

5 Port Pilot Rubber Seal Series VF5000

Compact and light weight:
32mm width

Large flow capacity: Nl/min 2846, 1/2

Low power consumption: 1.8W(DC)



Body Ported



Base mounted (with sub-plate)

Specifications

Fluid	Air	
Operating pressure range	2 position single, 3 position	0.15 to 0.9MPa
	2 position double	0.1 to 0.9MPa
Ambient and fluid temperature	Max. 50°C	
Response time ⁽¹⁾	2 position single/double	30ms or less(A to 0.5MPa)
	3 position	50ms or less(A to 0.5MPa)
Max.operating cycle	2 position single/double	5Hz
	3 position	3Hz
Lubrication	Not required	
Manual override	Non-locking push, Locking slotted, Locking knob	
Mounting position	Free	
Impact/Vibration resistance ⁽²⁾	300/50m/s ²	
Enclosure	Dust proof	



Note 1) Based on dynamic performance test JIS8375-1981(Coil temperature 20°C, at rated voltage, without surge voltage suppressor.)

Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature, for both energized and de-energized states.(Value in the initial stage.)

Vibration resistance: No malfunction occurred in a one-sweep test between 8.3and 2000Hz.

Test was performed at both energized and de-energized states to the

Electrical entry	DIN connector		
Voltages (V)	AC50/60Hz	100, 200, 12, 24, 48, 110, 220, 240	
	DC	24, 6, 12, 48, 100, 110	
Allowable voltage	-15 to +10% of rated voltage		
Apparent power ⁽¹⁾	AC	In-rush	5.6VA(50Hz), 5.0VA(60Hz)
		Holding	3.4VA(50Hz), 2.3VA(60Hz)
Power consumption ⁽¹⁾	DC	1.8W, 2W(With LED)	
Indicator light and surge voltage suppressor	AC	ZNR(Varistor), Neon lamp(LED100V or less)	
	DC	ZNR(Varistor), LED(Neon lamp100V or more)	



Note 1) At rated voltage

Model

Body type	Model ⁽¹⁾	Position/Solenoid	Port size	Effective area (Nl/min)mm ²			Weight ⁽²⁾	
				1/4	3/8	1/2	1/4, 3/8	1/2
Body ported	VF5120-□□-02	2/Single	1/4	34.2(1864)	45(2453)	-	0.38	-
	VF5220-□□-02	2/Double		34.2(1864)	45(2453)	-	0.45	-
	VF5320-□□-02	3/Closed centre	3/8	30.6(1668)	36(1963)	-	0.56	-
	VF5420-□□-02	3/Exhaust centre		32.4(1766)	41.4(2257)	-	0.56	-
	VF5520-□□-02	3/Pressure centre		36(1963)	36(1963)	-	0.56	-
Base mounted (With sub-plate)	VF5144-□□-02	2/Single	1/4	34.2(1864)	45(2453)	52(2846)	0.57	0.62
	VF5244-□□-02	2/Double		34.2(1864)	45(2453)	52(2846)	0.65	0.69
	VF5344-□□-02	3/Closed centre	3/8	33(1766)	34(1864)	38(2061)	0.74	0.79
	VF5444-□□-02	3/Exhaust centre		36(1963)	39(2061)	44(2355)	0.74	0.79
	VF5544-□□-02	3/Pressure centre		1/2	33.3(1815)	36(1963)	39.6(2159)	0.74
				10.8(588) ⁽³⁾	15.3(834) ⁽³⁾	15.3(834) ⁽³⁾		



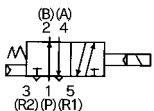
Note 1) Body ported valves can be mounted on manifold directly.(Manifold: B mount/Common EXH)

Note 2) Weight is for Grommet style.

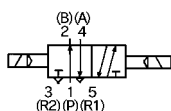
Note 3) In centre position the flow "P→A, B" is shown.

