

Vacuum Generator Complex Type VG

20 mm wide multi-functional type ejector (stand-alone type)

⚠ Safety instructions for this product

Safety instructions, Common safety instructions for each product category and Detailed safety instructions for each product are in the end of this catalog and our website.

Model Designation (Example)



(1) Vacuum Generator Complex type VG

(2) Vacuum characteristics

Code	H	L	E
Charact.	High-vacuum type (Rated supply pressure: 0.5 MPa)	Large-flow type (Rated supply pressure: 0.5 MPa)	High-vacuum at Low air supply pressure type (Rated air supply pressure: 0.35 MPa)

(3) Nozzle bore

Code	Nozzle bore (mm)	H Type			L Type			E Type		
		Vacuum level (kPa)	Suction flow (l/min [ANR])	Air consumption (l/min [ANR])	Vacuum level (kPa)	Suction flow (l/min [ANR])	Air consumption (l/min [ANR])	Vacuum level (kPa)	Suction flow (l/min [ANR])	Air consumption (l/min [ANR])
05	0.5	-90	7 [7]	11.5	-66	12 [12]	11.5	—	—	—
07	0.7	-93	13 [13]	23	-66	23 [26]	23	-90	10.5 [10.5]	17
10	1.0	-93	26 [27]	46	-66	34 [40]	46	-90	21 [21]	34

*1. Values are when rated pressure is applied. (H and L type: 0.5 MPa, E type: 0.35 MPa.)

*2. Suction flow values on the left represent those of vacuum port dia. 4 mm or 5/32", and those in [] are of vacuum port dia. 6 mm or 1/4".

*3. The values in the table are representative values. Suction flow can vary by vacuum port dia. and tube length.

(4) Combination of units (○: Equipped)

Code	A	B	E	F
Filter	○	○	○	○
Pressure sensor		○		○
Suction valve			○	○
Blow-off valve			○	○

*Power Supply of Pressure Sensors is 12 to 24 VDC.

(5) Vacuum port size (V)

Code	mm size (mm)		inch size (inch)	
	4	6	5/32	1/4
Tube O.D.	ø4	ø6	ø5/32	ø1/4

(6) Air supply port size (P)

Code	mm size (mm)		inch size (inch)	
	4	6	5/32	1/4
Tube O.D.	ø4	ø6	ø5/32	ø1/4

(7) Solenoid valve specifications (Unit: E and F type only)

Code	DC24	AC100
Voltage	24 VDC	100 VAC

(8) Wire lead-out direction (Unit: E and F type only)

Code	S	L
Direction	Side	Top

(9) Pressure sensor (Unit: B and F type only)

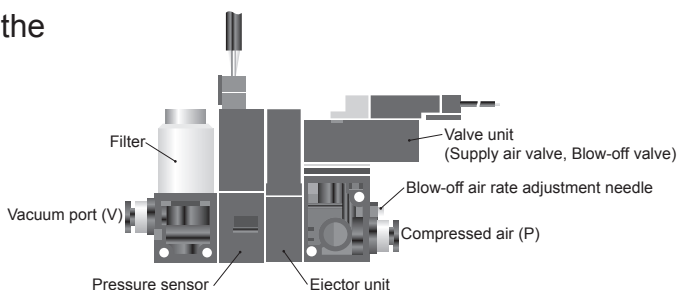
Code	Type
NW	2 switch outputs
NA	1 analog output and 1 switch output
A	1 analog output

Characteristics

Pressure sensor, blow-off valve, ejector and the like are unitized.

Select the best combination in accordance with your applications.

Three types of pressure sensors.



Vacuum Generator Complex type VG

Specifications

Fluid medium	Air (JIS B 8392-1: Compliant with [Class 1.2.1 to 2.4.3])	
Operating press. range	0.25 to 0.7 MPa	
Operating temp. range	5 to 50°C (No freezing)	
Operating humid. range	35 to 85%RH (No dew condensation)	
Vibration resist./Shock resist.	50 m/s ² max. /150m/s ² max.	
Protective structure	IEC standard IP40 equiv.	
Lubrication	Not required	
Proof pressure	Air supply circuit	1.05 MPa
	Vac. circuit	0.2 MPa

*Proof pressure is the level of pressure at which the product would not be damaged. It does not mean the pressure where the product works normally.

Solenoid valve specifications

Rated voltage	24 VDC ±10%	100 VAC ±10%
Power consumption	1.2 W (with LED)	1.5 VA (with LED)
Surge protection	Varistor	Bridge diode
Operation indicator	Current application: Red LED ON	
Manual override	Push button (non-lock)	

Suction main valve specifications

Operation type	Indirect operation by pilot valve	
Valve type	Normally closed	
Response time	OFF→ON	24VDC Specification: 12 msec
		100VAC Specification: 15 msec
	ON→OFF	24VDC Specification: 20 msec
		100VAC Specification: 27 msec

*The response time at rated supply air pressure of 0.5 MPa and rated voltage (100%).

