Large Flow High Vacuum Generator

VLM

PISCO®

RoHS

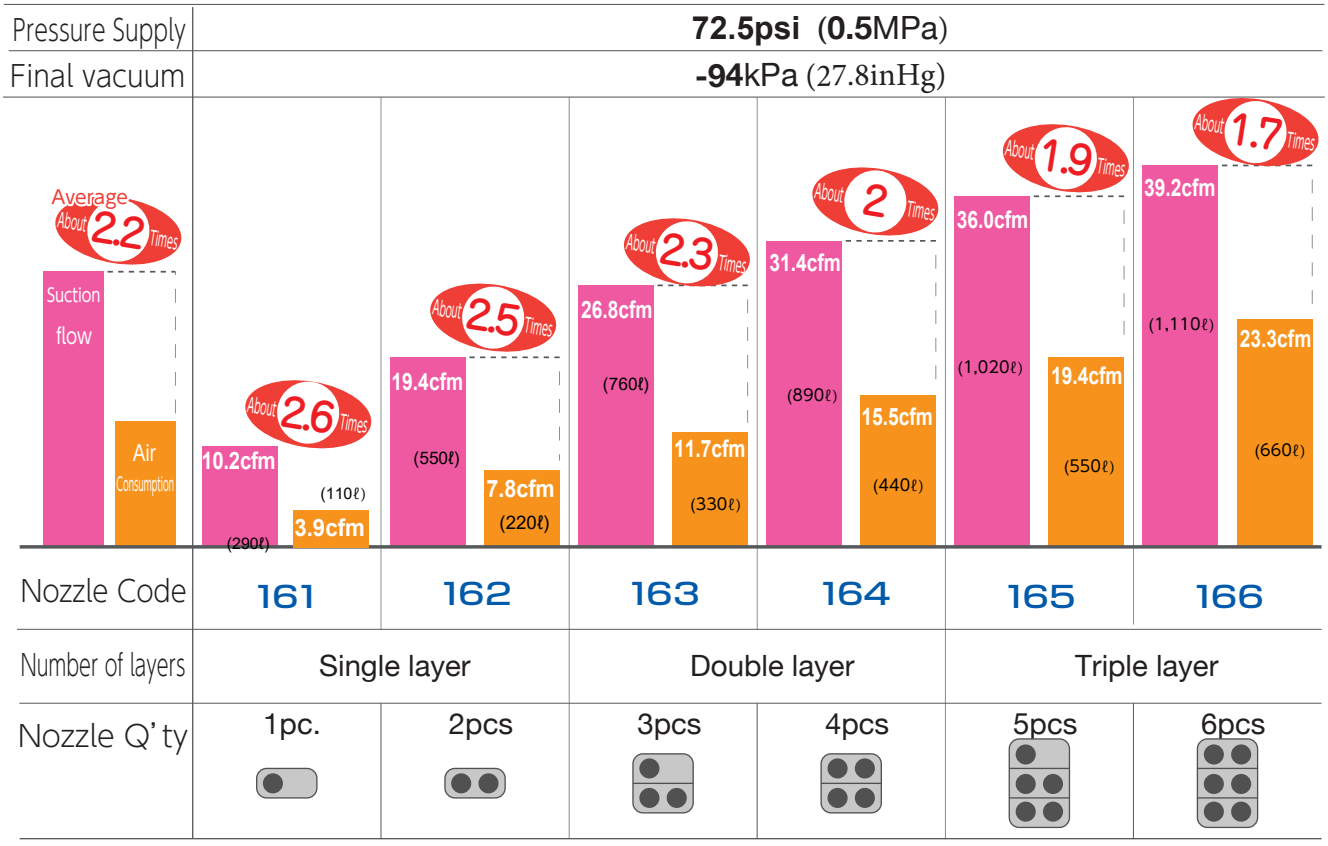
& Piping Equipment

NITTO KOHKI CHIYODA

Characteristics

Securing high vacuum and high flow rate

- By adoption of multi-stage nozzle and multi layer structure, suction flow can be secured approx. **2.2**times (on average) larger than air consumption.



Excellent in ozone resistance ▸ FKM for all sealing rubber.

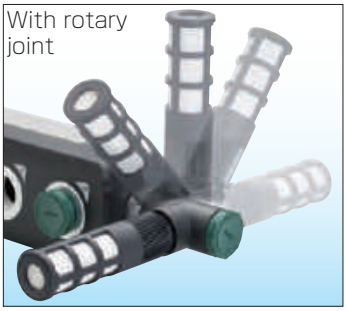
Silencer installing direction is selectable.

▸ Selectable from **Three** directions; Side, Front(*1) and With rotary joint, depending on the installation space.

