

5 Port Pilot Rubber Seal Series VF1000

**Compact and light weight:
26.4mm width**

**Large flow capacity:
N/min 147 Rc(PT) 1/8**

**Low power consumption:
1.8W(DC)**



VF1220
(DIN connector)

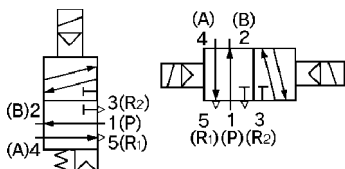


VF1120
(DIN connector with
bracket)

JIS Symbol

Single VF1120

Double VF1220



Specifications

Fluid	Air	
Operating pressure range	2 position single	0.15 to 0.9MPa
	2 position double	0.1 to 0.9MPa
Ambient and fluid temperature	Max.50°C	
Response time ⁽¹⁾	20ms or less(At 0.5MPa)	
Max. operating cycle	10Hz	
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	
Pilot exhaust	Individual exhaust, Common exhaust for main valve and pilot valve	

Note 1) Based on dynamic performance test JIS B8375-1981(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.

Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000Hz. Test was performed at both energized and de-energized states to the axis and right angle directions of the main valve and armature. (Valve in the initial stage.)

Electrical entry		DIN terminal
Voltages (V)	AC50/60Hz	100, 200, 110, 220, 240
	DC	24, 12
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 light (LED 100V or less)
	DC	ZNR(Varistor), LED(Neon lamp 100V or more)

* Option Note 1) At rated voltage.

Option

Description	Part No.	Notes
Bracket	DXT144-8-1A	for VF1220
	DXT144-8-3A	for VF1120
Silencer	AN120-M5	M5
Throttle valve	DXT154-34-1A	With element

Model

Piping	Model	Position/Solenoid	Port size ⁽¹⁾	Effective area mm ² (N/min)	Weight(kg)
Body ported	VF1120-□□-01	2/Single	1/8	2.7(147)	0.16
	VF1220-□□-01	2/Double	1/8	2.7(147)	0.25

Note 1) Exhaust (EA, EB) port is M5 X 0.8.

Model for Manifold

Model*	Manifold		
	Style	Exhaust	A, B port
VF1□30-□□-01	B mount	30	Common Valve
		31	Individual Valve

*If exhaust for main valve and pilot valve is common, model number will be VF113 [3], VF123 [3].

How to Order

Ordering source area code

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

Port size (P, A, B)

01	1/8
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EA, EB port: M5

Thread

—	Rc (PT)
F	G (PF)
N	NPT
T	NPTF

Option

F	With bracket
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* Not installed when delivered

Body ported VF1 1 2 0 1 D 01 Q

For manifold VF1 1 3 0 1 D 01 Q

Actuation

1	Single solenoid
2	Double solenoid

Body option

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

* Option

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 250V CA and 50V DC

Electrical entry

D	DIN	W/ connector
DO	connector	W/o connector
Y	DIN connector (DIN43650B)	W/ connector
YO	connector	W/o connector

Contact SMC for other voltages (9)

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

Indicator light/surge voltage suppressor

—	None
Z	W/ indicator light/surge voltage suppressor

Manual override

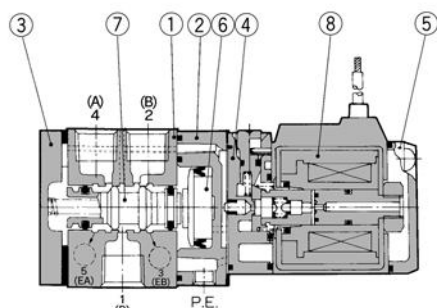
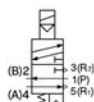
—	Non-locking push style
B	Locking slotted style
C	Locking knob style

Port size (A/B)

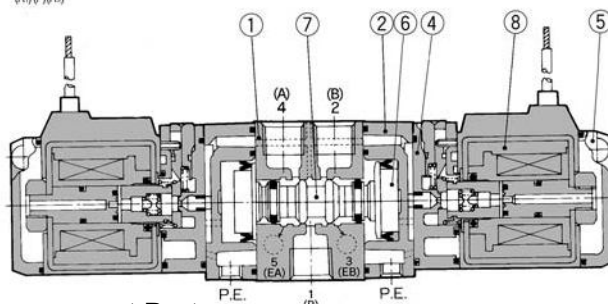
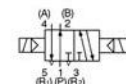
01	1/8
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Construction

