

Ejector System/10.5 mm Width Integrated Type Vacuum Ejector Unit

VSX Series



VSX Series
Model No. Notation

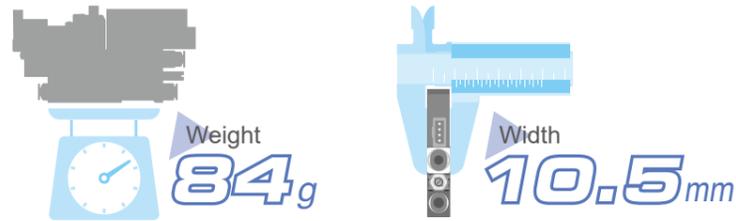
Lightweight, compact integrated type vacuum ejector unit achieving high cycle operation of vacuum systems

Vacuum Characteristic Variations

Nozzle Diameter	Suction Flow Rate (L/min (ANR))			Air Consumption (L/min (ANR))			Ultimate Vacuum Pressure (-kPa)		
	H	L	E	H	L	E	H	L	E
0.5 mm	7	12	3	11.5	8.8	90.4	66.5	90.4	
0.7 mm	13	24	10.5	23	17	93.1	66.5	90.4	
1.0 mm	24	26	20	46	34	93.1	66.5	90.4	

*Rated supply pressure; H, L → 0.5 MPa, E → 0.35 MPa

Lightweight, compact vacuum generator meeting market needs



2 types of vacuum generation valves available (Normally Closed, Self-holding)

Self-holding (double solenoid type) is optimal for applications involving long-duration vacuum generation and supports energy saving. Valve response time is pursued to the utmost limit, achieving high cycle operation of vacuum systems.

2 types of pressure switches available (with easy-to-see LED display, inexpensive analog output only)

2 types of fixing methods available, allowing selection according to the application.

Direct mount type fixed from the side with screws, etc., and DIN rail mounting type capable of mounting onto DIN rails are available.

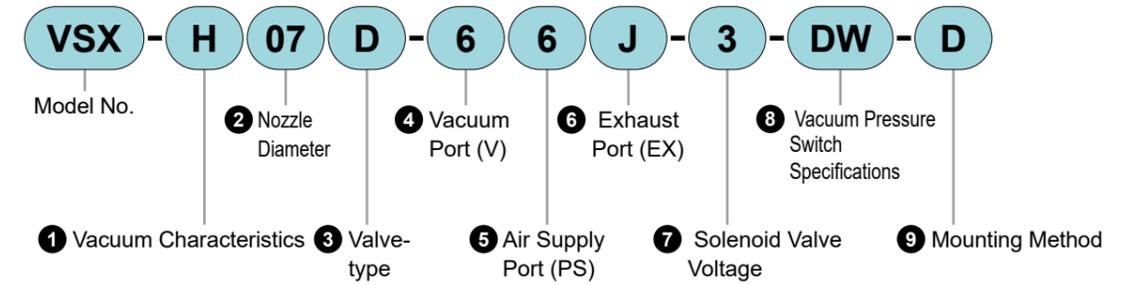
Manifold type also available (max. 10 stations)

Compliant with Global Standards



Model No. Notation

● 10.5 mm width integrated vacuum ejector unit discrete



1 Vacuum Characteristics

Code	Content
H	High Vacuum/Medium Flow Type
L	Medium Vacuum/High Flow Type
E	High Vacuum/Low Flow Type

*: When the combination for 1 and 2 is 'L10', Exhaust Port 6 'J' cannot be selected.

2 Nozzle Diameter

Code	Content
05	*0.5
07	*0.7
10	*1.0

*: When the combination for 1 and 2 is 'L10', Exhaust Port 6 'J' cannot be selected.

3 Valve-type

Code	Content
B	Normally Closed Type
D	Self-holding Type

4 Vacuum Port (V)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting

5 Air Supply Port (PS)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting

6 Exhaust Port (EX)

Code	Content
S	Atmospheric Release with Silencer
J	*6 Push-in fitting centralized exhaust

*: When the combination for 1 and 2 is 'L10', 6 'J' cannot be selected.

7 Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC

8 Vacuum Pressure Switch Specifications

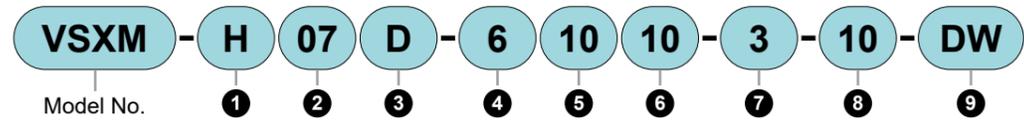
Code	Content
Blank	Without Vacuum Pressure Switch
DW	NPN Output 2 points with Digital Display
DA	NPN Output 1 point + Analog Output with Digital Display
AO	Analog Output

9 Mounting Method

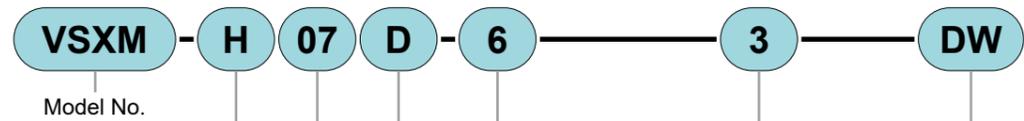
Code	Content
Blank	Direct Mount Type
D	DIN Rail Mounting Type

Model No. Notation

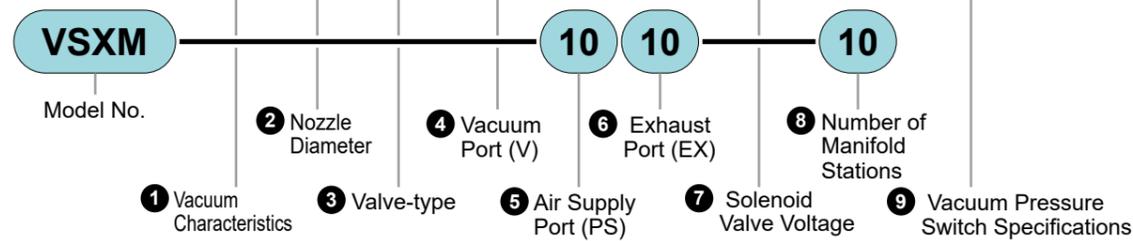
●Ejector System/10.5 mm Width Integrated Type Vacuum Ejector Unit Manifold Type



●10.5 mm width integrated vacuum ejector unit manifold single unit



●Ejector System/10.5 mm Width Integrated Type Vacuum Ejector Unit Manifold Type Manifold Only



In manifold types, exhaust air may flow around to non-operating ejectors and be output from the vacuum port. If exhaust air flow-around affects usage, please consult us.

1 Vacuum Characteristics

Code	Content
H	High Vacuum/Medium Flow Type
L	Medium Vacuum/High Flow Type
E	High Vacuum/Low Flow Type
Z	For mixed specifications (Provide details in the specification sheet)

*1: For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, please refer to P. 268, 269.
*2: If is "Z", Nozzle Diameter is "00" only.
*3: For manifold single unit, "Z" cannot be selected. For manifold only, vacuum characteristics cannot be selected.

2 Nozzle Diameter

Code	Content
05	ø0.5
07	ø0.7
10	ø1.0
00	For mixed specifications (Provide details in the specification sheet)

*1: For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, please refer to P. 268, 269.
*2: If Vacuum Characteristics is "Z", is "00" only.
*3: For manifold single unit, "Z" cannot be selected. For manifold only, nozzle diameter cannot be selected.

3 Valve-type

Code	Content
B	Normally Closed Type
D	Self-holding Type
Z	For mixed specifications (Provide details in the specification sheet)

*1: For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, please refer to P. 268, 269.
*2: For manifold single unit, "Z" cannot be selected. For manifold only, valve type cannot be selected.

4 Vacuum Port (V)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
CX	For fitting mix (Provide details in the specification sheet)

*1: For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, please refer to P. 268, 269.
*2: For manifold single unit, "CX" cannot be selected. For manifold only, vacuum port cannot be selected.

5 Air Supply Port (PS)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
8	ø8 Push-in fitting
10	ø10 Push-in fitting

*: For manifold single unit, air supply port cannot be selected.

6 Exhaust Port (EX)

Code	Content
S	Atmospheric Release with Silencer
6	ø6 Push-in fitting centralized exhaust
8	ø8 Push-in fitting centralized exhaust
10	ø10 Push-in fitting centralized exhaust

*1: If centralized exhaust type (6, 8, 10) is selected, depending on the operating conditions, exhaust air may flow around due to insufficient exhaust capacity. Please inquire for details.
*2: For manifold single unit, exhaust port cannot be selected.

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

(Catalog No. CC-1226AA)

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

(Catalog No. CC-1271AA)

●Design compatible with rechargeable battery manufacturing process

VSX - - P4*

VSXM - - P4*

*Please inquire for details.

●Uses food-grade lubricant and resin/rubber materials compliant with the Food Sanitation Act, suitable for food manufacturing processes.

VSX - - FP*

7 Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC

*: For manifold only, solenoid valve voltage cannot be selected.

8 Number of Manifold Stations

Code	Content
2	2 stations
to	to
10	10 stations

*1: The number of stations that can operate simultaneously differs depending on the combination of nozzle diameter and port size. Please inquire for details.

*2: For manifold single unit, the number of manifold stations cannot be selected.

9 Vacuum Pressure Switch Specifications

Code	Content
Blank	Without Vacuum Pressure Switch
DW	NPN Output 2 points with Digital Display
DA	NPN Output 1 point + Analog Output with Digital Display
AO	Analog Output
Z	For mixed specifications (Provide details in the specification sheet)

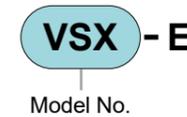
*1: For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, please refer to P. 268, 269.

*2: For manifold single unit, "Z" cannot be selected. For manifold only, vacuum pressure switch specifications cannot be selected.

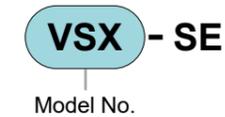
Maintenance Part Model No.

* For details on maintenance parts, please refer to P. 264.

●Filter Element



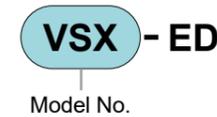
●Silencer Element



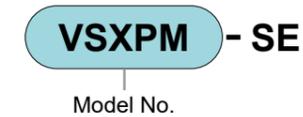
●Silencer Element F



●Silencer Element D



●Silencer Element for Manifold



Specifications

Item	VSX
Operating Fluid	Air
Operating Pressure MPa	0.3 to 0.7
Operating Temperature °C	5 to 50

Ejector Characteristics

Model No.	Nozzle Diameter (mm)	Rated Supply Pressure (MPa)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))
VSX-H05... Atmospheric Release Centralized Exhaust	0.5	0.5	90.4	7	11.5
VSX-L05... Atmospheric Release Centralized Exhaust			66.5	12	
VSX-E05... Atmospheric Release Centralized Exhaust	0.7	0.35	90.4	3	8.8
VSX-H07... Atmospheric Release Centralized Exhaust		0.5	93.1	13	23
VSX-L07...S Atmospheric Release Centralized Exhaust	0.7	0.5	66.5	(23) 24	
VSX-L07...J Atmospheric Release Centralized Exhaust			22		
VSX-E07... Atmospheric Release Centralized Exhaust	1.0	0.35	90.4	10.5	17
VSX-H10...S Atmospheric Release Centralized Exhaust		0.5	0.5	93.1	24
VSX-H10...J Atmospheric Release Centralized Exhaust	20				
VSX-L10...S Atmospheric Release Centralized Exhaust	1.0	0.5	66.5	26	34
VSX-E10...S Atmospheric Release Centralized Exhaust			20		
VSX-E10...J Atmospheric Release Centralized Exhaust		0.35	90.4	19	

*: Values in () are for Vacuum Port: ø4 mm Push-in fitting.