JIS Symbol

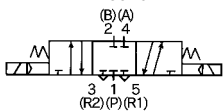
Single
VF5120



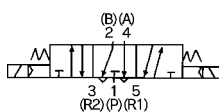
Double
VF5220



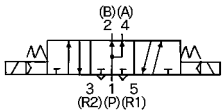
Closed Centre
VF5320



Exhaust Centre
VF5420

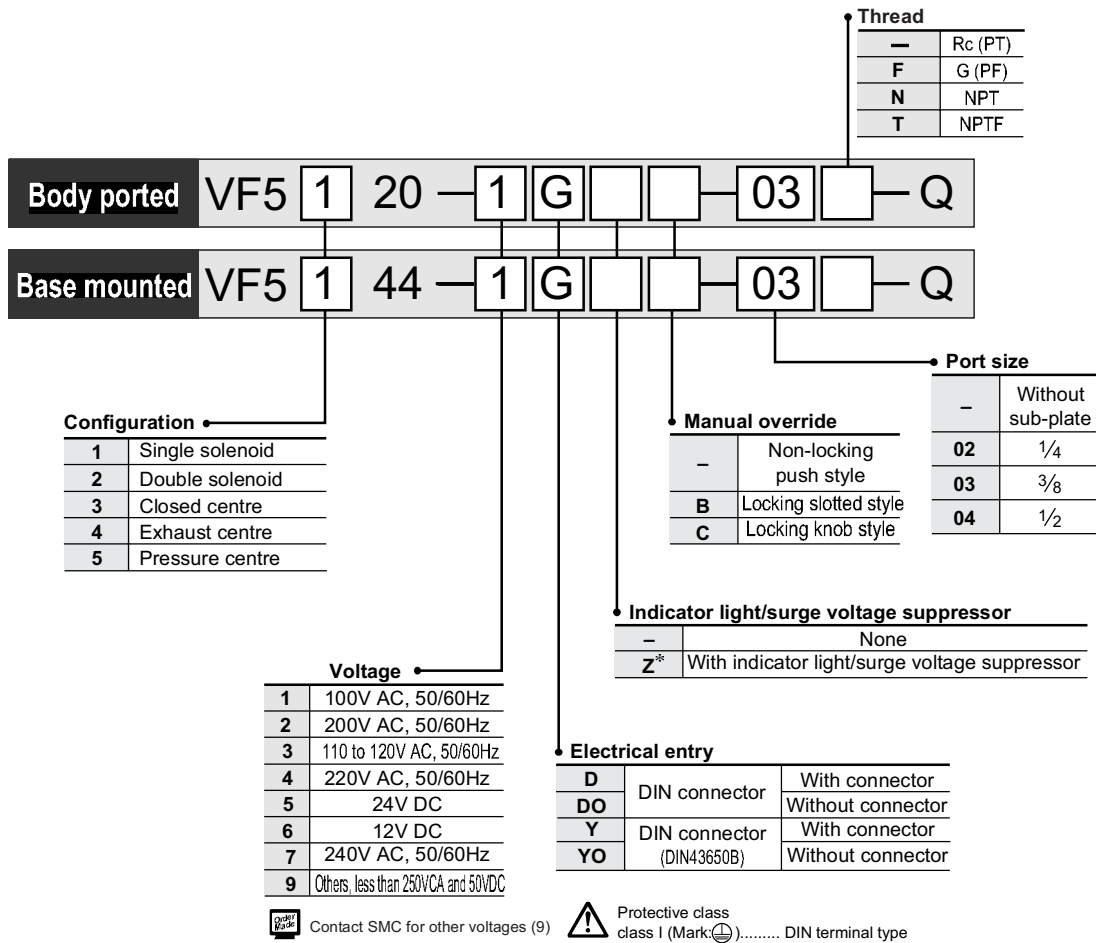


Pressure Centre
VF5520

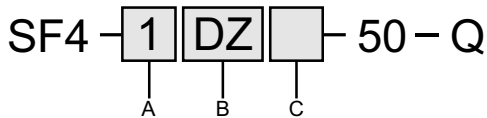


VF5000

How to Order



How to Order Pilot Valve Assembly



A Voltage

1	100V AC, 50/60Hz
2	200V AC, 50/60Hz
3	110 to 120V AC, 50/60Hz
4	220V AC, 50/60Hz
5	24V DC
6	12V DC
7	240V AC, 50/60Hz
9	Others, less than 250VCA and 50VDC

B Electrical entry/Indicator light and surge voltage suppressor

Symbol	Electrical entry	Indicator light/surge voltage suppressor
D	DIN connector	None
DZ		With indicator light and surge voltage suppressor
DO		None
DOZ	W/o connector	With indicator light and surge voltage suppressor
Y	DIN connector (DIN43650B)	None
YZ		With indicator light and surge voltage suppressor
YO		None
YOZ	W/o connector	With indicator light and surge voltage suppressor

C Manual override

—	Non-locking push type
B	Locking slotted style
C	Locking knob style

Contact SMC for other voltages (9)

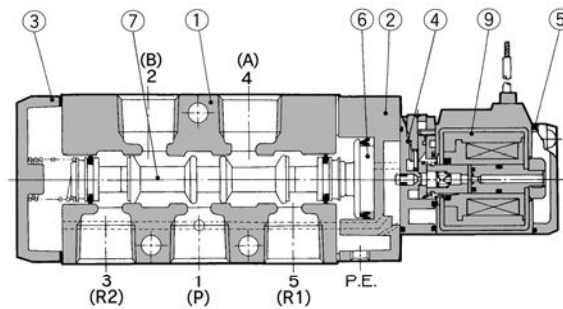
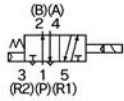
Protective class class I (Mark: ⊕)..... DIN terminal type