Blow-off main valve specifications

Operation type	Direct operating poppet	
Valve type	Normally closed	
Response time	OFF→ON	24 VDC Specification: 3.5 msec
		100 VAC Specification: 8 msec
	ON→OFF	24 VDC Specification: 3 msec
		100 VAC Specification: 14 msec

*The response time at rated supply air pressure of 0.5 MPa and rated voltage (100%).

Vacuum Filter specifications

Element material	PVFM (Polyvinyl formal)
Filtering accuracy (*)	5 μm
Filter area	1,130 mm ²

*Based on PISCO measuring condition.

Blow-off function

Blow-off air rate	0 to 7 ℓ/min [ANR] (Supply pressure: 0.5 MPa)
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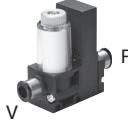
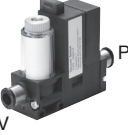
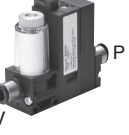
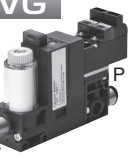
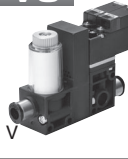
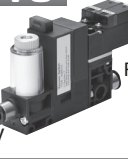
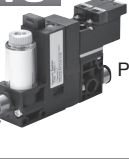
*Blow-off air rate varies according to the vacuum port dia. and tube length (piping resistance and others) on vacuum side.

Pressure sensor (without pressure display) specifications

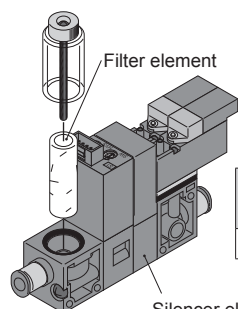
	-NW	-NA	-A
Pressure sensor code	2 switch outputs	1 switch output, 1 analog output	1 analog output
Power requirement	12 to 24 VDC ± 10% Ripple (P-P) 10% max.		
Current consumption	25 mA	17 mA	15 mA
Pressure detection	Diffused metaloxide semiconductive pressure sensor		
Proof pressure	0.2 MPa		
Switch output	Switch output	NPN open collector (30 V 80 mA max/Residual voltage 0.8 V max.)	
	No. of pressure setting	2	1
	Pressure setting range	0 to -100 kPa	
	Operating accuracy	±3%F.S. (Standard temp. at 25°C)	
	Hysteresis	2%F.S. (Fixed)	Variable (About 1 to 15% of set value)
	Operation indicator	SW1: Red LED turns ON, when the switch output is ON SW2: Green LED turns ON, when the switch output is ON	Red LED turns ON, when the switch output is ON.
Analog output	Output voltage	1 to 5 V	
	Zero-point voltage	1 ±0.1 V	
	Span voltage	4 ±0.1 V	
	Output current	1 mA max.	
	Temp. charact. (Zero point)	±0.1 %F.S./°C (Standard temp. at 25°C)	
	Temp. charact. (Span)	±0.1 %F.S./°C (Standard temp. at 25°C)	
	Linearity	±0.5%F.S. max.	

*Allowable range of the variation of "Zero point voltage" and "Pressure setting value" caused by repeated voltage application is ±3%F.S.