Valve Specifications

●Pilot Valve

Item	Vacuum Generation Valve		Vacuum Breaking Valve	
Valve-type and Operation Method	Direct acting poppet valve			
Rated Voltage V	24 VDC	100 VAC	24 VDC	100 VAC
Allowable Voltage Fluctuation RangeV	DC 24 ±10%	AC 100 ±10%	DC 24 ±10%	AC 100 ±10%
Surge Protection Circuit	Varistor	Bridge Diode	Varistor	Bridge Diode
Power Consumption	1.2 W (with LED)	1.5 VA (with LED)	1.2 W (with LED)	1.5 VA (with LED)
Manual Override	Non-locking push-type			
Operation Indicator	When coil is energized: Red LED lights up			
	Connector type: 500 mm			
Wiring Method	Red: 24 VDC Black: COM	Blue	Red: 24 VDC Black: COM	Blue

●Main valve

Item	Vacuum Generation Valve
Valve-type and Operation Method	Pilot operated poppet valve
Proof pressure MPa	1.05
Valve Type	Normally Closed
Lubrication	Not required
Effective Area (mm²)	Air Supply Port Size ø4: 3.5 Air Supply Port Size ø6: 4.5

Vacuum Pressure Switch Specifications

Item	With Digital Display Type		Without Display Type
	With 2-point Switch Output (-DW)	With Analog Output (-DA)	Analog Output Only (-A0)
Factory Set Pressure kPa	-50 (SW1), -10 (SW2)	-50	-
Current Consumption mA	≤40		≤15
Pressure Sensing Element	Diffused Semiconductor Pressure Switch		
Working pressure kPa	-100 to 0		
Set Pressure kPa	-99 to 0		-
Proof Pressure MPa	0.2		
Storage Temperature °C	-20 to 80 (Atmospheric pressure, 60% RH humidity)		
Operating Temperature °C	0 to 50 (However, no freezing)		
Operating Humidity	35 to 85% RH (However, no condensation)		
Power Supply Voltage V	DC 12 to 24 ±10% Ripple (P-P) ≤ 10%		
Protection Structure	Equivalent to IEC Standard IP40		
Number of Output Points	2	1	-
Repeatability	±3% F.S. max. (at Ta = 25°C)		
Differential	Fixed (≤ 2% F.S.)	Variable (Approx. 0 to 15% F.S.)	
Switch Output	NPN Transistor Open Collector Output ≤ 30 V 80 mA Residual Voltage ≤ 0.8 V		
Analog Output	Output Voltage V	-	1 to 5
	Zero Point VoltageV	-	1±0.1
	Span Voltage V	-	4±0.1
	Output CurrentmA	-	≤ 1 (Load resistance ≥ 5 kΩ)
Linearity/Hysteresis	-	±0.5% F.S. max.	±0.5% F.S. max.
Display kPa	-99 to 0 (2-digit Red LED display)		
Display Update Rate	Approx. 4 times/1 second		
Display Accuracy	±3% F.S. ±2 digit		
Resolution	1 digit		
Operation Indicator	SW1: Red LED lights up at or above set pressure	Red LED lights up at or above set pressure	
	SW2: Green LED lights up at or above set pressure		
Functions	1. MODE Switch (ME or S1 or S2)	1. MODE Switch (ME or SW)	
	2. S1 Setting Trimmer (2/3 turn trimmer)	2. SW Setting Trimmer (2/3 turn trimmer)	
	3. S2 Setting Trimmer (2/3 turn trimmer)	3. HYS Setting Trimmer (Approx. 0 to 15% F.S.)	

Vacuum Breaking Function Specifications

Valve Type	Break Air Flow Rate L/min (ANR)
Normally Closed	0 to 7.5
Self-holding Type	0.2 to 2

*1: Value at 0.5 MPa supply pressure.

*2: For self-holding type, please note that outside the flow rate setting range above, the valve response time specification may not be met.

*3: Break air flow rate varies depending on the diameter and length of the vacuum side piping (piping resistance, etc.).

Vacuum Filter Specifications

Item	Vacuum Filter
Element Material	Polyvinyl formal
Filtration Rating	µm 10
Filtration area	mm² 502

Weight Table

●Single Unit Type		
Model No.	Unit Contents	Weight (g)
VSX-□□-□□S-□-D□	Vacuum Ejector Unit (Atmospheric Release, With Vacuum Pressure Switch with LED Display)	81
VSX-□□-□□J-□-D□	Vacuum Ejector Unit (Centralized Exhaust, With Vacuum Pressure Switch with LED Display)	84
VSX-□□-□□S-□-A0	Vacuum Ejector Unit (Atmospheric Release, With Analog Output Vacuum Pressure Switch)	78
VSX-□□-□□J-□-A0	Vacuum Ejector Unit (Centralized Exhaust, With Analog Output Vacuum Pressure Switch)	81
VSX-□□-□□S-□	Vacuum Ejector Unit (Atmospheric Release, Vacuum Pressure Switch)	71
VSX-□□-□□J-□	Vacuum Ejector Unit (Centralized Exhaust, Vacuum Pressure Switch)	74

*1: DIN rail mounting type is approx. 5 g heavier than the Weightes listed above.

●Manifold Type		
Model No.	Manifold Mounted Unit Contents	Weight (g)
VSXM-□□□□□□S-□□-D□-2	Vacuum Ejector Unit Atmospheric Release With Vacuum Pressure Switch with LED Display 2-Station Manifold	310
VSXM-□□□□□□J-□□-D□-2	Vacuum Ejector Unit Centralized Exhaust With Vacuum Pressure Switch with LED Display 2-Station Manifold	330

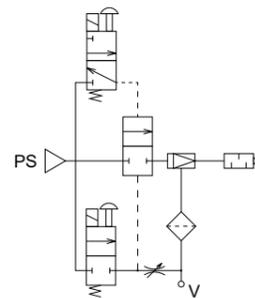
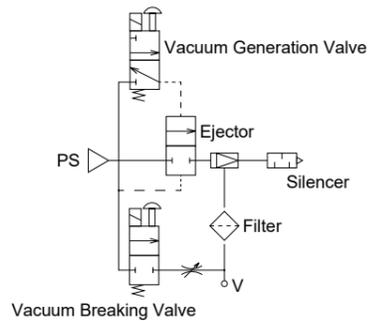
*1: Each additional station increases the Weight by 90 g.

*2: The Weightes listed above are for the type equipped with a vacuum pressure switch with LED display. Types equipped with analog output vacuum pressure switch are 3 g/station lighter than the Weightes above, and types without vacuum pressure switch are 10 g/station lighter, respectively.

Circuit Diagram

●Normally Closed Type

●Self-holding Type



Vacuum Characteristics, Flow Characteristics

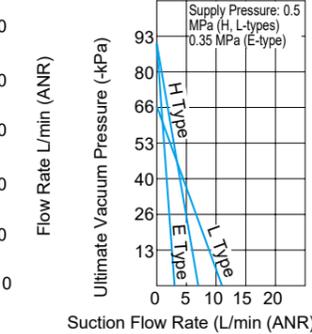
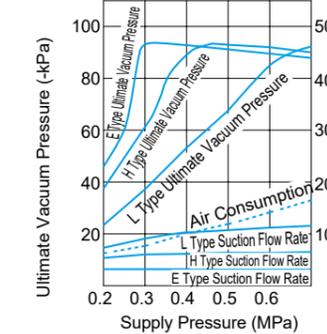
Vacuum Characteristics, Flow Characteristics

●VSX-H05, VSX-L05, VSX-E05

●VSX-H07, VSX-L07, VSX-E07

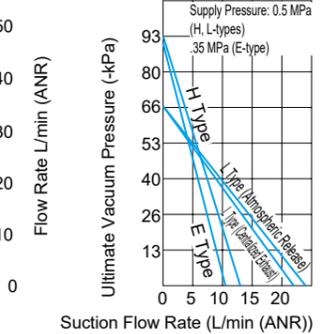
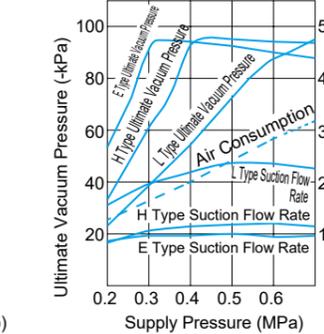
Vacuum Characteristics

Flow Characteristics



Vacuum Characteristics

Flow Characteristics

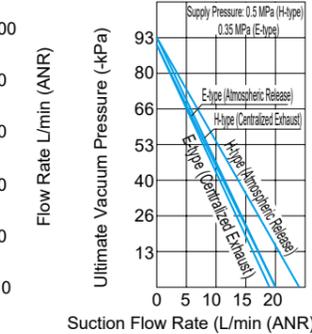
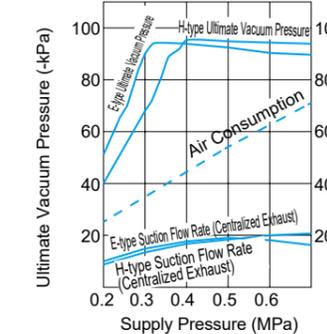


●VSX-H10□□□□J, VSX-L10□□□□J, VSX-E10□□□□J

●VSX-H10□□□□S, VSX-L10□□□□S, VSX-E10□□□□S

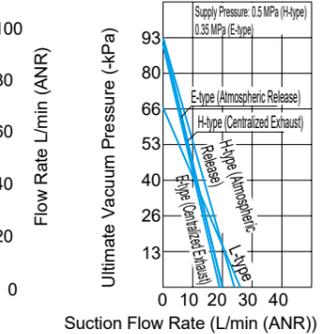
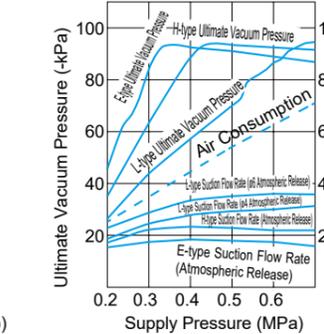
Vacuum Characteristics

Flow Characteristics



Vacuum Characteristics

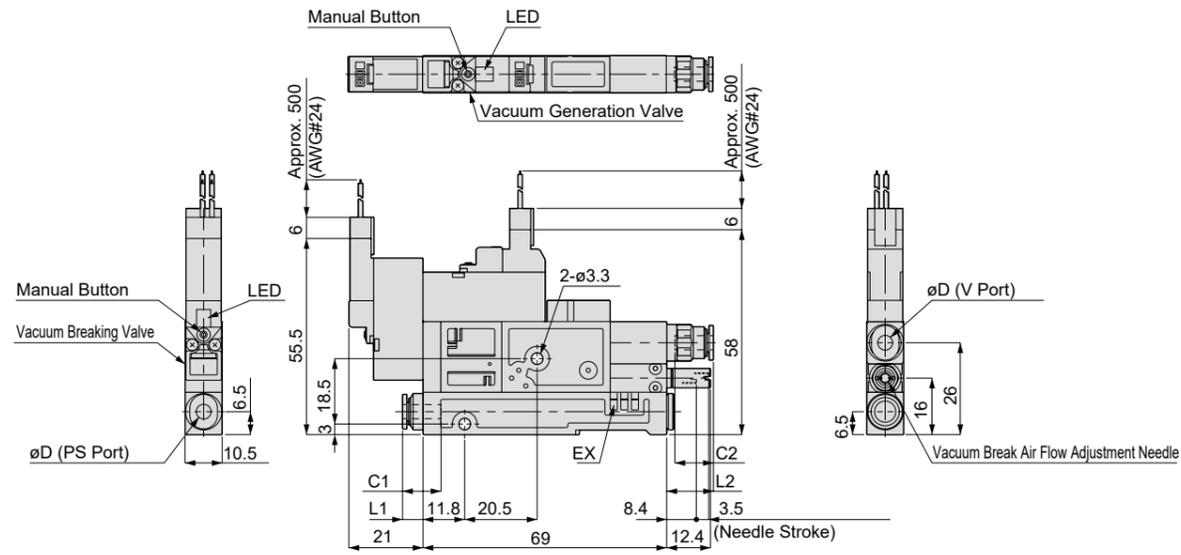
Flow Characteristics



- The supply pressure in the characteristics above is during vacuum generation.
- Abnormal noise (gurgling sound) may occur at a supply pressure slightly below the peak ultimate vacuum pressure in the characteristics above. In this state with abnormal noise, characteristics are unstable and noise level increases. Also, it may affect sensors, etc., causing trouble, so reset the supply pressure.
 - (Ex. 1: For an H-type vacuum ejector with source pressure 0.5 MPa, during ejector operation, the supply pressure drops to 0.43 MPa due to pressure drop, causing abnormal noise. → Reset the supply pressure during ejector operation to 0.5 MPa.)
- Select piping or equipment using an effective cross-sectional area approximately 3 times the nozzle diameter cross-sectional area as a guideline. If sufficient supply air flow rate is not secured, satisfactory vacuum characteristics cannot be obtained.
 - (Gurgling sound occurs even at the set pressure. Insufficient suction flow rate, failure to reach ultimate vacuum pressure, etc.)
 - (Ex. 2: For an H-type vacuum ejector, abnormal noise occurs even though the pressure during ejector operation is 0.5 MPa. → Insufficient supply air flow rate. (Supply air flow rate is restricted before the vacuum ejector due to piping resistance, etc., preventing the supply air flow rate required for satisfactory characteristics from being obtained.) → Select a pipe components that can secure the required effective cross-sectional area.)
 - (Ex. 3: For a vacuum ejector with a 1.0 mm nozzle diameter, cross-sectional area $0.5^2 \times \pi = 0.785 \text{ mm}^2 \times 3 = 2.35 \text{ mm}^2$. Therefore, select piping and equipment to secure an effective cross-sectional area of 2.3 mm² or more.)