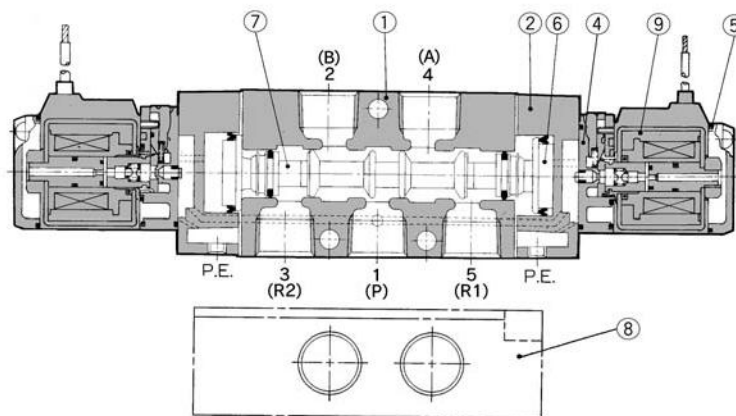
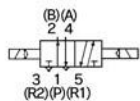
• Interchangeable with the previous model, "DXT154-A-□□□□".

Construction

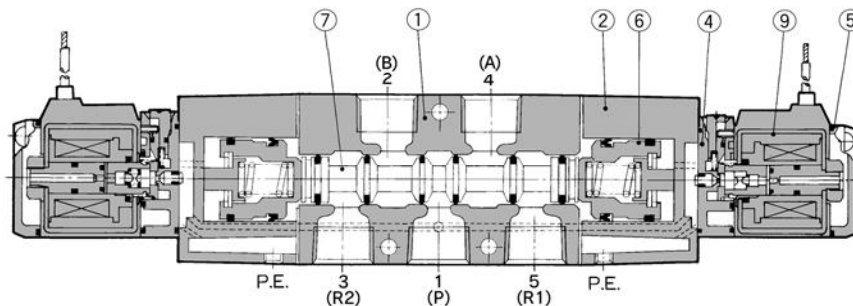
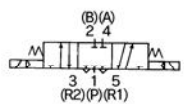
Single solenoid



Double solenoid



3 position closed centre



Component Parts

No.	Description	Material	Notes
①	Body	Aluminium die-cast	Metallic paint
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	Aluminum, NBR	

Replacement Parts

No.	Description	Part No.	Notes
⑧	Sub-plate	DXT156-24-1P	1/4
		DXT156-24-2P	3/8
		DXT156-24-3P	1/2
⑨	Pilot valve assembly	SF4-□□□-50	Refer to p.1.7-26

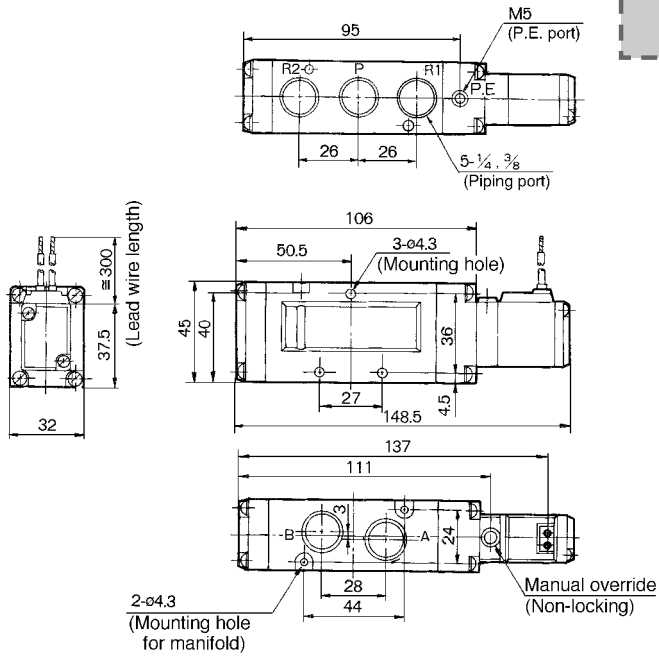


Note 1) 3 position: Aluminium die-cast
 Note 2) 3 position: Aluminium
 Note 3) 3 position: Metallic paint