Side

Front

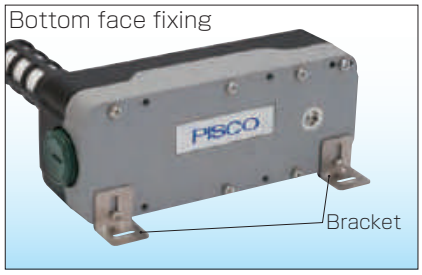
With rotary joint



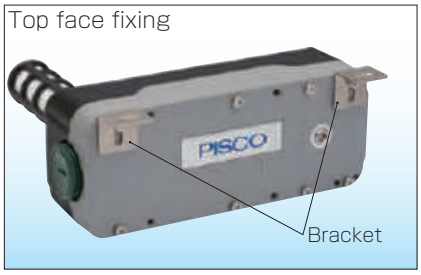
*1. Front installation is only for single layer type: 161, 162.
*2. Vacuum characteristic changes by silencer Q'ty and its installing direction.

Body can be fixed freely with two brackets.

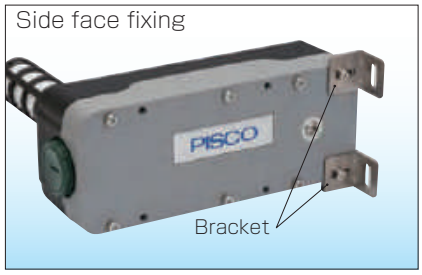
Bottom face fixing



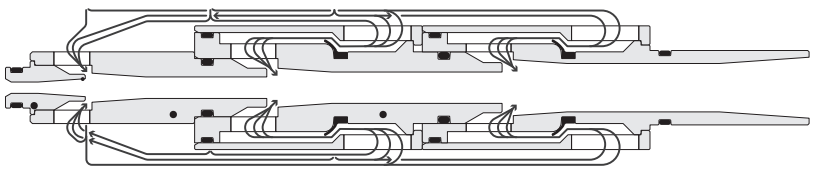
Top face fixing



Side face fixing



Basic Venturi Princeple

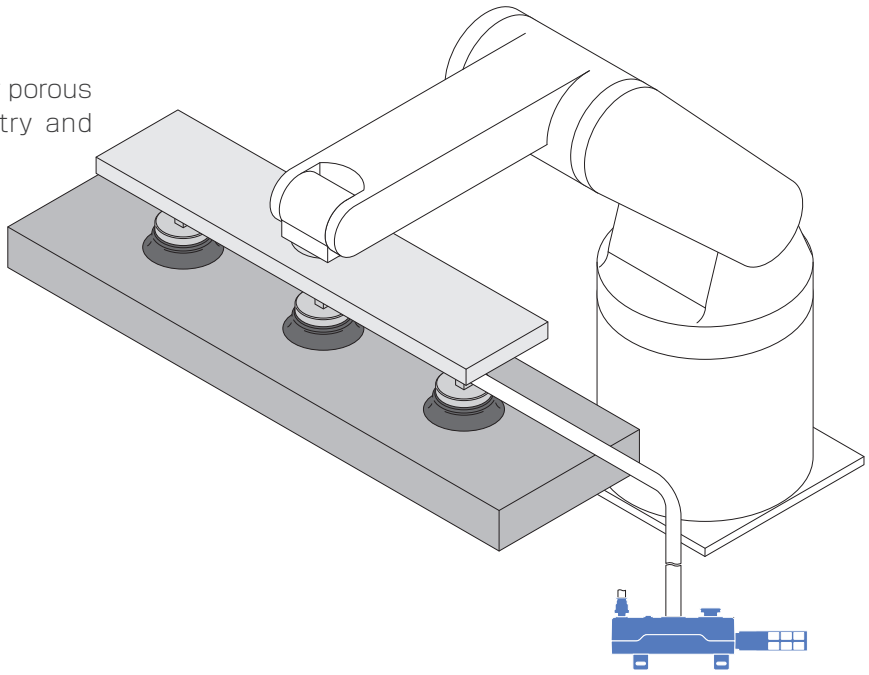


Suitable for applications in various industrial fields.

- Best suited for a various range of industries, as well as automobile, semiconductor, food and medicine industries.

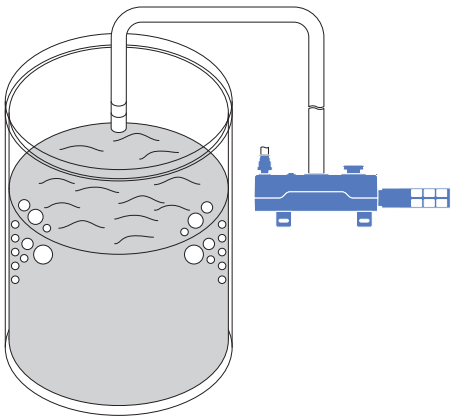
Suction Conveyance

Best suited for large and heavy or porous work-piece in automobile industry and packaging industry, etc.



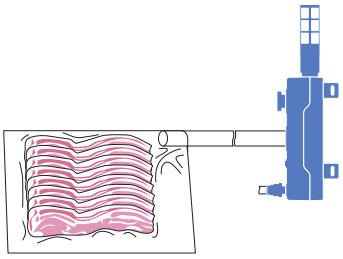
Defoaming · Deaeration

Bubble and air contained in adhesive, cosmetics (cream) and distilled water can be removed.