External Dimensions Diagram (Single Unit Type, Atmospheric Release-type, Without Vacuum Pressure Switch)

● Direct Mount Type



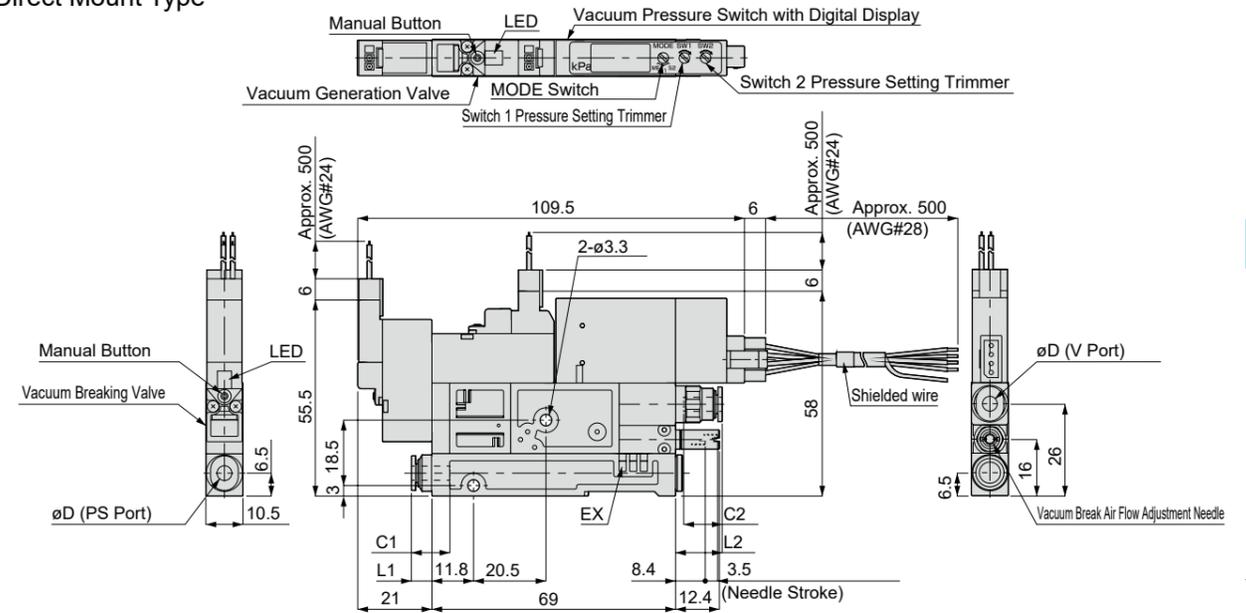
Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□□S-□	4	11.2	11.2	6.1	13.5
	6	11.9	11.9	8.9	13.7

External Dimension Drawings

External Dimensions Diagram (Single Unit Type, Atmospheric Release-type, With Vacuum Pressure Switch with Digital Display and 2-point Switch Output)

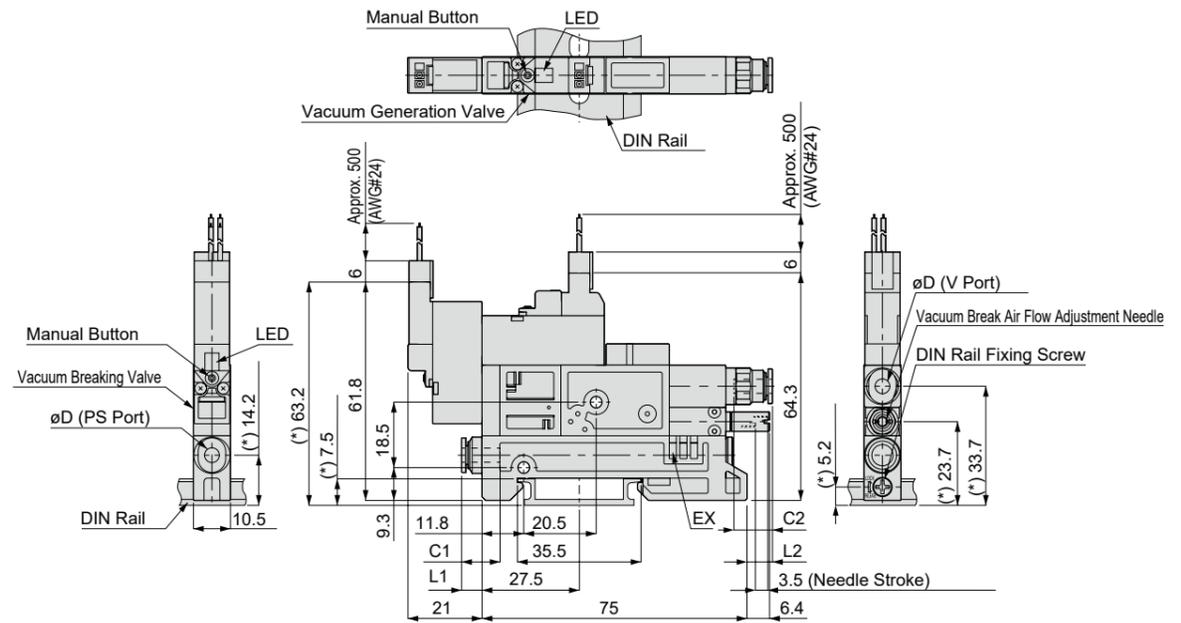
● Direct Mount Type



Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□□S-□-DW	4	11.2	11.2	6.1	13.5
	6	11.9	11.9	8.9	13.7

● DIN Rail Mounting Type

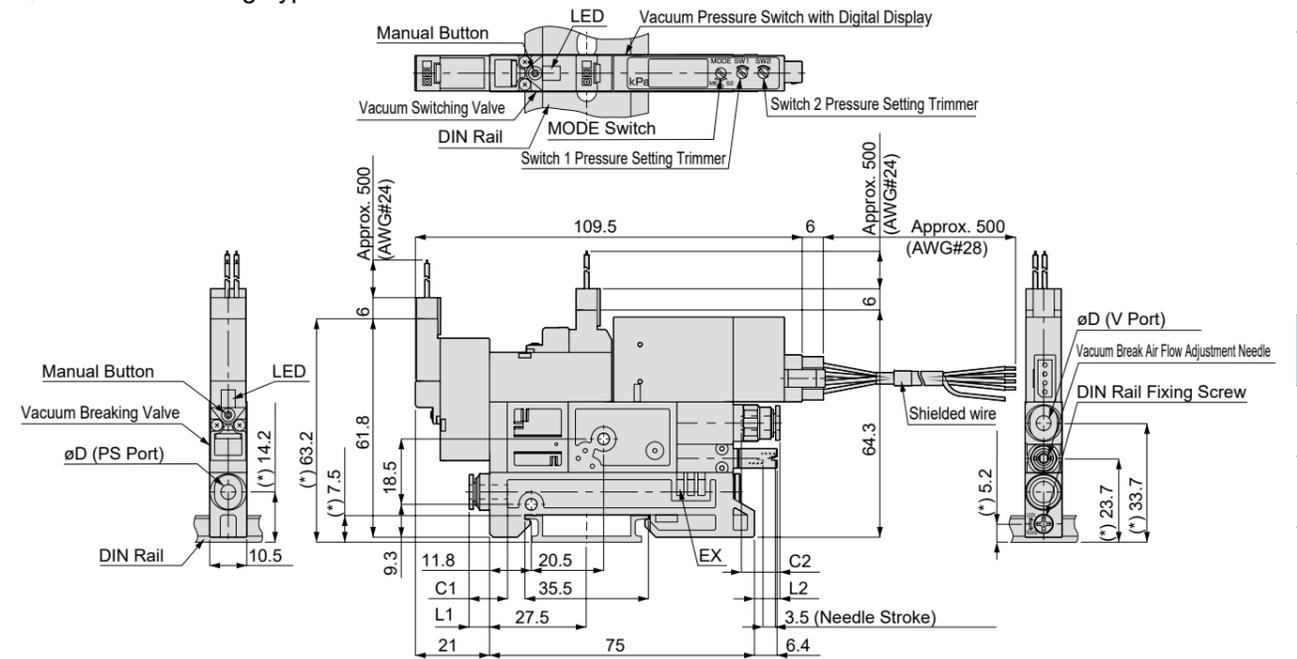


Note)Dimensions of the (*) printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□□S-□-D	4	11.2	11.2	6.1	7.5
	6	11.9	11.9	8.9	7.7

● DIN Rail Mounting Type

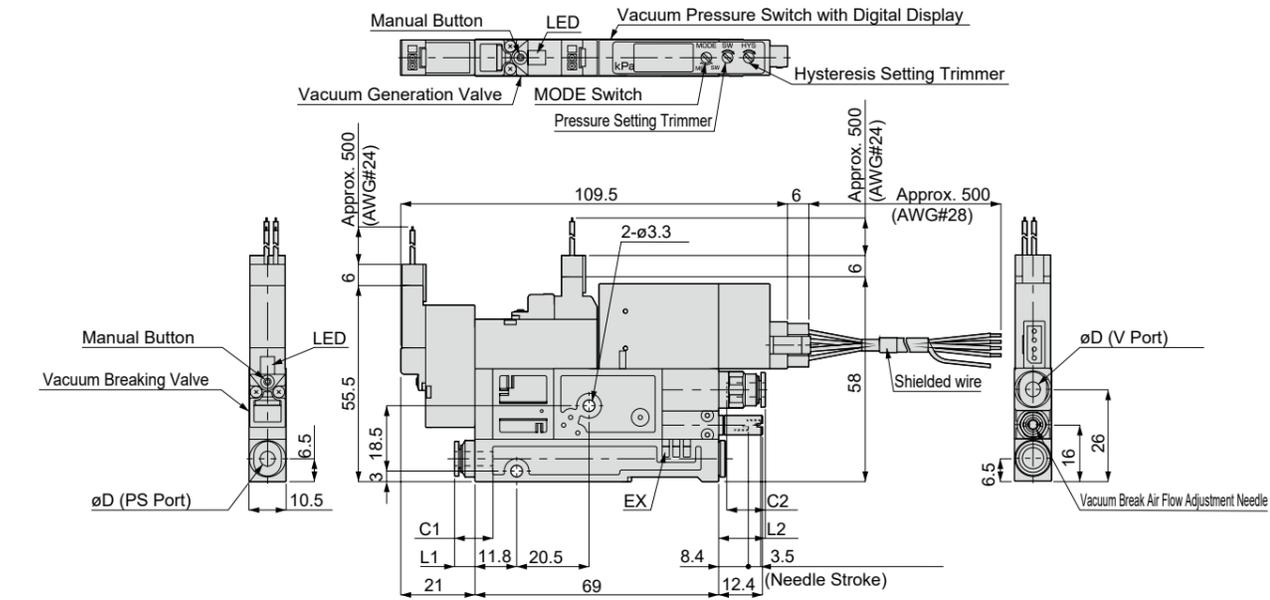


Note)Dimensions of the (*) printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□□S-□-DW-D	4	11.2	11.2	6.1	7.5
	6	11.9	11.9	8.9	7.7

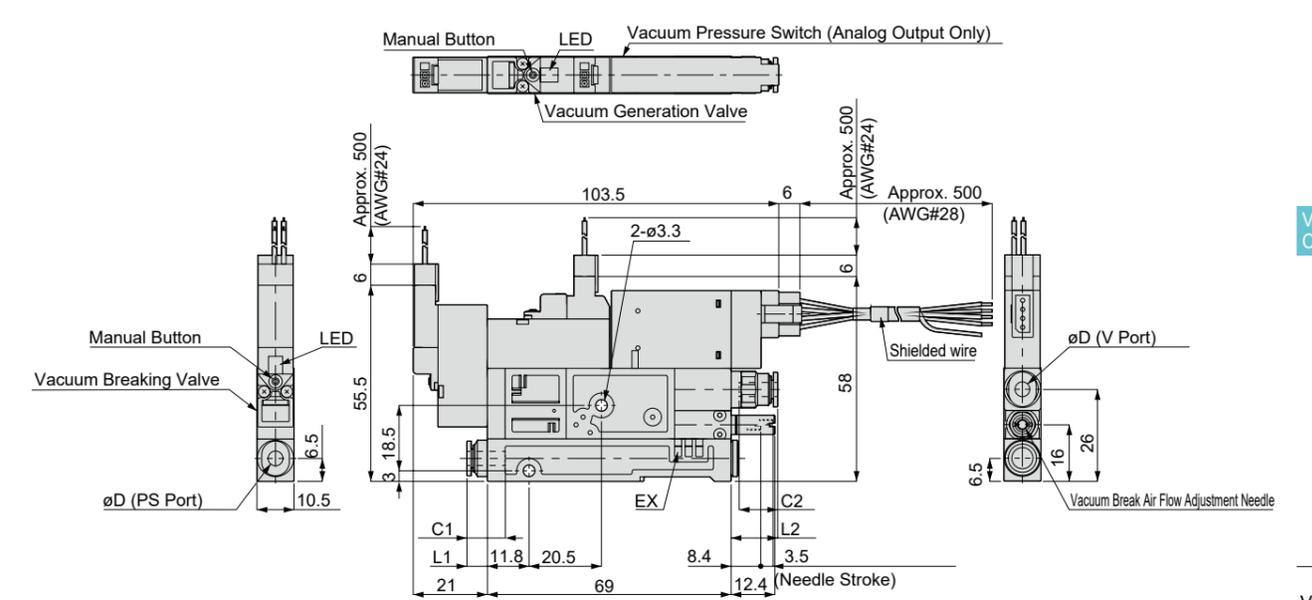
● Direct Mount Type



Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□□S-□-DA	4	11.2	11.2	6.1	13.5
	6	11.9	11.9	8.9	13.7

