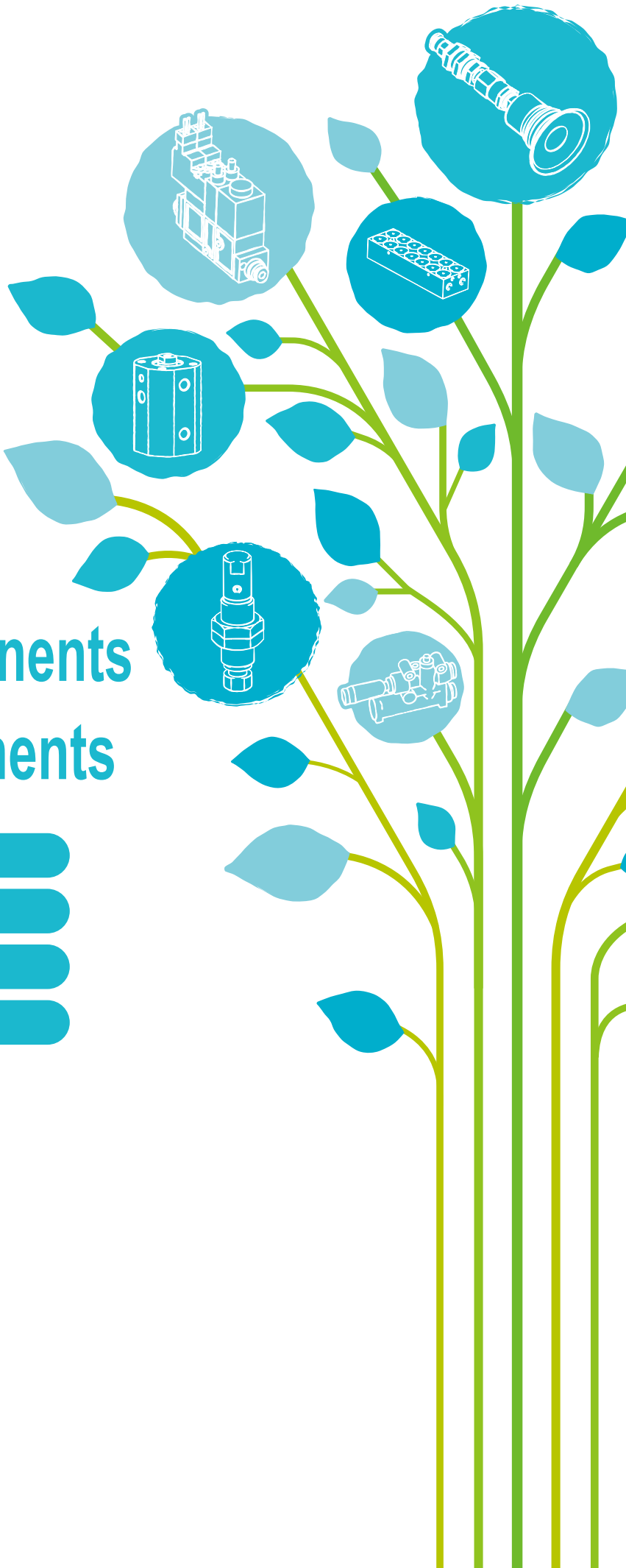
CKD



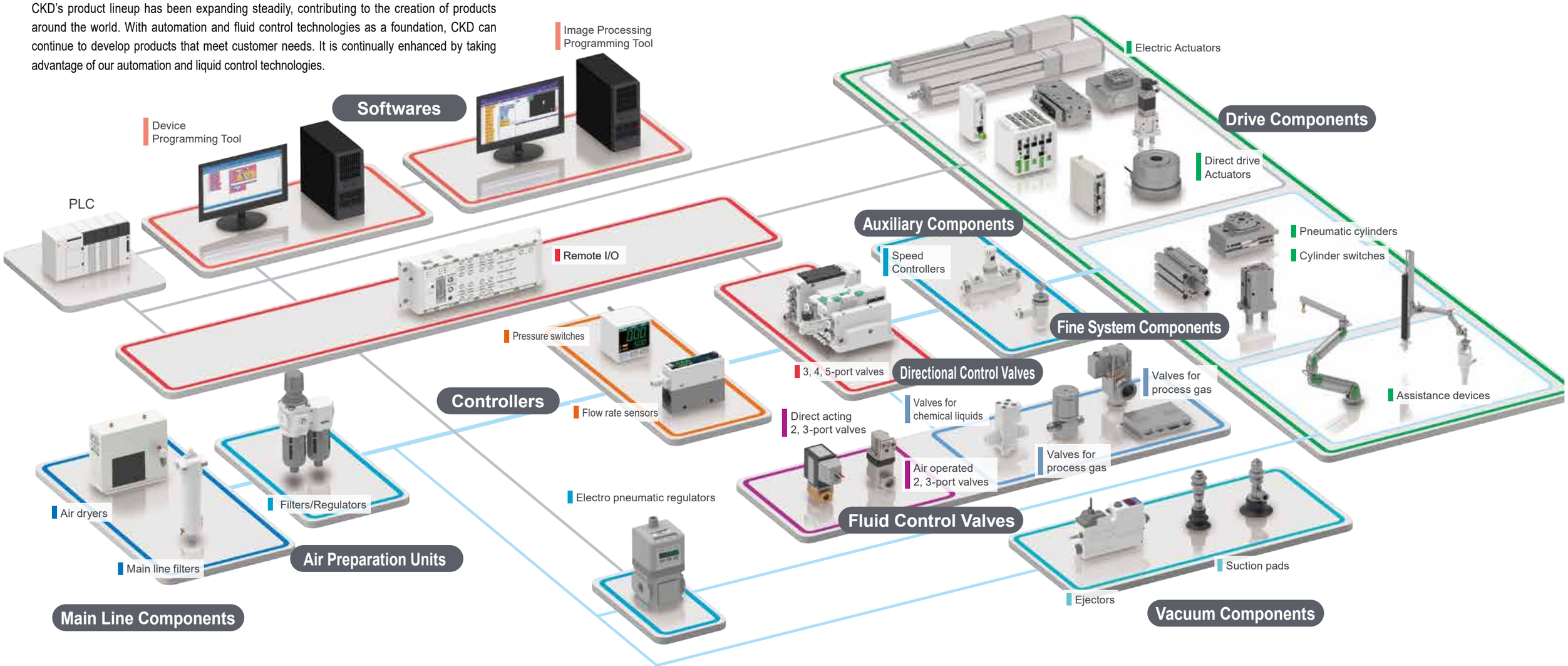
Precision Components
Vacuum Components

- Air Bearings
- Ejector Systems
- Vacuum Pump Systems
- Suction Pads

CKD products seen from their configuration images

Both Air and Electric. From software to I/O unit

CKD's product lineup has been expanding steadily, contributing to the creation of products around the world. With automation and fluid control technologies as a foundation, CKD can continue to develop products that meet customer needs. It is continually enhanced by taking advantage of our automation and liquid control technologies.



CKD products by application

High Durability components HP Series

Long service life
Environmental resistance

HP HIGH PRODUCTIVITY


CC-1421A

For food manufacturing processes FP Series

FP Food Process™


CC-1271A

For outdoor use WP Series

WEATHER PROOF


CC-1276A

Rechargeable Battery Manufacturing Process P4 Series

Material restrictions
1/5 or less dust generation rate


CC-1226AA

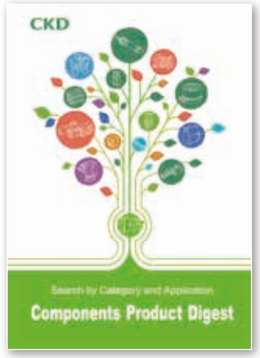
For Clean Components P5/P7 Series

Low particle generation exhaust port


CB-033SA

Guide to the CKD catalog

Learn more about each product category in the booklet catalog



RJ-001AA

The Digest Catalog allows you to search for components you are looking for by overview

Detailed specifications are available in the respective Booklet and WEB catalogs.

Main Line Component Products
Gas generator

Air dryer | Main Line Filters | Condensate Drains | Nitrogen gas extraction unit

RJ-009AA



Refining and pressure adjusting components
Auxiliary components

Filter | Regulator | Pressure gauge | Speed controller | Silencer | Fitting | Tube

RJ-007



Sensor/Controller

Pressure switch | Flow rate sensor | Flow rate controller | Air sensor

RJ-008AA



Precision Components
Vacuum Components

Air bearing | Ejector system | Vacuum pump system | Suction Pad

RJ-010AA



Fluid Control Valves

Solenoid valve | Air operated valve | Ball valve

RJ-013



Wet Fine System/High Purity Chemical Liquid System

CB-031A

Dry Fine System/High Purity Gas Control System Components

CB-035A



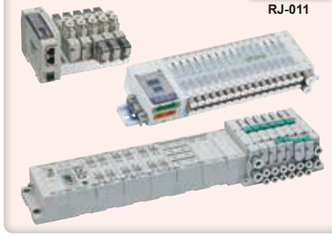
Learn more in the WEB

https://www.ckd.co.jp/kiki/en/

Directional Control Valve (1)

Plug-in Block Manifold | 3, 4, 5-port valve | Remote I/O

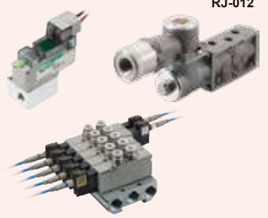
RJ-011



Directional Control Valve (2)

2, 3, 5-port valve | Explosion-proof | Air operated valve | Manual selector valve

RJ-012



Pneumatic Cylinder (1)

Standard

RJ-002AA



Pneumatic Cylinder (2)

Space saving structure

RJ-003AA



Pneumatic Cylinder (3)

With linear guide | With guide

RJ-004AA



Pneumatic Cylinder (4)

Rodless | With brake | Clamp | Oscillation / Rotation

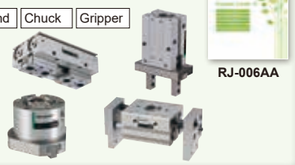
RJ-005



Pneumatic Cylinder (5)

Hand | Chuck | Gripper

RJ-006AA



Visual Programming Tool for Image Processing

Faciлea
CC-1548A

Faciлea AI
CC-1623A

Device Visual Programming Tool

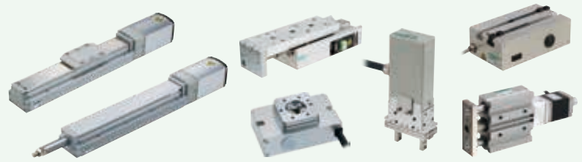
ExiaStudio
CC-1579AA



Electric Actuator

ROBODEX Pulse

RJ-014AA



Electric Actuator

ROBODEX Std.
CB-055A



Electric Actuator

ROBODEX Servo
CC-1275A CC-1436A



ABSODEX

ABSODEX
CC-1614AA



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Website Guide Intro 9

Model Selection System Guide Intro 10

Precautions for Use Intro 15
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Regarding Protection Structure Intro 13

Regarding CE Marking Ending 2

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>>> P. 1

Vacuum Equipment
>>> P. 103

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	Precision Suction Plate PVP	51
	Fine Buffer FBU2	67
	Active Fine Buffer AFB-RB	93
 Ejector System >>> P. 105	With Vacuum Break Function Type VSY	110
	Solenoid Valve Direct Mount Type VSH	120
	Tubular Type VSU	128
	Square Type VSB	140
	Pad Direct Mount Type VSC	146
	20 mm Width Single Unit Dedicated Type VSG	158
	16 mm Width Integrated Type VSK/VSKM	168
	20 mm Width Integrated Type VSJ/VSJM	194
	10.3 mm Width Integrated Type VSN/VSNM	214
	10.5 mm Width Integrated Type VSX/VSXM	242
	31.5 mm Width Single Unit Dedicated Type VSQ	270
	11 mm Pitch Manifold Dedicated Type VSZM	294
 Vacuum Pump System >>> P. 315	20 mm Width Integrated Type VSJP/VSJPM	318
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	10.5 mm Width Integrated Type VSXP/VSXPM	354
	31.5 mm Width Integrated Type VSQP	382
	11 mm Pitch Manifold Dedicated Type VSZPM	392
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	Standard Type Deep Type VSP-□A	422
	Standard Type Compact Type VSP-□RM	422
	Sponge Type VSP-□S	508
	Bellows Type VSP-□B	570
	Multi-stage Bellows Type VSP-□W	642
	Oval Type VSP-□E	702
	Soft Type VSP-□L	770
	Soft Bellows Type VSP-□LB	830
	Anti-slip Type VSP-□K	868
	For Thin Objects Type VSP-□P	904
	Flat Type/Flat Increased Suction Flow Type VSP-□F, □FH	936
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	For Packaging Bags Type VSP-□PB	1008
	For Metal Detectors Type VSP-□BE, □BD	1020
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	Swivel Holder VSP-□F1/F2/CF	1060
	Direct Mount Filter VSP-□T1/T2	1064
 Vacuum Related Equipment >>> P. 1067	Ring Blower Type Vacuum Generator VSRL	1072
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	Compact Vacuum Regulator VSRVV	1088
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	Vacuum Break Unit VSLF	1102
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	Vacuum Filter Compact Union Type VSFU	1106
	Compact Vacuum Filter Filter Socket Type VSFJ	1106
	Inline Filter FSL100/200/500	1118
	Vacuum Filter VFA1000/3000/4000	1124
	Vacuum Pressure Switch with Digital Display VSUS	1130
	Air Pincette VST	1136

Search by Product Lineup List

You can select by the appearance and product overview of each series.

Precision Equipment P. 1



Listed Page From P. 3

Air Bearing Actuator

LBC

Series	Features	Page
LBC	Achieves zero sliding resistance.	6



Listed Page From P. 15

Float Star

GFM

Series	Features	Page
GFM-A (Alignment Floating Pad)	A further evolved floating system for non-contact, clean, and damage-free conveyance.	18
GFM-T (High Floating Rail)		24
GFM-R (Floating Rail)		28
GFM-P (Precision Floating Stage)		38



Listed Page From P. 51

Precision Suction Plate

PVP

Series	Features	Page
PVP-R (Donut Type)	Precision suction plate with 40% porosity, adopting fluororesin sintered porous material.	54
PVP-C (Round Type)		
PVP-S (Square Type)		



Listed Page From P. 67

Fine Buffer

FBU2

■ Fine Buffer

Series	Features	Page
FBU2-7D (Inlay Type)	Achieves stable pressing force, low dust generation, and long lifespan through the adoption of a unique cushioning mechanism, magnetic spring.	70
FBU2-8M (Full Thread Type)		
FBU2-12D (Inlay Type)		
FBU2-12M (Full Thread Type)		
FBU2-SU (General Purpose Type)		80



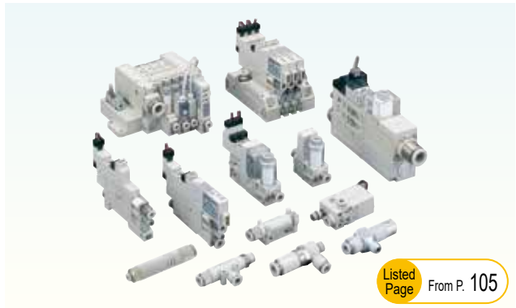
Listed Page From P. 93

Active Fine Buffer

AFB-RB

Series	Features	Page
AFB-RB	Integrates a motor and fine buffer, enabling rotary and buffering operations. All-in-one design enables compact and lightweight multi-head configurations.	96

Vacuum Equipment P. 103



Listed Page From P. 105

Vacuum Equipment

Ejector System/Vacuum Pump System

Series		Features	Page
Ejector System	With Vacuum Break Function Type VSY	Ejector systems and vacuum pump systems, which are the core of vacuum systems. Various unit types combining various related equipment are available.	110
	Solenoid Valve Direct Mount Type VSH		120
	Pipe Type VSU		128
	Square Type VSB		140
	Pad Direct Mount Type VSC		146
	20 mm Width Single Unit Dedicated Type VSG		158
	16 mm Width General Type VSK / VSKM		168
	20 mm Width General Type VSJ / VSJM		194
	10.3 mm Width General Type VSN / VSNM		214
	10.5 mm Width General Type VSX / VSXM		242
	31.5 mm Width Single Unit Dedicated Type VSQ		270
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	10.5 mm Width General Type VSXP / VSXPM		354
	31.5 mm Width General Type VSQP		382
	11 mm Pitch Manifold Dedicated Type VSZPM		392



Listed Page From P. 407

Vacuum Equipment

Suction Pad

Series		Features	Page
Suction Pad	Standard Type General Type VSP-□R	Attachment for direct suction of workpieces. A wide variety of materials, shapes, and pad diameters are available to match the size, weight, and characteristics of the target workpiece.	422
	Standard Type Deep Type VSP-□A		422
	Standard Type Compact VSP-□RM		422
	Sponge Type VSP-□S		508
	Bellows Type VSP-□B		570
	Multi-stage Bellows Type VSP-□W		642
	Oval Type VSP-□E		702
	Soft Type VSP-□L		770
	Soft Bellows Type VSP-□LB		830
	Anti-slip Type VSP-□K		868
	Thin Material Type VSP-□P		904
	Flat Type/Flat Suction Flow Rate Increase Type VSP-□F, □FH		936
	Suction Mark Prevention Type VSP-□Q		974
	Packaging Bag Type VSP-□PB		1008
	Metal Detector Type VSP-□BE, □BD		1020
	Mechanical Break Function Type VSP-KE□Y		1054
	Swing Holder VSP-□F1/F2/CF		1060
	Direct Mount Filter VSP-□T1 / T2		1064

Search by Product Lineup List

You can select by the appearance and product overview of each series.

Vacuum Equipment P. 1067



Vacuum Equipment

Vacuum Related Equipment

Series		Features	Page
Vacuum Related Equip-ment	Ring Blow Type Vacuum Generator VSRL	Vacuum break valve, vacuum pressure switch, vacuum filter, etc., various related equipment is available according to the usage of the vacuum system.	1072
	Fall Prevention Valve VSECV		1082
	Compact Vacuum Regulator VSRVV		1088
	Vacuum Regulator VRA2000		1098
	Vacuum Break Unit VSLF		1102
	Large Capacity Union Type Vacuum Filter VSFB		1106
	Compact Union Type Vacuum Filter VSFU		1106
	Compact Socket Type Vacuum Filter VSFJ		1106
	Inline Filter FSL100/200/500		1118
	Vacuum Filter VFA1000/3000/4000		1124
	Vacuum Pressure Switch with Digital Display VSUS		1130
	Air Tweezers VST		1136

MEMO

CKD How to use CAD data

Free download!

This is what makes CKD's CAD great!

Comprehensive list of CKD's leading products



Japanese, English, Chinese (Simplified and Traditional), and Korean are supported.

Simultaneous with new product launch

NEW Model No. AX1R

ABSODEX



Supports various data formats



More than 25 types of 2D and more than 35 types of 3D

Supports PDF and JPEG formats!

✱To use 3D CAD, you must register as a CKD plus member.

CKD plus How to register as a member

STEP 1

From the CKD components product top page, click "New member registration"



STEP 2.

Enter your name, company name, contact information, and email address

Easy registration in 2 STEPS

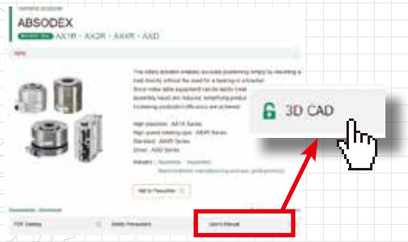
Registration complete!



How to download CAD

STEP 1

Click on "3D CAD" from the product detail page



STEP 2.

Select model No.

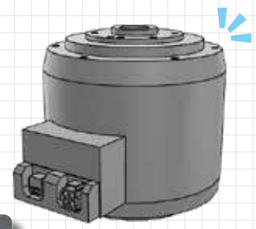
STEP 3

❶ Specify CAD format

❷ Generate CAD data

Download CAD

Download complete!



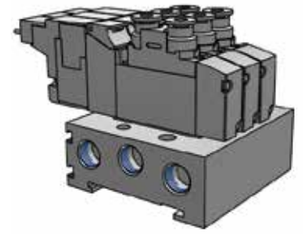
Pneumatic valve manifold specifications and CAD data are easily available on the Web.

Specifications are available



Manifold specifications for pneumatic valves can be prepared and shipped assembled to the customer.

Get CAD data



2D and 3D CAD data available for pneumatic valve manifold assemblies

Specifications and download method of CAD data

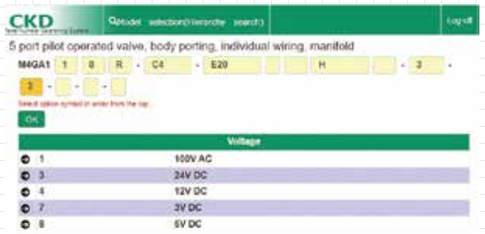
STEP 1

CKD components product TOP page > Product details page >Click "Manifold specifications sheet"



STEP 2.

Select model No.



STEP 3

Create specifications sheet



STEP 4

●For specifications output, Specification output Click

●If downloading CAD data 2D/3D CAD Click

Download complete!



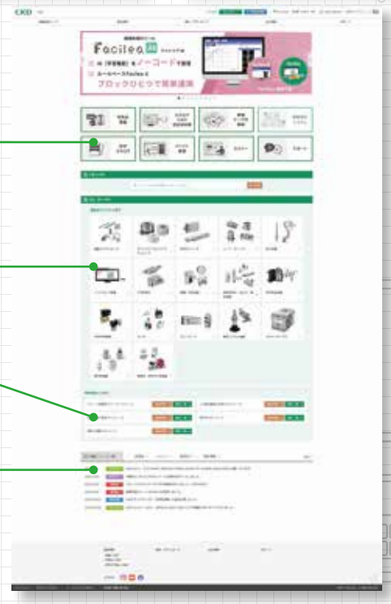
Significantly reduces work time

For details, please contact our nearest sales office. © 2025. CKD Corporation All Rights Reserved.

Website Information

We provide various information on our website.
Please take advantage of it

Catalog	CAD	Instruction manual
Maintenance parts	Software	Model selection
FAQ	Technical information	Product Information
Column	Event information	Seminar



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Various information is provided on each product page



Various information is available according to the product axis and application

Guide to the Model Selection System

How to use the Model Selection System

The CKD system supports selection of the following items.
Please use this information when selecting and designing models.

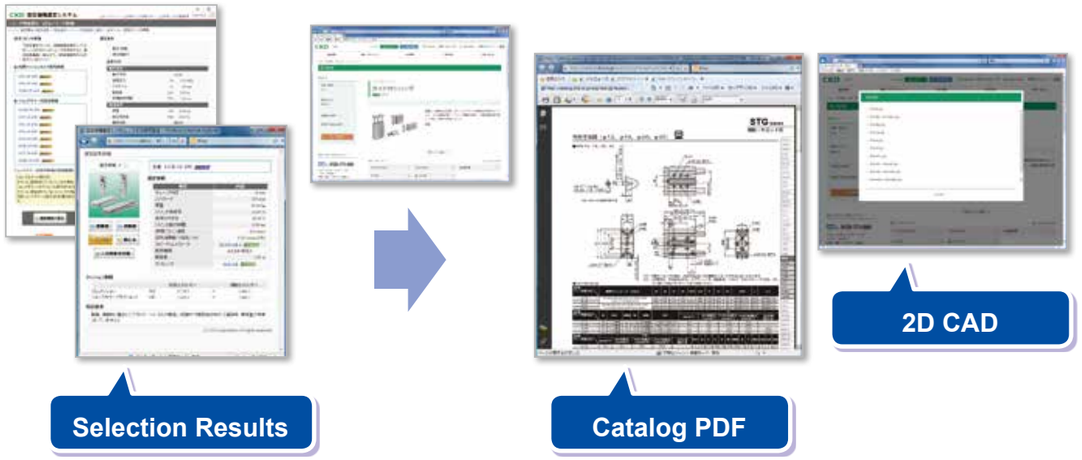
Available on our website

This is a system for selecting products according to the customer's application and working conditions.



∗Software may not be downloadable due to your security policy. If that is the case, contact CKD.

Linked to catalog PDF and CAD data from selection results!



No registration required, available anytime!

A variety of services such as CKD product catalogs, PDF, CAD data and model selection are available. Feel free to try it.

https://www.ckd.co.jp/en/

Regarding Display Method for Flow Characteristics

1. Display of Flow Characteristics

The flow rate display in the catalog specifications column is shown as follows.

Applicable Components	Display	Unit	Standard
Pneumatic Components	Display compliant with New JIS	C, b	ISO 6358:1989 "Pneumatic - Components for compressible fluids - Test methods for flow-rate characteristics" JIS B 8390:2000 (ISO 6358 translated)
	Conventional Display	S	JIS B 8373:1993 'Pneumatic 2-port solenoid valves' JIS B 8374:1993 'Pneumatic 3-port solenoid valves' JIS B 8375:1993 'Pneumatic 4, 5-port solenoid valves' JIS B 8379:1995 'Pneumatic silencers'
		Cv	ANSI (NFPA)T3. 21. 3:1990

2. Explanation

Conventionally, solenoid valve flow characteristics have been displayed by the effective area S, but JIS has been revised (JIS B 8390:2000), and they are now displayed by the pair of sonic conductance C and critical pressure ratio b.

● Sonic Conductance C: Value obtained by dividing the Weight flow rate passing through the equipment in a choked flow state by the product of the upper limit absolute pressure and the density in the standard state. (sonic conductance) S□5.0C (Conventional sizing is possible using C.)

● Critical Pressure Ratio b: The pressure ratio (downstream pressure / upstream pressure) below which choked flow occurs.

Effective Cross-Sectional Area (mm²) The cross-sectional area value of an ideal orifice without friction or contraction, derived by calculation from the pressure change within an air tank when air is released in a choked flow state from equipment attached to the air tank.

*Choked flow: Flow where the upstream pressure is high relative to the downstream pressure, and the speed reaches the speed of sound in a certain part of the equipment. The gas Weight flow rate is proportional to the upstream pressure and does not depend on the downstream pressure. (Choked flow)

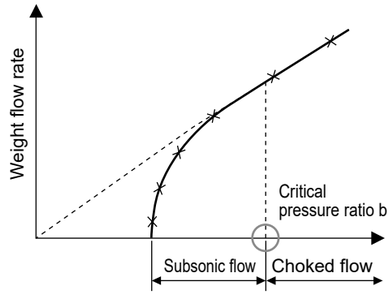


Fig. 1 Weight flow rate characteristics versus upstream pressure

Flow rate calculation formula

Expressed as follows using practical units.

$\frac{P_2+0.1}{P_1+0.1} \leq$ When b, Choked flow

$$Q=600\times C\,(P_1+0.1)\sqrt{\frac{293}{273+t}} \quad \text{.....(1)}$$

$\frac{P_2+0.1}{P_1+0.1}$ When > b, Subsonic flow

$$Q=600\times C\,(P_1+0.1)\sqrt{1-\left[\frac{\frac{P_2+0.1}{P_1+0.1}-b}{1-b}\right]^2}\sqrt{\frac{293}{273+t}} \quad \text{.....(2)}$$

Q: Air flow rate [dm³/min (ANR)], The SI unit dm³ (cubic decimeter) may also be expressed as L (liter). 1dm³=1L

C: Sonic conductance [dm³/(s/bar)]

b: Critical pressure ratio [−]

P1: Upstream pressure [MPa]

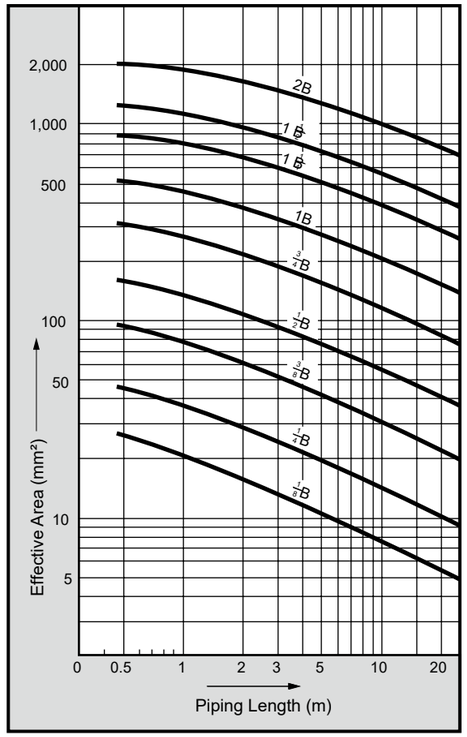
P2: Downstream pressure [MPa]

t: Temperature [°C]

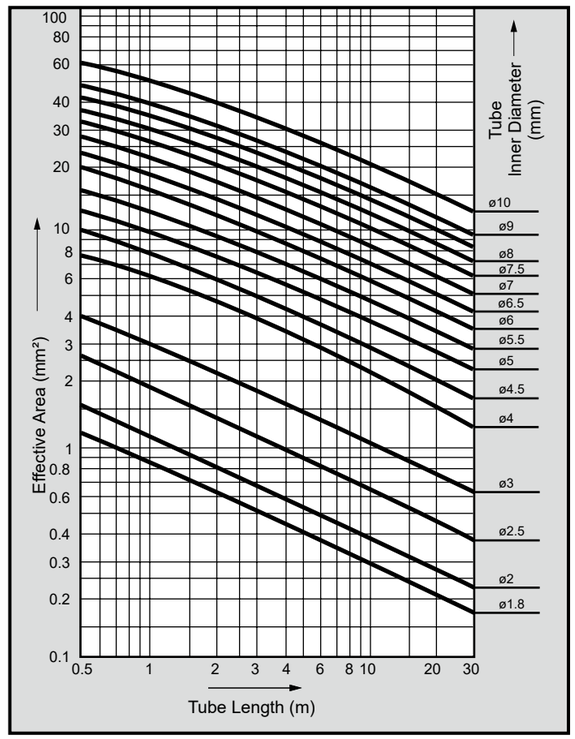
When calculating using the effective area S, substitute the value C obtained from C = S/5 into the above formula.
For subsonic flow, substitute b = 0.5 into formula (2).

Effective Area of Steel Pipe/Nylon Tube and Recommended Maximum Flow Rate Table for Gas Pipe

Effective Area of Steel Pipe



Effective Area of Nylon Tube



Recommended Maximum Flow Rate Table for Gas Pipe

Nominal Size	1/8B	1/4B	3/8B	1/2B	3/4B	1B	11/4B	11/2B
Pressure Drop MPa (□1)	0.124	0.0707	0.0576	0.0425	0.0276	0.0209	0.0133	0.0105
Inlet Pressure MPa	Recommended Maximum Flow Rate (L/min)							
0.05	127	244	518	838	1,465	2,460	3,870	5,150
0.1	146	282	598	965	1,690	2,828	4,460	5,950
0.15	163	314	668	1,076	1,885	3,150	4,960	6,630
0.2	179	344	730	1,180	2,060	3,450	5,430	7,280
0.3	206	395	840	1,360	2,375	3,900	6,300	8,400
0.4	230	442	940	1,520	2,660	4,450	7,000	9,360
0.5	252	485	1,030	1,660	2,920	4,875	7,700	10,250
0.6	272	523	1,110	1,800	3,140	5,250	8,300	11,050
0.7	292	558	1,185	1,920	3,350	5,620	8,870	11,800
0.8	308	592	1,260	2,035	3,560	5,970	9,430	12,570
0.9	324	623	1,325	2,140	3,745	6,290	9,900	13,220
1.0	340	654	1,395	2,250	3,930	6,600	10,400	13,880
1.2	370	717	1,510	2,450	4,280	7,150	11,250	15,040
1.4	398	763	1,625	2,624	4,590	7,700	12,100	16,200
1.5	410	790	1,680	2,710	4,740	7,930	12,550	16,780

(Note 1: Inlet Pressure = 0.5 MPa
Gas Pipe Length: 10 m)

(Remarks)
For main lines where the piping distance is long, it is necessary to consider the degree of pressure drop that occurs at the end of the main line when air flows. Recommended maximum flow rate means the maximum flow rate that can be recommended within a range where the pressure drop relative to the piping length is acceptable, judged from practical use. Therefore, it does not mean that a higher flow rate cannot flow, but rather that if more flows, the pressure drop will increase.

Regarding Protection Structure

● Protection Structure

■ IEC (International Electrotechnical Commission: International Electrotechnical Commission) Standard (IEC60529)

■ JIS C 0920 : 2003

IP−

Protection Characteristic Symbol (International Protection)

First Characteristic Numeral (Protection class against ingress of foreign solid objects)

First Characteristic Numeral	Degree of Protection	
0	No protection	No protection
1	ø50 mm	Solid objects with a diameter of 50 mm or more do not ingress.
2	ø12.5 mm	Solid objects with a diameter of 12.5 mm or more do not ingress.
3	2.5 mm	Solid objects with a diameter of 2.5 mm or more do not ingress.
4	1 mm	Solid objects with a diameter of 1.0 mm or more do not ingress.
5	Dust-protected type	Dust does not ingress in a quantity sufficient to interfere with the normal operation and safety of the equipment.
6	Dust-tight type	Dust does not ingress.

Second Characteristic Numeral (Protection class against ingress of water)

Second Characteristic Numeral	Degree of Protection	
0	No protection	
1	Protection against vertically falling water drops	No harmful effects from vertically falling water drops.
2	Protection against vertically dripping water when tilted up to 15 degrees	No harmful effects from water drops falling at an inclination of up to 15 degrees from vertical on either side.
3	Protection against spraying water	No harmful effects from water sprayed at an angle of up to 60 degrees from vertical on either side.
4	Protection against splashing water	No harmful effects from splashing water from any direction.
5	Protection against water jets	No harmful effects from water jets from a nozzle from any direction.
6	Protection against powerful water jets	No harmful effects from strong direct jets of water from any direction.
7	Protection against immersion in water	Water does not ingress when immersed in water under defined conditions.
8	Protection against continuous immersion in water	Can be used when continuously immersed in water.

MEMO

Safety Precautions

Be sure to read this section before use.

When designing and manufacturing equipment using CKD products, the manufacturer is obligated to ensure that the safety of the mechanism, pneumatic control circuit and/or water control circuit and the system that runs the electrical controls are secured.
It is important to select, use, handle and maintain CKD products appropriately to ensure their safe usage.
Observe warnings and precautions to ensure device safety.
Check that device safety is ensured, and manufacture a safe device.

WARNING

1 This product is designed and manufactured as a general industrial machine part. It must be handled by an operator having sufficient knowledge and experience.

2 Use this product in accordance with specifications.

This product must be used within its stated specifications. In addition, never modify or additionally machine this product.
This product is intended for use in general industrial machinery equipment or parts. It is not intended for use outdoors (except for products with outdoor specifications) or for use under the following conditions or environments. (Note that this product can be used when CKD is consulted prior to its usage and the customer consents to CKD product specifications. The customer should provide safety measures to avoid danger in the event of problems.)

❶ Use for applications requiring safety, including nuclear energy, railways, aircraft, marine vessels, vehicles, medical devices, devices or applications in contact with beverages or foodstuffs, amusement devices, emergency cutoff circuits, press machines, brake circuits, or safety devices or applications.
❷ Use for applications where life or assets could be significantly affected, and special safety measures are required.

3 Observe organization standards and regulations, etc., related to the safety of the device design and control, etc.

ISO4414,JIS B 8370(Pneumatic fluid power - General rules and safety requirements for systems and their components)
JFPS2008(Principles for pneumatic cylinder selection and use)
Including the High Pressure Gas Safety Act, Industrial Safety and Health Act, other safety rules, organization standards and regulations, etc.

4 Do not handle, pipe, or remove devices before confirming safety.

❶ Inspect and service the machine and devices after confirming safety of the entire system related to this product.
❷ Note that there may be hot or charged sections even after operation is stopped.
❸ When inspecting or servicing the device, turn OFF the energy source (air supply or water supply), and turn OFF power to the facility. Discharge any compressed air from the system, and pay enough attention to possible water leakage and leakage of electricity.
❹ When starting or restarting a machine or device that incorporates pneumatic components, make sure to secure system safety, such as pop-out prevention measures.

5 Observe the warnings and cautions on the following pages to prevent accidents.

■ Precautions are ranked as “DANGER”, “WARNING”, and “CAUTION” in this section.

DANGER:	In the case where the product operation is mishandled and/or when the urgency of a dangerous situation is high, it may lead to fatalities or serious injuries.
WARNING:	A dangerous situation may occur if handling is mistaken, leading to fatal or serious injuries.
CAUTION:	A dangerous situation may occur if handling is mistaken, leading to minor injuries or property damage.

Note that some items indicated with “CAUTION” may lead to serious results depending on the conditions.
All items contain important information and must be observed.

Warranty

1 Warranty period

The product specified herein is warranted for one (1) year from the date of delivery to the location specified by the customer.

2 Warranty coverage

If the product specified herein fails for reasons attributable to CKD within the warranty period specified above, CKD will promptly provide a replacement for the faulty product or a part thereof or repair the faulty product at one of CKD’s facilities free of charge.
However, following failures are excluded from this warranty:

1) Failure caused by handling or use of the product under conditions and in environments not conforming to those stated in the catalog, the Specifications, or the Instruction Manual.
2) Failure caused by use of the product exceeding its durability (cycles, distance, time, etc.) or caused by consumable parts.
3) Failure not caused by the product.
4) Failure caused by use not intended for the product.
5) Failure caused by modifications/alterations or repairs not carried out by CKD.
6) Failure caused by reasons unforeseen at the level of technology available at the time of delivery.
7) Failure caused by acts of nature and disasters beyond control of CKD.

The warranty stated herein covers only the delivered product itself. Any loss or damage induced by failure of the delivered product is excluded from this warranty.
Note: For details on the durability and consumable parts, contact your nearest CKD sales office.

3 Compatibility check

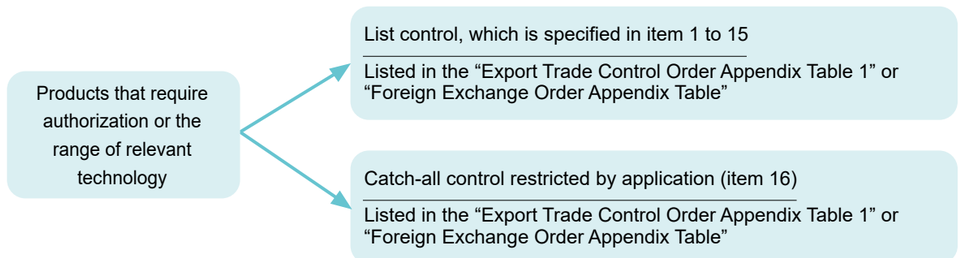
The customer is responsible for confirming the compatibility of CKD products with the customer’s systems, machines and equipment.

Precautions for export

1 Security Trade Control

The products in this catalog and their related technologies may require approval before export or provision.
For the sake of maintaining world peace and safety, there may be cases in which approval under the Foreign Exchange and Foreign Trade Control Law is required in advance, depending on the country to where the product or related technology is being exported or provided.
The scope of products and related technologies requiring approval are listed in the Export Trade Control Order Appendix Table 1 or Foreign Exchange Order Appendix Table.
The Export Trade Control Order Appendix Table 1 and Foreign Exchange Order Appendix Table contain the following two types of information.

- “List controls” specified for items 1 to 15
- “Catch-all controls” that do not indicate specifications by item, but restriction by application (Section 16)



An application for approval is received by the Security Export Licensing Division of the Ministry of Economy, Trade and Industry or local bureaus of the Ministry of Economy, Trade and Industry.

2 Products and related technologies in this catalog

The products and related technologies in this catalog are subject to the catch-all control of the Foreign Exchange and Foreign Trade Control Law.
When exporting or providing the products or related technologies in this catalog, ensure that they are not used for arms or weapons.

3 Contact

Contact your local CKD Sales Office for information on the Security Trade Control of products and related technologies in this catalog.

When Setting/Selecting

1. Confirmation of Specifications

Warning

Use within the product's specified operating range. Products listed in this catalog are designed for use only in compressed air systems. Do not use outside the specification range, as pressures or temperatures outside this range can cause damage or malfunction. (See specifications) If using fluids other than those specified for each device, please consult CKD.

2. Design for Safety

Warning

■ Take necessary precautions beforehand so that this product does not adversely affect people or objects in the event of failure.

Caution

■ Design pneumatic circuits understanding the characteristics of compressed air.
- If instantaneous stop holding is required during an emergency stop, functions equivalent to mechanical, hydraulic, or electrical systems cannot be expected.
- Due to the compressibility and expansibility of air, phenomena such as ejection, jetting, and leakage may occur.
- Design the circuit so that compressed air in the system can be exhausted.

■ Determine the lubrication method for pneumatic equipment and ensure proper maintenance can be performed.
- Lubricated type?
- Non-lubricated type?
  Clearly specify and implement lubrication oil management.

■ Check for leakage current to avoid malfunctions due to leakage current.
- Leakage current may cause malfunctions when used in programmable control or similar applications.

3. Design by Application

Caution

■ Because it is for compressed air, minute leaks that do not affect performance are permitted. If leakage is not permissible for the application, please contact us.

4. Operating Environment

Warning

■ Install the product avoiding rain, water, and direct sunlight.

■ Do not use the product in an atmosphere where there is a risk of corrosion. Use in such environments can cause damage or malfunction.

■ Avoid using in an ozone generating environment. Ozone-resistant series are available; please consult us if ozone is present in the supply air.

■ If the ambient temperature is 5°C or lower, moisture in the circuit may freeze, causing malfunctions or other problems. Therefore, remove moisture and take measures to prevent freezing.

Caution

■ Confirm that the product can withstand the operating environment before use.
- Cannot be used in environments where functional impairment may occur. For example, special environments where high temperatures, chemical liquid atmospheres, chemicals, vibrations, humidity, water droplets, cutting fluid, gas atmospheres, etc., are present. Ozone-generating environments.

5. Securing Space

Caution

■ Ensure sufficient space around pneumatic equipment for mounting, removal, wiring, and piping work.

6. Specification in Instruction Manual

Caution

■ Clearly specify maintenance conditions in the equipment's instruction manual.
- The product's function may significantly degrade, and safety may not be ensured, depending on usage conditions, operating environment, and maintenance. Proper maintenance allows the product to fully demonstrate its functions.

Mounting / Installation / Adjustment

Caution

1. Mounting

■ Do not remove the pneumatic equipment packaging bag or the piping port's sealing cap until immediately before piping work.
- If the cap of the piping port is removed before connecting the piping, foreign matter may enter the pneumatic equipment from the piping port, causing malfunction, etc.

■ For mounting pneumatic equipment, do not use a mounting method that supports it by piping.

■ Do not remove the piping port's dust-proof seal until immediately before piping work.
- Removing it before piping may allow foreign matter to enter from the piping port, causing malfunction or erroneous operation.

2. Pre-operation Check

■ When supplying compressed air after completing pipe connections, always check all connected parts for air leakage.
- Apply leak detection fluid to the piping connection points with a brush to check for air leaks. Be careful not to let leak detection fluid adhere to the plastic bowl. The plastic bowl may be damaged, which can be dangerous.

3. Piping

■ When wrapping sealing tape for pipe connections, start wrapping 2 mm or more inward from the tip of the threaded part of the pipe, in the direction opposite to the thread direction.
- If the sealing tape extends beyond the tip of the threaded part of the pipe, tightening the screw may cut the tape, allowing fragments to enter the solenoid valve and cause malfunctions.



When using liquid sealant, be careful not to let it adhere to the plastic bowl. The plastic bowl may break, which is dangerous.

■ Ensure that piping connected to pneumatic equipment does not detach due to vibration, loosening, or tension.
- Detachment of piping creates a dangerous situation.

■ Please note the following when using nylon or urethane tubing for piping.
- In atmospheres where spatter occurs, use flame-resistant tubing or metal steel pipes.
- For combined oil/pneumatic piping, use hydraulic hoses.
- When using standard one-touch fittings with spiral tubing, secure the base of the tube with a hose band. Rotation may occur, reducing holding capacity.
- For high-temperature liquids, use screw fastening fittings of the inlay type. One-touch fittings cannot be used.

■ Route piping so that connection joints do not come loose due to equipment movement, vibration, tension, etc.

■ When piping, always perform flushing immediately before connecting to pneumatic equipment.
- It is important that foreign matter that entered during piping does not enter the pneumatic equipment.

■ Tighten with the appropriate torque during piping connection.
- The purpose is to prevent air leaks and screw damage.
- To avoid damaging the screw threads, first tighten by hand before using a tool.

[Recommended Values]

Connection Thread	Tightening Torque N·m
M3	0.3 to 0.6
M5	1 to 1.5
Rc1/8	3 to 5
Rc1/4	6 to 8
Rc3/8	13 to 15
Rc1/2	16 to 18
Rc3/4	19 to 40
Rc1	41 to 70

Note: If a tightening torque is specified for each model, follow that value.



4. Pneumatic Source

■ Install a pneumatic filter immediately before the circuit using the pneumatic equipment.

■ When supplying compressed air after completing pipe connections, supply it so that high pressure is not applied suddenly.
- Piping connections may come off, and piping tubes may spring out, causing accidents.
- Caution: If compressed air is supplied too slowly, sealing pressure may not be generated depending on the solenoid valve's internal sealing mechanism, potentially causing air leakage.

■ Air Quality
- Use CKD's clean air system equipment according to the application.
- Use compressed air free from oxidized oil, tar, carbon, etc., from the air compressor.
- Use compressed air that does not contain solid foreign matter.

During Use and Maintenance

⚠Caution

1. Disassembly and Assembly

■ When disassembling and assembling pneumatic equipment, ensure that the work is performed by personnel who have acquired specialized knowledge.
- This refers to a level equivalent to Pneumatic Technician Grade 2 or higher.

■ When performing disassembly and assembly of pneumatic equipment, thoroughly read and fully understand the instruction manual for the relevant product before performing the disassembly and assembly work.
- Knowledge of the structure and operating principles of pneumatic equipment is required to ensure safety.

2. Maintenance and Inspection

■ When performing maintenance, turn off the power, stop the supply of compressed air, and ensure there is no residual pressure before proceeding.
- These are necessary conditions for ensuring safety.

When Designing and Selecting

⚠Warning

■If the adsorbed workpiece is considered to be at risk of falling, implement fall prevention measures to ensure safety.

■This product is not explosion-proof. Avoid using in flammable, explosive gases, fluids, or atmospheres. Also, avoid using it in a way that continuously applies pressure of 0.1 MPa or more to the vacuum circuit side.

■Be aware of the decrease in vacuum pressure due to problems with the supply air or power supply. There is a risk of adsorbed objects falling due to a decrease in suction force, so implement safety measures.

■If two or more pads are piped to one ejector in a vacuum circuit, if one pad experiences suction failure (leakage), the other pads may detach due to a decrease in vacuum pressure.

■Types with vacuum retention function and types with check valve function allow vacuum leakage, so if long-term vacuum retention is required, implement separate safety measures.

■When operating the valve, confirm that the leakage current is 1 mA or less. There is a risk of malfunction due to leakage current.

■If energization to the valve continues for long periods, heat is generated from the coil. There is a risk of burns due to heat and impact on peripheral equipment.

■Do not block the ejector's exhaust port or use in a way that increases exhaust resistance. This may cause vacuum not to be generated or a decrease in vacuum pressure.

■Do not use in locations with excessive vibration or shock. This may cause malfunction or failure. (Use with vibration at an acceleration of 49 m/s² or less.)

⚠Caution

■The effective area on the ejector supply pressure side should be three times the nozzle diameter's cross-sectional area as a guideline for piping and equipment selection. Insufficient supply flow rate may cause performance degradation.

■When generating vacuum, do not operate the vacuum break solenoid valve.

■Do not use spiral hoses. Especially when used on the vacuum side, the following problems may occur due to piping resistance.
Delay in vacuum attainment time. Decrease in vacuum level at the suction end due to flow rate reduction. Unstable operation of vacuum switch

■Keep vacuum side piping as short as possible and make the inner diameter larger. If the piping is long or has a small inner diameter, there may be a delay in response time during suction and release, and the required suction flow rate may not be secured.

■Vacuum pressure switches and ejectors with vacuum pressure switches should be piped to the end of the vacuum piping as much as possible. If the distance between the vacuum pressure switch and the end of the vacuum piping is long, piping resistance increases, and the vacuum level at the sensor part may be high even during non-suction, which may cause malfunctions of the vacuum pressure switch.

■In manifold type vacuum ejectors, if operating ejectors and non-operating ejectors are mixed, exhaust air generated during vacuum creation may flow around to the non-operating ejectors and be output from the vacuum port. This can cause problems, such as blowing away lightweight workpieces, so do not use under conditions where this could be an issue.
[Applicable Models]
VSNM Series all types
VSXM Series all types
VSKM Series (Unit combination: G, J, L types)
VSZM Series all types

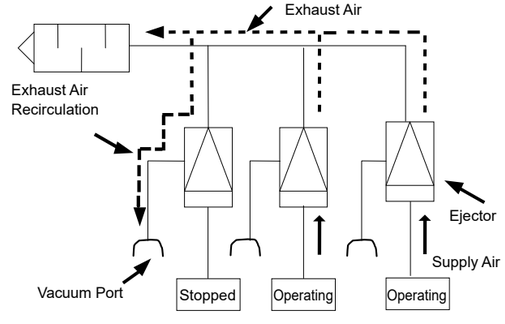


Fig. 1: Example of Exhaust Air Recirculation Phenomenon (VSXM)

■Do not apply strong tensile force or extreme bending to the lead wire. There is a risk of wire breakage.

■The transparent cover material of the filters FSL, VSFU-2/-3, VSG, VSK, VSJ, VSZ, and VSX are special polycarbonate resins, so avoid using them in atmospheres or locations where chemical substances (see below) are present or adhere.

Chemical Substance Name

Chemical Substance Name
All alcohols
Thinner
Carbon tetrachloride
Chloroform
Acetate ester
Aniline
Cyclohexane
Trichloroethylene
Sulfuric acid
Water-soluble cutting fluid (alkaline)

*Some substances other than those listed cannot be used, so please contact your nearest sales office.

■Vacuum Filters (VSFU-1, VSQ Series) have transparent covers made of polyamide resin, so avoid using them in atmospheres or locations where chemical substances (see table below) are present or adhere.

Chemical Substance Name

Chemical Substance Name
Methanol
Ethanol
Nitric acid
Sulfuric acid
Hydrochloric acid
Lactic acid
Acetone
Chloroform
Aniline
Trichloroethylene
Hydrogen peroxide

*Some substances other than those listed cannot be used, so please contact your nearest sales office.

Individual Precautions: Mechanical Vacuum Pressure Switch

When Designing and Selecting

Warning

■Do not use the mechanical vacuum pressure switch in flammable or explosive gases, fluids, or atmospheres. Since the vacuum switch is not explosion-proof, there is a risk of fire or explosion.

Caution

■Do not use in locations where water droplets, oil droplets, dust, etc., may be present. Since the mechanical vacuum pressure switch is not drip-proof or dust-proof, there is a risk of malfunction.

■The mechanical vacuum pressure switch does not change performance even when pressure of approximately 0.5 MPa is instantaneously applied, but during vacuum break, ensure that pressure of 0.2 MPa or more is not continuously applied. Continuous application may cause damage to the switch.

■Use the mechanical vacuum pressure switch within the specified pressure range. Using it outside the specified pressure range may cause malfunction due to hysteresis.

■Always turn off the power before wiring the mechanical vacuum pressure switch. Also, check the lead wire colors during wiring and be careful of incorrect wiring.

Individual Precautions: Electronic Vacuum Pressure Switch

When Designing and Selecting

Warning

■Do not use in flammable or explosive gases, fluids, or atmospheres. Since the vacuum pressure switch is not explosion-proof, there is a risk of fire or explosion.

Caution

■Do not use in atmospheres or gases containing corrosive substances. There is a risk of vacuum pressure switch failure.

■Do not wire or use in a way that applies noise (surge), etc. There is a risk of vacuum pressure switch failure.

■Do not use in locations where water droplets, oil droplets, dust, etc., may be present. Since the vacuum pressure switch is not drip-proof or dust-proof, there is a risk of malfunction.

■Do not use in a way that may cause heat generation exceeding the operating temperature range. There is a risk of vacuum pressure switch failure.

■In the case of a vacuum pressure switch, there is no change in performance even if pressure of approximately 0.5 MPa is instantaneously applied, but during vacuum break, ensure that pressure of 0.2 MPa or more is not continuously applied. Continuous application may cause damage to the vacuum pressure switch.

■Make sure to turn the power OFF before wiring. Also, check the wire colors during wiring and do not short-circuit the output terminal, power terminal, and common terminal. If a short circuit occurs, there is a risk of vacuum pressure switch failure.

When Designing and Selecting

Warning

■When performing swing transfer with pads fixed by screws, please be careful. Turning may cause screws to loosen, which can lead to trouble.

■When performing transport with the pad, consider the acceleration, impact and wind pressure. There is a risk of adsorbed objects detaching during transfer.

■Compact suction pad holders are smaller and lighter than conventional suction pad holders, so their load-bearing strength is inferior to conventional accessories. Set the load with sufficient margin and always confirm with the actual equipment.

■When mounting the pad holder, be sure to fix it securely. Loosening can risk causing trouble.

Caution

■For workpieces with variations in height or those easily damaged by external force, a buffer-type holder is suitable for suction. Please confirm the buffer force and stroke in the specifications section before use.

■When using a buffer-type holder, minimize lateral forces as there is a sliding part. This may cause a decrease in holder lifespan or malfunction.

■For connection port ø1.8 one-touch fittings, Air Fiber Antistatic Type UP-9402 Series and Air Fiber UP-9102 Series for barb fittings cannot be used.
(Applicable recommended tubing: Use Air Fiber Clean Type EH-5802 Series or Polyurethane Tubing UB01810 Series manufactured by Nihon Pisco Co., Ltd.)

■When using conductive suction pads, consider the selection of the suction pad holder and take measures to dissipate static electricity through attached metal plates, etc. Static electricity may remain charged within the suction pad. Some holders themselves are not conductive.

■Due to the nature of rubber, additives contained in the rubber may appear as powder on the surface over time.

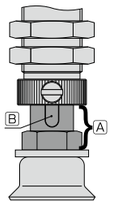
■Depending on the usage conditions, the workpiece and rubber pad may adhere tightly and not separate, so please thoroughly confirm this with the actual equipment.

■When mounting and fixing standard pad holders and compact pad holders using the partition wall, confirm the dimension drawing in the text, use the appropriate tool with reference to the recommended tightening torque below, and utilize the hexagonal part of the holder's outer diameter to ensure no loosening.

●Recommended Tightening Torque

Pad Holder Type	Standard		Compact	
Pad Holder Shape	Fixed Type	Buffer Type	Fixed Type	Buffer Type
Nut Size (mm)	Tightening Torque			
M3 x 0.5	0.7 N·m	-	0.7 N·m	-
M4 x 0.5	-	-	1 to 1.2 N·m	-
M4 x 0.7	1 to 1.2 N·m	-	-	-
M5 x 0.5	1.5 to 2 N·m	-	1.5 to 2 N·m	-
M5 x 0.8	1 to 1.5 N·m	-	1 to 1.5 N·m	-
M6 x 0.75	2 to 3 N·m	-	2 to 3 N·m	
M8 x 0.75	2.5 to 3.5 N·m	1.8 to 2.4 N·m	2.5 to 3.5 N·m	
M8 x 1	-	1.8 to 2.4 N·m	-	-
M10 x 1	5 to 7 N·m	4.5 to 6 N·m	5 to 7 N·m	4 to 6 N·m
M12 x 1	12 to 14 N·m	8 to 10 N·m	-	-
M14 x 1	18 to 21 N·m	4.5 to 6 N·m	-	-
M16 x 1	-	2 to 3 N·m	-	-
M20 x 1	19 to 21 N·m	-	-	-
M22 x 1	-	16 to 20 N·m	-	-
M24 x 2	40 to 50 N·m	-	-	-
M30 x 2	-	42 to 54 N·m	-	-

■When mounting a buffer-type pad holder, do not use a wrench or similar tool on the shaft part (see figure on right) during installation. Also, when replacing the pad, fix the hexagonal bolt part of the shaft with a wrench or similar tool before replacement. The keyway part of the shaft (see figure on right) may deform, causing malfunction.



■When replacing the pad, confirm the suction pad configuration diagram in the text, use the appropriate tool with reference to the recommended tightening torque below, and utilize the hexagonal part of the holder's outer diameter to ensure no loosening.

●Recommended Tightening Torque

Pad Holder Type	Standard	Compact
Pad Screw Size (mm)	Tightening Torque	
M3 x 0.5	-	0.7 N·m
M4 x 0.7	0.5 to 1.0 N·m	0.9 to 1.1 N·m
M5 x 0.8	1 to 1.5 N·m	
M6 x 1	2 to 2.7 N·m	
M10 x 1.5	5 to 7 N·m	-
M20 x 2	9 to 10 N·m	-

When Designing and Selecting

Caution

■ Common Precautions for Rubber Surface Treatment_Suction Mark Prevention Series
- ●The degree of suction mark reduction varies depending on the environment and workpiece, so always conduct suction tests with the actual equipment to select the model.
- ●The suction mark reduction treatment makes the pad rubber itself slippery, which may lead to poor suction.
- ●It does not completely prevent suction marks. The degree of suction mark reduction varies depending on the environment and workpiece.

■ Fiber Raised Type (Nylon Fiber: -NF, Silk Fiber: -SF)
- ●This product permits leakage due to fiber raising.
- ●Maximize the flow rate of the vacuum source. Also, vacuum holding usage is not possible.
- ●Select a sensor suitable for the working conditions.
- ●Suction force is significantly lower than that of normal pads, so take measures such as increasing the pad diameter or increasing the number of pads used.
- ●Dirt may adhere to the fibers. Clean regularly with water or a diluted neutral detergent.
- ●Upon delivery, the fibers are standing, and the vacuum level will not rise. Perform suction operations 5 times or more before use to stabilize the suction force, then confirm suction with the actual equipment.
- ●Fibers on the pad surface may come off depending on the workpiece and operating environment. Detached fibers may adhere to the workpiece, so take measures such as air blowing as needed.

■ Anti-Adhesion Type (-DL)
- ●Pad Material: For conductive silicone rubber (SE), the suction mark prevention effect is lower compared to other materials.
- ●The suction mark reduction treatment makes the pad rubber itself slippery, which may lead to poor suction.
- ●The pad may discolor due to the treatment, but there is no performance issue.

■ Suction Mark Reduction Type (-ER)
- ●Due to the suction mark reduction treatment, the surface hardness is higher than that of normal pads, which may lead to poor suction depending on the workpiece.

When Designing and Selecting

Caution

■ Since the pad rubber of this product is soft, please note the following when selecting and confirm suction with the actual equipment.
- ●Depending on the weight of the workpiece, its posture may not be maintained, and the pad may deform.
- ●Durability will be lower than that of normal pads.
- ●Due to the material's characteristics, the bellows may stick to each other and deform depending on the usage conditions.
- ●Start suction with the bellows part pressed against the workpiece. If suction is performed without pressing due to the soft pad rubber, it may lead to poor suction or reduced durability.
- ●Due to the material's characteristics, it is prone to deformation, so pay attention to storage conditions. Note that if it deforms, it will return to its original shape after being left for a while.

MEMO

Precision Components

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Air Bearing Actuator

LBC

■ Precision Components



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Air Bearing Actuator

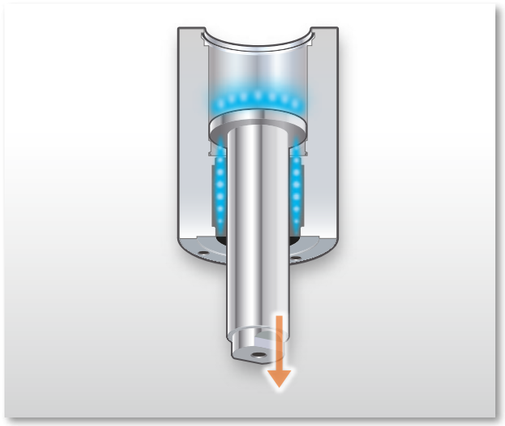
LBC Series

Actuator for Ultra-Precision Load Control Achieves zero sliding resistance with air bearings



Compatible with clean environments

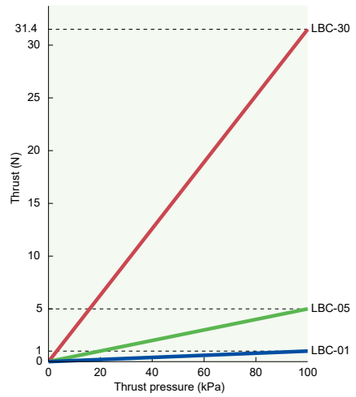
Completely non-contact air drive method with no particle generation and no lubrication. Compatible with environments requiring high cleanliness.



High-precision linear control

Since sliding resistance is zero, high-precision linear control of load is possible using an electro-pneumatic regulator for LBC.

Thrust Characteristics



Soft touch control with forces starting from 0.01 N

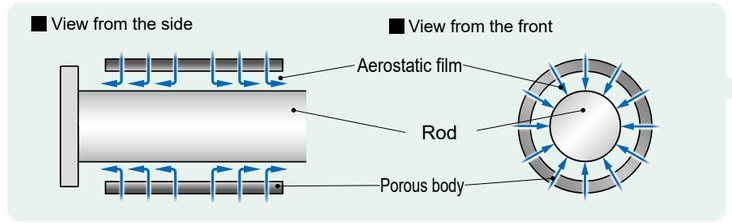
Since the load can be controlled from a minute force of 0.01 N, soft touch to the target workpiece is possible. Does not apply impact or cause scratches.

Excellent responsiveness

The rod material (movable part) is made of aluminum alloy for weight reduction, resulting in excellent responsiveness.

What is an Air Bearing (Aerostatic Bearing)*

A bearing that eliminates frictional resistance by floating the rod with an aerostatic film generated on the surface of a porous body



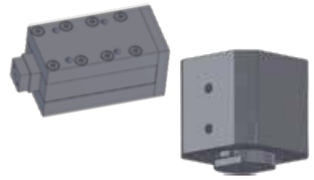
Series Variations

●Standard

3 types based on thrust range.

Model Name	Thrust Range
LBC-01	0.02 N to 1 N
LBC-05	0.1 N to 5.0 N
LBC-30	0.6 N to 31.4 N

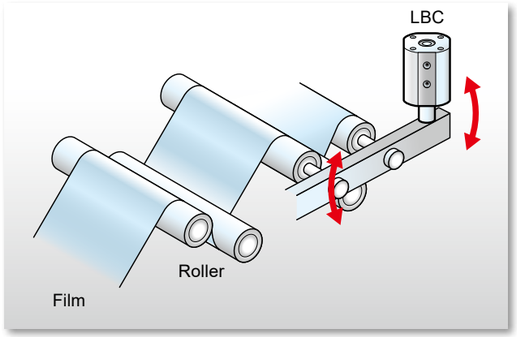
●Special specifications



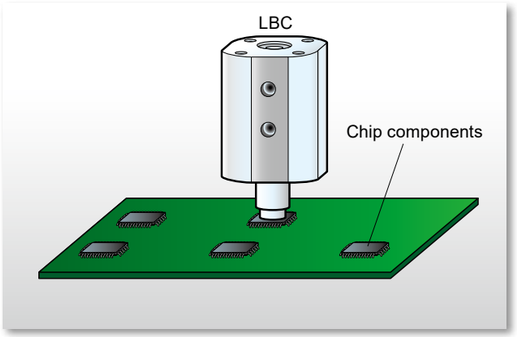
Many production records for specifications other than standard types. We flexibly handle thrust, stroke, shape, anti-rotation, etc. Please contact CKD.

Application Example

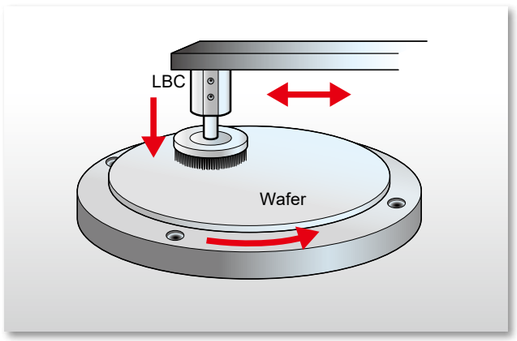
Film Tension Control



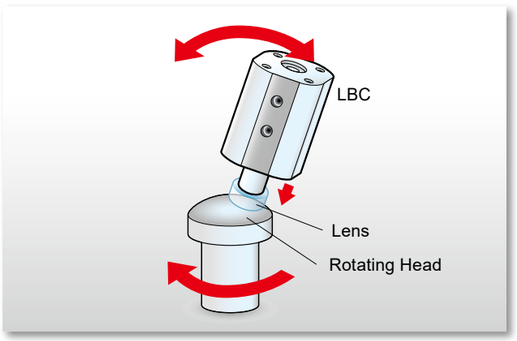
Chip Component Mounting (For Bonding Equipment)



Wafer Cleaning (For Scrubber Cleaning Machine)



Lens Polishing Finish



(*) This product has no rod return mechanism. When used horizontally or in a downward vertical orientation, if a return stroke is required, please use another cylinder or similar device to actuate the return of the LBC unit itself.



Air Bearing Actuator
Single Acting, Push type

LBC Series

RoHS

Model No. Notation

LBC - 01

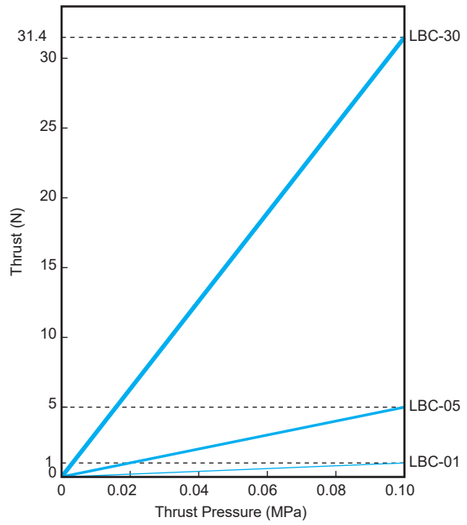
Model No.

1 Thrust

1 Thrust

Code	Content
01	1 N
05	5 N
30	30 N

Thrust Characteristics



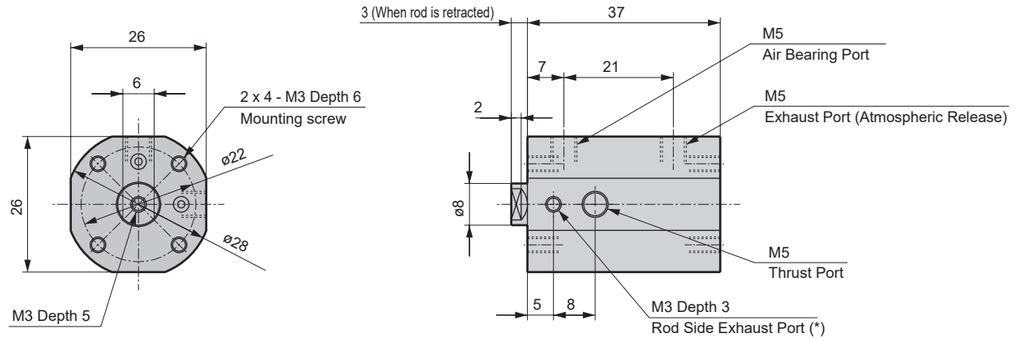
Specifications

Item			LBC-01	LBC-05	LBC-30
Actuation Method			Single Acting, PusH-type (*1)		
Operating Fluid			Clean Compressed Air (Equivalent to ISO 8573-1: 2010 Class 1.4.2)		
Operating Pressure MPa	Air Bearing Port		0.3 to 0.5		
	Thrust Port		0.002 to 0.1		
Ambient Temperature		°C	5 to 35		
Proof Pressure		MPa	0.75		
Pressure Receiving Area		mm²	10	50	314
Thrust Range		N	0.02 to 1.0	0.1 to 5.0	0.6 to 31.4
Stroke		mm	5^{+1}_{0}		30^{+1}_{0}
Allowable Lateral Load		N	1.2	0.8	4.0
Weight		g	50	45	345
Movable Part Weight (*2)		g	5	4.5	65
Bearing Part Air Consumption (*3)		L/min	2.5 or less	2.5 or less	7.5 or less

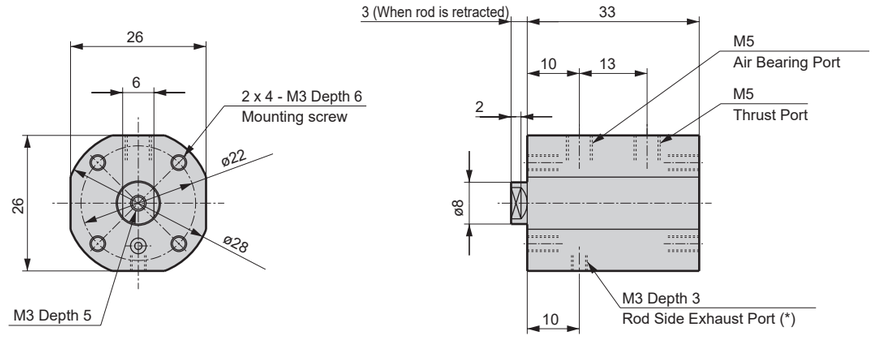
*1: There is no rod return mechanism.
*2: Movable part Weight indicates the total Weight of the rod, stopper, and cross recessed countersunk head machine screw.
*3: Value at bearing pressure 0.5 MPa.

External Dimension Drawings

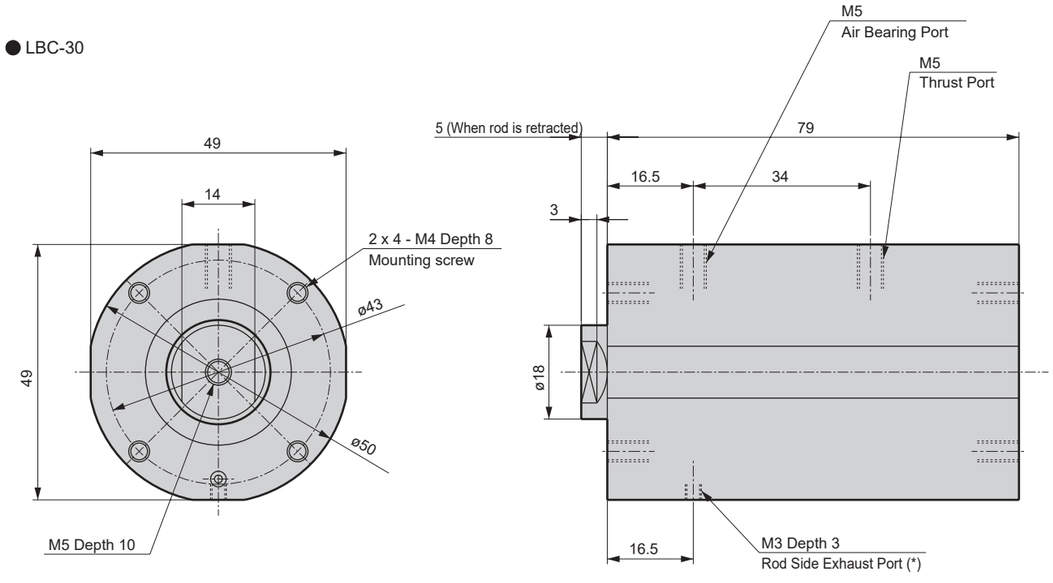
● LBC-01



● LBC-05



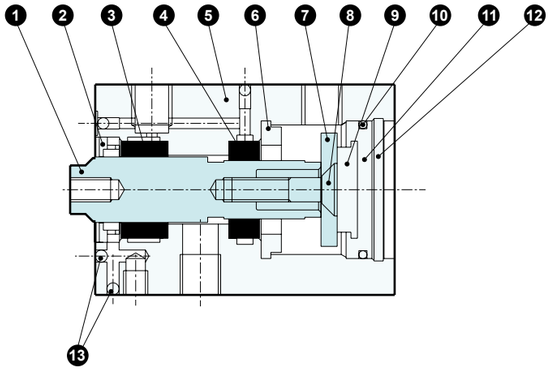
● LBC-30



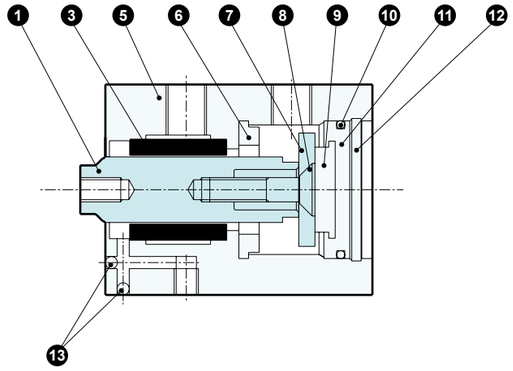
(*) To prevent air leakage from the rod part, evacuate using a vacuum generator from the rod side exhaust port.

Internal Structure Diagram/Materials

● LBC-01



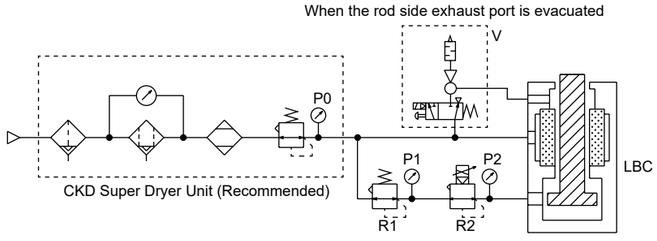
● LBC-05, 30



Do not disassemble

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod	Aluminum alloy		8	Cross Recessed Countersunk Head Machine Screw	Stainless steel	
2	Cap	Aluminum alloy	Alumite	9	Cushion Rubber R	Urethane rubber	
3	Bushing 1	Carbon Graphite Porous Material		10	Gasket	Nitrile rubber	
4	Bushing 2	Carbon Graphite Porous Material		11	Bottom Plate	Special Aluminum	Chromate
5	Body	Aluminum alloy	Alumite	12	C-ring for hole	Stainless steel	
6	Cushion Rubber L	Urethane rubber		13	Steel ball	Stainless steel	
7	Stopper	Aluminum alloy	Alumite				

Circuit Used



P0: Air Bearing Port Supply Pressure (0.3 to 0.5 MPa)
P1: Electro-Pneumatic Regulator Supply Pressure (0.2 MPa)
P2: Thrust Port Supply Pressure (0.002 to 0.1 MPa)
R1: Regulator
R2: Electro-Pneumatic Regulator for LBC
(EV25□□-FL (Refer to P. 10 to 12. Use this as reference.)
Special Order Details
• Control Pressure 0 to 0.1 MPa (Improved control pressure accuracy)
• Fixed Orifice(Improved relief performance in low pressure range)
• Normally Open (NO) Type
(Prevents rod ejection when power is OFF))
V: Celvacs (VSK)
(Only when prevention of air leakage from the rod part is required)

MEMO

Precision Components
LBC
GFM
PVP
FBU2
AFB-RB
Ending



Electro-Pneumatic Regulator for LBC (Special Specification Product)

EV2500 Series

- Electro-Pneumatic Regulator compatible with Air Bearing Actuator LBC
- Pressure Control Range 0 to 0.1 MPa
- Operation Method NO Type



CE UKCA RoHS

For compatible detailed model No.s, please visit the CKD website.

Model No. Notation

EV2500 - 0 08 - C11 B - FL298410

- EV2500: Model No.
- 0: ❶ Input Signal
- 08: Connection Port Size Rc1/4
- C11: ❷ Cable Option
- B: ❸ Bracket Option
- FL298410: ❹ Identification Number

❶ Input Signal

Code	Content
0	0-10 VDC
1	0-5 VDC
2	4-20 mADC or 1-5 VDC
3	10 kΩ Variable Resistor or 0-10 VDC (Connected to internal 10 VDC power supply)

❷ Cable Option

Code	Content
Blank	None
C11	1m attached
C13	3m attached

❸ Bracket Option

Code	Content
Blank	None
B	C-type bracket attached
B4	B-type bracket attached

❹ Identification Number

Code	Content
FL298410	For LBC-01
FL298411	For LBC-05
FL298412	For LBC-30

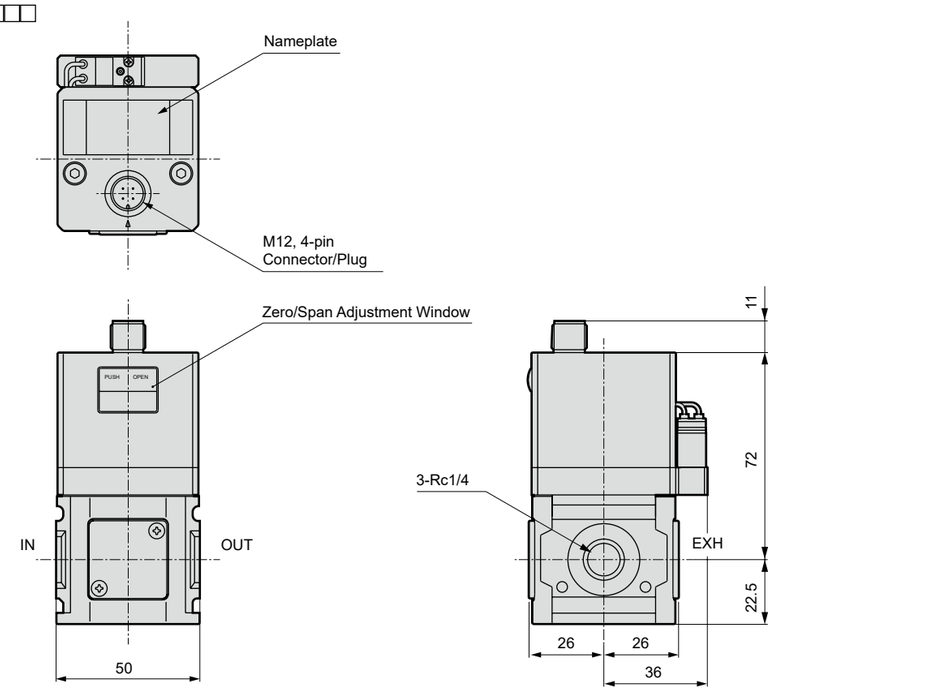
Specifications

Item		EV2500-□08-FL			
Operating Fluid		Clean Compressed Air (ISO 8573-1: 2010 Class 1.3.2)			
Operating Pressure		0.2 to 0.3 MPa			
Proof Pressure		0.7 MPa			
Pressure Control Range		0 to 0.1 MPa			
Power Supply Voltage		DC24V ±10%(Stabilized power supply with ripple factor 1% or less)			
Current Consumption		0.1 A or less (Inrush current 0.6 A when power is ON)			
Input Signal (Input Impedance)		0-10 VDC (20 kΩ)	0-5 VDC (10 kΩ)	4-20 mADC or 1-5 VDC (250 Ω) *1	10 kΩ Variable Resistor or 0-10 VDC (20 kΩ)
Monitor Output		1-1.8 VDC(However, none for 10 kΩ variable resistor input)			
Insulation Resistance		100 MΩ (500 VDC) or more			
Dielectric Strength		1500 VAC 1 minute			
Accuracy *2	Hysteresis	1% F.S. or less			
	Linearity	±0.5% F.S. or less			
	Resolution	0.5% F.S. or less			
	Repeatability	0.5% F.S. or less			
Temperature Characteristics	Zero Point Fluctuation	0.75% F.S./°C or less			
	Span Fluctuation	0.35% F.S./°C or less			
Step Response *3		0.6 s or less			
Vibration Resistance		98 m/s² or less			
Operating Ambient Temperature		5-50°C			
Mounting Orientation		Free			
Connection Port Size		Rc 1/4			
Weight		330 g			

*1: When using with signal voltage 1-5 VDC, a current of 4-20 mA flows from the signal source into the EV unit. Please check the specifications of the signal source used carefully before use.
*2: The above characteristics are based on power supply voltage 24.0 VDC, operating pressure 0.3 MPa, and control pressure 10 to 100% F.S.
*3: Operating pressure: Maximum operating pressure, step amount: 50% F.S. → 100% F.S. 50% F.S. → 60% F.S. 50% F.S. → 40% F.S.

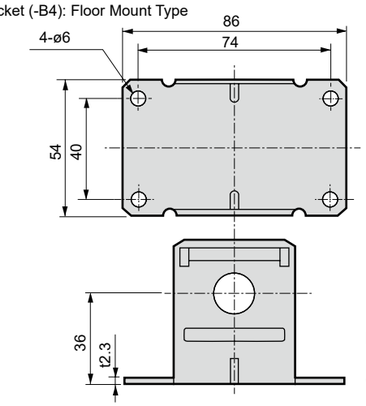
External Dimension Drawings

● EV2500-FL□□□□□



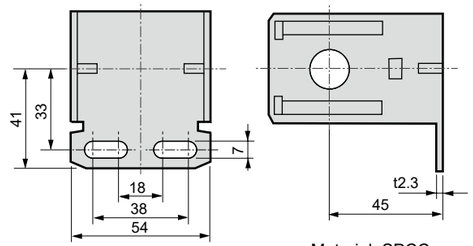
● Bracket Option

B-type Bracket (-B4): Floor Mount Type



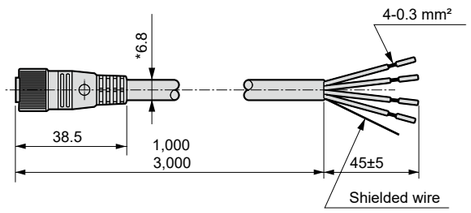
Material: SPCC
Treatment: Zinc plating
Weight: 165 g

C-type Bracket (-B): Wall Mount Type



Material: SPCC
Treatment: Zinc plating
Weight: 148 g

● Cable Option

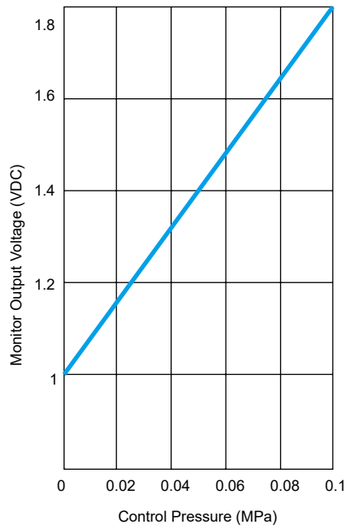


-C1*Shield/cable/connector

Pin No.	Insulation Color	Application	Input Signal-type			
			0-10 V	0-5 V	4-20 mA 1-5 V	10 kΩ VR (0-10 V)
1	Red	Power Supply ⊕	24 V			
2	Green	--	Monitor Output 1-1.8 V			VR Input Terminal
3	Black	Common	0V			VR Input Terminal 0V
4	White	Input Signal	0-10 V	0-5 V	4-20 mA 1-5 V	VR Output Terminal (0-10 V)

If cable connectors are not used, the following recommended cable socket (L-type) can be used. However, please use shielded wire for the cable.
Screw type ELWIKA4012 Correns (Hirschmann)
Soldering type Model XS2C-D422 Omron

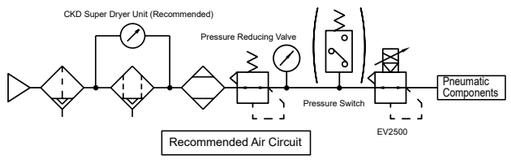
Monitor Output



Precautions for Use

Please also read the precautions for the standard EV2000 series.

1 For the operating fluid, use clean compressed air from which solids, moisture, oil, etc., have been sufficiently removed.
(ISO 8573-1: 2010 Class 1.3.2)



2 The operating pressure supplies the specified pressure relative to the control pressure, so ensure it does not deviate from the operating pressure range. Especially, settings where the control pressure exceeds 0 MPa and is set up to 60% F.S. without operating pressure, or where the control pressure remains unstable for a long time, will adversely affect product life; do not make such settings.

3 Unlike the standard EV2000 Series, the pilot operating pressure of this product is released (NO) when the power is OFF, which causes the secondary pressure to drop to atmospheric pressure.

4 This product constantly bleeds the secondary side to release the flow entering from the bearing port of the air bearing actuator, resulting in considerable air consumption from the EXH port. Therefore, significant exhaust noise occurs from the EXH port, and pressure loss occurs depending on the piping diameter; consider the following countermeasures.

- For exhaust noise: Pipe the EXH port for silencing, etc.
- For pressure loss: Increase the piping diameter used, set the operating pressure higher, etc.

Special Specification Product

Accepted as a special specification product. For details, please contact our sales department.

Air Bearing Cylinder Square Shaft Type

- Non-rotating rod type optimal for precision part installation
- Jig and rod weight cancellation mechanism can be built in
- Air flow path for suction and blowing can be built into the rod.
- Square shaft bearing requires no external rotation-stop mechanism.



For Ensuring Safety

Pneumatic Components Warnings/Precautions

Be sure to read this before use.
For general cylinders, please check "Pneumatic Cylinder ① to ⑤" (No. RJ-002AA to 006AA).

Individual Precautions: Air Bearing Actuator LBC Series

Design / Selection

Caution

■ Use clean, dry compressed air (ISO B 8573-1: 2010 Grade 1.4.2 or equivalent).

- To supply clean compressed air, install an air filter and oil mist filter. Use of CKD Super Dryer Unit SU Series is recommended. (Compatible circuit P. 12.)
- The drainage that occurs due to a drop in temperature within the pneumatic piping or pneumatic components can momentarily block the air flow path and cause operational failure. Furthermore, it causes rust, leading to pneumatic equipment failure.
- Any solid foreign matter in the compressed air can enter the pneumatic components and cause clogging, wear or locking in the bearing.

■ Always supply air with the specified pressure (0.3 to 0.5 MPa) to the bearing port when the actuator is in operation.

- If air is not supplied with the specified pressure, the resulting low load capacity of the bearing can cause the shaft to make contact, resulting in operational failure.
- Use a pressure switch and install a protection circuit that stops operation when pressure drops.

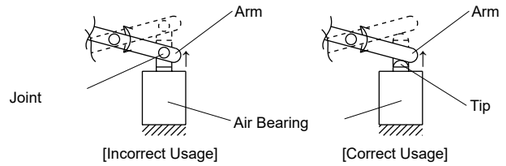
■ Connect a regulator with pressure relief mechanism to the thrust port. If using an electro-pneumatic regulator, please use the product compatible with LBC.
(Compatible circuit P. 12.)

■ The air bearing mounting surface should have a flatness level of 0.01 mm or below.

- Mounting on a low precision surface can cause the bearing to warp, resulting in operational failure.

■ Do not connect the end of the rod to an arm, etc.

- To avoid excessive lateral load from being applied to the bearing, make sure that the rod end is making straight contact with the loading object and that the contact point is a smoothly operating point-contact with low friction.



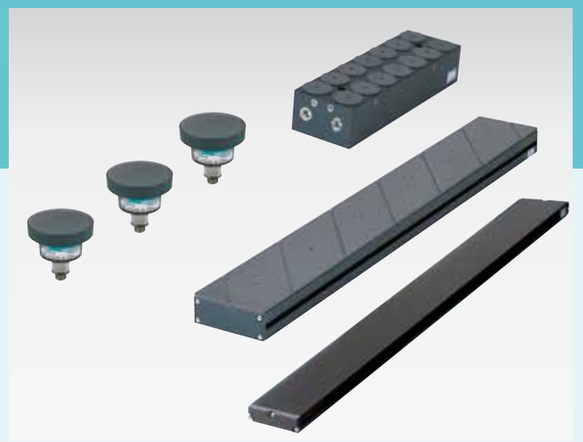
■ Do not use in applications where the rod is rotated using a motor, etc.

- The rod and bearing will make contact, leading to operational failure.

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

Float Star®
GFM

■ Precision Components



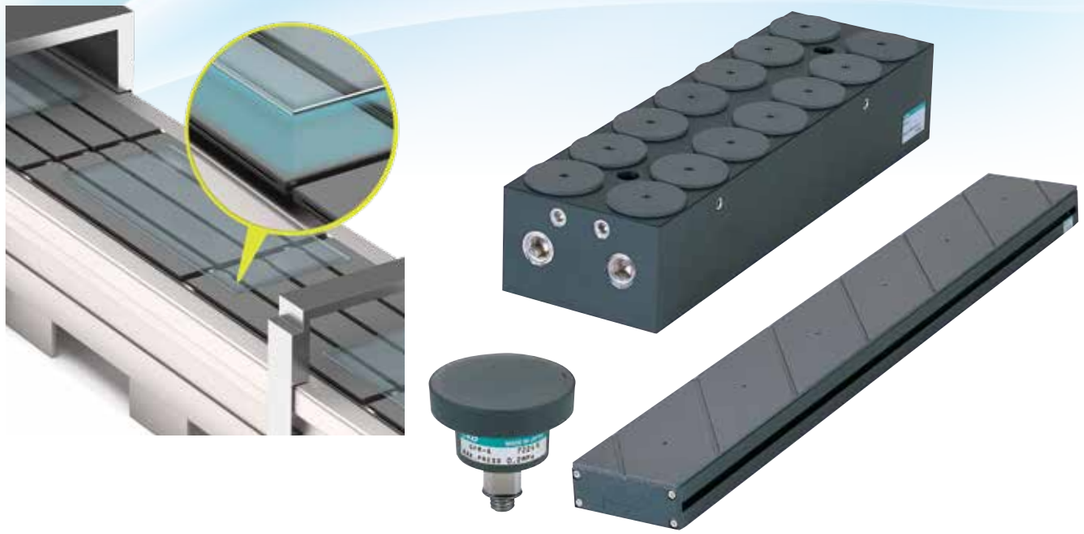
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● High float rail GFM-T 24
● Float rail GFM-R 28
● Precision Floating Stage GFM-P 38
GFM Technical data 42
⚠ Precautions for Use 48

GFM Series

High-precision/High-quality Floating System

Enables non-contact/clean/damage-less transport
even for delicate workpieces such as glass substrates



Stable, high-precision floating without contact

Adoption of carbon porous material realizes stable, high-precision floating without contact.



Significant reduction in air consumption

Adopts optimal air efficiency for glass floating, significantly reducing air consumption. Greatly contributes to factory energy saving.

Achieves Class 10 level *

Carbon porous material suppresses particles in floating air.

*Based on CKD tests for the GFM series, equivalent to Class 4 of JIS B 9920; measured values also include particle sizes of 0.5 µm or more. (Excluding GFM-T)

Prevents workpiece charging

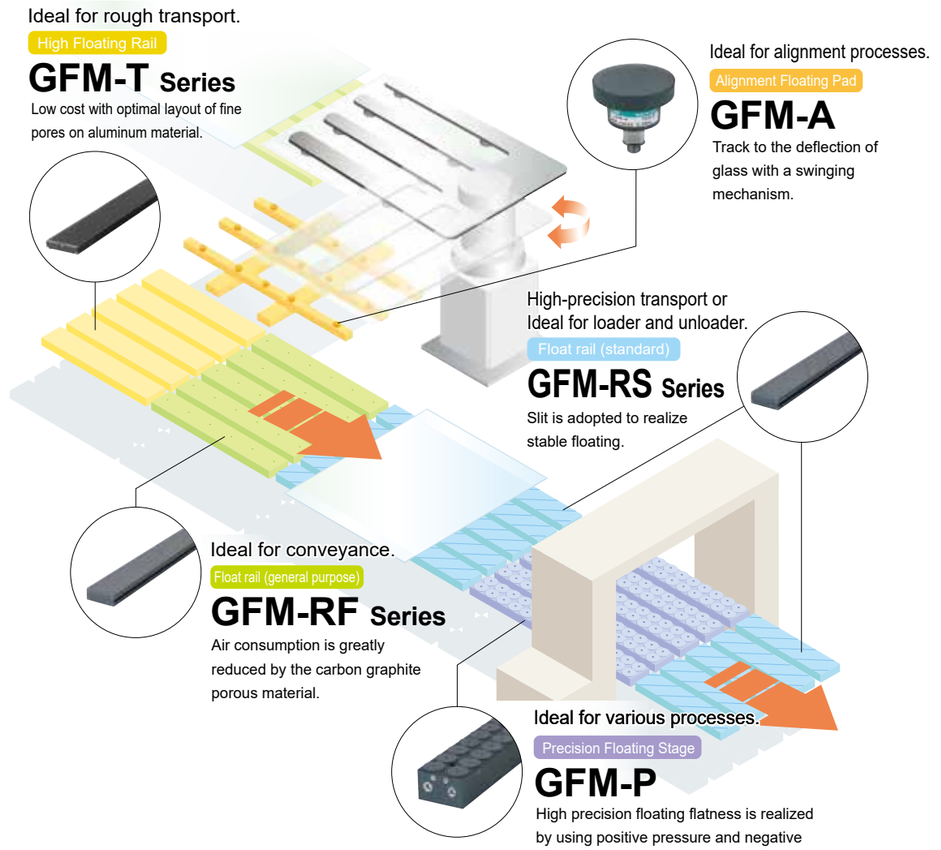
Conductive porous material suppresses static electricity. (Excluding GFM-T)

Ideal for high-sensitivity inspection

Adoption of a black body eliminates diffuse reflection and improves workpiece visibility.

Variations in diverse shapes/functions

Supports optimal systems for all processes, from transport to various processes and inspections



GFM Series variation

Model variations	Applications	Float [µm]	Air consumption L/min (at 0.1MPa) *1	Material	Page
GFM-A	Positioning	10 µm or more*2	10 or less	Contains carbon fiber PPS porous material	18
GFM-T Series	Rough transport	250 µm or more*2	100 or less	Aluminum alloy (Micropore processing)	24
GFM-RF Series	Transport	250 µm or more*2	24 or less	Carbon graphite Porous Material	28
GFM-RS Series	Loader/ Unloader	150 µm or more*2	24 or less	Carbon graphite Porous Material	28
GFM-P	Various processes	30 µm*3	3 or less	Carbon graphite Porous Material	38

*1 Take this as a guideline for air consumption. *2 Take this as a guide for float.
*3 The numerical values change according to the combination of positive pressure and negative pressure flow rate.

Precision Components
LBC
GFM
PVP
FBU2
AFB-RB
Ending



Floating System/Float Star

Alignment Floating Pad **GFM-A**

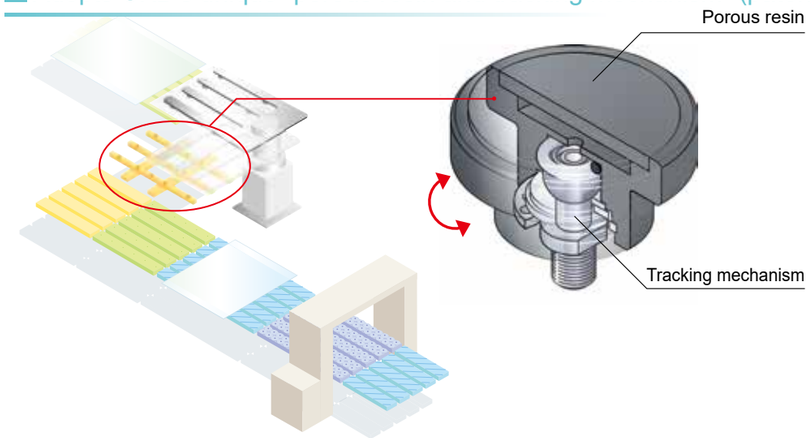
Swivel-type freely adaptable to deflection.

● Estimated float: 10 μm or more ● Main applications: Alignment

RoHS

Adoption of new material resin porous body and unique copying mechanism enables alignment adaptable to deflection.

Adopts CKD's unique "porous resin and tracking mechanism" (patented).



Less air consumption

Adoption of porous material reduced air consumption by 1/2.*

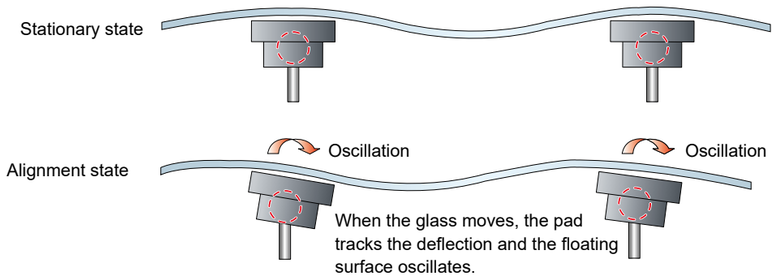
*Based on CKD tests for GFM-A

Antistatic

It is possible to suppress static electricity with antistatic resin porous material.

Supports sag freely

Non-contact floating is possible by following the deflection of large glass substrates, etc. (Image Diagram)



Suction holding

Suction fixing is possible after alignment.

Model No. Notation

GFM - A

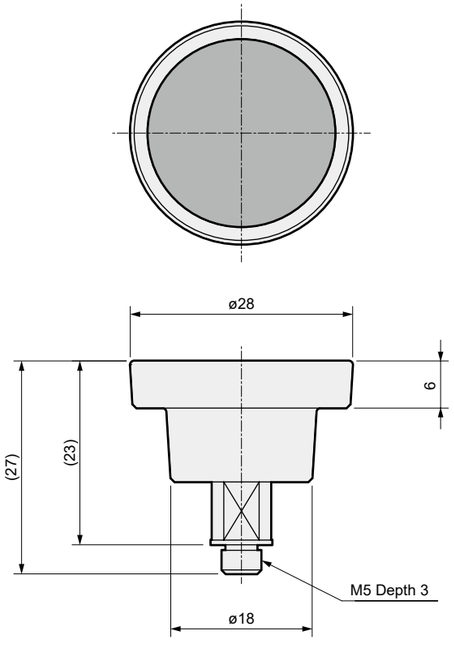
Model No.

Specifications

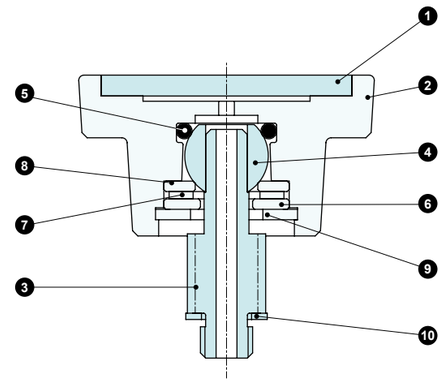
Item		GFM-A
Operating Fluid		Compressed Clean Air [Class 1.1.1 to 1.6.2]
Operating Pressure	During Floating MPa	0.08 to 0.2
	During Suction kPa	-90 to -60
Operating Ambient Temperature °C		5 to 40
Storage Ambient Temperature °C		-10 to 60 (However, no freezing)
Mounting Orientation		Limited to state with porous surface facing up
Applied load	*1 N	1 to 5
Air consumption	*1 L/min	10 or less
Floating height	*2: μm	10 or more
Suction Holding Force	N	5 or less (Direction perpendicular to suction surface)
Connection Port Size		M5
Weight	g	15

*1: Indicates air consumption when 0.1 MPa is supplied. Air consumption varies depending on the workpiece state and required floating amount. Consider this a guideline for flow rate calculation.
*2: When 0.1 MPa is supplied. Value when floating a load of 5 N. Consider this a guideline for floating height.

External Dimension Drawings

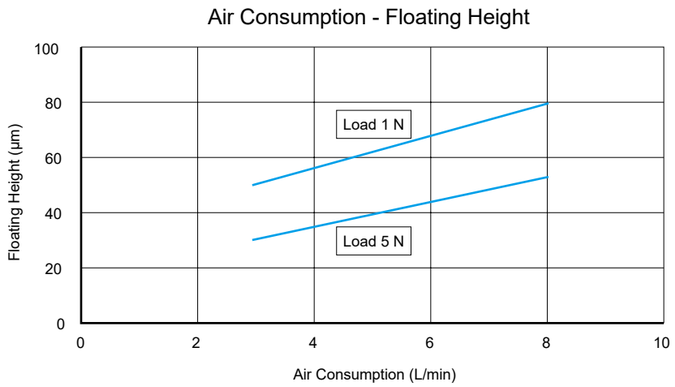


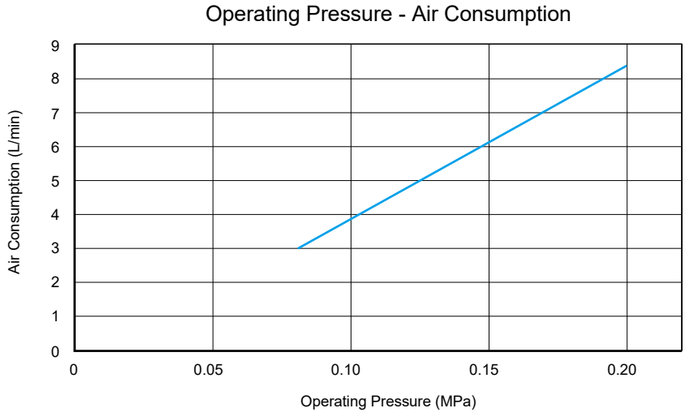
Internal Structure Diagram/Materials



Part No.	Part Name	Material	Remarks
1	Porous Material	Polyphenylene sulfide	Contains carbon fiber
2	Body	Polyphenylene sulfide	Contains carbon fiber
3	Shaft	Stainless steel	
4	Steel ball	Stainless steel	
5	O-ring	Nitrile rubber	
6	Metal Washer	Stainless steel	
7	Wave Washer	Stainless steel	
8	Metal Washer	Steel	Electroless nickel plating
9	C-type retaining ring for hole	Stainless steel	
10	Gasket	Nitrile rubber/Steel	

1 Floating Height (Reference Data)



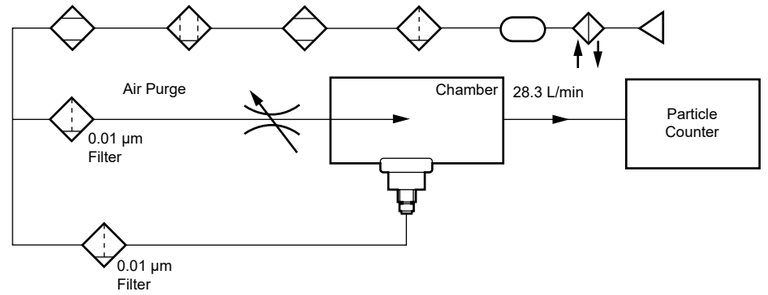


2 Particle Generation Amount (Reference Data)

[Measurement Method]

①Place the test sample in the chamber.
②Supply air.
③Measure the number of particles generated when air continues to flow.

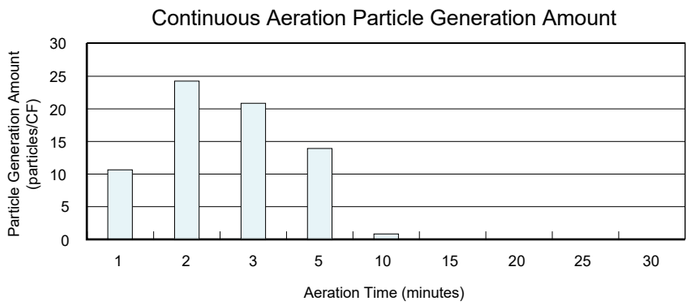
[Test Circuit]



[Measuring Instrument]

Particle Counter: Laser Dust Monitor
Minimum Measurable Particle Size: 0.1 μm
Suction Amount: 28.3 L/min

[Results]



* Particle generation amount also includes particle sizes of 0.5 μm or more.

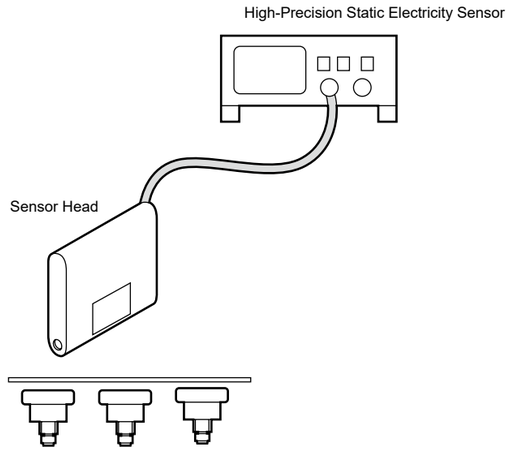
3 Static Electricity Change Amount (Reference Data)

MEMO

[Measurement Method]

①Place the sensor head at the center of the glass.
②Measure the amount of static electricity(voltage) when air is supplied.

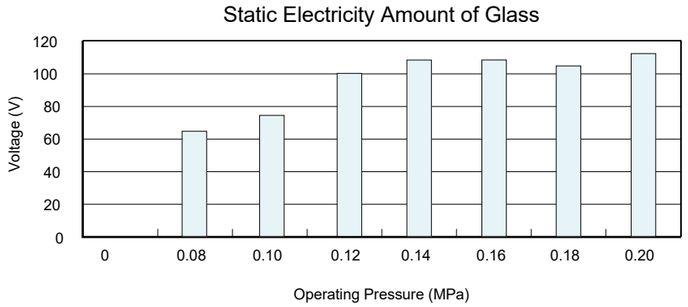
[Test Circuit]



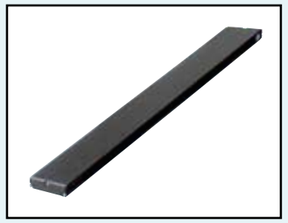
[Measuring Instrument]

Static Electricity Measurement: High-Precision Static Electricity Measuring Instrument (Non-contact type)

[Results]



Precision Components
LBC
GFM
PVP
FBU2
AFB-RB
Ending



Floating System/Float Star

High Floating Rail **GFM-T Series**

●Float: 250 μm or more ●Main applications: High Floating Transport

RoHS

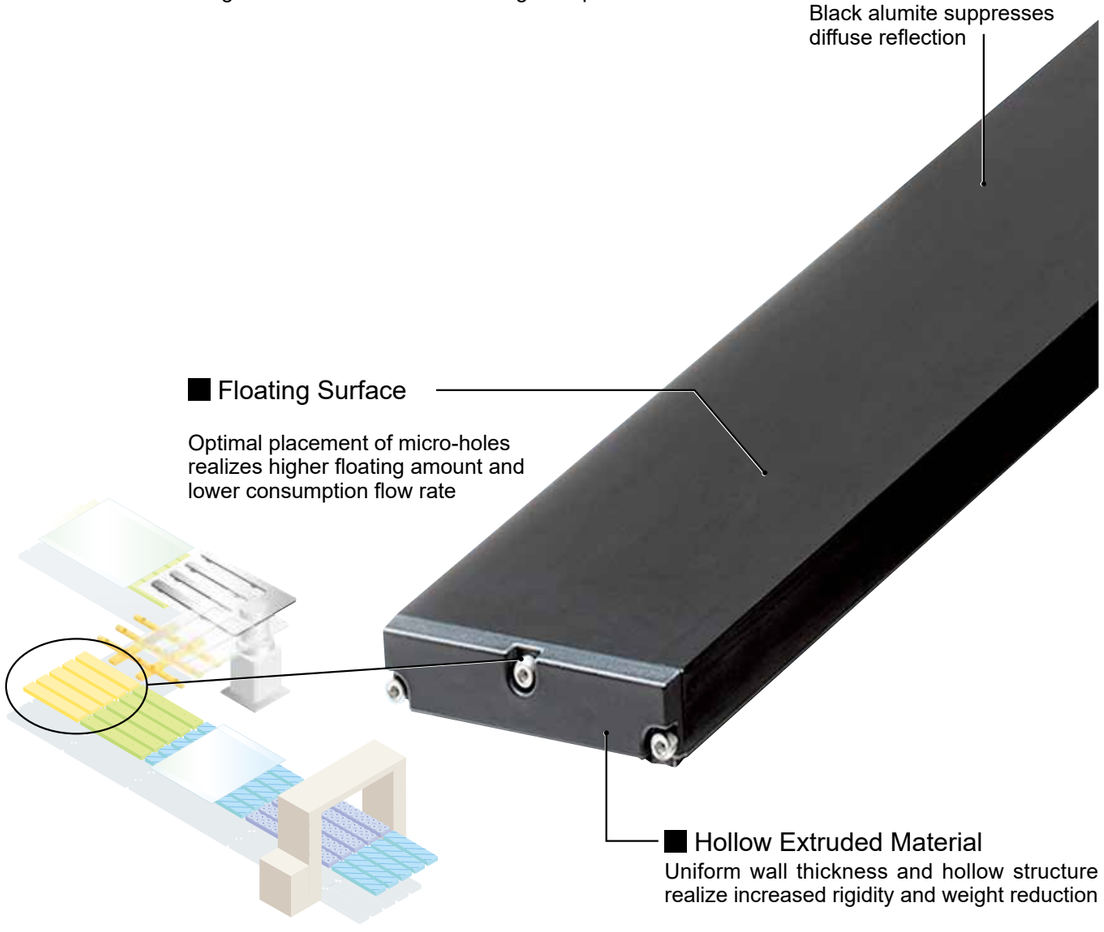
Unique design utilizing know-how from years of pneumatic technology enables non-contact transport with a high floating amount.

CKD's Unique Design

Applies fluid technology cultivated at CKD over many years.
Achieved high floating amount with low consumption flow rate.

Easy Installation

Bracketless direct piping and direct mounting structure saves installation effort.
Contributes to reducing installation man-hours on long transport distance lines.



Model No. Notation

GFM - T - 500

- GFM: Model No.
- 500: ❶ Product Length

❶ Product Length

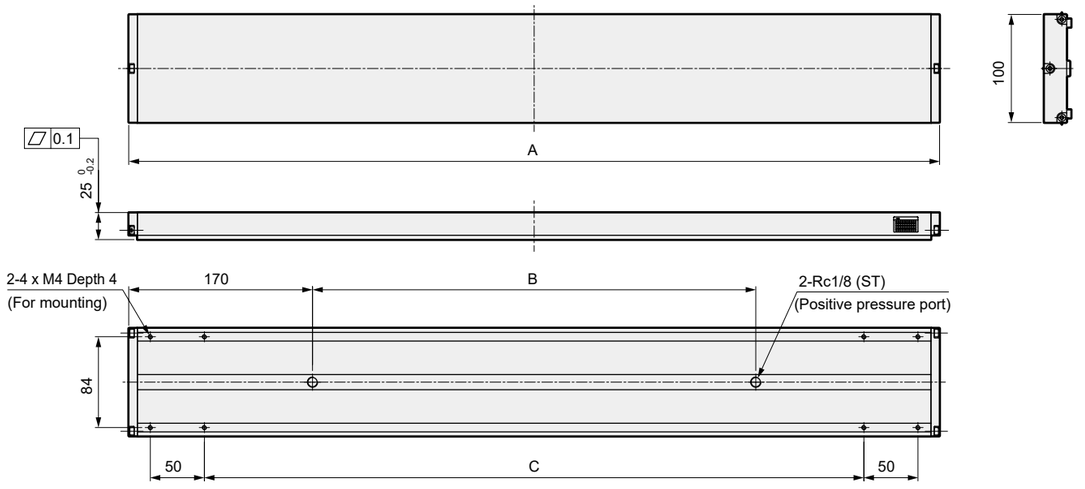
Code	Content
500	500
750	750
1,000	1,000

Specifications

Item	GFM-T-500	GFM-T-750	GFM-T-1000
Product Size (LxWxH) mm	500x100x25	750x100x25	1000x100x25
Operating Fluid	Compressed Clean Air [Class 1.6.2]		
Operating Ambient Temperature °C	5 to 40		
Storage Ambient Temperature °C	-10 to 60 (However, no freezing)		
Operating Pressure (Positive Pressure) MPa	0 to 0.2		
Air Consumption *1 L/min	50 or less	80 or less	100 or less
Floating Height *2 μm	250 or more		
Weight kg	1.7	2.5	3.3

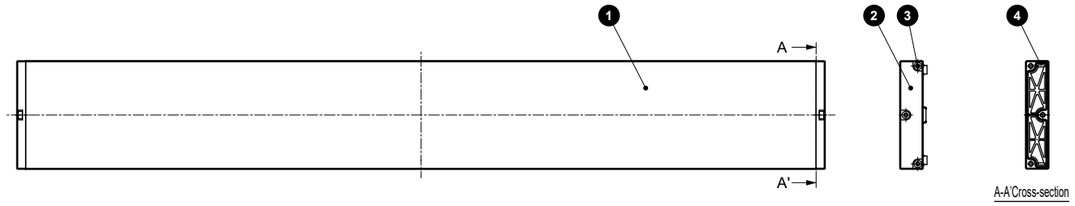
*1: Indicates air consumption when 0.1 MPa is supplied. Air consumption varies depending on the workpiece state and required floating amount. Consider this a guideline for flow rate calculation.
*2: When 0.1 MPa supplied. Value when floating glass with 0.7 mm thickness. Consider this a guideline for floating height.

External Dimension Drawings



Model No.	A	B	C
GFM-T-500	500	160	360
GFM-T-750	750	410	610
GFM-T-1000	1,000	660	860

Appearance/Material



Part No.	Part Name	Material	Remarks
1	Body	Aluminum alloy	Black Alumite Treatment *
2	Lid	Glass fiber filled polyamide	
3	Hexagon Socket Head Cap Screw	Stainless steel	
4	Gasket	Nitrile rubber	

*White streaks may be visible on the product exterior, but this occurs during the manufacturing process and does not affect product performance.

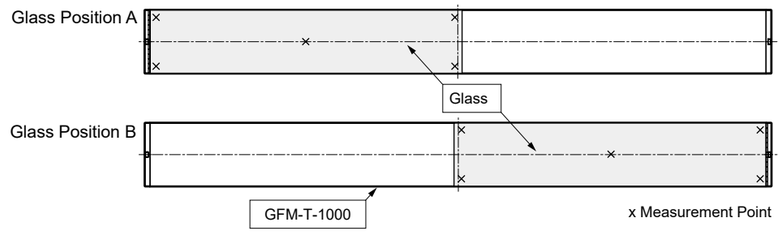
Technical Data

1 Floating Height (Reference Data)

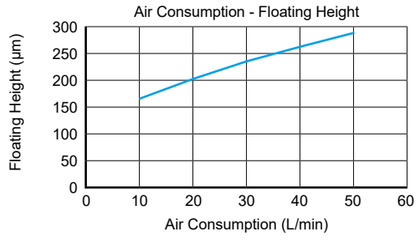
[Measurement Method]

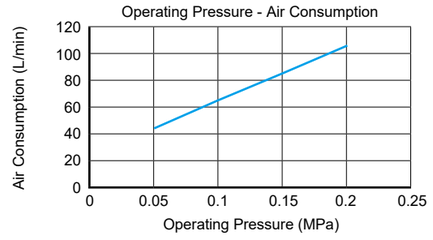
①Set the glass surface at zero supply air pressure as the reference point(zero point).
②Supply air, float the glass, and measure the displacement amount.
③Measure 5 points in the state of glass position A.
④Measure 5 points in the state of glass position B.

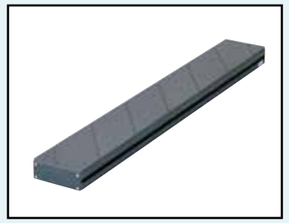
Floating Height: Smallest value among the displacement amounts of the 10 measurement points
Glass Size: t0.7x100x500



[Results]







Floating System/Float Star

Floating Rail GFM-R$^{F}_{S}$ Series

●Float: 150 μm or more ●Main applications: Transport

RoHS

New material carbon graphite porous body and unique design enable highly reliable floating transport.

CKD's Unique Design(Patent Acquired)

Applies fluid technology cultivated at CKD over many years.
Realized a floating surface shape that ensures reliable floating.

Antistatic

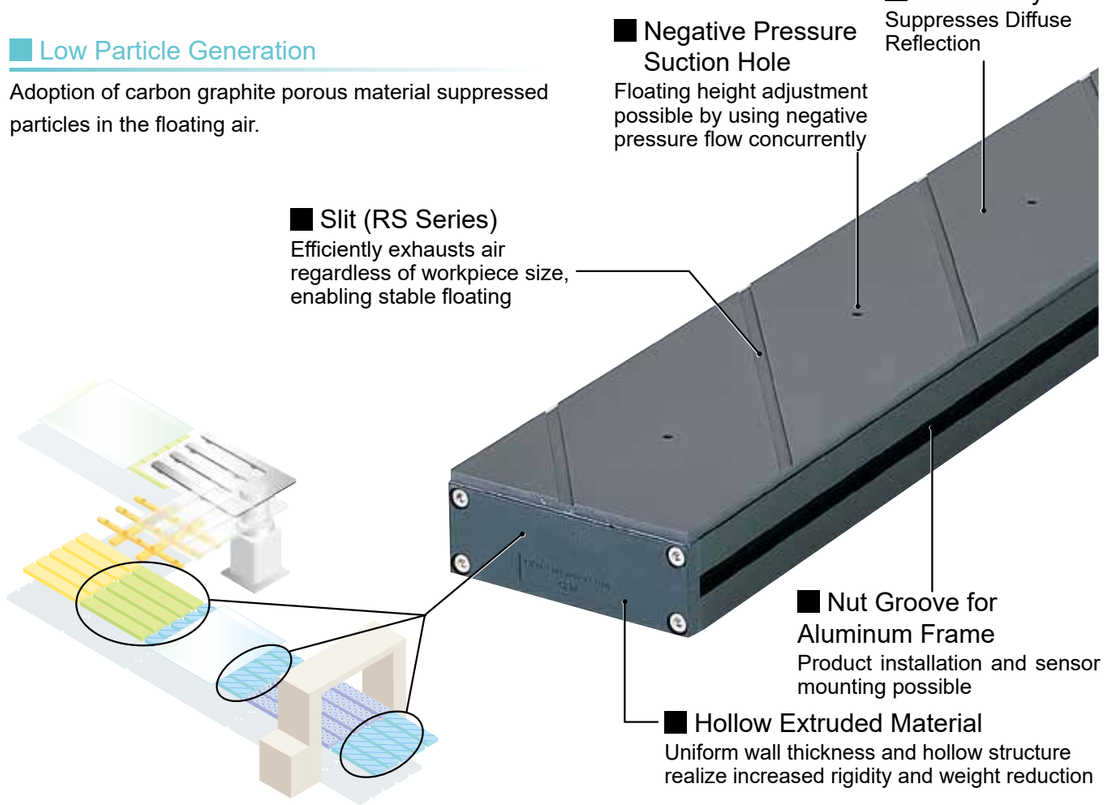
Achieved antistatic properties by adopting carbon graphite for the porous material. Floating air passing through the porous material has a slower flow velocity, and there is no charging of the workpiece.

Stable Floating

Adoption of porous material and optimal placement of air passages enable stable floating over a wide area.

Low Particle Generation

Adoption of carbon graphite porous material suppressed particles in the floating air.



Model No. Notation

GFM – RS – 500

- GFM: Model No.
- RS: ❶ Surface Shape
- 500: ❷ Floating Surface Length

❶ Surface Shape

Code	Content	
RS	With Slit	
RF	Without Slit	

❷ Floating Surface Length

Code	Content
500	500 mm
750	750 mm
1,000	1000 mm

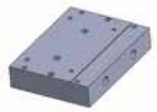
Bracket Kit Single Item Model No.

GFM – R – B

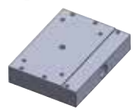
- GFM: Model No.

*For details of the bracket kit see P. 31.

Positive Pressure Side



Negative Pressure Side



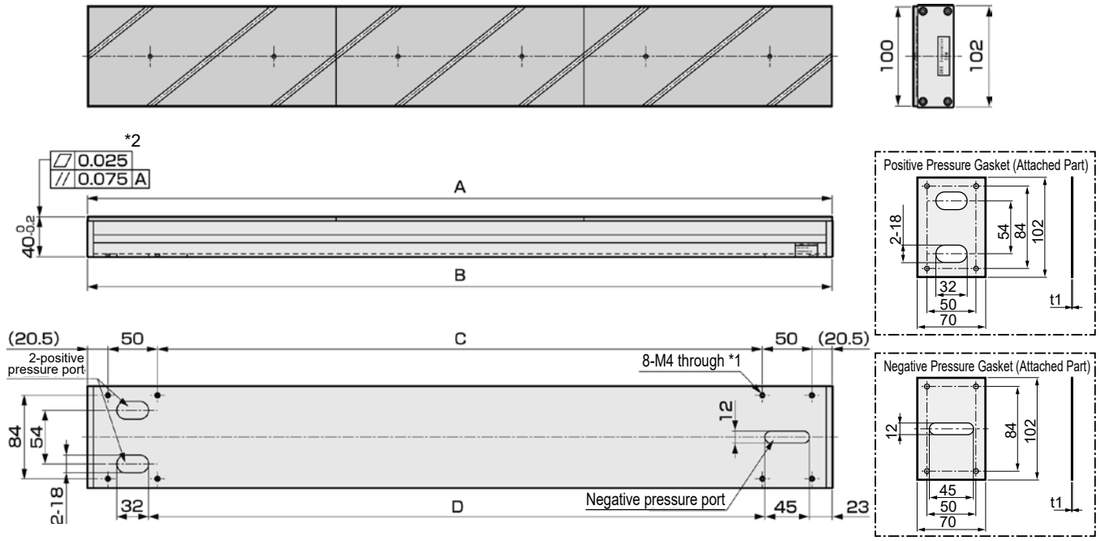
Specifications

Item		GFM-RS-500 GFM-RF-500	GFM-RS-750 GFM-RF-750	GFM-RS-1000 GFM-RF-1000
Product Size (LxWxH) mm		501x102x40	751x102x40	1001x102x40
Floating Surface Size (LxW) mm		500x100	750x100	1000x100
Operating Fluid		Compressed Clean Air [Class 1.1.1 to 1.6.2]		
Operating Ambient Temperature °C		5 to 40		
Storage Ambient Temperature °C		-10 to 60 (However, no freezing)		
Operating Pressure	Positive Pressure MPa	0 to 0.2		
	Negative Pressure kPa	-50 to 0		
Air consumption *1 L/min		Approx. 12	Approx. 18	Approx. 24
Floating height *2 μm		Approx. 150 (GFM-RS) / Approx. 250 (GFM-RF)		
Weight kg		1.8	2.7	3.6

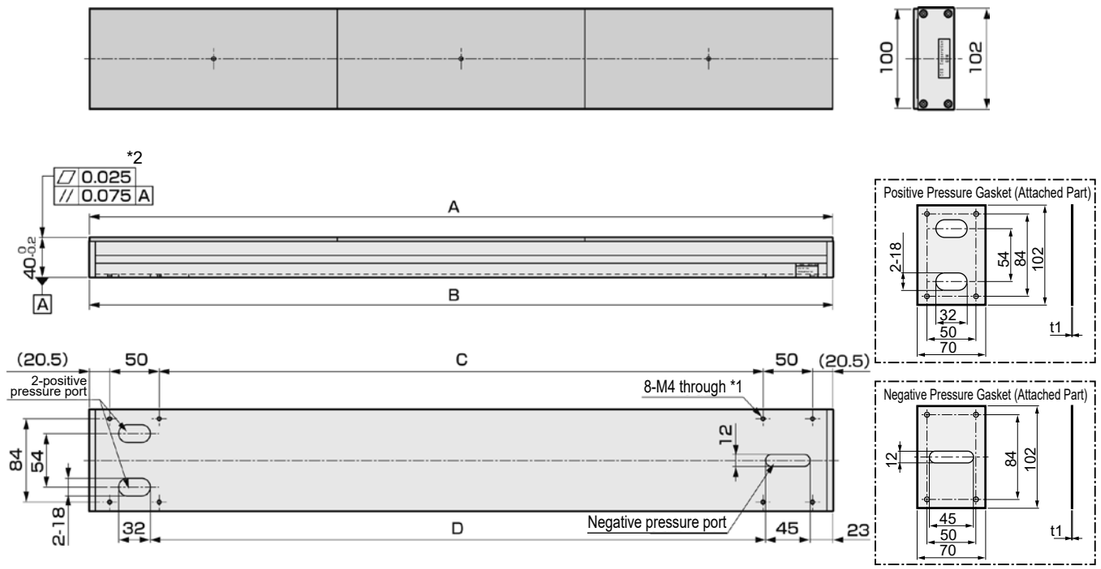
*1: Indicates air consumption when positive pressure 0.1 MPa and negative pressure 0 kPa are supplied. Air consumption varies depending on the workpiece state and required floating amount. Consider this a guideline for flow rate calculation.
*2: When positive pressure 0.1 MPa and negative pressure 0 kPa supplied. Value when floating glass with 0.7 mm thickness. Consider this a guideline for floating height.

External Dimension Drawings

● With Slit GFM-RS



● Without Slit GFM-RF



*1: Penetrates to the positive pressure port.
*2: Measurement value in a constant temperature room at 25°C. Accuracy changes in atmospheres deviating from 25°C. GFM-R□-1000 has flatness 0.05 mm and parallelism 0.1 mm.

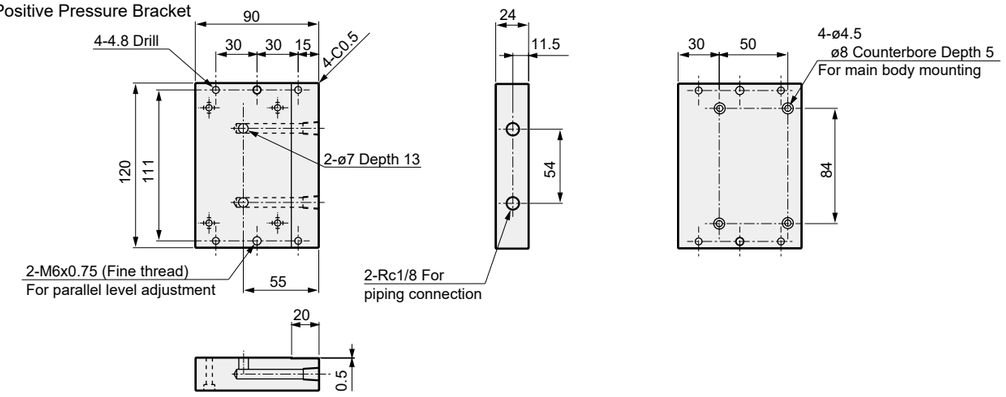
Model No.	A	B	C	D
GFM-R□-500	500	501	360	371.5
GFM-R□-750	750	751	610	621.5
GFM-R□-1000	1,000	1001	860	871.5

External Dimension Drawing (Bracket Kit)

● Model No.: GFM-R-B

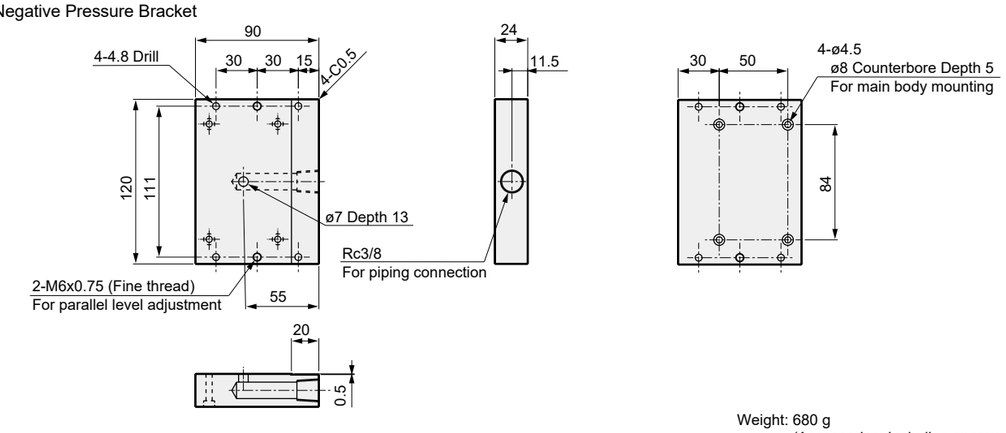
(Kit Contents: Positive pressure bracket, negative pressure bracket, 8 hexagon socket head cap screws, 8 screw gaskets)

• Positive Pressure Bracket



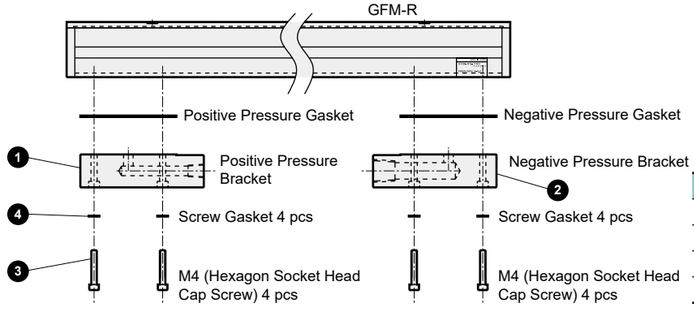
Weight: 680 g
(Accessories: Including approx. 20 g)

• Negative Pressure Bracket



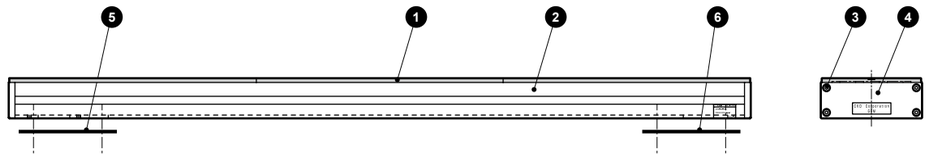
Weight: 680 g
(Accessories: Including approx. 20 g)

• Bracket Kit Mounting Example



Part No.	Part Name	Material	Remarks
1	Positive Pressure Bracket	Aluminum alloy	White Alumite Treatment
2	Negative Pressure Bracket	Aluminum alloy	White Alumite Treatment
3	Hexagon Socket Head Cap Screw	Stainless steel	
4	Screw Gasket	Nitrile rubber/Steel	

Appearance/Material



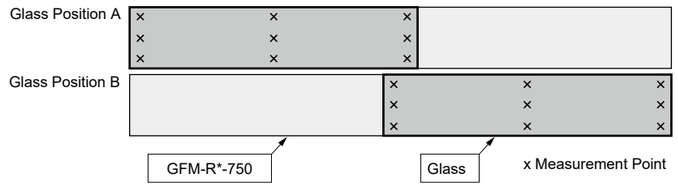
Part No.	Part Name	Material	Remarks
1	Porous Material	Carbon Graphite *1	
2	Base	Aluminum alloy	Black Alumite Treatment *2
3	Hexagon Socket Head Cap Screw	Stainless steel	
4	Lid	ABS Resin	
5	Positive Pressure Gasket	Nitrile rubber	Attached Parts
6	Negative Pressure Gasket	Nitrile rubber	Attached Parts

*1: Minor chipping on the porous material end face or gaps between porous materials may occur.
*2: White streaks may appear on the product exterior. This occurs during the manufacturing process and does not affect product performance.

1 Floating Height (Reference Data)

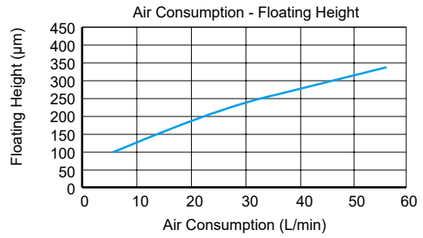
[Measurement Method]
①Set the glass surface at zero supply air pressure as the reference point(zero point).
②Float the glass and measure the displacement amount.
③Measure 9 points in the state of glass position A.
④Measure 9 points in the state of glass position B.

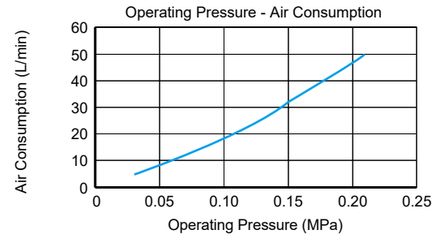
Floating Height: Smallest value among the displacement amounts of the 18 measurement points
Glass Size: t0.7x100x400



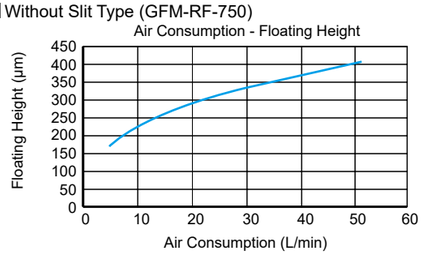
[Results]
Negative Pressure Condition: 0 kPa

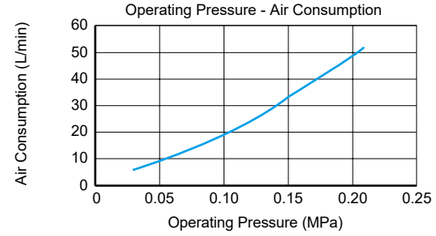
■ With Slit Type (GFM-RS-750)





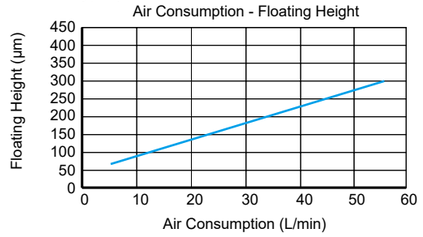
■ Without Slit Type (GFM-RF-750)

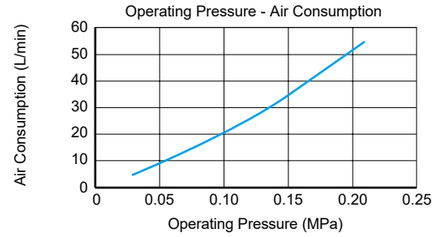




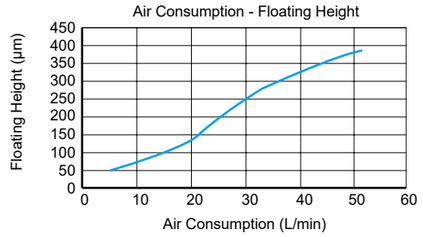
Negative Pressure Condition: -0.8 kPa

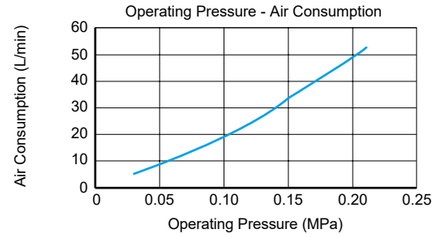
■ With Slit Type (GFM-RS-750)





■ Without Slit Type (GFM-RF-750)





2 Floating Flatness (Reference Data)

[Measurement Method]

①Set the glass surface at zero supply air pressure as the reference point(zero point).
②Float the glass and measure the displacement amount.
③Measure 9 points in the state of glass position A.
④Measure 9 points in the state of glass position B.

Floating Flatness: (max - min) value of the displacement amounts of the 18 measurement points

Glass Size: t0.7-100x400



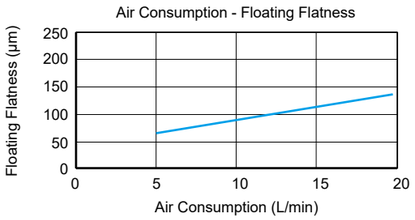
[Measuring Instrument]

Laser Displacement Meter: Specular reflection type (For transparent object measurement)

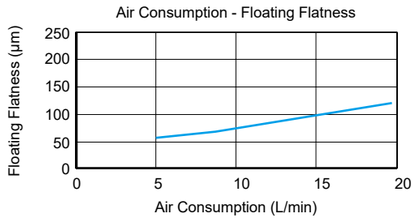
[Results]

■ With Slit Type (GFM-RS-750)

Negative Pressure Condition: 0 kPa

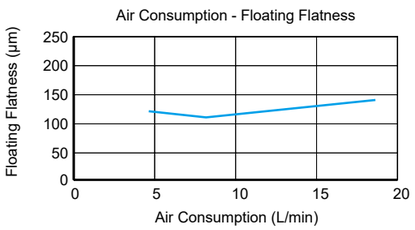


Negative Pressure Condition: -0.8 kPa

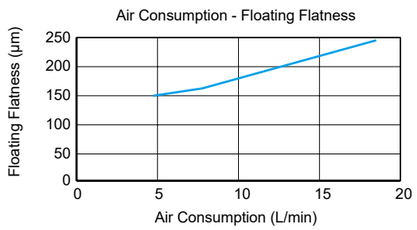


■ Without Slit Type (GFM-RF-750)

Negative Pressure Condition: 0 kPa



Negative Pressure Condition: -0.8 kPa

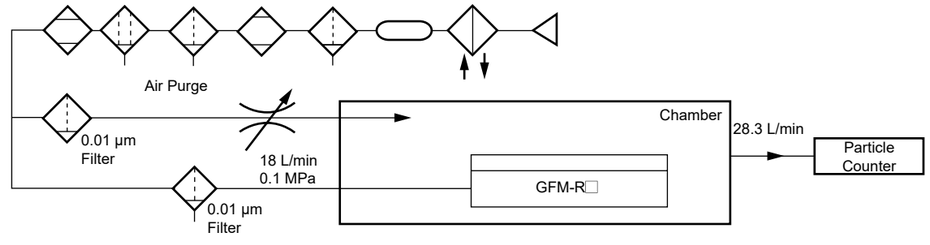


3 Particle Generation Amount (Reference Data)

[Measurement Method]

①Place the test sample inside the acrylic chamber.
②Supply 0.1 MPa (18 to 20 L/min) of air.
③Measure the number of particles generated when air continues to flow.

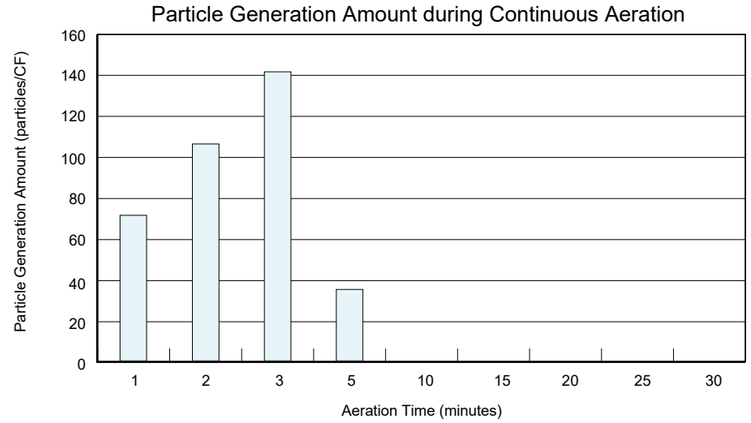
[Test Circuit]



[Measuring Instrument]

Particle Counter: Laser Dust Monitor
Minimum Measurable Particle Size: 0.1 μm
Suction Amount: 28.3 L/min

[Results]



* Particle generation amount also includes particle sizes of 0.5 μm or more.

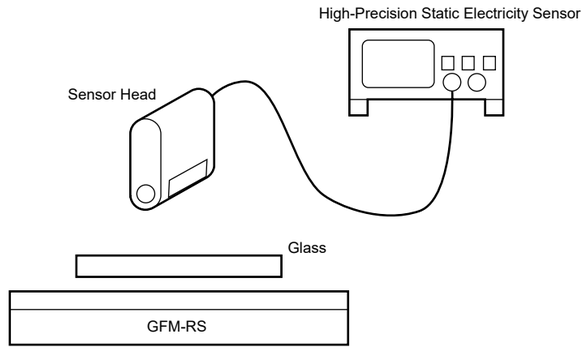
4 Static Electricity Change Amount (With Slit Type)(Reference Data)

[Measurement Method]

①Place the sensor head above the center of the glass.

②Measure the value indicated for the amount of static electricity (voltage) when air is supplied.

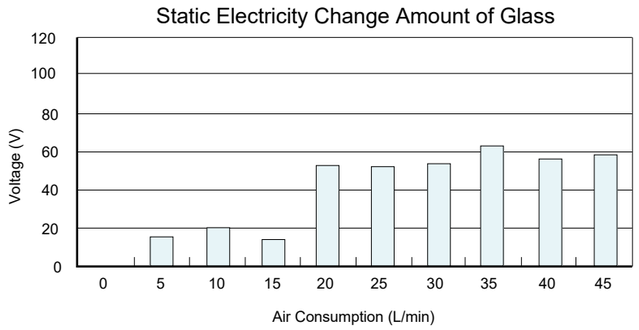
[Test Circuit]



[Measuring Instrument]

Static Electricity Measurement: High-Precision Static Electricity Measuring Instrument (Non-contact type)

[Results]



MEMO

Precision Components
LBC
GFM
PVP
FBU2
AFB-RB
Ending



Floating System/Float Star

Precision Floating Stage **GFM-P**

- Float: 30±6 μm
- Main applications: Various inspection processes, process steps

RoHS

New material carbon graphite porous body and unique design enable extremely high-precision floating.

CKD's unique design(patented)

Applies fluid technology cultivated at CKD over many years.
Realized a floating surface shape capable of high-precision floating.

High precision

Achieved high flatness and parallelism with ultra-precision machining.

High floating accuracy

Concurrent use of positive and negative pressure flows enables high-precision floating.

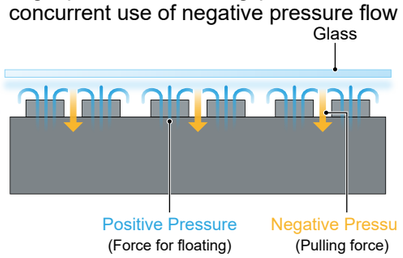
Antistatic

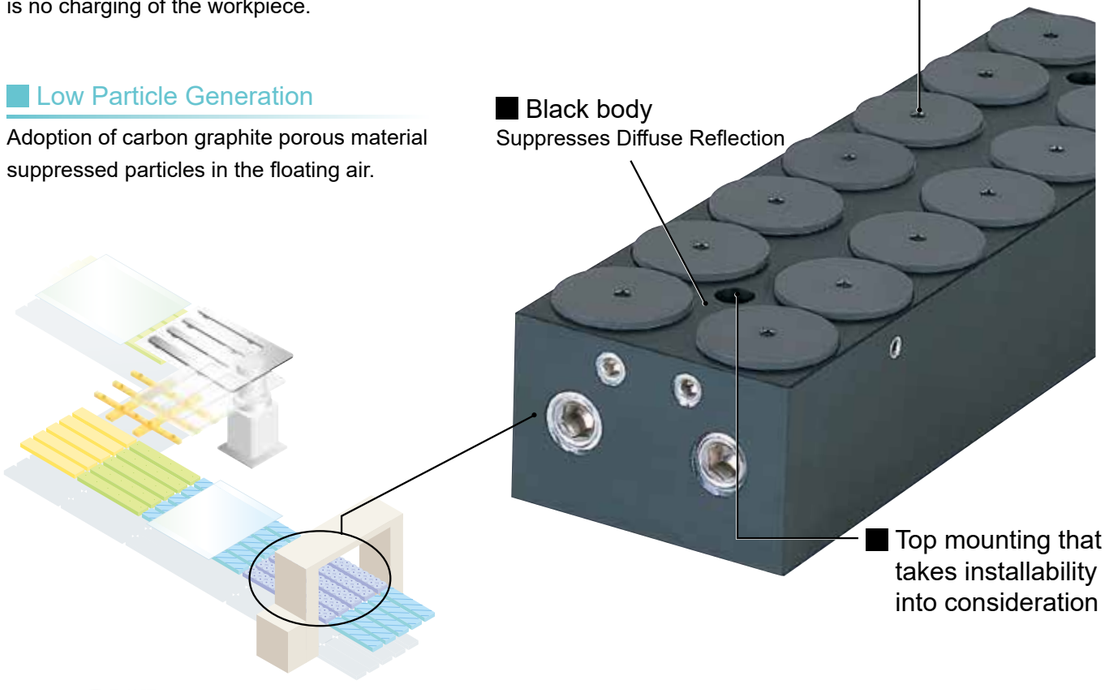
Achieved antistatic properties by adopting carbon graphite.
Floating air passing through the porous material has a slower flow velocity, and there is no charging of the workpiece.

Low Particle Generation

Adoption of carbon graphite porous material suppressed particles in the floating air.

■ Negative pressure vacuum hole
High-precision floating possible with concurrent use of negative pressure flow





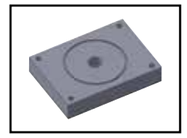
Model No. Notation

GFM – P
Model No.

Bracket Kit Single Item Model No.

GFM – P – B
Model No.

*For details of the bracket kit P. 40.

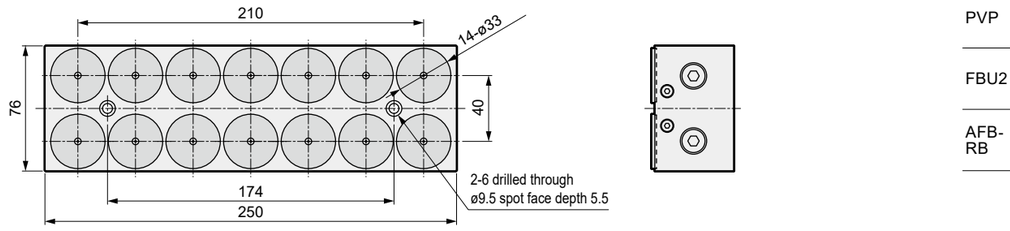


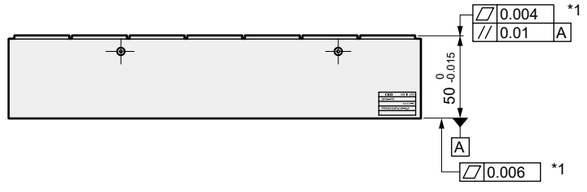
Specifications

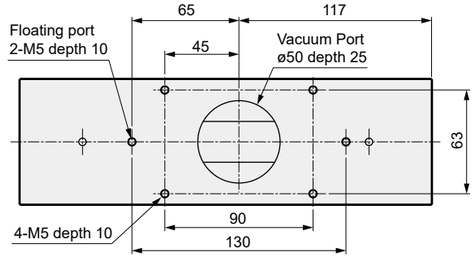
Item		GFM-P
Product Size (LxWxH) mm		250x76x50
Floating Surface Size (LxW) mm		250x76
Operating Fluid		Compressed Clean Air [Class 1.1.1 to 1.6.2]
Operating Ambient Temperature °C		5 to 40
Storage Ambient Temperature °C		-10 to 60 (However, no freezing)
Operating Pressure	Positive Pressure MPa	0 to 0.2
	Negative Pressure kPa	-50 to 0
Floating Flatness *1 μm		12 μm or less (when floating 30 μm)
Air Consumption *2 L/min		Approx. 2 to 3
Floating height *3: μm		Approx. 100
Weight kg		2.2

*1: Represents the MAX-MIN difference of the floating surface. Supply flow rate conditions vary depending on the workpiece state and customer's operating conditions. Consider this a guideline for floating flatness.
*2: Indicates air consumption when positive pressure 0.1 MPa is supplied. Air consumption varies depending on the workpiece state and required floating amount. Consider this a guideline for flow rate calculation.
*3: When positive pressure 0.1 MPa and negative pressure 0 kPa supplied. Value when floating glass with 0.7 mm thickness. Consider this a guideline for floating height.

External Dimension Drawings



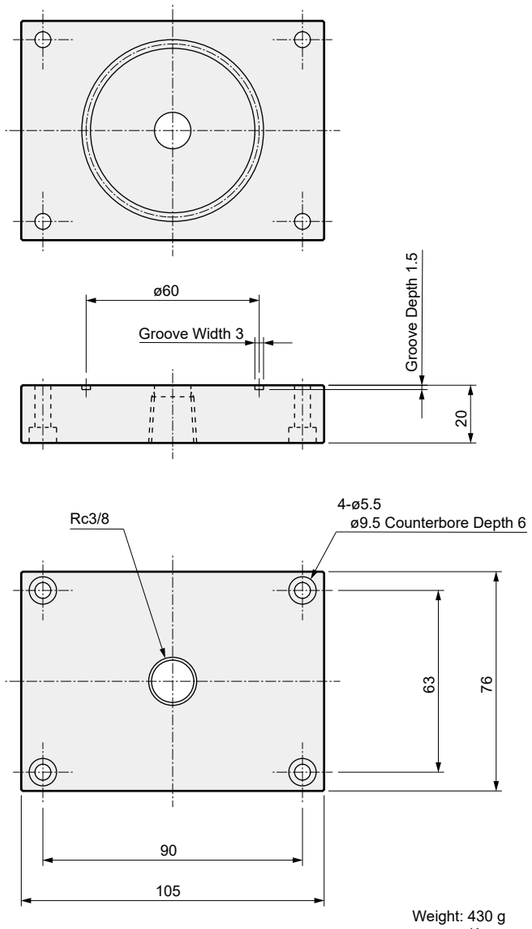




*1: Measurement value in a constant temperature room at 25°C. Accuracy may vary in atmospheres other than 25°C.

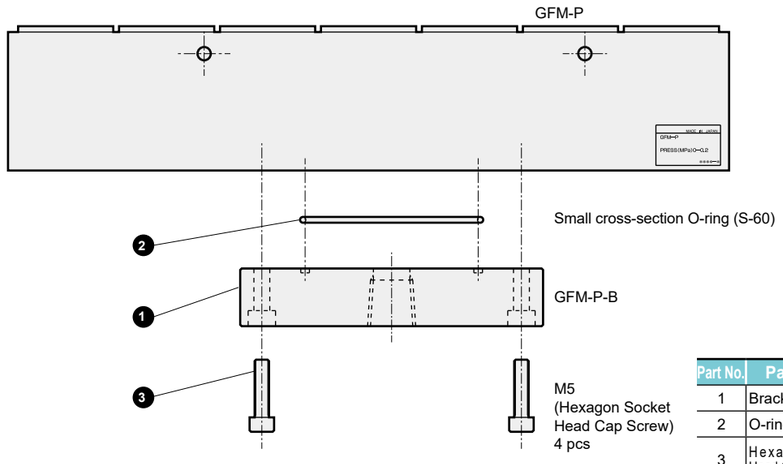
External Dimension Drawing (Bracket Kit)

● Model No.: GFM-P-B
(Kit Contents: Bracket, 1 O-ring, 4 hexagon socket head cap screws)



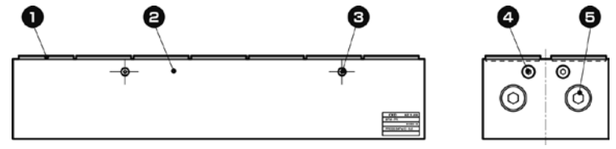
Weight: 430 g
(Accessories: Including approx. 20 g)

● Bracket Kit Mounting Example



Part No.	Part Name	Material	Remarks
1	Bracket	Aluminum alloy	White Alumite Treatment
2	O-ring	Nitrile rubber	
3	Hexagon Socket Head Cap Screw	Stainless steel	

Appearance/Material



Part No.	Part Name	Material	Remarks
1	Porous Material	Carbon Graphite *1	
2	Base	Aluminum alloy	Black Alumite Treatment *2
3	Hexagon Socket Set Screw	Stainless steel	
4	Hexagon Socket Set Screw	Stainless steel	
5	Hexagon Socket Set Screw	Stainless steel	

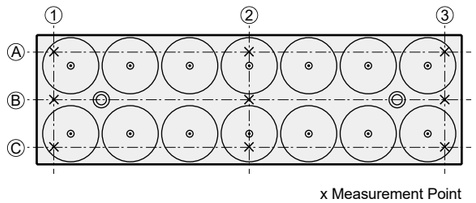
*1: Minor chipping may occur on the porous material end face.
*2: White streaks may appear on the product exterior. This occurs during the manufacturing process and does not affect product performance.

1 Floating Height/Floating Flatness 1 (Reference Data)

[Measurement Method]

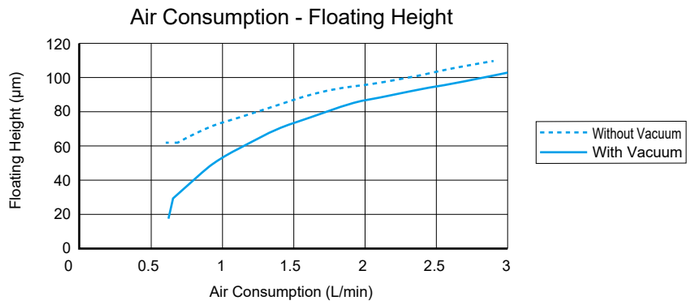
①Set the glass surface at zero supply air pressure as the reference point (zero point).
②Float the glass and measure the displacement amount.

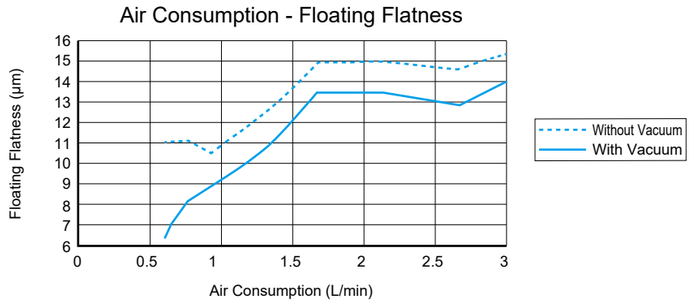
Floating Height: Average value of the displacement amounts of the 9 measurement points
Floating Flatness 1: (max-min) value of the displacement amounts of the 9 measurement points
Glass Size: t0.7x76x250

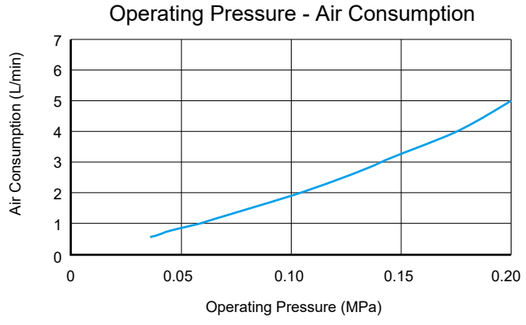


x Measurement Point

[Results]







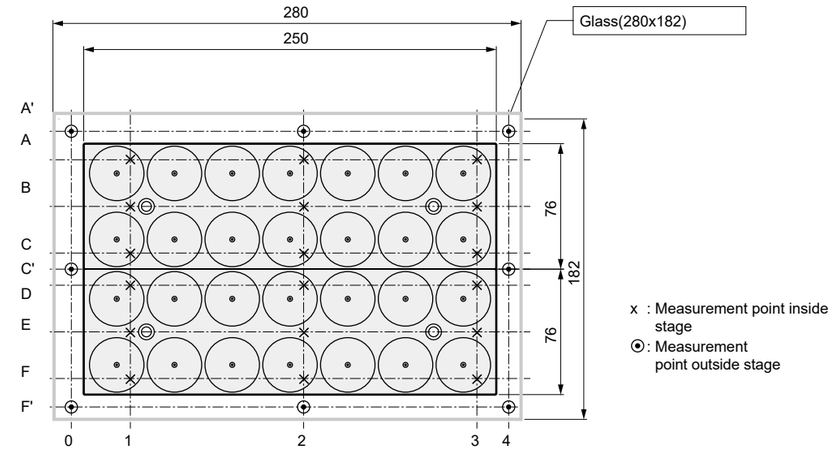
2 Floating Flatness 2 (Reference Data)

[Measurement Method]

①Set the glass surface at zero supply air pressure as the reference point(zero point).
②Float the glass and measure the displacement amount.