Single solenoid



Double solenoid



Component Parts

No.	Description	Material	Notes
①	Body	Aluminium die-cast	Metallic paint
②	Adapter plate	Resin	Black
③	End cover	Aluminium die-cast	Black
④	Pilot body	Resin	
⑤	Pilot cover	Resin	
⑥	Piston	Resin	
⑦	Spool		

Replacment Parts

No.	Description	Material	Part No.
⑧	Pilot valve assembly	—	SF4-□□□-50*

*Please refer to "How to Order Pilot Valve Assembly" right above

How to Order Pilot Valve Assembly

SF4-1 DZ 50-Q

A B C

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

* Option

C Manual override

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

B Electrical entry/ Indicator light and surge voltage suppressor

Symbol	Electrical entry	Indicator light/surge voltage suppressor
Y	DIN connector (DIN43650B)	W/ connector
YO		W/o connector
YOZ	W/ connector	W/ indicator light/surge voltage suppressor
YOZ	W/o connector	W/ indicator light/surge voltage suppressor

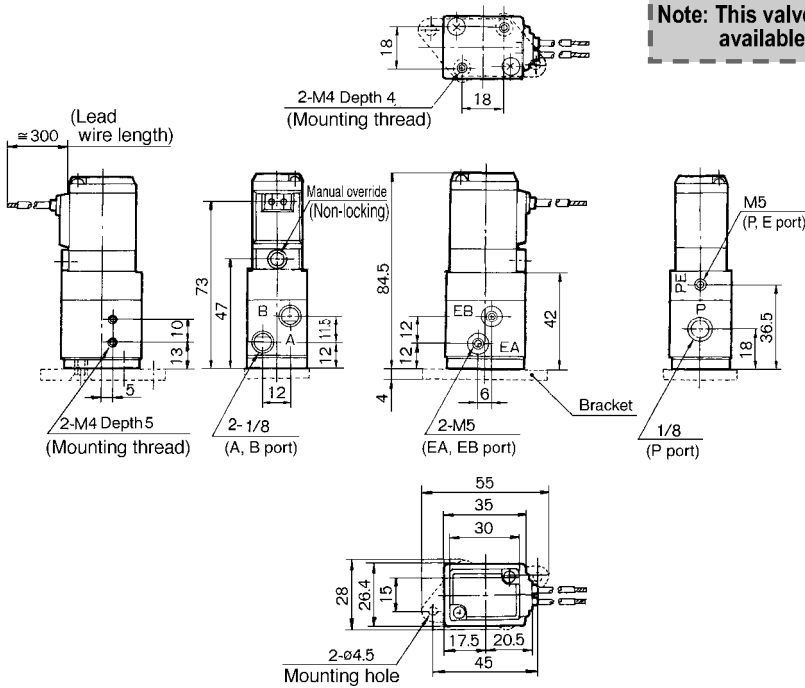


* With light and surge suppressor
Note): Interchangeable with the previous model DXT154-A-□□□□