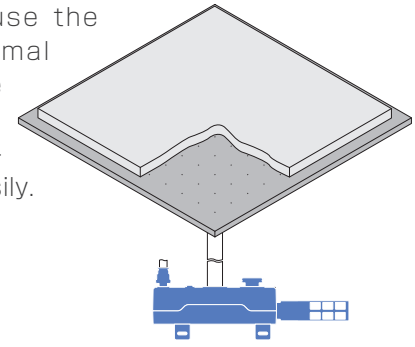
Vacuum packing

Can be used for vacuum packing of food or the like, removing air from the package.



Vacuum Holding

The processing accuracy can be stabilized because the distortion and thermal deformation of the work-piece hardly occurs. Also, the work-piece can be fixed easily.



Model Designation (Example)

VLM | H | 161 ① – 06 ② | 02 – S1 ③

③.Exhaust port(Connection type : Taper pipe female thread, Size : Rc3/4)

Code	161, 162 (Single layer)	163, 164 (Double layer)	165, 166 (Triple layer)
No Code	 No silencer, End cap 1pc.	 No silencer, End cap 1pc.	 No silencer, End cap 1pc.
S1	 Silencer 1pc. End cap 1pc.	 Silencer 2pcs, End cap 1pc.	 Silencer 3pcs, End cap 1pc.
S2	 Silencer 1pc. Rotate joint 1pc. End cap 2pcs	 Silencer 2pcs, Rotate joint 2pcs, End cap 3pcs	 Silencer 3pcs, Rotate joint 3pcs, End cap 4pcs

※.All type contain 2pcs of bracket for VLM installation and plug for pressure gauge port.

Air supply port size ▶02 : Rc1/4(Taper pipe female thread)

②.Vacuum port size

Code	06	08
Taper pipe female thread	Rc3/4	Rc1

①.Nozzle specification

Code	161	162	163	164	165	166
Layer	Single layer		Double layer		Triple layer	
Nozzle quantity	1pc. 	2pcs 	3pcs 	4pcs 	5pcs 	6pcs 
Suction /min[ANR]	10.2cf. (290ℓ)	19.4cf. (550ℓ)	26.8cf. (760ℓ)	31.4cf. (890ℓ)	36.0cfm (1,020ℓ)	39.2cfm (1,110ℓ)
Consumption/min[ANR]	3.9cf. (110ℓ)	7.8cf. (220ℓ)	11.7cf. (330ℓ)	15.5cfm (440ℓ)	19.4cfm (550ℓ)	23.3cfm (660ℓ)

Vacuum characteristic ▶H : High-vacuum large flow (Rated supply pressure : 72.5psi (0.5MPa), Final vacuum : -27.8 inHg (-94kPa))

Large Flow Vacuum Generator VLM

Model Designation of Attachment parts (Example)

VLM – R ①

①.Parts name

Code	R	E	B	D
	Rotate joint  Rc3/4 R3/4	End cap  R3/4	Bracket (2pcs/set) 	Dummy plug (2pcs/set)※ 

※.Dummy plug is needed to plug unnecessary nozzles.

Large Flow Vacuum Generator VLM

VVVSR06  R3/4

Silencer

(For direct mounting to body or attaching to rotate joint)

PF06-04  R3/4 Rc1/2

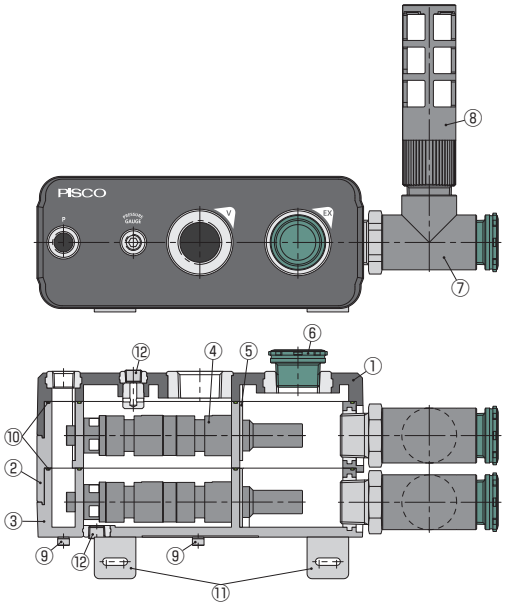
Bush

(For connecting Push-in fitting (Thread size : R1/2) to vacuum port (Rc3/4))