VF5000

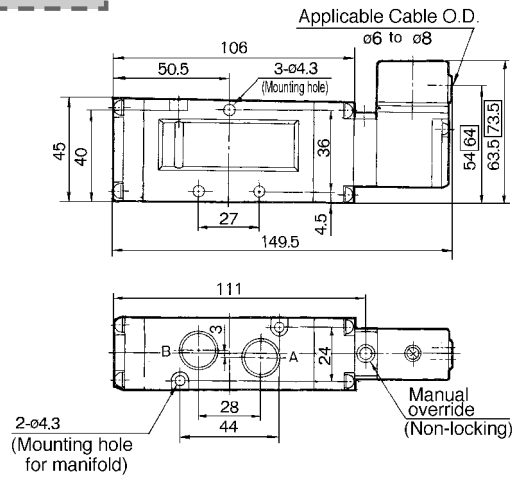
Body Ported: 2 Position Single Solenoid

Grommet/VF5120-□G



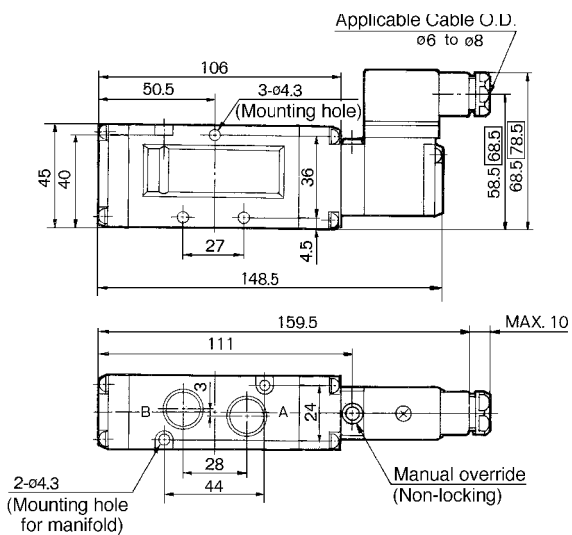
Grommet terminal/VF5120-□E

Note: This valve series is now only available with DIN connector.



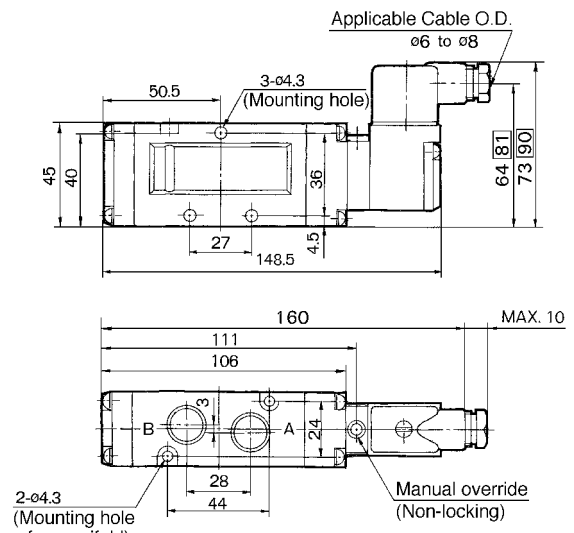
□: With indicator light and surge voltage suppressor

Conduit terminal/VF5120-□T



□: With indicator light and surge voltage suppressor

DIN connector/VF5120-□D/Y



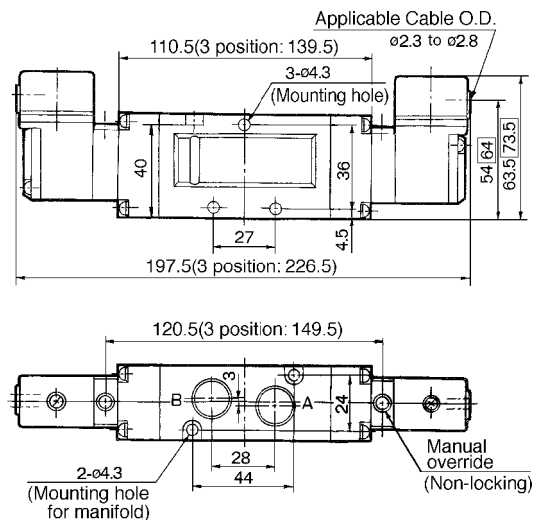
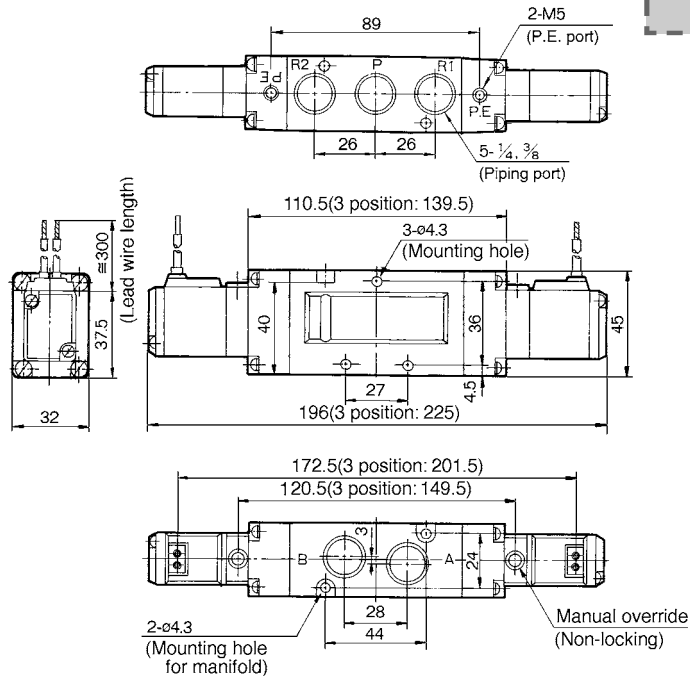
□: With indicator light and surge voltage suppressor


