

Vacuum Generator Complex type VN

10.3 mm wide, lightweight, compact, direct acting valve equipped, and suitable for high-cycle operation (Stand-alone and Manifold types).

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 of Stand-alone type (Example)

VN (1) **H05** (2) **-** **4** (3) **4** (4) **4** (5) **S** (6) **-** **D24** **-R1** (7)

(1) Vacuum Generator Complex type VN

(2) Vacuum characteristics, Nozzle bore

Code	Vacuum characteristics	Nozzle bore (mm)	Rated supply pressure (MPa)	Vacuum level (kPa)	Suction flow (ℓ/min [ANR])	Air consumption (ℓ/min [ANR])
E04	High-vacuum at Low air supply pressure type	0.4	0.35	-90.4	1.7[2]	6
H05	High-vacuum type	0.5	0.5		6.0[7]	11.5
E05	High-vacuum at Low air supply pressure type		0.35		2.6[3]	8
H06	High-vacuum type	0.6	0.5		8.1[9.5]	16
E06	High-vacuum at Low air supply pressure type		0.35		3.8[4.5]	12

*1. Suction flow values on the left represent those of vacuum port dia. 3mm, those in [] are of vacuum port dia. 4mm.

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

(3) Vacuum port size (V)

Code	3	4	3L	4L
Tube O.D. (mm)	ø3 Straight Push-in fitting	ø4 Straight Push-in fitting	ø3 Elbow Push-in fitting	ø4 Elbow Push-in fitting

(4) Air supply port for suction (PV)

Code	3	4
Tube O.D. (mm)	ø3 Straight Push-in fitting	ø4 Straight Push-in fitting

(5) Air supply port for blow-off air (PS)

Code	3	4	N
Tube O.D. (mm)	ø3 Straight Push-in fitting	ø4 Straight Push-in fitting	Common air supply port for suction and blow-off

*When 3 or 4 is selected for Air supply port for blow-off air, suction air and blow-off air are separately supplied.

(6) Exhaust port (EX)

Code	S	J (*)
Exhaust port	Open to air (Silencer vent)	Tube exhaust

"Tube exhaust" port comes with only for a 6 mm O.D. push-in fitting.

(7) Pressure sensor

Code	Specifications
No code	Without pressure sensor
-V1C □	Analog output vacuum sensor for negative press. with connector cable
-V2C □	Separate LED display + Analog output vacuum sensor for negative press. with connector cable
-R1	Analog output sensor for compound press.
-R2	Separate LED display + Analog output sensor for compound press.
-V4NC □	NPN output negative press. sensor with LED display
-V4PC □	PNP output negative press. sensor with LED display
-V4RNC □	NPN output compound press. sensor with LED display
-V4RPC □	PNP output compound press. sensor with LED display

*Select a cable length code from the below table for □ in pressure sensor code (connector type).

Code	No code	50	100	200	300
Cable length (mm)	Without cable	500	1,000	2,000	3,000

Model Code of bracket for stand-alone type (option)

VNB

*Including 2 hexagonal socket head screws (M3 x 12)

Model Designation of Connector cable for negative press. analog output sensor (Example) (Maintenance parts)

FSED012B07 (1) **-** **C300** (2)

(1) Cable for connector type pressure sensor

(2) Cable length

Code	C50	C100	C200	C300
Cable length (mm)	500	1,000	2,000	3,000

Model Designation of Connector cable for pressure sensor with LED display (Example) (Maintenance parts)

FVML010A (1) **02** (2) **-** **C300** (2)

(1) Cable for connector type pressure sensor

(2) Power supply line

Code	02	06
Power line	Included	Not included

(3) Cable length

Code	C50	C100	C200	C300
Cable length (mm)	500	1,000	2,000	3,000

Model Designation of Manifold type (Example)

VN (1) **H05** (2) **- 4** (3) **4** (4) **4** (5) **S** (6) **- D24** (7) **- V1C** (7) **- M** (8) **04** (8)

(1) Vacuum Generator Complex type VN

(2) Vacuum characteristics, Nozzle bore

Code	Vacuum characteristics	Nozzle bore (mm)	Rated supply pressure (MPa)	Vacuum level (kPa)	Suction flow (ℓ/min [ANR])	Air consumption (ℓ/min [ANR])
E04	High-vacuum at Low air supply pressure type	0.4	0.35	-90.4	1.7 [2]	6
H05	High-vacuum type	0.5	0.5		6.0 [7]	11.5
E05	High-vacuum at Low air supply pressure type		0.35		2.6 [3]	8
H06	High-vacuum type	0.6	0.5		8.1 [9.5]	16
E06	High-vacuum at Low air supply pressure type		0.35		3.8 [4.5]	12
K	Mixed configurations on a manifold (Fill out Specification Order Form.)					

*1. Suction flow values on the left represent those of vacuum port dia. 3mm, those in [] are of vacuum port dia. 4mm.

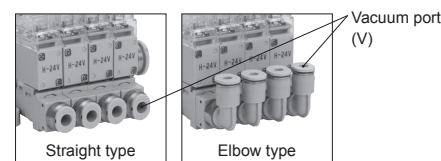
*2. The values in the table are representative values. Suction flow can vary by vacuum port dia. and tube length.

*3. When vacuum characteristic code is K, E type and H type cannot be mounted on a same manifold-base. Only different nozzle bore with same vacuum characteristics can be mounted on a same manifold-base.

(3) Vacuum port size (V)

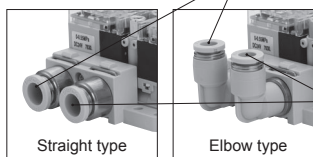
Port type	Straight Push-in fitting		Elbow Push-in fitting		K
Code	3	4	3L	4L	
Tube O.D. (mm)	ø3	ø4	ø3	ø4	

Mixed configurations on a manifold (Fill out Specification Order Form.)



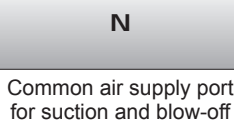
(4) Air supply port for suction (PV)

Port type	Straight Push-in fitting			Elbow Push-in fitting		
Code	4R	6R	8R	4LR	6LR	8LR
R side	4	6	8	4L	6L	8L
Both sides	4H	6H	8H	4LH	6LH	8LH
L side	4H	6H	8H	4LH	6LH	8LH
Tube O.D. (mm)	ø4	ø6	ø8	ø4	ø6	ø8



(5) Air supply port for blow-off air (PS)

Port type	Straight Push-in fitting			Elbow Push-in fitting		
Code	4R	6R	8R	4LR	6LR	8LR
R side	4	6	8	4L	6L	8L
Both sides	4H	6H	8H	4LH	6LH	8LH
L side	4H	6H	8H	4LH	6LH	8LH
Tube O.D. (mm)	ø4	ø6	ø8	ø4	ø6	ø8



(6) Exhaust port (EX)

S: Open to air (Silencer vent)

*Tube exhaust type is not selectable for manifold type.

(7) Pressure sensor

Code	Specifications
No code	Without pressure sensor
-V1C	Analog output vacuum sensor for negative press. with connector cable
-V2C	Separate LED display + Analog output vacuum sensor for negative press. with connector cable
-R1	Analog output sensor for compound press.
-R2	Separate LED display + Analog output sensor for compound press.
-V4NC	NPN output negative press. sensor with LED display
-V4PC	PNP output negative press. sensor with LED display
-V4RNC	NPN output compound press. sensor with LED display
-V4RPC	PNP output compound press. sensor with LED display
-K	Different sensor configurations on a manifold (Fill out Specification Order Form)

*Select a cable length code from the below table for ☐ in pressure sensor code (connector type).

Code	No code	50	100	200	300
Cable length (mm)	Without cable	500	1,000	2,000	3,000

(8) No. of stations

Code	02	03	04	05	06	07	08	09	10
No. of St.	2	3	4	5	6	7	8	9	10

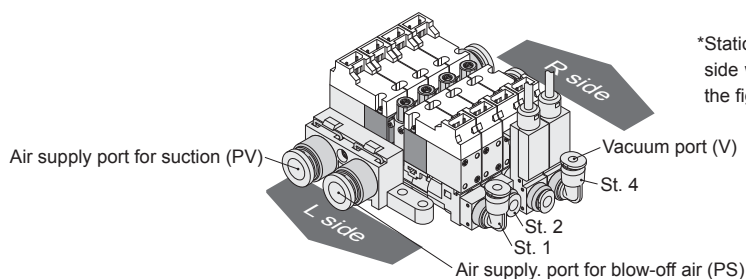
Vacuum Generator Complex type VN

Specification order form example for Manifold type

	Type	Vac. charact. , Nozzle bore.		Vacuum port	Air supply port	Air supply. port for blow-off air	Exhaust port(EX)		Voltage		Pressure sensor		No. of stations
	(1)	(2)		(3)	(4)	(5)	(6)				(7)		(8)
Manifold model code	VN	K	—	K	8	8	S	—	D24	—	K	—	M04
Mounting unit model code	L side	St.1	H04	—	3L			—		—			
		St.2	H05	—	4			—		—			
	↑ Station No. ↓	St.3	H06	—	4			—		—	R1		
		St.4	H04	—	3L			—		—	R1		
		St.5		—				—		—			
		St.6		—				—		—			
		St.7		—				—		—			
		St.8		—				—		—			
		St.9		—				—		—			
	R side	St.10		—				—		—			

*When vacuum characteristic code is K, E type and H type cannot be mounted on a same manifold-base. Only different nozzle bore with same vacuum characteristics can be mounted on a same manifold-base.

Manifold Type (reference)



*Station No. is counted as St.1, St.2, ...St.10 from L (left) side when the vacuum port is facing the front as shown in the figure.

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Vacuum Generator VN Series Manifold type Specification Order Form

To: NIHON PISCO CO., Ltd.

Name

Distributor
address

TEL

Delivery
address

TEL

Customer name
and address

TEL

Requested EX-W PISCO Date:

Order quantity:

pcs.

	Type (1)	Vac. charact. , Nozzle bore. (2)		Vacuum port (3)	Air supply port (4)	Air supply. port for blow-off air (5)	Exhaust port(EX) (6)		Voltage		Pressure sensor (7)		No. of stations (8)
Manifold model code	VN		—				S	—	D24	—		—	
Mounting unit model code	L side ↑ Station No. ↓ R side	St.1		—				—			—		
		St.2		—				—			—		
		St.3		—				—			—		
		St.4		—				—			—		
		St.5		—				—			—		
		St.6		—				—			—		
		St.7		—				—			—		
		St.8		—				—			—		
		St.9		—				—			—		
		St.10		—				—			—		

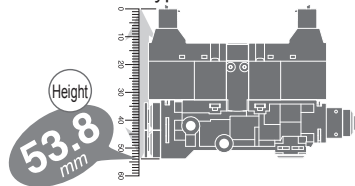
*When vacuum characteristic code is K, E type and H type cannot be mounted on a same manifold-base. Only different nozzle bore with same vacuum characteristics can be mounted on a same manifold-base.

Characteristics

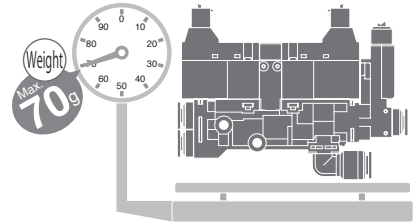
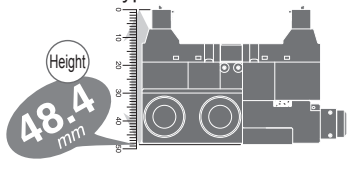
Suitable for the application with limited space.

Compact and lightweight ejector unit. Particularly, the body height is minimized.

■ Stand-alone type



■ Manifold type

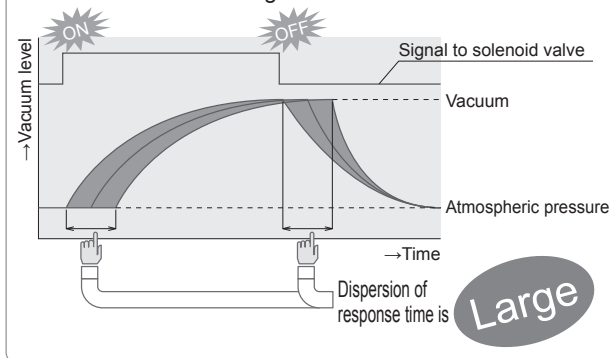


*Excluding pressure sensor with LED display and tube exhaust port.

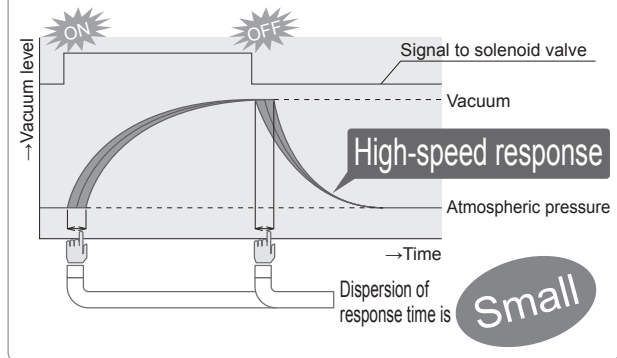
High-speed and stable response time. (ON / OFF = 5msec or less)

Direct acting valve is used for the main valve.

■ Conventional vacuum generators

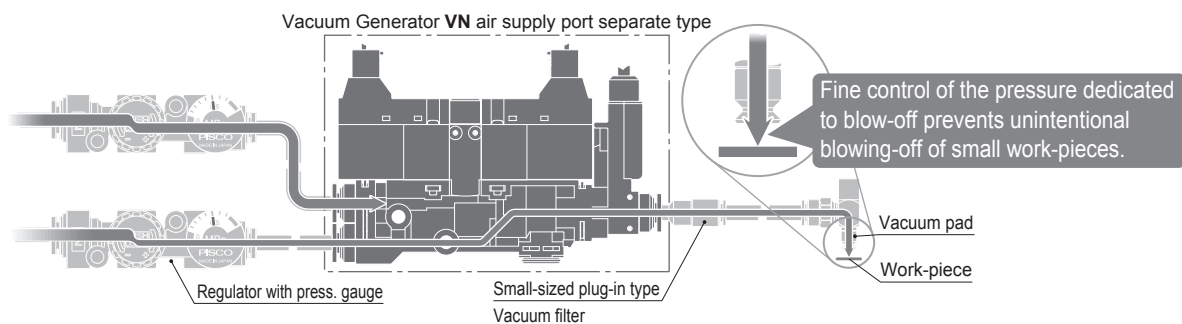


■ Vacuum Generator VN

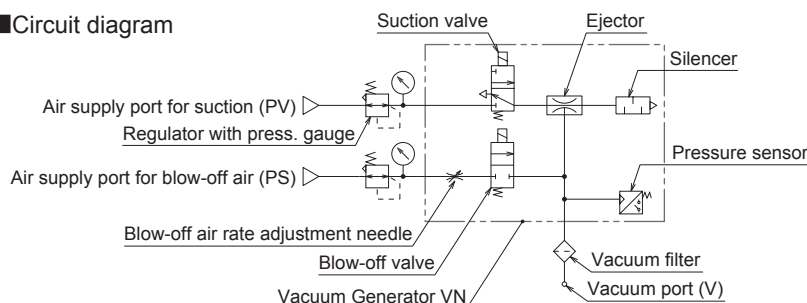


Releasing a tiny work-piece by blow-off air softly.