RoHS2 (2011/65/EU+EU2015/863) compliant

Without Pressure sensor			With Pressure sensor					
			Analog output			2 switch outputs/1 switch + 1 analog output		
Type	Model code VG[2][3]A-VP		Type	Model code VG[2][3]B-VP-A		Type	Model code VG[2][3]B-VP-[9]	
Filter built-in VG 	VGH05A-44	VGH05A- ⁵ / ₃₂ - ⁵ / ₃₂	Filter built-in VG 	VGH05B-44-A	VGH05B- ⁵ / ₃₂ - ⁵ / ₃₂ -A	Filter built-in VG 	VGH05B-44-[9]	VGH05B- ⁵ / ₃₂ - ⁵ / ₃₂ -[9]
	VGH07A-66	VGH07A- ¹ / ₄ - ¹ / ₄		VGH07B-66-A	VGH07B- ¹ / ₄ - ¹ / ₄ -A		VGH07B-66-[9]	VGH07B- ¹ / ₄ - ¹ / ₄ -[9]
	VGH10A-66	VGH10A- ¹ / ₄ - ¹ / ₄		VGH10B-66-A	VGH10B- ¹ / ₄ - ¹ / ₄ -A		VGH10B-66-[9]	VGH10B- ¹ / ₄ - ¹ / ₄ -[9]
	VGL05A-44	VGL05A- ⁵ / ₃₂ - ⁵ / ₃₂		VGL05B-44-A	VGL05B- ⁵ / ₃₂ - ⁵ / ₃₂ -A		VGL05B-44-[9]	VGL05B- ⁵ / ₃₂ - ⁵ / ₃₂ -[9]
	VGL07A-66	VGL07A- ¹ / ₄ - ¹ / ₄		VGL07B-66-A	VGL07B- ¹ / ₄ - ¹ / ₄ -A		VGL07B-66-[9]	VGL07B- ¹ / ₄ - ¹ / ₄ -[9]
	VGL10A-66	VGL10A- ¹ / ₄ - ¹ / ₄		VGL10B-66-A	VGL10B- ¹ / ₄ - ¹ / ₄ -A		VGL10B-66-[9]	VGL10B- ¹ / ₄ - ¹ / ₄ -[9]
	VGE07A-66	VGE07A- ¹ / ₄ - ¹ / ₄		VGE07B-66-A	VGE07B- ¹ / ₄ - ¹ / ₄ -A		VGE07B-66-[9]	VGE07B- ¹ / ₄ - ¹ / ₄ -[9]
	VGE10A-66	VGE10A- ¹ / ₄ - ¹ / ₄		VGE10B-66-A	VGE10B- ¹ / ₄ - ¹ / ₄ -A		VGE10B-66-[9]	VGE10B- ¹ / ₄ - ¹ / ₄ -[9]
Type	Model code VG[2][3]E-VP-[7]L		Type	Model code VG[2][3]F-VP-[7]L-A		Type	Model code VG[2][3]F-VP-[7]L-[9]	
Suction valve, Blow-off valve, Filter, Lead-out: TOP VG 	VGH05E-44-[7]L	VGH05E- ⁵ / ₃₂ - ⁵ / ₃₂ -[7]L	Suction valve, Blow-off valve, Filter, Lead-out: TOP VG 	VGH05F-44-[7]L-A	VGH05F- ⁵ / ₃₂ - ⁵ / ₃₂ -[7]L-A	Suction valve, Blow-off valve, Filter, Lead-out: TOP VG 	VGH05F-44-[7]L-[9]	VGH05F- ⁵ / ₃₂ - ⁵ / ₃₂ -[7]L-[9]
	VGH07E-66-[7]L	VGH07E- ¹ / ₄ - ¹ / ₄ -[7]L		VGH07F-66-[7]L-A	VGH07F- ¹ / ₄ - ¹ / ₄ -[7]L-A		VGH07F-66-[7]L-[9]	VGH07F- ¹ / ₄ - ¹ / ₄ -[7]L-[9]
	VGH10E-66-[7]L	VGH10E- ¹ / ₄ - ¹ / ₄ -[7]L		VGH10F-66-[7]L-A	VGH10F- ¹ / ₄ - ¹ / ₄ -[7]L-A		VGH10F-66-[7]L-[9]	VGH10F- ¹ / ₄ - ¹ / ₄ -[7]L-[9]
	VGL05E-44-[7]L	VGL05E- ⁵ / ₃₂ - ⁵ / ₃₂ -[7]L		VGL05F-44-[7]L-A	VGL05F- ⁵ / ₃₂ - ⁵ / ₃₂ -[7]L-A		VGL05F-44-[7]L-[9]	VGL05F- ⁵ / ₃₂ - ⁵ / ₃₂ -[7]L-[9]
	VGL07E-66-[7]L	VGL07E- ¹ / ₄ - ¹ / ₄ -[7]L		VGL07F-66-[7]L-A	VGL07F- ¹ / ₄ - ¹ / ₄ -[7]L-A		VGL07F-66-[7]L-[9]	VGL07F- ¹ / ₄ - ¹ / ₄ -[7]L-[9]
	VGL10E-66-[7]L	VGL10E- ¹ / ₄ - ¹ / ₄ -[7]L		VGL10F-66-[7]L-A	VGL10F- ¹ / ₄ - ¹ / ₄ -[7]L-A		VGL10F-66-[7]L-[9]	VGL10F- ¹ / ₄ - ¹ / ₄ -[7]L-[9]
	VGE07E-66-[7]L	VGE07E- ¹ / ₄ - ¹ / ₄ -[7]L		VGE07F-66-[7]L-A	VGE07F- ¹ / ₄ - ¹ / ₄ -[7]L-A		VGE07F-66-[7]L-[9]	VGE07F- ¹ / ₄ - ¹ / ₄ -[7]L-[9]
	VGE10E-66-[7]L	VGE10E- ¹ / ₄ - ¹ / ₄ -[7]L		VGE10F-66-[7]L-A	VGE10F- ¹ / ₄ - ¹ / ₄ -[7]L-A		VGE10F-66-[7]L-[9]	VGE10F- ¹ / ₄ - ¹ / ₄ -[7]L-[9]
Type	Model code VG[2][3]E-VP-[7]S		Type	Model code VG[2][3]F-VP-[7]S-A		Type	Model code VG[2][3]F-VP-[7]S-[9]	
Suction valve, Blow-off valve, Filter, Lead-out: SIDE VG 	VGH05E-44-[7]S	VGH05E- ⁵ / ₃₂ - ⁵ / ₃₂ -[7]S	Suction valve, Blow-off valve, Filter, Lead-out: SIDE VG 	VGH05F-44-[7]S-A	VGH05F- ⁵ / ₃₂ - ⁵ / ₃₂ -[7]S-A	Suction valve, Blow-off valve, Filter, Lead-out: SIDE VG 	VGH05F-44-[7]S-[9]	VGH05F- ⁵ / ₃₂ - ⁵ / ₃₂ -[7]S-[9]
	VGH07E-66-[7]S	VGH07E- ¹ / ₄ - ¹ / ₄ -[7]S		VGH07F-66-[7]S-A	VGH07F- ¹ / ₄ - ¹ / ₄ -[7]S-A		VGH07F-66-[7]S-[9]	VGH07F- ¹ / ₄ - ¹ / ₄ -[7]S-[9]
	VGH10E-66-[7]S	VGH10E- ¹ / ₄ - ¹ / ₄ -[7]S		VGH10F-66-[7]S-A	VGH10F- ¹ / ₄ - ¹ / ₄ -[7]S-A		VGH10F-66-[7]S-[9]	VGH10F- ¹ / ₄ - ¹ / ₄ -[7]S-[9]
	VGL05E-44-[7]S	VGL05E- ⁵ / ₃₂ - ⁵ / ₃₂ -[7]S		VGL05F-44-[7]S-A	VGL05F- ⁵ / ₃₂ - ⁵ / ₃₂ -[7]S-A		VGL05F-44-[7]S-[9]	VGL05F- ⁵ / ₃₂ - ⁵ / ₃₂ -[7]S-[9]
	VGL07E-66-[7]S	VGL07E- ¹ / ₄ - ¹ / ₄ -[7]S		VGL07F-66-[7]S-A	VGL07F- ¹ / ₄ - ¹ / ₄ -[7]S-A		VGL07F-66-[7]S-[9]	VGL07F- ¹ / ₄ - ¹ / ₄ -[7]S-[9]
	VGL10E-66-[7]S	VGL10E- ¹ / ₄ - ¹ / ₄ -[7]S		VGL10F-66-[7]S-A	VGL10F- ¹ / ₄ - ¹ / ₄ -[7]S-A		VGL10F-66-[7]S-[9]	VGL10F- ¹ / ₄ - ¹ / ₄ -[7]S-[9]
	VGE07E-66-[7]S	VGE07E- ¹ / ₄ - ¹ / ₄ -[7]S		VGE07F-66-[7]S-A	VGE07F- ¹ / ₄ - ¹ / ₄ -[7]S-A		VGE07F-66-[7]S-[9]	VGE07F- ¹ / ₄ - ¹ / ₄ -[7]S-[9]
	VGE10E-66-[7]S	VGE10E- ¹ / ₄ - ¹ / ₄ -[7]S		VGE10F-66-[7]S-A	VGE10F- ¹ / ₄ - ¹ / ₄ -[7]S-A		VGE10F-66-[7]S-[9]	VGE10F- ¹ / ₄ - ¹ / ₄ -[7]S-[9]