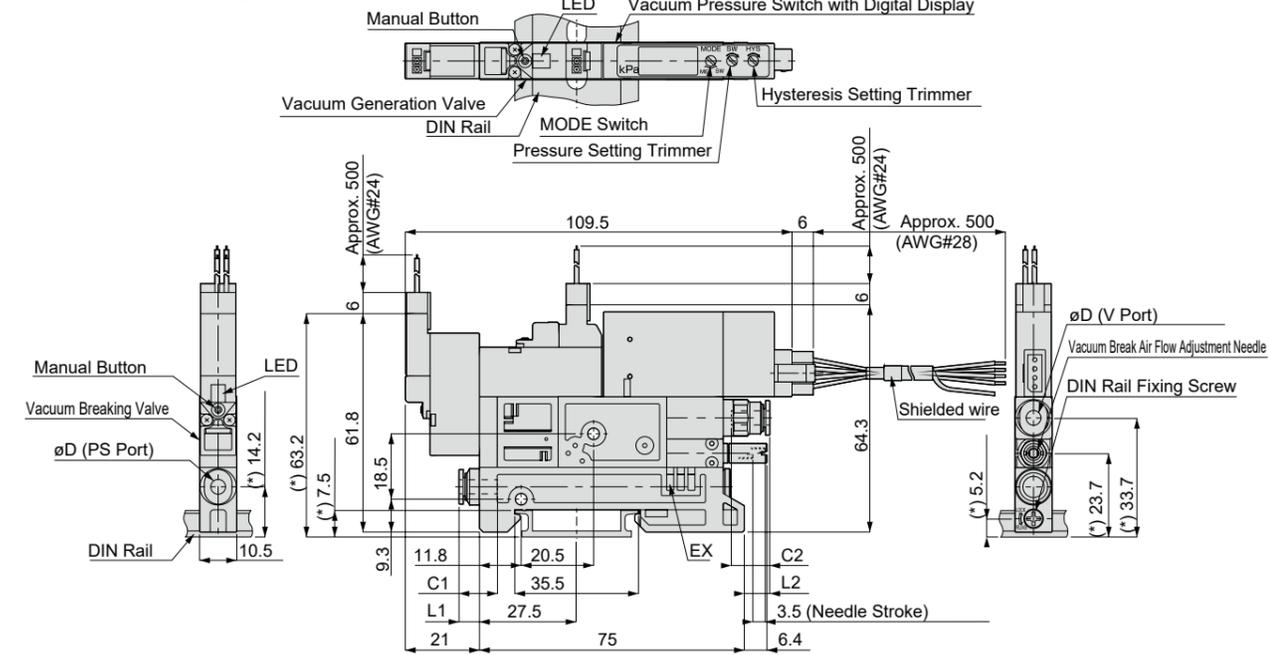
● Direct Mount Type



Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□□S-□-A0	4	11.2	11.2	6.1	13.5
	6	11.9	11.9	8.9	13.7

● DIN Rail Mounting Type

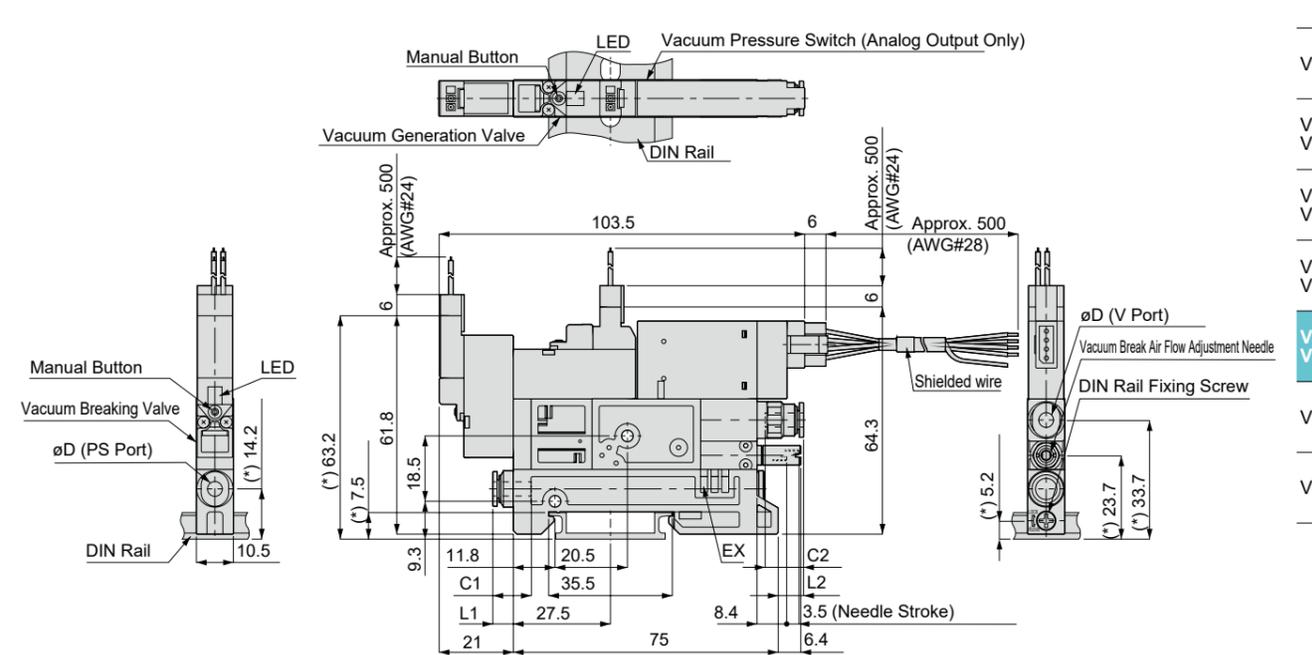


Note)Dimensions of the (*) printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□□S-□-DA-D	4	11.2	11.2	6.1	7.5
	6	11.9	11.9	8.9	7.7

● DIN Rail Mounting Type



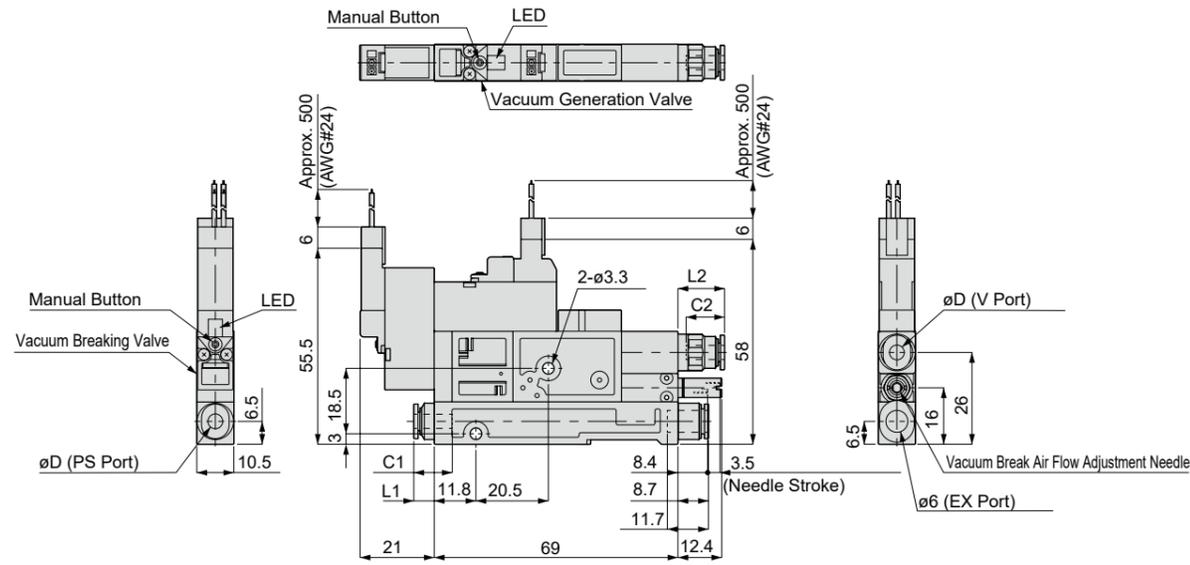
Note)Dimensions of the (*) printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□□S-□-A0-D	4	11.2	11.2	6.1	7.5
	6	11.9	11.9	8.9	7.7

External Dimensions Diagram (Single Unit Type, Centralized Exhaust Type, Without Vacuum Pressure Switch)

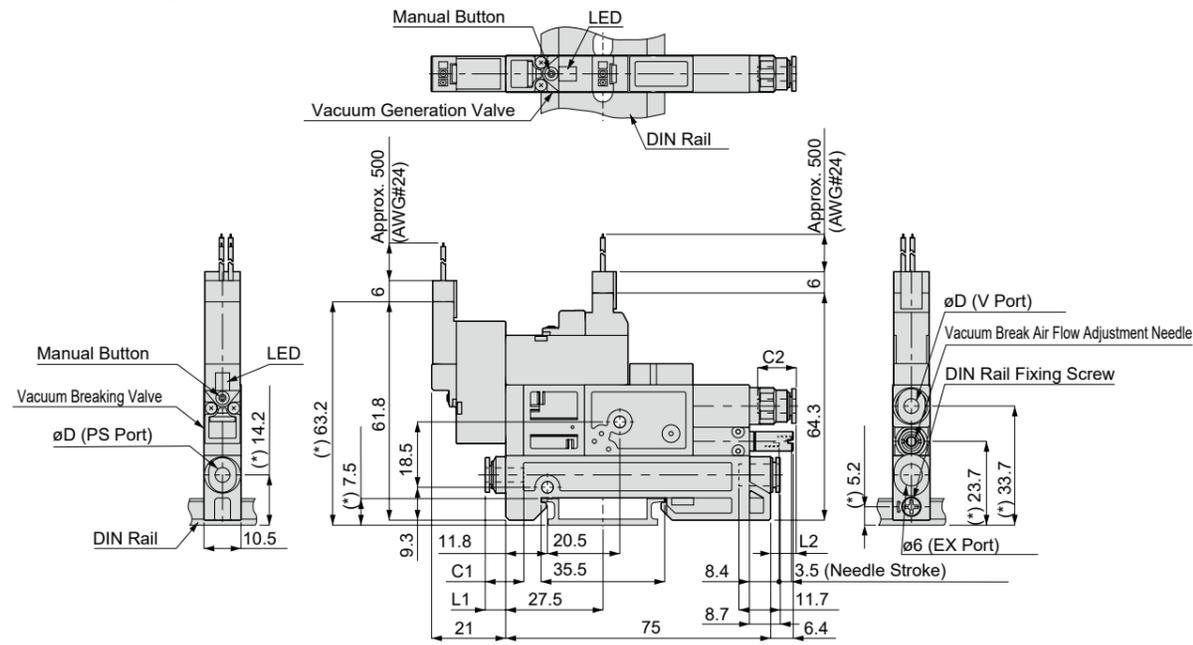
● Direct Mount Type



Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□□□□□□	4	11.2	11.2	6.1	13.5
	6	11.9	11.9	8.9	13.7

● DIN Rail Mounting Type



Note)Dimensions of the (*) printed part are for the DIN rail height: Value when 7.5 mm.

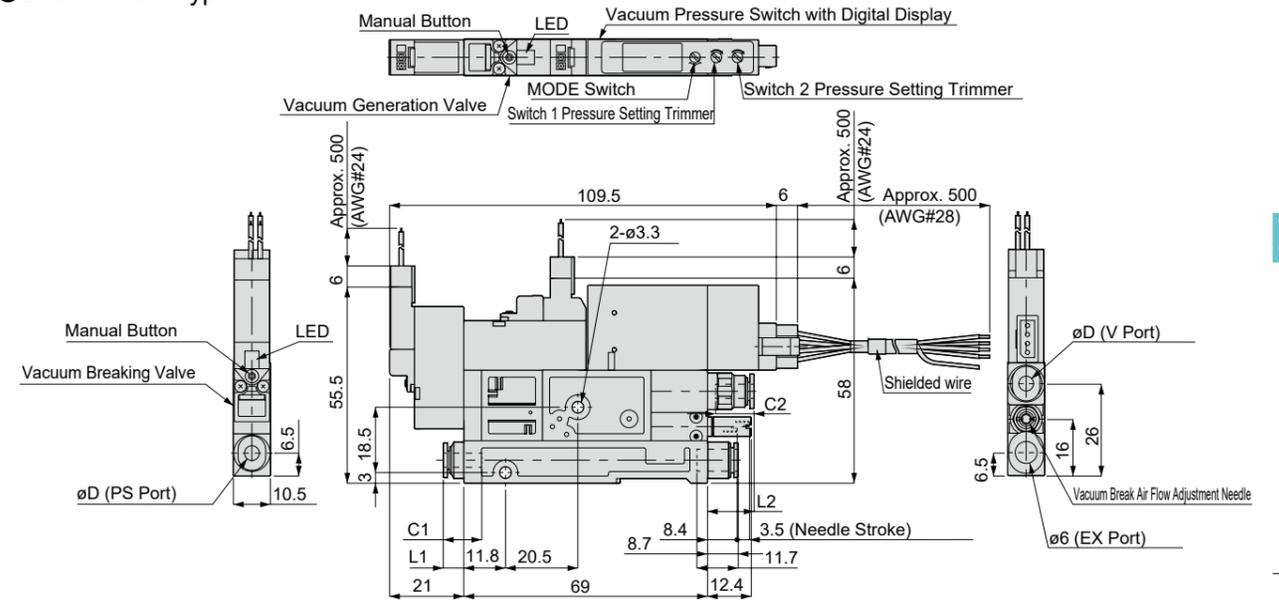
Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□□□□□□-D	4	11.2	11.2	6.1	7.5
	6	11.9	11.9	8.9	7.7