An air supply port dedicated to blow-off is provided separately. By placing a pressure regulator in the upstream of the port, not only the flow rate but also the pressure of blow-off air can be controlled easily.



■ Circuit diagram



Selectable form a total of 8, 4 types of analog output sensors and 4 types of sensors with built-in LED display.

Analog output sensor		Separate dual digital display and Analog output sensor		Pressure sensor with LED display			
Negative press. type	Compound press. type	Negative press. type	Compound press. type	Negative press. type	Compound press. type	Negative press. type	Compound press. type
NPN output	PNP output	NPN output	PNP output	NPN output	PNP output	NPN output	PNP output

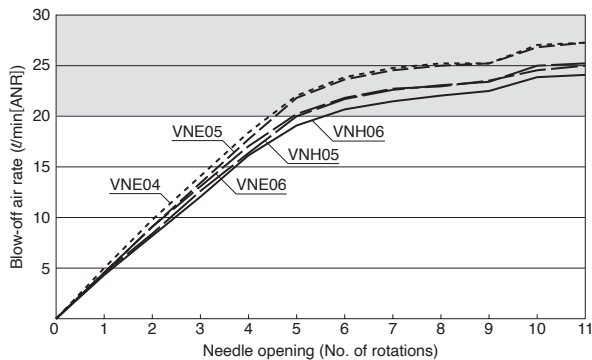
Vacuum Generator Complex type VN

Common supply port type is also available.

*Supply port: shared air supply port for suction and blow-off air.

Securing 20ℓ/min for blow-off air rate.

Supply pressure: 0.5 MPa



Lead wires of pressure sensor come as a connector cable. Easy wiring and enhanced maintenance performance. 4 types of cable length.

Select the most suitable one from 500, 1000, 2000, and 3000 mm.

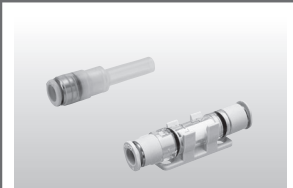
Connector cable can be selected only for pressure sensor with negative pressure analog output type and LED display equipped types. Analog output type sensor for compound pressure comes with grommet mount.

External vacuum filter is available by separate ordering.

Separation of a vacuum filter is a solution for inconvenience at replacing it even with the compact vacuum generator.

*Vacuum Generator VN series is not equipped with a vacuum filter. Please make sure to use a vacuum filter (VFU or VFJ) together with VN series for long-lasting use.

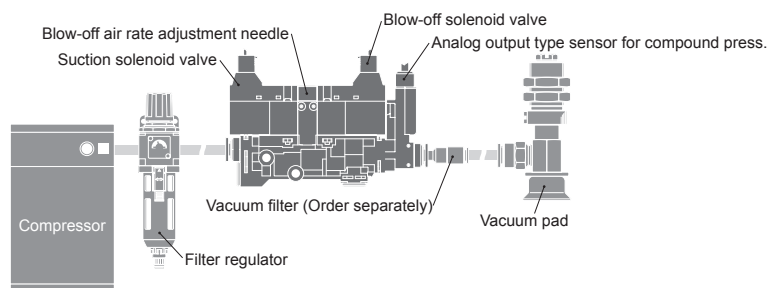
Related product



Vacuum Filter

► P.359

Piping Example



Specifications

Fluid medium	Air (JIS B 8392-1 : Compliant with [Class 1.2.1 to 2.4.3])	
Operating press. range	0 to 0.55 MPa	
Operating temp. range	5 to 50°C (No freezing)	
Operating humid. range	35 to 85%RH (No dew condensation)	
Vibration resist. / Shock resist.	50m/s ² max. / 150m/s ² max.	
Protective structure	IEC standard IP40 equiv.	
Lubrication	Not required	
Proof pressure	Air supply circuit	0.85 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%
Power consumption	Startup: 2.2 W, Retention: 0.6 W (Power saving LED circuit)
Surge protection	Incorporated
Operation indicator	Current application: Green LED ON
Manual override	Not equipped

Suction main valve specifications

Operation type	Direct operating poppet
Valve type	Normally closed
Response time	OFF→ON 5 msec
	ON→OFF 5 msec

*The response time is the figure at a steady state of supply air: 0.05 to 0.5 MPa, ambient temperature 20°C, and apply voltage 24 VDC ± 10%.

Blow-off main valve specifications

Operation type	Direct operating poppet
Valve type	Normally closed
Response time	OFF→ON 5 msec
	ON→OFF 5 msec

*The response time is the figure at a steady state of supply air: 0.05 to 0.5 MPa, ambient temperature 20°C, and apply voltage 24 VDC ± 10%.

Blow-off function

Blow-off air rate	0 to 20 l/min[ANR](Supply pressure at 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 display) specifications

	V1C □ (1 analog output for negative press.)	R1 (1 analog output for compound press.)
Electrical wiring	Connector type	Grommet type
Power requirements	10.8 to 30 VDC including ripple voltage	
Current consumption	20 mA (24VDC at no-load)	
Pressure detection	Diffused metaloxide semiconductive pressure sensor, gauge pressure	
Operating press. range	-100 to 0 kPa	-100 to 300 kPa
Proof pressure	1,000 kPa	600 kPa
Storage temp. range	-20 to 70°C (Atmospheric pressure, Humidity 65%RH max.)	
Operating pressure range	0 to 60°C (No freezing)	-10 to 60°C (No freezing)
Operation humidity range	30 to 85%RH (No dew condensation)	35 to 85%RH (No dew condensation)
Protective structure	IEC standard IP40 equiv.	
Analog output	Output voltage	1 to 5V
	Zero-point voltage	1 ±0.04V(at atmospheric pressure) 1 ±0.1V(at -100kPa)
	Voltage at designated press.	4.6 ±0.04V(at -90kPa) —
	Max. pressure voltage	(5 ±0.04V(at -100kPa)) 5 ±0.1V(at -300kPa)
	Linearity	±0.5%F.S.max. (Standard temp. at 25°C)
	Temp. charact.	±2%F.S.max. (0 to 60°C, Standard temp. at 25°C) ±2%F.S.max.
	Output current	0.495 mA max. (Load resistance: 10kΩmax.) 1 mA max. (Load resistance: 5kΩmax.)
	Output impedance	1kΩ —

*When "Zero-point voltage" and "Span voltage" need repeated apply of voltage, the tolerance of amount of change is ± 3% F. S.

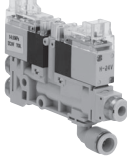
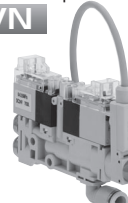
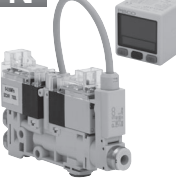
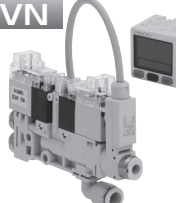
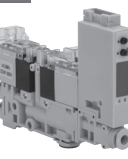
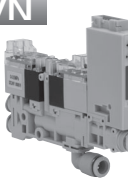
Specifications of Pressure sensor with LED display

	V4NC □	V4PC □	V4RNC □	V4RPC □
General spec.	Specifications	Negative / NPN output	Negative / PNP output	Compound / NPN output
	Fluid medium	Air, non-corrosive / non-flammable gas		
	Pressure detection	Diffused metaloxide semiconductive pressure switch		
	Operating temp. range	0 to 50°C (No freezing)		
	Storage temp. range	-20 to 70°C (Atmospheric pressure, Humidity 65%RH max.)		
	Operating humid. range	35 to 85%RH (No dew condensation)		
	Vibration resistance	100m/s ²		
	Shock resistance	150m/s ²		
Press. Range	Protective structure	IEC standard IP40 equiv.		
	Operating press. range	-100kPa to 0kPa	-100kPa to 300kPa	
	Proof pressure	0.9MPa	1.4MPa	
Power	Power requirements	12 to 24VDC ±10% including ripple (P-P)		
	Current consumption	30mA max.(at all LED on, no load with 2 points outputs)		
Display	Display element	Sign & 2 digits, 7 segments Red LED		
	Display frequency	4 times/sec.		
	Monitor system	Overpressure indication, blinking display		
	Panel lock function	On/Off by push-button		
	Display / Non-display	On/Off by push-button		
	Indication accuracy	±3%F.S.(0 to 50°C, Standard temp. at 25°C)		
	Zero point adjustment	Adjustable by zero adjusting mode		
Switch output	No. of pressure setting	2-point switch outputs		
	Switch output	NPN Open collector	PNP Open collector	NPN Open collector
	Switch capacity	30VDC 80mA max.	26.4VDC 80mA max.	30VDC 80mA max.
	Residual voltage	1.2V max.(at NPN load current 80 mA)		
	Output mode	Separate mode, Window comparator mode (selectable)		
	Pressure setting range	-99 to 0 (kPa)	-99 to 0 (kPa), .00 to 0.30 (MPa)	
	Operation indicator	Output ON: LED ON (SW1: RED / SW2: GREEN)		
	Temp. charact.	±5%F.S. (0 to 50°C, Standard temp. at 25°C)		
	Repeat accuracy	±0.3%F.S.		
	Response	Digital filter setting at 0 msec: 5 msec, Setting range (Selectable range 0 to 99 msec)		
	Hysteresis adjustment	0 to 30 count		
Analog output	Overload protection	Incorporated	Not included	Incorporated
	No. of pressure setting	1 point		
	Output voltage	1 to 5V		
	Zero-point voltage (0kPa)	1 ±0.06V		2 ±0.06V
	Voltage with neg. press.(-90kPa)	4.6 ±0.06V		1.1 ±0.06V
	Max. voltage with pos. press.(300kPa)	—		5 ±0.06V
	Output current	1mA (MAX)		
	Linearity	±0.5%F.S.		
	Repeat accuracy	±0.5%F.S.		
Temp. charact.	5%F.S. (0 to 50°C, standard temp. at 25°C)			

Vacuum Generator Complex type VN

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



Stand-alone type					
Separate air supply port type				Optional part	
Type	Model code	Type	Model code	Type	Model code
Silencer vent without pressure sensor VN	VN2-345S-D24	Tube exhaust without pressure sensor VN	VN2-345J-D24	Bracket VNB	VNB
					*Including 2 hexagonal socket head screws (M3 x 12)
Type	Model code	Type	Model code		
Silencer vent, Analog output with pressure sensor VN	VN2-345S-D24-R1 VN2-345S-D24-V1C VN2-345S-D24-V1C50 VN2-345S-D24-V1C100 VN2-345S-D24-V1C200 VN2-345S-D24-V1C300	Tube exhaust, Analog output with pressure sensor VN	VN2-345J-D24-R1 VN2-345J-D24-V1C VN2-345J-D24-V1C50 VN2-345J-D24-V1C100 VN2-345J-D24-V1C200 VN2-345J-D24-V1C300		
					
Type	Model code	Type	Model code		
Silencer vent, Analog output with pressure sensor + separate display VN	VN2-345S-D24-R2 VN2-345S-D24-V2C VN2-345S-D24-V2C50 VN2-345S-D24-V2C100 VN2-345S-D24-V2C200 VN2-345S-D24-V2C300	Tube exhaust, Analog output with pressure sensor + separate display VN	VN2-345J-D24-R2 VN2-345J-D24-V2C VN2-345J-D24-V2C50 VN2-345J-D24-V2C100 VN2-345J-D24-V2C200 VN2-345J-D24-V2C300		
					
Type	Model code	Type	Model code		
Silencer vent, with LED display pressure sensor VN	VN2-345S-D24-V4NC VN2-345S-D24-V4PC VN2-345S-D24-V4RNC VN2-345S-D24-V4RPC VN2-345S-D24-V4NC50 VN2-345S-D24-V4PC50 VN2-345S-D24-V4RNC50 VN2-345S-D24-V4RPC50 VN2-345S-D24-V4NC100 VN2-345S-D24-V4PC100 VN2-345S-D24-V4RNC100 VN2-345S-D24-V4RPC100 VN2-345S-D24-V4NC200 VN2-345S-D24-V4PC200 VN2-345S-D24-V4RNC200 VN2-345S-D24-V4RPC200 VN2-345S-D24-V4NC300 VN2-345S-D24-V4PC300 VN2-345S-D24-V4RNC300 VN2-345S-D24-V4RPC300	Tube exhaust, with LED display pressure sensor VN	VN2-345J-D24-V4NC VN2-345J-D24-V4PC VN2-345J-D24-V4RNC VN2-345J-D24-V4RPC VN2-345J-D24-V4NC50 VN2-345J-D24-V4PC50 VN2-345J-D24-V4RNC50 VN2-345J-D24-V4RPC50 VN2-345J-D24-V4NC100 VN2-345J-D24-V4PC100 VN2-345J-D24-V4RNC100 VN2-345J-D24-V4RPC100 VN2-345J-D24-V4NC200 VN2-345J-D24-V4PC200 VN2-345J-D24-V4RNC200 VN2-345J-D24-V4RPC200 VN2-345J-D24-V4NC300 VN2-345J-D24-V4PC300 VN2-345J-D24-V4RNC300 VN2-345J-D24-V4RPC300		
					



Notes

*Please select each code referring to the example of model designation. [2]: Vacuum characteristics and nozzle bore code, [3]: Vacuum port size code, [4]: Air supply port size for suction code, and [5]: Air supply port size for blow-off.



CAD data is available at PISCO website.



