

5 Port Pilot Operated Solenoid Valve

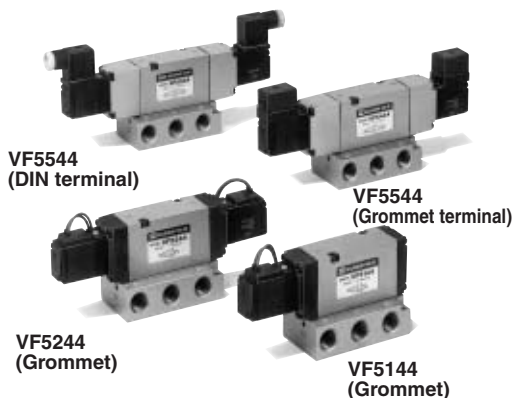
Rubber Seal

Series VF5000

Compact and lightweight:
32 mm width

Compact yet provides a large flow capacity:
Sonic conductance
C: 12 dm³/(s·bar)
{4/2 → 5/3(A/B → EA/EB)}

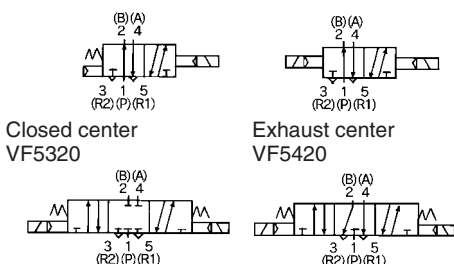
Low power consumption: 1.8 W (DC)



JIS Symbol

Single
VF5120

Double
VF5220



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	30 ms or less (at the pressure of 0.5 MPa)
	3 position	50 ms or less (at the pressure of 0.5 MPa)
Max. operating frequency	2 position single/double	5 Hz
	3 position	3 Hz
Lubrication		Not required
Manual override		Non-locking push type, Locking type B*, Locking type C*
Mounting orientation		Unrestricted
Shock/Vibration resistance ⁽²⁾		300/50 m/s ²
Enclosure		Dustproof



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
Coil rated voltage (V)	AC50/60 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 (LED100 V or less)
	DC		ZNR (Varistor), LED (Neon bulb100 V or more)



* Option Note) At rated voltage

Flow Characteristics/Weight

Valve model		Type of actuation	Port size	Flow characteristics						Weight ⁽²⁾ (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	VF5□20-□□-02	2 position single	1/4	7.1	0.46	1.9	7.7	0.51	2.2	0.38
		2 position double		7.1	0.46	1.9	7.7	0.51	2.2	0.45
		3 position closed center		6.7	0.46	1.8	6.6	10.41	1.8	0.56
		3 position exhaust center		7.1	0.42	1.9	8.0 [7.4]	0.45 [0.47]	2.2 [2.1]	0.56
		3 position pressure center		6.8 [2.7]	0.51 [0.50]	2.0 [0.78]	5.7	0.37	1.4	0.56
	VF5□20-□□-03	2 position single	3/8	8.8	0.44	2.4	10	0.49	2.9	0.38
		2 position double		8.8	0.44	2.4	10	0.49	2.9	0.45
		3 position closed center		7.5	0.43	2.0	7.5	0.38	1.9	0.56
		3 position exhaust center		8.3	0.40	2.2	10 [8.7]	0.48 [0.46]	3.0 [2.4]	0.56
		3 position pressure center		9.2 [3.0]	0.50 [0.49]	2.6 [0.85]	6.1	0.35	1.6	0.56
Base mounted ⁽¹⁾	VF5□44-□□-02	2 position single	1/4	7.3	0.49	2.1	7.3	0.50	2.0	0.57
		2 position double		7.3	0.49	2.1	7.3	0.50	2.0	0.65
		3 position closed center		6.6	0.35	1.7	6.3	0.31	1.6	0.74
		3 position exhaust center		7.4	0.33	1.9	8.1 [7.4]	0.35 [0.34]	2.1 [1.9]	0.74
		3 position pressure center		8.0 [2.9]	0.35 [0.48]	2.1 [0.85]	5.6	0.31	1.5	0.74
	VF5□44-□□-03	2 position single	3/8	8.4	0.34	2.2	8.9	0.29	2.3	0.57
		2 position double		8.4	0.34	2.2	8.9	0.29	2.3	0.65
		3 position closed center		7.3	0.34	2.0	7.1	0.28	1.8	0.74
		3 position exhaust center		8.1	0.27	2.0	14 [8.3]	0.26 [0.31]	3.4 [2.2]	0.74
		3 position pressure center		8.1 [2.5]	0.33 [0.48]	2.0 [0.74]	5.7	0.31	1.4	0.74
VF5□44-□□-04	2 position single	1/2	9.4	0.43	2.7	12	0.32	3.0	0.62	
	2 position double		9.4	0.43	2.7	12	0.32	3.0	0.69	
	3 position closed center		7.1	0.41	2.1	7.4	0.32	2.0	0.79	
	3 position exhaust center		8.6	0.39	2.4	13 [8.9]	0.21 [0.40]	3.1 [2.5]	0.79	
	3 position pressure center		11 [2.6]	0.18 [0.47]	2.6 [0.78]	6.1	0.35	1.6	0.79	