Replacement element



Filter element Model code
VGFE10

Silencer element (*)

* The silencer element is the same as one for vacuum generator Box type (VB). Please refer to page 259.



Notes

* Please select each code referring to the example of model designation.
[7]: Code for solenoid valve specification, and [9]: Pressure sensor code



CAD data is available
at PISCO website.



Packaging specifications

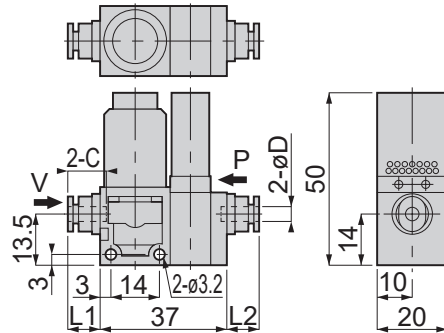
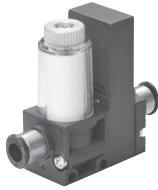
1 pc. /bag: Vacuum generator
10 pcs /bag: Replacement element

Dimensional Drawings

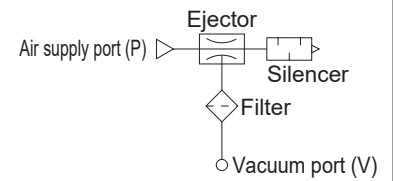
VG

With Filter

A Type



Circuit diagram



Unit: mm

Model code	Tube O.D. øD	L1	L2	C	Nozzle bore (ømm)	Rated supply pressure (MPa)	Final vacuum (-kPa)	Suction flow rate (ℓ/min [ANR])	Air consumption (ℓ/min [ANR])	Weight (g)
VGH05A-44	4	9.6	9.1	10.9	0.5	0.5	90	7	11.5	47
VGH07A-66	6	12.1	11.6	11.7	0.7		93	13	23	49
VGH10A-66					1			27	46	48
VGL05A-44	4	9.6	9.1	10.9	0.5	0.5	66	12	11.5	46
VGL07A-66	6	12.1	11.6	11.7	0.7			26	23	48
VGL10A-66					1			40	46	47
VGE07A-66	6	12.1	11.6	11.7	0.7	0.35	90	10.5	17	48
VGE10A-66					1			21	34	