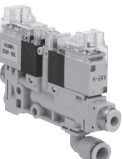
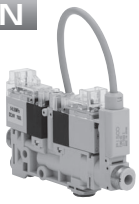
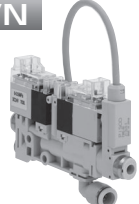
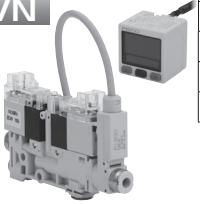
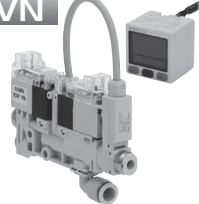
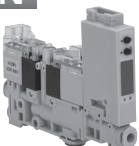
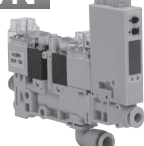
Packaging specifications
1 pc./bag

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



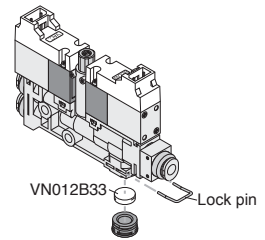
Stand-alone type

Common air supply port type

Type	Model code	Type	Model code
Silencer vent without pressure sensor VN	VN[2]-[3][4]NS-D24	Tube exhaust without pressure sensor VN	VN[2]-[3][4][5]NJ-D24
			
Type	Model code	Type	Model code
Silencer vent, Analog output with pressure sensor VN	VN[2]-[3][4]NS-D24-R1 VN[2]-[3][4]NS-D24-V1C VN[2]-[3][4]NS-D24-V1C50 VN[2]-[3][4]NS-D24-V1C100 VN[2]-[3][4]NS-D24-V1C200 VN[2]-[3][4]NS-D24-V1C300	Tube exhaust, Analog output with pressure sensor VN	VN[2]-[3][4]NJ-D24-R1 VN[2]-[3][4]NJ-D24-V1C VN[2]-[3][4]NJ-D24-V1C50 VN[2]-[3][4]NJ-D24-V1C100 VN[2]-[3][4]NJ-D24-V1C200 VN[2]-[3][4]NJ-D24-V1C300
			
Type	Model code	Type	Model code
Silencer vent, Analog output with pressure sensor + separate display VN	VN[2]-[3][4]NS-D24-R2 VN[2]-[3][4]NS-D24-V2C VN[2]-[3][4]NS-D24-V2C50 VN[2]-[3][4]NS-D24-V2C100 VN[2]-[3][4]NS-D24-V2C200 VN[2]-[3][4]NS-D24-V2C300	Tube exhaust, Analog output with pressure sensor + separate display VN	VN[2]-[3][4]NJ-D24-R2 VN[2]-[3][4]NJ-D24-V2C VN[2]-[3][4]NJ-D24-V2C50 VN[2]-[3][4]NJ-D24-V2C100 VN[2]-[3][4]NJ-D24-V2C200 VN[2]-[3][4]NJ-D24-V2C300
			
Type	Model code	Type	Model code
Silencer vent, with LED display pressure sensor VN	VN[2]-[3][4]NS-D24-V4NC VN[2]-[3][4]NS-D24-V4PC VN[2]-[3][4]NS-D24-V4RNC VN[2]-[3][4]NS-D24-V4RPC VN[2]-[3][4]NS-D24-V4NC50 VN[2]-[3][4]NS-D24-V4PC50 VN[2]-[3][4]NS-D24-V4RNC50 VN[2]-[3][4]NS-D24-V4RPC50 VN[2]-[3][4]NS-D24-V4NC100 VN[2]-[3][4]NS-D24-V4PC100 VN[2]-[3][4]NS-D24-V4RNC100 VN[2]-[3][4]NS-D24-V4RPC100 VN[2]-[3][4]NS-D24-V4NC200 VN[2]-[3][4]NS-D24-V4PC200 VN[2]-[3][4]NS-D24-V4RNC200 VN[2]-[3][4]NS-D24-V4RPC200 VN[2]-[3][4]NS-D24-V4NC300 VN[2]-[3][4]NS-D24-V4PC300 VN[2]-[3][4]NS-D24-V4RNC300 VN[2]-[3][4]NS-D24-V4RPC300	Tube exhaust, with LED display pressure sensor VN	VN[2]-[3][4]NJ-D24-V4NC VN[2]-[3][4]NJ-D24-V4PC VN[2]-[3][4]NJ-D24-V4RNC VN[2]-[3][4]NJ-D24-V4RPC VN[2]-[3][4]NJ-D24-V4NC50 VN[2]-[3][4]NJ-D24-V4PC50 VN[2]-[3][4]NJ-D24-V4RNC50 VN[2]-[3][4]NJ-D24-V4RPC50 VN[2]-[3][4]NJ-D24-V4NC100 VN[2]-[3][4]NJ-D24-V4PC100 VN[2]-[3][4]NJ-D24-V4RNC100 VN[2]-[3][4]NJ-D24-V4RPC100 VN[2]-[3][4]NJ-D24-V4NC200 VN[2]-[3][4]NJ-D24-V4PC200 VN[2]-[3][4]NJ-D24-V4RNC200 VN[2]-[3][4]NJ-D24-V4RPC200 VN[2]-[3][4]NJ-D24-V4NC300 VN[2]-[3][4]NJ-D24-V4PC300 VN[2]-[3][4]NJ-D24-V4RNC300 VN[2]-[3][4]NJ-D24-V4RPC300
			

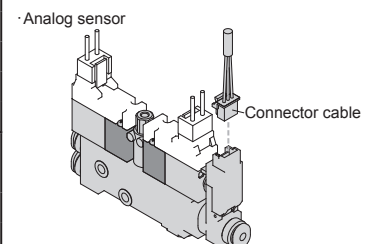
Replacement element

Silencer element

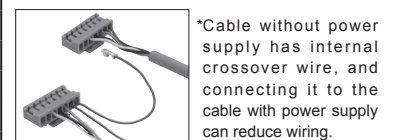
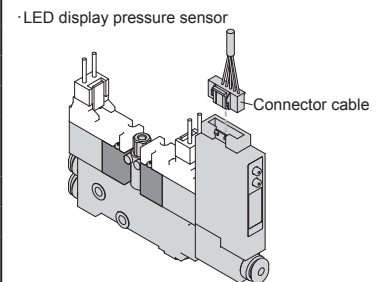


Silencer element Model code
VN012B33

Cable for connector type pressure sensor



Connector cable Model code	Cable length (mm)
FSED012B07-C50	500
FSED012B07-C100	1,000
FSED012B07-C200	2,000
FSED012B07-C300	3,000



*Cable without power supply has internal crossover wire, and connecting it to the cable with power supply can reduce wiring.

Connector cable	Model code	Cable length (mm)
With power supply	Without power supply	
FVML010A02-C50	FVML010A06-C50	500
FVML010A02-C100	FVML010A06-C100	1,000
FVML010A02-C200	FVML010A06-C200	2,000
FVML010A02-C300	FVML010A06-C300	3,000



Notes

*Please select each code referring to the example of model designation. [2]: Vacuum characteristics and nozzle bore code, [3]: Vacuum port size code, [4]: Air supply port size for suction code, and [5]: Air supply port size for blow-off.



CAD data is available
at PISCO website.



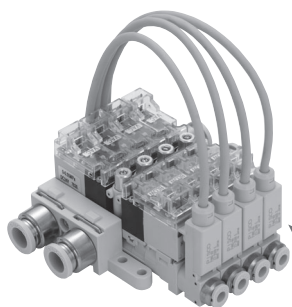
Packaging specifications
1 pc./bag

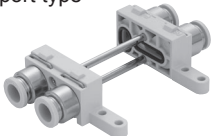
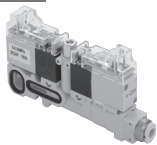
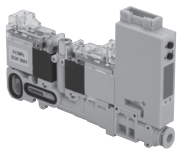
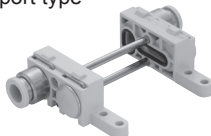
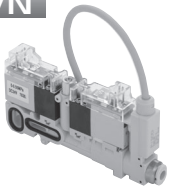
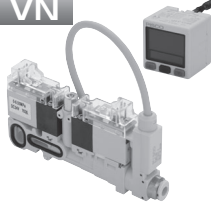
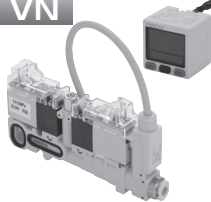
Vacuum Generator Complex type VN

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



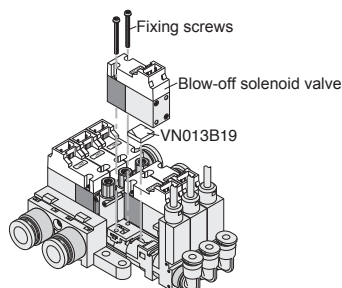
Manifold type



Manifold-base alone		Manifold mounting unit			
Type	No. of stations No. of St.	Type	Model code	Type	Model code
Separate air supply port type 	2St.	Without pressure sensor VN 	VN[2]-[3][4]-D24-M	LED display press. sensor VN 	VN[2]-[3][4]-D24-V4NC-M
	3St.				VN[2]-[3][4]-D24-V4PC-M
	4St.				VN[2]-[3][4]-D24-V4RNC-M
	5St.				VN[2]-[3][4]-D24-V4RPC-M
	6St.				VN[2]-[3][4]-D24-V4NC50-M
	7St.				VN[2]-[3][4]-D24-V4PC50-M
	8St.				VN[2]-[3][4]-D24-V4RNC50-M
9St.	VN[2]-[3][4]-D24-V4RPC50-M				
10St.	VN[2]-[3][4]-D24-V4NC100-M				
Common air supply port type 	2St.	Analog output press. sensor VN 	VN[2]-[3][4]-D24-R1-M VN[2]-[3][4]-D24-V1C-M VN[2]-[3][4]-D24-V1C50-M VN[2]-[3][4]-D24-V1C100-M VN[2]-[3][4]-D24-V1C200-M VN[2]-[3][4]-D24-V1C300-M		VN[2]-[3][4]-D24-V4PC100-M
	3St.				VN[2]-[3][4]-D24-V4RNC100-M
	4St.				VN[2]-[3][4]-D24-V4RPC100-M
	5St.				VN[2]-[3][4]-D24-V4NC200-M
	6St.				VN[2]-[3][4]-D24-V4PC200-M
	7St.				VN[2]-[3][4]-D24-V4RNC200-M
	8St.	VN[2]-[3][4]-D24-V4RPC200-M			
	9St.	VN[2]-[3][4]-D24-V4NC300-M			
	10St.	VN[2]-[3][4]-D24-V4PC300-M			
	Analog output sensor with separate display VN 		Analog output sensor with separate display VN 		VN[2]-[3][4]-D24-R2-M VN[2]-[3][4]-D24-V2C-M VN[2]-[3][4]-D24-V2C50-M VN[2]-[3][4]-D24-V2C100-M VN[2]-[3][4]-D24-V2C200-M VN[2]-[3][4]-D24-V2C300-M

Replacement element

Manifold mounting unit
Silencer element



Silencer element
Model code
VN013B19



*The above table is a reference of model code.

Only Manifold -base or only Manifold can not be sold except when those are necessary for replacement purposes. Please contact your nearest sales office for more details.



Notes

*Please select each code referring to the example of model designation. [2]: Vacuum characteristics and nozzle bore code, [3]: vacuum port size code. For [4], select code E for separate air supply ports for suction and blow-off, and code N for common air supply port for suction and blow-off.



CAD data is available
at PISCO website.



Packaging specifications
1 pc./bag

■ Weight List

Model code	Details of unit	Weight (g)
VN □□ - □□□ S-D24-V4 □	Separate air supply port, Silencer vent, Stand-alone type with LED display pressure sensor	68
VN □□ - □□□ S-D24- □	Separate air supply port, Silencer vent, Stand-alone type with pressure sensor (No display)	56
VN □□ - □□□ S-D24	Separate air supply port, Silencer vent, Stand-alone type without pressure sensor	53
VN □□ - □□□ J-D24-V4 □	Separate air supply port, Tube exhaust, Stand-alone type with LED display pressure sensor	70
VN □□ - □□□ J-D24- □	Separate air supply port, Tube exhaust, Stand-alone type with pressure sensor (No display)	58
VN □□ - □□□ J-D24	Separate air supply port, Tube exhaust, Stand-alone type without pressure sensor	55
VN □□ - □□ NS-D24-V4 □	Common air supply port, Silencer vent, Stand-alone type with LED display pressure sensor	66
VN □□ - □□ NS-D24- □	Common air supply port, Silencer vent, Stand-alone type with pressure sensor (No display)	54
VN □□ - □□ NS-D24	Common air supply port, Silencer vent, Stand-alone type without pressure sensor	51
VN □□ - □□ NJ-D24-V4 □	Common air supply port, Tube exhaust, Stand-alone type with LED display pressure sensor	68
VN □□ - □□ NJ-D24- □	Common air supply port, Tube exhaust, Stand-alone type with pressure sensor (No display)	56
VN □□ - □□ NJ-D24	Common air supply port, Tube exhaust, Stand-alone type without pressure sensor	53
VN- □ S-M	Separate air supply port, Manifold-base alone	171
VN- □ NS-M	Common air supply port, Manifold-base alone	164

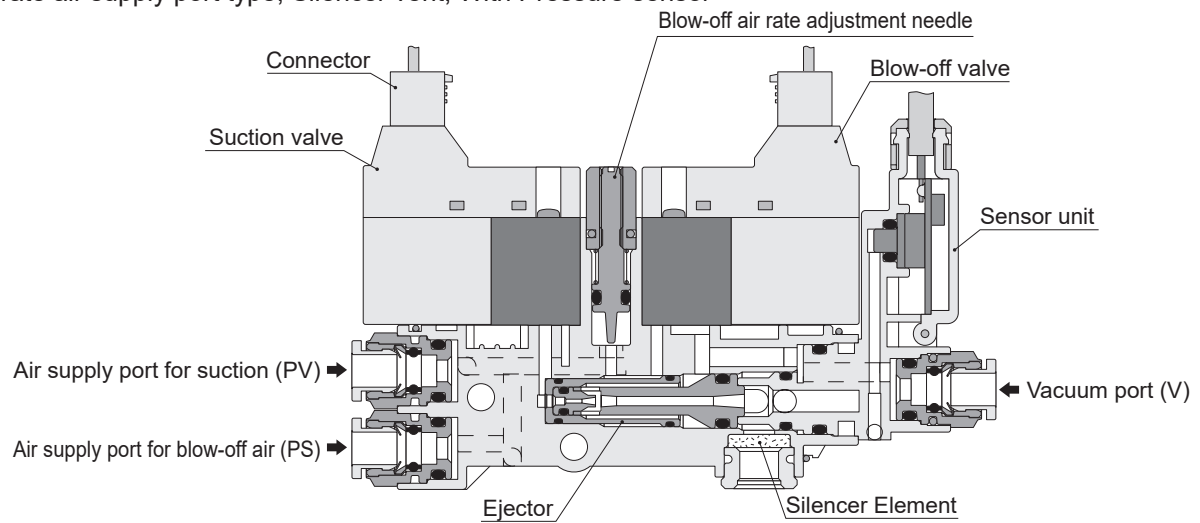
- For the Manifold type, each additional manifold mounting unit with pressure sensor (no display) adds 47 g of weight. With LED display pressure sensor, the weight increases by 59 g, and without pressure sensor, the weight increases by 43 g.

Ex. The weight of 4-stationed Manifold, each unit with pressure sensor, separate air supply port and silencer exhaust:

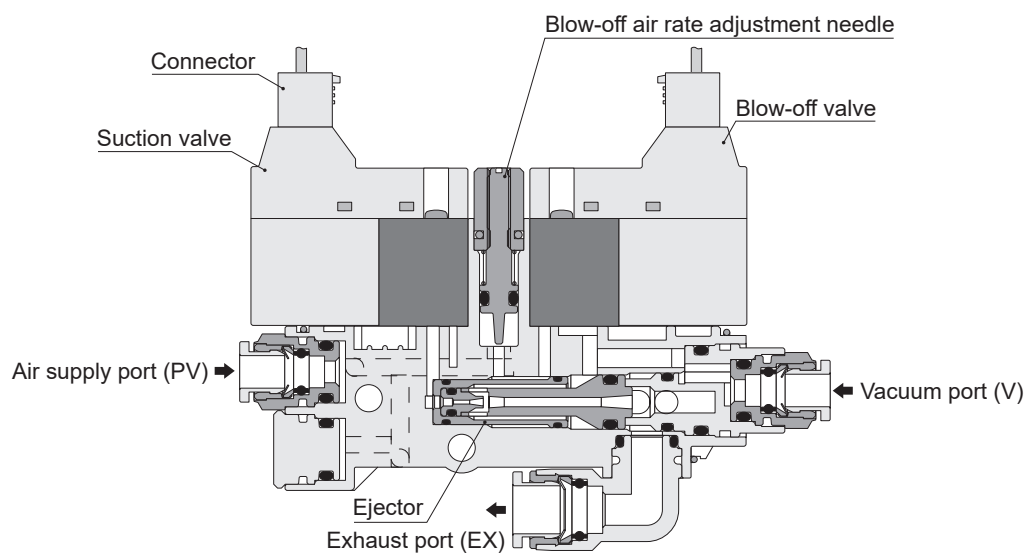
$171 + (4 \times 47) = 359 \text{ g} \rightarrow$ Add the weight of 4-stationed Manifold mounting units with pressure sensors (188 g) to the weight of Manifold-base alone (171 g).