Note 1) With sub-plate

Note 2) Weight stands for grommet type.

Note 3) []: Normal position

How to Order

Port size

02	1/4
03	3/8

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Body ported VF5 **1** 20 — **1** G **03**

Base mounted VF5 **1** 44 — **1** G **03**

Type of actuation

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

Manual override

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

Port size

Nil	Without sub-plate
02	1/4
03	3/8
04	1/2

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.

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

* Option

Electrical entry

G	Grommet (Lead wire length: 300 mm)	
H	Grommet (Lead wire length: 600 mm)	
E	Grommet terminal	
T	Conduit terminal	
D	DIN terminal	With connector
DO		Without connector

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

* 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

(C) Manual override

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

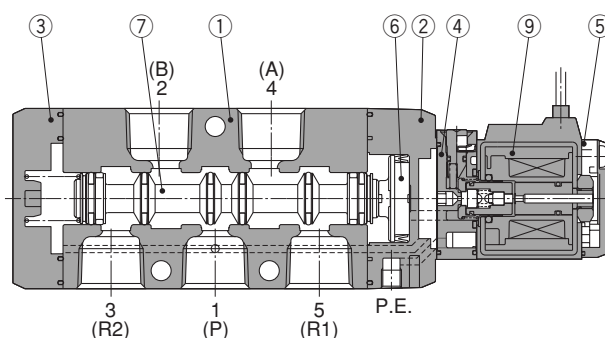
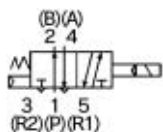


* Interchangeable with the previous model, "DXT154-A-□□□□".

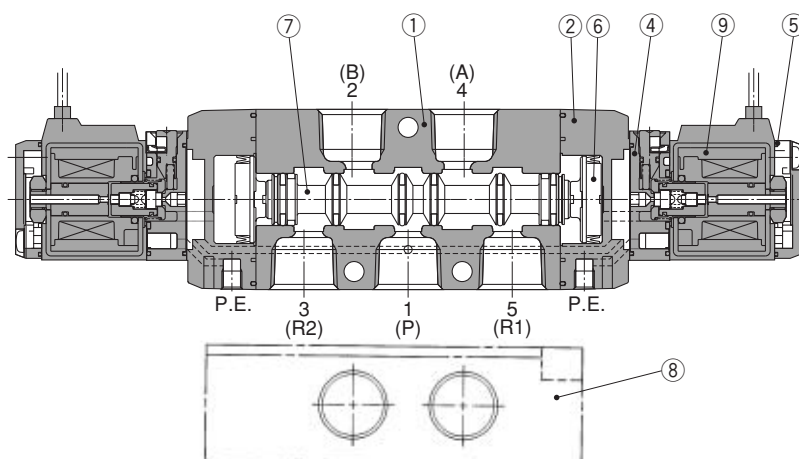
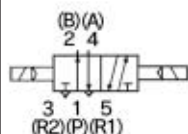
5 Port Pilot Operated Solenoid Valve Rubber Seal Series VF5000