Condition 1: State where glass is 15 mm larger than the precision floating stage

Floating Flatness 2: (max-min) value of the displacement amounts of the 18 measurement points inside the stage
Glass Size: t0.7x280x182
Floating Stage Arrangement State: No gap between stages



[Results]

	0	1	2	3	4
A'	18.0		26.5		23.0
A		25.5	25.9	22.1	
B		25.0	27.2	24.8	
C		25.8	27.9	26.2	
C'	21.8				25.0
D		26.1	24.9	27.9	
E		23.8	25.6	23.6	
F		20.4	24.7	20.0	
F'	9.7		20.0		13.9

(Unit: μm)

Target Floating Height	(μm)	20
Positive Pressure	(MPa)	0.05
Positive Pressure Flow Rate	(L/min)	1.6
Negative Pressure Flow Rate	(L/min)	6.5
Floating Height MAX	(μm)	27.9
Floating Height MIN	(μm)	20.0
Average Floating Height	(μm)	24.9
Floating Flatness	(μm)	7.9

*Data for measurement points outside the floating stage is omitted.

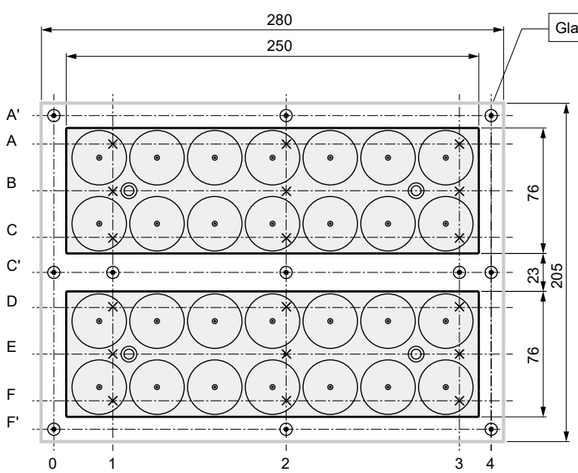
3 Floating Flatness 3 (Reference Data)

[Measurement Method]

①Set the glass surface at zero supply air pressure as the reference point (zero point).
②Float the glass and measure the displacement amount.

Condition 2: State where a 23 mm gap is made between floating stages under Condition 1

Floating Flatness 3: (max-min) value of the displacement amounts of the 18 measurement points inside the stage
Glass Size: t0.7x280x205
Floating Stage Arrangement State: Stage Interval 23 mm



x : Measurement point inside stage

⊙: Measurement point outside stage

[Results]

	0	1	2	3	4
A'	18.1		22.7		18.9
A		26.8	26.9	23.5	
B		26.0	27.2	25.0	
C		25.6	27.0	26.8	
C'	21.8	23.9	26.0	25.8	24.3
D		25.4	28.4	27.7	
E		23.7	25.3	25.0	
F		22.3	23.0	22.7	
F'	14.8		18.3		12.8

(Unit: μm)

Target Floating Height	(μm)	20
Positive Pressure	(MPa)	0.05
Positive Pressure Flow Rate	(L/min)	1.6
Negative Pressure Flow Rate	(L/min)	6.3
Floating Height MAX	(μm)	28.4
Floating Height MIN	(μm)	22.3
Average Floating Height	(μm)	25.5
Floating Flatness	(μm)	6.1

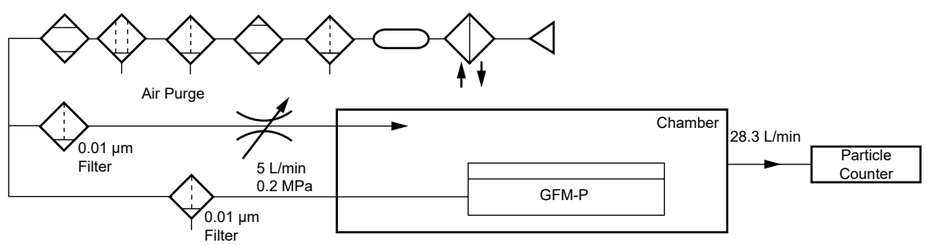
*Data for measurement points outside the floating stage is omitted.

4 Particle Generation Amount (Reference Data)

[Measurement Method]

①Place the test sample inside the acrylic chamber.
②Supply 0.2 MPa (approx. 5 L/min) of air.
③Measure the number of particles generated when air continues to flow.

[Test Circuit]

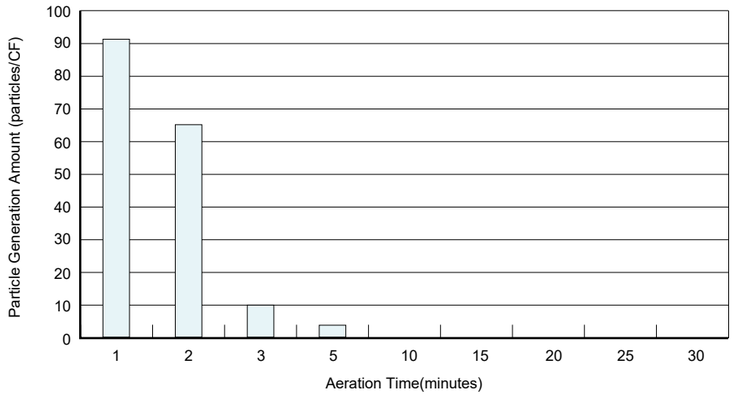


[Measuring Instrument]

Particle Counter: Laser Dust Monitor
Minimum Measurable Particle Size: 0.1 μm
Suction Amount: 28.3 L/min

[Results]

Particle Generation Amount during Continuous Aeration



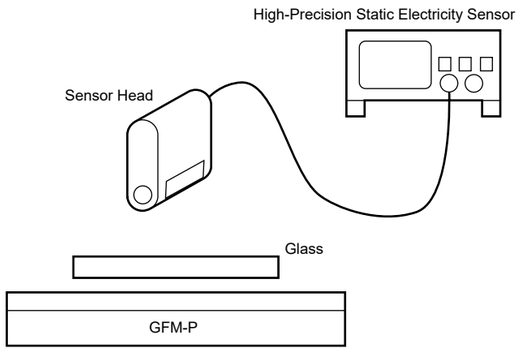
* Particle generation amount also includes particle sizes of 0.5 μm or more.

5 Static Electricity Change Amount (Reference Data)

[Measurement Method]

①Place the sensor head above the center of the glass.
②Measure the value indicated for the amount of static electricity (voltage) when air is supplied.

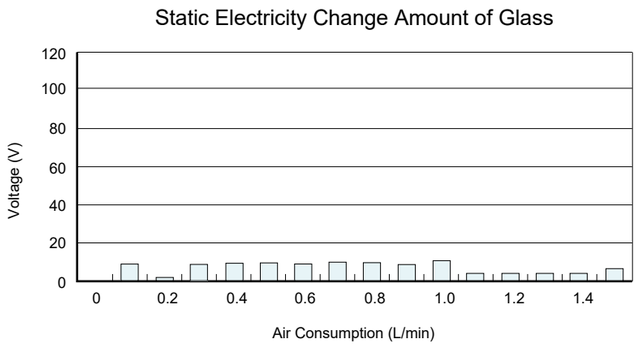
[Test Circuit]



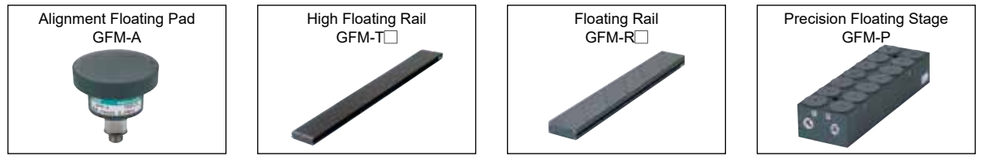
[Measuring Instrument]

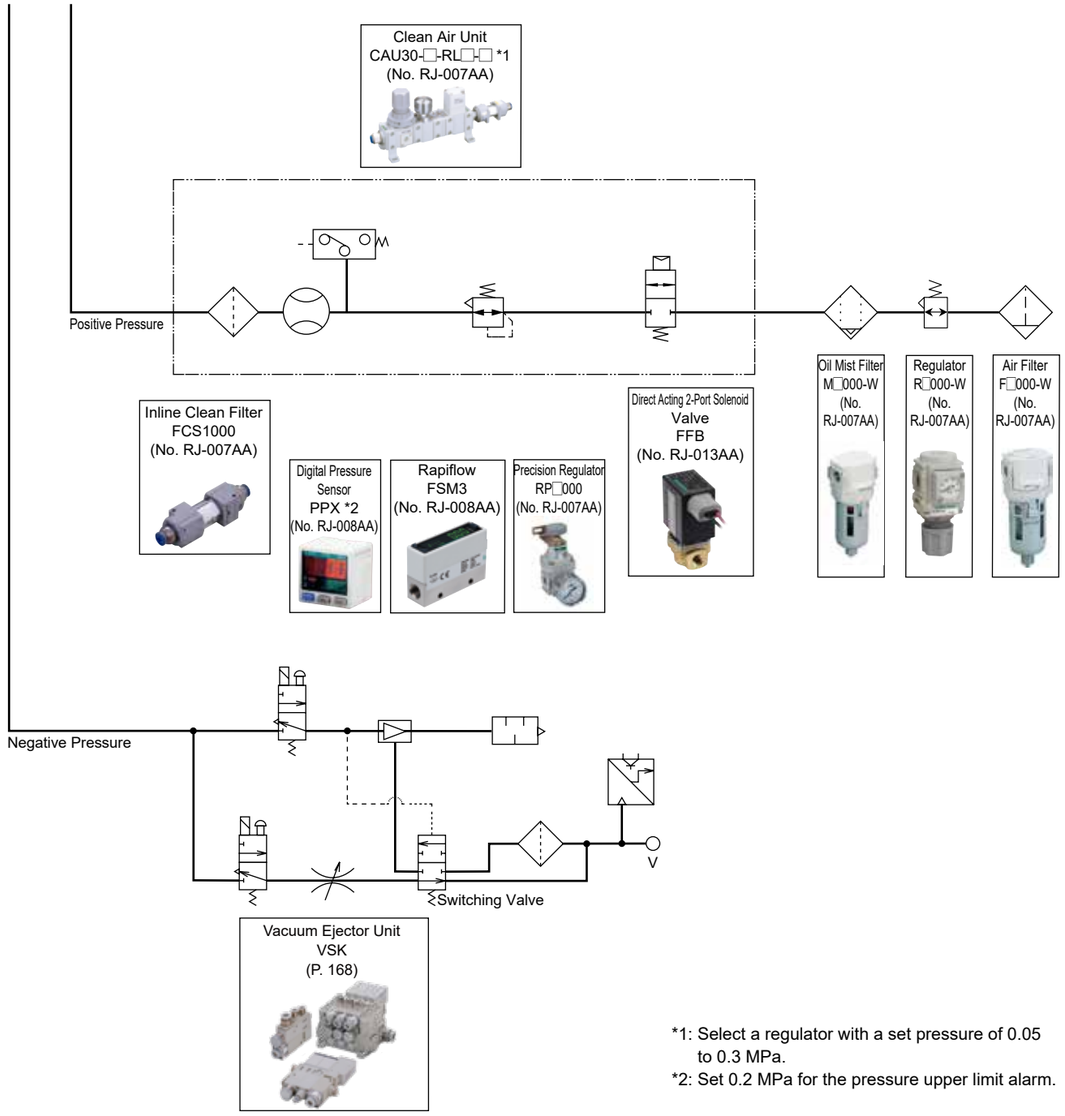
Static Electricity Measurement: High-Precision Static Electricity Measuring Instrument (Non-contact type)

[Results]



Floating System Related Products





*1: Select a regulator with a set pressure of 0.05 to 0.3 MPa.
*2: Set 0.2 MPa for the pressure upper limit alarm.

For Ensuring Safety

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro P. 15 for details.

Individual Precautions: Float Star GFM Series

Design / Selection

1. Common

Warning

■During transport/storage, keep the environment temperature within the range of the storage ambient temperature (-10°C to 60°C).
Transport/storage outside this range will cause product damage, abnormalities, or degradation of performance/durability. For optimal use of the product, transport/storage near 25°C is best.

■Always use within the product specifications.
Use outside the specification range can cause damage to the porous material or deterioration of the porous surface; do not use.

■Avoid using outdoors in areas with high levels of dust or direct sunlight.
Do not use in locations with corrosive or flammable gases. Also, never allow them to be inhaled.

■This product is used for compressed air. Do not use other fluids.

■Never modify or additionally machine this product. Processing distortion, etc., may lead to accuracy or strength degradation.

■The floating workpiece can be moved with minimal force.
To prevent injury to personnel and damage to workpieces/equipment/devices due to workpiece movement or overrun, appropriately incorporate workpiece support/holding/fixing and stoppers, etc.

■Consider the possibility that the pressure may be decreased by the electrical power failure or breakdown of the power source.
If insufficient floating could cause injury to personnel or damage to workpieces/equipment/devices, incorporate safety devices for that purpose. If insufficient suction force could cause injury to personnel or damage to workpieces/equipment/devices, incorporate safety devices for that purpose.

■Consider the behavior at emergency stop.
If safety devices activate during emergency stop or system abnormality, causing the power source, machinery, etc., to stop, design so as not to cause injury to personnel or damage to workpieces/equipment/devices.

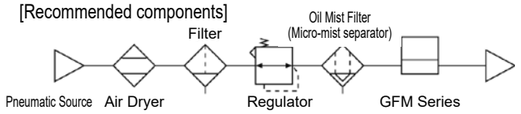
■Consider the behavior when restarting after emergency or abnormal stops.
Design so that restarting does not cause injury to personnel or damage to workpieces/equipment/devices.

■Perform piping with a sufficient effective cross-sectional area.
Piping design commensurate with air consumption is necessary. Ensure the effective area of tubes, fittings, valves, etc., is sufficiently large to minimize pressure drop. Insufficient floating or suction force can lead to injury to personnel and damage to workpieces/equipment/devices.

■Do not use spiral piping.
Avoid spiral piping on both the supply and vacuum sides; perform piping using the shortest possible straight distance to minimize pressure drop. Insufficient floating or suction force can lead to injury to personnel and damage to workpieces/equipment/devices.

Caution

■Use dry, clean compressed air [Class 1.1.1 to 1.6.2] (20,000 pcs./m^3 or less of solid particles 0.1 to 0.5 µm, pressure dew point +10°C or less, oil concentration 0.1mg/m^3 or less).
(Class is based on compressed air quality classes according to ISO-8573-1: 2010.)
[It is recommended to use the CKD Super dryer SD Series or CKD inline filter FCS.]
[Recommended components]



■When using this product in a cold climate, take the necessary measures to prevent freezing.
Foreign matter or oil in compressed air can clog the porous material, causing failure/malfunction.

■When there is a heat source in the surroundings, insulate the product.
Radiant heat may cause the product temperature to rise above the operating ambient temperature; shield with a cover, etc.

■Avoid using this product where vibration and impact are present.
Causes failure/malfunction.

■Wiping the floating surface of the product with cloth/paper, touching with a hand or contacting with glass will cause black adhesion(color transfer). This phenomenon means that applying physical load/stress to the porous material causes the porous surface layer to peel or be abraded, leading to particle generation; please be careful. (Excluding GFM-T)

2. SwiveL-type GFM-A

Warning

■Take care when swiveling operation is performed with a pad fixed with thread.
Rotation may cause screw loosening, risking trouble.

■When performing suction transport, consider the acceleration, impact and wind pressure.
There is a risk of the suctioned object detaching during movement.

Caution

■For the normal oscillating operation, set the applied load to 1 to 5 N.
Setting the quantity and installation layout is important. If the load capacity is 1 N or less, air may blow out from the body side or bottom surface. If 5 N or more, the copying mechanism may not function.

3. Rail-type GFM-R□/ Precision Type GFM-P

Caution

■Separately prepare brackets for piping connection that meet the mounting dimensions of your equipment.
Separate bracket kits are available. Please consult us.

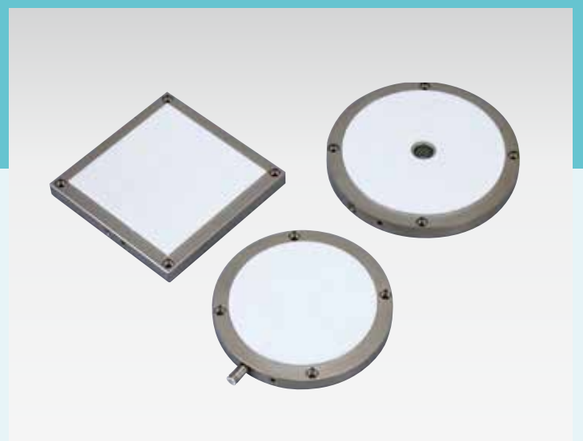
■Because the threaded part of the mounting section of this product penetrates the air path, air leakage may occur from the threaded part.
[GFM-R Series Only]
This can be prevented by using screw gaskets.

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

Precision Suction Plate

PVP

■ Precision Components



CONTENTS

Product Introduction 52
● PVP 54
⚠ Precautions for Use 64

Precise Contact Plate **PVP** Series

Precision Resin Porous Plate Suctions ultra-thin or soft materials over the entire surface without damaging the workpiece or causing distortion/deformation.

High-precision workpiece processing

Suction surface flatness: 2 µm, parallelism: 5 µm\. (Specification values for R-36-18, C-50, S-50-50) High workpiece fixing accuracy enables high-precision workpiece processing.

Large Suction Force

Porosity is 40%, enabling full-surface suction with large suction force. Even with large suction force, there is no suction deformation of ultra-thin workpieces.



Does Not Damage Workpiece

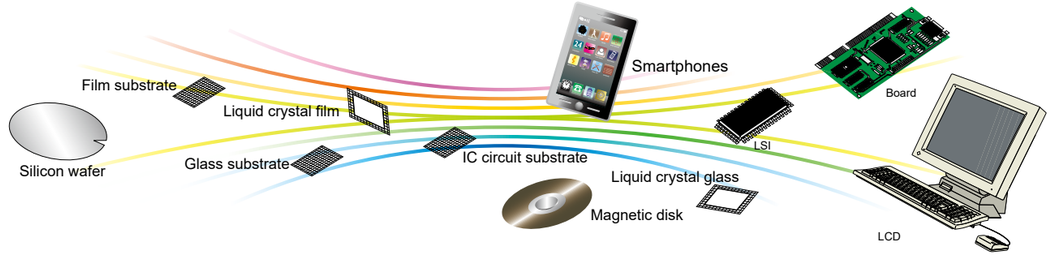
Suction surface hardness is Shore D60. Soft contact does not damage the workpiece.

Hardness: Shore D60

Lightweight

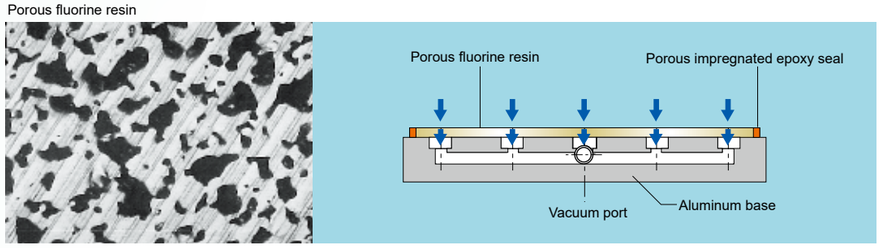
Porous fluorine resin (apparent specific gravity: 1.3) and aluminum base (specific gravity: 2.7). Being lightweight allows for smaller drive force.

Specific gravity: 2.7 or less



Porous Material Principle

Evacuates from the vacuum port and suctions from the entire surface of the fluororesin porous material.

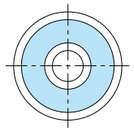


Series Variations

Plate shape is available in 3 standard types. Furthermore, we customize to the desired shape according to customer requests.

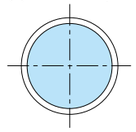
● Standard

PVP-R
(1) Donut shaped



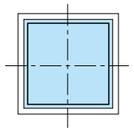
Disc, etc.

PVP-C
(2) Round shape



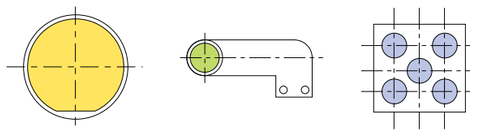
Semiconductor, silicon wafer, etc.

PVP-S
(3) Square shape



Plastic substrate, etc.

● Example of shape Special Specification Product



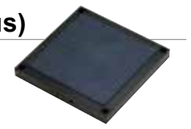
* Accepted as a special specification product. For details, please contact our sales department.

Antistatic (option)

Antistatic agent coated on the porous fluorine resin plate can prevent static electricity that may damage workpieces.

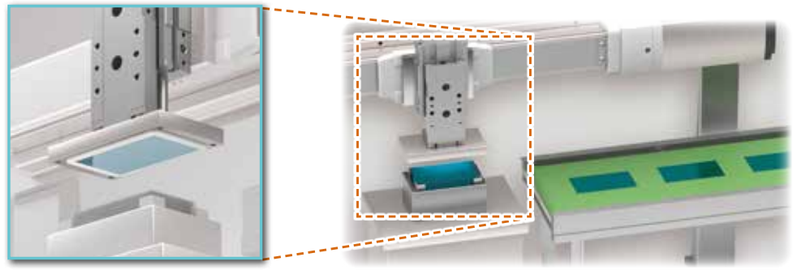
Black/conductive (PPS porous)

A black series that will not scratch nor cause glare on workpieces is also available.

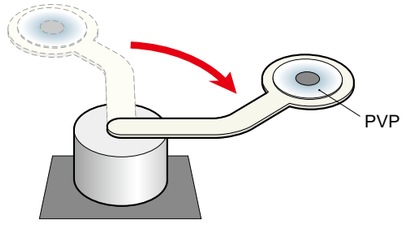


Application Example

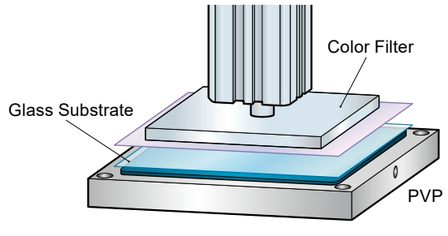
Film Substrate Transport

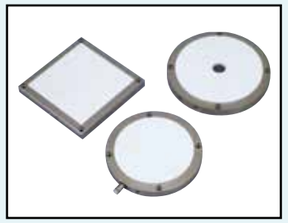


Robot Hand/Wafer Transport



LCD Glass Lamination Process





Precision Suction Plate

PVP Series

RoHS

Model No. Notation

●Model No. notation of the round adsorption plate



PVP - C - 50 - CP - A

Model No. / ❶ Porous Material Outer Diameter Dimension / Round Shape / ❷ Vacuum Port Position / ❸ Option

❶ Porous Material Outer Diameter Dimension

Code	Content
50	50
75	75
100	100
113	113
138	138
187	187

❷ Vacuum Port Position

Code	Content
Blank	Side Port
CP	Back Port

❸ Option

Code	Content
Blank	None
A	Antistatic Treatment

●How to order the square adsorption plate



PVP - S - 50-50 - CP - A

Model No. / ❶ Porous Material Short Side Dimension - Porous Material Long Side Dimension / Square Shape / ❷ Vacuum Port Position / ❸ Option

❶ Porous Material Short Side Dimension - Porous Material Long Side Dimension

Code	Content
50-50	50-50
100-100	100-100
150-150	150-150
200-250	200-250

❷ Vacuum Port Position

Code	Content
Blank	Side Port
CP	Back Port

❸ Option

Code	Content
Blank	None
A	Antistatic Treatment

●How to order the donut shaped suction plate



PVP - R - 36-18 - CP - A

Model No. / ❶ Porous Material Outer Diameter Dimension - Porous Material Inner Diameter Dimension / Donut Shape / ❷ Vacuum Port Position / ❸ Option

❶ Porous Material Outer Diameter Dimension - Porous Material Inner Diameter Dimension

Code	Content
36-18	36-18
85-27	85-27
118-18	118-18

❷ Vacuum Port Position

Code	Content
Blank	Side Port
CP	Back Port

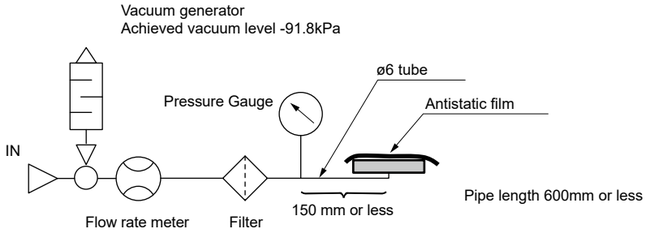
❸ Option

Code	Content
Blank	None
A	Antistatic Treatment

Specifications

Item			PVP-R-36-18 PVP-C-50 PVP-S-50-50	PVP-R-85-27 PVP-R-118-18 PVP-C-75 PVP-C-100 PVP-C-113 PVP-C-138 PVP-S-100-100	PVP-C-187 PVP-S-150-150 PVP-S-200-250
Product	Suction Surface μm(*1)	Flatness	2	3	4
		Parallelism	5	10	15
	Reference Surface Flatness	μm	10	10	10
	Air Leakage Amount	L/min (ANR)	0.4	0.6	1
	Vacuum Differential Pressure	kPa(*2)	40 or more		
	Applied Operating Pressure	MPa	0.2 or less (Clean Air)		
	Ambient Temperature	°C	5 to 40		
	Ambient Humidity	%RH(*3)	65 or less		
Porous Material Part	Material		Polychlorotrifluoroethylene resin		
	Porosity	%	40±5		
	Shore D Hardness	Degrees	60±15		
Base Part	Material		Corrosion Resistant Aluminum Alloy		
	Surface Treatment	(*4)	None		

*1: This accuracy is the measured value when left for 24 hours in a constant temperature room at 23°C. In temperature atmospheres deviating from 23°C, accuracy changes and may deviate from specification values. The measurement method involves measuring the straightness(in 2 or more directions) when the product is placed unloaded on a surface plate, and the maximum value is specified. Although this is not the original method for measuring flatness, this measurement method is used due to the depressions in the porous material.
*2: Represents the pressure drop value of the vacuum source when the workpiece is vacuum-suctioned over the entire porous surface.
*3: In humidity atmospheres exceeding 65% RH, suction surface accuracy may deteriorate and deviate from specification values.
*4: The body material of this product is raw corrosion-resistant aluminum alloy. If surface treatment (alumite treatment, electroless nickel plating, etc.) is specified, it will be handled as custom.



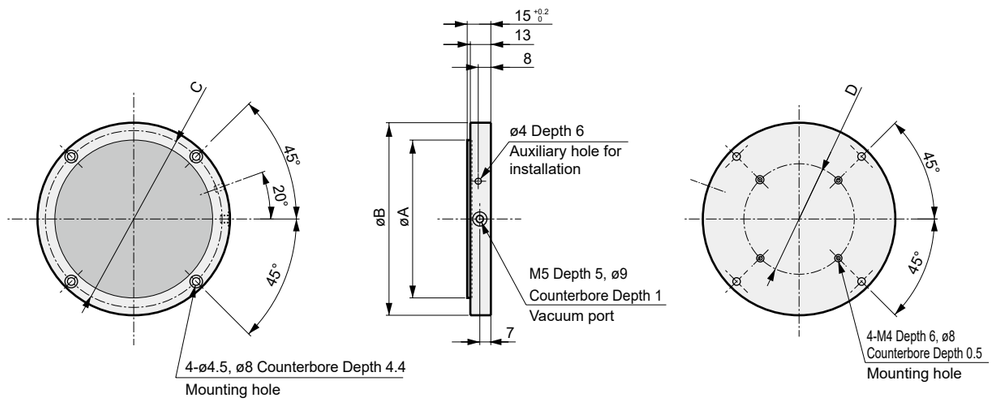
(Fig. 1) Inspection circuit diagram

Suction Area/Weight Table

Model No.	Suction Area (cm²)	Weight (g)
PVP-R-36-18	8	80
PVP-R-85-27	51	290
PVP-R-118-18	107	520
PVP-C-50	20	140
PVP-C-75	44	250
PVP-C-100	79	390
PVP-C-113	100	490
PVP-C-138	149	680
PVP-C-187	275	1,170
PVP-S-50-50	25	160
PVP-S-100-100	100	490
PVP-S-150-150	225	980
PVP-S-200-250	500	2,030

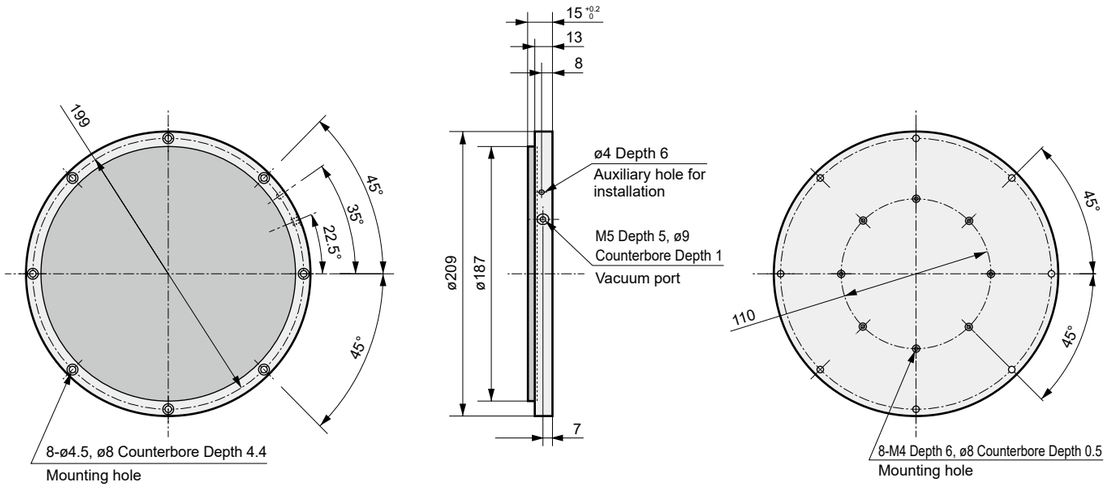
External Dimension Drawings

●PVP-C-□



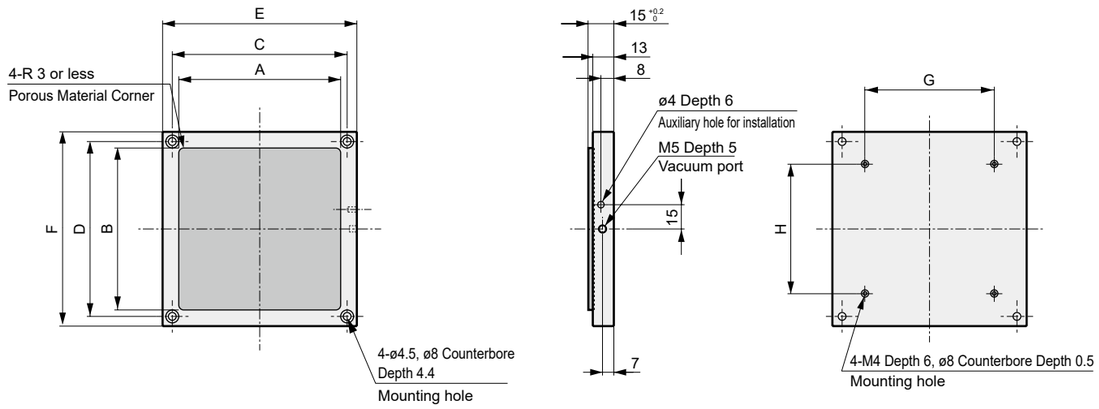
Model No.	A	B	C	D
PVP-C-50	50	72	62	30
PVP-C-75	75	97	87	50
PVP-C-100	100	122	112	70
PVP-C-113	113	135	125	70
PVP-C-138	138	160	150	90

●PVP-C-187



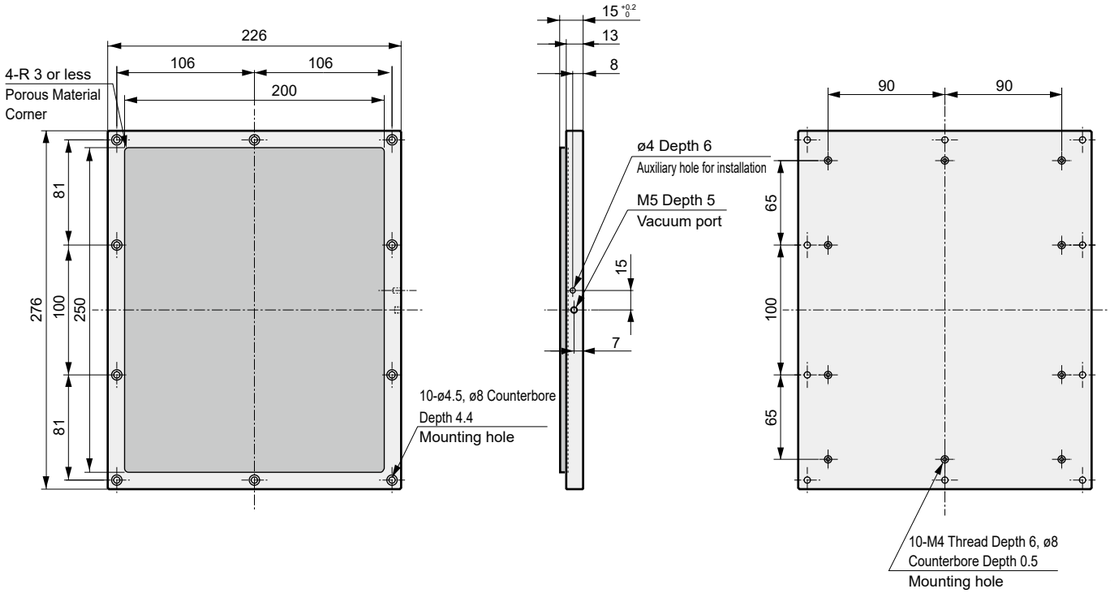
External Dimension Drawings

●PVP-S-□



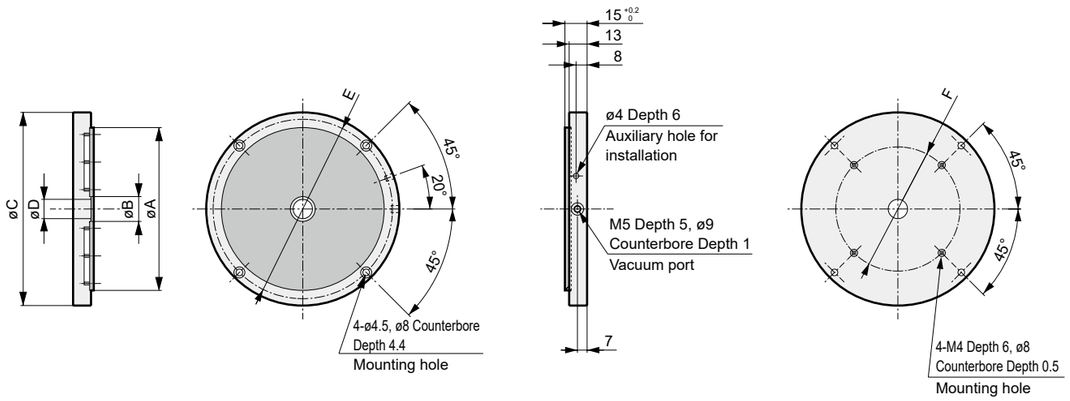
Model No.	A	B	C	D	E	F	G	H
PVP-S-50-50	50	50	58	58	70	70	40	40
PVP-S-100-100	100	100	108	108	120	120	80	80
PVP-S-150-150	150	150	158	158	170	170	120	120

●PVP-S-200-250



External Dimension Drawings

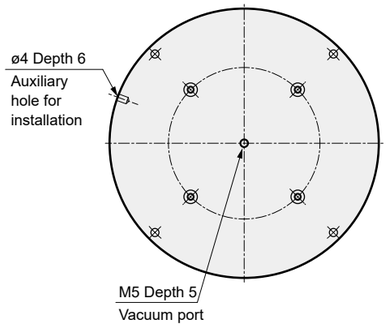
●PVP-R-□



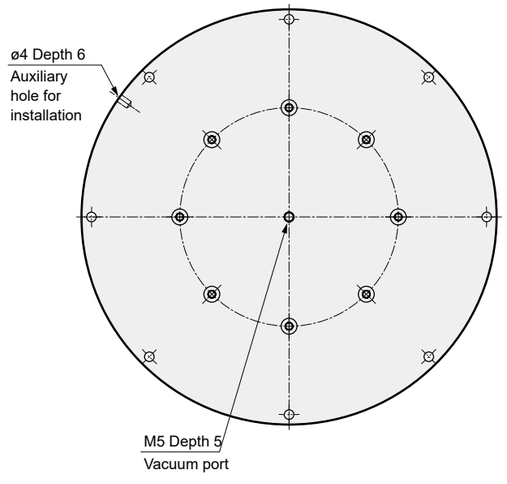
Model No.	A	B	C	D	E	F
PVP-R-36-18	36	18	58	16	48	30
PVP-R-85-27	85	27	107	25	97	60
PVP-R-118-18	118	18	140	16	130	90

Vacuum Port Position Back Port (CP)

●PVP-C-□



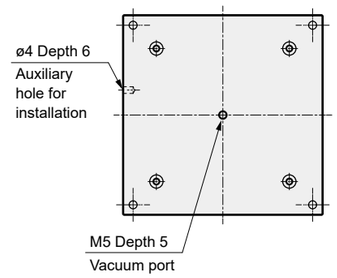
●PVP-C-187



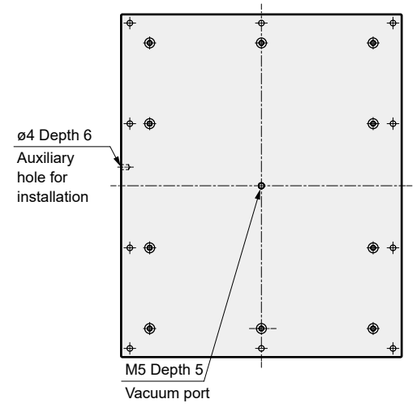
External Dimension Drawings

Vacuum Port Position Back Port (CP)

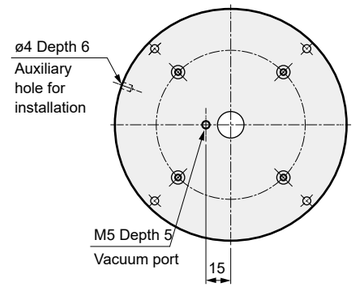
●PVP-S-□



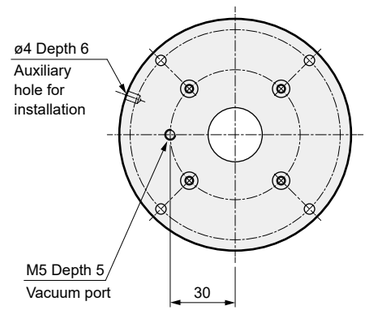
●PVP-S-200-250



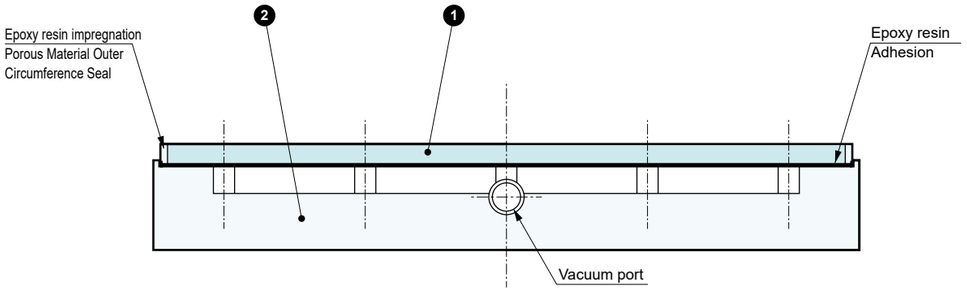
●PVP-R-□-18



●PVP-R-85-27



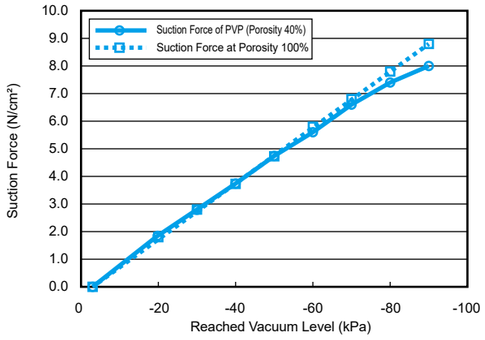
Internal Structure Diagram/Materials

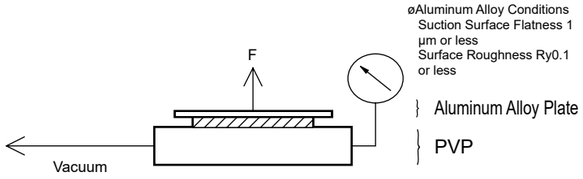


Part No.	Part Name	Material
1	Porous Material	Polychlorotrifluoroethylene resin
2	Base	Corrosion Resistant Aluminum Alloy

Technical Data

●Vertical suction(reference data)





This data is reference data measured with the above(PVP-S-50-50). The lower limit of the vacuum level reached is not zero because there is piping resistance due to the porous material and piping. Other than the above, suction force may change depending on piping resistance, shape of the object being suctioned, surface roughness, etc.

MEMO

Precision Components
LBC
GFM
PVP
FBU2
AFB-RB
Ending

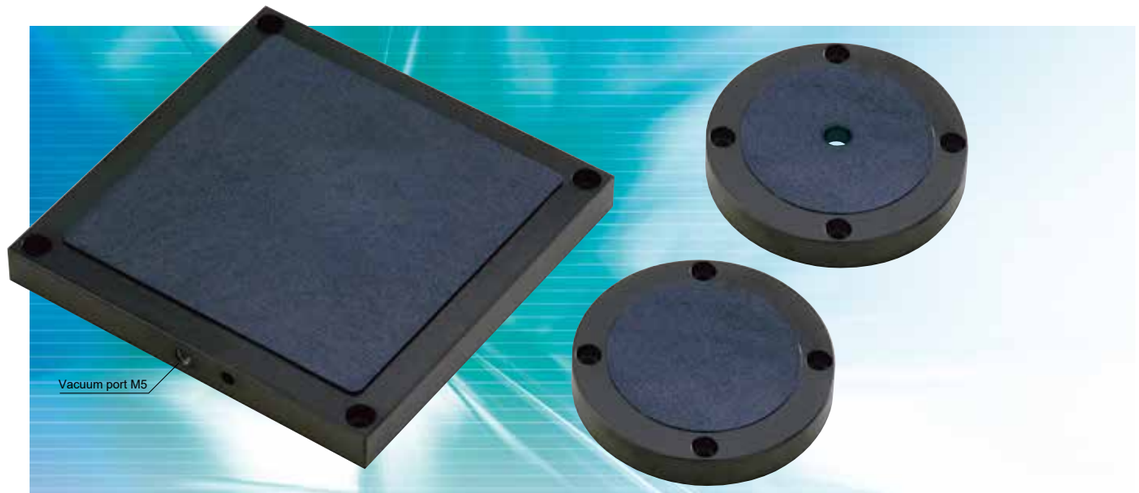
Precise suction plate (black) PVP-B Series

Available as a Special Specification Product.
For details, please contact our sales department.

Special Specification Product

No more scratches, no more glare.

The long-awaited black suction plate!



Black porous plate

No glare

The black color does not reflect light and thus enables the inspection processes that are not possible with a conventional white porous plate.

Conductive resin

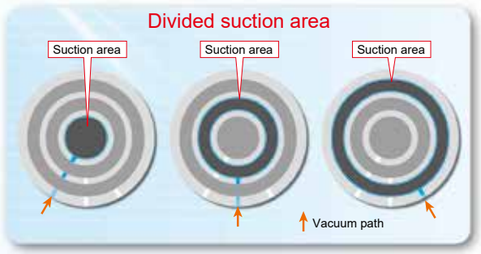
Soft touch on workpiece

The conductive resin suction plate does not generate static electricity nor damage a workpiece during suctioning.

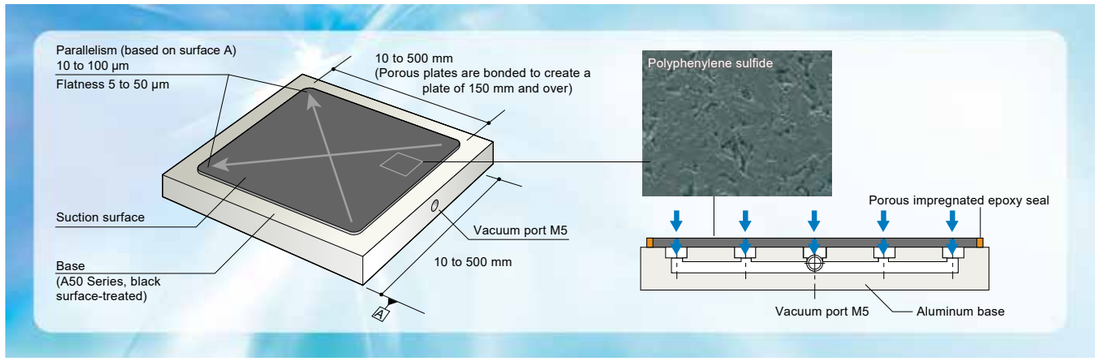
Dividable suction area (Example of customization)

The suction area can be divided to handle various kinds of workpiece

The optimum section of the divided PVP suction area can be used according to the workpiece.



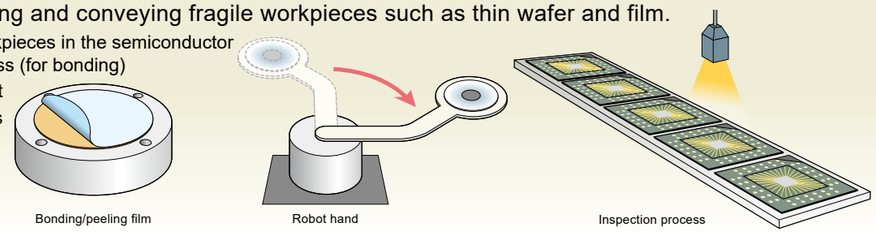
Porosity 40% and flatness 5 μm/10 mm.
Shore D100 suction surface hardness without damaging workpieces is suitable for various applications.



Applications of PVP

Perfect for suctioning and conveying fragile workpieces such as thin wafer and film.

- Suctioning to fix workpieces in the semiconductor manufacturing process (for bonding)
- Inspection equipment
- Conveying workpieces
- Assembling parts



Main specifications

Product	Suction surface accuracy	Flatness	5 to 50 μm
		Parallelism	10 to 100 μm
	Vacuum differential pressure		40 kPa and over (when vacuum source is -90 kPa)
Porous material	Material		With polyphenylene sulfide (PPS) carbon fiber *
	Porosity		40±5%
	Hardness (Shore)		100 or less
Base material	Material		Corrosion proof aluminum alloy
	Surface treatment		Black surface-treated

*As carbon fiber is exposed on the surface, powder may adhere to the workpiece, due to the dirt or dust produced when rubbed strongly.

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro P. 15 for details.

Design / Selection

Warning

■If a falling workpiece could pose a hazard in systems that incorporate a precision suction plate, a mechanical drop prevention device must be installed for safety.

■Do not use in environments with corrosive or flammable gases, and never allow such gases to be suctioned.

■Consider the behavior at emergency stop.
If safety devices activate during emergency stop or system abnormality, causing the power source, machinery, etc., to stop, design so as not to cause injury to personnel or damage to workpieces/equipment/devices.

■Be sure to use the product within the specified range(5 to 40°C, 0.2 MPa or less). The multi-porous layer peels off when used at a pressure or temperature exceeding the specified range, Do not use this product. It may generate corrosive gases.

■Consider the behavior when restarting after emergency or abnormal stops.
Design so that restarting does not cause injury to personnel or damage to workpieces/equipment/devices.

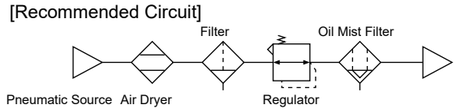
Caution

■Confirm before use that the product will withstand the working environment.
Environments that cause functional impairment, such as dusty atmospheres, processes that generate dust, chemical atmospheres, chemicals, vibrations, humidity, water droplets, gas atmospheres, ozone-generating environments, etc.

■Use at an ambient humidity of 65% RH or less. Use outside the specification range may degrade suction surface accuracy.

■Suction conditions vary with the product, piping, work, and working environment. Select the vacuum generator after sufficiently considering the ultimate vacuum level, suction flow rate, and response time.

■Use dry, clean compressed air [Class 1.6.2] (solid particles 0.1 µm, pressure dew point 10°C, oil content 0.1 mg/m^3) when purging with air.
(The grade is based on the compressed air quality grades according to ISO 8573-1: 2010.)
[Recommended Circuit]



■Do not use spiral hoses.
Piping resistance increases, causing problems such as delays in reaching vacuum and reduced suction force.

■Note the following when connecting more than one precise suction plate to one vacuum generator.
●If one precise suction plate leaks, vacuum will drop and cause suction errors.

●Piping between the vacuum generator and branch must be bigger than the piping between the branch and suction pad.

■When using this product in a cold climate, take the necessary measures to prevent freezing.
Foreign matter or oil in compressed air can clog the porous material, causing failure/malfunction.

■When there is a heat source in the surroundings, insulate the product.
The product temperature may rise above the ambient temperature due to radiant heat, so shield it with a cover, etc.

■Avoid using this product where vibration and impact are present.
Causes failure/malfunction.

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

MEMO

Fine Buffer

FBU2

■ Precision Components



CONTENTS

Product Introduction 68

● Lightweight FBU2-7 70
● Standard FBU2-12 70
● General purpose FBU2-SU 80

Technical Data 84
⚠ Precautions for Use 90

FBU2 Series

Spring buffer Eliminates defects

Adopts a magnetic spring utilizing the attractive force of magnets in the buffer section. Prevents damage to micro-devices and fragile workpieces with soft and stable pushing pressure.



Comparison between Fine Buffer and Spring Buffer. What are the benefits of using Fine Buffer?



Fine Buffer

Spring Buffer



Clean

Fine Buffer

Minimal particle generation due to no metal contact

Spring Buffer

Abrasion powder generated by metal contact

Reduces defect rate due to contamination

Long Life

Fine Buffer

No settling of movable parts due to magnetic thrust

Spring Buffer

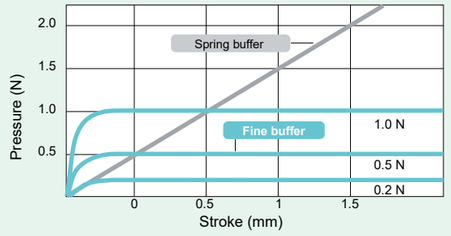
Spring settling occurs with repeated operation

Reduces replacement frequency
Reduces maintenance costs

Constant Pushing Pressure

Fine Buffer

Constant pushing pressure even if stroke changes



Spring Buffer

Pushing pressure changes when stroke changes

Unstable height
Reduces suction defect rate for workpieces
Reduces pad height adjustment time

With Anti-rotation Function

Fine Buffer

With anti-rotation function by magnetic return force



Magnetic restoring force in the rotation direction due to 4-axis spline magnetization (Magnetic Anti-rotation)

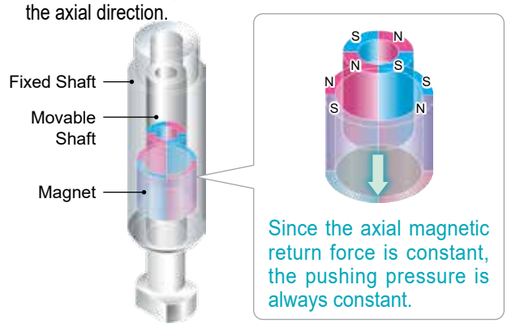
Spring Buffer

No anti-rotation function, separate installation required

Reduces design and assembly man-hours

Structure of Magnetic Spring

When the magnets incorporated in the movable shaft and fixed shaft are displaced, diagonal magnetic field lines are generated, creating a constant force that attempts to return to the axial direction.



Since the axial magnetic return force is constant, the pushing pressure is always constant.

Soft Pushing Pressure

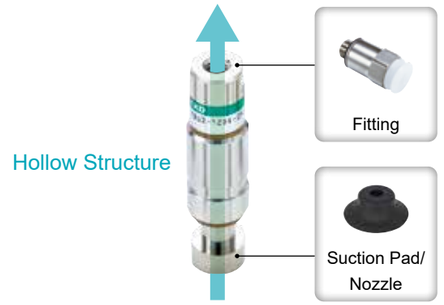
Achieved soft pushing pressure from 0.2 N by adopting a magnetic spring and reducing the weight of the movable shaft.

High Return Position Accuracy

Return position accuracy in X-Y direction of ±0.05 mm or less realizes high-precision handling. (Value for high-precision bearing type)

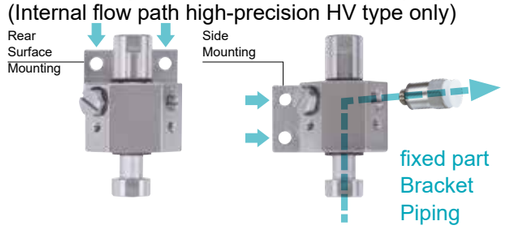
Easily made into a suction unit

Fittings can be attached to the tail side, and suction pads or nozzles directly to the head side, easily creating a suction unit.



Improved stability with dedicated bracket

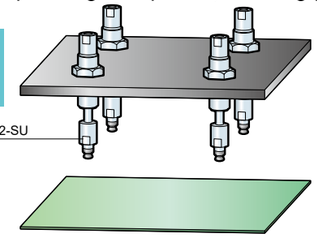
Piping can be done to the fixed dedicated bracket, unaffected by reaction forces from the piping tube. (Internal flow path high-precision HV type only)



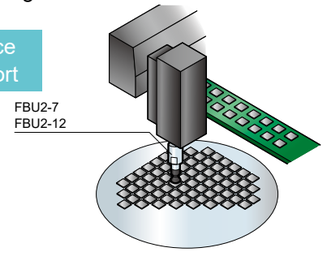
Application Example

In addition to vacuum suction, it has a track record in various applications utilizing constant pushing pressure, such as pressing workpieces, inserting parts, and continuity testing of contacts.

PCB/ Flexible substrate transport



Electronic Device Suction Transport



FBU2 Series variations

	Outer Diameter	Total length	Payload	Pushing Pressure	Bearing Accuracy	Stroke	Tail Piece Shape	Head Piece Shape	Page
Lightweight FBU2-7	ø7 h7	35 to 39 mm	30 g	0.2 N	S Standard	2 mm 6 mm	No hole M3	No hole M3	70
	M8 x 0.75				H High accuracy				
					HV Internal flow path high accuracy		No hole	M3	
Standard FBU2-12	ø12 h7	40 to 64 mm	80 g	0.5 N 1.0 N	S Standard	2 mm 6 mm 16 mm	No hole M3 M5	No hole M3 M5	70
	M12 x 1				H High accuracy	2 mm 6 mm			
					HV Internal flow path high accuracy		No hole	M3 M5	
General purpose FBU2-SU	M12 x 1	60 to 94 mm	200 g	0.5 N 1.0 N	- Standard only	2 mm 6 mm 16 mm	No hole M3 M4 M5 M6	No hole M3 M4 M5 M6	80



Fine Buffer

FBU2 Series

Outer Diameter: M8, M12, ø7, ø12
Payload: 30, 80 g

RoHS

Model No. Notation

FBU2 - 12D - S - 10 - 6 - T3 - H3

- FBU2: Model No.
- 12D: ❶ Outer Diameter
- S: ❷ Bearing Accuracy
- 10: ❸ Pushing Pressure
- 6: ❹ Buffer Stroke
- T3: ❺ Tail Piece Shape
- H3: ❻ Head Piece Shape

❶ Outer Diameter

Code	Content
7D	ø7h7 Spigot Joint Type
8M	M8x0.75 Fully Threaded Type
12D	ø12h7 Spigot Joint Type
12M	M12x1 Fully Threaded Type

❷ Bearing Accuracy

	Code	Content
	S	Standard (Bearing clearance 0.2 mm or less)
*1	H	High Precision (Bearing clearance 0.05 mm or less)
*1	HV	Internal Flow PatH-type High Precision (Bearing clearance 0.05 mm or less)

*1: For H, HV, outer diameters 8M, 12M cannot be selected.

❸ Pushing Pressure

	Code	Content
*1	02	0.2 N
*2	05	0.5 N
*2	10	1.0 N

*1: For 02, outer diameters 12D, 12M cannot be selected.
*2: For 05, 10, outer diameters 7D, 8M cannot be selected.

❹ Buffer Stroke

	Code	Content
	2	2 mm
	6	6 mm
*1	16	16 mm

*1: For 16, outer diameters 7D, 8M cannot be selected.

❺ Tail Piece Shape

	Code	Content	
	TB	No hole	
	T3	M3 Female Thread Depth 3	
*1	T5	M5 Female Thread Depth 4	

*1: For T5, outer diameters 7D, 8M cannot be selected.

❻ Head Piece Shape

	Code	Content	
	HB	No hole	
	H3	M3 Female Thread Depth 3	
*1	H5	M5 Female Thread Depth 4	

*1: For H5, outer diameters 7D, 8M cannot be selected.

Combination of Bearing Accuracy, Buffer Stroke, Tail Piece Shape, Head Piece Shape

		❷Bearing Accuracy		
		S	H	HV
❹Buffer Stroke	2	●	●	●
	6	●	●	●
	16	●		
❺Tail Piece Shape	TB	●	●	●
	T3	●	●	
	T5	●	●	
❻Head Piece Shape	HB	●	●	
	H3	●	●	●
	H5	●	●	●

Mounting Bracket Single Item Model No. for Spigot Joint Type

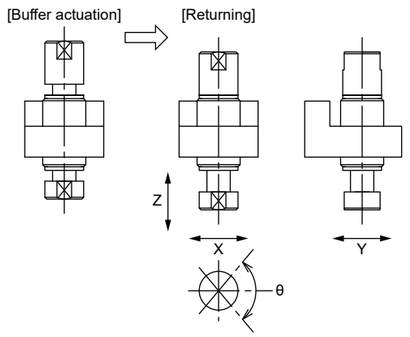
❶Outer Diameter	Mounting	Bracket Single Item Model No.	
7D	L-type	FBU2-7D-B1	
	Straight	FBU2-7D-B2	
12D	L-type	FBU2-12D-B1	
	Straight	FBU2-12D-B2	

Specifications

Values are for an ambient temperature of 23°C.

Descriptions		FBU2-7D				FBU2-8M		FBU2-12D					FBU2-12M		
		S		H/HV		S		S			H/HV		S		
Outer diameter		ø7h7				M8 × 0.75		ø12h7					M12 × 1		
External view		S/H 		HV 				S/H 			HV 				
Buffer pressing force	N	0.1 to 0.2				0.1 to 0.2		0.4 to 0.6, 0.9 to 1.1					0.4 to 0.6, 0.9 to 1.1		
Pressing force fluctuation (Note 1)		±15% or less													
Buffer stroke		2	6	2	6	2	6	2	6	16	2	6	2	6	16
Operating ambient temperature	°C	5 to 50		5 to 40		5 to 50		5 to 50			5 to 40		5 to 50		
Bearing clearance	mm	0.2 or less		0.05 or less		0.2 or less		0.2 or less			0.05 or less		0.2 or less		
Maximum torque sustained (Note 2)	N•cm	0.25 or more (reference value)						Note 3					Note 3		
Accuracy of origin return position Note 4	X-Y	mm	±0.1 or less		±0.05 or less		±0.1 or less		±0.1 or less			±0.05 or less		±0.1 or less	
	Z	mm	±0.1 or less												
	θ	°	3 or less												
Load capacity	g	30 or less						80 or less							

Note 1: This item indicates the fluctuation of the pressing force in the stroke. The pressing force is not proportional to the stroke.
Note 2: With a rotation torque on the movable shaft that exceeds the maximum torque sustained, the movable shaft looses synchronism and rotates 180°.
* Torque sustained: Force in the θ direction (Figure 1) with which the movable shaft may be misaligned but it will recover the original position
Note 3: For sustained torques of FBU2-12M/12D, see the table on the right.
Note 4: For the returning position accuracy, see the figure below (Figure 1). This item indicates the returning accuracy during buffering.
Note 5: Contact CKD for any requirement not fulfilled by the specification.
Note 6: The load capacity is the maximum load (of a bracket or a suction object) on the head piece.



(Figure 1) Returning accuracy detail

[FBU2-12M/12D Maximum torque sustained (reference)]

Pressing force (N)	Stroke (mm)	Torque sustained (N•cm)
0.5	2	0.5 or more
	6	0.5 or more
	16	1.2 or more
1	2	1.2 or more
	6	1.2 or more
	16	2.5 or more

Indicates the torque sustained at the tip.

Weight

● FBU2-8M /7D (Unit: g)

Model no.	Fixed section	Movable section (*1)	Tail piece (movable section)		Head piece (movable section)		Bracket (*2)	
			TB	T3	HB	H3	B1	B2
FBU2-8M-S-02-2	5.5	1.2	0.7	0.7	0.4	0.3	-	-
FBU2-8M-S-02-6		1.3						
FBU2-7D-S-02-2	2.2	1.2					8.9	13.1
FBU2-7D-S-02-6		1.3						
FBU2-7D-H-02-2		1.0						
FBU2-7D-H-02-6								
FBU2-7D-HV-02-2	2.1							
FBU2-7D-HV-02-6								

*1: Total weight of movable section = Movable section + Tail piece + Head piece,
Product weight = Fixed section + Movable section + Tail piece + Head piece
*2: A bracket includes a plug and a fixing screw.

● FBU2-12M/12D (Unit: g)

Model no.	Fixed section	Movable section (*1)	Tail piece (movable section)			Head piece (movable section)			Bracket (*2)	
			TB	T3	T5	HB	H3	H5	B1	B2
FBU2-12M-S-05/10-2	10.2	2.4	2.2	2.2	2.0	1.2	1.2	1.1	-	-
FBU2-12M-S-05/10-6		2.5								
FBU2-12M-S-05/10-16	14.0	3.9								
FBU2-12D-S-05/10-2	8.3	2.4							18.3	28.6
FBU2-12D-S-05/10-6		2.5								
FBU2-12D-S-05/10-16	12.9	3.9								
FBU2-12D-H-05/10-2	8.1	2.4								
FBU2-12D-H-05/10-6		2.5								
FBU2-12D-HV-05/10-2	7.1	2.4								
FBU2-12D-HV-05/10-6		2.5								

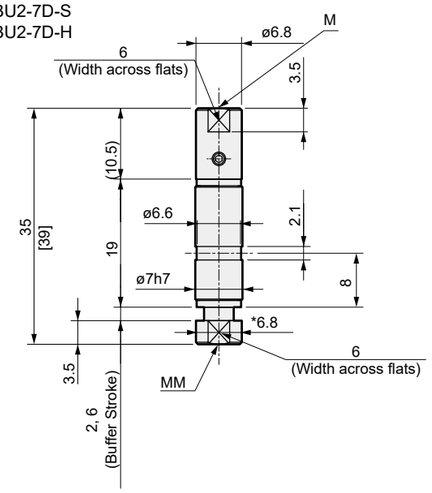
*1: Total weight of movable section = Movable section + Tail piece + Head piece, Product weight = Fixed section + Movable section + Tail piece + Head piece
*2: A bracket includes a plug and a fixing screw.

MEMO

Precision Components
LBC
GFM
PVP
FBU2
AFB-RB
Ending

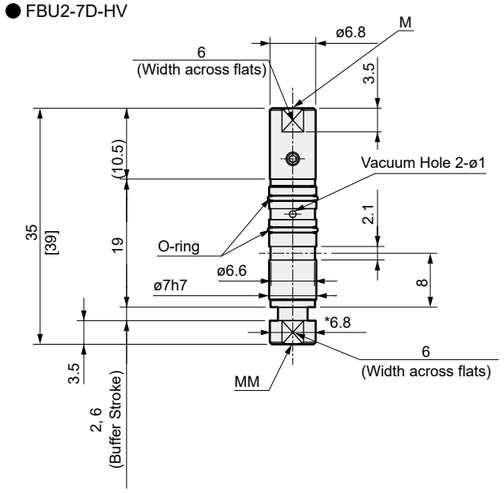
Outline Dimension Drawing (FBU2-7D, FBU2-8M)

● FBU2-7D-S
● FBU2-7D-H



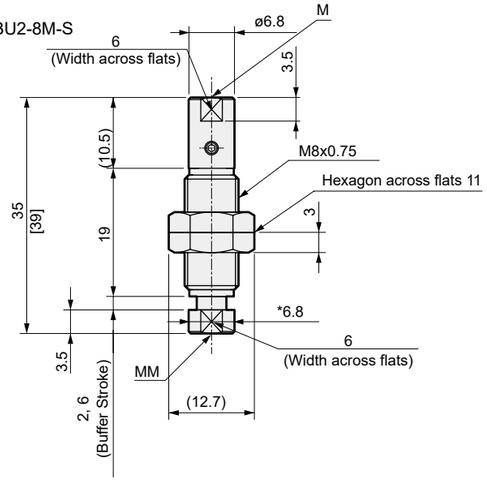
* Dimensions in [ ] are for 6 stroke.

● FBU2-7D-HV



* Dimensions in [ ] are for 6 stroke.
* O-rings are shipped installed. To maintain sealing performance, apply a thin coat of lubricant such as grease to the O-ring before use.
* Illustrated dimensions are the same regardless of tail piece and head piece shape.

● FBU2-8M-S



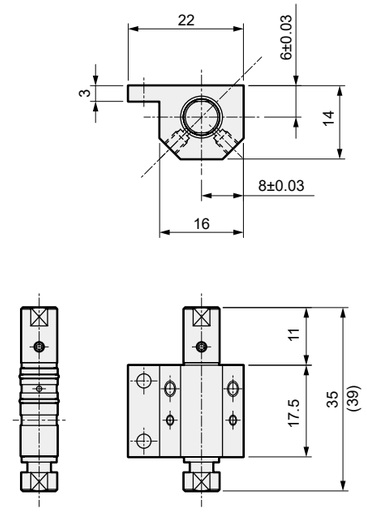
* Dimensions in [ ] are for 6 stroke.

Thread Shape

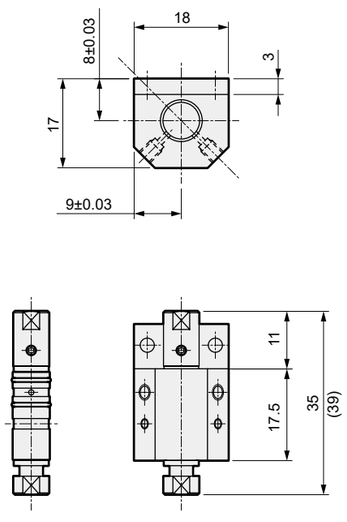
Tail Piece Shape	M	Head Piece Shape	MM
TB	No hole	HB	No hole
T3	M3 Thread Depth 3	H3	M3 Thread Depth 3

Outline Dimension Drawing with Bracket (FBU2-7D-B1/B2)

● FBU2-7D-B1



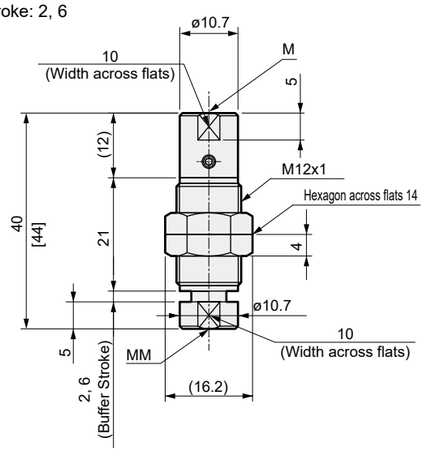
● FBU2-7D-B2



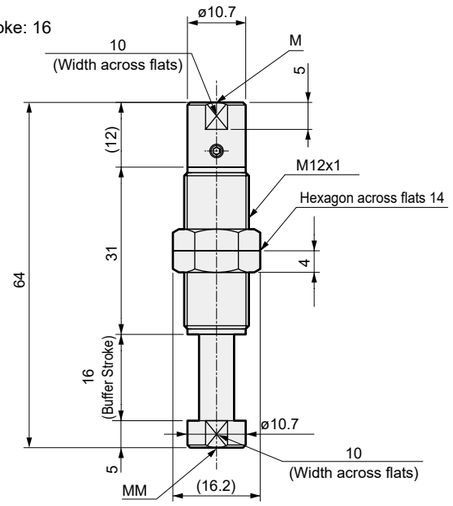
* Dimensions in [ ] are for 6 stroke.

Outline Dimension Drawing (FBU2-12M, FBU2-12D)

● FBU2-12M-S
Buffer Stroke: 2, 6

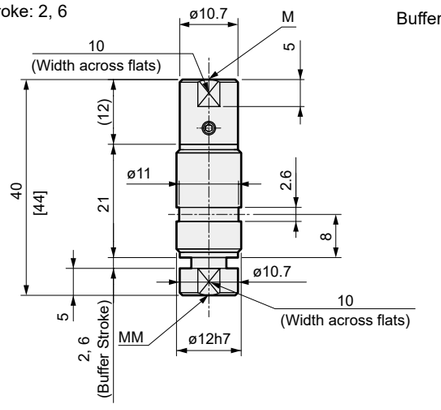


Buffer Stroke: 16

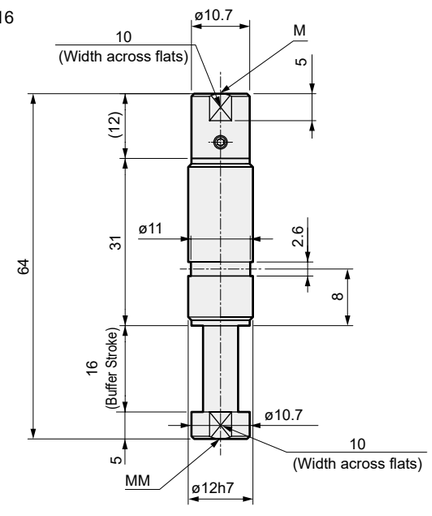


* Dimensions in [ ] are for 6 stroke.

● FBU2-12D-S/H
Buffer Stroke: 2, 6

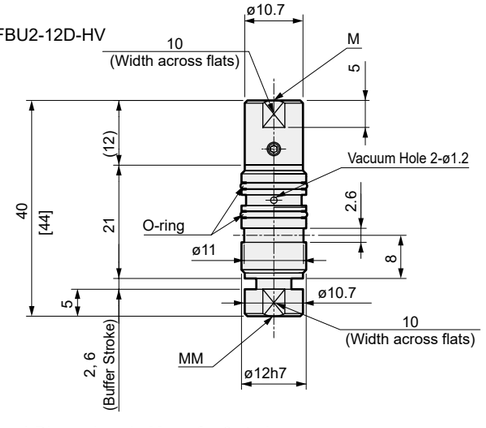


Buffer Stroke: 16



* Dimensions in [ ] are for 6 stroke.

● FBU2-12D-HV



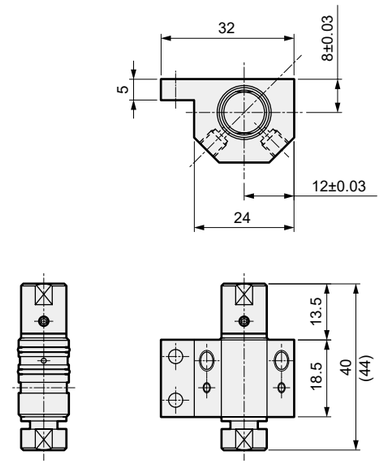
Thread Shape

Tail Piece Shape	M	Head Piece Shape	MM
TB	No hole	HB	No hole
T3	M3 Thread Depth 3	H3	M3 Thread Depth 3
T5	M5 Thread Depth 4	H5	M5 Thread Depth 4

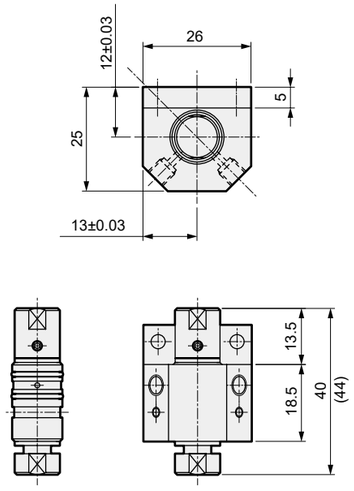
* Dimensions in [ ] are for 6 stroke.
* O-rings are shipped installed. To maintain sealing performance, apply a thin coat of lubricant such as grease to the O-ring before use.
* Illustrated dimensions are the same regardless of tail piece and head piece shape.

Outline Dimension Drawing with Bracket (FBU2-12D-B1/B2)

● FBU2-12D-B1



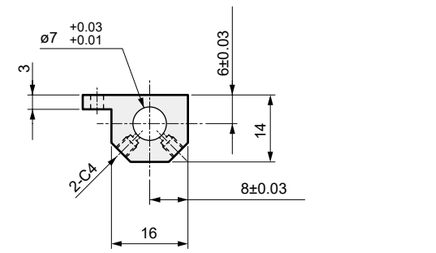
● FBU2-12D-B2

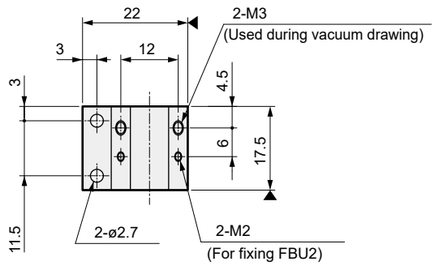


* Dimensions in [ ] are for 6 stroke.

Bracket Outline Dimension Drawing

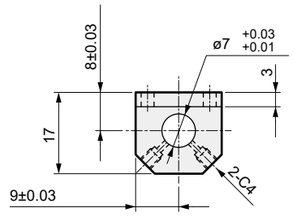
● FBU2-7D-B1
(Attached Parts: Plug FPL-M3 1 pc., Set Screw 1 pc. M2x2)

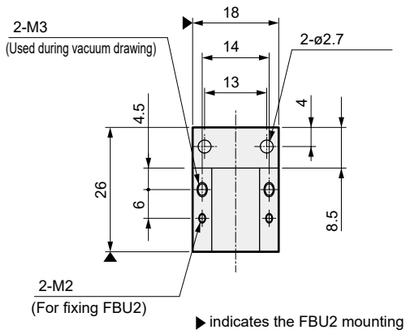




▶ indicates the FBU2 mounting reference surface.

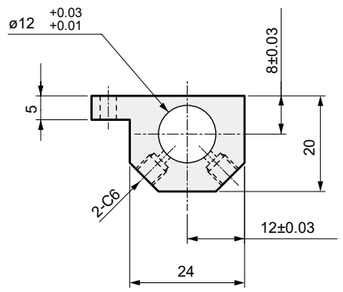
● FBU2-7D-B2
(Attached Parts: Plug FPL-M3 1 pc., Set Screw 1 pc. M2x2)

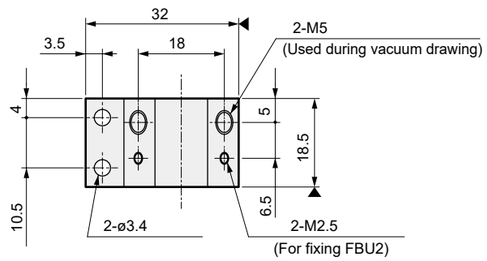




▶ indicates the FBU2 mounting reference surface.

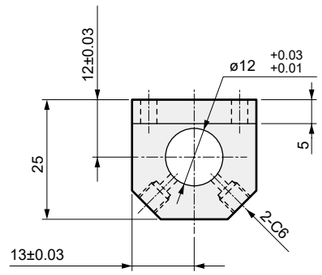
● FBU2-12D-B1
(Attached Parts: Plug FPL-M5 1 pc., Set Screw 1 pc. M2.5x2.5)

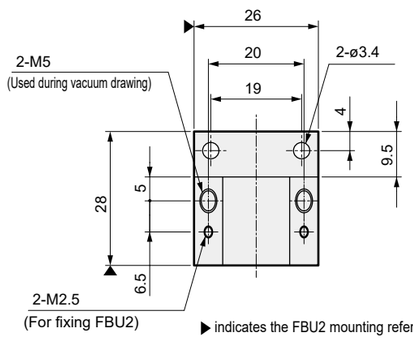




▶ indicates the FBU2 mounting reference surface.

● FBU2-12D-B2
(Attached Parts: Plug FPL-M5 1 pc., Set Screw 1 pc. M2.5x2.5)



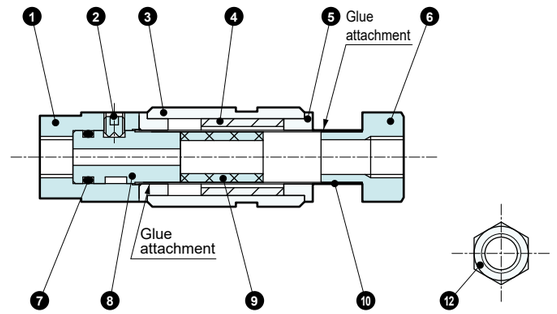


▶ indicates the FBU2 mounting reference surface.

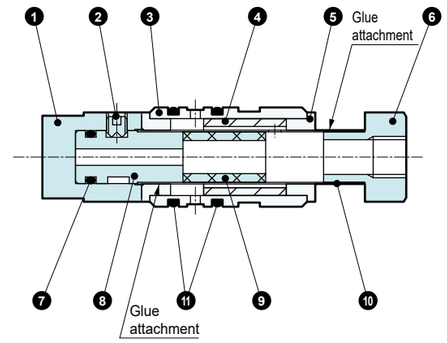
* When using for vacuum drawing, tighten the plugs (FPL-M3, M5) into the unused threads (M3, M5).

Internal structure and parts list

●FBU2-□-S (standard)
-□-H (high-precision)



●FBU2-□-HV (high-precision internal flow path type)



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Tail piece	Aluminum alloy	Electroless nickeling	7	O ring	Nitrile rubber	
2	Hexagon socket screw	Stainless steel		8	Tail joint	Aluminum alloy	Trivalent chromate treatment
3	Fixed shaft	Stainless steel		9	Ring magnet	Plastic magnet	
4	Ring magnet	Plastic magnet		10	Guide tube	Stainless steel	
5	Bearing	Fluorine resin	Standard bearing type	11	O ring	Nitrile rubber	Internal flow path type
		Polyester resin	Internal flow path type	12	Hexagon nut	Carbon steel	Electroless nickeling (all-screw type only)
6	Head piece	Aluminum alloy	Electroless nickeling				

Bracket material

Model no.	Material	Remarks
FBU2- 7D -B1	Aluminum alloy	Electroless nickeling
FBU2- 7D -B2		
FBU2- 12D -B1		
FBU2- 12D -B2		



Fine Buffer

FBU2-SU Series

Outer Diameter: M12, Fully Threaded Type
Payload: 200 g

RoHS

Model No. Notation

FBU2-SU - 05 - 6 - T3 - H3

- FBU2-SU: Model No.
- 05: ❶ Pushing Pressure
- 6: ❷ Buffer Stroke
- T3: ❸ Tail Piece Shape
- H3: ❹ Head Piece Shape

❶ Pushing Pressure

Code	Content
05	0.5 N
10	1.0 N

❷ Buffer Stroke

Code	Content
2	2 mm
6	6 mm
16	16 mm

❸ Tail Piece Shape

Code	Content	
TB	No hole	
T3	M3 Female Thread Depth 3	
T4	M4 Female Thread Depth 4	
T5	M5 Female Thread Depth 4	
T6	M6 Female Thread Depth 5	

❹ Head Piece Shape

Code	Content	
HB	No hole	
H3	M3 Female Thread Depth 3	
H4	M4 Female Thread Depth 4	
H5	M5 Female Thread Depth 4	
H6	M6 Female Thread Depth 5	

Specifications

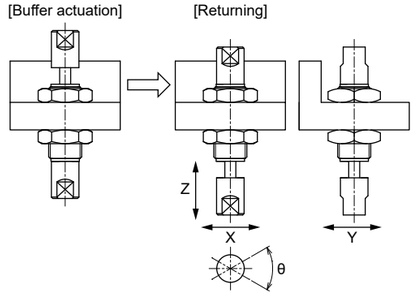
Item		FBU2-SU
Outer Diameter		M12x1
Pushing Pressure	N	0.4 to 0.6, 0.9 to 1.1
Pushing Pressure Variation	*1)	±15% or less
Buffer Stroke	mm	2, 6, 16
Operating Ambient Temperature	°C	5 to 50
Bearing Clearance	mm	0.2 or less
Max. Holding Torque	N·cm	*2)
Return Position Accuracy *3)	X-Y mm	±0.1 or less
	Z mm	±0.1 or less
	θ °	3 or less
Payload	g	200 or less

*1: Indicates the amount of pushing pressure fluctuation during the stroke. It does not mean that the pushing pressure is proportional to the buffer stroke.
*2: If rotational torque exceeding the maximum holding torque is applied to the movable shaft, the movable shaft will step out and reverse 180°.
*Holding torque...Force which applies force in the θ direction (Fig. 1) to return to the original position even if the movable shaft position is displaced
*3: Refer to (Fig. 1) for return position accuracy. Indicates the return accuracy during buffering.
*4: For requests not conforming to specifications, please consult CKD.

[FBU2-SU Maximum torque sustained (reference)]

Pressing force (N)	Stroke (mm)	Torque sustained (N•m)
0.5	2	0.5 or more
	6	0.5 or more
	16	1.2 or more
1	2	1.2 or more
	6	1.2 or more
	16	2.5 or more

Indicates the torque sustained at the tip.

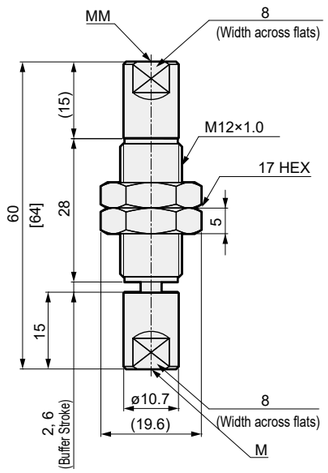


(Fig. 1) Detailed Diagram of Return Position Accuracy

External Dimension Drawings

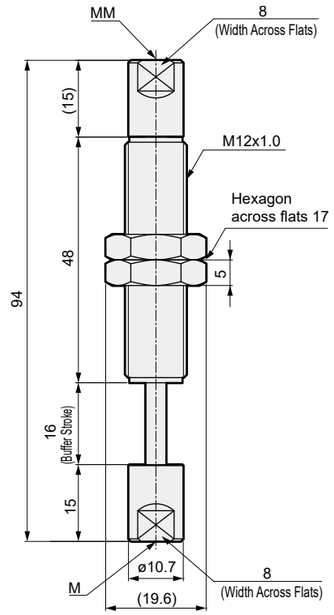
* The width-across-flats position of the tail piece and head piece is arbitrary.

●FBU2-SU-05/10-6



Note: Values in [ ] are dimensions for 6 strokes.

●FBU2-SU-05/10-16



Thread Shape

Tail Piece Shape	M	Head Piece Shape	MM
TB	No hole	HB	No hole
T3	M3 Thread Depth 3	H3	M3 Thread Depth 3
T4	M4 Thread Depth 4	H4	M4 Thread Depth 4
T5	M5 Thread Depth 4	H5	M5 Thread Depth 4
T6	M6 Thread Depth 5	H6	M6 Thread Depth 5

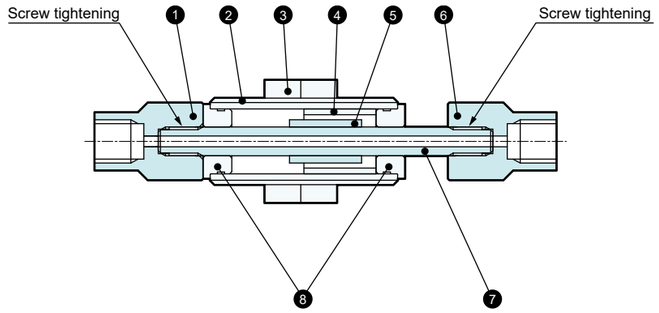
*1: Total Weight of Movable Parts = Movable Part + Tail Piece + Head Piece, Product Weight = Fixed Part + Movable Part + Tail Piece + Head Piece.

Weight

(Unit: g)

Model No.	Fixed Part	Movable Part	Tail Piece					Head Piece				
			TB	T3	T4	T5	T6	HB	H3	H4	H5	H6
FBU2-SU-05/10-2	19.1	4.2	3.4	3.3	3.2	3.1	2.9	3.4	3.3	3.2	3.1	2.9
FBU2-SU-05/10-6	19.1	4.5										
FBU2-SU-05/10-16	25.2	7.9										

Internal Structure Diagram/Materials



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Adapter (tail)	Aluminum alloy	Trivalent chromate treatment	5	Ring magnet	Plastic magnet	
2	Fixed shaft	Stainless steel		6	Adapter (head)	Aluminum alloy	Trivalent chromate treatment
3	Hexagon nut	Steel	Zinc plating, trivalent chromate finish	7	Rod	Stainless steel	
4	Ring magnet	Plastic magnet		8	Bearing	Polyphenylene sulfide	With a filler

MEMO

Precision Components
LBC
GFM
PVP
FBU2
AFB-RB
Ending

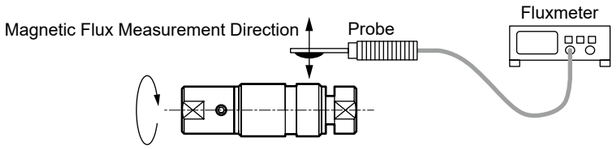
1 Leakage Magnetic Flux

[Measuring Instrument]

Fluxmeter
Probe

[Measurement Method]

① Touch the probe to each measurement point of FBU2.
② Rotate FBU2 around its central axis and measure the maximum magnetic flux density.



[Target]

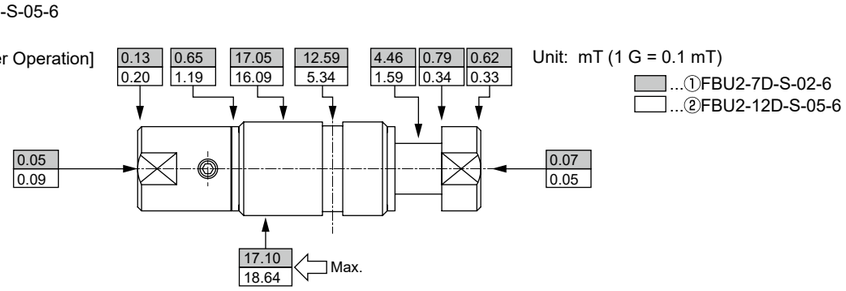
①FBU2-7D-S-02-6
②FBU2-12D-S-05-6
③FBU2-12D-S-05-16

[Results]

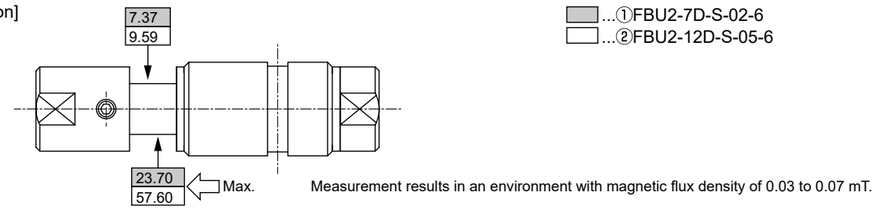
* Magnetic Flux Density at Each Position

①FBU2-7D-S-02-6
②FBU2-12D-S-05-6

[Before Buffer Operation] Unit: mT (1 G = 0.1 mT)



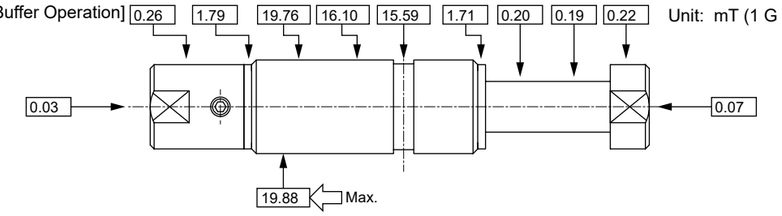
[After Buffer Operation]



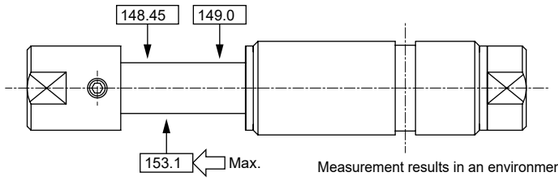
Measurement results in an environment with magnetic flux density of 0.03 to 0.07 mT.

③FBU2-12D-S-05-16

[Before Buffer Operation] Unit: mT (1 G = 0.1 mT)



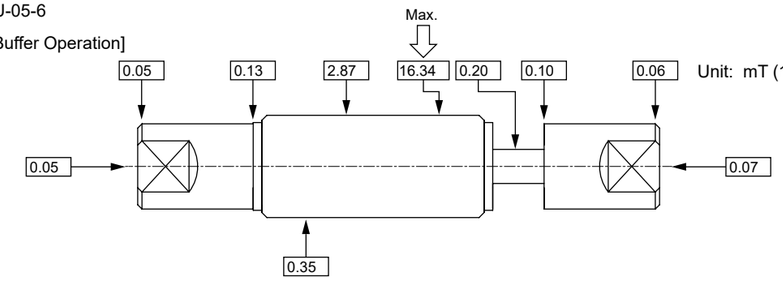
[After Buffer Operation]



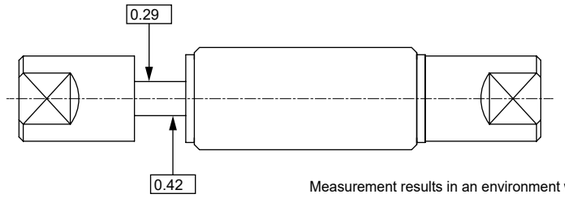
Measurement results in an environment with magnetic flux density of 0.03 to 0.07 mT.

④FBU2-SU-05-6

[Before Buffer Operation] Unit: mT (1 G = 0.1 mT)



[After Buffer Operation]



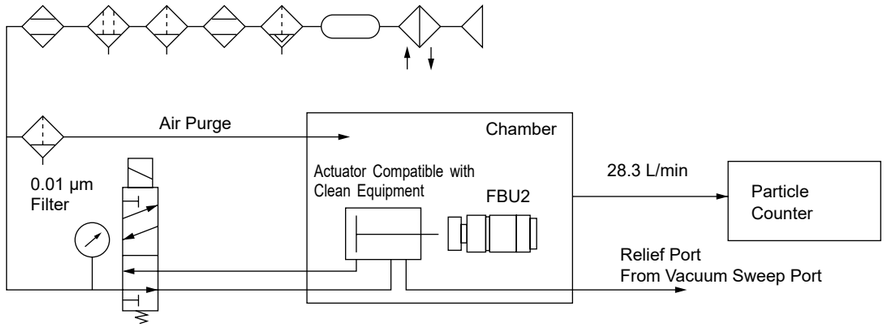
Measurement results in an environment with magnetic flux density of 0.03 to 0.07 mT.

2 Particle Generation Amount

[Measuring Instrument]

Particle Counter: Laser Dust Monitor
Minimum Measurable Particle Size: 0.1 μm
Suction Amount: 28.3 L/min

[Test Circuit]



[Measurement Method]

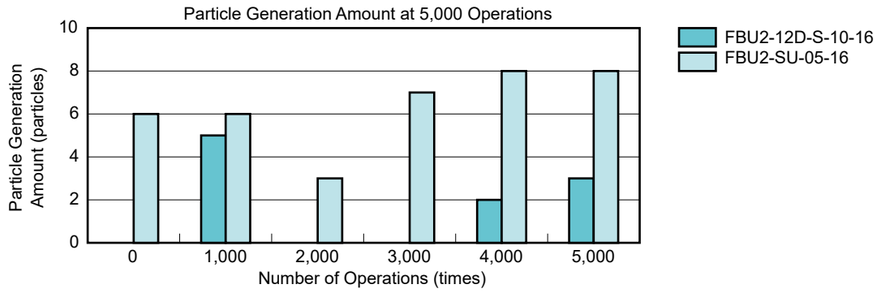
① Place the test sample inside an antistatic chamber (stainless steel).
② Supply clean air (air passed through a 0.01 μm filter) at the same flow rate as the particle counter's suction rate (28.3 L/min).
③ Confirm that the particle counter reading becomes "0" when not operated.
④ Operate the test sample and measure the particles generated during operation.

*Use a sealed chamber to prevent particles other than those from the test sample from entering the chamber.
*Confirm beforehand that the particle generation amount of the clean equipment compatible actuator (vacuum sweep type) to be used is 0.

[Measurement Conditions]

* Air Quality
For Purge: Grade 1.2.1 + 0.01 μm Gas Filter
• FBU2 Operating Speed: 50 mm/s
• Operating Conditions: No load, installed parallel to purge flow
• Measurement Frequency: 1 minute measurement / 1,000 operations
• Sample: FBU2-12D-S-10-16
FBU2-SU-05-16

[Measurement Results]



FBU2-12D-S-10-16

Particle Size	Number of Operations					
	0	1,000	2,000	3,000	4,000	5,000
0.1 μm or more	0	5	0	0	0	2
0.2 μm or more	0	0	0	0	1	0
0.3 μm or more	0	0	0	0	1	1
0.5 μm or more	0	0	0	0	0	0
1.0 μm or more	0	0	0	0	0	0
2.0 μm or more	0	0	0	0	0	0
Total Particle Generation Amount	0	5	0	0	2	3

FBU2-SU-05-16

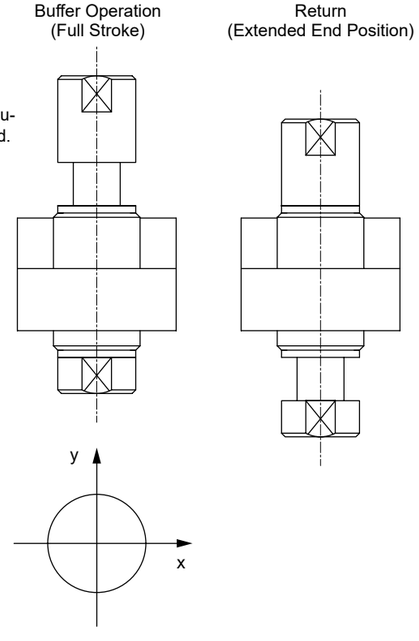
Particle Size	Number of Operations					
	0	1,000	2,000	3,000	4,000	5,000
0.1 μm or more	6	6	3	7	8	8
0.2 μm or more	0	0	0	0	0	0
0.3 μm or more	0	0	0	0	0	0
0.5 μm or more	0	0	0	0	0	0
1.0 μm or more	0	0	0	0	0	0
2.0 μm or more	0	0	0	0	0	0
Total Particle Generation Amount	6	6	3	7	8	8

3 Return Position Accuracy (X-Y)

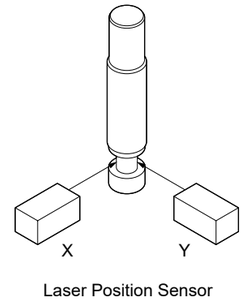
[Measuring Instrument]

Laser Position Sensor

[Measurement Overview Diagram]



[Measurement Method]



[Measurement Method]

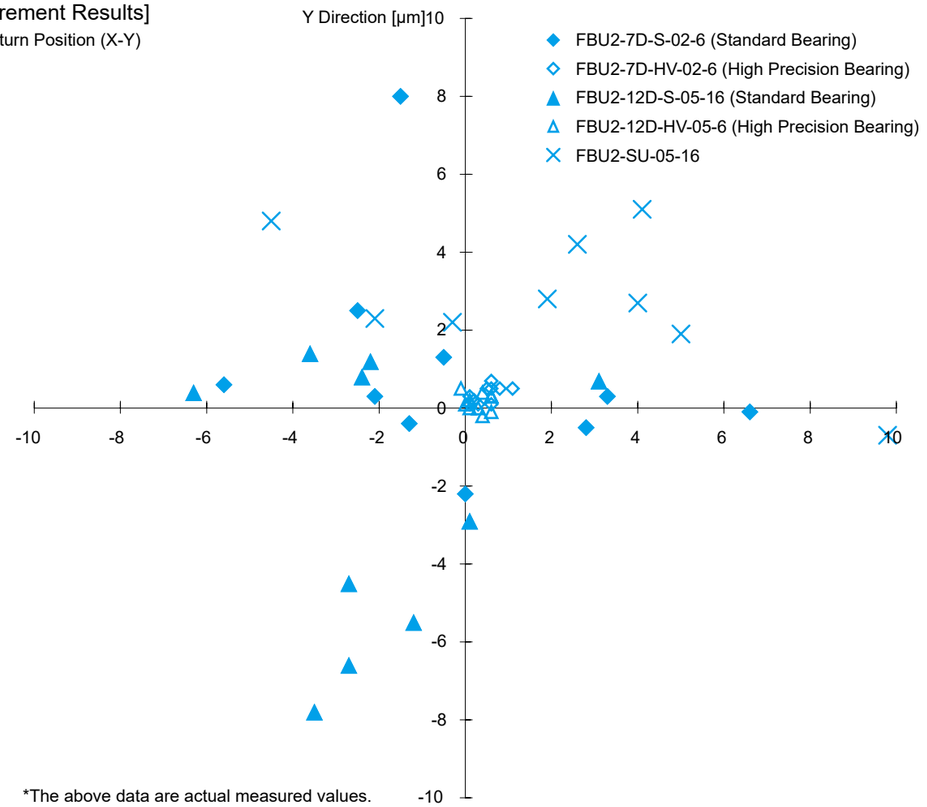
Measure the X-Y position accuracy when manually operated for a full stroke and then returned.
Load: No Load
Installation Direction: Downward
Vacuum Level: Non-vacuum
Piping: None

[Target]

FBU2-7D-S-02-6
FBU2-7D-HV-02-6
FBU2-12D-S-05-16
FBU2-12D-HV-05-6

[Measurement Results]

Return Position (X-Y)



*The above data are actual measured values.

This is a list of suction pads that can be directly attached to the Fine Buffer. After selecting the pad, select the head piece model No. that matches the pad.

Pad Shape	Pad Shape	Application	Pad Diameter	Model No. *Select the pad material	Head Piece Code	Pad Material N	S	U	F	HN	EP	SE	NE	G	FS
Standard Type Compact Type		Ideal for small workpieces such as semiconductor parts	ø0.7	VSP-ME0.7RM□-M3	H3 (M3 Female Thread)	●	●	●	●	●	●	●	●	●	-
			ø1	VSP-ME1RM□-M3											
			ø1.5	VSP-ME1.5RM□-M3											
			ø2	VSP-ME2RM□-M3											
			ø3	VSP-ME3RM□-M3											
			ø4	VSP-ME4RM□-M3											
Standard Type General		Ideal for thick, flat workpieces	ø1	VSP-E1R□	H3 (M3 Female Thread)	●	●	●	●	●	●	●	●	●	-
			ø2	VSP-E2R□											
			ø3	VSP-E3R□											
			ø4	VSP-E4R□											
			ø6	VSP-ME6R□-M5	H5 (M5 Female Thread)										
			ø6	VSP-E6R□											
			ø8	VSP-ME8R□-M5											
			ø8	VSP-E8R□											
			ø10	VSPG-10RøA	H4 (M4 Female Thread)										
For Thin Objects Type		Ideal for thin workpieces such as vinyl	ø8	VSP-ME8P□-M5	H5 (M5 Female Thread)	●	●	●	●	-	-	-	●	-	●
			ø8	VSP-E8P□											
			ø10	VSP-ME10P□-M5											
			ø10	VSP-E10P□											
Sponge-type		Ideal for workpieces with uneven surfaces such as exterior wall materials	ø10	VSPG-10SøA	H6 (M6 Female Thread)	Blank: Chloroprene Rubber S: Silicone									
Oval-type		Ideal for long workpieces like boards and semiconductor parts	2x4	VSPG-2x4EøA	H6 (M6 Female Thread)	●	●	●	●	●	●	●	●	-	-
			3.5x7	VSPG-3.5x7EøA											
			4x10	VSPG-4x10EøA											
			4x20	VSPG-4x20EøA											
			5x10	VSPG-5x10EøA											
			6x10	VSPG-6x10EøA											
Flat Type Flat Increased Suction Flow Type		Thin workpieces like sheets and vinyl	ø10	VSPG-10FøA	H4 (M4 Female Thread)	●	●	●	●	-	-	●	●	-	-
			ø15	VSPG-15FøA											
			ø10	VSPG-10FHøA											
			ø15	VSPG-15FHøA											

Pad Material

Ordering Code	Pad Material
N	Nitrile rubber
S	Silicone Rubber
U	Urethane rubber
F	Fluororubber
HN	HNBR
EP	EPDM
SE	Conductive Silicone Rubber
NE	Conductive NBR (Low Resistance-type)
G	Food Sanitation Act Compliant NBR
FS	Fluorosilicone Rubber

When selecting a surface treatment option, add the Code after the rubber material.

Surface Treatment

Content	Compatible Pad Material N	S	F	SE	NE	Code
No surface treatment	All pad materials, all pad diameters					Blank
Anti-Adhesion Special Coating		●	●	●		-DL
Suction Mark Reduction Surface Modification	●				●	-ER
Fluorine Coating		●		●		-FG

*Surface treatment cannot be selected for sponge-type.
*Anti-adhesion special coating cannot be selected for standard type compact.

Model No. Notation

FBU2 - 12D - S - 10 - 6 - T3 - H3

Head Piece Shape

Head Piece Shape

Code	Content
H3	M3 Female Thread Depth 3
H5	M5 Female Thread Depth 4

Model No. Notation

FBU2-SU - 05 - 6 - T3 - H3

Head Piece Shape

Head Piece Shape

Code	Content
H3	M3 Female Thread Depth 3
H4	M4 Female Thread Depth 4
H5	M5 Female Thread Depth 4
H6	M6 Female Thread Depth 5

Characteristics of Each Pad Material

■Rubber material, sponge material

Item	Ordering Code	Nitrile rubber N	Food Sanitation Act Compliant NBR G	HNBR HN	Silicone Rubber S	Conductive Silicone Rubber SE	Urethane rubber U	Fluororubber F	Fluorosilicone Rubber FS	EPDM EP	Conductive NBR (Low Resistance-type) NE	Chloroprene Rubber (Sponge-type) Blank	Silicone Rubber (Sponge-type) S
Application		Cardboard, Plywood Steel Plate, Food Related, Other General Workpieces		Cardboard, Plywood, Steel Plate, Food Related Other General Workpieces Low Concentration Ozone Use in Environment	Semiconductor Mold Ejection Thin Workpieces Food Related		Cardboard Plywood Steel Plate	Chemical Atmospheres, High Temperature Workpieces	Mold Ejection Ejection	Applications requiring highly ozone resistance, use in humid atmospheres	Semiconductor	With uneven surfaces Workpieces	Workpieces with uneven surfaces Food Related
Pad Color		Black	Light Gray	Black	Clear White	Black	Dark Blue	Gray	Dark Orange	Black	Black	Black	Dark Orange
Various Properties: Table by Pad Shape Surface Hardness (Shore A)	Standard Type	50° to 80°	60° to 70°	50° to 70°	50°	60°	55° to 70°	60° to 70°	-	50° to 70°	60° to 70°	-	–
	Oval-type	40° to 50°	–	50°	40° to 50°	50° to 60°	55°	50°	–	50°	70°	–	–
	Flat Type	60°	–	–	40°	40°	50°	50°	–	–	60°	–	–
	Flat Increased Suction Flow Type						–						
	For Thin Objects Type	40°	–	–	40°	–	55°	50°	40°	–	60°	–	–
High Temp. Operating Limit		110°C		140°C	180°C		60°C	230°C	180°C	150°C	110°C	80°C	180°C
Low Temp. Operating Limit		-30°C		-30°C	-40°C		-20°C	-10°C	-50°C	-40°C	-30°C	-45°C	-40°C
Weather Resistance		△		○	◎		○	○	○	◎	△	○	◎
Ozone Resistance		x		○	◎		◎	◎	◎	◎	x	○	◎
Acid Resistance		△		△	○		x	◎	○	◎	△	△	○
Alkali Resistance		○		○	◎		x	x	◎	◎	○	◎	◎
Oil Resistance	(Gasoline/Diesel)	◎		◎	△		◎	◎	△	x	◎	x	△
	(Benzene/Toluene)	△		x	△		△	◎	△	x	△	△	△
Volume Resistivity		–		–	–	≤10⁸ Ω·cm	–	–	–	–	≤200 Ω·cm	–	–

Evaluation Guide → ◎: Optimal, ○: Suitable, △: Good, x: Unsuitable
*1: Various properties indicate the characteristics of general synthetic rubber used for the pad material.
*2: Actual use at the operating limit temperature is instantaneous; if continuing for a certain period, confirm sufficiently before use.
*3: When the fiber flocked type surface treatment (option) is selected, the high-temperature operating limit for fluororubber becomes 200°C.
*4: Use within the Fine Buffer's operating ambient temperature range.
Other pad shapes and materials are also available. Also refer to P. 408, 409.

Suction Pad Selection Method

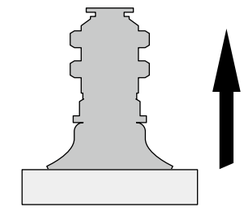
Theoretical Suction Force

Theoretical suction force is determined by the pad area and the vacuum pressure generated when using that pad. Use calculated values as reference; perform actual suction tests as needed for confirmation. Theoretical suction force is a value under static conditions. Allow sufficient margin considering the workpiece Weight and forces due to acceleration during movement (lifting, stopping, rotating, etc.). Also, allow sufficient margin when determining the number and placement of pads.

(1)Calculation Formula

$$W = x10.13xf\frac{C \times P}{101}$$

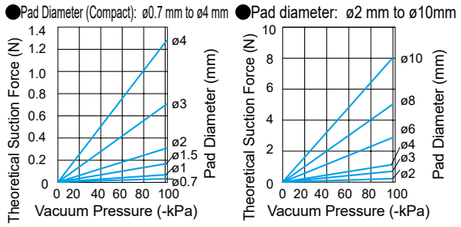
W: Suction Force (N)
C: Pad Area (cm²)
P: Vacuum Pressure (-kPa)
f: Safety Factor Horizontal Lifting (See figure on right): 1/4
Vertical Lifting (See figure on right): 1/8



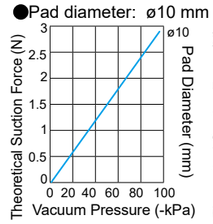
*1: For sponge-type pads, calculate using the inner diameter of the sponge pad part, referring to the table below.
*2: For flat type pads, calculate using the grooves on the suction surface, referring to the table below.
*3: Regarding the suction force of the thin object type pad, due to pad characteristics, the theoretical suction force may exceed the pad's own strength depending on the vacuum level. Please confirm with the actual machine.

(2) Theoretical Suction Force Graph [Please apply a safety factor to the values obtained from the graph.]

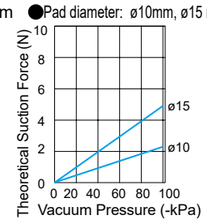
Standard/Thin Object Type



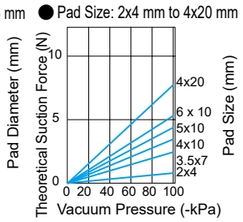
Sponge Pad



Flat Pad



Oval Pad



To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, refer to Intro 15 for details.

Design / Selection

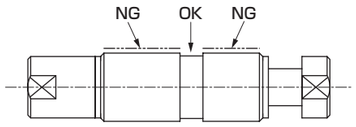
Warning

■Working ambient temperature ranges differ depending on bearing. Be sure to use within the specified range.
- Standard Bearing Type (S): 5 to 50°C
- High Precision Bearing (H/HV): 5 to 40°C

Note) FBU2-SU is a standard bearing type.

■This product has a built-in magnet.
Do not use in locations with magnetic chips, dust, etc. This can cause damage or malfunction.

■Fix the product in place with a nut (full thread: 8M, 12M, SU) or hexagon socket head set screws (Spigot joint type: 7D, 12D). When using set screws, utilize the groove part of the fixed shaft. Follow the mounting precautions on the next page during installation.



■Mounting orientationUse vertically.
Lateral load or moment force on the movable shaft affects characteristics variation and lifespan.

Caution

■When using for vacuum applications, use a tube with low piping tension as the tension resulting from the piping tube is added to the pressure.
Recommended Tubing: UP Series
(Antistatic Tubing, Air Fiber)

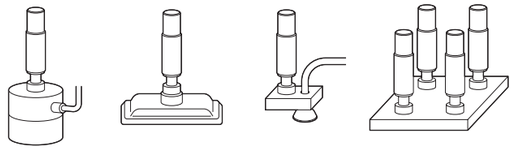
■The load (jig and suctioned workpiece) on the movable shaft must not exceed the load capacity.
- FBU2-7D/8M: 30 g or less
- FBU2-12D/12M: 80 g or less
- FBU2-SU: 200 g or less

■When conveying the workpiece, acceleration should not be more than 4 G. Excessive acceleration may cause product damage.

■When used for a rotating application, note the max. holding torque of the magnet. If force exceeding the maximum holding torque is applied, it may step out and reverse 180°.

■The internal flow path high accuracy (HV) product has a leak.
A gap seal structure is adopted to improve pushing pressure stability and return position accuracy. Therefore, vacuum leakage occurs. (Pressure drop within 10 kPa relative to initial pressure -80 kPa)

■ Using the product in the following way can cause moment force on the movable axis even at below load capacity, leading to malfunctions or failure.
1. When a large jig other than the suction pad is attached to the head piece.
2. When a large or irregularly shaped suction pad is attached.
3. When using in ways which apply eccentric load to the movable axis.
4. When holding one jig or workpiece with several FBU2 units.



Consult with CKD when using this unit with the method above.

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

MEMO

Active Fine Buffer

AFB-RB

■ Precision Components



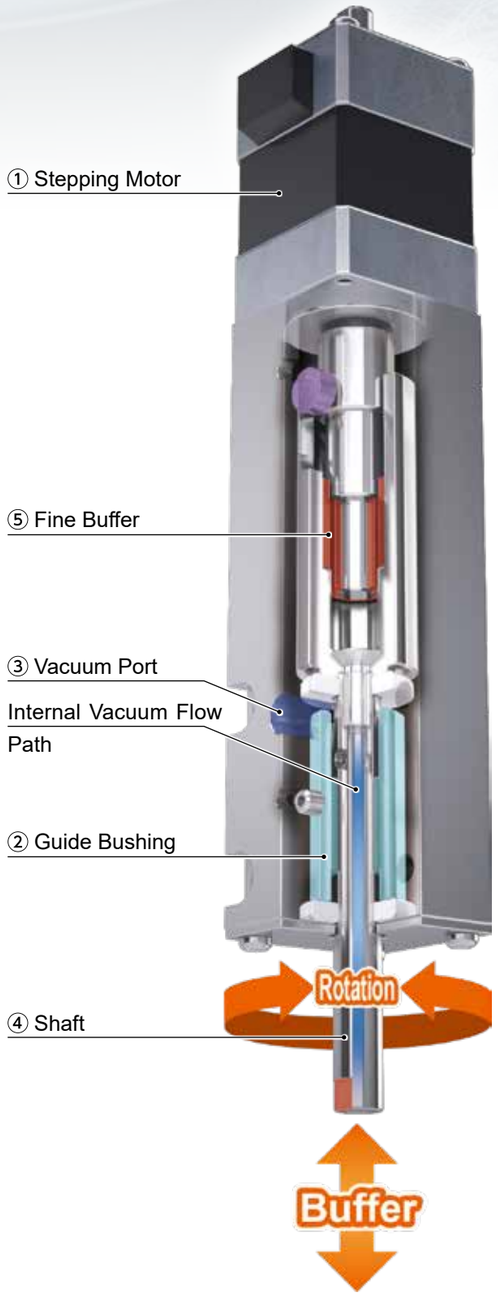
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⚠ Precautions for Use 99

Active Fine Buffer

AFB-RB Series

Ideal for Alignment Buffer & Rotation Operation



Alignment Function

① Stepping Motor

Selectable from various motors

2-phase, 5-phase, batteryless absolute

Selectable with sensor.

øCheck the mounting motor specifications for details.

② Guide Bushing

Rotational runout accuracy 0.01 mm or less

Built-in ball shaft achieves rotational runout accuracy of 0.01 mm or less.

Rotational Runout		mm	0.01
Return Position Accuracy	X, Y	mm	±0.01
	Z	mm	±0.02
	θ	°	±0.2

Vacuum Suction Function

③ Vacuum Port

Internal vacuum flow path allows easy piping to the front vacuum port

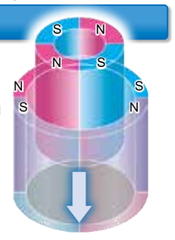
④ Shaft

Workpiece vacuum suction at the tip

Buffer Function

⑤ Fine Buffer

Magnetic Spring Buffering Mechanism



Low Particle Generation

Lower particle generation compared to spring buffer

Long Life

No settling of movable parts due to magnetic force, no performance change due to aging

Constant pushing pressure for soft touch

Constant pushing pressure even if stroke changes.

Pushing pressure selectable from 2 ranges: 0.5 N / 1.0 N.

Space Saving

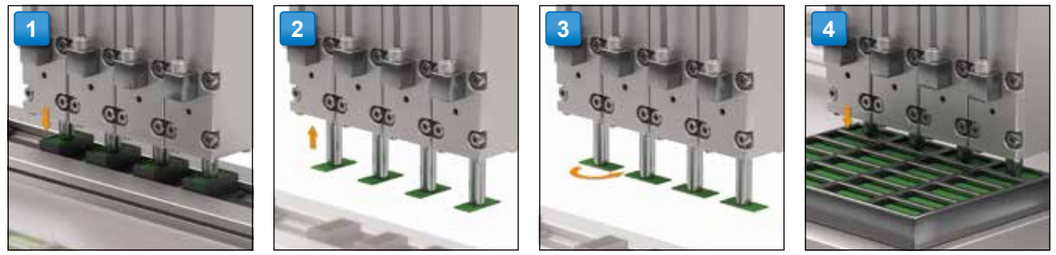
Compact and manifoldable.



How to Use Active Fine Buffer



Used as a suction unit, acts as a buffer during workpiece pick & place. Furthermore, positioning can be done in the workpiece's θ direction by motor rotation.



Start Suction Transport
Buffer activates to protect workpiece

During Transport
Buffer stroke extended state

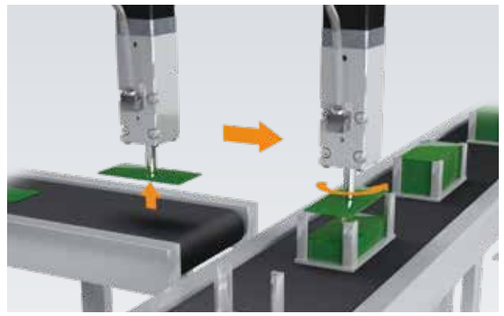
During Transport
Rotational operation, workpiece rotates 90 degrees

Transport End
Buffer activates to protect workpiece

Usage Examples

Stacking Transport

Loads workpieces with constant pushing pressure regardless of stroke.



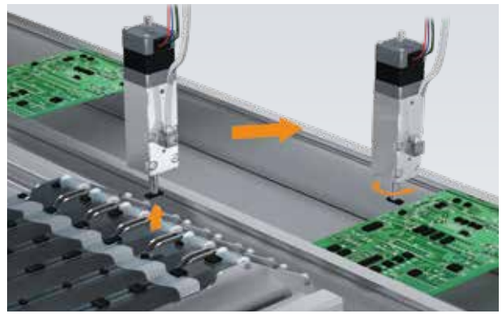
Compact Camera/Lens Module Assembly

Sequentially inserts multiple parts into the case.
Loads workpieces with constant pushing pressure.



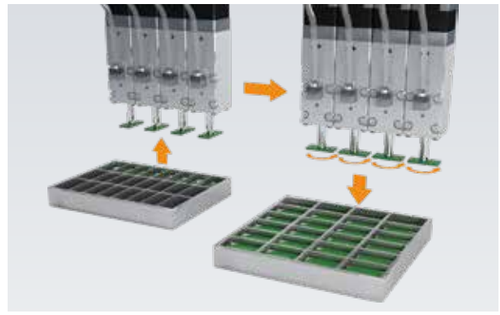
Precision Mounting

Suppresses shaft runout, realizing high-precision θ alignment.



Rotational Alignment during P & P

Can be installed compactly with a 20 mm mounting pitch.





Active Fine Buffer

AFB-RB Series

Payload: 50 g

RoHS

Model No. Notation

AFB-RB **05** **03** **A**

- AFB-RB: Model No.
- 05: ❶ Pushing Pressure
- 03: ❷ Buffer Stroke
- A: ❸ Mounting Motor Specifications

❶ Pushing Pressure

Code	Content
05	0.5 N
10	1.0 N

❷ Buffer Stroke

Code	Content
03	3 mm
06	6 mm

Mounting Motor Specifications *1

Code	Content
A	Oriental Motor 2-Phase Stepping Motor (Motor Model No.: PKP213D05)
B	Oriental Motor 5-Phase Stepping Motor (Motor Model No.: PK513PB)
C	MinebeaMitsumi 2-Phase Stepping Motor (Motor Model No.: 08PM-K049BSTDCN)
D	Oriental Motor AZ Motor (Motor Model No.: AZM14AK)

*1: The motor has a custom model No. for AFB-RB, but refer to the above model No.s to check motor specifications.

(Reference) Motor cable (❸ Mounted motor specification "B")

●Connection cable (for five-phase stepper motor)

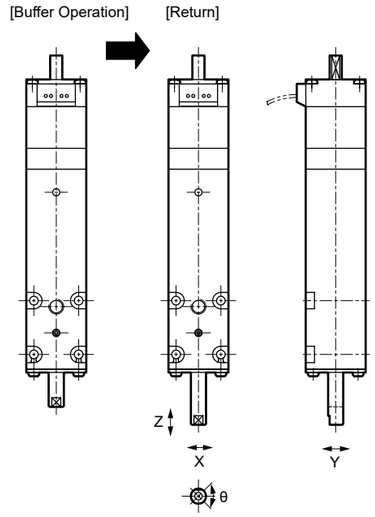
LC5N06A

For specifications, etc., please inquire with Oriental Motor Co., Ltd.

Specifications

Item		AFB-RB
Pushing Pressure	N	0.5±0.2, 1.0±0.2 (Selectable)
Pushing Pressure Variation	*1)	±15% or less
Buffer Stroke	mm	3, 6 (Selectable)
Ambient Temperature	°C	10 to 40
Storage Ambient Temperature	°C	0 to 50 (No condensation)
Rotational Runout	mm	0.01
Return Position Accuracy *2	X, Y mm	±0.01
	Z mm	±0.02
	θ °	±0.2
Product Weight	g	Approx. 120 (Approx. 150 with AZ motor)
Mounting Orientation	*3	Shaft Downward
Load capacity	g	50 or less
Payload Moment of Inertia	kg·m²	2.45×10⁻⁶ or less
Movable part weight	g	21
Moment of Inertia of Movable Parts	kg·m²	4.56×10⁻⁷
Operating Rotation Speed	rpm	100 or less

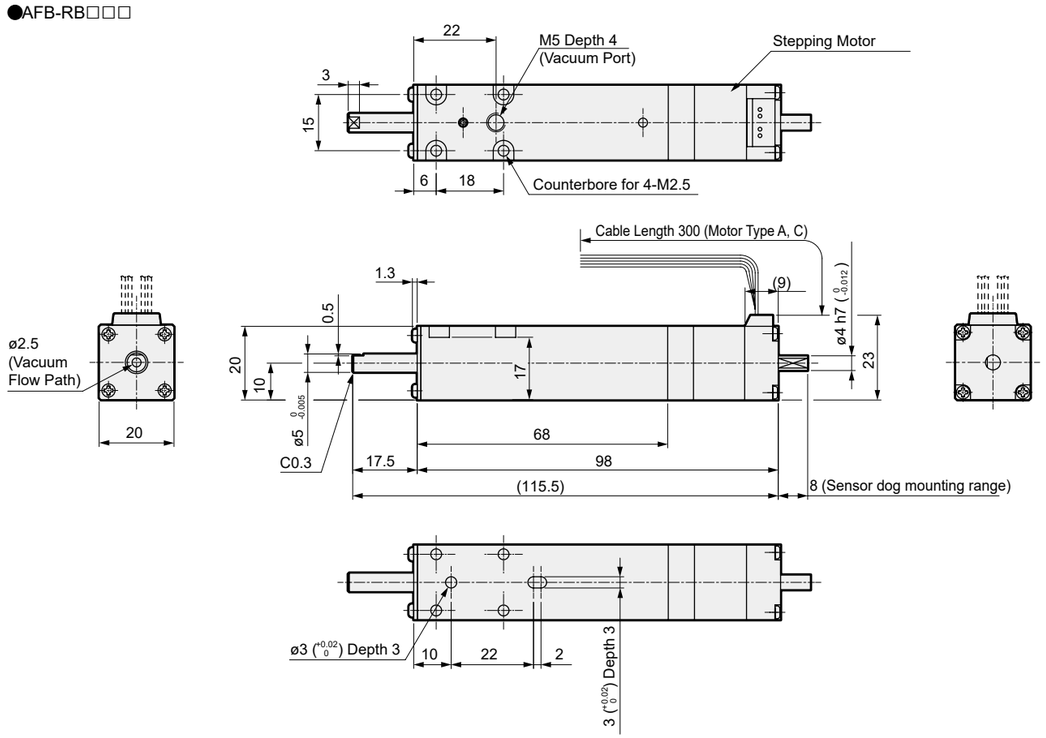
*1: Indicates the amount of pushing pressure fluctuation during the stroke. Pushing pressure is not proportional to the buffer stroke.
*2: Return position accuracy is the return position of the shaft after buffer operation (Refer to Fig. 1).
*3: The pushing pressure is set considering the Weight of the movable parts when the product is used downward.
*4: Holding torque depends on motor specifications.



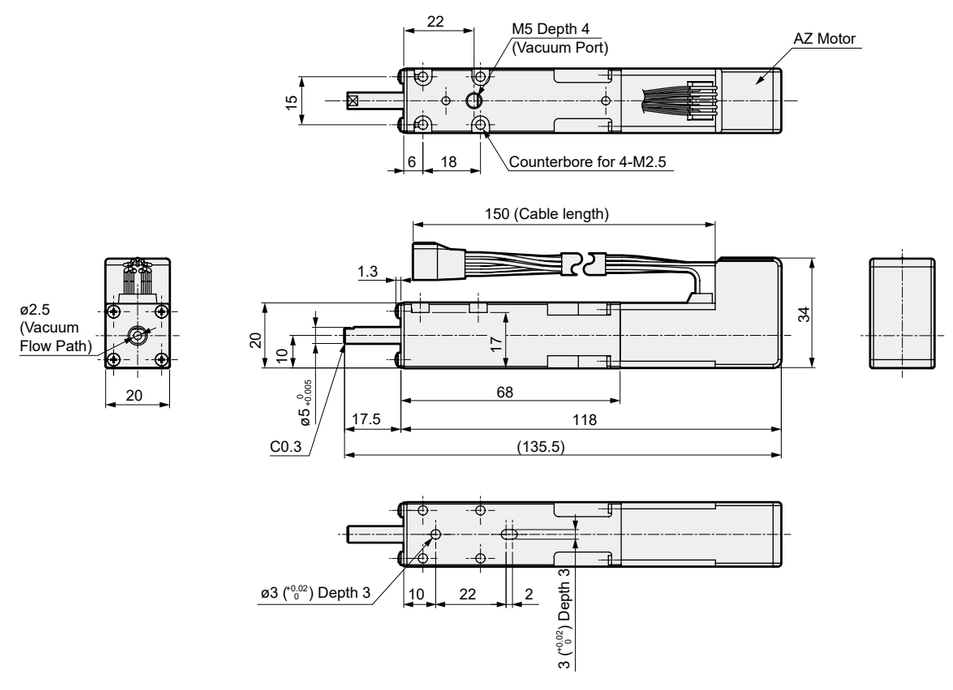
(Fig. 1) Detailed Diagram of Return Position Accuracy

External Dimension Drawings

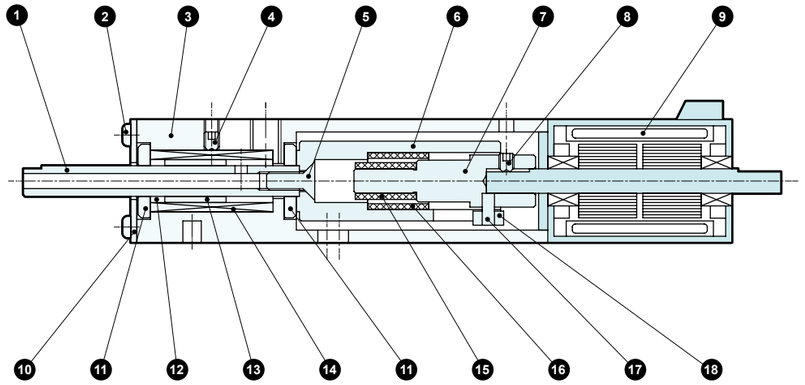
●AFB-RB□□□



●AFB-RB□□D (AZ motor)



Internal Structure Diagram/Materials



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Shaft	High Carbon Chromium Bearing Steel		10	Cap	Stainless steel	
2	Phillips pan head machine screw	Stainless steel		11	Washer	Polyacetal resin	
3	Body	Aluminum alloy	Electroless nickel plating	12	Outer cylinder cap	Aluminum alloy	
4	Hexagon Socket Set Screw	Stainless steel		13	Retainer	-	
5	Cross Recessed Countersunk Head Machine Screw	Stainless steel		14	Outer cylinder	Steel	
6	Movable Shaft	Aluminum alloy	Trivalent chromate treatment	15	Ring magnet	Plastic magnet	
7	Fixed Shaft	Stainless steel		16	Ring magnet	Plastic magnet	
8	Hexagon Socket Set Screw	Stainless steel		17	Parallel pin	Stainless steel	
9	Stepping Motor	-		18	Small diameter ball bearing	Stainless steel	

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, refer to Intro 15 for details.

Individual Precautions: Active Fine Buffer AFB-RB Series

Design / Selection

DANGER

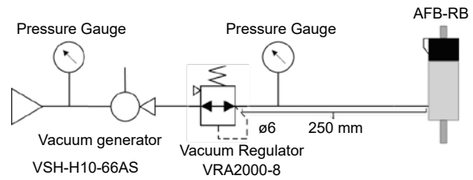
- Do not use in locations where hazardous materials such as ignitable, flammable, or explosive substances are present. There is a risk of ignition, fire, or explosion.
- Ensure that the product is free of water droplets and oil droplets. This can cause fire or malfunction.
- When installing the product, ensure it is securely held and fixed. Product tipping, falling, abnormal operation, etc., can cause injury.
- Use a DC stabilized power supply (24 VDC ±10%) for the motor and control. Direct connection to an AC power supply can cause fire, bursting, damage, etc.

Warning

- This product has a built-in magnet.
  Do not use in locations with magnetic chips, dust, etc. This can cause damage or malfunction.
- Use hexagon socket head cap screws to secure the product.
- Mount the product vertically.
  Lateral loads or moment forces on the shaft will affect characteristics and service life.
- Design a safety circuit or equipment so that damage to equipment, injury to persons, etc., does not occur when the machine stops in the event of a system failure such as emergency stop or power outage.
- Install indoors with low humidity.
  In locations exposed to rainwater or high humidity (80% humidity or higher, where condensation occurs), there is a risk of electrical leakage or fire accidents. Oil drops and oil mist are strictly prohibited.
- Observe the ambient temperature for use and storage. Be sure there is no condensation present on the product when using or storing it.
  Failure to do so can cause abnormal product stoppage or reduced service life. Ventilate if heat builds up.
- Install in a location free from direct sunlight, dust, and corrosive gas/explosive gas/inflammable gas/combustibles, and away from heat sources. Additionally, chemical resistance has not been considered.
  Failure to do so can cause malfunction, explosion, or fire.
- Use and store in a location free from strong electromagnetic waves, ultraviolet rays, and radiation.
  Failure to do so can cause malfunction or failure.
- Limit positive pressure to a max. of 50KPa when applying vacuum burst, and do not use so as to constantly apply pressure.

Caution

- The load (jig and suctioned workpiece) on the shaft must not exceed the payload.
- Jig and workpiece weight should be 50 g or less and moment of inertia should be 2.45×10^{-6}kg·m^2 or less.
- When conveying the workpiece, acceleration should not be more than 4 G. Excessive acceleration may cause product damage.
- A gap seal structure is used to improve pressing force stability and repeatability. Therefore, vacuum leakage will occur. The amount of vacuum leakage varies depending on the air circuit and equipment used.
  [Reference] The pressure drop will be 10 kPa or less compared to the initial pressure of -80kPa when the following pneumatic components is used.



- Supplying vacuum during a stroke may prevent the seal from performing effectively. Therefore, for vacuum suction, initiate the stroke after supplying vacuum.
- While wiring, ensure that inductive noise is not applied and that high-current or strong magnetic field locations or large motor power lines for other devices do not use the same piping and wiring (through multi-core cables, etc.). Also, pay attention to inverter power supplies used for robots, etc., and their wiring sections (do not use the same wiring/piping). Apply frame grounding for the same power supply and always insert a filter at the output section.

■ If the product's output section shares a power supply with inductive loads that generate surges (such as solenoid valves, relays), surge current can flow into the output section, causing damage. Therefore, separate the output system acting as the inductive load from this product's output power supply. If a separate power supply cannot be used, connect surge absorbers directly in parallel with all inductive loads.

■ Select a motor power supply which provides ample capacity based on the number of installed products. Insufficient capacity may lead to malfunctions.

■ Do not disassemble the product.

■ The lead wires cannot be used in applications involving repeated bending.

■ The customer is responsible for confirming the compatibility of CKD products with the customer's systems, machines and equipment.

MEMO

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

Precision Components
LBC
GFM
PVP
FBU2
AFB-RB
Ending

Vacuum Components

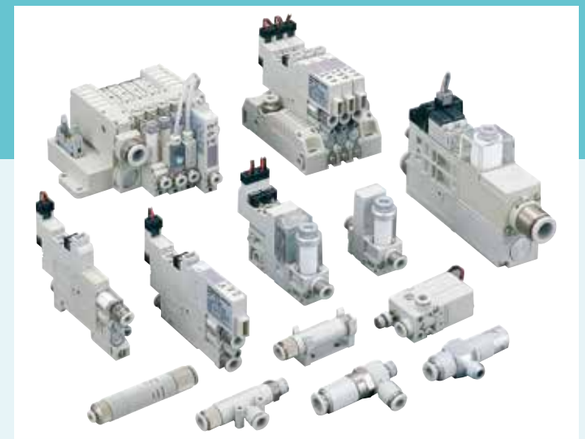
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Suction Pad 407
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Ejector System

VS□

■ Vacuum Components



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●20 mm width dedicated single unit (VSG)	158
●16 mm width integrated (VSK/VSKM)	168
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●10.5 mm width integrated (VSX/VSXM)	242
●31.5 mm width dedicated single unit (VSQ)	270
●11 mm pitch manifold (VSZM)	294

System Table

Ejector System
Single Unit Type

●: Standard equipment ○: Option

Model	Series Name		Single Unit Width Dimension (mm)	Single Unit Weight (g)	Manifold	Component Devices: With Valve: For Generation	Component Devices: With Valve: For Breaking	Component Devices: With Switch: Mechanical-type	Component Devices: With Switch: Switch Output	Component Devices: With Switch: Analog Output	Component Devices: With Vacuum Filter	Component Devices: With Silencer	Component Devices: Centralized Exhaust Type	Component Devices: With Check Valve	Nozzle Diameter (mm): 03 (0.3)	04 (0.4)	05 (0.5)	06 (0.6)	07 (0.7)	10 (1.0)	12 (1.2)	15 (1.5)	20 (2.0)	Ultimate Vacuum Pressure (-kPa) Note 1: H	L	E	Suction Flow Rate (L/min (ANR)): H	L	E	Air Consumption (L/min (ANR)): H	L	E	Page Listed
Ejector System / Single Unit Type	**VSY Series** With Vacuum Break Function • Integrates ejector and vacuum break functions • Compact and lightweight, enabling use at the end of vacuum piping		11	19 to 26							○	○	○				○		○					90 92	66	90	7 12.5	12 18/21	3 9	11.5 23		8 17	110
	VSH Series Solenoid Valve Direct Mount Type (Supply Port Thread Type) • Air supply port size: M5 to R1/4 series allows direct mounting of solenoid valves • Wide variety of nozzle diameters from ø0.5 to ø2.0		ø9.8 to ø28	13 to 128								○	○				○	○	○	○	○	○	90 93 66	66 66	92	7 13 28 38 63 104	12 26 42 95 174	10.5 21 27 42 82	11.5 23 46 70 100 200		17 34 47 70 150	120
	VSU Series Tubular Type • Vacuum port and air supply port are aligned, allowing installation mid-piping. • Dedicated mounting bracket available.		ø8.5 to ø13	6.4 to 24							●	○	○		○	○	○		○					90 92	66	88 90	2 4 7 12.5	3 7 12 20/22	1 2 3 10	4.5 8 11.5 23		3.5 6.5 8 17	128
	VSB Series Square-type • Square silencer built-in type allows for main body mounting and fixing. • Mechanical vacuum pressure switch option available.		12.2	18 to 49				○				●				○		○	○	○			90 93	66	92	7 13 28 38	12 26 42	10.5 21 27	11.5 23 46 70		17 34 47	140
	VSC Series Pad Direct Mount Type (Vacuum Port Thread Type) • Vacuum port size: M5 to R1/4 series allows direct mounting of vacuum pads • Wide variety of nozzle diameters from ø0.5 to ø2.0		8 to ø24	15 to 109								○	○		○	○	○		○	○	○	○	○	90 93 66	66 66	92	2 4 7 13 28 38 63 110	4 7.5 11 26 42 95 180	10.5 21 27 42 84	4.5 8 11.5 23 46 70 100 200		17 34 47 70 150	146

Note1) Supply pressure is 0.5 MPa for H and L-types, and 0.35 MPa for E-type.

Ejector Characteristic Table

Nozzle Diameter		Ultimate Vacuum Pressure (-kPa) *1			Suction Flow Rate (L/min (ANR))			Air Consumption (L/min (ANR))		
Model No.	(mm)	H	L	E	H	L	E	H	L	E
03	0.3	90	66	88	2	3 to 4	1	4.5		3.5
04	0.4	90		90 to 90.4	4	7 to 7.5	2	8		6 to 6.5
05	0.5	90 to 91	66 to 67	90 to 92	7	11 to 12	3	11.5		8 to 8.8
06	0.6	90.4	-	90.4	9.5	-	4.5	16	-	12
07	0.7	90.4 to 93.1	66 to 67	90 to 92	12 to 13	18 to 26	9 to 10.5	23		17
10	1.0	93 to 93.1			20 to 28	26 to 42	19 to 21	46		34
12	1.2		67	90.4 to 92	32 to 38	50	27	70		47
15	1.5		66	92 to 93	63	95	42	100		70
20	2.0				96 to 110	143 to 180	82 to 84	200		150

*1: Supply pressure is 0.5 MPa for H and L-types, and 0.35 MPa for E-type.
*2: H-type: High vacuum/Medium flow type = High vacuum type; L-type: Medium vacuum/High flow type = High flow type E-type: High vacuum/Low flow type = Low supply pressure High vacuum type (Energy-saving type)

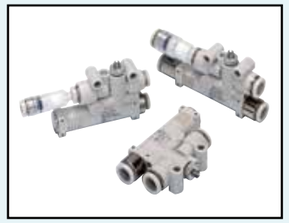
System Table

Ejector System
Unit Type

●: Standard equipment ○: Option

Model	Series Name		Single Unit Width Dimension (mm)	Single Unit Weight (g)	Manifold	Component Devices: With Valve: For Generation	Component Devices: With Valve: For Breaking	Component Devices: With Switch: Mechanical-type	Component Devices: With Switch: Switch Output	Component Devices: With Switch: Analog Output	Component Devices: With Vacuum Filter	Component Devices: With Silencer	Component Devices: Centralized Exhaust Type	Component Devices: With Check Valve	Nozzle Diameter (mm): 03 (0.3)	04 (0.4)	05 (0.5)	06 (0.6)	07 (0.7)	10 (1.0)	12 (1.2)	15 (1.5)	20 (2.0)	Ultimate Vacuum Pressure (-kPa) *1: H	L	E	Suction Flow Rate (L/min (ANR)): H	L	E	Air Consumption (L/min (ANR)): H	L	E	Page Listed
Ejector System / Unit Type	**VSG Series** Integrated type emphasizing basic performance • Single unit dedicated type • Valve, vacuum pressure switch, and filter unitized. Selection possible according to the purpose of use.		20	47 to 128		●	●		○	○	●	●					○		○					90 93	66	90 92	7 13 27	12 26 40	10.5 21	11.5 23 46	17 34	158
	VSK/VSKM Series Wide variety of options available • Modularization of each unit allows selection of the optimal unit. • Built-in check valve, air timer type vacuum break valve selection possible.		16	69 to 183	○	○	○	○	○ Digital display available	○	●	○	○	○			○		○	○				91 93	67	91	7 13 27 38	12 24/26 40 50	10.5 21 27	11.5 23 46 70	17 34 47	168
	VSJ/VSJM Series Prevents workpiece blow-off through flow rate and pressure control of break air • Self-holding type compatible with energy saving also available for vacuum generation valve. • Vacuum break circuit relief function achieves shorter vacuum break time.		20	156 to 176	○	●	●		○ Digital display	○	●	○	○				○		○	○				90.4 93.1	66.5	90.4	7 13 27 32/38	12 24/26 34/40	10.5 21 24/27	11.5 23 46 70	17 34 47	194
	VSN/VSNM Series High-speed and stable response • Compact and lightweight. Especially compact height dimension. • Direct acting valve adopted for main valve, ON/OFF response = 5 msec		10.3	51 to 171	○	●	●		○	○ (Also compatible with digital display Selectable)		○	○		○	○	○							90.4		90.4	7 9.5		2 3 4.5	11.5 16	6 8 12	214
	VSX/VSXM Series Lightweight/Compact Type • Mounting options: Direct mount type and DIN rail-type available. • Self-holding type compatible with energy saving also available for vacuum generation valve.		10.5	71 to 89	○	●	●		○ Digital display available	○	●	○	○				○		○					90.4 93.1	66.5	90.4	7 13 20/24	12 22/24 26	3 10.5 19/20	11.5 23 46	8.8 17 34	242
	VSQ Series Large vacuum unit optimal for controlling large flow rates • Nozzle-types standardized: Single, 2-stage, Twin (3 types) • Self-holding type compatible with energy saving also available for vacuum generation valve (Single nozzle-type only).		31.5	367 to 499		●	●		○ Digital display		●	○	○				○ Twin Nozzle	○ Twin Nozzle	○ 2-Stage Nozzle	○ 2-Stage Nozzle	○ 2-Stage Nozzle	○ ○	○ ○	93	66	92 93	63 96/97.5 52 75 85 40 (24) *2 70 (36) *2	95 143/160	42 70	100 200 23 46 70 *2 100 (23) *2 200 (46) *2	70 150 17 34 47	270
	VSZM Series Manifold Dedicated Type Wiring Saving (Flat Cable/D-sub Connector) Compatible • Installation of atmospheric release valve enables high flow rate atmospheric breaking, shortening vacuum break time. • Valve power consumption 0.55 W, self-holding type also selectable for energy saving compatibility.		11	Please inquire.	●	●	●		○ Digital display available	○	●	○	○				○		○	○				90.4 93.1	66.5	90.4	7 13 24	12 23/24	10.5 20	11.5 23 46	17 34	294

*1: Supply pressure is 0.5 MPa for H and L-types, and 0.35 MPa for E-type.
*2: The values in for the VSQ Twin Nozzle-type are for the small diameter nozzle.



Vacuum Ejector with Vacuum Break Function

VSY Series

RoHS

Integrates ejector and vacuum break functions
Compact and lightweight, enabling use at the end of vacuum piping

Vacuum Characteristic Variations

Nozzle Diameter \ Vacuum Characteristics	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	90	66	90
0.7 mm	12.5	21	9	23		17	92	66	90

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

Integrates ejector and vacuum break functions

Switching between vacuum generation ⇔ break air is possible by turning the supply air to the ejector ON/OFF.

Added function to discharge break air to the ejector
Enables more reliable vacuum breaking compared to conventional single unit type ejectors

(Refer to the piping examples on the next page)

Achieves faster suction/break cycles by incorporating a shutoff valve

Solution Examples



Transport by robot hand, etc.

Concentrates necessary functions while being lightweight and compact, allowing installation near the workpiece at the tip of moving parts.

Model No. Notation

●Vacuum Ejector with Vacuum Break Function

VSY - H 07 - 6 6 6 S - F

- VSY: Model No.
- H: ❶ Vacuum Characteristics
- 07: ❷ Nozzle Diameter
- 6: ❸ Vacuum Port (V)
- 6: ❹ Vacuum Generation Air Supply Port (P)
- 6: ❺ Break Air Supply Port (PD)
- S: ❻ Exhaust Port (EX)
- F: ❼ Vacuum Filter

❶ Vacuum Characteristics

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

❷ Nozzle Diameter

Code	Content
05	ø0.5
07	ø0.7

❸ Vacuum Port (V)
❹ Vacuum Generation Air Supply Port (P)
❺ Break Air Supply Port (PD)

Code	Content
444	ø4 Push-in fitting
666	ø6 Push-in fitting

❻ Exhaust Port (EX)

Code	Content	
S	Atmospheric Release with Silencer	
J	Centralized Exhaust	

❼ Vacuum Filter

Code	Content	
Blank	None	
F	With Vacuum Filter	

Maintenance Part Model No.

●Replacement vacuum filter

VSY - F - 44M

- VSY: Model No.
- 44M: ❶ Port Size

❶ Port Size

Code	Content
44M	For VSY-□444□
66M	For VSY-□666□

●Dedicated Bracket

VSY - B

- VSY: Model No.

Specifications

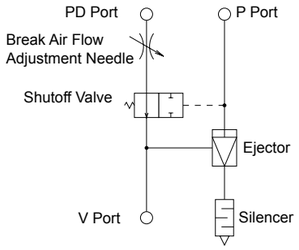
Item	VSY
Operating Fluid	Air
Operating Pressure MPa	0.3 to 0.7
Ambient/Fluid Temperatures ℃	5 to 50
Lubrication	Not required

Vacuum Filter Specifications

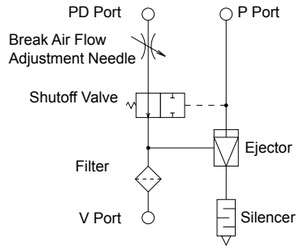
Item	Vacuum Filter
Operating Fluid	Air
Working pressure kPa	-100 to 0
Filtration Rating μm	10
Ambient/Fluid Temperatures ℃	0 to 60
Filtration Area cm²	Port size ø4: 0.8
	Port size ø6: 1.1

Circuit Diagram

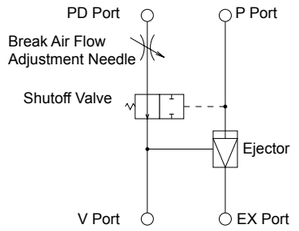
●VSY-□S(Atmospheric release with silencer)



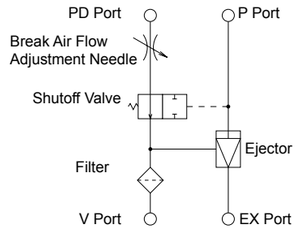
●VSY-□S-F(Atmospheric release with silencer, with vacuum filter)



●VSY-□-J(common exhaust)



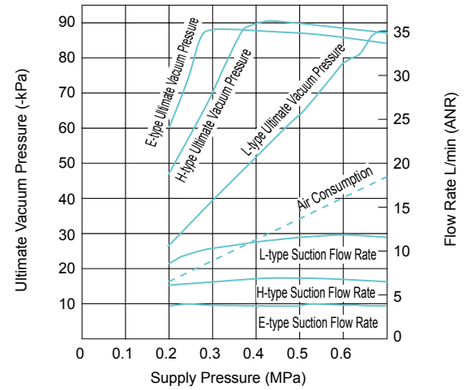
●VSY-□J-F(common exhaust, with vacuum filter)



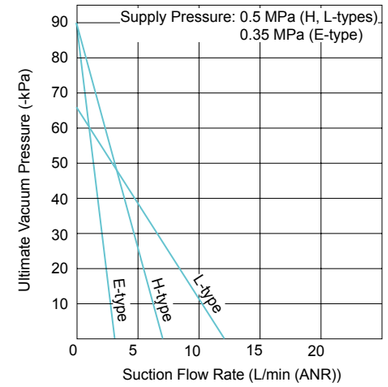
Vacuum Characteristics, Flow Characteristics

●VSY-□05

Vacuum Characteristics

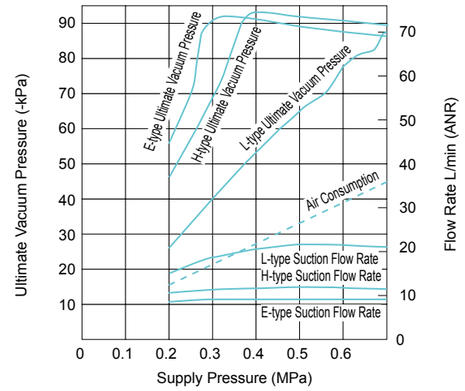


Flow Characteristics

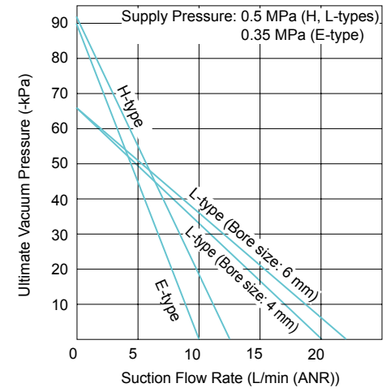


●VSY-□07

Vacuum Characteristics



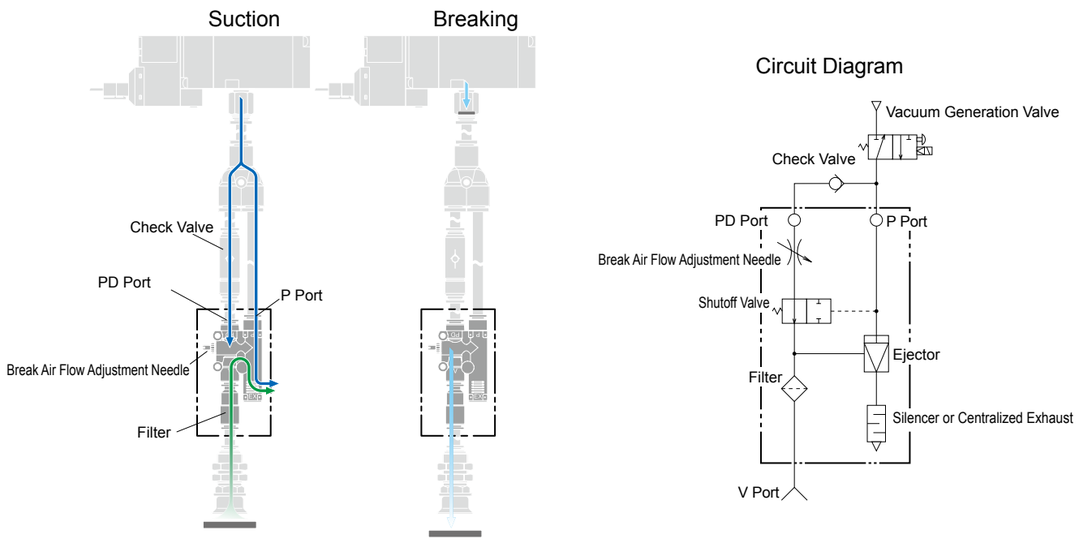
Flow Characteristics



1. The supply pressure in the characteristics above is during vacuum generation.
2. Achieved vacuum pressure with the characteristics described above produces abnormal noise (soft clicking sound) at supply pressure just before reaching the peak value. In this state with abnormal noise, performance is 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.)
3. 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 0.7 mm nozzle diameter, cross-sectional area 0.352 × π = 0.785 mm² × 3 = 1.15 mm². Therefore, select piping and equipment to secure an effective cross-sectional area of 1.1 mm² or more.)

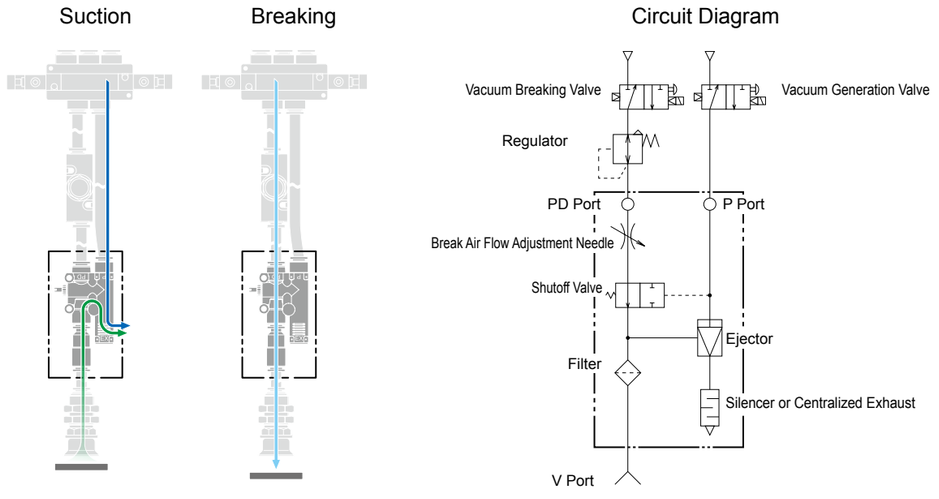
How to Use

[Example 1]



Connect the P port and PD port with a check valve (purchased separately), and use the residual pressure between the check valve and the PD port as break air. Adjust the break air flow rate with the break air flow adjustment needle, and adjust the break time by the length of the tube connecting the check valve and the PD port.

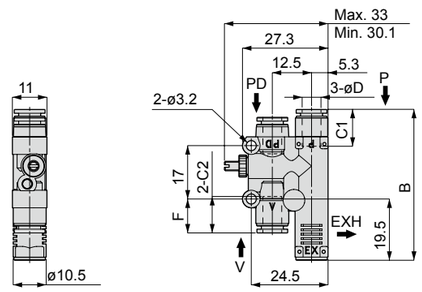
[Example 2]



When wanting to instantly release the workpiece with vacuum break air, adjust the break air pressure and flow rate, but be careful as it may blow the workpiece away. The diagram above is an example of using different pressures for the vacuum generation supply air and the vacuum breaking supply air, such as when wanting to lower the pressure of the vacuum breaking air. (However, Vacuum Generation Supply Pressure ≥ Vacuum Breaking Supply Pressure.)
Adjust the vacuum break air flow rate with the break air flow adjustment needle, and adjust the break time through control of the vacuum breaking valve, etc.