VG

With Pressure sensor, Filter

B Type

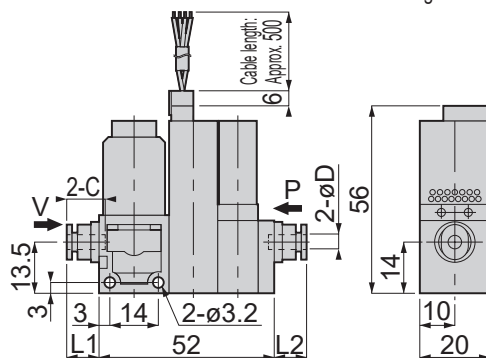


-NA: Hysteresis setting trimmer
-NW: SW2 Vacuum setting trimmer

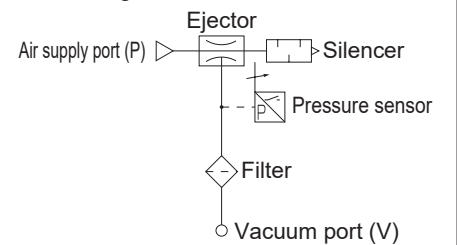


Operation indicator LED

-NA: SW Vacuum setting trimmer
-NW: SW1 Vacuum setting trimmer



Circuit diagram



*Sensor with 1 analog output (-A) is not equipped with operation indicator LED or vacuum setting trimmer.

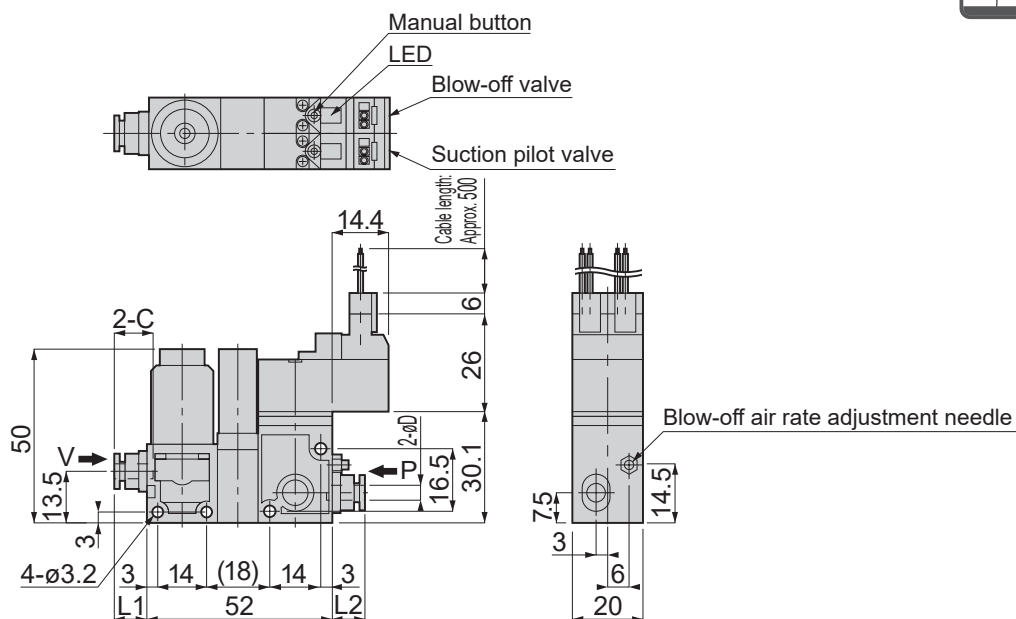
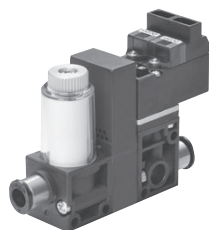
Unit: mm

Model code	Tube O.D. øD	L1	L2	C	Nozzle bore (ømm)	Rated supply pressure (MPa)	Final vacuum (-kPa)	Suction flow rate (ℓ/min [ANR])	Air consumption (ℓ/min [ANR])	Weight (g)
VGH05B-44- <u>9</u>	4	9.6	9.1	10.9	0.5	0.5	90	7	11.5	74
VGH07B-66- <u>9</u>	6	12.1	11.6	11.7	0.7		93	13	23	75
VGH10B-66- <u>9</u>					1			27	46	
VGL05B-44- <u>9</u>	4	9.6	9.1	10.9	0.5	0.5	66	12	11.5	73
VGL07B-66- <u>9</u>	6	12.1	11.6	11.7	0.7			26	23	75
VGL10B-66- <u>9</u>					1			40	46	74
VGE07B-66- <u>9</u>	6	12.1	11.6	11.7	0.7	0.35	90	10.5	17	75
VGE10B-66- <u>9</u>					1			21	34	74

*For 9 in the model code, please select a code for sensor specifications, referring to the Model Designation (Example).