Construction

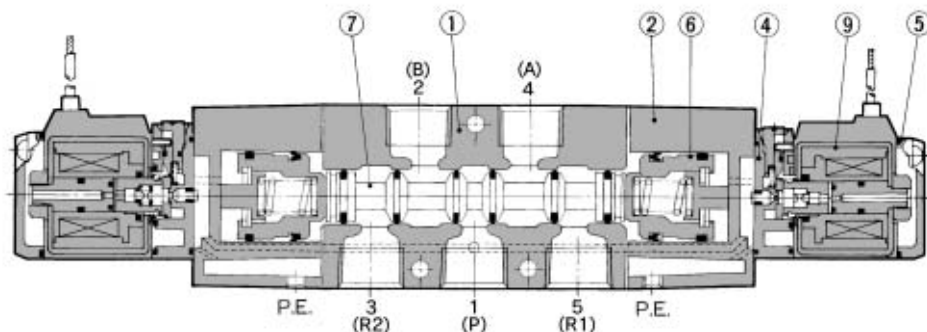
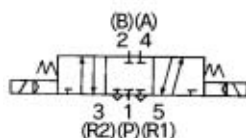
Single solenoid



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	Resin ⁽¹⁾	Black
④	Pilot body	Resin	
⑤	Pilot cover	Resin	
⑥	Piston	Resin ⁽²⁾	
⑦	Spool valve	Aluminum, HNBR	

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

Replacement Parts

No.	Description	Part no.	Note
⑧	Sub-plate	DXT156-24-1□P	1/4
		DXT156-24-2□P	3/8
		DXT156-24-3□P	1/2
⑨	Pilot valve assembly	SF4-□□□-50	Refer to "How to Order" on page 3-4-34.

Sub-plate Part No.