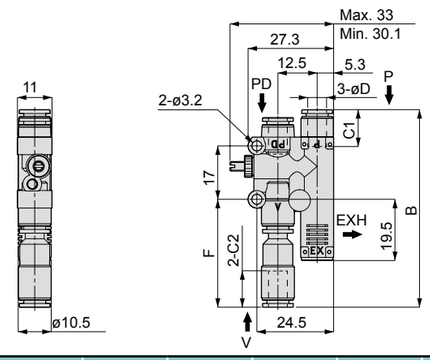
External Dimension Drawings

●VSY-□S(Atmospheric release with silencer)



Model No.	Bore size øD	B	F	C1	C2	Nozzle Diameter	Rated Pressure (MPa)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSY-H05-444S	4	45.4	10.7	11.2	11.3	0.5	0.5	90	7	11.5	19
VSY-H05-666S	6	48.2	11	11.9	11.8						20
VSY-H07-444S	4	45.4	10.7	11.2	11.3	0.7		92	12.5	23	20
VSY-H07-666S	6	48.2	11	11.9	11.8						
VSY-L05-444S	4	45.4	10.7	11.2	11.3	0.5		66	12	11.5	19
VSY-L05-666S	6	48.2	11	11.9	11.8						20
VSY-L07-444S	4	45.4	10.7	11.2	11.3	0.7			18	23	19
VSY-L07-666S	6	48.2	11	11.9	11.8				21		20
VSY-E05-444S	4	45.4	10.7	11.2	11.3	0.5	0.35	90	3	8	19
VSY-E05-666S	6	48.2	11	11.9	11.8						20
VSY-E07-444S	4	45.4	10.7	11.2	11.3	0.7			9	17	20
VSY-E07-666S	6	48.2	11	11.9	11.8						20

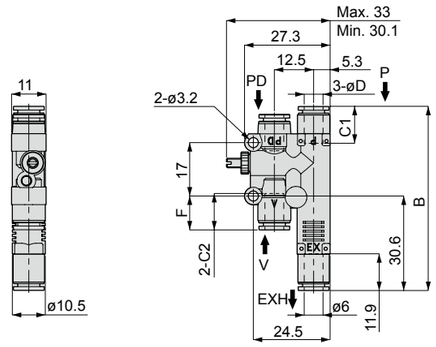
●VSY-□S-F(Atmospheric release with silencer, with vacuum filter)



Model No.	Bore size øD	B	F	C1	C2	Nozzle Diameter	Rated Pressure (MPa)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSY-H05-444S-F	4	60.3	34.4	11.2	11.3	0.5	0.5	90	7	11.5	21
VSY-H05-666S-F	6	63.3	34.6	11.9	11.8						22
VSY-H07-444S-F	4	60.3	34.4	11.2	11.3	0.7		92	12.5	23	21
VSY-H07-666S-F	6	63.3	34.6	11.9	11.8						22
VSY-L05-444S-F	4	60.3	34.4	11.2	11.3	0.5		66	12	11.5	21
VSY-L05-666S-F	6	63.3	34.6	11.9	11.8						22
VSY-L07-444S-F	4	60.3	34.4	11.2	11.3	0.7			18	23	21
VSY-L07-666S-F	6	63.3	34.6	11.9	11.8				21		22
VSY-E05-444S-F	4	60.3	34.4	11.2	11.3	0.5	0.35	90	3	8	21
VSY-E05-666S-F	6	63.3	34.6	11.9	11.8						22
VSY-E07-444S-F	4	60.3	34.4	11.2	11.3	0.7			9	17	21
VSY-E07-666S-F	6	63.3	34.6	11.9	11.8						22

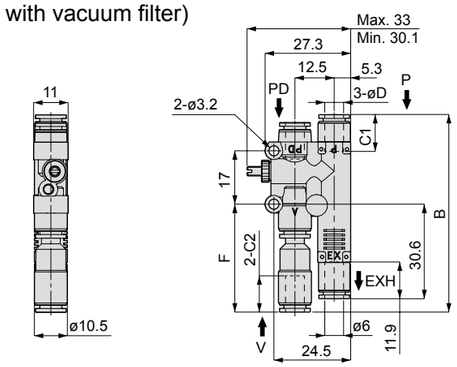
External Dimension Drawings

●VSY-□J(common exhaust)



Model No.	Bore size øD	B	F	C1	C2	Nozzle Diameter	Rated Pressure (MPa)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSY-H05-444J	4	56.3	10.7	11.2	11.3	0.5	0.5	90	7	11.5	23
VSY-H05-666J	6	59	11	11.9	11.8						
VSY-H07-444J	4	56.3	10.7	11.2	11.3	0.7		92	12.5	23	
VSY-H07-666J	6	59	11	11.9	11.8						
VSY-L05-444J	4	56.3	10.7	11.2	11.3	0.5		66	12	11.5	23
VSY-L05-666J	6	59	11	11.9	11.8						23
VSY-L07-444J	4	56.3	10.7	11.2	11.3	0.7			18	23	23
VSY-L07-666J	6	59	11	11.9	11.8				21		23
VSY-E05-444J	4	56.3	10.7	11.2	11.3	0.5	0.35	90	3	8	23
VSY-E05-666J	6	59	11	11.9	11.8						
VSY-E07-444J	4	56.3	10.7	11.2	11.3	0.7			9	17	
VSY-E07-666J	6	59	11	11.9	11.8						24

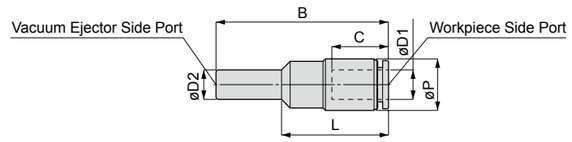
●VSY-□J-F(common exhaust, with vacuum filter)



Model No.	Bore size øD	B	F	C1	C2	Nozzle Diameter	Rated Pressure (MPa)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSY-H05-444J-F	4	60.3	34.4	11.2	11.3	0.5	0.5	90	7	11.5	24
VSY-H05-666J-F	6	63.3	34.6	11.9	11.8						25
VSY-H07-444J-F	4	60.3	34.4	11.2	11.3	0.7		92	12.5	23	24
VSY-H07-666J-F	6	63.3	34.6	11.9	11.8						25
VSY-L05-444J-F	4	60.3	34.4	11.2	11.3	0.5		66	12	11.5	24
VSY-L05-666J-F	6	63.3	34.6	11.9	11.8						25
VSY-L07-444J-F	4	60.3	34.4	11.2	11.3	0.7			18	23	24
VSY-L07-666J-F	6	63.3	34.6	11.9	11.8				21		25
VSY-E05-444J-F	4	60.3	34.4	11.2	11.3	0.5	0.35	90	3	8	24
VSY-E05-666J-F	6	63.3	34.6	11.9	11.8						25
VSY-E07-444J-F	4	60.3	34.4	11.2	11.3	0.7			9	17	25
VSY-E07-666J-F	6	63.3	34.6	11.9	11.8						26

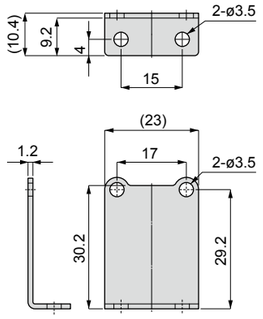
External Dimension Drawings

●VSY-F(replacement vacuum filter)



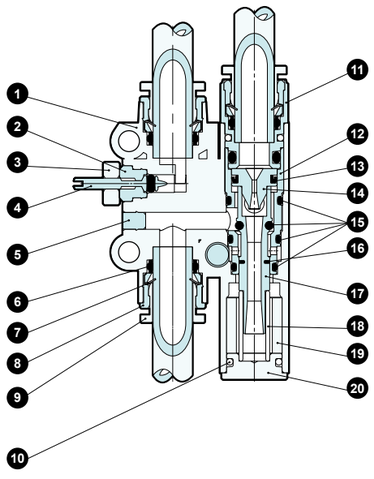
Model No.	Bore size øD1	Applicable Fitting Size øD2	B	L	C	øP	Filtration Area (cm²)	Weight (g)
VSY-F-44M	4	4	35	21.8	11.3	8	0.8	1.5
VSY-F-66M	6	6	35.4	22	11.8	10.5	1.1	2.5

●VSY-B(dedicated bracket)



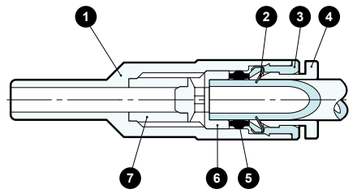
Internal Structure Diagram/Materials

●VSY



Part No.	Part Name	Material
1	Resin Body	Polybutylene terephthalate resin
2	Upper Plug	Brass, Electroless nickel plating
3	Lock Nut	Aluminum alloy
4	Breaking Needle	Stainless steel
5	Plug 2	Brass, Electroless nickel plating
6	Elastomer Sleeve	Nitrile rubber
7	Locking Finger	Stainless steel
8	Guide Ring	Brass, Electroless nickel plating
9	Release Ring	Acetal Resin
10	Spring Pin	Stainless steel
11	Cartridge	-
12	Sleeve	Brass, Electroless nickel plating
13	Y-Packing	Nitrile rubber
14	Nozzle Piston	Brass, Electroless nickel plating
15	O-ring	Nitrile rubber
16	Spool Packing	Special Nitrile Rubber
17	Diffuser Spool	Brass, Electroless nickel plating
18	Diffuser Spring	Stainless steel
19	Silencer Element	-
20	End Plug	Brass, Electroless nickel plating

●Vacuum Filter



Part No.	Part Name	Material
1	Resin Body	Polypropylene resin
2	Locking Finger	Stainless steel
3	Guide Ring	Brass, Electroless nickel plating
4	Release Ring	Acetal Resin
5	Elastomer Sleeve	Nitrile rubber
6	Element Retainer	Acetal Resin
7	Filter Element	Polyvinyl formal

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: VSY Series

Design / Selection

Warning

■Read the catalog carefully regarding the piping method of VSY vacuum ejector. Incorrect piping methods can potentially cause personal injury or equipment damage.

■Since the filter body material is PP, the resin may deteriorate due to direct sunlight or ultraviolet rays.

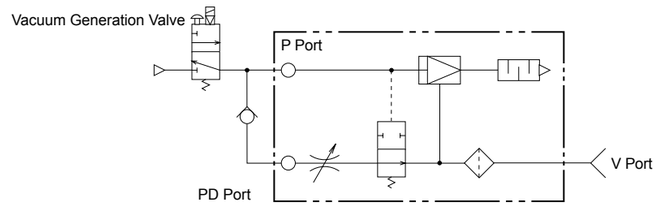
Caution

■Read the catalog carefully regarding flow rate adjustment and burst time adjustment for burst air.

■The built-in vacuum filter cannot be replaced with an element Discrete. When replacement is necessary during maintenance inspections, etc., the entire filter body must be replaced.

■When using different pressures for supply air for vacuum generation and vacuum burst, be sure to set the pressure for vacuum burst lower than that of vacuum generation. If it is higher than the vacuum generation supply air pressure, it may lead to leaks.

■When using the following piping method, burst air may enter instantaneously from the check valve and be emitted from the V port until the shut-off valve completely switches over.



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



Single Unit Ejector (Solenoid Valve Direct Mount Type)

VSH Series

RoHS

Simple vacuum ejector that converts compressed air to vacuum

Abundant vacuum characteristic variations

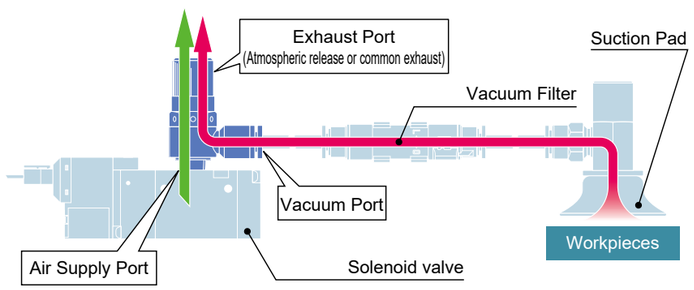
Nozzle Diameter \ Vacuum Characteristics	Suction Flow Rate (L/min (ANR))			Air Consumption (L/min (ANR))			Ultimate Vacuum Pressure (-kPa)		
	H	L	E	H	L	E	H	L	E
0.5 mm	7	12		11.5			90	66	
0.7 mm	13	26	10.5	23		17	93	66	92
1.0 mm	28	42	21	46		34	93	66	92
1.2 mm	38		27	70		47	93		92
1.5 mm	63	95	42	100		70	93	66	92
2.0 mm	104	174	82	200		150	93	66	92

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

Abundant lineup of types with different performance and shapes, compatible with various conditions

Direct mounting possible on solenoid valves, manifold blocks, etc.

Piping Example



Model No. Notation

●Discrete ejector (solenoid valve direct mounting)

VSH - H 15 - 10 8A J

Model No.
❶ Vacuum Characteristics
❷ Nozzle Diameter
❸ Vacuum Port (V)
❹ Air Supply Port (P)
❺ Exhaust Port (EX)

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

●Design compatible with rechargeable battery manufacturing process

VSH - ..... - P4□

* Please inquire for details.

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

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

VSH - ..... - FP□

❶ Vacuum Characteristics

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

Note) For items ❶ and ❷, the combinations 'E05' and 'L12' cannot be selected.

❷ Nozzle Diameter

Code	Content
05	ø0.5
07	ø0.7
10	ø1.0
12	ø1.2
15	ø1.5
20	ø2.0

Note) For items ❶ and ❷, the combinations 'E05' and 'L12' cannot be selected.

❸ Vacuum Port (V)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
8	ø8 Push-in fitting
10	ø10 Push-in fitting
12	ø12 Push-in fitting

❹ Air Supply Port (P)

Code	Content
M5	M5×0.8
6A	R1/8
8A	R1/4
10A	R3/8

❺ Exhaust Port (EX)

Code	Content	
S	Atmospheric Release with Silencer	
J	Centralized Exhaust	

Maintenance Part Model No. * For details on the maintenance parts, refer to P. 127.

●Silencer Kit

VSH - 6A - SK

Model No.
❶ Air Supply Port (P)

❶ Air Supply Port (P)

Code	Content
M5	M5×0.8
6A	R1/8
8A	R1/4

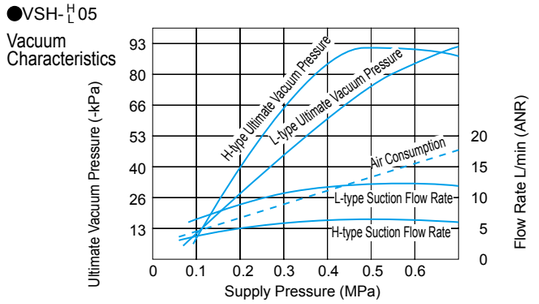
Model No./Port Combination Table

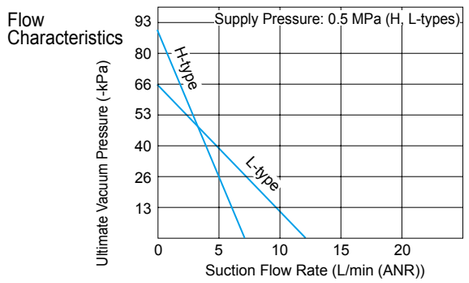
Vacuum Port (V)	4	6	8		10		12	
Air Supply Port (P)	M5	6A	6A	8A	8A	10A	8A	10A
Model No.								
VSH-H05	●	●						
VSH-H07		●						
VSH-H10		●	●					
VSH-H12		●	●					
VSH-H15				●	●			
VSH-H20					●	●	●	●
VSH-L05	●	●						
VSH-L07		●	●					
VSH-L10		●	●					
VSH-L15				●	●		●	
VSH-L20					●	●	●	●
VSH-E07		●						
VSH-E10		●	●					
VSH-E12		●	●					
VSH-E15				●	●			
VSH-E20					●	●	●	●

Vacuum Characteristics, Flow Characteristics

Supply Pressure - Ultimate Vacuum Pressure, Suction Flow Rate, Air Consumption

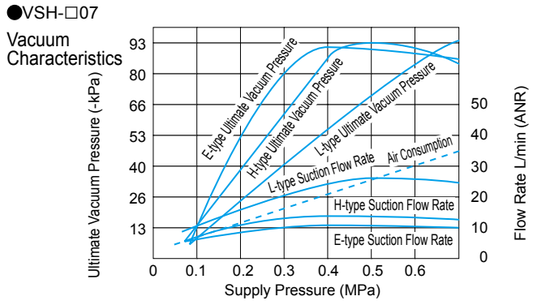
●VSH-H05

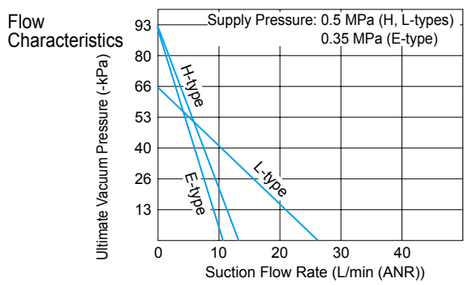




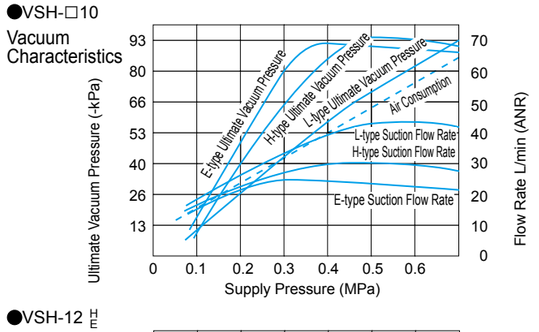
●VSH-L05

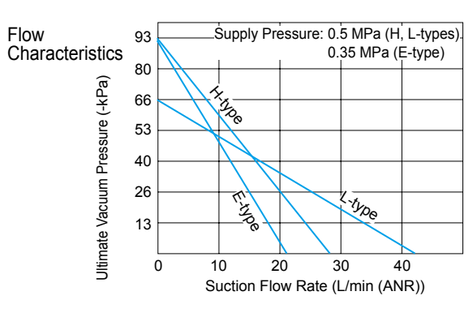
●VSH-H07



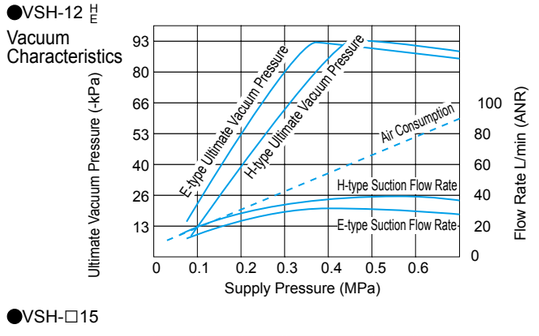


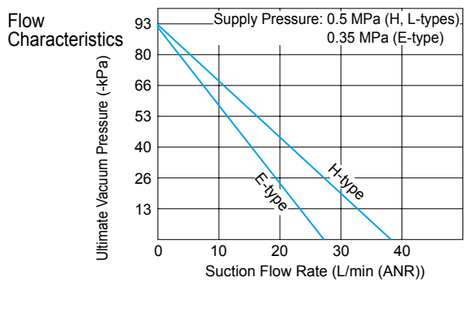
●VSH-L07



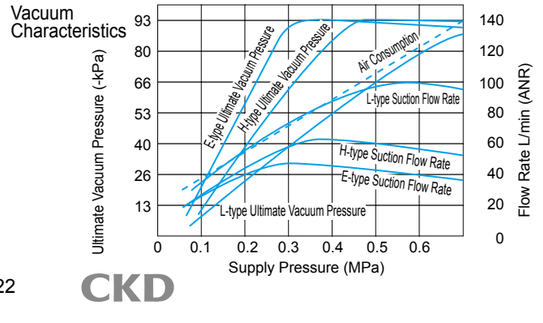


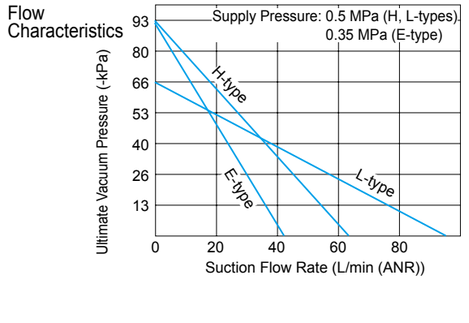
●VSH-M07





●VSH-M10



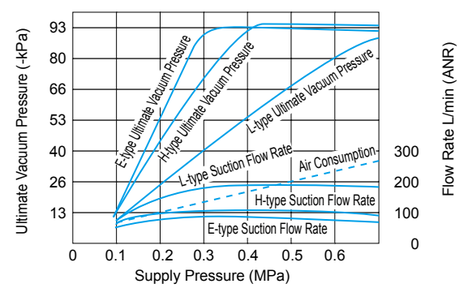


Vacuum Characteristics, Flow Characteristics

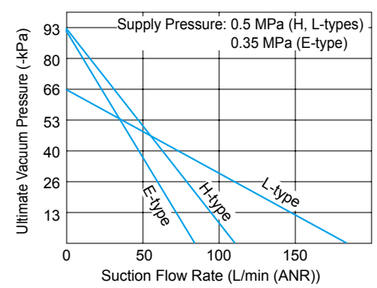
Supply Pressure - Ultimate Vacuum Pressure, Suction Flow Rate, Air Consumption

●VSH-□20

Vacuum Characteristics



Flow Characteristics

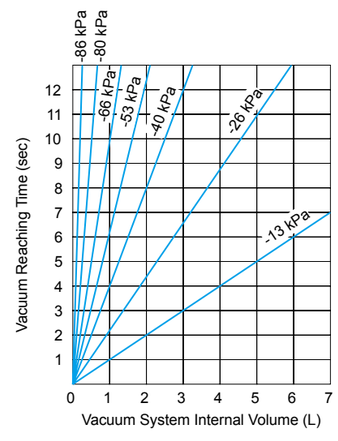


Vacuum Characteristics

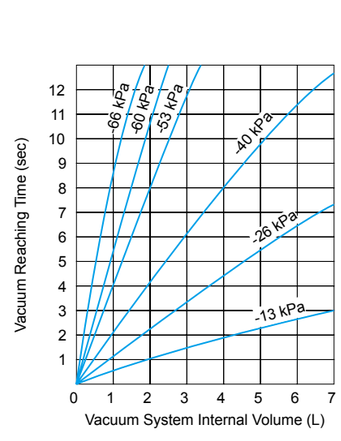
(Reference) Vacuum achievement time (supply pressure H-type: 0.5 MPa, L-type: 0.5 MPa, E-type: 0.3 to 0.5 MPa)

* Values vary depending on the vacuum system piping configuration, etc., so please use these as a guideline.

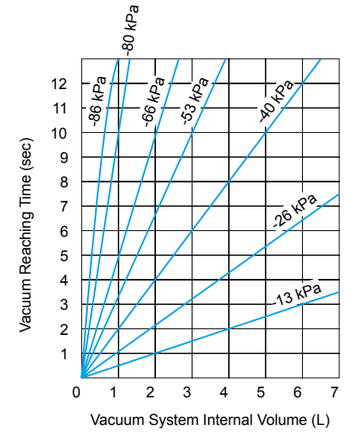
●VSH-H05



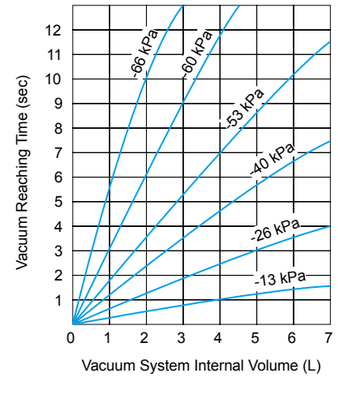
●VSH-L05



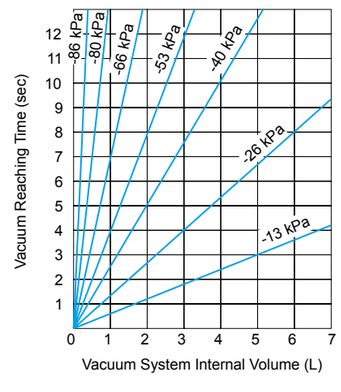
●VSH-H07



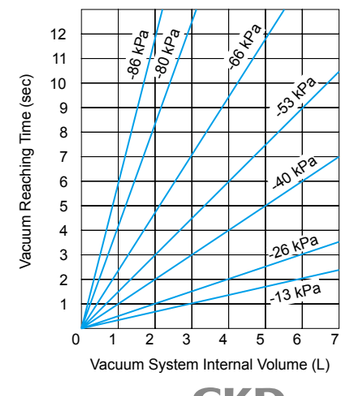
●VSH-L07



●VSH-E07



●VSH-H10

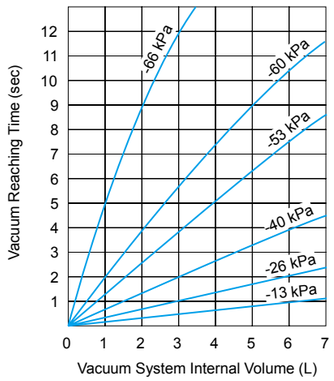


Vacuum Characteristics

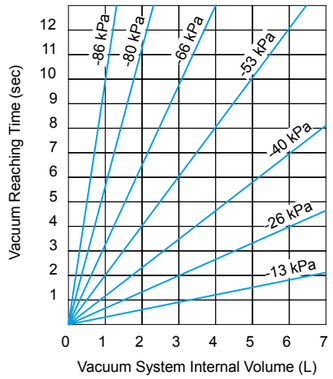
(Reference) Vacuum achievement time (supply pressure H-type: 0.5 MPa, L-type: 0.5 MPa, E-type: 0.3 to 0.5 MPa)

*Values vary depending on the vacuum system piping configuration, etc., so please use these as a guideline.

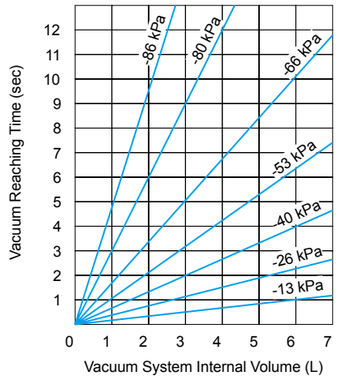
●VSH-L10



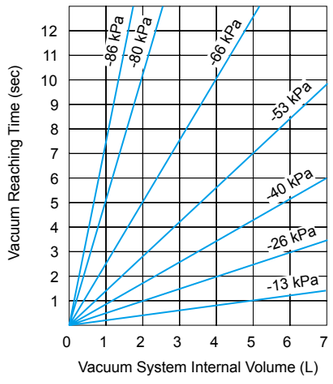
●VSH-E10



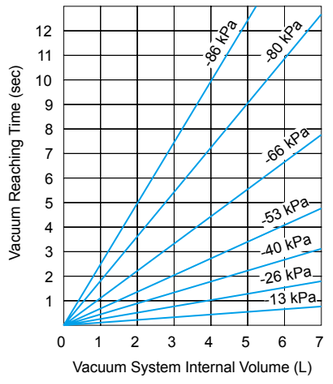
●VSH-H12



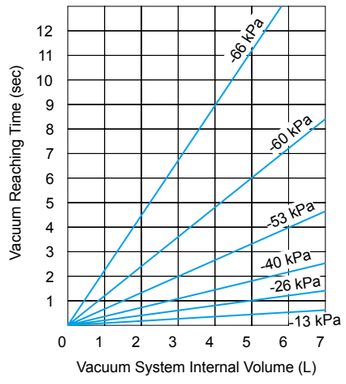
●VSH-E12



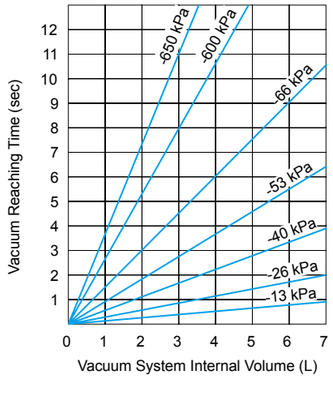
●VSH-H15



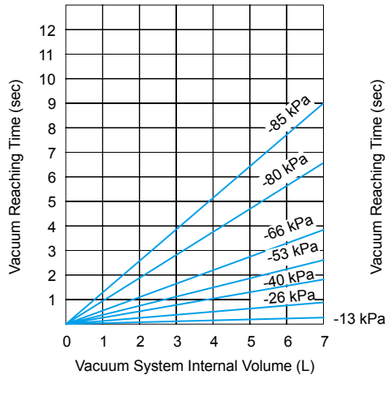
●VSH-L15



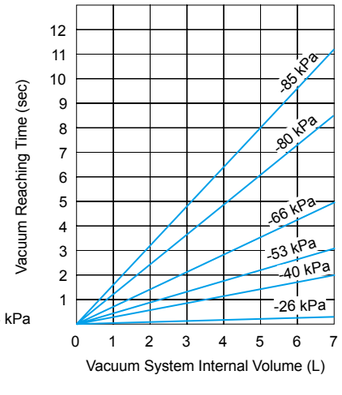
●VSH-E15



●VSH-H20

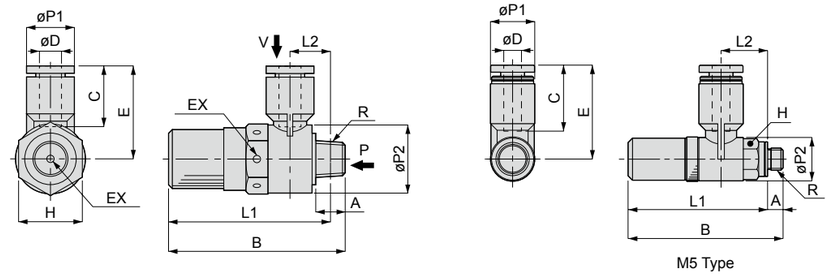


●VSH-E20



External Dimension Drawings

●VSH-□-□S (Atmospheric release with silencer)



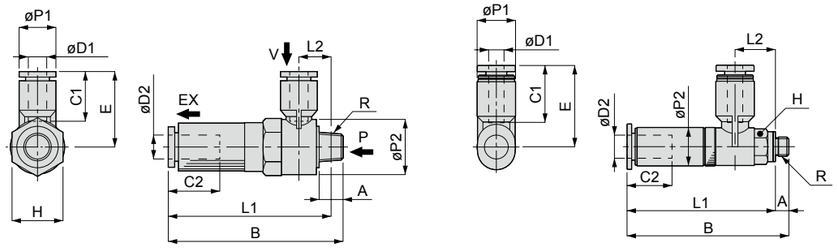
Unit : mm

Model No.	Bore size øD	R	A	B	L1	L2	øP1	øP2	C	E	Width across flats H	Nozzle Diameter (mm)	Operating Pressure (MPa)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSH-H05-4M5S	4	M5×0.8	3	34.5	31.5	10.5	10	9.8	14.9	21.2	8	0.5	0.5	90	7	11.5	13
VSH-H05-66AS	6	R1/8	8	48	44	11.4	12.4	18.4	17	25.5	17	0.7		93	13	23	37
VSH-H07-66AS												1			28	46	
VSH-H10-66AS												1.2			38	70	
VSH-H12-66AS												1			28	46	
VSH-H10-86AS	8					12.4	14.5		18.1	28.4		1.2			38	70	38
VSH-H12-86AS												1.5			63	100	77
VSH-H15-88AS		R1/4	11	71.5	65.5	13.5	17.6	22	20.2	28.9	22						80
VSH-H15-108AS	10					14.8				31.2							
VSH-H20-108AS				99.6	93.5	16.8	21	28	23.4	36.4	24	2.0			104	200	116
VSH-H20-1010AS		R3/8	12	100.6	94.2	17.5											126
VSH-H20-128AS	12	R1/4	11	99.6	93.5	16.8											116
VSH-H20-1210AS		R3/8	12	100.6	94.2	17.5											126
VSH-L05-4M5S	4	M5×0.8	3	34.5	31.5	10.5	10	9.8	14.9	21.2	8	0.5	0.5	66	12	11.5	13
VSH-L05-66AS	6	R1/8	8	48	44	11.4	12.4	18.4	17	25.5	17	0.7			26	23	37
VSH-L07-66AS												1			42	46	36
VSH-L10-66AS												0.7			26	23	39
VSH-L07-86AS	8					12.4	14.5		18.1	28.4		1			42	46	38
VSH-L10-86AS												1.5			95	100	75
VSH-L15-88AS		R1/4	11	71.5	65.5	13.5	17.6	22	20.2	28.9	22						78
VSH-L15-108AS	10					14.8				31.2							
VSH-L15-128AS	12					16.5	21		23.4	36.9							82
VSH-L20-108AS	10			99.6	93.5	16.8											116
VSH-L20-1010AS		R3/8	12	100.6	94.2	17.5	21	28	23.4	36.4	24	2.0			174	200	126
VSH-L20-128AS	12	R1/4	11	99.6	93.5	16.8											116
VSH-L20-1210AS		R3/8	12	100.6	94.2	17.5											126
VSH-E07-66AS	6	R1/8	8	48	44	11.4	12.4	18.4	17	25.5	17	0.7	0.35	92	10.5	17	37
VSH-E10-66AS												1			21	34	
VSH-E12-66AS												1.2			27	47	
VSH-E10-86AS	8					12.4	14.5		18.1	28.4		1			21	34	39
VSH-E12-86AS												1.2			27	47	38
VSH-E15-88AS		R1/4	11	71.5	65.5	13.5	17.6	22	20.2	28.9	22	1.5			42	70	78
VSH-E15-108AS	10					14.8				31.2							80
VSH-E20-108AS				99.6	93.5	16.8											116
VSH-E20-1010AS		R3/8	12	100.6	94.2	17.5	21	28	23.4	36.4	24	2.0			82	150	126
VSH-E20-128AS	12	R1/4	11	99.6	93.5	16.8											116
VSH-E20-1210AS		R3/8	12	100.6	94.2	17.5											126

Note) L1 and L2 dimensions for tapered thread types are reference dimensions after screw tightening.

External Dimension Drawings

●VSH-□-□J (common exhaust)



M5 Type

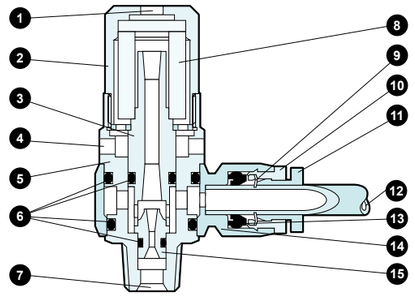
Unit: mm

Model No.	Bore size øD1	Bore size øD2	R	A	B	L1	L2	øP1	øP2	C1	C2	E	Width across flats H	Nozzle Diameter (mm)	Operating Pressure (MPa)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSH-H05-4M5J	4	6	M5×0.8	3	41.8	38.8	10.5	10	10	14.9	11.9	21.2	8	0.5	0.5	90	7	11.5	18
VSH-H05-66AJ	6	8	R1/8	8	58.4	54.4	11.4	12.4	18.4	17	18.2	25.5	17	0.7		93	13	23	45
VSH-H07-66AJ														0.7			13	23	46
VSH-H10-66AJ														1			28	46	45
VSH-H12-66AJ														1.2			38	70	44
VSH-H10-86AJ	8						12.4	14.5		18.1		28.4		1			28	46	46
VSH-H12-86AJ														1.2			38	70	46
VSH-H15-88AJ		12			76.9	70.9	13.5		22		23.3	28.9	22	1.5			63	100	92
VSH-H15-108AJ	10		R1/4	11			14.8	17.6		20.2		31.2							95
VSH-H20-108AJ					89.4	83.3	16.8	21	28	23.4		36.4	24	2.0			104	200	128
VSH-H20-1010AJ			R3/8	12	90.4	84	17.5												138
VSH-H20-128AJ	12		R1/4	11	89.4	83.3	16.8												128
VSH-H20-1210AJ			R3/8	12	90.4	84	17.5												138
VSH-L05-4M5J	4	6	M5×0.8	3	41.8	38.8	10.5	10	10	14.9	11.9	21.2	8	0.5	0.5	66	12	11.5	18
VSH-L05-66AJ	6	8	R1/8	8	58.4	54.4	11.4	12.4	18.4	17	18.2	25.5	17	0.7			26	23	45
VSH-L07-66AJ														1			42	46	44
VSH-L10-66AJ														0.7			26	23	46
VSH-L07-86AJ	8						12.4	14.5		18.1		28.4		1			42	46	45
VSH-L10-86AJ																			
VSH-L15-88AJ		12			76.9	70.9	13.5		22		23.3	28.9	22	1.5			95	100	90
VSH-L15-108AJ	10		R1/4	11			14.8	17.6	22	20.2		31.2							93
VSH-L15-128AJ	12						16.5	21	28	23.4		36.9							97
VSH-L20-108AJ	10				89.4	83.3	16.8					36.4	24	2.0			174	200	128
VSH-L20-1010AJ			R3/8	12	90.4	84	17.5												138
VSH-L20-128AJ	12		R1/4	11	89.4	83.3	16.8												128
VSH-L20-1210AJ			R3/8	12	90.4	84	17.5												138
VSH-E07-66AJ	6	8	R1/8	8	58.4	54.4	11.4	12.4	18.4	17	18.2	25.5	17	0.7	0.35	92	10.5	17	45
VSH-E10-66AJ														1			21	34	
VSH-E12-66AJ														1.2			27	47	
VSH-E10-86AJ	8						12.4	14.5		18.1		28.4		1			21	34	47
VSH-E12-86AJ														1.2			27	47	46
VSH-E15-88AJ		12			76.9	70.9	13.5		22		23.3	28.9	22	1.5			42	70	92
VSH-E15-108AJ	10		R1/4	11			14.8	17.6		20.2		31.2							96
VSH-E20-108AJ					89.4	83.3	16.8	21	28	23.4		36.4	24	2.0			82	150	128
VSH-E20-1010AJ			R3/8	12	90.4	84	17.5												138
VSH-E20-128AJ	12		R1/4	11	89.4	83.3	16.8												128
VSH-E20-1210AJ			R3/8	12	90.4	84	17.5												138

Note) L1 and L2 dimensions for tapered thread types are reference dimensions after screw tightening.

Internal Structure Diagram/Materials

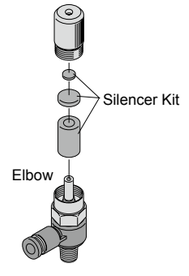
●VSH Series



Part No.	Part Name	Material	Remarks
1	Exhaust Port (EX)		
2	Cap	Aluminum alloy	
3	Diffuser	Brass	Electroless nickel plating
4	Exhaust Port (EX)		
5	Metal Body	Brass	Electroless nickel plating
6	O-ring	Nitrile rubber	
7	Air Supply Port (P)		
8	Silencer Element	Polyvinyl formal	
9	Locking Finger	Stainless steel	
10	Guide Ring	Brass	Electroless nickel plating
11	Release Ring	Acetal Resin	
12	Vacuum Port (V)		
13	Elastomer Sleeve	Nitrile rubber	
14	Resin Body	Polybutylene terephthalate resin	
15	Nozzle	Brass	Electroless nickel plating

Maintenance Parts

●Silencer Kit



Silencer Kit Model No.	Vacuum Ejector Model No.
VSH-M5-SK	VSH-□□-□M5S
VSH-6A-SK	VSH-□□-□6AS
VSH-8A-SK	VSH-□□-□8AS

Note) VSH-□20-□□□ uses VSC-20-SK (Silencer Kit for VSC-20).



Single Unit Ejector (Tubular Type)

VSU Series

RoHS

Simple vacuum ejector that converts compressed air to vacuum

Vacuum Characteristic Variations

Nozzle Diameter \ Vacuum Characteristics	Suction Flow Rate (L/min (ANR))			Air Consumption (L/min (ANR))			Ultimate Vacuum Pressure (-kPa)		
	H	L	E	H	L	E	H	L	E
0.3 mm	2	3	1	4.5		3.5	90	66	88
0.4 mm	4	7	2	8		6.5	90	66	90
0.5 mm	7	12	3	11.5		8	90	66	90
0.7 mm	12.5	22	10	23		17	92	66	90

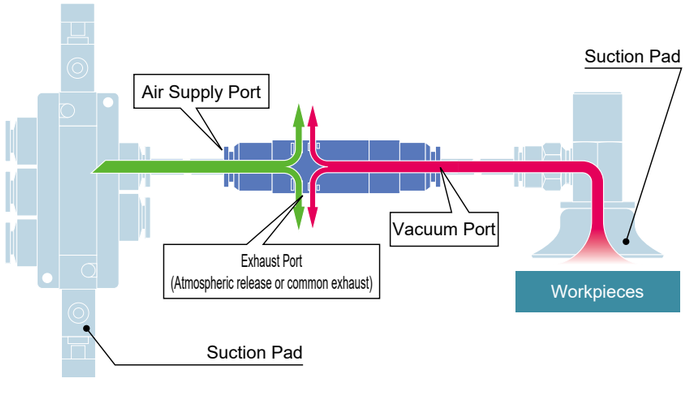
* Rated supply pressure; H, L⇒0.5 MPa, E⇒0.35 MPa

Conversion from compressed air to vacuum possible in a single line

Small diameter nozzles available for low consumption flow rate needs: ø0.3, ø0.4 mm

Easy mounting/removal with dedicated fixing bracket (sold separately)

Piping Example



Model No. Notation

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

• Structure usable in rechargeable battery manufacturing processes

VSU - ..... - P4□

* Please inquire for details.

Model No. Notation

●Discrete ejector (tubular)

VSU - H 07 - 6 6 S

- VSU: Model No.
- H: ❶ Vacuum Characteristics
- 07: ❷ Nozzle Diameter
- 6: ❸ Vacuum Port (V)
- 6: ❹ Air Supply Port (P)
- S: ❺ Exhaust Port (EX)
- (blank): ❻ Shape

❶ Vacuum Characteristics

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

❷ Nozzle Diameter

Code	Content
03	ø0.3
04	ø0.4
05	ø0.5
07	ø0.7

❸ Vacuum Port (V)

Code	Content
2	ø1.8 Push-in fitting
4	ø4 Push-in fitting
6	ø6 Push-in fitting
M3	M3×0.5
M5	M5×0.8
6A	R1/8

Note1) "2" and "M3" in item ❸ can only be selected when the shape in item ❻ is "M".
Note2) "6" and "6A" in item ❸ can only be selected when the shape in item ❻ is "Blank".
Note3) When the combination for items ❶❷ is "L05", "2" in item ❸ cannot be selected.

❹ Air Supply Port (P)

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

Note) For shape "M" in item ❻, only "4" can be selected for item ❹.

❺ Exhaust Port (EX)

Code	Content	
Blank		
S	Atmospheric Release	
J	Centralized Exhaust	

Note) For shape "M" in item ❻, only "Blank" can be selected for item ❺.

❻ Shape

Code	Content
Blank	Standard
M	Compact

Note1) For "03" and "04" in item ❷, only shape "M" can be selected for item ❻.
Note2) For "07" in item ❷, only shape "Blank" can be selected for item ❻.
Note3) When the combination for ❶ and ❷ is 'E05', only shape 'M' can be selected for item ❻.

Maintenance Part Model No. * For details on the maintenance parts, refer to P. 137.

●Bracket for VSU

VSU - 07 - B

- VSU: Model No.
- 07: ❶ Nozzle Diameter

❶ Nozzle Diameter

Code	Content
04	ø0.3, ø0.4 common (for VSU-□M)
05	ø0.5
07	ø0.7

●Filter element for VSU

VSU - E

- VSU: Model No.

●VSU - □Filter element for M (compact)

VSU - EM

- VSU: Model No.

●VSU - □Filter spacer for M (compact)

VSU - SM

- VSU: Model No.

Common Specifications

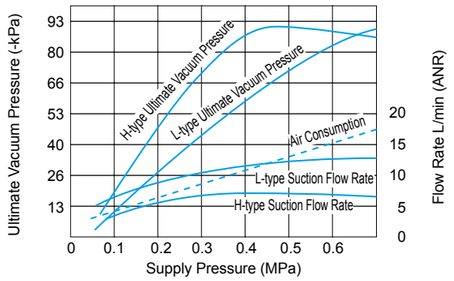
Item	VSU
Operating Fluid	Air
Operating Pressure MPa	0.15 to 0.7
Ambient/Fluid Temperatures ℃	0 to 60

Vacuum Characteristics, Flow Characteristics

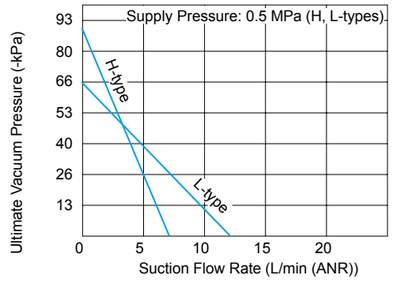
Supply Pressure - Ultimate Vacuum Pressure, Suction Flow Rate, Air Consumption

●VSU-$^{H}_{L}$05

Vacuum Characteristics

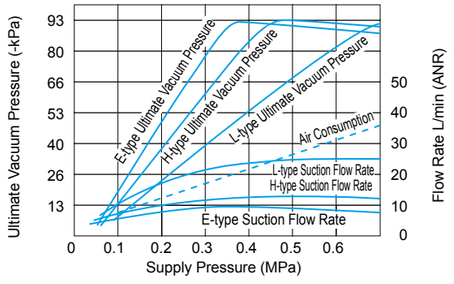


Flow Characteristics

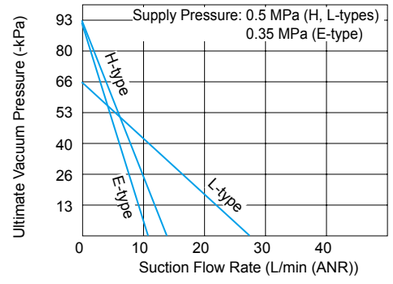


●VSU-□07

Vacuum Characteristics



Flow Characteristics

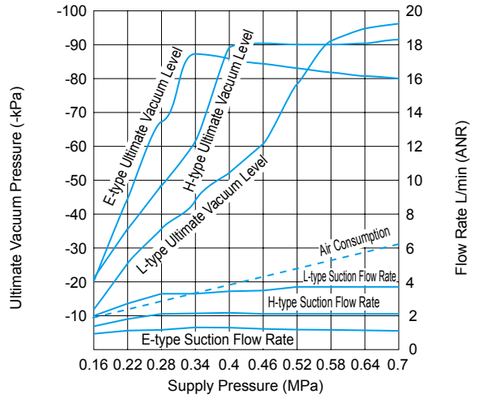


Vacuum Characteristics, Flow Characteristics

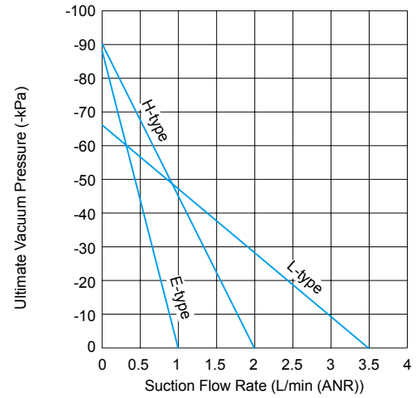
Supply Pressure - Ultimate Vacuum Pressure, Suction Flow Rate, Air Consumption

●VSU-□03□M

Vacuum Characteristics

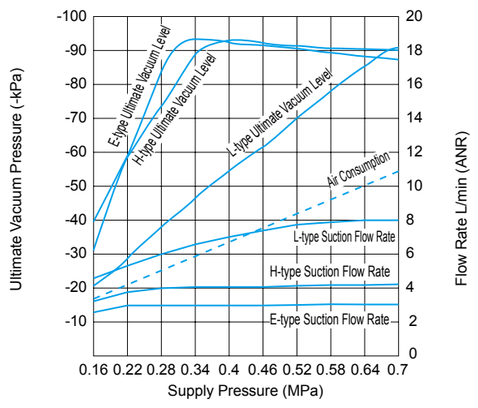


Flow Characteristics

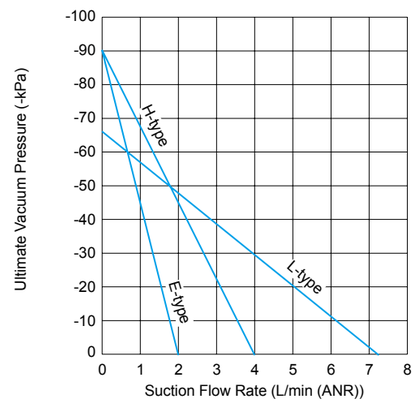


●VSU-□04□M

Vacuum Characteristics

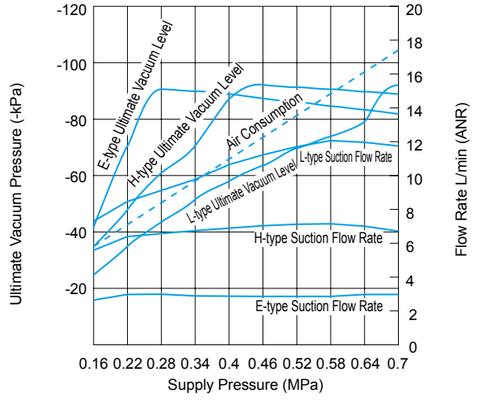


Flow Characteristics

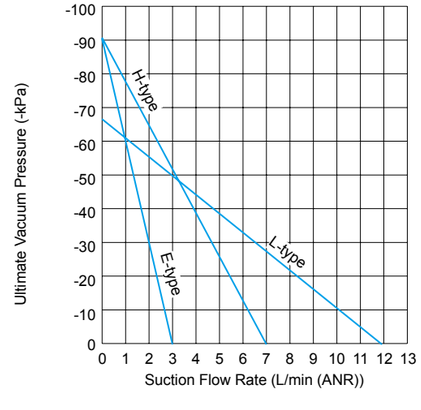


●VSU-□05□M

Vacuum Characteristics



Flow Characteristics

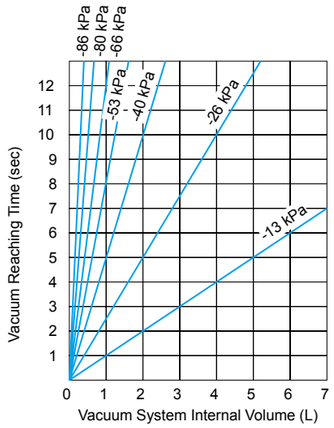


Vacuum Characteristics

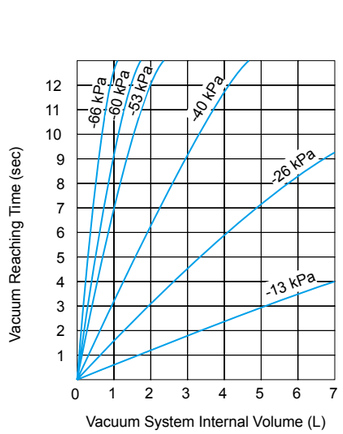
(Reference) Vacuum achievement time (supply pressure H-type: 0.5 MPa, L-type: 0.5 MPa, E-type: 0.3 to 0.5 MPa)

*Values vary depending on the vacuum system piping configuration, etc., so please use these as a guideline.

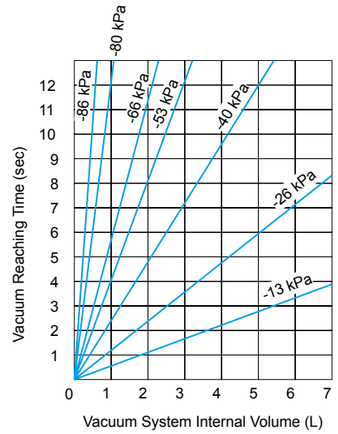
●VSU-H05



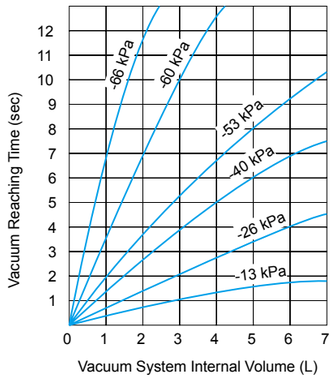
●VSU-L05



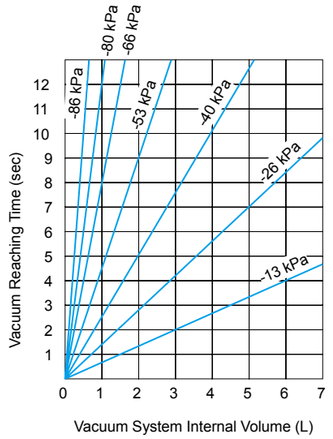
●VSU-H07



●VSU-L07



●VSU-E07



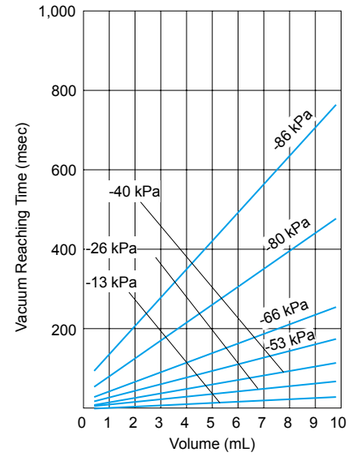
1. The supply pressure in the characteristics above is during vacuum generation.
2. Abnormal noise (gurgling sound) may occur at a supply pressure slightly below the peak ultimate vacuum pressure in the characteristics above. In this state with abnormal noise, characteristics are unstable and noise level 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.)
3. 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 $0.5^2 \times \pi = 0.785\ mm^2 \times 3 = 2.35\ mm^2$. Therefore, select piping and equipment to secure an effective cross-sectional area of 2.3 mm^2 or more.)

Vacuum Characteristics

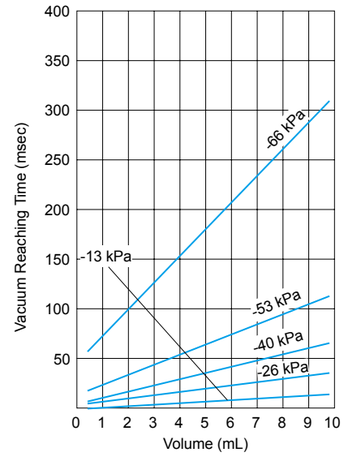
(Reference) Vacuum achievement time (supply pressure H-type: 0.5 MPa, L-type: 0.5 MPa, E-type: 0.3 to 0.5 MPa)

* Values vary depending on the vacuum system piping configuration, etc., so please use these as a guideline.

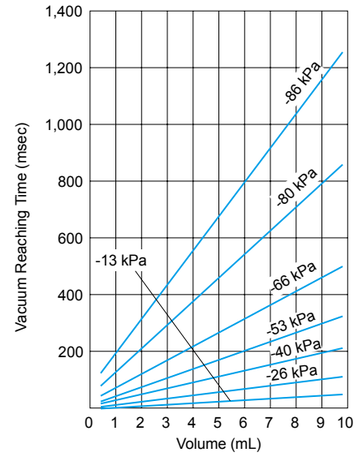
●VSU-H03□M



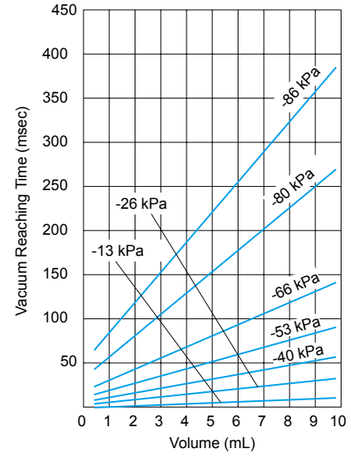
●VSU-L03□M



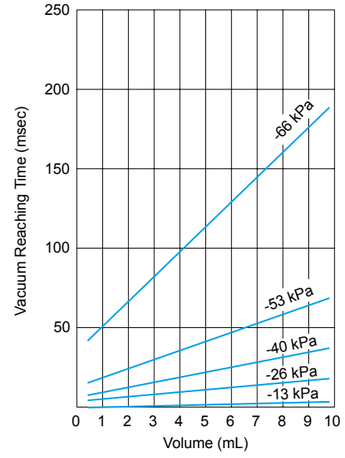
●VSU-E03□M



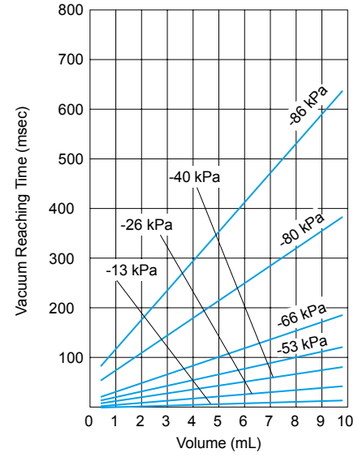
●VSU-H04□M



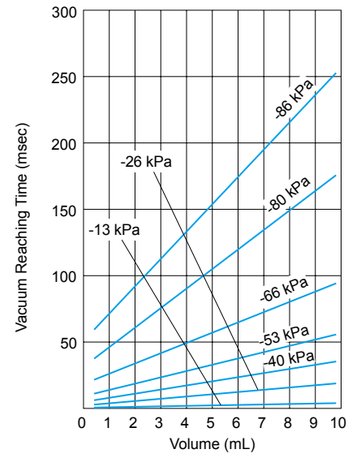
●VSU-L04□M



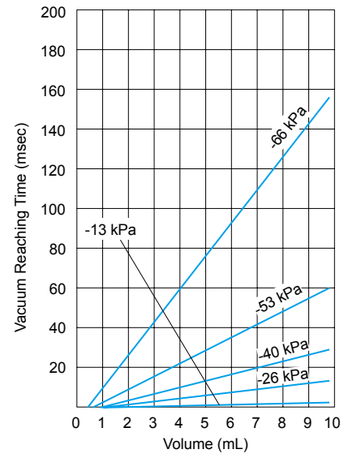
●VSU-E04□M



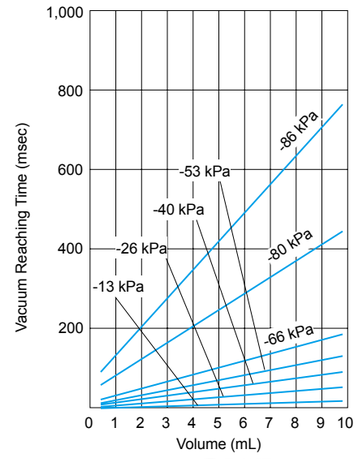
●VSU-H05□M



●VSU-L05□M



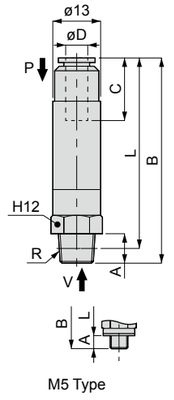
●VSU-E05□M



External Dimension Drawings

●VSU-□-□S (atmospheric release)

Unit: mm



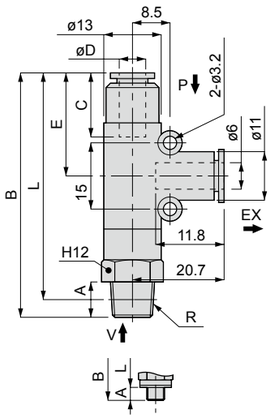
M5 Type

Model No.	Bore size øD	R	A	B	L	C	Nozzle Diameter (mm)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSU-H05-M54S	4	M5×0.8	3	50.3	47.3	10.9	0.5	90	7	11.5	18
VSU-H05-M56S	6			51.3	48.3	11.7					17
VSU-H05-6A4S	4	R1/8	8	54.3	50.3	10.9					20
VSU-H05-6A6S	6			55.3	51.3	11.7					
VSU-H07-M54S	4	M5×0.8	3	57.1	54.1	10.9	0.7	92	12.5	23	19
VSU-H07-M56S	6			57.8	54.8	11.7					18
VSU-H07-6A4S	4	R1/8	8	61.1	57.1	10.9					21
VSU-H07-6A6S	6			61.8	57.8	11.7					
VSU-L05-M54S	4	M5×0.8	3	50.3	47.3	10.9	0.5	66	12	11.5	18
VSU-L05-M56S	6			51.3	48.3	11.7					17
VSU-L05-6A4S	4	R1/8	8	54.3	50.3	10.9					20
VSU-L05-6A6S	6			55.3	51.3	11.7					
VSU-L07-M54S	4	M5×0.8	3	57.1	54.1	10.9	0.7		20	23	19
VSU-L07-M56S	6			57.8	54.8	11.7					18
VSU-L07-6A4S	4	R1/8	8	61.1	57.1	10.9			22		21
VSU-L07-6A6S	6			61.8	57.8	11.7					
VSU-E07-M54S	4	M5×0.8	3	57.1	54.1	10.9	0.7	90	10	17	19
VSU-E07-M56S	6			57.8	54.8	11.7					17
VSU-E07-6A4S	4	R1/8	8	61.1	57.1	10.9					22
VSU-E07-6A6S	6			61.8	57.8	11.7					21

Note1) The L dimension for tapered thread types is a reference dimension after screw tightening.
Note2) For M5 threads, the width across flats section is knurled. Also, H12 is for 6A (R1/8) threads.

●VSU-□-□J (common exhaust)

Unit: mm



M5 Type

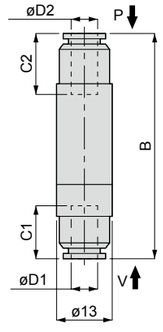
Model No.	Bore size øD	R	A	B	L	C	E	Nozzle Diameter (mm)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSU-H05-M54J	4	M5×0.8	3	50.3	47.3	11.2	22.3	0.5	90	7	11.5	20
VSU-H05-M56J	6			51.3	48.3	11.9	23.3					23
VSU-H05-6A4J	4	R1/8	8	54.3	50.3	11.2	22.3					22
VSU-H05-6A6J	6			55.3	51.3	11.9	23.3					21
VSU-H07-M54J	4	M5×0.8	3	57.1	54.1	11.2	29.1	0.7	92	12.5	23	23
VSU-H07-M56J	6			57.8	54.8	11.9	29.8					22
VSU-H07-6A4J	4	R1/8	8	61.1	57.1	11.2	29.1					24
VSU-H07-6A6J	6			61.8	57.8	11.9	29.8					23
VSU-L05-M54J	4	M5×0.8	3	50.3	47.3	11.2	22.3	0.5	66	12	11.5	20
VSU-L05-M56J	6			51.3	48.3	11.9	23.3					19
VSU-L05-6A4J	4	R1/8	8	54.3	50.3	11.2	22.3					22
VSU-L05-6A6J	6			55.3	51.3	11.9	23.3					21
VSU-L07-M54J	4	M5×0.8	3	57.1	54.1	11.2	29.1	0.7		20	23	20
VSU-L07-M56J	6			57.8	54.8	11.9	29.8					19
VSU-L07-6A4J	4	R1/8	8	61.1	57.1	11.2	29.1			22		23
VSU-L07-6A6J	6			61.8	57.8	11.9	29.8					22
VSU-E07-M54J	4	M5×0.8	3	57.1	54.1	11.2	29.1	0.7	90	10	17	22
VSU-E07-M56J	6			57.8	54.8	11.9	29.8					21
VSU-E07-6A4J	4	R1/8	8	61.1	57.1	11.2	29.1					24
VSU-E07-6A6J	6			61.8	57.8	11.9	29.8					23

Note1) The L dimension for tapered thread types is a reference dimension after screw tightening.
Note2) For M5 threads, the width across flats section is knurled. Also, H12 is for 6A (R1/8) threads.

External Dimension Drawings

●VSU-□-□S (union, atmospheric release)

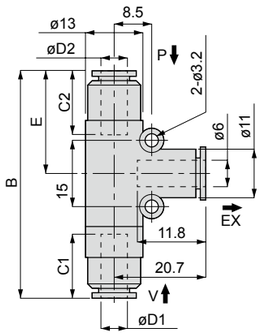
Unit : mm



Model No.	Bore size øD1	Bore size øD2	B	C1	C2	Nozzle Diameter (mm)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSU-H05-44S	4	4	49.9	11.2	11.2	0.5	90	7	11.5	19
VSU-H05-46S		6	50.9		11.9					
VSU-H05-64S	6	4	50.6	11.9	11.2					18
VSU-H05-66S		6	51.6		11.9					
VSU-H07-44S	4	4	56.7	11.2	11.2	0.7	92	12.5	23	20
VSU-H07-46S		6	57.4		11.9					
VSU-H07-64S	6	4		11.9	11.2					19
VSU-H07-66S		6	58.1		11.9					
VSU-L05-44S	4	4	49.9	11.2	11.2	0.5	66	12	11.5	19
VSU-L05-46S		6	50.9		11.9					
VSU-L05-64S	6	4	50.6	11.9	11.2					18
VSU-L05-66S		6	51.6		11.9					
VSU-L07-44S	4	4	56.7	11.2	11.2	0.7		20	23	20
VSU-L07-46S		6	57.4		11.9					19
VSU-L07-64S	6	4		11.9	11.2			22		18
VSU-L07-66S		6	58.1		11.9					
VSU-E07-44S	4	4	56.7	11.2	11.2	0.7	90	10	17	21
VSU-E07-46S		6	57.4		11.9					20
VSU-E07-64S	6	4		11.9	11.2					19
VSU-E07-66S		6	58.1		11.9					

●VSU-□-□J (union, common exhaust)

Unit : mm

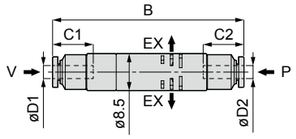


Model No.	Bore size øD1	Bore size øD2	B	C1	C2	E	Nozzle Diameter (mm)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSU-H05-44J	4	4	49.9	11.2	11.2	22.3	0.5	90	7	11.5	21
VSU-H05-46J		6	50.9		11.9	23.3					20
VSU-H05-64J	6	4		11.9	11.2	22.3					
VSU-H05-66J		6	51.6		11.9	23.3					
VSU-H07-44J	4	4	56.7	11.2	11.2	29.1	0.7	92	12.5	23	23
VSU-H07-46J		6	57.4		11.9	29.8					22
VSU-H07-64J	6	4		11.9	11.2	29.1					
VSU-H07-66J		6	58.1		11.9	29.8					21
VSU-L05-44J	4	4	49.9	11.2	11.2	22.3	0.5	66	12	11.5	21
VSU-L05-46J		6	50.9		11.9	23.3					
VSU-L05-64J	6	4	50.6	11.9	11.2	22.3					20
VSU-L05-66J		6	51.6		11.9	23.3					
VSU-L07-44J	4	4	56.7	11.2	11.2	29.1	0.7		20	23	22
VSU-L07-46J		6	57.4		11.9	29.8					
VSU-L07-64J	6	4		11.9	11.2	29.1			22		
VSU-L07-66J		6	58.1		11.9	29.8					21
VSU-E07-44J	4	4	56.7	11.2	11.2	29.1	0.7	90	10	17	22
VSU-E07-46J		6	57.4		11.9	29.8					
VSU-E07-64J	6	4		11.9	11.2	29.1					
VSU-E07-66J		6	58.1		11.9	29.8					21

External Dimension Drawings

●VSU-□-□M (compact, union, atmospheric release)

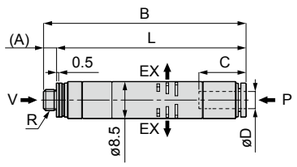
Unit: mm



Model No.	Bore size øD1	Bore size øD2	B	C1	C2	Nozzle Diameter (mm)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSU-H03-24M	2	4	45	8.4	11.2	0.3	90	2	4.5	6.5
VSU-H03-44M	4		47.8	11.2						6.8
VSU-H04-24M	2		45	8.4				4	8	6.5
VSU-H04-44M	4		47.8	11.2						6.8
VSU-H05-24M	2		45	8.4				7	11.5	6.5
VSU-H05-44M	4		47.8	11.2						6.8
VSU-L03-24M	2	4	45	8.4	11.2	0.4	66	3	4.5	6.5
VSU-L03-44M	4		47.8	11.2						6.8
VSU-L04-24M	2		45	8.4				7	8	6.5
VSU-L04-44M	4		47.8	11.2						6.8
VSU-L05-44M	4		47.8	11.2				12	11.5	6.8
VSU-E03-24M	2	5	45	8.4	11.2	0.5	88	1	3.5	6.5
VSU-E03-44M	4		47.8	11.2						6.8
VSU-E04-24M	2		45	8.4			90	2	6.5	6.5
VSU-E04-44M	4		47.8	11.2						6.8
VSU-E05-24M	2		45	8.4				3	8	6.5
VSU-E05-44M	4		47.8	11.2						6.8

●VSU-□-□M (compact, atmospheric release)

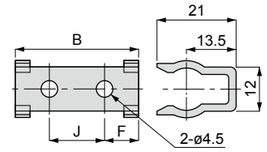
Unit: mm



Model No.	Bore size øD	M	A	C	L	Nozzle Diameter (mm)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSU-H03-M34M	4	M3×0.5	2.5	11.2	44.1	0.3	90	2	4.5	6.5
VSU-H03-M54M		M5×0.8	3							6.8
VSU-H04-M34M		M3×0.5	2.5					4	8	6.5
VSU-H04-M54M		M5×0.8	3							6.8
VSU-H05-M34M		M3×0.5	2.5					7	11.5	6.5
VSU-H05-M54M		M5×0.8	3							6.8
VSU-L03-M34M	4	M3×0.5	2.5	11.2	44.1	0.4	66	3	4.5	6.5
VSU-L03-M54M		M5×0.8	3							6.8
VSU-L04-M34M		M3×0.5	2.5					7	8	6.5
VSU-L04-M54M		M5×0.8	3							6.8
VSU-L05-M34M		M3×0.5	2.5					12	11.5	6.5
VSU-L05-M54M		M5×0.8	3							6.8
VSU-E03-M34M	4	M3×0.5	2.5	11.2	44.1	0.5	88	1	3.5	6.5
VSU-E03-M54M		M5×0.8	3							6.8
VSU-E04-M34M		M3×0.5	2.5				90	2	6.5	6.5
VSU-E04-M54M		M5×0.8	3							6.8
VSU-E05-M34M		M3×0.5	2.5					3	8	6.5
VSU-E05-M54M		M5×0.8	3							6.8

External Dimension Drawings

●Bracket for VSU



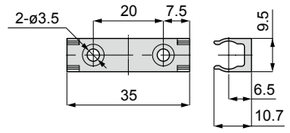
Unit: mm

Model No.	B	F	J	Weight (g)
VSU-05-B	33.2	9	15	2
VSU-07-B	39.2	10	20	2

Note) VSU-05-B is for 0.5 mm nozzle dia. / VSU-07-B is for 0.7 mm nozzle dia.

●VSU-□M (compact) bracket

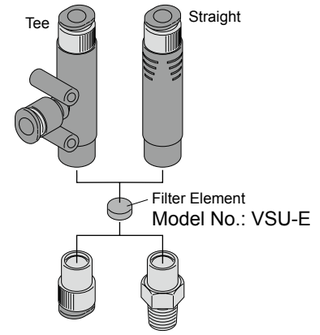
Model No.: VSU-04-B



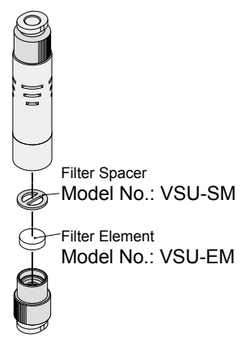
Weight: 1.1 g

Maintenance Parts

●VSU (Standard)



●VSU-□M (compact)



To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, refer to Intro 15 for details.

Individual Precautions: Single Unit Ejector (Tubular Type) VSU Series

Design / Selection

Warning

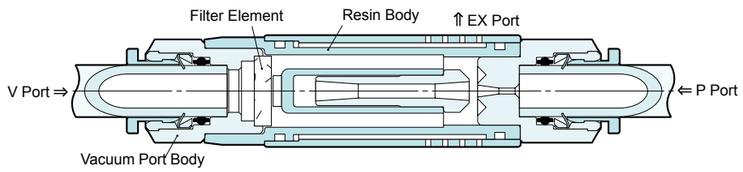
●For the VSU type, do not apply load to the body in the tension direction. Tensile load may cause the metal body to detach from the resin body.

●Avoid use of the VSU type in which excessive internal pressure is applied to the ejector. The metal body may detach from the resin body.

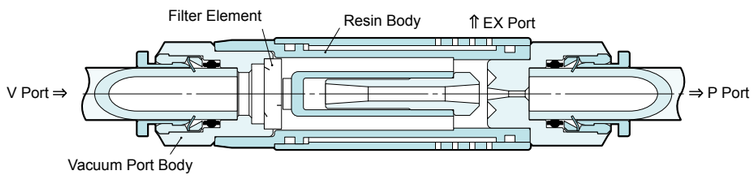
Caution

●The VSU type and VSU-□M (compact) type may not exhibit satisfactory performance if, during filter element maintenance, appropriate parts are not installed in the correct positions (no gap between the resin body and vacuum port body) as shown in the structural diagram below.

●VSU structural diagram



●VSU-□M (compact) structure diagram



●For the VSU-□M (compact), assemble the filter element after maintenance and make sure that the plug is installed in the specified position as shown in the structure diagram above. Then assemble the spacer and filter element. Note that the plug does not need to be removed during maintenance.

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

MEMO



Single Unit Ejector (Square-type)

VSB Series

RoHS

Simple vacuum ejector that converts compressed air to vacuum

Abundant vacuum characteristic variations

Nozzle Diameter \ Vacuum Characteristics	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		11.5			90	66	
0.7 mm	13	26	10.5	23		17	93	66	92
1.0 mm	28	42	21	46		34	93	66	92
1.2 mm	38		27	70		47	93		92

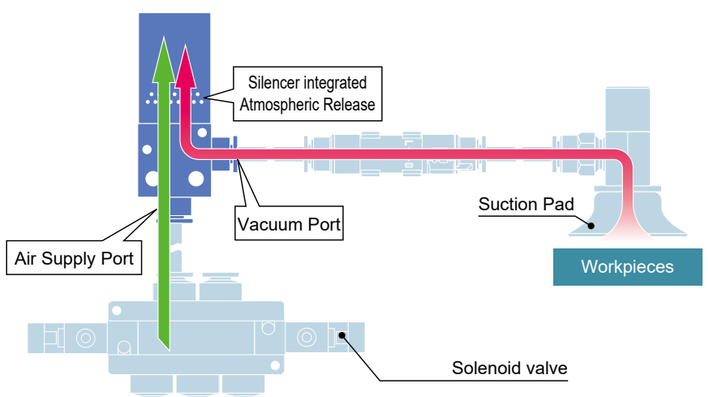
* Rated supply pressure; H, L⇒0.5 MPa, E⇒0.35 MPa

Can be installed mid-piping between solenoid valve and suction pad

Square-type with built-in silencer, allowing main body mounting and fixing

Type integrated with mechanical vacuum switch also available

Piping Example



Model No. Notation

●Discrete ejector (square)

VSB - H 07 - 66 V

- VSB: Model No.
- H: ❶ Vacuum Characteristics
- 07: ❷ Nozzle Diameter
- 66: ❸ Vacuum Port (V) - Air Supply Port (P)
- V: ❹ Mechanical Vacuum Pressure Switch

❶ Vacuum Characteristics

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

Note) For ❶❷, the combination of "E05" and "L12" cannot be selected.

❷ Nozzle Diameter

Code	Content
05	ø0.5
07	ø0.7
10	ø1.0
12	ø1.2

Note) For ❶❷, the combination of "E05" and "L12" cannot be selected.

❸ Vacuum Port (V) - Air Supply Port (P)

Code	Content
44	ø4 Push-in fitting -ø4 Push-in fitting
66	ø6 Push-in fitting -ø6 Push-in fitting

❹ Mechanical Vacuum Pressure Switch

Code	Content
Blank	Without Pressure Switch
V	With Mechanical Vacuum Pressure Switch

●Mechanical vacuum switch Discrete

VSB - VUSM - 4

- VSB: Model No.
- 4: ❶ Input Port

❶ Input Port

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

Model No./Port Combination Table

Vacuum Port (V) Air Supply Port (P)	44	66
Model No.		
VSB-H05	●	
VSB-H07		●
VSB-H10		●
VSB-H12		●
VSB-L05	●	
VSB-L07		●
VSB-L10		●
VSB-E07		●
VSB-E10		●
VSB-E12		●

Maintenance Part Model No. * For details on the maintenance parts, refer to P. 144.

●Silencer Element A

VSB - EA

Model No.

●Silencer Element B

VSB - EB

Model No.

Common Specifications

Item	VSB
Operating Fluid	Air
Operating Pressure MPa	0.15 to 0.7
Ambient Temperature/Fluid Temperature °C	0 to 60

Square-type with Vacuum Pressure Switch Mounted (VSB)/ Mechanical Vacuum Pressure Switch Specifications

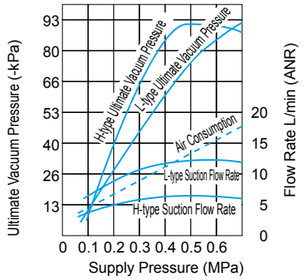
Item	Mechanical Vacuum Pressure Switch
Pressure Detection Method	Diaphragm - Microswitch
Operating Fluid	Air
Operating Temperature °C	0 to 60 (However, no freezing)
Electrical Capacity	3A 250V
Set Pressure kPa	-66 to -20
Repeatability kPa	±5
Differential kPa	≤ 22
Factory Set Pressure kPa	Approx. -50

Vacuum Characteristics, Flow Characteristics

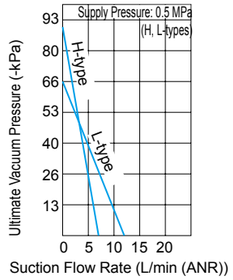
Supply Pressure - Ultimate Vacuum Pressure, Suction Flow Rate, Air Consumption

●VSB-$^{H}_{L}$05

Vacuum Characteristics

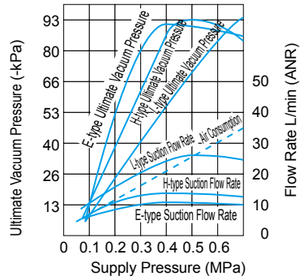


Flow Characteristics

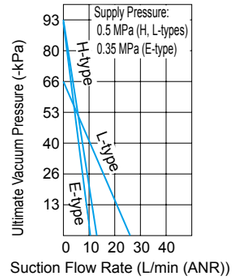


●VSB-□07

Vacuum Characteristics

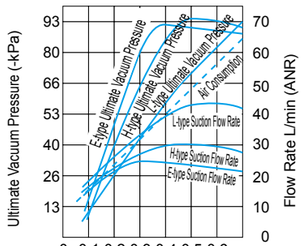


Flow Characteristics

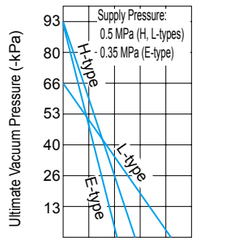


●VSB-□10

Vacuum Characteristics

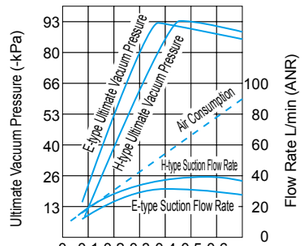


Flow Characteristics

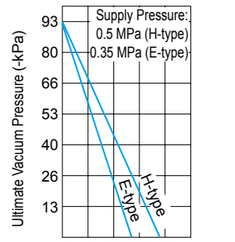


●VSB-□12

Vacuum Characteristics



Flow Characteristics

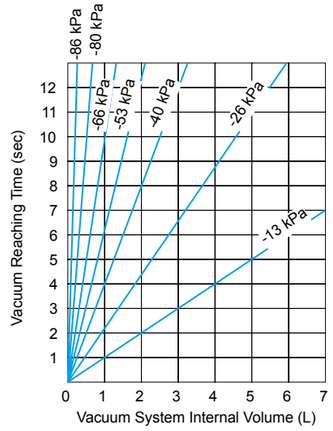


1. The supply pressure in the characteristics above is during vacuum generation.
2. Abnormal noise (gurgling sound) may occur at a supply pressure slightly below the peak ultimate vacuum pressure in the characteristics above. In this state with abnormal noise, characteristics are unstable and noise level 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.)
3. 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 $0.5^2 \times \pi = 0.785\ mm^2 \times 3 = 2.35\ mm^2$. Therefore, select piping and equipment to secure an effective cross-sectional area of 2.3 mm^2 or more.)

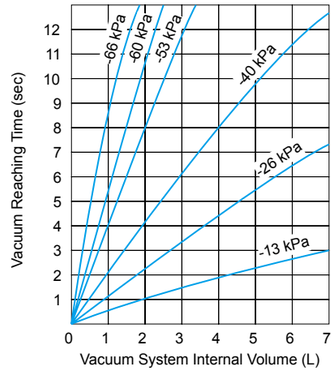
Vacuum Characteristics

(Reference) Vacuum achievement time (supply pressure H-type: 0.5 MPa, L-type: 0.5 MPa, E-type: 0.3 to 0.5 MPa)
* Values vary depending on the vacuum system piping configuration, etc., so please use these as a guideline.

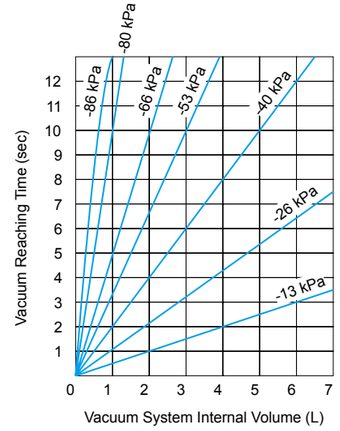
●VSB-H05



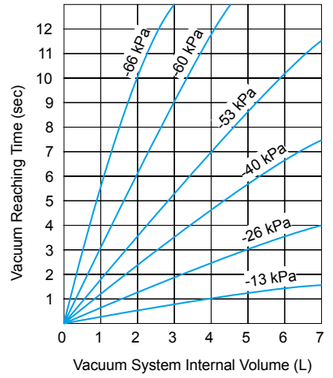
●VSB-L05



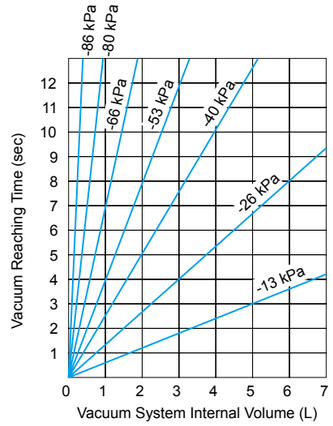
●VSB-H07



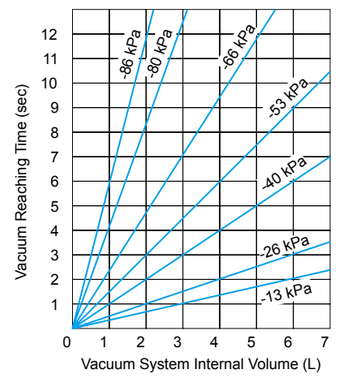
●VSB-L07



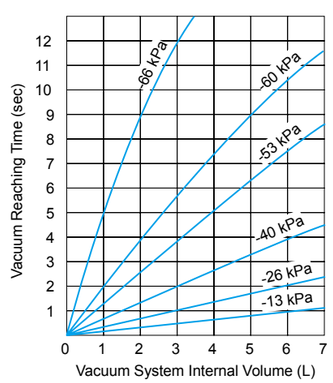
●VSB-E07



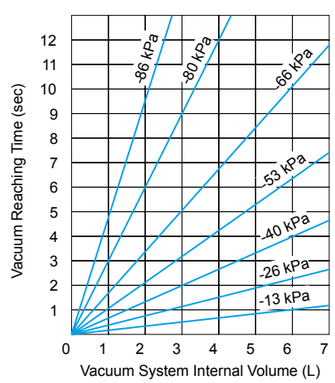
●VSB-H10



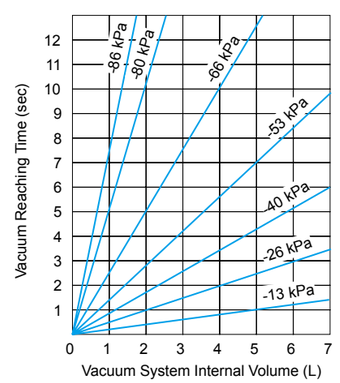
●VSB-L10



●VSB-H12



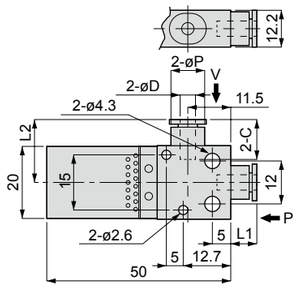
●VSB-E12



External Dimension Drawings

●VSB-□-□(atmospheric release)

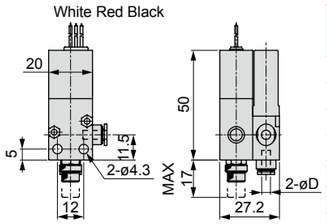
Unit: mm



Model No.	Bore size øD	øP	C	L1	L2	Nozzle Diameter (mm)	Operating Pressure (MPa)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSB-H05-44	4	9	11.3	6.9	16.9	0.5	0.5	90	7	11.5	18
VSB-H07-66	6	10.6	11.8	7.2	17.2	0.7	0.5	93	13	23	19
VSB-H10-66						1			28	46	
VSB-H12-66						1.2			38	70	18
VSB-L05-44	4	9	11.3	6.9	16.9	0.5	0.45	66	12	11.5	18
VSB-L07-66	6	10.6	11.8	7.2	17.2	0.7			26	23	19
VSB-L10-66						1			42	46	18
VSB-E07-66	6	10.6	11.8	7.2	17.2	0.7	0.4	92	10.5	17	19
VSB-E10-66						1			21	34	
VSB-E12-66						1.2			27	47	18

●VSB-□-□V (with vacuum switch)

Unit: mm

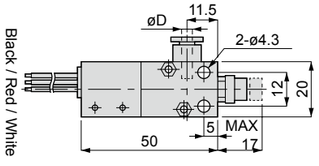


Model No.	Bore size øD	Nozzle Diameter (mm)	Operating Pressure (MPa)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSB-H05-44V	4	0.5	0.5	90	7	11.5	47
VSB-H07-66V	6	0.7	0.5	93	13	23	46
VSB-H10-66V		1			28	46	47
VSB-H12-66V		1.2			38	70	48
VSB-L05-44V	4	0.5	0.45	66	12	11.5	47
VSB-L07-66V	6	0.7			26	23	48
VSB-L10-66V		1			42	46	47
VSB-E07-66V	6	0.7	0.4	92	10.5	17	49
VSB-E10-66V		1			21	34	
VSB-E12-66V		1.2			27	47	48

Note) Lead Wire White : COMMON
Red : N.C.
Black : N.O.

●VSB-VUSM-□ Mechanical vacuum switch, single unit

Unit: mm

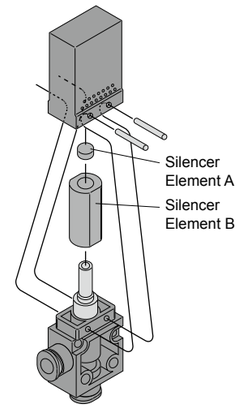


Model No.	Bore size øD	Weight (g)
VSB-VUSM-4	4	29
VSB-VUSM-6	6	29

Note) Lead Wire Length approx. 300 mm (AWG#24)
White: COMMON
Red: N.C.
Black: N.O.

Maintenance Parts

●Silencer Element



Element A Model No.	Element B Model No.
VSB-EA	VSB-EB
Note) Common part for VSB, VSG, VSJ	Note) Common part for VSB, VSG



Single Unit Ejector (Pad Direct Mount Type)

VSC Series

RoHS

Simple vacuum ejector that converts compressed air to vacuum

Abundant vacuum characteristic variations

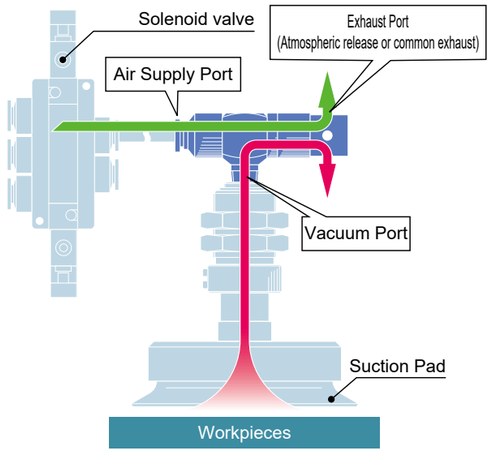
Nozzle Diameter \ Vacuum Characteristics	Suction Flow Rate (L/min (ANR))			Air Consumption (L/min (ANR))			Ultimate Vacuum Pressure (-kPa)		
	H	L	E	H	L	E	H	L	E
0.3 mm	2	4		4.5			90	66	
0.4 mm	4	7.5		8			90	66	
0.5 mm	7	12		11.5			90	66	
0.7 mm	13	26	10.5	23		17	93	66	92
1.0 mm	28	42	21	46		34	93	66	92
1.2 mm	38		27	70		47	93		92
1.5 mm	63	95	42	100		70	93	66	92
2.0 mm	110	180	84	200		150	93	66	92

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

Abundant lineup of types with different performance and shapes, compatible with various conditions

Direct mounting possible on suction pad holders, etc.

Piping Example



Model No. Notation

Model No. Notation

●Discrete ejector (pad direct mounting)

VSC - H 15 - 10A 10L J

Model No.
❶ Vacuum Characteristics
❷ Nozzle Diameter
❸ Vacuum Port (V)
❹ Air Supply Port (P)
❺ Exhaust Port (EX)

❶ Vacuum Characteristics

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

Note) For ❶❷, the combinations "E03", "E04", "E05", "L12" cannot be selected.

❷ Nozzle Diameter

Code	Content
03	ø0.3
04	ø0.4
05	ø0.5
07	ø0.7
10	ø1.0
12	ø1.2
15	ø1.5
20	ø2.0

Note) For ❶❷, the combinations "E03", "E04", "E05", "L12" cannot be selected.

❸ Vacuum Port (V)

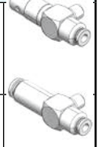
Code	Content
M5	M5 × 0.8 *1
6A	R1/8
8A	R1/4
10A	R3/8

Note1) When ❸ is "M5", ❺ exhaust port (EX) "J" cannot be selected.

❹ Air Supply Port (P)

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

❺ Exhaust Port (EX)

Code	Content	
S	Atmospheric Release with Silencer	
J	Centralized Exhaust *1	

Note1) For ❸, when the vacuum port (V) is "M5", ❺ "J" cannot be selected.

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

●Design compatible with rechargeable battery manufacturing process

VSC - ..... - P4□

*Please inquire for details.

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

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

VSC - ..... - FP□

Maintenance Part Model No.

* For details on the maintenance parts, P. 157.

●Silencer element (for VSC-□M5)

VSC - M5 - SE

Model No.

●Silencer Kit

VSC - 12 - SK

Model No.
❶ Nozzle Diameter

❶ Nozzle Diameter

Code	Content
12	ø1.2 (Common for ø0.7, ø1.0)
15	ø1.5
20	ø2.0

Model No./Port Combination Table

* M Thread Type

Vacuum Port (V)	M5
Air Supply Port (P)	4
Model No.	
VSC-H03	●
VSC-H04	●
VSC-H05	●
VSC-L03	●
VSC-L04	●
VSC-L05	●

* R Thread Type

Vacuum Port (V)	6A		8A		10A	
Air Supply Port (P)	6*	8*	8*	10*	8*	10*
Model No.						
VSC-H07	●	●				
VSC-H10	●	●				
VSC-H12	●	●				
VSC-H15			●	●	●	●
VSC-H20			●	●	●	●
VSC-L07	●	●				
VSC-L10	●	●				
VSC-L15			●	●	●	●
VSC-L20			●	●	●	●
VSC-E07	●	●				
VSC-E10	●	●				
VSC-E12	●	●				
VSC-E15			●	●	●	●
VSC-E20			●	●	●	●

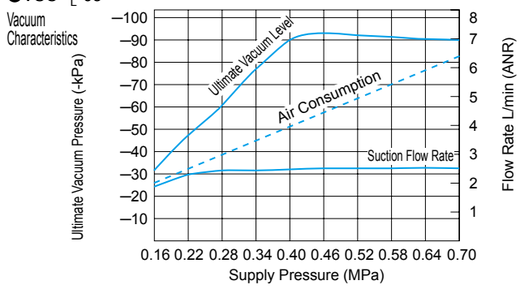
Common Specifications

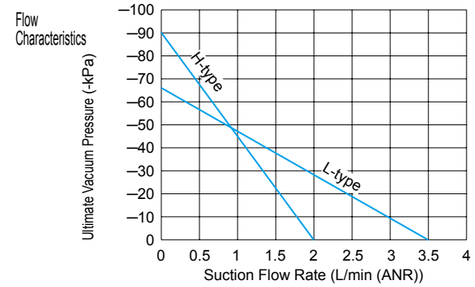
Item	VSC
Operating Fluid	Air
Operating Pressure MPa	0.15 to 0.7
Ambient /Fluid Temperatures ℃	0 to 60

Vacuum Characteristics, Flow Characteristics

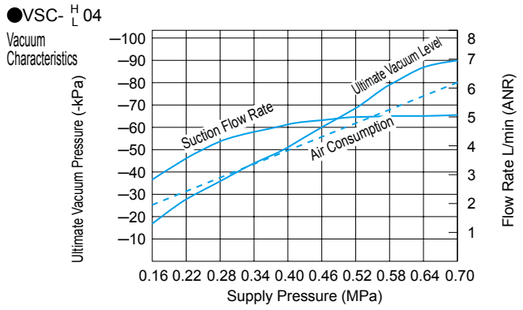
Supply Pressure - Ultimate Vacuum Pressure, Suction Flow Rate, Air Consumption

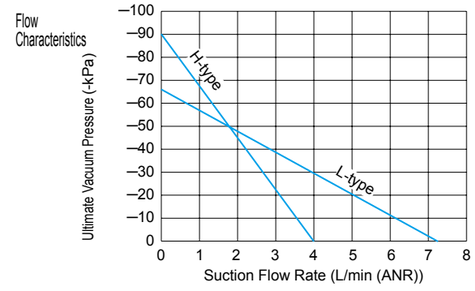
●VSC-$^{H}_{L}$03



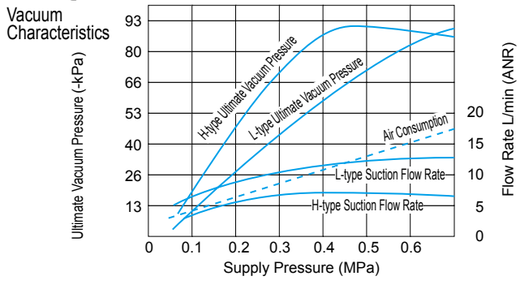


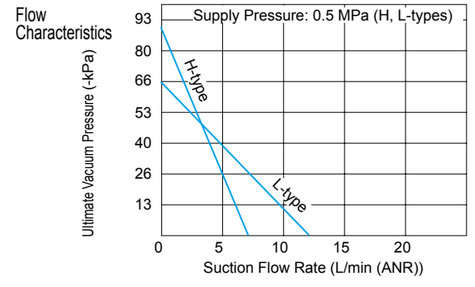
●VSC-$^{H}_{L}$04



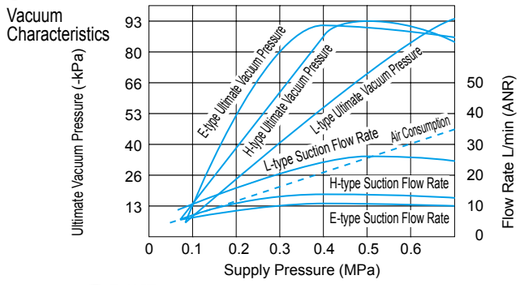


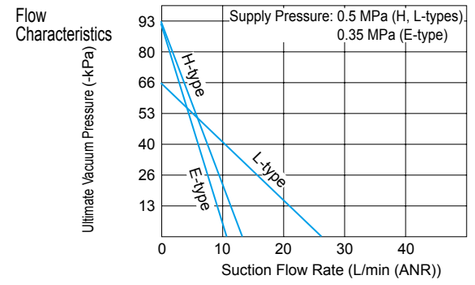
●VSC-$^{H}_{L}$05





●VSC-□07

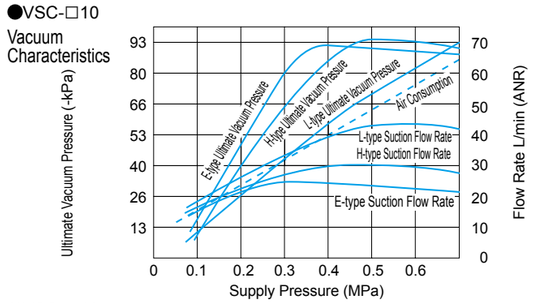


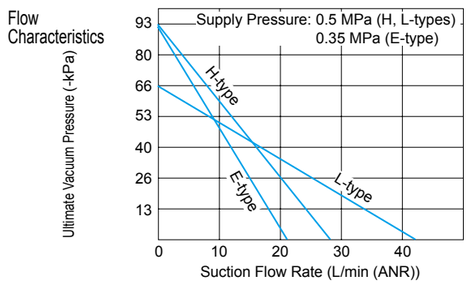


Vacuum Characteristics, Flow Characteristics

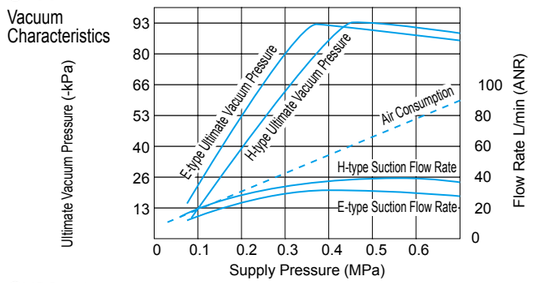
Supply Pressure - Ultimate Vacuum Pressure, Suction Flow Rate, Air Consumption

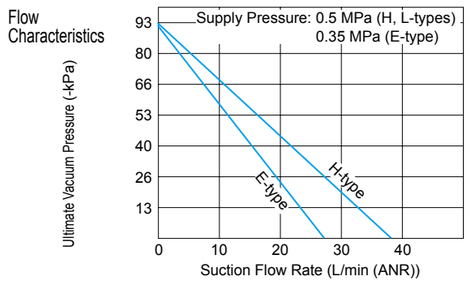
●VSC-□10



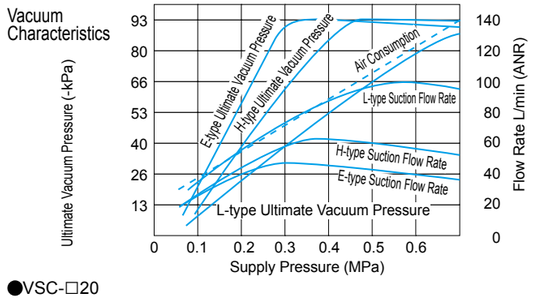


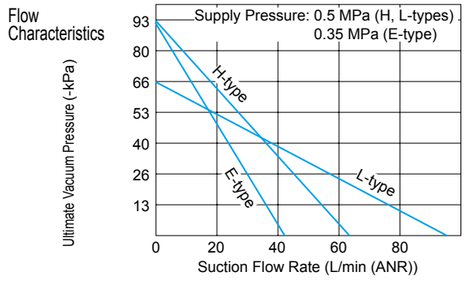
●VSC-□12



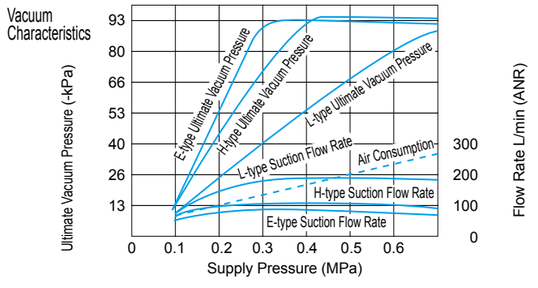


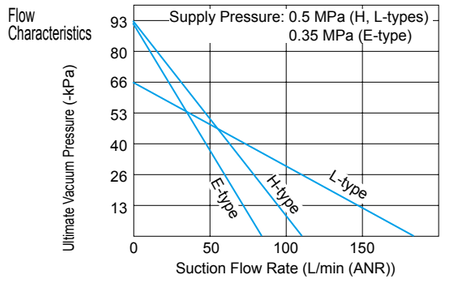
●VSC-□15





●VSC-□20





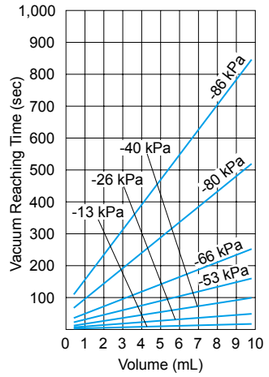
1. The supply pressure in the characteristics above is during vacuum generation.
2. Abnormal noise (gurgling sound) may occur at a supply pressure slightly below the peak ultimate vacuum pressure in the characteristics above. In this state with abnormal noise, characteristics are unstable and noise level 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.)
3. 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 $0.5^2 \times \pi = 0.785$ mm² × 3 = 2.35 mm². Therefore, select piping and equipment to secure an effective cross-sectional area of 2.3 mm² or more.)

Vacuum Characteristics

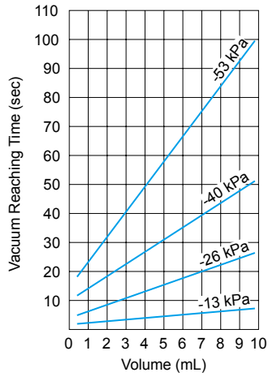
(Reference) Vacuum achievement time (supply pressure H-type: 0.5 MPa, L-type: 0.5 MPa, E-type: 0.3 to 0.5 MPa)

*Values vary depending on the vacuum system piping configuration, etc., so please use these as a guideline.

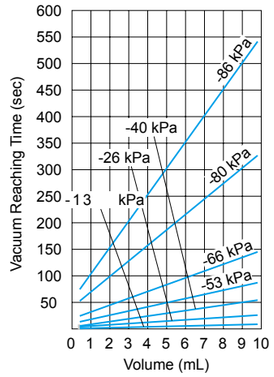
●VSC-H03



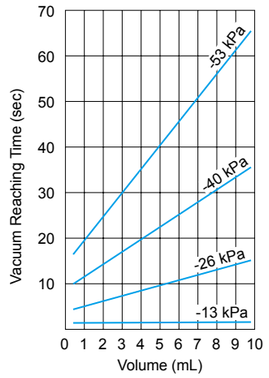
●VSC-L03



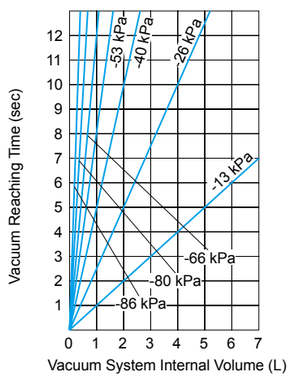
●VSC-H04



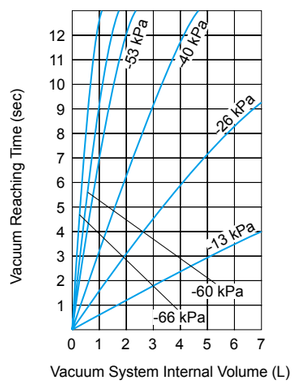
●VSC-L04



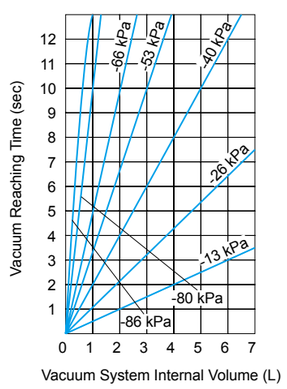
●VSC-H05



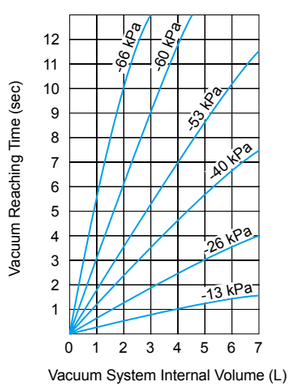
●VSC-L05



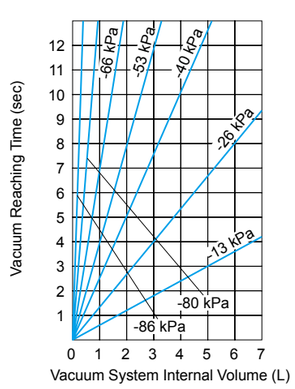
●VSC-H07



●VSC-L07



●VSC-E07

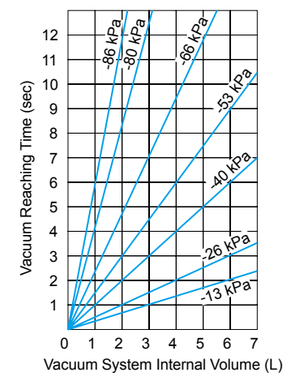


Vacuum Characteristics

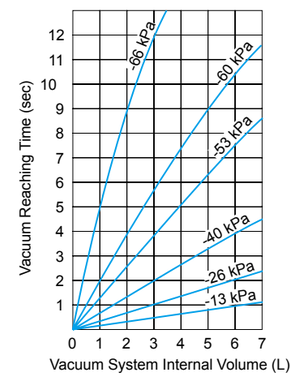
(Reference) Vacuum achievement time (supply pressure H-type: 0.5 MPa, L-type: 0.5 MPa, E-type: 0.3 to 0.5 MPa)

* Values vary depending on the vacuum system piping configuration, etc., so please use these as a guideline.

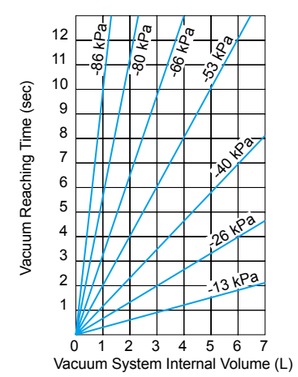
●VSC-H10



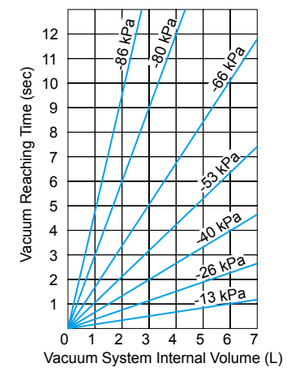
●VSC-L10



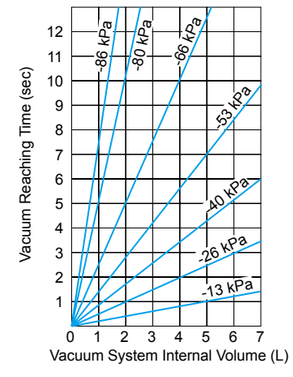
●VSC-E10



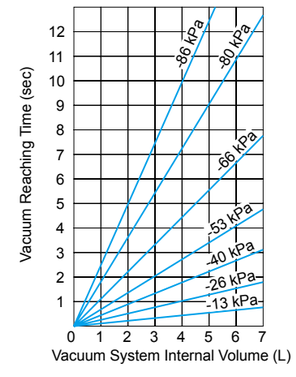
●VSC-H12



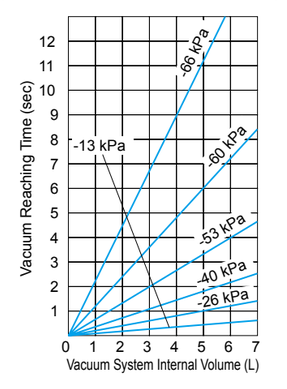
●VSC-E12



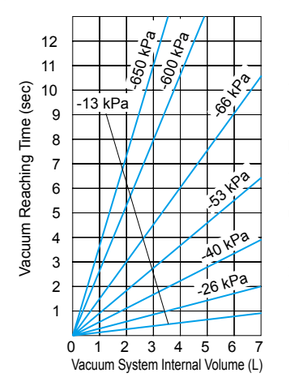
●VSC-H15



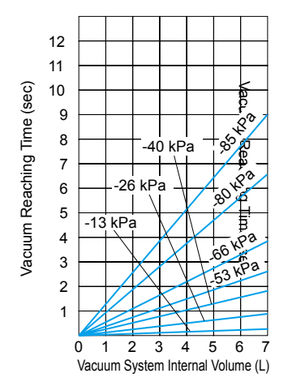
●VSC-L15



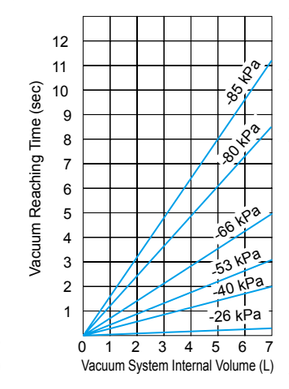
●VSC-E15



●VSC-H20

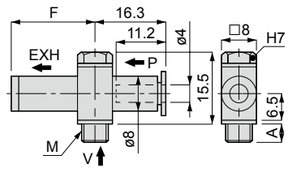


●VSC-E20



External Dimension Drawings

●VSC-□-□S (straight, atmospheric release with silencer)



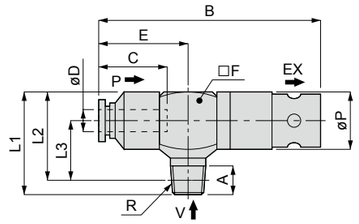
Unit: mm

Model No.	M	A	F	Nozzle Diameter (mm)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSC-H03-M54S	M5×0.8	3.5	15	0.3	90	2	4.5	13
VSC-H04-M54S			17	0.4		4	8	14
VSC-H05-M54S		3	19	0.5		11.5	11.5	15
VSC-L03-M54S	M5×0.8	3.5	18.2	0.3	66	4	4.5	14
VSC-L04-M54S			19	0.4		8	8	14
VSC-L05-M54S		3	19	0.5		11	11.5	17

Note) Please note that the piping direction cannot be changed after mounting this product.

External Dimension Drawings

●VSC-□-□S (Atmospheric release with silencer)



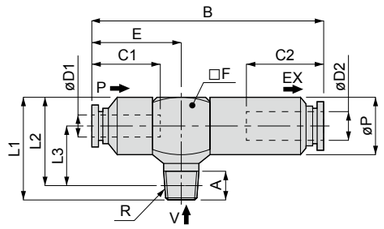
Unit: mm

Model No.	Bore size øD	R	A	L1	L2	L3	øP	B	E	C	□F	Nozzle Diameter (mm)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSC-H07-6A6S	6	R1/8	8	28	24	16	16	62.5	24.5	17	16	0.7	93	13	23	32
VSC-H07-6A8S	8							65.2	27.2	18.2						
VSC-H10-6A6S	6							62.5	24.5	17		1		28	46	
VSC-H10-6A8S	8							65.2	27.2	18.2						
VSC-H12-6A6S	6							62.5	24.5	17		1.2		38	70	
VSC-H12-6A8S	8							65.2	27.2	18.2						
VSC-H15-8A8S	8	R1/4	11	39	33	21	24	104.2	29.2	18.2	22	1.5		63	100	87
VSC-H15-10A8S		R3/8	12		32.7	20.7										88
VSC-H15-8A10S	10	R1/4	11		33	21		105.9	30.9	20.7						89
VSC-H15-10A10S		R3/8	12		32.7	20.7										
VSC-H20-8A8S	8	R1/4	11		33	21		104.2	29.2	18.2		2		110	200	91
VSC-H20-10A8S		R3/8	12		32.7	20.7										92
VSC-H20-8A10S	10	R1/4	11		33	21		105.9	30.9	20.7						93
VSC-H20-10A10S		R3/8	12		32.7	20.7										94
VSC-L07-6A6S	6	R1/8	8	28	24	16	16	62.5	24.5	17	16	0.7	66	26	23	32
VSC-L07-6A8S	8							65.2	27.2	18.2						
VSC-L10-6A6S	6							62.5	24.5	17		1		42	46	
VSC-L10-6A8S	8							65.2	27.2	18.2						
VSC-L15-8A8S	8	R1/4	11	39	33	21	24	104.2	29.2	18.2	22	1.5		95	100	85
VSC-L15-10A8S		R3/8	12		32.7	20.7										86
VSC-L15-8A10S	10	R1/4	11		33	21		105.9	30.9	20.7						87
VSC-L15-10A10S		R3/8	12		32.7	20.7										88
VSC-L20-8A8S	8	R1/4	11		33	21		104.2	29.2	18.2		2		180	200	87
VSC-L20-10A8S		R3/8	12		32.7	20.7										88
VSC-L20-8A10S	10	R1/4	11		33	21		105.9	30.9	20.7						89
VSC-L20-10A10S		R3/8	12		32.7	20.7										
VSC-E07-6A6S	6	R1/8	8	28	24	16	16	62.5	24.5	17	16	0.7	92	10.5	17	32
VSC-E07-6A8S	8							65.2	27.2	18.2						
VSC-E10-6A6S	6							62.5	24.5	17		1		21	34	
VSC-E10-6A8S	8							65.2	27.2	18.2						
VSC-E12-6A6S	6							62.5	24.5	17		1.2		27	47	
VSC-E12-6A8S	8							65.2	27.2	18.2						
VSC-E15-8A8S	8	R1/4	11	39	33	21	24	104.2	29.2	18.2	22	1.5		42	70	88
VSC-E15-10A8S		R3/8	12		32.7	20.7										89
VSC-E15-8A10S	10	R1/4	11		33	21		105.9	30.9	20.7						90
VSC-E15-10A10S		R3/8	12		32.7	20.7										
VSC-E20-8A8S	8	R1/4	11		33	21		104.2	29.2	18.2		2		84	150	93
VSC-E20-10A8S		R3/8	12		32.7	20.7										94
VSC-E20-8A10S	10	R1/4	11		33	21		105.9	30.9	20.7						95
VSC-E20-10A10S		R3/8	12		32.7	20.7										

Note) L1, L2, L3 dimensions are reference dimensions after screw tightening.

External Dimension Drawings

●VSC-□-□J (common exhaust)



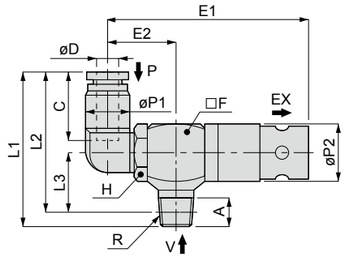
Unit: mm

Model No.	Bore size øD1	Bore size øD2	R	A	L1	L2	L3	øP	B	E	C1	C2	□F	Nozzle Diameter (mm)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSC-H07-6A6J	6	8	R1/8	8	28	24	16	16	64.7	24.5	17	18.2	16	0.7	93	13	23	37
VSC-H07-6A8J	8								67.4	27.2	18.2							
VSC-H10-6A6J	6								64.7	24.5	17			1		28	46	
VSC-H10-6A8J	8								67.4	27.2	18.2							
VSC-H12-6A6J	6								64.7	24.5	17			1.2		38	70	
VSC-H12-6A8J	8								67.4	27.2	18.2							
VSC-H15-8A8J	8	12	R1/4	11	38	32	21	22	94	29.2	18.2	23.3	22	1.5		63	100	99
VSC-H15-10A8J			R3/8	12		31.7	20.7											100
VSC-H15-8A10J	10		R1/4	11		32	21		95.7	30.9	20.7							101
VSC-H15-10A10J			R3/8	12		31.7	20.7											
VSC-H20-8A8J	8		R1/4	11		32	21		94	29.2	18.2			2		110	200	103
VSC-H20-10A8J			R3/8	12		31.7	20.7											104
VSC-H20-8A10J	10		R1/4	11		32	21		95.7	30.9	20.7							105
VSC-H20-10A10J			R3/8	12		31.7	20.7											
VSC-L07-6A6J	6	8	R1/8	8	28	24	16	16	64.7	24.5	17	18.2	16	0.7	66	26	23	37
VSC-L07-6A8J	8								67.4	27.2	18.2							
VSC-L10-6A6J	6								64.7	24.5	17			1		42	46	
VSC-L10-6A8J	8								67.4	27.2	18.2							
VSC-L15-8A8J	8	12	R1/4	11	38	32	21	22	94	29.2	18.2	23.3	22	1.5		95	100	97
VSC-L15-10A8J			R3/8	12		31.7	20.7											98
VSC-L15-8A10J	10		R1/4	11		32	21		95.7	30.9	20.7							99
VSC-L15-10A10J			R3/8	12		31.7	20.7											
VSC-L20-8A8J	8		R1/4	11		32	21		94	29.2	18.2			2		180	200	100
VSC-L20-10A8J			R3/8	12		31.7	20.7											
VSC-L20-8A10J	10		R1/4	11		32	21		95.7	30.9	20.7							101
VSC-L20-10A10J			R3/8	12		31.7	20.7											
VSC-E07-6A6J	6	8	R1/8	8	28	24	16	16	64.7	24.5	17	18.2	16	0.7	92	10.5	17	37
VSC-E07-6A8J	8								67.4	27.2	18.2							
VSC-E10-6A6J	6								64.7	24.5	17			1		21	34	
VSC-E10-6A8J	8								67.4	27.2	18.2							
VSC-E12-6A6J	6								64.7	24.5	17			1.2		27	47	
VSC-E12-6A8J	8								67.4	27.2	18.2							
VSC-E15-8A8J	8	12	R1/4	11	38	32	21	22	94	29.2	18.2	23.3	22	1.5		42	70	100
VSC-E15-10A8J			R3/8	12		31.7	20.7											101
VSC-E15-8A10J	10		R1/4	11		32	21		95.7	30.9	20.7							102
VSC-E15-10A10J			R3/8	12		31.7	20.7											
VSC-E20-8A8J	8		R1/4	11		32	21		94	29.2	18.2			2		84	150	105
VSC-E20-10A8J			R3/8	12		31.7	20.7											106
VSC-E20-8A10J	10		R1/4	11		32	21		95.7	30.9	20.7							107
VSC-E20-10A10J			R3/8	12		31.7	20.7											

Note) L1, L2, L3 dimensions are reference dimensions after screw tightening.

External Dimension Drawings

●VSC-□-□LS (Air supply port elbow, atmospheric release with silencer)



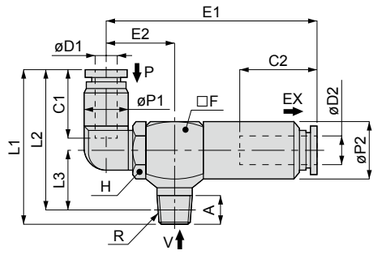
Unit: mm

Model No.	Bore size øD1	R	A	L1	L2	L3	E1	E2	øP1	øP2	C	Width across flats H	□F	Nozzle Diameter (mm)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSC-H07-6A6LS	6	R1/8	8	42.8	38.8	16	57.3	19.3	12.5	16	17	14	16	0.7	93	13	23	32
VSC-H07-6A8LS	8			45.7	41.7		58.3	20.3	14.5		18.1							34
VSC-H10-6A6LS	6			42.8	38.8		57.3	19.3	12.5		17			1		28	46	32
VSC-H10-6A8LS	8			45.7	41.7		58.3	20.3	14.5		18.1							34
VSC-H12-6A6LS	6			42.8	38.8		57.3	19.3	12.5		17			1.2		38	70	32
VSC-H12-6A8LS	8			45.7	41.7		58.3	20.3			18.1							34
VSC-H15-8A8LS	8	R1/4	11	52.7	46.7	21	98.3	23.3	14.5	24		19	22	1.5		63	100	86
VSC-H15-10A8LS		R3/8	12		46.4	20.7												87
VSC-H15-8A10LS	10	R1/4	11	56.5	50.5	21	100.8	25.8	17.5		20.2							91
VSC-H15-10A10LS		R3/8	12		50.2	20.7												92
VSC-H20-8A8LS	8	R1/4	11	52.7	46.7	21	98.3	23.3	14.5		18.1			2		110	200	90
VSC-H20-10A8LS		R3/8	12		46.4	20.7												91
VSC-H20-8A10LS	10	R1/4	11	56.5	50.5	21	100.8	25.8	17.5		20.2							95
VSC-H20-10A10LS		R3/8	12		50.2	20.7												96
VSC-L07-6A6LS	6	R1/8	8	42.8	38.8	16	57.3	19.3	12.5	16	17	14	16	0.7	66	26	23	32
VSC-L07-6A8LS	8			45.7	41.7		58.3	20.3	14.5		18.1							34
VSC-L10-6A6LS	6			42.8	38.8		57.3	19.3	12.5		17			1		42	46	32
VSC-L10-6A8LS	8			45.7	41.7		58.3	20.3			18.1							34
VSC-L15-8A8LS	8	R1/4	11	52.7	46.7	21	98.3	23.3	14.5	24		19	22	1.5		95	100	84
VSC-L15-10A8LS		R3/8	12		46.4	20.7												85
VSC-L15-8A10LS	10	R1/4	11	56.5	50.5	21	100.8	25.8	17.5		20.2							89
VSC-L15-10A10LS		R3/8	12		50.2	20.7												90
VSC-L20-8A8LS	8	R1/4	11	52.7	46.7	21	98.3	23.3	14.5		18.1			2		180	200	86
VSC-L20-10A8LS		R3/8	12		46.4	20.7												87
VSC-L20-8A10LS	10	R1/4	11	56.5	50.5	21	100.8	25.8	17.5		20.2							91
VSC-L20-10A10LS		R3/8	12		50.2	20.7												92
VSC-E07-6A6LS	6	R1/8	8	42.8	38.8	16	57.3	19.3	12.5	16	17	14	16	0.7	92	10.5	17	32
VSC-E07-6A8LS	8			45.7	41.7		58.3	20.3	14.5		18.1							34
VSC-E10-6A6LS	6			42.8	38.8		57.3	19.3	12.5		17			1		21	34	32
VSC-E10-6A8LS	8			45.7	41.7		58.3	20.3	14.5		18.1							34
VSC-E12-6A6LS	6			42.8	38.8		57.3	19.3	12.5		17			1.2		27	47	32
VSC-E12-6A8LS	8			45.7	41.7		58.3	20.3			18.1							34
VSC-E15-8A8LS	8	R1/4	11	52.7	46.7	21	98.3	23.3	14.5	24		19	22	1.5		42	70	87
VSC-E15-10A8LS		R3/8	12		46.4	20.7												88
VSC-E15-8A10LS	10	R1/4	11	56.5	50.5	21	100.8	25.8	17.5		20.2							92
VSC-E15-10A10LS		R3/8	12		50.2	20.7												93
VSC-E20-8A8LS	8	R1/4	11	52.7	46.7	21	98.3	23.3	14.5		18.1			2		84	150	92
VSC-E20-10A8LS		R3/8	12		46.4	20.7												93
VSC-E20-8A10LS	10	R1/4	11	56.5	50.5	21	100.8	25.8	17.5		20.2							97
VSC-E20-10A10LS		R3/8	12		50.2	20.7												98

Note) L1, L2, L3 dimensions are reference dimensions after screw tightening.

External Dimension Drawings

●VSC-□-□LJ (air supply port elbow, common exhaust)



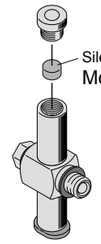
Unit: mm

Model No.	Bore size øD1	Bore size øD2	R	A	L1	L2	L3	E1	E2	øP1	øP2	C1	C2	Width across flats H	□F	Nozzle Diameter (mm)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSC-H07-6A6LJ	6	8	R1/8	8	42.8	38.8	16	59.5	19.3	12.5	16	17	18.2	14	16	0.7	93	13	23	36
VSC-H07-6A8LJ	8				45.7	41.7		60.5	20.3	14.5		18.2								38
VSC-H10-6A6LJ	6				42.8	38.8		59.5	19.3	12.5		17				1		28	46	36
VSC-H10-6A8LJ	8				45.7	41.7		60.5	20.3	14.5		18.2								38
VSC-H12-6A6LJ	6				42.8	38.8		59.5	19.3	12.5		17				1.2		38	70	36
VSC-H12-6A8LJ	8				45.7	41.7		60.5	20.3	14.5		18.2								38
VSC-H15-8A8LJ	8	12	R1/4	11	52.7	46.7	21	88.1	23.3		22		23.3	19	22	1.5		63	100	98
VSC-H15-10A8LJ			R3/8	12		46.4	20.7													99
VSC-H15-8A10LJ	10		R1/4	11	56.5	50.5	21	90.6	25.8	17.5		20.2								102
VSC-H15-10A10LJ			R3/8	12		50.2	20.7													103
VSC-H20-8A8LJ	8		R1/4	11	52.7	46.7	21	88.1	23.3	14.5		18.2				2		110	200	102
VSC-H20-10A8LJ			R3/8	12		46.4	20.7													103
VSC-H20-8A10LJ	10		R1/4	11	56.5	50.5	21	90.6	25.8	17.5		20.2								107
VSC-H20-10A10LJ			R3/8	12		50.2	20.7													108
VSC-L07-6A6LJ	6	8	R1/8	8	42.8	38.8	16	59.5	19.3	12.5	16	17	18.2	14	16	0.7	66	26	23	36
VSC-L07-6A8LJ	8				45.7	41.7		60.5	20.3	14.5		18.2								38
VSC-L10-6A6LJ	6				42.8	38.8		59.5	19.3	12.5		17				1		42	46	36
VSC-L10-6A8LJ	8				45.7	41.7		60.5	20.3	14.5		18.2								38
VSC-L15-8A8LJ	8	12	R1/4	11	52.7	46.7	21	88.1	23.3		22		23.3	19	22	1.5		95	100	96
VSC-L15-10A8LJ			R3/8	12		46.4	20.7													97
VSC-L15-8A10LJ	10		R1/4	11	56.5	50.5	21	90.6	25.8	17.5		20.2								101
VSC-L15-10A10LJ			R3/8	12		50.2	20.7													102
VSC-L20-8A8LJ	8		R1/4	11	52.7	46.7	21	88.1	23.3	14.5		18.2				2		180	200	97
VSC-L20-10A8LJ			R3/8	12		46.4	20.7													98
VSC-L20-8A10LJ	10		R1/4	11	56.5	50.5	21	90.6	25.8	17.5		20.2								102
VSC-L20-10A10LJ			R3/8	12		50.2	20.7													103
VSC-E07-6A6LJ	6	8	R1/8	8	42.8	38.8	16	59.5	19.3	12.5	16	17	18.2	14	16	0.7	92	10.5	17	36
VSC-E07-6A8LJ	8				45.7	41.7		60.5	20.3	14.5		18.2								38
VSC-E10-6A6LJ	6				42.8	38.8		59.5	19.3	12.5		17				1		21	34	36
VSC-E10-6A8LJ	8				45.7	41.7		60.5	20.3	14.5		18.2								38
VSC-E12-6A6LJ	6				42.8	38.8		59.5	19.3	12.5		17				1.2		27	47	36
VSC-E12-6A8LJ	8				45.7	41.7		60.5	20.3	14.5		18.2								38
VSC-E15-8A8LJ	8	12	R1/4	11	52.7	46.7	21	88.1	23.3		22		23.3	19	22	1.5		42	70	98
VSC-E15-10A8LJ			R3/8	12		46.4	20.7													99
VSC-E15-8A10LJ	10		R1/4	11	56.5	50.5	21	90.6	25.8	17.5		20.2								103
VSC-E15-10A10LJ			R3/8	12		50.2	20.7													104
VSC-E20-8A8LJ	8		R1/4	11	52.7	46.7	21	88.1	23.3	14.5		18.2				2		84	150	103
VSC-E20-10A8LJ			R3/8	12		46.4	20.7													104
VSC-E20-8A10LJ	10		R1/4	11	56.5	50.5	21	90.6	25.8	17.5		20.2								108
VSC-E20-10A10LJ			R3/8	12		50.2	20.7													109

Note) L1, L2, L3 dimensions are reference dimensions after screw tightening.

Maintenance Parts

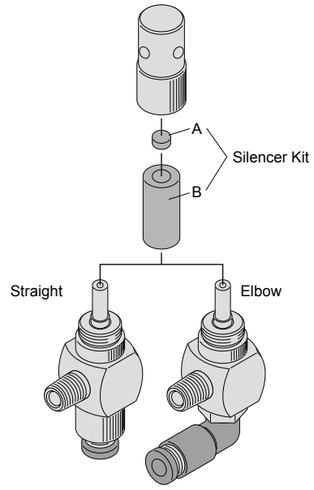
●Silencer Element



Silencer Element Model No.	Vacuum Ejector Model No.
VSC-M5-SE	VSC-□03-M5□
	VSC-□04-M5□
	VSC-□05-M5□

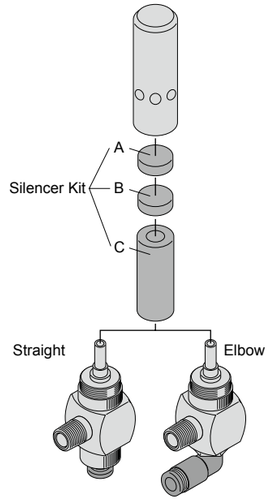
●Silencer Kit

• VSC-□07, 10, 12

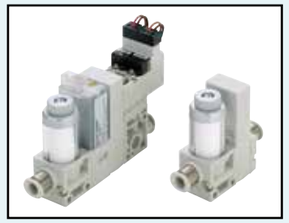


Silencer Kit Model No.	Vacuum Ejector Model No.
VSC-12-SK	VSC-□07-6A□(L)S
	VSC-□10-6A□(L)S
	VSC-□12-6A□(L)S

• VSC-□15, 20



Silencer Kit Model No.	Vacuum Ejector Model No.
VSC-15-SK	VSC-□15-8A8□(L)S
	VSC-□15-10A8□(L)S
	VSC-□15-8A10□(L)S
	VSC-□15-10A10□(L)S
VSC-20-SK	VSC-□20-8A8□(L)S
	VSC-□20-10A8□(L)S
	VSC-□20-8A10□(L)S
	VSC-□20-10A10□(L)S



Ejector System/20 mm Width Integrated Type Vacuum Ejector Unit

VSG Series

RoHS

Integrated type vacuum ejector unit emphasizing basic performance, with unitized basic functions allowing selection according to the purpose of use.

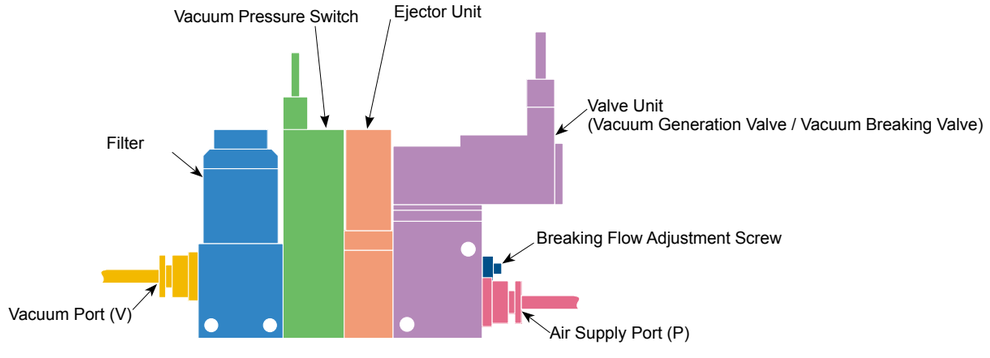
Vacuum Characteristic Variations

Nozzle Diameter \ Vacuum Characteristics	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		11.5			90	66	
0.7 mm	13	26	10.5	23		17	93	66	90
1.0 mm	27	40	21	46		34	93	66	92

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

Pressure switch, valves (for vacuum generation, for vacuum breaking), etc., are unitized.Selection of type according to the purpose of use is possible.

3 types of pressure switches available.



Model No. Notation

●20 mm width single dedicated vacuum ejector unit

VSG - H 07 F - 6 6 - 3 - NW

- VSG: Model No.
- H: ❶ Vacuum Characteristics
- 07: ❷ Nozzle Diameter
- F: ❸ Unit Combination
- 6: ❹ Vacuum Port (V)
- 6: ❺ Air Supply Port (P)
- 3: ❻ Solenoid Valve Voltage
- NW: ❼ Vacuum Pressure Switch Specifications

❶ Vacuum Characteristics

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

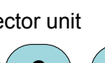
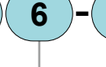
Note) The combination 'E05' for items ❶ and ❷ cannot be selected.

❷ Nozzle Diameter

Code	Content
05	ø0.5
07	ø0.7
10	ø1.0

Note1) : The combination 'E05' for items ❶ and ❷ cannot be selected.
Note2) : When ❷ is '05', only '44' can be selected for ❹ Vacuum Port (V) and ❺ Air Supply Port (P).
Note3) : When ❷ is '07' or '10', only '66' can be selected for ❹ Vacuum Port (V) and ❺ Air Supply Port (P).

❸ Unit Combination

Filter	Vacuum Pressure Switch with LED Display	Vacuum Generation Valve	Vacuum Breaking Valve	Code	
●				A	
●	●			B	
●		●	●	E	
●	●	●	●	F	

Note1) : When ❸ is 'A' or 'B', Solenoid Valve Voltage ❻ cannot be selected.
Note2) : When ❸ is 'A' or 'E', Vacuum Pressure Switch Specification ❼ cannot be selected.

❹ Vacuum Port (V)
❺ Air Supply Port (P)

Code	Content
44	ø4 Push-in fitting
66	ø6 Push-in fitting

Note1): When Nozzle Diameter ❷ is '05', only '44' can be selected for items ❹ and ❺.
Note2): When Nozzle Diameter ❷ is '07' or '10', only '66' can be selected for items ❹ and ❺.

❻ Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC

Note) When Unit Combination ❸ is 'A' or 'B', item ❻ cannot be selected.

❼ Vacuum Pressure Switch Specifications

Code	Content
NW	NPN Output 2 points
NA	NPN Output 2 points + Analog Output
A	Analog Output

Note) When Unit Combination ❸ is 'A' or 'E', item ❼ cannot be selected.

Maintenance Part Model No. * For details on the maintenance parts, P. 166.

●Filter Element

VSG - E
- VSG: Model No.
- E

●Silencer Element

VSB - EA
VSB - EB
- VSB: Model No.
- EA / EB

* Silencer element for VSG is a common part with VSB.

Specifications

Item		VSG
Operating Fluid		Air
Operating Pressure	MPa	0.25 to 0.7
Ambient Temperature/Fluid Temperature	°C	5 to 50
Lubrication		Not required

Supply Valve Specifications

Item		Supply Valve	
Valve-type and Operation Method		Pilot operated poppet valve	
Rated Voltage	V	DC 24 ±10%	AC 100 ±10%
Surge Suppressor		Varistor (24 VDC)	Bridge Diode (100 VAC)
Power Consumption		1.2 W (with LED)	1.5 VA (with LED)
Effective Area	mm²	5	
Manual Override		Non-locking push-type	

Vacuum Breaking Valve Specifications

Item		Vacuum Breaking Valve	
Valve-type and Operation Method		Direct acting poppet valve	
Rated Voltage	V	DC 24 ±10%	AC 100 ±10%
Surge Suppressor		Varistor (24 VDC)	Bridge Diode (100 VAC)
Power Consumption		1.2 W (with LED)	1.5 VA (with LED)
Effective Area	mm²	0.3	
Manual Override		Non-locking push-type	

Vacuum Filter Specifications

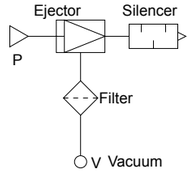
Item		Vacuum Filter
Element Material		Polyvinyl formal
Filtration Rating	μm	10

Vacuum Pressure Switch Specifications

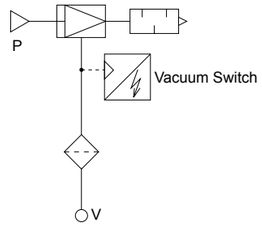
Item			Vacuum Pressure Switch		
Model No.			VSG... -NA	VSG... -NW	VSG... -A
Output Specification			Switch Output 1 point	Switch Output 2 points	-
			Analog Output 1 point	-	Analog Output 1 point
Power Supply Voltage		V	DC 12 to 24 ±10% Ripple content ≤ 10%(P-P)		
Power Consumption (at 24 VDC supply)			≤ 17 mA (when 1 switch point is ON)	≤ 25 mA (when 2 switch points are ON)	≤ 15 mA (at output current 0 mA)
Operating Fluid			Air, Inert gas		
Working pressure		kPa	-100 to 0		
Proof pressure		kPa	200		
Operating Temperature		°C	0 to 50		
Operating Humidity			35 to 85% RH (No condensation)		
Switch Output	Number of Output Points		1	2	-
	Output Format		NPN Transistor Open Collector		-
	Set Pressure	kPa	0 to -100		-
	Repeatability		±3% F.S.(at 25°C)		-
	Differential		Approx. 1 to 15% of set value	≤ 2% F.S.	-
	Switch Rating		≤ 30 VDC 80 mA		-
	Residual Voltage	V	≤ 0.8		-
Analog Output	Output Voltage	V	1 to 5	-	1 to 5
	Zero Point Voltage	V	1±0.1	-	1±0.1
	Span Voltage	V	4±0.1	-	4±0.1
	Output Current	mA	≤ 1	-	≤ 1
	Linearity/Hysteresis		≤ ±0.5% F.S.	-	≤ ±0.5% F.S.

Circuit Diagram

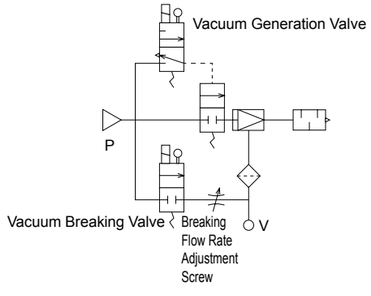
●VSG-øA-□(Unit combination: A)



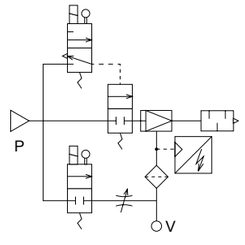
●VSG-øB-□(Unit combination: B)



●VSG-□E -□(Unit combination: E)



●VSG -□F -□(Unit combination: F)

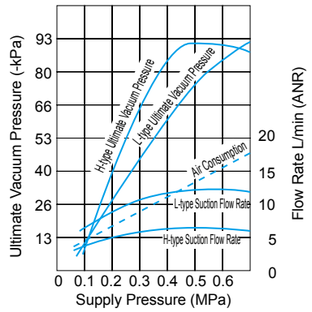


Vacuum Components
Ejector System
VSY
VSH
VSU
VSB
VSC
VSG
VSK/ VSKM
VSJ/ VSJM
VSN/ VSNM
VSX/ VSXM
VSQ
VSZM
Ending

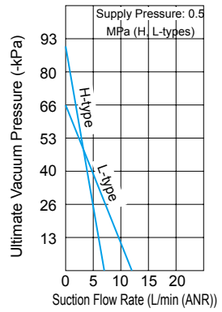
Vacuum Characteristics, Flow Characteristics

●VSG-□05

Vacuum Characteristics

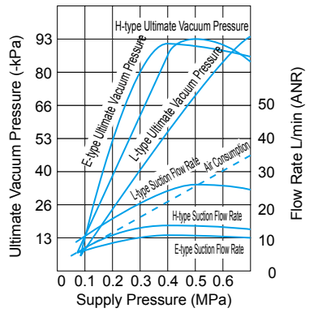


Flow Characteristics

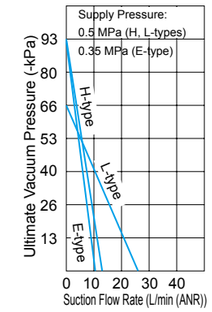


●VSG-□07

Vacuum Characteristics



Flow Characteristics



●VSG-□10

Vacuum Characteristics

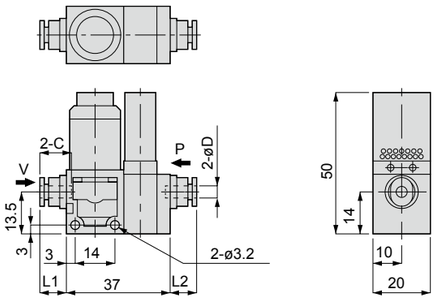
Flow Characteristics

1. The supply pressure in the characteristics above is during vacuum generation.
2. 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.)
3. 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 $0.5^2 \times \pi = 0.785\ mm^2 \times 3 = 2.35\ mm^2$. Therefore, select piping and equipment to secure an effective cross-sectional area of 2.3 mm² or more.)

MEMO

External Dimension Drawings

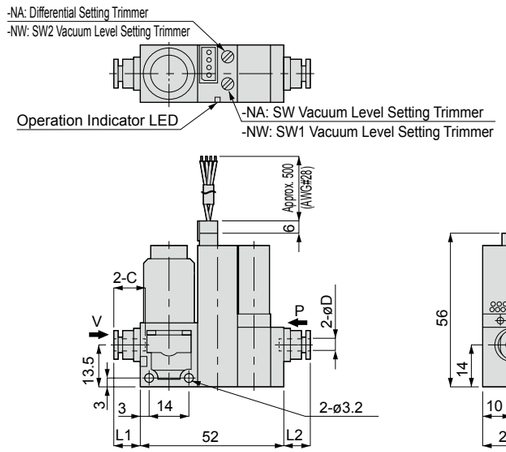
● VSG -□A -□(Unit combination: A)



Unit: mm

Model No.	Bore size øD	L1	L2	C	Nozzle Diameter (mm)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSG-H 05A-44	4	9.9	9.4	11.2	0.5	90	7	11.5	47
VSG-H 07A-66	6	12.3	11.8	11.9	0.7	93	13	23	49
VSG-H 10A-66					1		27	46	48
VSG-L 05A-44	4	9.9	9.4	11.2	0.5	66	12	11.5	46
VSG-L 07A-66	6	12.3	11.8	11.9	0.7		26	23	48
VSG-L 10A-66					1		40	46	47
VSG-E 07A-66	6	12.3	11.8	11.9	0.7	90	10.5	17	48
VSG-E 10A-66					1	92	21	34	

● VSG -□B -□(Unit combination: B)



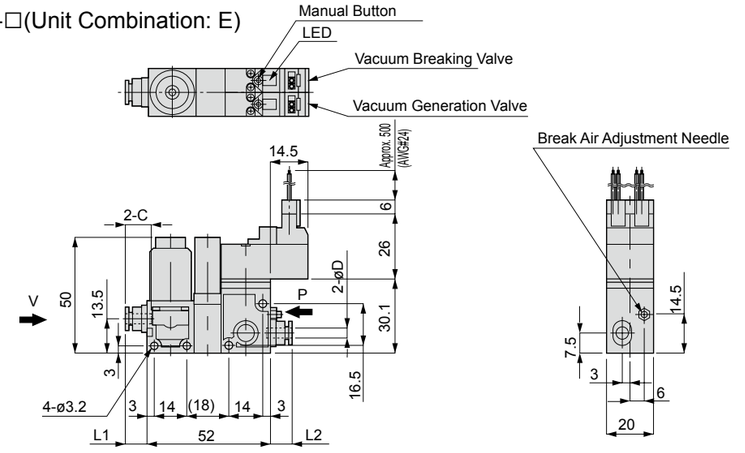
Note) For analog output type (-A), operation indicator LED and vacuum level setting trimmer are not installed.

Unit: mm

Model No.	Bore size øD	L1	L2	C	Nozzle Diameter (mm)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSG-H 05B-44-□	4	9.9	9.4	11.2	0.5	90	7	11.5	74
VSG-H 07B-66-□	6	12.3	11.8	11.9	0.7	93	13	23	75
VSG-H 10B-66-□					1		27	46	
VSG-L 05B-44-□	4	9.9	9.4	11.2	0.5	66	12	11.5	73
VSG-L 07B-66-□	6	12.3	11.8	11.9	0.7		26	23	75
VSG-L 10B-66-□					1		40	46	74
VSG-E 07B-66-□	6	12.3	11.8	11.9	0.7	90	10.5	17	75
VSG-E 10B-66-□					1	92	21	34	74

External Dimension Drawings

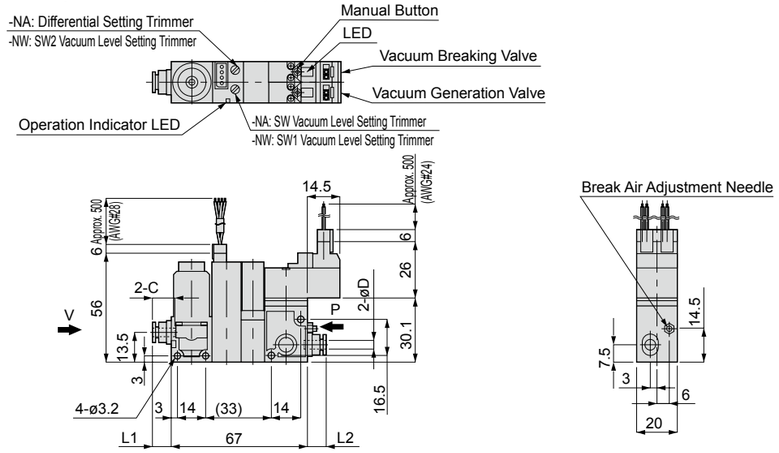
● VSG-□E -□(Unit Combination: E)



Unit: mm

Model No.	Bore size øD	L1	L2	C	Nozzle Diameter (mm)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSG-H 05E-44-□	4	9.9	7.9	11.2	0.5	90	7	11.5	99
VSG-H 07E-66-□	6	12.3	10.3	11.9	0.7	93	13	23	100
VSG-H 10E-66-□					1		27	46	101
VSG-L 05E-44-□	4	9.9	7.9	11.2	0.5	66	12	11.5	99
VSG-L 07E-66-□	6	12.3	10.3	11.9	0.7		26	23	101
VSG-L 10E-66-□					1		40	46	100
VSG-E 07E-66-□	6	12.3	10.3	11.9	0.7	90	10.5	17	101
VSG-E 10E-66-□					1	92	21	34	100

● VSG -□F -□(Unit combination: F)

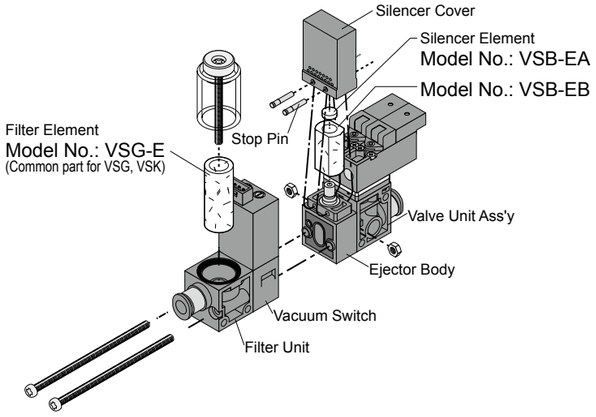


Note) For analog output type (-A), operation indicator LED and vacuum level setting trimmer are not installed.

Unit: mm

Model No.	Bore size øD	L1	L2	C	Nozzle Diameter (mm)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	Weight (g)
VSG-H 05F-44-□-□	4	9.9	7.9	11.2	0.5	90	7	11.5	125
VSG-H 07F-66-□-□	6	12.3	10.3	11.9	0.7	93	13	23	128
VSG-H 10F-66-□-□					1		27	46	127
VSG-L 05F-44-□-□	4	9.9	7.9	11.2	0.5	66	12	11.5	127
VSG-L 07F-66-□-□	6	12.3	10.3	11.9	0.7		26	23	
VSG-L 10F-66-□-□					1		40	46	
VSG-E 07F-66-□-□	6	12.3	10.3	11.9	0.7	90	10.5	17	128
VSG-E 10F-66-□-□					1	92	21	34	

Maintenance Parts



MEMO

Vacuum Components
Ejector System
VSY
VSH
VSU
VSB
VSC
VSG
VSK/ VSKM
VSJ/ VSJM
VSN/ VSNM
VSX/ VSXM
VSQ
VSZM
Ending



Ejector System/16 mm Width Integrated Type Vacuum Ejector Unit

VSK Series

RoHS

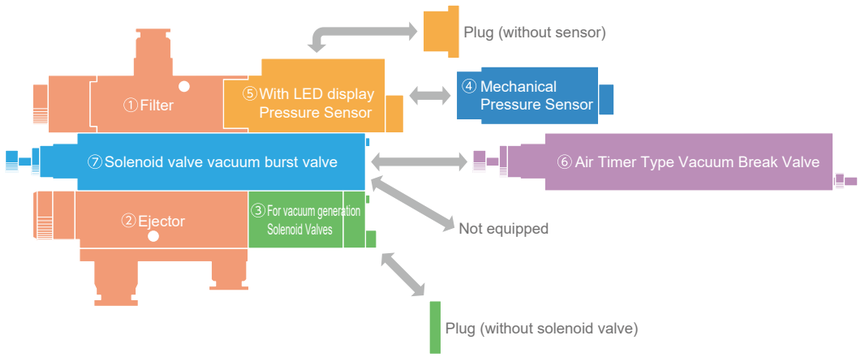
Integrated type vacuum ejector unit with modularized abundant units, allowing selection according to the purpose of use.

Abundant vacuum characteristic variations

Nozzle Diameter \ Vacuum Characteristics	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		11.5			91	67	
0.7 mm	13	26	10.5	23		17	93	67	91
1.0 mm	27	40	21	46		34	93	67	91
1.2 mm	38	50	27	70		47	93	67	91

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

Modularization of each unit and abundant unit combinations allow selection of the optimal unit according to the purpose of use.



Unit Combination Code	A	B	C	D	E	F	G	H	J	K	L	M	P	Q	R	S	T	W
① Filter Section + ② Ejector Section	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
③ Vacuum Generation Solenoid Valve	–	–	–	–	–	–	○	○	○	○	○	○	○	○	○	○	○	○
Check Valve (Vacuum Holding Function)	–	○	–	○	–	○	–	○	–	○	–	○	–	–	–	–	–	–
④ Mechanical Pressure Sensor	–	–	○	○	–	–	–	–	○	○	–	–	–	○	–	–	○	–
⑤ Pressure Sensor with LED Display	–	–	–	–	○	○	–	–	–	–	○	○	–	–	○	–	–	○
⑥ Air Timer Type Vacuum Break Valve	–	–	–	–	–	–	–	–	–	–	–	–	○	○	○	–	–	–
⑦ Solenoid Valve-type Break Valve	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	○	○	○

Vacuum break valve can be selected from solenoid valve-type and air timer type, and furthermore, a switching valve is incorporated, enabling short-time vacuum break air blow and fine adjustment of break air.

* Air Timer Break
After generating vacuum with an electrical signal, when the electrical signal turns off, compressed air is automatically sent into the vacuum circuit for a fixed period of time. During this time, retract the pad from the workpiece. When the breaking operation finishes, the vacuum circuit becomes closed.

2 types of pressure switches available.

Pressure sensor with LED display (2 types: 2-point switch output, 1-point switch output + analog output) and a low-cost, easy-to-use mechanical-type are available. Model selection according to the application is possible.

Manual button is push & lock type, convenient for maintenance.

Solution Examples



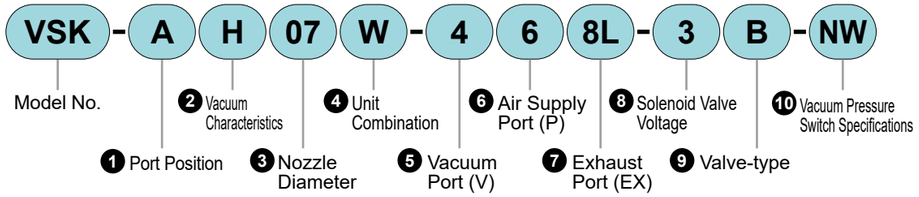
Packaging machines, assembly equipment, and various other transport devices.

An all-mighty model where unit configuration can be selected according to desired functions, usable for various applications.

Vacuum Components
Ejector System
VSB
VSC
VSG
VSK/ VSKM
VSJ/ VSJM
VSN/ VSNM
VSX/ VSXM
VSQ
VSZM
Ending

Model No. Notation

●Single Unit Type Model No.



1 Port Position

Code	Content
A	Single Unit Type Connection Port 2 faces
B	Single Unit Type Connection Port 1 face

2 Vacuum Characteristics

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

Note) The combination of ❷ 'E' and Nozzle Diameter ❸ '05' cannot be selected.

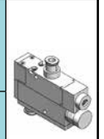
3 Nozzle Diameter

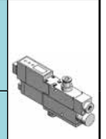
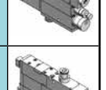
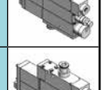
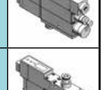
Code	Content
05	ø0.5
07	ø0.7
10	ø1.0
12	ø1.2

Note1) The combination of Vacuum Characteristics ❷ 'E' and ❸ '05' cannot be selected.

Note2) If ❺ Vacuum Port (V) or ❻ Air Supply Port (P) is '4', then '10' and '12' for item ❸ cannot be selected.

4 Unit Combination

Filter	Vacuum Generation Valve	Check Valve (Vacuum holding)	Mechanical Vacuum Pressure Switch	Vacuum pressure with digital display Switch	Air timer type vacuum burst Valve	For Vacuum Breaking Valve	Code	
●							A	
●		●					B	
●			●				C	
●		●	●				D	
●				●			E	
●		●		●			F	
●	●						G	
●	●	●					H	
●	●		●				J	
●	●	●	●				K	

Filter	Vacuum Generation Valve	Check Valve (Vacuum holding)	Mechanical Vacuum Pressure Switch	Vacuum pressure with digital display Switch	Air timer type vacuum burst Valve	For Vacuum Breaking Valve	Code	
●	●			●			L	
●	●	●		●			M	
●	●				●		P	
●	●			●	●		Q	
●	●			●	●		R	
●	●	Note1)				●	S	
●	●	Note1)	●			●	T	
●	●	Note1)		●		●	W	

Note1) Vacuum self-holding valve is built-in.

Note1) If ❹ is 'A', 'B', 'C', 'D', 'E', or 'F', then Solenoid Valve Voltage ❽ and Valve Type ❾ cannot be selected.

Note2) Select Vacuum Pressure Switch Specification ❿ only when ❹ is 'E', 'F', 'L', 'M', 'R', or 'W'.

5 Vacuum Port (V)

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

Note) If ❺ or Air Supply Port (P) ❻ is '4', then '10' and '12' for Nozzle Diameter ❸ cannot be selected.

6 Air Supply Port (P)

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

Note) If Vacuum Port (V) ❺ or ❻ is '4', then '10' and '12' for Nozzle Diameter ❸s cannot be selected.

7 Exhaust Port (EX)

Code	Content
S	Atmospheric Release with Silencer
8	ø8 Push-in fitting straight centralized exhaust
8L	*8 Push-in fitting elbow centralized exhaust

8 Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC

Note) If Unit Combination ❹ is 'A', 'B', 'C', 'D', 'E', or 'F', then ❽ and Valve Type ❾ cannot be selected.

9 Valve-type

Code	Content
A	Normally Open
B	Normally Closed

Note) If Unit Combination ❹ is 'A', 'B', 'C', 'D', 'E', or 'F', then Solenoid Valve Voltage ❽ and ❾ cannot be selected.

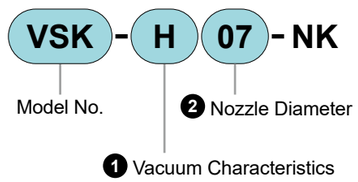
10 Vacuum Pressure Switch Specifications

Code	Content
NW	NPN Output 2 points with Digital Display
NA	NPN Output 1 point + Analog Output with Digital Display
PW	PNP Output 2 points with Digital Display
PA	PNP Output 1 point + Analog Output with Digital Display

Note) Select item ❿ only when Unit Combination ❹ is 'E', 'F', 'L', 'M', 'R', or 'W'.

Maintenance Part Model No. * For details on the maintenance parts, P. 189.

●Nozzle Kit



1 Vacuum Characteristics

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

Note) The combination of ❶ 'E' and Nozzle Diameter ❷ '05' cannot be selected.

2 Nozzle Diameter

Code	Content
05	ø0.5
07	ø0.7
10	ø1.0
12	ø1.2

Note) The combination of ❶ Vacuum Characteristics 'E' and ❷ '05' cannot be selected.

●Filter Element

VSG-E

●Silencer Element for Single Unit

VSK-SE

●Silencer Kit for Manifold

VSKM-SK

●Masking Block for Manifold

VSKM-MB

Note) The combination of ❶ 'E' and Nozzle Diameter ❷ '05' cannot be selected.

Model No. Notation

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.

●Manifold model No.

VSKM	-	H	07	W	-	T4	20	S2	-	3	B	-	10	-	NW
Model No.		❶	❷	❸		❹	❺	❻		❼	❽		❾		❿

●Manifold single unit model No.

VSKM	-	H	07	W	-	T4	—	3	B	—	NW
Model No.						❹					

●Manifold base only model No.

VSKM	—	PP	20	S2	—	10
Model No.		❹ Vacuum Port (V)	❻ Exhaust Port (EX)		❽ Valve-type	❿ Vacuum Pressure Switch Specifications

❷ Nozzle Diameter
❶ Vacuum Characteristics
❸ Unit Combination
❺ Air Supply Port (P)
❼ Solenoid Valve Voltage
❾ Number of Manifold Stations

❶ 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.)

Note1) The combination of ❶ 'E' and Nozzle Diameter ❷ '05' cannot be selected.
Note2) For mixed specifications, please be sure to fill out the 'Mixed Manifold Specification Sheet'.
Note3) When ❶ is 'Z', only Nozzle Diameter ❷ '00' can be selected. When ❷ is '00', only ❶ 'Z' can be selected.
Note4) For the 'Manifold Only' option, Nozzle Diameter ❷ 'Z' cannot be selected. For the 'Manifold Base Only' option, the vacuum characteristics cannot be selected.

❷ Nozzle Diameter

Code	Content
05	ø0.5
07	ø0.7
10	ø1.0
12	ø1.2
00	For mixed specifications(Provide details in the specification sheet.)

Note1) The combination of ❶ Vacuum Characteristics 'E' and ❷ '05' cannot be selected.
Note2) For mixed specifications, please be sure to fill out the 'Mixed Manifold Specification Sheet'.
Note3) When ❶ is 'Z', only ❷ '00' can be selected. When ❷ is '00', only ❶ 'Z' can be selected.
Note4) When ❹ Vacuum Port (V) is 'S4' or 'T4', ❷ '10' and '12' cannot be selected.
Note5) For the 'Manifold Only' option, ❷ 'Z' cannot be selected. For the 'Manifold Base Only' option, the nozzle diameter cannot be selected.