VF1000

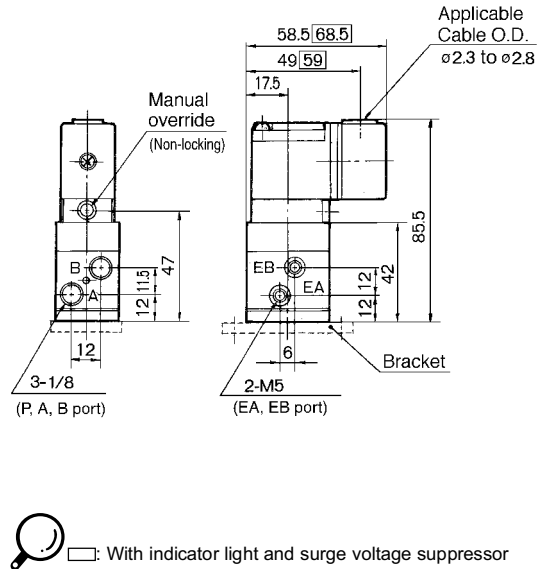
2 Position Single Solenoid

Grommet/VF1120-□G



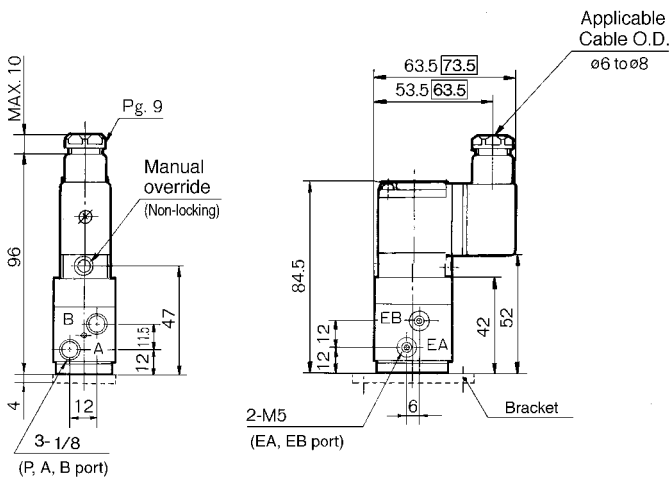
Grommet terminal/VF1120-□E

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



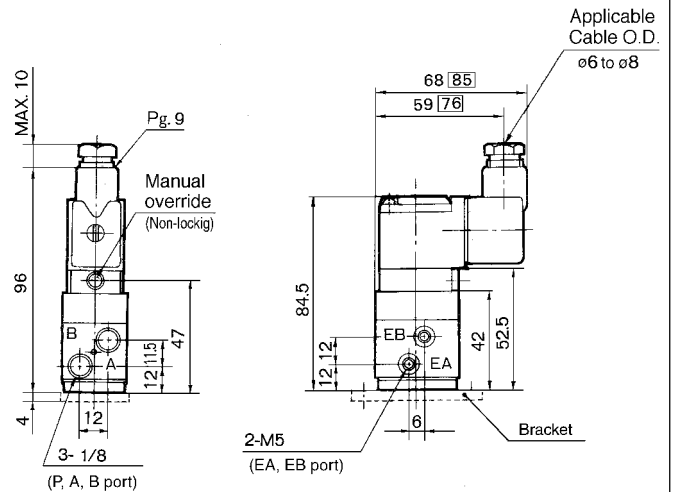
□: With indicator light and surge voltage suppressor