DXT156-24- $\frac{1}{2}$ □P

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

VQ7

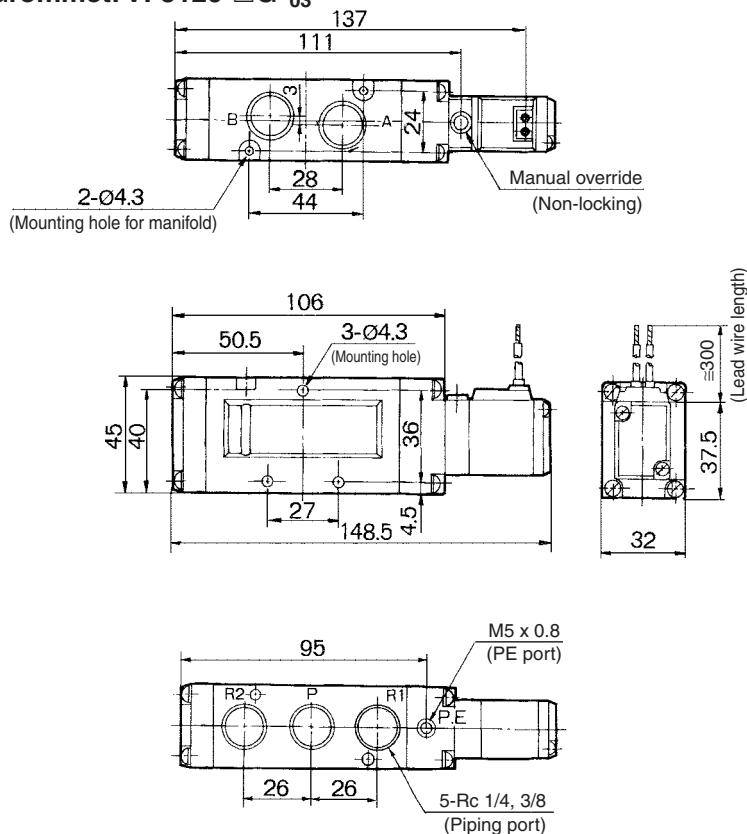
EVS

VFN

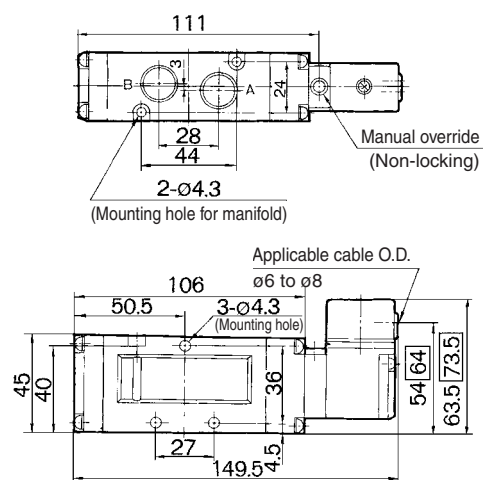
Series VF5000

Body Ported: 2 Position Single Solenoid

Grommet: VF5120-□G-⁰²/₀₃

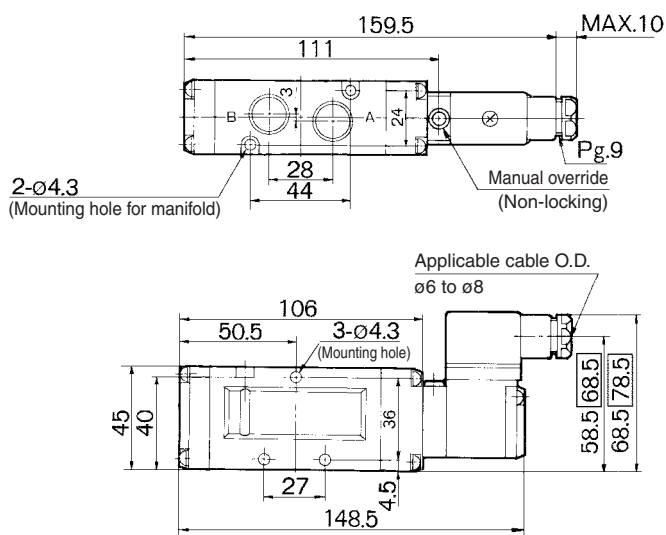


Grommet terminal: VF5120-□E-⁰²/₀₃



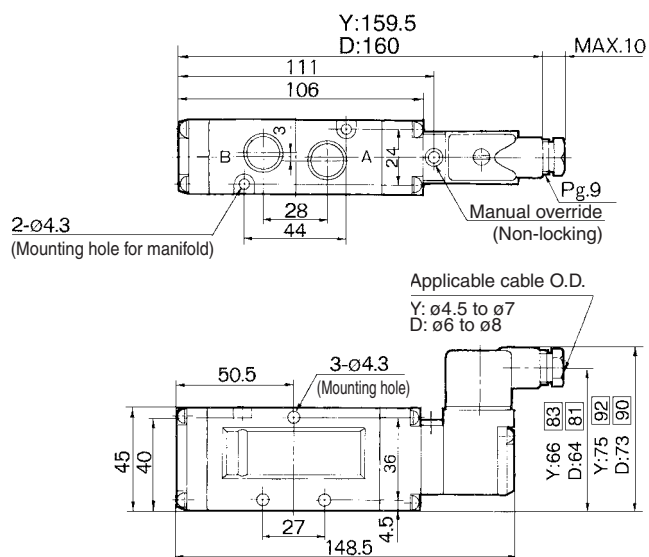