❸ Unit Combination

Filter	Vacuum Generation Valve	Check Valve (Vacuum holding)	Mechanical Vacuum Pressure Switch	Vacuum Pressure Switch with Digital Display	Air Timer Type Vacuum Breaking Valve	Vacuum Breaking Valve	Code
●							A
●		●					B
●			●				C
●		●	●				D
●				●			E
●		●		●			F
●	●						G
●	●	●					H
●	●		●				J
●	●	●	●				K
●	●			●			L
●	●	●		●			M
●	●				●		P

Filter	Vacuum Generation Valve	Check Valve (Vacuum holding)	Mechanical Vacuum Pressure Switch	Vacuum Pressure Switch with Digital Display	Air Timer Type Vacuum Breaking Valve	Vacuum Breaking Valve	Code
●	●		●		●		Q
●	●			●	●		R
●	●	*1				●	S
●	●	*1	●			●	T
●	●	*1		●		●	W
For mixed specifications (Provide details in the specification sheet.) <Applicable to Manifold Type>							Z

*1: Vacuum self-holding valve is built-in.

Note1) For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet".
Note2) When ❸ is 'A', 'B', 'C', 'D', 'E', or 'F', Solenoid Valve Voltage ❼ and Valve Type ❽ cannot be selected.
Note3) Select Vacuum Pressure Switch Specification ❿ only when ❸ is 'E', 'F', 'L', 'M', 'R', or 'W'.
Note4) For the manifold type model number, 'A', 'B', 'C', 'D', 'E', or 'F' cannot be selected for item ❸.
Note5) For the 'Manifold Only' option, the unit combination cannot be selected.

❹ Vacuum Port (V)

Code	Content	Type: Manifold Type	Type: Manifold Single Unit	Type: Manifold Only
PP	Plug Port Position Side			●
S4	ø4 Push-in fitting Port Position Side	●		●
S6	ø6 Push-in fitting Port Position Side	●		●
S8	ø8 Push-in fitting Port Position Side	●		●
T4	ø4 Push-in fitting Port Position Top	●	●	
T6	ø6 Push-in fitting Port Position Top	●	●	
T8	ø8 Push-in fitting Port Position Top	●	●	
00	For Manifold Single Unit with Port Position Side		●	
CX	For Fitting Mix (Provide details in the specification sheet.)	●		

Note1) For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet".
Note2) To mount a masking block, select Nozzle Diameter ❷ 'CX' and specify the mounting position and quantity on the manifold specification sheet.
Note3) When ❹ is 'S4' or 'T4', Nozzle Diameter ❷ '10' and '12' cannot be selected.

❺ Air Supply Port (P)

Shape	Size	Position	Code
Straight Fitting	ø6	R Side Only	16
	ø8		18
	ø10		10
	ø12		12
	ø6	Both Sides	26
	ø8		28
	ø10		20
	ø12		22
	ø6	L Side Only	36
	ø8		38
	ø10		30
	ø12		32
Elbow Fitting	ø8	R Side Only	48
	ø10		40
	ø12		42
	ø8	L Side Only	58
	ø10		50
	ø12		52
	ø8	Both Sides	68
	ø10		60
	ø12		62

Note) For manifold single unit, air supply port cannot be selected.

❻ Exhaust Port (EX)

Centralized Exhaust Port			
Shape	Size	Position	Code
Straight Fitting	ø8	R Side Only	18
	ø10		10
	ø12		12
	ø8	L Side Only	28
	ø10		20
	ø12		22
	ø8	Both Sides	38
	ø10		30
	ø12		32
Elbow Fitting	ø8	R Side Only	48
	ø10		40
	ø12		42
	ø8	L Side Only	58
	ø10		50
	ø12		52
	ø8	Both Sides	68
	ø10		60
	ø12		62
Tapered Pipe Female Thread	Rc1/4	R Side Only	72
	Rc3/8		73
	Rc1/2		74
	Rc1/4	L Side Only	82
	Rc3/8		83
	Rc1/2		84
	Rc1/4	Both Sides	92
	Rc3/8		93
	Rc1/2		94
Atmospheric Release-type Silencer		R Side Only	S1
		L Side Only	S2
		Both Sides	S3

Note) For manifold single unit, exhaust port cannot be selected.

❼ Solenoid Valve Voltage

Code	Content
1	100 VAC
3)	24 VDC

Note1) When ❸ Unit Combination is 'A', 'B', 'C', 'D', 'E', or 'F', ❼ and Valve Unit Type ❽ cannot be selected.
Note2) For the 'Manifold Only' option, the solenoid valve voltage cannot be selected.

❽ Valve-type

Code	Content
A	Normally Open
B	Normally Closed
Z	For Mixed Specifications (Provide details in the specification sheet.)

Note1) For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet".
Note2) When ❸ is 'A', 'B', 'C', 'D', 'E', or 'F', Solenoid Valve Voltage ❼ and Valve Unit Type ❽ cannot be selected.
Note3) For the 'Manifold Only' option, ❽ 'Z' cannot be selected.

❾ Number of Manifold Stations

Code	Content
2	2 stations
to	to
10	10 stations

Note1) The number of stations that can operate simultaneously differs depending on the combination of nozzle diameter and port size. Please inquire for details.
Note2) For manifold single unit only, the number of manifold stations cannot be selected.

❿ Vacuum Pressure Switch Specifications

Code	Content
NW	NPN Output 2 points with Digital Display
NA	NPN Output 1 point + Analog Output with Digital Display
PW	PNP Output 2 points with Digital Display
PA	PNP Output 1 point + Analog Output with Digital Display
Z	For Mixed Specifications (Provide details in the specification sheet.)

Note1) For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet".
Note2) Select item ❿ only when ❸ Unit Combination is 'E', 'F', 'L', 'M', 'R', or 'W'.
Note3) For the 'Manifold Only' option, ❿ 'Z' cannot be selected. For the 'Manifold Base Only' option, the vacuum pressure switch specification cannot be selected.

Specifications

Item	VSK
Operating Fluid	Air
Operating Pressure MPa	0.25 to 0.7
Ambient Temperature/Fluid Temperature °C	5 to 50
Lubrication	Not required

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))
VSK-□H05...	0.5	0.5	91	7	11.5
VSK-□L05...		0.5	67	11	11.5
VSK-□H07...	0.7	0.5	93	13	23
VSK-□L07...		0.5	67	(24) 26	23
VSK-□E07...		0.35	91	10.5	17
VSK-□H10...	1.0	0.5	93	27	46
VSK-□L10...		0.5	67	40	46
VSK-□E10...		0.35	91	21	34
VSK-□H12...	1.2	0.5	93	38	70
VSK-□L12...		0.5	67	50	70
VSK-□E12...		0.35	91	27	47

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

Valve (for Vacuum Generation, Breaking) Specifications

Item	Solenoid Valve (for Vacuum Generation, Breaking)				
Configuration	Vacuum Generation Valve		Vacuum Breaking Valve		
Rated Voltage V	24 VDC	100 VAC	24 VDC	100 VAC	
Voltage Fluctuation Range V	DC 21.6 to 26.4 (DC 24 ±10%)	AC 90 to 110 (AC 100 ±10%)	DC 21.6 to 26.4 (DC 24 ±10%)	AC 90 to 110 (AC 100 ±10%)	
Surge Suppressor	Varistor	Bridge Diode	Varistor	Bridge Diode	
Power Consumption	0.8 W	1 VA	0.8 W	1 VA	
Valve-type and Operation Method	Pilot operated poppet valve				
Insulation Class	Equivalent to Class B				
Manual Override	Locking push-type				
Operation Indicator	Red LED lights up when coil is energized				
Method and Lead Wire Length	Connector type: 500 mm				
Proof Pressure MPa	1.05				
Operation Classification	N.C.	N.O.	N.C.	N.O.	N.C.
Effective Area mm²	3.5	3.5	3.5	3.5	0.6

Lead Wire Color

For Vacuum Generation Valve Only		For Combination of Vacuum Generation and Breaking Valves	
24 VDC	100 VAC	24 VDC	100 VAC
Red(+) Black(-)	Blue	Black(-: supply solenoid valve)	White(Common)
		Red(+: COMMON)	Blue(Supply Solenoid Valve)
		White(-: burst solenoid valve)	Black(Breaking Solenoid Valve)

Vacuum Pressure Switch with Digital Display Specifications

Item		Vacuum Pressure Switch with Digital Display			
Specifications		With 2-point Switch Output (-NW)	With Analog Output (-NA)	With 2-point Switch Output (-PW)	With Analog Output (-PA)
Current Consumption mA		≤ 40			
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 70 (Atmospheric pressure, ≤ 60% RH humidity)			
Operating Temperature °C		0 to 50 (However, no freezing)			
Operating Humidity		35 to 85% RH (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	2	1
Repeatability		±3% F.S. max(at Ta = 25°C)			
Differential		Fixed (≤ 2% F.S.)	Variable (Approx. 0 to 15% F.S.)	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		PNP Transistor Open Collector Output Power Supply Voltage 80 mA Residual Voltage 0.8 V	
Analog Output	Output Voltage V	-	1 to 5	-	1 to 5
	Zero Point Voltage V	-	1±0.1	-	1±0.1
	Span Voltage V	-	4±0.1	-	4±0.1
	Output Current mA	-	≤ 1 (Load resistance ≥ 5 kΩ)	-	≤ 1 (Load resistance ≥ 5 kΩ)
	Linearity/Hysteresis	-	±0.5% F.S. or less	-	±0.5% F.S. or less
Response time ms		Approx. ≤ 2			
Display kPa		-99 to 0 (2-digit Red LED display)			
Display Update Rate		Approx. 4 times/sec			
Display Accuracy		±3% F.S. ±2 digit			
Resolution		1 digit			
Operation Indicator		SW1: Red LED lights up at or above set pressure SW2: Green LED lights up at or above set pressure	Red LED lights up at or above set pressure	SW1: Red LED lights up at or above set pressure SW2: Green LED lights up at or above set pressure	Red LED lights up at or above set pressure
Functions		1. MODE Switch(ME or S1 or S2) 2. S1 Setting Trimmer(2/3 turn trimmer) 3. S2 Setting Trimmer(2/3 turn trimmer)	1. MODE Switch(ME or SW) 2. SW Setting Trimmer(2/3 turn trimmer) 3. HYS Setting Trimmer(Approx. 0 to 15% of set value)	1. MODE Switch(ME or S1 or S2) 2. S1 Setting Trimmer(2/3 turn trimmer) 3. S2 Setting Trimmer(2/3 turn trimmer)	1. MODE Switch(ME or SW) 2. SW Setting Trimmer(2/3 turn trimmer) 3. HYS Setting Trimmer(Approx. 0 to 15% of set value)

Mechanical Vacuum Pressure Switch Specifications

Item		Mechanical Vacuum Pressure Switch
Pressure Detection Method		Diaphragm - Microswitch
Set Pressure	kPa	-80 to -20
Setting Method		Infinitely adjustable by rotating nut
Switch Terminals		Common, N.O., N.C.
Repeatability	kPa	±4
Differential	kPa	≤ 16
Microswitch Used		QJ Type (AM8100) Panasonic or J-7 Omron
Electrical Capacity		7A 250 VAC
Factory Set Pressure	kPa	Approx. -50

Air Timer Type Vacuum Break Valve Specifications

Item		Air Timer Type Vacuum Breaking Valve
Structure		Delayed type by timer air cylinder, poppet type, 2-way valve
Breaking Time		Approx. 0.3 to 3 seconds immediately after vacuum generation valve closes
Break Air Flow Rate	L/min (ANR)	0 to 40 (supply pressure: At 0.5 MPa)
Time Setting Method		Control by speed controller of timer air cylinder

Vacuum Filter Specifications

Item		Vacuum Filter
Element Material		Polyvinyl formal
Filtration Rating	μm	10
Filtration area	mm²	1,130

Weight Table

Unit Combination Code	Weight (g) for single unit		Weight (g) for manifold	
	VSK-A...	VSK-B...	VSKM...-S...	VSKM...-T...
A	60	60	76	78
B	60	60	76	78
C	79	79	94	96
D	79	79	94	96
E	85	85	100	102
F	85	85	100	102
G	81	81	97	99
H	81	81	97	99
J	100	100	115	117
K	100	100	115	117
L	106	106	121	123
M	106	106	121	123
P	134	134	150	152
Q	153	153	168	170
R	159	159	174	176
S	129	129	144	146
T	147	147	163	165
W	153	153	169	171

Manifold Type		Weight (g)
Side Block	VSKM...-...S1...	73
	VSKM...-...S2...	84
	VSKM...-...S3...	73
	VSKM...-.....	61
Intermediate Block	VSKM-.....-.....(Without plug)	21
	VSKM-...P-.....(With plug)	22

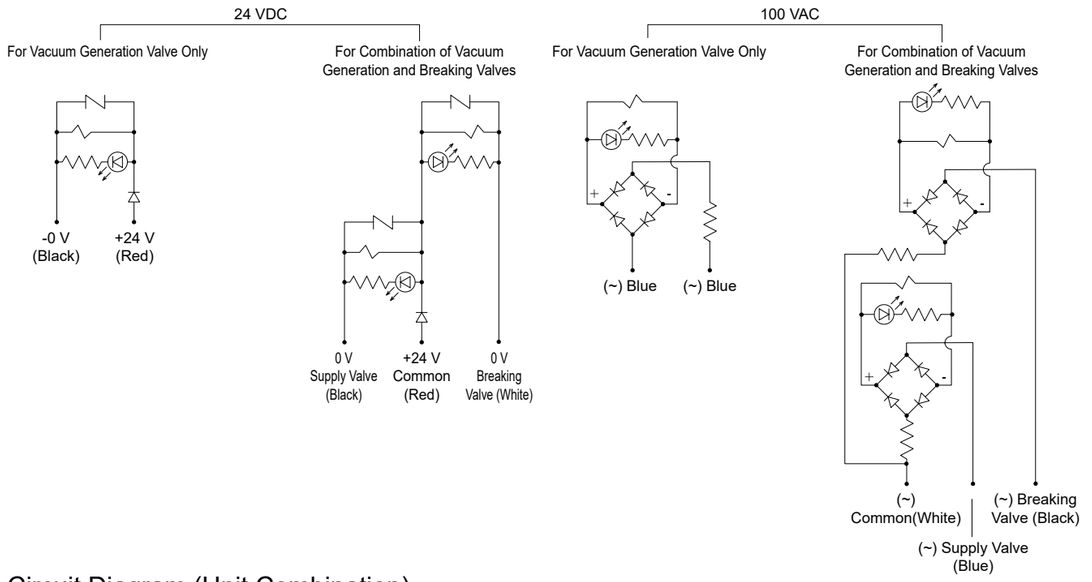
Block Plate	Weight (g)
VSKM...-MB	6

Silencer	Weight (g)
Single Unit Atmospheric Release	2

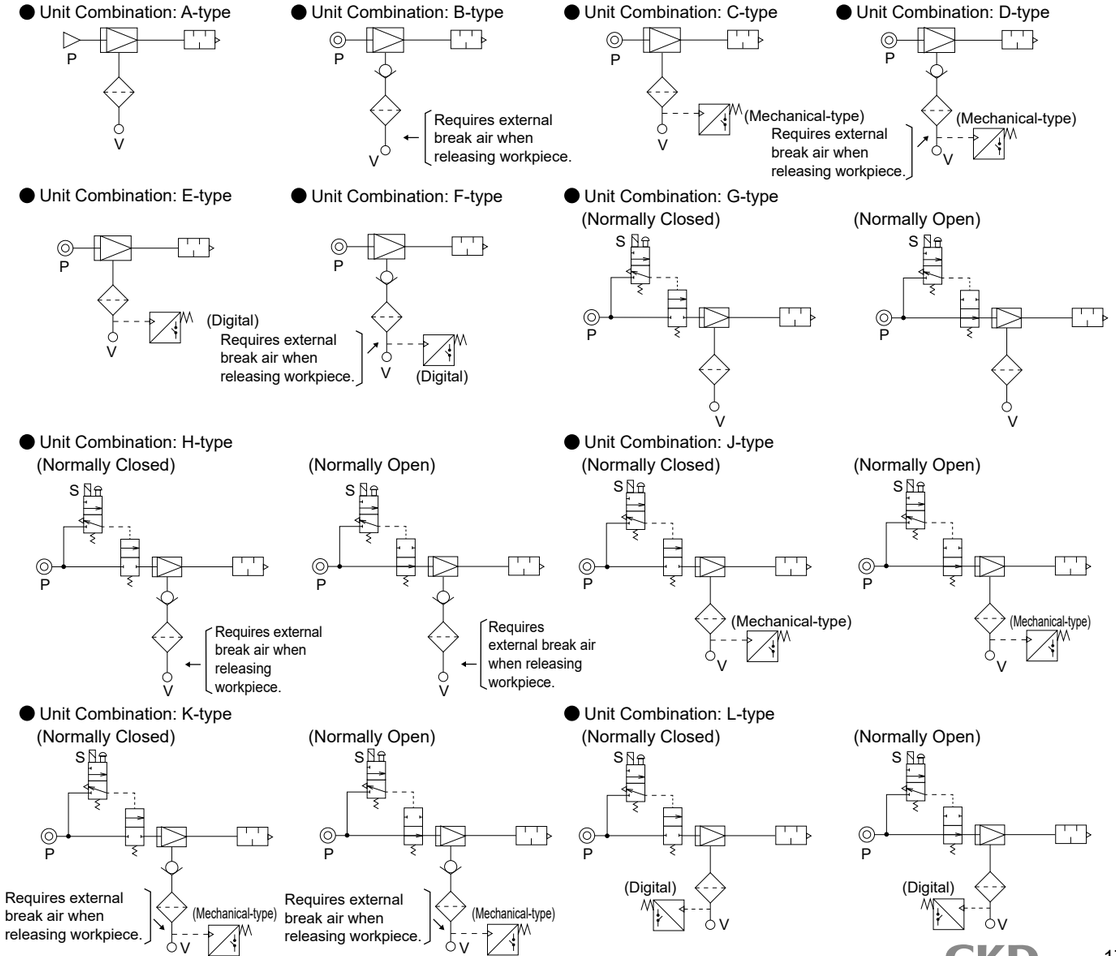
Cartridge for Single Unit	Weight (g)
ø4 Push-in fitting	3.5
ø6 Push-in fitting	3.5
ø8 Push-in fitting	10
Plug Cartridge	1.5

Cartridge for Manifold	Weight (g)
ø6 Push-in fitting	21
ø8 Push-in fitting	20
ø10 Push-in fitting	19
ø12 Push-in fitting	26
ø8 Elbow Push-in fitting	25
ø10 Elbow Push-in fitting	32
ø12 Elbow Push-in fitting	38
Rc1/4 Cartridge	44
Rc3/8 Cartridge	35
Rc1/2 Cartridge	38
Plug Cartridge	6

Electrical Circuit(Solenoid Valve)

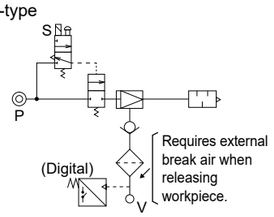


Circuit Diagram (Unit Combination)

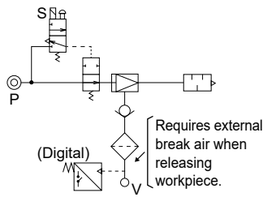


Circuit Diagram (Unit Combination)

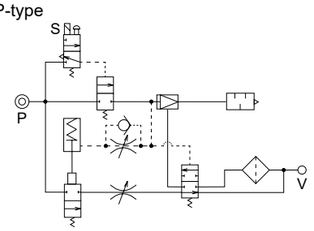
● Unit Combination: M-type
(Normally Closed)



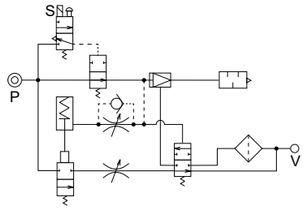
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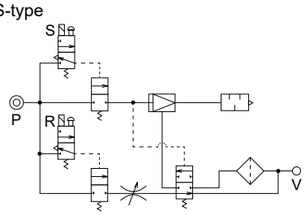
● Unit Combination: P-type
(Normally Closed)



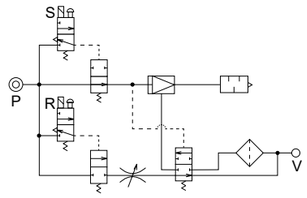
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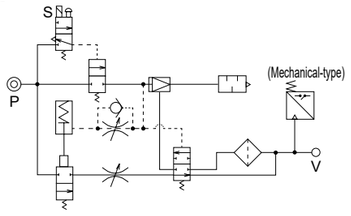
● Unit Combination: S-type
(Normally Closed)



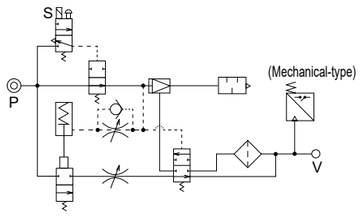
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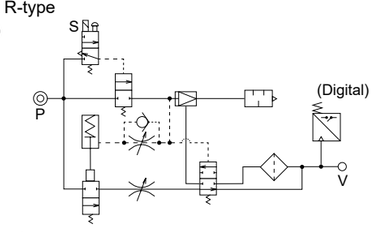
● Unit Combination: Q-type
(Normally Closed)



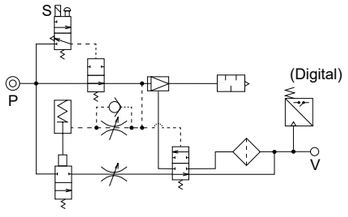
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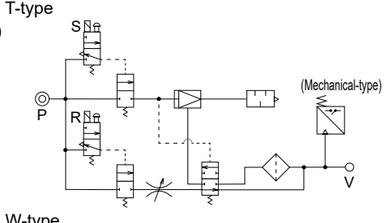
● Unit Combination: R-type
(Normally Closed)



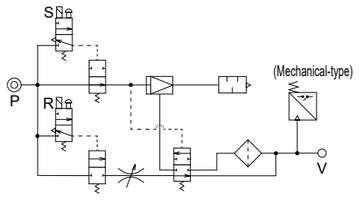
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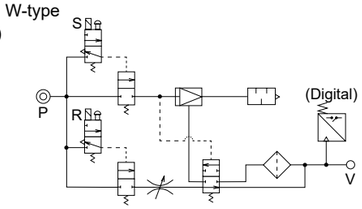
● Unit Combination: T-type
(Normally Closed)



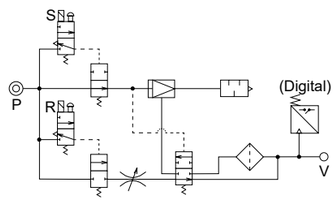
(Normally Open)



● Unit Combination: W-type
(Normally Closed)



(Normally Open)

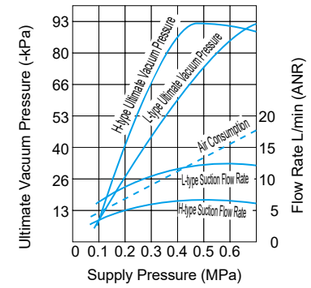


Vacuum Characteristics, Flow Characteristics

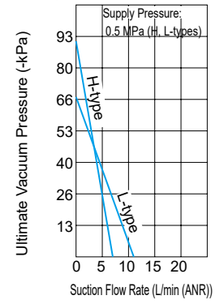
Supply Pressure - Ultimate Vacuum Pressure, Suction Flow Rate, Air Consumption

●VSK-□H05, VSK-□L05

Vacuum Characteristics

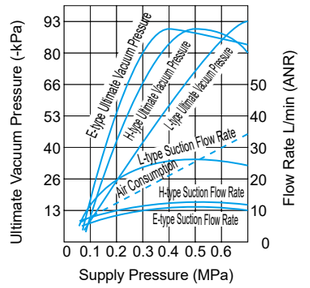


Flow Characteristics

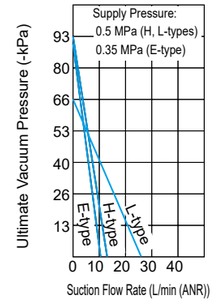


●VSK-□H07, VSK-□L07, VSK-□E07

Vacuum Characteristics



Flow Characteristics



●VSK-□H10, VSK-□L10, VSK-□E10

Vacuum Characteristics

Flow Characteristics

●VSK-□H12, VSK-□L12, VSK-□E12

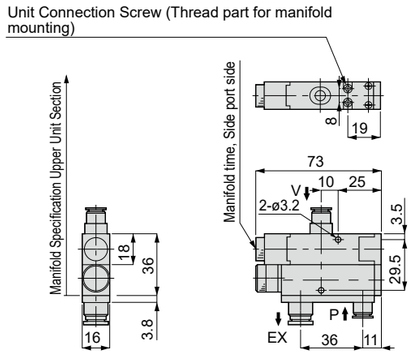
Vacuum Characteristics

Flow Characteristics

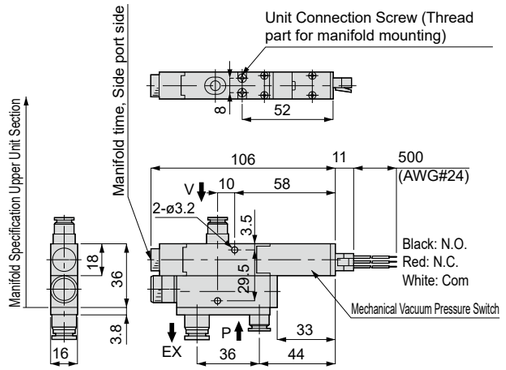
1. The supply pressure in the characteristics above is during vacuum generation.
2. Abnormal noise (gurgling sound) may occur at a supply pressure slightly below the peak ultimate vacuum pressure in the characteristics above. In this state with abnormal noise, characteristics are unstable and noise level 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.)
3. 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 piping equipment that can secure the necessary effective cross-sectional area.))
   (Ex. 3: For a vacuum ejector with a 1.0 mm nozzle diameter, cross-sectional area $0.5^2 \times \pi = 0.785\ mm^2 \times 3 = 2.35\ mm^2$. Therefore, select piping and equipment to secure an effective cross-sectional area of 2.3 mm^2 or more.)

External Dimensions Diagram (Piping Method 2-Face-type VSK-A)

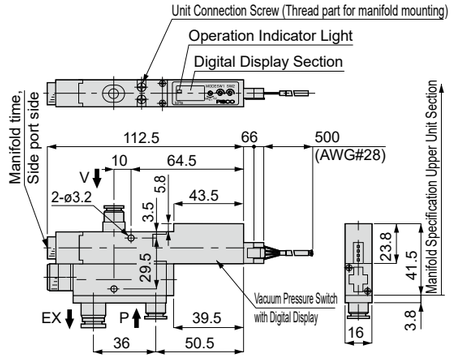
● Unit Combination: A,



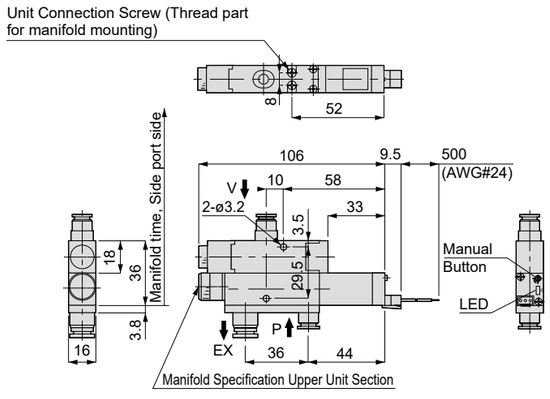
●B type unit combination: C, D types



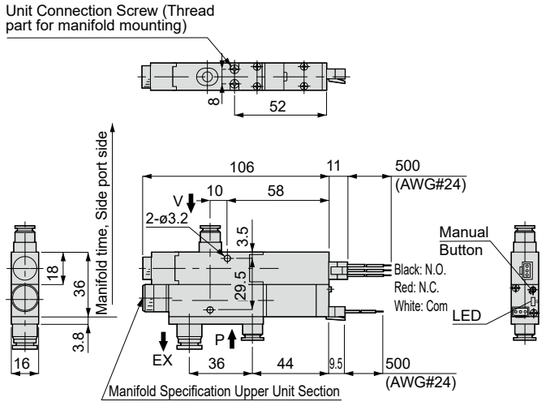
● Unit Combination: E,



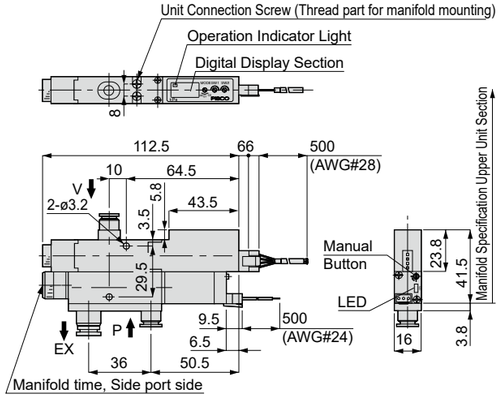
●F type unit combination: G, H-types



● Unit Combination: J,

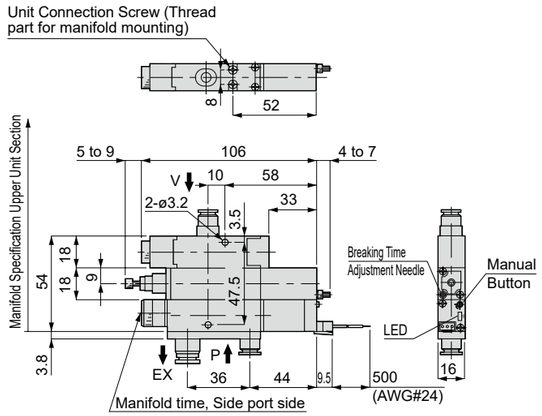


●K type unit combination: L, M types

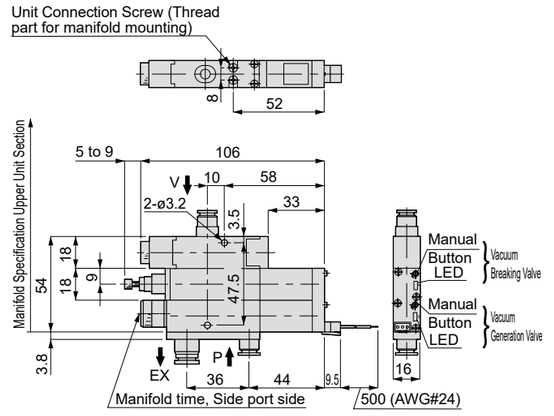


External Dimensions Diagram (Piping Method 2-Face-type VSK-A)

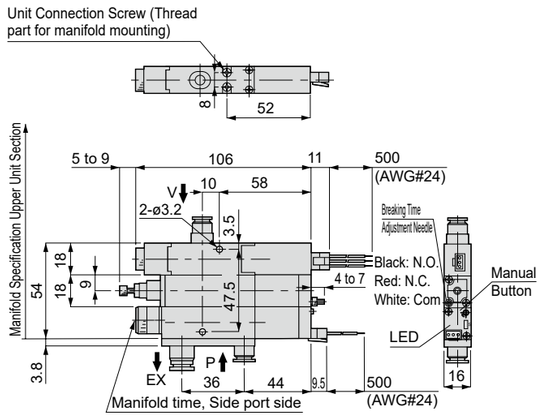
● Unit Combination: P type



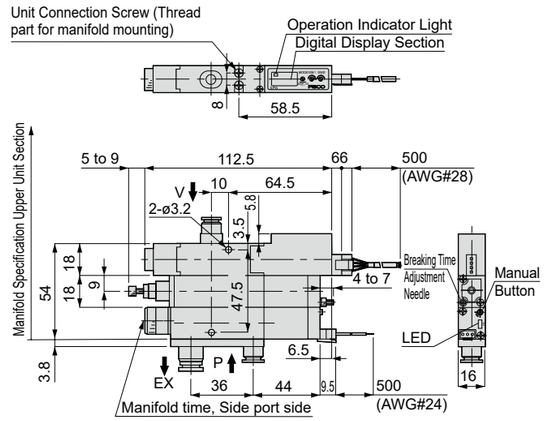
● Unit Combination: S-type



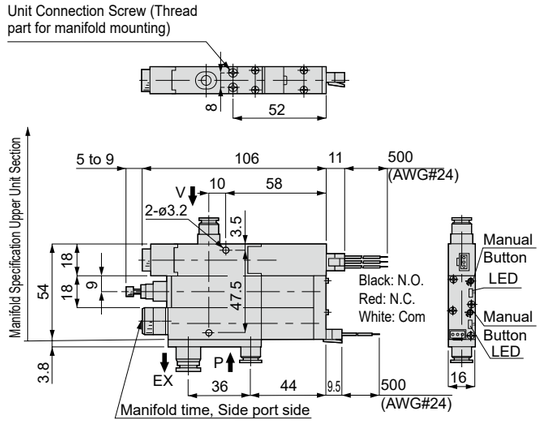
● Unit Combination: Q type



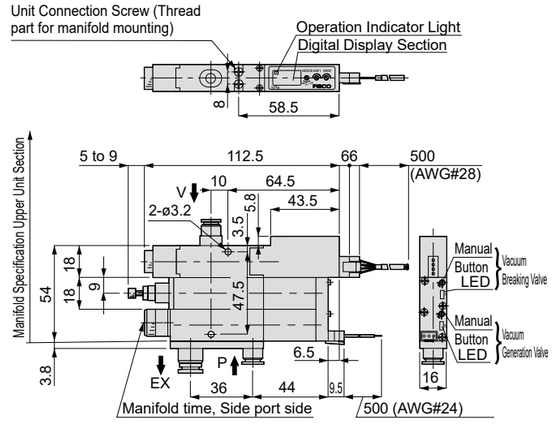
● Unit Combination: R-type



● Unit Combination: T type

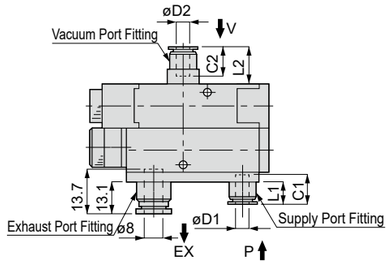


● Unit Combination:: W-type



External Dimensions Diagram (Piping Method 2-Face-type VSK-A)

●Fitting dimensions



Unit: mm

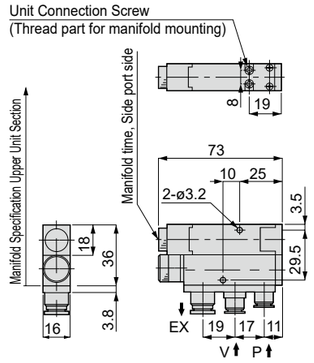
	Bore size øD1	Bore size øD2	L1	L2	C1	C2
P Port	4	-	6.1	-	11.2	-
	6	-	8.9	-	11.9	-
	8	-	17.3	-	18.2	-
V Port	-	4	-	11.6	-	11.2
	-	6	-	14.4	-	11.9
	-	8	-	22.8	-	18.2

●Silencer(atmospheric release)

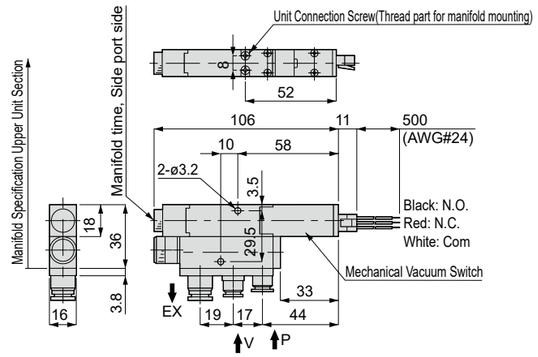
●Exhaust fitting (elbow)

External Dimensions Diagram (Piping Method 1-Face-type VSK-B)

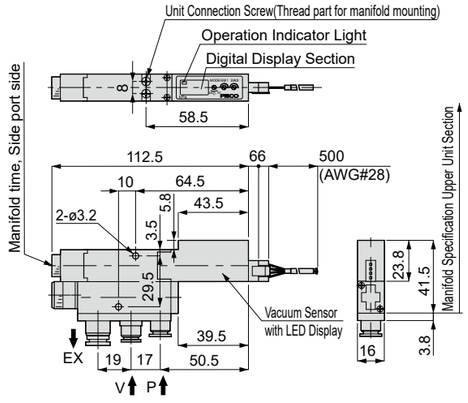
● Unit Combination: A,B type



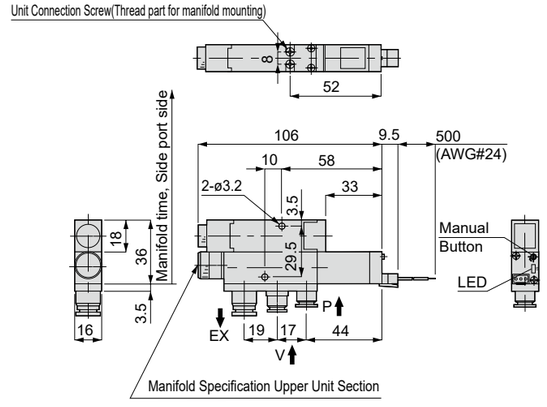
● Unit Combination: C, D types



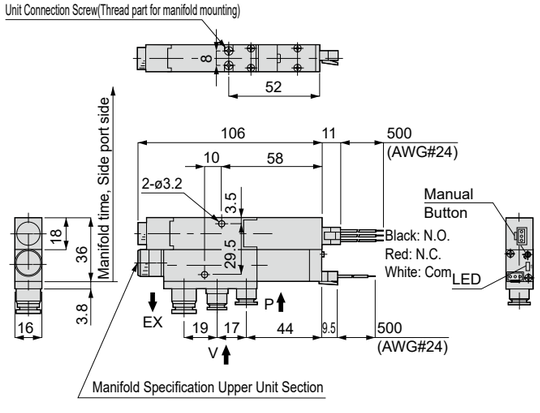
● Unit Combination: E,F type



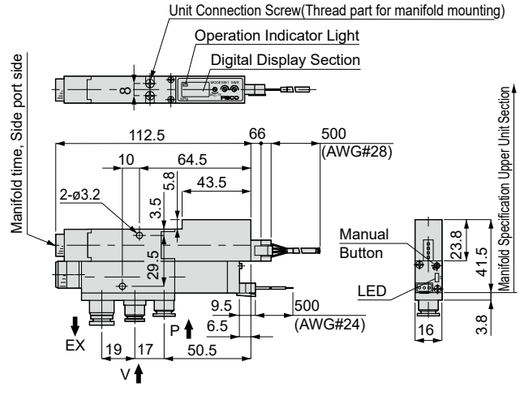
● Unit Combination: G, H-types



● Unit Combination: J,K type

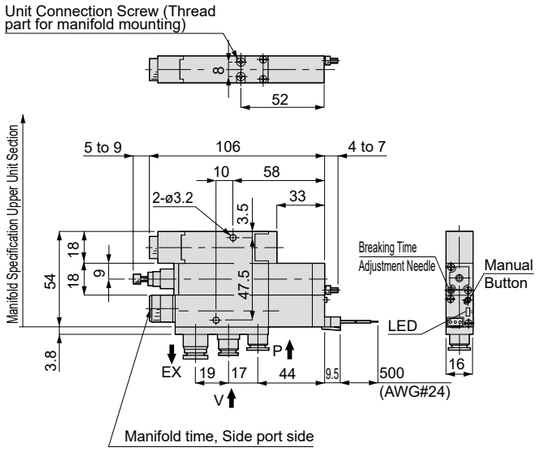


● Unit Combination: L, M types

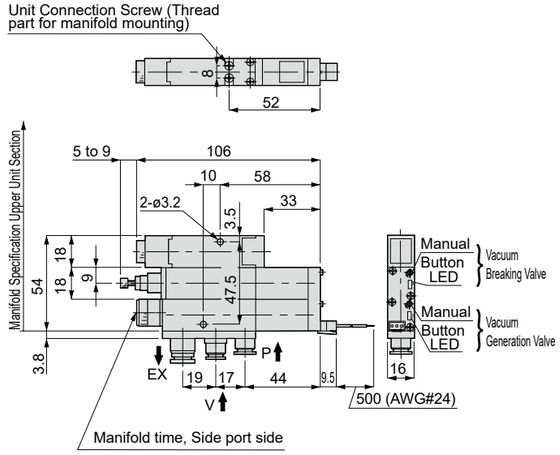


External Dimensions Diagram (Piping Method 1-Face-type VSK-B)

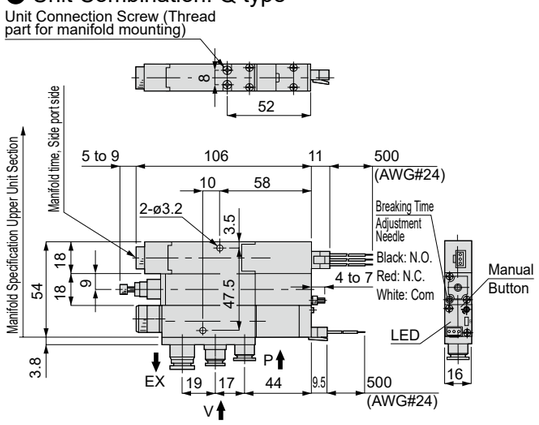
● Unit Combination: P type



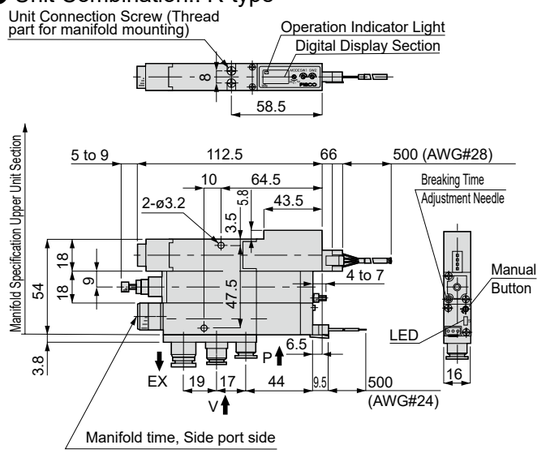
● Unit Combination: S-type



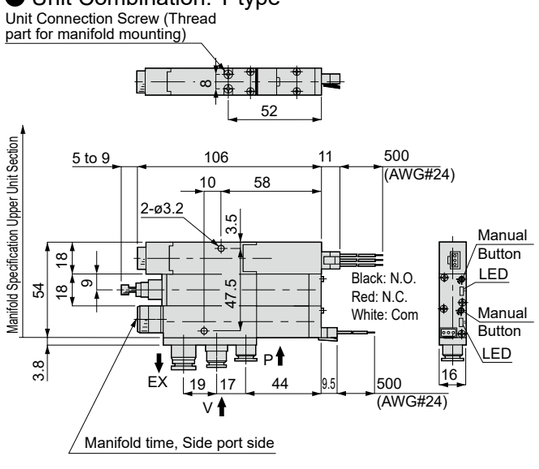
● Unit Combination: Q type



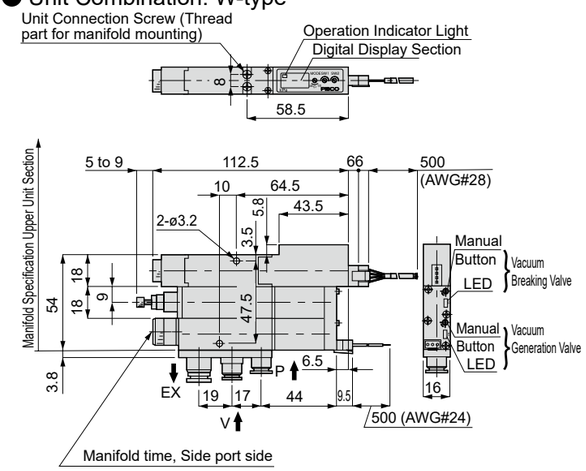
● Unit Combination:: R-type



● Unit Combination: T type

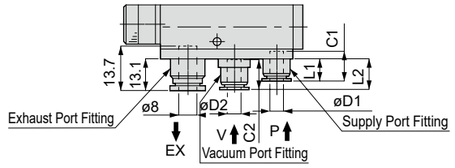


● Unit Combination: W-type



External Dimensions Diagram (Piping Method 1-Face-type VSK-B)

●Fitting dimensions



Unit: mm

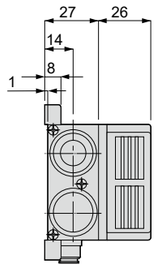
	Bore size øD1	Bore size øD2	L1	L2	C1	C2
P Port	4	-	6.1	-	11.2	-
	6	-	8.9	-	11.9	-
	8	-	17.3	-	18.2	-
V Port	-	4	-	9.8	-	11.2
	-	6	-	12.6	-	11.9
	-	8	-	21	-	18.2

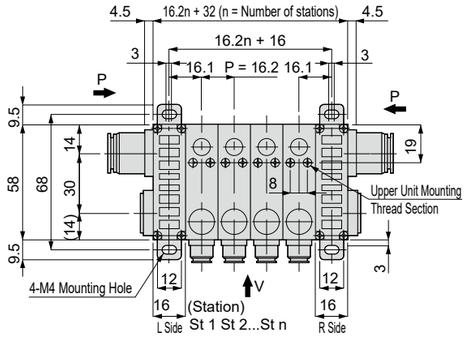
●Silencer (atmospheric release)

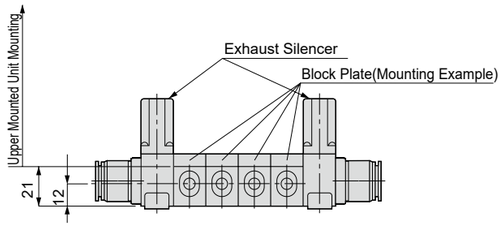
●Exhaust fitting (elbow)

External Dimensions Diagram (Manifold Type VSKM)

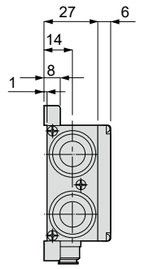
●Manifold (atmosphere release)

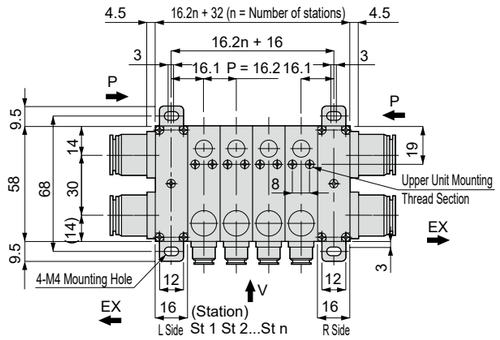


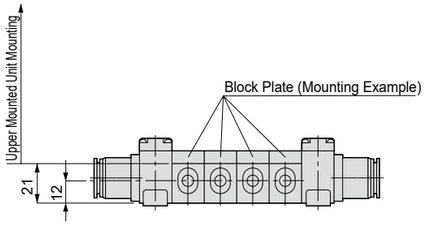




●Manifold (common exhaust)



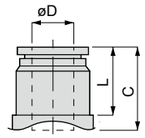




External Dimensions Diagram (Manifold Type VSKM)

●Supply Port Fitting Section Dimensions

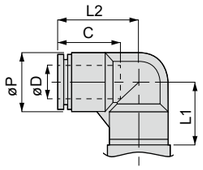
• Straight Type



Unit: mm

Bore size øD	L	C
6	11.1	17
8	12.2	18.2
10	14.7	20.7
12	18.8	23.3

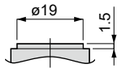
• Elbow Type



Unit: mm

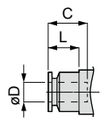
Bore size øD	øP	C	L1	L2
8	14.5	18.1	17	22.7
10	17.5	20.2	21	26.2
12	21	23.4	23	29.4

• Plug Type



●Vacuum Port Fitting Section Dimensions

• Straight Type



Unit: mm

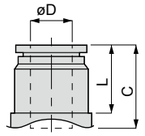
Bore size øD	L	C
4	6.1	11.2
6	8.9	11.9
8	17.3	18.2

• Plug Type



●Exhaust Port Fitting Section Dimensions

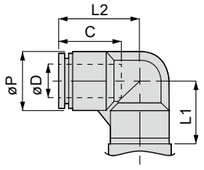
• Straight Type



Unit: mm

Bore size øD	L	C
8	12.2	18.2
10	14.7	20.7
12	18.8	23.3

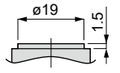
• Elbow Type



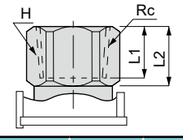
Unit: mm

Bore size øD	øP	C	L1	L2
8	14.5	18.1	17	22.7
10	17.5	20.2	21	26.2
12	21	23.4	23	29.4

• Plug Type



●Female Thread Type

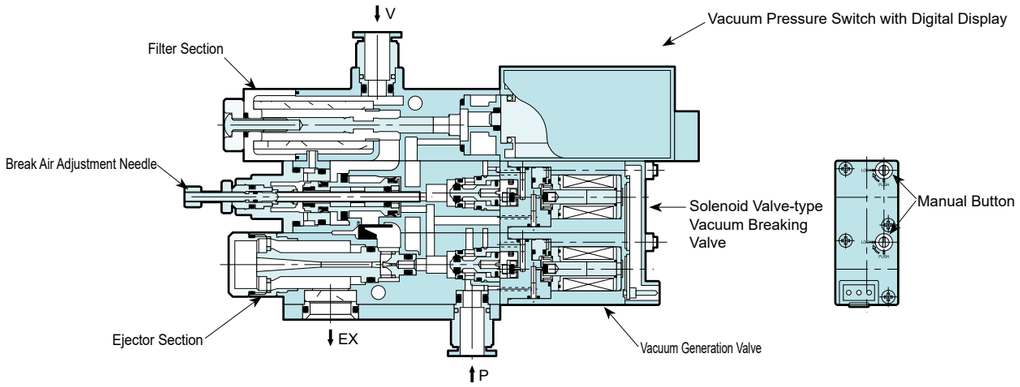


Unit: mm

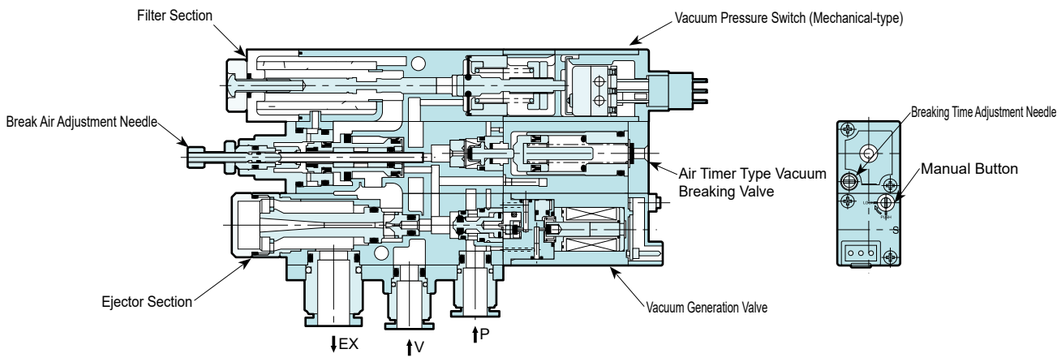
Rc	Width across flats H	L1	L2
Rc1/4	22	11	14
Rc3/8	22	12	14
Rc1/2	24	13	17

Internal Structure Diagram

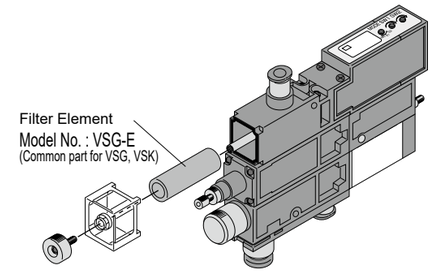
Piping Direction 2-Face-type VSK-A
●VSK-A□□W (With Solenoid Valve-type Vacuum Breaking Valve, Normally Closed)

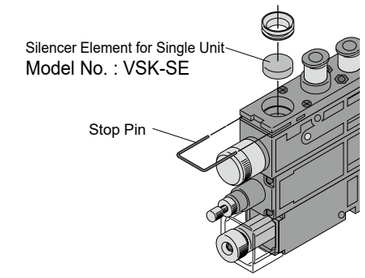


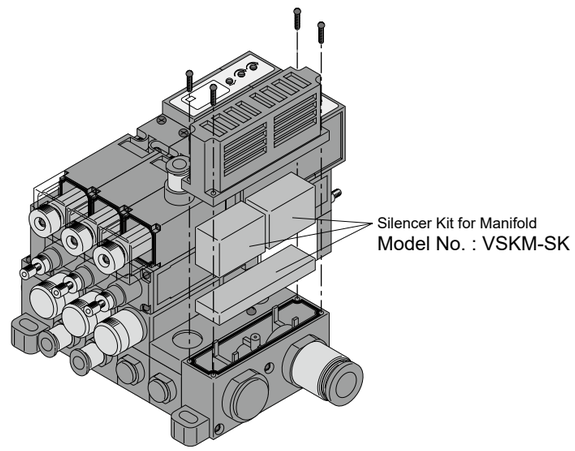
Piping Direction 1-Face-type VSK-B
●VSK-B□□Q(With Air Timer Type Vacuum Breaking Valve, Normally Closed)

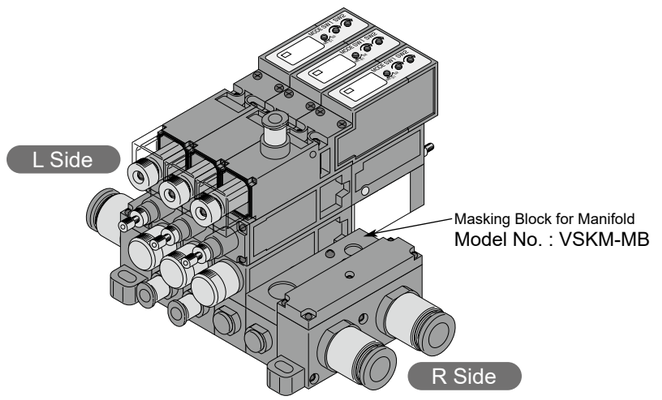


Maintenance Parts









To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro P. 15 for details.

Individual Precautions: VSK Series

Design / Selection

Caution

■Fittings By removing the stop pin, it is possible to detach the cartridge tube, timer cylinder and element for maintenance. After mounting, confirm that the stop pin is securely inserted.

■Do not remove the gripper on the body coupling part. Detachment/reattachment is possible a few times, but reduced connection strength may potentially cause main body damage.

■Unit Combination: For G, J, L-types, in manifold type vacuum ejectors where operating and non-operating ejectors coexist, exhaust air during vacuum generation may flow around to non-operating ejectors and be output from the vacuum port. This can cause problems, such as blowing away lightweight workpieces, so do not use under conditions where this could be an issue.

Precautions for Manifold Use

■Increased manifold stations may cause degraded performance or malfunction due to the following reasons. Please inquire for details.

1. Degradation of vacuum performance due to insufficient supply air
   Countermeasures: ①Check supply air capacity, etc.
   ②Keep piping as short as possible
   ③Increase fitting size
   ④If 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: ①If using one-sided silencer, use double-sided silencers.
   ②Use individual exhaust for each station. (Special Order)
   ③Avoid locations where the exhaust section faces a wall.
   ④Reduce the number of stations.
   Cause: For centralized exhaust type, high piping resistance degrades performance.
   Countermeasures: ①If exhausting from one side, use both sides.
   ②Keep piping length as short as possible.
   ③Increase exhaust fitting size.
   ④Use individual exhaust for each station. (Special Order)
   ⑤Reduce the number of stations.

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.

How to Create a VSKM Mixed Manifold Specification Sheet

●Mix manifold model No.(example)

VSKM- ❶Z ❷00 ❸Z - ❹CX ❺28 ❻S2 - ❼3 ❽Z - ❾5 - ❿Z

●Mix manifold specifications sheet(example)

Vacuum Ejector Model No. ❶ ❷ ❸ ❹ ❺ ❻ ❼	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSKM- H 07 G - S8 - 3 A -	○	○									2
VSKM- E 10 W - S6 - 3 B - NW			○								1
VSKM- E 10 W - T6 - 3 B - NW					○						1
VSKM-											
VSKM-											
Masking Block Model No.											
VSKM- MB - S6				○							1

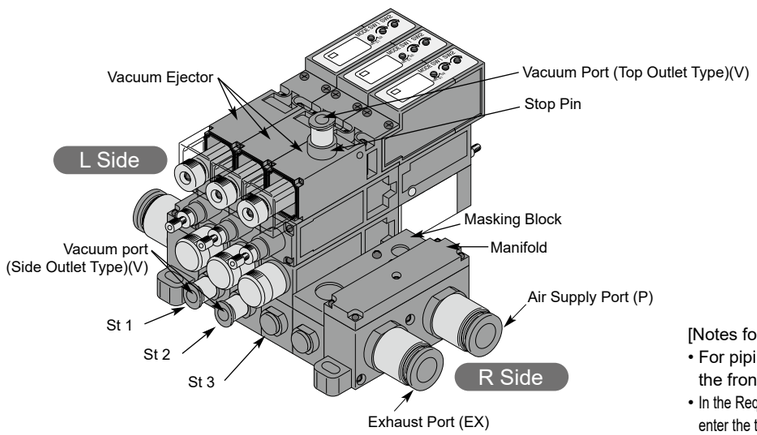
[For Fitting Mix Specification with Output Port Size Only]

●Mix manifold model No.(example)

VSKM- ❶H ❷07 ❸W - ❹CX ❺28 ❻S2 - ❼3 ❽B - ❾5 - ❿NW

●Mix manifold specifications sheet(example)

Vacuum Ejector Model No. ❶ ❷ ❸ ❹ ❺ ❻ ❼	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSKM- H 07 W - S8 - 3 B - NW	○	○									2
VSKM- H 07 W - S6 - 3 B - NW			○	○							2
VSKM- H 07 W - T6 - 3 B - NW					○						1
VSKM-											
VSKM-											
Masking Block Model No.											
VSKM- MB -											



[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.

VSKM Mixed Manifold Specification Sheet

Date of Issue
Company
Attn:
Order No.

Contact Person Quantity Set Delivery Date (Month/Day)

Voucher No. Order Received No.

●Mix manifold model No.

VSKM- ❶ ❷ ❸ - ❹ ❺ ❻ - ❼ ❽ - ❾ - ❿

❶ Vacuum Characteristics Note1, 2, 3)

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)

❷ Nozzle Diameter Note1, 2, 3)

05	ø0.5
07	ø0.7
10	ø1.0
12	ø1.2
00	For mixed specifications(Provide details in the specification sheet)

❸ Unit Combination Note2, 4, 5)

For the Unit Combination, please refer to item ❹ on P. 170.

❹ Vacuum port(V) Note2), Note6)

PP	Plug Port Position Side
S4	ø4 Push-in fitting Port Position Side
S6	ø6 Push-in fitting Port Position Side
S8	ø8 Push-in fitting Port Position Side
T4	ø4 Push-in fitting Port Position Top
T6	ø6 Push-in fitting Port Position Top
T8	ø8 Push-in fitting Port Position Top
CX	For fitting mix(Provide details in the specification sheet)

❺ Air Supply Port (P)

For Air Supply Port, refer to ❺ on P. 173.

❻ Exhaust Port (EX)

For Exhaust Port, refer to ❻ on P. 173.

❼ Solenoid valve voltage Note4)

1	100 VAC
3	24 VDC

❽ Valve Note2), Note4)

A	Normally Open Type
B	Normally Closed Type
Z	For mixed specifications(Provide details in the specification sheet)

❾ Number of Manifold Stations

2 to 10	2 to 10 Stations

❿ Vacuum pressure switch specifications Note2), Note5)

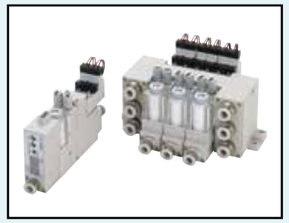
NW	NPN Output 2 points
NA	NPN Output 1 point + Analog Output
PW	PNP Output 2 points
PA	PNP Output 1 point + Analog Output
Z	For mixed specifications (Provide details in the specification sheet)

Notes for model No. Selection

Note1) The combination of ❶ Vacuum Characteristics 'E' and Nozzle Diameter ❷ '05' cannot be selected.
Note2) For mixed specifications, please be sure to fill out the 'Mixed Manifold Specification Sheet'.
Note3) When ❶ is 'Z', only ❷ '00' can be selected. When ❷ is '00', only ❶ 'Z' can be selected.
Note4) When ❸ Unit Combination is 'A', 'B', 'C', 'D', 'E', or 'F', Solenoid Valve Voltage ❼ and Vacuum Supply Valve Type ❽ cannot be selected.
Note5) Select Vacuum Sensor Specification ❿ only when ❸ Unit Combination is 'E', 'F', 'L', 'M', 'R', or 'W'.
Note6) To mount a masking block, select 'CX' for ❹ Vacuum Port (V) and specify the mounting position and quantity on the manifold specification sheet.

●Mix manifold specifications sheet

Vacuum Ejector Model No. ❶ ❷ ❸ ❹ ❺ ❻ ❼	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSKM-											
VSKM-											
VSKM-											
VSKM-											
VSKM-											
Masking Block Model No.											
VSKM- MB -											



Ejector System/20 mm Width Integrated Type Vacuum Ejector Unit

VSJ Series

RoHS

Integrated type vacuum ejector unit with abundant variations such as break air flow rate & pressure adjustment needle

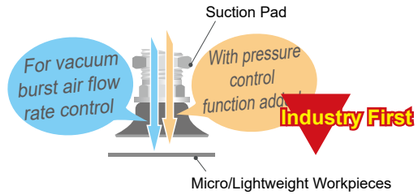
Abundant vacuum characteristic variations

Nozzle Diameter \ Vacuum Characteristics	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		11.5			90.4	66.5	
0.7 mm	13	26	10.5	23		17	93.1	66.5	90.4
1.0 mm	27	40	21	46		34	93.1	66.5	90.4
1.2 mm	38		27	70		47	93.1		90.4

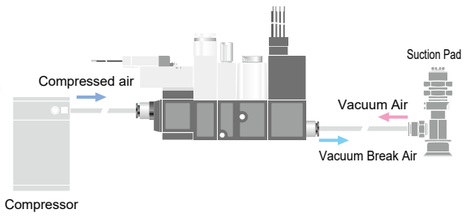
* Rated supply pressure; H, L⇒0.5 MPa, E⇒0.35 MPa

Adds pressure control to conventional vacuum break air flow control

Prevents workpiece blow-off.



Relief function in vacuum break circuit (Function to release excess pressure) is provided, achieving shorter vacuum break time.



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

Self-holding (double solenoid valve) is optimal for applications involving long-duration vacuum generation and supports energy saving.

Manifold type also available (max. 10 stations)

2 types of output port piping outlets available: front and back.

LED display adopted for pressure sensor display, improving visibility.

2 types available: with 2-point switch output and with analog output.
Also, connector system adopted for wiring, facilitating wiring layout.

Model No. Notation

●20 mm width integrated vacuum ejector unit, discrete

VSJ - H 07 A - 6 6 8 - 3 - W

- VSJ: Model No.
- H: ❶ Vacuum Characteristics
- 07: ❷ Nozzle Diameter
- A: ❸ Valve-type
- 6: ❹ Vacuum Port (V)
- 6: ❺ Air Supply Port (PS)
- 8: ❻ Exhaust Port (EX)
- 3: ❼ Solenoid Valve Voltage
- W: ❽ Vacuum Pressure Switch Specifications

❶ Vacuum Characteristics

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

Note) The combinations 'E05' and 'L12' for items ❶ and ❷ cannot be selected.

❷ Nozzle Diameter

Code	Content
05	ø0.5
07	ø0.7
10	ø1.0
12	ø1.2

Note) The combinations 'E05' and 'L12' for items ❶ and ❷ cannot be selected.

❸ Valve-type

Code	Content
A	Normally Open Type
B	Normally Closed Type
D	Self-holding Type

❹ Vacuum Port (V)

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

❺ Air Supply Port (PS)

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

❻ Exhaust Port (EX)

Code	Content
S	Atmospheric Release with Silencer
8	*8 Push-in fitting centralized exhaust

❼ Solenoid Valve Voltage

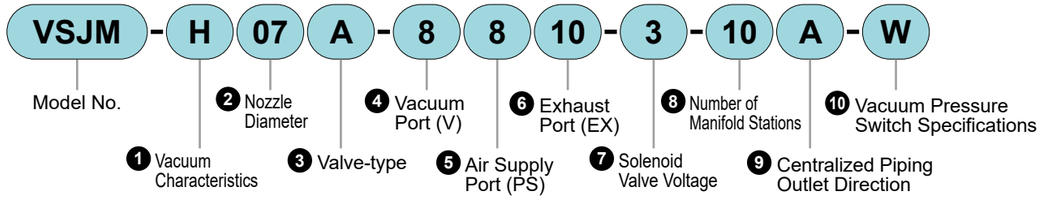
Code	Content
1	100 VAC
3	24 VDC

❽ Vacuum Pressure Switch Specifications

Code	Content
Blank	Without Vacuum Pressure Switch
W	NPN Output 2 points with Digital Display
A	NPN Output 1 point + Analog Output with Digital Display

model No. Indication Method (Manifold Type)

●20 mm width integrated vacuum ejector unit manifold



❶ 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)

Note1) The combinations 'E05' and 'L12' for items ❶ and ❷ cannot be selected.
Note2) When ❶ is 'Z', Nozzle Diameter ❷ is '00' only. When Nozzle Diameter ❷ is '00', ❶ is 'Z' only.
Note3) For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, P. 212, 213.

❷ Nozzle Diameter

Code	Content
05	ø0.5
07	ø0.7
10	ø1.0
12	ø1.2
00	For mixed specifications (Provide details in the specification sheet)

Note1) The combinations 'E05' and 'L12' for items ❶ and ❷ cannot be selected.
Note2) When ❶ is 'Z', Nozzle Diameter ❷ is '00' only. When Nozzle Diameter ❷ is '00', ❶ is 'Z' only.
Note3) For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, P. 212, 213.

❸ Valve-type

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

Note) For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, P. 212, 213.

❹ Vacuum Port (V)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
8	ø8 Push-in fitting
CX	For fitting mix (Provide details in the specification sheet)

Note) For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, see P. 212, 213.

❺ Air Supply Port (PS)

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

❻ Exhaust Port (EX)

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

❼ Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC

❽ Number of Manifold Stations

Code	Content
2	2 stations
to	to
10	10 stations

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

❾ Centralized Piping Outlet Direction

Code	Content
A	Vacuum Port Side
B	Supply Port Side

❿ Vacuum Pressure Switch Specifications

Code	Content
Blank	Without Vacuum Pressure Switch
W	NPN Output 2 points with Digital Display
A	NPN Output 1 point + Analog Output with Digital Display
Z	For Mixed Specifications (Provide details in the specification sheet)

Note) For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, P. 212, 213.

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

●Design compatible with rechargeable battery manufacturing process

VSJ -..... - P4*

VSJM -..... - P4*

* Please inquire for details.

Maintenance Part Model No. * For details on the maintenance parts, P. 209.

●Filter element for vacuum side

VSG - E

●Burst side filter element

VSJ - PE

●Silencer Element A

VSB - EA

●Silencer element C

VSJ - EC

Model No.

Specifications

Item	VSJ
Operating Fluid	Air
Operating Pressure MPa	0.3 to 0.7
Ambient Temperature/Fluid 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))
VSJ-H05...	0.5	0.5	90.4	7	11.5
VSJ-L05...		0.35	66.5	12	11.5
VSJ-H07...	0.7	0.5	93.1	13	23
VSJ-L07...		0.5	66.5	(24) 26	23
VSJ-E07...		0.35	90.4	10.5	17
VSJ-H10...	1.0	0.5	93.1	27	46
VSJ-L10...		0.5	66.5	(34) 40	46
VSJ-E10...		0.35	90.4	21	34
VSJ-H12...	1.2	0.5	93.1	(32) 38	70
VSJ-E12...		0.35	90.4	(24) 27	47

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

Valve (for Vacuum Generation, Vacuum Breaking) Specifications

●Pilot solenoid 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
Voltage Fluctuation Range V	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	Push-type non-locking type			
Operation Indicator	When coil is energized: Red LED lights up			
Wiring Method	Connector (cable length: 500 mm)			
	Red: 24 VDC Black: COM	Blue	Red: 24 VDC Black: COM	Blue

●Main valve

Item	Vacuum Generation Valve		Vacuum Breaking Valve
Valve-type and Operation Method	Pilot operated poppet valve		
Proof Pressure MPa	1.05		
Valve-type	Self-holding, Normally Closed, Normally Open		Normally Closed
Lubrication	Not required		
Effective Area mm²	Air Supply (PS) Port Size	ø4: 3.5	1
		ø6: 5	

Vacuum Pressure Switch with LED Display Specifications

Item		With 2-point Switch Output (-W)	With Analog Output (-A)
Factory Set Value kPa		-50 (SW1), -10 (SW2)	-50
Current Consumption mA		≤ 40	
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 freezing)	
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. max.)	Variable (Approx. 0 to 15% of set value)
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 Voltage V	-	1±0.1
	Span Voltage V	-	4±0.1
	Output Current mA	-	≤ 1 (Load resistance ≥ 5 kΩ)
	Linearity/Hysteresis	-	±0.5% F.S. max.
Response time ms		2 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% of set value)

Vacuum Breaking Function Specifications

Item	Vacuum Breaking Function
Break Air Flow Rate L/min (ANR)	0 to 50 (at 0.5 MPa supply pressure)
Breaking Air Relief Valve Structure	Elastomer seal, poppet valve
Relief Pressure Setting Range kPa	-25 to 25

Vacuum Filter Specifications

Item		Vacuum Filter
Element Material		Polyvinyl formal
Filtration Rating	μm	10
Filtration area	mm²	1,130

Weight Table

①Single Unit

VSJ		Weight (g)	Remarks
Atmospheric	VSJ-□□□-□□S-□□-□	165	Vacuum Port: ø4, ø6
Release, With Sensor	VSJ-□□□-□8S-□□-□	171	Vacuum Port: ø8
Atmospheric Release,	VSJ-□□□-□□S-□□	156	Vacuum Port: ø4, ø6
Without Sensor	VSJ-□□□-8□S-□□	163	Vacuum Port: ø8
Centralized Exhaust,	VSJ-□□□-□□8-□□-□	169	Vacuum Port: ø4, ø6
With Sensor	VSJ-□□□-8□8-□□-□	176	Vacuum Port: ø8
Centralized Exhaust,	VSJ-□□□-□□8-□□	161	Vacuum Port: ø4, ø6
Without Sensor	VSJ-□□□-8□8-□□	167	Vacuum Port: ø8

②Manifold Intermediate Block

	Weight (g)	Remarks
Manifold Intermediate Block	19	For 1 station

③Manifold Side Block

VSJ	Weight (g)	Remarks
Vacuum Ejector Unit (Atmospheric Release)	118	Number of Cartridges Used: 2 pcs (PS Port) Plugs are attached to PV, EX ports
Vacuum Ejector Unit (Centralized Exhaust)	112	Number of Cartridges Used: 4 pcs (PS, EX Ports) A plug is attached to the PV port

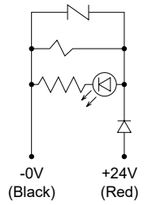
④Cartridge (Input/Exhaust Port)

	Weight (g)	Remarks
Push-in fitting for ø6	12	For ø6 mm
Push-in fitting for ø8	10	For ø8 mm
Push-in fitting for ø10	13	For ø10 mm

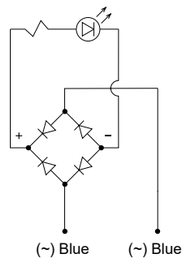
■Calculate the manifold weight using the formula below.
Manifold Weight =(① VSJ Single Unit + ② Manifold Intermediate Block) × Number of stations + ③ Manifold Side Block + ④ Cartridge × Number used

Electrical Circuit (Solenoid Valve)

●24 VDC specification Valve for vacuum generation and vacuum burst

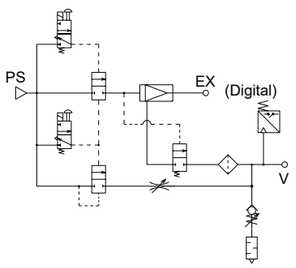


●100 VAC specification Valve for vacuum generation and vacuum burst

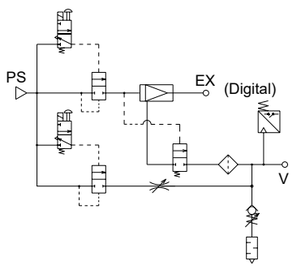


Circuit Diagram

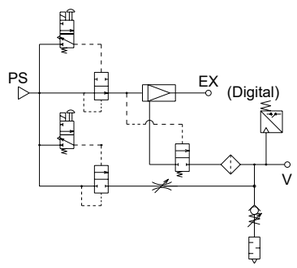
●Self-holding Type



●Normally Closed Type



●Normally Open Type

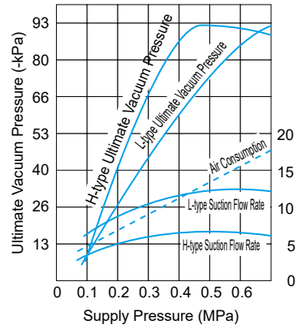


Vacuum Characteristics, Flow Characteristics

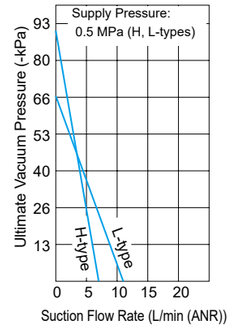
Supply Pressure - Ultimate Vacuum Pressure, Suction Flow Rate, Air Consumption

●VSJ-H 05, VSJ-L 05

Vacuum Characteristics

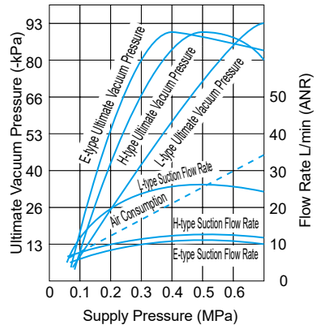


Flow Characteristics

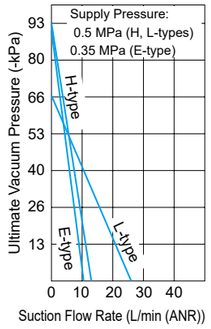


●VSJ-H 07, VSJ-L 07, VSJ-E 07

Vacuum Characteristics



Flow Characteristics



●VSJ-H 10, VSJ-L 10, VSJ-E 10

Vacuum Characteristics

Flow Characteristics

●VSJ-H 12, VSJ-E 12

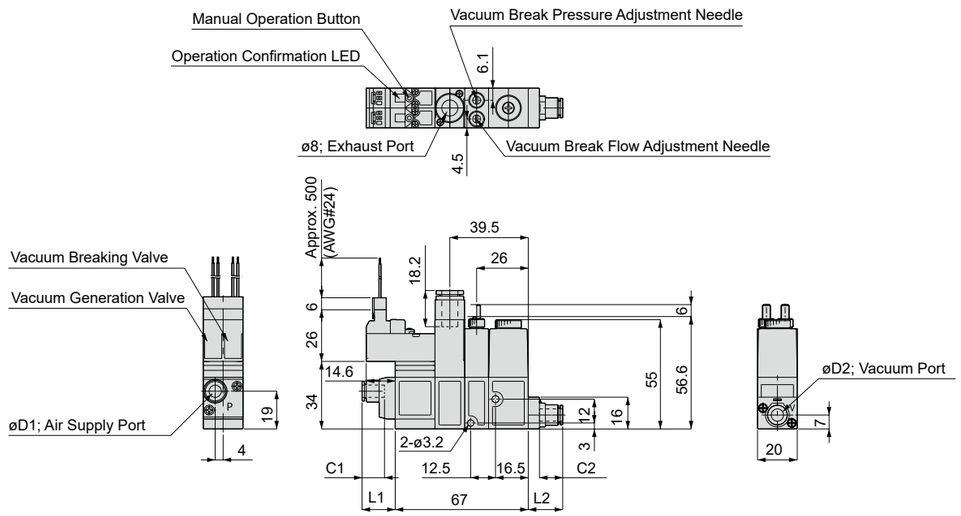
Vacuum Characteristics

Flow Characteristics

1. The supply pressure in the characteristics above is during vacuum generation.
2. 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.)
3. 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 $0.5^2 \times \pi = 0.785$ mm² × 3 = 2.35 mm². Therefore, select piping and equipment to secure an effective cross-sectional area of 2.3 mm² or more.)

External Dimensions Diagram (Single Unit Type VSJ)

●Common exhaust, without vacuum pressure switch



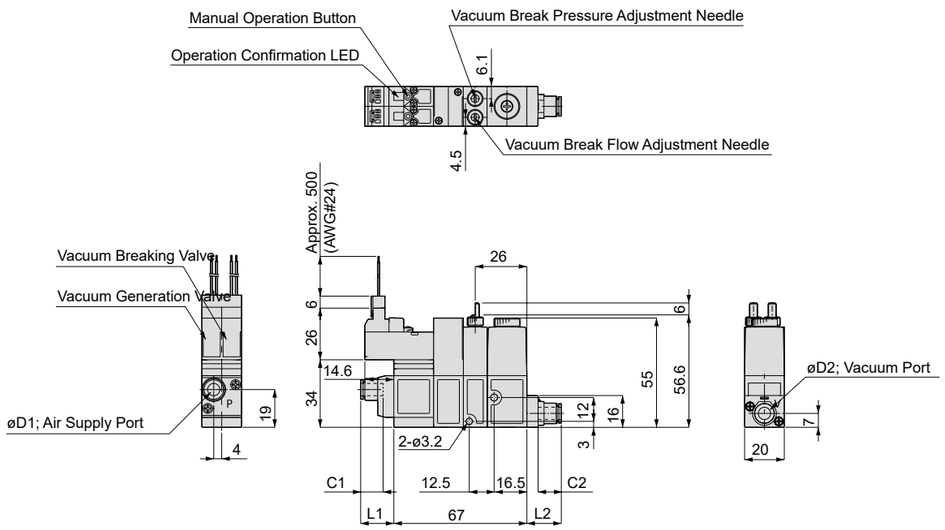
Unit: mm

Air Supply Port Bore size øD1	C1	L1
4	11.5	14.9
6	11.9	17.3

Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	14.6
6	11.9	17.4
8	18.2	25.8

●Atmospheric release, without vacuum pressure switch



Unit: mm

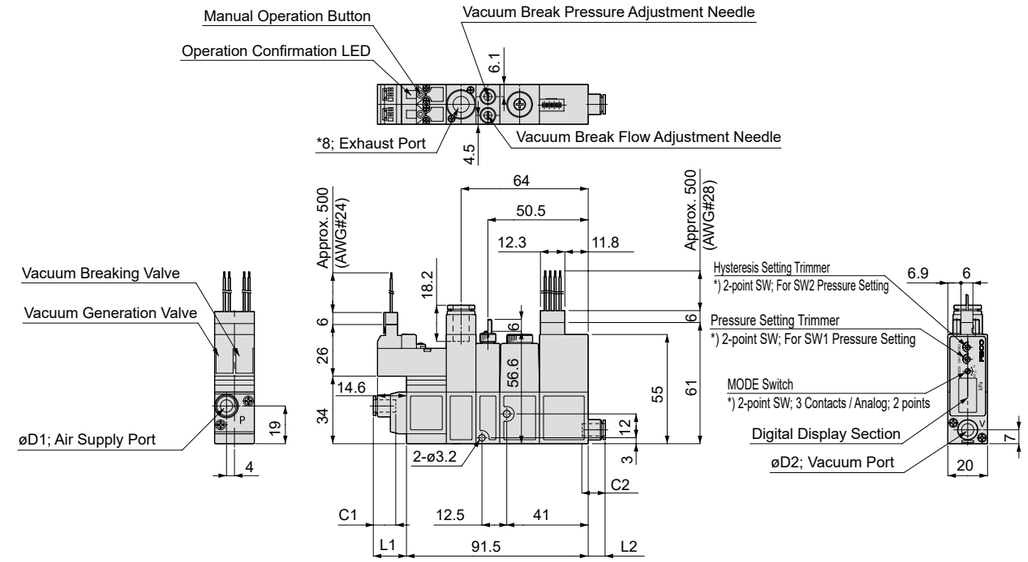
Air Supply Port Bore size øD1	C1	L1
4	11.5	14.9
6	11.9	17.3

Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	14.6
6	11.9	17.4
8	18.2	25.8

External Dimensions Diagram (Single Unit Type VSJ)

●Common exhaust, with vacuum pressure switch



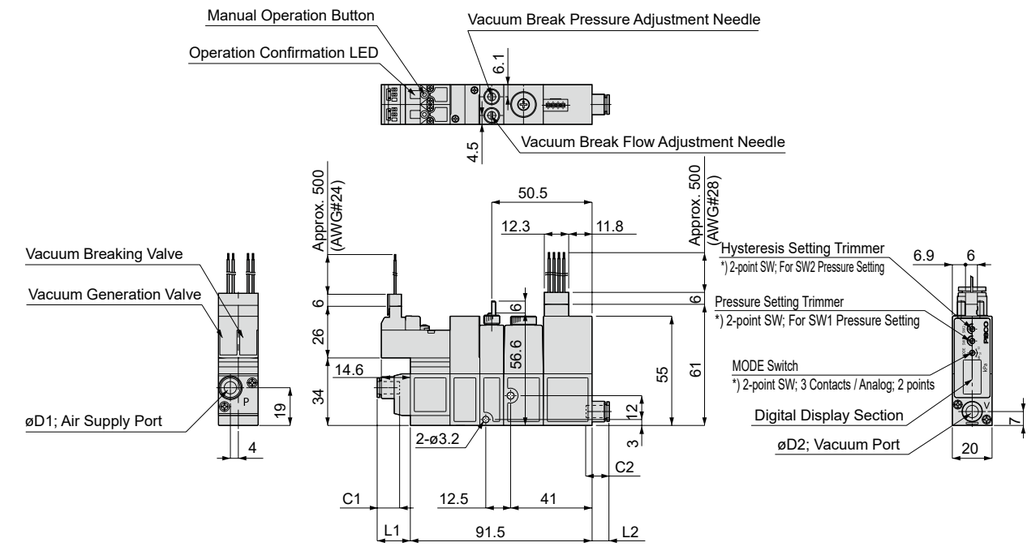
Unit: mm

Air Supply Port Bore size øD1	C1	L1
4	11.5	14.9
6	11.9	17.3

Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	6.1
6	11.9	8.9
8	18.2	17.3

●Atmospheric release, with vacuum pressure switch



Unit: mm

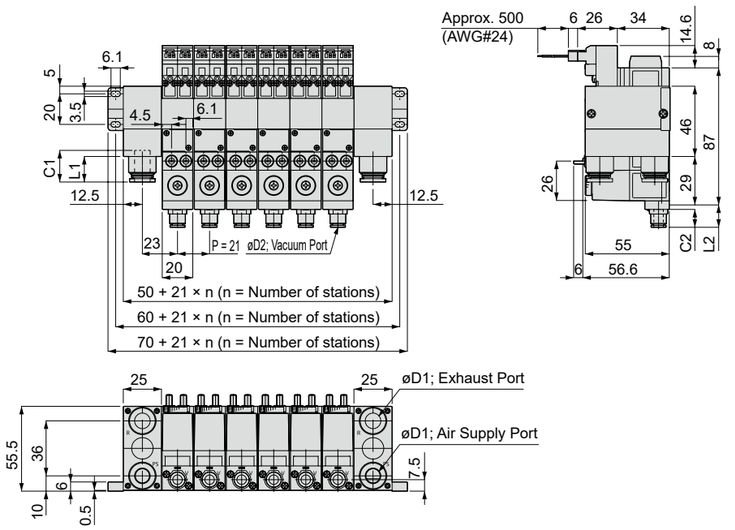
Air Supply Port Bore size øD1	C1	L1
4	11.5	14.9
6	11.9	17.3

Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	6.1
6	11.9	8.9
8	18.2	17.3

External Dimensions Diagram (Manifold Type VSJM)

●Common exhaust, common piping leadout direction on vacuum port side, without vacuum pressure switch



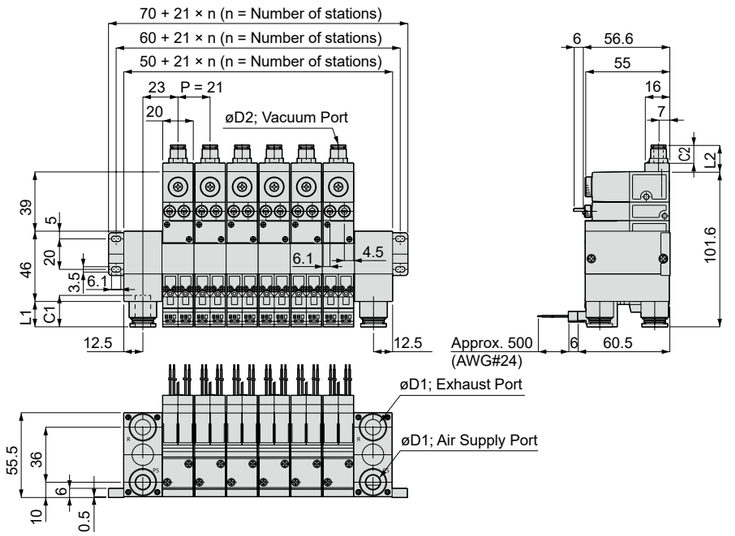
Unit: mm

Air Supply Port Bore size øD1	C1	L1
6	17	11.6
8	18.2	13.1
10	20.7	16.7

Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	14.6
6	11.9	17.4
8	18.2	23.0

●Common exhaust, common piping leadout direction on supply port side, without vacuum pressure switch



Unit: mm

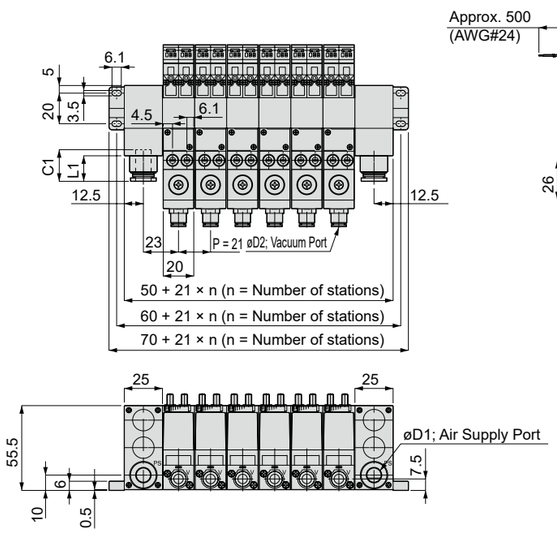
Air Supply Port Bore size øD1	C1	L1
6	17	11.6
8	18.2	13.1
10	20.7	16.7

Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	14.6
6	11.9	17.4
8	18.2	23.0

External Dimensions Diagram (Manifold Type VSJM)

●Atmospheric release, common piping leadout direction on vacuum port side, without vacuum pressure switch



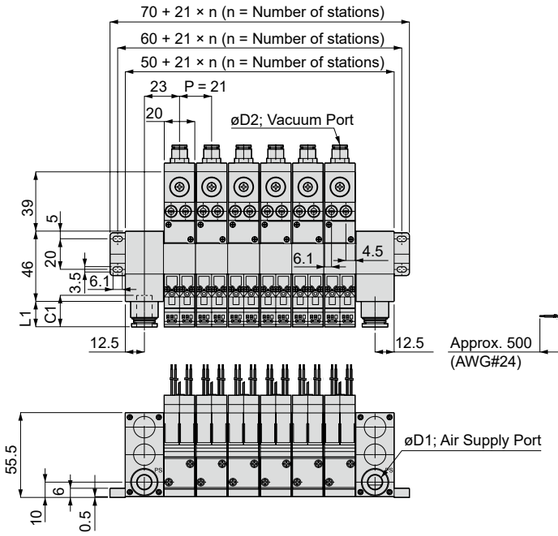
Unit: mm

Air Supply Port Bore size øD1	C1	L1
6	17	11.6
8	18.2	13.1
10	20.7	16.7

Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	14.6
6	11.9	17.4
8	18.2	23.0

●Atmospheric release, common piping leadout direction on supply port side, without vacuum pressure switch



Unit: mm

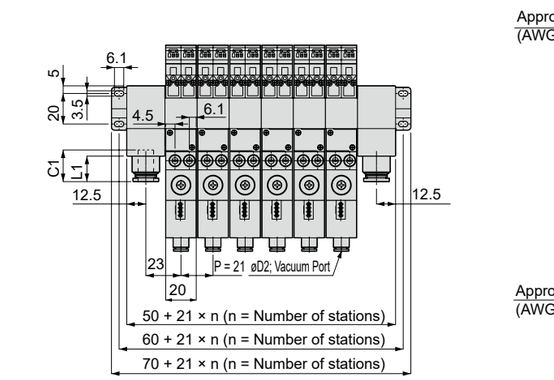
Air Supply Port Bore size øD1	C1	L1
6	17	11.6
8	18.2	13.1
10	20.7	16.7

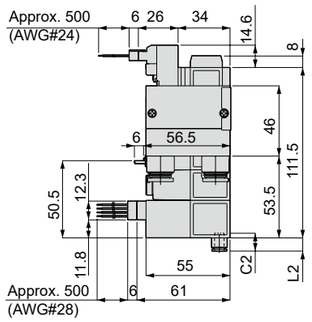
Unit: mm

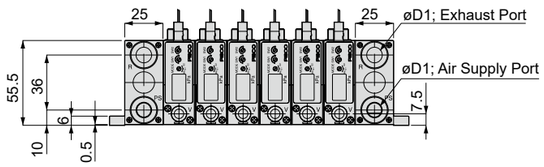
Vacuum port Bore size øD2	C2	L2
4	11.2	14.6
6	11.9	17.4
8	18.2	23.0

External Dimensions Diagram (Manifold Type VSJM)

●Common exhaust, common piping leadout direction on vacuum port side, with vacuum pressure switch







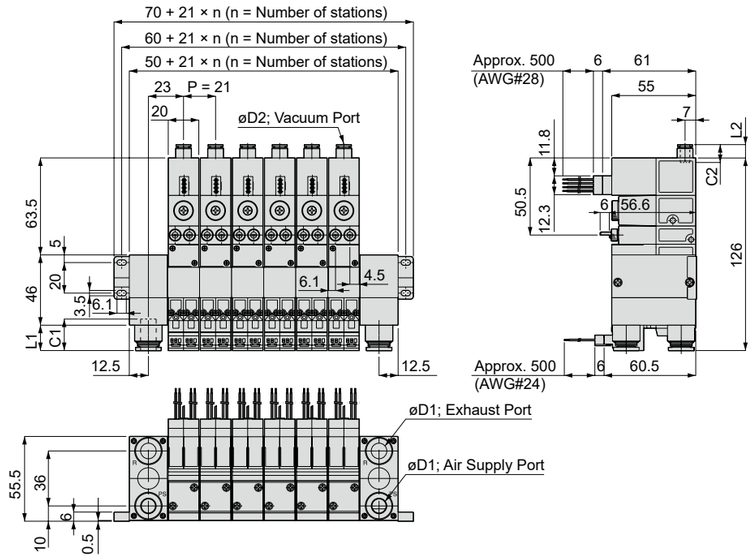
Unit: mm

Air Supply Port Bore size øD1	C1	L1
6	17	11.6
8	18.2	13.1
10	20.7	16.7

Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	6.1
6	11.9	8.9
8	18.2	17.3

●Common exhaust, common piping leadout direction on supply port side, with vacuum pressure switch



Unit: mm

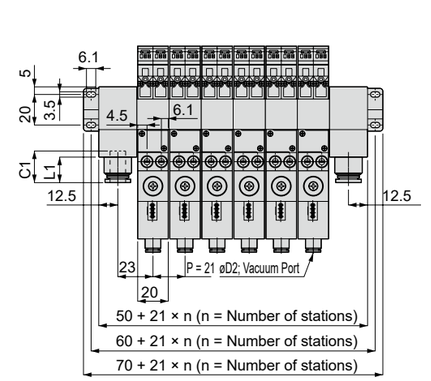
Air Supply Port Bore size øD1	C1	L1
6	17	11.6
8	18.2	13.1
10	20.7	16.7

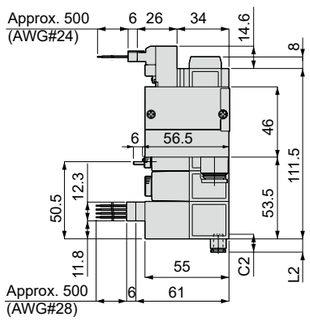
Unit: mm

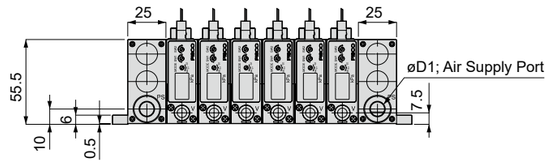
Vacuum port Bore size øD2	C2	L2
4	11.2	6.1
6	11.9	8.9
8	18.2	17.3

External Dimensions Diagram (Manifold Type VSJM)

●Atmospheric release, common piping leadout direction on vacuum port side, with vacuum pressure switch







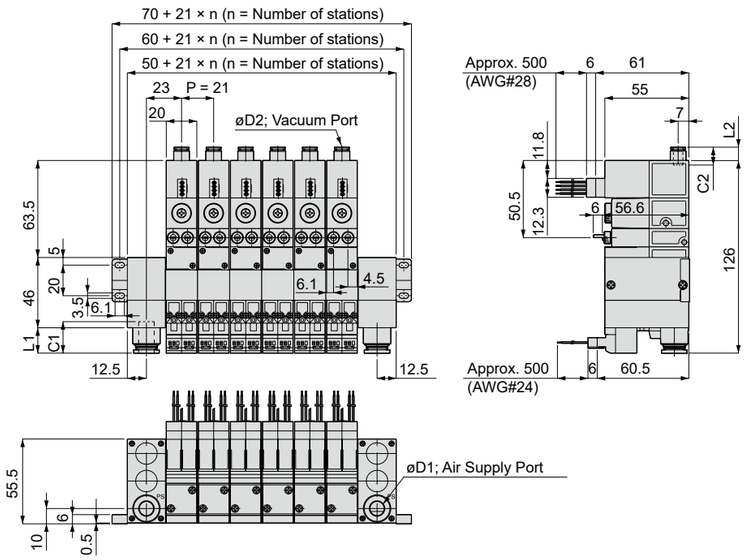
Unit: mm

Air Supply Port Bore size øD1	C1	L1
6	17	11.6
8	18.2	13.1
10	20.7	16.7

Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	6.1
6	11.9	8.9
8	18.2	17.3

●Atmospheric release, common piping leadout direction on supply port side, with vacuum pressure switch



Unit: mm

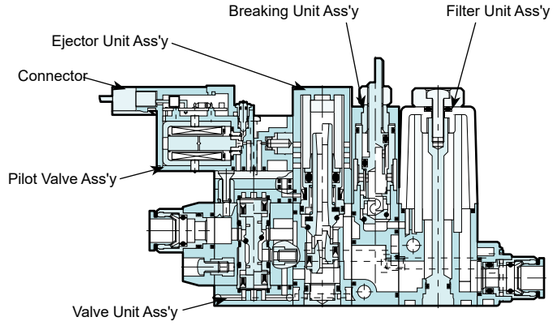
Air Supply Port Bore size øD1	C1	L1
6	17	11.6
8	18.2	13.1
10	20.7	16.7

Unit: mm

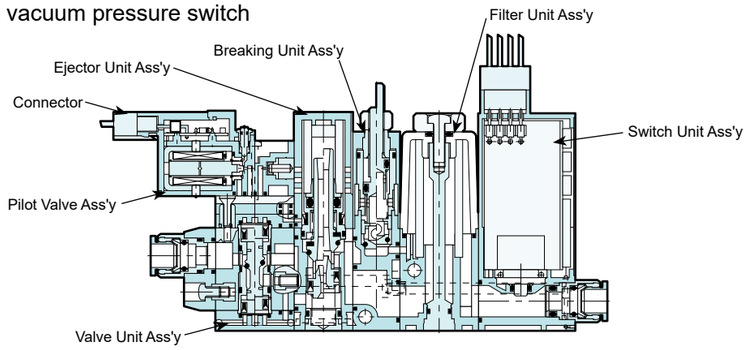
Vacuum port Bore size øD2	C2	L2
4	11.2	6.1
6	11.9	8.9
8	18.2	17.3

Internal Structure Diagram

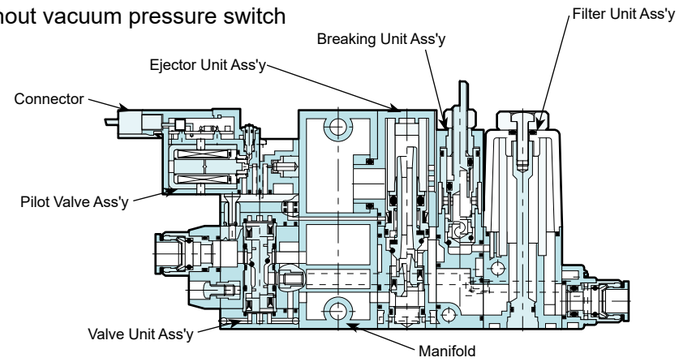
●Single unit VSJ, without vacuum pressure switch



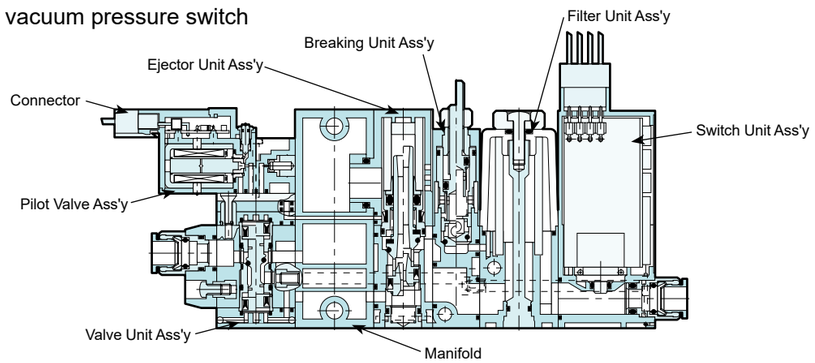
●Single unit VSJ, with vacuum pressure switch



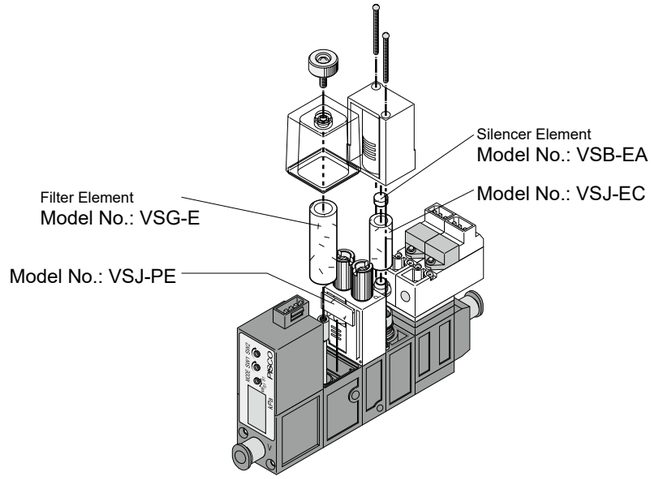
●Manifold VSJM, without vacuum pressure switch



●Manifold VSJM, with vacuum pressure switch



Maintenance Parts



To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro P 15 for details.

Individual Precautions: VSJ Series

Design / Selection

Warning

■For the self-hold (VSJ-□□D...), when resupplying after the pilot air supply is stopped (including the first use after shipment), the position of the switching valve is in neutral. When restarting pilot air supply, be sure to send a signal to the pilot valve or perform switching reliably by manual operation.

Caution

■Fittings When replacing the supply port sheath block, make sure that the packing has not fallen out, remove the deposits in the vicinity, then securely tighten it at the specified tightening torque.

Precautions for Manifold Use

■As the number of manifold stations increases, malfunctions such as the deterioration of vacuum performance due to shortage of supply air or insufficient exhaust port capacity and exhaust flowing into the vacuum port may occur. The allowable number of simultaneously operating stations differs depending on nozzle size, vacuum performance, etc., so please inquire.

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.

MEMO

Vacuum Components
Ejector System
VSY
VSH
VSU
VSB
VSC
VSG
VSK/ VSKM
VSJ/ VSJM
VSN/ VSNM
VSX/ VSXM
VSQ
VSZM
Ending

How to Create a VSJM Mixed Manifold Specification Sheet

●Mix manifold model No.(example)

❶	❷	❸		❹	❺	❻		❼		❽		❾		❿
VSJM -	Z	00	Z	-	CX	8	8	-	3	-	5	B	-	Z

●Mix manifold specifications sheet (example)

Vacuum Ejector Model No. ❶ ❷ ❸ ❹ ❺						Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSJM -	H	07	B	- 4	- W	○	○									2
VSJM -	H	07	A	- 4	- W			○	○							2
VSJM -	E	10	B	- 6	- A					○						1
VSJM -				-	-											
VSJM -				-	-											

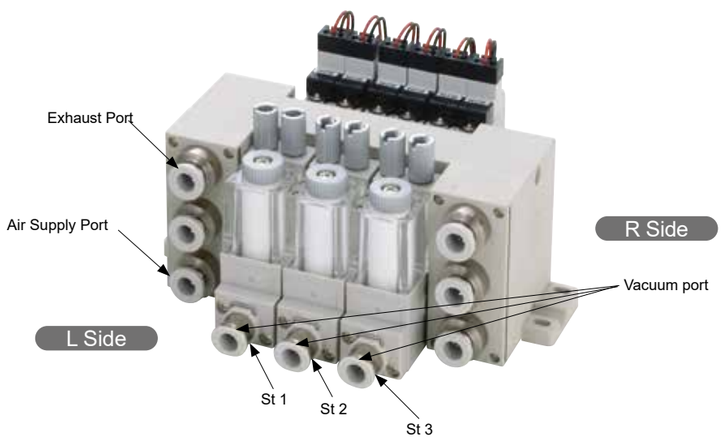
[For Fitting Mix Specification with Output Port Size Only]

●Mix manifold model No.(example)

❶	❷	❸		❹	❺	❻		❼		❽		❾		❿
VSJM -	H	07	B	- CX	8	5	-	3	-	5	B	-	W	

●Mix manifold specifications sheet (example)

Vacuum Ejector Model No. ❶ ❷ ❸ ❹ ❺						Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSJM -	H	07	B	- 4	- W	○	○									2
VSJM -	H	07	B	- 6	- W			○	○							2
VSJM -	H	07	B	- 8	- W					○						1
VSJM -				-	-											
VSJM -				-	-											



* : The station No. is St.1, St.2... from the L side when the vacuum port is viewed forwardSt.10.

[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.

VSJM 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.

❶	❷	❸		❹	❺	❻		❼		❽	❾		❿
VSJM -								-		-			-	

❶ Vacuum Characteristics Note1, 2, 3)

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)

❷ Nozzle Diameter Note1, 2)

05	ø0.5
07	ø0.7
10	ø1.0
12	ø1.2
00	For mixed specifications (Provide details in the specification sheet)

❸ Valve-type

A	Normally Open Type
B	Normally Closed Type
D	Double Solenoid Type
Z	For mixed specifications (Provide details in the specification sheet)

❹ Vacuum Port (V)

4	ø4 Push-in fitting
6	ø6 Push-in fitting
8	ø8 Push-in fitting
CX	For fitting mix (Provide details in the specification sheet)

❺ Air Supply Port (PS)

6	ø6 Push-in fitting
8	ø8 Push-in fitting
10	ø10 Push-in fitting

❻ Exhaust Port (EX)

S	Atmospheric Release with Silencer
8	ø8 Push-in fitting centralized exhaust
10	ø10 Push-in fitting centralized exhaust

❼ Solenoid Valve Voltage

1	100 VAC
3	24 VDC

❽ Number of Manifold Stations

2 to 10	2 to 10 Stations

❾ Centralized Piping Outlet Direction

A	Vacuum Port Side
B	Supply Port Side

❿ Vacuum Pressure Switch Specifications

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

Notes for model No. Selection

Note1) The combination of ❶ Vacuum Characteristics 'E' and Nozzle Diameter ❷ '05', and the combination of ❶ 'L' and ❷ '12' cannot be selected.

Note2) For mixed specifications, please be sure to fill out the 'Mixed Manifold Specification Sheet'.

Note3) When ❶ is 'Z', only ❷ '00' can be selected. When ❷ is '00', only ❶ 'Z' can be selected.

●Mix manifold specifications sheet

Vacuum Ejector Model No. ❶ ❷ ❸ ❹ ❺						Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSJM -				-	-											
VSJM -				-	-											
VSJM -				-	-											
VSJM -				-	-											
VSJM -				-	-											



Ejector System/10.3 mm Width Compact Integrated Type Vacuum Ejector Unit

VSN Series

Integrated type vacuum ejector unit achieving high-speed and stable response
Large flow rate during vacuum breaking makes it ideal for fast pick & place operations

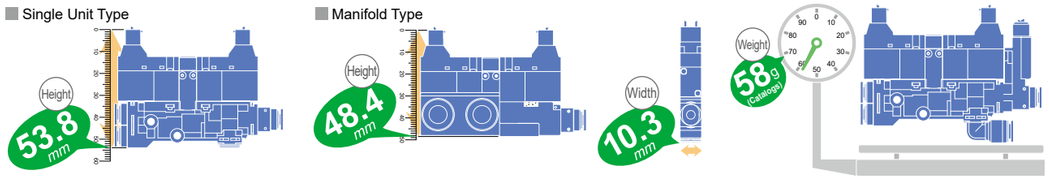
Vacuum Characteristic Variations

Vacuum Characteristics / Nozzle Diameter	Suction Flow Rate (L/min (ANR))		Air Consumption (L/min (ANR))		Ultimate Vacuum Pressure (-kPa)	
	H	E	H	E	H	E
0.4 mm		2		6		90.4
0.5 mm	7	3	11.5	8	90.4	90.4
0.6 mm	9.5	4.5	16	12	90.4	90.4

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

Ideal for customers with limited installation space

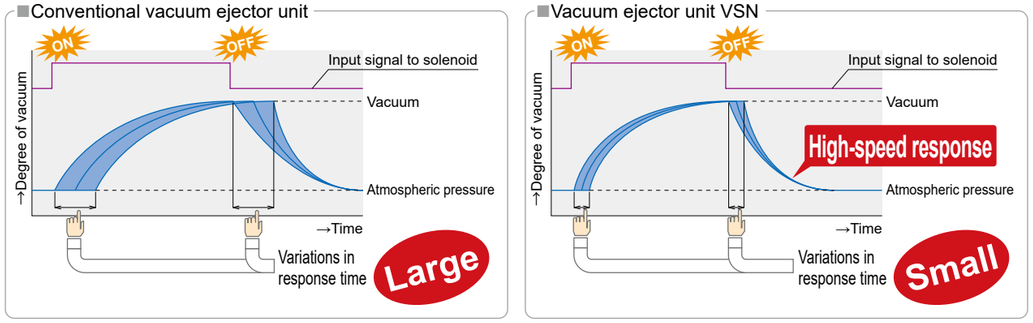
Compact and lightweight, especially with reduced product height.



* Excluding pressure sensor with LED display and centralized exhaust port section.

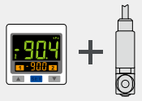
Achieves high-speed and stable responsE(ON/OFF ≤ 5 msec)

Direct acting valve adopted for main valve.



4 types of analog output pressure sensors available

- Analog Output Sensor for Negative Pressure
- Separate Digital Pressure Indicator + Analog Output Sensor for Negative Pressure
- Analog Output Sensor for Compound Pressure
- Separate Digital Pressure Indicator + Analog Output Sensor for Compound Pressure

	For Negative Pressure	For Compound Pressure
Analog Switch		
Separate Digital Pressure Indicator + Analog Switch		

Vacuum filter is external(purchased separately)

Eliminates the inconvenience of filter replacement work due to product miniaturization.

*This product does not have a built-in vacuum filter.
To use the product for a longer time, always use our company's vacuum filter (refer to the right) in the vacuum piping.

VSFU Compact Union Type	VSFJ Socket Type
	
Model No. / VSFU	Model No. / VSFJ
VSFU-2-44	VSFJ-44

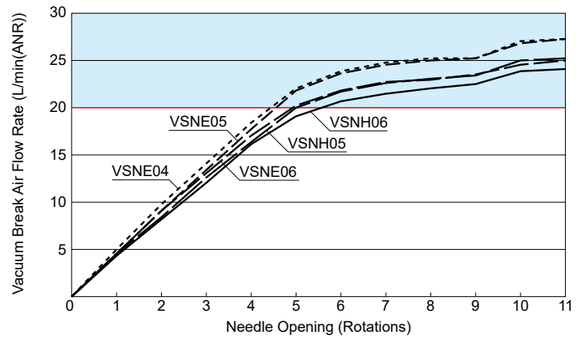
Pressure sensor lead wires are connectorized. Improved wiring work and maintainability. Four connector cable lengths available.

Optimal length can be selected from 500, 1,000, 2,000, 3,000 mm according to the installation location.

*Only for pressure sensor with analog output for negative pressure, pressure sensor with LED display. Pressure sensor with analog output for compound pressure is grommet type.

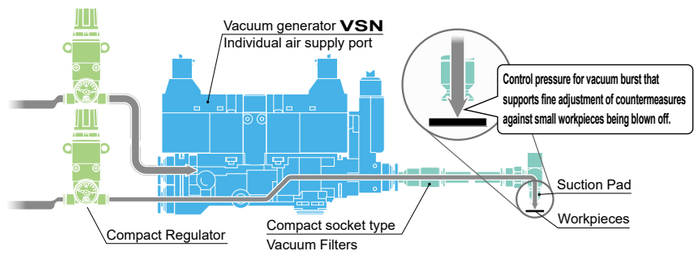
Vacuum break air flow rate ensures 20 L/min

Supply Pressure: At 0.5 MPa

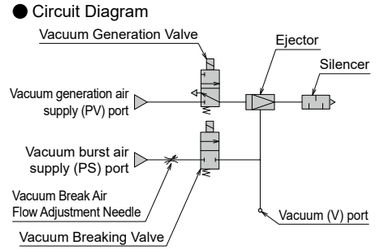


Gently release small workpieces during vacuum breaking

Independent vacuum break air supply port(option)
Therefore, in addition to conventional flow rate adjustment, pressure adjustment is possible with an external regulator, facilitating fine adjustment of vacuum break air.



● Circuit Diagram



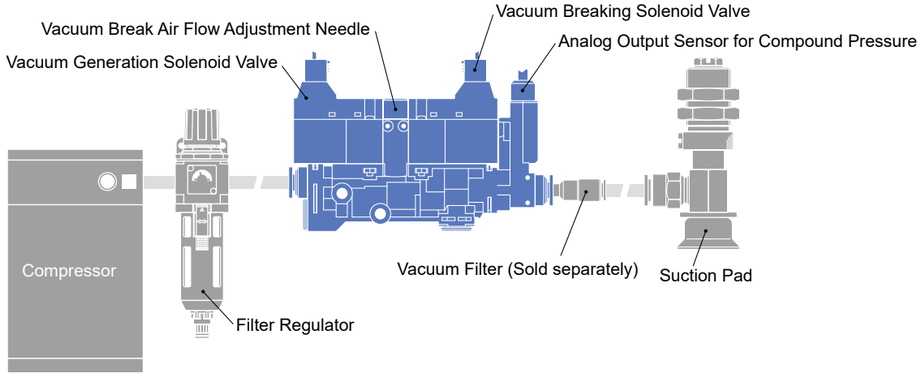
Type with common supply port also available in lineup

*Supply port: Air supply port for vacuum generation and Common vacuum burst air supply port.

Compliant with Global Standards

CE UKCA RoHS

Example Circuit Usage



Model No. Notation

- 10.3 mm Width Compact Vacuum Unit (Ejector System Compatible-type)
- Vacuum Ejector Unit Single Unit Type

VSN	-	H	05	-	4	4	4	S	-	3	-	V1C1
Model No.		❶ Vacuum Characteristics	❷ Nozzle Diameter		❸ Vacuum Port (V)	❹ Vacuum Generation Air Supply Port (PV)	❺ Vacuum Break Air Supply Port (PS)	❻ Exhaust Port (EX)		❼ Solenoid Valve Voltage		❽ Vacuum Pressure Switch Specifications

❶ Vacuum Characteristics

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

Note) The combination 'H04' for items ❶ and ❷ cannot be selected.

❷ Nozzle Diameter

Code	Content
04	ø0.4
05	*0.5
06	ø0.6

Note) The combination 'H04' for items ❶ and ❷ cannot be selected.

❸ Vacuum Port (V)

Code	Content
4	ø4 Push-in straight fitting
4L	ø4 Push-in elbow fitting

❹ Vacuum Generation Air Supply Port (PV)

Code	Content
4	ø4 Push-in straight fitting

❺ Vacuum Break Air Supply Port (PS)

Code	Content
4	ø4 Push-in straight fitting
N	Common Air for Vacuum Generation / Vacuum Breaking

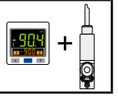
❻ Exhaust Port (EX)

Code	Content
S	Atmospheric Release with Silencer
J	ø6 Push-in fitting centralized exhaust

❼ Solenoid Valve Voltage

Code	Content
3	24 VDC

❽ Vacuum Pressure Switch Specifications

Type	Lead Wire (mm)	Separate LED Indicator	Code	Diagram
Without Vacuum Pressure Switch			Blank	
Analog Output for Negative Pressure	500		V1C0	
	1,000		V1C1	
	2,000		V1C2	
	3,000		V1C3	
	500	●	V2C0	
	1,000	●	V2C1	
	2,000	●	V2C2	
	3,000	●	V2C3	
Analog Output for Compound Pressure Grommet Lead Wire	3,000		R1	
	3,000	●	R2	

Maintenance Part Model No.

*For details of the maintenance parts, P. 236.

●Silencer Element

VSN - E
Model No.

●Dedicated bracket(common to VSN and VSNP)

VSN - B

Option Single Item Model No.

●Separate Digital Indicator

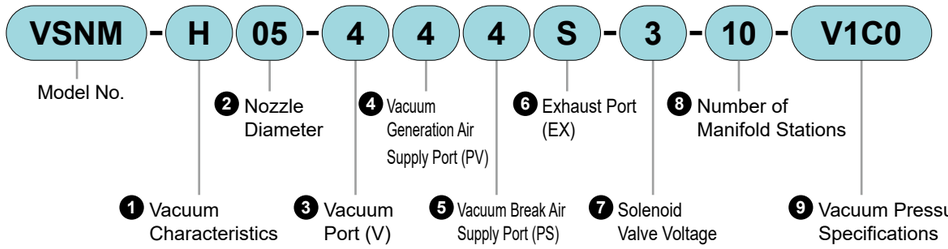
VSN - SED - 31N
Model No.

●Sensor connection connector(e-con)

VSN - EC
Model No.

Model No. Notation

- 10.3 mm Width Compact Vacuum Unit (Ejector System Compatible-type)
- Vacuum Ejector Unit Manifold Type



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.

❶ Vacuum Characteristics

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

Note1) The combination 'H04' for items ❶ and ❷ cannot be selected.
Note2) For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, P. 240, 241.

❷ Nozzle Diameter

Code	Content
04	ø0.4
05	*0.5
06	ø0.6
00	For mixed specifications(Provide details in the specification sheet.)

Note1) The combination 'H04' for items ❶ and ❷ cannot be selected.
Note2) For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, P. 240, 241.

❸ Vacuum Port (V)

Code	Content
4	ø4 Push-in straight fitting
4L	ø4 Push-in elbow fitting
CX	For mixed specifications(Provide details in the specification sheet.)

Note1) For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, P. 240, 241.

❹ Vacuum Generation Air Supply Port (PV)

Shape	Size	Position	Code	Diagram
Straight Fitting	ø4	R Side Only	**4R**	
	ø6		**6R**	
	ø8		**8R**	
	ø4	Both Sides	**4**	
	ø6		**6**	
	ø8		**8**	
	ø4	L Side Only	**4H**	
	ø6		**6H**	
	ø8		**8H**	
Elbow Fitting	ø4	R Side Only	**4LR**	
	ø6		**6LR**	
	ø8		**8LR**	
	ø4	Both Sides	**4L**	
	ø6		**6L**	
	ø8		**8L**	
	ø4	L Side Only	**4LH**	
	ø6		**6LH**	
	ø8		**8LH**	

❺ Vacuum Break Air Supply Port (PS)

Shape	Size	Position	Code	Diagram
Straight Fitting	ø4	R Side Only	**4R**	
	ø6		**6R**	
	ø8		**8R**	
	ø4	Both Sides	**4**	
	ø6		**6**	
	ø8		**8**	
	ø4	L Side Only	**4H**	
	ø6		**6H**	
	ø8		**8H**	
Elbow Fitting	ø4	R Side Only	**4LR**	
	ø6		**6LR**	
	ø8		**8LR**	
	ø4	Both Sides	**4L**	
	ø6		**6L**	
	ø8		**8L**	
	ø4	L Side Only	**4LH**	
	ø6		**6LH**	
	ø8		**8LH**	
Common for Vacuum Generation / Vacuum Breaking			**N**	

❻ Exhaust Port (EX)

Code	Content
S	Atmospheric Release with Silencer

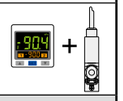
❼ Solenoid Valve Voltage

Code	Content
3	24 VDC

❽ Number of Manifold Stations

Code	Content
2	2 stations
to	to
10	10 stations

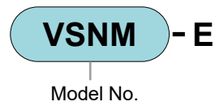
❾ Vacuum Pressure Switch Specifications

Type	Lead Wire (mm)	Separate LED Indicator	Code	Diagram
Without Vacuum Pressure Switch			**Blank**	
Analog Output for Negative Pressure	500		**V1C0**	
	1,000		**V1C1**	
	2,000		**V1C2**	
	3,000		**V1C3**	
	500	●	**V2C0**	
	1,000	●	**V2C1**	
	2,000	●	**V2C2**	
	3,000	●	**V2C3**	
Analog Output for Compound Pressure Grommet Lead Wire	3,000		**R1**	
	3,000	●	**R2**	
For Mixed Specifications *Provide details in the specification sheet.			**Z**	

Note) For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, P. 240, 241.

Maintenance Part Model No. * For details on the maintenance parts, P. 236.

●Spare silencer element

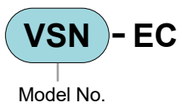


Option Single Item Model No.

●Separate Digital Indicator



●Sensor connection connector(e-con)



Specifications

Item		Vacuum Ejector Unit VSN
Operating Fluid		Air
Operating Pressure	MPa	0 to 0.55
Ambient Temperature/Fluid Temperature	°C	5 to 50
Operating Humidity		35 to 85% RH (No condensation)
Protection Structure		Equivalent to IEC Standard IP40
Vibration/Shock Resistance	(m/s²)	≤ 50 / ≤ 150

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])
VSN-E04	0.4	0.35	90.4	2	6
VSN-H05	0.5	0.5		7	11.5
VSN-E05		0.35		3	8
VSN-H06	0.6	0.5		9.5	16
VSN-E06		0.35		4.5	12

Valve Specifications

Item \ Unit		Vacuum Ejector Unit VSN	
		Vacuum Generation Valve	Vacuum Breaking Valve
Valve-type and Operation Method		Direct acting poppet valve	
Rated Voltage	V	24 VDC	
Voltage Fluctuation Range		±10%	
Surge Suppressor		Built-in Surge Suppressor	
Power consumption	W	Startup: 2.2 Holding: 0.6 (Built-in power saving circuit)	
Operation Indicator		Green LED	
Operating Pressure	MPa	0 to 0.55	0 to 0.55
Valve-type		Normally Closed Type	
Response Time(*1)	ms	Both Vacuum Generation (OFF→ON) / Vacuum Stop (ON→OFF) ≤ 5	
Wiring Method and Lead Wire		Connector type: 500 mm	
Length		Red Lead Wire: +24 VDC, Black Lead Wire: -0 V	

Note1) Response time is the time until pressure change is detected at the vacuum port when rated pressure and rated voltage are supplied. Vacuum reaching time at the piping end(workpiece) and vacuum breaking time vary depending on conditions such as ejector characteristics, volume(vacuum piping length), and vacuum breaking flow rate.

Vacuum Breaking Function

Item		
Break Air Flow Rate	L/min (ANR)	0 to 20 (at 0.5 MPa supply)

Note) Variable by vacuum break air flow adjustment needle.

Vacuum Pressure Switch Specifications

Item			Negative Pressure Specification(-V1□)	Compound Pressure Specification(-R1)
Power Supply Voltage		V	DC 10.8 to 30 (incl. ripple)	
Current Consumption		mA	≤ 20	
Pressure Sensing Element			Diffused Semiconductor Pressure Sensor	
Working pressure		kPa	-100 to 0	-100 to 300
Proof pressure		kPa	200	600
Storage Temperature		°C	-20 to 70 (atmospheric pressure, humidity: 65% RH or less)	
Operating Temperature		°C	-10 to 60 (No condensation)	
Operating Humidity			35 to 85% RH (No condensation)	
Protection Structure			Equivalent to IEC Standard IP40	
Analog Output	Output Voltage	V	1 to 5	
	Zero Point Voltage	V	1±0.04 (= at atmospheric pressure)	1±0.1 (= at -100 kPa)
	Maximum Pressure Point Voltage	V	4.6±0.04 (= at -100 kPa)	5±0.1 (= at 300 kPa)
	Linearity/Hysteresis		≤ ±0.5% F.S.(at Ta = 25°C)	
	Temperature Characteristics		≤ ±2% F.S.(0 to 50°C, Ta = 25°C)	
	Output Current	mA	0.195 or less (load resistance: 10 kΩ or less)	1 or less (load resistance: 5 kΩ or less)
	Output impedance	kΩ	1	-

Separate Digital Indicator Specifications(-V2□, -R2)

Item			Separate Digital Indicator
Power Supply Voltage		V	DC 10.8 to 26.4
Current Consumption		mA	40 max.(No load)
Repeatability			≤ ±0.1% F.S. ±1 digit
Differential			Adjustable
Response time		ms	2.5 or less (malfunction prevention function: 25, 100, 250, 500, 1000, 1500 selected)
Output Short-circuit Protection			Yes
Pressure Display	Display Unit		kPa
	Display Magnification Resolution		0.1
	Display Update Rate		5 times/sec
	Display Accuracy		≤ ±1% F.S. ±1 digit
	Operation Indicator Light		Orange 1 & 2 Indicator Light
	Digital Display		Main display: 2 colors(red, green), sub-display: Orange
Sensor Input Specifications	Voltage input signal	V	1 to 5
	Input impedance	MΩ	1
Switch Output	Number of Output Points		2-point Output (OUT1, OUT2)
	Output Method		NPN Open Collector
	Switch Rating		30 VDC 125 mA max.
	Internal Voltage Drop	V	≤ 1.5
Analog Output	Output Voltage	V	1 to 5 ≤ ±2.5% F.S.
	Linearity		≤ ±1% F.S.
	Output impedance	KΩ	1
Environmental Resistance	Protection Structure		Equivalent to IEC Standard IP40
	Storage Temperature	°C	-10 to 60 (No condensation or freezing)
	Operating Temperature	°C	0 to 50
	Operating Humidity		35 to 85% RH(No freezing)
	Dielectric Strength		1000 VAC 1 minute (Between lead wire and case)
	Insulation Resistance		≥ 50 MΩ (500 VDC) (Between lead wire and case)
	Vibration Resistance		Double amplitude 1.5 mm or 100 m/s², 10 to 55 Hz, 2 hours in each X, Y, Z direction
	Shock Resistance		100 m/s², 2 hours in each X, Y, Z direction
Temperature Characteristics			±0.5%F.S. (0 to 50°C, base temperature: 25°C)

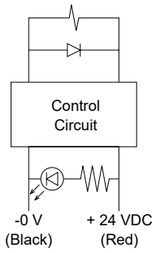
Weight Table

Model No.	Unit Contents	Weight (g)
VSN-□□-□□□S-3-□	Single unit type, individual air supply port, atmospheric release, with sensor	56
VSN-□□-□□□S-3	Single unit type, individual air supply port, atmospheric release, without sensor	53
VSN-□□-□□□J-3-□	Single unit type, individual air supply port, centralized exhaust, with sensor	58
VSN-□□-□□□J-3	Single unit type, individual air supply port, centralized exhaust, without sensor	55
VSN-□□-□□NS-3-□	Single unit type, common air supply port, atmospheric release, with sensor	54
VSN-□□-□□NS-3	Single unit type, common air supply port, atmospheric release, without sensor	51
VSN-□□-□□NJ-3-□	Single unit type, common air supply port, centralized exhaust, with sensor	56
VSN-□□-□□NJ-3	Single unit type, common air supply port, centralized exhaust, without sensor	53
VSNM-□□-□□NS-3-2-□	Manifold type, individual/common air supply port, with sensor	171
VSNM-□□-□□NS-3-2	Manifold type, individual/common air supply port, without sensor	164

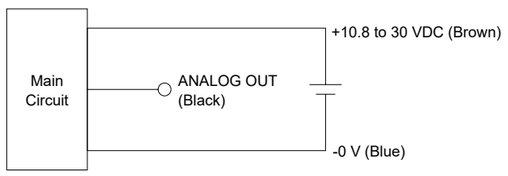
■ For the manifold, with each station increase, a sensor equipped unit can be used for each station increase: 47 g, with unit without sensor for 1 station: 43 g heavier. Example: The weight of vacuum ejector unit, with sensor, quadruple manifold is 171 +(2 × 47) = 265 g→2. Weight of manifold: Weight of 2 units with sensor for 171 g: Add 94 g.

Electrical Circuit Diagram

● Solenoid valve



● vacuum pressure switch



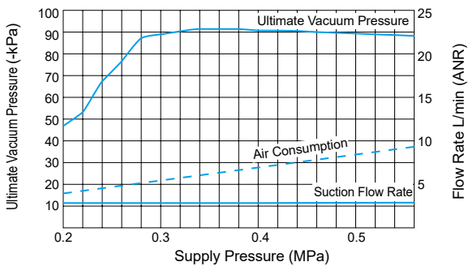
MEMO

Vacuum Components
Ejector System
VSY
VSH
VSU
VSB
VSC
VSG
VSK/ VSKM
VSJ/ VSJM
VSN/ VSNM
VSX/ VSXM
VSQ
VSZM
Ending

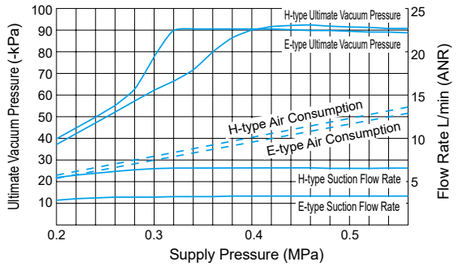
Vacuum Characteristics

Supply Pressure - Ultimate Vacuum Pressure, Suction Flow Rate, Consumption Flow Rate

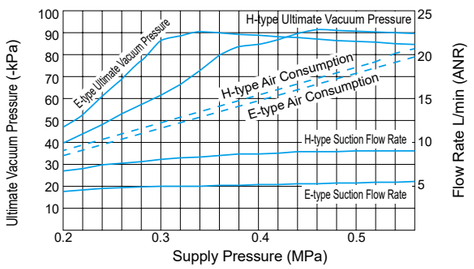
● VSN-E04



● VSN-H05, VSN-E05



● VSN-H06, VSN-E06

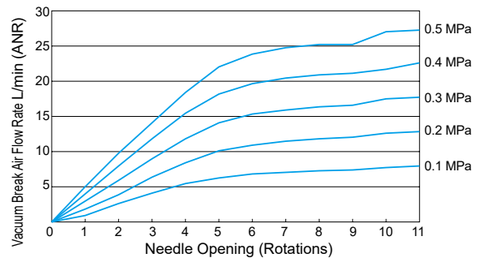


1. The supply pressure in the characteristics above is during vacuum generation.
2. Abnormal noise (gurgling sound) may occur at a supply pressure slightly below the peak ultimate vacuum pressure in the characteristics above. In this state with abnormal noise, characteristics are unstable and noise level increases. Also, it may affect sensors, etc., causing trouble, so reset the supply pressure.
   (ex1. Source pressure is 0.5MPa with the H-type vacuum ejector. During vacuum ejector operation, supply pressure drops to 0.43 MPa due to pressure drop, and abnormal noise is generated. → Reset the supply pressure during ejector operation to 0.5 MPa.)
3. 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 level, etc.)
   (ex2. Abnormal noise occurs even when pressure is 0.5MPa with H-type vacuum ejector during vacuum ejector operation. → 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.))
   (ex3. When using a vacuum ejector with 0.6 mm nozzle diameter, carry out piping and components selection so that the effective cross-sectional area of 0.9 mm² or more is secured by using 0.32 xπ=0.282 mm² x3=0.84 mm² cross-sectional area.)

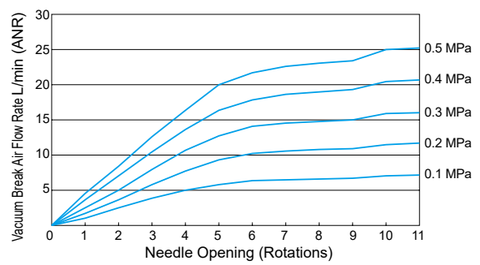
Vacuum Characteristics

Vacuum Break Air Flow Characteristics

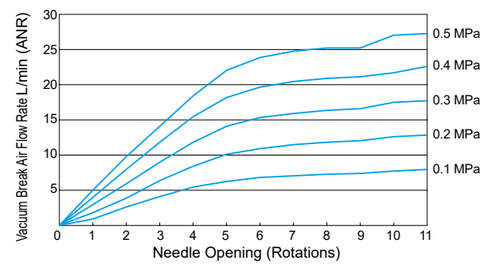
● VSN-E04



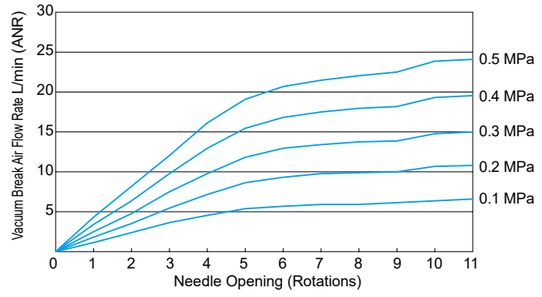
● VSN-H05



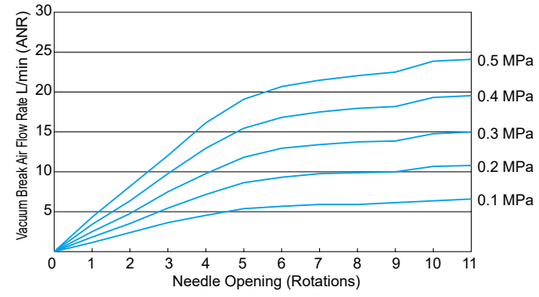
● VSN-E05



● VSN-H06

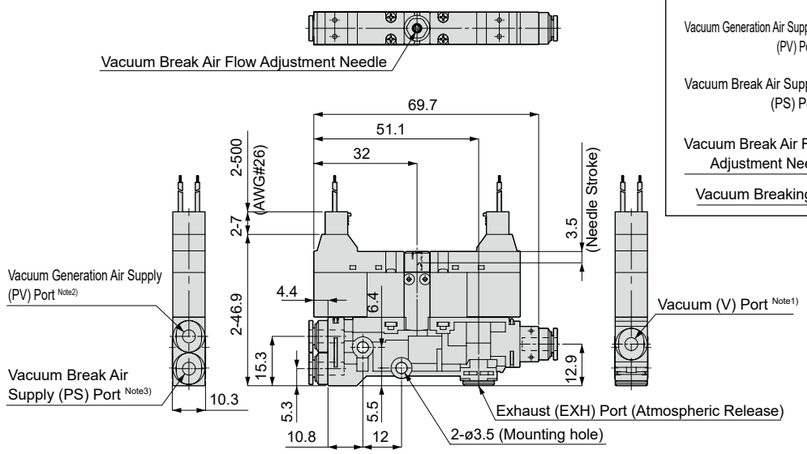


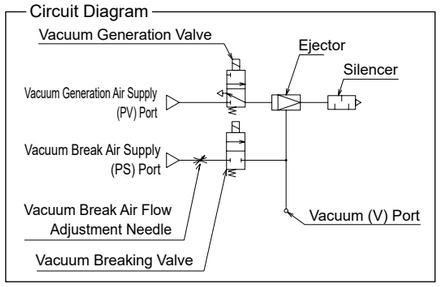
● VSN-E06



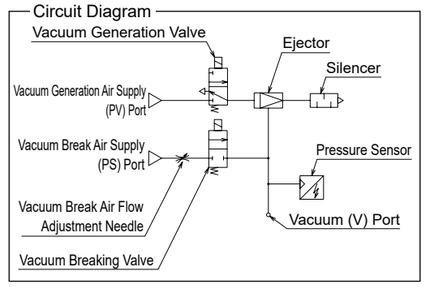
External Dimensions Diagram (Single Unit Type)

● Individual air supply port, atmospheric release, without vacuum pressure switch
• VSN-□□-□□□S-3

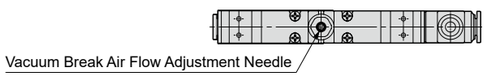


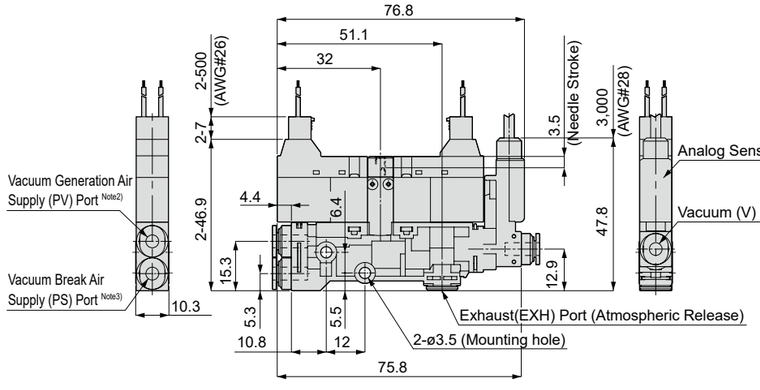


● Individual air supply port, atmospheric release, with vacuum pressure switch
• VSN-□□-□□□S-3-V□□□/R□

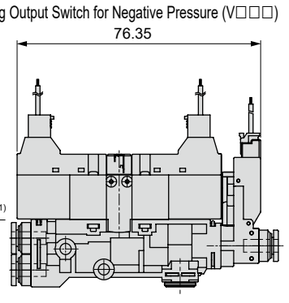


• Analog Output Switch for Compound Pressure (R□)





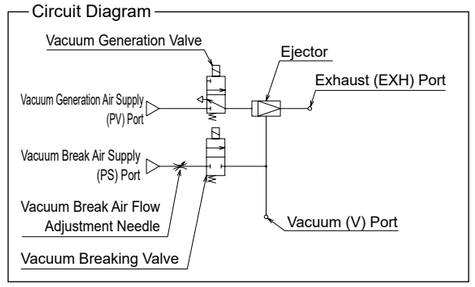
• Analog Output Switch for Negative Pressure (V□□□)

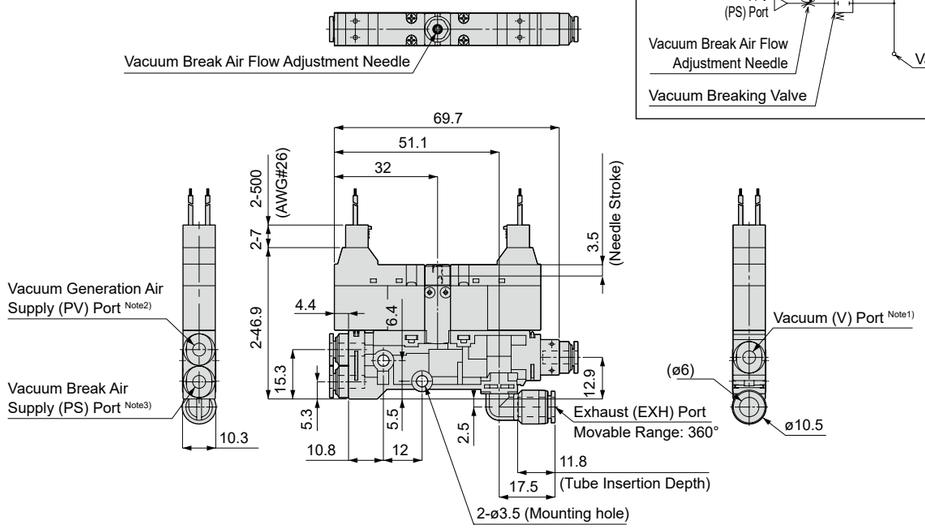


Note1) For vacuum (V) port dimensions, P. 230 Refer to Table 1 on .
Note2) For dimensions of the air supply (PV) port for vacuum generation, P. 230 Refer to Table 2 on the .
Note3) For vacuum burst air supply (PS) port dimensions, P. 230 Refer to Table 2 on the .

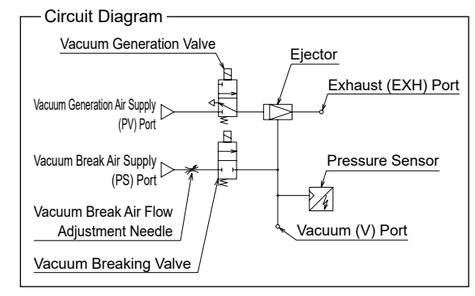
External Dimensions Diagram (Single Unit Type)

● Individual air supply port, common exhaust, without vacuum pressure switch
• VSN-□□-□□□J-3

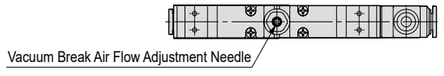


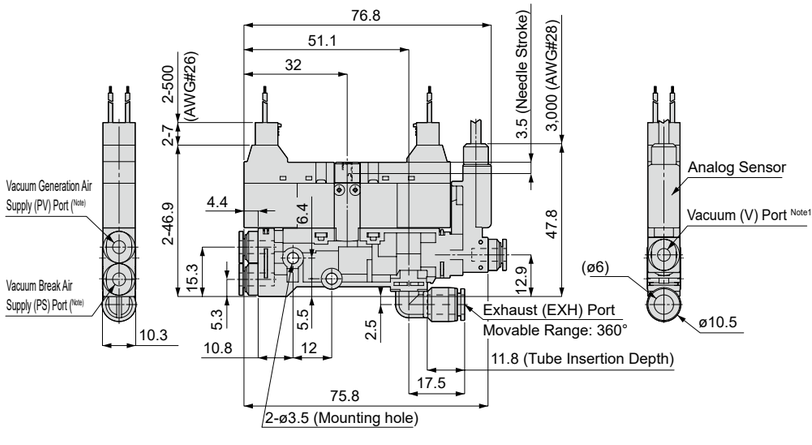


● Individual air supply port, common exhaust, with vacuum pressure switch
• VSN-□□-□□□J-3-V□□□/R□

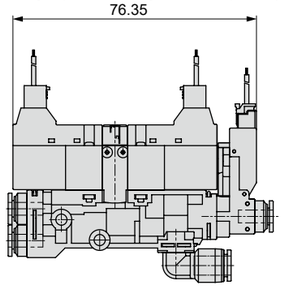


• Analog Output Switch for Compound Pressure (R□)





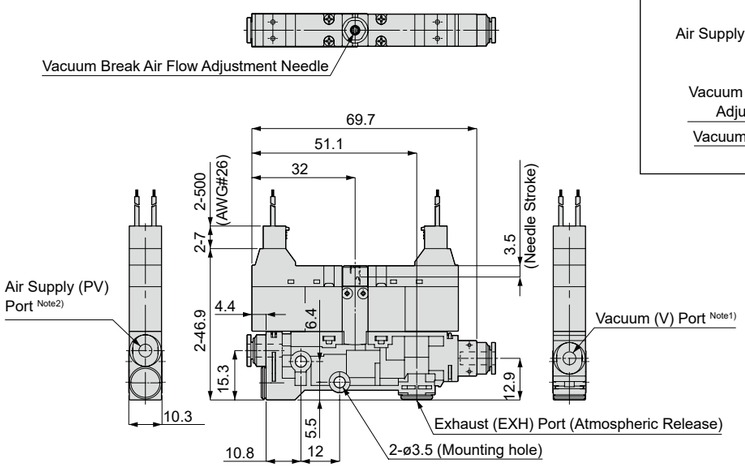
• Analog Output Switch for Negative Pressure (V□□□)

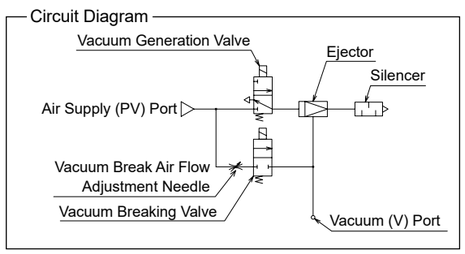


Note1) For vacuum (V) port dimensions, P. 230 Refer to Table 1 on .
Note2) For dimensions of the air supply (PV) port for vacuum generation, P. 230 Refer to Table 2 on the .
Note3) For vacuum burst air supply (PS) port dimensions, P. 230 Refer to Table 2 on the .

External Dimensions Diagram (Single Unit Type)

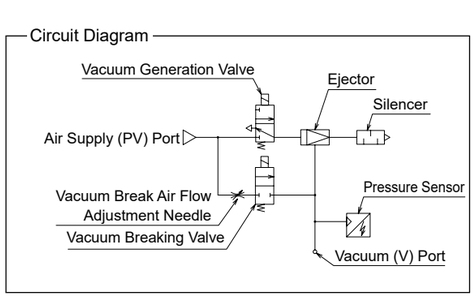
● Common air supply port, atmospheric release, without vacuum pressure switch
• VSN-□□-□□NS-3



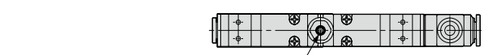


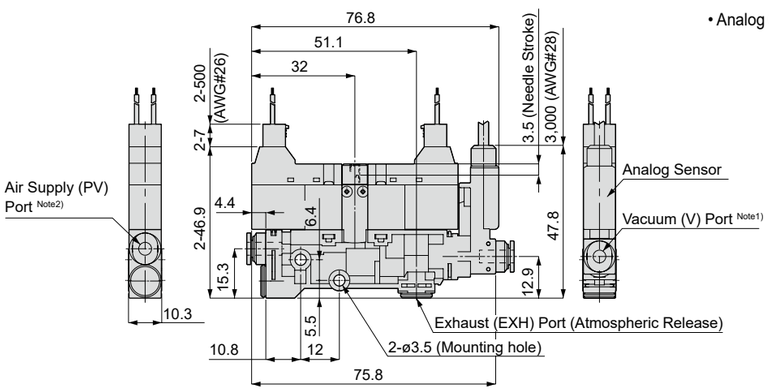
Note1) For vacuum (V) port dimensions, P. 230 Refer to Table 1 on .
Note2) For air supply (PV) port dimensions, P. 230 Refer to Table 2 on the .

● Common air supply port, atmospheric release, with vacuum pressure switch
• VSN-□□-□□NS-3-V□□□/R□

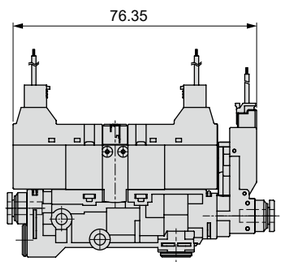


• Analog Output Switch for Compound Pressure (R□)





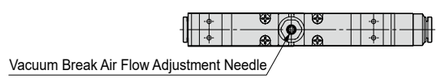
• Analog Output Switch for Negative Pressure (V□□□)

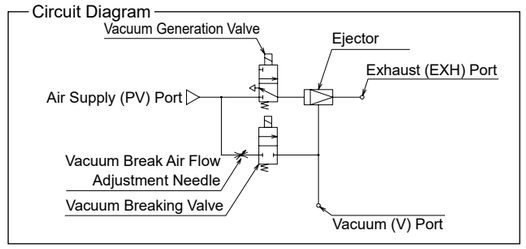


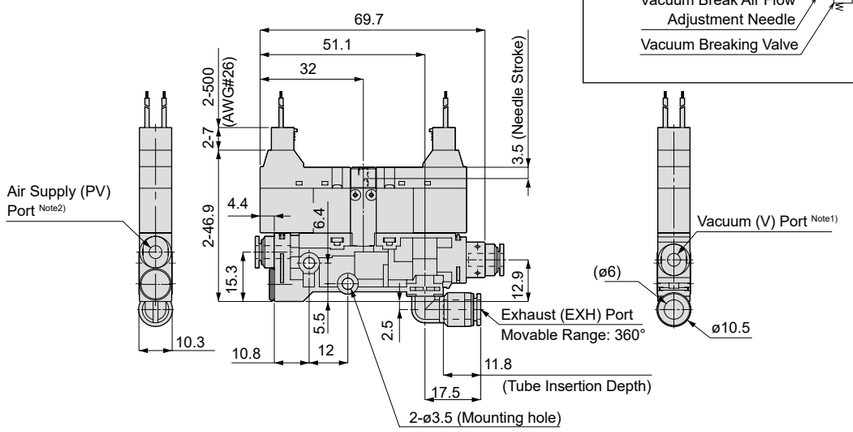
Note1) For vacuum (V) port dimensions, P. 230 Refer to Table 1 on .
Note2) For air supply (PV) port dimensions, P. 230 Refer to Table 2 on the .

External Dimensions Diagram (Single Unit Type)

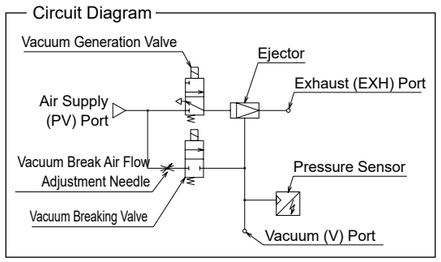
● Common air supply port, common exhaust, without vacuum pressure switch
• VSN-□□-□□NJ-3



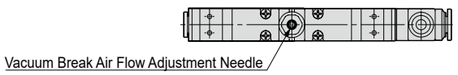


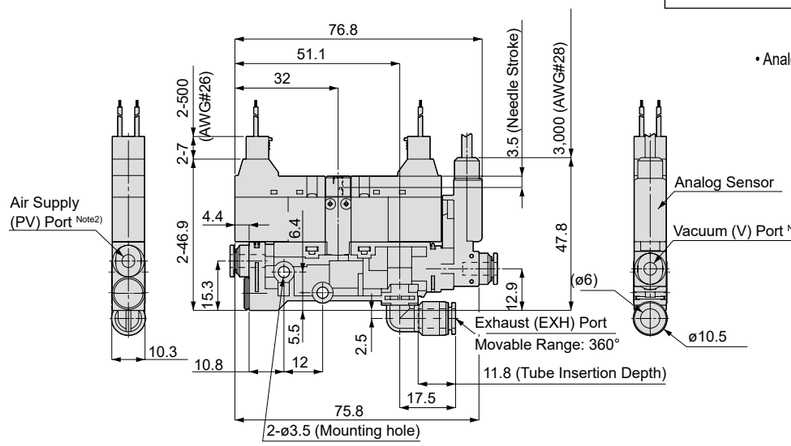


● Common air supply port, common exhaust, with vacuum pressure switch
• VSN-□□-□□NJ-3-V□□□/R□

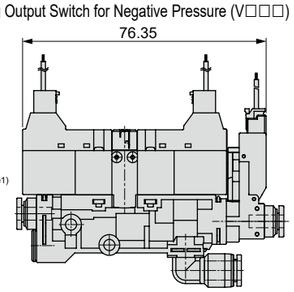


• Analog Output Switch for Compound Pressure (R□)





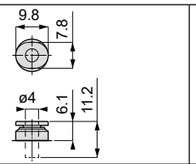
• Analog Output Switch for Negative Pressure (V□□□)



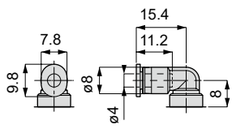
Note1) For vacuum (V) port dimensions, P. 230 Refer to Table 1 on .
Note2) For air supply (PV) port dimensions, P. 230 Refer to Table 2 on the .

External Dimension Drawings

● Single unit fitting dimensions

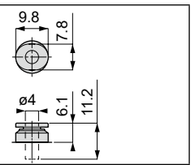


ø4 Push-in straight fitting



ø4 Push-in elbow fitting

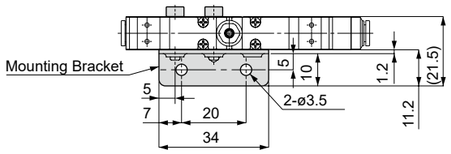
Table 1: Vacuum Port Push-in Fitting Shape

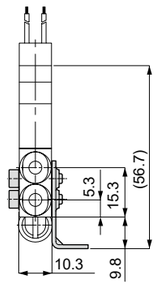


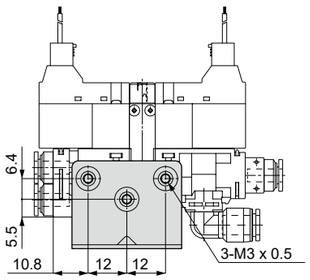
4 (ø4 Straight)

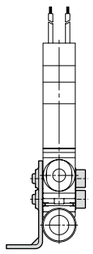
Table 2: Supply Port Push-in Fitting Shape

● Dedicated bracket for single unit
• VSN-B



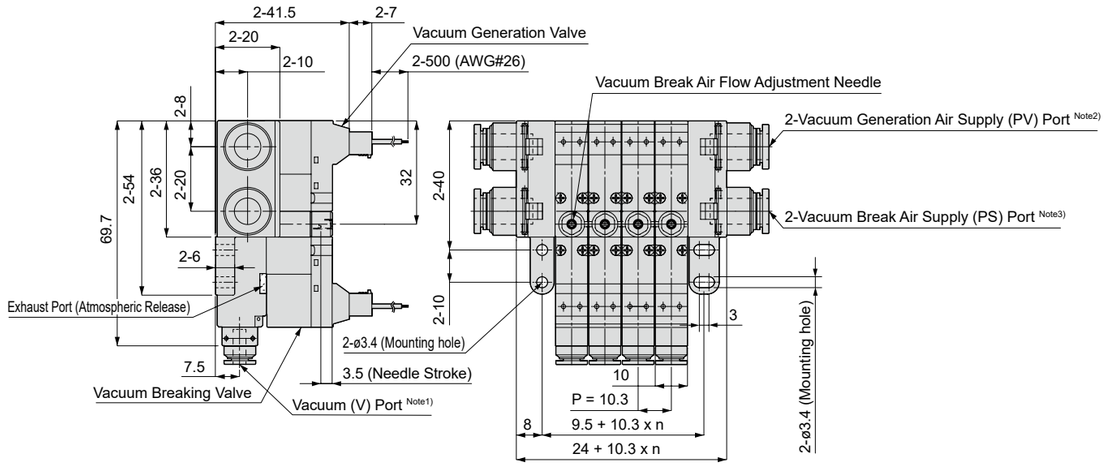






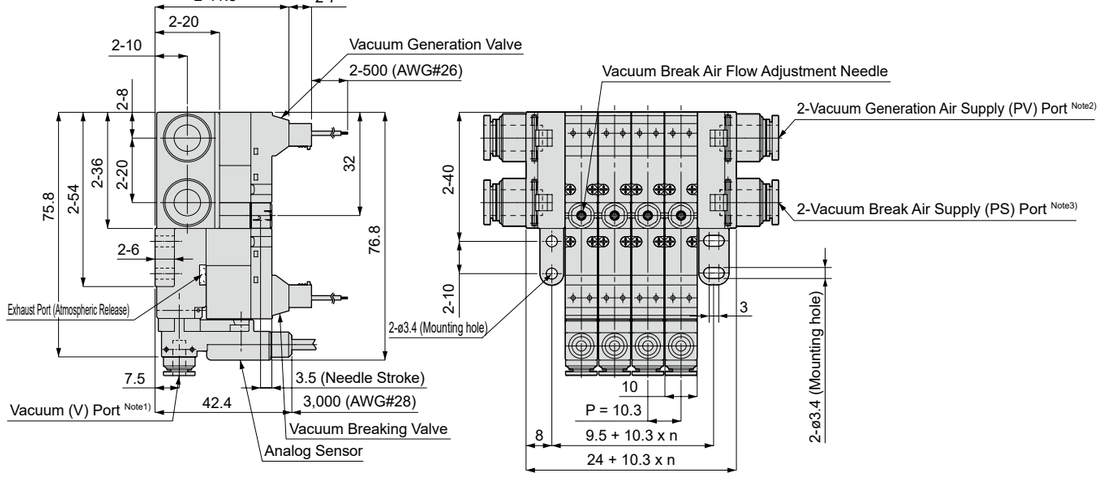
External Dimensions Diagram (Manifold Type)

● Individual air supply port, without vacuum pressure switch
• VSNM-□□-□□□S-3-□

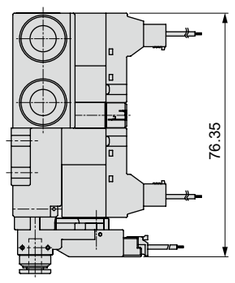


● Individual air supply port, with vacuum pressure switch
• VSNM-□□-□□□S-3-□-V□□□/R□

• Compound Pressure Analog Output Switch(R□)



• Analog Output Switch for Negative Pressure (V□□□)

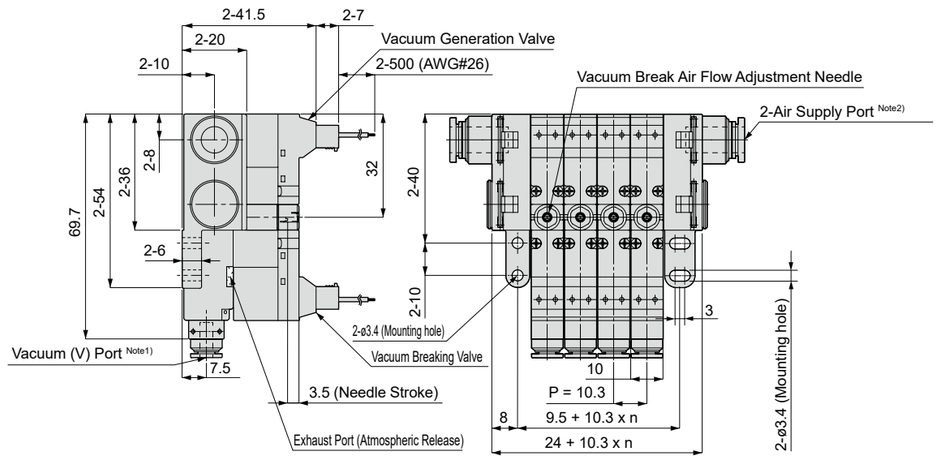


Note1) For vacuum port dimensions, P. 233 Refer to Table 1 on .
Note2) For dimensions of the air supply port for vacuum generation, P. 233 Refer to Table 2 on the .
Note3) For vacuum burst air supply port dimensions, P. 233 Refer to Table 2 on the .

