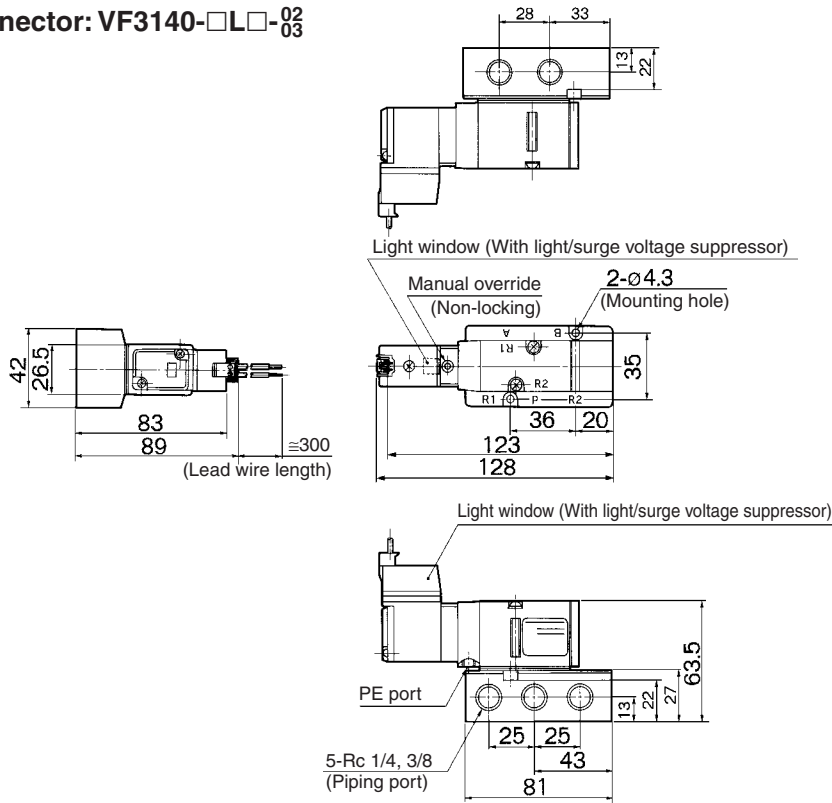
EVS

VFN

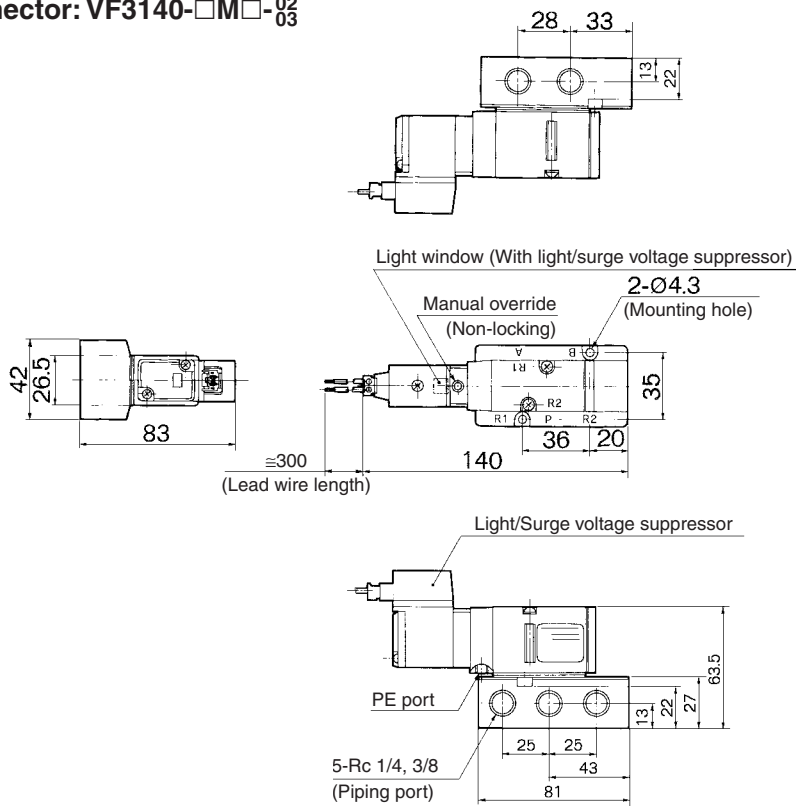
Series VF3000

Base Mounted (With sub-plate): 2 Position Single Solenoid

L plug connector: VF3140-□L□- $\frac{02}{03}$



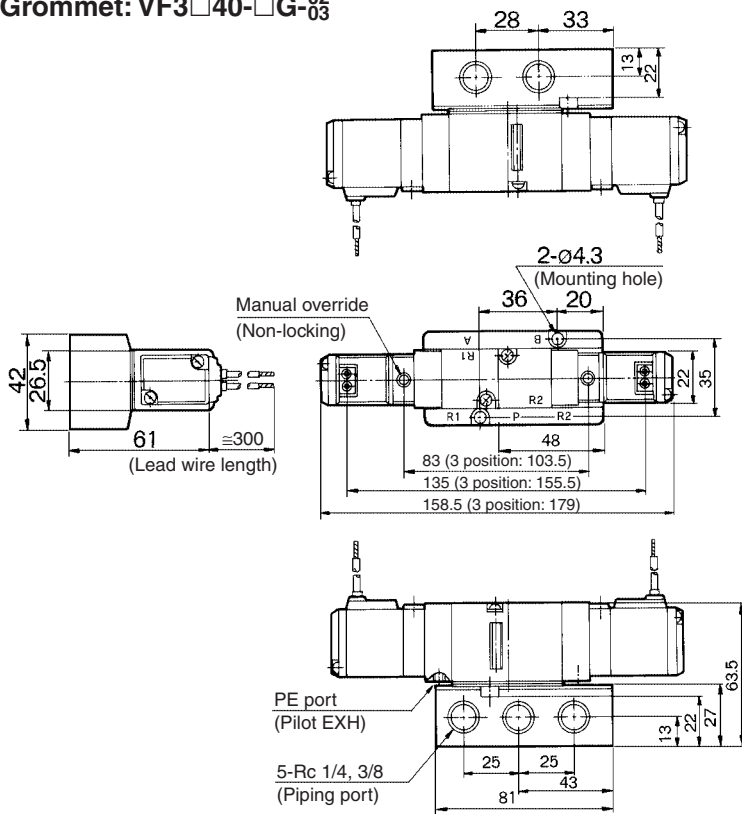