External Dimension Drawings

External Dimensions Diagram (Single Unit Type, Centralized Exhaust Type, With Vacuum Pressure Switch with Digital Display and 2-point Switch Output)

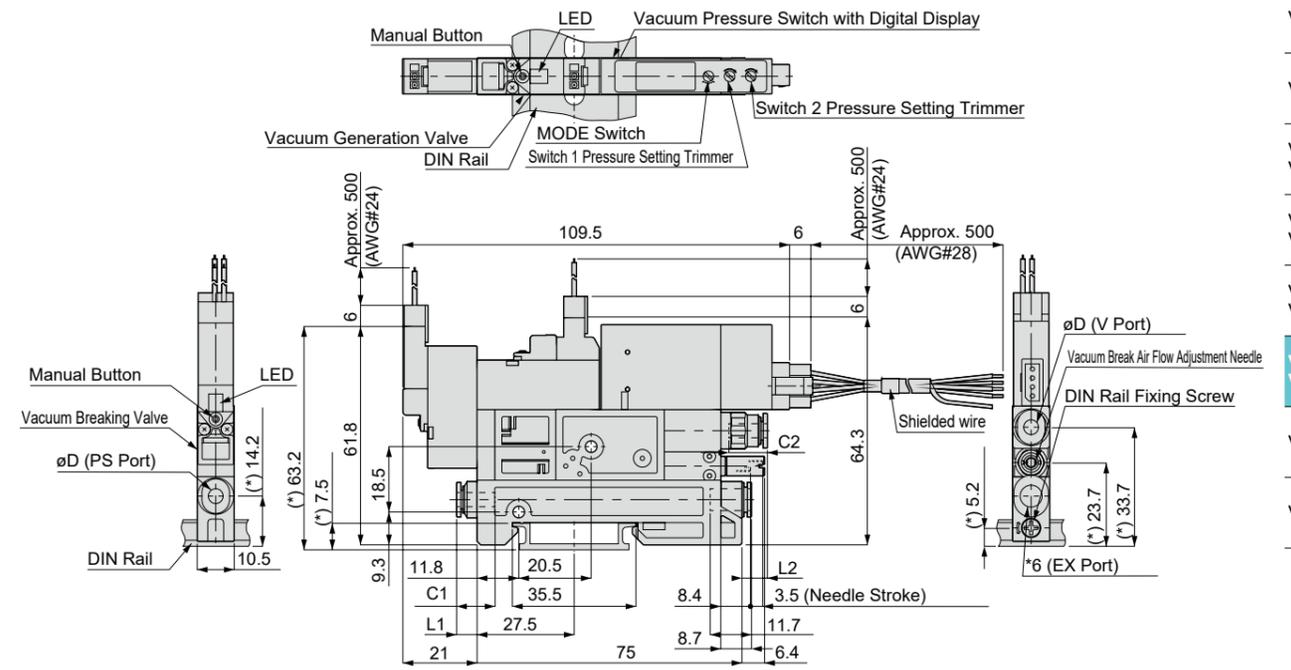
● Direct Mount Type



Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□□□□□□-DW	4	11.2	11.2	6.1	13.5
	6	11.9	11.9	8.9	13.7

● DIN Rail Mounting Type



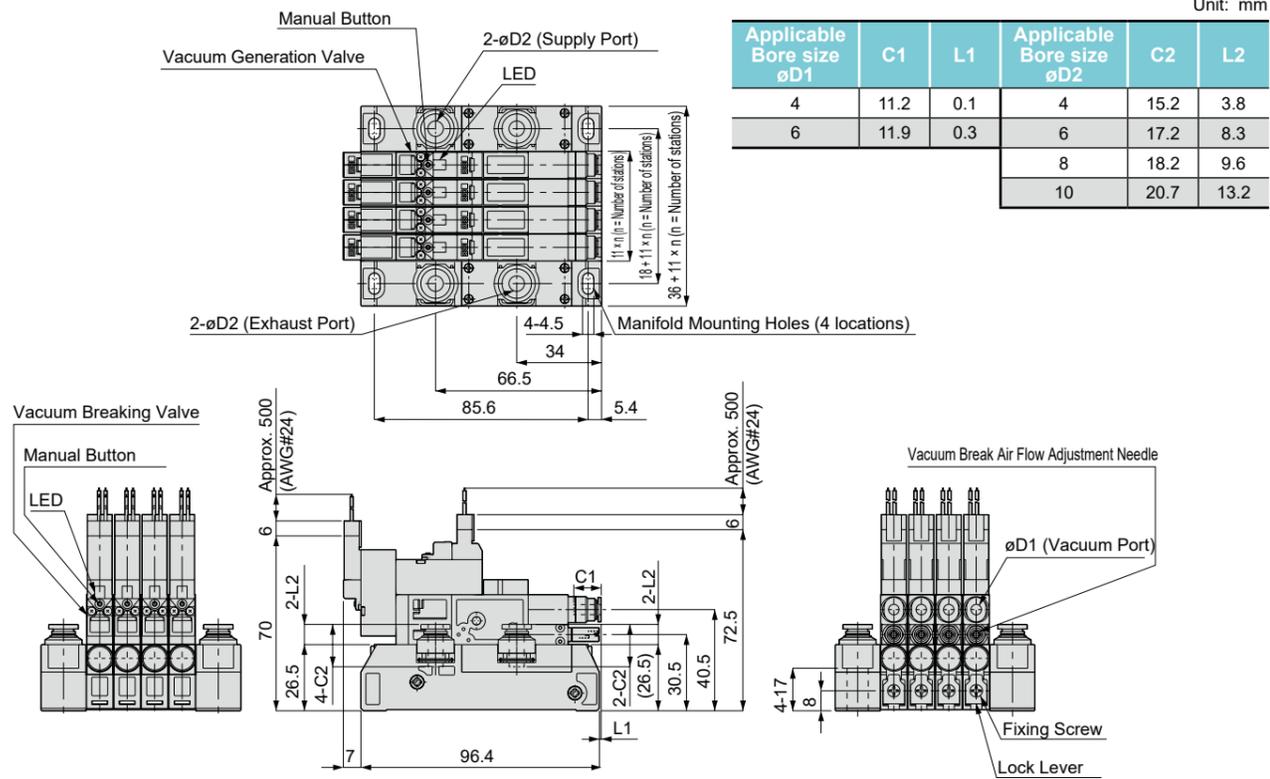
Note)Dimensions of the (*) printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

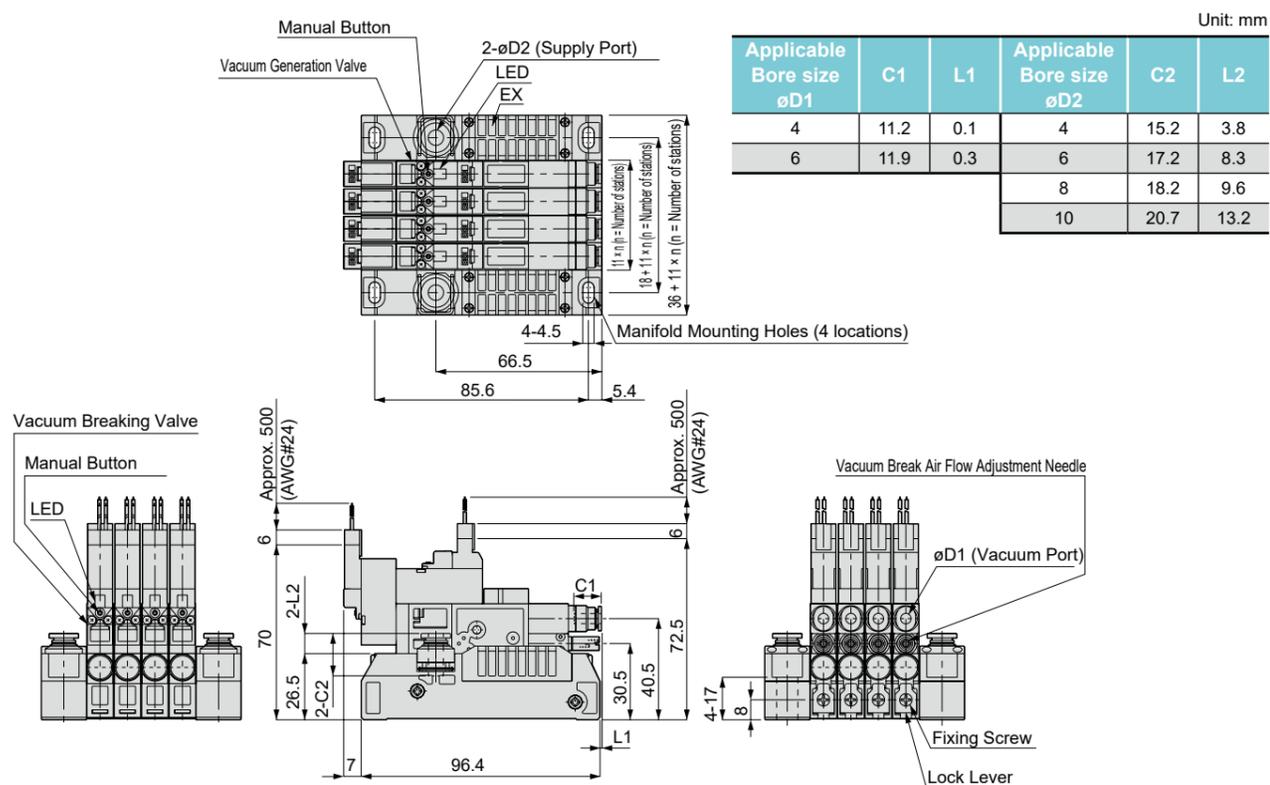
Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□□□□□□-DW-D	4	11.2	11.2	6.1	7.5
	6	11.9	11.9	8.9	7.7

External Dimensions Diagram (Manifold Type, VSXM, Without Vacuum Pressure Switch)