■ Sectional Drawings

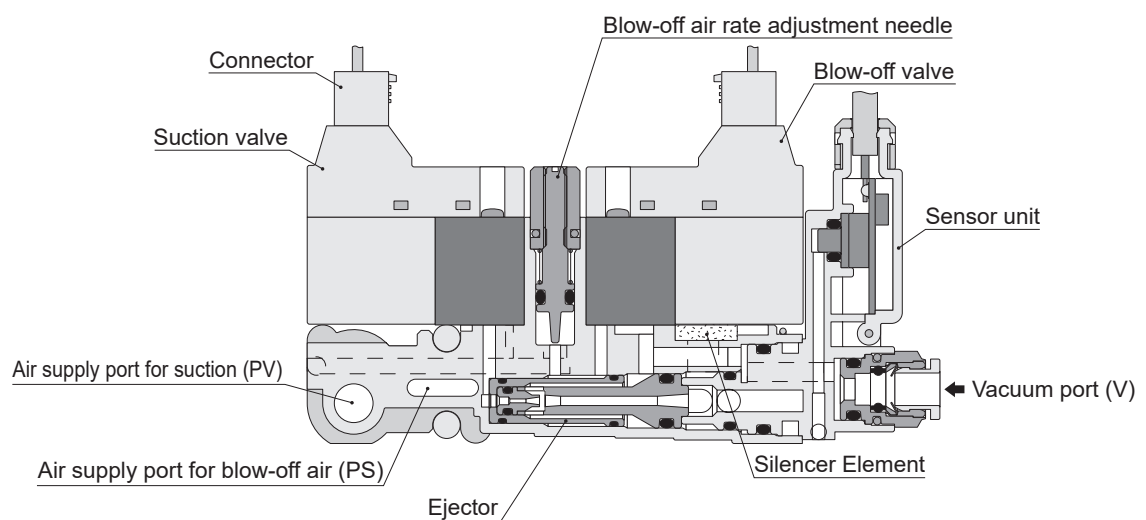
Separate air supply port type, Silencer vent, With Pressure sensor



Common air supply port type, Tube exhaust, Without Pressure sensor



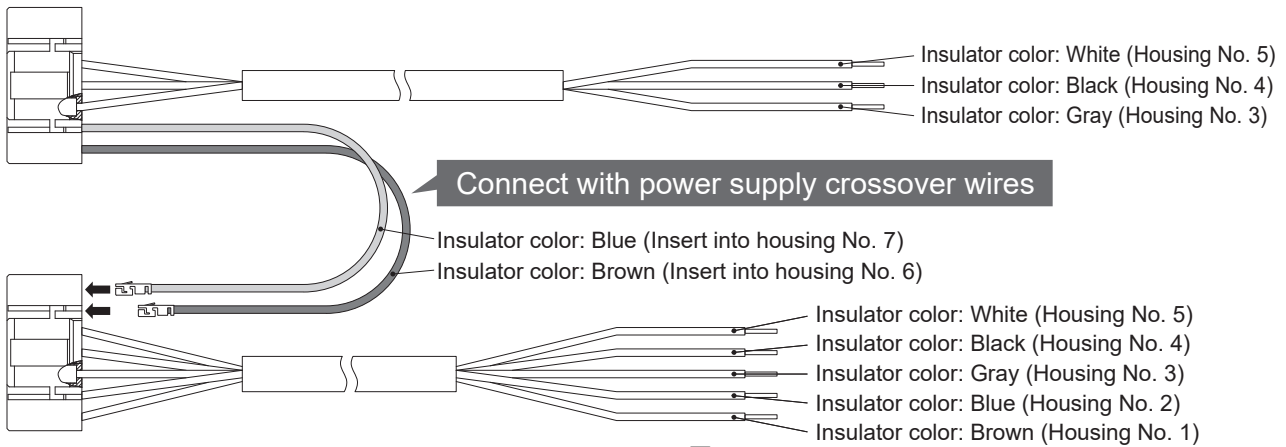
Manifold type, With Pressure sensor



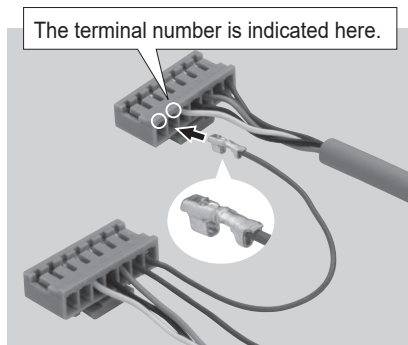
■ How to connect power crossover wires of cable for connector type LED display pressure sensor

The connector cable without power supply line has internal crossover wires, and wiring can be reduced by connecting it to the connector cable with power supply line.

Connector cable without power supply line (Model code: FVML010A06-□)

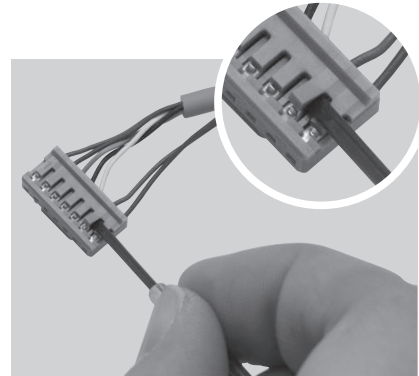
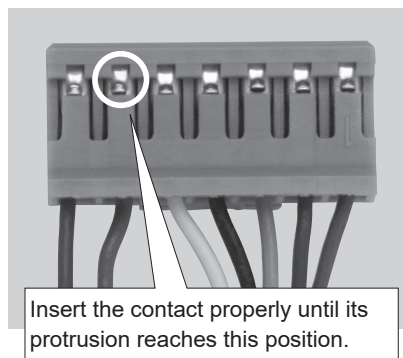


Connector cable with power supply line (Model code: FVML010A02-□)



Insert the brown lead wire into terminal No. 6 and the blue lead wire into terminal No. 7.

*Pay attention to the contact orientation.



When removing an already inserted contact, gently lift the housing lock lever and pull out the lead wire with a fine-tipped precision screwdriver or similar tool.

*Be careful not to pry up the lock lever too much, as it may cause the lock lever to break.

Refer to PISCO User's Manual for the handling and maintenance of the main unit and sensor.

Dimensional Drawings

VN

Separate air supply port type, Silencer vent, Without Pressure sensor

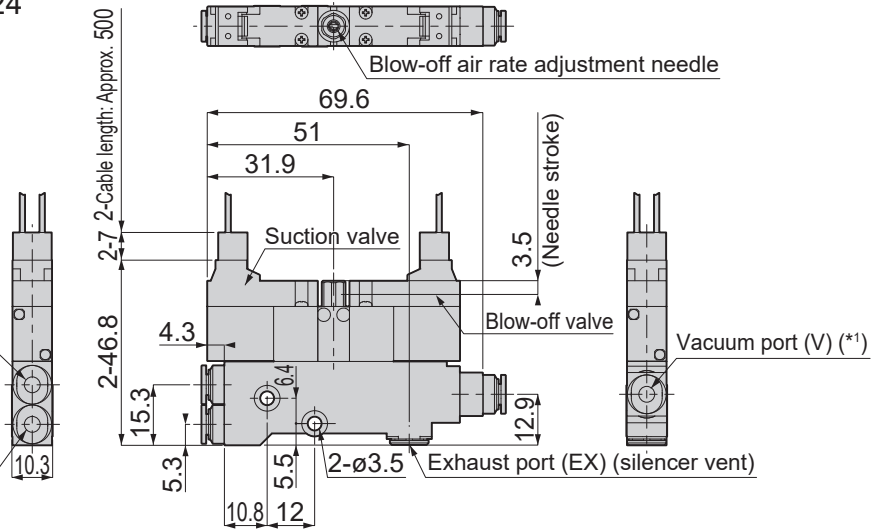


Model code: VN□-□□□S-D24



Air supply port for suction (PV) (*2)

Air supply port for blow-off air (PS) (*3)

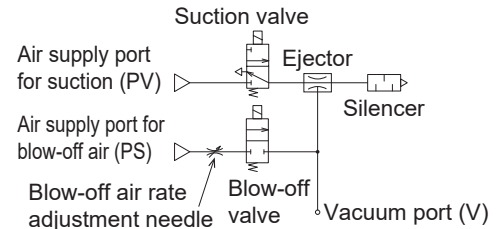


*1. For Vacuum port (V) dimensions, refer to Table 1 of "Fitting dimensions for stand-alone type" on the latter page.

*2. For Air supply port for suction (PV) dimensions, refer to Table 2 of "Fitting dimensions for stand-alone type" on the latter page.

*3. For Air supply port for blow-off air (PS) dimensions, refer to Table 2 of "Fitting dimensions for stand-alone type" on the latter page.

Circuit diagram

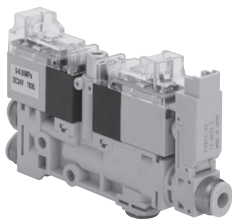


VN

Separate air supply port type, Silencer vent, With Analog output sensor for negative press.

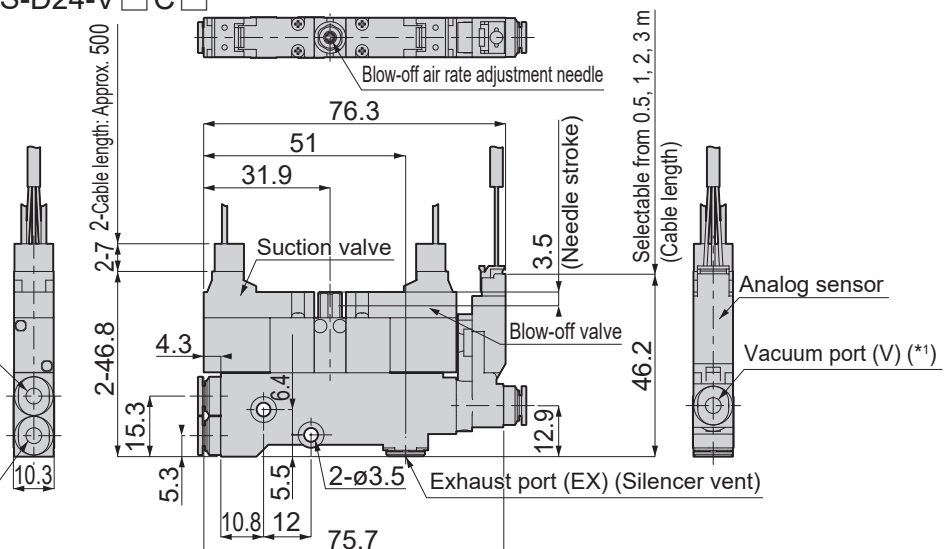


Model code: VN□-□□□S-D24-V□C□



Air supply port for suction (PV) (*2)

Air supply port for blow-off air (PS) (*3)

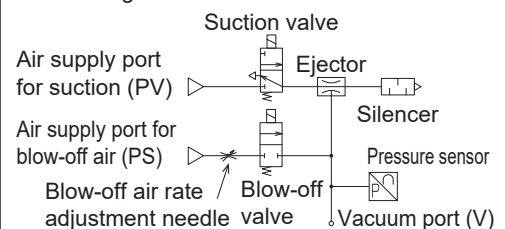


*1. For Vacuum port (V) dimensions, refer to Table 1 of "Fitting Dimensions for Stand-alone type" on the latter page.

*2. For Air supply port for suction (PV) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.

*3. For Air supply port for blow-off air (PS) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.

Circuit diagram

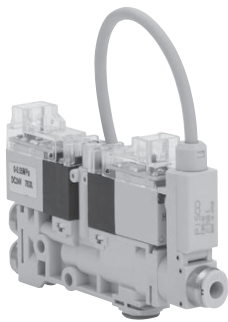


VN

Separate air supply port type, Silencer vent, With Analog output sensor for compound press.

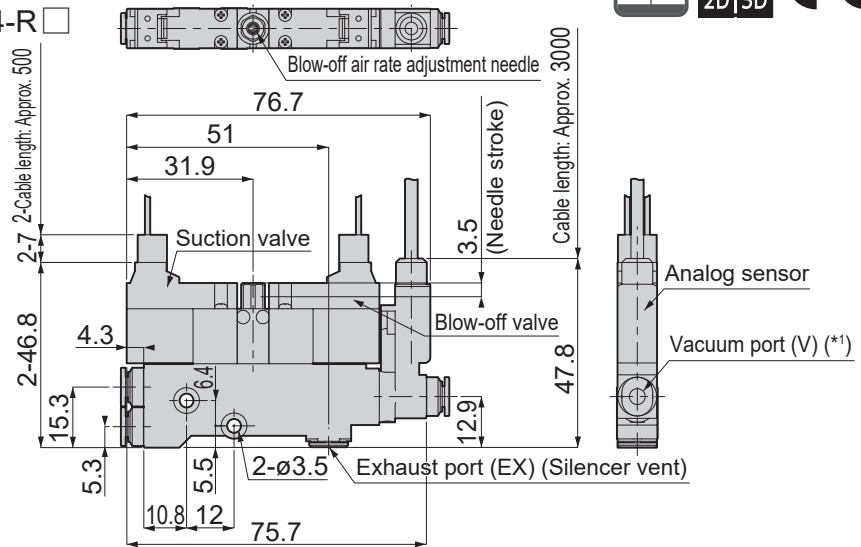


Model code: VN□-□□□S-D24-R□



Air supply port for suction (PV) (*2)

Air supply port for blow-off air (PS) (*3)

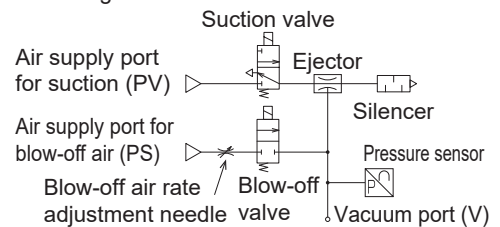


*1. For Vacuum port (V) dimensions, refer to Table 1 of "Fitting Dimensions for Stand-alone type" on the latter page.

*2. For Air supply port for suction (PV) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.

*3. For Air supply port for blow-off air (PS) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.