VG

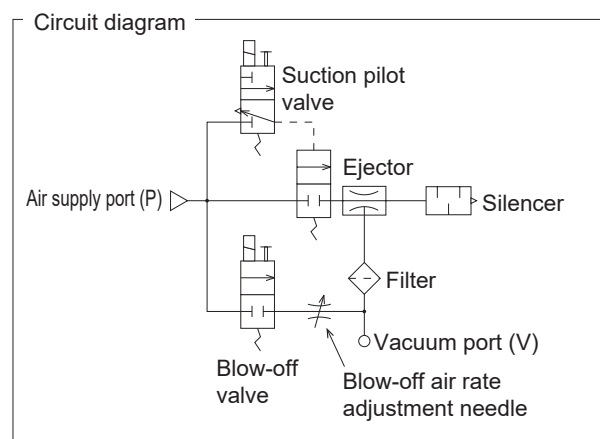
E Type

With Suction valve, Blow-off valve, Filter, Lead-out: Top

Unit: mm

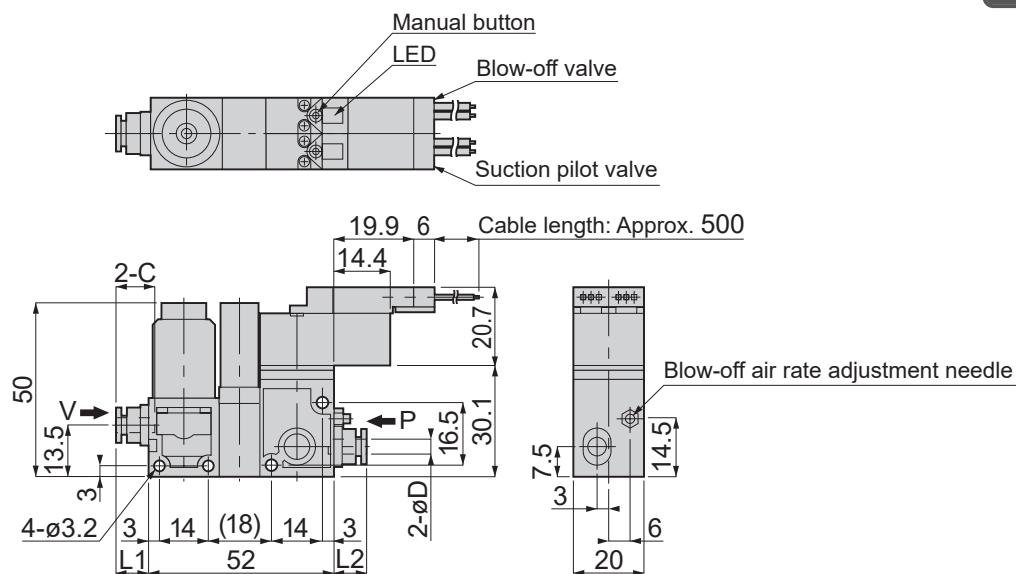
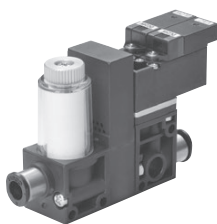
Model code	Tube O.D. øD	L1	L2	C	Nozzle bore (ømm)	Rated supply pressure (MPa)	Final vacuum (-kPa)	Suction flow rate (ℓ/min [ANR])	Air consumption (ℓ/min [ANR])	Weight (g)
VGH05E-44- 7 L	4	9.6	7.6	10.9	0.5	0.5	90	7	11.5	99
VGH07E-66- 7 L	6	12.1	10.1	11.7	0.7		93	13	23	100
VGH10E-66- 7 L					1			27	46	101
VGL05E-44- 7 L	4	9.6	7.6	10.9	0.5	0.5	66	12	11.5	99
VGL07E-66- 7 L	6	12.1	10.1	11.7	0.7			26	23	101
VGL10E-66- 7 L					1			40	46	100
VGE07E-66- 7 L	6	12.1	10.1	11.7	0.7	0.35	90	10.5	17	101
VGE10E-66- 7 L					1			21	34	100

*For 7 in the model code, please select a code for the solenoid valve specifications, referring to the Model Designation (Example).



VG

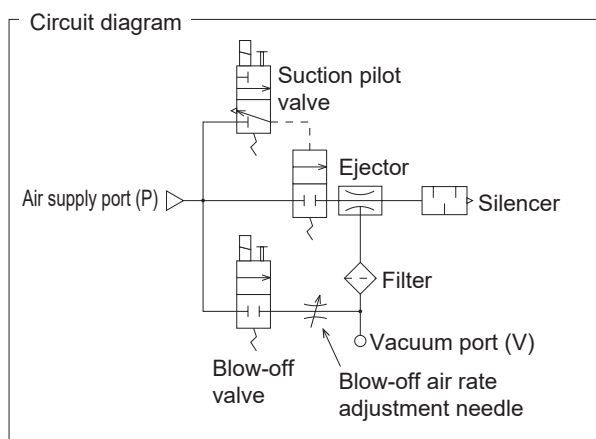
E Type

With Suction valve, Blow-off valve, Filter, Lead-out: Side

Unit: mm

Model code	Tube O.D. øD	L1	L2	C	Nozzle bore (ømm)	Rated supply pressure (MPa)	Final vacuum (-kPa)	Suction flow rate (ℓ/min [ANR])	Air consumption (ℓ/min [ANR])	Weight (g)
VGH05E-44- 7 S	4	9.6	7.6	10.9	0.5	0.5	90	7	11.5	99
VGH07E-66- 7 S	6	12.1	10.1	11.7	0.7		93	13	23	100
VGH10E-66- 7 S					1			27	46	101
VGL05E-44- 7 S	4	9.6	7.6	10.9	0.5	0.5	66	12	11.5	99
VGL07E-66- 7 S	6	12.1	10.1	11.7	0.7			26	23	101
VGL10E-66- 7 S					1			40	46	100
VGE07E-66- 7 S	6	12.1	10.1	11.7	0.7	0.35	90	10.5	17	101
VGE10E-66- 7 S					1			21	34	100