External Dimensions Diagram (Manifold Type)

● Common air supply port, without vacuum pressure switch

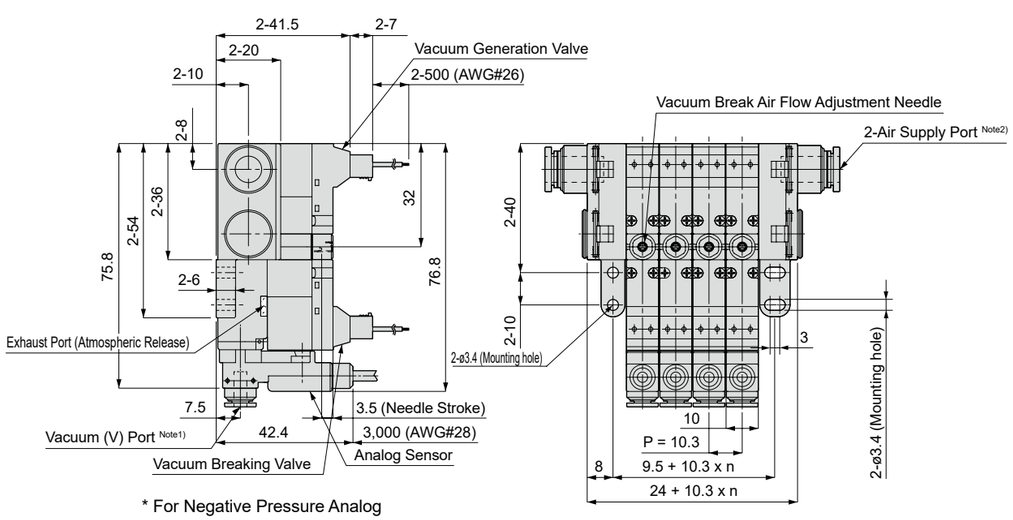
• VSNM-□□-□□NS-3-□



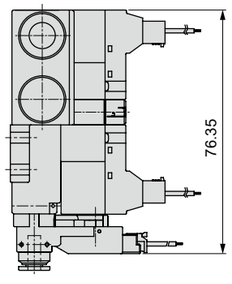
● Common air supply port, with vacuum pressure switch

• VSNM-□□-□□NS-3-□-V□□□/R□

• Compound Pressure Analog Output Switch(R□)



* For Negative Pressure Analog Output Switch(V□□□)



Note1) For vacuum port dimensions, P. 233 Refer to Table 1 on .

Note2) For air supply port dimensions, P. 233 Refer to Table 2 on the .

External Dimensions Diagram (Manifold Type)

● Manifold fitting dimensions

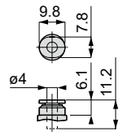
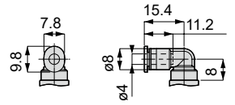
	
ø4 Push-in straight fitting	ø4 Push-in elbow fitting

Table 1: Vacuum Port Push-in Fitting Shape

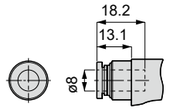
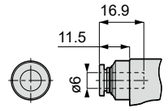
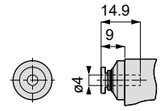
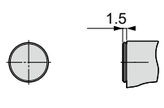
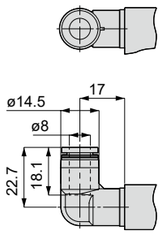
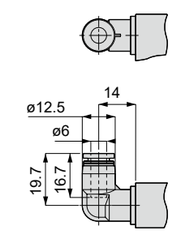
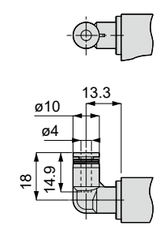
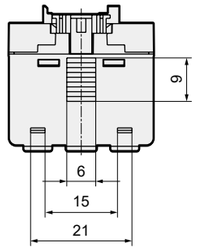
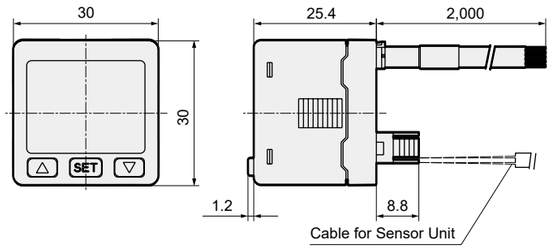
			
ø8 Push-in straight fitting	ø6 Push-in straight fitting	ø4 Push-in straight fitting	Plug Type
			
ø8 Push-in elbow fitting	ø6 Push-in elbow fitting	ø4 Push-in elbow fitting	

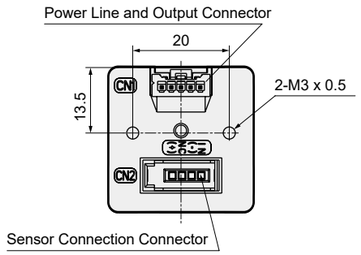
Table 2: Supply Port Push-in Fitting Shape

External Dimension Drawings

● Separate Digital Indicator







• Power Line and Output Wiring Specifications

Wire Color	Content
Brown	Power Supply (10.8 to 26.4 VDC)
Orange	Analog Output (1 to 5 V)
White	OUT2 Output
Black	OUT1 Output
Blue	COMMON

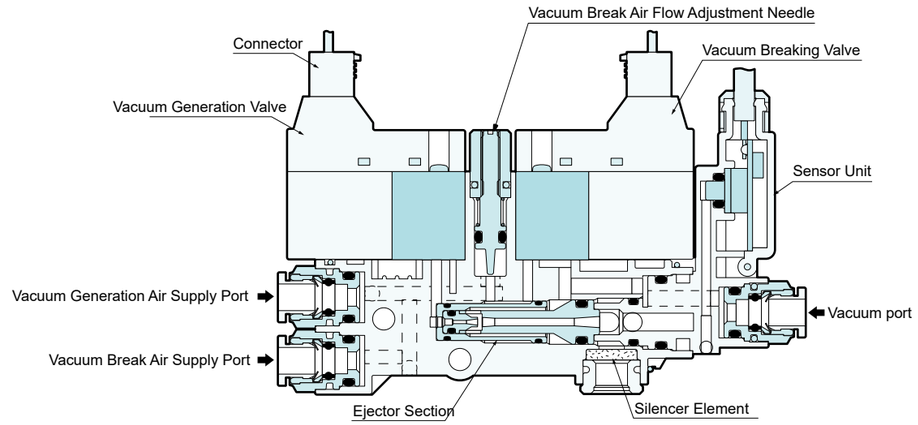
• Sensor Unit Connection Wiring Specifications

Wire Color	Content
Brown	DC+
Blue	DC-
Black	IN

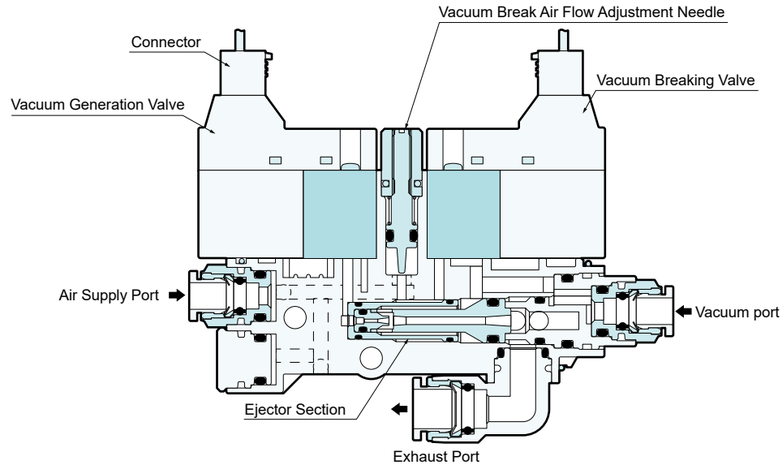
* For how to wire the sensor connection connector, P. 238.

Internal Structure Diagram

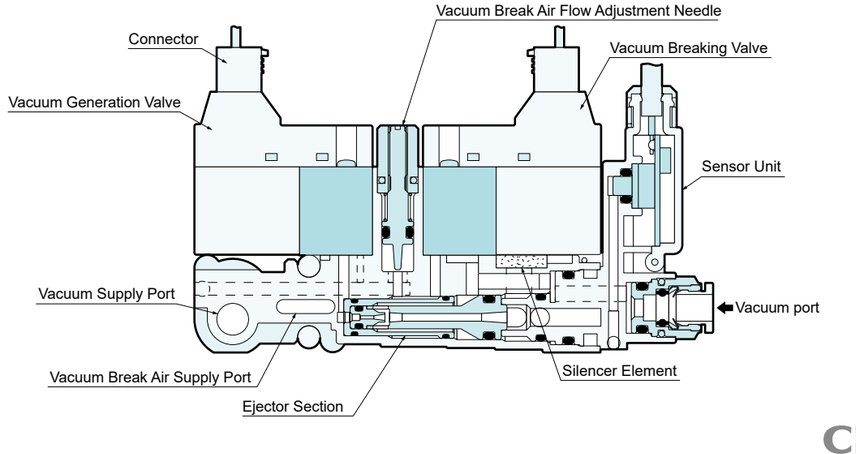
● Vacuum ejector unit single-type
• Air Supply Port Individual-type, Atmospheric Release, With Vacuum Pressure Switch



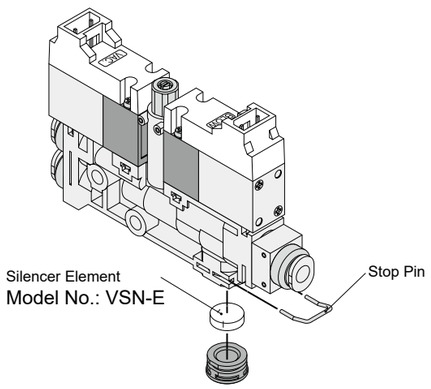
● Vacuum ejector unit single-type
• Air Supply Port Common Type, Centralized Exhaust, Without Vacuum Pressure Switch

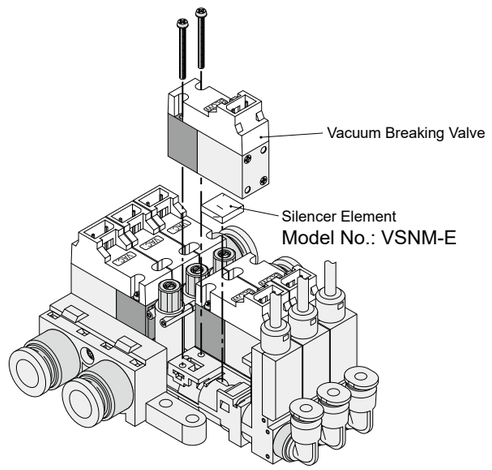


● Vacuum ejector unit manifold
• With Vacuum Pressure Switch



Maintenance Parts





Pneumatic Components

To Use This Product Safely

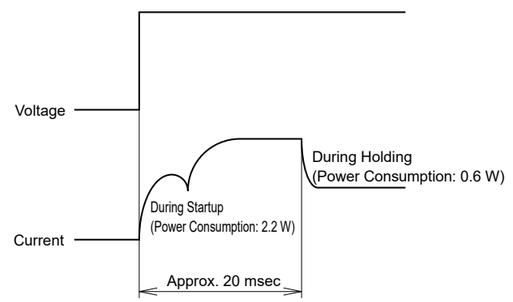
Be sure to read this before use.
For general pneumatic components precautions, Intro P. 15 for details.

Individual Precautions: VSN Series

Design / Selection

Warning

■The solenoid valve of this product uses a current control circuit, serving as a mechanism to reduce the current value when the coil is kept energized. Absolutely avoid use in environments subject to vibration/shock outside of specifications. This can lead to valve malfunction.



Current/Voltage Waveform During Solenoid Valve Energization

Caution

■The solenoid valve lead wire of this product has polarity. If the polarity is incorrect, the solenoid valve will not operate.

■This product does not have a Vacuum Filters. Always use our company's vacuum filter series together with this product. If a vacuum filter is not used, sucked-in dust, dirt, etc., will accumulate inside the product, causing degradation of vacuum performance (ejector system compatible unit) or solenoid valve leakage/ malfunction(ejector system compatible unit, vacuum pump system compatible unit), etc. (Recommended Vacuum Filters: VSFU Series, VSFJ Series

■In the manifold, the number of units that can operate at the same time is limited due to the conditions of the air supply amount(supply port size, pipe length, regulator processing flow rate, etc.) and ejector air consumption(vacuum characteristics), etc. If using the manifold type in a manner involving simultaneous operation, please consult our sales office.

■The solenoid valve of this product essentially operates continuously. If performing continuous energization exceeding 15 minutes, limit it to 10 times/day or less. Also, return to normal operation after continuous energization.

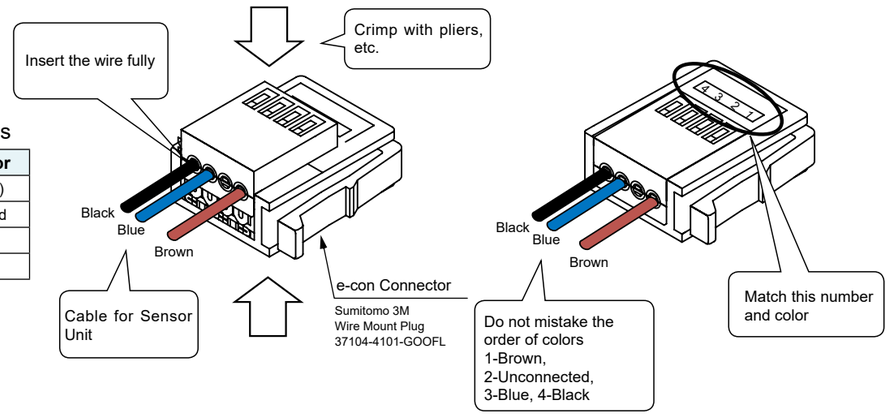
For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Equipment Product Site(https: //www.ckd.co.jp/kiki/en/) → 'model No.' → Instruction Manual.

How to Use

■ How to connect sensor connection connector(e-con)

For connection of the sensor connection connector, cut the half-strip part at the tip of the cable lead wire before use. Insert the lead wire fully into the connector and securely crimp it with a tool such as pliers.

- Removal of lead wire insulation is not required.
- Incorrect wiring can lead to destruction, failure, or malfunction of the sensor/indicator. During crimping, check the pin number and wire color, and be careful to avoid mistakes.
- Once the sensor connection connector is crimped, it cannot be reused. If a wiring mistake or lead wire insertion failure occurs, use a new sensor connection connector.



* Wiring Specifications

Pin No.	Cable Color
1	Brown(DC+)
2	Unconnected
3	Blue(DC-)
4	Black(IN)

MEMO

How to Create a VSNM Mixed Manifold Specification Sheet

● Mix manifold model No.(example)

VSNM- ❶Z ❷00 - ❸CX ❹4R ❺N ❻S - ❼3 - ❽5 - ❾Z

● Mix manifold specifications sheet

Vacuum Ejector Unit Model No. ❶ ❷ ❸ ❾	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSNM- H 05 - 4 - R1	○	○									2
VSNM- E 05 - 4 - R2			○	○							2
VSNM- E 05 - 4L - R2					○						1
VSNM-											
VSNM-											

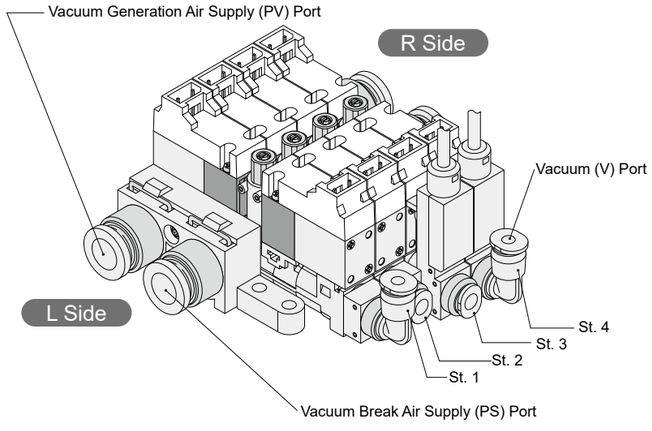
[For Fitting Mix Specification with Vacuum Port Size Only]

● Mix manifold model No.(example)

VSNM- ❶H ❷05 - ❸CX ❹4R ❺N ❻S - ❼3 - ❽5 - ❾V1C1

● Mix manifold specifications sheet

Vacuum Ejector Unit Model No. ❶ ❷ ❸ ❾	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSNM- H 05 - 4 - V1C1	○	○									2
VSNM- H 05 - 4L - V1C1			○	○	○						3
VSNM-											
VSNM-											
VSNM-											



[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.

VSNM Mixed Manifold Specification Sheet

Date of Issue
Company
Contact Person Quantity Set Delivery Date (Month/Day)
Attn:
Voucher No. Order Received No.
Order No.

● Mix manifold model No.

VSNM- ❶ ❷ - ❸ ❹ ❺ ❻ - ❼ - ❽ - ❾

❶ Vacuum Characteristics

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

❷ Nozzle Diameter

Code	Content
04	ø0.4
05	ø0.5
06	ø0.6
00	For mixed specifications (Provide details in the specification sheet)

❸ Vacuum Port (V)

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

❹ Vacuum Generation Air Supply Port (PV)

Code	Content
Unit combination is P. 218 Refer to .	

❺ Vacuum Break Air Supply Port (PS)

Code	Content
Unit combination is P. 218 Refer to .	

❻ Exhaust Port (EX)

Code	Content
S	Atmospheric Release with Silencer

❼ Solenoid Valve Voltage

Code	Content
3	24 VDC

❽ Number of Manifold Stations

Code	Content
2	2 stations
to	to
10	10 stations

❾ Vacuum Port (V)

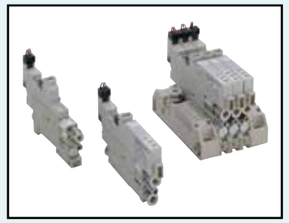
Code	Content
Blank	Without Vacuum Pressure Switch
V1C0	Analog Output for Negative Pressure / Connector Lead Wire 500 mm
V1C1	Analog Output for Negative Pressure / Connector Lead Wire 1000 mm
V1C2	Analog Output for Negative Pressure / Connector Lead Wire 2000 mm
V1C3	Analog Output for Negative Pressure / Connector Lead Wire 3000 mm
V2C0	Separate LED Indicator + Analog Output for Negative Pressure / Connector Lead Wire 500 mm
V2C1	Separate LED Indicator + Analog Output for Negative Pressure / Connector Lead Wire 1000 mm
V2C2	Separate LED Indicator + Analog Output for Negative Pressure / Connector Lead Wire 2000 mm
V2C3	Separate LED Indicator + Analog Output for Negative Pressure / Connector Lead Wire 3000 mm
R1	Analog Output for Compound Pressure / Grommet Lead Wire 3000 mm
R2	Separate LED Indicator + Analog Output for Compound Pressure / Grommet Lead Wire 3000 mm
Z	For mixed specifications (Provide details in the specification sheet.)

Notes for model No. Selection

Note1) The only available combinations for ❶ and ❷ are 'E04', 'H05', 'E05', 'H06', 'E06', and 'Z00'.

● Mix manifold specifications sheet

Vacuum Ejector Unit Model No. ❶ ❷ ❸ ❾	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSNM-											
VSNM-											
VSNM-											
VSNM-											
VSNM-											



Ejector System/10.5 mm Width Integrated Type Vacuum Ejector Unit

VSX Series

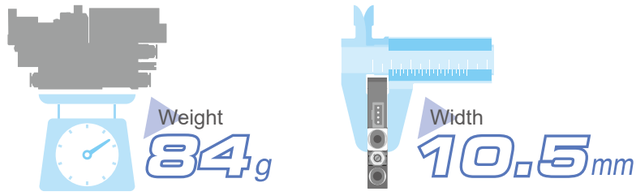
Lightweight, compact integrated type vacuum ejector unit achieving high cycle operation of vacuum systems

Vacuum Characteristic Variations

Nozzle Diameter \ Vacuum Characteristics	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

CE UKCA RoHS

Model No. Notation

●10.5 mm width integrated vacuum ejector unit discrete

VSX - H 07 D - 6 6 J - 3 - DW - D

- VSX: Model No.
- ❶ Vacuum Characteristics: H
- ❷ Nozzle Diameter: 07
- ❸ Valve-type: D
- ❹ Vacuum Port (V): 6
- ❺ Air Supply Port (PS): 6
- ❻ Exhaust Port (EX): J
- ❼ Solenoid Valve Voltage: 3
- ❽ Vacuum Pressure Switch Specifications: DW
- ❾ Mounting Method: D

❶ 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 ❶ and ❷ is 'L10', Exhaust Port ❻ 'J' cannot be selected.

❷ Nozzle Diameter

Code	Content
05	*0.5
07	*0.7
10	*1.0

*: When the combination for ❶ and ❷ is 'L10', Exhaust Port ❻ 'J' cannot be selected.

❸ Valve-type

Code	Content
B	Normally Closed Type
D	Self-holding Type

❹ Vacuum Port (V)

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

❺ Air Supply Port (PS)

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

❻ Exhaust Port (EX)

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

*: When the combination for ❶ and ❷ is 'L10', ❻ 'J' cannot be selected.

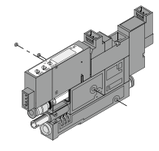
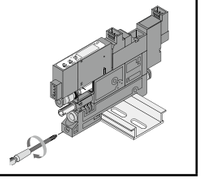
❼ Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC

❽ Vacuum Pressure Switch Specifications

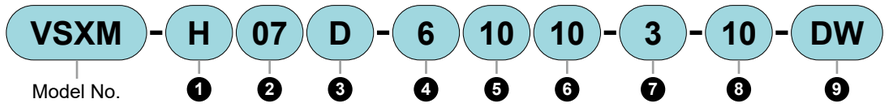
Code	Content
Blank	Without Vacuum Pressure Switch
DW	NPN Output 2 points with Digital Display
DA	NPN Output 1 point + Analog Output with Digital Display
AO	Analog Output

❾ Mounting Method

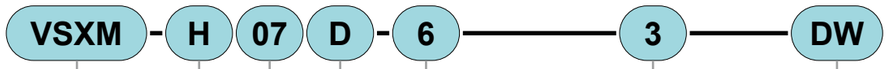
Code	Content	
Blank	Direct Mount Type	
D	DIN Rail Mounting Type	

Model No. Notation

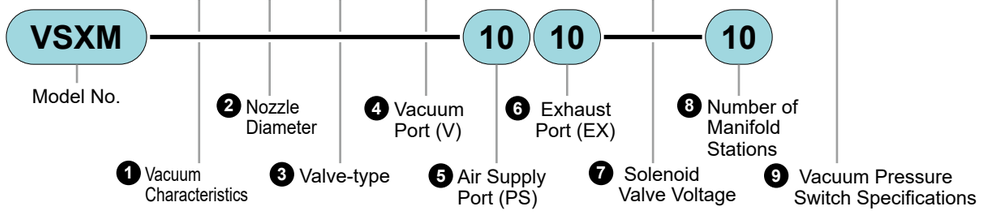
●Ejector System/10.5 mm Width Integrated Type Vacuum Ejector Unit Manifold Type



●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.

❶ 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.

❷ 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.

❸ 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, ❸"Z" cannot be selected. For manifold only, valve type cannot be selected

❹ 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.

❺ 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.

❻ 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)

●Design compatible with rechargeable battery manufacturing process

VSX - ..... - P4*
VSXM - ..... - P4*

*Please inquire for details.

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

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

VSX - ..... - FP*

❼ Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC

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

❽ 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.

❾ Vacuum Pressure Switch Specifications

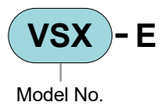
Code	Content
Blank	Without Vacuum Pressure Switch
DW	NPN Output 2 points with Digital Display
DA	NPN Output 1 point + Analog Output with Digital Display
AO	Analog Output
Z	For mixed specifications (Provide details in the specification sheet)

*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.

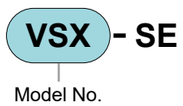
Maintenance Part Model No.

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

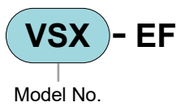
●Filter Element



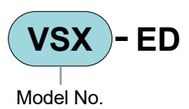
●Silencer Element



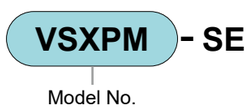
●Silencer Element F



●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	0.5	0.5	90.4	7	11.5
	Centralized Exhaust					
VSX-L05...	Atmospheric Release			66.5	12	
	Centralized Exhaust					
VSX-E05...	Atmospheric Release		0.35	90.4	3	8.8
	Centralized Exhaust					
VSX-H07...	Atmospheric Release	0.7	0.5	93.1	13	23
	Centralized Exhaust					
VSX-L07...S	Atmospheric Release			66.5	(23) 24	
VSX-L07...J	Centralized Exhaust				22	
VSX-E07...	Atmospheric Release		0.35	90.4	10.5	17
	Centralized Exhaust					
VSX-H10...S	Atmospheric Release	1.0	0.5	93.1	24	46
VSX-H10...J	Centralized Exhaust				20	
VSX-L10...S	Atmospheric Release			66.5	26	
VSX-E10...S	Atmospheric Release		0.35	90.4	20	34
VSX-E10...J	Centralized Exhaust				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 Range V	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			
Wiring Method	Connector type: 500 mm			
	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% RippIE (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 Voltage V	-	1±0.1	
	Span Voltage V	-	4±0.1	
	Output Current mA	-	≤ 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.

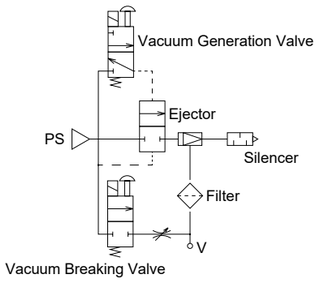
●Manifold Type

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-□□□-□□□-□□-D□-2	Vacuum Ejector Unit Centralized Exhaust With Vacuum Pressure Switch with LED Display 2-Station Manifold	330

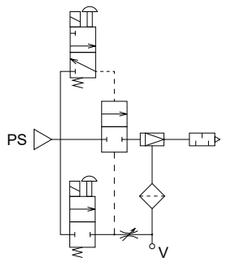
*1: Each additional station increases the Weight by 90 g.
*2: The Weightes listed above are for the type equipped with a vacuum pressure switch with LED display. Types equipped with analog output vacuum pressure switch are 3 g/station lighter than the Weightes above, and types without vacuum pressure switch are 10 g/station lighter, respectively.

Circuit Diagram

●Normally Closed Type



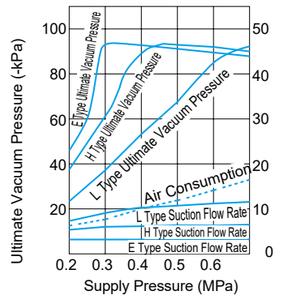
●Self-holding Type



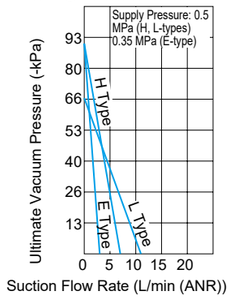
Vacuum Characteristics, Flow Characteristics

●VSX-H05, VSX-L05, VSX-E05

Vacuum Characteristics

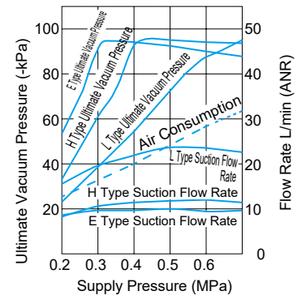


Flow Characteristics

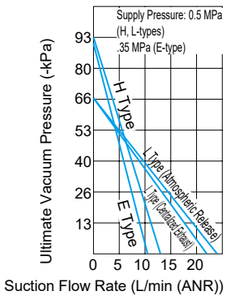


●VSX-H07, VSX-L07, VSX-E07

Vacuum Characteristics

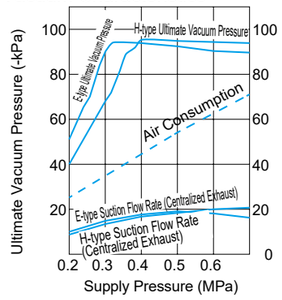


Flow Characteristics

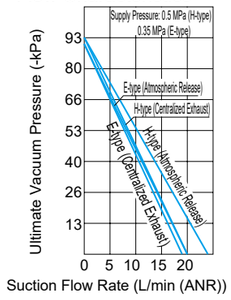


●VSX-H10□-□□J, VSX-L10□-□□J, VSX-E10□-□□J

Vacuum Characteristics

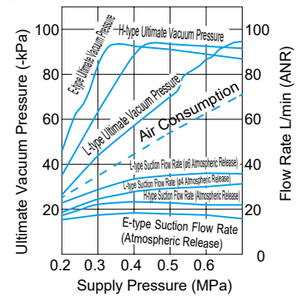


Flow Characteristics

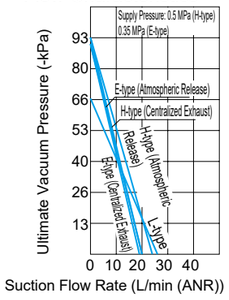


●VSX-H10□-□□S, VSX-L10□-□□S, VSX-E10□-□□S

Vacuum Characteristics



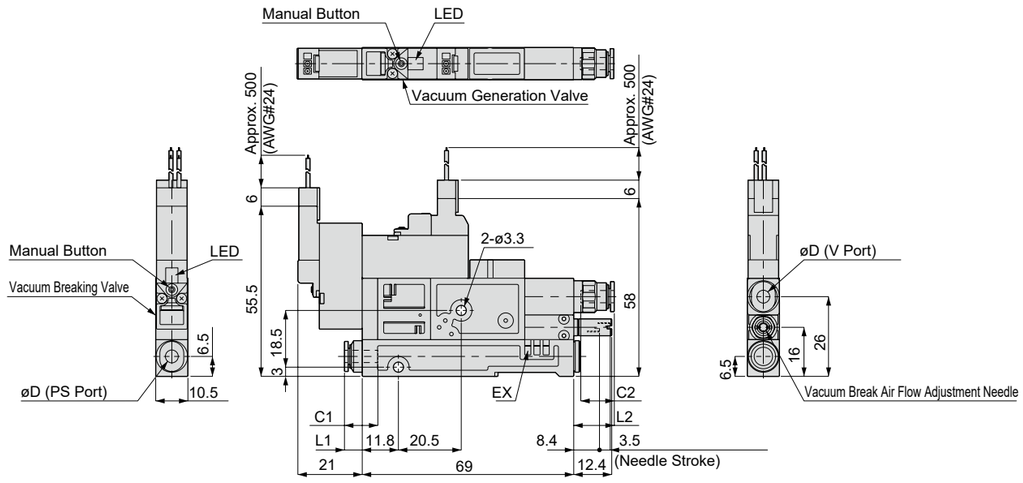
Flow Characteristics



1. The supply pressure in the characteristics above is during vacuum generation.
2. 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.)
3. 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 $0.5^2 \times \pi = 0.785\ mm^2 \times 3 = 2.35\ mm^2$. 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)

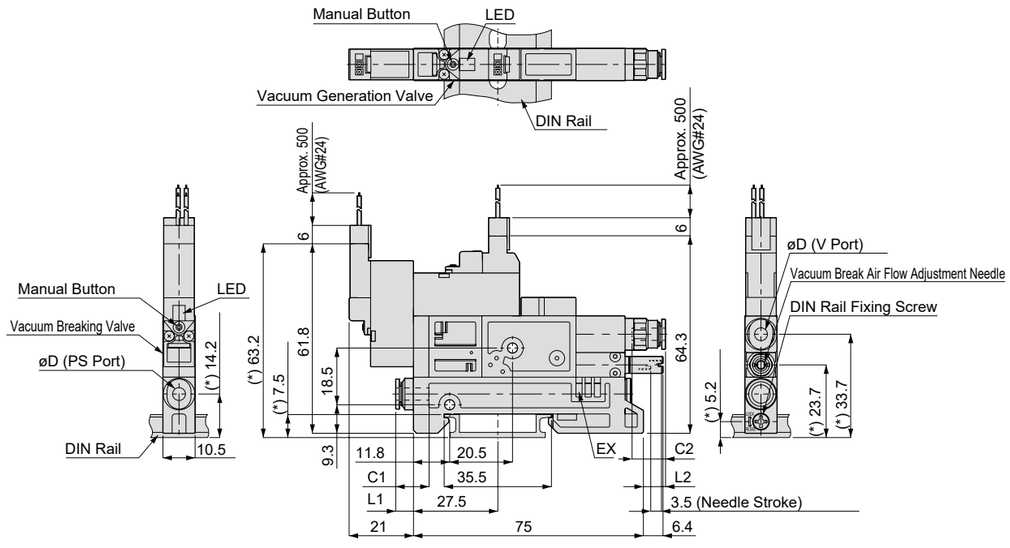
●Direct Mount Type



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

●DIN Rail Mounting Type



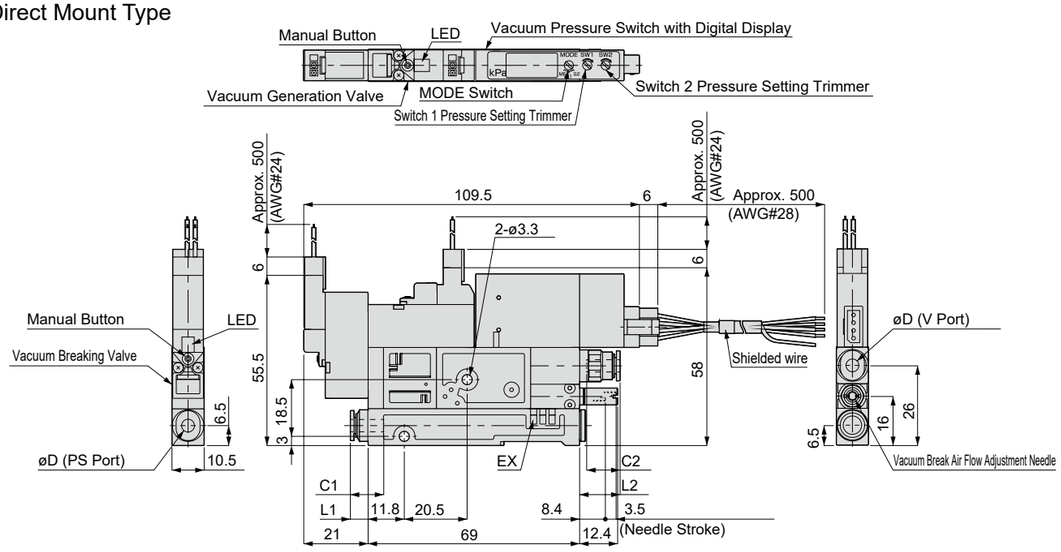
Note)Dimensions of the (*) printed part are for the DIN rail height: Value when 7.5 mm.

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

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

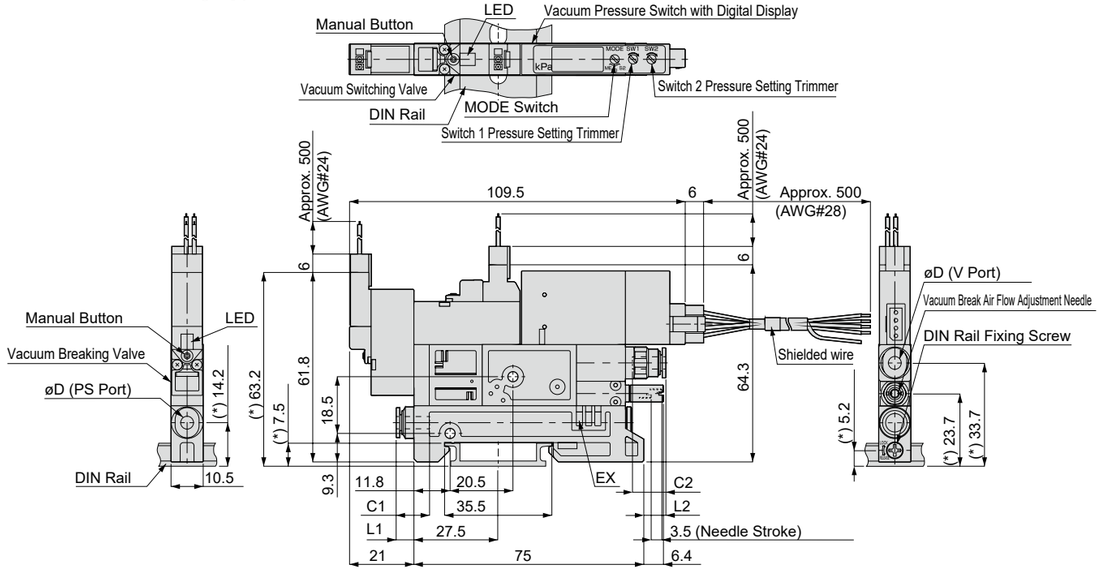
●Direct Mount Type



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



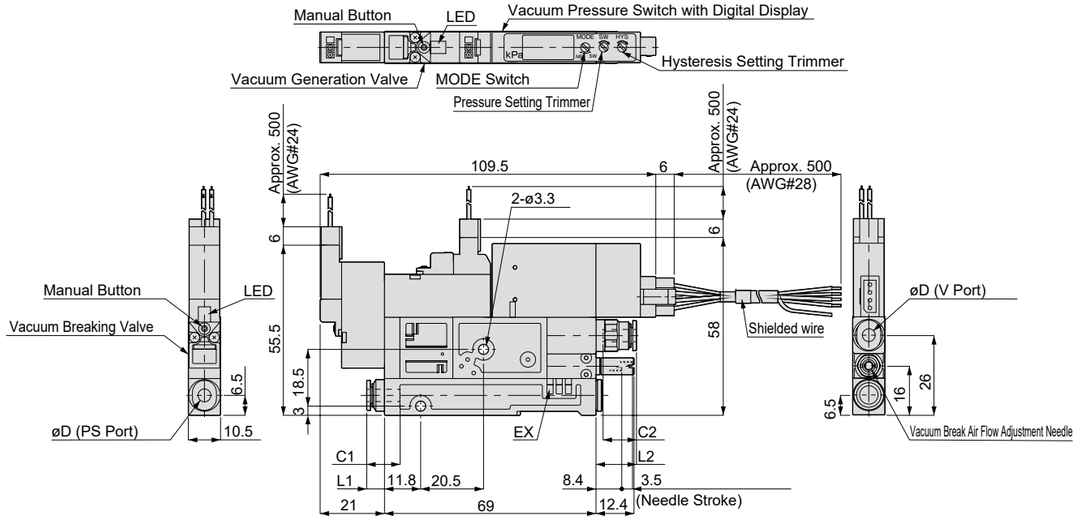
Note)Dimensions of the (*) printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□-□□S-□-DW-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, Atmospheric Release-type, With Vacuum Pressure Switch with Digital Display, Analog Output, and Switch Output)

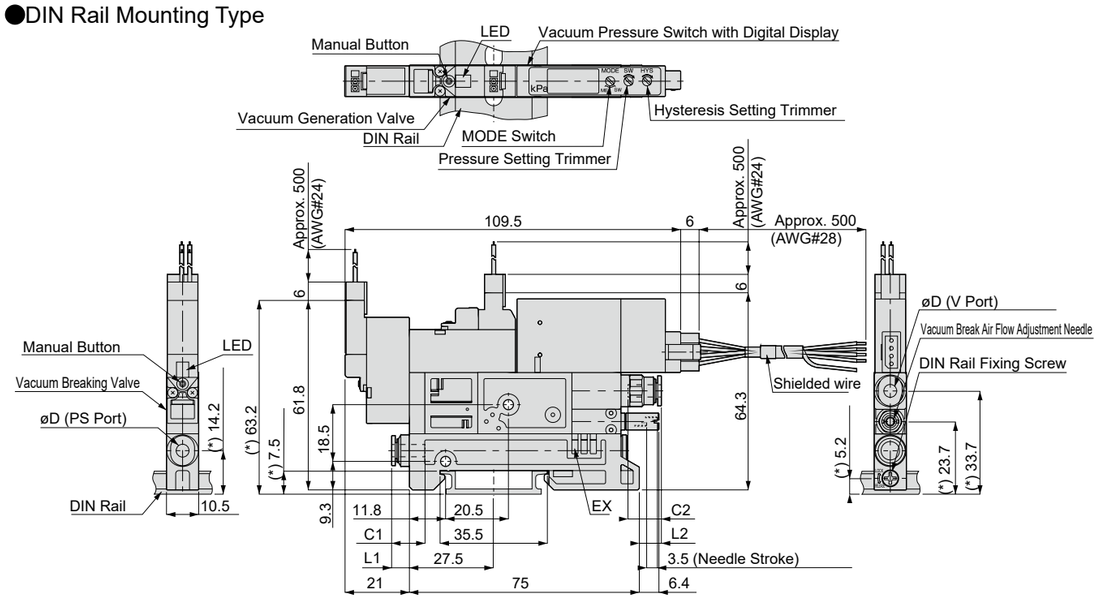
●Direct Mount Type



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

●DIN Rail Mounting Type



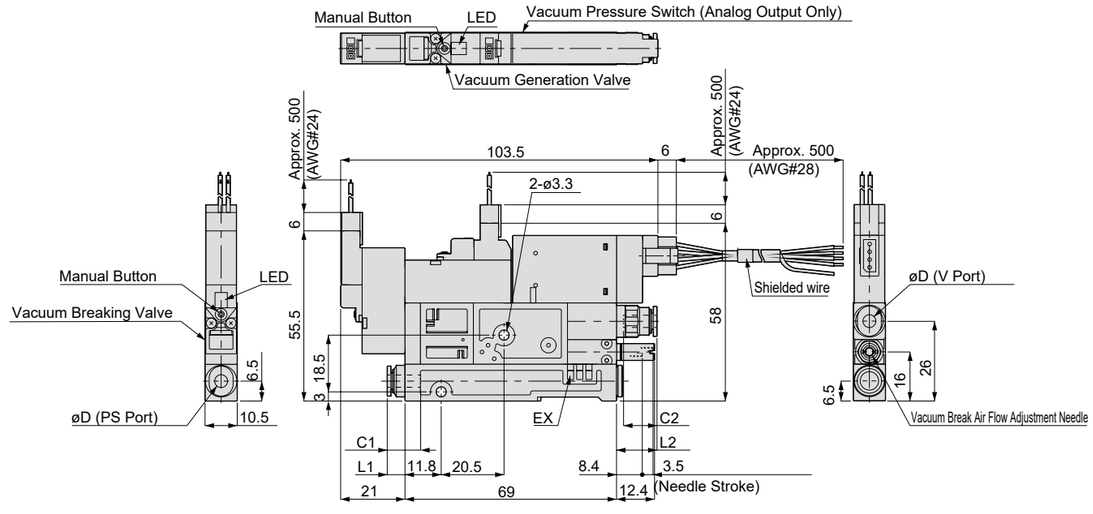
Note)Dimensions of the (*) printed part are for the DIN rail height: Value when 7.5 mm.

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

External Dimensions Diagram (Single Unit Type, Atmospheric Release-type, With Analog Output Vacuum Pressure Switch)

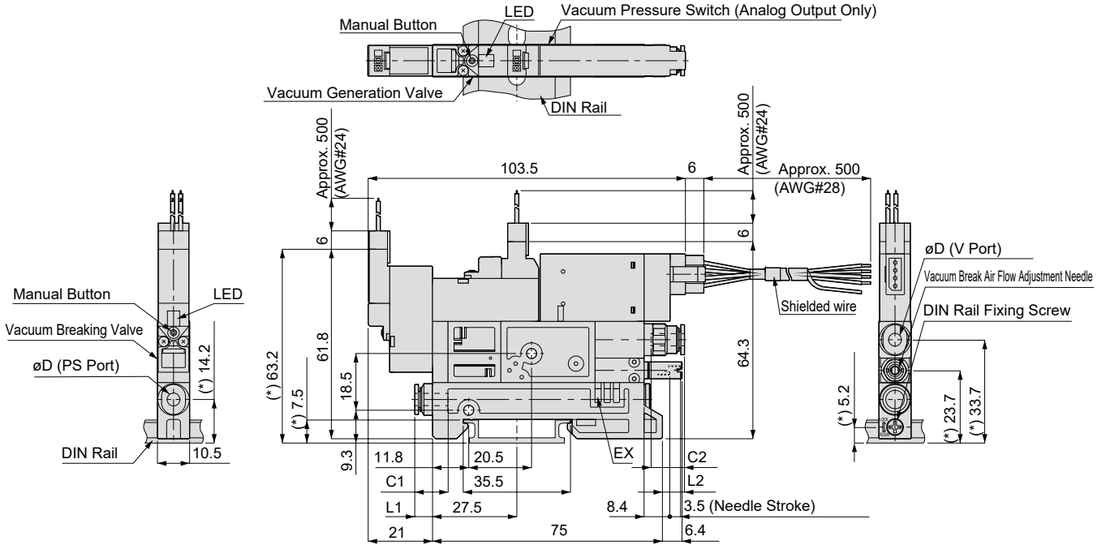
●Direct Mount Type



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



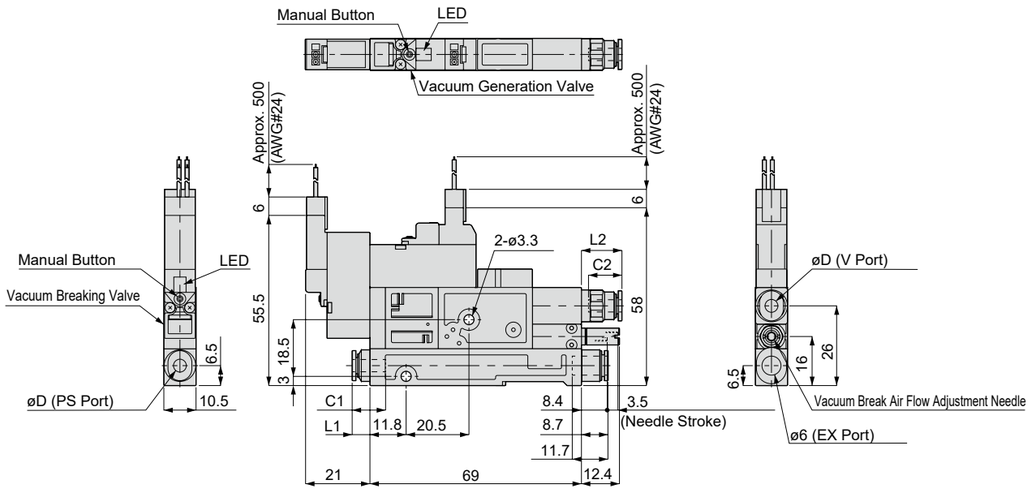
Note)Dimensions of the (*) printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□-□□S-□-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)

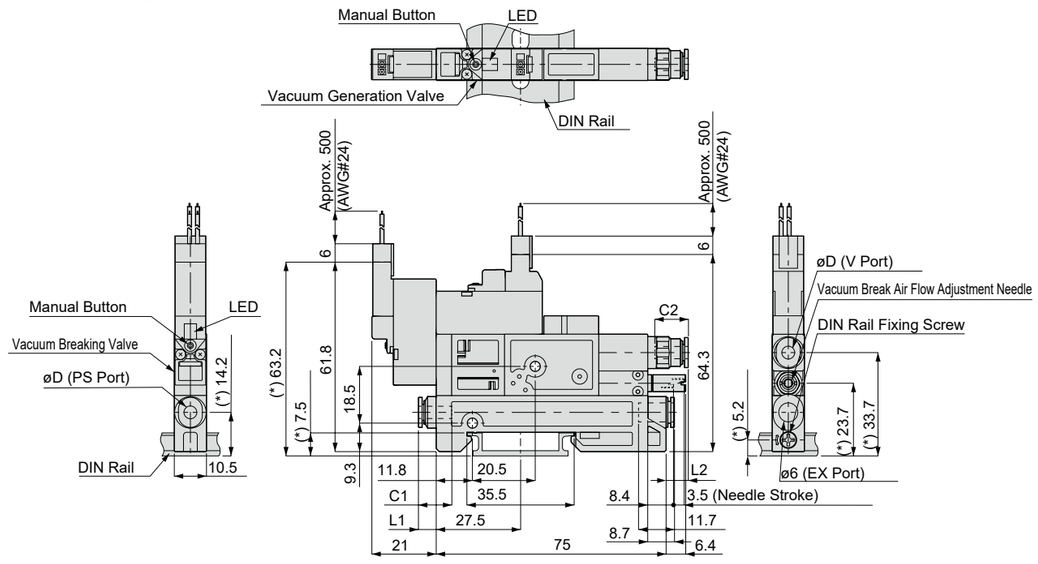
●Direct Mount Type



Unit: mm

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

●DIN Rail Mounting Type



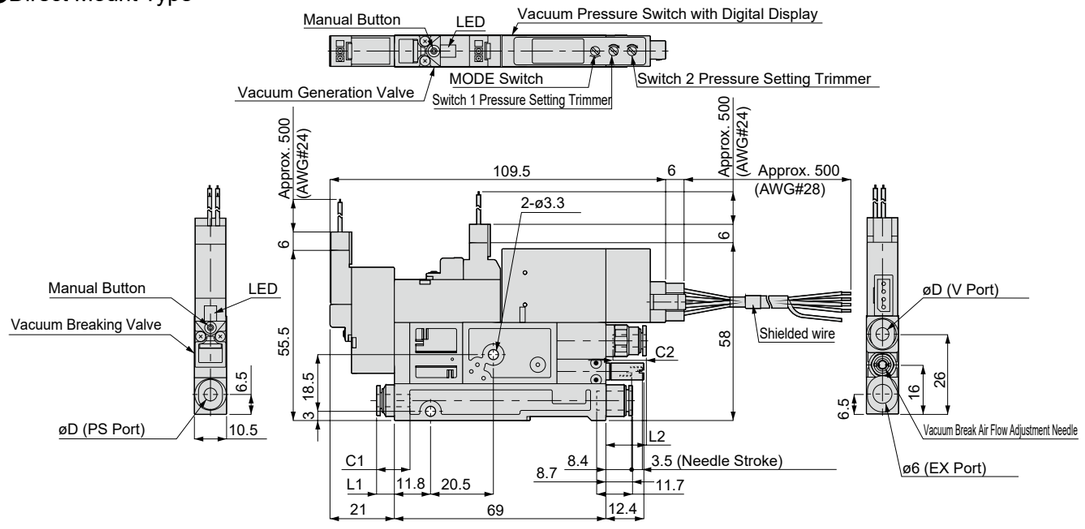
Note)Dimensions of the (*) printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□-□□J-□-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, With Vacuum Pressure Switch with Digital Display and 2-point Switch Output)

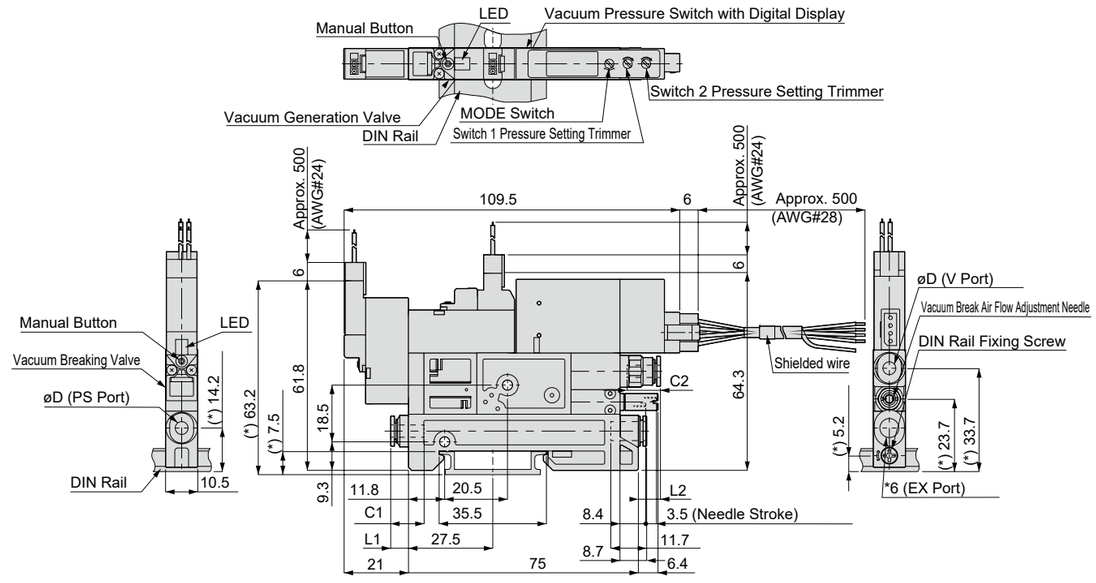
●Direct Mount Type



Unit: mm

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

●DIN Rail Mounting Type



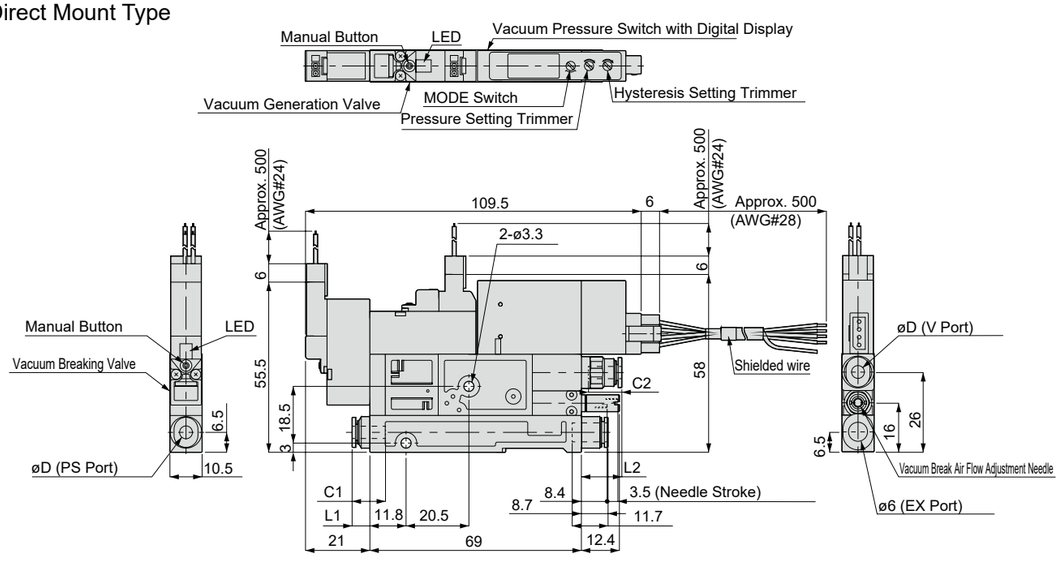
Note)Dimensions of the (*) printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□-□□J-□-DW-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, With Vacuum Pressure Switch with Digital Display, Analog Output, and Switch Output)

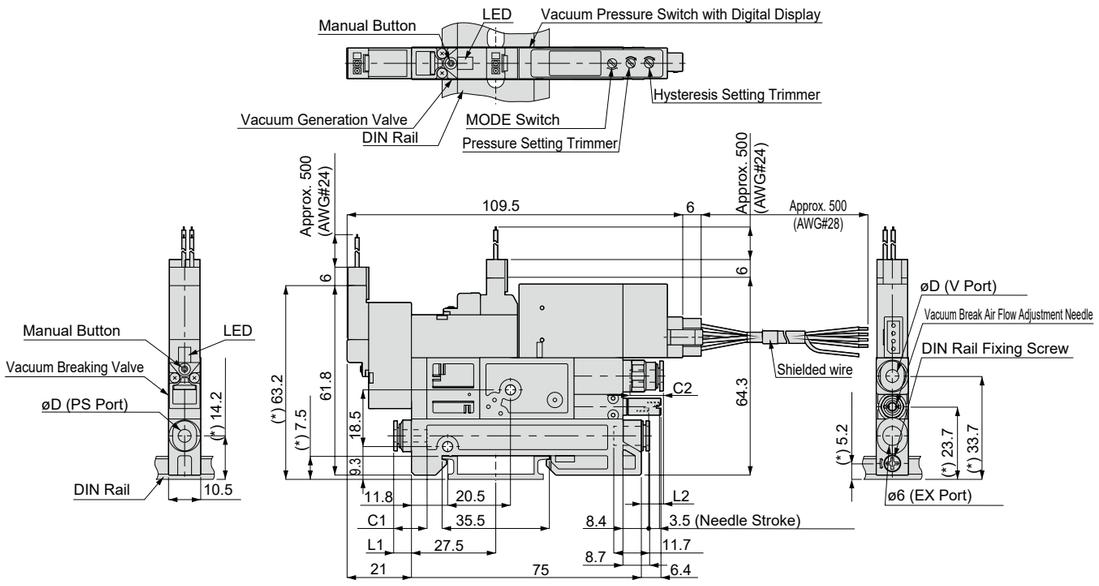
●Direct Mount Type



Unit: mm

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

●DIN Rail Mounting Type



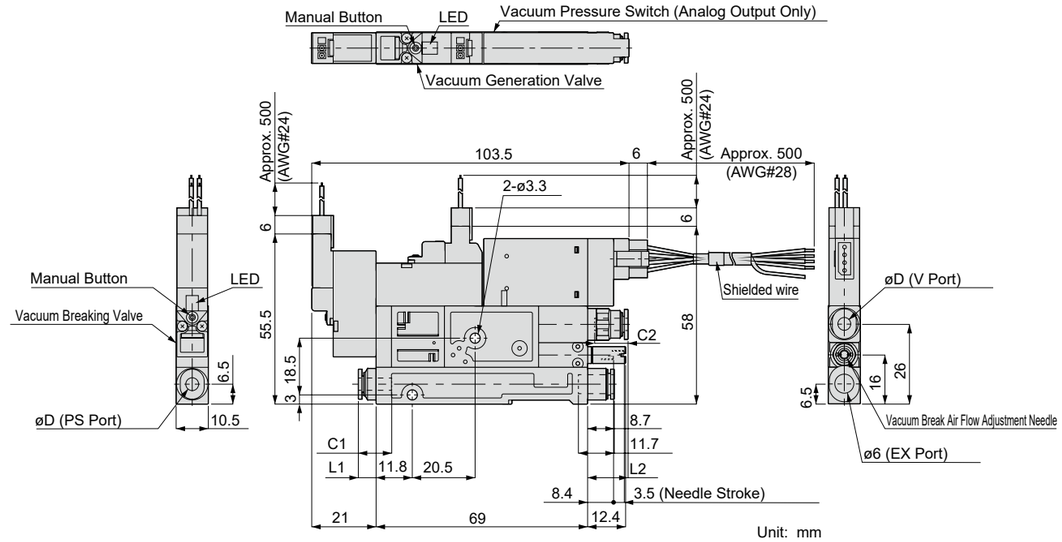
*)Dimensions of the (*) printed parts are for the DIN rail height: Value when 7.5 mm.

Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□-□□J-□-DA-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, With Analog Output Vacuum Pressure Switch)

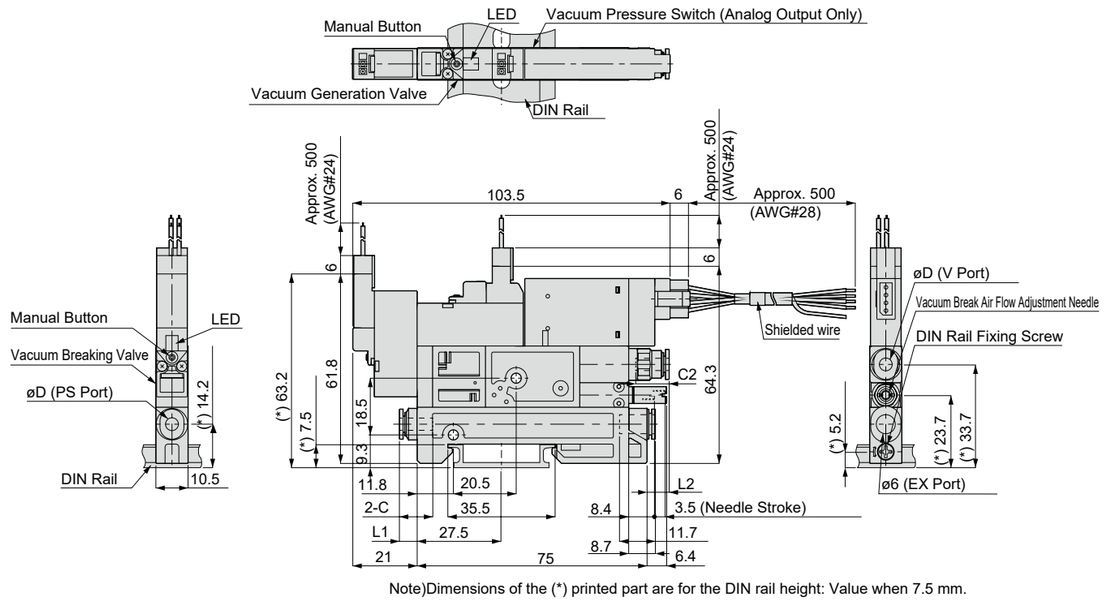
●Direct Mount Type



Unit: mm

Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□-□□J-□-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

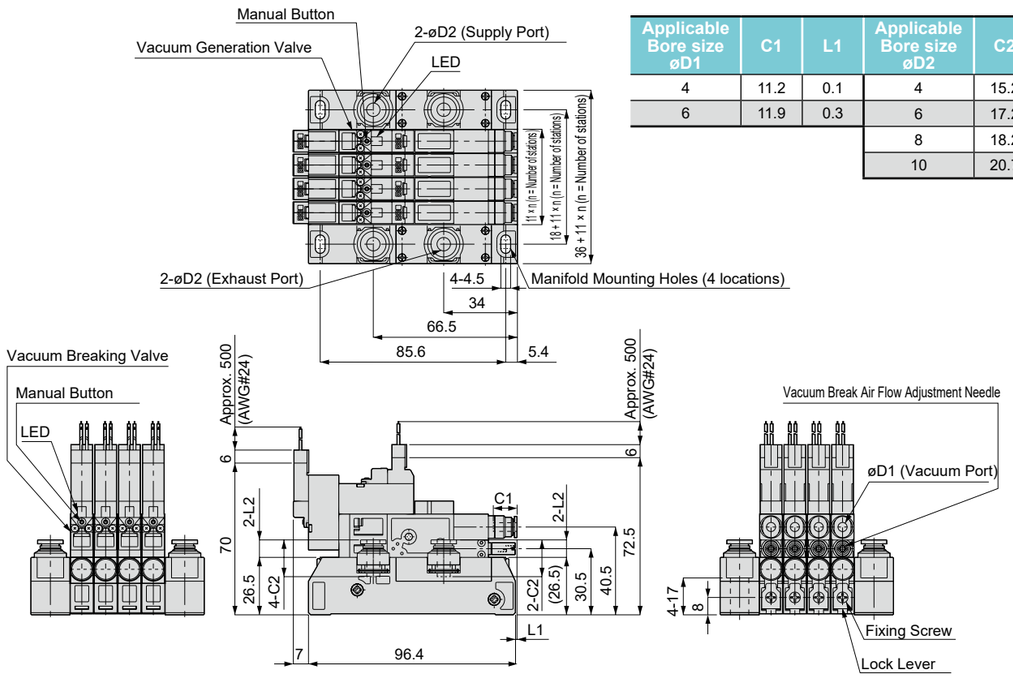
Model No.	Applicable Bore size(øD)	C1	C2	L1	L2
VSX-□□□-□□J-□-A0-D	4	11.2	11.2	6.1	7.5
	6	11.9	11.9	8.9	7.7

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

●Common exhaust

Unit: mm

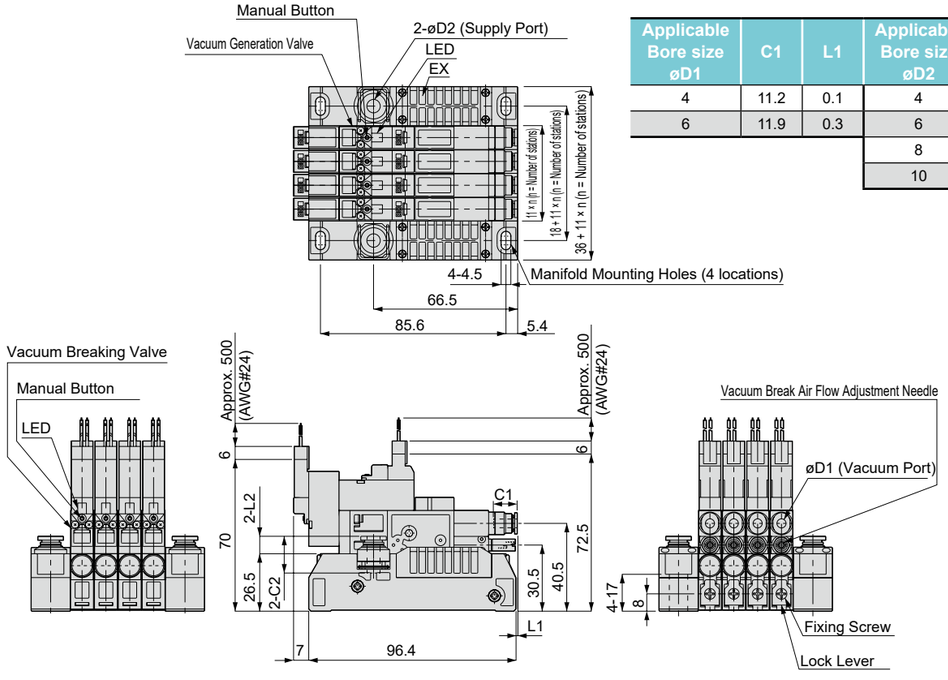
Applicable Bore size øD1	C1	L1	Applicable Bore size øD2	C2	L2
4	11.2	0.1	4	15.2	3.8
6	11.9	0.3	6	17.2	8.3
			8	18.2	9.6
			10	20.7	13.2



●Atmosphere release

Unit: mm

Applicable Bore size øD1	C1	L1	Applicable Bore size øD2	C2	L2
4	11.2	0.1	4	15.2	3.8
6	11.9	0.3	6	17.2	8.3
			8	18.2	9.6
			10	20.7	13.2

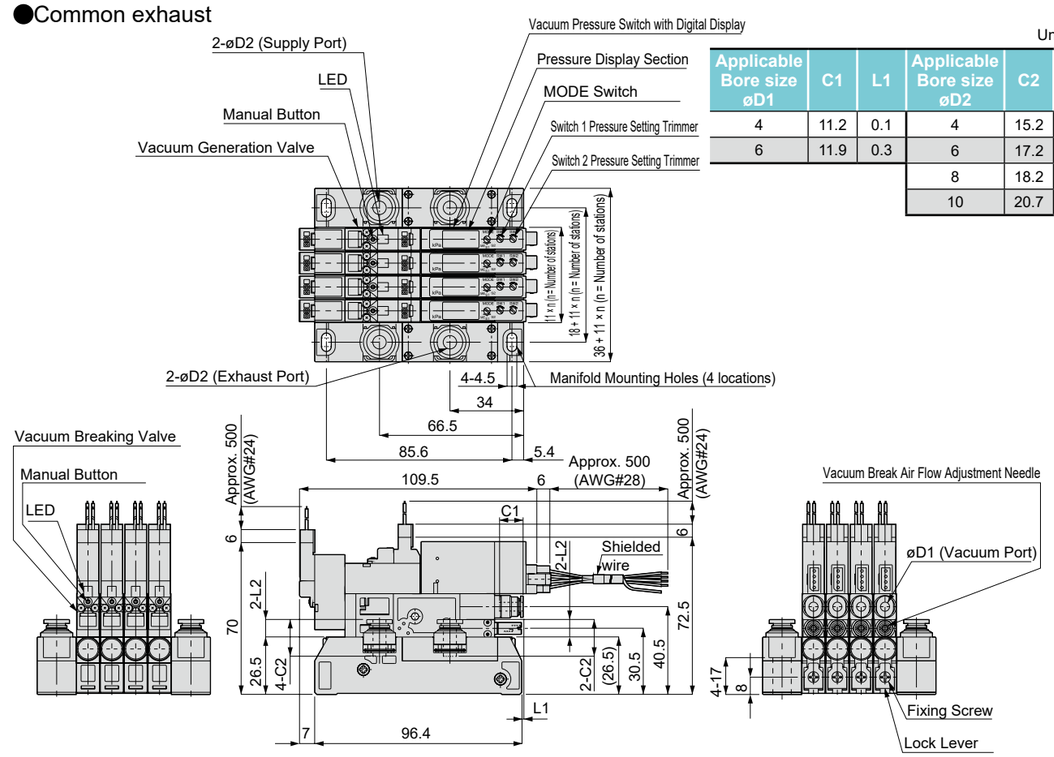


External Dimensions Diagram (Manifold Type VSXM, With Vacuum Pressure Switch with Digital Display and 2-point Switch Output)

●Common exhaust

Unit: mm

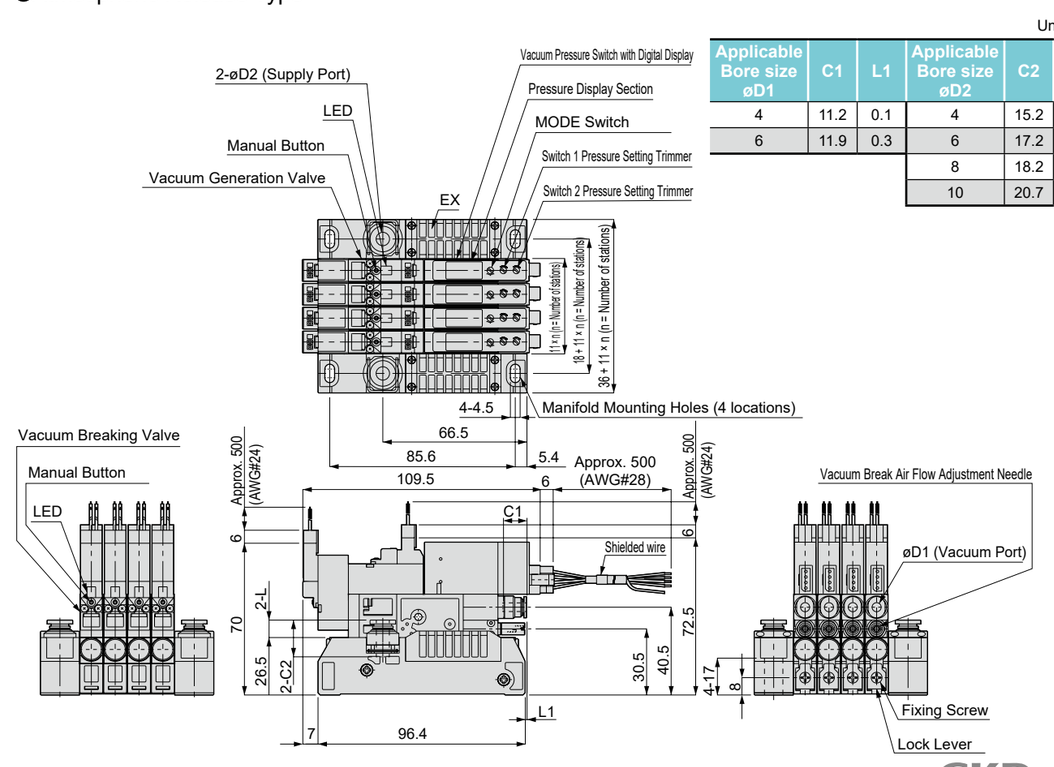
Applicable Bore size øD1	C1	L1	Applicable Bore size øD2	C2	L2
4	11.2	0.1	4	15.2	3.8
6	11.9	0.3	6	17.2	8.3
			8	18.2	9.6
			10	20.7	13.2



●Atmospheric Release Type

Unit: mm

Applicable Bore size øD1	C1	L1	Applicable Bore size øD2	C2	L2
4	11.2	0.1	4	15.2	3.8
6	11.9	0.3	6	17.2	8.3
			8	18.2	9.6
			10	20.7	13.2

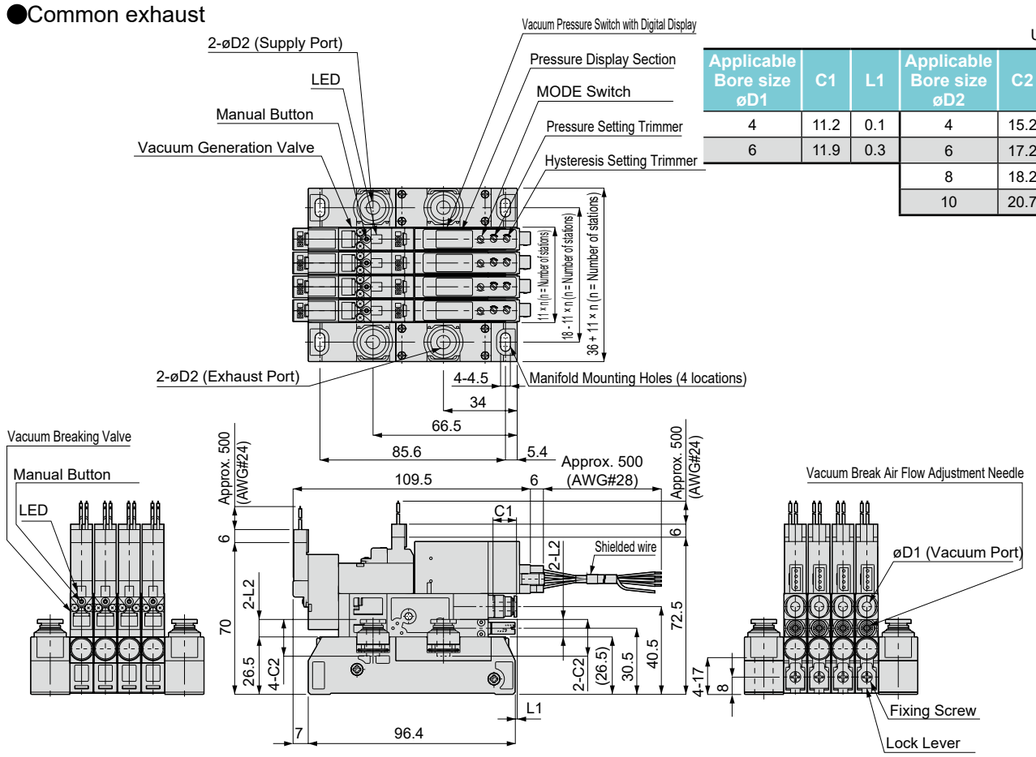


External Dimensions Diagram (Manifold Type VSXM, With Vacuum Pressure Switch with Digital Display, Analog Output, and Switch Output)

●Common exhaust

Unit: mm

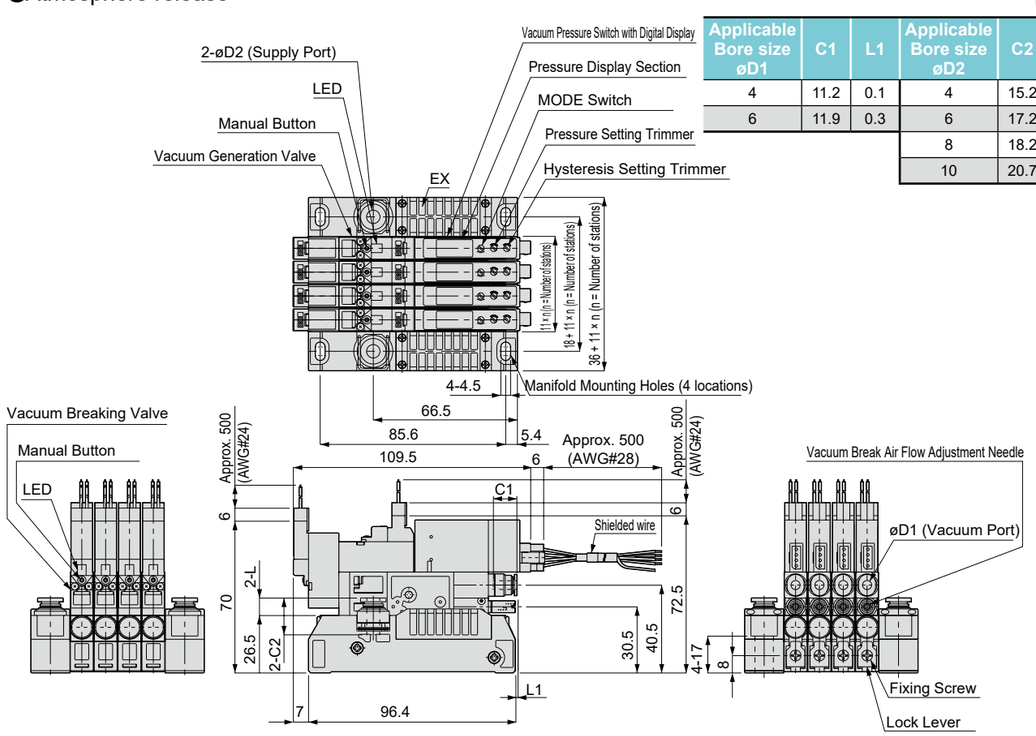
Applicable Bore size øD1	C1	L1	Applicable Bore size øD2	C2	L2
4	11.2	0.1	4	15.2	3.8
6	11.9	0.3	6	17.2	8.3
			8	18.2	9.6
			10	20.7	13.2



●Atmosphere release

Unit: mm

Applicable Bore size øD1	C1	L1	Applicable Bore size øD2	C2	L2
4	11.2	0.1	4	15.2	3.8
6	11.9	0.3	6	17.2	8.3
			8	18.2	9.6
			10	20.7	13.2

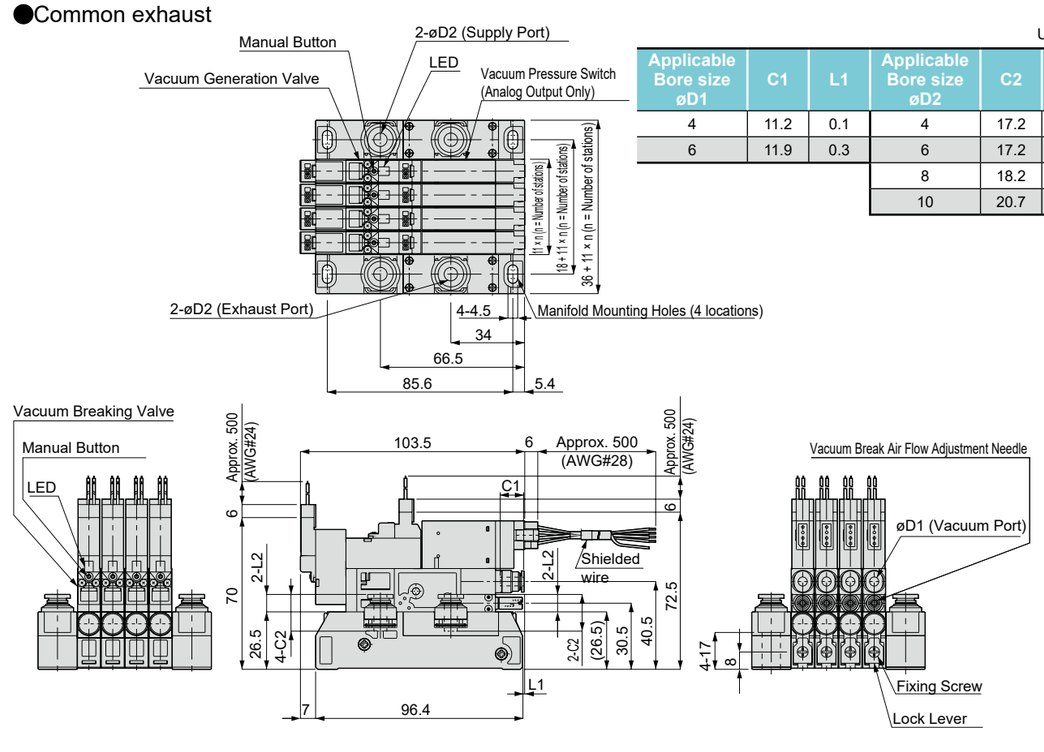


External Dimensions Diagram (Manifold Type VSXM, With Analog Output Vacuum Pressure Switch)

●Common exhaust

Unit: mm

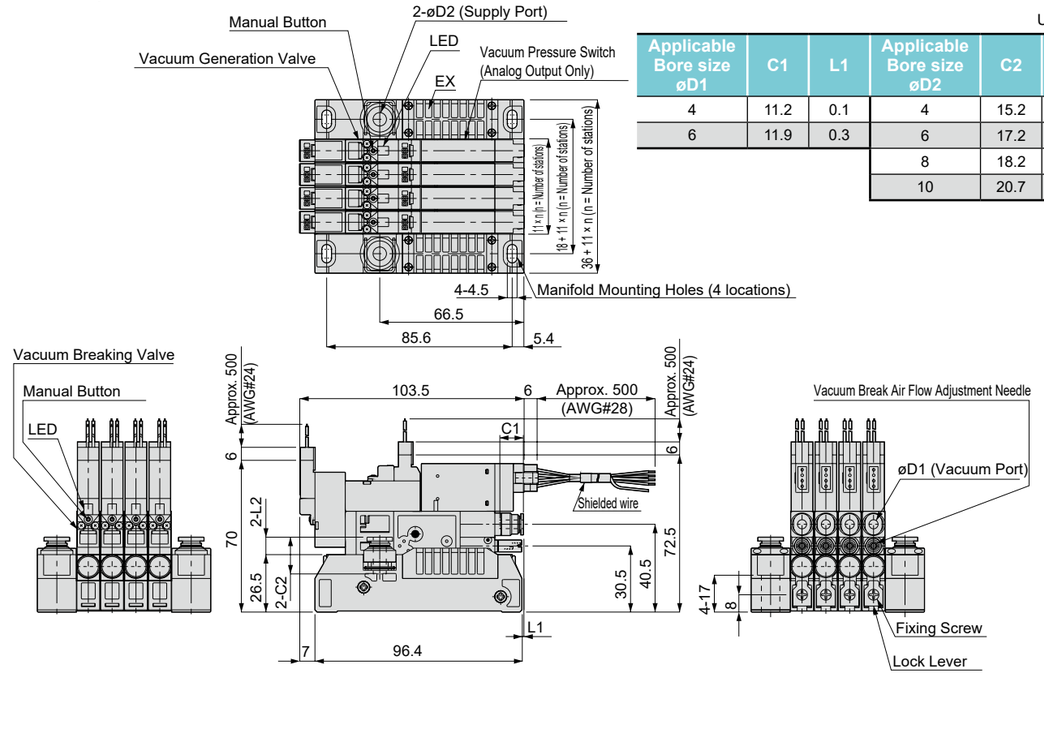
Applicable Bore size øD1	C1	L1	Applicable Bore size øD2	C2	L2
4	11.2	0.1	4	17.2	15.2
6	11.9	0.3	6	17.2	8.3
			8	18.2	9.6
			10	20.7	13.2



●Atmosphere release

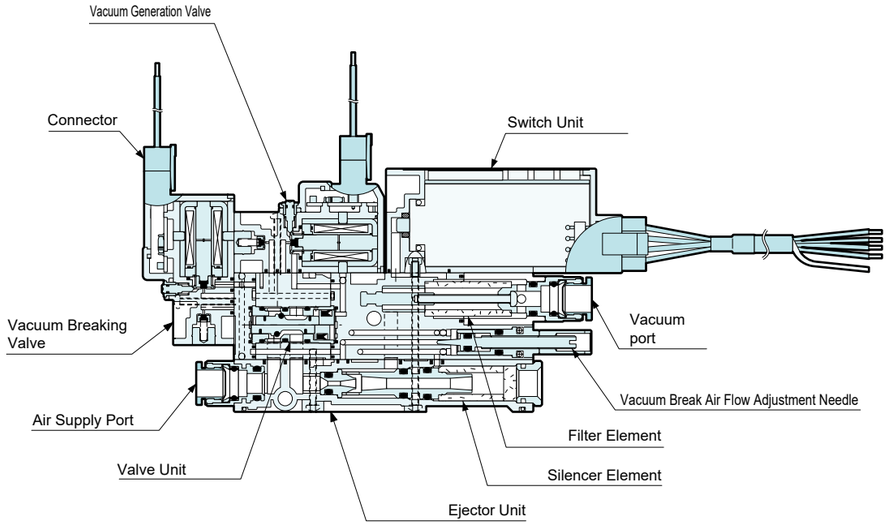
Unit: mm

Applicable Bore size øD1	C1	L1	Applicable Bore size øD2	C2	L2
4	11.2	0.1	4	15.2	3.8
6	11.9	0.3	6	17.2	8.3
			8	18.2	9.6
			10	20.7	13.2

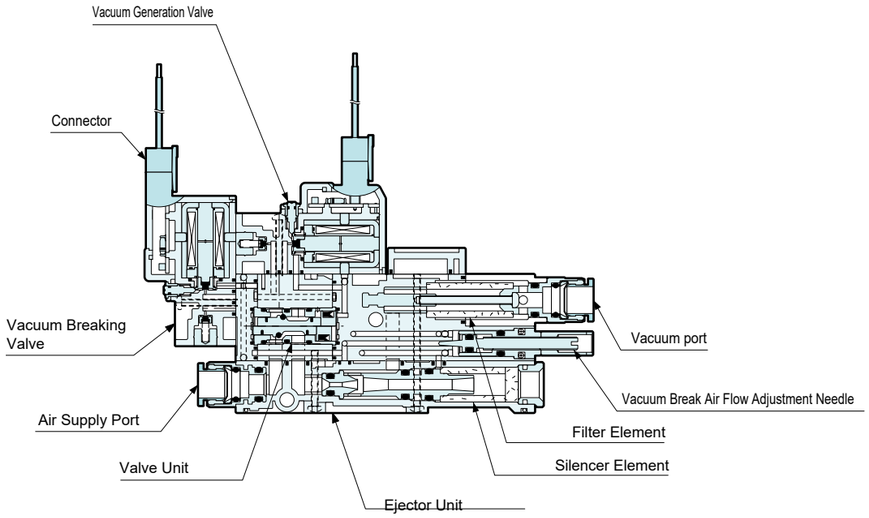


Internal Structure Diagram (Single Unit Type)

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

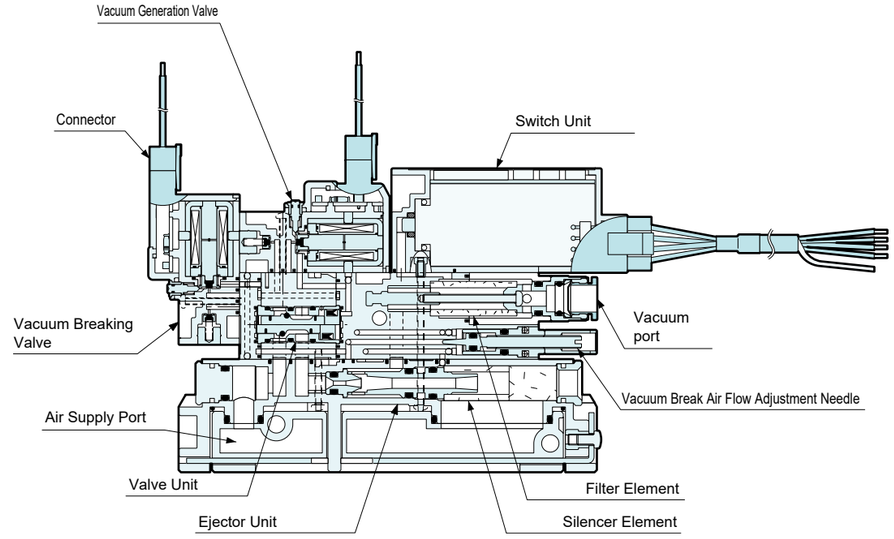


Ex.) VSX-□□□-□□S-□
Without Vacuum Pressure Switch-type

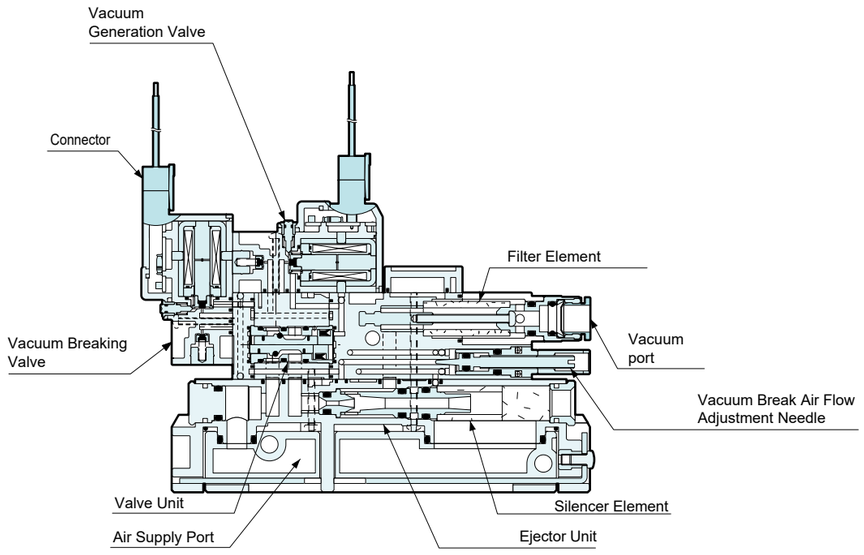


Internal Structure Diagram (Manifold Type)

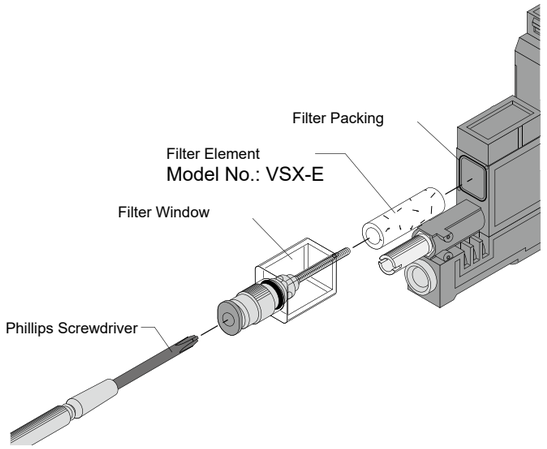
Ex.) VSXM-□□□-□□S-□-□-□
With Vacuum Pressure Switch-type

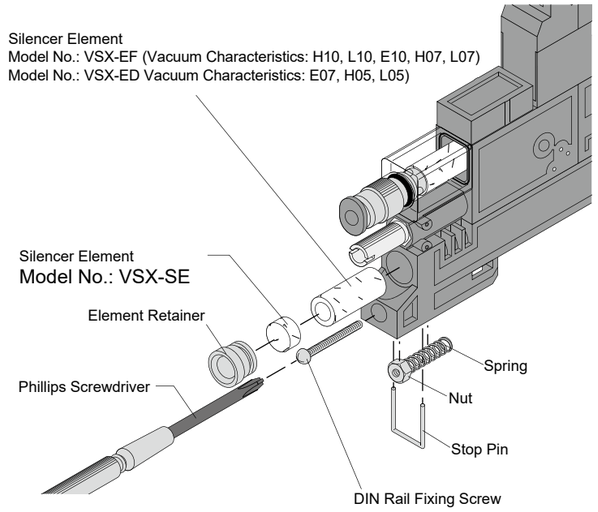


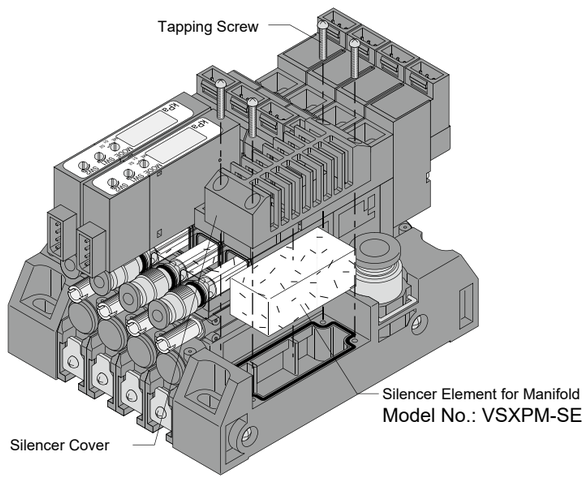
Ex.) VSXM-□□□-□□S-□-□
Without Vacuum Pressure Switch-type



Maintenance Parts







Pneumatic Components

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.

Vacuum Components
Ejector System
VSY
VSH
VSU
VSB
VSC
VSG
VSK/ VSKM
VSJ/ VSJM
VSN/ VSNM
VSX/ VSXM
VSQ
VSZM
Ending

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: ①Check supply air capacity, etc.
   ②Keep piping as short as possible
   ③Increase fitting size
   ④If 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: ①Use individual exhaust for each station. (Special Order)
   ②Avoid locations where the exhaust section faces a wall.
   ③Reduce the number of stations.
   Cause: For centralized exhaust type, high piping resistance degrades performance.
   Countermeasures: ①Keep piping length as short as possible.
   ②Increase exhaust fitting size.
   ③Use individual exhaust for each station. (Special Order)
   ④Reduce the number of stations.

MEMO

Vacuum Components
Ejector System
VSY
VSH
VSU
VSB
VSC
VSG
VSK/ VSKM
VSJ/ VSJM
VSN/ VSNM
VSX/ VSXM
VSQ
VSZM
Ending

How to Create a VSXM Mixed Manifold Specification Sheet

●Mix manifold model No.(example)

VSXM- ❶Z ❷00 ❸Z - ❹CX ❺6 ❻5 - ❼3 - ❽5 - ❾B

●Mix manifold specifications sheet (example)

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

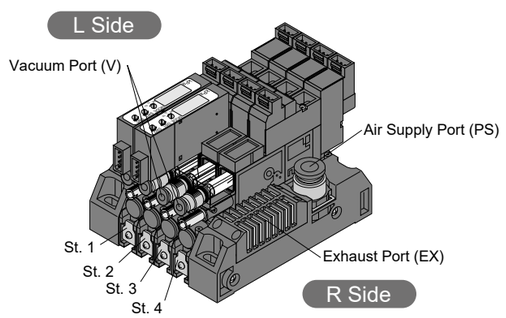
[For Fitting Mix Specification with Output Port Size Only]

●Mix manifold model No.(example)

VSXM- ❶H ❷07 ❸B - ❹CX ❺4 ❻4 - ❼3 - ❽5 ❾DW

●Mix manifold specifications sheet (example)

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



[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

Date of Issue
Company
Contact Person Quantity Set Delivery Date (Month/Day)
Attn:
Voucher No. Order Received No.
Order No.

●Mix manifold model No.

VSXM- ❶ ❷ ❸ - ❹ ❺ ❻ - ❼ - ❽ - ❾

❶ 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)

❷ Nozzle Diameter

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

❸ Valve-type

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

❹ 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)

❺ 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

❻ 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

❼ Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC

❽ Number of Manifold Stations

Code	Content
2 to 10	2 to 10 Stations

❾ Vacuum Pressure Switch Specifications

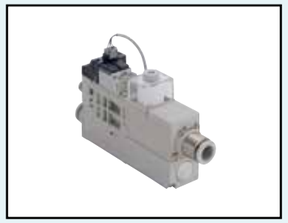
Code	Content
Blank	Without Vacuum Pressure Switch
DW	NPN Output 2 points with Digital Display
DA	NPN Output 1 point + Analog Output with Digital Display
AO	Analog Output
Z	For mixed specifications (Provide details in the specification sheet)

Notes for model No. Selection

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

●Mix manifold specifications sheet

Vacuum Ejector Model No. ❶ ❷ ❸ ❹ ❼ ❾	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSXM- - - - - - - -											
VSXM- - - - - - - -											
VSXM- - - - - - - -											
VSXM- - - - - - - -											
VSXM- - - - - - - -											



Ejector System/31.5 mm Width Integrated Type Vacuum Ejector Unit

VSQ Series

Integrated type vacuum ejector unit optimal for controlling large flow rates

Abundant vacuum characteristic variations

Nozzle Diameter \ Vacuum Characteristics	Suction Flow Rate (L/min (ANR))			Air Consumption (L/min (ANR))			Ultimate Vacuum Pressure (-kPa)		
	H	L	E	H	L	E	H	L	E
1.5 mm	63	95	42	100		70	93	66	92
2.0 mm	97.5	160	70	200		150	93	66	92
	T			T			T		
1.5 mm (0.7 mm)	40 (24)			100 (23)			93 (93)		
2.0 mm (1.0 mm)	70 (36)			200 (46)			93 (93)		
	D			D			D		
0.7 mm	52			23			93		
1.0 mm	75			46			93		
1.2 mm	85			70			93		

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

3 types of nozzle types standardized

- **Single Nozzle Type:** Nozzle Diameter 1.5, 2.0 mm
- **Twin Nozzle Type:** Nozzle Diameter 1.5, 2.0 mm
- **2-Stage Nozzle Type:** Nozzle Diameter 0.7, 1.0, 1.2 mm

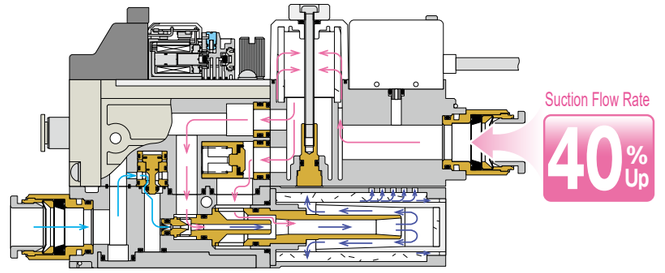
Abundant variations of vacuum generation valves

- **Single Nozzle Type:** Normally Closed, Normally Open, Self-holding types
- **Twin Nozzle Type:** Normally Closed Type
- **2-Stage Nozzle Type:** Normally Closed, Normally Open types

Single type is an orthodox integrated type high flow vacuum ejector

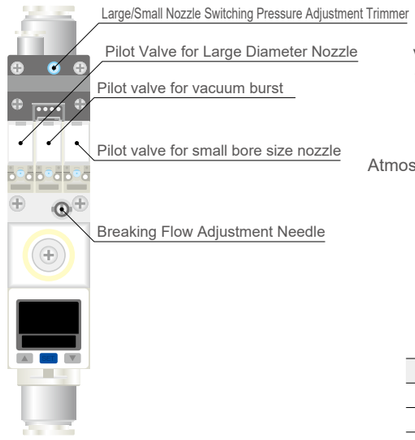
Suction flow rate of 2-stage nozzle type is approx. 40% higher compared to conventional single type

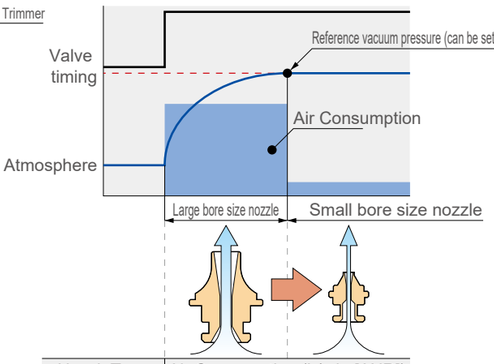
40% increase compared to the suction flow rate of our company's integrated type vacuum generator.



Twin nozzle type is optimal for applications with long suction time and transport time

- Vacuum rise up to the reference vacuum pressure is handled by the large diameter nozzle, and above the reference vacuum pressure is controlled by the small diameter nozzle, resulting in significant savings in consumption flow rate; energy-saving design type.
- Control possible with the conventional single signal for vacuum generation.





NozzleType	Air Consumption (L/min [ANR])	
T15	100	23
T20	200	46

Pressure sensor equipped with easy-to-read LCD 2-screen, 3-color display

With power saving mode function, 30% power saving possible.



Selection of negative common specification possible

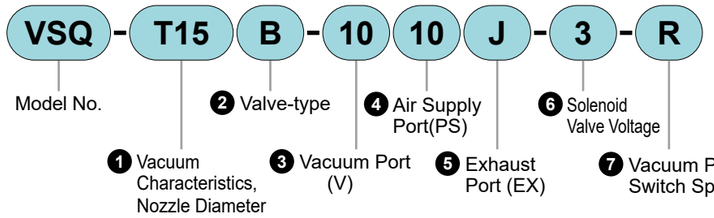
Optimal when the negative side of the power supply is used as a common reference unit.

Atmospheric release type exhaust noise: 78 dB [A] (Representative model, according to our company's measurement conditions)

Compliant with Global Standards

Model No. Notation

●31.5 mm Width Single Unit Dedicated Vacuum Ejector Unit



❶ Vacuum Characteristics, Nozzle Diameter

Vacuum Characteristics		Flow Rate	Nozzle Diameter	Code
Single Nozzle Type	High Vacuum	Medium Flow Rate	ø1.5	H15
	Medium Vacuum	High Flow Rate		L15
	High Vacuum	Low Flow Rate		E15
	High Vacuum	Medium Flow Rate	ø2.0	H20
	Medium Vacuum	High Flow Rate		L20
	High Vacuum	Low Flow Rate		E20
Twin Nozzle Type			ø1.5 (ø0.7)	T15
			ø2.0 (ø1.0)	T20
2-Stage Nozzle Type			ø0.7	D07
			ø1.0	D10
			ø1.2	D12

*1: When ❶ is 'T15' or 'T20', Valve Type ❷ 'A' and 'D' cannot be selected.
*2: When ❶ is 'D07', 'D10', or 'D12', Valve Type ❷ 'D' cannot be selected.
*3: ❹ '6' can only be selected when ❶ is 'D07', 'D10', or 'D12'.
*4: When ❶ is 'T15' or 'T20', Solenoid Valve Voltage ❻ '1' and '3MC' cannot be selected.

❷ Valve-type

Code	Content
A	Normally Open Type
B	Normally Closed Type
D	Self-holding Type

*1: When ❶ Vacuum Characteristics/Nozzle Diameter is 'T15' or 'T20', ❷ 'A' and 'D' cannot be selected.
*2: When ❶ Vacuum Characteristics/Nozzle Diameter is 'D07', 'D10', or 'D12', ❷ 'D' cannot be selected.

❸ Vacuum Port (V)

Code	Content
8	ø8 Push-in fitting
10	ø10 Push-in fitting

❹ Air Supply Port (PS)

	Code	Content
*1	6	ø6 Push-in fitting
	8	ø8 Push-in fitting
	10	ø10 Push-in fitting

*1: ❹ '6' can only be selected when ❶ is 'D07', 'D10', or 'D12'.

❺ Exhaust Port (EX)

Code	Content
S	Atmospheric Release with Silencer
J	ø12 Push-in fitting centralized exhaust

❻ Solenoid Valve Voltage

	Code	Content
*1	1	100 VAC
	3	24 VDC (Positive Common specification)
*1	3MC	24 VDC (Negative Common specification)

*1: When ❶ Vacuum Characteristics/Nozzle Diameter is 'T15' or 'T20', ❷ 'A' and 'D' cannot be selected.

❼ Vacuum Pressure Switch Specifications

Code	Content
Blank	Without Vacuum Pressure Switch
R	NPN Output 2 points with Digital Display
RP	PNP Output 2 points with Digital Display

Model No. Notation

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

●Design compatible with rechargeable battery manufacturing process

VSQ - ..... - P4*

*Please inquire for details.

Maintenance Part Model No.

* For details on maintenance parts, please refer to P. 291.

●Filter Element

VSQ - E
Model No.

●Silencer Element A

VSQ - SEZA
Model No.

●Silencer Element B

VSQ - SEZB
Model No.

Specifications

Item	VSQ
Operating Fluid	Air
Operating Pressure MPa	0.3 to 0.7
Ambient Temperature/Fluid Temperature °C	5 to 50

Ejector Characteristics

Nozzle Type		Nozzle Diameter (mm)		Rated Supply Pressure (MPa)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))
Single Nozzle	H15	1.5	-	0.5	93	63	100
	L15				66	95	
	E15			0.35	92	42	70
	H20	2.0	-	0.5	93	(96) 97.5	200
	L20				66	(143) 160	
	E20			0.35	92	70	150
Twin Nozzle	T15	0.7 (Small diameter)	1.5 (Large diameter)	0.5	93 (93)	40 [24]	100 [23]
	T20	1.0 (Small diameter)	2.0 (Large diameter)			70 [36]	200 [46]
2-Stage Nozzle	D07	0.7	-	0.5	93	52	23
	D10	1.0	-			75	46
	D12	1.2	-			85	70

*1: The value inside [ ] for the Twin Nozzle type is the value for the small diameter nozzle.
*2: The value inside ( ) is the value for Vacuum Port: *8 Push-in fitting.

Valve Specifications

●Pilot Valve

Item	Pilot Valve	
ValvE-type and Operation Method	Direct acting poppet valve	
Rated Voltage V	24 VDC	100 VAC
Voltage Fluctuation Range V	DC 24 ±10%	AC 100 ±10%
Surge Suppressor	Varistor	Bridge Diode
Power Consumption	0.55 W	1 VA
Manual Override	Locking push type	
Operation Indicator	When coil is energized: Red LED lights up	

●Switching valve

* Twin Nozzle Type

Item	Valve for Small Diameter	Valve for Large Diameter	Vacuum Breaking Valve
ValvE-type and Operation Method	Pilot operated poppet valve		
Valve Type	Normally Closed	Normally Closed	Normally Closed
Lubrication	Not required		
Effective Area mm² (Cv value)	3.5 (0.19)	16.5 (0.89)	3.5 (0.19)

* 2-Stage Nozzle Type

Item	Vacuum Generation Valve	Vacuum Breaking Valve
ValvE-type and Operation Method	Pilot operated poppet valve	
Valve Type	Normally Closed, Normally Open	Normally Closed
Lubrication	Not required	
Effective Area mm² (Cv value)	3.5 (0.19)	3.5 (0.19)

* Single Nozzle Type

Item	Vacuum Generation Valve	Vacuum Breaking Valve
ValvE-type and Operation Method	Pilot operated poppet valve	
Valve Type	Normally Closed, Normally Open, Self-holding	Normally Closed
Lubrication	Not required	
Effective Area mm² (Cv value)	16.5 (0.89)	3.5 (0.19)
Minimum Energization Time (ms)	≥ 50	

Vacuum Pressure Switch Specifications

Item		Vacuum Pressure Switch	
		NPN Output (R)	PNP Output (RP)
Working pressure kPa		-100 to 100	
Proof pressure kPa		500	
Environmental Resistance	Ambient Temperature (During Storage) °C	-10 to 60 (No condensation or freezing)	
	Ambient Temperature (During Operation) °C	0 to 50 (No condensation or freezing)	
	Ambient Humidity (Storage/Operating)	35 to 85% RH (No condensation)	
	Protection Structure	Equivalent to IEC Standard IP40	
Power Supply Voltage V		DC 12 to 24 ±10% Ripple(P-P) ≤±10%	
Current Consumption mA		≤40 (No load)	
Pressure Display	Display Update Rate	5 times/sec	
	Display Accuracy	±2% F.S. ±1 digit	
	Digital Display	Main Display: 2 colors (red, sub-display: Orange)	
Switch Output	Number of Output Points	2 points	
	Output Method	NPN Open Collector	PNP Open Collector
	Switch Rating	≤ 30 VDC 125 mA	
	Internal Voltage Drop	≤1.5 V	
Temperature Characteristics		≤ ±2% F.S.(0 to 50°C, at 25°C)	
Repeatability		±0.2% F.S. ±1 digit	
Differential (Hysteresis)		Adjustable	
Response Time		Selectable (50/250/500/1000/2000/3000 ms)	

Vacuum Filter Specifications

Item	Vacuum Filter
Element Material	Polyvinyl formal
Filtration Rating μm	10
Filtration area mm^2	1507

Vacuum Breaking Function

Item	Vacuum Breaking Function
Break Air Flow Rate L/min (ANR)	0 to 50 (at 0.5 MPa supply pressure)

Valve Lead Wire Color

●24 VDC Plus Common Specification

Nozzle Type	Black	Gray	Blue	Brown
Twin Nozzle Type	Vacuum Generation (-)	Vacuum Breaking (-)	0 V(-)	24 VDC (+ common)
2-Stage Nozzle Type	Vacuum Generation (-)	Vacuum Breaking (-)	- (*1)	24 VDC (+ common)
Single Nozzle Type	Vacuum Generation (-)	Vacuum Breaking (-)	- (*1)	24 VDC (+ common)

●24 VDC Minus Common Specification

Nozzle Type	Black	Gray	Blue	Brown
2-Stage Nozzle Type	Vacuum Generation(+)	Vacuum Breaking (+)	- (*1)	0 V(- common)
Single Nozzle Type	Vacuum Generation(+)	Vacuum Breaking (+)	- (*1)	0 V(- common)

●100 VAC Specification

Nozzle Type	Black	Gray	Blue	Brown
2-Stage Nozzle Type	Vacuum Generation (-)	Vacuum Breaking (-)	- (*1)	common
Single Nozzle Type	Vacuum Generation (-)	Vacuum Breaking (-)	- (*1)	common

*1: For 2-stage nozzle and single nozzle, the blue lead wire is not used.

Weight Table

Model No.	Unit Contents	Weight (g)
VSQ-□□□-□□S-□	Single Nozzle, Atmospheric Release	329
VSQ-□□□-□□S-□	Single Nozzle, Centralized Exhaust	352
VSQ-D□□-□□S-□	2-Stage Nozzle, Atmospheric Release	329
VSQ-D□□-□□J-□	2-Stage Nozzle, Centralized Exhaust	352
VSQ-T□□-□□S-□	Twin Nozzle, Atmospheric Release	377
VSQ-T□□-□□J-□	Twin Nozzle, Centralized Exhaust	400

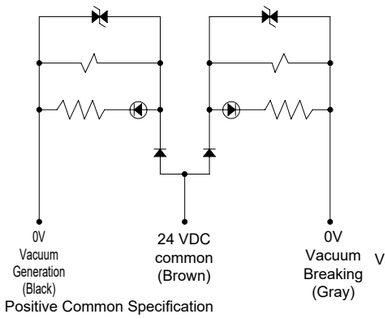
Cartridge	Weight (g)
ø6 Push-in fitting	21
ø8 Push-in fitting	20
ø10 Push-in fitting	19

Vacuum Pressure Switch	Weight (g)
R, RP	57

Electrical Circuit(Solenoid Valve)

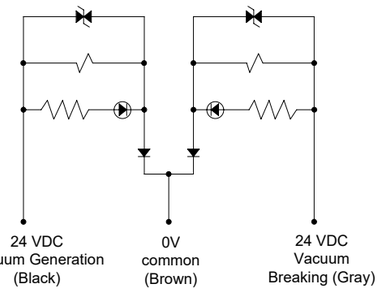
●24 VDC

・Single Nozzle Type
・2-Stage Nozzle Type



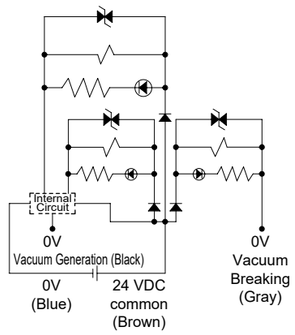
Positive Common Specification

・Single Nozzle Type
・2-Stage Nozzle Type



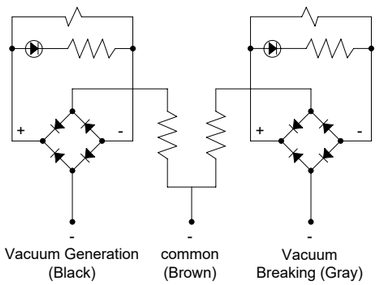
Negative Common Specification

・Twin Nozzle Type



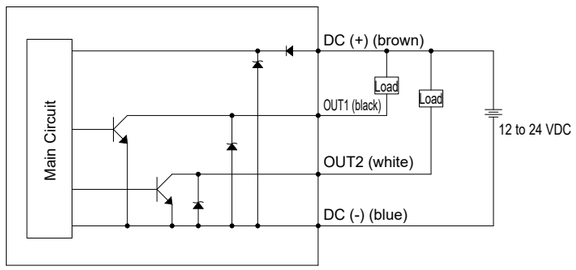
●100 VAC

・Single Nozzle Type
・2-Stage Nozzle Type

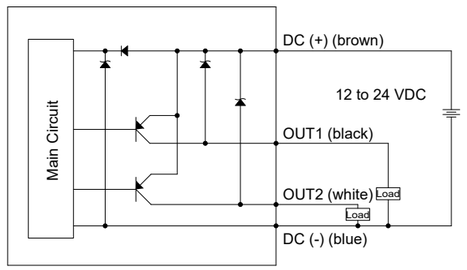


Vacuum Pressure Switch Electrical Circuit Diagram

■ NPN Open Collector Output

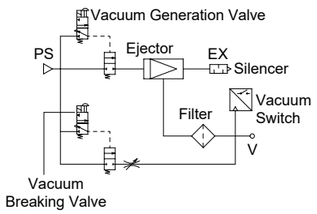


■ PNP Open Collector Output

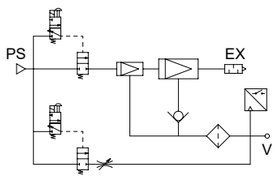


Circuit Diagram

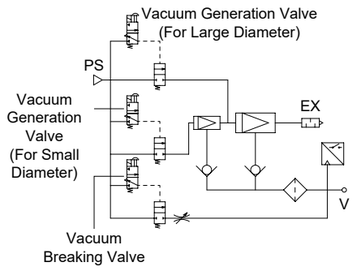
●Single Nozzle Type



●2-Stage Nozzle Type



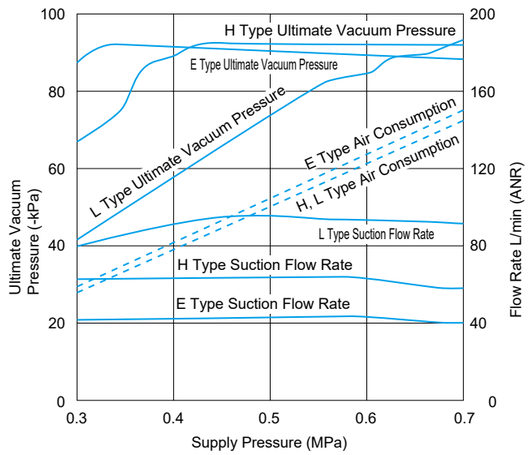
●Twin Nozzle Type



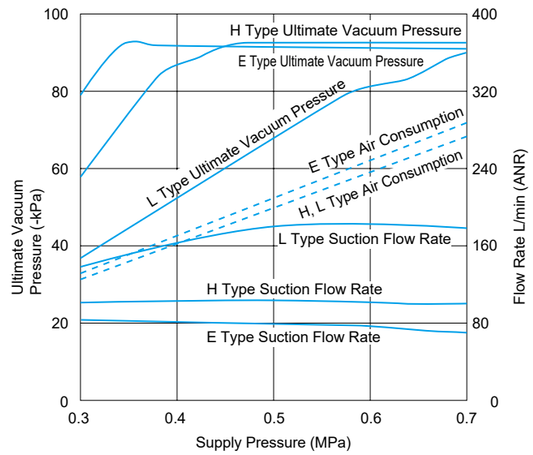
Vacuum Characteristics

●Single Nozzle Type

・VSQ-H15□-□□□-□-□
・VSQ-L15□-□□□-□-□
・VSQ-E15□-□□□-□-□ Vacuum Characteristic Diagram

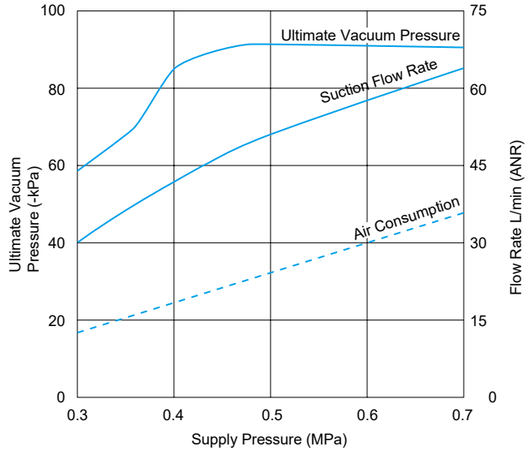


・VSQ-H20□-□□□-□-□
・VSQ-L20□-□□□-□-□
・VSQ-E20□-□□□-□-□ Vacuum Characteristic Diagram

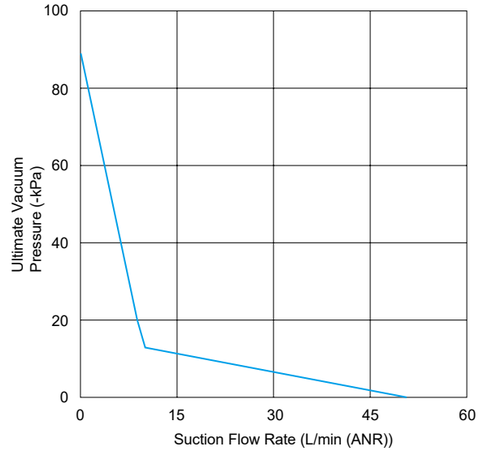


●2-Stage Nozzle Type

・VSQ-D07□-□□□-□-□ Vacuum Characteristic Diagram



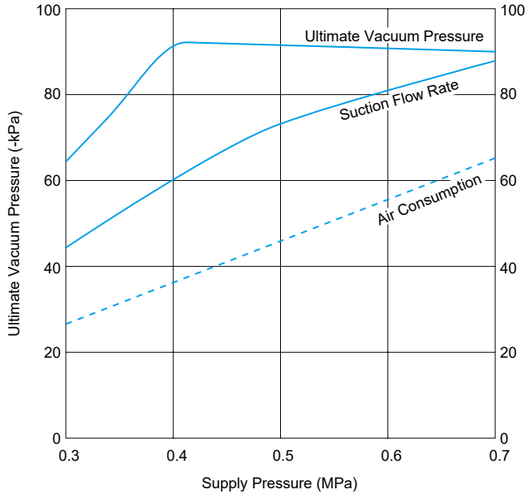
・VSQ-D07□-□□□-□-□ Flow Characteristic Diagram



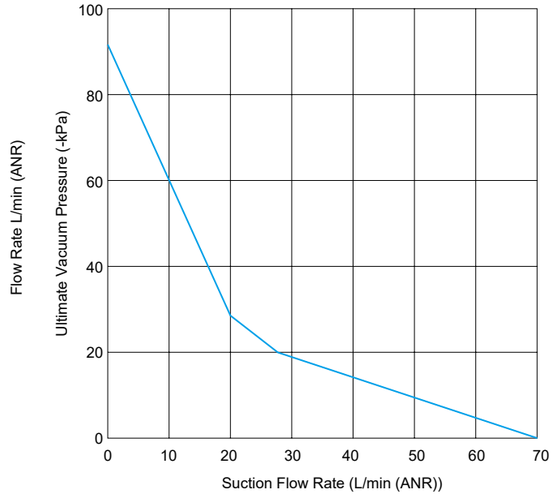
Vacuum Characteristics

●2-Stage Nozzle Type

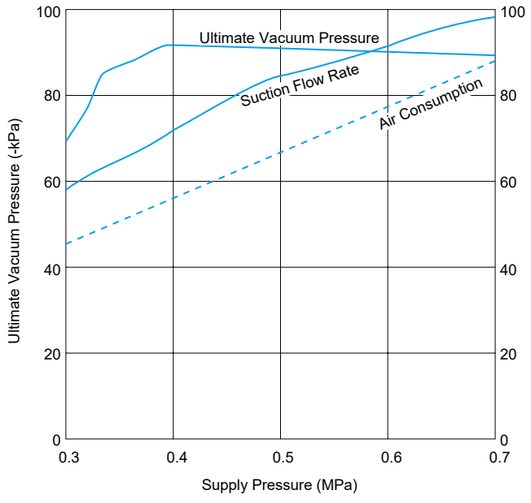
・VSQ-D10□-□□□-□-□ Vacuum Characteristic Diagram



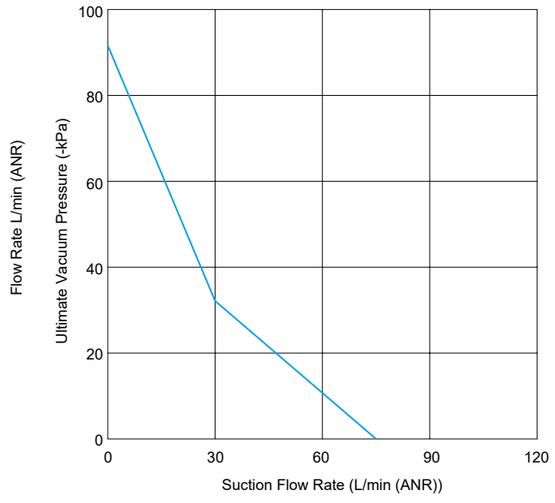
・VSQ-D10□-□□□-□-□ Flow Characteristic Diagram



・VSQ-D12□-□□□-□-□ Vacuum Characteristic Diagram



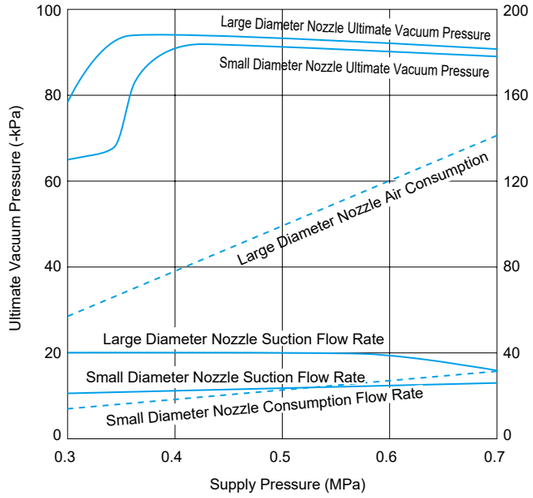
・VSQ-D12□-□□□-□-□ Flow Characteristic Diagram



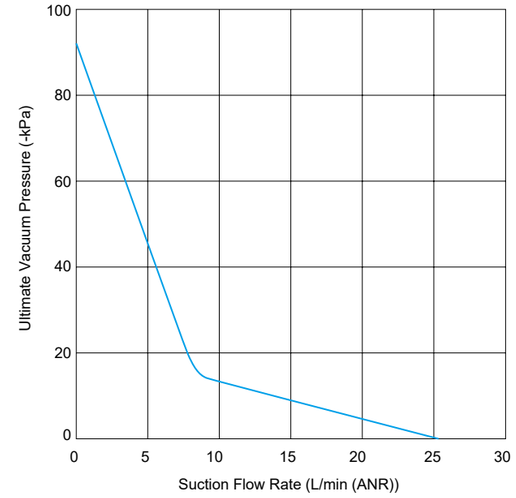
Vacuum Characteristics

●Twin Nozzle Type

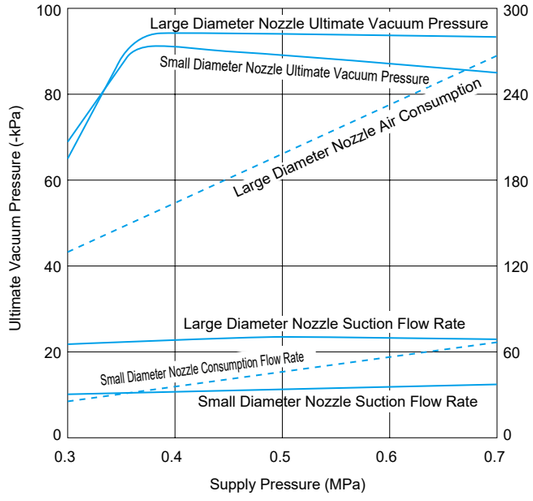
・VSQ-T15B-□□□-□-□ Vacuum Characteristic Diagram



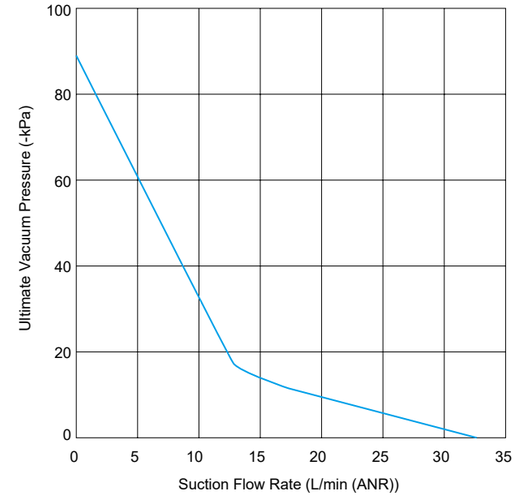
・VSQ-T15B-□□□-□-□ Flow Characteristic Diagram (Small Diameter Nozzle)



・VSQ-T20B-□□□-□-□ Vacuum Characteristic Diagram



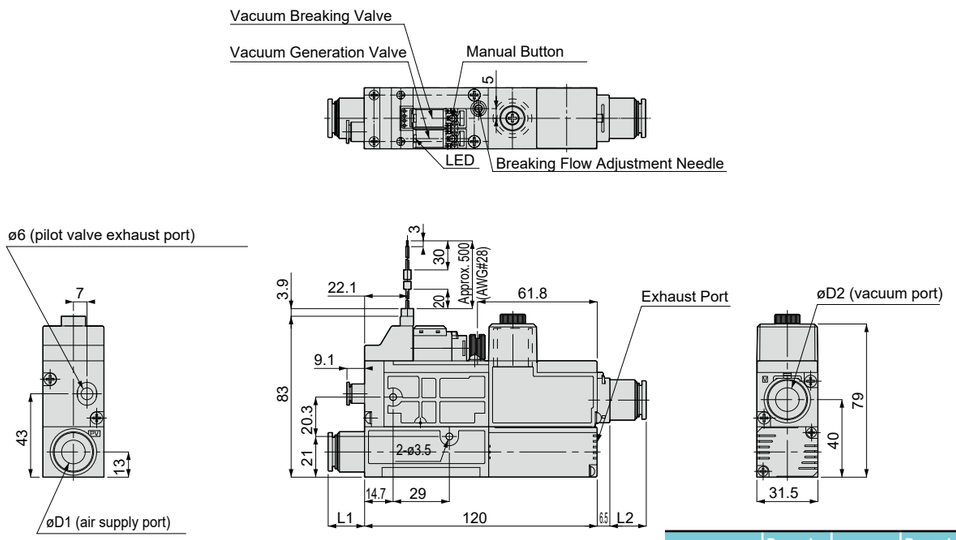
・VSQ-T20B-□□□-□-□ Flow Characteristic Diagram (Small Diameter Nozzle)



1. The supply pressure in the characteristics above is during vacuum generation.
2. 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.)
3. 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 $0.5^2 \times \pi = 0.785\ mm^2 \times 3 = 2.35\ mm^2$. Therefore, select piping and equipment to secure an effective cross-sectional area of 2.3 mm² or more.)

External Dimensions Diagram (Single Nozzle Type, Atmospheric Release Type)

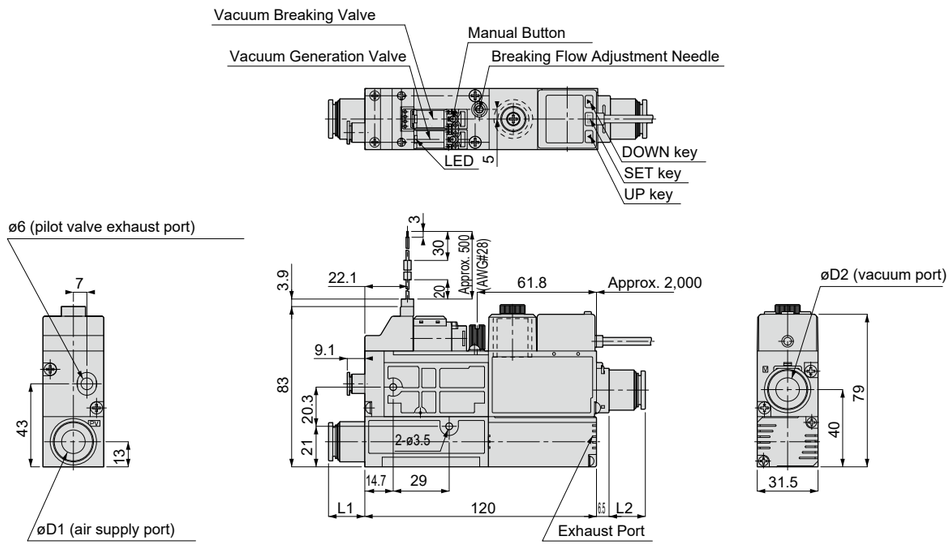
●Without Vacuum Pressure Switch



Unit: mm

	Bore size øD1	L1	Bore size øD2	L2
Air Supply Port	8	12.2	-	-
	10	14.7	-	-
Vacuum port	-	-	8	12.2
	-	-	10	14.7

●With vacuum pressure switch and digital display

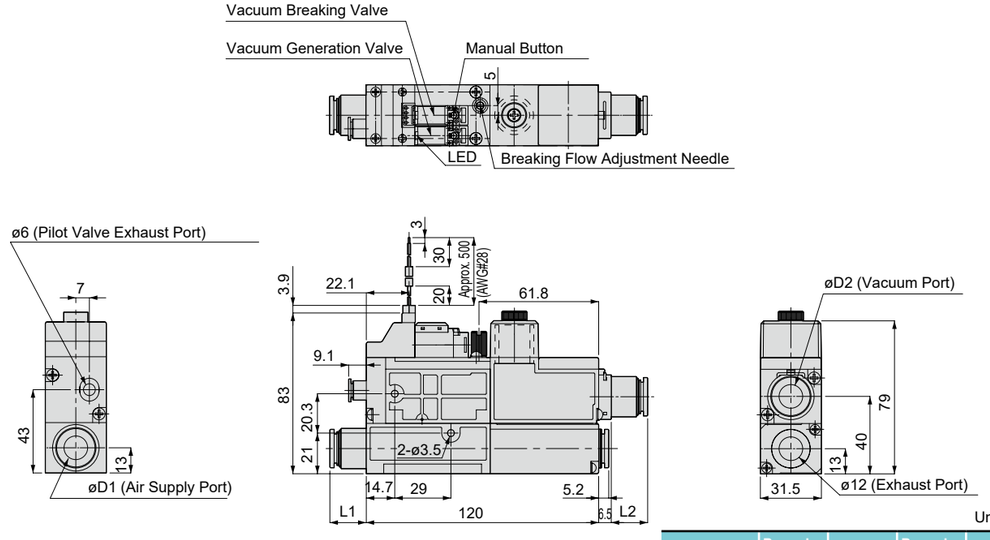


Unit: mm

	Bore size øD1	L1	Bore size øD2	L2
Air Supply Port	8	12.2	-	-
	10	14.7	-	-
Vacuum port	-	-	8	12.2
	-	-	10	14.7

External Dimensions Diagram (Single Nozzle Type, Centralized Exhaust Type)

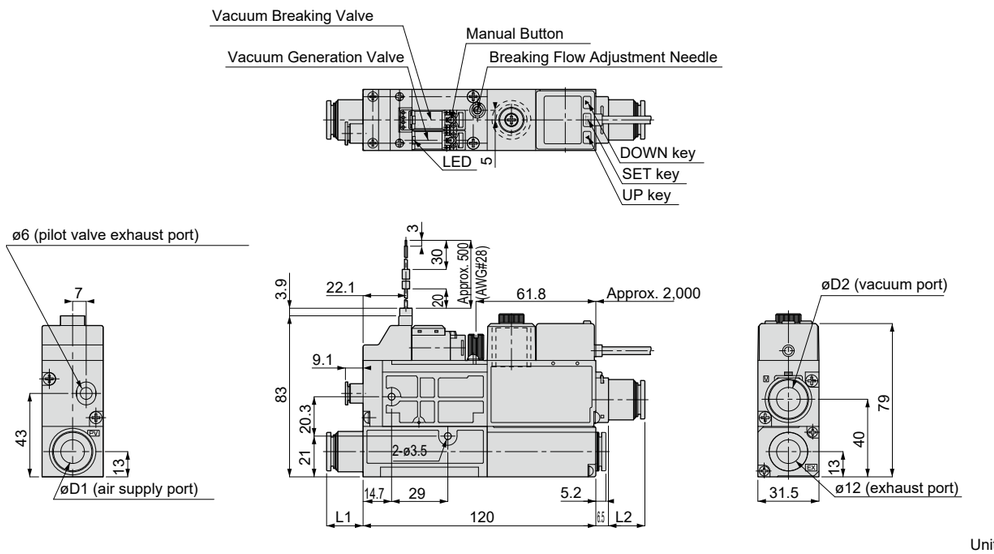
●Without Vacuum Pressure Switch



Unit: mm

	Bore size øD1	L1	Bore size øD2	L2
Air Supply Port	8	12.2	-	-
	10	14.7	-	-
Vacuum port	-	-	8	12.2
	-	-	10	14.7

●With vacuum pressure switch and digital display

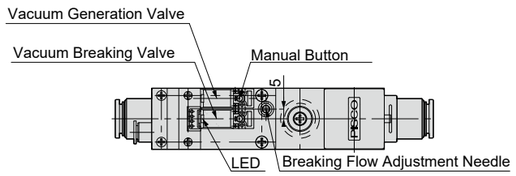


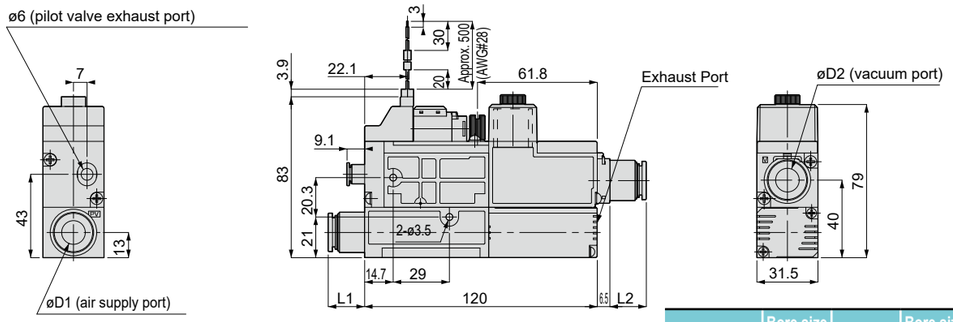
Unit: mm

	Bore size øD1	L1	Bore size øD2	L2
Air Supply Port	8	12.2	-	-
	10	14.7	-	-
Vacuum port	-	-	8	12.2
	-	-	10	14.7

External Dimensions Diagram (2-Stage Nozzle Type, Atmospheric Release Type)

●Without Vacuum Pressure Switch

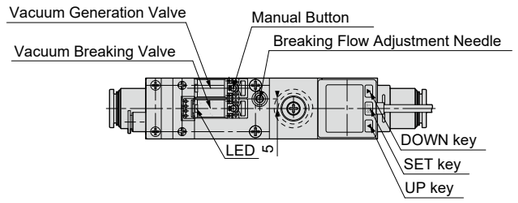


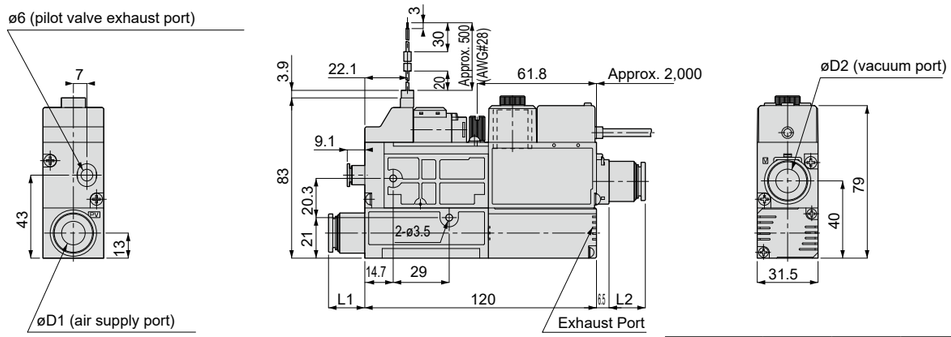


Unit: mm

	Bore size øD1	L1	Bore size øD2	L2
Air Supply Port	6	11.1	-	-
	8	12.2	-	-
	10	14.7	-	-
Vacuum port	-	-	8	12.2
	-	-	10	14.7

●With vacuum pressure switch and digital display



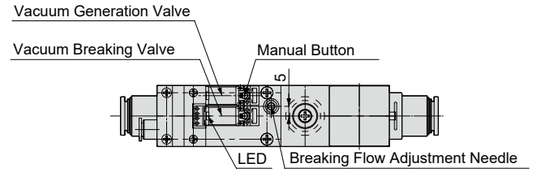


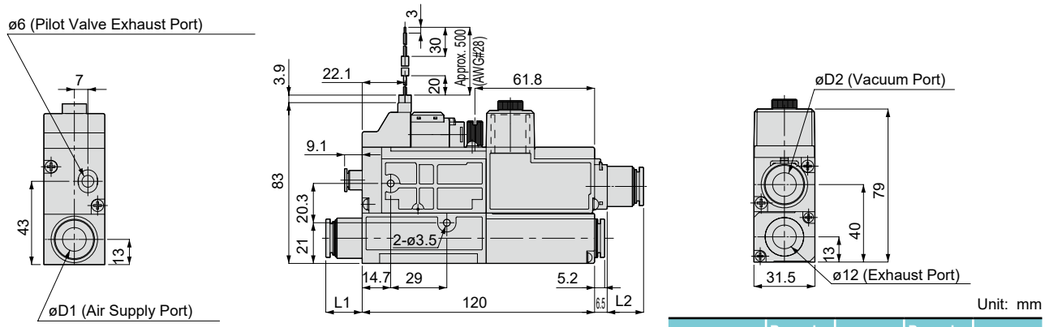
Unit: mm

	Bore size øD1	L1	Bore size øD2	L2
Air Supply Port	6	11.1	-	-
	8	12.2	-	-
	10	14.7	-	-
Vacuum port	-	-	8	12.2
	-	-	10	14.7

External Dimensions Diagram (2-Stage Nozzle Type, Centralized Exhaust Type)

●Without Vacuum Pressure Switch

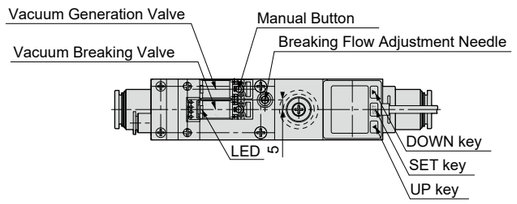


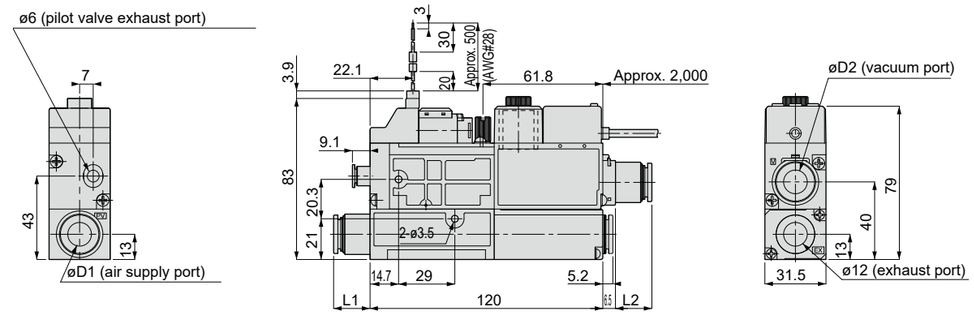


Unit: mm

	Bore size øD1	L1	Bore size øD2	L2
Air Supply Port	6	11.1	-	-
	8	12.2	-	-
	10	14.7	-	-
Vacuum port	-	-	8	12.2
	-	-	10	14.7

●With vacuum pressure switch and digital display



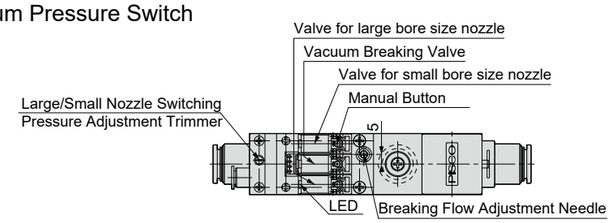


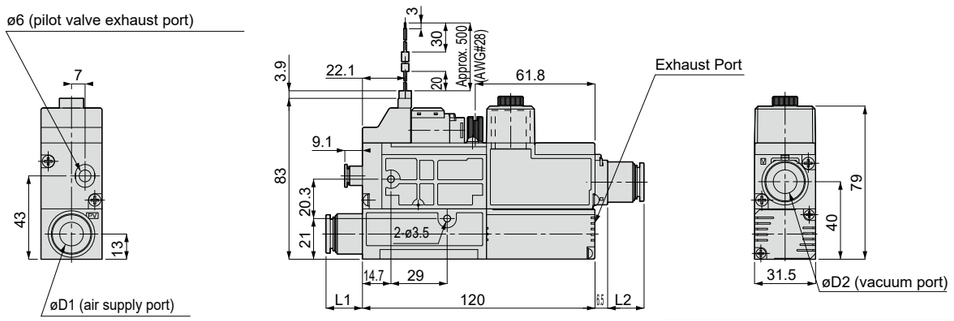
Unit: mm

	Bore size øD1	L1	Bore size øD2	L2
Air Supply Port	6	11.1	-	-
	8	12.2	-	-
	10	14.7	-	-
Vacuum port	-	-	8	12.2
	-	-	10	14.7

External Dimensions Diagram (Twin Nozzle Type, Atmospheric Release Type)

●Without Vacuum Pressure Switch

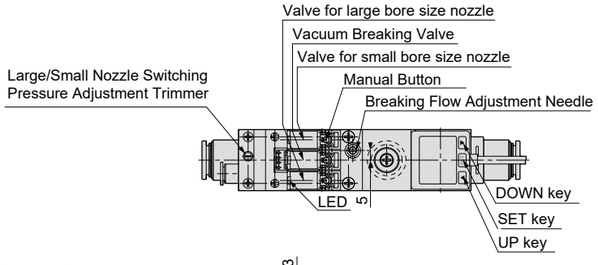


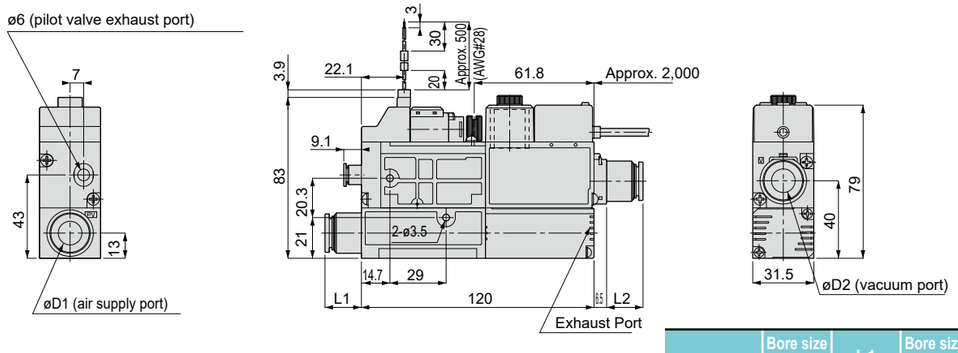


Unit: mm

	Bore size øD1	L1	Bore size øD2	L2
Air Supply Port	8	12.2	-	-
	10	14.7	-	-
Vacuum port	-	-	8	12.2
	-	-	10	14.7

●With vacuum pressure switch and digital display



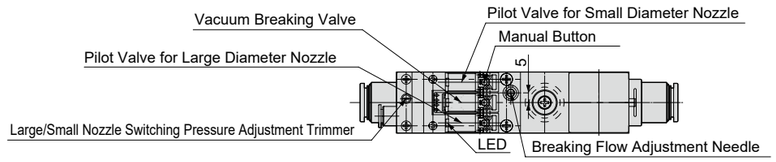


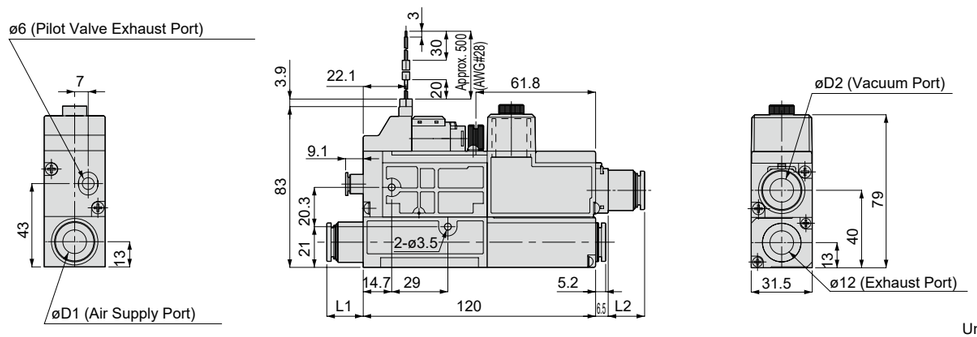
Unit: mm

	Bore size øD1	L1	Bore size øD2	L2
Air Supply Port	8	12.2	-	-
	10	14.7	-	-
Vacuum port	-	-	8	12.2
	-	-	10	14.7

External Dimensions Diagram (Twin Nozzle Type, Centralized Exhaust Type)

●Without Vacuum Pressure Switch

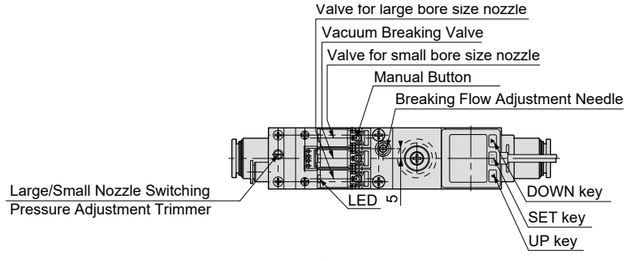


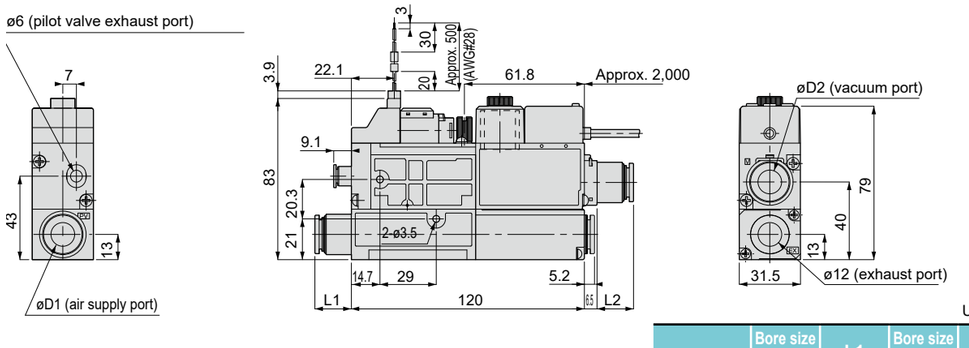


Unit: mm

	Bore size øD1	L1	Bore size øD2	L2
Air Supply Port	8	12.2	-	-
	10	14.7	-	-
Vacuum port	-	-	8	12.2
	-	-	10	14.7

●With vacuum pressure switch and digital display





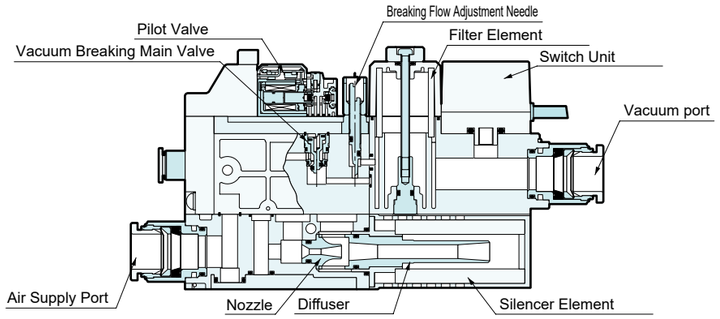
Unit: mm

	Bore size øD1	L1	Bore size øD2	L2
Air Supply Port	8	12.2	-	-
	10	14.7	-	-
Vacuum port	-	-	8	12.2
	-	-	10	14.7

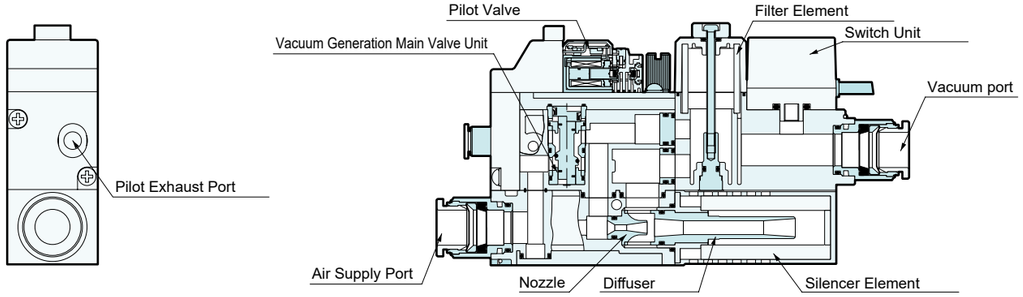
Internal Structure Diagram

●Single Nozzle Type

・Breaking Circuit

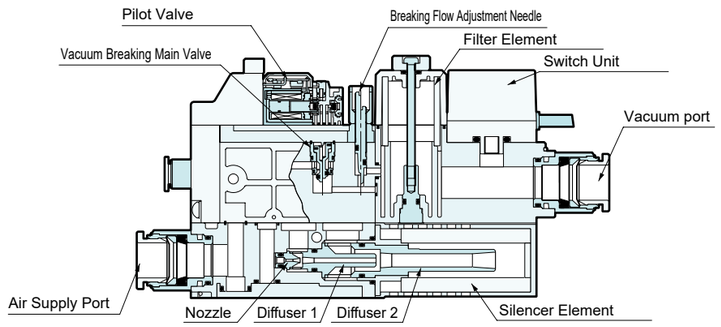


・Vacuum Circuit

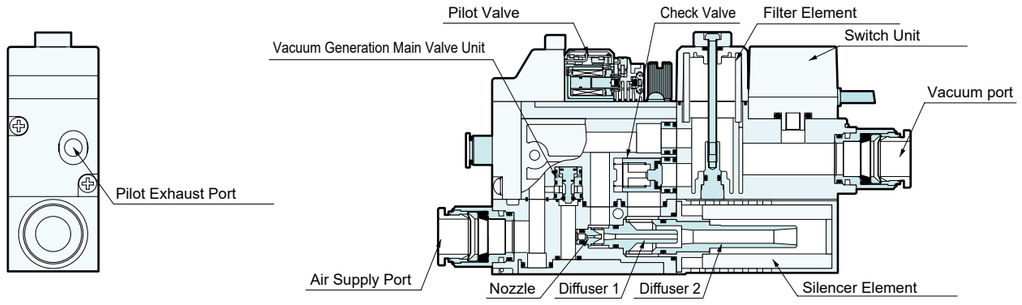


●2-Stage Nozzle Type

・Breaking Circuit



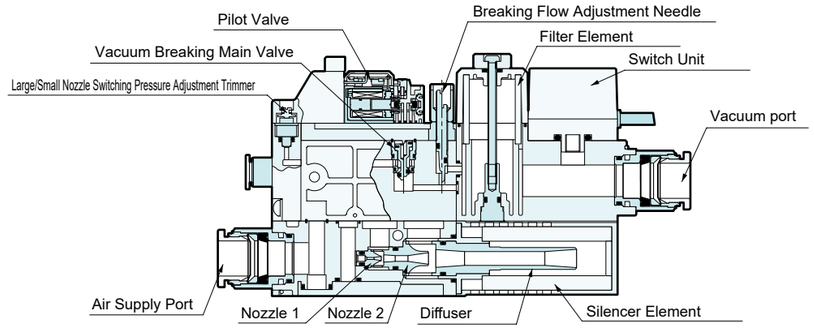
・Vacuum Circuit



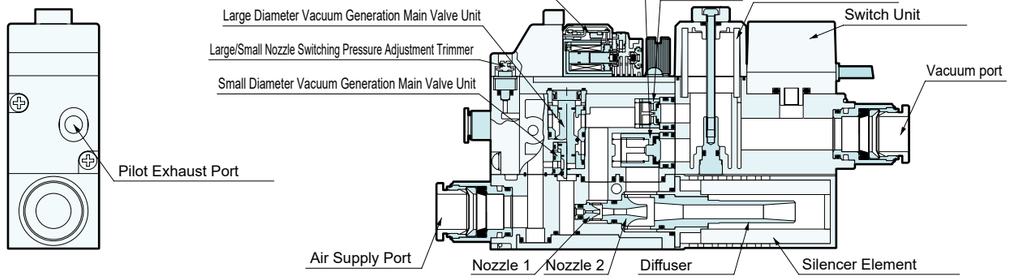
Internal Structure Diagram

●Twin Nozzle Type

・Breaking Circuit



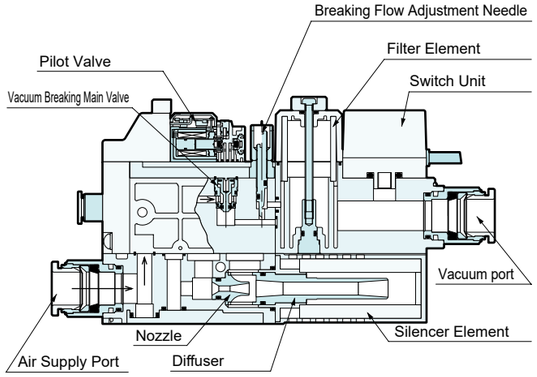
・Vacuum Circuit



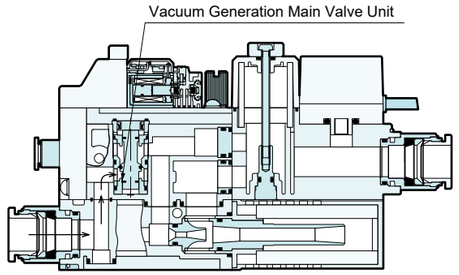
Operation Explanation Diagram (Single Nozzle Type, Normally Closed)

● Vacuum Generation Stopped State

• Breaking Circuit

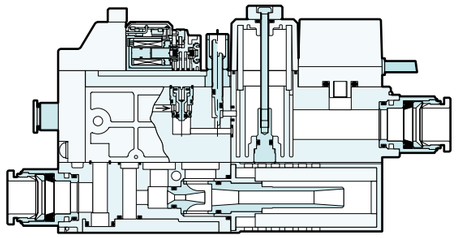


• Vacuum Circuit

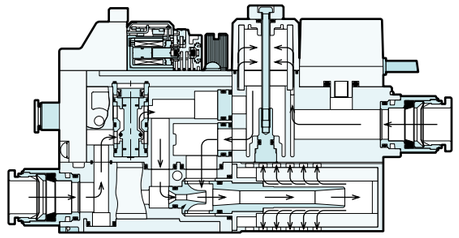


● Vacuum Generation State

• Breaking Circuit

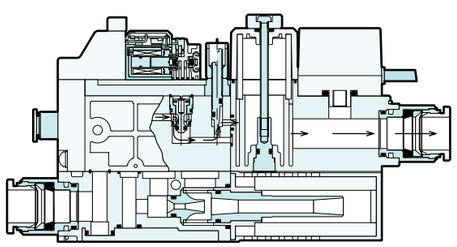


• Vacuum Circuit

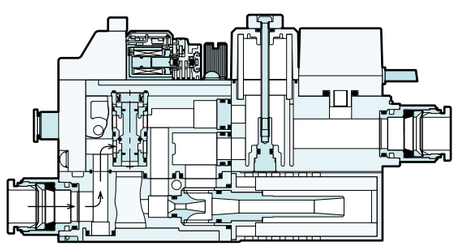


● Vacuum Break Air Supply

• Breaking Circuit



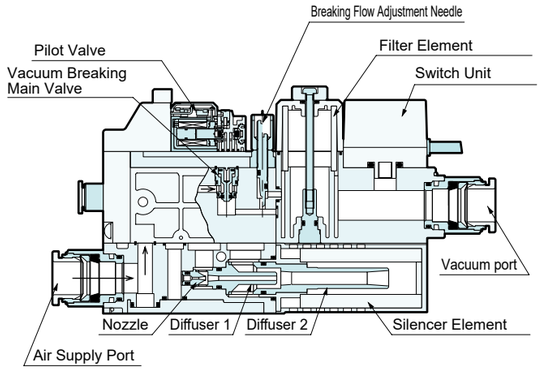
• Vacuum Circuit



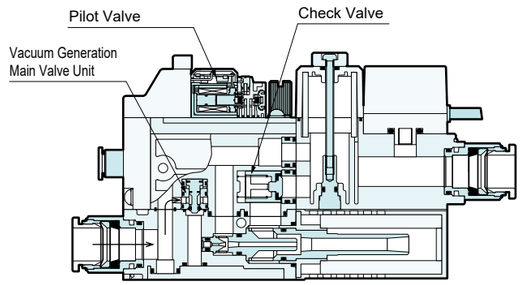
Operation Explanation Diagram (2-Stage Nozzle Type, Normally Closed)

● Vacuum Generation Stopped State

• Breaking Circuit

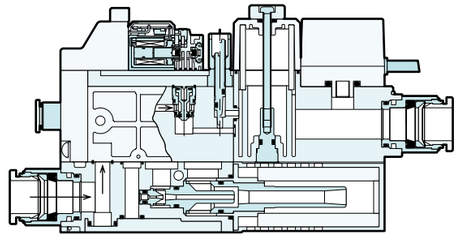


• Vacuum Circuit

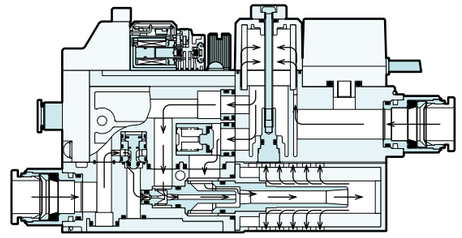


● Vacuum Generation State

• Breaking Circuit

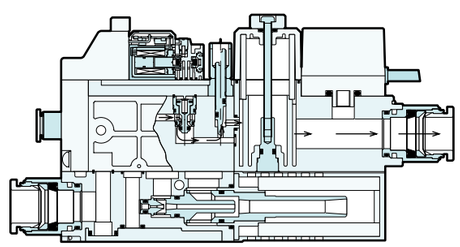


• Vacuum Circuit

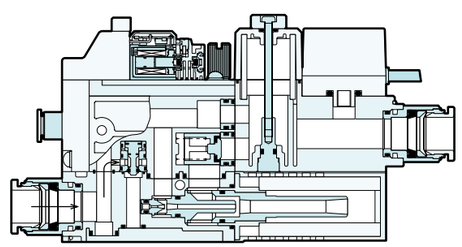


● Vacuum Break Air Supply

• Breaking Circuit



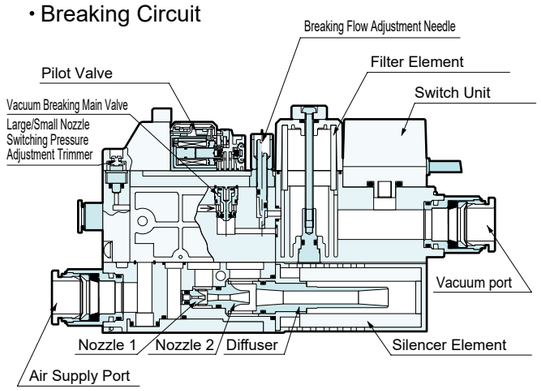
• Vacuum Circuit



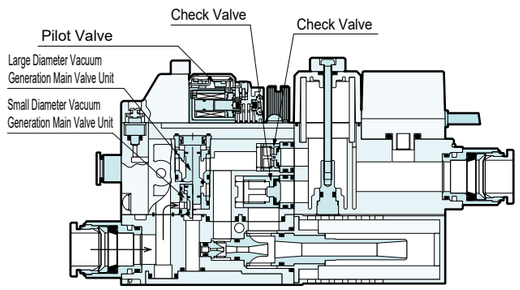
Operation Explanation Diagram (Twin Nozzle Type)

● Vacuum Generation Stopped State

• Breaking Circuit

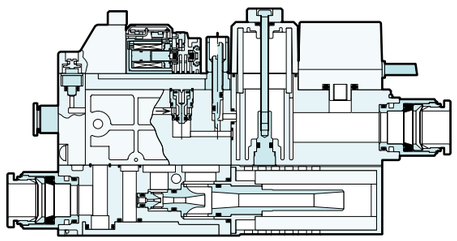


• Vacuum Circuit

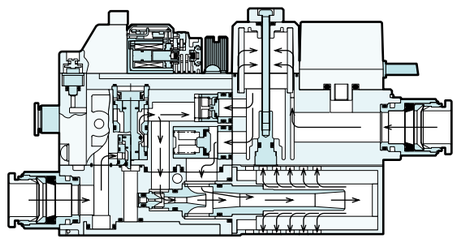


● Vacuum Generation State (Vacuum rise up to reference vacuum pressure: Large diameter nozzle) Nozzle Diameter

• Breaking Circuit

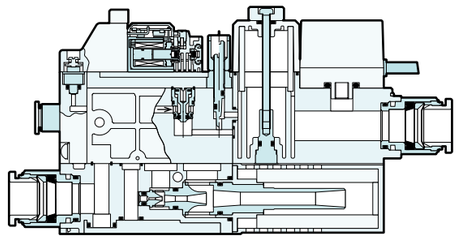


• Vacuum Circuit

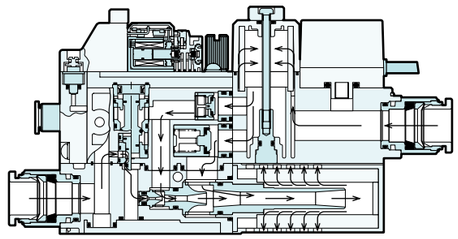


● Vacuum Generation State (Above reference vacuum pressure: Small diameter nozzle)

• Breaking Circuit

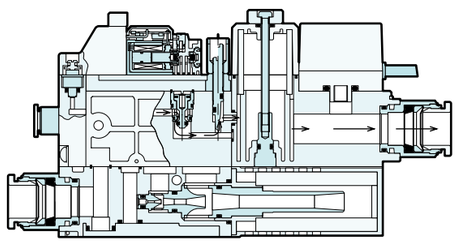


• Vacuum Circuit

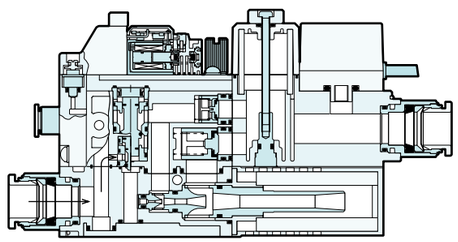


● Vacuum Break Air Supply

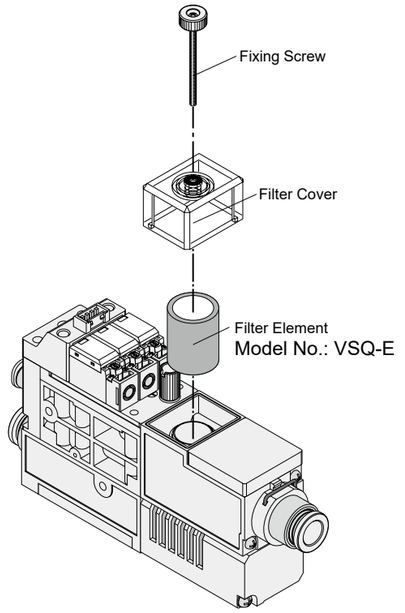
• Breaking Circuit

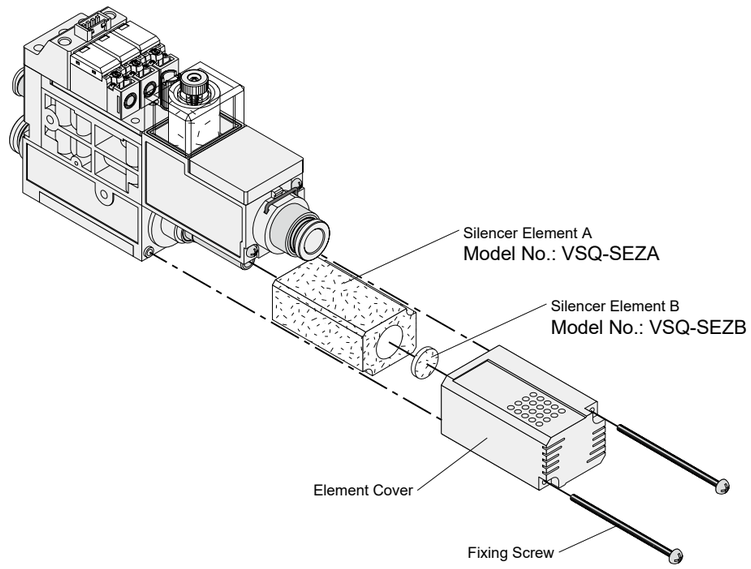


• Vacuum Circuit



Maintenance Parts





To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro Page 15 for details.