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

Grommet/VF5□20-□G

Grommet terminal/VF5□20-□E

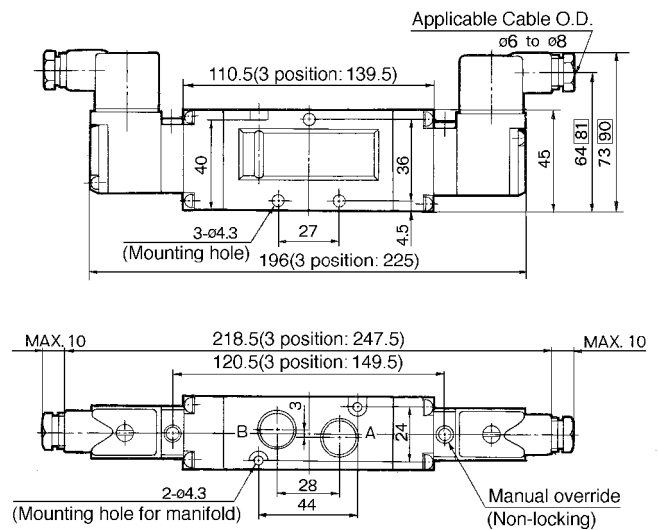
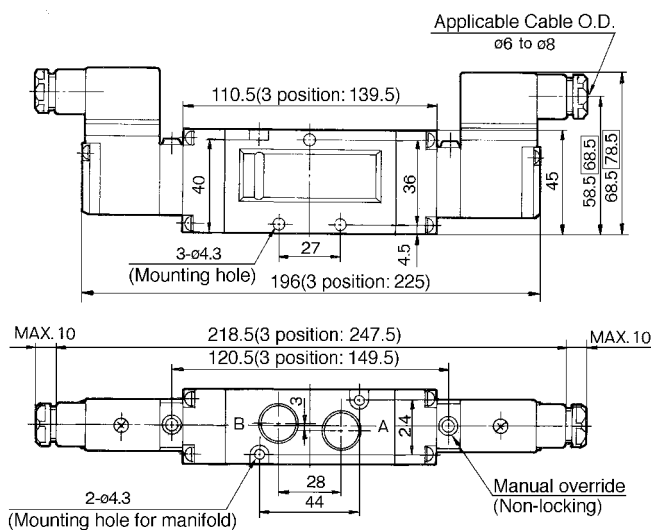
Note: This valve series is now only available with DIN connector.





 □: With indicator light and surge voltage suppressor

Conduit terminal/VF5□20-□T

DIN connector/VF5□20-□D/Y



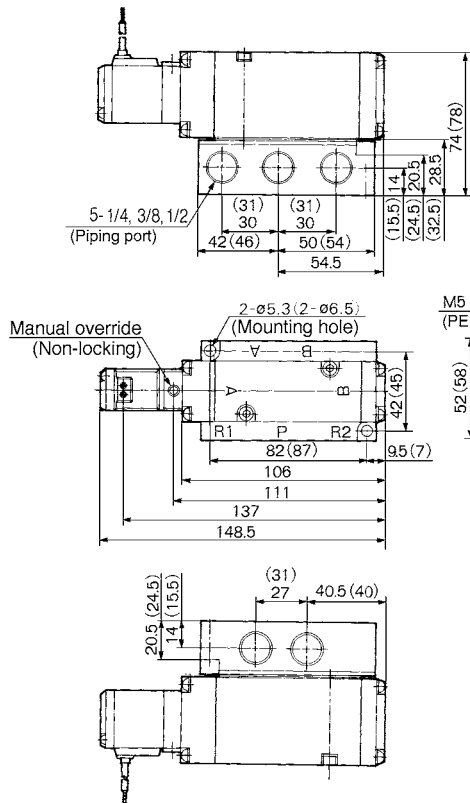
 □: With indicator light and surge voltage suppressor