Circuit diagram

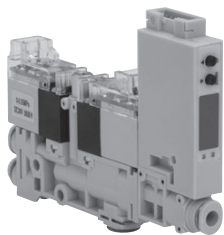


VN

Separate air supply port type, Silencer vent, With LED display pressure sensor

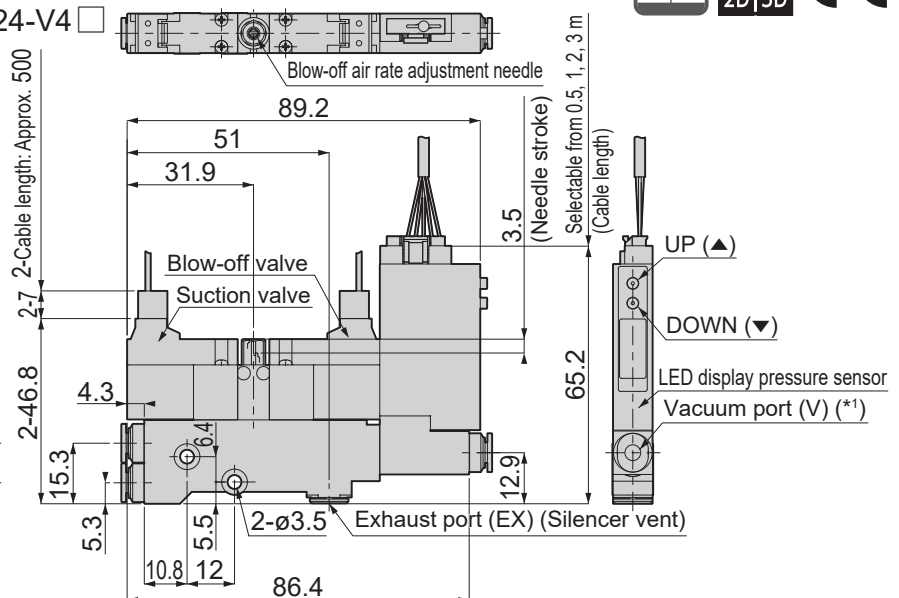


Model code: VN□-□□□S-D24-V4□



Air supply port for suction (PV) (*2)

Air supply port for blow-off air (PS) (*3)

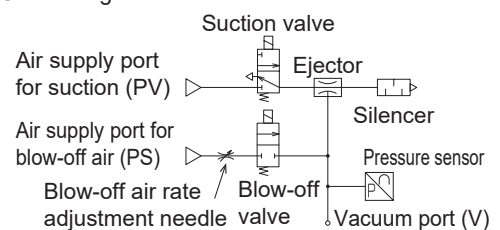


*1. For Vacuum port (V) dimensions, refer to Table 1 of "Fitting Dimensions for Stand-alone type" on the latter page.

*2. For Air supply port for suction (PV) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.

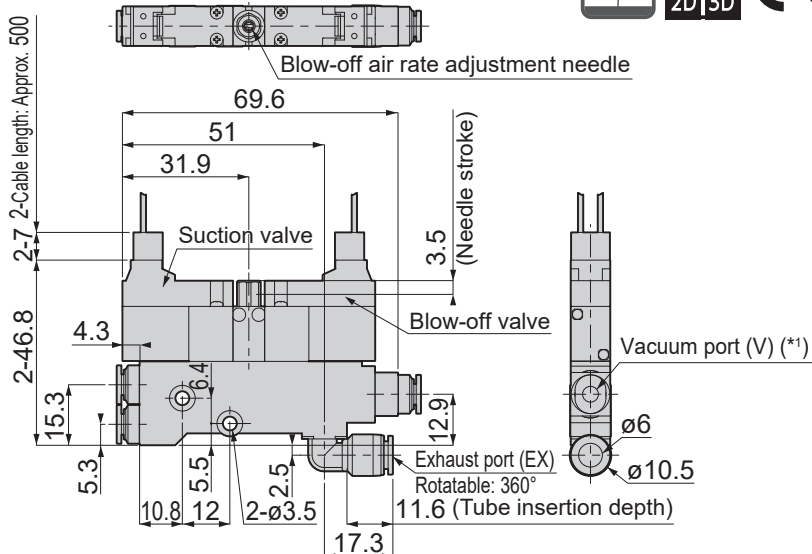
*3. For Air supply port for blow-off air (PS) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.

Circuit diagram

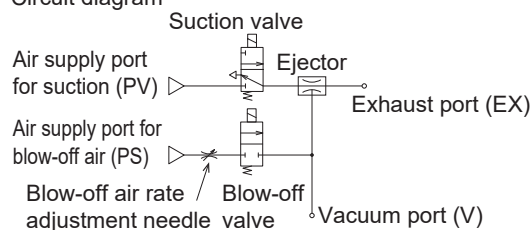


CE

Air supply port for blow-off air (PS) (*3)

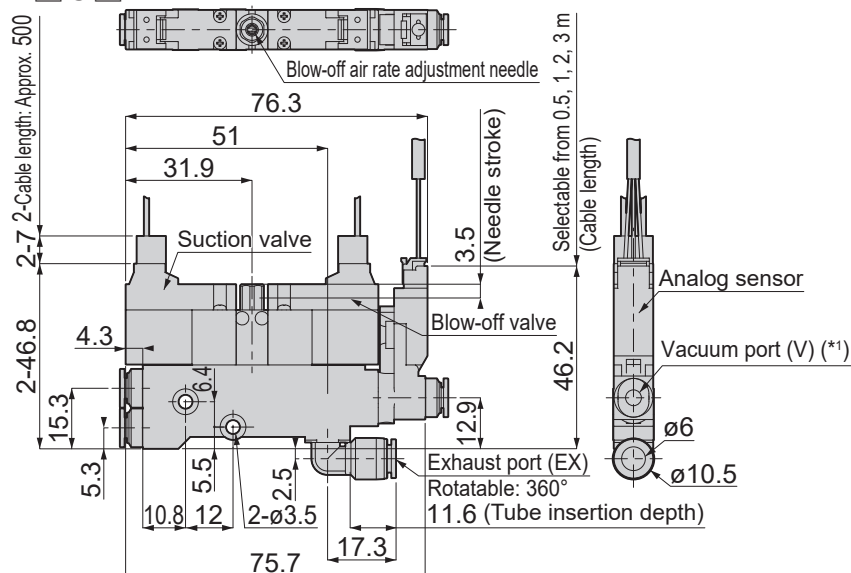


- ### Circuit diagram

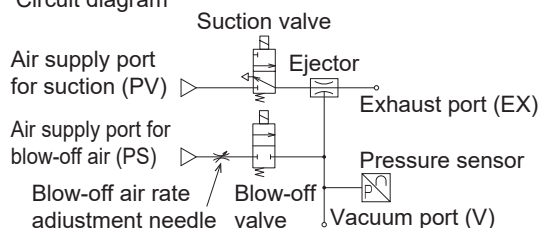


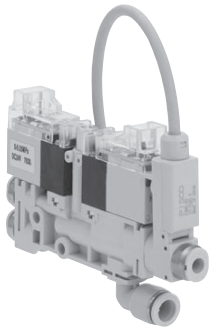
CE

Air supply port for blow-off air (PS) (*3)



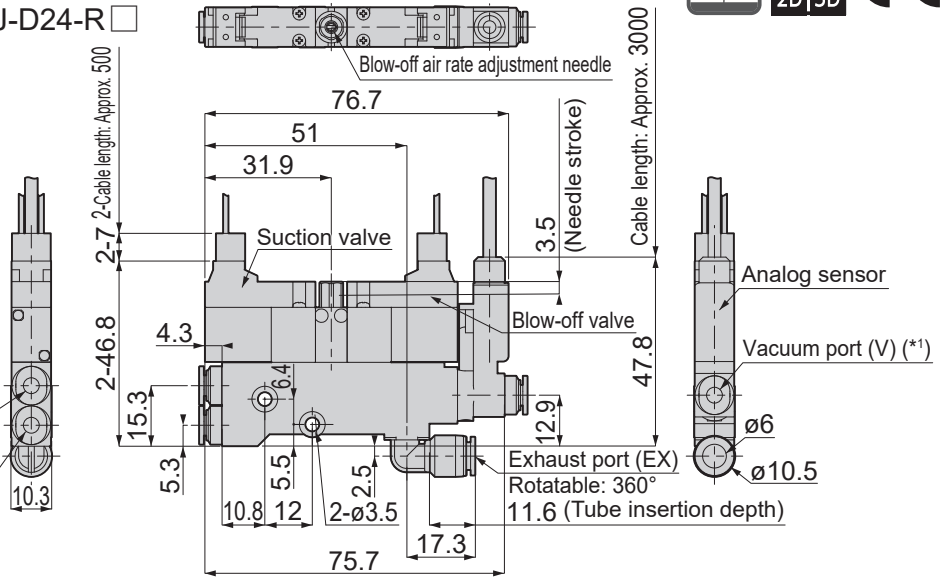
- *1. For Vacuum port (V) dimensions, refer to Table 1 of "Fitting Dimensions for Stand-alone type" on the latter page.
- *2. For Air supply port for suction (PV) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.
- *3. For Air supply port for blow-off air (PS) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.



VN**Separate air supply port type, Tube exhaust, With Analog output sensor for compound press.**Model code: VN - J-D24-R 

Air supply port for suction (PV) (*2)

Air supply port for blow-off air (PS) (*3)

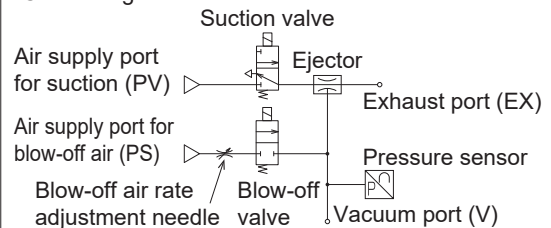
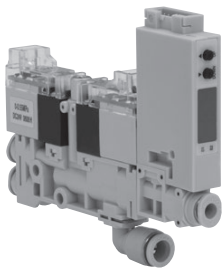


*1. For Vacuum port (V) dimensions, refer to Table 1 of "Fitting Dimensions for Stand-alone type" on the latter page.

*2. For Air supply port for suction (PV) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.

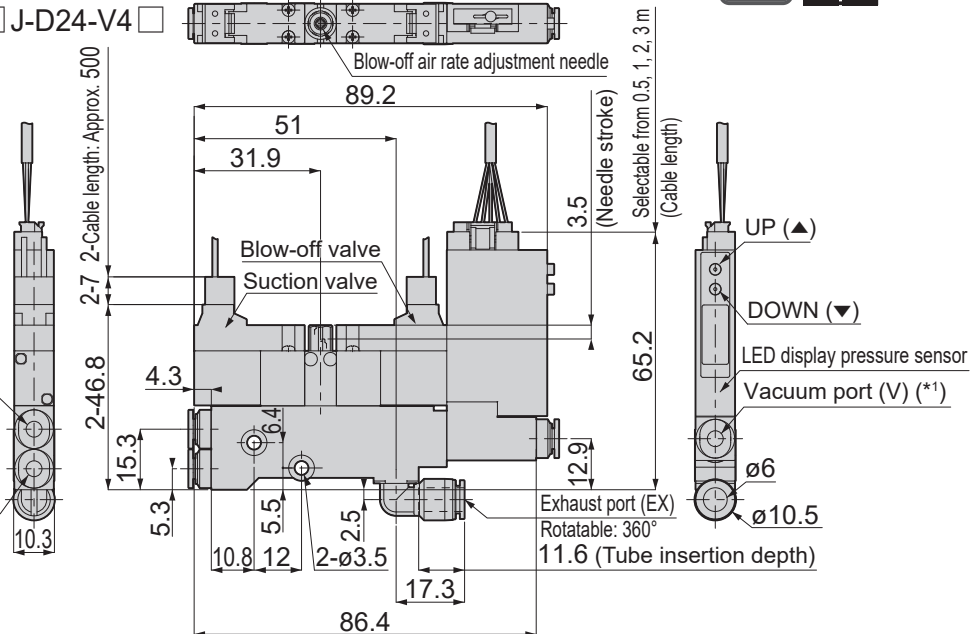
*3. For Air supply port for blow-off air (PS) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.

Circuit diagram

**VN****Separate air supply port type, Tube exhaust, With LED display pressure sensor**Model code: VN - J-D24-V4 

Air supply port for suction (PV) (*2)

Air supply port for blow-off air (PS) (*3)

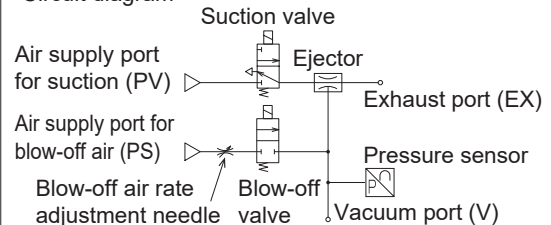


*1. For Vacuum port (V) dimensions, refer to Table 1 of "Fitting Dimensions for Stand-alone type" on the latter page.

*2. For Air supply port for suction (PV) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.

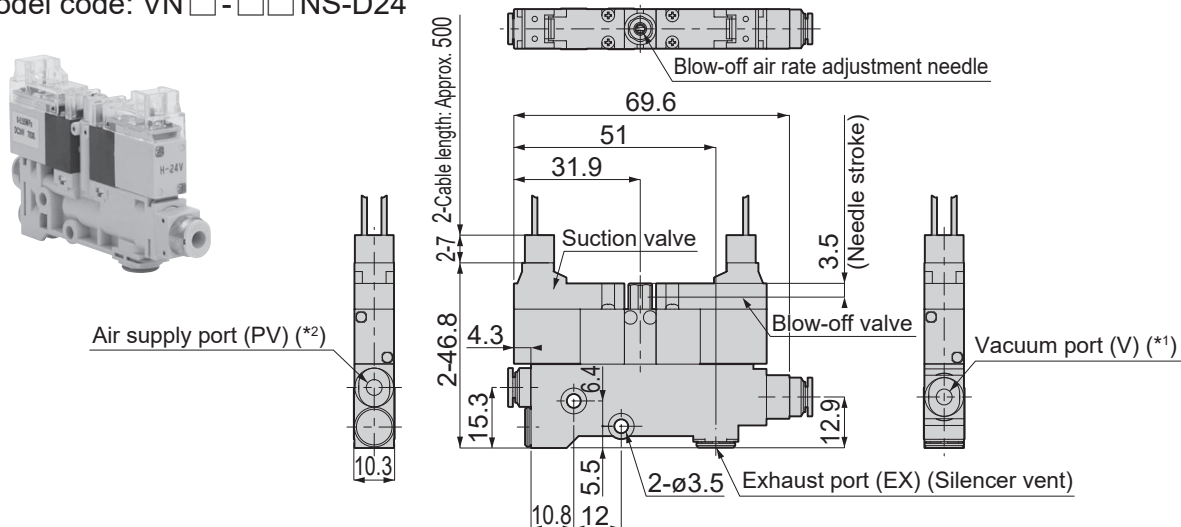
*3. For Air supply port for blow-off air (PS) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.