●Common exhaust



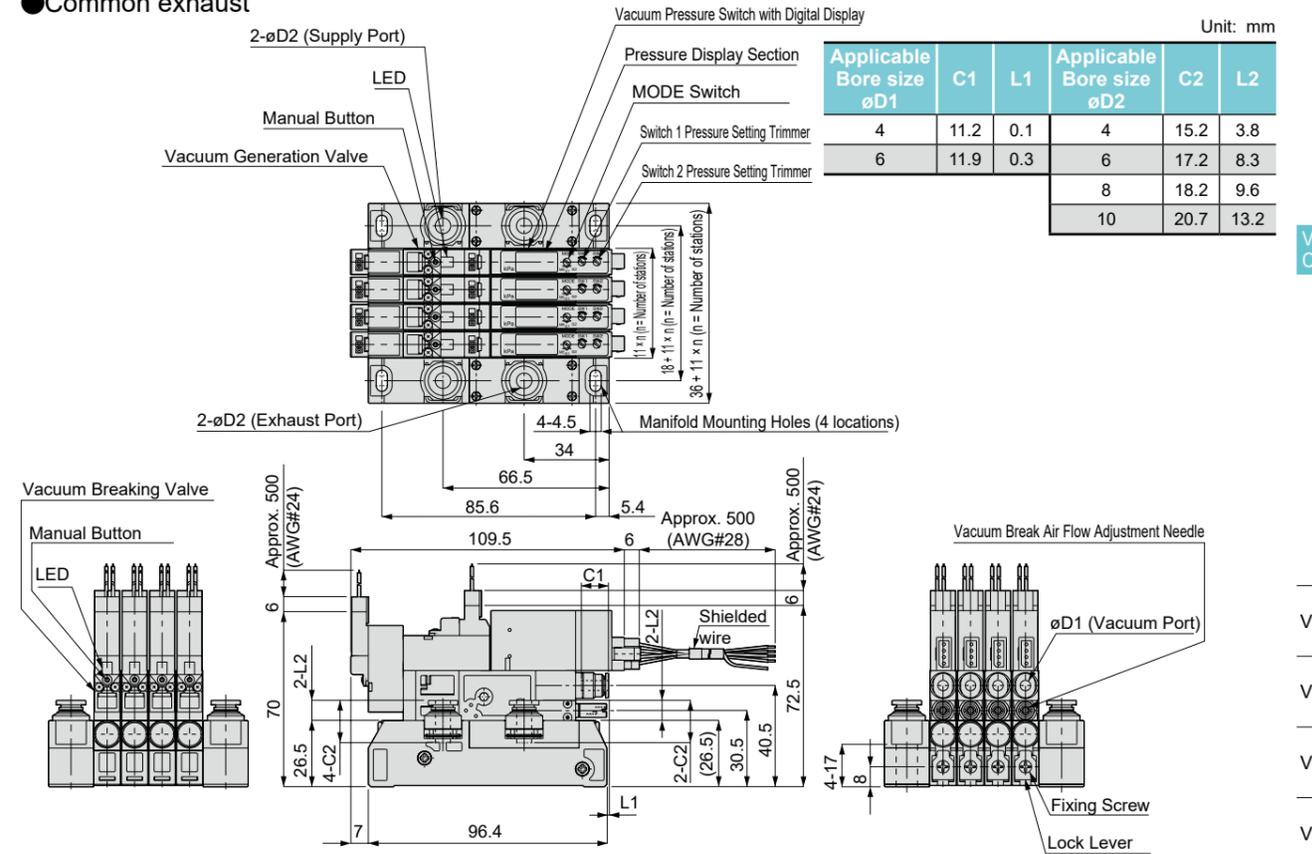
●Atmosphere release



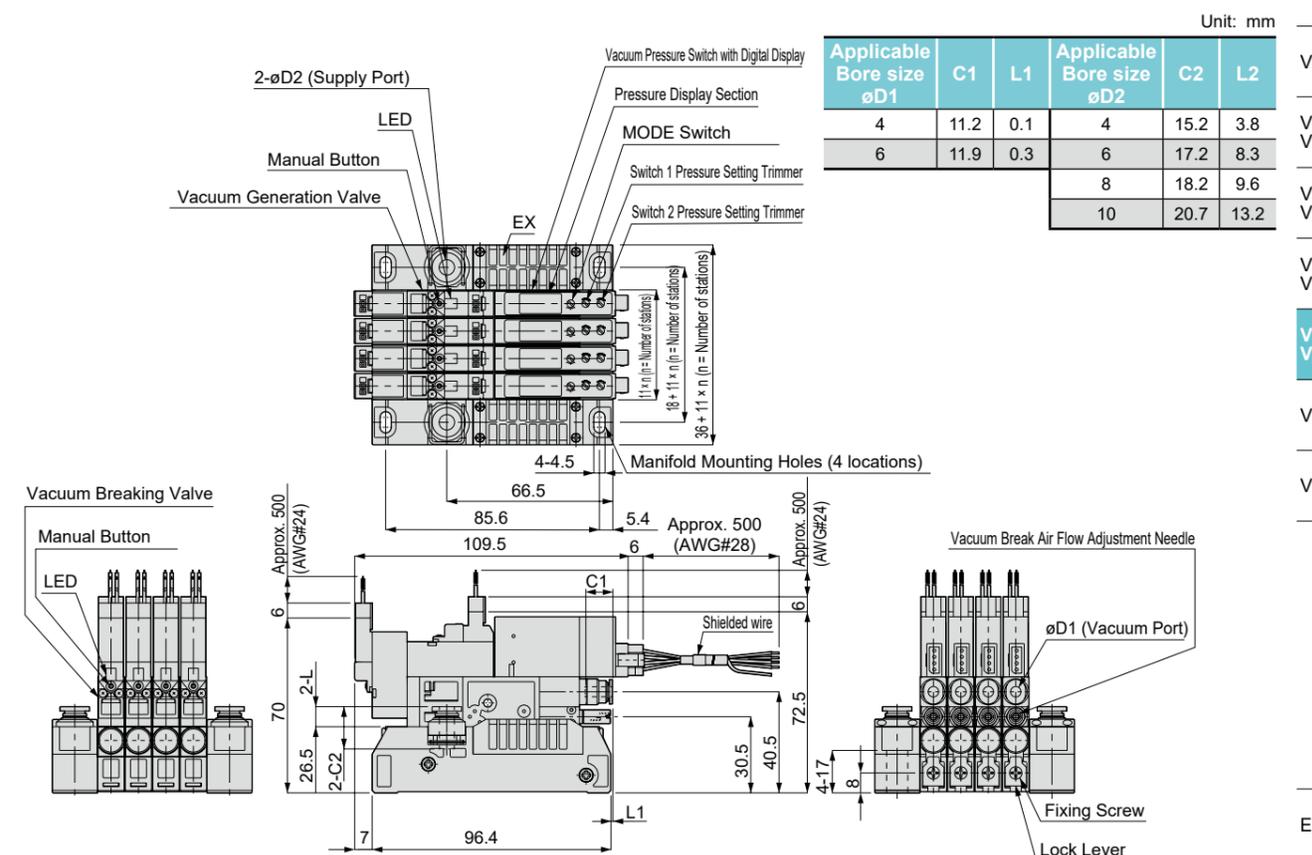
External Dimension Drawings

External Dimensions Diagram (Manifold Type VSXM, With Vacuum Pressure Switch with Digital Display and 2-point Switch Output)

●Common exhaust



●Atmospheric Release Type



Vacuum Components

Ejector System

VSX

VSH

VSU

VSB

VSC

VSG

VSK/
VSKM

VSJ/
VSJM

VSN/
VSNM

VSX/
VSXM

VSQ

VSZM

Ending

Vacuum Components

Ejector System

VSX

VSH

VSU

VSB

VSC

VSG

VSK/
VSKM

VSJ/
VSJM

VSN/
VSNM

VSX/
VSXM

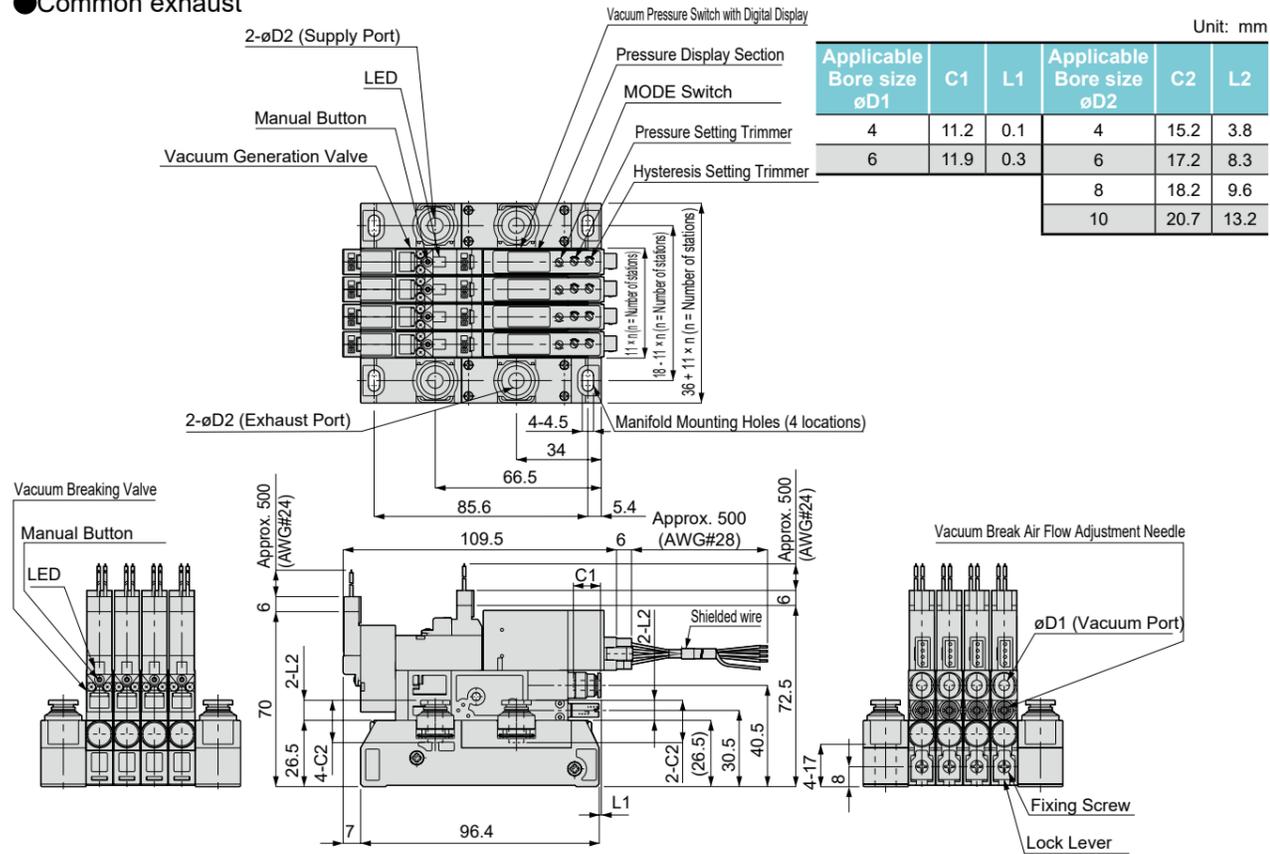
VSQ

VSZM

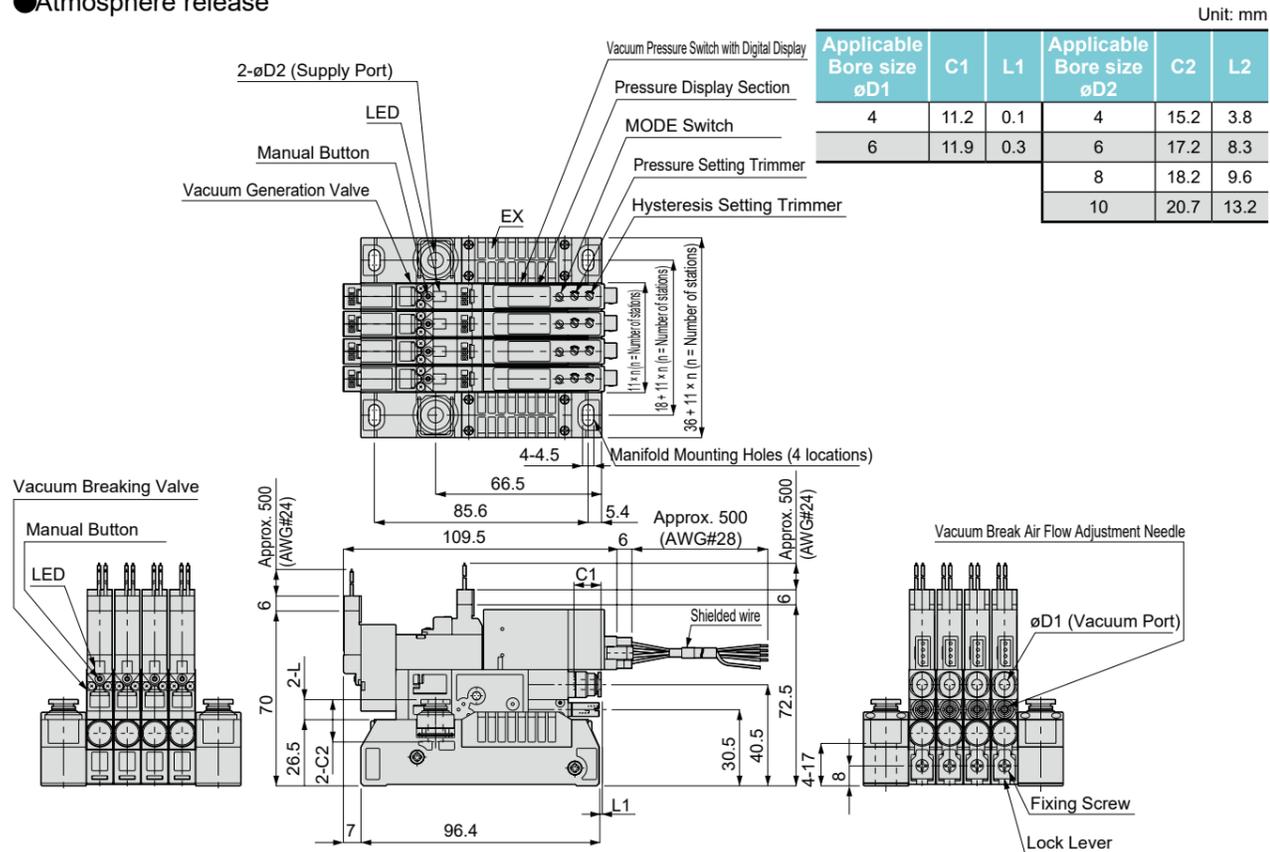
Ending

External Dimensions Diagram (Manifold Type VSXM, With Vacuum Pressure Switch with Digital Display, Analog Output, and Switch Output)