□ : With light/surge voltage suppressor

Conduit terminal: VF5120-□T-⁰²/₀₃



□ : With light/surge voltage suppressor

DIN terminal: VF5120-□D-⁰²/₀₃
VF5120-□Y-⁰²/₀₃

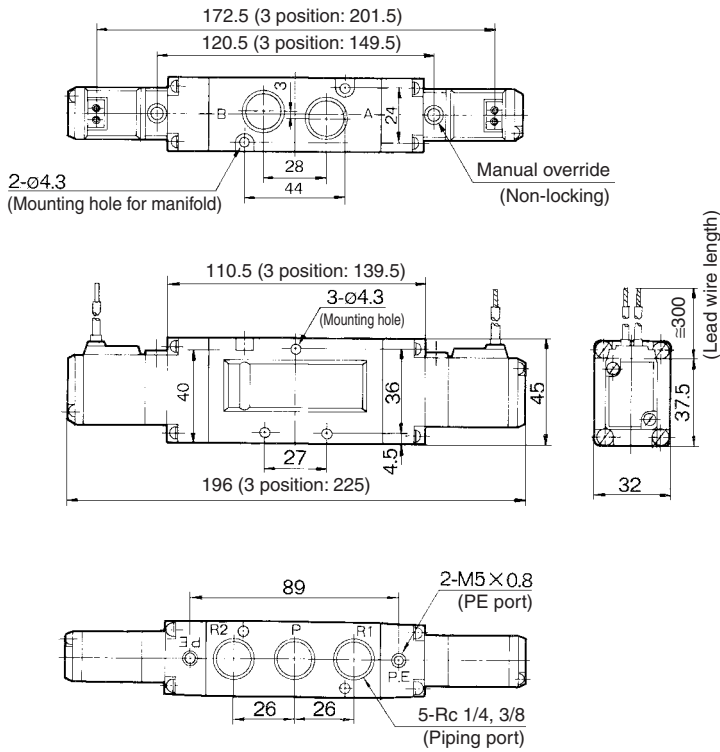


□ : With light/surge voltage suppressor

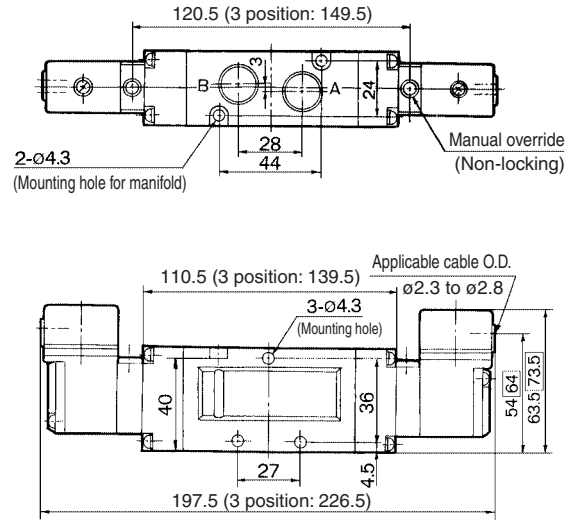
5 Port Pilot Operated Solenoid Valve Rubber Seal Series VF5000