*For 7 in the model code, please select a code for the solenoid valve specifications, referring to the Model Designation (Example).



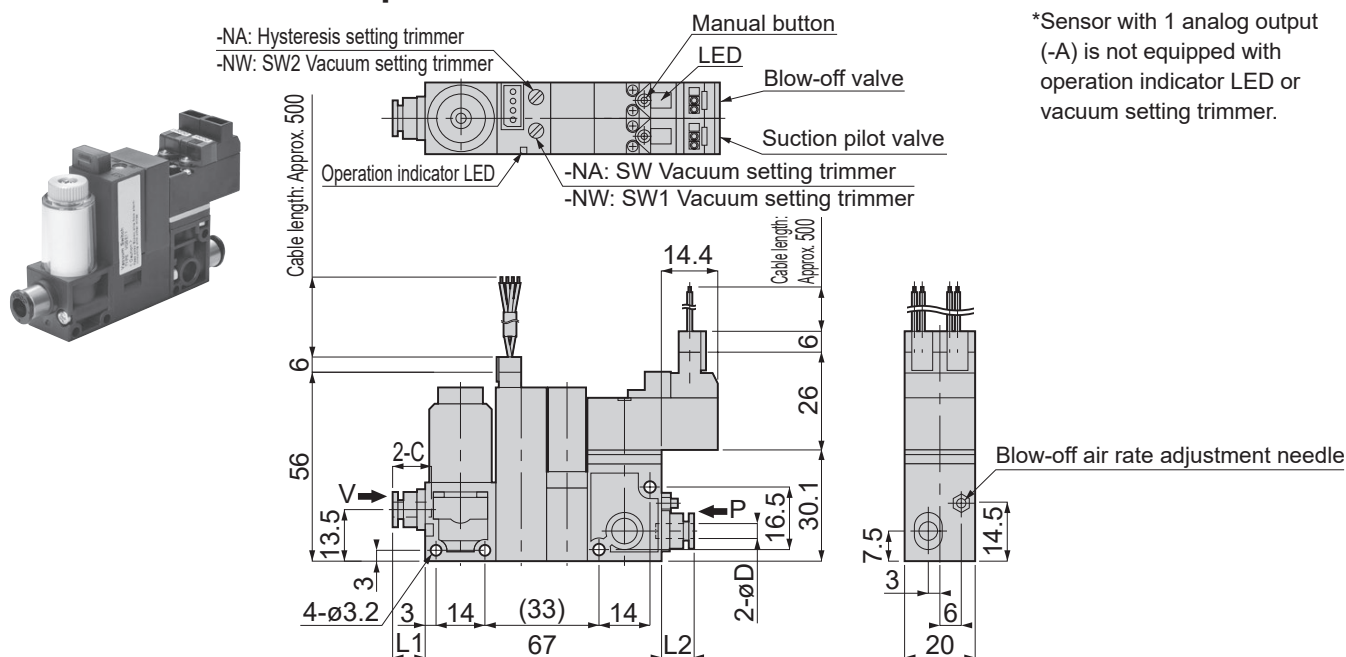
VG

F Type

With Pressure sensor, Suction valve, Blow-off valve, Filter, Lead-out: Top



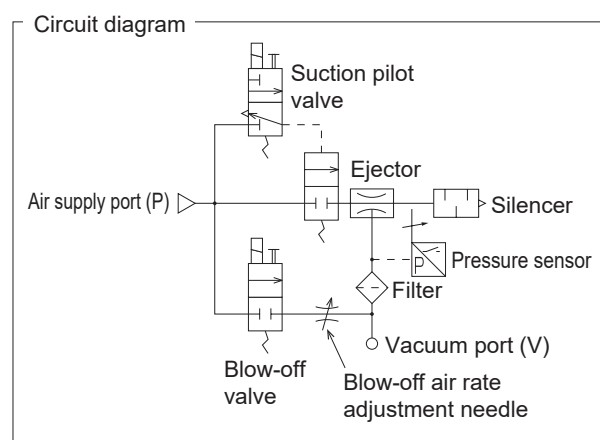
*Sensor with 1 analog output (-A) is not equipped with operation indicator LED or vacuum setting trimmer.