Individual Precautions: VSQ Series

Design / Selection

Warning

■For self-holding type, 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 by manual operation before use.

■Make sure to turn the power OFF before wiring. Also, during wiring, check the lead wire color, terminal number, etc., and do not short the output terminal, power supply terminal, and common terminal. Shorting may potentially cause switch failure.

Caution

■To connect to an output terminal or power supply terminal(relay, valve, etc.), install a surge voltage absorption circuit. Also, avoid usage where the current exceeds the rating.

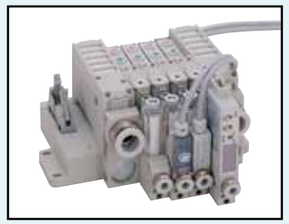
■When using a unit power supply such as switching power supply, ground the F.G.(frame ground).

■Do not short-circuit the output terminal with other terminals.

■When using the twin nozzle type, allow a margin between the vacuum level during workpiece suction and the set value of the large/small nozzle switching pressure switch. If the vacuum level and set value are equivalent, the large/small diameter pilot valves may operate consecutively.

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.

MEMO



Ejector System/11 mm Pitch Manifold Vacuum Ejector Unit

VSZM Series

Compact, lightweight manifold-dedicated vacuum ejector unit that significantly shortens vacuum break time (max. 12 stations)

Vacuum Characteristic Variations

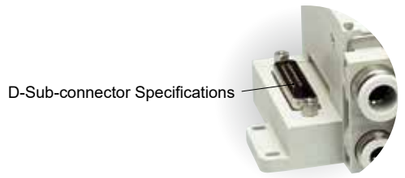
Vacuum Characteristics / Nozzle Diameter	Suction Flow Rate (L/min (ANR))			Air Consumption (L/min (ANR))			Ultimate Vacuum Pressure (-kPa)		
	H	L	E	H	L	E	H	L	E
0.5 mm	7	12		11.5			90.4	66.5	
0.7 mm	13	24	10	23		17	93.1	66.5	90.4
1.0 mm	24		20	46		34	93.1		90.4

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

Vacuum generation valve selectable from Normally Closed type and Self-holding type

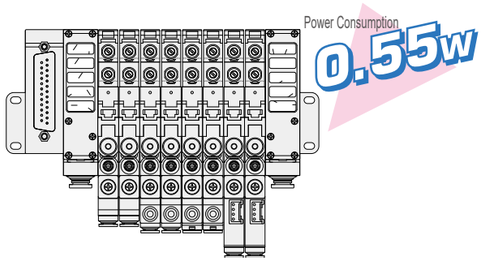
Centralized wiring for supply valve / breaking valve

Adoption of centralized wiring specification enables reduction of wiring work time.





Valve power consumption reduced to 0.55 W, achieving energy saving.



Piping standardized with Push-in fitting and female thread specifications Selection possible according to piping application

Various variations of vacuum pressure switches also available Compatible with a wide range of applications

● Analog output



● No Display 1-point output

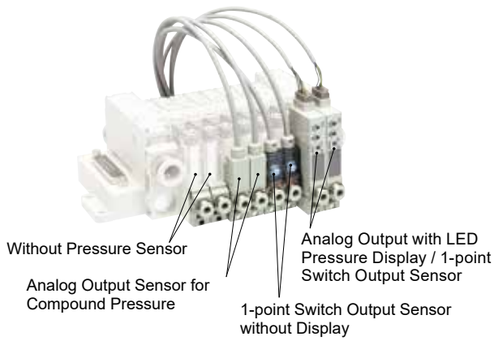


● 1-point output with digital display + analog output

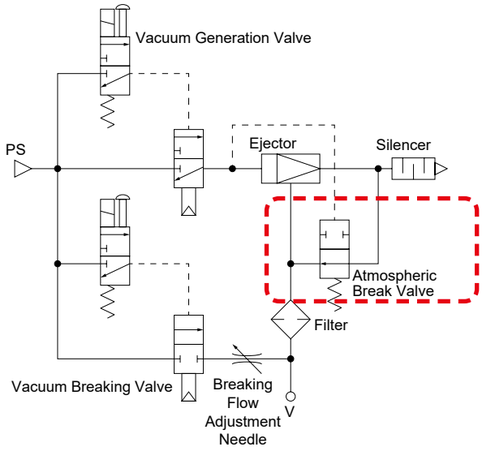


● With digital display 2-point output



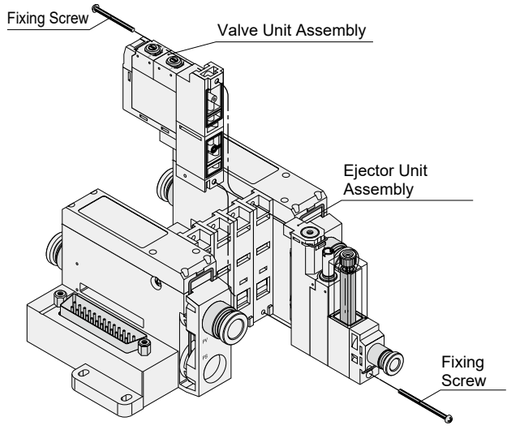


Installation of atmospheric break valve enables high flow rate atmospheric breaking, significantly shortening vacuum break time



Structure considering maintainability makes maintenance work easy

Since valves, filters, etc., are unitized, replacement is possible by removing only the necessary parts.

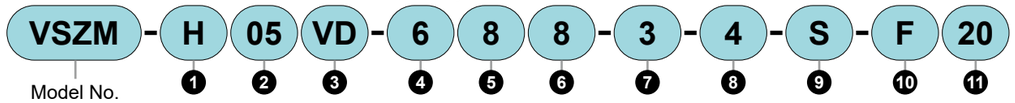


Compliant with Global Standards

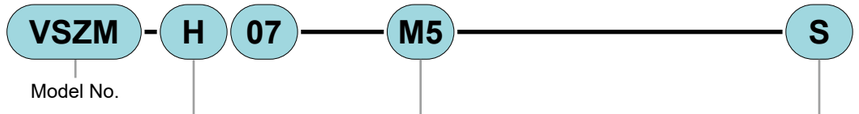
CE UKCA RoHS

Model No. Notation

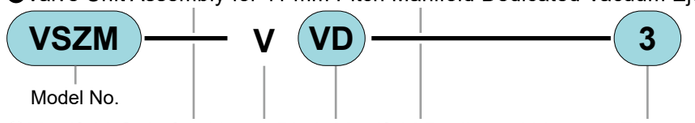
●11 mm Pitch Manifold Dedicated Vacuum Ejector Unit



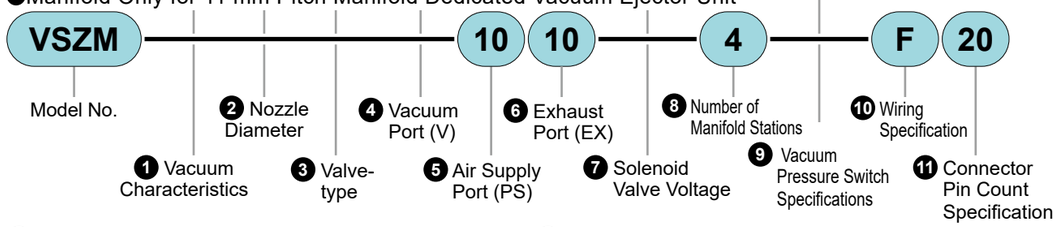
●Ejector Unit Assembly for 11 mm Pitch Manifold Dedicated Vacuum Ejector Unit



●Valve Unit Assembly for 11 mm Pitch Manifold Dedicated Vacuum Ejector Unit



●Manifold Only for 11 mm Pitch Manifold Dedicated Vacuum Ejector Unit



❶ 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: The combinations ❶❷"E05" and "L10" are not possible.
*2: For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, please refer to P. 312, 313.
*3: If ❶ is "Z", Nozzle Diameter is "00" only. If is "0", is ❶"Z" only.
*4: For Ejector Unit Assembly, ❶"Z" cannot be selected. For Manifold Only, or Valve Unit Assembly, Vacuum Characteristics cannot be selected.

❷ Nozzle Diameter

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

*1: The combinations ❶❷"E05" and "L10" are not possible.
*2: For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, please refer to P. 312, 313.
*3: If ❶Vacuum Characteristics is "Z", ❷is "00" only. If is ❷"0", is ❶"Z" only.
*4: For ejector unit assembly, ❷"00" cannot be selected. For Manifold Only, or Valve Unit Assembly, Nozzle Diameter cannot be selected.

❸ 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. 312, 313.
*2: For Valve Unit Assembly, ❸"Z" cannot be selected. For ejector unit assembly, or in the case of manifold only, the valve type cannot be selected.

❹ Vacuum Port (V)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
M5	M5×0.8
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. 312, 313.
*2: For Ejector Unit Assembly, ❹"CX" cannot be selected. For Valve Unit Assembly, or Manifold Only, Vacuum Port cannot be selected.

❺ Air Supply Port (PS)

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

*: Ejector Unit Assembly, or Valve Unit Assembly cannot select Air Supply Port.

❻ 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

*: Ejector Unit Assembly, or Valve Unit Assembly cannot select Exhaust Port.

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.

❼ Solenoid Valve Voltage

Code	Content
3	24 VDC

*: For Ejector Unit Assembly, or Manifold Only, Solenoid Valve Voltage cannot be selected.

❽ Number of Manifold Stations

Code	Content
2	2 stations
to	to
12	12 stations

*1: The number of stations that can be operated simultaneously varies depending on the combination of nozzle diameter and port size. Please contact us for details.
*2: For Ejector Unit Assembly, or Valve Unit Assembly, Number of Manifold Stations cannot be selected.

❾ 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	
S	NPN Output 1 point without Display	
V1	Analog Output for Negative Pressure	
R1	Analog Output for Compound Pressure	
*2 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. 312, 313.
*2: For Ejector Unit Assembly, ❾"Z" cannot be selected. For valve unit assembly or manifold only, vacuum pressure switch specifications cannot be selected.

❿ Wiring Specification

Code	Content	
F	Flat Cable Connector	
D	D-sub Connector *2	

*1: For ejector unit assembly or valve unit assembly, the wiring specification cannot be selected.
*2: If Connector Pin Count Specification is "20" or "26", "D" cannot be selected.

⓫ Connector Pin Count Specification

Code	Content
Blank	Connector with optimal pin count installed by our company
*4 20	20-pin Flat Cable Connector (max. 9 stations)
*5 26	26-pin Flat Cable Connector (max. 12 stations)
*6 25	25-pin D-sub Connector (max. 12 stations)

*1: For flat cable connector:

Number of Manifold Stations	2 to 4 stations	10-pin Flat Cable Connector
	5 to 9 stations	20-pin Flat Cable Connector
	10 to 12 stations	26-pin Flat Cable Connector

For D-sub connector:

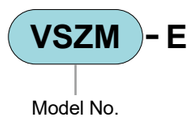
Number of Manifold Stations	2 to 4 stations	9-pin D-sub Connector (max. 9 stations)
	5 to 12 stations	25-pin D-sub Connector (max. 12 stations)

*2: For Ejector Unit Assembly and Valve Unit Assembly, the connector pin count cannot be selected.
*3: When ⓫ is '20' or '26', Wiring Specification ❿ 'D' cannot be selected
*4: For ❽ Number of Manifold Stations '5' to '9', please select 'Blank'.
*5: For ❽ Number of Manifold Stations '10' to '12', please select 'Blank'.
6: For ❽ Number of Manifold Stations '5' to '12', please select 'Blank'.

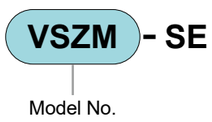
Maintenance Part Model No.

* For details on maintenance parts, please refer to P. 308.

● Filter Element



● Silencer Element



Specifications

Item	VSZM
Operating Fluid	Air
Operating Pressure MPa	0.3 to 0.7
Ambient Temperature/Fluid 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))
VSZM-H05	0.5	0.5	90.4	7	11.5
VSZM-L05			66.5	12	
VSZM-H07	0.7	0.5	93.1	13	23
VSZM-L07			66.5	(23) 24	
VSZM-E07		0.35	90.4	10	17
VSZM-H10	1.0	0.5	93.1	24	46
VSZM-E10		0.35	90.4	20	34

*1: Values in ( ) are for Vacuum Port: Values are for M5 × 0.8.

Valve Specifications

●Pilot Valve

Item	Vacuum Generation Valve	Vacuum Breaking Valve
ValvE-type and Operation Method	Direct Acting Pilot Valve	
Rated Voltage V	24 VDC	
Voltage Fluctuation Range V	DC 21.6 to DC 26.4	
Surge Suppressor	Varistor	
Power consumption W	0.55 (with LED)	
Operation Indicator Light	When coil is energized: Red LED lights up	When coil is energized: Yellow-green LED lights up
Manual Override	Locking push type	
Wiring Method	D-sub Connector, Flat Cable Connector	

●Switching valve

Item	Vacuum Generation Valve	Vacuum Breaking Valve
ValvE-type and Operation Method	Pilot Operated Pilot Valve	
Valve Type	Normally Closed, Self-holding	Normally Closed
Proof Pressure MPa	1.05	
Lubrication	Not required	
Effective Area mm² (Cv value)	4.5 (0.24)	3.5 (0.19)

Vacuum Pressure Switch Specifications

Item		With Digital Display		No Display	Separate Type	Analog
		2-point Switch Output	1-point Switch Output	1-point Switch Output	Pressure Indicator with Switch	
Current Consumption mA		40		20	50	20
Pressure Sensing Element		Diffused Semiconductor Pressure Sensor			-	Diffused Semiconductor Pressure Sensor
Working pressure kPa		-100 to 0			-	-100 to 0
Set Pressure		-99 to 0 kPa			-999 to 999 counts	-
Proof Pressure MPa		0.2			-	0.2
Storage Temperature °C		-20 to 80		-20 to 70		
Operating Temperature °C		0 to 50		-10 to 60	-10 to 50	-10 to 60
Operating Humidity		35 to 85% RH				
Power Supply Voltage V		DC 12 to 24 ±10% Ripple(P-P) ≤ 10%		DC 10.8 to 30 (incl. ripple)		
Protection Structure		Equivalent to IEC Standard IP40				
Number of Switch Output Points		2	1	1	2	-
Repeatability		±0.3% F.S. Max.(at Ta = 25°C)				-
Differential		Fixed	Variable	Fixed	Variable	-
Switch Output		NPN Transistor Open Collector Output				-
Analog Output	Output Voltage V	-	1 to 5	-	1 to 5	
	Zero Point Voltage V	-	1±0.1	-	1±0.1	
	Span Voltage V	-	4±0.1	-	4±0.1	
	Output Current mA	-	≤ 1	-	≤ 0.5	≤ 1
	Linearity/Hysteresis	-	±0.5% F.S. Max.	-	±0.5% F.S. Max.	
Display		-99 to 0 kPa (2-digit Red LED display)		-	3-digit Red LED display	-
Display Update Rate		Approx. 4 times/sec		-	Approx. 4 times/sec	-
Display Accuracy		±3% F.S. ±2 digit		-	±1% F.S.	-
Resolution		1 digit		-	1 digit	-
Switch Operation Indicator Light		SW1: Red LED lights up when output is ON			SW1: Green LED lights up when output is ON	-
		SW2: Green LED lights up when output is ON	-		SW2: Red LED lights up when output is ON	-

Vacuum Breaking Function

Item		Vacuum Break Valve
Break Air Flow Rate L/min (ANR)		0 to 50 at 0.5 MPa supply
Atmospheric Break Valve	Actuation Method	Indirect operation by pneumatic pressure
	Valve Structure	Elastomer seal, poppet valve
	Valve Type	Normally Open
	Lubrication	Not required
	Orifice Diameter mm	Equivalent to 3.5

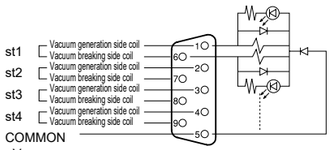
Vacuum Filter Specifications

Item	Vacuum Filter
Element Material	Polyvinyl formal
Filtration Rating μm	10
Filtration area mm²	660
Replacement Filter Element Model No.	VSZM-E

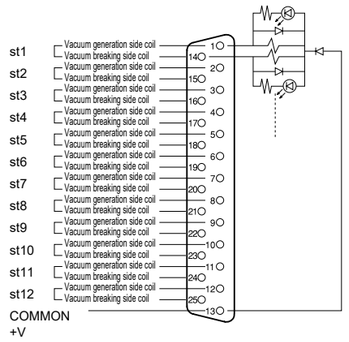
Electrical Circuit(Solenoid Valve)

●D-sub Connector

9-pin

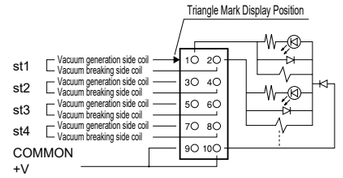


25-pin



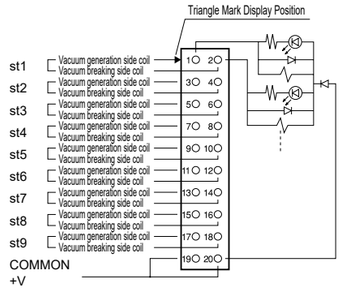
●Flat Cable Connector

10-pin



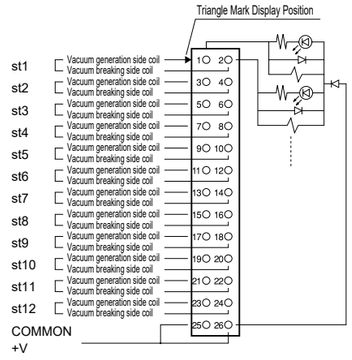
(Note) COMMON(+V) pins No. 9 and 10 are internally shorted.

20-pin



(Note) COMMON(+V) pins No. 19 and 20 are internally shorted.

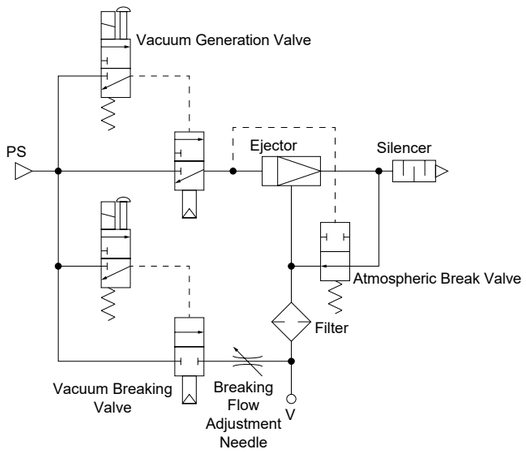
26-pin



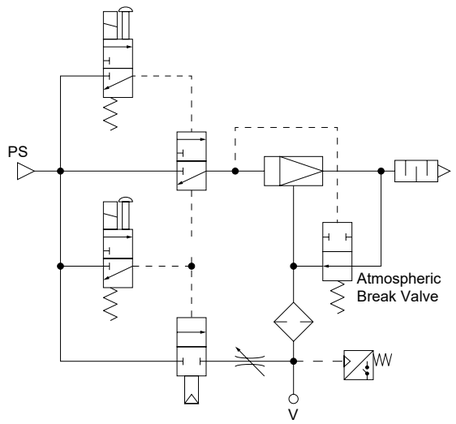
(Note) COMMON(+V) pins No. 25 and 26 are internally shorted.

Circuit Diagram

●Normally Closed Type



Self-holding Type

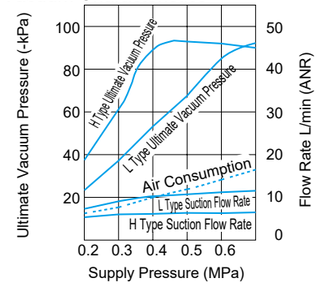


Vacuum Characteristics

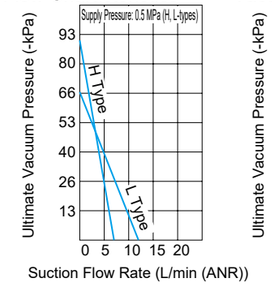
Supply Pressure - Ultimate Vacuum Pressure, Suction Flow Rate, Consumption Flow Rate

●VSZM-H05, VSZM-L05

Vacuum Characteristics

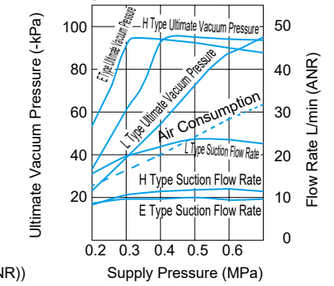


Flow Characteristics

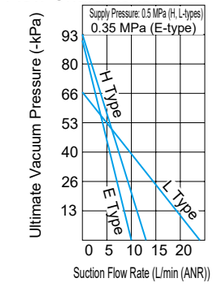


●VSZM-H07, VSZM-L07, VSZM-E07

Vacuum Characteristics

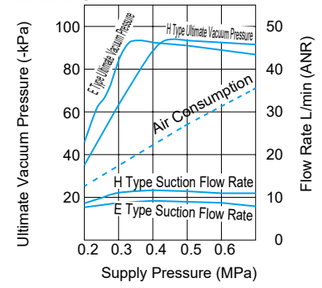


Flow Characteristics

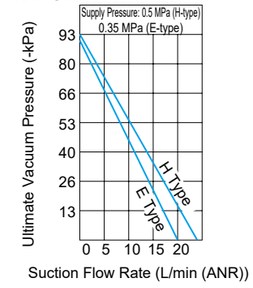


●VSZM-H10, VSZM-E10

Vacuum Characteristics



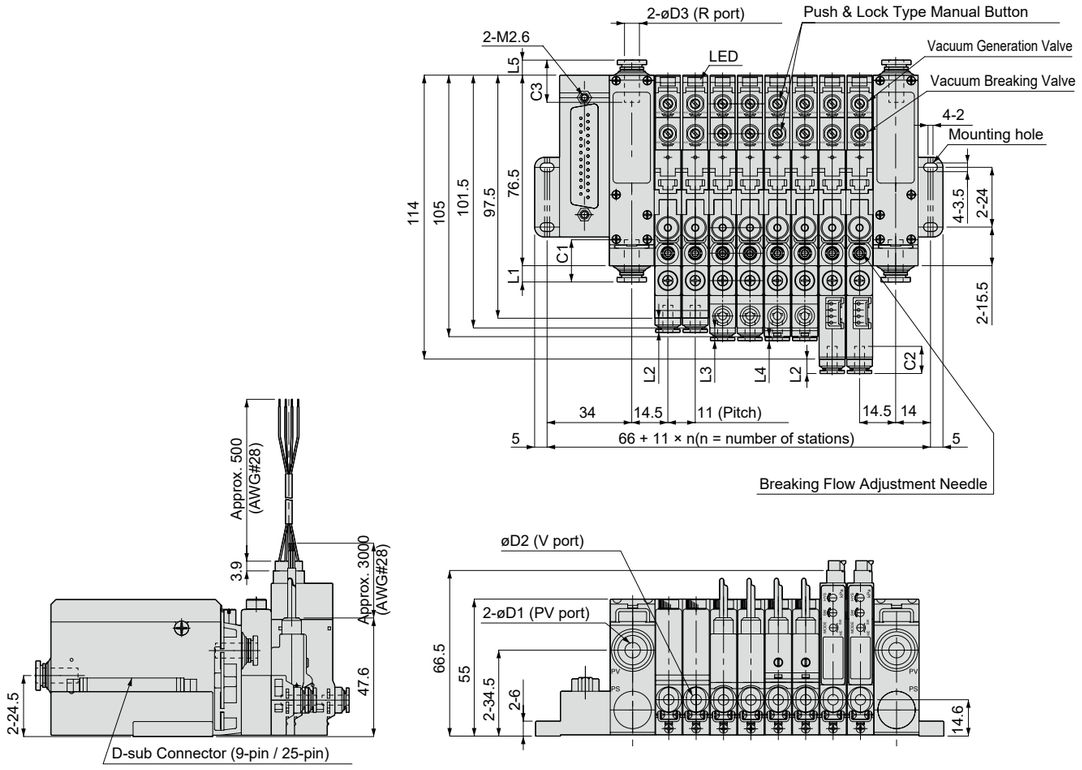
Flow Characteristics



1. The supply pressure in the characteristics above is during vacuum generation.
2. 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.)
3. 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 level, 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 $0.5^2 \times \pi = 0.785\ mm^2 \times 3 = 2.35\ mm^2$. Therefore, select piping and equipment to secure an effective cross-sectional area of 2.3mm or more.)

Outline Dimension Drawing (D-sub Connector Specification)

●Common exhaust

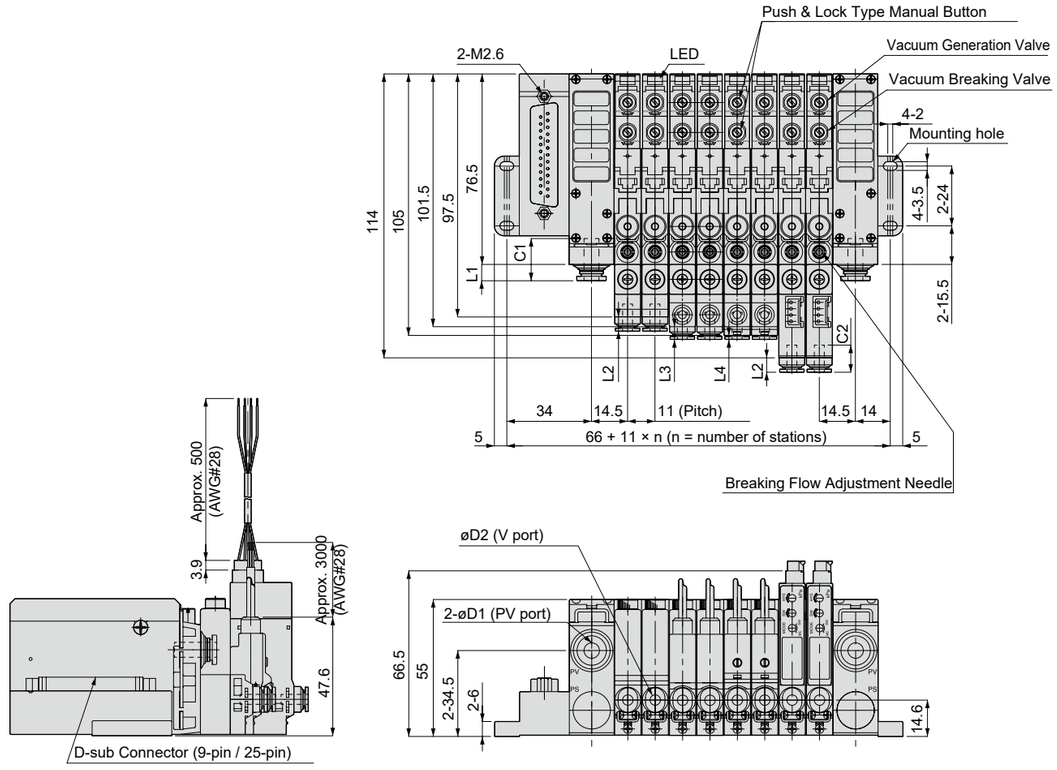


Unit: mm

PV Port øD1	C1	L1	V Port øD2	C2	L2	L3	L4	R Port øD3	C3	L5
6	17	6.6	4	11.2	6.1	5.4	1.9	6	17	6.1
8	18.2	8.1	6	10	8.9	8.2	4.7	8	18.2	7.6
10	20.7	11.7	M5 (Female thread)	-	4	3.3	-0.2	10	20.7	11.2

Outline Dimension Drawing (D-sub Connector Specification)

●Atmosphere release

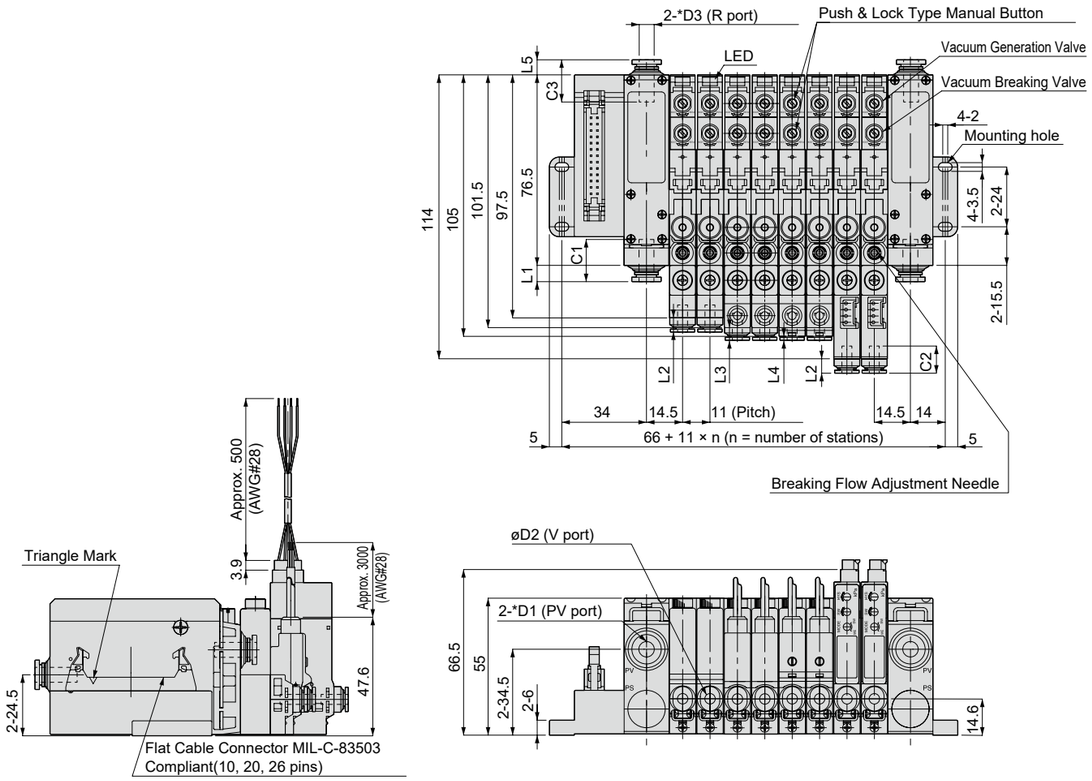


Unit: mm

PV Port øD1	C1	L1	V Port øD2	C2	L2	L3	L4
6	17	6.6	4	11.2	6.1	5.4	1.9
8	18.2	8.1	6	10	8.9	8.2	4.7
10	20.7	11.7	M5 (Female thread)	-	4	3.3	-0.2

Outline Dimension Drawing (Flat Cable Connector Specification)

●Common exhaust

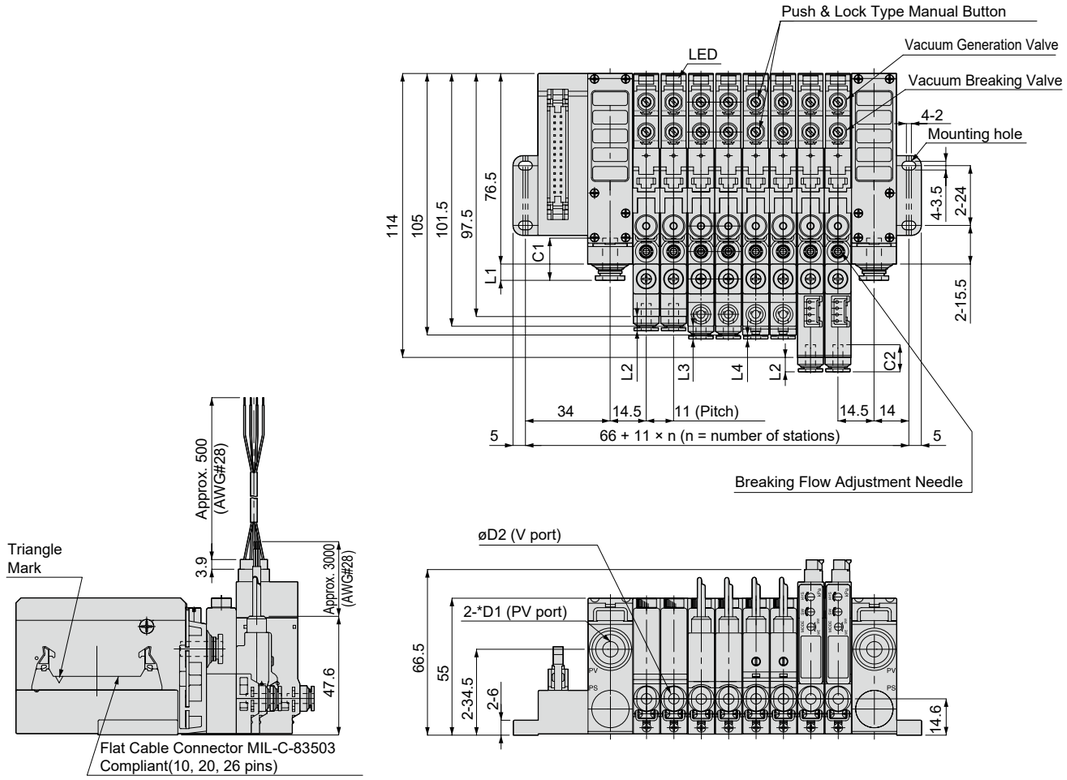


Unit: mm

PV Port øD1	C1	L1	V Port øD2	C2	L2	L3	L4	R Port øD3	C3	L5
6	17	6.6	4	11.2	6.1	5.4	1.9	6	17	6.1
8	18.2	8.1	6	10	8.9	8.2	4.7	8	18.2	7.6
10	20.7	11.7	M5 (Female thread)	-	4	3.3	-0.2	10	20.7	11.2

Outline Dimension Drawing (Flat Cable Connector Specification)

●Atmosphere release

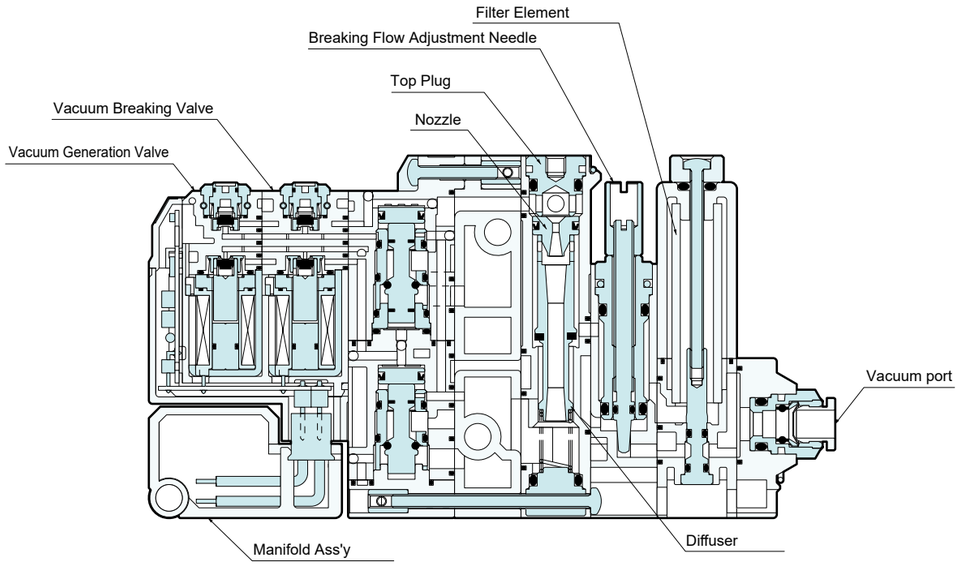


Unit: mm

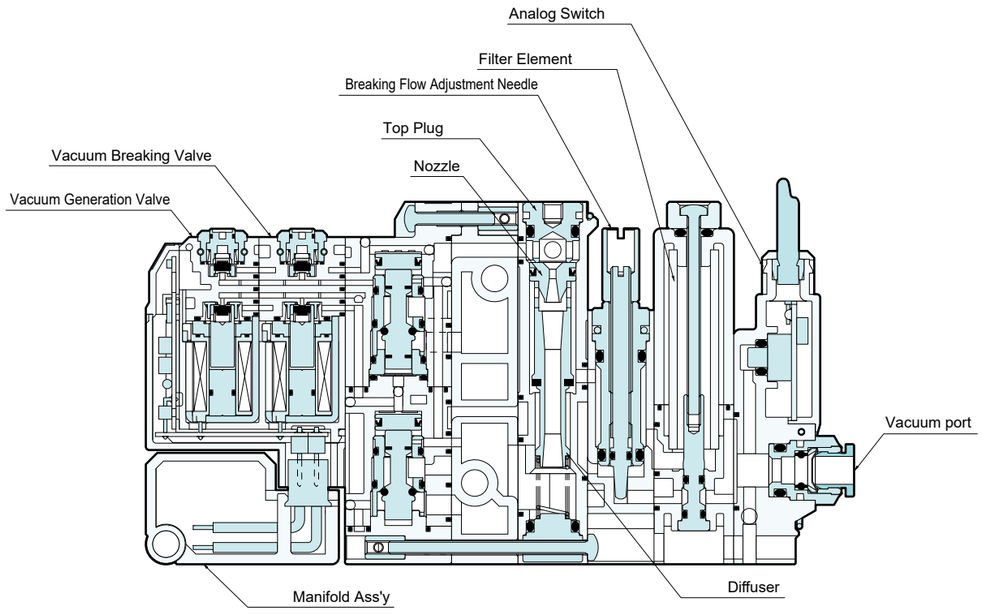
PV Port øD1	C1	L1	V Port øD2	C2	L2	L3	L4
6	17	6.6	4	11.2	6.1	5.4	1.9
8	18.2	8.1	6	10	8.9	8.2	4.7
10	20.7	11.7	M5 (Female thread)	-	4	3.3	-0.2

Internal Structure Diagram

●Without Vacuum Pressure Switch

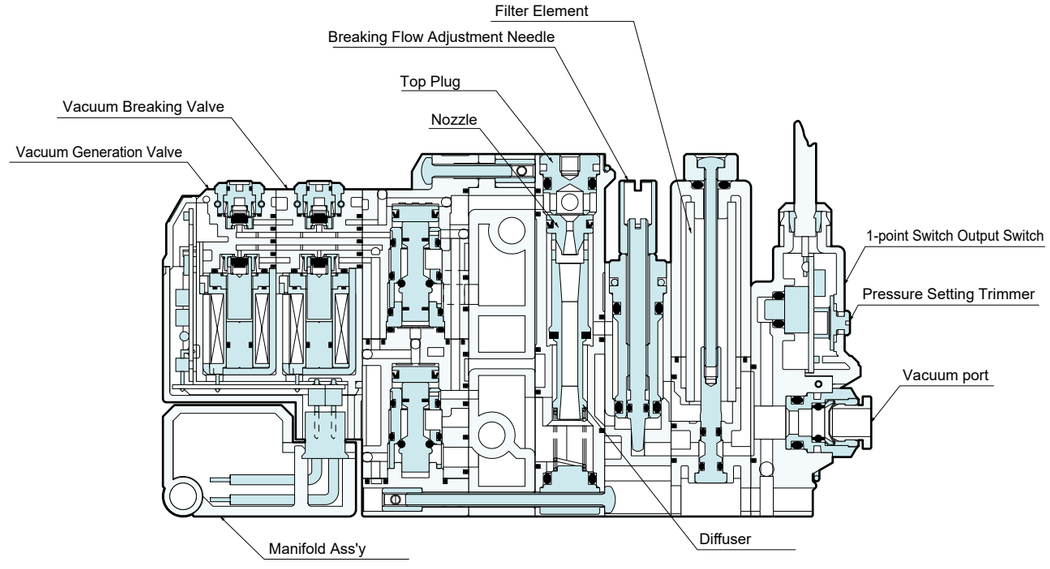


●Vacuum pressure switch with analog output

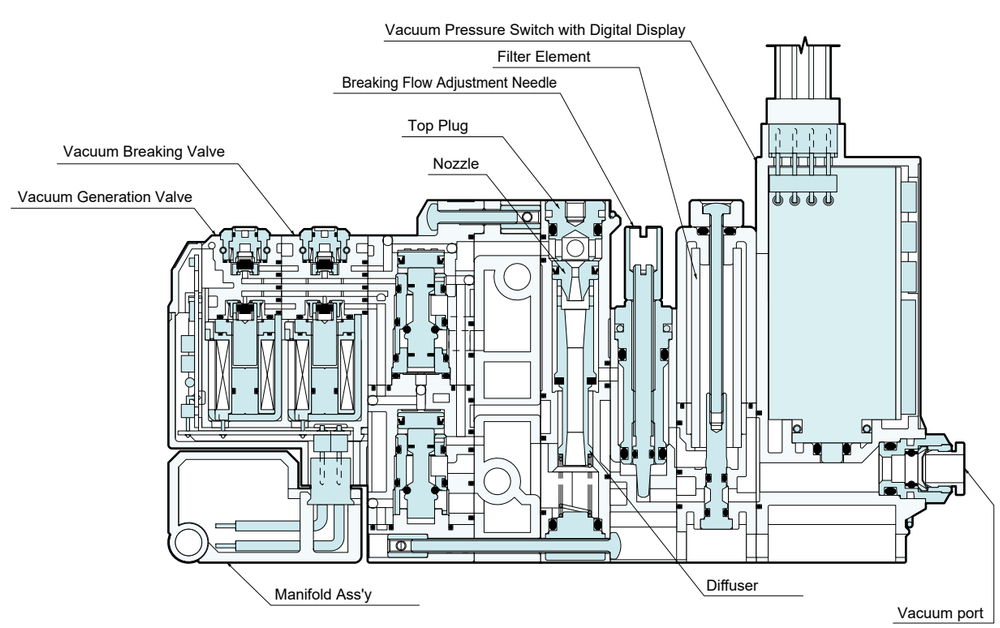


Internal Structure Diagram

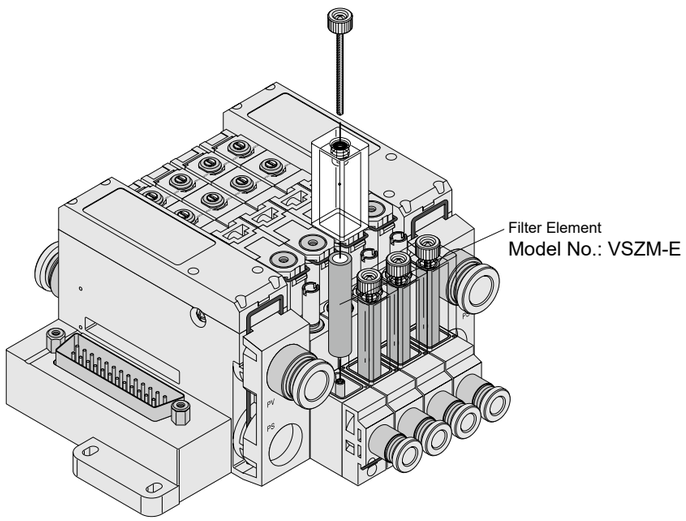
●Vacuum pressure switch with 1-point switch output

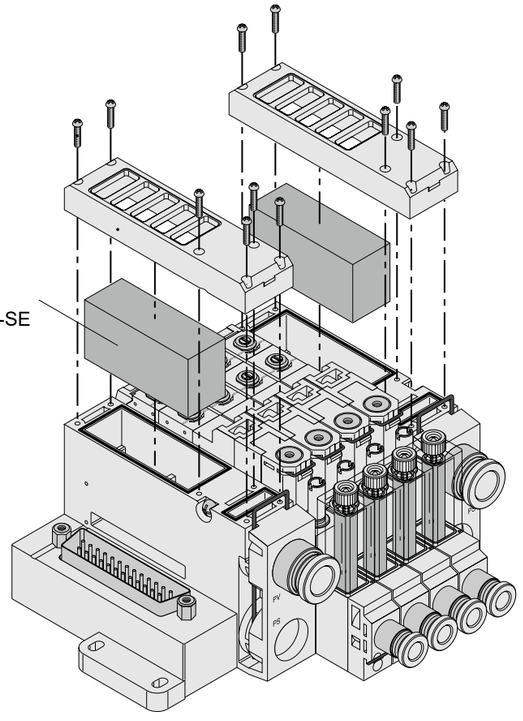


●Vacuum Pressure Switch with Digital Display



Maintenance Parts





MEMO

Vacuum Components
Ejector System
VSY
VSH
VSU
VSB
VSC
VSG
VSK/ VSKM
VSJ/ VSJM
VSN/ VSNM
VSX/ VSXM
VSQ
VSZM
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: VSZM Series

Design / Selection

Warning

■For the self-holding type (VSZ-D...), the position of the switching valve (main valve) after stopping the pilot air supply is in a neutral state (including when first used after shipment). When re-supplying pilot air, be sure to apply a signal to the pilot valve or perform manual operation to reliably switch to the required state.

■When using the self-holding type (VSZ-D...) amidst vibration, install it so that the direction of vibration is perpendicular to the switching valve (main valve).

Caution

■When attaching/detaching the cartridge fitting and ejector top plug, remove any adhered matter from the seal part, then securely insert the stop pin. Perform this after carefully reading and understanding the precautions for use in the main text.

■For wiring D-sub connectors and flat cable connectors, carefully check the electrical circuit diagram in the handling precautions/instruction manual before wiring.

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

■As the number of manifold stations increases, satisfactory performance may not be obtained or trouble may occur due to the following reasons. Please consult your nearest sales office.

There is a limit to the number of stations for which performance can be ensured(number of simultaneously operable stations) depending on nozzle size, vacuum characteristics, manifold specifications, etc. Please inquire at your nearest sales office.

1. Degradation of vacuum performance due to insufficient supply air
   - Countermeasures -
   ①Check supply air capacity, etc.
   ②Keep piping as short as possible.
   ③Use larger fitting sizes.
2. Degradation of vacuum performance due to insufficient exhaust port capacity, or interference of exhaust air with other stations
   Cause: Cause: Insufficient capacity of silencer or piping leads to large exhaust resistance and performance degradation.
   - Countermeasures -
   ①Centralized piping (exhaust) specification → Use thicker piping and make it as short as possible.
   ②Avoid locations where the exhaust section faces a wall.
   ③Reduce the number of simultaneously operating units.

For manifold type vacuum ejectors, when operating and non-operating ejectors coexist, exhaust air during vacuum generation may flow around to non-operating ejectors and be output from the vacuum port. This can cause problems, such as blowing away lightweight workpieces, so do not use under conditions where this could be an issue.

How to Create VSZM Mixed Manifold Specification Sheet

●Mix manifold model No.(example)

❶	❷	❸	❹	❺	❻	❼	❽	❾	❿	⓫
VSZM- Z	00	Z	- CX	8	6	- 3	- 5	- Z	- F	26

●Mix manifold specifications sheet (example)

Vacuum Ejector Model No. ❶ ❷ ❸ ❹ ❾	Arrangement Position 1	2	3	4	5	6	7	8	9	10	11	12	Quantity
VSZM- H 05 B - 4 - DW	○	○											2
VSZM- H 07 B - 6 - DA			○	○									2
VSZM- H 07 D - 6 -					○								1
VSZM- - - - - -													
VSZM- - - - - -													

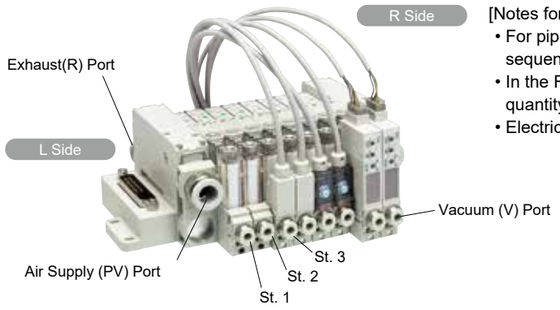
[For Fitting Mix Specification with Output Port Size Only]

●Mix manifold model No.(example)

❶	❷	❸	❹	❺	❻	❼	❽	❾	❿	⓫
VSZM- H	07	B	- CX	8	5	- 3	- 5	- DW	- F	26

●Mix manifold specifications sheet (example)

Vacuum Ejector Model No. ❶ ❷ ❸ ❹ ❾	Arrangement Position 1	2	3	4	5	6	7	8	9	10	11	12	Quantity
VSZM- H 07 B - 6 - DW	○			○									2
VSZM- H 07 B - 4 - DW		○			○								2
VSZM- H 07 B - M5 - DW			○										1
VSZM- - - - - -													
VSZM- - - - - -													



[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.
- Electrical connector assembly is fixed on the L side of the manifold.

VSZM Mixed Manifold Specification Sheet

Contact Person | Quantity Set | Delivery Date (Month/Day) | Date of Issue

Company

Voucher No. | Order Received No. | Attn:

Order No.

●Mix manifold model No.

❶	❷	❸	❹	❺	❻	❼	❽	❾	❿	⓫
VSZM-			-			-	-	-	-	

Vacuum Characteristics *1, 2	
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)

Nozzle Diameter *1, 2	
05	ø0.5
07	ø0.7
10	ø1.0
00	For mixed specifications (Provide details in the specification sheet)

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

❹ Vacuum Port (V)	
4	ø4 Push-in fitting
6	ø6 Push-in fitting
M5	M5×0.8
CX	For fitting mix(Provide details in the specification sheet)

❺ Air Supply Port (PS)	
6	ø6 Push-in fitting
8	ø8 Push-in fitting
10	ø10 Push-in fitting

❻ Exhaust Port (EX)	
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

❼ Solenoid Valve Voltage	
3	24 VDC

Number of Manifold Stations	
2 to 12	2 stations to 12 stations

❾ Vacuum Pressure Switch Specifications	
Blank	Without Vacuum Pressure Switch
DW	2-point Output with Digital Display
DA	1-point Output + Analog Output with Digital Display
S	NPN Output 1 point without Display
V1	Analog Output for Negative Pressure
R1	Analog Output for Compound Pressure
Z	For mixed specifications (Provide details in the specification sheet)

❿ Wiring Specification	
F	Flat Cable Connector
D	D-sub Connector

⓫ Connector Pin Count Specification	
Blank	For Flat Cable Connector Specification
	2 to 4 stations 10-pin
	5 to 9 stations 20-pin
	10 to 12 stations 26-pin
	For D-sub Connector Specification
	2 to 4 stations 9-pin
	5 to 12 stations 25-pin
20	20-pin Flat Cable Connector (max. 9 stations)
26	26-pin Flat Cable Connector (max. 12 stations)
25	25-pin D-sub Connector (max. 12 stations)

Notes for model No. Selection

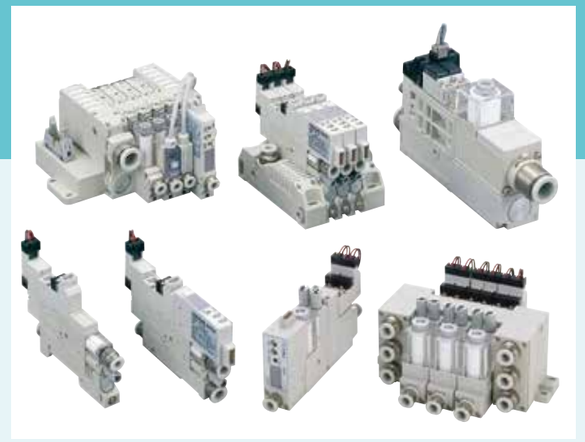
*1: The combinations of ❶ 'E' and ❷ '05', and ❶ 'L' and ❷ '10' cannot be selected.
*2: When ❶ is 'Z', only ❷ '00' can be selected. When ❷ is '00', only ❶ 'Z' can be selected.

●Mix manifold specifications sheet

Vacuum Ejector Model No. ❶ ❷ ❸ ❹ ❾	Arrangement Position 1	2	3	4	5	6	7	8	9	10	11	12	Quantity
VSZM- - - - - -													
VSZM- - - - - -													
VSZM- - - - - -													
VSZM- - - - - -													
VSZM- - - - - -													

Vacuum Pump System
VS□P

■ Vacuum Components



CONTENTS

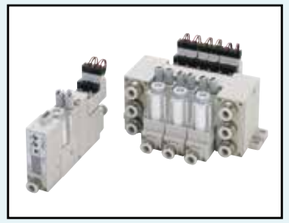
System Table	316
●20 mm width integrated(VSJP/VSJPM)	318
●10.3 mm width integrated(VSNP/VSNPM)	334
●10.5 mm width integrated(VSXP/VSXPM)	354
●31.5 mm width single unit dedicated type (VSQP)	382
●11 mm pitch manifold dedicated type (VSZPM)	392

System Table

Vacuum Pump System
Vacuum Switching Unit

● : Standard equipment ○: Option

Model	Series Name		Discrete/width dimension(mm)	Single Unit Weight (g)	Manifold	Component Devices: With Valve: For Generation	With Valve: For Breaking	With Switch: Switch Output	With Switch: Analog Output	With Vacuum Filter	With Silencer	Check Valve	Vacuum Valve Effective Area	Listed Page
Vacuum Pump System — Vacuum Switching Unit	**VSJP/VSJPM Series** Prevents workpiece blow-off through flow rate and pressure control of break air • Self-holding type compatible with energy saving also available for vacuum generation valve. • Vacuum break circuit relief function achieves shorter vacuum break time.		20	125.5 to 158.5	○	●	●	○	○	●			3.5 mm² (ø4), 5 mm² (ø6)	318
	VSNP/VSNPM Series High-speed and stable response • Compact and lightweight. Especially compact height dimension. • Direct acting valve adopted for main valve, ON/OFF response = 5 msec		10.3	52.5 to 171	○	●	●	○	○ (Also available with digital display)				0.7 mm²	334
	VSXP/VSXPM Series Lightweight/Compact Type • Mounting options: Direct mount type and DIN rail-type available. • 3-way valve specification significantly shortens vacuum break time by making the vacuum supply valve a 3-way valve.		10.5	78 to 88	○	●	●	○ (Also available with digital display)	○ (Also available with digital display)	●			2-Way Valve Specification : 3.5 mm² (ø4), 4.5 mm² (ø6) 3-Way Valve Specification : 3.0 mm² (ø4), 3.6 mm² (ø6)	354
	VSQP Series Large vacuum unit optimal for controlling large flow rates • Vacuum supply valve available in Normally Open type and Normally Closed type.		31.5	365 to 436		●	●	○ (With digital display)		●			16.5 mm²	382
	VSZPM Series Manifold Dedicated Type Wiring Saving (Flat Cable / D-sub Connector) Compatible • Installation of atmospheric release valve enables high flow rate atmospheric breaking, shortening vacuum break time. • Valve power consumption 0.55 W, self-holding type also selectable for energy saving compatibility.		11	Please inquire	●	●	●	○	○	●			4.5 mm²	392



20 mm Width Integrated Type Vacuum Switching Unit

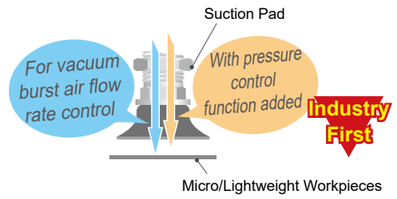
VSJP Series

RoHS

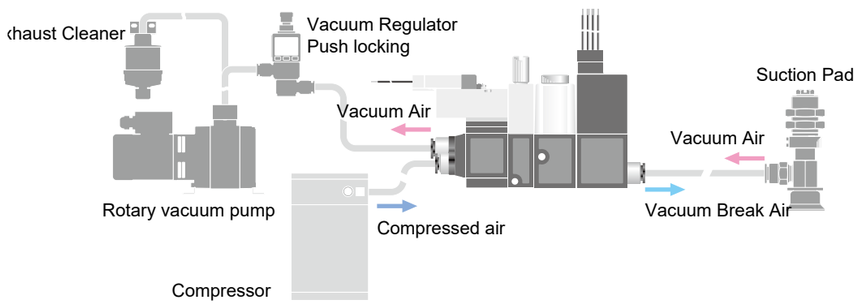
Integrated type vacuum switching unit with abundant variations including break air flow rate & pressure adjustment needle

Adds pressure control to conventional vacuum break air flow control

Prevents workpiece blow-off.



Incorporates a relief function (function to release excess pressure) in the vacuum break circuit, achieving shorter vacuum break time.



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

Self-holding (double solenoid valve) is optimal for applications involving long-duration vacuum generation and supports energy saving.

Manifold type also available (max. 10 stations)

2 types of output port piping outlets available: front and back.

Uses LED display for pressure sensor indication, improving visibility.

2 types available: With 2-point switch output and with analog output. Also, connector system adopted for wiring, facilitating wiring layout.

Model No. Indication Method (Single Unit Type)

●20 mm width integrated vacuum switching unit single unit

VSJP - A 6 6 6 - 3 - W

- VSJP: Model No.
- A: ❶ Valve-type
- 6: ❷ Vacuum Port (V)
- 6: ❸ Air Supply Port (PS)
- 6: ❹ Vacuum Supply Port (PV)
- 3: ❺ Solenoid Valve Voltage
- W: ❻ Vacuum Pressure Switch Specifications

❶ Valve-type

Code	Content
A	Normally Open Type
B	Normally Closed Type
D	Self-holding Type

❷ Vacuum Port (V)

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

❸ Air Supply Port (PS)

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

❹ Vacuum Supply Port (PV)

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

❺ Solenoid Valve Voltage

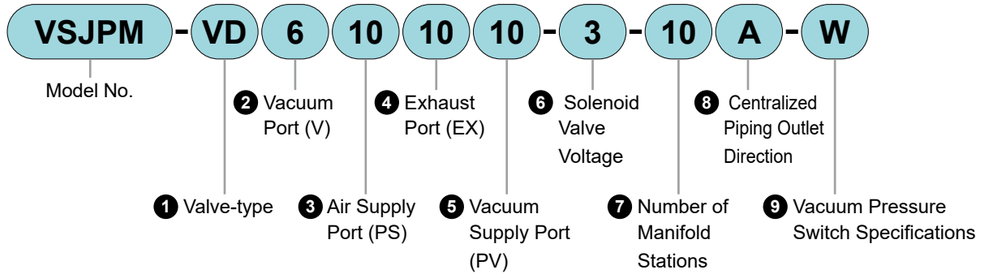
Code	Content
1	100 VAC
3	24 VDC

❻ Vacuum Pressure Switch Specifications

Code	Content
Blank	Without Vacuum Pressure Switch
W	NPN Output 2 points with Digital Display
A	NPN Output 1 point + Analog Output with Digital Display

model No. Indication Method (Manifold Type)

●20 mm width integrated vacuum switching unit manifold



1 Valve-type

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

*: For mixed specifications, indicate using the "Mixed Manifold Specification Sheet". For details, refer to P. 332, 333.

2 Vacuum Port (V)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
8	ø8 Push-in fitting
CX	For fitting mix(Provide details in the specification sheet)

*: For mixed specifications, indicate using the "Mixed Manifold Specification Sheet". For details, refer to P. 332, 333.

3 Air Supply Port (PS)

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

4 Exhaust Port (EX)

Code	Content
6	ø6 Push-in fitting centralized exhaust
8	ø8 Push-in fitting centralized exhaust
10	ø10 Push-in fitting centralized exhaust

5 Vacuum Supply Port (PV)

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

6 Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC

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

● Structure usable in rechargeable battery manufacturing processes

VSJP - ..... - P4*

VSJPM - ..... - P4*

*Please inquire for details.

7 Number of Manifold Stations

Code	Content
2	2 stations
to	t o
10	10 stations

8 Centralized Piping Outlet Direction

Code	Content
A	Vacuum Port Side
B	Supply Port Side

9 Vacuum Pressure Switch Specifications

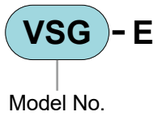
Code	Content
Blank	Without Vacuum Pressure Switch
W	NPN Output 2 points with Digital Display
A	NPN Output 1 point + Analog Output with Digital Display
Z	For mixed specifications (Provide details in the specification sheet)

*: For mixed specifications, indicate using the "Mixed Manifold Specification Sheet". For details, refer to P. 332, 333.

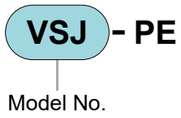
Maintenance Part Model No.

*For details of the maintenance parts, refer to P. 329.

●Filter element for vacuum side



●Burst side filter element



Specifications

Item	VSJP
Operating Fluid	Air
Operating Pressure MPa	0.3 to 0.7
Ambient Temperature/Fluid Temperature °C	5 to 50
Vacuum pressure kPa	-100 to 0

Valve (for Vacuum Generation, Vacuum Breaking) Specifications

●Pilot solenoid valve

Item	Vacuum Supply Valve		Vacuum Breaking Valve	
ValvE-type and Operation Method	Direct acting poppet valve			
Rated Voltage V	24 VDC	100 VAC	24 VDC	100 VAC
Voltage Fluctuation Range V	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	Push-type non-locking type			
Operation Indicator	When coil is energized: Red LED lights up			
Wiring Method	Connector (cable length: 500 mm)			
	Red: 24 VDC Black: COM	Blue	Red: 24 VDC Black: COM	Blue

●Main valve

Item	Vacuum Supply Valve		Vacuum Breaking Valve
ValvE-type and Operation Method	Pilot operated poppet valve		
Proof Pressure MPa	1.05		
Valve Type	Self-holding, Normally Closed, Normally Open		Normally Closed
Lubrication	Not required		
Effective Area (mm²)	Air Supply (PS) Port Size	ø4: 3.5	1
		ø6: 5	

Vacuum Pressure Switch with LED Display Specifications

Item		With 2-point Switch Output (-W)	With Analog Output (-A)
Factory Set Value (kPa)		-50 (SW1), -10 (SW2)	-50
Current Consumption mA		≤ 40	
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 freezing)	
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. max.)	Variable (Approx. 0 to 15% of set value)
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 Voltage V	-	1±0.1
	Span Voltage V	-	4±0.1
	Output Current mA	-	≤ 1 (Load resistance ≥ 5 kΩ)
	Linearity/Hysteresis	-	±0.5% F.S. max.
Response time ms		2 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% of set value)

Vacuum Breaking Function Specifications

Item		Vacuum Breaking Function
Break Air Flow Rate	L/min (ANR)	0 to 50 (at 0.5 MPa supply pressure)
Breaking Air Relief Valve Structure		Elastomer seal, poppet valve
Relief Pressure Setting Range	kPa	-25 to 25

Vacuum Filter Specifications

Item		Vacuum Filter
Element Material		Polyvinyl formal
Filtration Rating	μm	10
Filtration area	mm²	1,130

Weight Table

①Single Unit

VSJP		Weight (g)	Remarks
With	VSJP-□-□□□□-□□-□	152	Vacuum Port: ø4, ø6
Sensor	VSJP-□-8□□□-□□-□	159	Vacuum Port: ø8
Without	VSJP-□-□□□□-□□	126	Vacuum Port: ø4, ø6
Sensor	VSJP-□-8□□□-□□	132	Vacuum Port: ø8

②Manifold Intermediate Block

	Weight (g)	Remarks
Manifold Intermediate Block	19	For 1 station

③Manifold Side Block

VSJP	Weight (g)	Remarks
Vacuum Switching Unit	106	Number of Cartridges Used: 6 pcs

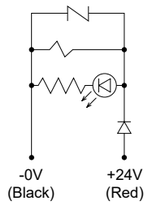
④Cartridge (Input/Exhaust Port)

	Weight (g)	Remarks
Push-in fitting for ø6	12	For ø6 mm
Push-in fitting for ø8	10	For ø8 mm
Push-in fitting for ø10	13	For ø10 mm

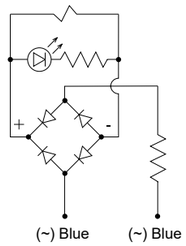
■ Use the calculation formula below to determine the Weight of the manifold type.
Manifold Weight =(①VSJP Unit Single + ②Manifold Intermediate Block) × No. of stations + ③Manifold Side Block + ④Cartridge × quantity used

Electrical Circuit (Solenoid Valve)

●24 VDC specification Valve for vacuum supply and vacuum burst

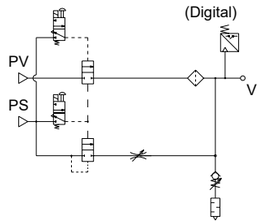


●100 VAC specification Valve for vacuum supply and vacuum burst

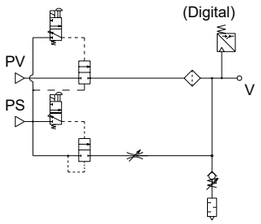


Circuit Diagram

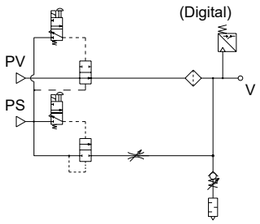
●Self-holding Type



●Normally Closed Type

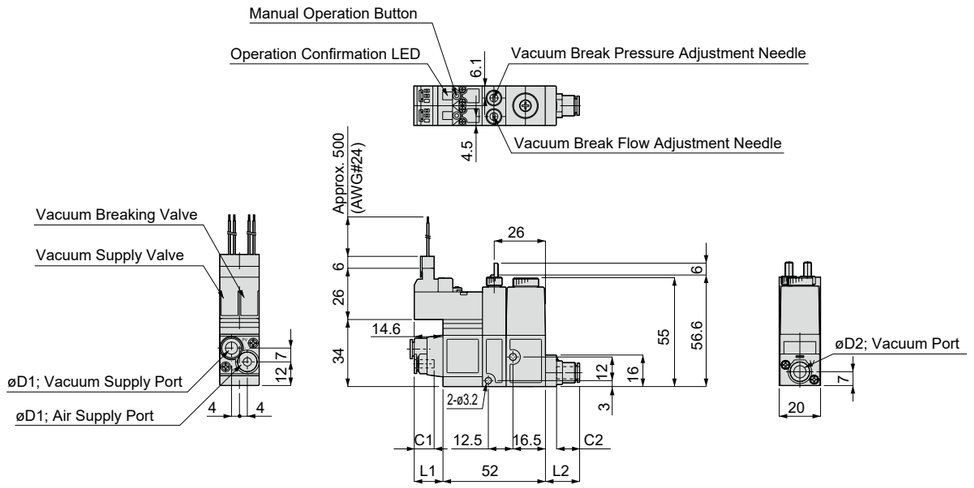


●Normally Open Type



External Dimensions Diagram (Single Unit Type)

●Without Vacuum Pressure Switch



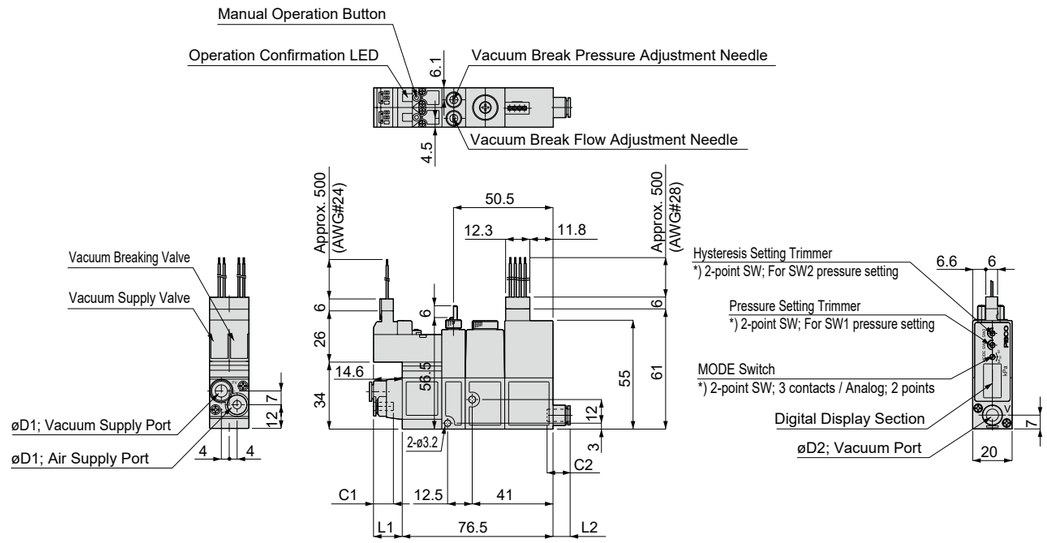
Unit: mm

Air Supply Port Bore size øD1	C1	L1
4	11.5	14.9
6	11.9	17.3

Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	14.6
6	11.9	17.4
8	18.2	25.8

●With vacuum pressure switch



Unit: mm

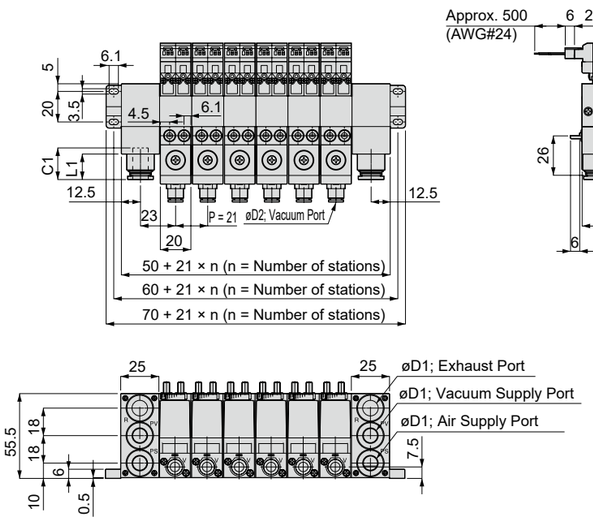
Air Supply Port Bore size øD1	C1	L1
4	11.5	14.9
6	11.9	17.3

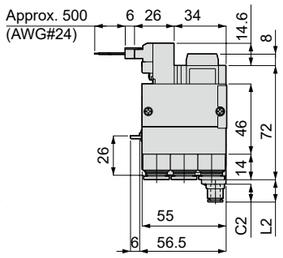
Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	6.1
6	11.9	8.9
8	18.2	17.3

Outline Dimension Drawing (Manifold Type VSJPM)

●Common exhaust, common piping leadout direction on vacuum port side, without vacuum pressure switch





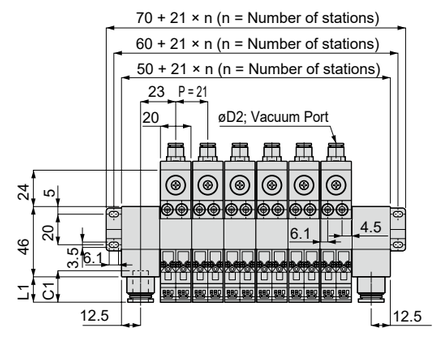
Unit: mm

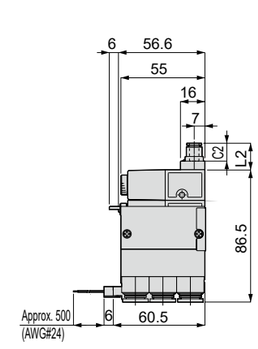
Air Supply Port Bore size øD1	C1	L1
6	17	11.6
8	18.2	13.1
10	20.7	16.7

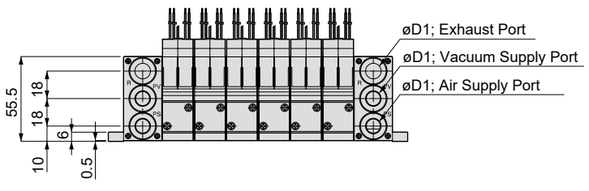
Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	14.6
6	11.9	17.4
8	18.2	23.0

●Common exhaust, common piping leadout direction on supply port side, without vacuum pressure switch







Unit: mm

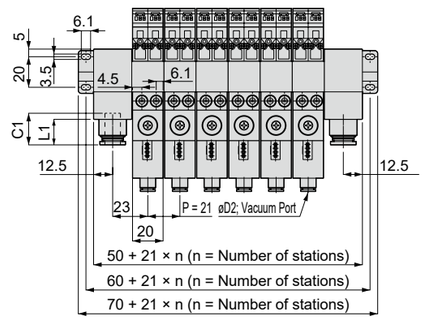
Air Supply Port Bore size øD1	C1	L1
6	17	11.6
8	18.2	13.1
10	20.7	16.7

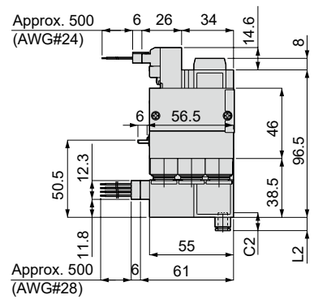
Unit: mm

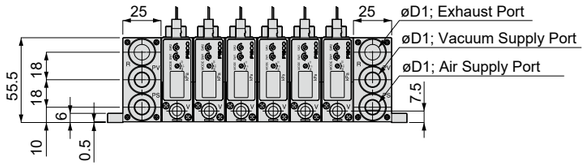
Vacuum port Bore size øD2	C2	L2
4	11.2	14.6
6	11.9	17.4
8	18.2	23.0

Outline Dimension Drawing (Manifold Type VSJPM)

●Common exhaust, common piping leadout direction on vacuum port side, with vacuum pressure switch







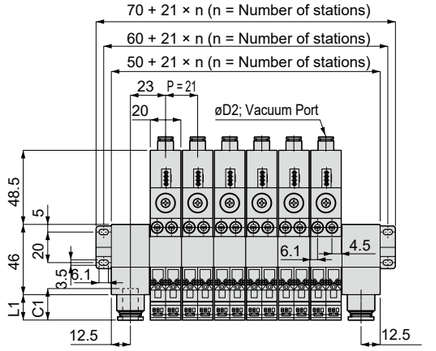
Unit: mm

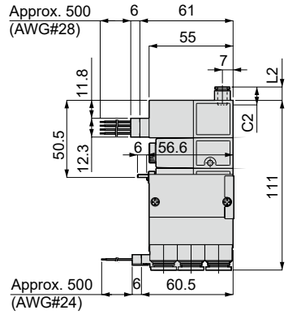
Air Supply Port Bore size øD1	C1	L1
6	17	11.6
8	18.2	13.1
10	20.7	16.7

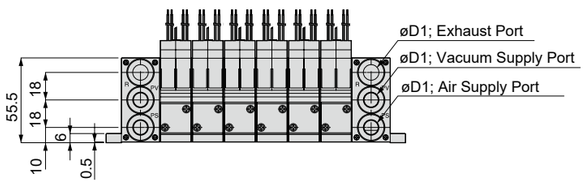
Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	6.1
6	11.9	8.9
8	18.2	17.3

●Common exhaust, common piping leadout direction on supply port side, with vacuum pressure switch







Unit: mm

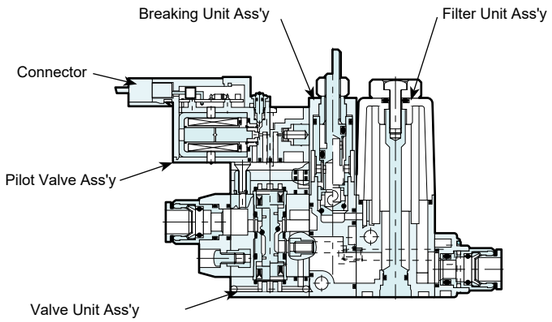
Air Supply Port Bore size øD1	C1	L1
6	17	11.6
8	18.2	13.1
10	20.7	16.7

Unit: mm

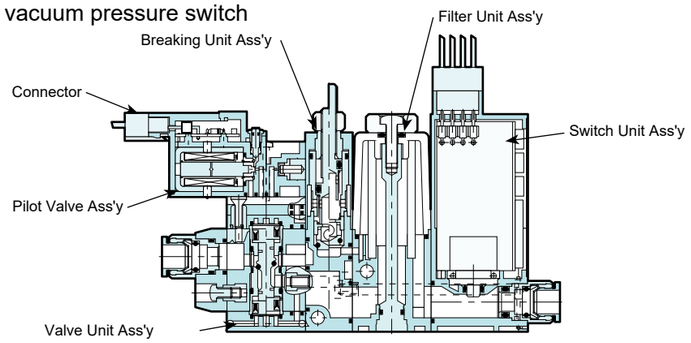
Vacuum port Bore size øD2	C2	L2
4	11.2	6.1
6	11.9	8.9
8	18.2	17.3

Internal Structure Diagram

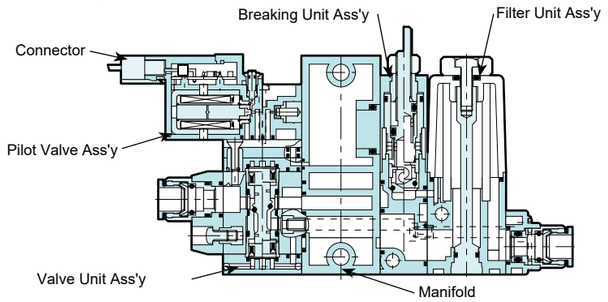
●Single unit, without vacuum pressure switch



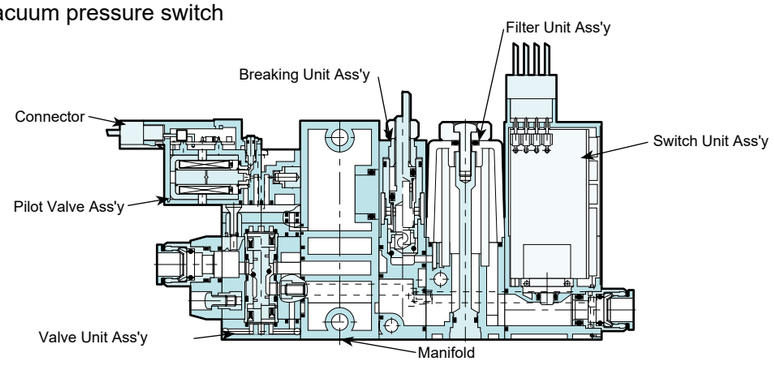
●Single unit, with vacuum pressure switch



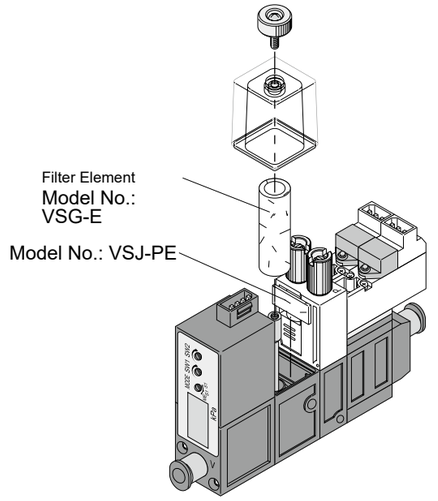
●Manifold, without vacuum pressure switch



●Manifold, with vacuum pressure switch



Maintenance Parts



Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, refer to Intro 15 for details.

Individual Precautions: 20 mm Width Integrated Type VSJP Series

Design / Selection

Warning

■Vacuum retention function allows vacuum leakage. Hence, take other safety measures if vacuum retention for long periods is required.

■For the self-hold (VSJ-□□D...), when resupplying after the pilot air supply is stopped (including the first use after shipment), the position of the switching valve is in neutral. When restarting pilot air supply, be sure to send a signal to the pilot valve or perform switching reliably by manual operation.

Caution

■Fittings When replacing the supply port sheath block, make sure that the packing has not fallen out, remove the deposits in the vicinity, then securely tighten it at the specified tightening torque.

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

MEMO

Vacuum Components
Vacuum Pump System
VSJP/ VSJPM
VSNP/ VSNPM
VSXP/ VSXPM
VSQP
VSZPM
Ending

How to Create VSJPM Mixed Manifold Specification Sheet

●Mix manifold model No.(example)

VSJPM - ❶Z ❷CX ❸8 ❹8 ❺8 - ❻3 - ❼5 ❽B - ❾Z

●Mix manifold specifications sheet (example)

Vacuum Switching Unit Model No. ❶❷❾	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Qty
VSJPM - B 4 - W	○	○	○								3
VSJPM - B 6 - A				○							1
VSJPM - B 8 - W					○						1
VSJPM -											
VSJPM -											

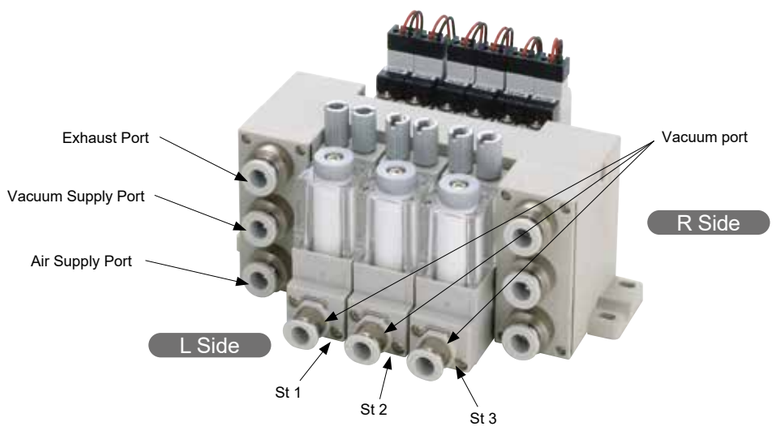
[For Fitting Mix Specification with Output Port Size Only]

●Mix manifold model No.(example)

VSJPM - ❶B ❷CX ❸6 ❹8 ❺8 - ❻3 - ❼5 ❽B - ❾W

●Mix manifold specifications sheet (example)

Vacuum Switching Unit Model No. ❶❷❾	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Qty
VSJPM - B 4 - W	○		○		○						3
VSJPM - B 6 - W		○									1
VSJPM - B 8 - W				○							1
VSJPM -											
VSJPM -											



*With the vacuum port facing forward, the stations are numbered St. 1, St. 2... St. 10, starting from the L (left) side.

[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.

VSJPM Mixed Manifold Specification Sheet

Contact Person ____ Quantity Set ____ Delivery (Month/Day) ____

Voucher No. ____ Order Received No. ____

Date of Issue ____
Company ____
Attn: ____
Order No. ____

●Mix manifold model No.

VSJPM - ❶ ❷ ❸ ❹ ❺ - ❻ - ❼ ❽ - ❾

❶ Valve-type

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

❷ Vacuum Port (V)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
8	ø8 Push-in fitting
CX	For fitting mix(Provide details in the specification sheet)

❸ Air Supply Port (PS)

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

❹ Exhaust Port (EX)

Code	Content
6	ø6 Push-in fitting centralized exhaust
8	ø8 Push-in fitting centralized exhaust
10	ø10 Push-in fitting centralized exhaust

❺ Vacuum Supply Port (PV)

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

❻ Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC

❼ Number of Manifold Stations

Code	Content
2 to 10	2 to 10 Stations

❽ Centralized Piping Outlet Direction

Code	Content
A	Vacuum Port Side
B	Supply Port Side

❾ Vacuum Pressure Switch Specifications

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

●Mix manifold specifications sheet

Vacuum Switching Unit Model No. ❶❷❾	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSJPM -											
VSJPM -											
VSJPM -											
VSJPM -											
VSJPM -											



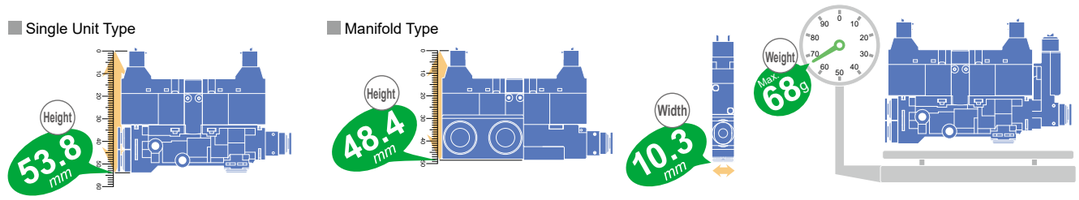
10.3 mm Width Compact Integrated Type Vacuum Switching Unit

VSNP Series

Integrated type vacuum switching unit achieving high-speed and stable response
Large flow rate during vacuum breaking, optimal for quick Pick & Place operations

Ideal for customers with limited installation space

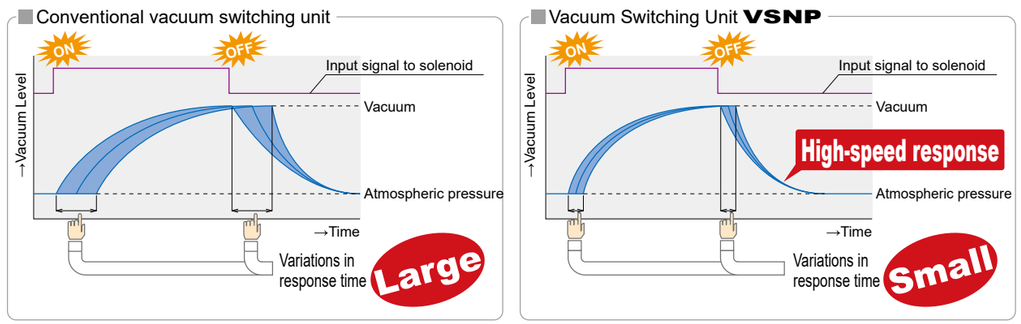
Compact and lightweight, especially with reduced product height.



*Excluding pressure sensor with LED display.

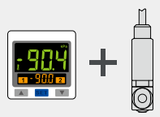
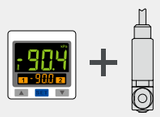
Achieves high-speed and stable responsE(ON/OFF ≤ 5 msec)

Direct acting valve adopted for main valve.



4 types of analog output pressure sensors available

- Analog Output Sensor for Negative Pressure
- Separate Digital Pressure Indicator + Analog Output Sensor for Negative Pressure
- Analog Output Sensor for Compound Pressure
- Separate Digital Pressure Indicator + Analog Output Sensor for Compound Pressure

	For Negative Pressure	For Compound Pressure
Analog Switch		
SeparatE-type Digital Pressure Indicator + Analog Switch		

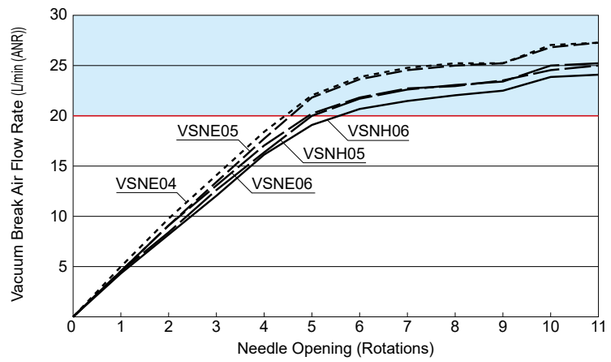
Pressure sensor lead wires are connectorized. Improved wiring work and maintainability
4 types of connector cable lengths available

Optimal length can be selected from 500, 1,000, 2,000, 3,000 mm according to the installation location.

*Only for pressure sensor with analog output for negative pressure, LED display pressure sensor. Pressure sensor with analog output for compound pressure is grommet type.

Vacuum break air flow rate ensures 20 L/min

Supply Pressure: At 0.5 MPa



Vacuum filter is external(purchased separately)

Eliminates inconvenience of filter replacement work due to product miniaturization

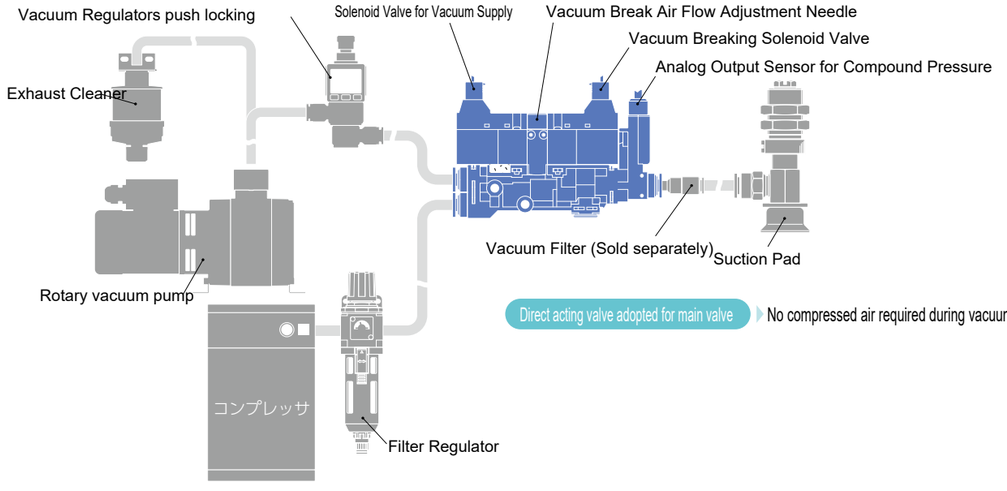
*This product does not have a built-in vacuum filter. To use the product longer, always use our vacuum filter (refer to the right) together with the vacuum piping.

VSFU	VSFJ
Compact Union Type	Socket Type
	
Model No. / VSFU	Model No. / VSFJ
VSFU-2-44	VSFJ-44

Compliant with Global Standards

CE UKCA RoHS

Example Circuit Usage



Direct acting valve adopted for main valve ▶ No compressed air required during vacuum supply

Model No. Notation

●10.3mm width small vacuum unit(vacuum pump system compatible-type)
●Vacuum switching unit single unit

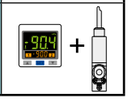
VSNP - 4 4 4 - 3 - V1C0

- VSNP: Model No.
- 4 (1st): ❶ Vacuum Port (V)
- 4 (2nd): Vacuum Supply Port (PV): ø4 Push-in straight fitting
- 4 (3rd): Air Supply Port for Vacuum Breaking: ø4 Push-in straight fitting
- 3: Solenoid Valve Voltage: 24 VDC
- V1C0: ❷ Vacuum Pressure Switch Specifications

❶ Vacuum Port (V)

Code	Content
4	*4 Push-in straight fitting
4L	*4 Push-in elbow fitting

❷ Vacuum Pressure Switch Specifications

Type	Lead Wire(mm)	Separate LED Indicator	Code	
Without Vacuum Pressure Switch			Blank	
Analog Output for Negative Pressure	500		V1C0	
	1,000		V1C1	
	2,000		V1C2	
	3,000		V1C3	
	500	●	V2C0	
	1,000	●	V2C1	
	2,000	●	V2C2	
	3,000	●	V2C3	
Analog Output for Compound Pressure Grommet Lead Wire	3,000		R1	
	3,000	●	R2	

Maintenance Part Model No.

For details of the *maintenance parts, Refer to P. 349 .

●Silencer Element

VSNP - E
Model No.

●Dedicated bracket (common to VSN and VSNP)

VSN - B
Model No.

●Separate Digital Indicator

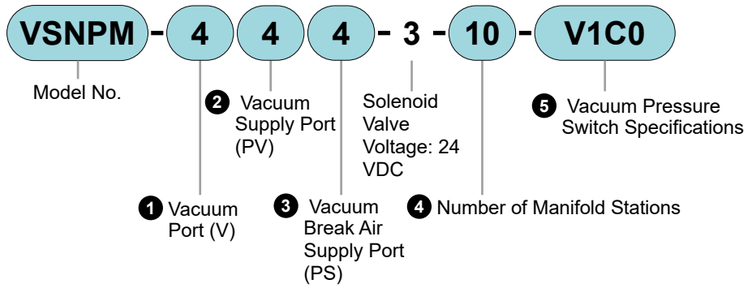
VSN - SED - 31N
Model No.

●Sensor connection connector (e-con)

VSN - EC
Model No.

Model No. Notation

●10.3mm width small vacuum unit(vacuum pump system compatible-type)
●Vacuum switching unit manifold



❶ Vacuum Port (V)

Code	Content
4	*4 Push-in straight fitting
4L	*4 Push-in elbow fitting
CX	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, refer to P. 352, 353.

❷ Vacuum Supply Port (PV)

Shape	Size	Position	Code	
Straight Fitting	ø4	R Side Only	**4R**	
	ø6		**6R**	
	ø8		**8R**	
	ø4	Both Sides	**4**	
	ø6		**6**	
	ø8		**8**	
	ø4	L Side Only	**4H**	
	ø6		**6H**	
	ø8		**8H**	
Elbow Fitting	ø4	R Side Only	**4LR**	
	ø6		**6LR**	
	ø8		**8LR**	
	ø4	Both Sides	**4L**	
	ø6		**6L**	
	ø8		**8L**	
	ø4	L Side Only	**4LH**	
	ø6		**6LH**	
	ø8		**8LH**	

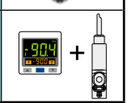
❸ Vacuum Break Air Supply Port (PS)

Shape	Size	Position	Code	
Straight Fitting	ø4	R Side Only	**4R**	
	ø6		**6R**	
	ø8		**8R**	
	ø4	Both Sides	**4**	
	ø6		**6**	
	ø8		**8**	
	ø4	L Side Only	**4H**	
	ø6		**6H**	
	ø8		**8H**	
Elbow Fitting	ø4	R Side Only	**4LR**	
	ø6		**6LR**	
	ø8		**8LR**	
	ø4	Both Sides	**4L**	
	ø6		**6L**	
	ø8		**8L**	
	ø4	L Side Only	**4LH**	
	ø6		**6LH**	
	ø8		**8LH**	
Common for Vacuum Generation / Vacuum Breaking			**N**	

❹ Number of Manifold Stations

Code	Content
2	2 stations
to	to
10	10 stations

❺ Vacuum Pressure Switch Specifications

Type	Lead Wire(mm)	Separate LED Indicator	Code	
Without Vacuum Pressure Switch			**Blank**	
Analog Output for Negative Pressure	500		**V1C0**	
	1,000		**V1C1**	
	2,000		**V1C2**	
	3,000		**V1C3**	
	500	●	**V2C0**	
	1,000	●	**V2C1**	
	2,000	●	**V2C2**	
	3,000	●	**V2C3**	
Analog Output for Compound Pressure Grommet Lead Wire	3,000		**R1**	
	3,000	●	**R2**	

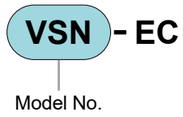
*: For mixed specifications, be sure to fill out the "Mixed Manifold Specification Sheet". For details, refer to P. 352, 353.

Option Single Item Model No.

●Separate Digital Indicator



●Sensor connection connector (e-con)



Specifications

Item	Vacuum Switching Unit VSNP
Operating Fluid	Air
Operating Pressure MPa	0 to 0.55
Ambient Temperature/Fluid Temperature (°C)	5 to 50
Operating Humidity	35 to 85% RH (No condensation)
Protection Structure	Equivalent to IEC Standard IP40
Vibration/Shock Resistance (m/s²)	≤ 50 / ≤ 150
Vacuum pressure kPa	-100 to 0

Valve Specifications

Item \ Unit	Vacuum Switching Unit VSNP	
	Vacuum Supply Valve	Vacuum Breaking Valve
ValvE-type and Operation Method	Direct acting poppet valve	
Rated Voltage V	24 VDC	
Voltage Fluctuation Range	±10%	
Surge Suppressor	Built-in Surge Suppressor	
Power consumption W	Startup: 2.2 Holding: 0.6 (Built-in power saving circuit)	
Operation Indicator	Green LED	
Operating Pressure MPa	0 to 0.55	
Valve Type	Normally Closed Type	
Response Time (*1) ms	Both Vacuum Generation (OFF→ON) / Vacuum Stop (ON→OFF) ≤ 5	
Wiring Method and Lead Wire Length	Connector type: 500 mm	
	Red Lead Wire: +24 VDC, Black Lead Wire: 0V	

*1: Response time is the time until pressure change is detected at the vacuum port when rated pressure and rated voltage are supplied. Vacuum reaching time at the piping end (workpiece) and vacuum breaking time vary depending on conditions such as ejector characteristics, volume (vacuum piping length), and vacuum breaking flow rate.

Vacuum Flow Rate

Item	
Vacuum Flow Rate L/min (ANR)	8 (at -80 kPa supply)

Vacuum Breaking Function

Item	
Break Air Flow Rate L/min (ANR)	0 to 20 (at 0.5 MPa supply)

*: Variable by vacuum break air flow adjustment needle.

Vacuum Pressure Switch Specifications

Item		Negative Pressure Specification(-V1□)	Compound Pressure Specification(-R1)
Power Supply Voltage V		DC 10.8 to 30 (incl. ripple)	
Current Consumption mA		≤ 20	
Pressure Sensing Element		Diffused Semiconductor Pressure Sensor	
Operating Pressure Range kPa		-100 to 0	-100 to 300
Proof pressure kPa		200	600
Storage Temperature Range °C		-20 to 70 (Atmospheric pressure, Humidity: 65% RH or less)	
Operating Temperature Range °C		-10 to 60 (No condensation)	
Operating Humidity Range		35 to 85% RH (No condensation)	
Protection Structure		Equivalent to IEC Standard IP40	
Analog Output	Output Voltage V	1 to 5	
	Zero Point Voltage V	1±0.04 (= at atmospheric pressure)	1±0.1 (= at -100 kPa)
	Maximum Pressure Point Voltage V	4.6±0.04 (= at -100 kPa)	5±0.1 (= at 300 kPa)
	Linearity/Hysteresis	≤ ±0.5% F.S.(at Ta = 25°C)	
	Temperature Characteristics	≤ ±2% F.S.(0 to 50°C, Ta = 25°C)	
	Output Current mA	0.195 or less (load resistance: 10 kΩ or less)	1 or less (load resistance: 5 kΩ or less)
	Output impedance kΩ	1	-

Separated digital display specifications (-V2□, -R2□)

Item		Separate Digital Indicator
Power Supply Voltage V		DC 10.8 to 26.4
Current Consumption mA		≤ 40 max.(No load)
Repeatability		≤ ±0.1% F.S. ±1 digit
Differential		Adjustable
Response time ms		2.5 or less (malfunction prevention function: 25, 100, 250, 500, 1000, 1500 selected)
Output Short-circuit Protection		Yes
Pressure Display	Display Unit	kPa
	Display Magnification Resolution	0.1
	Display Update Rate	5 times/sec
	Display Accuracy	≤ ±1% F.S. ±1 digit
	Operation Indicator Light	Orange 1 & 2 Indicator Light
	Digital Display	Main Display: 2 colors (red, green), sub-display: Orange
Sensor Input Specifications	Voltage input signal V	1 to 5
	Input impedance MΩ	1
Switch Output	Number of Output Points	2-point Output (OUT1, OUT2)
	Output Method	NPN Open Collector
	Switch Rating	30 VDC 125 mA max.
	Internal Voltage Drop V	≤ 1.5
Analog Output	Output Voltage V	≤ 1 to 5 ±2.5% F.S.
	Linearity	≤ ±1% F.S.
	Output impedance KΩ	1
Environmental Resistance	Protection Structure	Equivalent to IEC Standard IP40
	Storage Temperature °C	-10 to 60 (No condensation or freezing)
	Operating Temperature °C	0 to 50
	Operating Humidity	35 to 85% RH (No freezing)
	Dielectric Strength	1000 VAC 1 minute (Between lead wire and case)
	Insulation Resistance	≥ 50 MΩ (500 VDC)(Between lead wire and case)
	Vibration Resistance	Double amplitude 1.5 mm or 100 m/s², 10 to 55 Hz, 2 hours in each X, Y, Z direction
	Shock Resistance	100 m/s², 2 hours in each X, Y, Z direction
Temperature Characteristics		±0.5%F.S. (0 to 50°C, base temperature: 25°C)

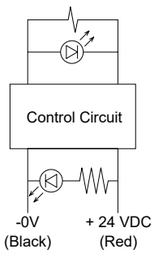
Weight Table

Model No.	Unit Contents	Weight (g)
VSNP-□□□-3-□	Single Unit Type, Air/Vacuum Supply Port Individual, Atmospheric Release, With Sensor	56
VSNP-□□□-3	Single Unit Type, Air/Vacuum Supply Port Individual, Atmospheric Release, Without Sensor	53
VSNPM-□□□-3-2-□	Manifold Type, Air/Vacuum Supply Port Individual, With Sensor	171
VSNPM-□□□-3-2	Manifold Type, Air/Vacuum Supply Port Individual, Without Sensor	164

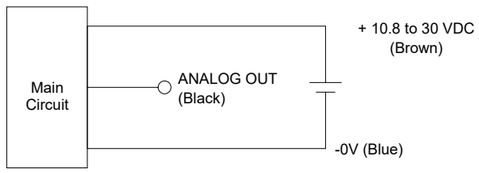
■ For the manifold, with each station increase, a sensor equipped unit can be used for each station increase: 56 g, per station for unit without sensor: 53 g heavier. Example: The weight of vacuum switching unit, with sensor, quadruple manifold is 171 +(2 x 56) = 283 g→2: Weight of 2 units with sensor for 171 g: Add 112 g.

Electrical Circuit Diagram

● Solenoid valve

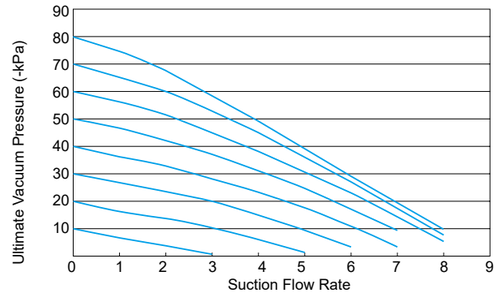


● Vacuum Pressure Switch

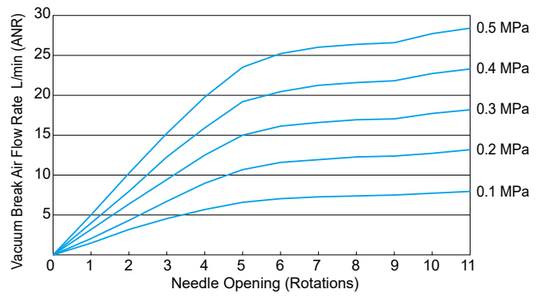


Vacuum Characteristics

VSNP Flow Characteristics



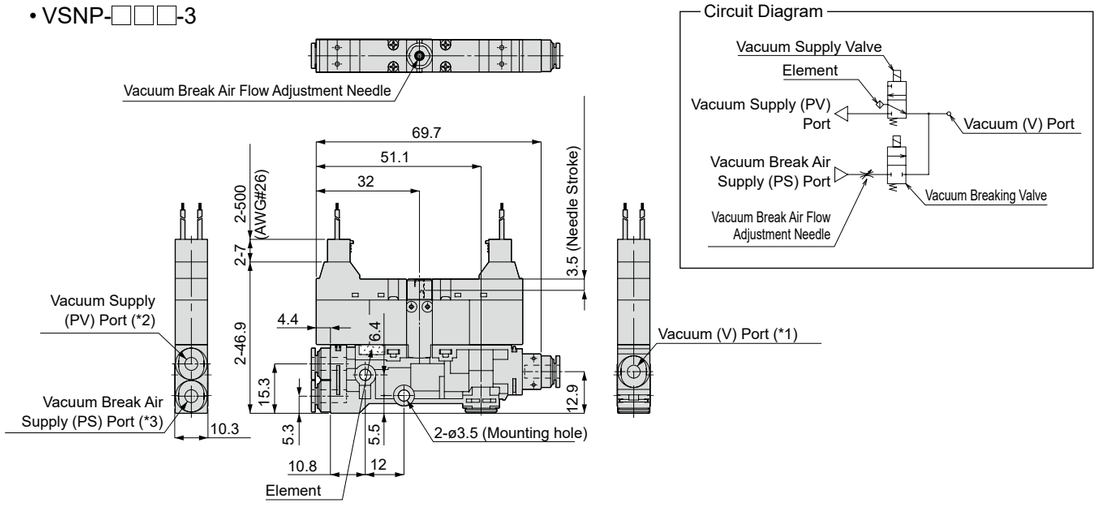
VSNP Vacuum Break Air Flow Characteristics



External Dimensions Diagram (Single Unit Type)

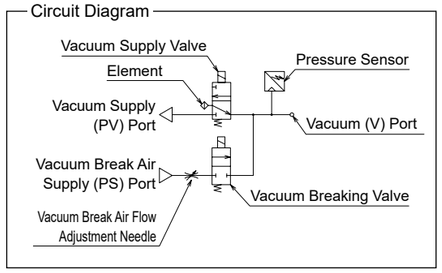
● Without Vacuum Pressure Switch

• VSNP-□□□-3

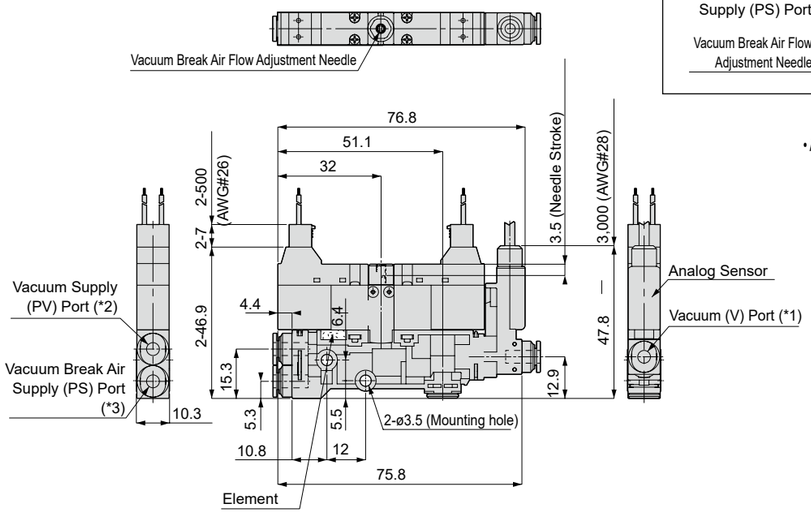


● With vacuum pressure switch

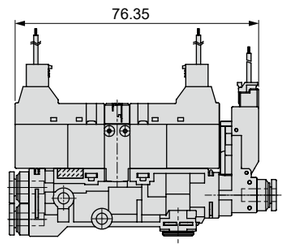
• VSNP-□□□-3-V□□□/R□



• Analog Output Switch for Compound Pressure (R□)



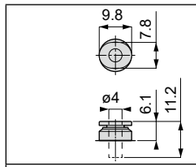
• Analog Output Switch for Negative Pressure (V□□□)



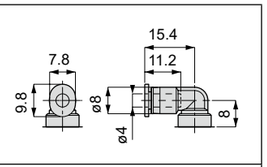
*1: For vacuum (V) port dimensions, Refer to P. 345 Table 1 on .
*2: For vacuum supply (PV) port dimensions Refer to P. 345 Table 2 on the .
*3: For vacuum burst air supply (PS) port dimensions, P. 345 Refer to Table 2 on the .

External Dimension Drawings

● Single unit fitting dimensions

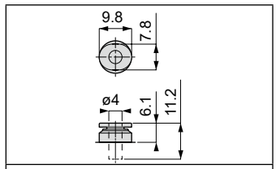


ø4 Push-in straight fitting



ø4 Push-in elbow fitting

Table 1: Vacuum Port Push-in Fitting Shape

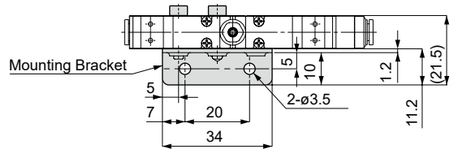


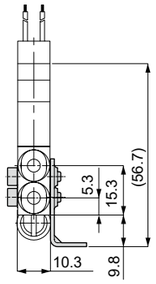
4 (ø4 Straight)

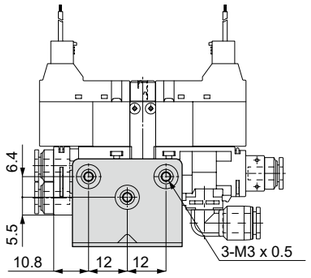
Table 2: Supply Port Push-in Fitting Shape

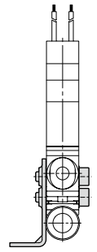
● Dedicated bracket for single unit

• VSN-B





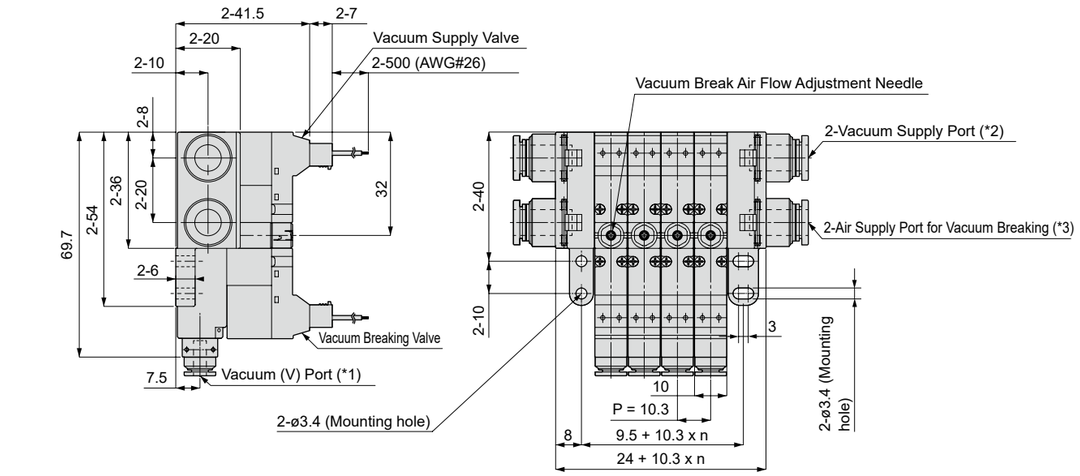




External Dimensions Diagram (Manifold Type)

● Without Vacuum Pressure Switch

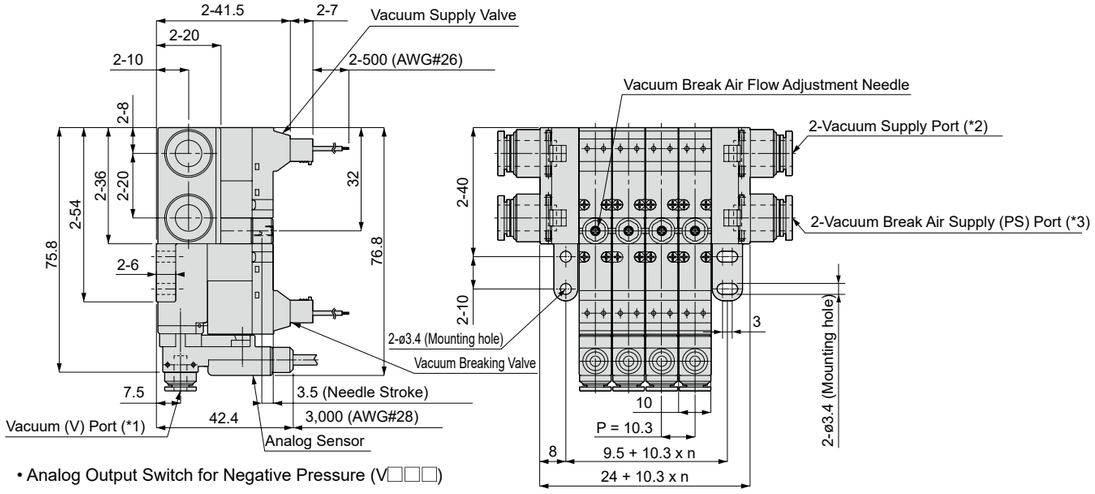
• VSNPM-□□□-3-□



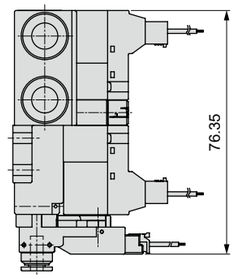
● With vacuum pressure switch

• VSNPM-□□□-3-□-V□□□/R□

• Analog Output Switch for Compound Pressure (R□)



• Analog Output Switch for Negative Pressure (V□□□)



*1: For vacuum port dimensions, Refer to P. 347 Table 1 on.
*2: For vacuum port dimensions, Refer to P. 347Table 2 on the.
*3: For vacuum burst air supply port dimensions, Refer to P. 347 Table 2 on the.

External Dimension Drawings

● Manifold fitting dimensions

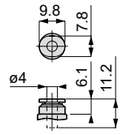
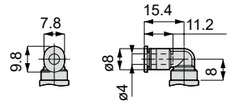
	
ø4 Push-in straight fitting	ø4 Push-in elbow fitting

Table 1: Vacuum Port Push-in Fitting Shape

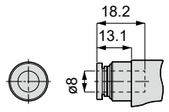
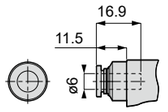
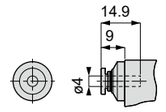
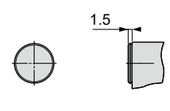
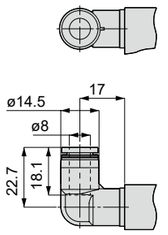
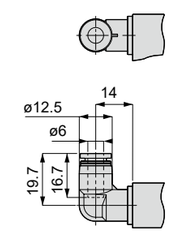
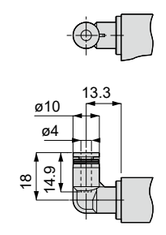
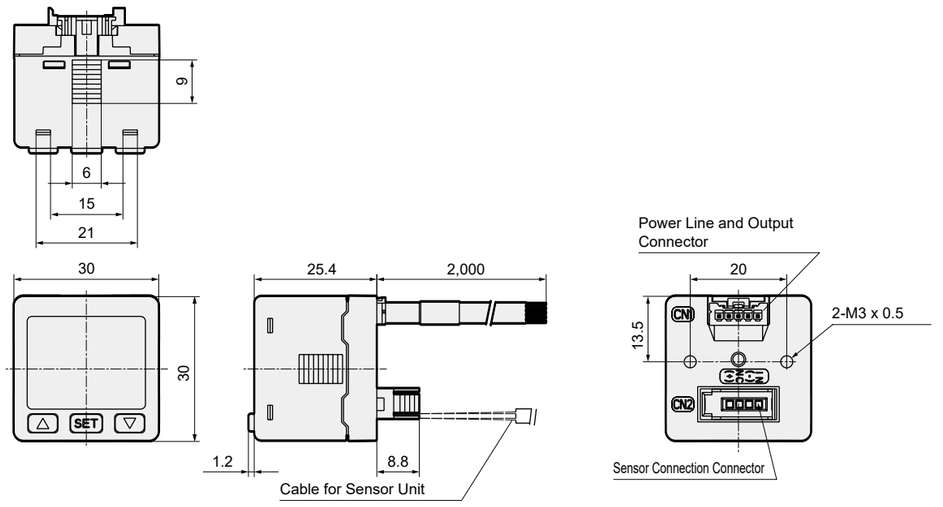
			
ø8 Push-in straight fitting	ø6 Push-in straight fitting	ø4 Push-in straight fitting	Plug Type
			
ø8 Push-in elbow fitting	ø6 Push-in elbow fitting	ø4 Push-in elbow fitting	

Table 2: Supply Port Push-in Fitting Shape

● Separate Digital Indicator



* Power Line and Output Wiring Specifications

Wire Color	Content
Brown	Power Supply (10.8 to 26.4 VDC)
Orange	Analog Output (1 to 5 V)
White	OUT2 Output
Black	OUT1 Output
Blue	COMMON

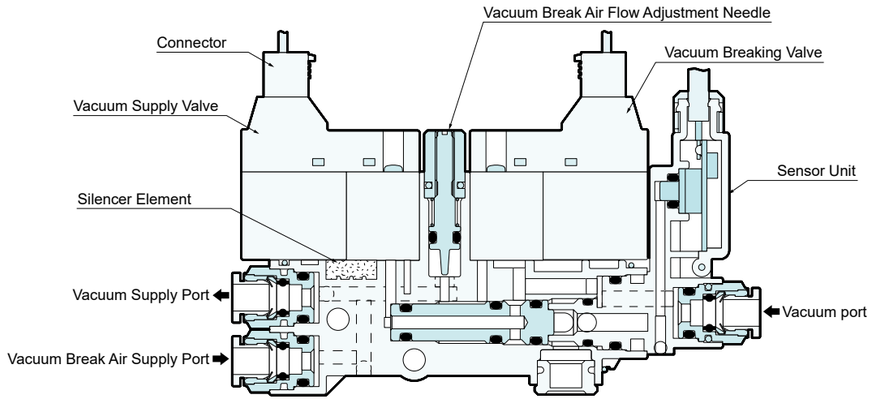
* Sensor Unit Connection Wiring Specifications

Wire Color	Content
Brown	DC+
Blue	DC-
Black	IN

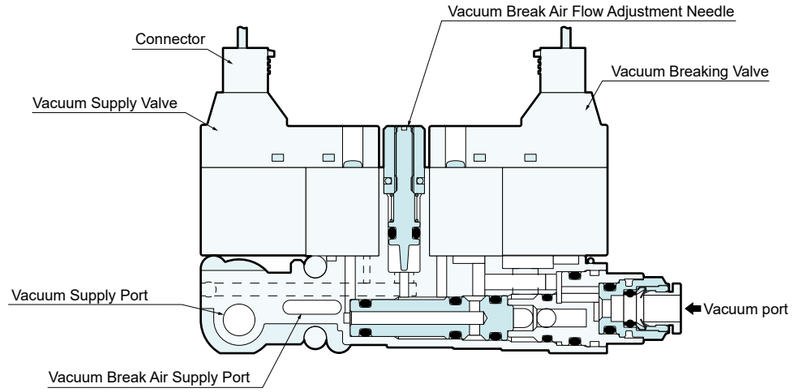
*For how to wire the sensor connection connector, P. 351.

Internal Structure Diagram

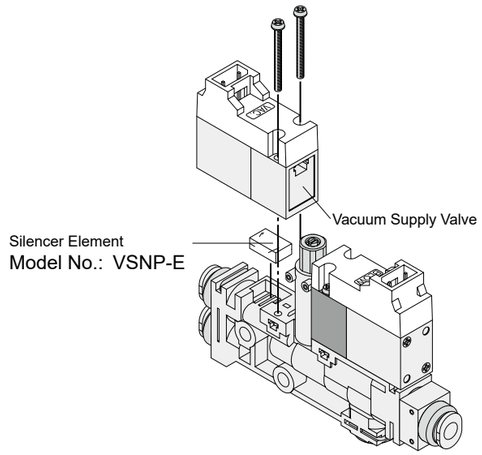
● Vacuum switching unit single unit
• With Vacuum Pressure Switch



● Vacuum switching unit manifold
• Without Vacuum Pressure Switch



Maintenance Parts



Pneumatic Components

To Use This Product Safely

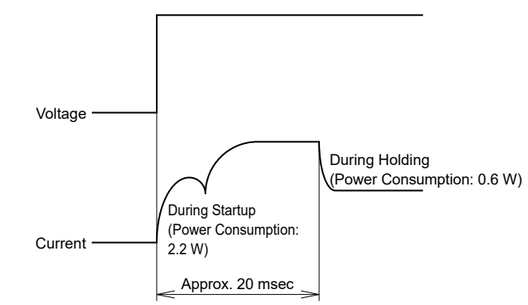
Be sure to read this before use.
For general pneumatic components precautions, Intro Page 15 for details.

Individual Precautions: 10.3 mm Width Integrated Type VSNP Series

Design / Selection

Warning

■ The solenoid valve of this product employs a current control circuit, featuring a mechanism that lowers the current value during coil energization holding. Absolutely avoid use in environments subject to vibration/shock outside of specifications. This can lead to valve malfunction.



Current/Voltage Waveform During Solenoid Valve Energization

Caution

■ The solenoid valve lead wire of this product has polarity. If the polarity is incorrect, the solenoid valve will not operate.

■ This product does not have a Vacuum Filters. Always use our company's vacuum filter series together with this product. If a vacuum filter is not used, sucked-in dust, dirt, etc., will accumulate inside the product, causing degradation of vacuum performance (ejector system compatible unit) or solenoid valve leakage/ malfunction(ejector system compatible unit, vacuum pump system compatible unit), etc.
(Recommended Vacuum Filters: VSFU Series, VSFJ Series

■ The solenoid valve of this product essentially operates continuously. If performing continuous energization exceeding 15 minutes, limit it to 10 times/day or less. Also, return to normal operation after continuous energization.

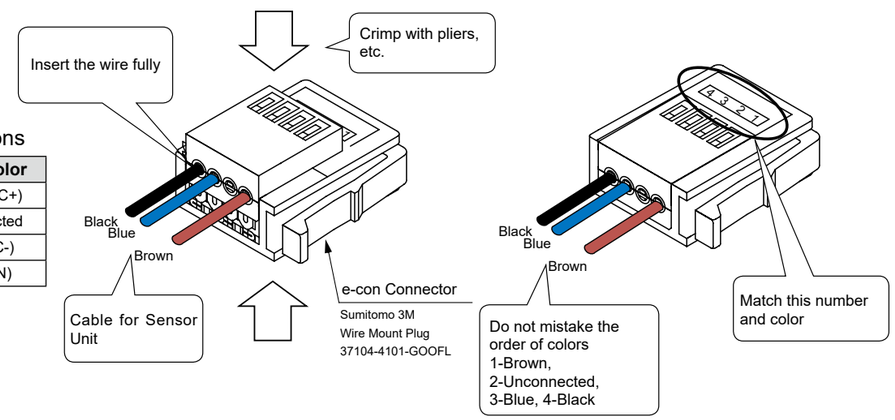
■ When leaving the product for 24 h or more with pressure 0 to 0.1MPa/OFF, perform a conditioning operation of the solenoid valve (one second or more and x5 times or more before starting operation).

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.

How to Use

■ How to connect sensor connection connector(e-con)
For connection of the sensor connection connector, cut the half-strip part at the tip of the cable lead wire before use. Insert the lead wire fully into the connector and securely crimp it with a tool such as pliers.

- Removal of lead wire insulation is not required.
- Incorrect wiring can lead to destruction, failure, or malfunction of the sensor and indicator. During pressure welding, check the pin number and wire color carefully to avoid mistakes.
- Once the sensor connection connector is crimped, it cannot be reused. If a wiring mistake or lead wire insertion failure occurs, use a new sensor connection connector.



• Wiring Specifications

Pin No.	Cable Color
1	Brown (DC+)
2	Unconnected
3	Blue (DC-)
4	Black (IN)

How to Create VSNPM Mixed Manifold Specification Sheet

● Mix manifold model No.(example)

VSNPM- ❶ **CX** ❷ **4R** ❸ **4** - ❹ **3** - ❺ **5** - ❻ **Z**

● Mix manifold specifications sheet

Vacuum Switching Unit Model No. ❶ ❻	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSNPM- 4 - V2	○	○			○						3
VSNPM- 4L - V2			○								1
VSNPM- 4L - V1				○							1
VSNPM- -											
VSNPM- -											

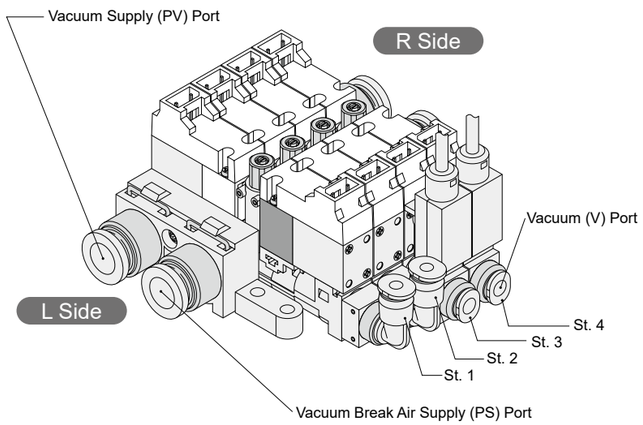
[For Fitting Mix Specification with Vacuum Port Size Only]

● Mix manifold model No.(example)

VSNPM- ❶ **CX** ❷ **4** ❸ **4** - ❹ **3** - ❺ **5** - ❻ **V2**

● Mix manifold specifications sheet

Vacuum Switching Unit Model No. ❶ ❻	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSNPM- 4 - V2	○	○		○	○						4
VSNPM- 4L - V2			○								1
VSNPM- -											
VSNPM- -											
VSNPM- -											
VSNPM- -											



[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.

VSNPM Mixed Manifold Specification Sheet

Date of Issue
Company
Contact Person Quantity Set Delivery (Month/Day)
Attn:
Voucher No. Order Received No.
Order No.

● Mix manifold model No.

VSNPM- ❶ ❷ ❸ - ❹ - ❺ - ❻

❶ Vacuum Port (V)

Code	Content
4	ø4 Push-in straight fitting
4L	ø4 Push-in elbow fitting
CX	For fitting mix(Provide details in the specification sheet)

❷ Air Supply Port for Vacuum Generation (PV)

Content
Refer to ❷ on page 338 for unit combination

❸ Air Supply Port for Vacuum Breaking (PS)

Content
Refer to ❸ on page 338 for unit combination

❹ Solenoid Valve Voltage

Code	Content
3	24 VDC

❺ Number of Manifold Stations

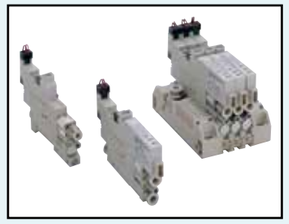
Code	Content
2	2 stations
to	to
10	10 stations

❻ Vacuum Sensor Specification

Code	Content
Blank	Without Vacuum Pressure Switch
V1C0	Analog Output for Negative Pressure / Connector Lead Wire 500 mm
V1C1	Analog Output for Negative Pressure / Connector Lead Wire 1000 mm
V1C2	Analog Output for Negative Pressure / Connector Lead Wire 2000 mm
V1C3	Analog Output for Negative Pressure / Connector Lead Wire 3000 mm
V2C0	Separate LED Indicator + Analog Output for Negative Pressure / Connector Lead Wire 500 mm
V2C1	Separate LED Indicator + Analog Output for Negative Pressure / Connector Lead Wire 1000 mm
V2C2	Separate LED Indicator + Analog Output for Negative Pressure / Connector Lead Wire 2000 mm
V2C3	Separate LED Indicator + Analog Output for Negative Pressure / Connector Lead Wire 3000 mm
R1	Analog Output for Compound Pressure / Grommet Lead Wire 3000 mm
R2	Separate LED Indicator + Analog Output for Compound Pressure / Grommet Lead Wire 3000 mm
Z	For mixed specifications (Provide details in the specification sheet.)

● Mix manifold specifications sheet

Vacuum Switching Unit Model No. ❶ ❻	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSNPM- -											
VSNPM- -											
VSNPM- -											
VSNPM- -											
VSNPM- -											

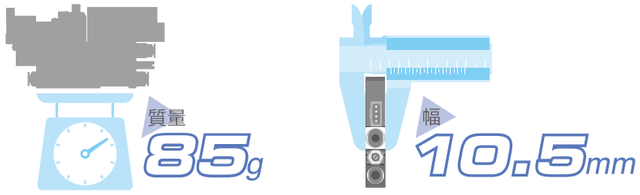


10.5 mm Width Integrated Type Vacuum Switching Unit

VSXP Series

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

Lightweight, compact vacuum generator meeting market needs



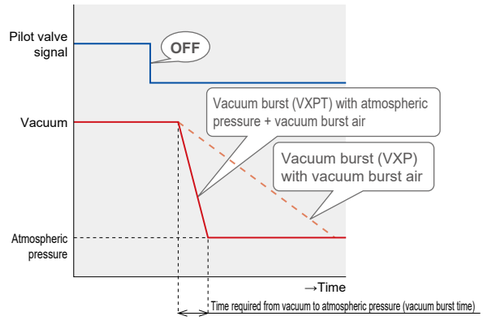
*The Weight above is the value for the 2-port specification direct mount type with LED display pressure sensor.

Vacuum supply valve available in Normally Closed (always closed).

Valve response time is pursued to the utmost limit, achieving high cycle operation of vacuum systems.

Significantly shortens vacuum break time by making the main valve for vacuum supply a 3-way valve.

Since vacuum is held immediately after the main valve turns OFF, compared to the conventional 2-way valve (VXP type) which performed vacuum breaking only with vacuum break air, the 3-port specification (VXPT type) allows atmosphere to flow into the vacuum circuit when the main valve turns OFF, enabling vacuum breaking by atmospheric pressure + vacuum break air.



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

Two fixing methods available, allowing selection according to the application.

Direct mount type fixed by screws, etc., from the side, and DIN rail mounting type available.

Manifold type also available (max. 10 stations)

Compliant with Global Standards

CE UKCA RoHS

Model No. Notation

●10.5 mm width integrated vacuum switching unit single unit

VSXP - VD 6 6 6 - 3 - DW - VD

- VSXP: Model No.
- ❷ Vacuum Port (V): 6
- ❹ Vacuum Supply Port (PV): 6
- ❻ Vacuum Pressure Switch Specifications: DW
- ❶ Valve-type: VD
- ❸ Air Supply Port (PS): 6
- ❺ Solenoid Valve Voltage: 3
- ❼ Mounting Method: VD

❶ Valve-type

Code	Content
D	2-Way Valve Specification
T	3-Way Valve Specification

❷ Vacuum Port (V)

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

❸ Air Supply Port (PS)

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

❹ Vacuum Supply Port (PV)

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

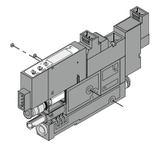
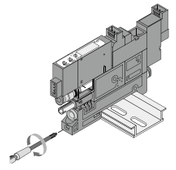
❺ Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC

❻ Vacuum Pressure Switch Specifications

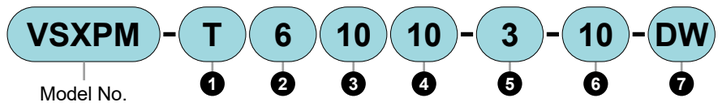
Code	Content
Blank	Without Vacuum Pressure Switch
DW	NPN Output 2 points with Digital Display
DA	NPN Output 1 point + Analog Output with Digital Display
AO	Analog Output

❼ Mounting Method

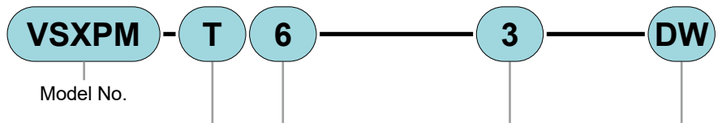
Code	Content	
Blank	Direct Mount Type	
D	DIN Rail Mounting Type	

model No. Indication Method(Manifold Type)

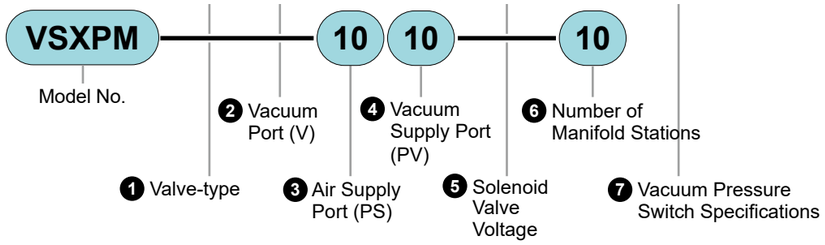
●10.5 mm width integrated vacuum switching unit manifold



●10.5 mm width integrated vacuum switching unit manifold single unit



●10.5 mm width integrated vacuum switching unit manifold only



❶ Valve-type

Code	Content
D	2-Way Valve Specification
T	3-Way Valve Specification
Z	For Mixed Specifications (Provide details in the specification sheet)

*1: For mixed specifications, see P. 380, 381. Be sure to fill in the "mix manifold specifications sheet".
*2: For manifold single unit, "Z" cannot be selected.
*3: For manifold only, valve-type cannot be selected.

❷ 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, see P. 380, 381. Be sure to fill in the "mix manifold specifications sheet".
*2: For manifold single unit, "CX" cannot be selected.
*3: For manifold only, vacuum port cannot be selected.

❸ 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.

❹ Vacuum Supply Port (PV)

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, vacuum supply port cannot be selected.

❺ Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC

*: For the 'Manifold Only' option, the solenoid valve voltage cannot be selected.

❻ Number of Manifold Stations

Code	Content
2	2 stations
to	to
10	10 stations

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

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

●Design compatible with rechargeable battery manufacturing process

VSXP - ..... - P4*

VSXPM - ..... - P4*

*Please inquire for details.

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

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

VSXP - ..... - FP*

❼ 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, see P. 380, 381. Be sure to fill in the "mix manifold specifications sheet".
*2: For manifold single unit, "Z" cannot be selected.
*3: For manifold only, vacuum pressure switch specifications cannot be selected.

Maintenance Part Model No.

*For details of the maintenance parts, P. 378.

●Filter Element



●Filter Element for Valve



Specifications

Item	VSXP
Operating Fluid	Air
Operating Pressure MPa	0.3 to 0.7
Ambient Temperature/ Fluid Temperature (°C)	5 to 50
Vacuum pressure kPa	-100 to 0

Solenoid Valve Specifications

●Pilot Valve

Item	Vacuum Supply Valve		Vacuum Breaking Valve	
ValvE-type and Operation Method	Direct acting poppet valve			
Rated Voltage V	24 VDC	100 VAC	24 VDC	100 VAC
Voltage Fluctuation Range V	DC 24 ±10%	AC 100 ±10%	DC 24 ±10%	AC 100 ±10%
Surge Suppressor	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 Operation	Non-locking push-type			
Operation Indicator	When coil is energized: Red LED lights up			
Wiring Method	Connector type: 500 mm			
	Red: 24 VDC Black: COM	Blue	Red: 24 VDC Black: COM	Blue

●Switching valve 2-way valve specifications VSXP-D

Item	Vacuum Supply Valve
ValvE-type and Operation Method	Direct acting 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

●Switching valve 3-way valve specifications VSXP-T

Item	Vacuum Generation Valve
ValvE-type and Operation Method	Direct acting poppet valve
Proof Pressure MPa	1.05
Valve Type	Normally Closed
Lubrication	Not required
Effective Area (mm²)	Vacuum Supply Port Size ø4: 3.0
	Vacuum Supply Port Size ø6: 3.6

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)
Shipment defaultPressure kPa		-50 (SW1), -10 (SW2)	-50	-
Current ConsumptionMA		≤ 40		* 15
Pressure Sensing Element		Diffused Semiconductor Pressure Switch		
Operating Pressure kPa		-100 to 0		
Set Pressure kPa		-99 to 0		-
Proof pressureForceMPa		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% RippIE (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 VoltageV	-	1 to 5	
	Zero point voltageV	-	1±0.1	
	Span voltageV	-	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 SW2: Green LED lights up at or above set pressure	Red 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

●2-way valve specifications VSXP-D

Valve Type	Break Air Flow Rate L/min (ANR)
Normally Closed	0 to 11.0

*1: Value at 0.5 MPa supply pressure.
*2: Break air flow rate varies depending on the diameter and length(piping resistance, etc.) of the vacuum side piping.

●3-way valve specifications VSXP-T

Valve Type	Break Air Flow Rate L/min (ANR)
Normally Closed	0 to 7.5

*1: Value at 0.5 MPa supply pressure.
*2: Break air flow rate varies depending on the diameter and length(piping resistance, etc.) of the vacuum side piping.

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)
VSXP-D□□□-□-D□	Vacuum Switching Unit 2-Way Valve Specification(Vacuum Pressure Switch with Digital Display)	85
VSXP-D□□□-□-A0	Vacuum Switching Unit 2-Way Valve Specification(Vacuum Pressure Switch with Analog Output)	82
VSXP-D□□□-□	Vacuum Switching Unit 2-Way Valve Specification(Without Vacuum Pressure Switch)	75
VSXP-T□□□-□-D□	Vacuum Switching Unit 3-Way Valve Specification(Vacuum Pressure Switch with Digital Display)	88
VSXP-T□□□-□-A0	Vacuum Switching Unit 3-Way Valve Specification(Vacuum Pressure Switch with Analog Output)	85
VSXP-T□□□-□	Vacuum Switching Unit 3-Way Valve Specification(Without Vacuum Pressure Switch)	78

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

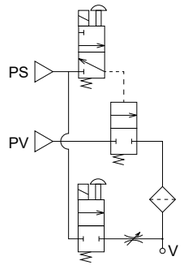
●Manifold Type

Model No.	Manifold Mounted Unit Contents	Weight (g)
VSXPM-D□□□-□□-D□-2	Vacuum Switching Unit 2-Way Valve Specification with Digital Display Vacuum Sensor, 2-Station Manifold	340
*1: Weight increases by 95 g for each additional station.		
VSXPM-T□□□-□□-D□-2	Vacuum Switching Unit 3-Way Valve Specification with Digital Display Vacuum Sensor, 2-Station Manifold	350

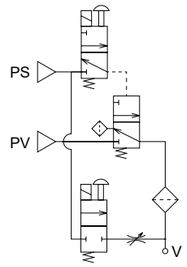
*1: Weight increases by 100 g for each additional station.
*2: The Weightes listed above are for the type equipped with a vacuum pressure switch with LED display. Types equipped with analog output vacuum pressure switch(no display vacuum pressure switch) are 3 g/station lighter than the above Weight, and types without vacuum pressure switch are 10 g/station lighter, respectively.