Specifications

Nozzle type	161	162	163	164	165	166
Layers	Single layer		Double layer		Triple layer	
Nozzle quantity	1 pc.	2 pcs	3 pcs	4 pcs	5 pcs	6 pcs
Suction flow rate (/min ANR)	10.2cf. (290L)	19.4cf. (550L)	26.8cf. (760L)	31.4cf. (890L)	36.0cf. (1,020L)	39.2cf. (1,110L)
Air consumption (/min ANR)	3.9cf. (110L)	7.8cf. (220L)	11.7cf. (330L)	15.5cf. (440L)	19.4cf. (550L)	23.3cf. (660L)
Fluid medium	Air					
Operating pressure range	43.5 ~ 101.5 psi (0.3 ~ 0.7 Mpa)					
Rated supply pressure	72.5 psi (0.5 Mpa)					
Operating temp. range	41~122°F (5 ~ 50°C)					
Nozzle diameter (mm)	ø1.6					

Construction (VLMH163 or 164)



No.	Parts	Material
①	Top case	Brass, PA, Aluminum
②	Middle case	PA, Aluminum
③	Bottom case	PA, Aluminum
④	Nozzle Ass'y	PA, FKM
⑤	Nozzle clip	Iron (Electroless nickel plated)
⑥	End cap	PBT
⑦	Rotate joint	Aluminum,PBT
⑧	Silencer	PBT, PVF
⑨	Hexagon socket head bolt	Iron (Electroless nickel plated)
⑩	Case packing	FKM
⑪	Bracket	Iron (Electroless nickel plated)
⑫	Plug for pressure gauge port	Iron (Electroless nickel plated)

Safety instruction manual

⚠Warnings

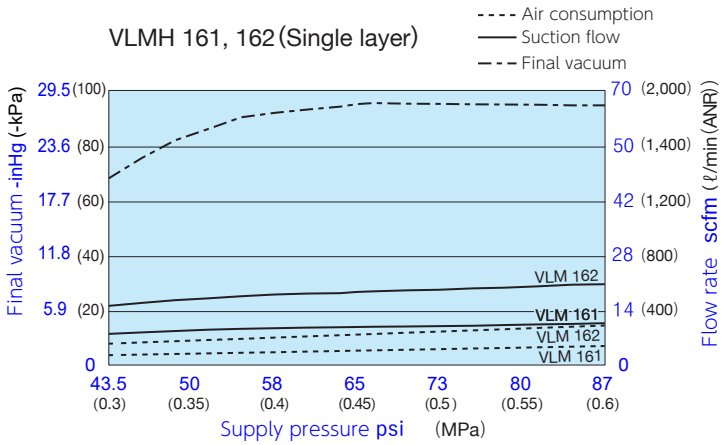
1. Maintenance of Large Flow Vacuum Generator VLM Series should be conducted by a person with the understanding about the construction of this product and enough knowledge about pneumatic equipment.

⚠Cautions

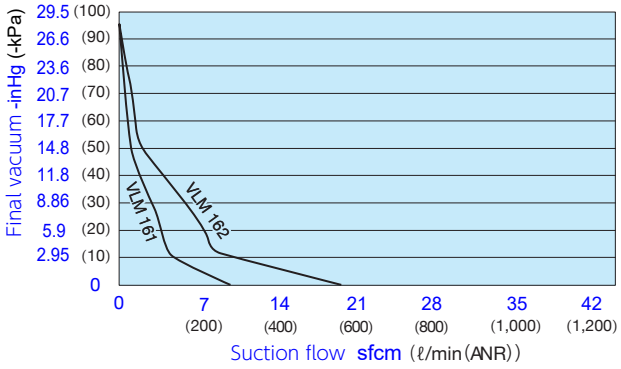
1. When selecting an exhaust piping, or use without silencer with dust existing in air or pipe, dust may enter from the exhaust port by back-flow at operation stop, and it may cause malfunction and performance drop.
2. Vacuum characteristics may be changed upon plumbing conditions and other variants.
3. Do not use the generator in corrosive gas, flammable gas, chemicals, sea water, water or steam. As the generator may be damaged and lead to leakage.
4. Do not use the generator in places where they can be exposed to water drops, oil drops, duct, etc. The generator is neither drip-proof nor dust-proof, so that trouble may result.
5. Diameter of tube connected to vacuum port to be as large as possible and length as long as possible, to ensure the generator performance.
6. Falling or shock may cause damage or leakage to the generator.
7. Install silencer to every layer of the generator, otherwise performance may be deteriorated.
8. Do not supply positive pressure more than 0.3MPa such as blow-off air to vacuum circuit. It causes check packing damage.
9. Use of vacuum filter is recommended to prevent possible entering of foreign substances from vacuum port (V).