Conduit terminal/VF1120-□T



□: With indicator light and surge voltage suppressor

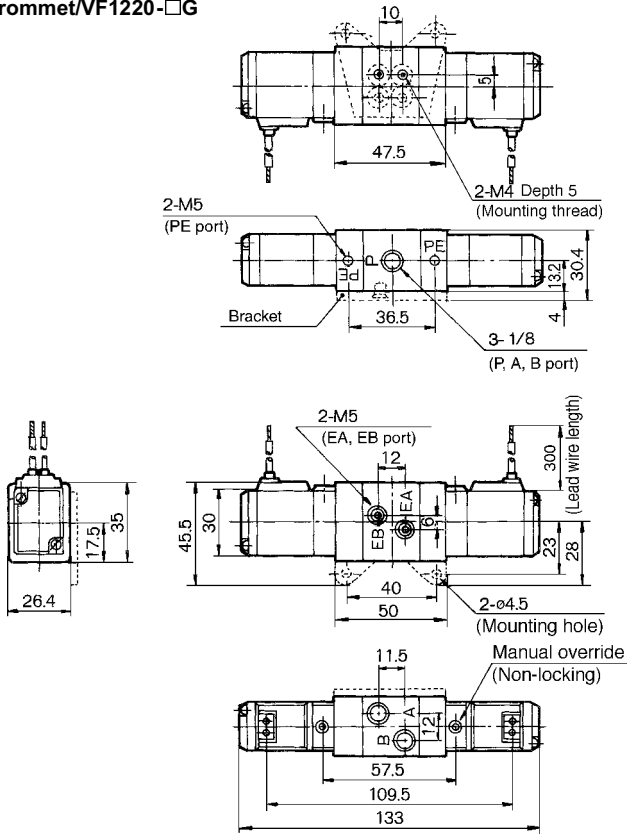
DIN connector/VF1120-□D/Y



□: With indicator light and surge voltage suppressor

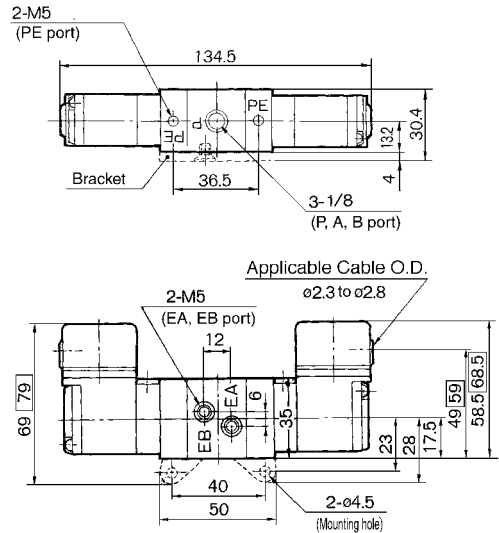
2 Position Double Solenoid

Grommet/VF1220-□G



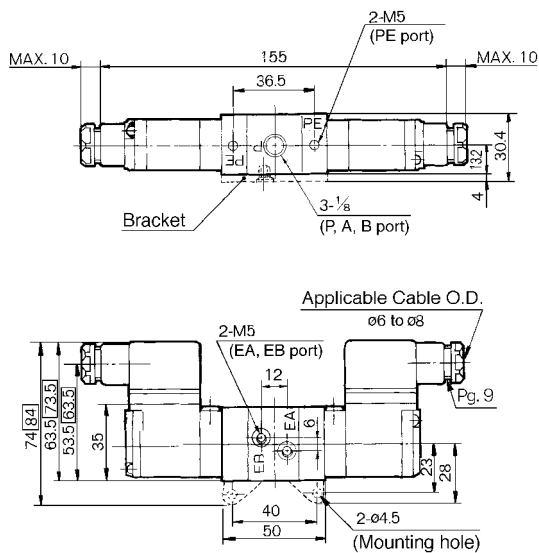
Grommet terminal/VF1220-□E

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



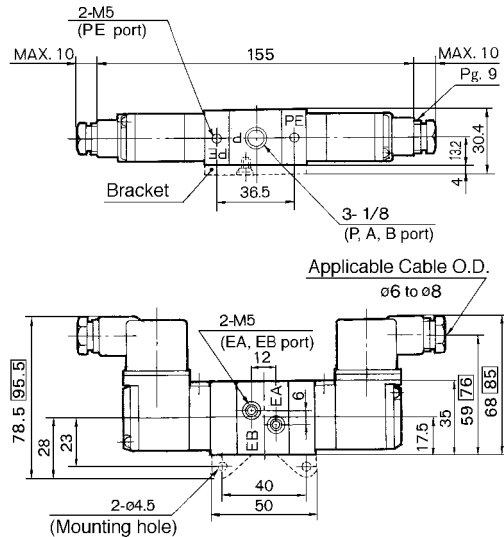
□: With indicator light and surge voltage suppressor

Conduit terminal/VF-□T



□: With indicator light and surge voltage suppressor

DIN connector/VF1220-□D/Y



□: With indicator light and surge voltage suppressor

VF1000

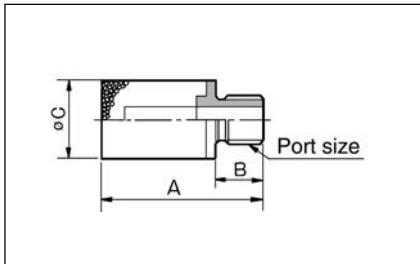
Option

Silencer specifications

Model	AN120-M5	AN110-01
Max. operating press.	1.0MPa	1.0MPa
Fluid temperature	5 to 60°C	5 to 60°C
Noise reduction*	18dB or more	21dB or more
Effective area	5mm ²	35mm ²
Port size	M5 X 0.8	1/8
Material Body	BC-6	BC-6
Weight	3.3gf	20gf
Application	Body ported, Individual exhaust manifold	Common exhaust manifold