Circuit Diagram

●Normally closed 2-way valve specification



●Normally closed 3-way valve specification

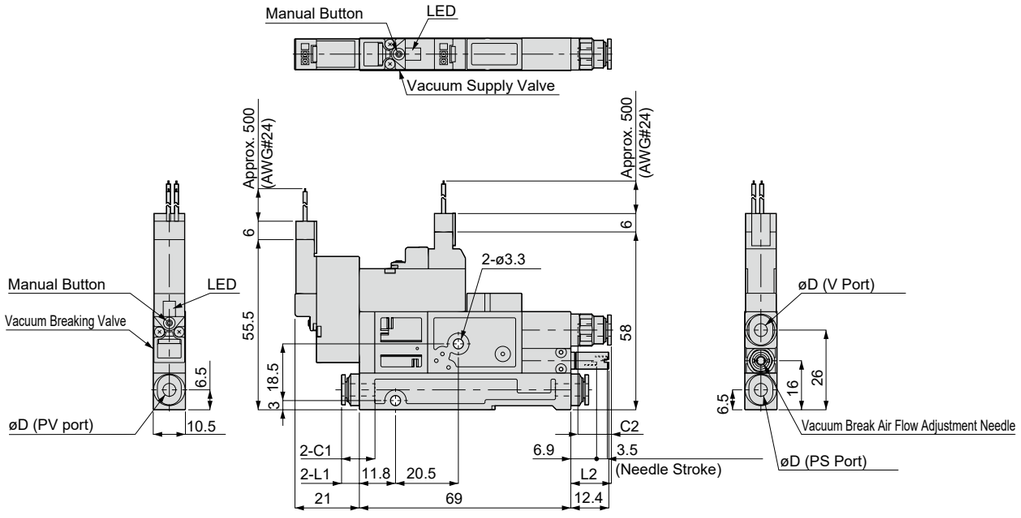


MEMO

Vacuum Components
Vacuum Pump System
VSJP/ VSJPM
VSNP/ VSNPM
VSXP/ VSXPM
VSQP
VSZPM
Ending

Outline Dimension Drawing (Single Unit Type, 2-Way Valve Specification Without Vacuum Pressure Switch)

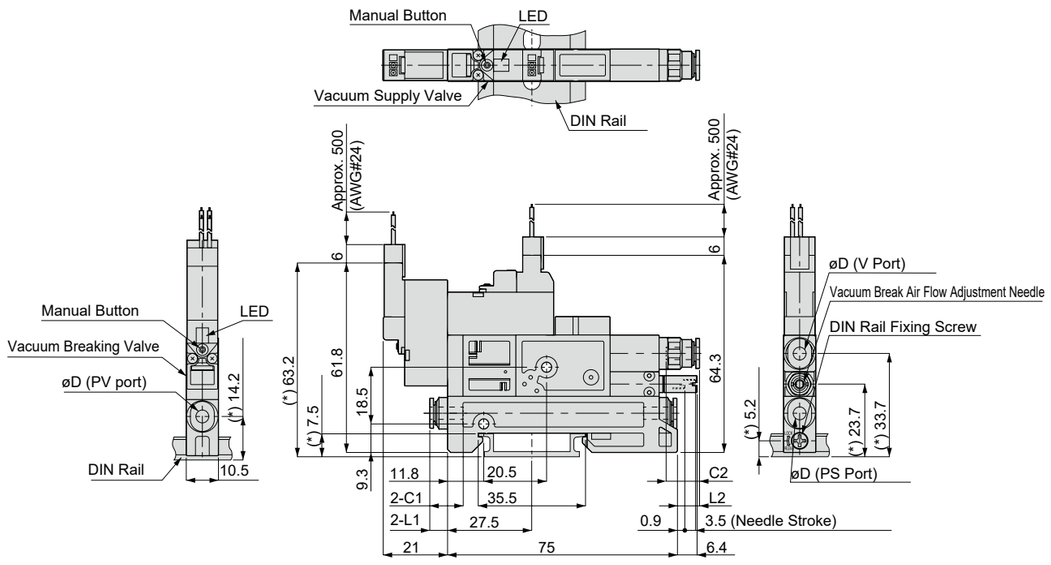
●Direct Mount Type



Unit: mm

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

●DIN Rail Mounting Type



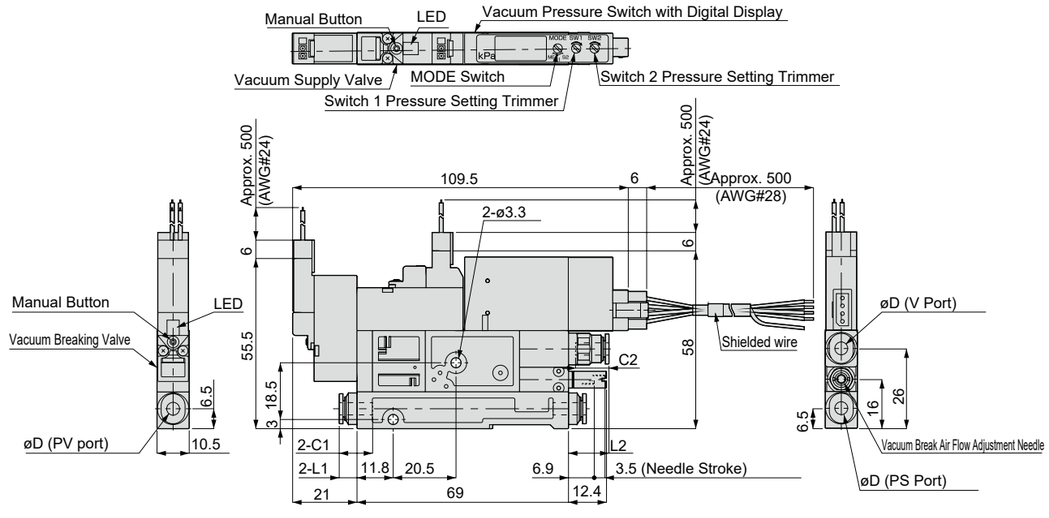
Note)(*) Dimensions of the printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

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

Outline Dimension Drawing (Single Unit Type, 2-Way Valve Specification, With Vacuum Pressure Switch with Digital Display and 2-point Switch Output)

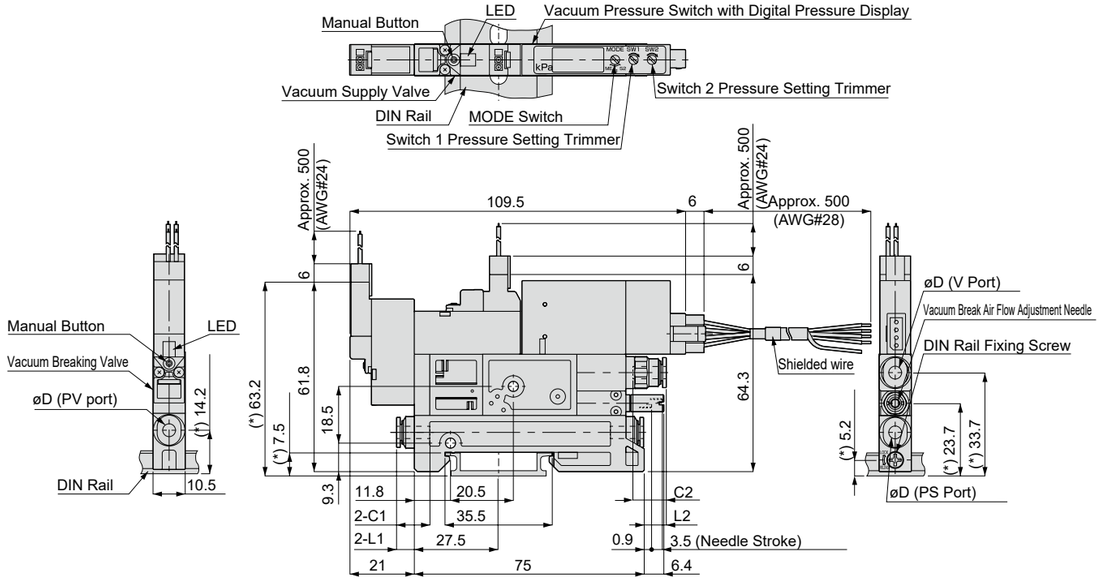
●Direct Mount Type



Unit: mm

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

●DIN Rail Mounting Type



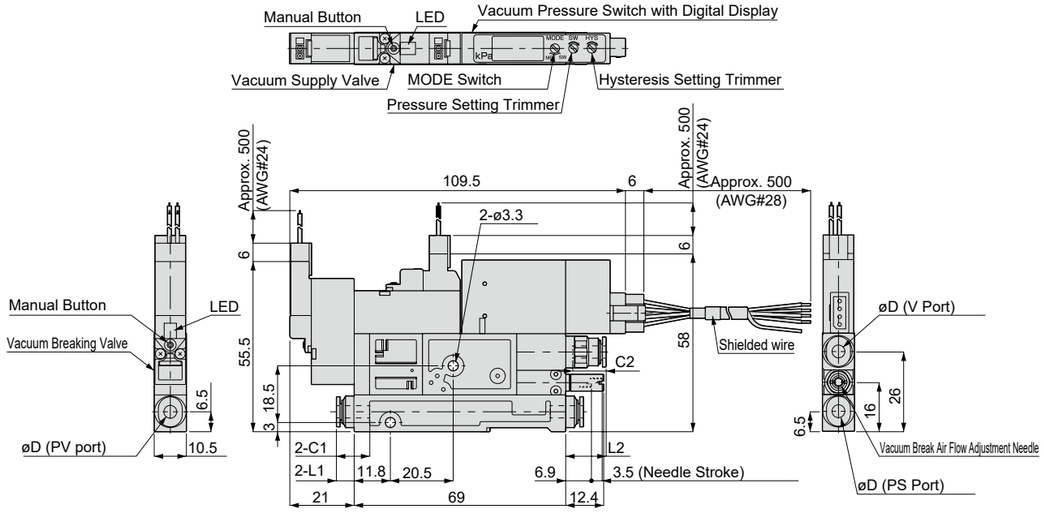
Note)(*) Dimensions of the printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

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

Outline Dimension Drawing (Single Unit Type, 2-Way Valve Specification With Vacuum Pressure Switch with Digital Display, Analog Output, and Switch Output)

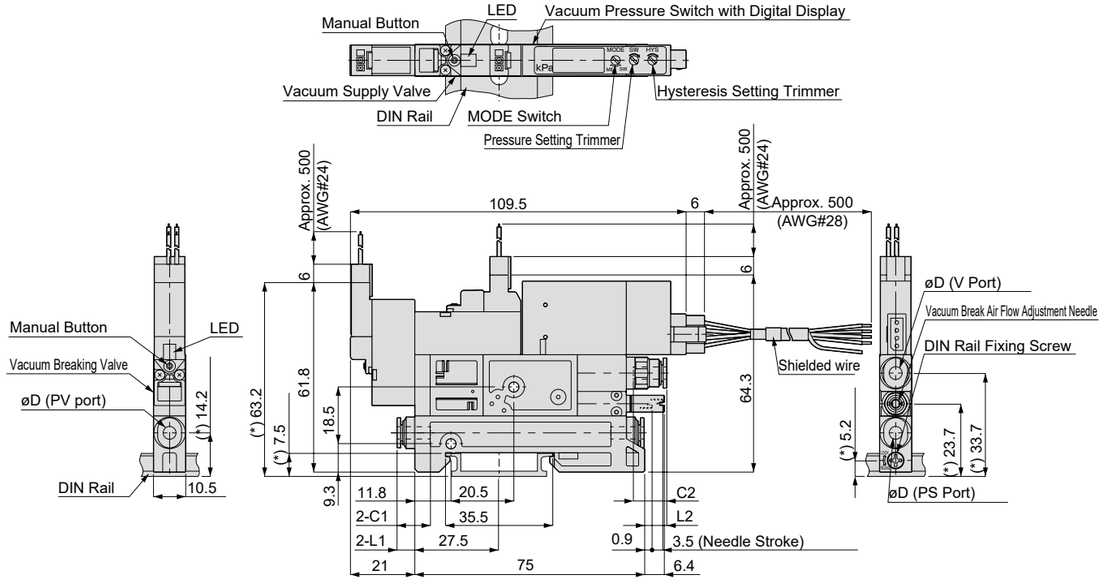
●Direct Mount Type



Unit: mm

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

●DIN Rail Mounting Type



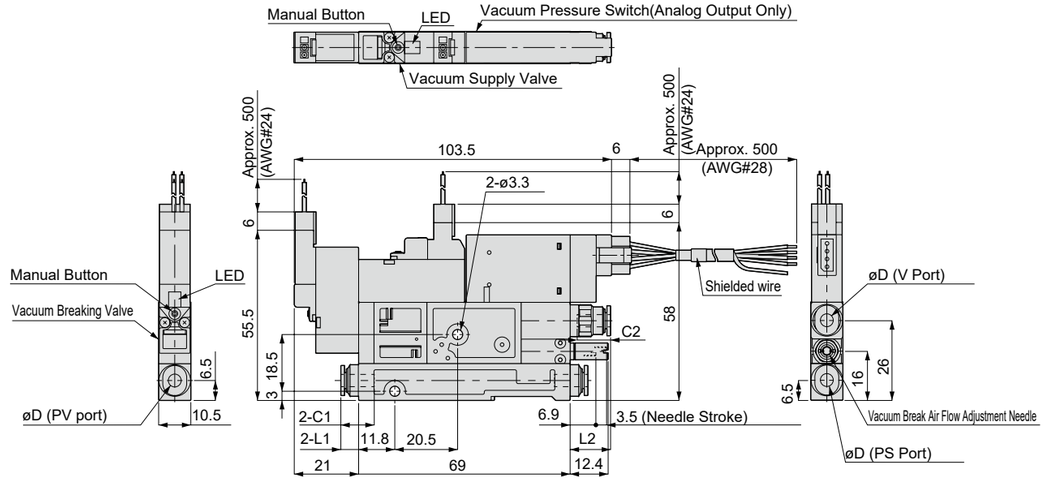
Note)(*) Dimensions of the printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

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

Outline Dimension Drawing (Single Unit Type, 2-Way Valve Specification With Vacuum Pressure Switch with Analog Output)

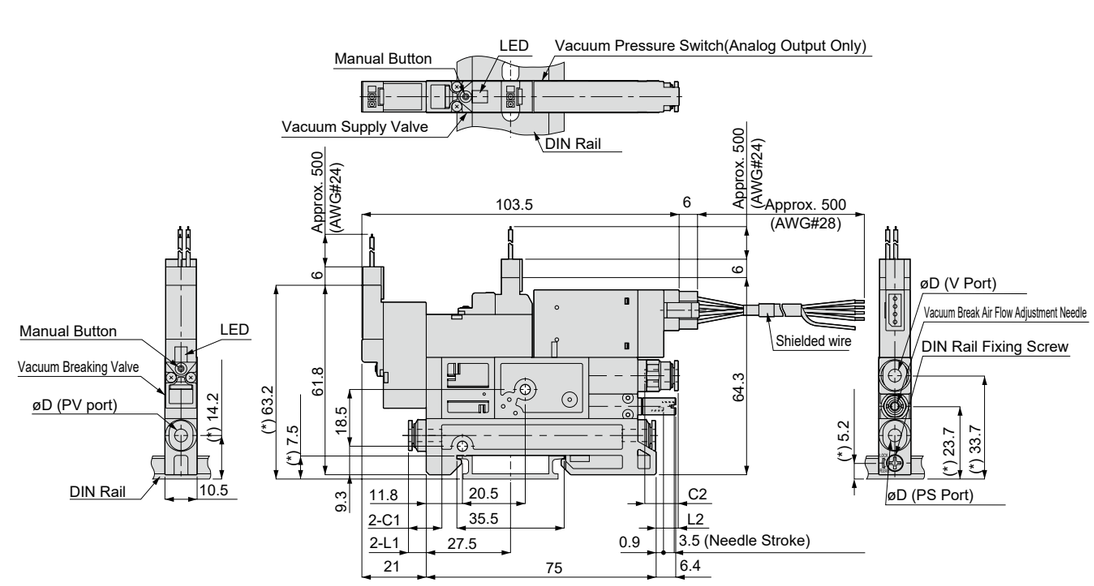
●Direct Mount Type



Unit: mm

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

●DIN Rail Mounting Type



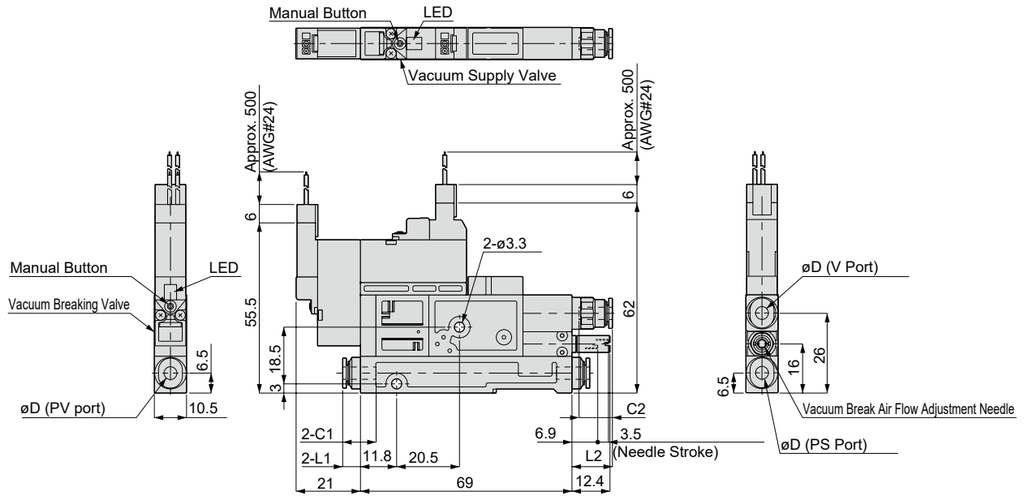
Note)(*) Dimensions of the printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

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

Outline Dimension Drawing (Single Unit Type, 3-Way Valve Specification Without Vacuum Pressure Switch)

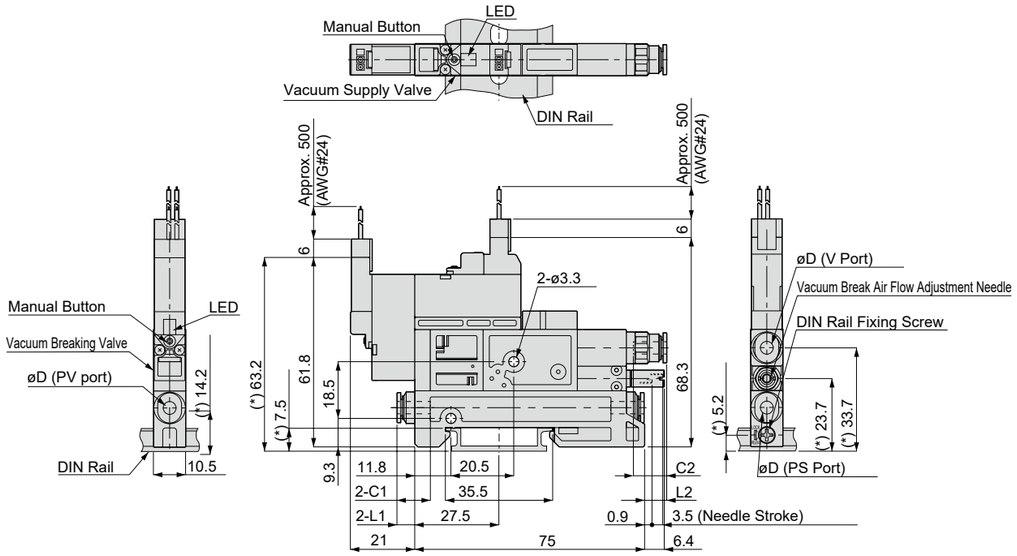
●Direct Mount Type



Unit: mm

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

●DIN Rail Mounting Type



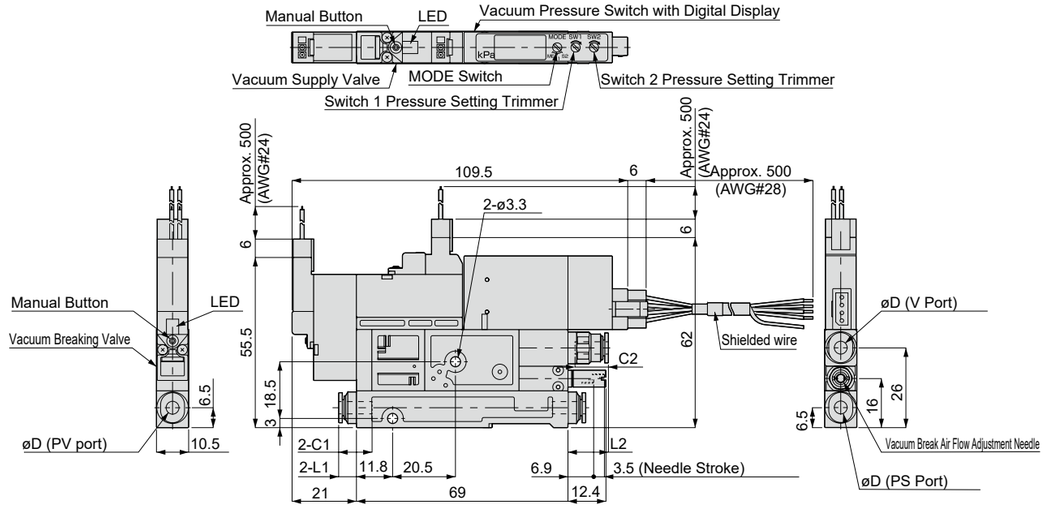
Note)(*) Dimensions of the printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

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

Outline Dimension Drawing (Single Unit Type, 3-Way Valve Specification With Vacuum Pressure Switch with Digital Display and 2-point Switch Output)

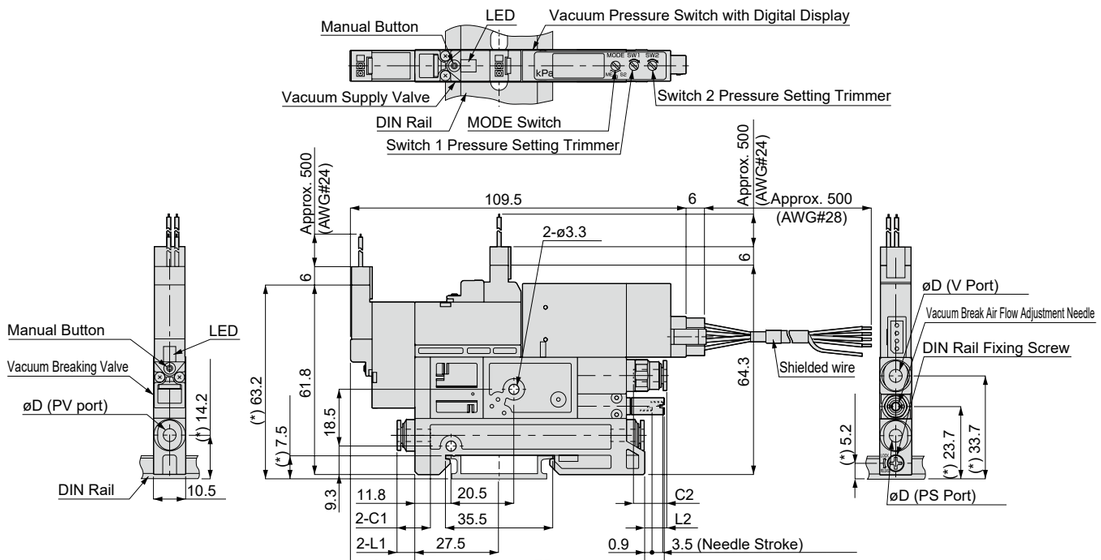
●Direct Mount Type



Unit: mm

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

●DIN Rail Mounting Type



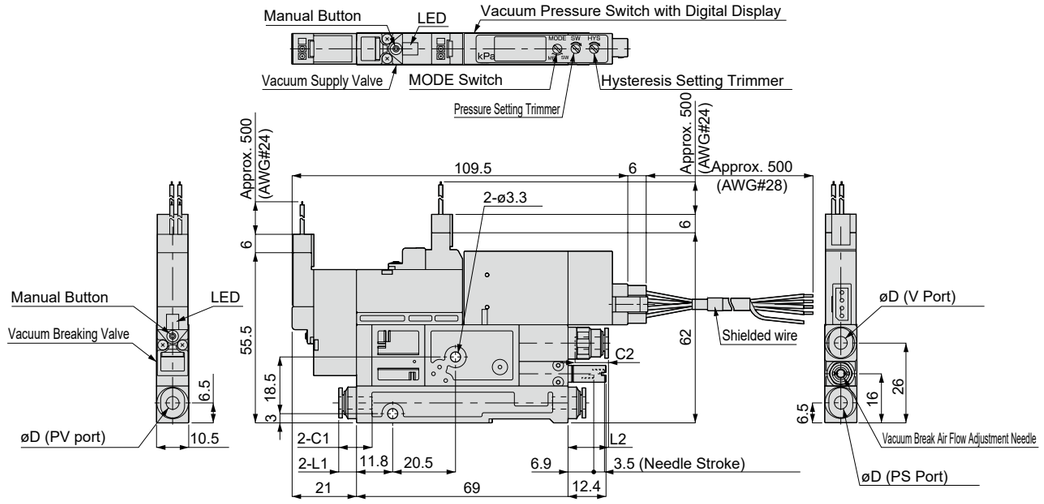
Note)(*) Dimensions of the printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

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

Outline Dimension Drawing (Single Unit Type, 3-Way Valve Specification With Vacuum Pressure Switch with Digital Display, Analog Output, and Switch Output)

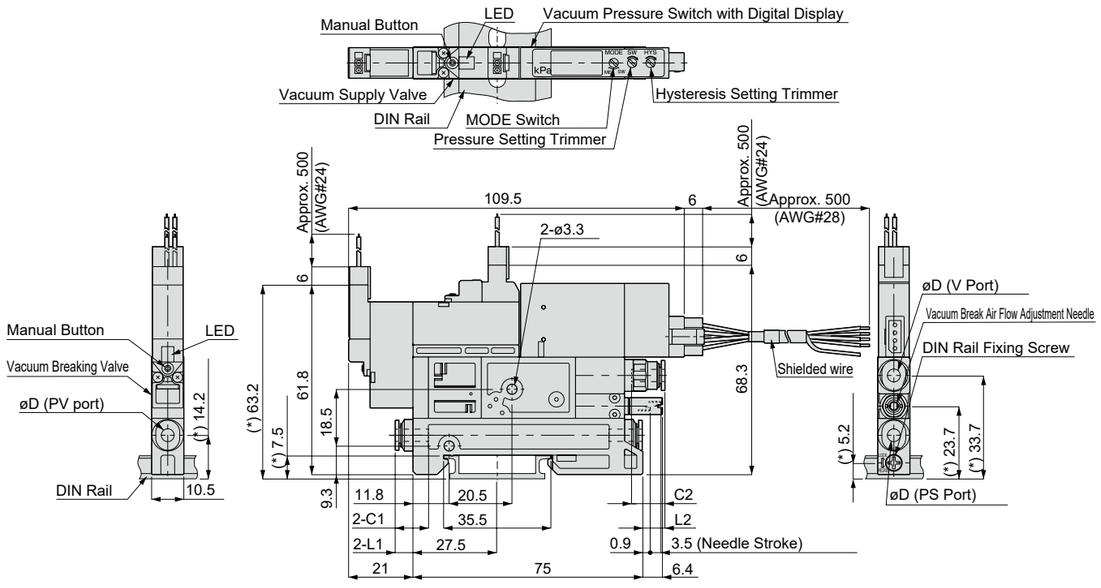
●Direct Mount Type



Unit: mm

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

●DIN Rail Mounting Type



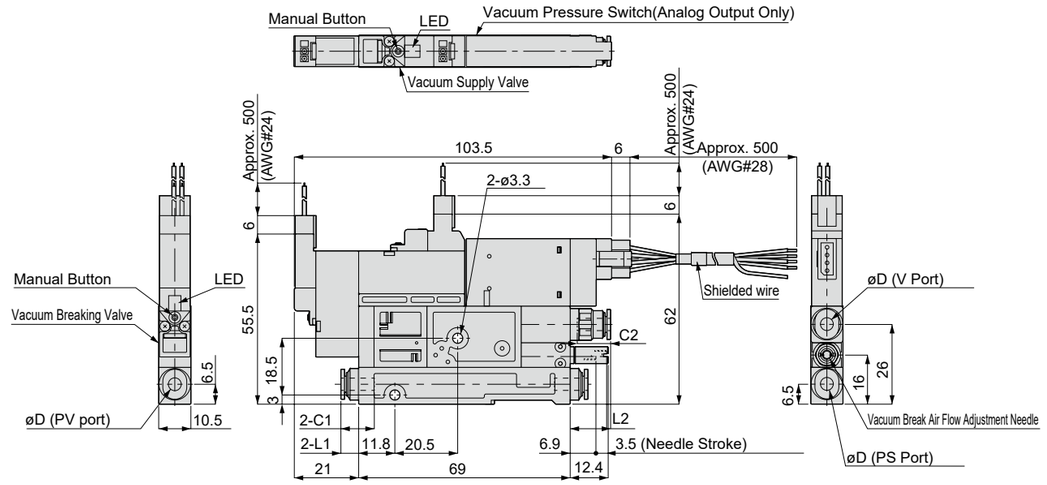
Note)(*) Dimensions of the printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

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

Outline Dimension Drawing (Single Unit Type, 3-Way Valve Specification With Vacuum Pressure Switch with Analog Output)

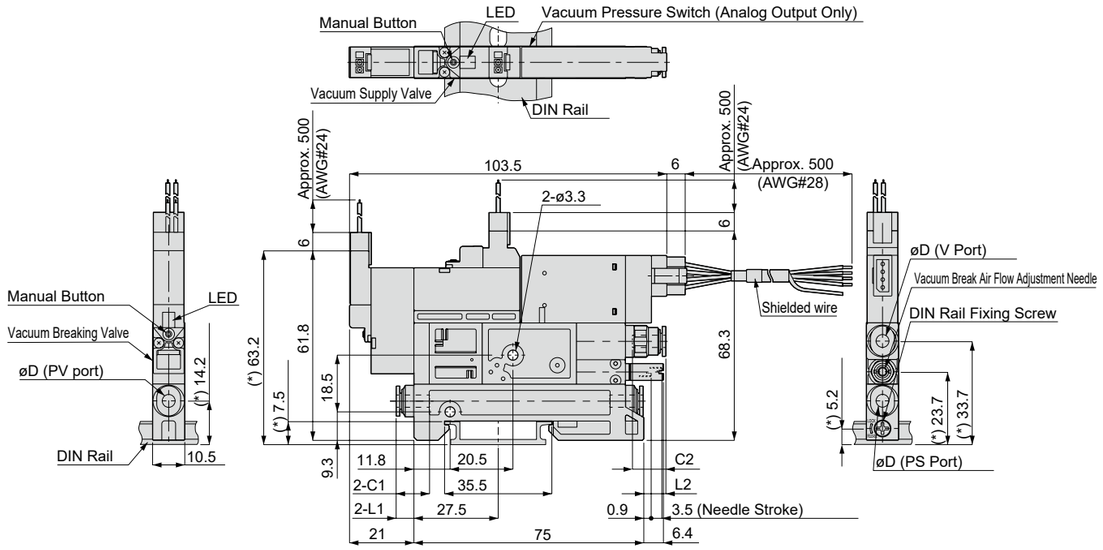
●Direct Mount Type



Unit: mm

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

●DIN Rail Mounting Type



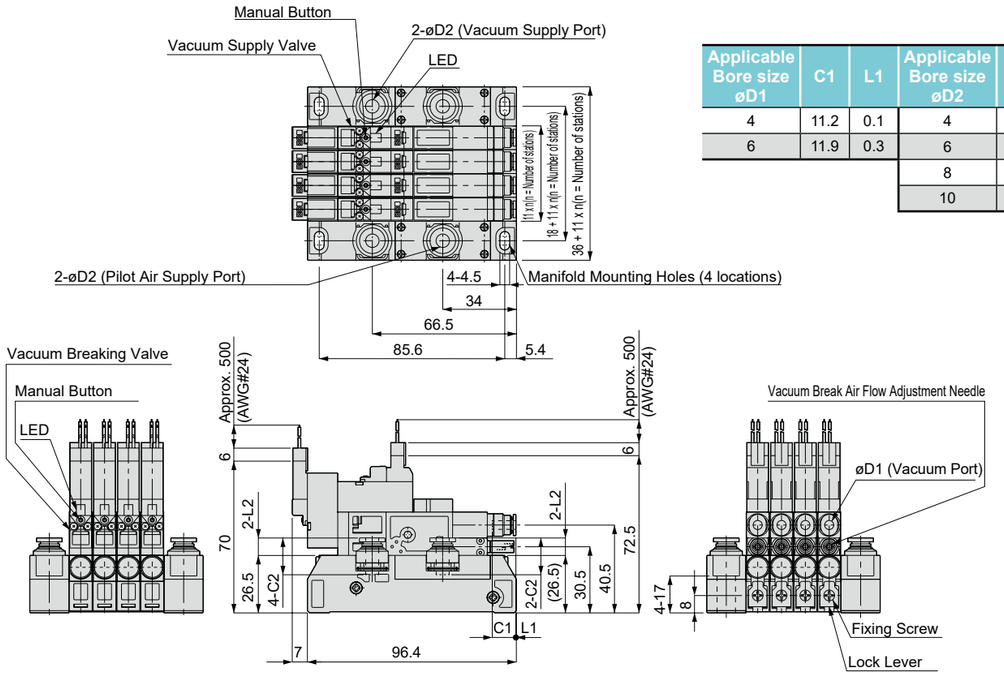
Note)(*) Dimensions of the printed part are for the DIN rail height: Value when 7.5 mm.

Unit: mm

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

Outline Dimension Drawing (Manifold Type, 2-Way Valve Specification VSXPM-D)

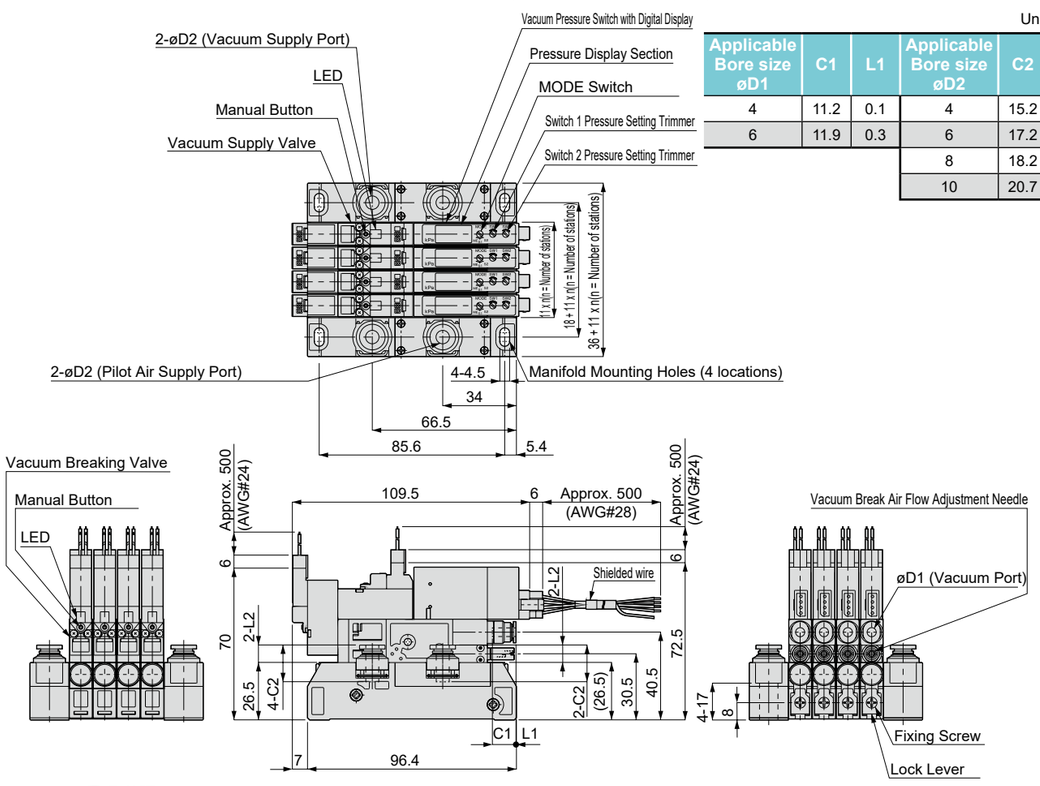
●Without Vacuum Pressure Switch



Unit: mm

Applicable Bore size øD1	C1	L1	Applicable Bore size øD2	C2	L2
4	11.2	0.1	4	15.2	3.8
6	11.9	0.3	6	17.2	8.3
			8	18.2	9.6
			10	20.7	13.2

●With vacuum pressure switch, 2-point switch output and LED display

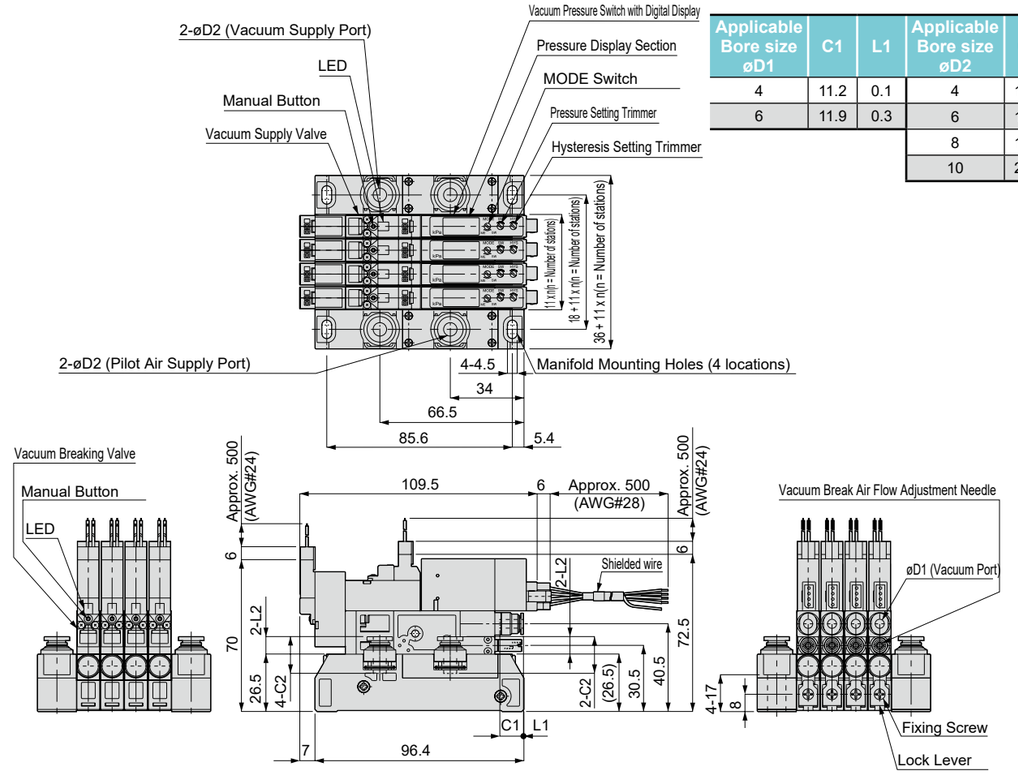


Unit: mm

Applicable Bore size øD1	C1	L1	Applicable Bore size øD2	C2	L2
4	11.2	0.1	4	15.2	3.8
6	11.9	0.3	6	17.2	8.3
			8	18.2	9.6
			10	20.7	13.2

Outline Dimension Drawing (Manifold Type, 2-Way Valve Specification, VSXPM-D)

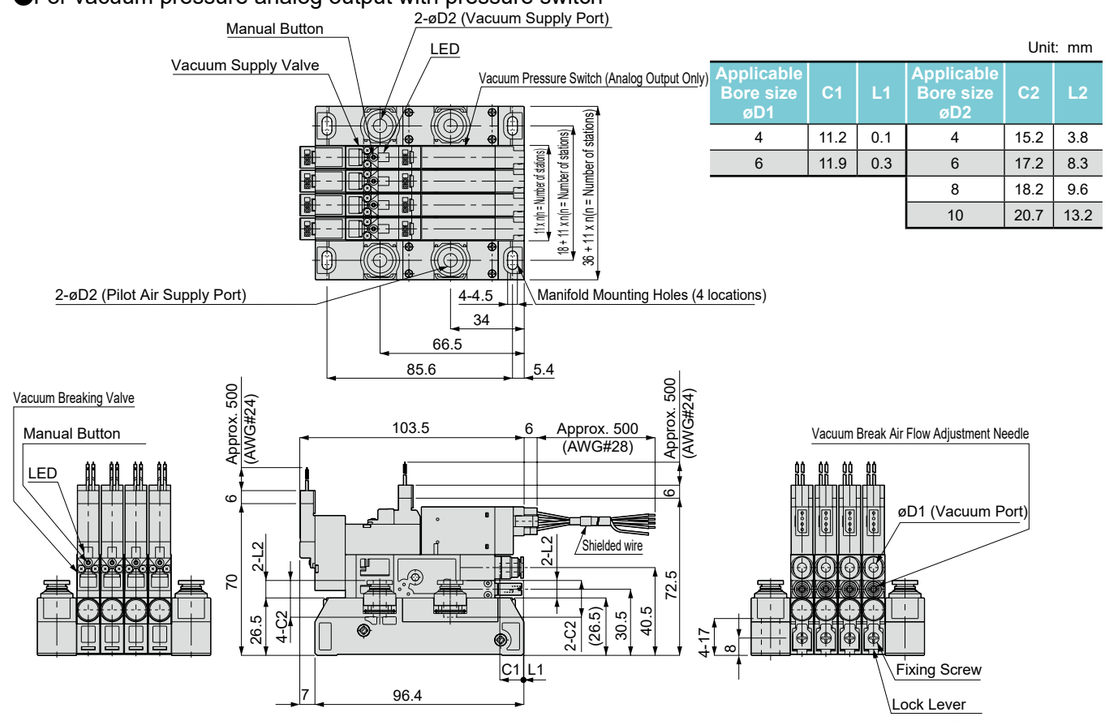
●Analog output with LED display, with switch output and with vacuum pressure switch



Unit: mm

Applicable Bore size øD1	C1	L1	Applicable Bore size øD2	C2	L2
4	11.2	0.1	4	15.2	3.8
6	11.9	0.3	6	17.2	8.3
			8	18.2	9.6
			10	20.7	13.2

●For vacuum pressure analog output with pressure switch



Unit: mm

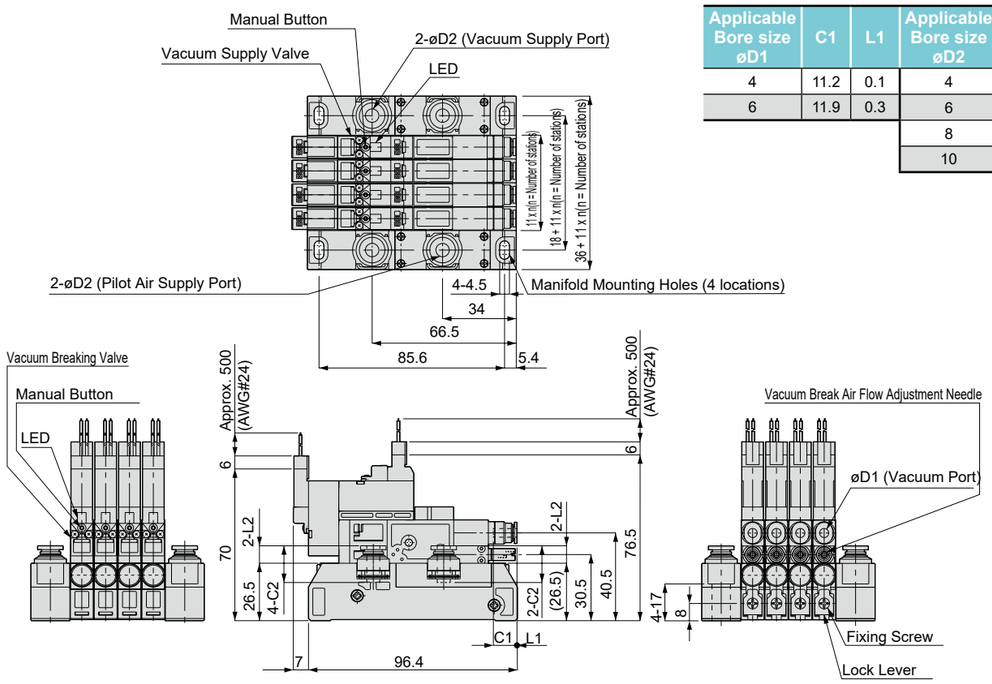
Applicable Bore size øD1	C1	L1	Applicable Bore size øD2	C2	L2
4	11.2	0.1	4	15.2	3.8
6	11.9	0.3	6	17.2	8.3
			8	18.2	9.6
			10	20.7	13.2

Outline Dimension Drawing (Manifold Type, 3-Way Valve Specification VSXPM-T)

●Without Vacuum Pressure Switch

Unit: mm

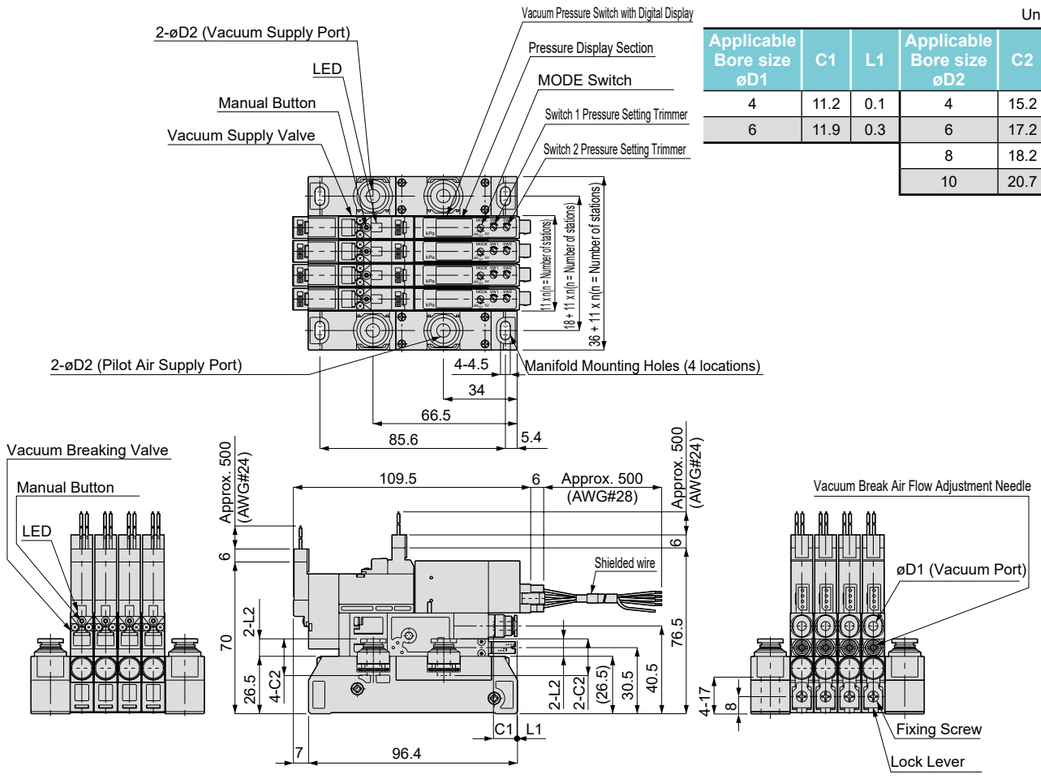
Applicable Bore size øD1	C1	L1	Applicable Bore size øD2	C2	L2
4	11.2	0.1	4	15.2	3.8
6	11.9	0.3	6	17.2	8.3
			8	18.2	9.6
			10	20.7	13.2



●With vacuum pressure switch, 2-point switch output and LED display

Unit: mm

Applicable Bore size øD1	C1	L1	Applicable Bore size øD2	C2	L2
4	11.2	0.1	4	15.2	3.8
6	11.9	0.3	6	17.2	8.3
			8	18.2	9.6
			10	20.7	13.2

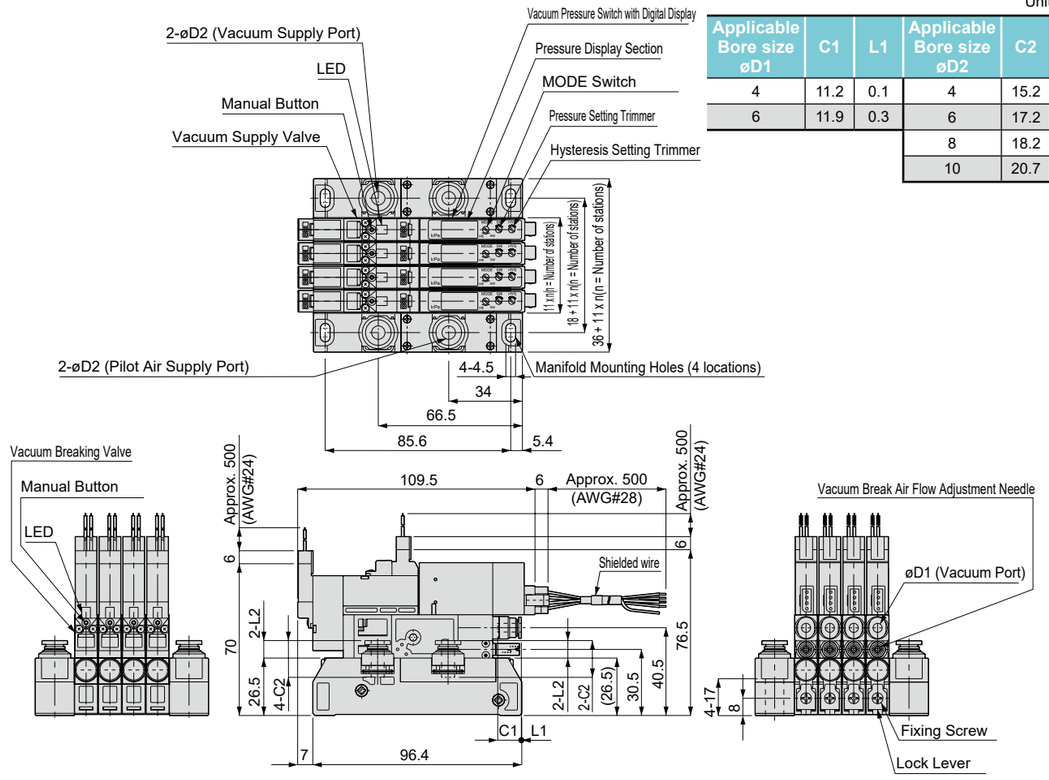


Outline Dimension Drawing (Manifold Type, 3-Way Valve Specification VSXPM-T)

●Analog output with LED display, with switch output and with vacuum pressure switch

Unit: mm

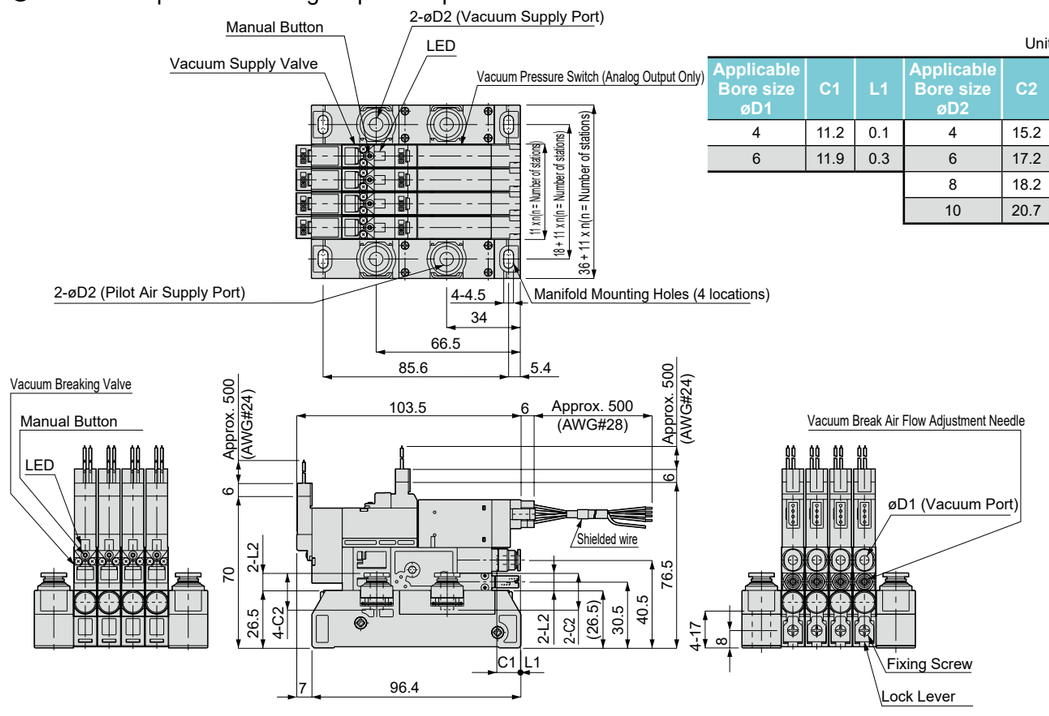
Applicable Bore size øD1	C1	L1	Applicable Bore size øD2	C2	L2
4	11.2	0.1	4	15.2	3.8
6	11.9	0.3	6	17.2	8.3
			8	18.2	9.6
			10	20.7	13.2



●For vacuum pressure analog output with pressure switch

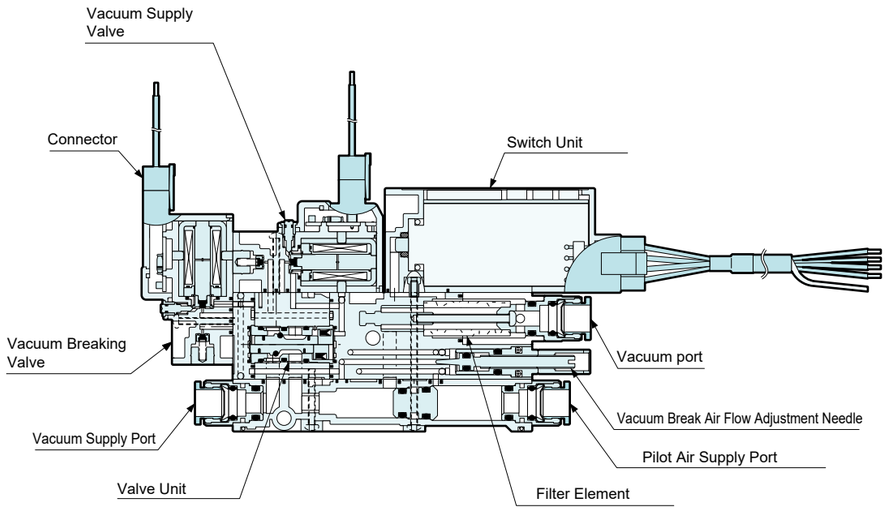
Unit: mm

Applicable Bore size øD1	C1	L1	Applicable Bore size øD2	C2	L2
4	11.2	0.1	4	15.2	3.8
6	11.9	0.3	6	17.2	8.3
			8	18.2	9.6
			10	20.7	13.2

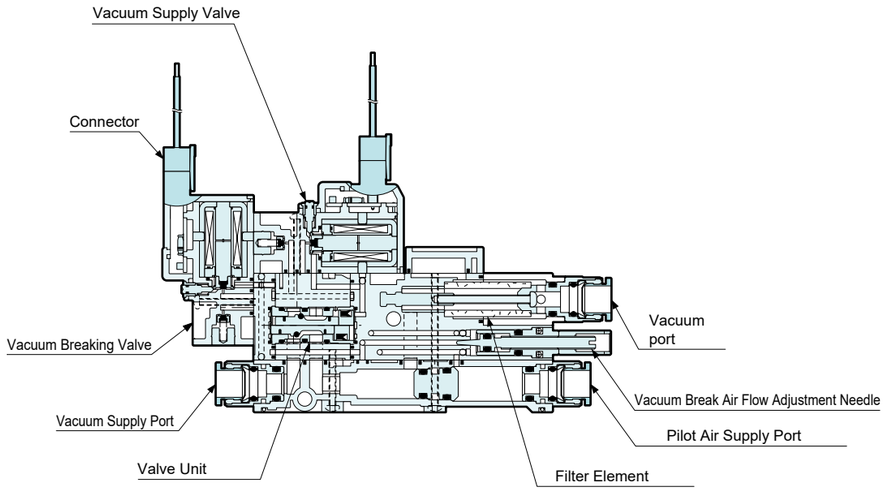


Internal Structure Diagram (Single Unit Type)

●2-way valve specifications　VSXP-D
Ex.) VSXP-D□□□-□-□
With Vacuum Pressure Switch-type

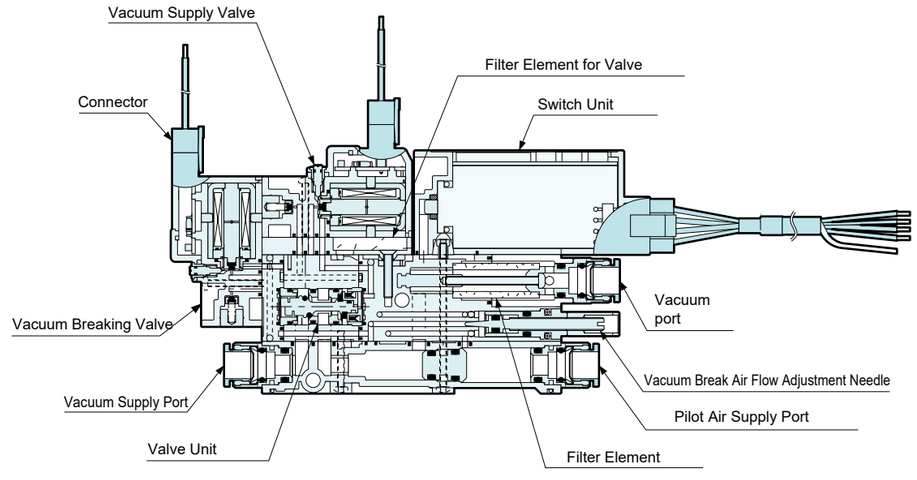


Ex.) VSXP-D□□□-□
Without Vacuum Pressure Switch-type

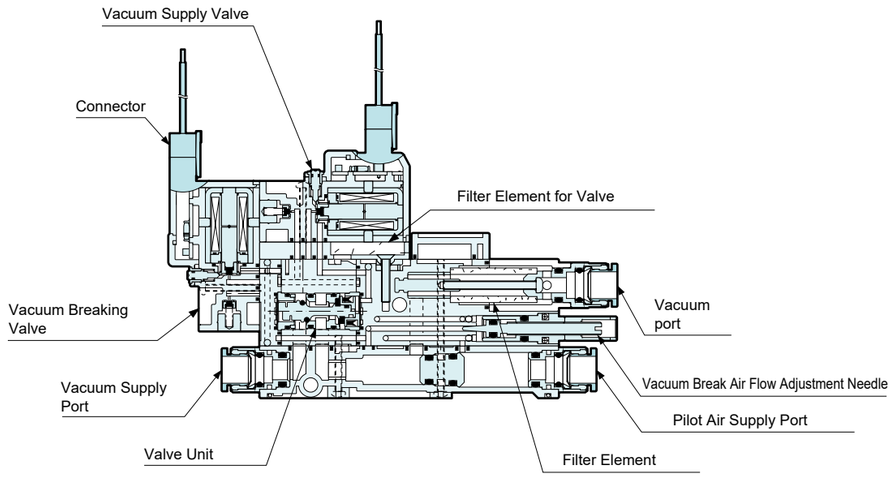


Internal Structure Diagram (Single Unit Type)

●3-way valve specifications　VSXP-T
Ex.) VSXP-T□□□-□-□
With Vacuum Pressure Switch-type

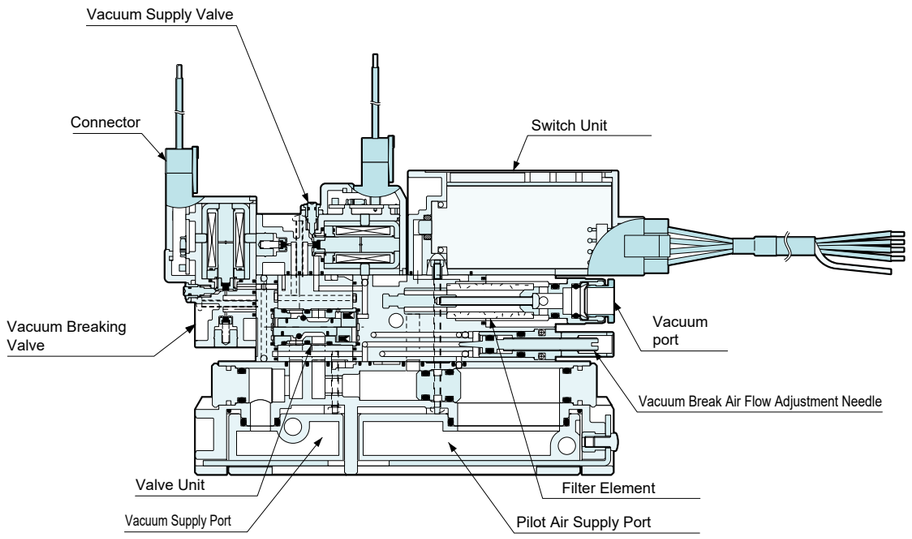


Ex.) VSXP-T□□□-□
Without Vacuum Pressure Switch-type

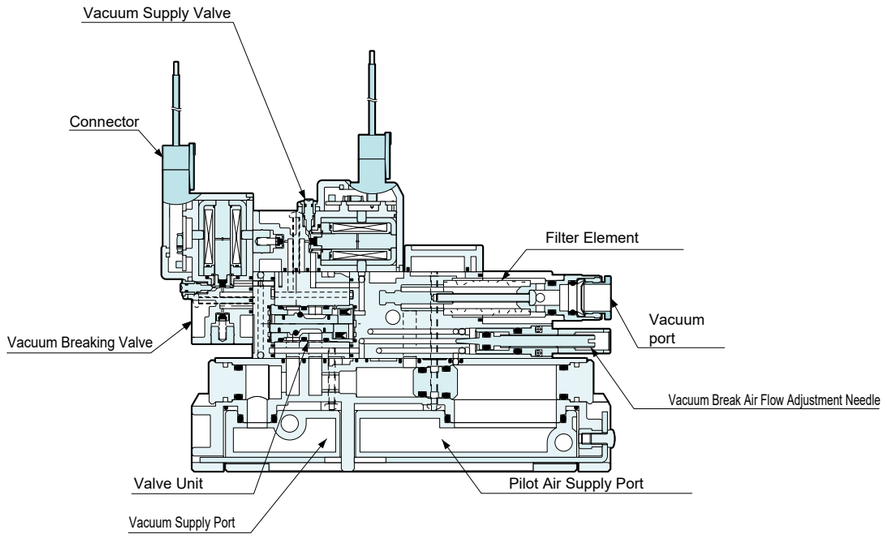


Internal Structure Diagram (Manifold Type)

●2-way valve specifications　VSXPM-D
Ex.) VSXPM-D□□□-□-□-□
With Vacuum Pressure Switch-type

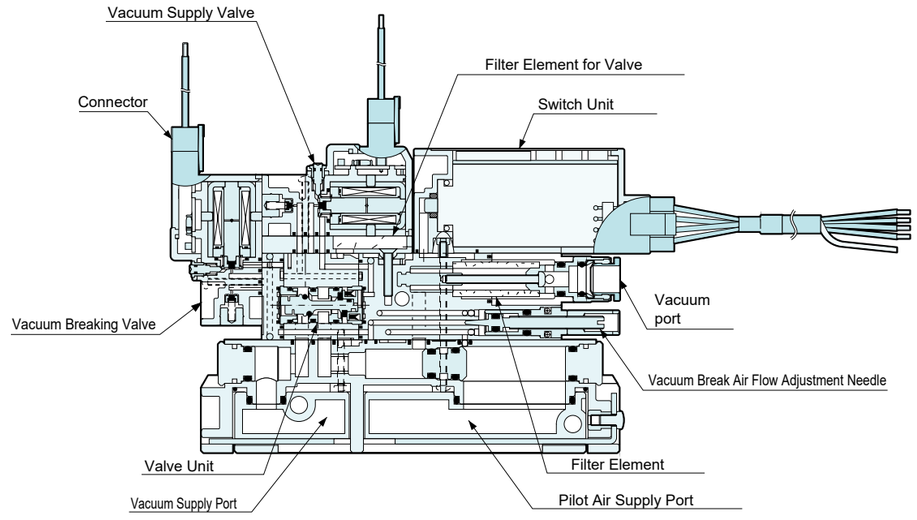


Ex.) VSXPM-D□□□-□-□
Without Vacuum Pressure Switch-type

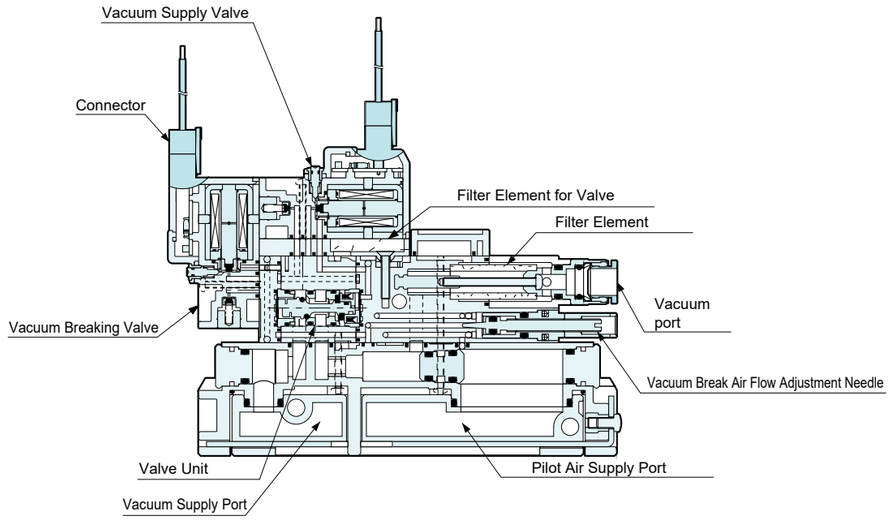


Internal Structure Diagram (Manifold Type)

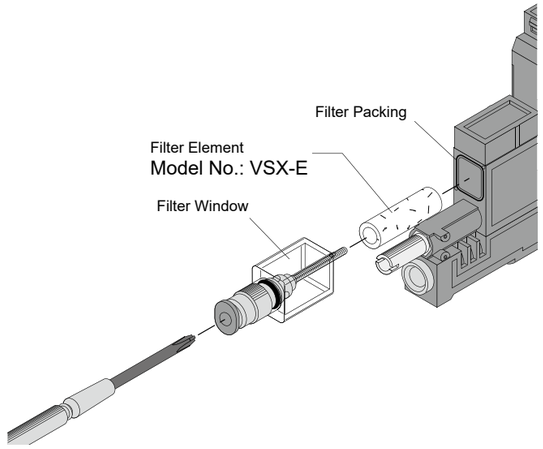
●3-way valve specifications　VSXPM-T
Ex.) VSXPM-T□□□-□-□-□
With Vacuum Pressure Switch-type

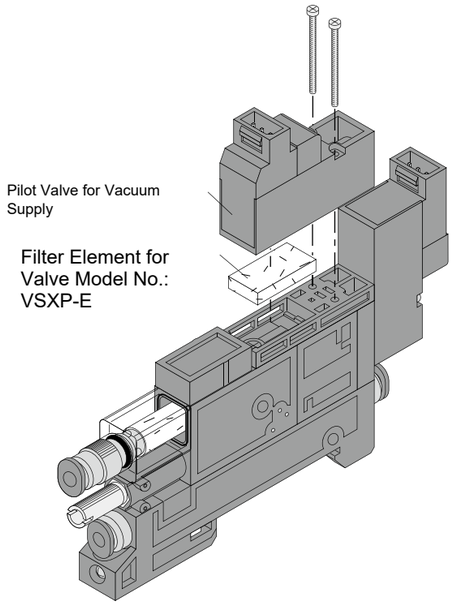


Ex.) VSXPM-T□□□-□-□
Without Vacuum Pressure Switch-type



Maintenance Parts





Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, refer to Intro 15 for details.

Individual Precautions: 10.5 mm Width Integrated Type VSXP Series

Design / Selection

Warning

■The vacuum retention function of the vacuum pump system compatible 2-way valve specifications (VSXP-D) allows for leakage. Hence, take other safety measures if vacuum retention for long periods is required. Note that the 3-Way Valve Specification (VSXP-T type) does not have a vacuum holding function.

■When using the DIN rail, if vibration or impact may be applied to the product, use commercially available DIN rail fixing brackets on both sides for safety and install securely.

■When installing the unit in the manifold, insert the lock lever to the end and fix it securely with screws. Vibration may cause the lock lever to detach, potentially causing the unit to eject.

Caution

■Fittings When replacing the cartridge of the supply (PS, PV) port, remove the deposits from the seal and then securely insert the stop pin.

■Fittings When replacing the cartridge cartridge of the vacuum (V) port, remove the deposits on the seal part after checking that the window packing has not fallen off and securely fix the screws with the prescribed tightening torque.

■The vacuum pump system compatible 3-way valve specifications will break the vacuum with atmospheric pressure. Therefore, if a large amount of dust, dirt, etc., adheres to the filter element for the valve, the pressure loss of the filter element increases, potentially causing a delay in the vacuum break time. It is recommended to clean and replace the filter element for the valve frequently at appropriate times.

■When mounting the unit in the manifold, check that there is no fallout or protrusion of the O-ring of air supply (vacuum supply) and exhaust(air supply) ports.

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.

How to Create VSXPM Mixed Manifold Specification Sheet

●Mix manifold model No.(example)

VSXPM- ❶Z ❷CX ❸6 ❹8 - ❺3 - ❻5 - ❼Z

●Mix manifold specifications sheet(example)

Vacuum Switching Unit Model No. ❶ ❷ ❺ ❼	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSXPM- D 4 - 3 - DW	○	○	○								3
VSXPM- D 4 - 3 - DA				○							1
VSXPM- T 6 - - DW					○						1
VSXPM- - - - -											
VSXPM- - - - -											

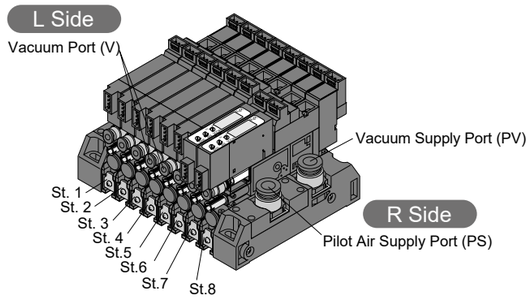
[For Fitting Mix Specification with Output Port Size Only]

●Mix manifold model No.(example)

VSXPM- ❶D ❷CX ❸6 ❹6 - ❺3 - ❻5 - ❼DW

●Mix manifold specifications sheet(example)

Vacuum Switching Unit Model No. ❶ ❷ ❺ ❼	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSXPM- D 4 - 3 - DW	○	○	○								3
VSXPM- D 6 - 3 - DW				○							1
VSXPM- - - - -					○						1
VSXPM- - - - -											
VSXPM- - - - -											



[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.

VSXPM Mixed Manifold Specification Sheet

Date of Issue
Company
Contact Person Quantity Set Delivery (Month/Day)
Attn:
Voucher No. Order Received No.
Order No.

●Mix manifold model No.

VSXPM- ❶ ❷ ❸ ❹ - ❺ - ❻ - ❼

❶ Valve-type

Code	Content
D	2-Way Valve Specification
T	3-Way Valve Specification
Z	For mixed specifications (Provide details in the specification sheet)

❷ 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)

❸ 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

❹ Vacuum Supply Port (PV)

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

❺ Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC

❻ Number of Manifold Stations

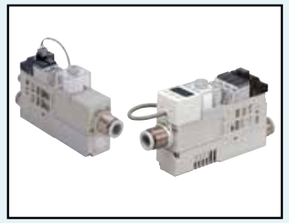
Code	Content
2 to 10	2 stations to 12 stations

❼ 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)

●Mix manifold specifications sheet

Vacuum Switching Unit Model No. ❶ ❷ ❺ ❼	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSXPM- - - - -											
VSXPM- - - - -											
VSXPM- - - - -											
VSXPM- - - - -											
VSXPM- - - - -											



31.5 mm Width Integrated Type Vacuum Switching Unit

VSQP Series

Integrated type vacuum ejector unit optimal for controlling large flow rates

Abundant variations of vacuum supply valves

Normally Closed, Normally Open standardized.

Pressure sensor equipped with easy-to-view LCD 2-screen, 3-color display

With power saving mode function, 30% power saving possible.



Selection of negative common specification possible

Optimal when the negative side of the power supply is used as a common reference potential.

Compliant with Global Standards

CE UKCA RoHS

Model No. Notation

●31.5 mm width Discrete dedicated vacuum switching unit

VSQP - B - 10 - 10 - 3 - R

- VSQP: Model No.
- B: ❶ Valve-type
- 10: ❷ Vacuum Port (V)
- 10: ❸ Vacuum Supply Port (PV)
- 3: ❹ Solenoid Valve Voltage
- R: ❺ Vacuum Pressure Switch Specifications

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

●Design compatible with rechargeable battery manufacturing process

VSQP - ..... - P4*

*Please inquire for details.

❶ Valve-type

Code	Content
A	Normally Open Type
B	Normally Closed Type

❷ Vacuum Port (V)

Code	Content
10	ø10 Push-in fitting
12	ø12 Push-in fitting

❸ Vacuum Supply Port (PV)

Code	Content
10	ø10 Push-in fitting
12	ø12 Push-in fitting

❹ Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC (Positive Common specification)
3MC	24 VDC (Negative Common specification)

❺ Vacuum Pressure Switch Specifications

Code	Content
Blank	Without Vacuum Pressure Switch
R	NPN Output 2 points with Digital Display
RP	PNP Output 2 points with Digital Display

Maintenance Part Model No.

*For details of the maintenance parts, P. 390.

●Filter Element

VSQ - E

- VSQ: Model No.

Specifications

Item	VSQP
Operating Fluid	Air
Operating Pressure MPa	0.3 to 0.7
Ambient Temperature/Fluid Temperature °C	5 to 50
Vacuum pressure kPa	-100 to 0

Solenoid Valve Specifications

●Pilot Valve

Item	Pilot Valve	
Valve-type and Operation Method	Direct acting poppet valve	
Rated Voltage V	24 VDC	100 VAC
Voltage Fluctuation Range V	DC 24 ±10%	AC 100 ±10%
Surge Suppressor	Varistor	Bridge Diode
Power Consumption	0.55 W	1 VA
Manual Override	Push-type lock type	
Operation Indicator	When coil is energized: Red LED lights up	

●Switching valve

Item	Vacuum Supply Valve	Vacuum Breaking Valve
Valve-type and Operation Method	Pilot operated poppet valve	
Valve-type	Normally Closed, Normally Open	Normally Closed
Lubrication	Not required	
Effective Area mm² (Cv value)	16.5 (0.89)	3.5 (0.19)

Vacuum Pressure Switch Specifications

Item		Vacuum Pressure Switch	
		NPN Output (R)	PNP Output (RP)
Working pressure kPa		-100 to 100	
Proof pressure kPa		500	
Environmental Resistance	Ambient Temperature (Storage)(°C)	-10 to 60 (No condensation or freezing)	
	Ambient Temperature (Operating)(°C)	0 to 50 (No condensation or freezing)	
	Ambient Humidity (Storage/Operating)	35 to 85% RH (No condensation)	
	Protection Structure	Equivalent to IEC Standard IP40	
Power Supply Voltage V		DC 12 to 24 ±10% Ripple(P-P) ≤ ±10%	
Current Consumption mA		≤ 40 (No load)	
Pressure Display	Display Update Rate	5 times/sec	
	Display Accuracy	±2% F.S. ±1 digit	
	Digital Display	Main display: 2 colors (red, sub-display: Orange)	
Switch Output	Number of Output Points	2 points	
	Output Method	NPN Open Collector	PNP Open Collector
	Switch Rating	≤ 30 VDC 125 mA	
	Internal Voltage Drop	≤1.5 V	
Temperature Characteristics		≤ ±2% F.S.(0 to 50°C, at 25°C)	
Repeatability		±0.2% F.S. ±1 digit	
Differential (Hysteresis)		Adjustable	
Response Time		Selectable (50/250/500/1000/2000/3000 ms)	

Vacuum Filter Specifications

Item	Vacuum Filter
Element Material	Polyvinyl formal
Filtration Rating μm	10
Filtration area mm²	1507

Vacuum Breaking Function

Item	Vacuum Breaking Function
Break Air Flow Rate L/min (ANR)	0 to 50 (at 0.5 MPa supply pressure)

Valve Lead Wire Color

Item	Black	Gray	Blue	Brown
24 VDC Plus Common Specification	Vacuum Generation (-)	Vacuum Breaking (-)	-(*1)	24 VDC (+ common)
24 VDC Minus Common Specification	Vacuum Generation(+)	Vacuum Breaking (+)	-(*1)	0 V (- common)
100 VAC Specification	Vacuum Generation (-)	Vacuum Breaking (-)	-(*1)	common

*: For this model, the included blue lead wire is not used.

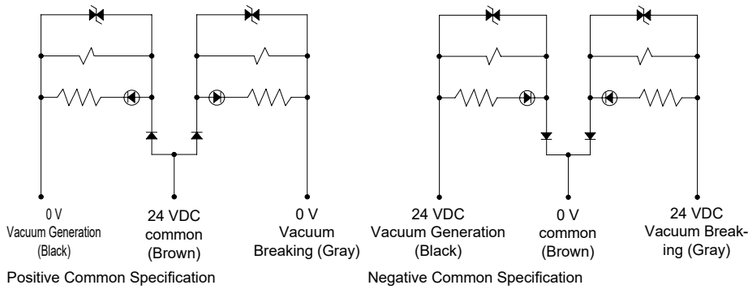
Weight Table

Model No.	Unit Contents	Weight (g)
VSPQ-□□□-□	Single unit without switch	327
VSPQ-□□□-□-R,RP	Single unit with switch	384

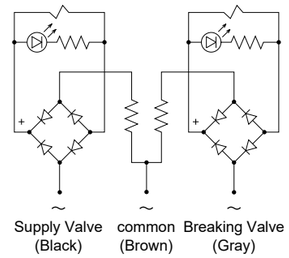
Cartridge	Weight (g)
ø10 Push-in fitting	19
ø12 Push-in fitting	26

Electrical Circuit (Solenoid Valve)

●24 VDC

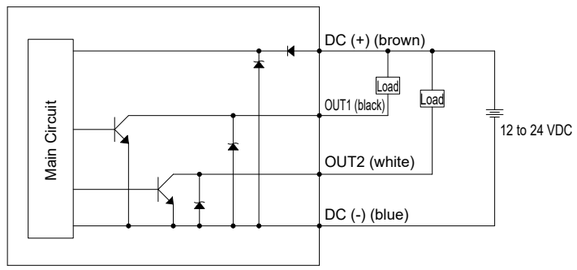


●100 VAC

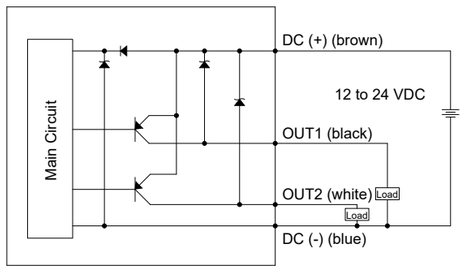


Vacuum Pressure Switch Electrical Circuit Diagram

■NPN open collector output

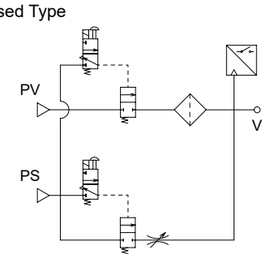


■PNP open collector output



Circuit Diagram

●Normally Closed Type

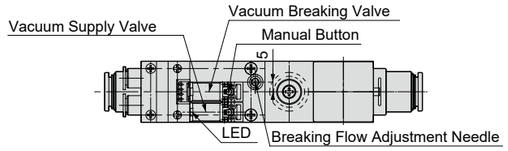


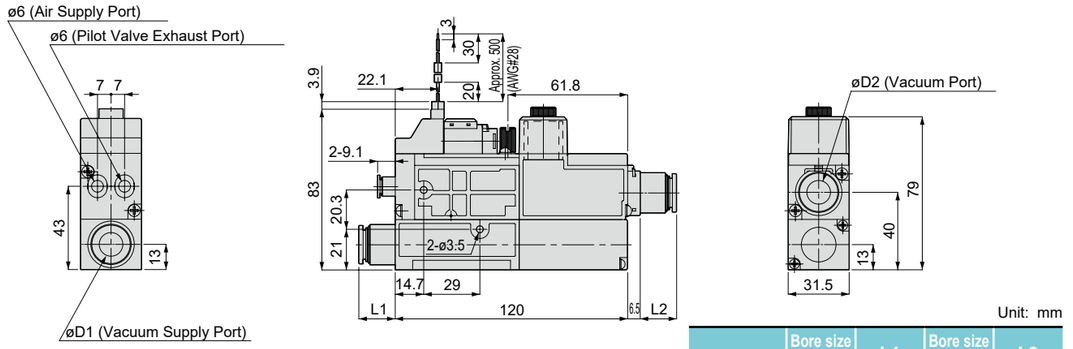
MEMO

Vacuum Components
Vacuum Pump System
VSJP/ VSJPM
VSNP/ VSNPM
VSXP/ VSXPM
VSQP
VSZPM
Ending

External Dimension Drawings

●Without Vacuum Pressure Switch

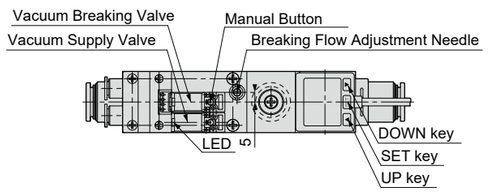


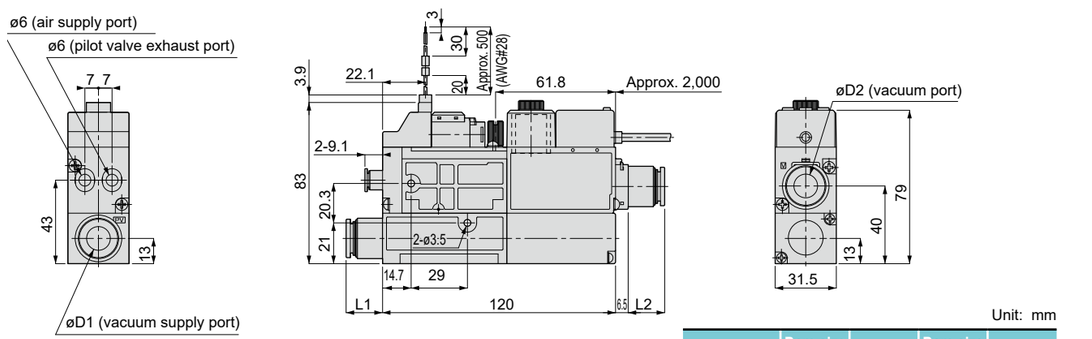


Unit: mm

	Bore size øD1	L1	Bore size øD2	L2
Air Supply Port	10	14.7	-	-
	12	18.8	-	-
Vacuum port	-	-	10	14.7
	-	-	12	18.8

●With vacuum pressure switch and digital display



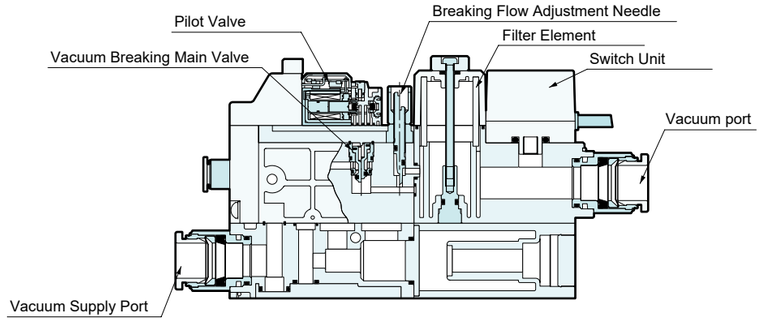


Unit: mm

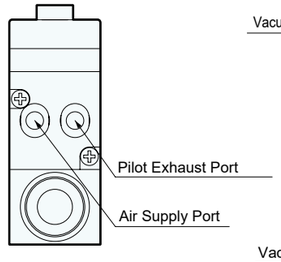
	Bore size øD1	L1	Bore size øD2	L2
Air Supply Port	10	14.7	-	-
	12	18.8	-	-
Vacuum port	-	-	10	14.7
	-	-	12	18.8

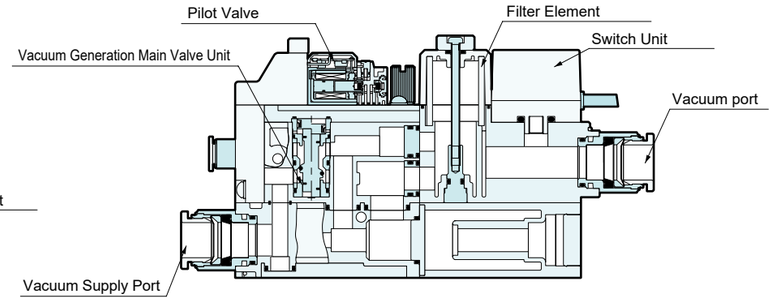
Internal Structure Diagram

●Burst circuit

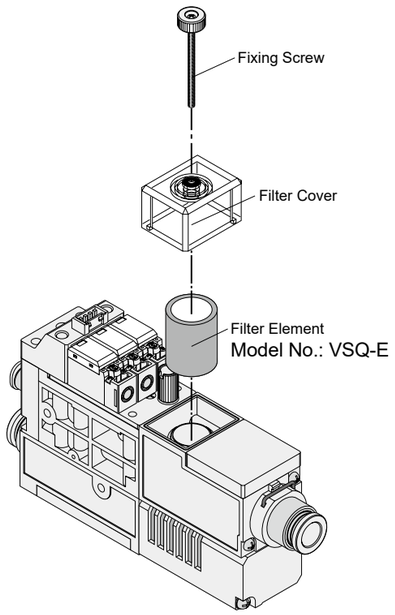


●Vacuum circuit





Maintenance Parts



Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, refer to Intro 15 for details.

Individual Precautions: 31.5 mm Width Single Unit Dedicated Type VSQP Series

Design / Selection

Warning

■The vacuum retention function of the vacuum switching unit allows leakage. Hence, take other safety measures if vacuum retention for long periods is required.

■Make sure to turn the power OFF before wiring. Also, during wiring, check the lead wire color, terminal number, etc., and do not short the output terminal, power supply terminal, and common terminal. If short-circuited, there is a risk of sensor failure.

Caution

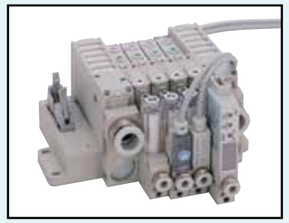
■Use a stable DC power supply.

■To connect to an output terminal or power supply terminal(relay, valve, etc.), install a surge voltage absorption circuit. Also, avoid usage where the current exceeds the rating.

■When using a unit power supply such as switching power supply, ground the F.G.(frame ground).

■Do not short-circuit the output terminal with other terminals.

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



11 mm Pitch Manifold Vacuum Switching Unit

VSZPM Series

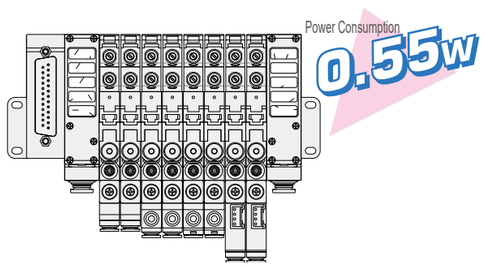
Compact and lightweight vacuum switching unit dedicated to manifolds (max 12 stations)

Centralized wiring for supply valve / breaking valve

Adoption of centralized wiring specification enables reduction of wiring work time.



Valve power consumption reduced to 0.55 W, achieving energy saving.



Piping standardized with Push-in fitting and female thread specifications Selection possible according to piping application

Various variations of vacuum pressure switches also available Compatible with a wide range of applications

- Analog output



- Without display 1-point output

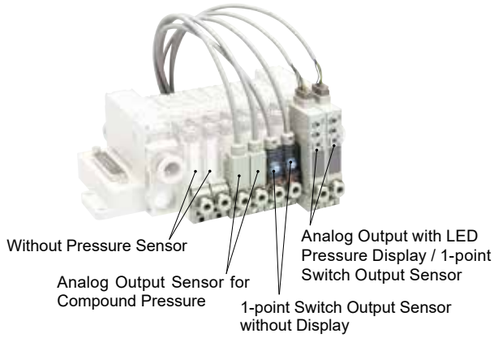


- With digital display 1-point output + Analog output



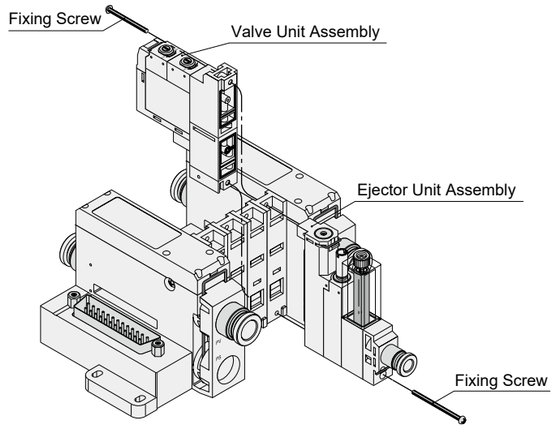
- With digital display 2-point output





Structure considering maintainability makes maintenance work easy

Since valves, filters, etc., are unitized, replacement is possible by removing only the necessary parts.

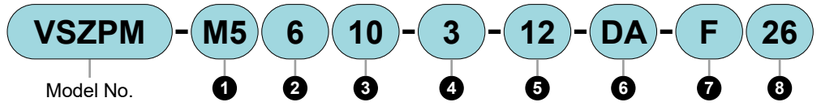


Compliant with Global Standards

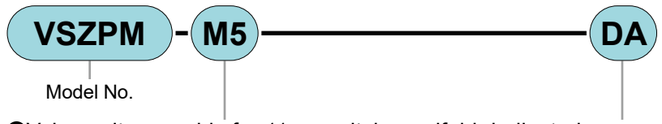
CE UKCA RoHS

Model No. Notation

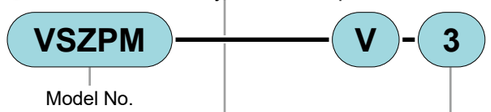
●11 mm pitch manifold dedicated vacuum switching unit



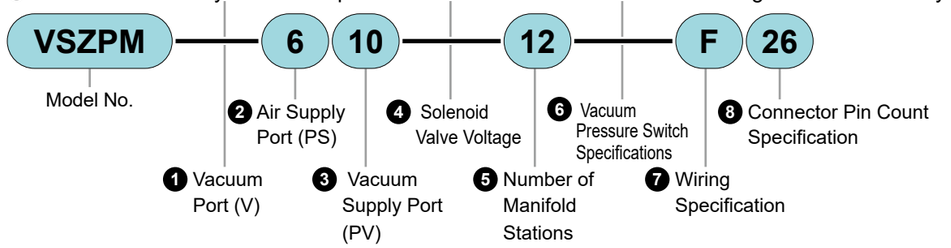
●Pump unit assembly for 11 mm pitch manifold dedicated vacuum switching unit



●Valve unit assembly for 11 mm pitch manifold dedicated vacuum switching unit



●Valve unit assembly for 11 mm pitch manifold dedicated vacuum switching unit manifold only



❶ Vacuum Port (V)

Code	Content	Type: Manifold	Pump Unit Assembly	Valve Unit Assembly	Manifold Only
4	ø4 Push-in fitting	●	●		
6	ø6 Push-in fitting	●	●		
M5	M5×0.8	●	●		
CX	For Fitting Mix (Provide details in the specification sheet)	●			

*: For mixed specifications, Pages 404 and 405 øBe sure to fill in the "mix manifold specifications sheet".

❷ Air Supply Port (PS)

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

*: For pump unit assembly and valve unit assembly, the air supply port cannot be selected.

❸ Vacuum Supply Port (PV)

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

*: For pump unit assembly and valve unit assembly, the vacuum supply port cannot be selected.

❹ Solenoid Valve Voltage

Code	Content
3	24 VDC

*: For pump unit assembly and manifold only, the solenoid valve voltage cannot be selected.

❺ Number of Manifold Stations

Code	Content
2	2 stations
to	t o
12	12 stations

*: For pump unit assembly and valve unit assembly, the number of manifold stations cannot be selected.

❻ Vacuum Pressure Switch Specifications

Code	Content	Type: Manifold	Pump Unit Assembly	Valve Unit Assembly	Manifold Only
Blank	Without Vacuum Pressure Switch	●	●		
DW	NPN Output 2 points with Digital Display	●	●		
DA	NPN Output 1 point + Analog Output with Digital Display	●	●		
S	NPN Output 1 point without Display	●	●		
V1	Analog Output for Negative Pressure	●	●		
R1	Analog Output for Compound Pressure	●	●		
Z	For Mixed Specifications (Provide details in the specification sheet)	●			

*: For mixed specifications, please be sure to fill out the 'Mixed Manifold Specification Sheet' on P. 404 and P. 405.

❼ Wiring Specification

	Code	Content	
	F	Flat Cable Connector	
*2	D	D-sub Connector	

*1: For pump unit assembly and valve unit assembly, the wiring specification cannot be selected.
*2: When ❽ Connector Pin Count is '20' or '26', ❼ 'D' cannot be selected. When ❽ Connector Pin Count is '25', ❼ 'F' cannot be selected.

❽ Connector Pin Count Specification

	Code	Content
	Blank	Connector with optimal pin count installed by our company
*3	20	20-pin Flat Cable Connector (max. 9 stations)
	26	26-pin Flat Cable Connector (max. 12 stations)
*3	25	25-pin D-sub Connector (max. 12 stations)

*1: For flat cable connector:

Number of Manifold Stations	2 to 4 stations	10-pin Flat Cable Connector
	5 to 9 stations	20-pin Flat Cable Connector
	10 to 12 stations	26-pin Flat Cable Connector

For D-sub connector:

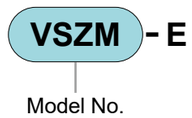
Number of Manifold Stations	2 to 4 stations	9-pin D-sub Connector (max. 9 stations)
	5 to 12 stations	25-pin D-sub Connector (max. 12 stations)

*2: For pump unit assembly or valve unit assembly, the connector pin count specification cannot be selected.
*3: When ❽ is '20' or '26', Wiring Specification ❼ 'D' cannot be selected. When ❽ is '25', Wiring Specification ❼ 'F' cannot be selected.
*4: For ❺ '5' to '9', please select 'Blank'.
*5: For ❺ '10' to '12', please select 'Blank'.
*6: For ❺ '5' to '12', please select 'Blank'.

Maintenance Part Model No.

* For details on maintenance parts, please refer to P. 402.

●Filter Element



Specifications

Item		VSZPM
Operating Fluid		Air
Operating Pressure	MPa	0.3 to 0.7
Ambient Temperature/Fluid Temperature	°C	5 to 50
Vacuum pressure	kPa	-100 to 0

Solenoid Valve Specifications

●Pilot Valve

Item	Vacuum Supply Valve	Vacuum Breaking Valve
Valve-type and Operation Method	Direct acting poppet valve	
Rated Voltage V	24 VDC	
Allowable Voltage Fluctuation Range V	21.6 DC to 26.4 DC	
Surge Protection Circuit	Varistor	
Power consumption W	0.55 (with LED)	
Operation Indicator Light	When coil is energized: Red LED lights up	When coil is energized: Yellow-green LED lights up
Manual Operation	Push & Lock type	
Wiring Method	D-sub Connector, Flat Cable Connector	

●Switching valve

Item	Vacuum Supply Valve	Vacuum Breaking Valve
Valve-type and Operation Method	Pilot operated poppet valve	
Valve Function	Single	
Valve-type	Normally Closed	
Proof Pressure MPa	1.05	
Lubrication	Not required	
Effective Area mm² (Cv value)	4.5 (0.24)	3.5 (0.19)

Vacuum Pressure Switch Specifications

Item		With Digital Display		No Display	Separate-type	Analog
		2-point Switch Output	1-point Switch Output	1-point Switch Output	Pressure Indicator with Switch	
Current Consumption mA		40		20	50	20
Pressure Sensing Element		Diffused Semiconductor Pressure Sensor			-	Diffused Semiconductor Pressure Sensor
Working pressure kPa		-100 to 0			-	-100 to 0
Set Pressure		-99 to 0 kPa			-999 to 999 counts	-
Proof Pressure MPa		0.2			-	0.2
Storage Temperature °C		-20 to 80		-20 to 70		
Operating Temperature °C		0 to 50		-10 to 60	-10 to 50	-10 to 60
Operating Humidity		35 to 85% RH				
Power Supply Voltage V		DC 12 to 24 ±10% Ripple (P-P) ≤ 10%		DC 10.8 to 30 (incl. ripple)		
Protection Structure		Equivalent to IEC Standard IP40				
Number of Switch Output Points		2	1	1	2	-
Repeatability		±0.3% F.S. Max.(at Ta = 25°C)				-
Differential		Fixed	Variable	Fixed	Variable	-
Switch Output		NPN Transistor Open Collector Output				-
Analog Output	Output Voltage V	-	1 to 5	-	1 to 5	
	Zero Point Voltage V	-	1±0.1	-	1±0.1	
	Span Voltage V	-	4±0.1	-	4±0.1	
	Output Current mA	-	≤ 1	-	≤ 0.5	≤ 1
	Differential/Hysteresis	-	±0.5% F.S. Max.	-	±0.5% F.S. Max.	
Display		-99 to 0 kPa (2-digit Red LED display)		-	3-digit Red LED display	-
Display Update Rate		Approx. 4 times/sec		-	Approx. 4 times/sec	-
Display Accuracy		±3% F.S. ±2 digit		-	±1% F.S.	-
Resolution		1 digit		-	1 digit	-
Switch Operation Indicator Light		SW1: Red LED lights up when output is ON			SW1: Green LED lights up when output is ON	-
		SW2: Green LED lights up when output is ON	-		SW2: Red LED lights up when output is ON	-

Vacuum Breaking Function

Item		Vacuum Break Valve
Break Air Flow Rate	L/min (ANR)	0 to 50 (at 0.5 MPa supply)

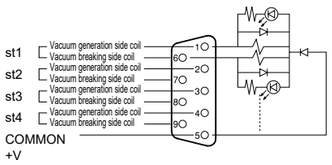
Vacuum Filter Specifications

Item		Vacuum Filter
Element Material		Polyvinyl formal
Filtration Rating	μm	10
Filtration area	mm²	660

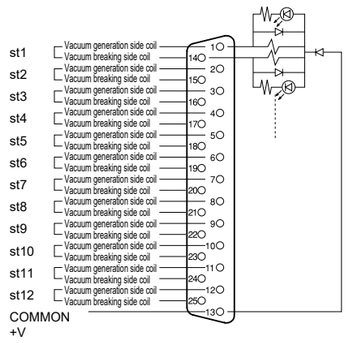
Electrical Circuit (Solenoid Valve)

●D-sub Connector

9-pin

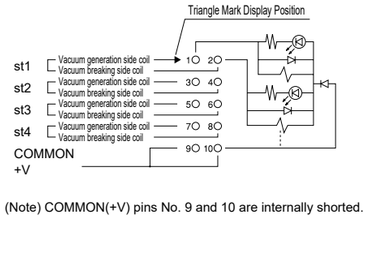


25-pin



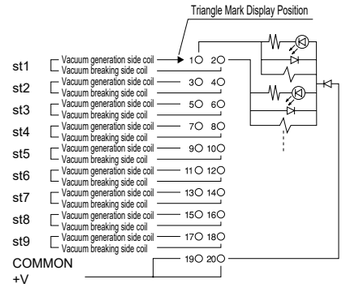
●Flat Cable Connector

10-pin



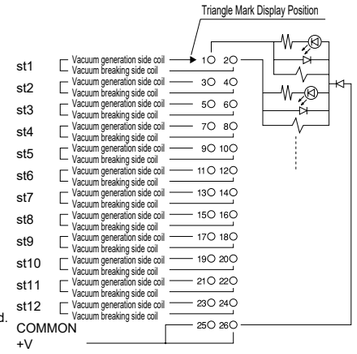
(Note) COMMON(+V) pins No. 9 and 10 are internally shorted.

20-pin



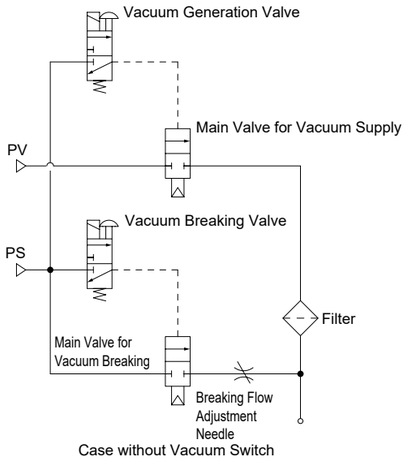
(Note) COMMON(+V) pins No. 19 and 20 are internally shorted.

26-pin

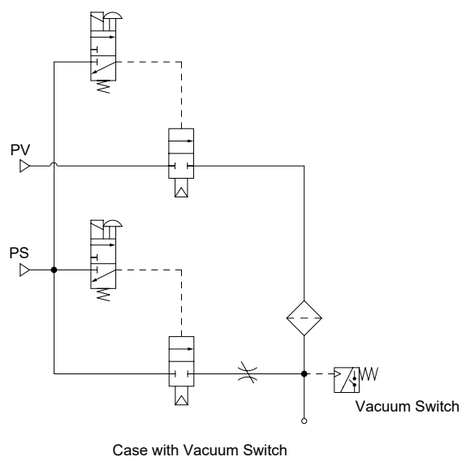


(Note) COMMON(+V) pins No. 25 and 26 are internally shorted.

Circuit Diagram



Case without Vacuum Switch



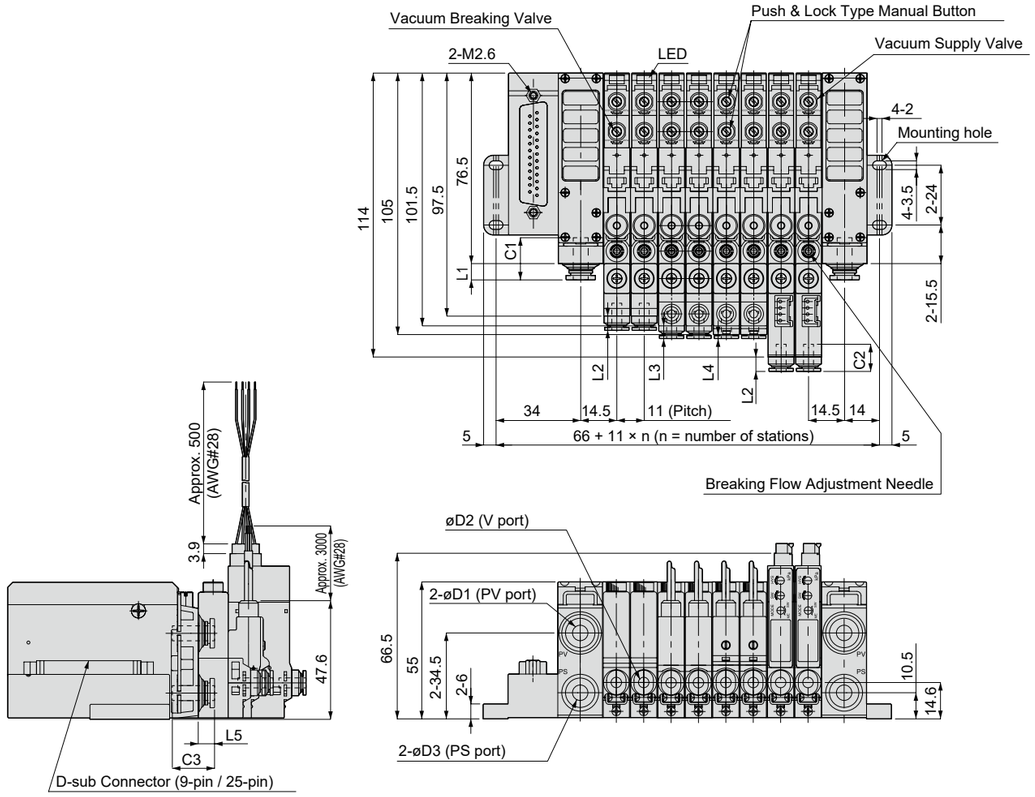
Case with Vacuum Switch

MEMO

Vacuum Components
Vacuum Pump System
VSJP/ VSJPM
VSNP/ VSNPM
VSXP/ VSXPM
VSQP
VSZPM
Ending

External Dimension Drawings

●D-sub Connector Specification

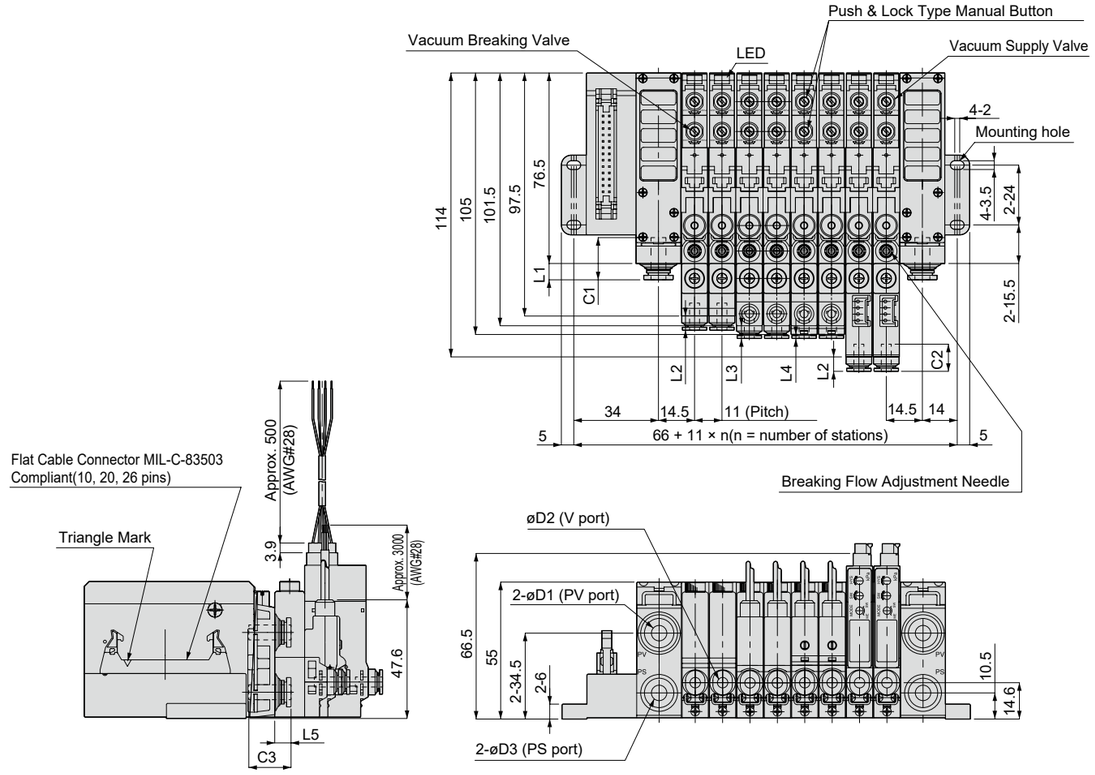


Unit: mm

PV Port øD1	C1	L1	V Port øD2	C2	L2	L3	L4	PS Port øD3	C3	L5
6	17	6.6	4	11.2	6.1	5.4	1.9	4	14.9	2
8	18.2	8.1	6	10	8.9	8.2	4.7	6	17	6.6
10	20.7	11.7	M5 (Female thread)	-	4	3.3	-0.2	8	18.2	8.1

External Dimension Drawings

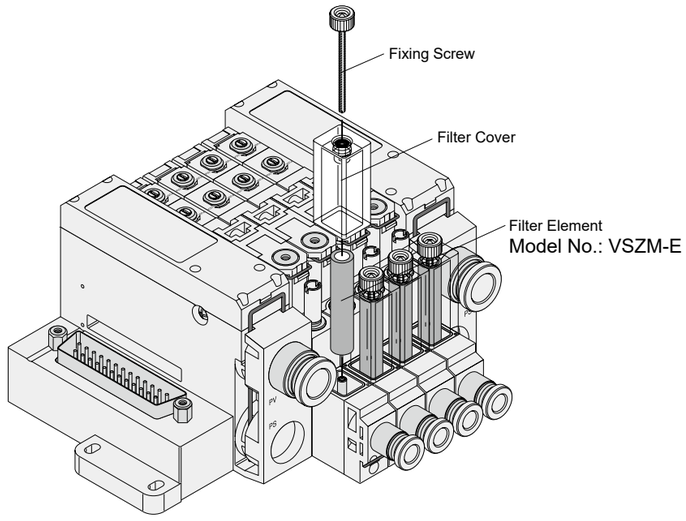
●Flat Cable Connector Specification



Unit: mm

PV Port øD1	C1	L1	V Port øD2	C2	L2	L3	L4	PS Port øD3	C3	L5
6	17	6.6	4	11.2	6.1	5.4	1.9	4	14.9	2
8	18.2	8.1	6	10	8.9	8.2	4.7	6	17	6.6
10	20.7	11.7	M5 (Female thread)	-	4	3.3	-0.2	8	18.2	8.1

Maintenance Parts



Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro Page 15 for details.

Individual Precautions: 11 mm Pitch Manifold Dedicated Type VSZPM Series

Design / Selection

Warning

■The vacuum switching unit (VSZP) allows leakage. Hence, take other safety measures if vacuum retention for long periods is required.

Caution

■Manifold silencer specification may cause performance degradation and trouble due to element clogging. Perform periodic maintenance inspections.

■Depending on usage conditions, the manifold may undergo deterioration of vacuum performance or trouble. Hence, fully understand the manifold safety precautions in this catalog before use.

■When all units are not operated at the same time, the ejector exhaust of the operating unit leads to the vacuum port of the stopped unit. If exhaust flow-around poses a problem, please consult us.

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

Vacuum Components
Vacuum Pump System
VSJP/ VSJPM
VSNP/ VSNPM
VSXP/ VSXPM
VSQP
VSZPM
Ending

How to Create VSZPM Mixed Manifold Specification Sheet

●Mix manifold model No.(example)

VSZPM - ❶CX ❷6 ❸8 - ❹3 - ❺5 - ❻Z - ❼F ❽26

●Mix manifold specifications sheet(example)

Vacuum Switching Unit Model No. ❶ ❻	Arrangement Position 1	2	3	4	5	6	7	8	9	10	11	12	Quantity
VSZPM- 6 - DW	○	○											2
VSZPM- 6 - DA			○		○								2
VSZPM- 4 -				○									1
VSZPM- -													
VSZPM- -													

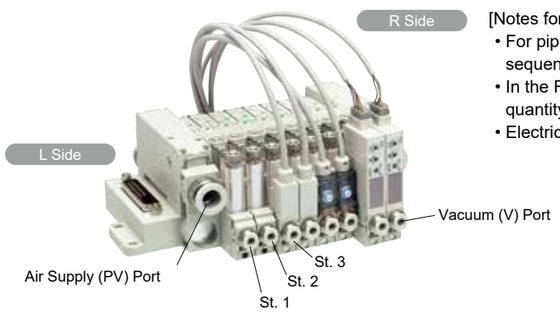
[For Fitting Mix Specification with Output Port Size Only]

●Mix manifold model No.(example)

VSZPM - ❶CX ❷6 ❸6 - ❹3 - ❺5 - ❻DW - ❼F ❽26

●Mix manifold specifications sheet (example)

Vacuum Switching Unit Model No. ❶ ❻	Arrangement Position 1	2	3	4	5	6	7	8	9	10	11	12	Quantity
VSZPM- M5 - DW	○	○											2
VSZPM- 6 - DW			○		○								2
VSZPM- 4 - DW				○									1
VSZPM- -													
VSZPM- -													



[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.
- Electrical connector assembly is fixed on the L side of the manifold.

VSZPM 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.

VSZPM - ❶ ❷ ❸ - ❹ - ❺ - ❻ - ❼ ❽

❶ Vacuum Port (V)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
M5	M5×0.8
CX	For fitting mix (Provide details in the specification sheet)

❷ Air Supply Port (PS)

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

❸ Vacuum Supply Port (PV)

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

❹ Solenoid Valve Voltage

Code	Content
3	24 VDC

❺ Number of Manifold Stations

Code	Content
2 to 12	2 stations to 12 stations

❻ 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
S	NPN Output 1 point without Display
V1	Analog Output for Negative Pressure
R1	Analog Output for Compound Pressure
Z	For mixed specifications (Provide details in the specification sheet)

❼ Wiring Specification

Code	Content
F	Flat Cable Connector
D	D-sub Connector

❽ Connector Pin Count Specification

Code	Content
Blank	For Flat Cable Connector Specification
	2 to 4 stations 10-pin
	5 to 9 stations 20-pin
	10 to 12 stations 26-pin
	For D-sub Connector Specification
	2 to 4 stations 9-pin
	5 to 12 stations 25-pin
20	20-pin Flat Cable Connector (max. 9 stations)
26	26-pin Flat Cable Connector (max. 12 stations)
25	25-pin D-sub Connector (max. 12 stations)

●Mix manifold specifications sheet

Vacuum Switching Unit Model No. ❶ ❻	Arrangement Position 1	2	3	4	5	6	7	8	9	10	11	12	Quantity
VSZPM- -													
VSZPM- -													
VSZPM- -													
VSZPM- -													
VSZPM- -													

Suction Pad
VSP

■ Vacuum Components



CONTENTS

System Table	408
●Standard general (VSP-☐R)	422
●Standard deep (VSP-☐A)	422
●Standard compact (VSP-☐RM)	422
●Sponge (VSP-☐S)	508
●Bellows (VSP-☐B)	570
●Multi-stage bellows (VSP-☐W)	642
●Oval (VSP-☐E)	702
●Soft (VSP-☐L)	770
●Soft bellows (VSP-☐LB)	830
●Anti-slip type (VSP-☐K)	868
●Thin object type (VSP-☐P)	904
●Flat type/flat intake flow rate increase-type (VSP-☐F, ☐FH)	936
●Suction mark prevention type (VSP-☐Q)	974
●Packaging bag (VSP-☐PB)	1008
●Type for metal detector (VSP-☐BE, ☐BD)	1020
●With mechanical burst function (VSP-KE☐Y)	1054
●Swinging holder (VSP-☐F1/F2/CF)	1,060
●Direct mounting filter (VSP-T1/T2)	1064

Pad Shape - Pad Size / Pad Material / Option List

Pad Shape		Pad Shape Code	Pad Size 0.7	1	1.5	2	2.5	3	3.5	4	5	6	8	10	15	20	25	30	35	40	50	60	70	80	100	150	200
Standard Type	General-type	R	–	●	–	●	-	●	–	●	–	●	●	●	●	●	●	●	–	●	●	●	–	●	●	●	●
	Deep Type	A	–	–	–	–	-	–	–	–	–	–	–	–	●	●	●	●	–	●	●	●	–	●	●	–	–
	Compact	RM	●	●	●	●	-	●	–	●	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Sponge Type		S	–	–	–	–	-	–	–	–	–	–	–	●	●	●	●	●	●	–	●	–	●	–	●	–	–
Bellows Type		B	–	–	–	●	-	–	–	●	–	●	●	●	●	●	●	●	–	●	●	●	–	●	●	–	–
Multi-stage Bellows Type		W	–	–	–	–	-	–	–	–	–	●	●	●	–	●	–	●	–	●	●	–	–	–	–	–	–
Oval-type		E	–	–	–	2x4 ●	-	–	3.5x7 ●	4x10, 4x20 ● 4 x 30,	–	5x10, 5 x 20 ● 5 x 30	6 x 10, 6 x 20, ● 6 x 30	8 x 20, 8 x 30 ●	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Soft Type		L	–	–	–	–	-	–	–	●	–	●	●	●	●	●	–	●	–	●	–	–	–	–	–	–	–
Soft Bellows Type		LB	–	–	–	–	-	–	–	–	–	●	●	●	●	●	–	–	–	–	–	–	–	–	–	–	–
Anti-slip Type		K	–	–	–	–	-	–	–	–	–	–	–	●	–	●	–	●	–	●	●	–	–	–	–	–	–
Thin workpiece type		P	–	–	–	–	-	–	–	–	–	–	●	●	●	●	–	–	–	–	–	–	–	–	–	–	–
Flat Type	Suction Flow Rate Standard	F	–	–	–	–	-	–	–	–	–	–	–	●	●	●	●	●	–	–	–	–	–	–	–	–	–
	Suction Flow Rate Increased	FH	–	–	–	–	-	–	–	–	–	–	–	●	●	●	●	●	–	–	–	–	–	–	–	–	–
Suction Mark Prevention Type		Q	–	–	–	–	-	–	–	–	–	–	–	●	–	●	–	●	–	–	–	–	–	–	–	–	–
Packaging bag type		PB	-	-	-	-	-	-	-	-	-	-	-	-	-	●	●	●	-	●	-	-	-	-	-	-	-
Metal detector type		BE BD	-	-	-	-	-	-	-	-	-	-	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-
Mechanical-type with Break Function		Y	-	-	-	-	●	●	-	●	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-

Pad Material	Nitrile rubber N	Silicone Rubber S	Urethane rubber U	Fluororubber F	Conductive Silicone Rubber SE	Conductive NBR (Low Resistance-type) NE	Food Sanitation Act Compliant NBR G	HNBR HN	EPDM EP	Fluorosilicone Rubber FS	Oil Resistant NBR NH	Extra Soft Silicone Rubber 20° YS2	Extra Soft Silicone Rubber 40° YS4	Chloroprene Rubber Blank	PEEK K	POM M	Conductive EEK KE
Standard Type General-type	●	●	●	●	●	●	●	●	●	–	–	–	–	–	–	–	–
Standard Type Deep Type	●	●	●	●	●	●	●	●	●	–	–	–	–	–	–	–	–
Standard Type Compact	●	●	●	●	●	●	●	●	●	–	–	–	–	–	–	–	–
Sponge Type	–	●	–	–	–	–	–	–	–	–	–	–	–	●	–	–	–
Bellows Type	●	●	●	●	●	●	–	●	●	–	–	●	●	–	–	–	–
Multi-stage Bellows Type	●	●	●	●	–	●	●	●	●	–	–	●	●	–	–	–	–
Oval-type	●	●	●	●	●	●	–	●	●	–	–	–	–	–	–	–	–
Soft Type	●	●	–	–	●	●	–	–	–	●	–	–	–	–	–	–	–
Soft Bellows Type	●	●	●	–	●	●	–	●	●	–	–	–	–	–	–	–	–
Anti-slip Type	–	●	●	●	–	●	–	–	–	–	●	–	–	–	–	–	–
Thin workpiece type	●	●	●	●	–	●	–	–	–	●	–	–	–	–	–	–	–
Flat Type Suction Flow Rate Standard	●	●	●	●	●	●	–	–	–	–	–	–	–	–	–	–	–
Flat Type Suction Flow Rate Increased	●	●	–	●	●	●	–	–	–	–	–	–	–	–	–	–	–
Suction Mark Prevention Type	–	–	–	–	–	–	–	–	–	–	–	–	–	–	●	●	●
Packaging bag type	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metal detector type	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mechanical-type with Break Function	●	●	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-

Option	Free Holder (Swing)	Flexible Holder (Swing)	Direct Mount Filter	Drop Prevention Valve	Surface Treated Rubber	Resin Attachment	Rechargeable Battery Compatible Specification	Food FP Specification
Standard Type General-type	●	●	●	●	●	–	●	●
Standard Type Deep Type	●	●	●	●	●	–	●	●
Standard Type Compact	–	●	-	●	●	–	●	-
Sponge Type	●	●	●	●	–	–	●	●
Bellows Type	●	●	●	●	●	● Mounting Parts	●	●
Multi-stage Bellows Type	●	●	●	●	●	–	●	●
Oval-type	●	●	●	●	●	–	●	-
Soft Type	●	●	●	●	●	–	●	●
Soft Bellows Type	●	●	●	●	●	–	●	●
Anti-slip Type	●	●	●	●	–	–	●	-
Thin workpiece type	●	●	●	●	–	–	●	●
Flat Type Suction Flow Rate Standard	●	●	●	●	●	–	●	●
Flat Type Suction Flow Rate Increased	●	●	●	●	●	–	●	●
Suction Mark Prevention Type	–	Standard ●	●	●	–	–	●	-
Packaging bag type	-	-	-	-	-	-	-	●
Metal detector type	-	-	●	-	-	-	-	●
Mechanical-type with Break Function	-	-	-	-	-	-	-	-

Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechanical Break Function
Ending

Pad Shape - Holder Shape List

Pad Shape \ Holder Shape	VSP-A / VSP-MA	VSP-B / VSP-MB	VSP-C / VSP-MC	VSP-D / VSP-MD	VSP-E / VSP-ME	VSP-F	VSP-LFC	VSP-LFD	VSP-HC	VSP-HD	VSP-HDW	VSP-HE	VSP-HEW	VSP-AE	VSP-BE	VSP-KE
Standard Type	●	●	●	●	●	●	●	●	●	●	●	●	●	–	–	–
	●	●	●	●	●											
Sponge Type	●	●	●	●	–	●	●	●	●	●	●	●	●	–	–	–
	●	●	●	●	–											
Bellows Type	●	●	●	●	●	●	●	●	●	●	●	●	●	–	–	–
	●	●	●	●	●											
Multi-stage Bellows Type	●	●	●	●	●	●	●	●	●	●	●	●	●	–	–	–
	●	●	●	●	●											
Oval Type	●	●	●	●	–	●	●	●	●	●	●	●	●	●	●	–
	●	●	●	●	–											
Soft Type	●	●	●	●	–	●	●	●	●	●	●	●	●	–	–	–
	●	●	●	●	–											
Soft Bellows Type	●	●	●	●	–	●	●	●	●	●	●	●	●	–	–	–
	●	●	●	●	–											
Anti-slip Type	●	●	●	●	–	●	●	●	●	●	●	●	●	–	–	–
	●	●	●	●	–											
For Thin Objects Type	●	●	●	●	●	●	●	●	–	●	●	●	●	–	–	–
	●	●	●	●	●											
Flat Type	●	●	●	●	–	●	●	●	●	●	●	●	●	–	–	–
	●	●	●	●	–											
Suction Mark Prevention Type	●	●	●	●	–	●	●	●	●	●	●	●	●	–	–	–
	●	●	●	●	–											
For Packaging Bags Type	●	-	-	-	●	-	-	-	-	-	-	-	-	-	-	–
	-	-	-	-	-											
For Metal Detectors Type	●	●	●	●	●	●	●	●	●	●	●	●	●	-	-	–
	●	●	●	●	-											
Mechanical-type with Break Function	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●
	-	-	-	-	-											

Holder Shape

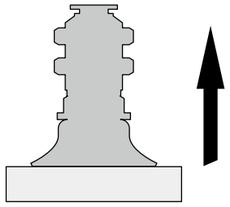
Code		VSP-A	VSP-B	VSP-C	VSP-D	VSP-E	VSP-F	VSP-LFC	VSP-LFD
	Standard	VSP-A	VSP-B	VSP-C	VSP-D	VSP-E	VSP-F	VSP-LFC	VSP-LFD
	Compact	VSP-MA	VSP-MB	VSP-MC	VSP-MD	VSP-ME	–	–	–
Shape		Fixed Type Vacuum Outlet Top	Fixed Type Vacuum Outlet Side	Buffer Type Vacuum Outlet Top	Buffer Type Vacuum Outlet Side	Direct Mount Type Fixed	Direct Mount Type Buffer	Low Particle Generation Buffer Type Vacuum Outlet Top	Low Particle Generation Buffer Type Vacuum Outlet Side

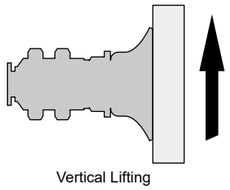
Code	Standard	VSP-HC	VSP-HD	VSP-HDW	VSP-HE	VSP-HEW	VSP-AE	VSP-BE	VSP-KE
Shape		Lightweight Buffer Type Vacuum Outlet Top	Lightweight Buffer Type Vacuum Outlet Side	Lightweight Buffer Type Vacuum Outlet Both Sides	Low Profile Direct Mount Fixed Type Vacuum Outlet Side	Low Profile Direct Mount Fixed Type Vacuum Outlet Both Sides	Screw Mount Type Vacuum Outlet Top	Screw Mount Type Vacuum Outlet Side	Direct Mount Type with Mechanical Break Function

Suction Pad Selection Method

Theoretical Suction Force

Theoretical suction force is determined by the pad area and the vacuum pressure generated when using that pad. Use calculated values as reference; perform actual suction tests as needed for confirmation. Theoretical suction force is a value under static conditions. Allow sufficient margin considering the workpiece Weight and forces due to acceleration during movement(lifting, stopping, rotating, etc.). Also, allow sufficient margin when determining the number and placement of pads.





① Method by Calculation Formula

$$W = x10.13xf\frac{C \times P}{101}$$

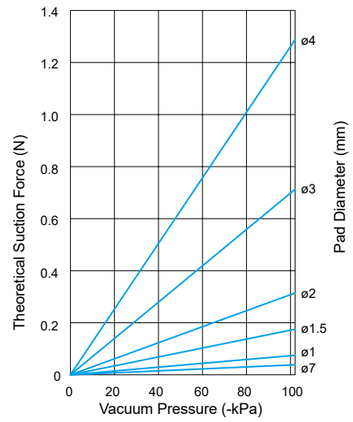
W: Suction Force (N)
C: Pad Area (cm²)
P: Vacuum Pressure (-kPa)
f: Safety Factor Horizontal Lifting (See figure on right): 1/4
Vertical Lifting (See figure on right): 1/8

*1: For sponge-type pads, calculation uses the inner diameter of the sponge pad section. Refer to the table on the right.
*2: For flat type pads, calculation uses the grooves on the suction surface. Refer to the table on the next page.
*3: Regarding the suction force of Bellows (Multi-stage Bellows), Soft (Soft Bellows), and Thin Workpiece-type pads, due to pad characteristics, the theoretical suction force may exceed the pad's own strength depending on the vacuum level. Please verify with actual equipment.

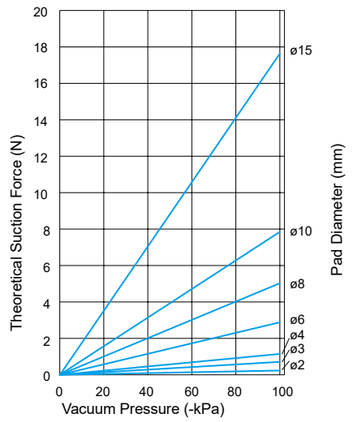
② Theoretical Suction Force Graph [Add a safety factor to the values obtained from the graph.]

Standard, Bellows, Multi-stage Bellows, Soft, Soft Bellows, Non-slip, Thin Workpiece, Suction Mark Prevention Pads (*)

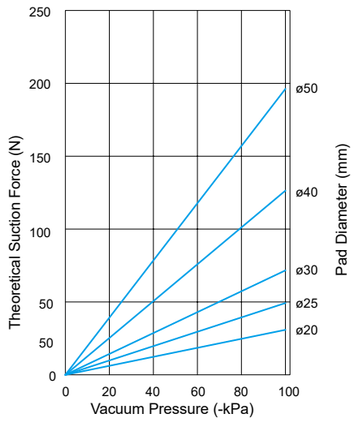
●Pad Diameter (Compact): ø0.7 mm to ø4 mm



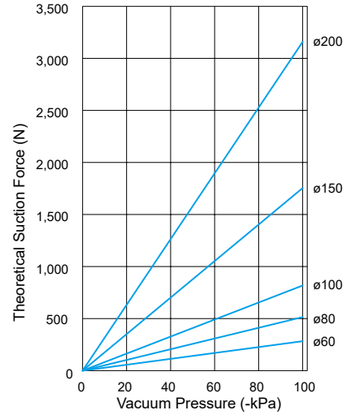
●Pad Diameter: ø2 mm to ø15 mm



●Pad Diameter: ø20 mm to ø50 mm



●Pad Diameter: ø60 mm to ø200 mm

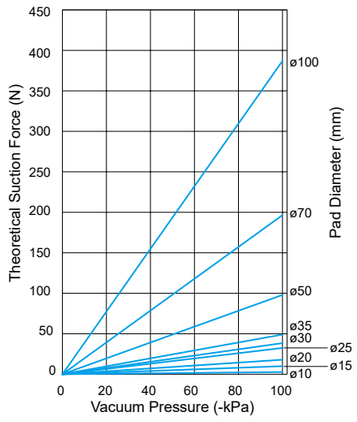


*Depending on the pad shape, some listed pad diameters in the graph may not be available. Please confirm the size from the pad size list in the table below.

Pad Shape		Standard	Bellows	Multi-stage Bellows	Soft	Soft Bellows	Non-slip	Thin Workpiece	Suction Mark Prevention
Pad diameter (mm)	ø0.7	●	-	-	-	-	-	-	-
	ø1	●	-	-	-	-	-	-	-
	ø1.5	●	-	-	-	-	-	-	-
	ø2	●	●	-	-	-	-	-	-
	ø4	●	●	-	●	-	-	-	-
	ø6	●	●	●	●	●	-	-	-
	ø8	●	●	●	●	●	-	●	-
	ø10	●	●	●	●	●	●	●	●
	ø15	●	●	-	●	●	-	●	-
	ø20	●	●	●	●	●	●	●	●
	ø25	●	●	-	-	-	-	-	-
	ø30	●	●	●	●	-	●	-	●
	ø40	●	●	●	●	-	●	-	-
	ø50	●	●	●	-	-	●	-	-
	ø60	●	●	-	-	-	-	-	-
	ø80	●	●	-	-	-	-	-	-
	ø100	●	●	-	-	-	-	-	-
	ø150	●	-	-	-	-	-	-	-
	ø200	●	-	-	-	-	-	-	-

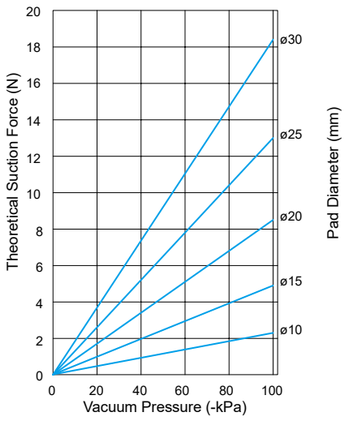
Sponge Pad

●Pad diameter: ø10 mm to ø100 mm



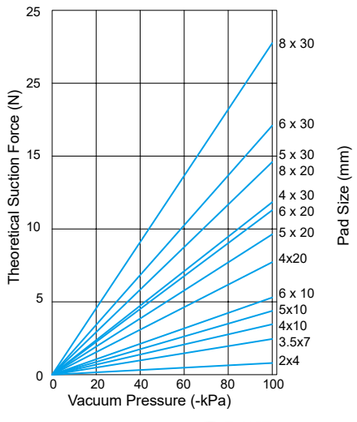
Flat Pad

●Pad diameter: ø10 mm to ø30 mm

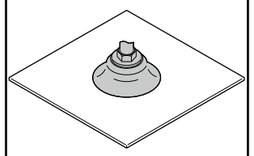
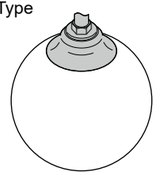
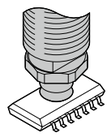
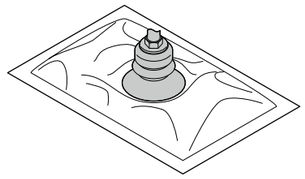


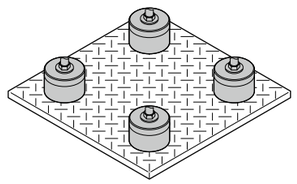
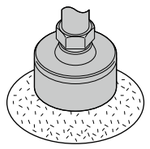
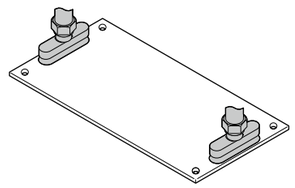
Oval Pad

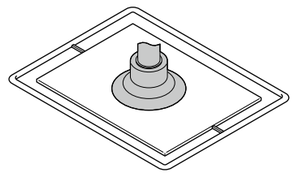
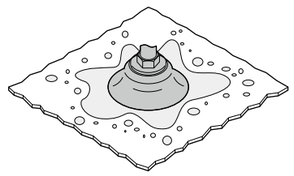
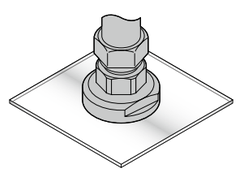
● Pad Size: 2 x 4 mm to 8 x 30 mm

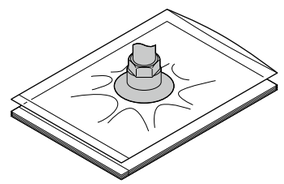
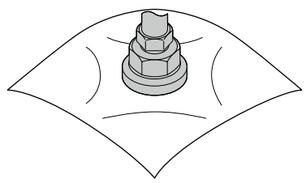


Suction Pad Shapes

Standard Type			Bellows / Multi-stage Bellows Type
General-type 	Deep Type 	Compact 	
Thick, flat workpieces.	Round fruits(apples, etc.) and round balls.	Compact workpieces and semiconductor manufacturing equipment.	Bags containing retort pouches, foodstuffs, etc.

Sponge-type		Oval-type
		
Building exterior materials, small stone objects, or shell-like workpieces.		Long workpieces like circuit boards or semiconductors.

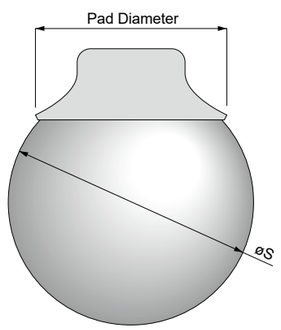
Soft / Soft Bellows Type	Anti-slip Type	Suction Mark Prevention Type
		
Extracting molded products or easily scratched workpieces.	Workpieces with oil adhesion, such as press parts.	LCD glass, painting processes, semiconductor manufacturing equipment.

For Packaging Bags Type	For Thin Objects Type	Flat Type/Flat Increased Suction Flow Type
		
Thin workpieces like copy paper or vinyl.		Thin workpieces like sheets or vinyl.

●[Reference] Suction of spherical surfaces(deep pad)

Minimum Adsorbable Diameter

Pad Diameter (mm)	ø15	ø20	ø25	ø30	ø40	ø50	ø60	ø80	ø100
Sphere Diameter (øS mm)	20	30	40	50	80	100	120	160	200



Characteristics of Each Pad Material

■Rubber material

Item	Ordering Code	Pad Material	Nitrile rubber	Food Sanitation Act Compliant NBR	HNBR	Silicone Rubber	Conductive Silicone Rubber	Extra Soft Silicone Rubber		Urethane rubber	Fluororubber	Fluorosilicone Rubber	EPDM	Conductive NBR (Low Resistance-type)	Metal Detectable Silicone			
															Iron Powder Specification		SUS Powder Specification	
			N, NH (*1)	G	HN	S	SE	YS2	YS4	U	F	FS	EP	NE	SF3	SF5	SS3	SS5
Application			Cardboard Plywood Steel Plate Food Related Other General Workpieces		Cardboard, Plywood, Steel Plate, Food Related, Other General Workpieces. Use in low-concentration ozone environments	Semiconductor Mold Ejection Thin Workpieces Food Related		Food Related		Cardboard, Plywood, Steel Plate	Chemical Atmosphere, High Temperature Workpieces	Mold Ejection	Applications requiring light/ozone resistance, use in humid. atmospheres	Semiconductor	For processes sensitive to foreign matter contamination, such as food production lines			
Pad Color			Black	Light Gray	Black	Clear White	Black	Pink	Blue	Dark Blue	Gray	Dark Orange	Black	Black	Reddish Brown	Dark Green	Brown	Green
Various Properties	Surface Hardness by Pad Shape (Shore A)	Standard Type	50° to 80°	60° to 70°	50° to 70°	50°	60°	–	–	55° to 70°	60° to 70°	-	50° to 70°	60° to 70°	-	–	–	–
		Bellows Type	50°	–	50°	50°	60°	20°	40°	55°	60°	-	50°	60°	–	–	–	–
		Multi-stage Bellows Type	50°	50°	50°	50°	–	20°	40°	55°	50°	-	50°	60°	–	–	–	–
		Oval Type	40° to 50°	–	50°	40° to 50°	50° to 60°	–	–	55°	50°	–	50°	70°	–	–	–	–
		Soft Type	40°	–	–	40°	60°	–	–	–	–	40°	–	50°	–	–	–	–
		Soft Bellows Type	40°	–	50°	40°	60°	–	–	55°	–	–	50°	60°	–	–	–	–
		Anti-slip Type	50°	–	–	50°	–	–	–	55°	60°	–	–	60°	–	–	–	–
		Flat Type	60°	–	–	40°	40°	–	–	50°	50°	–	–	60°	–	–	–	–
		Flat Increased Suction Flow Type								–								
		For Thin Objects Type	40°	–	–	40°	–	–	–	55°	50°	40°	–	60°	–	–	–	–
		Metal Detector Type	–	–	–	–	–	–	–	–	–	–	–	–	30°	50°	30°	50°
	High Temp. Operating Limit		110°C		140°C	180°C		180°C		60°C	230°C	180°C	150°C	110°C	180°C			
	Low Temp. Operating Limit		-30°C		-30°C	-40°C		-40°C		-20°C	-10°C	-50°C	-40°C	-30°C	-40°C			
	Weather Resistance		△		○	◎		◎		○	○	○	◎	△	◎			
	Ozone Resistance		x		○	◎		◎		◎	◎	◎	◎	x	◎			
	Acid Resistance		△		△	○		○		x	◎	○	◎	△	○			
	Alkali Resistance		○		○	◎		◎		x	x	◎	◎	○	◎			
	Oil Resistance	(Gasoline/Diesel)	◎		◎	△		△		◎	◎	△	x	◎	△			
		(Benzene/Toluene)	△		x	△		△		△	◎	△	x	△	△			
	Volume Resistivity		–		–	–	10^5 Ω·cm or less	–		–	–	–	–	200 Ω·cm or less	–			

Reading the rating ➡◎: Optimal, ○: Suitable△: Good, x: Unsuitable

*1: Pad material order code: NH is only available for the non-slip type.

Note 1: Various properties indicate the characteristics of general synthetic rubber used for the pad material.

Note 2: Actual use at the operating limit temperature is instantaneous; if continuing for a certain period, confirm sufficiently before use.

Note 3: When the fiber flocked type surface treatment (option) is selected, the high-temperature operating limit for fluororubber becomes 200°C.

■Sponge Material

Item	Ordering Code	Pad Material	Chloroprene Rubber (Sponge-type)	Silicone Rubber (Sponge-type)
			Blank	S
Application			Workpieces with uneven surfaces	Workpieces with uneven surfaces Food Related
Pad Color			Black	Dark Orange
Various Properties	High Temp. Operating Limit		80°C	180°C
	Low Temp. Operating Limit		-45°C	-40°C
	Weather Resistance		○	◎
	Ozone Resistance		○	◎
	Acid Resistance		△	○
	Alkali Resistance		◎	◎
	Oil Resistance	(Gasoline/Diesel)	x	△
		(Benzene/Toluene)	△	△
	Volume Resistivity		–	–

■Resin material

Item	Ordering Code	Pad Material	PEEK	POM	Conductive PEEK
			K	M	KE
Application			Semiconductor/LCD manufacturing equipment	Various production lines Food-related equipment/ Packaging machinery	Semiconductor/LCD manufacturing equipment Electronic equipment parts
Pad Color			Beige	White	Black
Various Physical Properties	High Temp. Operating Limit		250°C	95°C	250°C
	Low Temp. Operating Limit		-50°C	-60°C	-50°C
	Weather Resistance		◎	x	◎
	Acid Resistance		◎	x	◎
	Alkali Resistance		◎	△	◎
	Self-lubricating		○	◎	○
	Abrasion resistant		◎	◎	◎
	Volume Resistivity		–	–	10^3 to 10^8 Ω·cm

Reading the rating ➡◎: Optimal, ○: Suitable△: Good, x: Unsuitable

*1: Various properties pertain to the pad section resin material and do not include the characteristics of the adsorption mark prevention pad holder section. Please select considering the specifications of the vacuum pad holder used and the adsorption mark prevention pad holder section.

*2: Various properties are general characteristics of each material and are not guaranteed values. Please confirm with actual equipment before use.

*3: Actual use at the high-temperature usage limit temperature is instantaneous; if continued for a certain period, please confirm sufficiently before use.

*4: Volume resistivity is a representative value published by the material manufacturer and is not a guaranteed value.

Pad Diameter Compatibility Table by Material

Pad Material		N: Nitrile									
Pad Shape		Standard Type			Bellows Type	Multi-stage Bellows Type	Soft Type	Soft Bellows Type	For Thin Objects Type	Flat Type	Mechanical-type with Break Function
		General-type	Deep Type	Compact Type							
Pad Diameter (mm)	ø0.7			●							
	ø1	●		●							
	ø1.5			●							
	ø2	●		●	●						
	ø2.5										●
	ø3	●		●							●
	ø4	●		●	●		●				●
	ø6	●			●	●	●	●			●
	ø8	●			●	●	●	●	●		●
	ø10	●			●	●	●	●	●	●	●
	ø15	●	●		●		●	●	●	●	
	ø20	●	●		●	●	●	●	●	●	
	ø25	●	●		●					●	
	ø30	●	●		●	●	●			●	
	ø40	●	●		●	●	●				
	ø50	●	●		●	●					
	ø60	●	●		●						
	ø80	●	●		●						
	ø100	●	●		●						
	ø150	●									
	ø200	●									

Pad Material		S: Silicone												
Pad Shape		Standard Type			Bellows Type	Multi-stage Bellows Type	Soft Type	Soft Bellows Type	Flat Type	Anti-slip Type	For Thin Objects Type	Sponge Type	For Packaging Bags Type	Mechanical-type with Break Function
		General-type	Deep Type	Compact Type										
Pad Diameter (mm)	ø0.7			●										
	ø1	●		●										
	ø1.5			●										
	ø2	●		●	●									
	ø2.5													●
	ø3	●		●										●
	ø4	●		●	●		●							●
	ø6	●			●	●	●	●						●
	ø8	●			●	●	●	●			●			●
	ø10	●			●	●	●	●	●	●	●	●		●
	ø15	●	●		●		●	●	●		●	●		
	ø20	●	●		●	●	●	●	●	●	●	●	●	
	ø25	●	●		●				●			●	●	
	ø30	●	●		●	●	●		●	●		●	●	
	ø35											●		
	ø40	●	●		●	●	●			●			●	
	ø50	●	●		●	●				●		●		
	ø60	●	●		●									
	ø70											●		
	ø80	●	●		●									
	ø100	●	●		●							●		
	ø150	●												
	ø200	●												

Pad Material		U: Urethane								
Pad Shape		Standard Type			Bellows Type	Multi-stage Bellows Type	Soft Bellows Type	Anti-slip Type	For Thin Objects Type	Flat Type (*1)
		General-type	Deep Type	Compact Type						
Pad Diameter (mm)	ø0.7			●						
	ø1	●		●						
	ø1.5			●						
	ø2	●		●						
	ø3	●		●						
	ø4	●		●						
	ø6	●			●		●			
	ø8	●			●		●		●	
	ø10	●			●	●	●	●	●	●
	ø15	●	●		●		●		●	●
	ø20	●	●		●	●	●	●	●	●
	ø25	●	●		●					●
	ø30	●	●		●	●		●		●
	ø40	●	●		●	●		●		
	ø50	●	●		●	●		●		
	ø60	●	●		●					
	ø80	●	●		●					
	ø100	●	●		●					
	ø150	●								
	ø200	●								

*1: Suction Flow Rate Increased Type FH is not supported.

Pad Material		F: Fluorine									G: Food Sanitation Act Compliant NBR			
Pad Shape		Standard Type			Bellows Type	Multi-stage Bellows Type	Anti-slip Type	For Thin Objects Type	Flat Type	With Mechanical Break Function Type	Standard Type			Multi-stage Bellows Type
		General-type	Deep Type	Compact Type							General-type	Deep Type	Compact Type	
Pad Diameter (mm)	ø0.7			●									●	
	ø1	●		●							●		●	
	ø1.5			●									●	
	ø2	●		●							●		●	
	ø2.5									●				
	ø3	●		●						●	●		●	
	ø4	●		●						●	●		●	
	ø6	●			●	●				●	●			●
	ø8	●			●	●		●		●	●			●
	ø10	●			●	●	●	●	●	●	●			●
	ø15	●	●		●			●	●		●	●		
	ø20	●	●		●	●	●	●	●		●	●		●
	ø25	●	●		●				●		●	●		
	ø30	●	●		●	●	●		●		●	●		●
	ø40	●	●		●	●	●				●	●		●
	ø50	●	●		●	●	●				●	●		●
	ø60	●	●		●									
	ø80	●	●		●									
	ø100	●	●		●									
	ø150	●												
	ø200	●												

Pad Material		SE: Conductive Silicone								Blank: Chloroprene Sponge Type	NH: Oil Resistant NBR Anti-slip Type	SF3, SF5, SS3, SS5: Metal Detectable Silicone For Metal Detectors Type
Pad Shape		Standard Type			Bellows Type	Soft Type	Soft Bellows Type	Flat Type	Mechanical-type with Break Function			
		General-type	Deep Type	Compact Type								
Pad Diameter (mm)	ø0.7			●								
	ø1	●		●								
	ø1.5			●								
	ø2	●		●								
	ø2.5								●			
	ø3	●		●					●			
	ø4	●		●	●	●			●			
	ø6	●			●	●	●		●			
	ø8	●			●	●	●		●			
	ø10	●			●	●	●	●	●	●	●	●
	ø15	●	●		●	●	●	●		●		●
	ø20	●	●		●	●	●	●		●	●	●
	ø25	●	●		●			●		●		
	ø30	●	●		●	●		●		●	●	
	ø35									●		
	ø40	●	●		●	●					●	
	ø50	●	●		●					●	●	
	ø60	●			●							
	ø70									●		
	ø80	●			●							
	ø100	●			●					●		
	ø150	●										
	ø200	●										

Pad Material		NE: Conductive NBR (Low Resistance-type)										YS2, YS4: Extra Soft Silicone	
Pad Shape		Standard Type			Bellows Type	Multi-stage Bellows Type	Soft Type	Soft Bellows Type	Anti-slip Type	For Thin Objects Type	Flat Type	Bellows Type	Multi-stage Bellows Type
		General-type	Deep Type	Compact Type									
Pad Diameter (mm)	ø0.7			●									
	ø1	●		●									
	ø1.5			●									
	ø2	●		●									
	ø3	●		●									
	ø4	●		●			●						
	ø6	●			●	●	●	●					
	ø8	●			●	●	●	●		●			
	ø10	●			●	●	●	●	●	●	●	●	●
	ø15	●	●		●		●	●		●	●	●	
	ø20	●	●		●	●	●	●	●	●	●	●	●
	ø25	●	●		●						●	●	
	ø30	●	●		●	●	●		●		●	●	●
	ø40	●	●		●	●	●		●			●	●
	ø50	●	●		●	●			●			●	●
	ø60	●	●		●								
	ø80	●			●								
	ø100	●	●		●								
	ø150	●											
	ø200	●											

Pad Diameter Compatibility Table by Material

Pad Material		HN: HNBR						EP: EPDM						FS: Fluorosilicone	
Pad Shape		Standard Type			Bellows Type	Multi-stage Bellows Type	Soft Bellows Type	Standard Type			Bellows Type	Multi-stage Bellows Type	Soft Bellows Type	Soft Type	For Thin Objects Type
		General-type	Deep Type	Compact Type				General-type	Deep Type	Compact Type					
Pad Diameter (mm)	ø0.7			●						●					
	ø1	●		●				●		●					
	ø1.5			●						●					
	ø2	●		●				●		●					
	ø3	●		●				●		●					
	ø4	●		●				●		●				●	
	ø6	●			●	●	●	●			●	●	●	●	
	ø8	●			●	●	●	●			●	●	●	●	●
	ø10	●			●	●	●	●			●	●	●	●	●
	ø15	●	●		●		●	●	●		●		●	●	●
	ø20	●	●		●	●	●	●	●		●	●	●	●	●
	ø25	●	●		●			●	●		●				
	ø30	●	●		●	●		●	●		●			●	
	ø40	●	●		●	●		●	●		●	●		●	
	ø50	●	●		●	●		●	●		●	●			
	ø60	●	●		●			●	●		●				
	ø80	●	●		●			●	●		●				
	ø100	●	●		●			●	●		●				
	ø150	●						●							
	ø200	●						●							

Pad Material		N: Nitrile	S: Silicone	U: Urethane	F: Fluorine	SE: Conductive Silicone	E: Conductive Butadiene Rubber (Low Resistance-type)	NE: Conductive NBR (Low Resistance-type)	HN: HNBR	EP: EPDM
Pad Shape		Oval Type								
Pad Size (mm)	2x4	●	●	●	●	●		●	●	●
	3.5x7	●	●	●	●	●		●	●	●
	4x10	●	●	●	●	●	●	●	●	●
	4x20	●	●	●	●	●	●	●	●	●
	4 x 30	●	●			●	●	●	●	●
	5x10	●	●	●	●	●	●	●	●	●
	5 x 20	●	●	●	●	●	●	●	●	●
	5 x 30	●	●	●	●	●	●	●	●	●
	6 x 10	●	●	●	●	●	●	●	●	●
	6 x 20	●	●	●	●	●	●	●	●	●
	6 x 30	●	●	●	●	●	●	●	●	●
	8 x 20	●	●	●	●	●	●	●	●	●
	8 x 30	●	●	●	●	●	●	●	●	●

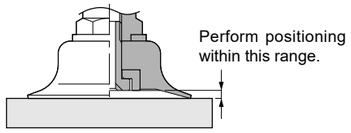
Pad Material		K: PEEK	M: POM	KE: Conductive PEEK
Pad Shape		Suction Mark Prevention Type		
Pad Diameter (mm)	ø10	●	●	●
	ø20	●	●	●
	ø30	●	●	●

Pad Material		K: PEEK	M: POM	KE: Conductive PEEK
Pad Shape		Resin Attachment for Suction Mark Prevention Bellows Type		
Pad Diameter (mm)	ø10	●	●	●
	ø15	●	●	●
	ø20	●	●	●
	ø25	●	●	●
	ø30	●	●	●

Reference Material for Using Suction Pads

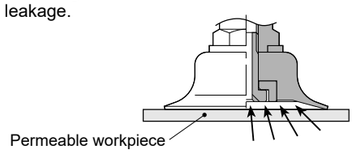
Impact on Pad

When pressing the pad against the workpiece, do not apply impact or large forces. Pad deformation, cracking, and wear will accelerate. Therefore, ensure it is within the deformation range of the pad skirt, or that the rib part, etc., makes light contact. Especially with small diameter pads, perform positioning accurately.



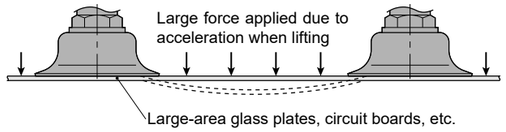
For Workpieces with Permeability or Holes

For suction of permeable workpieces, suction force decreases due to air leakage, so countermeasures such as increasing ejector or vacuum pump capacity, or increasing the effective cross-sectional area of the piping path are necessary. Also, selecting a small diameter pad is one way to reduce air leakage.



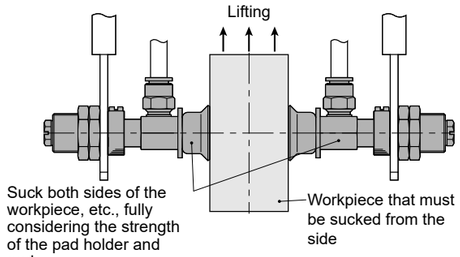
For Large-Area Flat Workpieces

When lifting large-area glass plates, circuit boards, etc., large forces due to acceleration may be applied, or they may ripple under their own weight. Therefore, consider pad arrangement and size, ensuring a sufficient margin.



When Sucking the Side of a Workpiece to Lift It

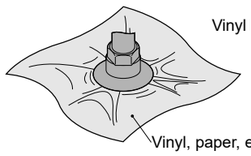
All pad holders are designed for horizontal lifting. Therefore, when sucking the side of a workpiece and lifting it, fully consider the strength of the pad holder and pad.



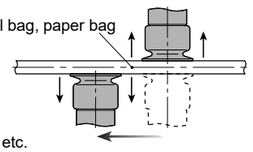
When Sucking Soft Workpieces

When sucking soft workpieces like vinyl, paper, thin plates, etc., the workpiece may deform or wrinkle due to vacuum pressure. Therefore, it is necessary to use a small pad and further lower the vacuum pressure (See Fig-1). Also, when opening vinyl bags, paper bags, etc., small diameter pads are suitable. Mounting opposing pads slightly offset left/right from the center makes opening easier(See Fig-2).

●Fig. -1

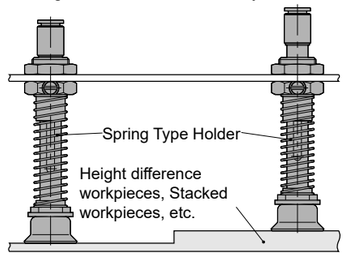


●Fig. -2



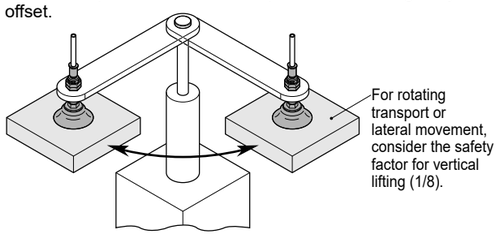
When the Distance Between Pad and Workpiece is Not Constant

If positioning between the pad and workpiece is not possible, such as for workpieces with steps or stacked workpieces, use a spring type. Even if the distance between the pad and workpiece changes, it can be absorbed by the stroke.



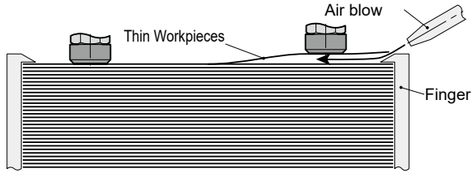
When Performing Rotating Transport

When performing rotating transport with pads fixed by screws, the screws may loosen and the pad may detach. Therefore, design with a sufficient margin. Also, be especially careful if the suction position and the workpiece's center of gravity are offset.



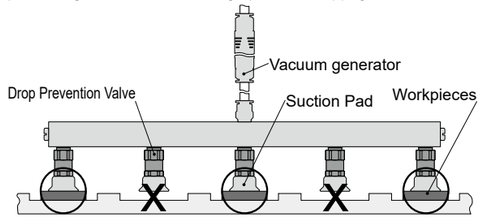
When Sucking Multiple Stacked Thin Workpieces

Since multiple workpieces may be suctioned at once, it is necessary to use a small-diameter pad and further lower the vacuum pressure/. Also, one method to prevent suction of multiple workpieces is to use air blow or Fingers as shown in the diagram below.



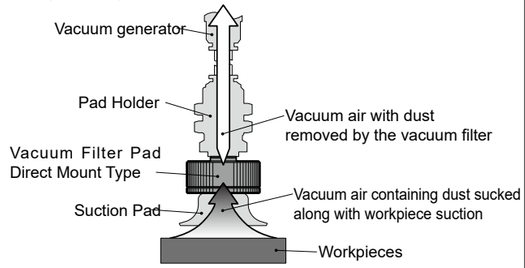
When Using Multiple Pads with One Vacuum Source

Installing a drop prevention valve between the pad and pad holder automatically reduces suction when a workpiece detaches from the pad (within a non-problematic range) or when no workpiece is contacting the pad, mitigating vacuum drop in the entire system and preventing troubles like handling operation stoppage.



When Wanting to Stop Dust at the Pad Section

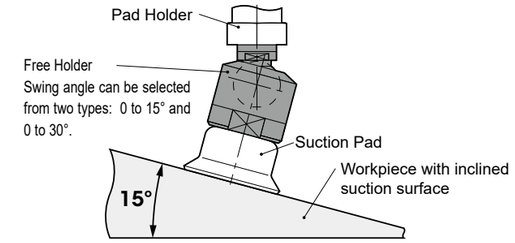
Use the vacuum filter pad direct mount type installed between the pad and pad holder.



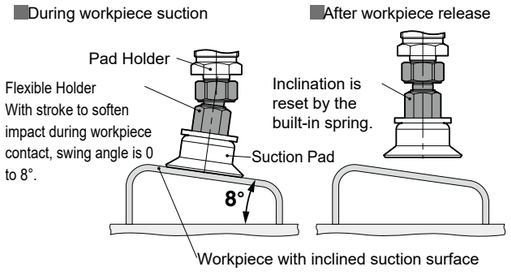
When the Sucked Workpiece Surface is Not Flat

If the sucked workpiece surface is not flat (inclined or curved), use a pad swing device.

● For **Free Holder**



● For **Flexible Holder**



When Adsorption Marks from Suction Pads are Problematic

While not completely preventable, adsorption marks can be reduced by using the Adsorption Mark Countermeasure Series with special surface treatment on the pad or the Suction Mark Prevention Type made of resin material. (The degree of adsorption mark reduction varies depending on the environment and workpiece. Please perform suction tests with actual equipment for model selection.)

Adsorption Mark Countermeasure Surface Treatment Series

Fiber Raised Type (-NF, -SF)

Fibers(nylon or silk) on the pad surface prevent direct contact with the workpiece, thus preventing rubber material transfer.



●Pad material (2 types)
Silicone Rubber, Fluororubber
●Pad diameter (mm)(9 types)
ø10 to ø80
●Pad shape (5 types)
Standard (General-type, Deep Type), Soft, Soft Bellows, Bellows

Sticking Prevention Type (-DL)

Special coating with good slippage. Effective for preventing sticking of lightweight workpieces and thin workpieces.

●Pad material (3 types)
Silicone Rubber, Fluororubber, Conductive Silicone
●Pad diameter (mm)(23 types)
ø4 to ø50 (circular), 2 x 4 to 8 x 30 (oblong)
●Pad shape (10 types)
Standard (standard/deep), Soft/soft bellows, Bellows, multi-stage bellows,
For thin objects, flat, Flat intake flow rate increase, oval

Adsorption Mark Reduction Type (-ER)

Surface modification of nitrile rubber with chemicals reduces adsorption marks.



●Pad material (2 types)
Nitrile Rubber, Conductive NBR (Low Resistance-type)
●Pad diameter (mm)(29 types)
ø0.7 to ø60 (circular), 2 x 4 to 8 x 30 (oblong)
●Pad shape (11 types)
Standard (General-type, Deep Type, Compact Type), Soft, Soft Bellows, Bellows, Multi-stage Bellows, Thin Workpiece, Flat, Flat Suction Flow Rate Increased, Oblong

Fluorine Coating Type (-FG)

Fluorine coating prevents sticking to the workpiece and sticking of the bellows section. Improved pad durability and abrasion resistance.



●Pad material (4 types)
Silicone Rubber, Conductive Silicone Extra Soft Silicone Rubber (Hardness 20°, 40°)
●Pad diameter (mm)(33 types)
ø0.7 to ø200 (circular), 2 x 4 to 8 x 30 (oblong)
●Pad shape (11 types)
Standard (General-type, Deep Type, Compact Type), Soft, Soft Bellows, Bellows, Multi-stage Bellows, Thin Workpiece, Flat, Flat Suction Flow Rate Increased, Oblong

Suction Mark Prevention Type

Suction Mark Prevention Type

Resin pad resistant to marking workpieces integrated with a flexible holder. Can also suck inclined workpieces.



●Resin material (3 types)
PEEK, POM, Conductive PEEK
●Pad diameter (mm)(3 types)
ø10 to ø30

Suction Mark Prevention Resin Attachment(Bellows Only)

Simply attach the dedicated resin attachment to the bellows type to handle workpieces sensitive to adsorption marks. Can also suck inclined workpieces.



●Resin material (3 types)
PEEK, POM, Conductive PEEK
●Applicable pad diameter (mm)(5 types)
ø10 to ø30



Suction Pad Standard Type (General-type, Deep Type, Compact Type)

VSP- □R□, □A□, □RM□ Series

Suction pads with basic shapes for general-purpose use

RoHS

Three shapes available: General-type optimal for flat workpieces, Deep type optimal for round workpieces, Compact type optimal for small workpieces

Abundant holder variations

Shape 18 types

- Standard6 types
- CompactClass 5
- Low dust generation ..... 2 types
- Lightweight3 types
- Low back2 types

Piping Connection 12 types

- Push-in fitting (ø1.8 to ø12) Six types
- Barbed fitting (ø4, ø6) ..... 2 types
- Screw-in (M3, M5, G1/8, G1/4), 4 types

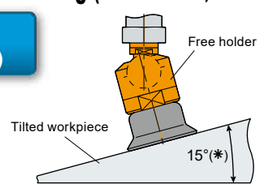
Stroke 12 types

2 mm to 50 mm
(Depends on pad diameter, holder type)

Low particle generation holders (LFC, LFD) with less abrasion powder from sliding and low noise are available

Assembly option for swing (free holder, flexible holder) that follows inclined workpiece surfaces is supported

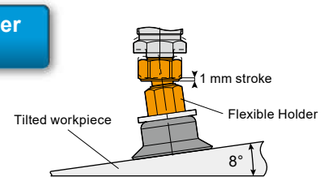
Free holder (F1:30°, F2:15°)



*7.5° for 15° swing angle type

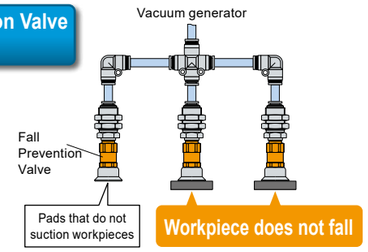
Flexible Holder (CF)

After removing the workpiece, returns to the normal position (vertical)



Assembly option for drop prevention valve (V) that reduces vacuum drop in separate circuits even without a workpiece is supported

Drop Prevention Valve (V)

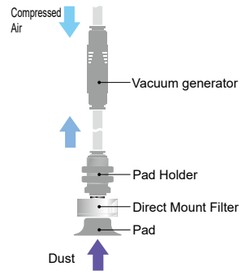


Removes dust during workpiece suction

Direct Mount Filter (T1, T2)

Filtration Area
T1: 1.7 cm², T2: 7 cm²





Pad surface treatment (option) with special processing to reduce adsorption marks is available

	-NF	-SF	-DL	-ER	-FG
Surface Treatment	Fiber Raised: Nylon	Fiber Raised: Silk	Sticking Prevention	Adsorption Mark Reduction	Fluorine Coating
					
Compatible Material	Silicone Fluorine	Silicone Fluorine	Silicone Fluorine Conductive Silicone	Nitrile Conductive NBR (Low Resistance-type)	Silicone Conductive Silicone
Features	Fibers(nylon or silk) on the pad surface prevent direct contact with the workpiece, thus preventing rubber material transfer.		Special coating with good slippage. Effective for preventing sticking of lightweight workpieces and thin workpieces.	Surface modification with environmentally friendly chemicals reduces adsorption marks.	Surface modification with special treatment prevents sticking to the workpiece. Improved pad durability and abrasion resistance.
Compatible-type	General-type, Deep Type			General-type, Deep Type, Compact Type	

Pad Shape

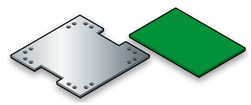
General-type

The most basic shaped pad for general-purpose use



Recommended Workpiece

Thick and flat items



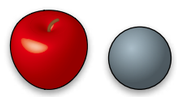
Deep Type

Deep lip provides good conformity to curved surfaces



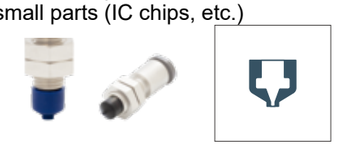
Recommended Workpiece

Round items like fruits or balls



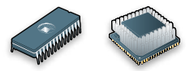
Compact

Specialized in small diameter sizes, compatible with suction of small parts (IC chips, etc.)