Circuit diagram



VN**Common air supply port type, Silencer vent, Without Pressure sensor**

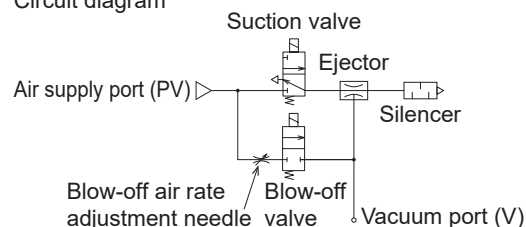
Model code: VN□-□□NS-D24



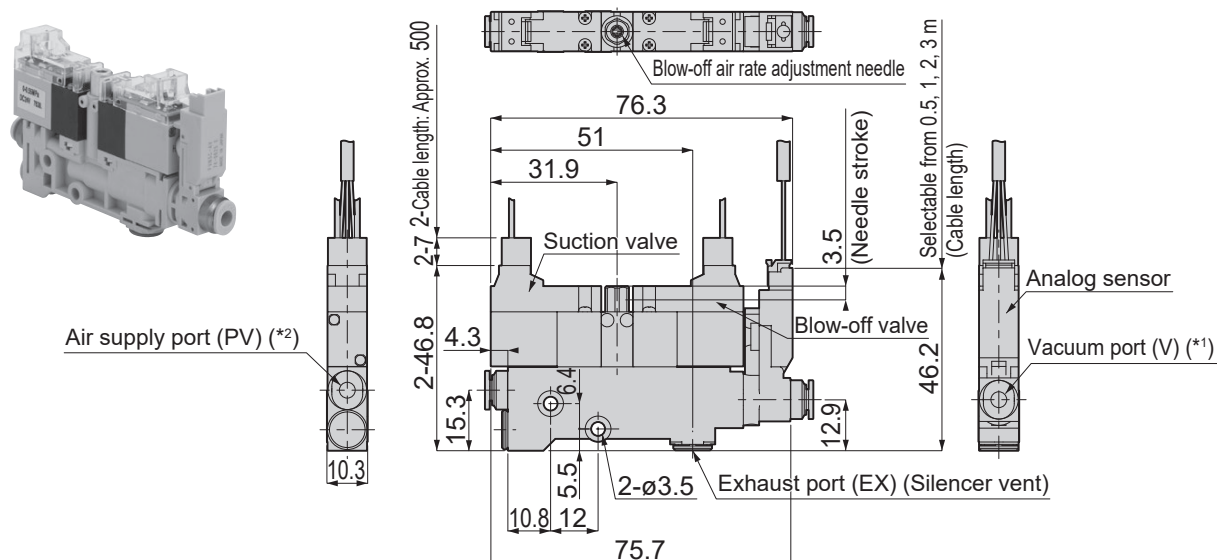
*1. For Vacuum port (V) dimensions, refer to Table 1 of "Fitting Dimensions for Stand-alone type" on the latter page.

*2. For Air supply port (PV) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.

Circuit diagram

**VN****Common air supply port type, Silencer vent, With Analog output sensor for negative press.**

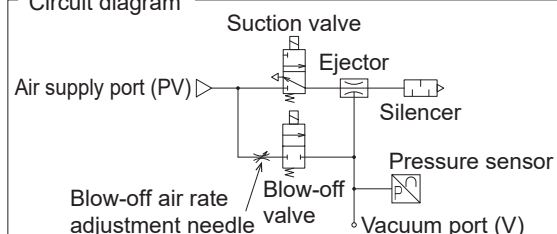
Model code: VN□-□□NS-D24-V□C□



*1. For Vacuum port (V) dimensions, refer to Table 1 of "Fitting Dimensions for Stand-alone type" on the latter page.

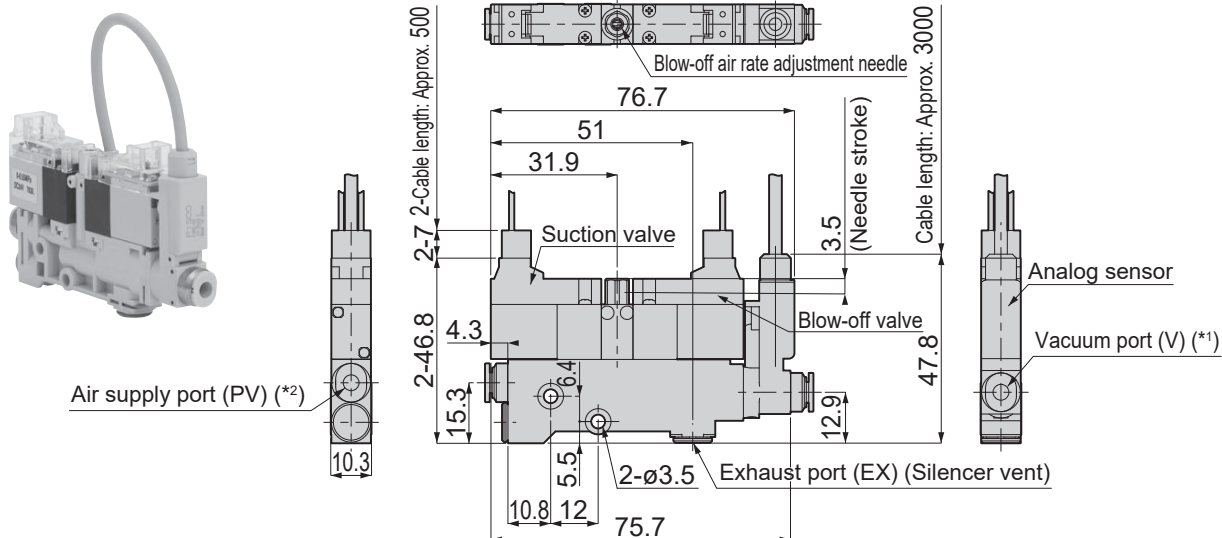
*2. For Air supply port (PV) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.

Circuit diagram



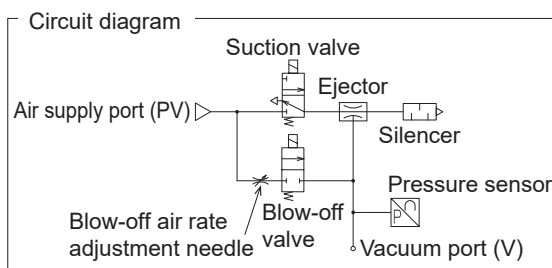
VN**Common air supply port type, Silencer vent, With Analog output sensor for compound press.**

Model code: VN□-□□NS-D24-R□

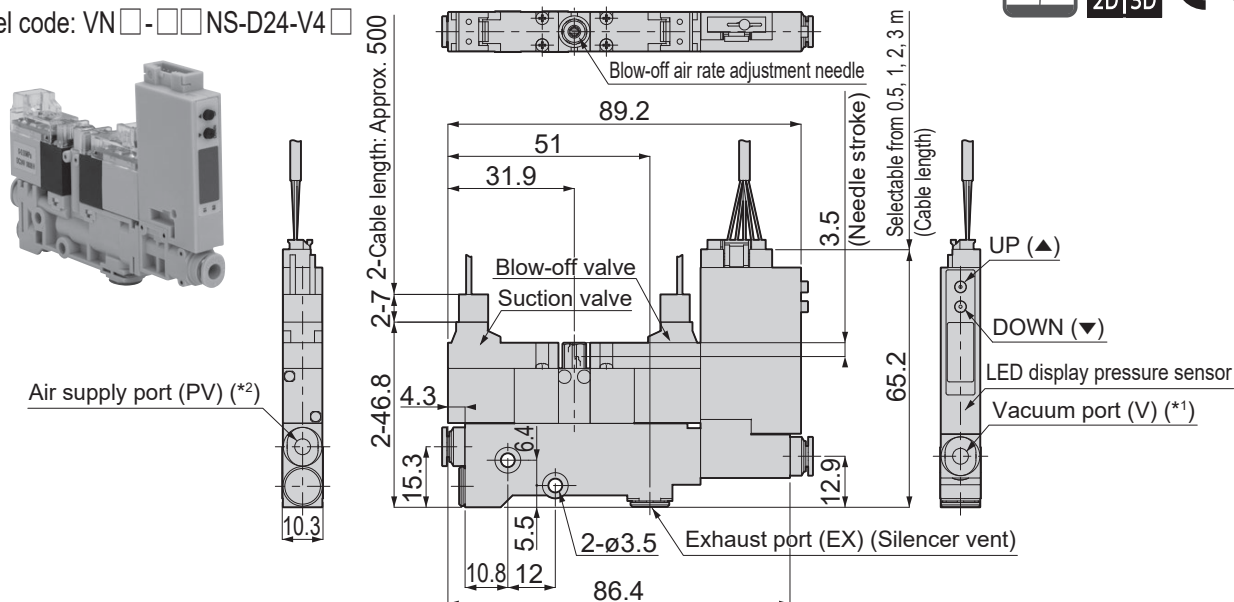


*1. For Vacuum port (V) dimensions, refer to Table 1 of "Fitting Dimensions for Stand-alone type" on the latter page.

*2. For Air supply port (PV) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.

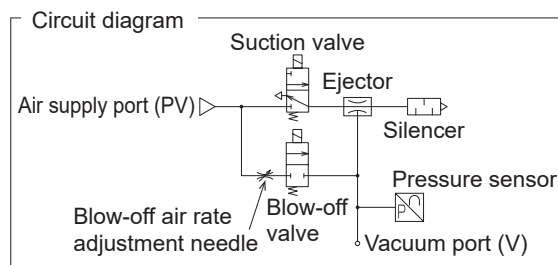
**VN****Common air supply port type, Silencer vent, With LED display pressure sensor**

Model code: VN□-□□NS-D24-V4□



*1. For Vacuum port (V) dimensions, refer to Table 1 of "Fitting Dimensions for Stand-alone type" on the latter page.

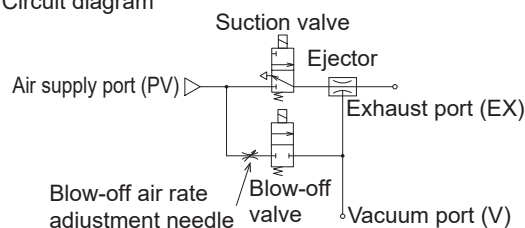
*2. For Air supply port (PV) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.



CE

[illegible]

- ### Circuit diagram



CE

A detailed view of a grey, rectangular industrial valve assembly, likely a solenoid valve. It features a label on the left side with the text "HBM" and "10V DC". The assembly has several ports and a complex internal structure, typical of industrial fluid control components.

Technical drawing of the SMC VAC-1000 vacuum switch assembly, showing dimensions and components.

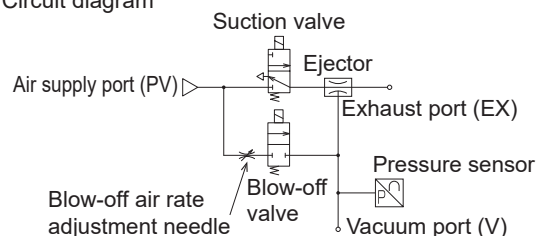
Dimensions (mm):

- Top view: 10.3 (width), 2-7 (cable length), 2-46.8 (total length), 4.3 (port offset), 15.3 (port offset), 10.8 (port offset), 12 (port offset), 2-Ø3.5 (port offset), 17.3 (port offset), 75.7 (total length).
- Side view: 76.3 (total width), 51 (width to suction valve), 31.9 (width to blow-off valve), 3.5 (needle stroke), 46.2 (height to exhaust port), 12.9 (exhaust port offset), 2.5 (exhaust port offset), 5.5 (exhaust port offset), 6.4 (exhaust port offset), 6 (exhaust port offset).
- Detail view: 2-7 (cable length), 2-46.8 (total length), 4.3 (port offset), 15.3 (port offset), 10.8 (port offset), 12 (port offset), 2-Ø3.5 (port offset), 17.3 (port offset), 75.7 (total length).

Components and Labels:

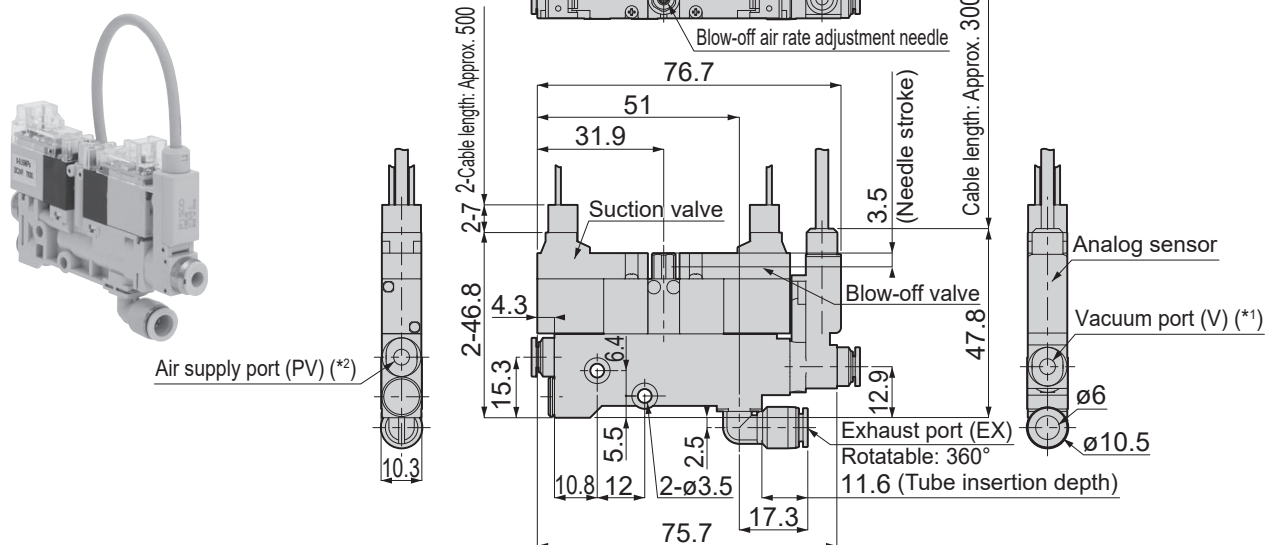
- Blow-off air rate adjustment needle
- Suction valve
- Blow-off valve
- Exhaust port (EX)
- Rotatable: 360°
- 11.6 (Tube insertion depth)
- Analog sensor
- Vacuum port (V) (*1)
- Selectable from 0.5, 1, 2, 3 m (Cable length)
- Ø6 (Analog sensor port)
- Ø10.5 (Vacuum port)

- ### Circuit diagram



VN**Common air supply port type, Tube exhaust, With Analog output sensor for compound press.**