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

Grommet: VF5□20-□G-⁰²₀₃

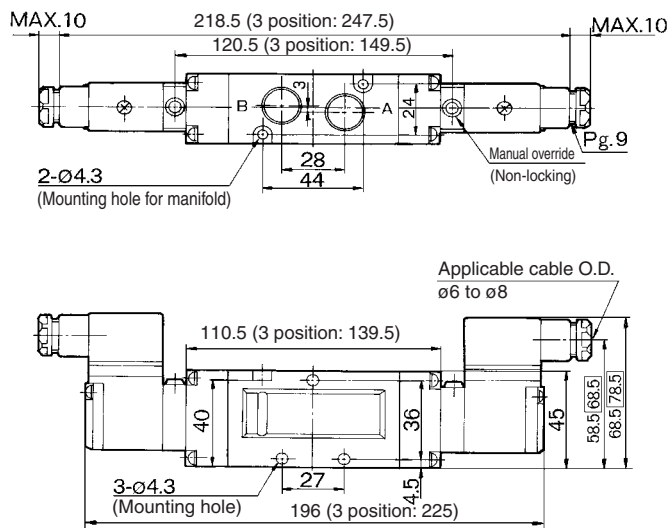


Grommet terminal: VF5□20-□E-⁰²₀₃



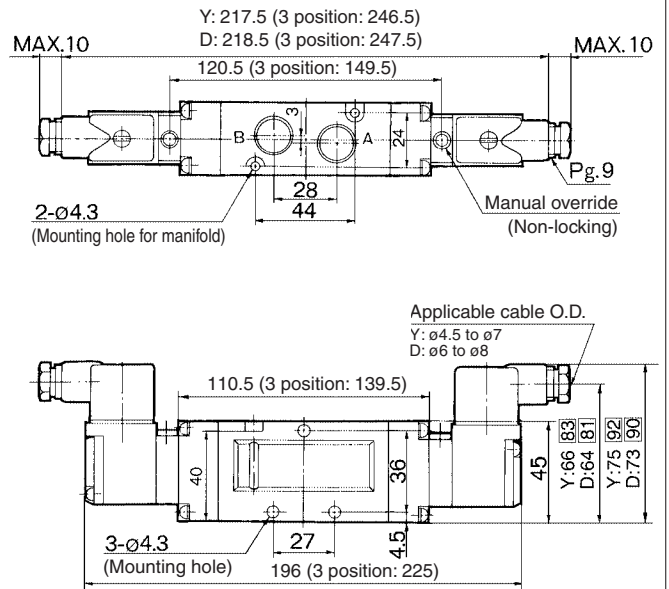
□ : With light/surge voltage suppressor

Conduit terminal: VF5□20-□T-⁰²₀₃



□ : With light/surge voltage suppressor

DIN terminal: VF5□20-□D-⁰²₀₃
VF5□20-□Y-⁰²₀₃



□ : With light/surge voltage suppressor

VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

VQ7

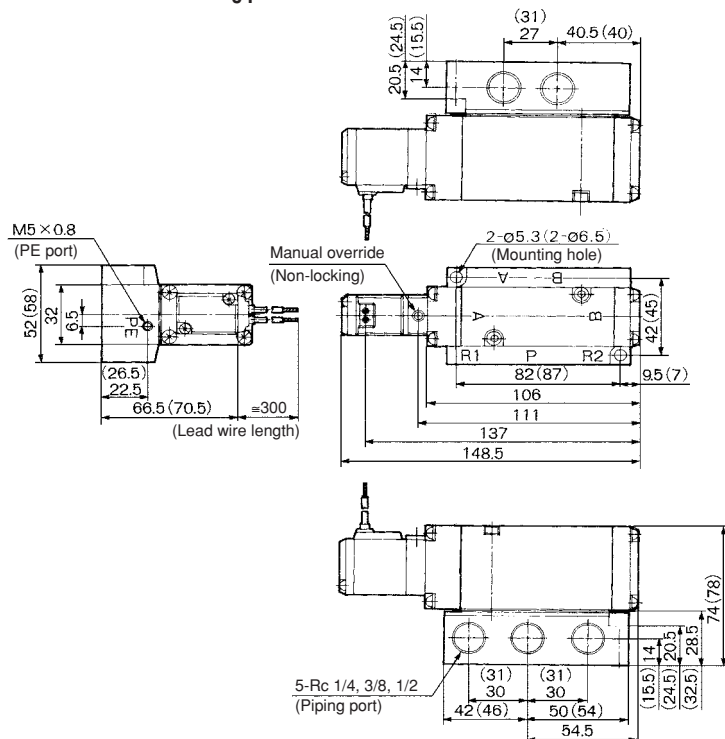
EVS

VFN

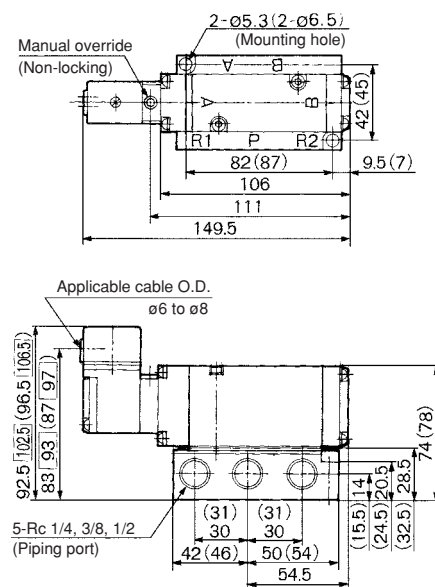
Series VF5000

Base Mounted: 2 Position Single Solenoid