Characteristics

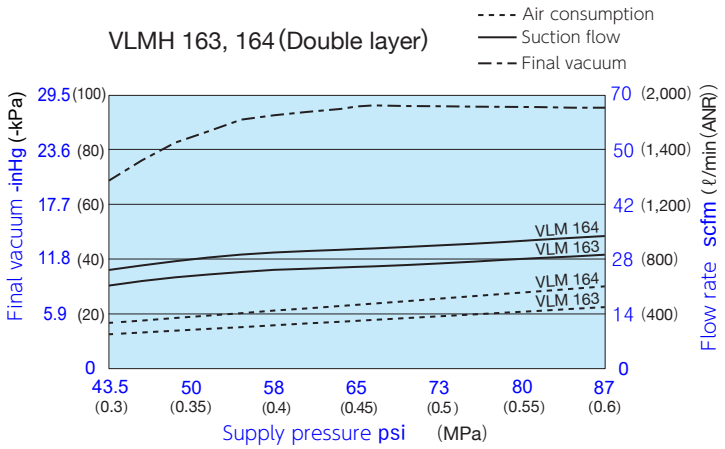
VLMH 161, 162 (Single layer)



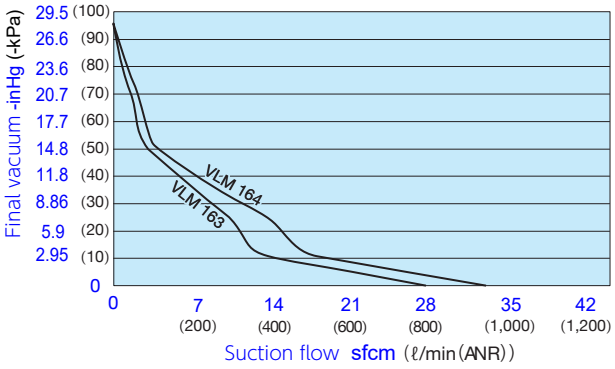
VLMH 161, 162 (Single layer)



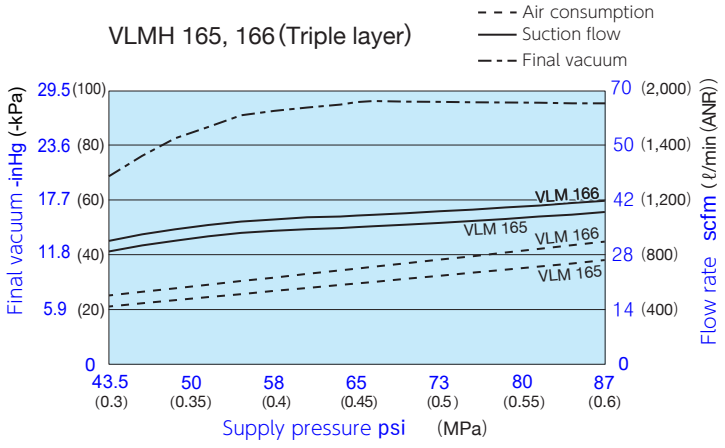
VLMH 163, 164 (Double layer)



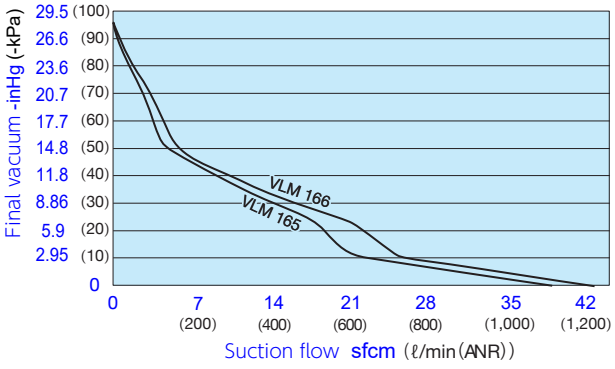
VLMH 163, 164 (Double layer)



VLMH 165, 166 (Triple layer)



VLMH 165, 166 (Triple layer)



Appearance drawing

Model code : **VLM H161-[2]02-[3]** Single layer, nozzle 1pc.
VLM H162-[2]02-[3] Single layer, nozzle 2pcs