Unit: mm

Model code	Tube O.D. øD	L1	L2	C	Nozzle bore (ømm)	Rated supply pressure (MPa)	Final vacuum (-kPa)	Suction flow rate (ℓ/min [ANR])	Air consumption (ℓ/min [ANR])	Weight (g)
VGH05F-44- 7 L- 9	4	9.6	7.6	10.9	0.5	0.5	90	7	11.5	125
VGH07F-66- 7 L- 9	6	12.1	10.1	11.7	0.7		93	13	23	128
VGH10F-66- 7 L- 9					1			27	46	127
VGL05F-44- 7 L- 9	4	9.6	7.6	10.9	0.5	0.5	66	12	11.5	127
VGL07F-66- 7 L- 9	6	12.1	10.1	11.7	0.7			26	23	
VGL10F-66- 7 L- 9					1			40	46	
VGE07F-66- 7 L- 9	6	12.1	10.1	11.7	0.7	0.35	90	10.5	17	128
VGE10F-66- 7 L- 9					1			21	34	

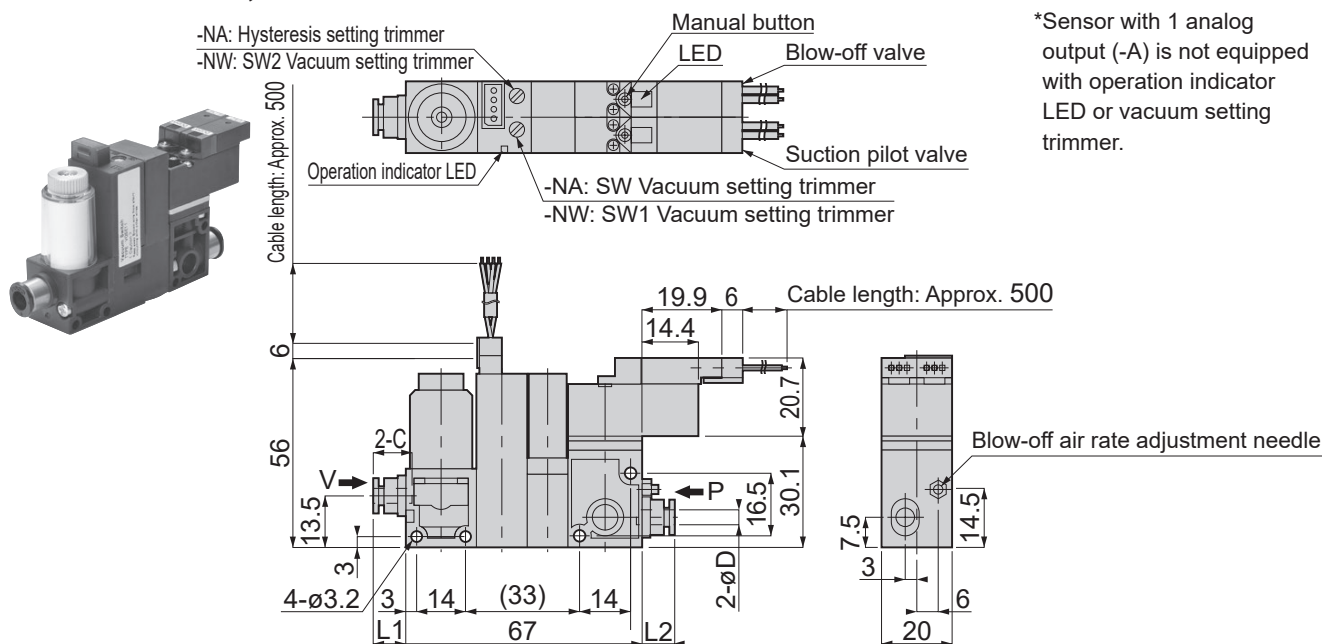
*For 7 in the model code, please select a code for the solenoid valve specifications, and for 9, select a code for the sensor specifications, referring to the Model Designation (Example).



VG

F Type

With Pressure sensor, Suction valve, Blow-off valve, Filter, Lead-out: Side



Unit: mm

Model code	Tube O.D. ϕ D	L1	L2	C	Nozzle bore (ϕ mm)	Rated supply pressure (MPa)	Final vacuum (-kPa)	Suction flow rate (ℓ /min [ANR])	Air consumption (ℓ /min [ANR])	Weight (g)
VGH05F-44- 7 S- 9	4	9.6	7.6	10.9	0.5	0.5	90	7	11.5	125
VGH07F-66- 7 S- 9	6	12.1	10.1	11.7	0.7		93	13	23	128
VGH10F-66- 7 S- 9					1			27	46	127
VGL05F-44- 7 S- 9	4	9.6	7.6	10.9	0.5	0.5	66	12	11.5	127
VGL07F-66- 7 S- 9	6	12.1	10.1	11.7	0.7			26	23	
VGL10F-66- 7 S- 9					1			40	46	
VGE07F-66- 7 S- 9	6	12.1	10.1	11.7	0.7	0.35	90	10.5	17	128
VGE10F-66- 7 S- 9					1			21	34	

*For 7 in the model code, please select a code for the solenoid valve specifications, and for 9, select a code for the sensor specifications, referring to the Model Designation (Example).