Grommet: VF5144-□G-⁰²₀₃₀₄



Grommet terminal: VF5144-□E-⁰²₀₃₀₄



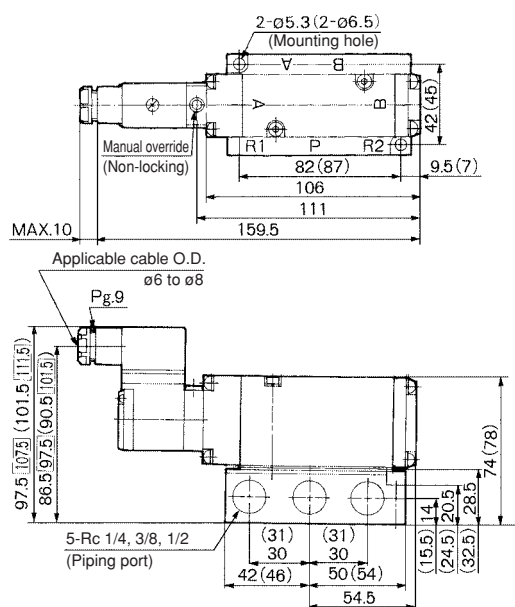
() : VF5144-□G-04



() : VF5144-□E-04

□ : With light/surge voltage suppressor

Conduit terminal: VF5144-□T-⁰²₀₃₀₄

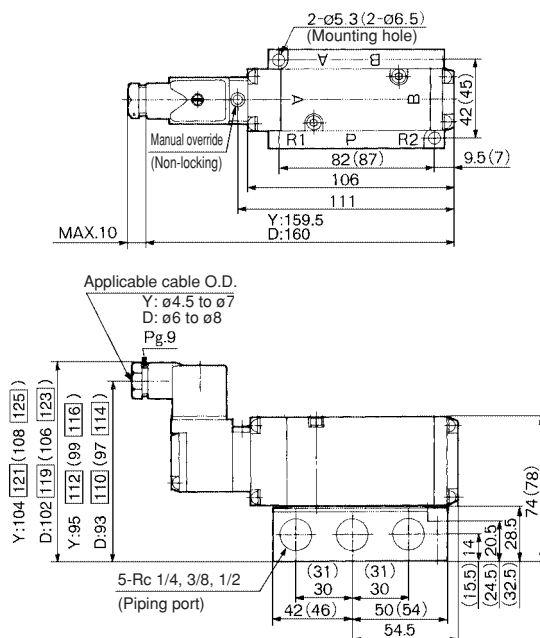


() : VF5144-□T-04

□ : With light/surge voltage suppressor

DIN terminal: VF5144-□D-⁰²₀₃₀₄

VF5144-□Y-⁰²₀₃₀₄



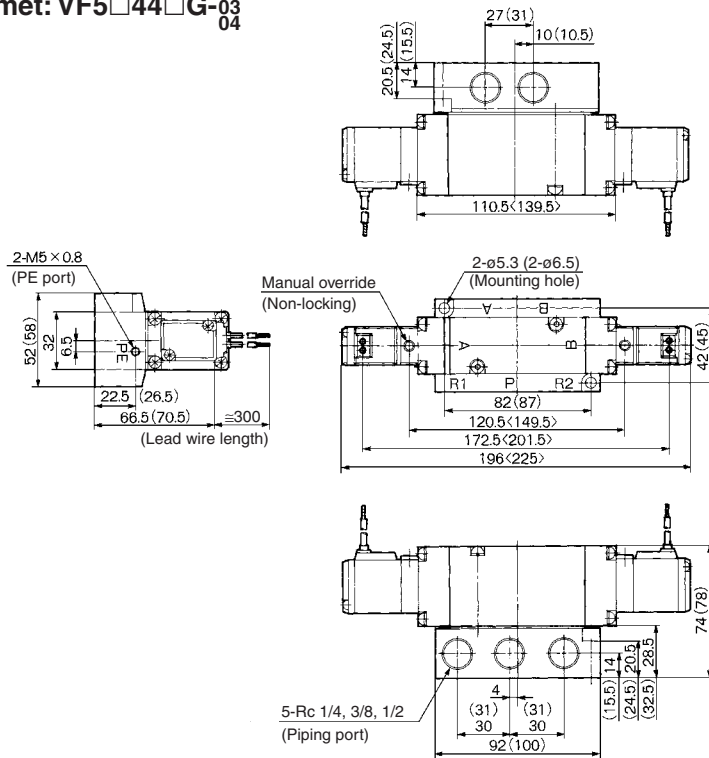
() : VF5144-□D-04

□ : With light/surge voltage suppressor

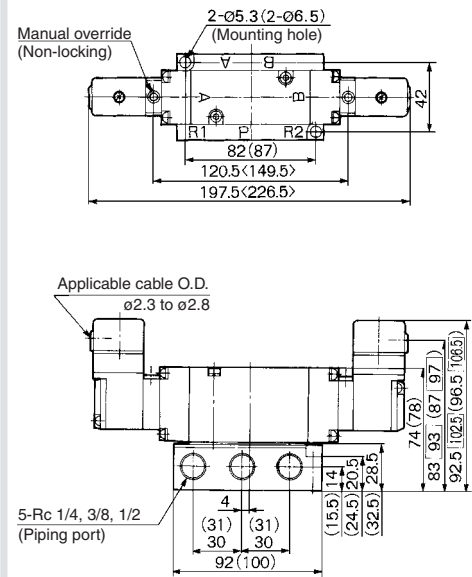
5 Port Pilot Operated Solenoid Valve Rubber Seal Series VF5000