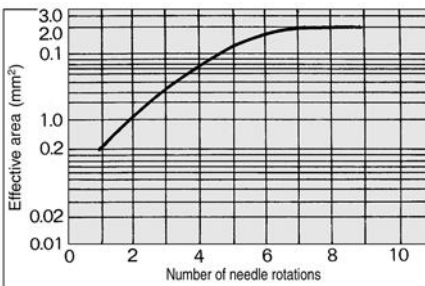
* At 0.5MPa

Silencer/Dimensions



Model	AN120-M5	AN110-01	
Dimensions (mm)	A	17	38
	B	5	6
	C	8	13

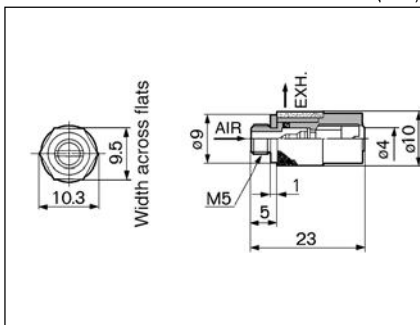
Throttle valve DXT154-34-1A/Flow characteristics



Effective area: S=2.2mm², Cv=0.12

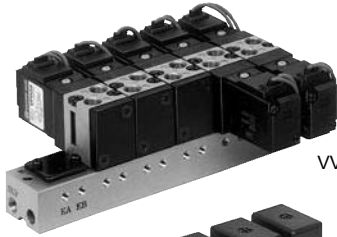
Air passage: A port → EA port (Throttle valve)

Throttle valve DXT154-34-1A/Dimensions(mm)

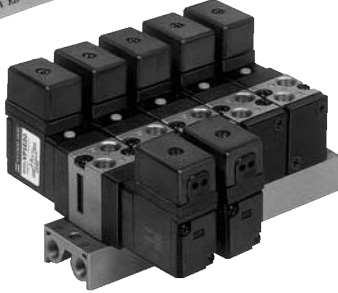


Series VF1000

Manifold



VV5F1-31



VV5F1-30

Manifold Specifications

Manifold	B mount (Single base)
Maximum stations	20*

*If there are more than 8 stations, supply from both sides of supply(P) port and exhaust from both sides of exhaust (R) port.

Model	Exhaust	Piping/Port location			Port size			Applicable valve
		P	R(E)	A, B	P	R(E)	A, B	
VV5F1-30	Common	Side	Side	Top	1/8	1/8	1/8	VF1□30 VF1□33
		Base	Base	Valve				
VV5F1-31	Individual	Side	Side	Top	1/8	M5	1/8	
		Base	Base	Valve				

Note 1) Supply is all common.
Note 2) Direction of single solenoid: Same side of P(SUP) port.

Options

Description	Part No.	Applicable manifold
Throttle valve	DXT154-34-1A	VV5F1-31
Silencer	AN120-M5	VV5F1-31
	AN110-01	VV5F1-30
Blank plate assembly	DXT144-13-2A	VV5F1-30, 31

How to Order Manifold Base

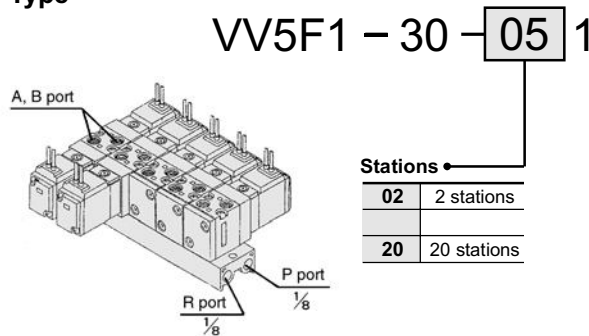
Please order the appropriate valves and or blank plate assembly with manifold base.

(Example) VV5F1-30-051 1pc (Manifold base)
VF1230-1D-01-Q 2pcs (Valve)
VF1130-1D-01-Q 3pcs (Valve)
DXT144-13-2A 1pc (Blank plate assembly)

B mount (Integrated style)