M plug connector: VF3140-□M□- $\frac{02}{03}$



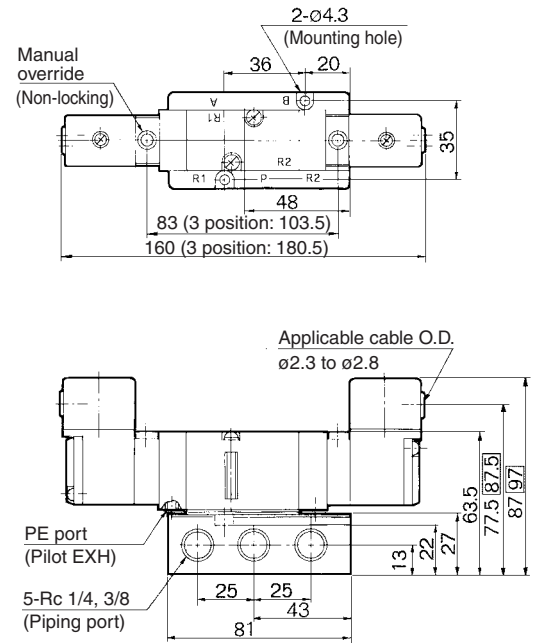
5 Port Pilot Operated Solenoid Valve Rubber Seal Series VF3000

Base Mounted (With sub-plate): 2 Position Double Solenoid, 3 Position Closed Center/Exhaust Center/Pressure Center