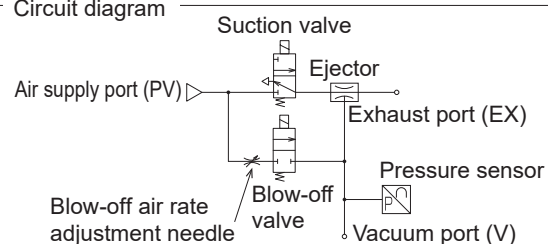
Model code: VN□-□□NJ-D24-R□



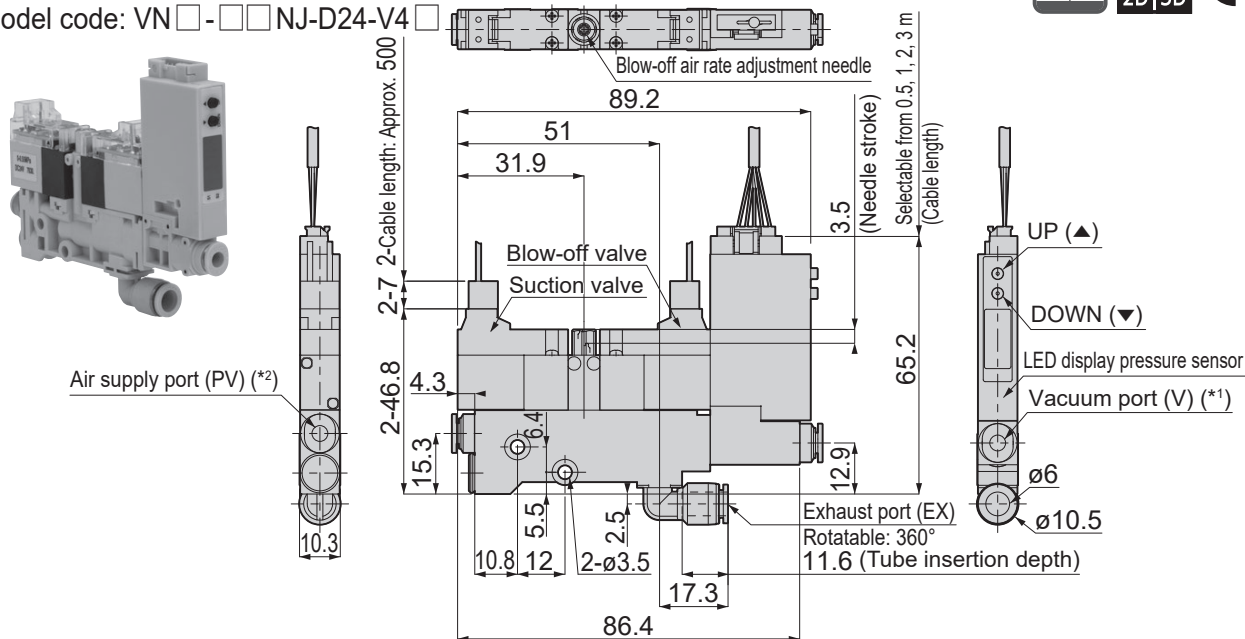
*1. For Vacuum port (V) dimensions, refer to Table 1 of "Fitting Dimensions for Stand-alone type" on the latter page.

*2. For Air supply port (PV) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.

Circuit diagram

**VN****Common air supply port type, Tube exhaust, With LED display pressure sensor**

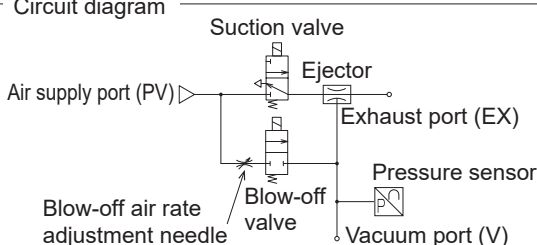
Model code: VN□-□□NJ-D24-V4□



*1. For Vacuum port (V) dimensions, refer to Table 1 of "Fitting Dimensions for Stand-alone type" on the latter page.

*2. For Air supply port (PV) dimensions, refer to Table 2 of "Fitting Dimensions for Stand-alone type" on the latter page.

Circuit diagram

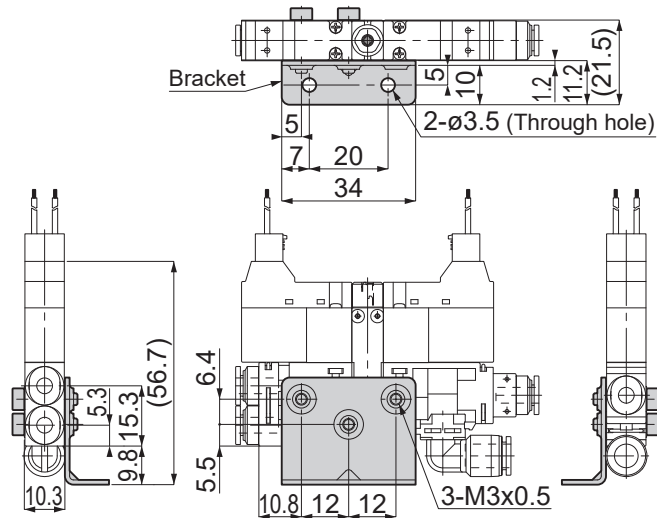


■ Fitting Dimensions for Stand-alone type

Table 1: Push-in Fitting type for vacuum port			
3 (ø3 Straight)	4 (ø4 Straight)	3L (ø3 Elbow)	4L (ø4 Elbow)

Table 2: Push-in Fitting type for air supply port	
3 (ø3 Straight)	4 (ø4 Straight)

VNB Bracket for stand-alone type (Optional)

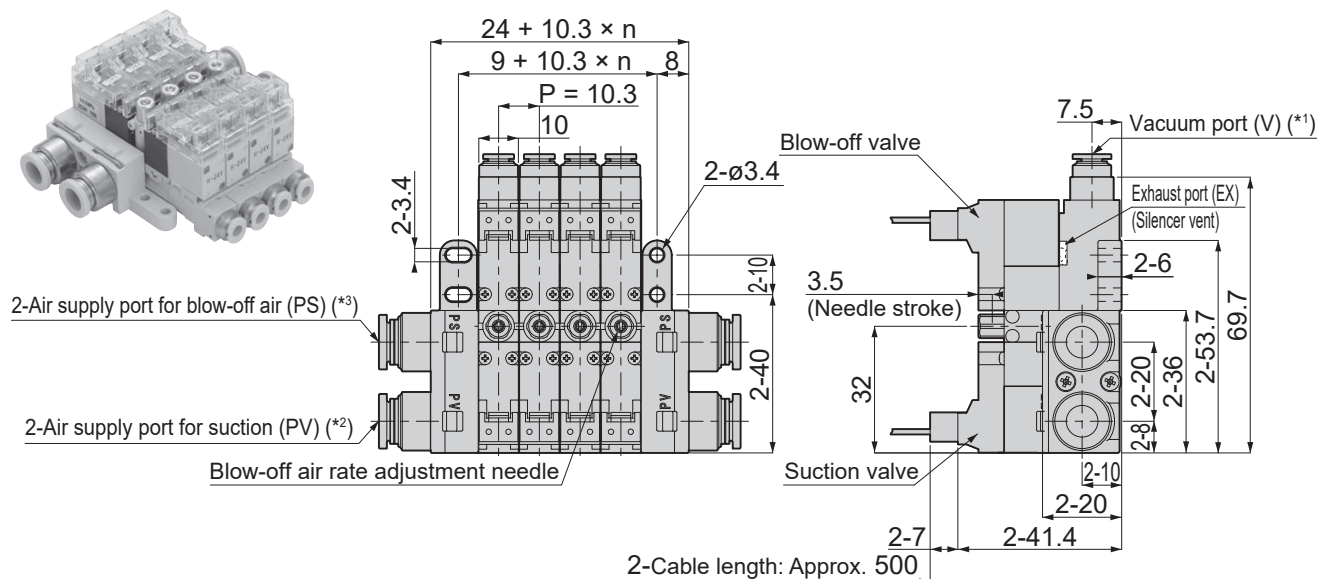


*Hexagon socket head cap screws (M3 x 12): 2 pcs. included.

VN-M Manifold type
Separate air supply port type, Silencer vent, Without Pressure sensor



Model code: VN□-□□□S-D24-M□



*1. For Vacuum port dimensions, refer to Table 1 of "Fitting Dimensions for Manifold type" on the latter page.

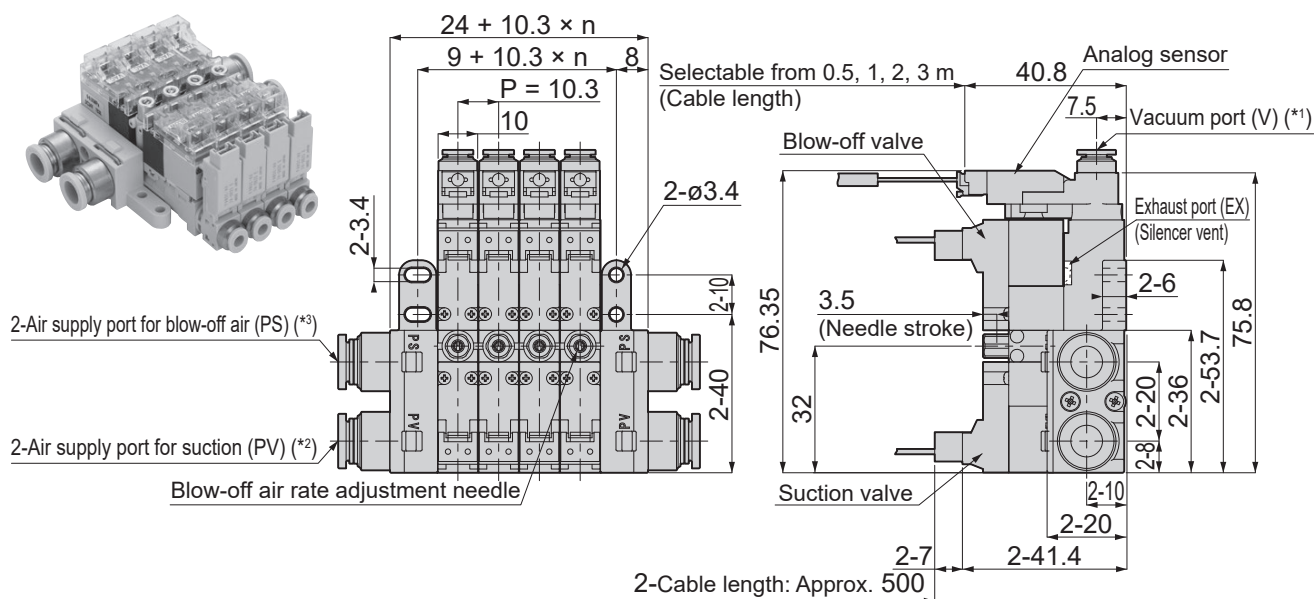
*2. For Air supply port for suction dimensions, refer to Table 2 of "Fitting Dimensions for Manifold type" on the latter page.

*3. For Air supply port for blow-off air dimensions, refer to Table 2 of "Fitting Dimensions for Manifold type" on the latter page.

VN-M Manifold type
Separate air supply port type, Silencer vent, With Analog output sensor for negative press.



Model code: VN□-□□□S-D24-V□C□-M□



*1. For Vacuum port dimensions, refer to Table 1 of "Fitting Dimensions for Manifold type" on the latter page.

*2. For Air supply port for suction dimensions, refer to Table 2 of "Fitting Dimensions for Manifold type" on the latter page.

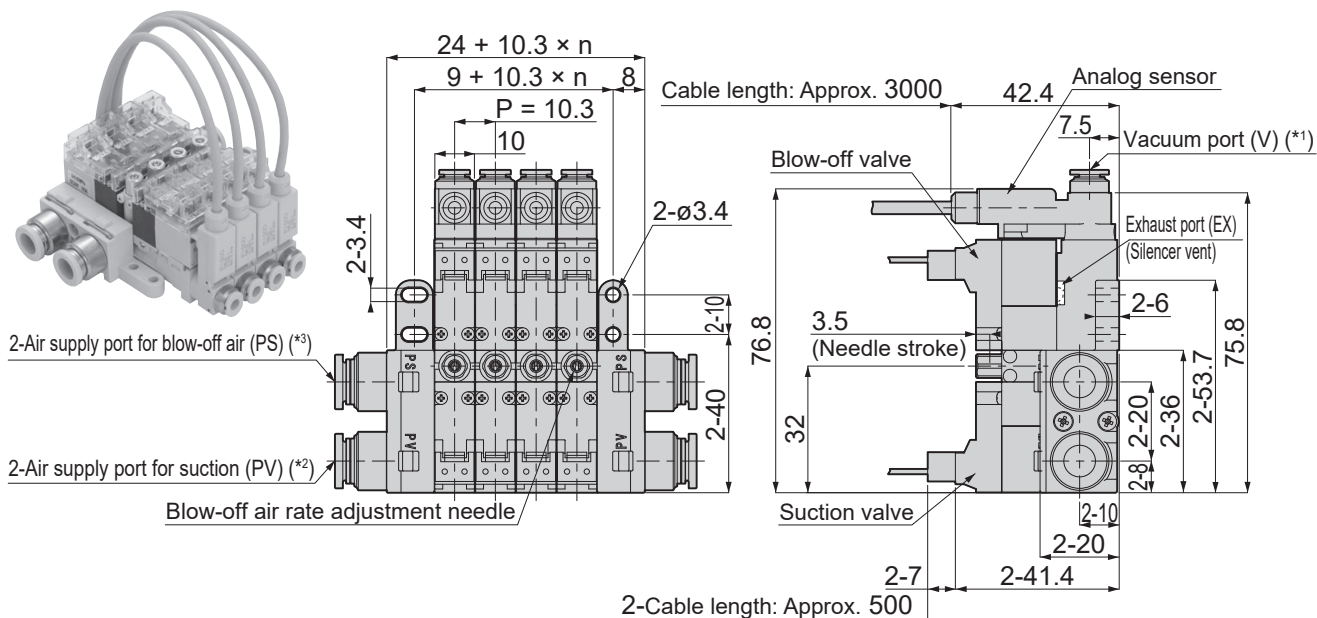
*3. For Air supply port for blow-off air dimensions, refer to Table 2 of "Fitting Dimensions for Manifold type" on the latter page.

VN-M**Manifold type**

Separate air supply port type, Silencer vent, With Analog output sensor for compound press.



Model code: VN□-□□□S-D24-R□-M□



*1. For Vacuum port dimensions, refer to Table 1 of "Fitting Dimensions for Manifold type" on the latter page.

*2. For Air supply port for suction dimensions, refer to Table 2 of "Fitting Dimensions for Manifold type" on the latter page.