 □: With indicator light and surge voltage suppressor

VF5000

Base Mounted: 2 Position Single Solenoid

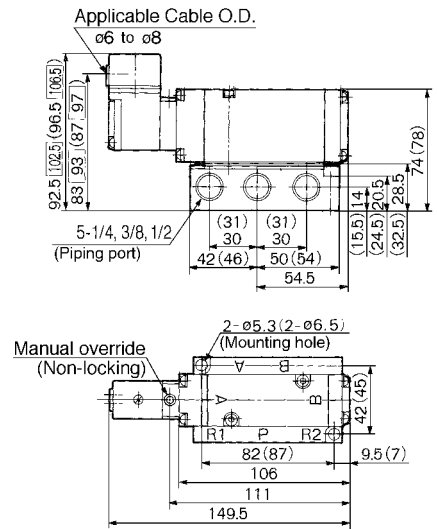
Grommet/VF5144-□G



() : VF5144-□G-04

Grommet terminal/VF5144-□E

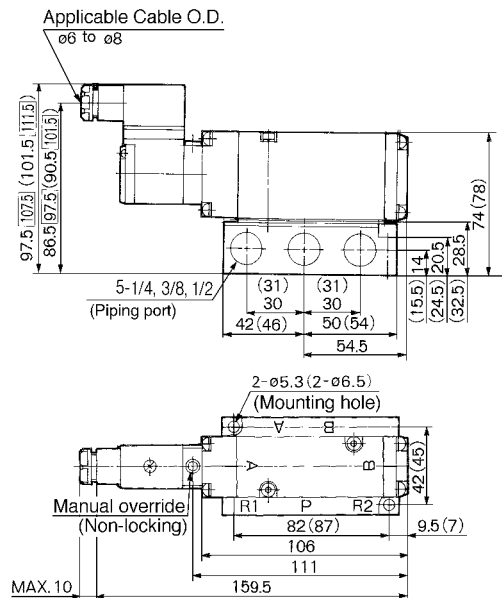
Note: This valve series is now only available with DIN connector.