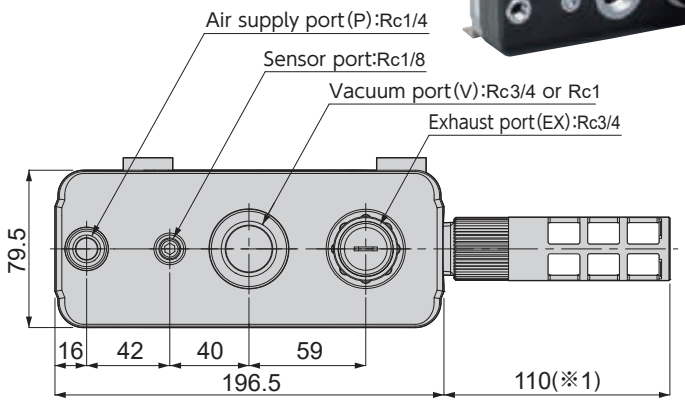
No silencer ⇒[3] : No code

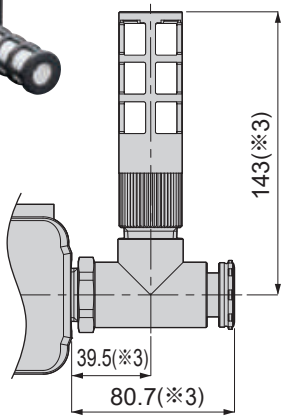
Silencer: Side installation ⇒[3] : S1

Silencer: Front installation ⇒[3] : S1

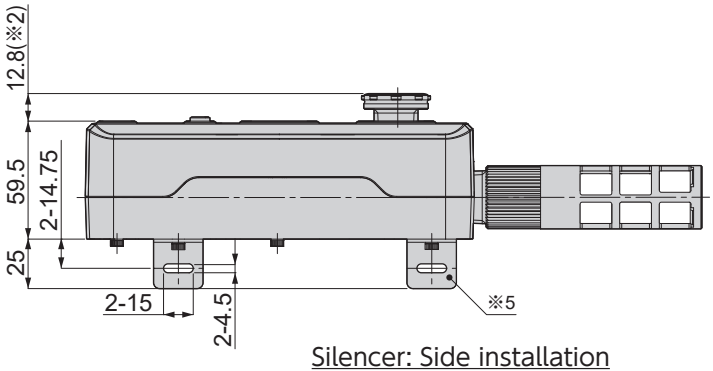
Silencer with rotate joint ⇒[3] : S2

Unit : mm

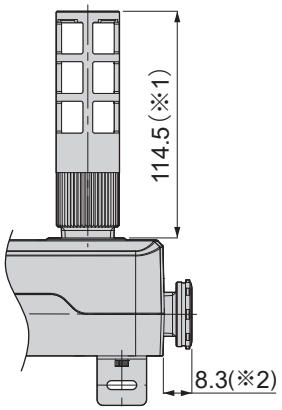


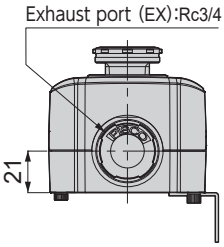


Silencer with rotate joint

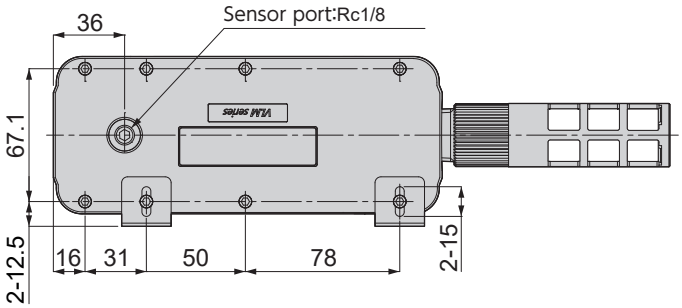


Silencer: Side installation





Silencer: Front installation



Model code	weight (g)
VLM H161-[2]02	848
VLM H162-[2]02	909
VLM H161-[2]02-S1	882
VLM H162-[2]02-S1	943
VLM H161-[2]02-S2	952
VLM H162-[2]02-S2	1,013

※1)Reference dimension when silencer installed. ※2) Reference dimension when end cap installed.
※3) Reference dimension when silencer and rotate joint installed.
※4) [2] Replaced with vacuum port size code from the model designation (example) in page 4.
※5) The installation method of bracket in this dimensional drawing is only one example. Refer page 2 for other bracket installation method.

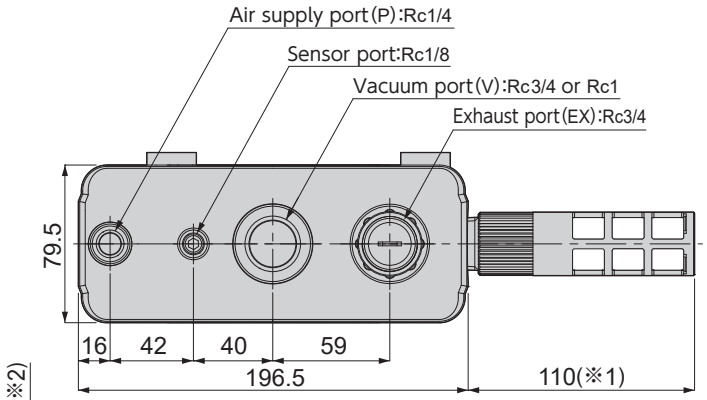
Model code : **VLM H163-[2]02-[3]** Double layer, nozzle 3pcs
VLM H164-[2]02-[3] Double layer, nozzle 4pcs