Common SUP/Common EXH style

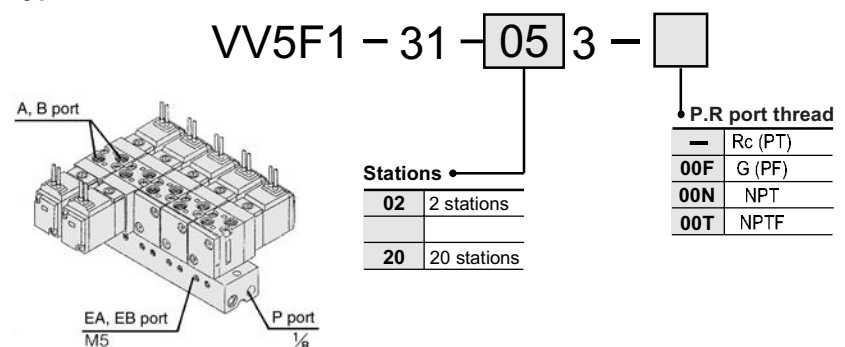
30 Type



Applicable solenoid valves
VF1 1/2 30-□□□□-□-Q
VF1 1/2 33-□□□□-□-Q

Common SUP/Individual EXH style

31 Type

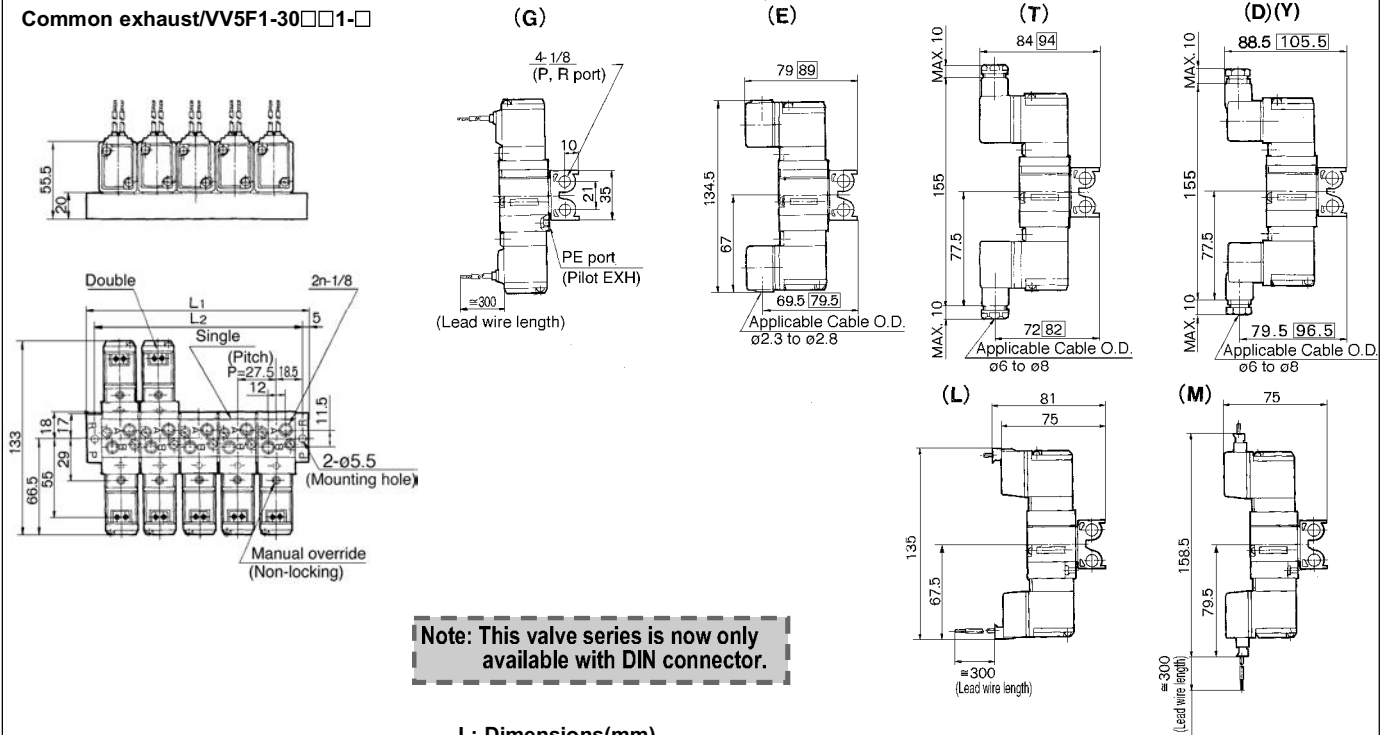


Applicable blank plate ass'y
DXT144-13-2A

VF1000

Manifold

Common exhaust/VV5F1-30□□1-□



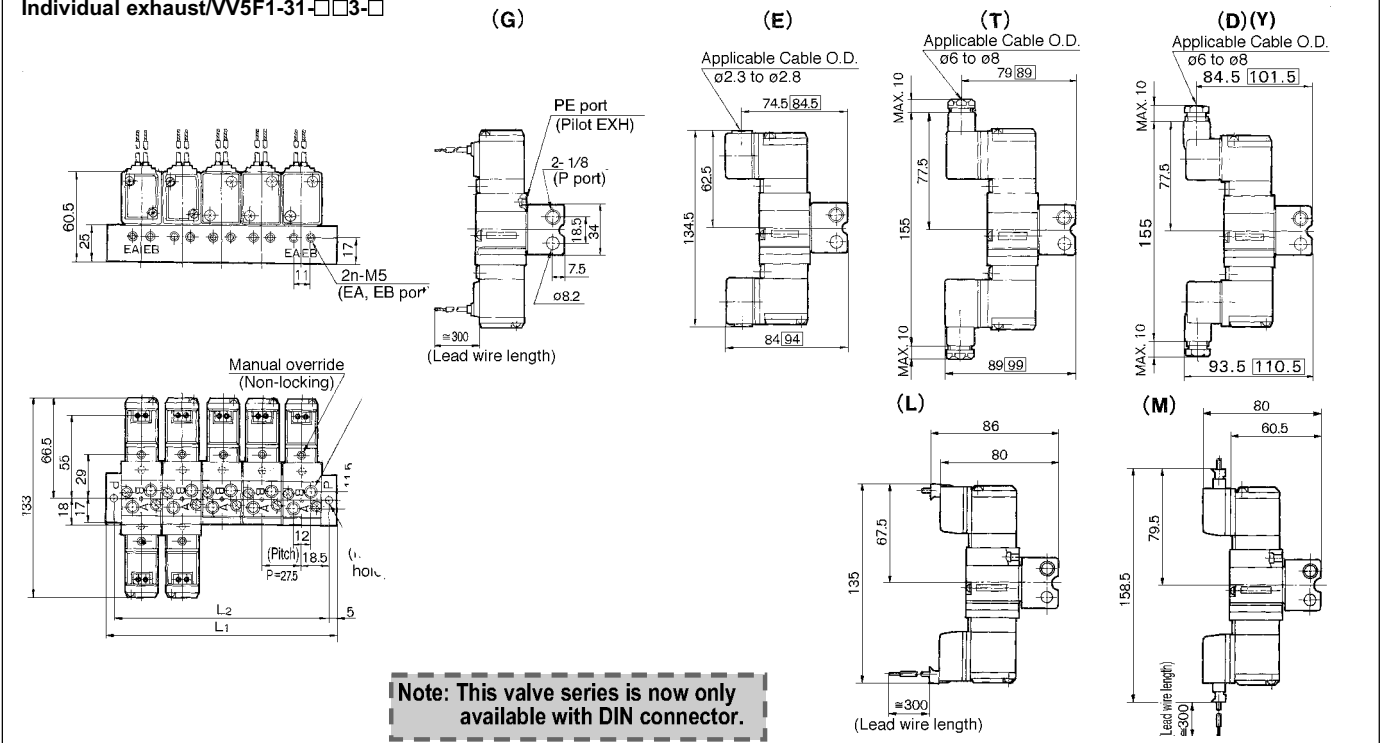
L: Dimensions(mm)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	74.5	102	129.5	157	184.5	212	239.5	267	294.5	322	349.5	377	404.5	432	459.5	487	514.5	542	569.5
L2	64.5	92	119.5	147	174.5	202	229.5	257	284.5	312	339.5	367	394.5	422	449.5	477	504.5	532	559.5



□: With indicator light and surge voltage suppressor

Individual exhaust/VV5F1-31□□3-□



L: Dimensions(mm)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	74.5	102	129.5	157	184.5	212	239.5	267	294.5	322	349.5	377	404.5	432	459.5	487	514.5	542	569.5
L2	64.5	92	119.5	147	174.5	202	229.5	257	284.5	312	339.5	367	394.5	422	449.5	477	504.5	532	559.5



□: With indicator light and surge voltage suppressor

n: Station