() : VF5144-□E-04

□ : With indicator light and surge voltage suppressor

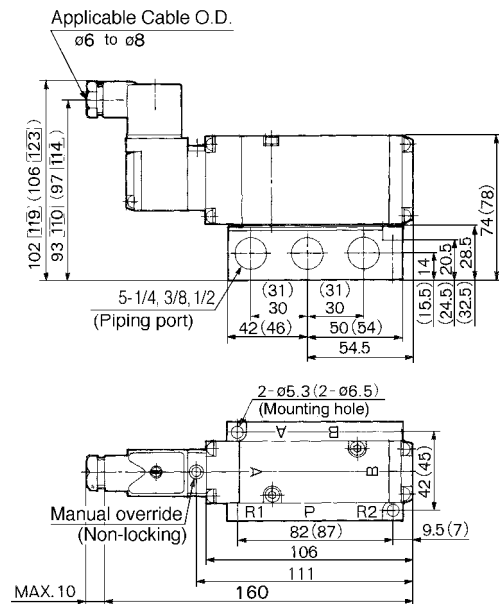
Conduit terminal/VF5144-□T



() : VF5144-□T-04

□ : With indicator light and surge voltage suppressor

DIN connector/VF5144-□D

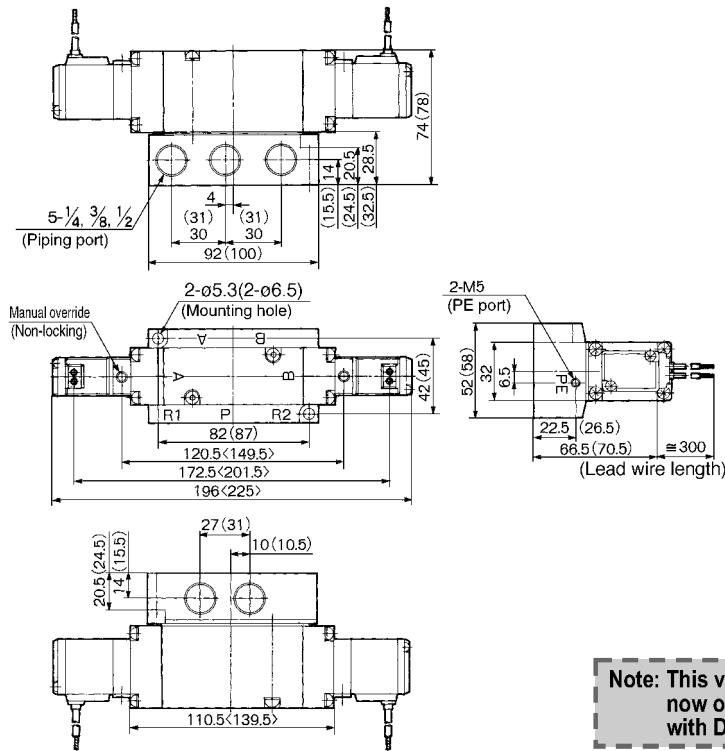


() : VF5144-□D-04

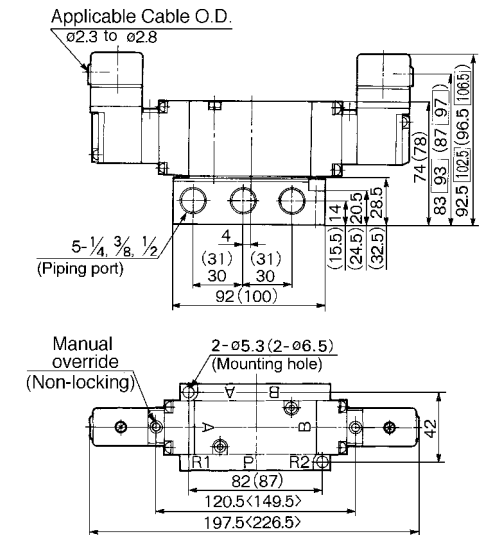
□ : With indicator light and surge voltage suppressor

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

Grommet/VF5□44-□G



Grommet terminal/VF5□44-□E

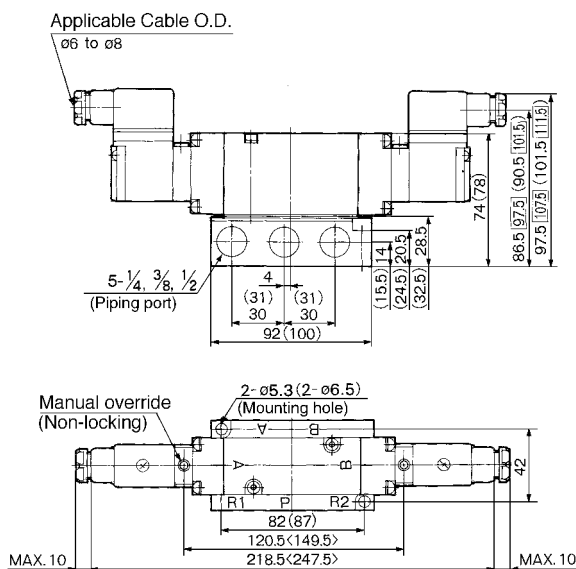


Note: This valve series is now only available with DIN connector.

() : VF5□44-□G-04
< > : 3 position

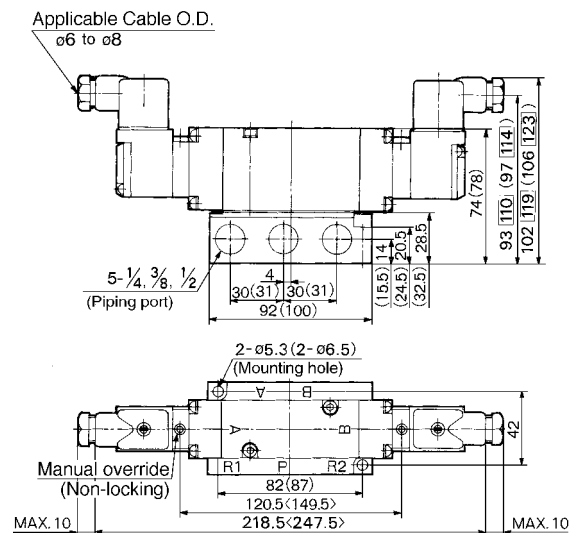
() : VF5□44-□E-04
□ : With indicator light and surge voltage suppressor
< > : 3 position

Conduit terminal/VF5□44-□T



() : VF5□44-□T-04
□ : With indicator light and surge voltage suppressor
< > : 3 position

DIN connector/VF5□44-□D

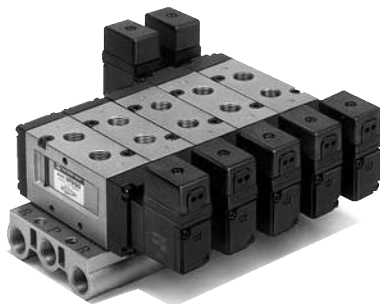


() : VF5□44-□D-04
□ : With indicator light and surge voltage suppressor
< > : 3 position

Series VF5000 Manifold



VV5F5-21



VV5F5-20

Manifold Specifications

Manifold	B mount(Single base)
Exhaust	Common
Maximum stations	10 (15 for 21 type w/side block)*



*In case of more than 5 station for type 20 and 40 or more than 8 station for type 21, supply air from both sides of supply (P) port and exhaust air from both sides of exhaust (R) port.