Base Mounted: 2 Position Double Solenoid, 3 Position Closed Center/Exhaust Center/Pressure Center

Grommet: VF5□44□G-⁰²₀₃₀₄



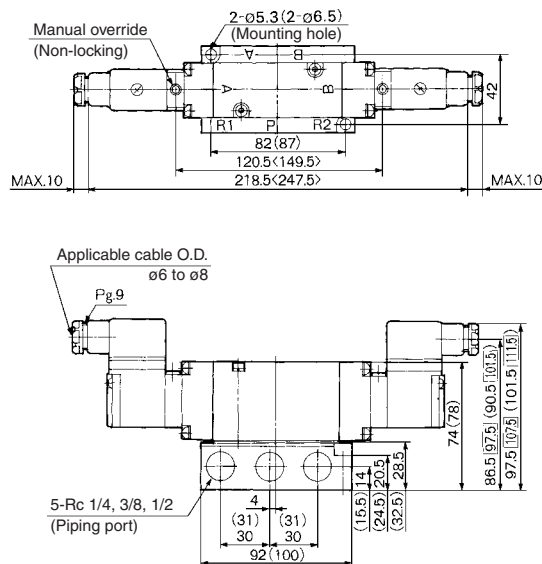
Grommet terminal: VF5□44□E-⁰²₀₃₀₄



() : VF5□44-□G-04
< > : 3 position

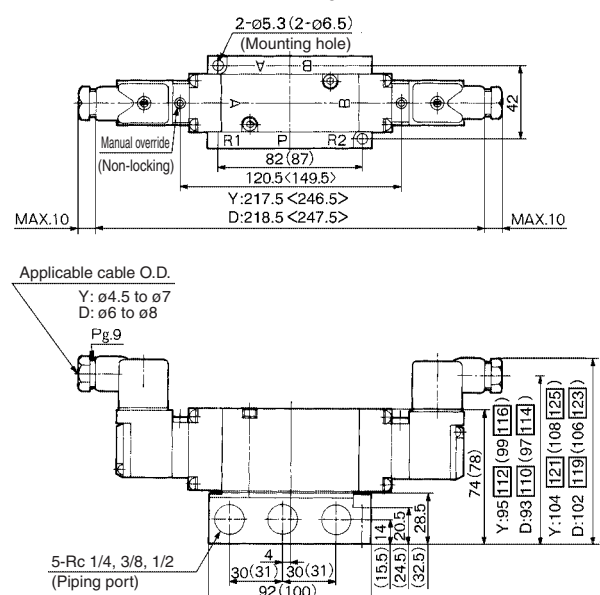
() : VF5□44-□E-04
□ : With light/surge voltage suppressor
< > : 3 position

Conduit terminal: VF5□44-□T-⁰²₀₃₀₄



() : VF5□44-□D-04
□ : With light/surge voltage suppressor
< > : 3 position

DIN terminal: VF5□44-□D-⁰²₀₃₀₄
VF5□44-□Y-⁰²₀₃₀₄



() : VF5□44-□D-04
□ : With light/surge voltage suppressor
< > : 3 position

VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

VQ7

EVS

VFN