●Common exhaust

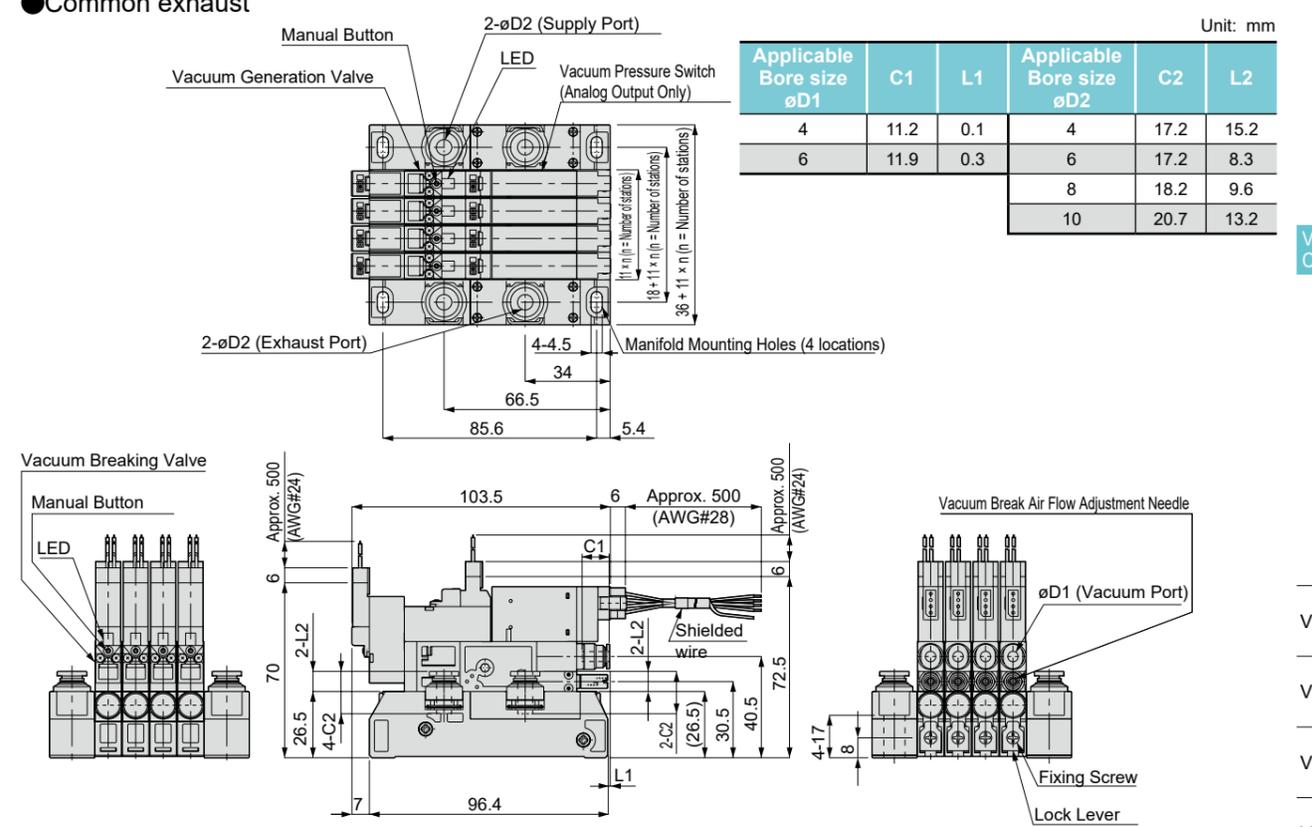


●Atmosphere release

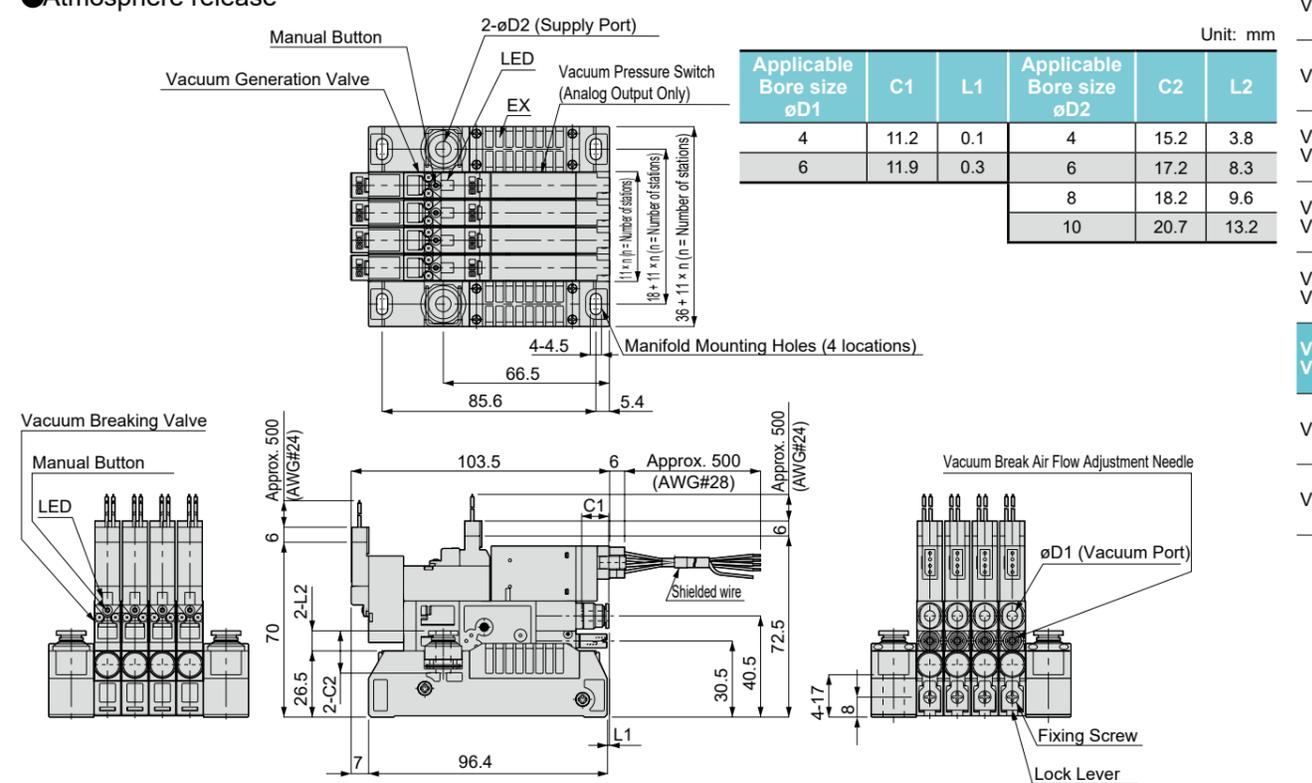


External Dimensions Diagram (Manifold Type VSXM, With Analog Output Vacuum Pressure Switch)

●Common exhaust

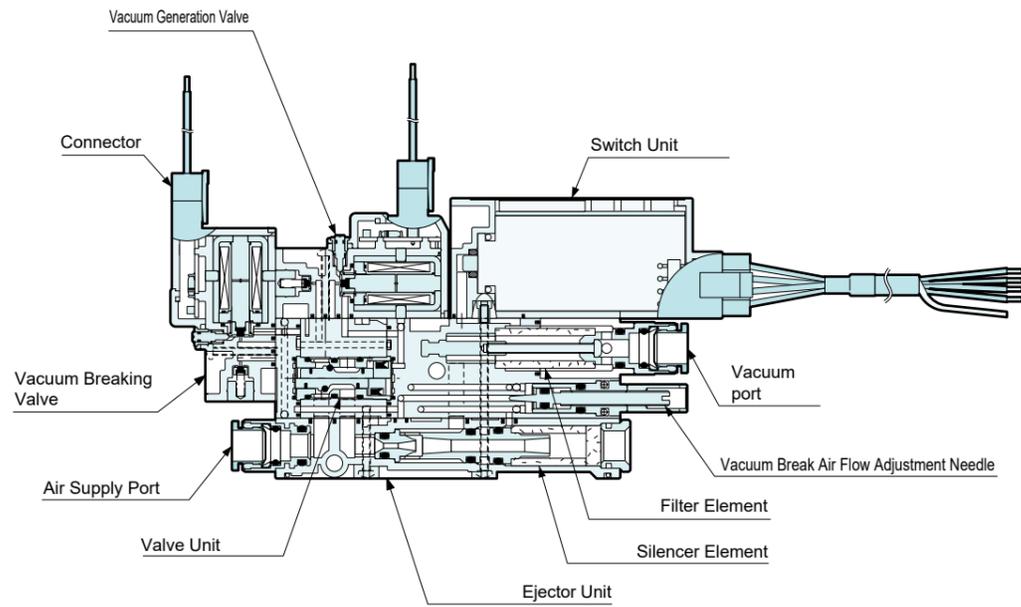


●Atmosphere release



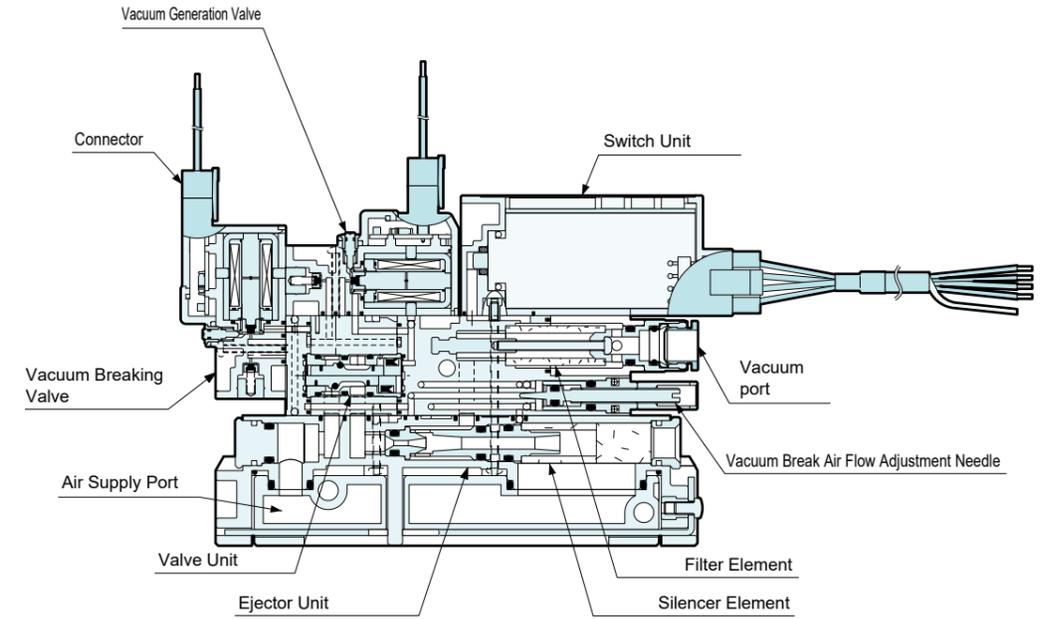
Internal Structure Diagram (Single Unit Type)

Ex.) VSX-□□□□-□□S-□□
With Vacuum Pressure Switch-type

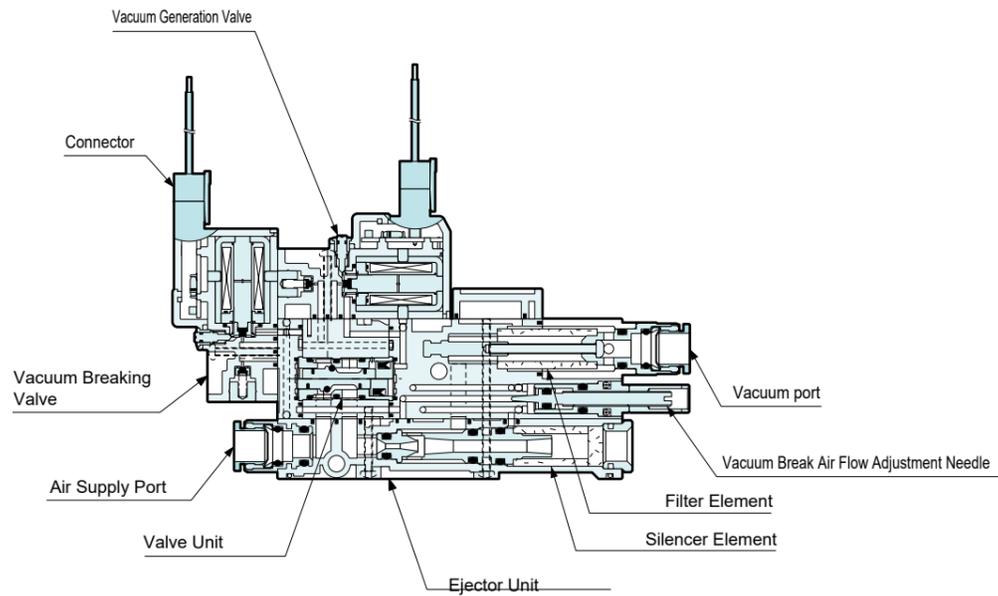


Internal Structure Diagram (Manifold Type)

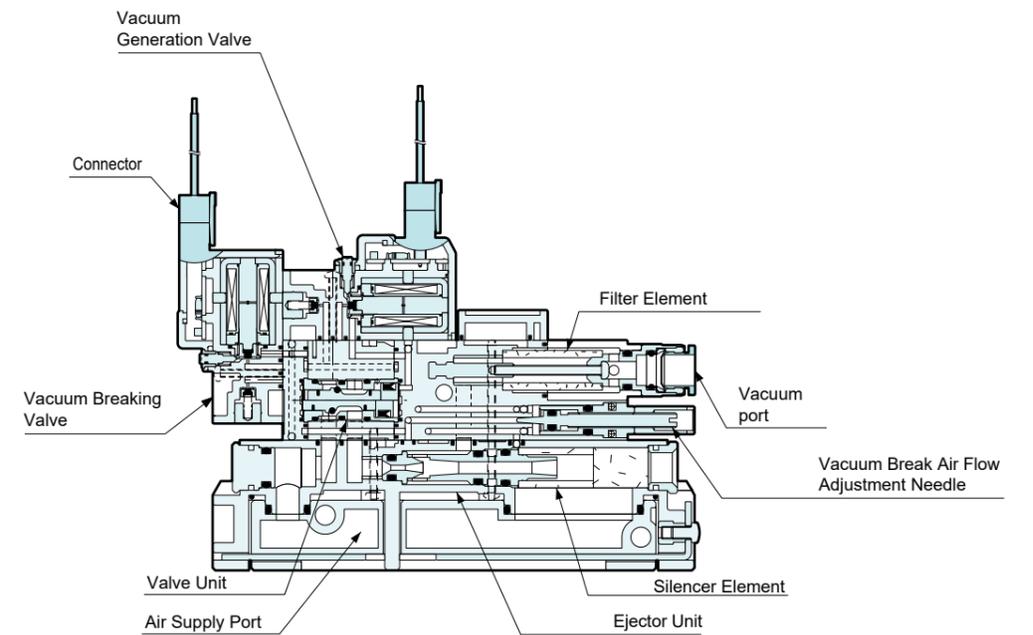
Ex.) VSXM-□□□□-□□S-□□□
With Vacuum Pressure Switch-type