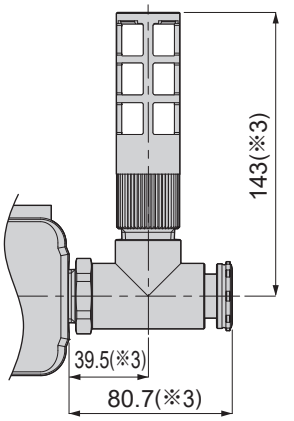
No silencer ⇒[3] : No code

Silencer: Side installation ⇒[3] : S1

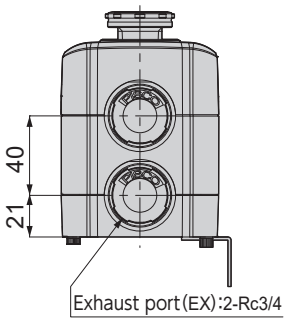
Silencer with rotate joint ⇒[3] : S2

Unit : mm

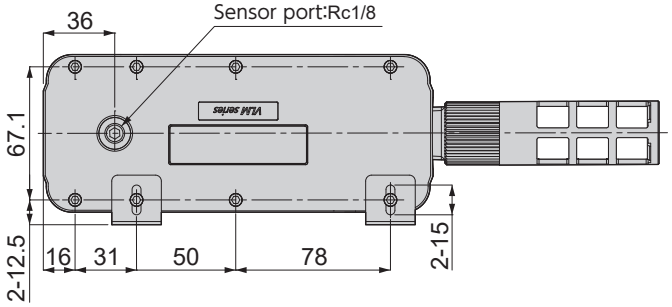




Silencer with rotate joint



Silencer: Side installation



Model code	weight (g)
VLM H163-[2]02	1,358
VLM H164-[2]02	1,393
VLM H163-[2]02-S1	1,426
VLM H164-[2]02-S1	1,461
VLM H163-[2]02-S2	1,566
VLM H164-[2]02-S2	1,601

※1)Reference dimension when silencer installed. ※2) Reference dimension when end cap installed.
※3) Reference dimension when silencer and rotate joint installed.
※4) [2] Replaced with vacuum port size code from the model designation (example) in page 4.
※5) The installation method of bracket in this dimensional drawing is only one example. Refer page 2 for other bracket installation method.

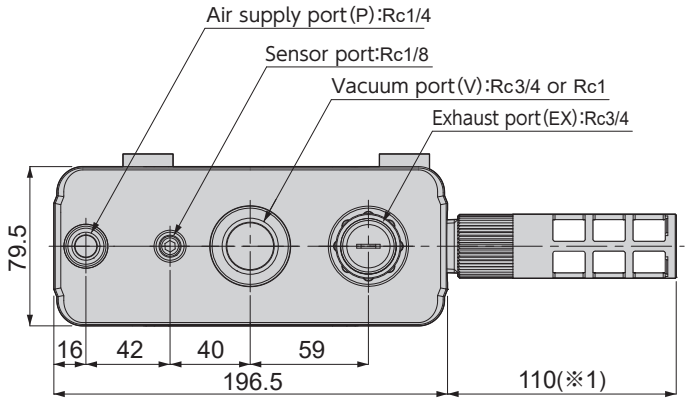
Model code : **VLM H165-[2]02-[3]** Triple layer, nozzle 5pcs
VLM H166-[2]02-[3] Triple layer, nozzle 6pcs