Grommet: VF3□40-□G-02



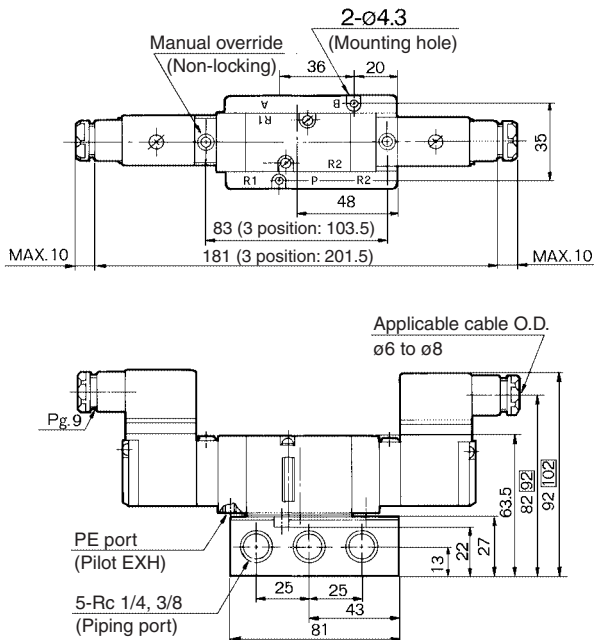
Grommet terminal: VF3□40-□E-02



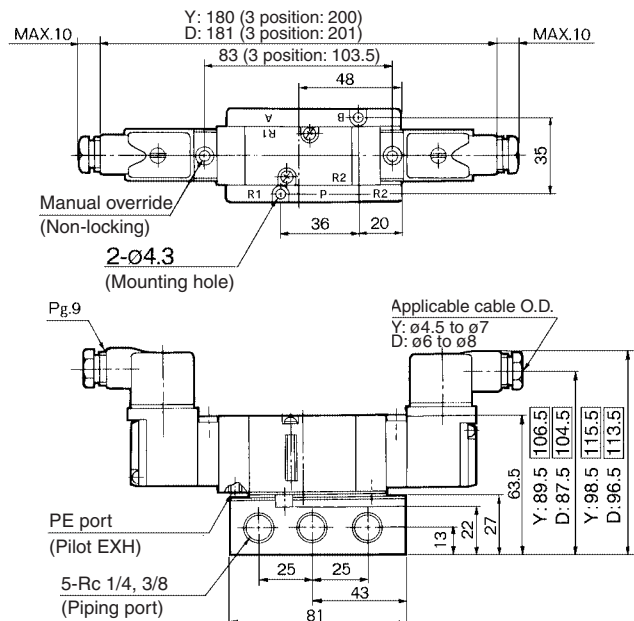
□ : With light/surge voltage suppressor

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

Conduit terminal: VF3□40-□T-02



DIN terminal: VF3□40-□D-02
VF3□40-□Y-02

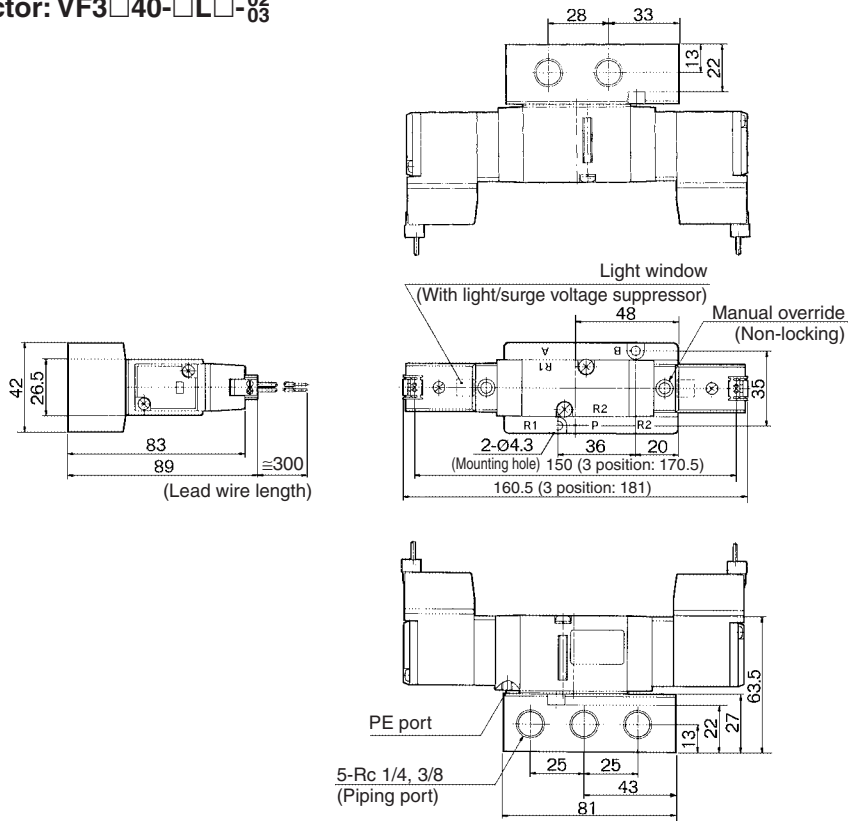


□ : With light/surge voltage suppressor

Series VF3000

Base Mounted (With sub-plate): 2 Position Double Solenoid, 3 Position Closed Center/Exhaust Center/Pressure Center

L plug connector: VF3□40-□L□- $\frac{02}{03}$



M plug connector: VF3□40-□M□- $\frac{02}{03}$