Ex.) VSX-□□□□-□□S-□
Without Vacuum Pressure Switch-type



Ex.) VSXM-□□□□-□□S-□□□
Without Vacuum Pressure Switch-type



Vacuum Components

Vacuum Components

Ejector System

Ejector System

VSX

VSX

VSH

VSH

VSU

VSU

VSX

VSX

VSC

VSC

VSG

VSG

VSK/
VSKM

VSK/
VSKM

VSJ/
VSJM

VSJ/
VSJM

VSN/
VSNM

VSN/
VSNM

**VSX/
VSXM**

**VSX/
VSXM**

VSQ

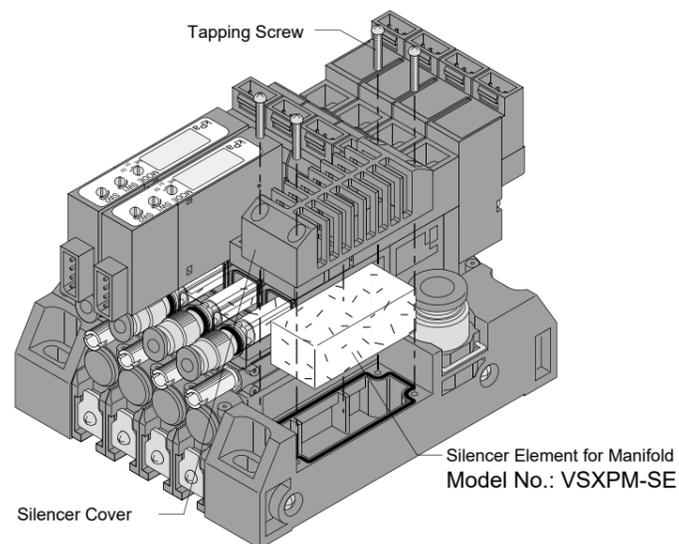
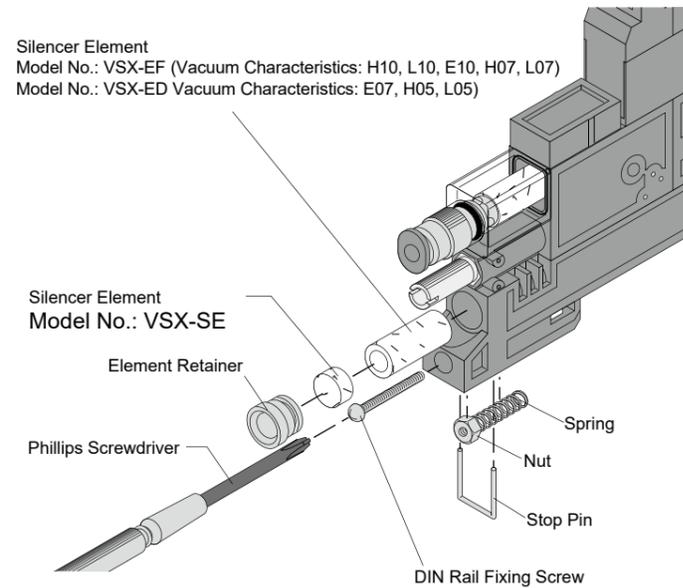
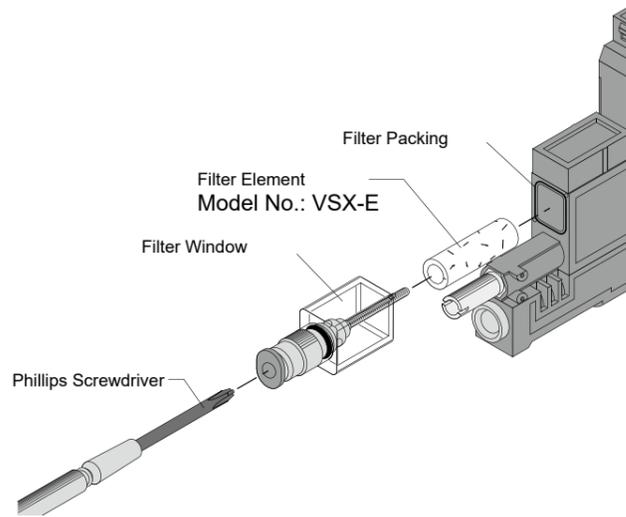
VSQ

VSZM

VSZM

Ending

Ending



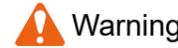
To Use This Product Safely

Be sure to read this before use.

For general pneumatic components precautions, Intro Page 15 for details.

Individual Precautions: VSX Series

Design / Selection



Warning

- For self-holding type (VSX-□□D-...), when pilot air supply is stopped and then restarted (including initial use after shipment), the switching valve is in the neutral state. When restarting pilot air supply, be sure to send a signal to the pilot valve or perform switching reliably by manual operation.
- When using the DIN rail type, if there is a possibility of vibration or shock being applied to the product, for safety, use commercially available DIN rail fixing brackets on both sides and ensure secure mounting.
- When mounting the unit onto the manifold, insert the lock lever fully and securely fix it with the screw. Vibration may cause the lock lever to detach, potentially causing the unit to eject.



Caution

- When replacing the cartridge fitting of the Vacuum (V) port, confirm that the window packing has not fallen out, remove any adhering substances from the seal section, and securely tighten the screws with the specified tightening torque.
- When mounting the unit onto the manifold, always confirm that the O-rings of the Air Supply (Vacuum Supply) and Exhaust (Air Supply) ports have not fallen out or protruded.

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Equipment Product Site (<https://www.ckd.co.jp/kiki/en/>) → 'model No.' → **Instruction Manual**.

Precautions for Manifold Use

■ Increasing the number of manifold stations may result in unsatisfactory performance or cause trouble due to the following reasons. Please inquire for details.

1. Degradation of vacuum performance due to insufficient supply air

- Countermeasures:
- ① Check supply air capacity, etc.
 - ② Keep piping as short as possible
 - ③ Increase fitting size
 - ④ If supplying from one side, supply from both sides of the manifold

2. Insufficient exhaust port capacity leading to degradation of vacuum performance, or exhaust air exiting from the vacuum ports of other stations.

→ The number of stations for which performance can be maintained in a manifold depends on nozzle size, vacuum performance, etc. Please inquire.

Cause: For silencer type (atmospheric release), insufficient silencer capacity increases exhaust resistance, degrading performance.

- Countermeasures:
- ① Use individual exhaust for each station. (Special Order)
 - ② Avoid locations where the exhaust section faces a wall.
 - ③ Reduce the number of stations.

Cause: For centralized exhaust type, high piping resistance degrades performance.

- Countermeasures:
- ① Keep piping length as short as possible.
 - ② Increase exhaust fitting size.
 - ③ Use individual exhaust for each station. (Special Order)
 - ④ Reduce the number of stations.

MEMO

Vacuum
Components

Ejector System

VSX/VSXM

VSQ

VSZM

VSY

VSH

VSU

VSB

VSC

VSG

VSK/
VSKM

VSJ/
VSJM

VSN/
VSNM

Ending

Vacuum
Components

Ejector System

Vacuum
Components

VSX/VSXM

VSQ

VSZM

VSY

VSH

VSU

VSB

VSC

VSG

VSK/
VSKM

VSJ/
VSJM

VSN/
VSNM

Ending

How to Create a VSXM Mixed Manifold Specification Sheet

● Mix manifold model No. (example)

VSXM- ¹Z ²00 ³Z - ⁴CX ⁵6 ⁶5 - ⁷3 - ⁸5 - ⁹B

● Mix manifold specifications sheet (example)

Vacuum Ejector Model No.	Arrangement Position										Quantity
	1	2	3	4	5	6	7	8	9	10	
VSXM- ¹ H ² 07 ³ B - ⁴ 4 - ⁷ 3 - ⁹ DW	○	○									2
VSXM- ¹ E ² 07 ³ B - ⁴ 6 - ⁷ 3 - ⁹ DW			○		○						2
VSXM- ¹ E ² 07 ³ A - ⁴ 6 - ⁷ - ⁹ DA				○							1
VSXM- ¹ - ² - ³ - ⁴ - ⁷ - ⁹ -											
VSXM- ¹ - ² - ³ - ⁴ - ⁷ - ⁹ -											

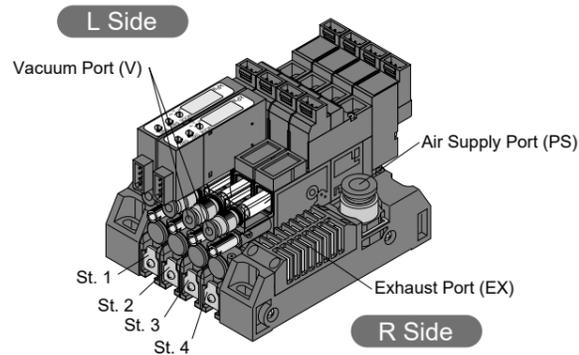
[For Fitting Mix Specification with Output Port Size Only]

● Mix manifold model No. (example)

VSXM- ¹H ²07 ³B - ⁴CX ⁵4 ⁶4 - ⁷3 - ⁸5 ⁹DW

● Mix manifold specifications sheet (example)

Vacuum Ejector Model No.	Arrangement Position										Quantity
	1	2	3	4	5	6	7	8	9	10	
VSXM- ¹ H ² 07 ³ B - ⁴ 4 - ⁷ 3 - ⁹ DW	○	○									2
VSXM- ¹ H ² 07 ³ B - ⁴ 6 - ⁷ 3 - ⁹ DW			○	○	○						3
VSXM- ¹ - ² - ³ - ⁴ - ⁷ - ⁹ -											
VSXM- ¹ - ² - ³ - ⁴ - ⁷ - ⁹ -											



[Notes for Filling Out]

- For piping position, place the vacuum port at the front and install sequentially from the left.
- In the Required Quantity column at the right end of the table, enter the total quantity of the specified product model No.s.

VSXM Mixed Manifold Specification Sheet

Contact Person _____ Quantity _____ Set _____ Delivery Date (Month/Day) _____

Voucher No. _____ Order Received No. _____

Date of Issue _____

Company _____

Attn: _____

Order No. _____

● Mix manifold model No.

VSXM- ¹- ²- ³- ⁴- ⁵- ⁶- ⁷- ⁸- ⁹-

1 Vacuum Characteristics

Code	Content
H	High Vacuum/Medium Flow Type
L	Medium Vacuum/High Flow Type
E	High Vacuum/Low Flow Type
Z	For mixed specifications (Provide details in the specification sheet)

2 Nozzle Diameter

Code	Content
05	ø0.5
07	ø0.7
10	ø1.0
00	For mixed specifications (Provide details in the specification sheet)

3 Valve-type

Code	Content
B	Normally Closed Type
D	Self-holding Type
Z	For mixed specifications (Provide details in the specification sheet)

4 Vacuum Port (V)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
CX	For fitting mix (Provide details in the specification sheet)

5 Air Supply Port (PS)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
8	ø8 Push-in fitting
10	ø10 Push-in fitting

6 Exhaust Port (EX)

Code	Content
S	Atmospheric Release with Silencer
6	ø6 Push-in fitting centralized exhaust
8	ø8 Push-in fitting centralized exhaust
10	ø10 Push-in fitting centralized exhaust

7 Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC

8 Number of Manifold Stations

Code	Content
2 to 10	2 to 10 Stations

9 Vacuum Pressure Switch Specifications

Code	Content
Blank	Without Vacuum Pressure Switch
DW	NPN Output 2 points with Digital Display
DA	NPN Output 1 point + Analog Output with Digital Display
AO	Analog Output
Z	For mixed specifications (Provide details in the specification sheet)

Notes for model No. Selection

- *1: The combination 1"E" and 2"5" cannot be selected.
- *2: When 1 is 'Z', only 2 '00' can be selected. When 2 is '00', only 1 'Z' can be selected.

● Mix manifold specifications sheet

Vacuum Ejector Model No.	Arrangement Position										Quantity
	1	2	3	4	5	6	7	8	9	10	
VSXM- ¹ - ² - ³ - ⁴ - ⁷ - ⁹ -											
VSXM- ¹ - ² - ³ - ⁴ - ⁷ - ⁹ -											
VSXM- ¹ - ² - ³ - ⁴ - ⁷ - ⁹ -											
VSXM- ¹ - ² - ³ - ⁴ - ⁷ - ⁹ -											
VSXM- ¹ - ² - ³ - ⁴ - ⁷ - ⁹ -											