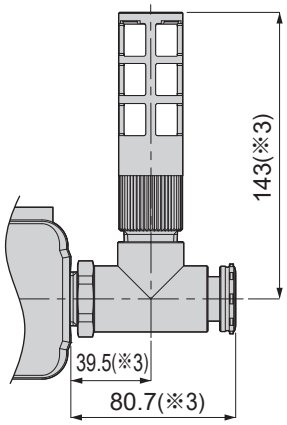
No silencer ⇒[3] : No code

Silencer: Side installation ⇒[3] : S1

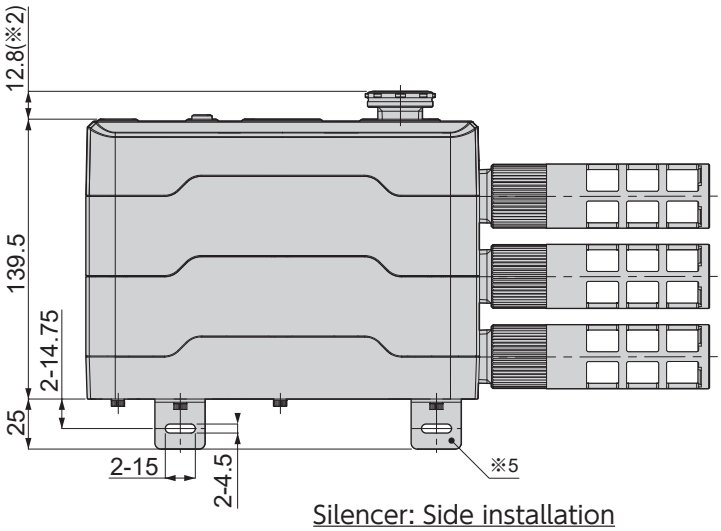
Silencer with rotate joint ⇒[3] : S2

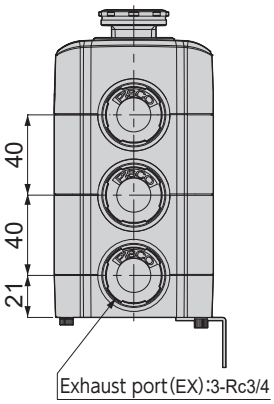
Unit : mm



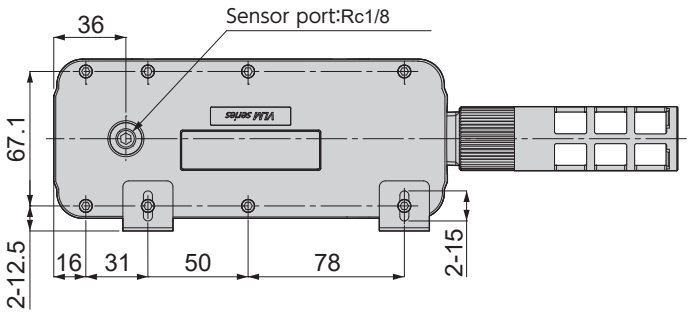


Silencer with rotate joint





Silencer: Side installation



Model code	weight (g)
VLM H165-[2]02	1,828
VLM H166-[2]02	1,848
VLM H165-[2]02-S1	1,930
VLM H166-[2]02-S1	1,950
VLM H165-[2]02-S2	2,140
VLM H166-[2]02-S2	2,160

※1)Reference dimension when silencer installed. ※2) Reference dimension when end cap installed.
※3) Reference dimension when silencer and rotate joint installed.
※4) [2] Replaced with vacuum port size code from the model designation (example) in page 4.
※5) The installation method of bracket in this dimensional drawing is only one example. Refer page 2 for other bracket installation method.

Parts

Bracket

Rotate joint

End cap

Dummy plug

Silencer
(without elbow block)

Bush

Model code	Model code	Model code	Model code	Model code	Model code
VLM-B	VLM-R	VLM-E	VLM-D	VVVSR06	PF06-04

Related products

Large digital pressure sensor (vacuum switch)

VUS -32 Compound pressure type

● Rated pressure range : -100～100 kPa

Model code
VUS-32R-NV-01
VUS-32R-N2-01
VUS-32R-PV-01
VUS-32R-P2-01

- Easily viewable LCD dual displays. High level visibility with 3-color display
- Improved wiring workability and maintenance by lead wire with connector.
- Copy function enables to copy various settings to slave-side sensor.

Digital pressure gauge

GPD -V Negative pressure type

● Rated pressure range : -101～0 kPa

Model code
GPD-V-01

- Pressure is clearly digital displayed by a single push of a button.
- Display with only 1 battery, no need of wiring.
- A power saving mode is adapted. Battery life is about 3 years (at 5times indication/ day).

Air Tank

ATS

●Tank capacity : 0.4 ～20ℓ

Model code
ATS-0.4
ATS-0.75
ATS-2
ATS-5
ATS-10
ATS-20

- Reducing the vacuum pressure fluctuations and pulsations.
- Tank capacity is selectable from 6 variations.
- Tank is made of stainless steel.

Related products

Push-in fittings for air supply port

*Air supply port size : Rc1/4. Tubing OD: 10, 12 mm

Male

R (R1/4)

CHIYODA

NITTO KOHKI

Elbow

R (R1/4)

CHIYODA

Model code	
F10-02M	20PM+65SN
F12-02M	20PM+80SN

Model code
F10-02ML
F12-02ML

Push-in fittings for vacuum port

*These push-in fittings can be used only when the vacuum port size is Rc3/4 and installing a bush listed above (PF06-04).
Tubing OD: 10, 12, 16 mm

Male

R (R1/2)

CHIYODA

NITTO KOHKI

Elbow

R (R1/2)

CHIYODA

Union Y

R (R1/2)

CHIYODA

Model code	
F10-04M	40PM+65SN
F12-04M	40PM+80SN
F16-04M	40PM+110SN

Model code
F10-04ML
F12-04ML
F16-04ML

Model code
F10-04MY
F12-04MY
F16-04MY

Hydrolysis Polyurethane Tubing

Model NO.	O.D. x I.D.	W.Temp	W.Pressure	Color
TE-4 x 2.5	4 x 2.5	Air = -5~60°C Water = 5~40°C Vacuum = -5~60°C	Air = 0.8 MPa Water = 0.3 MPa Vacuum = -100 kPa	BK R Y CG CY CR CBL W C OR LB LG G
TE-6	6 x 4			
TE-8	8 x 5			
TE-10	10 x 6.5			
TE-12	12 x 8			
TE-16	16 x 11			

"#$%&'!()!*+,!-.-(/-0/1!(*!!234!25!-*6!27!8+/+9)
":1*;,<=!>?@4!A?@4!&??@

DISTRIBUTED BY

บริษัท นานดีอินเตอร์เทรด จำกัด
NANDEE INTER-TRADE CO., LTD.
Tel : 0-2675-8230 (Auto), 0-2675-8240 (Auto)
Fax : 0-2212-1448, 0-2213-0360

: nandeeintertrade
: @nandeeintertrade
: www.nandee.co.th