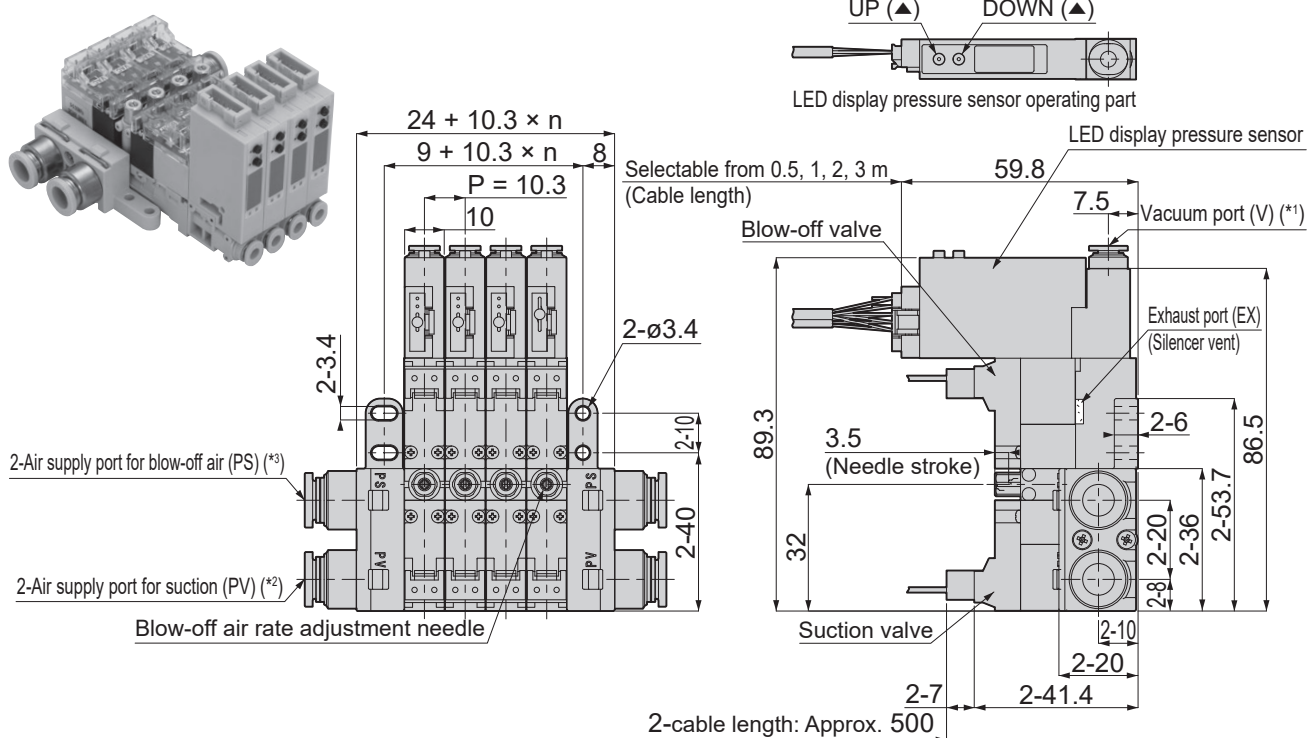
*3. For Air supply port for blow-off air dimensions, refer to Table 2 of "Fitting Dimensions for Manifold type" on the latter page.

VN-M**Manifold type**

Separate air supply port type, Silencer vent, With LED display pressure sensor



Model code: VN□-□□□S-D24-V4□-M□



*1. For Vacuum port dimensions, refer to Table 1 of "Fitting Dimensions for Manifold type" on the latter page.

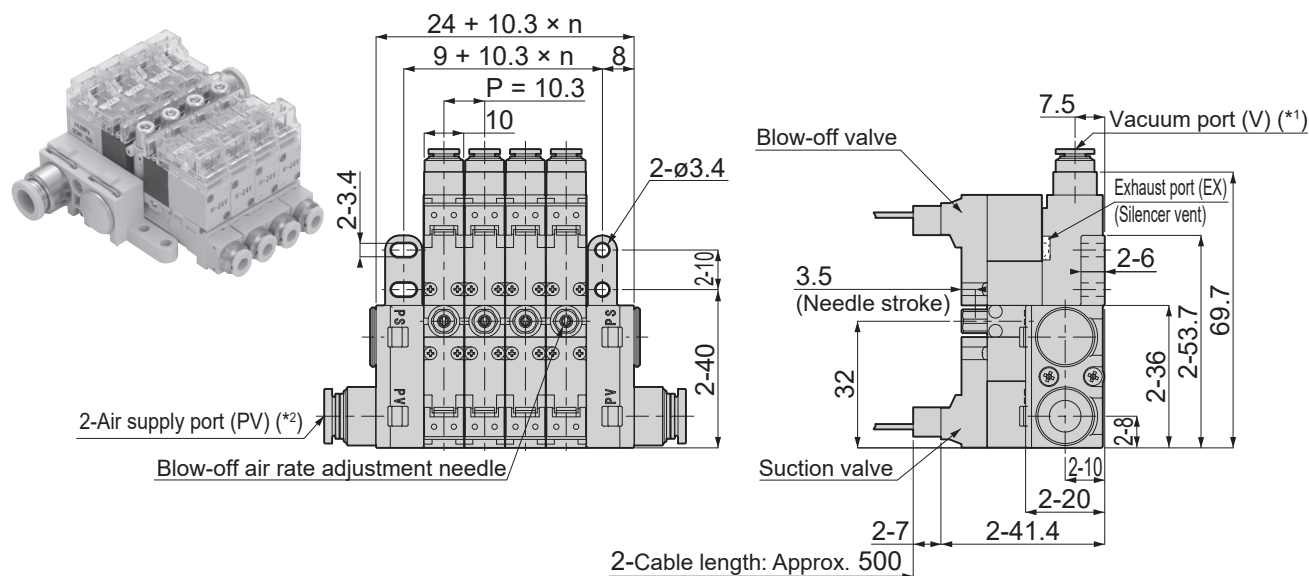
*2. For Air supply port for suction dimensions, refer to Table 2 of "Fitting Dimensions for Manifold type" on the latter page.

*3. For Air supply port for blow-off air dimensions, refer to Table 2 of "Fitting Dimensions for Manifold type" on the latter page.

VN-M Manifold type
Common air supply port type, Silencer vent, Without Pressure sensor



Model code: VN□-□□NS-D24-M□



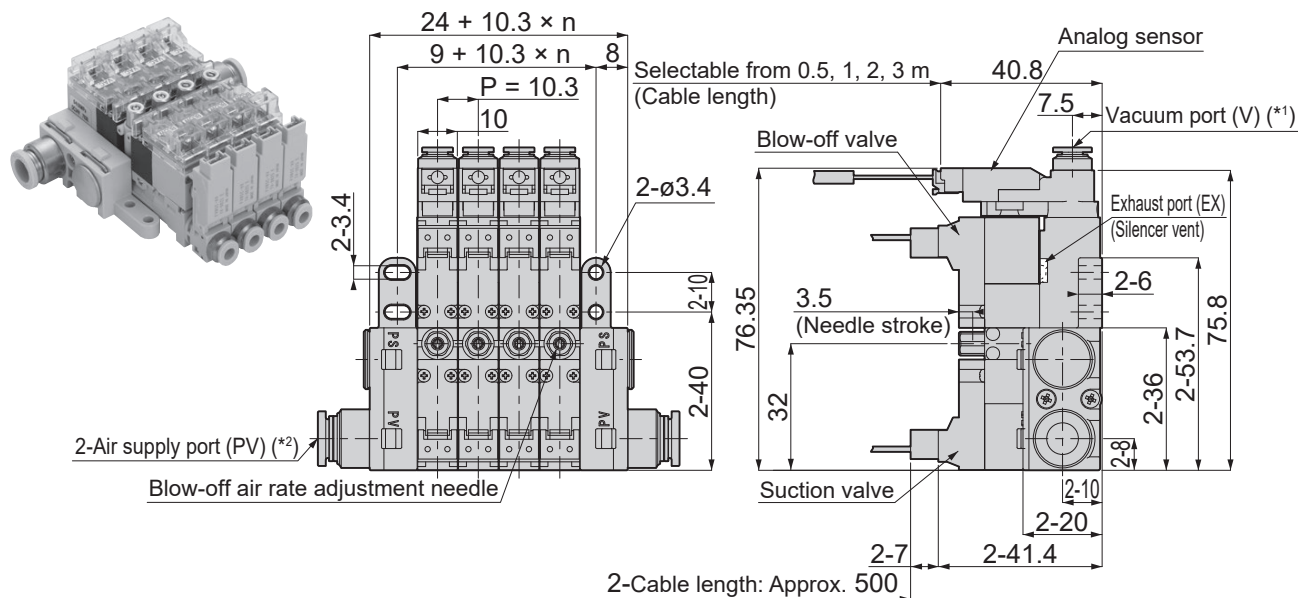
*1. For Vacuum port dimensions, refer to Table 1 of "Fitting Dimensions for Manifold type" on the latter page.

*2. For Air supply port dimensions, refer to Table 2 of "Fitting Dimensions for Manifold type" on the latter page.

VN-M Manifold type
Common air supply port type, Silencer vent, With Analog output sensor for negative press.



Model code: VN□-□□NS-D24-V□C□-M□



*1. For Vacuum port dimensions, refer to Table 1 of "Fitting Dimensions for Manifold type" on the latter page.

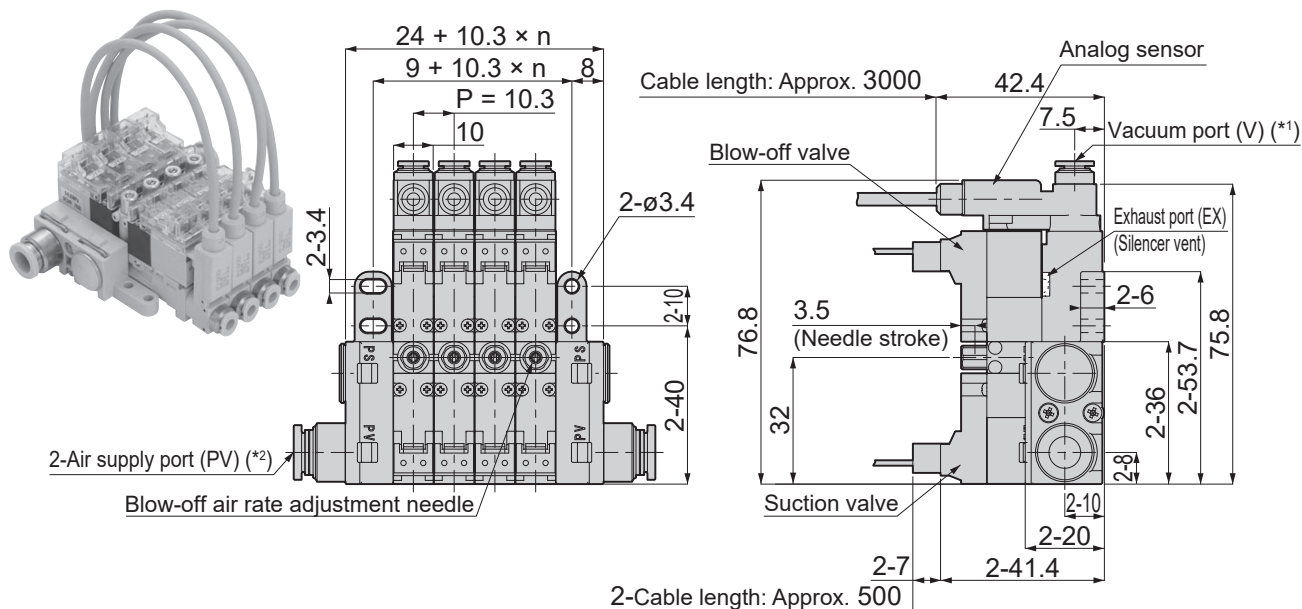
*2. For Air supply port dimensions, refer to Table 2 of "Fitting Dimensions for Manifold type" on the latter page.

VN-M**Manifold type**

Common air supply port type, Silencer vent, With Analog output sensor for compound press.



Model code: VN□-□□NS-D24-R□-M□



*1. For Vacuum port dimensions, refer to Table 1 of "Fitting Dimensions for Manifold type" on the latter page.

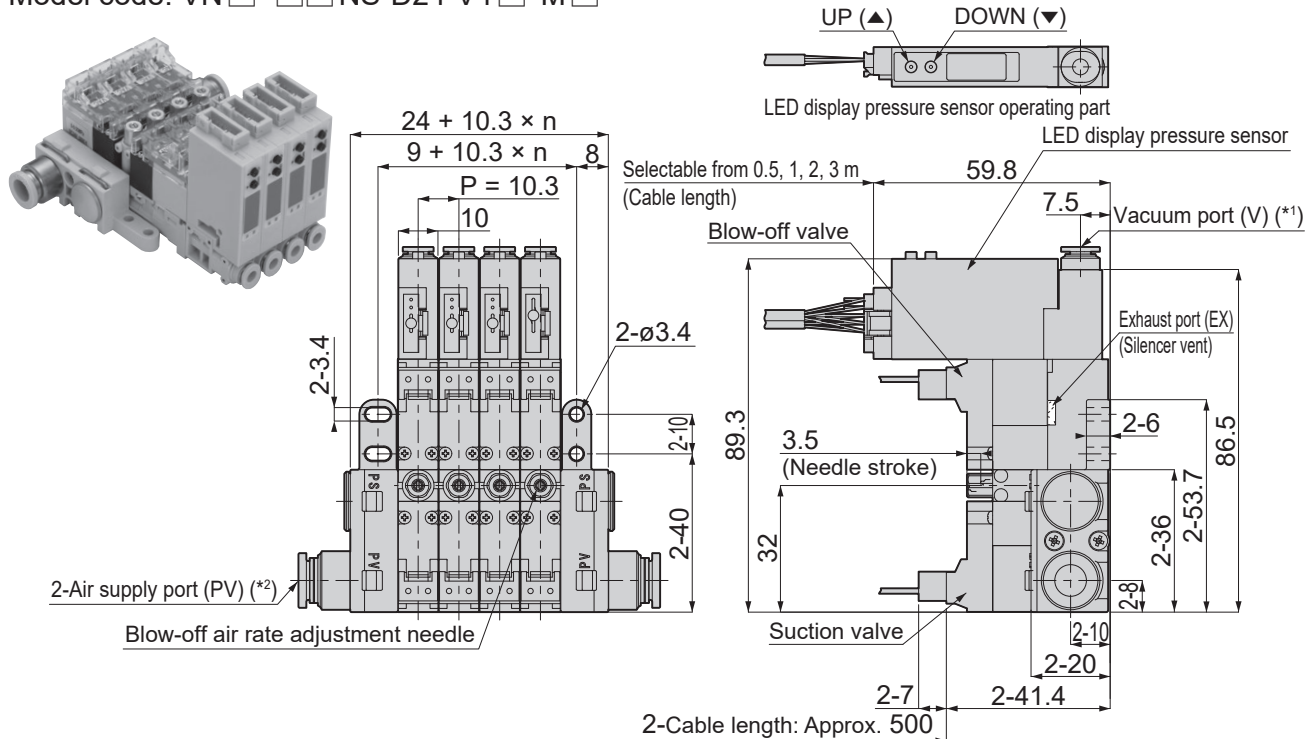
*2. For Air supply port dimensions, refer to Table 2 of "Fitting Dimensions for Manifold type" on the latter page.

VN-M**Manifold type**

Common air supply port type, Silencer vent, With LED display pressure sensor



Model code: VN□-□□NS-D24-V4□-M□



*1. For Vacuum port dimensions, refer to Table 1 of "Fitting Dimensions for Manifold type" on the latter page.

*2. For Air supply port dimensions, refer to Table 2 of "Fitting Dimensions for Manifold type" on the latter page.

■ Fitting Dimensions for Manifold type

Table 1: Push-in Fitting type for vacuum port

3 (ø3 Straight)	4 (ø4 Straight)	3L (ø3 Elbow)	4L (ø4 Elbow)

Table 2: Push-in Fitting type for air supply port

4 (ø4 Straight)	6 (ø6 Straight)	8 (ø8 Straight)	Plug (One-side supply)
4 (ø4 Elbow)	6 (ø6 Elbow)	8 (ø8 Elbow)	