Model	Exhaust port ⁽¹⁾	Piping/Port location			Port size			Applicable Valve ⁽²⁾
		P	R	A,B	P	R	A,B	
VV5F5-20	Common	Side Base	Side Base	Top Valve	3/8	3/8	1/4 3/8	VF5□20
VV5F5-21	Common	Side Side block	Side Side block	Top Valve	1/2	1/2	1/4 3/8	
VV5F5-40*	Common	Side Base	Side Base	Bottom Base	3/8	3/8	1/4	VF5□44



* Its effective area is 80% of that with sub-plate

Note 1) P(SUP) port is all common.

Note 2) Model number for valve unit is that for application manifold.

Options

Description	Part No.	Applicable manifold
Spacer ass'y for individual exhaust ⁽¹⁾	DXT156-20-1A	VV5F5-20, 21
	DXT156-20-3A	VV5F5-40
Blank plate ass'y	DXT156-19-1A	VV5F5-20, 21
	DXT156-19-2A	VV5F5-40



Note 1) Spacer is used when it is necessary to exhaust from certain valves individually.

How to Order Manifold Base

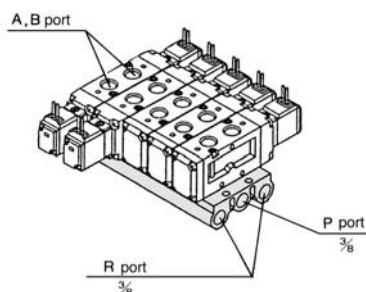
Please indicate the appropriate valves and/or blank plate assembly and manifold base separately.

(Example) VV5F5-20-051 1pc. (Manifold base)
VF5120-1G-03 2pcs. (Valve)
VF5220-1G-03 2pcs. (Valve)
DXT156-19-1A 1pc. (Blank plate assembly)

B mount (Integrated style)

Top piping/Common exhaust

20 Type



VV5F5 - 20 - 05 1 -

Ordering source area code

Code	areas
-	Japan, Asia Australia
E	Europe
N	North America

Stations

02	2 stations
⋮	⋮
10	10 stations

Thread

-	Rc (PT)
00F	G (PF)
00N	NPT
00T	NPTF

Applicable solenoid valves

VF5□20-□□□□- $\frac{02}{03}$ -Q

Applicable blank plate ass'y

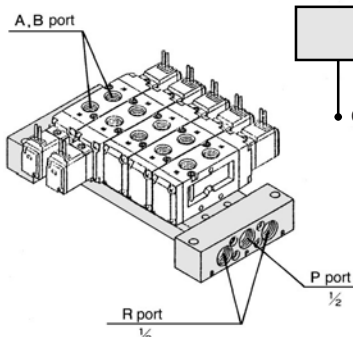
DXT156-20-1A

Applicable spacer ass'y for individual exhaust

DXT156-19-1A

Top piping/Common exhaust

21 Type



VV5F5 - 21 - 05 1 -

Ordering source area code

Code	areas
-	Japan, Asia Australia
E	Europe
N	North America

Stations

02	2 stations
⋮	⋮
15	15 stations

Thread

-	Rc (PT)
00F	G (PF)
00N	NPT
00T	NPTF

Applicable solenoid valves

VF5□20-□□□□- $\frac{02}{03}$ -Q

Applicable blank plate ass'y

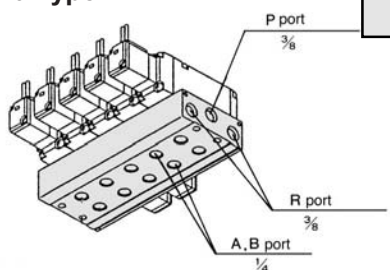
DXT156-20-1A

Applicable spacer ass'y for individual exhaust

DXT156-19-1A

Bottom piping/Common exhaust

40 Type



VV5F5 - 40 - 05 2 - 02 -

Ordering source area code

Code	areas
-	Japan, Asia Australia
E	Europe
N	North America

Stations

02	2 stations
⋮	⋮
10	10 stations

Thread

-	Rc (PT)
F	G (PF)
N	NPT
T	NPTF

Applicable solenoid valves

VF5□20-□□□□- $\frac{02}{03}$ -Q

Applicable blank plate ass'y

DXT156-20-1A

Applicable spacer ass'y for individual exhaust

DXT156-19-1A

How to Order Manifold Base

Please indicate the appropriate valves and/or blank plate assembly and manifold base separately.

(Example) VV5F5-20-051 1pc. (Manifold base)
 VF5120-1D-03-Q 2pcs. (Valve)
 VF5220-1D-03-Q 2pcs. (Valve)
 DXT156-19-1A 1pc. (Blank plate assembly)

VF5000

Manifold/VV5F5-20, VV5F5-21

(mm)