Recommended Workpiece

Small items like semiconductor parts



Pad Diameter

General-type 18 types

1 2 3 4 6
8 10 15 20 25
30 40 50 60 80
100 150 200

Deep Type 9 types

15 20 25 30 40
50 60 80 100

Compact 6 types

0.7 1 1.5 2 3
4

Pad Material

General-type	9 types	Nitrile, Silicone, Urethane, Fluorine, Conductive Silicone, Conductive NBR (Low Resistance-type), Food Sanitation Act Complia HNBR, EPDM
Deep Type	9 types	Nitrile, Silicone, Urethane, Fluorine Conductive Silicone, Conductive NBR (Low Resistance-type), Food Sanitation Act Compliant NBR, HNBR, EPDM
Compact	9 types	Nitrile, Silicone, Urethane, Fluorine Conductive Silicone, Conductive NBR (Low Resistance-type), Food Sanitation Act Compliant NBR, HNBR, EPDM

*Food Sanitation Act compliant NBR (G), Silicone (S) are compliant with the Food Sanitation Act. (Holder is not compliant / Suction pad is compliant only for workpiece contact area)

Solution Examples

Transport of heavy steel plates

Press working, laser processing,



Transport of spherical workpieces

Food machinery, etc.



Compact transport unit

Electronic parts, semiconductor



Model No. Notation

●Standard, general (R), deep (A), compact (RM)

Suction Pad

VSP – C – 40 – -20 – R – N – -ER – 6 – [ ] – F1 – V – T1

Model No.	❶ Holder Shape	❷ Pad Diameter	❸ Stroke Option	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment	❼ Connection Size/Shape	❽ Buffer Load	❾ Pad Swinging	❿ Drop Prevention Valve	⓫ Direct Mount Filter
VSP	C	40	-20	R	N	-ER	6		F1	V	T1

Pad Rubber Only

VSPG – 40 — R N -ER

Model No.	❷ Pad Diameter	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment
VSPG	40	R	N	-ER

Pad Rubber + Set with Fixing Screw

VSPG – 40 — R N -ER A

Model No.	❷ Pad Diameter	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment	
VSPG	40	R	N	-ER	A

*1: For ❹ R with ❷ 10 to 200, and for ❹ A, the "Pad Rubber + Set Screw Set" can be selected.

❶ Holder Shape

Buffer Present/Absent	Type	Vacuum Outlet	Code
Fixed Type	Standard	Top Direction	A
	Compact		MA
	Standard	Side Direction	B
	Compact		MB
	Low Profile		HE
		Both Sides Direction	HEW
	Standard	Direct Mount Type	E
	Compact		ME

Buffer Present/Absent	Type	Vacuum Outlet	Code
Buffer Type	Standard	Top Direction	C
	Compact		MC
	Low Particle Generation		LFC
	Lightweight		HC
	Standard	Side Direction	D
	Compact		MD
	Low Particle Generation		LFD
	Lightweight		HD
		Both Sides Direction	HDW
	Standard	Direct Mount Type	F

❷ Pad Diameter

Pad Shape	R									A									RM								
Pad Material	N	S	U	F	SE	NE	G	HN	EP	N	S	U	F	SE	NE	G	HN	EP	N	S	U	F	SE	NE	G	HN	EP	Code
Pad Diameter																												
ø0.7																			●	●	●	●	●	●	●	●	●	0.7
ø1	●	●	●	●	●	●	●	●	●										●	●	●	●	●	●	●	●	●	1
ø1.5																			●	●	●	●	●	●	●	●	●	1.5
ø2	●	●	●	●	●	●	●	●	●										●	●	●	●	●	●	●	●	●	2
ø3	●	●	●	●	●	●	●	●	●										●	●	●	●	●	●	●	●	●	3
ø4	●	●	●	●	●	●	●	●	●										●	●	●	●	●	●	●	●	●	4
ø6	●	●	●	●	●	●	●	●	●																			6
ø8	●	●	●	●	●	●	●	●	●																			8
ø10	●	●	●	●	●	●	●	●	●																			10
ø15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●										15
ø20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●										20
ø25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●										25
ø30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●										30
ø40	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●										40
ø50	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●										50
ø60	●	●	●	●	●	●		●	●	●	●	●	●		●		●	●										60
ø80	●	●	●	●	●	●		●	●	●	●	●	●		●		●	●										80
ø100	●	●	●	●	●	●		●	●	●	●	●	●		●		●	●										100
ø150	●	●	●	●	●	●		●	●																			150
ø200	●	●	●	●	●	●		●	●																			200

❸ Stroke Option

Content	Holder Shape C	D	HC	LFC	LFD	Code
Specified Stroke, or No Buffer	●	●				Blank
Stroke 2 mm				●		-2
Stroke 5 mm				●	●	-5
Stroke 10 mm	●	●	●	●	●	-10
Stroke 15 mm	●	●	●	●	●	-15
Stroke 20 mm	●	●	●	●	●	-20
Stroke 25 mm			●			-25
Stroke 30 mm	●	●	●			-30
Stroke 40 mm	●	●	●			-40
Stroke 50 mm	●	●	●			-50

❹ Pad Shape

Code	Content
R	Standard Type General-type
A	Standard Type Deep Type
RM	Standard Type Compact Type

❺ Pad Material

Code	Content
N	Nitrile rubber
S	Silicone Rubber
U	Urethane rubber
F	Fluororubber
SE	Conductive Silicone Rubber
NE	Conductive NBR (Low Resistance-type)
G	Food Sanitation Act Compliant NBR
HN	HNBR
EP	EPDM

*1: For ❶ Holder Shape other than C, D, HC, LFC, and LFD, ❸ is 'Blank'. *2: For the specified stroke of ❸ 'Blank', please confirm the stroke dimension on the external dimension drawing.
*3: When ❷ Pad Diameter is 0.7 to 15, -2 can be selected for ❸. *4: When ❷ Pad Diameter is 6 to 50, -30, -40, and -50 can be selected for ❸.
*5: When ❷ Pad Diameter is 60 to 200, ❸ is 'Blank'.

Model No. Notation

Refer to the following page for holder shape - pad diameter - pad shape - port size/shape combinations.

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

●Design compatible with rechargeable battery manufacturing process

VSP – ..... – P4*

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

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

VSP – ..... – FP*

*Please inquire for details.

❻ Surface Treatment

Content	Compatible Pad Material N	S	F	SE	NE	Compatible Pad Diameter General-type (R)	Deep Type (A)	Compact Type (RM)	Code
No surface treatment	All pad materials, all pad diameters								Blank
Fiber Raised (Nylon)		●	●			ø15 to ø80	ø15 to ø80		-NF
Fiber Raised (Silk)		●	●			ø15 to ø80	ø15 to ø80		-SF
Anti-Adhesion Special Coating		●	●	●		ø6 to ø50	ø15 to ø50		-DL
Suction Mark Reduction Surface Modification	●				●	ø6 to ø60	ø15 to ø60	ø0.7 to ø4	-ER
Fluorine Coating		●		●		ø6 to ø200	ø15 to ø100	ø0.7 to ø4	-FG

❼ Connection Size/Shape

Content	Holder Shape A	B	C	D	MA	MB	MC	MD	ME	LFC	LFD	HC	HD	HDW	HE	HEW	Code
(❶: For E and F)																	Blank
ø1.8 Push-in fitting		●	●	●	●	●	●	●				●	●	●	●	●	2
ø4 Push-in fitting	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	4
ø6 Push-in fitting	●	●	●	●		●		●		●	●	●	●	●	●	●	6
ø8 Push-in fitting	●	●	●	●													8
ø10 Push-in fitting	●	●	●	●													10
ø12 Push-in fitting	●		●														12
ø4 Push-in fitting, without spring cover			●	●													4C
ø6 Push-in fitting, without spring cover			●	●													6C
ø4 Barb fitting	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	4T
ø6 Barb fitting	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	6T
ø4 Barb fitting, without spring cover			●	●													4TC
ø6 Barb fitting, without spring cover			●	●													6TC
M3×0.5									●								M3
M5×0.8									●								M5
G1/8	●	●	●	●													6A
G1/4	●	●	●	●													8A

*1: For ❶ Holder Shape C and D with ❸ Stroke Option -20 to -50, options 4C, 6C, 4TC, and 6TC can be selected for ❼. Additionally, for (3) Stroke Option -30 to -50, only 4C, 6C, 4TC, and 6TC can be selected for ❼.
*2: The selectable Port Size/Shape varies depending on the ❷ Pad Diameter. Please check the combination table on the next page.

❽ Buffer Load

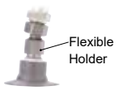
Code	Content
Blank	Standard Load or No Buffer
L	Low Load (1/4 of Standard Load)

*1: For ❶ Holder Shape other than LFC, ❽ is 'Blank'.
*2: For ❸ Stroke Option -2, ❽ is 'Blank'.

❾ Pad Swing

Code	Content
Blank	None
F1	With Free Holder (Angle 30°)
F2	With Free Holder (Angle 15°)
CF	Flexible Holder (Angle 8°)





*1: ❾ F1 and F2 can be selected when ❷ Pad Diameter is 10 to 100.
*2: ❾ CF can be selected in the following cases: with ❶ Holder Shape E and ❷ Pad Diameter 6 or 8; with ❶ Holder Shape ME and ❼ Port Size/Shape M5; and with ❷ Pad Diameter 10 to 50.
*3: For dimensions with the pad swivel function, please refer to P. 1060 and P. 1062.

⓫ Direct Mount Filter

Code	Content
Blank	None
T1	With Direct Mount Filter (Filtration Area 1.7 cm²)
T2	With Direct Mount Filter (Filtration Area 7 cm²)



*1: ⓫ T1 can be selected when ❷ Pad Diameter is 10 to 50.
*2: ⓫ T2 can be selected when ❷ Pad Diameter is 20 to 50.
*3: For dimensions with the direct mount filter, please refer to P. 1064.

❿ Drop Prevention Valve

Code	Content
Blank	None
V	Drop With prevention valve



*1: ❿ V can only be selected for ❶ Holder Shape E and ME, and for ❷ Pad Diameter 10 to 100
*2: For ❻ -NF and -SF, ❿ is 'Blank'.
*3: For dimensions with the drop prevention valve, please refer to P. 1083 and P. 1084.

Holder Shape - Pad Diameter - Pad Shape - Connection Size/Shape Combination Table

Holder Shape	Pad Diameter	Pad Shape	Push-in fitting								Barb fitting				Thread	
			ø1.8	ø4		ø6		ø8	ø10	ø12	ø4		ø6		G1/8	G1/4
			2	**4**	**4C**	**6**	**6C**	**8**	**10**	**12**	**4T**	**4TC**	**6T**	**6TC**	**6A**	**8A**
A	ø1 to ø4	R		●							●					
	ø6 to ø8			●		●					●		●			
	ø10 to ø15	R(A)				●							●			
	ø20 to ø50			●		●					●		●			
	ø60 to ø100			●		●		●							●	
	ø150 to ø200	R				●		●	●	●						●
B	ø1 to ø4	R	●	●							●		●			
	ø6 to ø8		●	●		●					●		●			
	ø10 to ø50	R(A)		●		●					●		●			
	ø60 to ø100			●		●		●							●	
	ø150 to ø200	R				●		●	●							●
C	ø1 to ø4	R	●	●		●					●		●			
	ø6 to ø8		●	●	●	●	●				●	●	●	●		
	ø10 to ø50	R(A)		●	●	●	●				●	●	●	●		
	ø60 to ø100			●		●		●							●	
	ø150 to ø200	R				●		●	●	●						●
D	ø1 to ø4	R	●	●		●					●		●			
	ø6 to ø8		●	●	●	●	●				●	●	●	●		
	ø10 to ø50	R(A)		●	●	●	●				●	●	●	●		
	ø60 to ø100			●		●		●							●	
	ø150 to ø200	R				●		●	●							●

Holder Shape	Pad Diameter	Pad Shape	Thread	
			M3	M5
			Blank	
E	ø0.7 to ø4	RM		●
	ø1 to ø4	R	●	
	ø6 to ø8			●

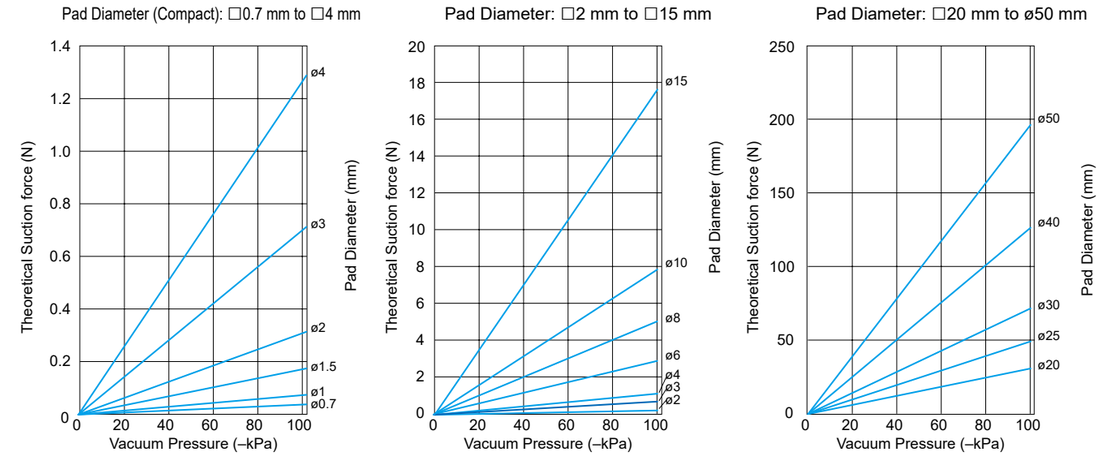
Holder Shape	Pad Diameter	Pad Shape	Thread	
			M10	M14
			Blank	
F	ø1 to ø8	R	●	
	ø10 to ø50	R(A)		●

Holder Shape	Pad Diameter	Pad Shape	Push-in fitting			Barb fitting	
			ø1.8	ø4	ø6	ø4	ø6
			2	**4**	**6**	**4T**	**6T**
MA	ø0.7 to ø4	RM	●			●	
	ø6 to ø8	R	●			●	
	ø10 to ø15	R(A)		●		●	
	ø20 to ø50			●		●	●
MB	ø0.7 to ø4	RM	●	●		●	●
	ø6 to ø8	R	●	●		●	●
	ø10 to ø50	R(A)	●	●	●	●	●
MC	ø0.7 to ø4	RM	●			●	●
	ø6 to ø8	R	●			●	●
	ø10 to ø50	R(A)	●	●		●	●
MD	ø0.7 to ø4	RM	●	●		●	●
	ø6 to ø8	R	●	●		●	●
	ø10 to ø50	R(A)	●	●	●	●	●

Holder Shape	Pad Diameter	Pad Shape	Push-in fitting			Barb fitting	
			ø1.8	ø4	ø6	ø4	ø6
			2	**4**	**6**	**4T**	**6T**
LFC	ø0.7 to ø4	RM		●		●	●
	ø6 to ø15	R(A)		●		●	●
	ø20 to ø50			●	●	●	●
LFD	ø0.7 to ø4	RM		●		●	●
	ø6 to ø15	R(A)		●		●	●
	ø20 to ø50			●	●	●	●
HC	ø10 to ø50	R(A)	●	●	●	●	●
HD	ø6 to ø50	R(A)	●	●	●	●	●
HDW	ø6 to ø50	R(A)	●	●	●	●	●
HE	ø6 to ø50	R(A)	●	●	●	●	●
HEW	ø6 to ø50	R(A)	●	●	●	●	●

Holder Shape	Pad Diameter	Pad Shape	Thread	
			M3	M5
			M3	**M5**
ME	ø0.7 to ø4	RM	●	
	ø6 to ø8	R		●

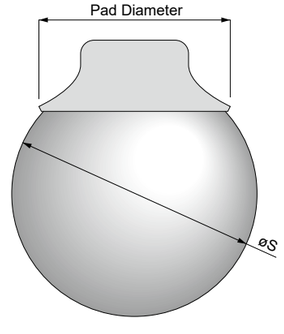
Theoretical Suction Force



Theoretical suction force is a value under static conditions. For actual use, consider a safety factor of 1/4 for horizontal lifting and 1/8 for vertical lifting.

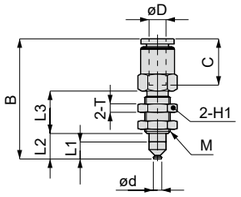
●Spherical Surface Suction (Deep Pad
Minimum Adsorbable Diameter

Pad Diameter (mm)	ø15	ø20	ø25	ø30	ø40	ø50	ø60	ø80	ø100
Sphere Diameter (øS mm)	20	30	40	50	80	100	120	160	200

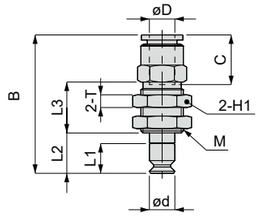


Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Push-in fitting)

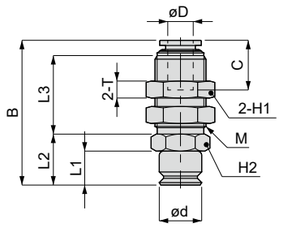
●VSP-A1 to 4R□-4



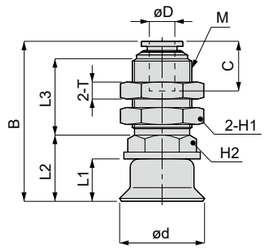
●VSP-A6, 8R□-4/6



●VSP-A10R□-6
●VSP-A15R(A)□-6



●VSP-A20 to 50R(A)□-4/6



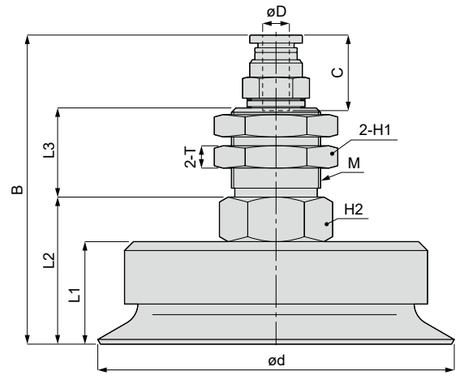
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	L3	Tube End C	Width Across Flats H1	Width Across Flats H2	T	Weight (g)
VSP-A1R□-4	1	4	M6x0.75	28.6	4	6	10	11.2	8	-	2	5.7
VSP-A2R□-4	2	4	M6x0.75	28.6	4	6	10	11.2	8	-	2	5.7
VSP-A3R□-4	3	4	M6x0.75	28.6	4	6	10	11.2	8	-	2	5.7
VSP-A4R□-4	4	4	M6x0.75	28.6	4	6	10	11.2	8	-	2	5.7
VSP-A6R□-4	6	4	M8x0.75	32.1	7	9.5	12	11.2	12	-	3	8.5
VSP-A6R□-6		6	M10x1	32.8				11.9				13
VSP-A8R□-4	8	4	M8x0.75	30.6	5.5	8	12	11.2	12	-	3	8.5
VSP-A8R□-6		6	M10x1	31.3				11.9				13
VSP-A10R□-6	10	6	M12x1	34.3	8	12	18.5	11.9	14	12	4	21
VSP-A15R(A)□-6	15	6	M12x1	35.3 (36.3)	9 (10)	13 (14)	18.5	11.9	14	12	4	21 (21)
VSP-A20R(A)□-4	20	4	M12x1	46.9 (47.9)	10 (11)	16 (17)	18	11.2	14	12	4	31 (31)
VSP-A20R(A)□-6		6	M14x1	37.9 (38.9)		15.6 (16.6)		11.9	17	14		37 (37)
VSP-A25R(A)□-4	25	4	M12x1	47.9 (48.9)	11 (12)	17 (18)	18	11.2	14	12	4	31 (31)
VSP-A25R(A)□-6		6	M14x1	38.9 (39.9)		16.6 (17.6)		11.9	17	14		37 (37)
VSP-A30R(A)□-4	30	4	M12x1	47.9 (50.9)	11 (14)	17 (20)	18	11.2	14	12	4	33 (33)
VSP-A30R(A)□-6		6	M14x1	38.9 (41.9)		16.6 (19.6)		11.9	17	14		39 (39)
VSP-A40R(A)□-4	40	4	M12x1	50.9 (54.4)	14 (17.5)	20 (23.5)	18	11.2	14	12	4	40 (41)
VSP-A40R(A)□-6		6	M14x1	41.9 (45.4)		19.6 (23.1)		11.9	17	14		46 (47)
VSP-A50R(A)□-4	50	4	M12x1	51.9 (54.9)	15 (18)	21 (24)	18	11.2	14	12	4	46 (48)
VSP-A50R(A)□-6		6	M14x1	42.9 (45.9)		20.6 (23.6)		11.9	17	14		52 (54)

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Push-in fitting)

●VSP-A60 to 100R(A)□-4/6/8
●VSP-A150, 200R□-6/8/10/12



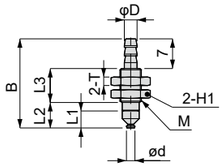
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	L3	Tube End C	Width Across Flats H1	Width Across Flats H2	T	Weight (g)
VSP-A60R(A)□-4	60	4	M20x1	61.2 (68.2)	18 (25)	30.6 (37.6)	20	11.2	24	22	5	141 (142)
VSP-A60R(A)□-6		6		63.4 (70.4)				11.9				142 (143)
VSP-A60R(A)□-8		8		71.8 (78.8)				18.2				147 (148)
VSP-A80R(A)□-4	80	4	M20x1	63.6 (73.6)	23 (33)	33 (43)	20	11.2	24	22	5	225 (234)
VSP-A80R(A)□-6		6		65.8 (75.8)				11.9				226 (235)
VSP-A80R(A)□-8		8		74.2 (84.2)				18.2				231 (240)
VSP-A100R(A)□-4	100	4	M20x1	65.6 (74.6)	25 (34)	35 (44)	20	11.2	24	22	5	315 (321)
VSP-A100R(A)□-6		6		67.8 (76.8)				11.9				316 (322)
VSP-A100R(A)□-8		8		76.2 (85.2)				18.2				321 (327)
VSP-A150R□-6	150	6	M24x2	111	45	65	30	11.9	30	27	10	938
VSP-A150R□-8		8		111.7				18.2				937
VSP-A150R□-10		10		118.7				20.7				942
VSP-A150R□-12		12		124				23.3				960
VSP-A200R□-6	200	6	M24x2	116	50	70	30	11.9	30	27	10	1,418
VSP-A200R□-8		8		116.7				18.2				1,417
VSP-A200R□-10		10		123.7				20.7				1,422
VSP-A200R□-12		12		128.9				23.3				1,440

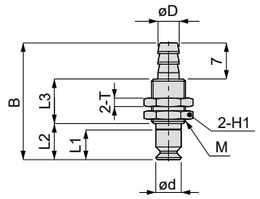
*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Barb Fitting)

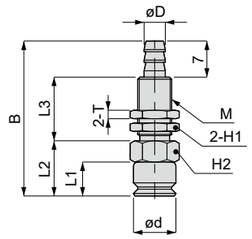
●VSP-A1 to 4R□-4T



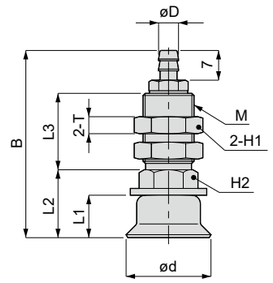
●VSP-A6, 8R□-4T/6T



●VSP-A10R□-6T
●VSP-A15R(A)□-6T



●VSP-A20 to 50R(A)□-4T/6T



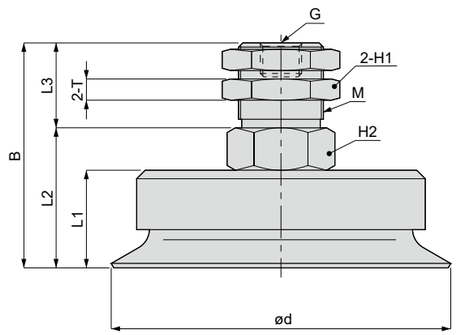
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	L3	Width Across Flats H1	Width Across Flats H2	T	Weight (g)
VSP-A1R□-4T	1	2.5	M5x0.5	21	4	6	8	8	-	2	3
VSP-A2R□-4T	2	2.5	M5x0.5	21	4	6	8	8	-	2	3
VSP-A3R□-4T	3	2.5	M5x0.5	21	4	6	8	8	-	2	3
VSP-A4R□-4T	4	2.5	M5x0.5	21	4	6	8	8	-	2	3
VSP-A6R□-4T	6	2.5	M5x0.5	24.5	7	9.5	8	8	-	2	4
VSP-A6R□-6T		4	M8x0.75	26		8.5	10.5	10	-		6
VSP-A8R□-4T	8	2.5	M5x0.5	23	5.5	8	8	8	-	2	5
VSP-A8R□-6T		4	M8x0.75	24.5		7	10.5	10	-		7
VSP-A10R□-6T	10	4	M8x0.75	35	8	12	15	10	10	2	12
VSP-A15R(A)□-6T	15	4	M8x0.75	36 (37)	9 (10)	13 (14)	15	10	10	2	12
VSP-A20R(A)□-4T	20	2.5	M12x1	44 (45)	10 (11)	16 (17)	18	14	12	4	28 (28)
VSP-A20R(A)□-6T		4									
VSP-A25R(A)□-4T	25	2.5	M12x1	45 (46)	11 (12)	17 (18)	18	14	12	4	29 (29)
VSP-A25R(A)□-6T		4									
VSP-A30R(A)□-4T	30	2.5	M12x1	45 (48)	11 (14)	17 (20)	18	14	12	4	33 (33)
VSP-A30R(A)□-6T		4									
VSP-A40R(A)□-4T	40	2.5	M12x1	48 (51.5)	14 (17.5)	20 (23.5)	18	14	12	4	40 (41)
VSP-A40R(A)□-6T		4									
VSP-A50R(A)□-4T	50	2.5	M12x1	49 (52)	15 (18)	21 (24)	18	14	12	4	46 (47)
VSP-A50R(A)□-6T		4									

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Female Thread)

●VSP-A60 to 100R(A)□-6A
●VSP-A150, 200R□-8A



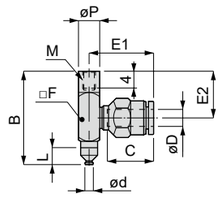
Unit: mm

Model No.	Pad Diameter ød	Vacuum Outlet Size G	Mounting screw M	B	L1	L2	L3	Width Across Flats H1	Width Across Flats H2	T	Weight (g)
VSP-A60R(A)□-6A	60	G1/8	M20x1	50.6 (57.6)	18 (25)	30.6 (37.6)	20	24	22	5	133 (133)
VSP-A80R(A)□-6A	80	G1/8	M20x1	53 (63)	23 (33)	33 (43)	20	24	22	5	217 (226)
VSP-A100R(A)□-6A	100	G1/8	M20x1	55 (64)	25 (34)	35 (44)	20	24	22	5	307 (313)
VSP-A150R□-8A	150	G1/4	M24x2	95	45	65	30	30	27	10	923
VSP-A200R□-8A	200	G1/4	M24x2	100	50	70	30	30	27	10	1,403

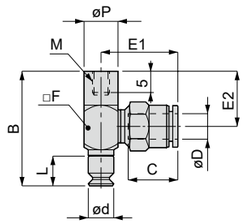
*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Push-in fitting)

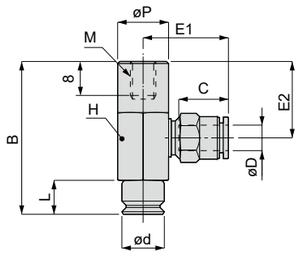
●VSP-B1 to 4R□-2/4



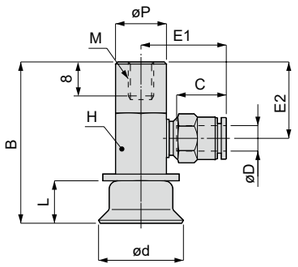
●VSP-B6, 8R□-2/4/6



●VSP-B10R□-4/6
●VSP-B15R(A)□-4/6



●VSP-B20 to 50R(A)□-4/6



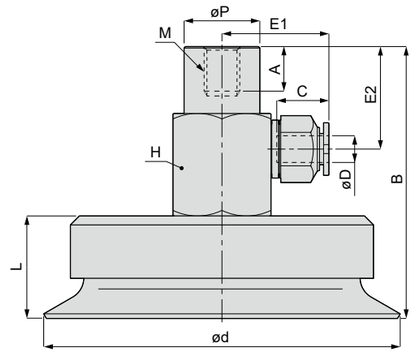
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L	Tube End C	øP	E1	E2	Width Across Flats H	□F	Weight (g)
VSP-B1R□-2	1	1.8	M3x0.5	22	4	8.4	5	12	11	-	5	5
VSP-B1R□-4		4				11.2		15.3				6
VSP-B2R□-2	2	1.8	M3x0.5	22	4	8.4	5	12	11	-	5	5
VSP-B2R□-4		4				11.2		15.3				6
VSP-B3R□-2	3	1.8	M3x0.5	22	4	8.4	5	12	11	-	5	5
VSP-B3R□-4		4				11.2		15.3				6
VSP-B4R□-2	4	1.8	M3x0.5	22	4	8.4	5	12	11	-	5	5
VSP-B4R□-4		4				11.2		15.3				6
VSP-B6R□-2	6	1.8	M4x0.7	27	7	8.4	8	12.7	13	-	8	11
VSP-B6R□-4		4				11.2		16.8				12
VSP-B6R□-6		6				11.9		18.6				13
VSP-B8R□-2	8	1.8	M4x0.7	25.5	5.5	8.4	8	12.7	13	-	8	11
VSP-B8R□-4		4				11.2		16.8				12
VSP-B8R□-6		6				11.9		18.6				13
VSP-B10R□-4	10	4	M6x1	36	8	11.2	12	18.8	18	12	-	29
VSP-B10R□-6		6				11.9		20.1				30
VSP-B15R(A)□-4	15	4	M6x1	37 (38)	9 (10)	11.2	12	18.8	18	12	-	30 (30)
VSP-B15R(A)□-6		6				11.9		20.1				31 (31)
VSP-B20R(A)□-4	20	4	M6x1	38 (39)	10 (11)	11.2	12	18.8	18	12	-	33 (33)
VSP-B20R(A)□-6		6				11.9		20.1				34 (34)
VSP-B25R(A)□-4	25	4	M6x1	39 (40)	11 (12)	11.2	12	18.8	18	12	-	34 (34)
VSP-B25R(A)□-6		6				11.9		20.1				35 (35)
VSP-B30R(A)□-4	30	4	M6x1	39 (42)	11 (14)	11.2	12	18.8	18	12	-	36 (36)
VSP-B30R(A)□-6		6				11.9		20.1				37 (37)
VSP-B40R(A)□-4	40	4	M6x1	42 (45.5)	14 (17.5)	11.2	12	18.8	18	12	-	43 (44)
VSP-B40R(A)□-6		6				11.9		20.1				44 (45)
VSP-B50R(A)□-4	50	4	M6x1	43 (46)	15 (18)	11.2	12	18.8	18	12	-	49 (50)
VSP-B50R(A)□-6		6				11.9		20.1				50 (51)

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Push-in fitting)

●VSP-B60 to 100R(A)□-4/6/8
●VSP-B150, 200R□-6/8/10



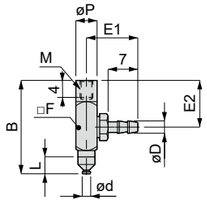
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	A	B	L	Tube End C	øP	E1	E2	Width Across Flats H	Weight (g)
VSP-B60R(A)□-4	60	4	M8 x 1.25	10	58.6 (65.6)	18 (25)	11.2	17	21.5	23	22	148 (147)
VSP-B60R(A)□-6		6					11.9		23.7			149 (148)
VSP-B60R(A)□-8		8					18.2		32.1			154 (153)
VSP-B80R(A)□-4	80	4	M8 x 1.25	10	61 (71)	23 (33)	11.2	17	21.5	23	22	232 (240)
VSP-B80R(A)□-6		6					11.9		23.7			233 (241)
VSP-B80R(A)□-8		8					18.2		32.1			237 (245)
VSP-B100R(A)□-4	100	4	M8 x 1.25	10	63 (72)	25 (34)	11.2	17	21.5	23	22	321 (327)
VSP-B100R(A)□-6		6					11.9		23.7			322 (328)
VSP-B100R(A)□-8		8					18.2		38.6			327 (333)
VSP-B150R□-6	150	6	M16 x 2	20	110	45	17	26	30.9	40	30	1,008
VSP-B150R□-8		8					18.2		31.6			1,008
VSP-B150R□-10		10					20.7		38.6			1,115
VSP-B200R□-6	200	6	M16 x 2	20	115	50	17	26	30.9	40	30	1,487
VSP-B200R□-8		8					18.2		31.6			1,487
VSP-B200R□-10		10					20.7		38.6			1,494

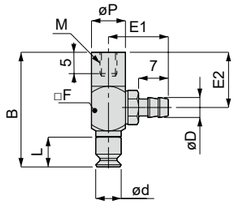
*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Barb Fitting)

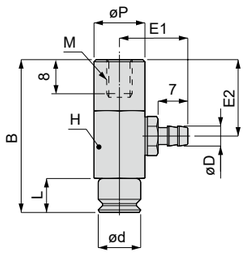
●VSP-B1 to 4R□-4T/6T



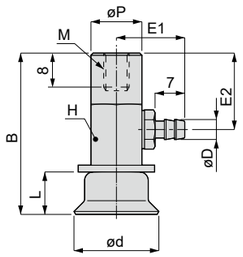
●VSP-B6, 8R□-4T/6T



●VSP-B10R□-4T/6T
●VSP-B15R(A)□-4T/6T



●VSP-B20 to 50R(A)□-4T/6T



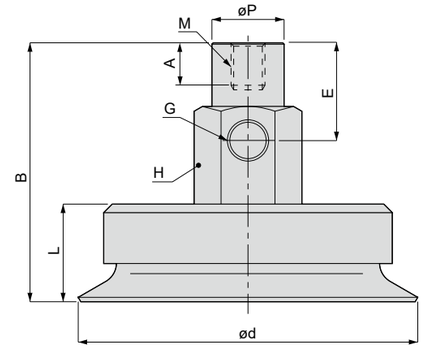
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L	øP	E1	E2	Width Across Flats H	□F	Weight (g)
VSP-B1R□-4T	1	2.5	M3x0.5	22	4	5	11.9	11	-	5	4
VSP-B1R□-6T		4									
VSP-B2R□-4T	2	2.5	M3x0.5	22	4	5	11.9	11	-	5	4
VSP-B2R□-6T		4									
VSP-B3R□-4T	3	2.5	M3x0.5	22	4	5	11.9	11	-	5	4
VSP-B3R□-6T		4									
VSP-B4R□-4T	4	2.5	M3x0.5	22	4	5	11.9	11	-	5	4
VSP-B4R□-6T		4									
VSP-B6R□-4T	6	2.5	M4x0.7	27	7	8	13.9	13	-	8	11
VSP-B6R□-6T		4									
VSP-B8R□-4T	8	2.5	M4x0.7	25.5	5.5	8	13.9	13	-	8	11
VSP-B8R□-6T		4									
VSP-B10R□-4T	10	2.5	M6x1	36	8	12	15.9	18	12	-	29
VSP-B10R□-6T		4									
VSP-B15R(A)□-4T	15	2.5	M6x1	37 (38)	9 (10)	12	15.9	18	12	-	29 (29)
VSP-B15R(A)□-6T		4									
VSP-B20R(A)□-4T	20	2.5	M6x1	38 (39)	10 (11)	12	15.9	18	12	-	32 (32)
VSP-B20R(A)□-6T		4									
VSP-B25R(A)□-4T	25	2.5	M6x1	39 (40)	11 (12)	12	15.9	18	12	-	33 (33)
VSP-B25R(A)□-6T		4									
VSP-B30R(A)□-4T	30	2.5	M6x1	39 (42)	11 (14)	12	15.9	18	12	-	35 (35)
VSP-B30R(A)□-6T		4									
VSP-B40R(A)□-4T	40	2.5	M6x1	42 (45.5)	14 (17.5)	12	15.9	18	12	-	42 (43)
VSP-B40R(A)□-6T		4									
VSP-B50R(A)□-4T	50	2.5	M6x1	43 (46)	15 (18)	12	15.9	18	12	-	48 (49)
VSP-B50R(A)□-6T		4									

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Female Thread)

●VSP-B60 to 100R(A)□-6A
●VSP-B150, 200R□-8A



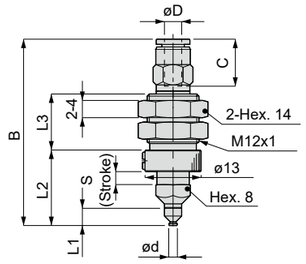
Unit: mm

Model No.	Pad Diameter ød	Vacuum Outlet Size G	Mounting screw M	A	B	L	øP	E	Width Across Flats H	Weight (g)
VSP-B60R(A)□-6A	60	G1/8	M8 x 1.25	10	58.6 (65.6)	18 (25)	17	23	22	140 (139)
VSP-B80R(A)□-6A	80	G1/8	M8 x 1.25	10	61 (71)	23 (33)	17	23	22	224 (232)
VSP-B100R(A)□-6A	100	G1/8	M8 x 1.25	10	63 (72)	25 (34)	17	23	22	313 (319)
VSP-B150R□-8A	150	G1/4	M16 x 2	20	110	45	26	40	30	995
VSP-B200R□-8A	200	G1/4	M16 x 2	20	115	50	26	40	30	1,474

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C1 to 4R□-2/4/6□
●VSP-C1 to 4-□R□-2/4/6

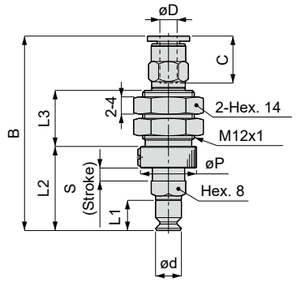


Unit: mm

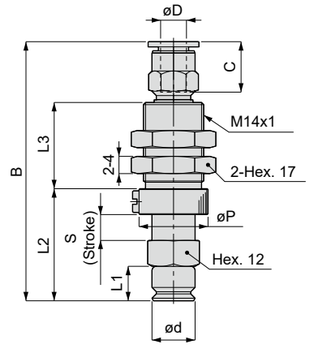
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C1R□-2	1	1.8	39.4	4	17.5	13	8.4	3	0.9 to 1.9	16
VSP-C1R□-4		4	43.5				11.2			17
VSP-C1R□-6		6	45.3				11.9			20
VSP-C1-10R□-2		1.8	53.4		27	17.5	8.4	10	0.6 to 1.7	20
VSP-C1-10R□-4		4	57.5				11.2			21
VSP-C1-10R□-6		6	59.3				11.9			24
VSP-C1-15R□-2		1.8	64.4		32	23.5	8.4	15	0.4 to 1.7	23
VSP-C1-15R□-4		4	68.5				11.2			24
VSP-C1-15R□-6		6	70.3				11.9			27
VSP-C1-20R□-2		1.8	74.4		37	28.5	8.4	20	0.3 to 1.8	26
VSP-C1-20R□-4		4	78.5				11.2			27
VSP-C1-20R□-6		6	80.3				11.9			30
VSP-C2R□-2	2	1.8	39.4	4	17.5	13	8.4	3	0.9 to 1.9	16
VSP-C2R□-4		4	43.5				11.2			17
VSP-C2R□-6		6	45.3				11.9			20
VSP-C2-10R□-2		1.8	53.4		27	17.5	8.4	10	0.6 to 1.7	20
VSP-C2-10R□-4		4	57.5				11.2			21
VSP-C2-10R□-6		6	59.3				11.9			24
VSP-C2-15R□-2		1.8	64.4		32	23.5	8.4	15	0.4 to 1.7	23
VSP-C2-15R□-4		4	68.5				11.2			24
VSP-C2-15R□-6		6	70.3				11.9			27
VSP-C2-20R□-2		1.8	74.4		37	28.5	8.4	20	0.3 to 1.8	26
VSP-C2-20R□-4		4	78.5				11.2			27
VSP-C2-20R□-6		6	80.3				11.9			30
VSP-C3R□-2	3	1.8	39.4	4	17.5	13	8.4	3	0.9 to 1.9	16
VSP-C3R□-4		4	43.5				11.2			17
VSP-C3R□-6		6	45.3				11.9			20
VSP-C3-10R□-2		1.8	53.4		27	17.5	8.4	10	0.6 to 1.7	20
VSP-C3-10R□-4		4	57.5				11.2			21
VSP-C3-10R□-6		6	59.3				11.9			24
VSP-C3-15R□-2		1.8	64.4		32	23.5	8.4	15	0.4 to 1.7	23
VSP-C3-15R□-4		4	68.5				11.2			24
VSP-C3-15R□-6		6	70.3				11.9			27
VSP-C3-20R□-2		1.8	74.4		37	28.5	8.4	20	0.3 to 1.8	26
VSP-C3-20R□-4		4	78.5				11.2			27
VSP-C3-20R□-6		6	80.3				11.9			30
VSP-C4R□-2	4	1.8	39.4	4	17.5	13	8.4	3	0.9 to 1.9	16
VSP-C4R□-4		4	43.5				11.2			17
VSP-C4R□-6		6	45.3				11.9			20
VSP-C4-10R□-2		1.8	53.4		27	17.5	8.4	10	0.6 to 1.7	20
VSP-C4-10R□-4		4	57.5				11.2			21
VSP-C4-10R□-6		6	59.3				11.9			24
VSP-C4-15R□-2		1.8	64.4		32	23.5	8.4	15	0.4 to 1.7	23
VSP-C4-15R□-4		4	68.5				11.2			24
VSP-C4-15R□-6		6	70.3				11.9			27
VSP-C4-20R□-2		1.8	74.4		37	28.5	8.4	20	0.3 to 1.8	26
VSP-C4-20R□-4		4	78.5				11.2			27
VSP-C4-20R□-6		6	80.3				11.9			30

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C6, 8R□-2/4/6
●VSP-C6, 8-□R□-2/4/6



●VSP-C10R□-4/6
●VSP-C10-□R□-4/6
●VSP-C15R(A)□-4/6
●VSP-C15-□R(A)□-4/6



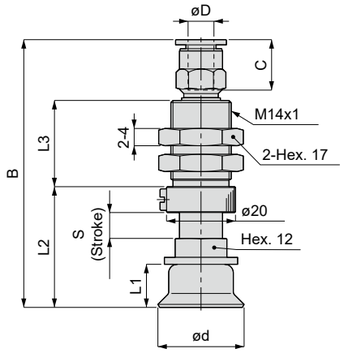
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	øP	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C6R□-2	6	1.8	41.4	7	19.5	13	13	8.4	3	0.9 to 1.9	17
VSP-C6R□-4		4	45.5					11.2			18
VSP-C6R□-6		6	47.3					11.9			19
VSP-C6-10R□-2		1.8	52.9		26.5	17.5		8.4	10	0.8 to 2.7	19
VSP-C6-10R□-4		4	57					11.2			20
VSP-C6-10R□-6		6	58.8					11.9			21
VSP-C6-15R□-2		1.8	63.9		31.5	23.5		8.4	15	0.7 to 3.0	23
VSP-C6-15R□-4		4	68					11.2			24
VSP-C6-15R□-6		6	69.8					11.9			25
VSP-C6-20R□-2		1.8	73.9		36.5	28.5		8.4	20	0.9 to 3.4	25
VSP-C6-20R□-4		4	78					11.2			26
VSP-C6-20R□-6		6	79.8					11.9			26
VSP-C8R□-2	8	1.8	39.9	5.5	18	13	13	8.4	3	0.9 to 1.9	17
VSP-C8R□-4		4	44					11.2			18
VSP-C8R□-6		6	45.8					11.9			19
VSP-C8-10R□-2		1.8	51.4		25	17.5		8.4	10	0.8 to 2.7	19
VSP-C8-10R□-4		4	55.5					11.2			20
VSP-C8-10R□-6		6	57.3					11.9			21
VSP-C8-15R□-2		1.8	62.4		30	23.5		8.4	15	0.7 to 3.0	23
VSP-C8-15R□-4		4	66.5					11.2			24
VSP-C8-15R□-6		6	68.3					11.9			25
VSP-C8-20R□-2		1.8	72.4		35	28.5		8.4	20	0.9 to 3.4	25
VSP-C8-20R□-4		4	76.5					11.2			26
VSP-C8-20R□-6		6	78.3					11.9			27
VSP-C10R□-4	10	4	59	8	26	20	16	11.2	6	4.0 to 7.1	35
VSP-C10R□-6		6	60.3					11.9			36
VSP-C10-10R□-4		4	63.5		30.5			11.2	10	2.0 to 5.2	36
VSP-C10-10R□-6		6	64.8					11.9			37
VSP-C10-15R□-4		4	73.5		35.5	25		11.2	15	2.0 to 5.9	41
VSP-C10-15R□-6		6	74.8					11.9			42
VSP-C10-20R□-4		4	89.5		42.5	34		11.2	20	1.1 to 4.8	48
VSP-C10-20R□-6		6	90.8					11.9			49
VSP-C15R(A)□-4	15	4	60 (61)	9 (10)	27 (28)	20	16	11.2	6	4.0 to 7.1	35 (35)
VSP-C15R(A)□-6		6	61.3 (62.3)					11.9			36 (36)
VSP-C15-10R(A)□-4		4	64.5 (65.5)		31.5 (32.5)			11.2	10	2.0 to 5.2	36 (36)
VSP-C15-10R(A)□-6		6	65.8 (66.8)					11.9			37 (37)
VSP-C15-15R(A)□-4		4	74.5 (75.5)		36.5 (37.5)	25		11.2	15	2.0 to 5.9	41 (41)
VSP-C15-15R(A)□-6		6	75.8 (76.8)					11.9			42 (42)
VSP-C15-20R(A)□-4		4	90.5 (91.5)		43.6 (44.5)	34		11.2	20	1.1 to 4.8	49 (49)
VSP-C15-20R(A)□-6		6	91.8 (92.8)					11.9			50 (50)

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C20 to 50R(A)□-4/6
●VSP-C20 to 50-□R(A)□-4/6



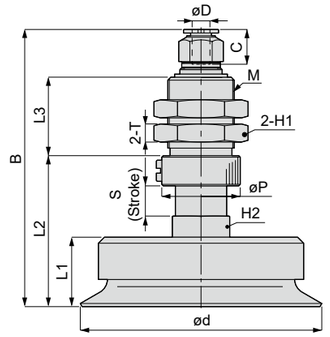
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C20R(A)□-4	20	4	61 (62)	10 (11)	28 (29)	20	11.2	6	7.0 to 12.6	39 (40)
VSP-C20R(A)□-6		6	62.3 (63.3)				11.9			40 (41)
VSP-C20-10R(A)□-4		4	67 (68)		34 (35)		11.2	10	3.3 to 10.0	41 (42)
VSP-C20-10R(A)□-6		6	68.3 (69.3)				11.9			42 (43)
VSP-C20-15R(A)□-4		4	77 (78)		39 (40)	25	11.2	15	3.3 to 10.4	46 (47)
VSP-C20-15R(A)□-6		6	78.3 (79.3)				11.9			47 (48)
VSP-C20-20R(A)□-4		4	93 (94)		46 (47)	34	11.2	20	2.0 to 8.7	53 (54)
VSP-C20-20R(A)□-6		6	94.3 (95.3)				11.9			54 (55)
VSP-C25R(A)□-4	25	4	62 (63)	11 (12)	29 (30)	20	11.2	6	7.0 to 12.6	39 (40)
VSP-C25R(A)□-6		6	63.3 (64.3)				11.9			40 (41)
VSP-C25-10R(A)□-4		4	68 (69)		35 (36)		11.2	10	3.3 to 10.0	42 (43)
VSP-C25-10R(A)□-6		6	69.3 (70.3)				11.9			43 (44)
VSP-C25-15R(A)□-4		4	78 (79)		40 (41)	25	11.2	15	3.3 to 10.4	47 (48)
VSP-C25-15R(A)□-6		6	79.3 (80.3)				11.9			48 (49)
VSP-C25-20R(A)□-4		4	94 (95)		47 (48)	34	11.2	20	2.0 to 8.7	53 (54)
VSP-C25-20R(A)□-6		6	95.3 (96.3)				11.9			54 (55)
VSP-C30R(A)□-4	30	4	62 (65)	11 (14)	29 (32)	20	11.2	6	7.0 to 12.6	42 (43)
VSP-C30R(A)□-6		6	63.3 (66.3)				11.9			43 (44)
VSP-C30-10R(A)□-4		4	68 (71)		35 (38)		11.2	10	3.3 to 10.0	44 (45)
VSP-C30-10R(A)□-6		6	69.3 (72.3)				11.9			45 (46)
VSP-C30-15R(A)□-4		4	78 (81)		40 (43)	25	11.2	15	3.3 to 10.4	49 (50)
VSP-C30-15R(A)□-6		6	79.3 (82.3)				11.9			50 (51)
VSP-C30-20R(A)□-4		4	94 (97)		47 (50)	34	11.2	20	2.0 to 8.7	56 (57)
VSP-C30-20R(A)□-6		6	95.3 (98.3)				11.9			57 (58)
VSP-C40R(A)□-4	40	4	65 (68.5)	14 (17.5)	32 (35.5)	20	11.2	6	7.0 to 12.6	49 (50)
VSP-C40R(A)□-6		6	66.3 (69.8)				11.9			50 (51)
VSP-C40-10R(A)□-4		4	71 (74.5)		38 (41.5)		11.2	10	3.3 to 10.0	51 (52)
VSP-C40-10R(A)□-6		6	72.3 (75.8)				11.9			52 (53)
VSP-C40-15R(A)□-4		4	81 (84.5)		43 (46.5)	25	11.2	15	3.3 to 10.4	56 (57)
VSP-C40-15R(A)□-6		6	82.3 (85.8)				11.9			57 (58)
VSP-C40-20R(A)□-4		4	97 (100.5)		50 (53.5)	34	11.2	20	2.0 to 8.7	63 (64)
VSP-C40-20R(A)□-6		6	98.3 (101.8)				11.9			64 (65)
VSP-C50R(A)□-4	50	4	66 (69)	15 (18)	33 (36)	20	11.2	6	7.0 to 12.6	54 (56)
VSP-C50R(A)□-6		6	67.3 (70.3)				11.9			55 (57)
VSP-C50-10R(A)□-4		4	72 (75)		39 (42)		11.2	10	3.3 to 10.0	57 (58)
VSP-C50-10R(A)□-6		6	73.3 (76.3)				11.9			58 (59)
VSP-C50-15R(A)□-4		4	82 (85)		44 (47)	25	11.2	15	3.3 to 10.4	62 (63)
VSP-C50-15R(A)□-6		6	83.3 (86.3)				11.9			63 (64)
VSP-C50-20R(A)□-4		4	98 (101)		51 (54)	34	11.2	20	2.0 to 8.7	68 (70)
VSP-C50-20R(A)□-6		6	99.3 (102.3)				11.9			69 (71)

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C60 to 100R(A)□-4/6/8
●VSP-C150, 200R□-6/8/10/12



Unit: mm

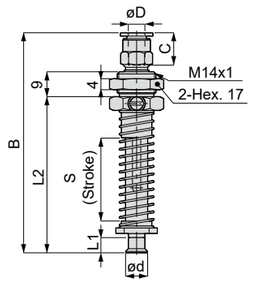
Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	L3	øP	Tube End C	Width across flats H1	Width across flats H2	T	Stroke S	Spring Force (N)	Weight (g)
VSP-C60R(A)□-4	60	4	M22x1	87.2 (95.2)	18 (25)	47.6 (54.6)	26	26	10.9	27	19	6	10	10.1 to 15.8	169 (169)
VSP-C60R(A)□-6		6		89.4 (97.4)					11.7						170 (170)
VSP-C60R(A)□-8		8		97.8 (105.8)					18.2						175 (175)
VSP-C80R(A)□-4	80	4	M22x1	89.6 (99.6)	23 (33)	50 (60)	26	26	10.9	27	19	6	10	10.1 to 15.8	253 (262)
VSP-C80R(A)□-6		6		91.8 (101.8)					11.7						254 (263)
VSP-C80R(A)□-8		8		100.2 (110.2)					18.2						259 (268)
VSP-C100R(A)□-4	100	4	M22x1	91.6 (100.6)	25 (34)	52 (61)	26	26	10.9	27	19	6	10	10.1 to 15.8	343 (349)
VSP-C100R(A)□-6		6		93.8 (102.8)					11.7						344 (350)
VSP-C100R(A)□-8		8		102.2 (111.2)					18.2						349 (361)
VSP-C150R□-6	150	6	M30x2	180	45	112.1	48	35	11.7	36	30	10	20.1	14.0 to 25.5	1,205
VSP-C150R□-8		8		180.7					18.2						1,210
VSP-C150R□-10		10		187.7					20.7						1,215
VSP-C150R□-12		12		192.9					23.3						1,242
VSP-C200R□-6	200	6	M30x2	185	50	117.1	48	35	11.7	36	30	10	20.1	14.0 to 25.5	1,684
VSP-C200R□-8		8		185.7					18.2						1,689
VSP-C200R□-10		10		192.7					20.7						1,694
VSP-C200R□-12		12		197.9					23.3						1,712

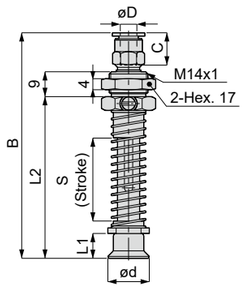
*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting without Spring Cover)

●VSP-C6, 8-□R□-4C/6C

●VSP-C10-□R□-4C/6C
●VSP-C15-□R(A)□-4C/6C





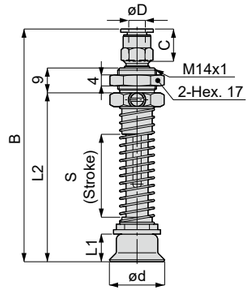
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C6-20R□-4C	6	4	67	7	45	11.2	20	1.5 to 4.9	43
VSP-C6-20R□-6C		6	68.3			11.9			44
VSP-C6-30R□-4C		4	80		58	11.2	30	1.1 to 4.8	48
VSP-C6-30R□-6C		6	81.3			11.9			49
VSP-C6-40R□-4C		4	93		71	11.2	40	1.0 to 4.5	54
VSP-C6-40R□-6C		6	94.3			11.9			55
VSP-C6-50R□-4C		4	106		84	11.2	50	0.9 to 4.5	59
VSP-C6-50R□-6C		6	107.3			11.9			60
VSP-C8-20R□-4C	8	4	65.5	5.5	43.5	11.2	20	1.5 to 4.9	43
VSP-C8-20R□-6C		6	66.8			11.9			44
VSP-C8-30R□-4C		4	78.5		56.5	11.2	30	1.1 to 4.8	48
VSP-C8-30R□-6C		6	79.8			11.9			49
VSP-C8-40R□-4C		4	91.5		69.5	11.2	40	1.0 to 4.5	54
VSP-C8-40R□-6C		6	92.8			11.9			55
VSP-C8-50R□-4C		4	104.5		82.5	11.2	50	0.9 to 4.5	59
VSP-C8-50R□-6C		6	105.8			11.9			60
VSP-C10-20R□-4C	10	4	66.5	8	44.5	11.2	20	1.5 to 4.9	43
VSP-C10-20R□-6C		6	67.8			11.9			44
VSP-C10-30R□-4C		4	79.5		57.5	11.2	30	1.1 to 4.8	48
VSP-C10-30R□-6C		6	80.8			11.9			49
VSP-C10-40R□-4C		4	92.5		70.5	11.2	40	1.0 to 4.5	54
VSP-C10-40R□-6C		6	93.8			11.9			55
VSP-C10-50R□-4C		4	105.5		83.5	11.2	50	0.9 to 4.5	59
VSP-C10-50R□-6C		6	106.8			11.9			60
VSP-C15-20R(A)□-4C	15	4	67.5 (68.5)	9 (10)	45.5 (46.5)	11.2	20	1.5 to 4.9	43 (43)
VSP-C15-20R(A)□-6C		6	68.8 (69.8)			11.9			44 (44)
VSP-C15-30R(A)□-4C		4	80.5 (81.5)		58.5 (59.5)	11.2	30	1.1 to 4.8	48 (48)
VSP-C15-30R(A)□-6C		6	81.8 (82.8)			11.9			49 (49)
VSP-C15-40R(A)□-4C		4	93.5 (94.5)		71.5 (72.5)	11.2	40	1.0 to 4.5	54 (54)
VSP-C15-40R(A)□-6C		6	94.8 (95.8)			11.9			55 (55)
VSP-C15-50R(A)□-4C		4	106.5 (107.5)		84.5 (85.5)	11.2	50	0.9 to 4.5	59 (59)
VSP-C15-50R(A)□-6C		6	107.8 (108.8)			11.9			60 (60)

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting without Spring Cover)

●VSP-C20 to 50-□R(A)□-4C/6C



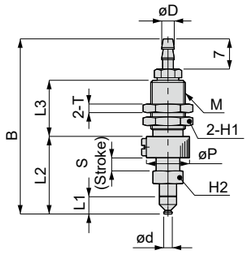
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C20-20R(A)□-4C	20	4	70 (71)	10 (11)	48 (49)	11.2	20	1.5 to 4.9	49 (50)
VSP-C20-20R(A)□-6C		6	71.3 (72.3)			11.9			50 (51)
VSP-C20-30R(A)□-4C		4	83 (84)		61 (62)	11.2	30	1.1 to 4.8	54 (55)
VSP-C20-30R(A)□-6C		6	84.3 (85.3)			11.9			55 (56)
VSP-C20-40R(A)□-4C		4	96 (97)		74 (75)	11.2	40	1.0 to 4.5	59 (60)
VSP-C20-40R(A)□-6C		6	97.3 (98.3)			11.9			60 (61)
VSP-C20-50R(A)□-4C		4	109 (110)		87 (88)	11.2	50	0.9 to 4.5	64 (65)
VSP-C20-50R(A)□-6C		6	110.3 (111.3)			11.9			65 (66)
VSP-C25-20R(A)□-4C	25	4	71 (72)	11 (12)	49 (50)	11.2	20	1.5 to 4.9	49 (50)
VSP-C25-20R(A)□-6C		6	72.3 (73.3)			11.9			50 (51)
VSP-C25-30R(A)□-4C		4	84 (85)		62 (63)	11.2	30	1.1 to 4.8	54 (55)
VSP-C25-30R(A)□-6C		6	85.3 (86.3)			11.9			55 (56)
VSP-C25-40R(A)□-4C		4	97 (98)		75 (76)	11.2	40	1.0 to 4.5	60 (61)
VSP-C25-40R(A)□-6C		6	98.3 (99.3)			11.9			61 (62)
VSP-C25-50R(A)□-4C		4	110 (111)		88 (89)	11.2	50	0.9 to 4.5	65 (66)
VSP-C25-50R(A)□-6C		6	111.3 (112.3)			11.9			66 (67)
VSP-C30-20R(A)□-4C	30	4	71 (74)	11 (14)	49 (52)	11.2	20	1.5 to 4.9	51 (52)
VSP-C30-20R(A)□-6C		6	72.3 (75.3)			11.9			52 (53)
VSP-C30-30R(A)□-4C		4	84 (87)		62 (65)	11.2	30	1.1 to 4.8	56 (57)
VSP-C30-30R(A)□-6C		6	85.3 (88.3)			11.9			57 (58)
VSP-C30-40R(A)□-4C		4	97 (100)		75 (78)	11.2	40	1.0 to 4.5	62 (61)
VSP-C30-40R(A)□-6C		6	98.3 (101.3)			11.9			63 (62)
VSP-C30-50R(A)□-4C		4	110 (113)		88 (91)	11.2	50	0.9 to 4.5	67 (68)
VSP-C30-50R(A)□-6C		6	111.3 (114.3)			11.9			68 (69)
VSP-C40-20R(A)□-4C	40	4	74 (77.5)	14 (17.5)	52 (55.5)	11.2	20	1.5 to 4.9	58 (59)
VSP-C40-20R(A)□-6C		6	75.3 (78.8)			11.9			59 (60)
VSP-C40-30R(A)□-4C		4	87 (90.5)		65 (68.5)	11.2	30	1.1 to 4.8	64 (65)
VSP-C40-30R(A)□-6C		6	88.3 (91.8)			11.9			65 (66)
VSP-C40-40R(A)□-4C		4	100 (103.5)		78 (81.5)	11.2	40	1.0 to 4.5	69 (70)
VSP-C40-40R(A)□-6C		6	101.3 (104.8)			11.9			70 (71)
VSP-C40-50R(A)□-4C		4	113 (116.5)		91 (94.5)	11.2	50	0.9 to 4.5	74 (75)
VSP-C40-50R(A)□-6C		6	114.3 (117.8)			11.9			75 (76)
VSP-C50-20R(A)□-4C	50	4	75 (78)	15 (18)	53 (56)	11.2	20	1.5 to 4.9	64 (65)
VSP-C50-20R(A)□-6C		6	76.3 (79.3)			11.9			65 (67)
VSP-C50-30R(A)□-4C		4	88 (91)		66 (69)	11.2	30	1.1 to 4.8	69 (71)
VSP-C50-30R(A)□-6C		6	89.3 (92.3)			11.9			70 (72)
VSP-C50-40R(A)□-4C		4	101 (104)		79 (82)	11.2	40	1.0 to 4.5	75 (76)
VSP-C50-40R(A)□-6C		6	102.3 (105.3)			11.9			76 (77)
VSP-C50-50R(A)□-4C		4	114 (117)		92 (95)	11.2	50	0.9 to 4.5	80 (81)
VSP-C50-50R(A)□-6C		6	115.3 (118.3)			11.9			81 (82)

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C1 to 4R□-4T/6T
●VSP-C1 to 4-□R□-4T/6T



Unit: mm

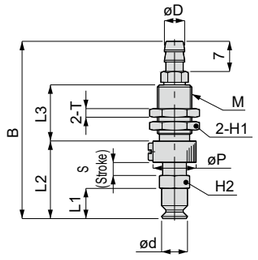
Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	L3	øP	Width across flats H1	Width across flats H2	T	Stroke S	Spring Force (N)	Weight (g)
VSP-C1R□-4T	1	2.5	M8x0.75	40.6	4	18	13	10	10	7	2	3	0.9 to 1.9	8
VSP-C1R□-6T		4												
VSP-C1-10R□-4T		2.5	M12x1	54.6		27	17.5	13	14	8	4	10	0.6 to 1.7	19
VSP-C1-10R□-6T		4												
VSP-C1-15R□-4T		2.5		65.6		32	23.5					15	0.4 to 1.7	22
VSP-C1-15R□-6T		4												
VSP-C1-20R□-4T		2.5		75.6		37	28.5					20	0.3 to 1.8	25
VSP-C1-20R□-6T		4												
VSP-C2R□-4T	2	2.5	M8x0.75	40.6	4	18	13	10	10	7	2	3	0.9 to 1.9	8
VSP-C2R□-6T		4												
VSP-C2-10R□-4T		2.5	M12x1	54.6		27	17.5	13	14	8	4	10	0.6 to 1.7	19
VSP-C2-10R□-6T		4												
VSP-C2-15R□-4T		2.5		65.6		32	23.5					15	0.4 to 1.7	22
VSP-C2-15R□-6T		4												
VSP-C2-20R□-4T		2.5		75.6		37	28.5					20	0.3 to 1.8	25
VSP-C2-20R□-6T		4												
VSP-C3R□-4T	3	2.5	M8x0.75	40.6	4	18	13	10	10	7	2	3	0.9 to 1.9	8
VSP-C3R□-6T		4												
VSP-C3-10R□-4T		2.5	M12x1	54.6		27	17.5	13	14	8	4	10	0.6 to 1.7	19
VSP-C3-10R□-6T		4												
VSP-C3-15R□-4T		2.5		65.6		32	23.5					15	0.4 to 1.7	22
VSP-C3-15R□-6T		4												
VSP-C3-20R□-4T		2.5		75.6		37	28.5					20	0.3 to 1.8	25
VSP-C3-20R□-6T		4												
VSP-C4R□-4T	4	2.5	M8x0.75	40.6	4	18	13	10	10	7	2	3	0.9 to 1.9	8
VSP-C4R□-6T		4												
VSP-C4-10R□-4T		2.5	M12x1	54.6		27	17.5	13	14	8	4	10	0.6 to 1.7	19
VSP-C4-10R□-6T		4												
VSP-C4-15R□-4T		2.5		65.6		32	23.5					15	0.4 to 1.7	22
VSP-C4-15R□-6T		4												
VSP-C4-20R□-4T		2.5		75.6		37	28.5					20	0.3 to 1.8	25
VSP-C4-20R□-6T		4												

VSP-□R□, □A□, □RM□ Series

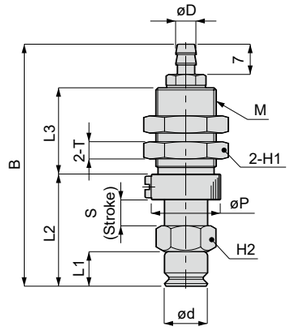
External Dimension Drawings

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C6, 8R□-4T/6T
●VSP-C6, 8-□R□-4T/6T



●VSP-C10R□-4T/6T
●VSP-C10-□R□-4T/6T
●VSP-C15R(A)□-4T/6T
●VSP-C15-□R(A)□-4T/6T



Unit: mm

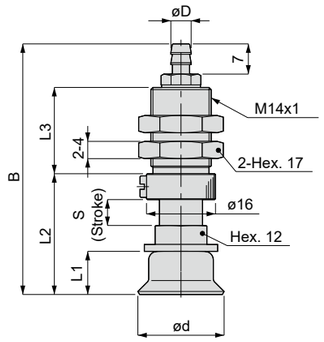
Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	L3	øP	Width across flats H1	Width across flats H2	T	Stroke S	Spring Force (N)	Weight (g)
VSP-C6R□-4T	6	2.5	M8x0.75	40.6	7	18	13	10	10	7	2	3	0.9 to 1.9	8
VSP-C6R□-6T		4												
VSP-C6-10R□-4T		2.5	M12x1	54.1		26.5	17.5	13	14	8	4	10	0.8 to 2.7	19
VSP-C6-10R□-6T		4												
VSP-C6-15R□-4T		2.5		65.1		31.5	23.5					15	0.7 to 3.0	22
VSP-C6-15R□-6T		4												
VSP-C6-20R□-4T		2.5		75.1		36.5	28.5					20	0.9 to 3.4	24
VSP-C6-20R□-6T		4												
VSP-C8R□-4T	8	2.5	M8x0.75	39.1	5.5	16.5	13	10	10	7	2	3	0.9 to 1.9	8
VSP-C8R□-6T		4												
VSP-C8-10R□-4T		2.5	M12x1	52.6		25	17.5	13	14	8	4	10	0.8 to 2.7	19
VSP-C8-10R□-6T		4												
VSP-C8-15R□-4T		2.5		63.6		30	23.5					15	0.7 to 3.0	22
VSP-C8-15R□-6T		4												
VSP-C8-20R□-4T		2.5		73.6		35	28.5					20	0.9 to 3.4	24
VSP-C8-20R□-6T		4												
VSP-C10R□-4T	10	2.5	M14x1	56.1	8	26	20	16	17	12	4	6	4.0 to 7.1	34
VSP-C10R□-6T		4												
VSP-C10-10R□-4T		2.5		60.6		30.5						10	2.0 to 5.2	35
VSP-C10-10R□-6T		4												
VSP-C10-15R□-4T		2.5		70.6		35.5	25					15	2.0 to 5.9	40
VSP-C10-15R□-6T		4												
VSP-C10-20R□-4T		2.5		86.6		42.5	34					20	1.1 to 4.8	47
VSP-C10-20R□-6T		4												
VSP-C15R(A)□-4T	15	2.5	M14x1	57.1 (58.1)	9 (10)	27 (28)	20	16	17	12	4	6	4.0 to 7.1	34 (34)
VSP-C15R(A)□-6T		4												
VSP-C15-10R(A)□-4T		2.5		61.6 (62.6)		31.5 (32.5)						10	2.0 to 5.2	35 (35)
VSP-C15-10R(A)□-6T		4												
VSP-C15-15R(A)□-4T		2.5		71.6 (72.6)		36.5 (37.5)	25					15	2.0 to 5.9	40 (40)
VSP-C15-15R(A)□-6T		4												
VSP-C15-20R(A)□-4T		2.5		87.6 (88.6)		43.5 (44.5)	34					20	1.1 to 4.8	48 (48)
VSP-C15-20R(A)□-6T		4												

*Dimensions in ( ) are for deep type pads.

Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechanical Break Function
Ending

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C20 to 50R(A)□-4T/6T
●VSP-C20 to 50-□R(A)□-4T/6T



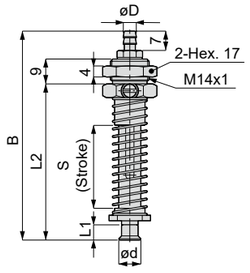
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-C20R(A)□-4T	20	2.5	58.1 (59.1)	10 (11)	28 (29)	20	6	7.0 to 12.6	38 (39)
VSP-C20R(A)□-6T		4							
VSP-C20-10R(A)□-4T		2.5	64.1 (65.1)		34 (35)		10	3.3 to 10.0	40 (41)
VSP-C20-10R(A)□-6T		4							
VSP-C20-15R(A)□-4T		2.5	74.1 (75.1)		39 (40)	25	15	3.3 to 10.4	45 (46)
VSP-C20-15R(A)□-6T		4							
VSP-C20-20R(A)□-4T		2.5	90.1 (91.1)		46 (47)	34	20	2.0 to 8.7	52 (52)
VSP-C20-20R(A)□-6T		4							
VSP-C25R(A)□-4T	25	2.5	59.1 (60.1)	11 (12)	29 (30)	20	6	7.0 to 12.6	39 (40)
VSP-C25R(A)□-6T		4							
VSP-C25-10R(A)□-4T		2.5	65.1 (66.1)		35 (36)		10	3.3 to 10.0	43 (44)
VSP-C25-10R(A)□-6T		4							
VSP-C25-15R(A)□-4T		2.5	75.1 (76.1)		40 (41)	25	15	3.3 to 10.4	48 (49)
VSP-C25-15R(A)□-6T		4							
VSP-C25-20R(A)□-4T		2.5	91.1 (92.1)		47 (48)	34	20	2.0 to 8.7	54 (55)
VSP-C25-20R(A)□-6T		4							
VSP-C30R(A)□-4T	30	2.5	59.1 (62.1)	11 (14)	29 (32)	20	6	7.0 to 12.6	40 (41)
VSP-C30R(A)□-6T		4							
VSP-C30-10R(A)□-4T		2.5	65.1 (68.1)		35 (38)		10	3.3 to 10.0	43 (44)
VSP-C30-10R(A)□-6T		4							
VSP-C30-15R(A)□-4T		2.5	75.1 (78.1)		40 (43)	25	15	3.3 to 10.4	48 (49)
VSP-C30-15R(A)□-6T		4							
VSP-C30-20R(A)□-4T		2.5	91.1 (94.1)		47 (50)	34	20	2.0 to 8.7	54 (55)
VSP-C30-20R(A)□-6T		4							
VSP-C40R(A)□-4T	40	2.5	62.1 (65.6)	14 (17.5)	32 (35.5)	20	6	7.0 to 12.6	47 (48)
VSP-C40R(A)□-6T		4							
VSP-C40-10R(A)□-4T		2.5	68.1 (71.6)		38 (41.5)		10	3.3 to 10.0	50 (51)
VSP-C40-10R(A)□-6T		4							
VSP-C40-15R(A)□-4T		2.5	78.1 (81.6)		43 (46.5)	25	15	3.3 to 10.4	55 (56)
VSP-C40-15R(A)□-6T		4							
VSP-C40-20R(A)□-4T		2.5	94.1 (97.6)		50 (53.5)	34	20	2.0 to 8.7	61 (62)
VSP-C40-20R(A)□-6T		4							
VSP-C50R(A)□-4T	50	2.5	63.1 (66.1)	15 (18)	33 (36)	20	6	7.0 to 12.6	53 (55)
VSP-C50R(A)□-6T		4							
VSP-C50-10R(A)□-4T		2.5	69.1 (72.1)		39 (42)		10	3.3 to 10.0	56 (57)
VSP-C50-10R(A)□-6T		4							
VSP-C50-15R(A)□-4T		2.5	79.1 (82.1)		44 (47)	25	15	3.3 to 10.4	61 (62)
VSP-C50-15R(A)□-6T		4							
VSP-C50-20R(A)□-4T		2.5	95.1 (98.1)		51 (54)	34	20	2.0 to 8.7	67 (69)
VSP-C50-20R(A)□-6T		4							

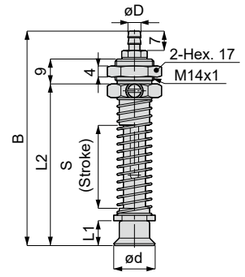
*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting without Spring Cover)

●VSP-C6, 8-□R□-4TC/6TC



●VSP-C10-□R□-4TC/6TC
●VSP-C15-□R(A)□-4TC/6TC



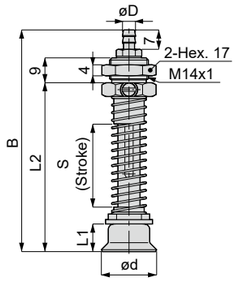
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C6-20R□-4TC	6	2.5	64.1	7	45	20	1.5 to 4.9	42
VSP-C6-20R□-6TC		4						
VSP-C6-30R□-4TC		2.5	77.1		58	30	1.1 to 4.8	47
VSP-C6-30R□-6TC		4						
VSP-C6-40R□-4TC		2.5	90.1		71	40	1.0 to 4.5	52
VSP-C6-40R□-6TC		4						
VSP-C6-50R□-4TC		2.5	103.1		84	50	0.9 to 4.5	58
VSP-C6-50R□-6TC		4						
VSP-C8-20R□-4TC	8	2.5	62.6	5.5	43.5	20	1.5 to 4.9	42
VSP-C8-20R□-6TC		4						
VSP-C8-30R□-4TC		2.5	75.6		56.5	30	1.1 to 4.8	47
VSP-C8-30R□-6TC		4						
VSP-C8-40R□-4TC		2.5	88.6		69.5	40	1.0 to 4.5	52
VSP-C8-40R□-6TC		4						
VSP-C8-50R□-4TC		2.5	101.6		82.5	50	0.9 to 4.5	58
VSP-C8-50R□-6TC		4						
VSP-C10-20R□-4TC	10	2.5	63.6	8	44.5	20	1.5 to 4.9	43
VSP-C10-20R□-6TC		4						
VSP-C10-30R□-4TC		2.5	76.6		57.5	30	1.1 to 4.8	48
VSP-C10-30R□-6TC		4						
VSP-C10-40R□-4TC		2.5	89.6		70.5	40	1.0 to 4.5	53
VSP-C10-40R□-6TC		4						
VSP-C10-50R□-4TC		2.5	102.6		83.5	50	0.9 to 4.5	59
VSP-C10-50R□-6TC		4						
VSP-C15-20R(A)□-4TC	15	2.5	64.6 (65.6)	9 (10)	45.5 (46.5)	20	1.5 to 4.9	43 (43)
VSP-C15-20R(A)□-6TC		4						
VSP-C15-30R(A)□-4TC		2.5	77.6 (78.6)		58.5 (59.5)	30	1.1 to 4.8	48 (48)
VSP-C15-30R(A)□-6TC		4						
VSP-C15-40R(A)□-4TC		2.5	90.6 (91.6)		71.5 (72.5)	40	1.0 to 4.5	53 (53)
VSP-C15-40R(A)□-6TC		4						
VSP-C15-50R(A)□-4TC		2.5	103.6 (104.6)		84.5 (85.5)	50	0.9 to 4.5	59 (59)
VSP-C15-50R(A)□-6TC		4						

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting without Spring Cover)

●VSP-C20 to 50-□R(A)□-4TC/6TC



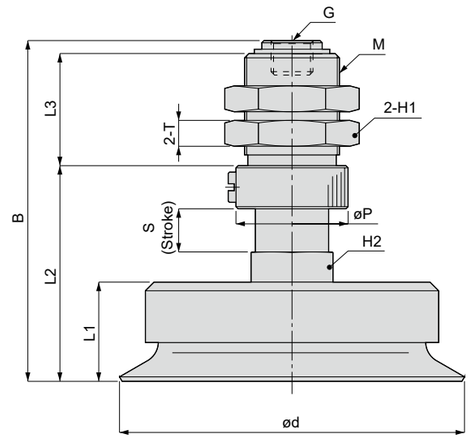
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C20-20R(A)□-4TC	20	2.5	67.1 (68.1)	10 (11)	48 (49)	20	1.5 to 4.9	48
VSP-C20-20R(A)□-6TC		4						
VSP-C20-30R(A)□-4TC		2.5	80.1 (81.1)		61 (62)	30	1.1 to 4.8	53
VSP-C20-30R(A)□-6TC		4						
VSP-C20-40R(A)□-4TC		2.5	93.1 (94.1)		74 (75)	40	1.0 to 4.5	58
VSP-C20-40R(A)□-6TC		4						
VSP-C20-50R(A)□-4TC		2.5	106.1 (107.1)		87 (88)	50	0.9 to 4.5	63
VSP-C20-50R(A)□-6TC		4						
VSP-C25-20R(A)□-4TC	25	2.5	68.1 (69.1)	11 (12)	49 (50)	20	1.5 to 4.9	48
VSP-C25-20R(A)□-6TC		4						
VSP-C25-30R(A)□-4TC		2.5	81.1 (82.1)		62 (63)	30	1.1 to 4.8	53
VSP-C25-30R(A)□-6TC		4						
VSP-C25-40R(A)□-4TC		2.5	94.1 (95.1)		75 (76)	40	1.0 to 4.5	58
VSP-C25-40R(A)□-6TC		4						
VSP-C25-50R(A)□-4TC		2.5	107.1 (108.1)		88 (89)	50	0.9 to 4.5	64
VSP-C25-50R(A)□-6TC		4						
VSP-C30-20R(A)□-4TC	30	2.5	68.1 (71.1)	11 (14)	49 (52)	20	1.5 to 4.9	49
VSP-C30-20R(A)□-6TC		4						
VSP-C30-30R(A)□-4TC		2.5	81.1 (84.1)		62 (65)	30	1.1 to 4.8	54
VSP-C30-30R(A)□-6TC		4						
VSP-C30-40R(A)□-4TC		2.5	94.1 (97.1)		75 (78)	40	1.0 to 4.5	59
VSP-C30-40R(A)□-6TC		4						
VSP-C30-50R(A)□-4TC		2.5	107.1 (110.1)		88 (91)	50	0.9 to 4.5	64
VSP-C30-50R(A)□-6TC		4						
VSP-C40-20R(A)□-4TC	40	2.5	71.1 (74.6)	14 (17.5)	52 (55.5)	20	1.5 to 4.9	57 (58)
VSP-C40-20R(A)□-6TC		4						
VSP-C40-30R(A)□-4TC		2.5	84.1 (87.6)		65 (68.5)	30	1.1 to 4.8	62 (63)
VSP-C40-30R(A)□-6TC		4						
VSP-C40-40R(A)□-4TC		2.5	97.1 (100.6)		78 (81.5)	40	1.0 to 4.5	68 (69)
VSP-C40-40R(A)□-6TC		4						
VSP-C40-50R(A)□-4TC		2.5	110.1 (113.6)		91 (94.5)	50	0.9 to 4.5	73 (74)
VSP-C40-50R(A)□-6TC		4						
VSP-C50-20R(A)□-4TC	50	2.5	72.1 (75.1)	15 (18)	53 (56)	20	1.5 to 4.9	63 (65)
VSP-C50-20R(A)□-6TC		4						
VSP-C50-30R(A)□-4TC		2.5	85.1 (88.1)		66 (69)	30	1.1 to 4.8	68 (70)
VSP-C50-30R(A)□-6TC		4						
VSP-C50-40R(A)□-4TC		2.5	98.1 (101.1)		79 (82)	40	1.0 to 4.5	73 (75)
VSP-C50-40R(A)□-6TC		4						
VSP-C50-50R(A)□-4TC		2.5	111.1 (114.1)		92 (95)	50	0.9 to 4.5	79 (80)
VSP-C50-50R(A)□-6TC		4						

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Female Thread)

●VSP-C60 to 100R(A)□-6A
●VSP-C150, 200R□-8A



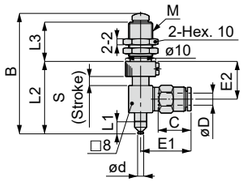
Unit: mm

Model No.	Pad Diameter ød	Vacuum Outlet Size G	Mounting screw M	B	L1	L2	L3	øP	Width across flats H1	Width across flats H2	T	Stroke S	Spring Force (N)	Weight (g)
VSP-C60R(A)□-6A	60	G1/8	M22x1	76.6 (83.6)	18 (25)	47.6 (54.6)	26	26	27	19	6	10	10.1 to 15.8	161 (161)
VSP-C80R(A)□-6A	80	G1/8	M22x1	79 (89)	23 (33)	50 (60)	26	26	27	19	6	10	10.1 to 15.8	245 (254)
VSP-C100R(A)□-6A	100	G1/8	M22x1	81 (90)	25 (34)	52 (61)	26	26	27	19	6	10	10.1 to 15.8	335 (341)
VSP-C150R□-8A	150	G1/4	M30x2	164	45	112.1	48	35	36	30	10	20.1	14.0 to 25.5	1,196
VSP-C200R□-8A	200	G1/4	M30x2	169	50	117.1	48	35	36	30	10	20.1	14.0 to 25.5	1,675

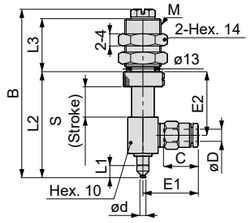
*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D1 to 4R□-2/4/6



●VSP-D1 to 4-□R□-2/4/6

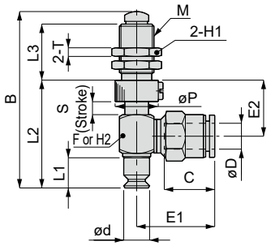


Unit: mm

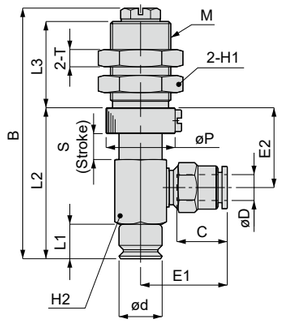
Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	L3	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D1R□-2	1	1.8	M8x0.75	40	4	24	13	8.4	12.7	12.5	3	0.9 to 1.9	13
VSP-D1R□-4		4						11.2	16.8				14
VSP-D1R□-6		6						11.9	18.6				15
VSP-D1-10R□-2		1.8	M12x1	55.6		35	17.5	8.4	13.7	21	10	0.6 to 1.7	29
VSP-D1-10R□-4		4						11.2	17.8				30
VSP-D1-10R□-6		6						11.9	19.1				31
VSP-D1-15R□-2		1.8		66.6		40	23.5	8.4	13.7	26	15	0.4 to 1.7	33
VSP-D1-15R□-4		4						11.2	17.8				34
VSP-D1-15R□-6		6						11.9	19.1				35
VSP-D1-20R□-2		1.8		76.6		45	28.5	8.4	13.7	31	20	0.3 to 1.8	36
VSP-D1-20R□-4		4						11.2	17.8				37
VSP-D1-20R□-6		6						11.9	19.1				38
VSP-D2R□-2	2	1.8	M8x0.75	40	4	24	13	8.4	12.7	12.5	3	0.9 to 1.9	13
VSP-D2R□-4		4						11.2	16.8				14
VSP-D2R□-6		6						11.9	18.6				15
VSP-D2-10R□-2		1.8	M12x1	55.6		35	17.5	8.4	13.7	21	10	0.6 to 1.7	29
VSP-D2-10R□-4		4						11.2	17.8				30
VSP-D2-10R□-6		6						11.9	19.1				31
VSP-D2-15R□-2		1.8		66.6		40	23.5	8.4	13.7	26	15	0.4 to 1.7	33
VSP-D2-15R□-4		4						11.2	17.8				34
VSP-D2-15R□-6		6						11.9	19.1				35
VSP-D2-20R□-2		1.8		76.6		45	28.5	8.4	13.7	31	20	0.3 to 1.8	36
VSP-D2-20R□-4		4						11.2	17.8				37
VSP-D2-20R□-6		6						11.9	19.1				38
VSP-D3R□-2	3	1.8	M8x0.75	40	4	24	13	8.4	12.7	12.5	3	0.9 to 1.9	13
VSP-D3R□-4		4						11.2	16.8				14
VSP-D3R□-6		6						11.9	18.6				15
VSP-D3-10R□-2		1.8	M12x1	55.6		35	17.5	8.4	13.7	21	10	0.6 to 1.7	29
VSP-D3-10R□-4		4						11.2	17.8				30
VSP-D3-10R□-6		6						11.9	19.1				31
VSP-D3-15R□-2		1.8		66.6		40	23.5	8.4	13.7	26	15	0.4 to 1.7	33
VSP-D3-15R□-4		4						11.2	17.8				34
VSP-D3-15R□-6		6						11.9	19.1				35
VSP-D3-20R□-2		1.8		76.6		45	28.5	8.4	13.7	31	20	0.3 to 1.8	36
VSP-D3-20R□-4		4						11.2	17.8				37
VSP-D3-20R□-6		6						11.9	19.1				38
VSP-D4R□-2	4	1.8	M8x0.75	40	4	24	13	8.4	12.7	12.5	3	0.9 to 1.9	13
VSP-D4R□-4		4						11.2	16.8				14
VSP-D4R□-6		6						11.9	18.6				15
VSP-D4-10R□-2		1.8	M12x1	55.6		35	17.5	8.4	13.7	21	10	0.6 to 1.7	29
VSP-D4-10R□-4		4						11.2	17.8				30
VSP-D4-10R□-6		6						11.9	19.1				31
VSP-D4-15R□-2		1.8		66.6		40	23.5	8.4	13.7	26	15	0.4 to 1.7	33
VSP-D4-15R□-4		4						11.2	17.8				34
VSP-D4-15R□-6		6						11.9	19.1				35
VSP-D4-20R□-2		1.8		76.6		45	28.5	8.4	13.7	31	20	0.3 to 1.8	36
VSP-D4-20R□-4		4						11.2	17.8				37
VSP-D4-20R□-6		6						11.9	19.1				38

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D6, 8R□-2/4/6
●VSP-D6, 8-□R□-2/4/6



●VSP-D10R□-4/6
●VSP-D10-□R□-4/6
●VSP-D15R(A)□-4/6
●VSP-D15-□R(A)□-4/6



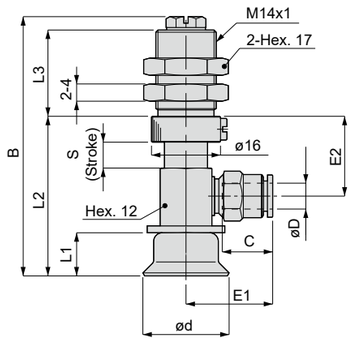
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	L3	øP	Tube End C	E1	E2	Width Across Flats H1	Width Across Flats H2	□F	T	Stroke S	Spring Force (N)	Weight (g)
VSP-D6R□-2	6	1.8	M8x0.75	41	7	25	13	10	8.4	12.7	13	10	-	8	2	3	0.9 to 1.9	13
VSP-D6R□-4		4							11.2	16.8								14
VSP-D6R□-6		6							11.9	18.6								15
VSP-D6-10R□-2		1.8	M12x1	56.1		35.5	17.5	13	8.4	14.7	21	14	12	-	4	10	0.6 to 1.7	33
VSP-D6-10R□-4		4							11.2	18.8								34
VSP-D6-10R□-6		6							11.9	20.1								35
VSP-D6-15R□-2		1.8		67.1		40.5	23.5		8.4	14.7	26					15	0.4 to 1.7	37
VSP-D6-15R□-4		4							11.2	18.8								38
VSP-D6-15R□-6		6							11.9	20.1								39
VSP-D6-20R□-2		1.8		77.1		45.5	28.5		8.4	14.7	31					20	0.3 to 1.8	40
VSP-D6-20R□-4		4							11.2	18.8								41
VSP-D6-20R□-6		6							11.9	20.1								42
VSP-D8R□-2	8	1.8	M8x0.75	39.5	5.5	23.5	13	10	8.4	12.7	13	10	-	8	2	3	0.9 to 1.9	13
VSP-D8R□-4		4							11.2	16.8								14
VSP-D8R□-6		6							11.9	18.6								15
VSP-D8-10R□-2		1.8	M12x1	54.6		34	17.5	13	8.4	14.7	21	14	12	-	4	10	0.6 to 1.7	33
VSP-D8-10R□-4		4							11.2	18.8								34
VSP-D8-10R□-6		6							11.9	20.1								35
VSP-D8-15R□-2		1.8		65.6		39	23.5		8.4	14.7	26					15	0.4 to 1.7	37
VSP-D8-15R□-4		4							11.2	18.8								38
VSP-D8-15R□-6		6							11.9	20.1								39
VSP-D8-20R□-2		1.8		75.6		44	28.5		8.4	14.7	31					20	0.3 to 1.8	40
VSP-D8-20R□-4		4							11.2	18.8								41
VSP-D8-20R□-6		6							11.9	20.1								42
VSP-D10R□-4	10	4	M14x1	58.1	8	35	20	16	11.2	18.8	18.5	17	12	-	4	6	4.0 to 7.1	47
VSP-D10R□-6		6							11.9	20.1								48
VSP-D10-10R□-4		4		63.1		40			11.2	18.8	25					10	2.0 to 5.2	50
VSP-D10-10R□-6		6							11.9	20.1								51
VSP-D10-15R□-4		4		73.1		45	25		11.2	18.8	30					15	2.0 to 5.9	56
VSP-D10-15R□-6		6							11.9	20.1								57
VSP-D10-20R□-4		4		89.1		52	34		11.2	18.8	37					20	1.1 to 4.8	66
VSP-D10-20R□-6		6							11.9	20.1								67
VSP-D15R(A)□-4	15	4	M14x1	59.1 (60.1)	9 (10)	36 (37)	20	16	11.2	18.8	18.5	17	12	-	4	6	4.0 to 7.1	47 (47)
VSP-D15R(A)□-6		6							11.9	20.1								48 (48)
VSP-D15-10R(A)□-4		4		64.1 (65.1)		41 (42)			11.2	18.8	25					10	2.0 to 5.2	50 (50)
VSP-D15-10R(A)□-6		6							11.9	20.1								51 (51)
VSP-D15-15R(A)□-4		4		74.1 (75.1)		46 (47)	25		11.2	18.8	30					15	2.0 to 5.9	56 (56)
VSP-D15-15R(A)□-6		6							11.9	20.1								57 (57)
VSP-D15-20R(A)□-4		4		90.1 (91.1)		53 (54)	34		11.2	18.8	37					20	1.1 to 4.8	66 (66)
VSP-D15-20R(A)□-6		6							11.9	20.1								67 (67)

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D20 to 50R(A)□-4/6
●VSP-D20 to 50-□R(A)□-4/6



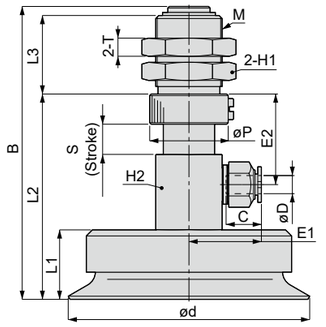
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D20R(A)□-4	20	4	60.1 (61.1)	10 (11)	37 (38)	20	11.2	18.8	18.5	6	7.0 to 12.6	51 (52)
VSP-D20R(A)□-6		6					11.9	20.1				52 (53)
VSP-D20-10R(A)□-4		4	66.1 (67.1)		43 (44)		11.2	18.8	24.5	10	3.3 to 10.0	54 (55)
VSP-D20-10R(A)□-6		6					11.9	20.1				55 (56)
VSP-D20-15R(A)□-4		4	76.1 (77.1)		48 (49)	25	11.2	18.8	29.5	15	3.3 to 10.4	61 (62)
VSP-D20-15R(A)□-6		6					11.9	20.1				62 (63)
VSP-D20-20R(A)□-4		4	92.1 (93.1)		55 (56)	34	11.2	18.8	36.5	20	2.0 to 8.7	71 (72)
VSP-D20-20R(A)□-6		6					11.9	20.1				72 (73)
VSP-D25R(A)□-4	25	4	61.1 (62.1)	11 (12)	38 (39)	20	11.2	18.8	18.5	6	7.0 to 12.6	51 (52)
VSP-D25R(A)□-6		6					11.9	20.1				52 (53)
VSP-D25-10R(A)□-4		4	67.1 (68.1)		44 (45)		11.2	18.8	24.5	10	3.3 to 10.0	55 (56)
VSP-D25-10R(A)□-6		6					11.9	20.1				56 (57)
VSP-D25-15R(A)□-4		4	77.1 (78.1)		49 (50)	25	11.2	18.8	29.5	15	3.3 to 10.4	61 (62)
VSP-D25-15R(A)□-6		6					11.9	20.1				62 (63)
VSP-D25-20R(A)□-4		4	93.1 (94.1)		56 (57)	34	11.2	18.8	36.5	20	2.0 to 8.7	71 (72)
VSP-D25-20R(A)□-6		6					11.9	20.1				72 (73)
VSP-D30R(A)□-4	30	4	61.1 (64.1)	11 (14)	38 (41)	20	11.2	18.8	18.5	6	7.0 to 12.6	53 (54)
VSP-D30R(A)□-6		6					11.9	20.1				54 (55)
VSP-D30-10R(A)□-4		4	67.1 (70.1)		44 (47)		11.2	18.8	24.5	10	3.3 to 10.0	57 (58)
VSP-D30-10R(A)□-6		6					11.9	20.1				58 (59)
VSP-D30-15R(A)□-4		4	77.1 (80.1)		49 (52)	25	11.2	18.8	29.5	15	3.3 to 10.4	63 (64)
VSP-D30-15R(A)□-6		6					11.9	20.1				64 (65)
VSP-D30-20R(A)□-4		4	93.1 (96.1)		56 (59)	34	11.2	18.8	36.5	20	2.0 to 8.7	73 (74)
VSP-D30-20R(A)□-6		6					11.9	20.1				74 (75)
VSP-D40R(A)□-4	40	4	64.1 (67.6)	14 (17.5)	41 (44.5)	20	11.2	18.8	18.5	6	7.0 to 12.6	60 (61)
VSP-D40R(A)□-6		6					11.9	20.1				61 (62)
VSP-D40-10R(A)□-4		4	70.1 (73.6)		47 (50.5)		11.2	18.8	24.5	10	3.3 to 10.0	64 (65)
VSP-D40-10R(A)□-6		6					11.9	20.1				65 (66)
VSP-D40-15R(A)□-4		4	80.1 (83.6)		52 (55.5)	25	11.2	18.8	29.5	15	3.3 to 10.4	70 (71)
VSP-D40-15R(A)□-6		6					11.9	20.1				71 (72)
VSP-D40-20R(A)□-4		4	96.1 (99.6)		59 (62.5)	34	11.2	18.8	36.5	20	2.0 to 8.7	80 (81)
VSP-D40-20R(A)□-6		6					11.9	20.1				81 (82)
VSP-D50R(A)□-4	50	4	65.1 (68.1)	15 (18)	42 (45)	20	11.2	18.8	18.5	6	7.0 to 12.6	66 (68)
VSP-D50R(A)□-6		6					11.9	20.1				67 (69)
VSP-D50-10R(A)□-4		4	71.1 (74.1)		48 (51)		11.2	18.8	24.5	10	3.3 to 10.0	70 (71)
VSP-D50-10R(A)□-6		6					11.9	20.1				71 (72)
VSP-D50-15R(A)□-4		4	81.1 (84.1)		53 (56)	25	11.2	18.8	29.5	15	3.3 to 10.4	80 (81)
VSP-D50-15R(A)□-6		6					11.9	20.1				81 (82)
VSP-D50-20R(A)□-4		4	97.1 (100.1)		60 (63)	34	11.2	18.8	36.5	20	2.0 to 8.7	86 (88)
VSP-D50-20R(A)□-6		6					11.9	20.1				87 (89)

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D60 to 100R(A)□-4/6/8
●VSP-D150, 200R□-6/8/10



Unit: mm

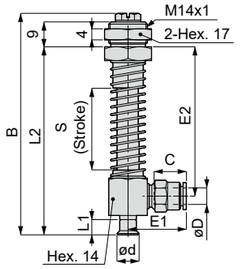
Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	L3	øP	Tube End C	E1	E2	Width Across Flats H1	Width Across Flats H2	T	Stroke S	Spring Force (N)	Weight (g)
VSP-D60R(A)□-4	60	4	M22x1	94.6 (101.6)	18 (25)	65.6 (72.6)	26	26	11.2	21.5	30	27	22	6	10	10.1 to 15.8	252 (251)
VSP-D60R(A)□-6		6							11.9	23.7							253 (252)
VSP-D60R(A)□-8		8							18.2	32.1							258 (257)
VSP-D80R(A)□-4	80	4	M22x1	97 (107)	23 (33)	68 (78)	26	26	11.2	21.5	30	27	22	6	10	10.1 to 15.8	332 (344)
VSP-D80R(A)□-6		6							11.9	23.7							333 (345)
VSP-D80R(A)□-8		8							18.2	32.1							338 (350)
VSP-D100R(A)□-4	100	4	M22x1	99 (108)	25 (34)	70 (79)	26	26	11.2	21.5	30	27	22	6	10	10.1 to 15.8	425 (431)
VSP-D100R(A)□-6		6							11.9	23.7							426 (432)
VSP-D100R(A)□-8		8							18.2	32.1							431 (437)
VSP-D150R□-6	150	6	M30x2	168.3	45	112.1	48	35	17	30.9	42.1	36	30	10	20.1	14.0 to 25.5	1,205
VSP-D150R□-8		8							18.2	31.6							1,210
VSP-D150R□-10		10							20.7	38.6							1,215
VSP-D200R□-6	200	6	M30x2	173.3	50	117.1	48	35	17	30.9	42.1	36	30	10	20.1	14.0 to 25.5	1,684
VSP-D200R□-8		8							18.2	31.6							1,689
VSP-D200R□-10		10							20.7	38.6							1,694

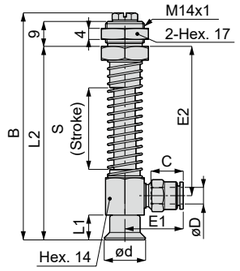
*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting without Spring Cover)

●VSP-D6, 8-□R□-4C/6C

●VSP-D10-□R□-4C/6C
●VSP-D15-□R(A)□-4C/6C





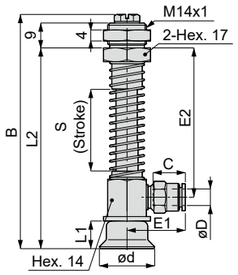
Unit: mm

Model No.	Pad Diameter□d	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D6-20R□-4C	6	4	67.1	7	55	11.2	19.8	40.5	20	1.5 to 4.9	62
VSP-D6-20R□-6C		6				11.9	21.1				63
VSP-D6-30R□-4C		4	80.1		68	11.2	19.8	53.5	30	1.1 to 4.8	68
VSP-D6-30R□-6C		6				11.9	21.1				69
VSP-D6-40R□-4C		4	93.1		81	11.2	19.8	66.5	40	1.0 to 4.5	75
VSP-D6-40R□-6C		6				11.9	21.1				76
VSP-D6-50R□-4C		4	106.1		94	11.2	19.8	79.5	50	0.9 to 4.5	82
VSP-D6-50R□-6C		6				11.9	21.1				83
VSP-D8-20R□-4C	8	4	65.6	5.5	53.5	11.2	19.8	40.5	20	1.5 to 4.9	62
VSP-D8-20R□-6C		6				11.9	21.1				63
VSP-D8-30R□-4C		4	78.6		56.5	11.2	19.8	53.5	30	1.1 to 4.8	68
VSP-D8-30R□-6C		6				11.9	21.1				69
VSP-D8-40R□-4C		4	91.6		69.5	11.2	19.8	66.5	40	1.0 to 4.5	75
VSP-D8-40R□-6C		6				11.9	21.1				76
VSP-D8-50R□-4C		4	104.6		82.5	11.2	19.8	79.5	50	0.9 to 4.5	82
VSP-D8-50R□-6C		6				11.9	21.1				83
VSP-D10-20R□-4C	10	4	68.1	8	56	11.2	19.8	40.5	20	1.5 to 4.9	69
VSP-D10-20R□-6C		6				11.9	21.1				70
VSP-D10-30R□-4C		4	81.1		69	11.2	19.8	53.5	30	1.1 to 4.8	75
VSP-D10-30R□-6C		6				11.9	21.1				76
VSP-D10-40R□-4C		4	94.1		82	11.2	19.8	66.5	40	1.0 to 4.5	82
VSP-D10-40R□-6C		6				11.9	21.1				83
VSP-D10-50R□-4C		4	107.1		95	11.2	19.8	79.5	50	0.9 to 4.5	89
VSP-D10-50R□-6C		6				11.9	21.1				90
VSP-D15-20R(A)□-4C	15	4	69.1 (70.1)	9 (10)	57 (58)	11.2	19.8	40.5	20	1.5 to 4.9	69 (69)
VSP-D15-20R(A)□-6C		6				11.9	21.1				70 (70)
VSP-D15-30R(A)□-4C		4	82.1 (83.1)		70 (71)	11.2	19.8	53.5	30	1.1 to 4.8	75 (75)
VSP-D15-30R(A)□-6C		6				11.9	21.1				76 (76)
VSP-D15-40R(A)□-4C		4	95.1 (96.1)		83 (84)	11.2	19.8	66.5	40	1.0 to 4.5	82 (82)
VSP-D15-40R(A)□-6C		6				11.9	21.1				83 (83)
VSP-D15-50R(A)□-4C		4	108.1 (109.1)		106 (107)	11.2	19.8	79.5	50	0.9 to 4.5	89 (89)
VSP-D15-50R(A)□-6C		6				11.9	21.1				90 (90)

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting without Spring Cover)

●VSP-D20 to 50-□R(A)□-4C/6C



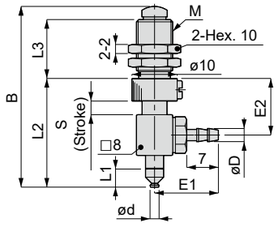
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D20-20R(A)□-4C	20	4	71.6 (72.6)	10 (11)	59.5 (60.5)	11.2	19.8	41	20	1.5 to 4.9	69 (70)
VSP-D20-20R(A)□-6C		6				11.9	21.1				70 (71)
VSP-D20-30R(A)□-4C		4	84.6 (85.6)		72.5 (73.5)	11.2	19.8	54	30	1.1 to 4.8	76 (77)
VSP-D20-30R(A)□-6C		6				11.9	21.1				77 (78)
VSP-D20-40R(A)□-4C		4	97.6 (98.6)		85.5 (86.5)	11.2	19.8	67	40	1.0 to 4.5	82 (83)
VSP-D20-40R(A)□-6C		6				11.9	21.1				83 (84)
VSP-D20-50R(A)□-4C		4	110.6 (111.6)		98.5 (99.5)	11.2	19.8	80	50	0.9 to 4.5	89 (90)
VSP-D20-50R(A)□-6C		6				11.9	21.1				90 (91)
VSP-D25-20R(A)□-4C	25	4	72.6 (73.6)	11 (12)	60.5 (61.5)	11.2	19.8	41	20	1.5 to 4.9	69 (70)
VSP-D25-20R(A)□-6C		6				11.9	21.1				70 (71)
VSP-D25-30R(A)□-4C		4	85.6 (86.6)		73.5 (74.5)	11.2	19.8	54	30	1.1 to 4.8	76 (77)
VSP-D25-30R(A)□-6C		6				11.9	21.1				77 (78)
VSP-D25-40R(A)□-4C		4	98.6 (99.6)		86.5 (87.5)	11.2	19.8	67	40	1.0 to 4.5	83 (84)
VSP-D25-40R(A)□-6C		6				11.9	21.1				84 (85)
VSP-D25-50R(A)□-4C		4	111.6 (112.6)		99.5 (100.5)	11.2	19.8	80	50	0.9 to 4.5	90 (91)
VSP-D25-50R(A)□-6C		6				11.9	21.1				91 (92)
VSP-D30-20R(A)□-4C	30	4	72.6 (75.6)	11 (14)	60.5 (63.5)	11.2	19.8	41	20	1.5 to 4.9	71 (72)
VSP-D30-20R(A)□-6C		6				11.9	21.1				72 (73)
VSP-D30-30R(A)□-4C		4	85.6 (88.6)		73.5 (76.5)	11.2	19.8	54	30	1.1 to 4.8	78 (79)
VSP-D30-30R(A)□-6C		6				11.9	21.1				79 (80)
VSP-D30-40R(A)□-4C		4	98.6 (101.6)		86.5 (89.5)	11.2	19.8	67	40	1.0 to 4.5	85 (86)
VSP-D30-40R(A)□-6C		6				11.9	21.1				86 (87)
VSP-D30-50R(A)□-4C		4	111.6 (114.6)		99.5 (102.5)	11.2	19.8	80	50	0.9 to 4.5	92 (93)
VSP-D30-50R(A)□-6C		6				11.9	21.1				93 (94)
VSP-D40-20R(A)□-4C	40	4	75.6 (79.1)	14 (17.5)	63.5 (67)	11.2	19.8	41	20	1.5 to 4.9	78 (79)
VSP-D40-20R(A)□-6C		6				11.9	21.1				79 (80)
VSP-D40-30R(A)□-4C		4	88.6 (92.1)		76.5 (80)	11.2	19.8	54	30	1.1 to 4.8	85 (86)
VSP-D40-30R(A)□-6C		6				11.9	21.1				86 (87)
VSP-D40-40R(A)□-4C		4	101.6 (105.1)		89.5 (93)	11.2	19.8	67	40	1.0 to 4.5	92 (93)
VSP-D40-40R(A)□-6C		6				11.9	21.1				93 (94)
VSP-D40-50R(A)□-4C		4	114.6 (118.1)		102.5 (106)	11.2	19.8	80	50	0.9 to 4.5	99 (100)
VSP-D40-50R(A)□-6C		6				11.9	21.1				100 (101)
VSP-D50-20R(A)□-4C	50	4	76.6 (79.6)	15 (18)	64.5 (67.5)	11.2	19.8	41	20	1.5 to 4.9	84 (85)
VSP-D50-20R(A)□-6C		6				11.9	21.1				85 (86)
VSP-D50-30R(A)□-4C		4	89.6 (92.6)		77.5 (80.5)	11.2	19.8	54	30	1.1 to 4.8	91 (92)
VSP-D50-30R(A)□-6C		6				11.9	21.1				92 (93)
VSP-D50-40R(A)□-4C		4	102.6 (105.6)		90.5 (93.5)	11.2	19.8	67	40	1.0 to 4.5	98 (99)
VSP-D50-40R(A)□-6C		6				11.9	21.1				99 (100)
VSP-D50-50R(A)□-4C		4	115.6 (118.6)		103.5 (106.5)	11.2	19.8	80	50	0.9 to 4.5	105 (107)
VSP-D50-50R(A)□-6C		6				11.9	21.1				106 (108)

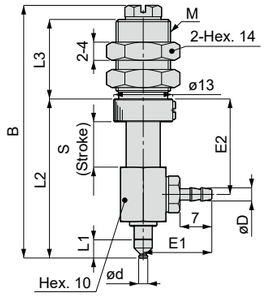
*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D1 to 4R□-4T/6T



●VSP-D1 to 4-□R□-4T/6T

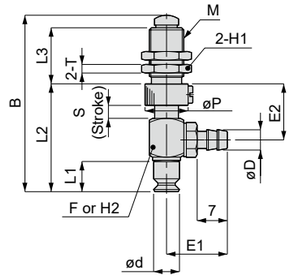


Unit: mm

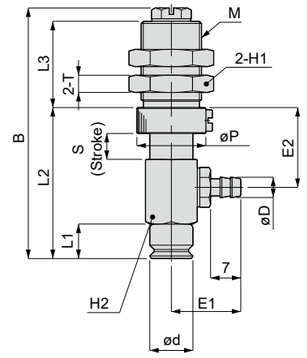
Model No.	Pad Diameter □d	Tube I.D. øD	Mounting screw M	B	L1	L2	L3	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D1R□-4T	1	2.5	M8x0.75	40	4	24	13	13.9	12.5	3	0.9 to 1.9	12
VSP-D1R□-6T		4										
VSP-D1-10R□-4T		2.5	M12x1	55.6		35	17.5	14.9	21	10	0.6 to 1.7	27
VSP-D1-10R□-6T		4										
VSP-D1-15R□-4T		2.5		66.6		40	23.5		26	15	0.4 to 1.7	32
VSP-D1-15R□-6T		4										
VSP-D1-20R□-4T		2.5		76.6		45	28.5		31	20	0.3 to 1.8	35
VSP-D1-20R□-6T		4										
VSP-D2R□-4T	2	2.5	M8x0.75	40	4	24	13	13.9	12.5	3	0.9 to 1.9	12
VSP-D2R□-6T		4										
VSP-D2-10R□-4T		2.5	M12x1	55.6		35	17.5	14.9	21	10	0.6 to 1.7	27
VSP-D2-10R□-6T		4										
VSP-D2-15R□-4T		2.5		66.6		40	23.5		26	15	0.4 to 1.7	32
VSP-D2-15R□-6T		4										
VSP-D2-20R□-4T		2.5		76.6		45	28.5		31	20	0.3 to 1.8	35
VSP-D2-20R□-6T		4										
VSP-D3R□-4T	3	2.5	M8x0.75	40	4	24	13	13.9	12.5	3	0.9 to 1.9	12
VSP-D3R□-6T		4										
VSP-D3-10R□-4T		2.5	M12x1	55.6		35	17.5	14.9	21	10	0.6 to 1.7	27
VSP-D3-10R□-6T		4										
VSP-D3-15R□-4T		2.5		66.6		40	23.5		26	15	0.4 to 1.7	32
VSP-D3-15R□-6T		4										
VSP-D3-20R□-4T		2.5		76.6		45	28.5		31	20	0.3 to 1.8	35
VSP-D3-20R□-6T		4										
VSP-D4R□-4T	4	2.5	M8x0.75	40	4	24	13	13.9	12.5	3	0.9 to 1.9	12
VSP-D4R□-6T		4										
VSP-D4-10R□-4T		2.5	M12x1	55.6		35	17.5	14.9	21	10	0.6 to 1.7	27
VSP-D4-10R□-6T		4										
VSP-D4-15R□-4T		2.5		66.6		40	23.5		26	15	0.4 to 1.7	32
VSP-D4-15R□-6T		4										
VSP-D4-20R□-4T		2.5		76.6		45	28.5		31	20	0.3 to 1.8	35
VSP-D4-20R□-6T		4										

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D6, 8R□-4T/6T
●VSP-D6, 8-□R□-4T/6T



●VSP-D10R□-4T/6T
●VSP-D10-□R□-4T/6T
●VSP-D15R(A)□-4T/6T
●VSP-D15-□R(A)□-4T/6T



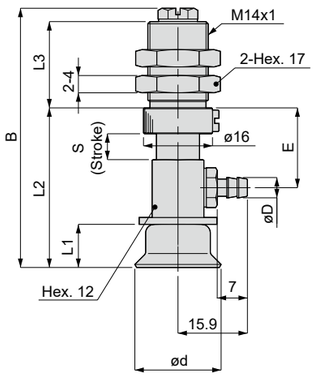
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	L3	øP	E1	E2	Width Across Flats H1	Width Across Flats H2	□F	T	Stroke S	Spring Force (N)	Weight (g)
VSP-D6R□-4T	6	2.5	M8x0.75	41	7	25	13	10	13.9	13	10	-	8	2	3	0.9 to 1.9	13
VSP-D6R□-6T		4															
VSP-D6-10R□-4T		2.5	M12x1	56.1		35.5	17.5	13	15.9	21	14	12	-	4	10	0.8 to 2.7	32
VSP-D6-10R□-6T		4															
VSP-D6-15R□-4T		2.5		67.1		40.5	23.5			26					15	0.7 to 3.0	36
VSP-D6-15R□-6T		4															
VSP-D6-20R□-4T		2.5		77.1		45.5	28.5			31					20	0.9 to 3.4	39
VSP-D6-20R□-6T		4															
VSP-D8R□-4T	8	2.5	M8x0.75	39.5	5.5	23.5	13	10	13.9	13	10	-	8	2	3	0.9 to 1.9	13
VSP-D8R□-6T		4															
VSP-D8-10R□-4T		2.5	M12x1	54.6		34	17.5	13	15.9	21	14	12	-	4	10	0.8 to 2.7	32
VSP-D8-10R□-6T		4															
VSP-D8-15R□-4T		2.5		65.6		39	23.5			26					15	0.7 to 3.0	36
VSP-D8-15R□-6T		4															
VSP-D8-20R□-4T		2.5		75.6		44	28.5			31					20	0.9 to 3.4	39
VSP-D8-20R□-6T		4															
VSP-D10R□-4T	10	2.5	M14x1	58.1	8	35	20	16	15.9	18.5	17	12	-	4	6	4.0 to 7.1	46
VSP-D10R□-6T		4															
VSP-D10-10R□-4T		2.5		63.1		40				25					10	2.0 to 5.2	49
VSP-D10-10R□-6T		4															
VSP-D10-15R□-4T		2.5		73.1		45	25			30					15	2.0 to 5.9	54
VSP-D10-15R□-6T		4															
VSP-D10-20R□-4T		2.5		89.1		52	34			37					20	1.1 to 4.8	65
VSP-D10-20R□-6T		4															
VSP-D15R(A)□-4T	15	2.5	M14x1	59.1 (60.1)	9 (10)	36 (37)	20	16	15.9	18.5	17	12	-	4	6	4.0 to 7.1	46
VSP-D15R(A)□-6T		4															
VSP-D15-10R(A)□-4T		2.5		64.1 (65.1)		41 (42)				25					10	2.0 to 5.2	49
VSP-D15-10R(A)□-6T		4															
VSP-D15-15R(A)□-4T		2.5		74.1 (75.1)		46 (47)	25			30					15	2.0 to 5.9	55
VSP-D15-15R(A)□-6T		4															
VSP-D15-20R(A)□-4T		2.5		90.1 (91.1)		53 (54)	34			37					20	1.1 to 4.8	65
VSP-D15-20R(A)□-6T		4															

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D20 to 50R(A)□-4T/6T



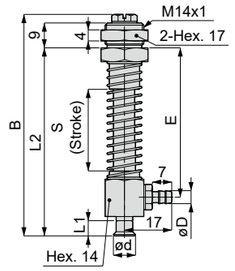
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D20R(A)□-4T	20	2.5	60.1 (61.1)	10 (11)	37 (38)	20	18.5	6	7.0 to 12.6	49 (49)
VSP-D20R(A)□-6T		4								
VSP-D20-10R(A)□-4T		2.5	66.1 (67.1)		43 (44)		24.5	10	3.3 to 10.0	53 (53)
VSP-D20-10R(A)□-6T		4								
VSP-D20-15R(A)□-4T		2.5	76.1 (77.1)		48 (49)	25	29.5	15	3.3 to 10.4	60 (60)
VSP-D20-15R(A)□-6T		4								
VSP-D20-20R(A)□-4T		2.5	92.1 (93.1)		55 (56)	34	36.5	20	2.0 to 8.7	70 (70)
VSP-D20-20R(A)□-6T		4								
VSP-D25R(A)□-4T	25	2.5	61.1 (62.1)	11 (12)	38 (39)	20	18.5	6	7.0 to 12.6	50 (50)
VSP-D25R(A)□-6T		4								
VSP-D25-10R(A)□-4T		2.5	67.1 (68.1)		44 (45)		24.5	10	3.3 to 10.0	54 (54)
VSP-D25-10R(A)□-6T		4								
VSP-D25-15R(A)□-4T		2.5	77.1 (78.1)		49 (50)	25	29.5	15	3.3 to 10.4	60 (60)
VSP-D25-15R(A)□-6T		4								
VSP-D25-20R(A)□-4T		2.5	93.1 (94.1)		56 (57)	34	36.5	20	2.0 to 8.7	70 (70)
VSP-D25-20R(A)□-6T		4								
VSP-D30R(A)□-4T	30	2.5	61.1 (64.1)	11 (14)	38 (41)	20	18.5	6	7.0 to 12.6	52 (52)
VSP-D30R(A)□-6T		4								
VSP-D30-10R(A)□-4T		2.5	67.1 (70.1)		44 (47)		24.5	10	3.3 to 10.0	54 (54)
VSP-D30-10R(A)□-6T		4								
VSP-D30-15R(A)□-4T		2.5	77.1 (80.1)		49 (52)	25	29.5	15	3.3 to 10.4	61 (61)
VSP-D30-15R(A)□-6T		4								
VSP-D30-20R(A)□-4T		2.5	93.1 (96.1)		56 (59)	34	36.5	20	2.0 to 8.7	71 (71)
VSP-D30-20R(A)□-6T		4								
VSP-D40R(A)□-4T	40	2.5	64.1 (67.6)	14 (17.5)	41 (44.5)	20	18.5	6	7.0 to 12.6	59 (60)
VSP-D40R(A)□-6T		4								
VSP-D40-10R(A)□-4T		2.5	70.1 (73.6)		47 (50.5)		24.5	10	3.3 to 10.0	63 (64)
VSP-D40-10R(A)□-6T		4								
VSP-D40-15R(A)□-4T		2.5	80.1 (83.6)		52 (55.5)	25	29.5	15	3.3 to 10.4	69 (70)
VSP-D40-15R(A)□-6T		4								
VSP-D40-20R(A)□-4T		2.5	96.1 (99.6)		59 (62.5)	34	36.5	20	2.0 to 8.7	79 (80)
VSP-D40-20R(A)□-6T		4								
VSP-D50R(A)□-4T	50	2.5	65.1 (68.1)	15 (18)	42 (45)	20	18.5	6	7.0 to 12.6	65 (66)
VSP-D50R(A)□-6T		4								
VSP-D50-10R(A)□-4T		2.5	71.1 (74.1)		48 (51)		24.5	10	3.3 to 10.0	69 (70)
VSP-D50-10R(A)□-6T		4								
VSP-D50-15R(A)□-4T		2.5	81.1 (84.1)		53 (56)	25	29.5	15	3.3 to 10.4	75 (77)
VSP-D50-15R(A)□-6T		4								
VSP-D50-20R(A)□-4T		2.5	97.1 (100.1)		60 (63)	34	36.5	20	2.0 to 8.7	85 (87)
VSP-D50-20R(A)□-6T		4								

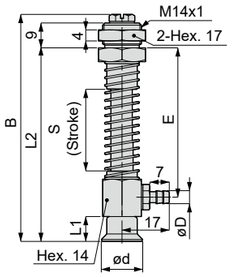
*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D6, 8-□R□-4TC/6TC



●VSP-D10-□R□-4TC/6TC
●VSP-D15-□R(A)□-4TC/6TC



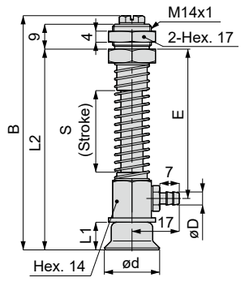
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D6-20R□-4TC	6	2.5	67.1	7	55	40.5	20	1.5 to 4.9	60
VSP-D6-20R□-6TC		4							
VSP-D6-30R□-4TC		2.5	80.1		68	53.5	30	1.1 to 4.8	67
VSP-D6-30R□-6TC		4							
VSP-D6-40R□-4TC		2.5	93.1		81	66.5	40	1.0 to 4.5	74
VSP-D6-40R□-6TC		4							
VSP-D6-50R□-4TC		2.5	106.1		94	79.5	50	0.9 to 4.5	80
VSP-D6-50R□-6TC		4							
VSP-D8-20R□-4TC	8	2.5	65.6	5.5	53.5	40.5	20	1.5 to 4.9	60
VSP-D8-20R□-6TC		4							
VSP-D8-30R□-4TC		2.5	78.6		56.5	53.5	30	1.1 to 4.8	67
VSP-D8-30R□-6TC		4							
VSP-D8-40R□-4TC		2.5	91.6		69.5	66.5	40	1.0 to 4.5	74
VSP-D8-40R□-6TC		4							
VSP-D8-50R□-4TC		2.5	104.6		82.5	79.5	50	0.9 to 4.5	80
VSP-D8-50R□-6TC		4							
VSP-D10-20R□-4TC	10	2.5	68.1	8	56	40.5	20	1.5 to 4.9	60
VSP-D10-20R□-6TC		4							
VSP-D10-30R□-4TC		2.5	81.1		69	53.5	30	1.1 to 4.8	67
VSP-D10-30R□-6TC		4							
VSP-D10-40R□-4TC		2.5	94.1		82	66.5	40	1.0 to 4.5	74
VSP-D10-40R□-6TC		4							
VSP-D10-50R□-4TC		2.5	107.1		95	79.5	50	0.9 to 4.5	80
VSP-D10-50R□-6TC		4							
VSP-D15-20R(A)□-4TC	15	2.5	69.1 (70.1)	9 (10)	57 (58)	40.5	20	1.5 to 4.9	60 (61)
VSP-D15-20R(A)□-6TC		4							
VSP-D15-30R(A)□-4TC		2.5	82.1 (83.1)		70 (71)	53.5	30	1.1 to 4.8	67 (68)
VSP-D15-30R(A)□-6TC		4							
VSP-D15-40R(A)□-4TC		2.5	95.1 (96.1)		83 (84)	66.5	40	1.0 to 4.5	74 (75)
VSP-D15-40R(A)□-6TC		4							
VSP-D15-50R(A)□-4TC		2.5	108.1 (109.1)		106 (107)	79.5	50	0.9 to 4.5	80 (81)
VSP-D15-50R(A)□-6TC		4							

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D20 to 50-□R(A)□-4TC/6TC



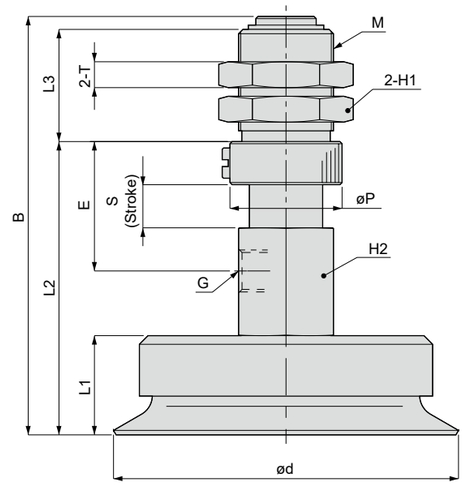
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D20-20R(A)□-4TC	20	4	71.6 (72.6)	10 (11)	59.5 (60.5)	41	20	1.5 to 4.9	68 (69)
VSP-D20-20R(A)□-6TC		6							
VSP-D20-30R(A)□-4TC		4	84.6 (85.6)		72.5 (73.5)	54	30	1.1 to 4.8	75 (76)
VSP-D20-30R(A)□-6TC		6							
VSP-D20-40R(A)□-4TC		4	97.6 (98.6)		85.5 (86.5)	67	40	1.0 to 4.5	81 (82)
VSP-D20-40R(A)□-6TC		6							
VSP-D20-50R(A)□-4TC		4	110.6 (111.6)		98.5 (99.5)	80	50	0.9 to 4.5	88 (89)
VSP-D20-50R(A)□-6TC		6							
VSP-D25-20R(A)□-4TC	25	4	72.6 (73.6)	11 (12)	60.5 (61.5)	41	20	1.5 to 4.9	68 (69)
VSP-D25-20R(A)□-6TC		6							
VSP-D25-30R(A)□-4TC		4	85.6 (86.6)		73.5 (74.5)	54	30	1.1 to 4.8	75 (76)
VSP-D25-30R(A)□-6TC		6							
VSP-D25-40R(A)□-4TC		4	98.6 (99.6)		86.5 (87.5)	67	40	1.0 to 4.5	82 (83)
VSP-D25-40R(A)□-6TC		6							
VSP-D25-50R(A)□-4TC		4	111.6 (112.6)		99.5 (100.5)	80	50	0.9 to 4.5	89 (90)
VSP-D25-50R(A)□-6TC		6							
VSP-D30-20R(A)□-4TC	30	4	72.6 (75.6)	11 (14)	60.5 (63.5)	41	20	1.5 to 4.9	69 (70)
VSP-D30-20R(A)□-6TC		6							
VSP-D30-30R(A)□-4TC		4	85.6 (88.6)		73.5 (76.5)	54	30	1.1 to 4.8	76 (77)
VSP-D30-30R(A)□-6TC		6							
VSP-D30-40R(A)□-4TC		4	98.6 (101.6)		86.5 (89.5)	67	40	1.0 to 4.5	82 (83)
VSP-D30-40R(A)□-6TC		6							
VSP-D30-50R(A)□-4TC		4	111.6 (114.6)		99.5 (102.5)	80	50	0.9 to 4.5	89 (90)
VSP-D30-50R(A)□-6TC		6							
VSP-D40-20R(A)□-4TC	40	4	75.6 (79.1)	14 (17.5)	63.5 (67)	41	20	1.5 to 4.9	77 (78)
VSP-D40-20R(A)□-6TC		6							
VSP-D40-30R(A)□-4TC		4	88.6 (92.1)		76.5 (80)	54	30	1.1 to 4.8	84 (85)
VSP-D40-30R(A)□-6TC		6							
VSP-D40-40R(A)□-4TC		4	101.6 (105.1)		89.5 (93)	67	40	1.0 to 4.5	91 (92)
VSP-D40-40R(A)□-6TC		6							
VSP-D40-50R(A)□-4TC		4	114.6 (118.1)		102.5 (106)	80	50	0.9 to 4.5	98 (99)
VSP-D40-50R(A)□-6TC		6							
VSP-D50-20R(A)□-4TC	50	4	76.6 (79.6)	15 (18)	64.5 (67.5)	41	20	1.5 to 4.9	83 (85)
VSP-D50-20R(A)□-6TC		6							
VSP-D50-30R(A)□-4TC		4	89.6 (92.6)		77.5 (80.5)	54	30	1.1 to 4.8	90 (92)
VSP-D50-30R(A)□-6TC		6							
VSP-D50-40R(A)□-4TC		4	102.6 (105.6)		90.5 (93.5)	67	40	1.0 to 4.5	97 (98)
VSP-D50-40R(A)□-6TC		6							
VSP-D50-50R(A)□-4TC		4	115.6 (118.6)		103.5 (106.5)	80	50	0.9 to 4.5	104 (105)
VSP-D50-50R(A)□-6TC		6							

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Female Thread)

●VSP-D60 to 100R(A)□-6A
●VSP-D150, 200R□-8A



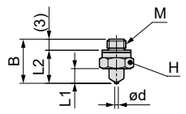
Unit: mm

Model No.	Pad Diameter ød	Vacuum Outlet Size G	Mounting screw M	B	L1	L2	L3	øP	E	Width Across Flats H1	Width Across Flats H2	T	Stroke S	Spring Force (N)	Weight (g)
VSP-D60R(A)□-6A	60	G1/8	M22x1	94.6 (101.6)	18 (25)	65.6 (72.6)	26	26	30	27	22	6	10	10.1 to 15.8	244 (243)
VSP-D80R(A)□-6A	80	G1/8	M22x1	97 (107)	23 (33)	68 (78)	26	26	30	27	22	6	10	10.1 to 15.8	328 (336)
VSP-D100R(A)□-6A	100	G1/8	M22x1	99 (108)	25 (34)	70 (79)	26	26	30	27	22	6	10	10.1 to 15.8	417 (423)
VSP-D150R□-8A	150	G1/4	M30x2	168.3	45	112.1	48	35	42.1	36	30	10	20.1	14.0 to 25.5	1,196
VSP-D200R□-8A	200	G1/4	M30x2	173.3	50	117.1	48	35	42.1	36	30	10	20.1	14.0 to 25.5	1,675

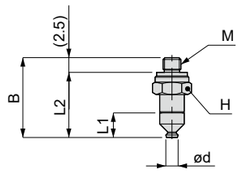
*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Fixed Type, Direct Mount, VSP-E, Male Thread)

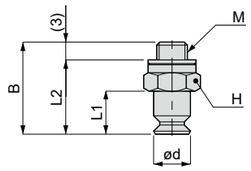
●VSP-E0.7 to 4RM□



●VSP-E1 to 4R□



●VSP-E6, 8R□

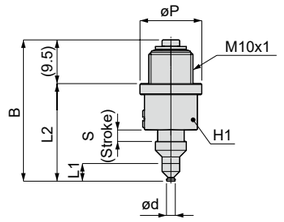


Unit: mm

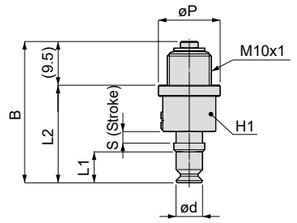
Model No.	Pad Diameter ød	M	B	L1	L2	Width Across Flats H	Weight (g)
VSP-E0.7RM□	0.7	M5x0.8	12	4	9	8	1
VSP-E1RM□	1	M5x0.8	12	4	9	8	1
VSP-E1.5RM□	1.5	M5x0.8	12	4	9	8	1
VSP-E2RM□	2	M5x0.8	12	4	9	8	1
VSP-E3RM□	3	M5x0.8	12	4	9	8	1
VSP-E4RM□	4	M5x0.8	12	4	9	8	1
VSP-E1R□	1	M3x0.5	13	4	10.5	5.5	1.5
VSP-E2R□	2	M3x0.5	13	4	10.5	5.5	1.5
VSP-E3R□	3	M3x0.5	13	4	10.5	5.5	1.5
VSP-E4R□	4	M3x0.5	13	4	10.5	5.5	1.5
VSP-E6R□	6	M5x0.8	15	7	12	8	3
VSP-E8R□	8	M5x0.8	13.5	5.5	10.5	8	3

Outline Dimension Drawing (Buffer Type, Direct Mount, VSP-F, Male Thread)

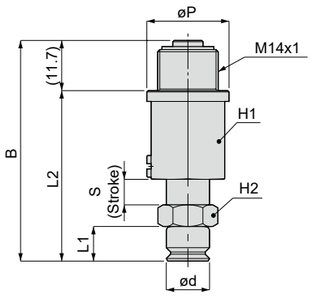
●VSP-F1 to 4R□



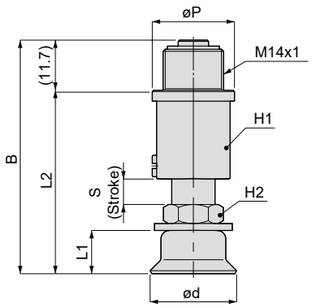
●VSP-F6, 8R□



●VSP-F10R□



●VSP-F15 to 50R(A)□



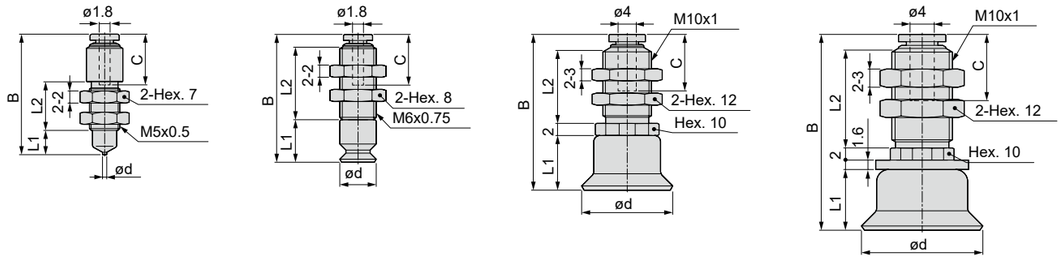
Unit: mm

Model No.	Pad Diameter ød	B	L1	L2	øP	Stroke S	Width Across Flats H1	Width Across Flats H2	Spring Force (N)	Weight (g)
VSP-F1R□	1	32	4	22.5	14	3	12	-	2.3 to 3.9	15
VSP-F2R□	2	32	4	22.5	14	3	12	-	2.3 to 3.9	15
VSP-F3R□	3	32	4	22.5	14	3	12	-	2.3 to 3.9	15
VSP-F4R□	4	32	4	22.5	14	3	12	-	2.3 to 3.9	15
VSP-F6R□	6	32	7	22.5	14	3	12	-	2.3 to 3.9	15
VSP-F8R□	8	30.5	5.5	21	14	3	12	-	2.3 to 3.9	15
VSP-F10R□	10	51	8	39.3	19	5.8	17	12	7.9 to 15	56 (56)
VSP-F15R(A)□	15	52 (53)	9 (10)	40.3 (41.3)	19	5.8	17	12	7.9 to 15	56 (56)
VSP-F20R(A)□	20	54 (55)	10 (11)	42.3 (43.3)	19	5.8	17	12	7.9 to 15	59 (59)
VSP-F25R(A)□	25	55 (56)	11 (12)	43.3 (44.3)	19	5.8	17	12	7.9 to 15	59 (59)
VSP-F30R(A)□	30	55 (58)	11 (14)	43.3 (46.3)	19	5.8	17	12	7.9 to 15	61 (61)
VSP-F40R(A)□	40	58 (61.5)	14 (17.5)	46.3 (49.8)	19	5.8	17	12	7.9 to 15	68 (69)
VSP-F50R(A)□	50	59 (62)	15 (18)	47.3 (50.3)	19	5.8	17	12	7.9 to 15	74 (76)

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Push-in fitting)

●VSP-MA0.7 to 4RM□-2 ●VSP-MA6, 8R□-2 ●VSP-MA10R□-4 ●VSP-MA15R(A)□-4 ●VSP-MA20 to 50R(A)□-4



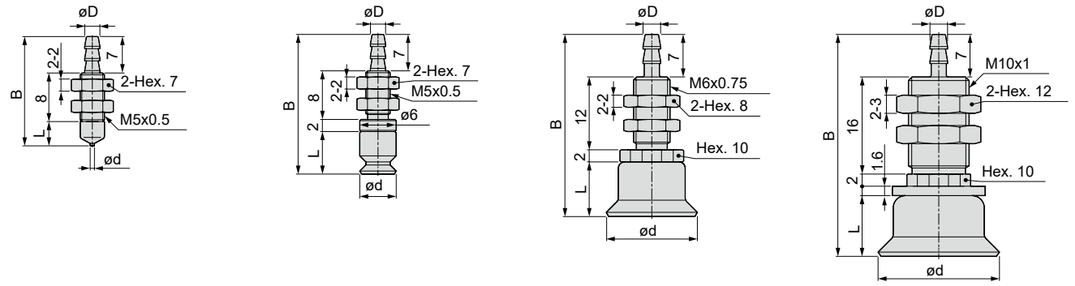
Unit: mm

Model No.	Pad Diameter ød	B	L1	L2	Tube End C	Weight (g)
VSP-MA0.7RM□-2	0.7	19.9	4	8	8.4	1.8
VSP-MA1RM□-2	1	19.9	4	8	8.4	1.8
VSP-MA1.5RM□-2	1.5	19.9	4	8	8.4	1.8
VSP-MA2RM□-2	2	19.9	4	8	8.4	1.8
VSP-MA3RM□-2	3	19.9	4	8	8.4	1.8
VSP-MA4RM□-2	4	19.9	4	8	8.4	1.8
VSP-MA6R□-2	6	21.1	7	12	8.4	2
VSP-MA8R□-2	8	19.6	5.5	12	8.4	2
VSP-MA10R□-4	10	29	8	16.4	11.2	6.4
VSP-MA15R(A)□-4	15	30 (31)	9 (10)	16.4	11.2	6.7 (6.8)
VSP-MA20R(A)□-4	20	32.6 (33.6)	10 (11)	16.4	11.2	12 (12)
VSP-MA25R(A)□-4	25	33.6 (34.6)	11 (12)	16.4	11.2	13 (13)
VSP-MA30R(A)□-4	30	33.6 (36.6)	11 (14)	16.4	11.2	15 (15)
VSP-MA40R(A)□-4	40	36.6 (40.1)	14 (17.5)	16.4	11.2	22 (23)
VSP-MA50R(A)□-4	50	37.6 (40.6)	15 (18)	16.4	11.2	28 (30)

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Barb Fitting)

●VSP-MA0.7 to 4RM□-4T ●VSP-MA6, 8R□-4T ●VSP-MA10R□-4T ●VSP-MA15R(A)□-4T ●VSP-MA20 to 50R(A)□-4T/6T



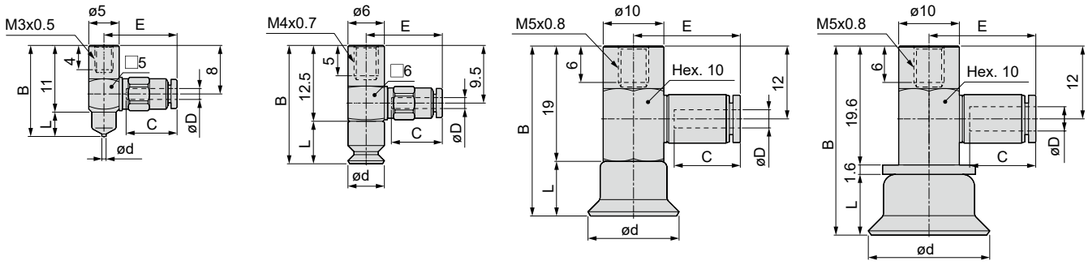
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-MA0.7RM□-4T	0.7	2.5	19	4	1.3
VSP-MA1RM□-4T	1	2.5	19	4	1.3
VSP-MA1.5RM□-4T	1.5	2.5	19	4	1.3
VSP-MA2RM□-4T	2	2.5	19	4	1.3
VSP-MA3RM□-4T	3	2.5	19	4	1.3
VSP-MA4RM□-4T	4	2.5	19	4	1.3
VSP-MA6R□-4T	6	2.5	24	7	1.6
VSP-MA8R□-4T	8	2.5	22.5	5.5	1.6
VSP-MA10R□-4T	10	2.5	29	8	3.6
VSP-MA15R(A)□-4T	15	2.5	30 (31)	9 (10)	3.9 (4)
VSP-MA20R(A)□-4T	20	2.5	36.6 (37.6)	10 (11)	12 (12)
VSP-MA20R(A)□-6T		4			
VSP-MA25R(A)□-4T	25	2.5	37.6 (38.6)	11 (12)	13 (13)
VSP-MA25R(A)□-6T		4			
VSP-MA30R(A)□-4T	30	2.5	37.6 (40.6)	11 (14)	15 (15)
VSP-MA30R(A)□-6T		4			
VSP-MA40R(A)□-4T	40	2.5	40.6 (44.1)	14 (17.5)	22 (23)
VSP-MA40R(A)□-6T		4			
VSP-MA50R(A)□-4T	50	2.5	41.6 (44.6)	15 (18)	28 (30)
VSP-MA50R(A)□-6T		4			

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Push-in fitting)

●VSP-MB0.7 to 4RM□-2/4 ●VSP-MB6, 8R□-2/4 ●VSP-MB10R□-2/4/6 ●VSP-MB15R(A)□-2/4/6 ●VSP-MB20 to 50R(A)□-2/4/6



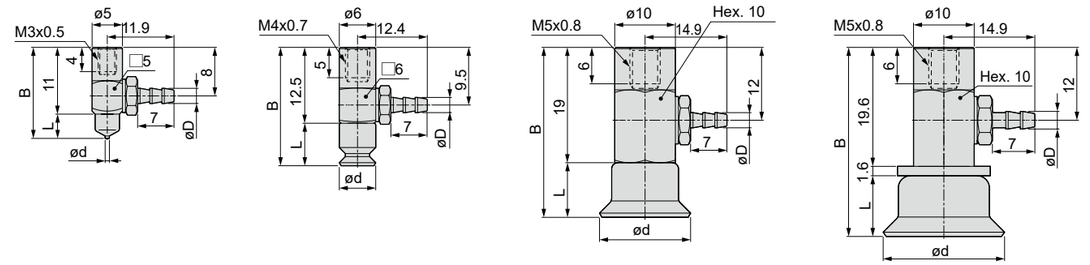
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-MB0.7RM□-2	0.7	1.8	15	4	8.4	12	1.5
VSP-MB0.7RM□-4		4			11.2	15.3	2.9
VSP-MB1RM□-2	1	1.8	15	4	8.4	12	1.5
VSP-MB1RM□-4		4			11.2	15.3	2.9
VSP-MB1.5RM□-2	1.5	1.8	15	4	8.4	12	1.5
VSP-MB1.5RM□-4		4			11.2	15.3	2.9
VSP-MB2RM□-2	2	1.8	15	4	8.4	12	1.5
VSP-MB2RM□-4		4			11.2	15.3	2.9
VSP-MB3RM□-2	3	1.8	15	4	8.4	12	1.5
VSP-MB3RM□-4		4			11.2	15.3	2.9
VSP-MB4RM□-2	4	1.8	15	4	8.4	12	1.5
VSP-MB4RM□-4		4			11.2	15.3	2.9
VSP-MB6R□-2	6	1.8	19.5	7	8.4	12.5	2
VSP-MB6R□-4		4			11.2	15.8	3.4
VSP-MB8R□-2	8	1.8	18	5.5	8.4	12.5	2
VSP-MB8R□-4		4			11.2	15.8	3.4
VSP-MB10R□-2	10	1.8	27	8	8.4	13.7	7.4
VSP-MB10R□-4		4			11.2	17.8	8.1
VSP-MB10R□-6		6			11.9	19.6	9.5
VSP-MB15R(A)□-2	15	1.8	28 (29)	9 (10)	8.4	13.7	7.8 (7.8)
VSP-MB15R(A)□-4		4			11.2	17.8	8.5 (8.5)
VSP-MB15R(A)□-6		6			11.9	19.6	9.9 (9.9)
VSP-MB20R(A)□-2	20	1.8	31.2 (32.2)	10 (11)	8.4	13.7	12 (12)
VSP-MB20R(A)□-4		4			11.2	17.8	13 (13)
VSP-MB20R(A)□-6		6			11.9	19.6	14 (14)
VSP-MB25R(A)□-2	25	1.8	32.2 (33.2)	11 (12)	8.4	13.7	13 (13)
VSP-MB25R(A)□-4		4			11.2	17.8	14 (14)
VSP-MB25R(A)□-6		6			11.9	19.6	15 (15)
VSP-MB30R(A)□-2	30	1.8	32.2 (35.2)	11 (14)	8.4	13.7	15 (15)
VSP-MB30R(A)□-4		4			11.2	17.8	16 (16)
VSP-MB30R(A)□-6		6			11.9	19.6	17 (17)
VSP-MB40R(A)□-2	40	1.8	35.2 (38.7)	14 (17.5)	8.4	13.7	22 (22)
VSP-MB40R(A)□-4		4			11.2	17.8	23 (23)
VSP-MB40R(A)□-6		6			11.9	19.6	24 (24)
VSP-MB50R(A)□-2	50	1.8	36.2 (39.2)	15 (18)	8.4	13.7	28 (28)
VSP-MB50R(A)□-4		4			11.2	17.8	29 (29)
VSP-MB50R(A)□-6		6			11.9	19.6	30 (30)

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Barb Fitting)

●VSP-MB0.7 to 4RM□-4T/6T ●VSP-MB6, 8R□-4T/6T ●VSP-MB10R□-4T/6T ●VSP-MB15R(A)□-4T/6T ●VSP-MB20 to 50R(A)□-4T/6T



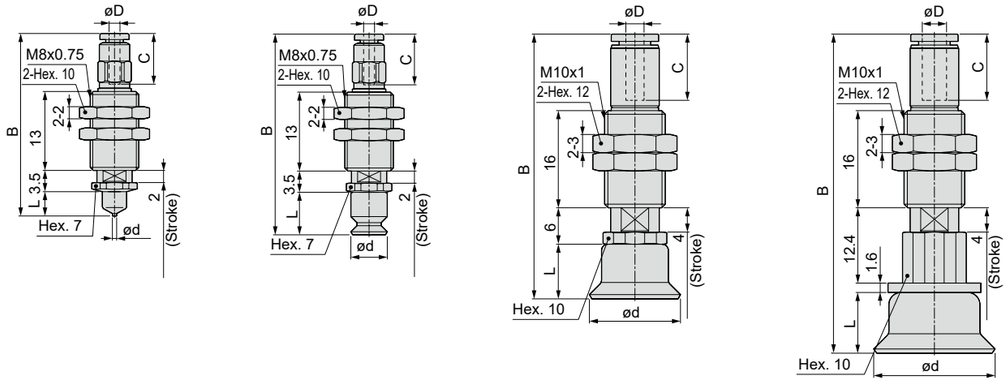
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Weight (g)
VSP-MB0.7RM□-4T	0.7	1.8	15	4	1.7
VSP-MB0.7RM□-6T		4			
VSP-MB1RM□-4T	1	1.8	15	4	1.7
VSP-MB1RM□-6T		4			
VSP-MB1.5RM□-4T	1.5	1.8	15	4	1.7
VSP-MB1.5RM□-6T		4			
VSP-MB2RM□-4T	2	1.8	15	4	1.7
VSP-MB2RM□-6T		4			
VSP-MB3RM□-4T	3	1.8	15	4	1.7
VSP-MB3RM□-6T		4			
VSP-MB4RM□-4T	4	1.8	15	4	1.7
VSP-MB4RM□-6T		4			
VSP-MB6R□-4T	6	1.8	19.5	7	2.1
VSP-MB6R□-6T		4			
VSP-MB8R□-4T	8	1.8	18	5.5	2.1
VSP-MB8R□-6T		4			
VSP-MB10R□-4T	10	6.2	27	8	6.9
VSP-MB10R□-6T		8.4			
VSP-MB15R(A)□-4T	15	10.6	28 (29)	9 (10)	7.4 (7.4)
VSP-MB15R(A)□-6T		12.8			
VSP-MB20R(A)□-4T	20	15	31.2 (32.2)	10 (11)	12 (12)
VSP-MB20R(A)□-6T		17.2			
VSP-MB25R(A)□-4T	25	19.4	32.2 (33.2)	11 (12)	13 (13)
VSP-MB25R(A)□-6T		21.6			
VSP-MB30R(A)□-4T	30	23.8	32.2 (35.2)	11 (14)	15 (15)
VSP-MB30R(A)□-6T		26			
VSP-MB40R(A)□-4T	40	28.2	35.2 (38.7)	14 (17.5)	23 (23)
VSP-MB40R(A)□-6T		30.4			
VSP-MB50R(A)□-4T	50	32.6	36.2 (39.2)	15 (18)	30 (30)
VSP-MB50R(A)□-6T		34.8			

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Push-in Fitting)

●VSP-MC0.7 to 4RM□-2 ●VSP-MC6, 8R□-2 ●VSP-MC10R□-2/4 ●VSP-MC20 to 50R(A)□-2/4
●VSP-MC15R(A)□-2/4



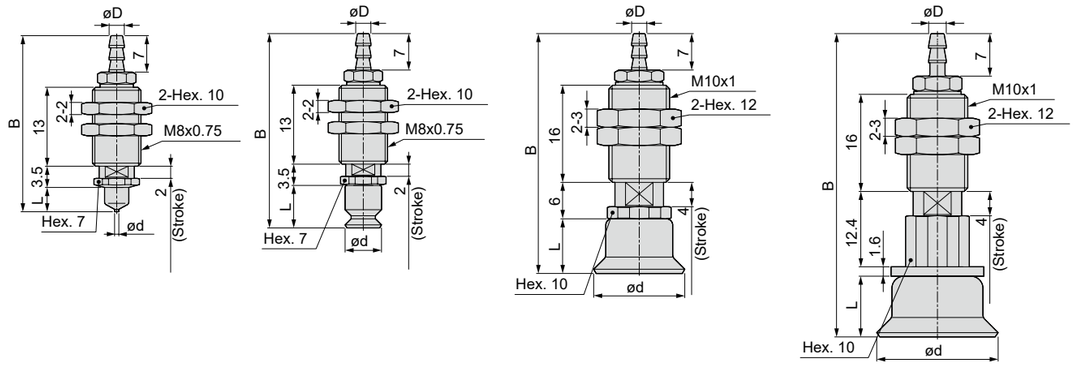
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	Spring Force (N)	Weight (g)
VSP-MC0.7RM□-2	0.7	1.8	30.2	4	8.4	0.2 to 0.3	6.5
VSP-MC1RM□-2	1	1.8	30.2	4	8.4	0.2 to 0.3	6.5
VSP-MC1.5RM□-2	1.5	1.8	30.2	4	8.4	0.2 to 0.3	6.5
VSP-MC2RM□-2	2	1.8	30.2	4	8.4	0.2 to 0.3	6.5
VSP-MC3RM□-2	3	1.8	30.2	4	8.4	0.2 to 0.3	6.5
VSP-MC4RM□-2	4	1.8	30.2	4	8.4	0.2 to 0.3	6.5
VSP-MC6R□-2	6	1.8	33.2	7	8.4	0.2 to 0.3	6.8
VSP-MC8R□-2	8	1.8	31.7	5.5	8.4	0.2 to 0.3	6.8
VSP-MC10R□-2	10	1.8	38.9	8	8.4	0.5 to 0.6	15
VSP-MC10R□-4		4	43		11.2		16
VSP-MC15R(A)□-2	15	1.8	39.9 (49.9)	9 (10)	8.4	0.5 to 0.6	15 (15)
VSP-MC15R(A)□-4		4	44 (45)		11.2		16 (16)
VSP-MC20R(A)□-2	20	1.8	48.9 (49.9)	10 (11)	8.4	1 to 1.3	23 (23)
VSP-MC20R(A)□-4		4	53 (54)		11.2		24 (24)
VSP-MC25R(A)□-2	25	1.8	49.9 (50.9)	11 (12)	8.4	1 to 1.3	24 (24)
VSP-MC25R(A)□-4		4	54 (55)		11.2		25 (25)
VSP-MC30R(A)□-2	30	1.8	49.9 (52.9)	11 (14)	8.4	1 to 1.3	26 (26)
VSP-MC30R(A)□-4		4	54 (57)		11.2		27 (27)
VSP-MC40R(A)□-2	40	1.8	52.9 (56.4)	14 (17.5)	8.4	1 to 1.3	33 (33)
VSP-MC40R(A)□-4		4	57 (60.5)		11.2		34 (34)
VSP-MC50R(A)□-2	50	1.8	53.9 (56.9)	15 (18)	8.4	1 to 1.3	39 (39)
VSP-MC50R(A)□-4		4	58 (61)		11.2		40 (40)

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Barb Fitting)

●VSP-MC0.7 to 4RM□-4T/6T ●VSP-MC6, 8R□-4T/6T ●VSP-MC10R□-4T/6T ●VSP-MC20 to 50R(A)□-4T/6T
●VSP-MC15R(A)□-4T/6T



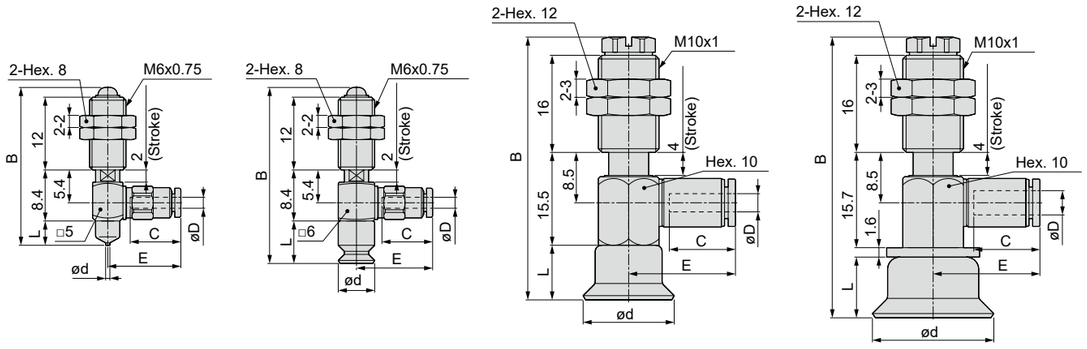
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MC0.7RM□-4T	0.7	2.5	30.1	4	0.2 to 0.3	6.6
VSP-MC0.7RM□-6T		4				
VSP-MC1RM□-4T	1	2.5	30.1	4	0.2 to 0.3	6.7
VSP-MC1RM□-6T		4				
VSP-MC1.5RM□-4T	1.5	2.5	30.1	4	0.2 to 0.3	6.7
VSP-MC1.5RM□-6T		4				
VSP-MC2RM□-4T	2	2.5	30.1	4	0.2 to 0.3	6.7
VSP-MC2RM□-6T		4				
VSP-MC3RM□-4T	3	2.5	30.1	4	0.2 to 0.3	6.6
VSP-MC3RM□-6T		4				
VSP-MC4RM□-4T	4	2.5	30.1	4	0.2 to 0.3	6.7
VSP-MC4RM□-6T		4				
VSP-MC6R□-4T	6	2.5	33.1	7	0.2 to 0.3	6.9
VSP-MC6R□-6T		4				
VSP-MC8R□-4T	8	2.5	31.6	5.5	0.2 to 0.3	6.9
VSP-MC8R□-6T		4				
VSP-MC10R□-4T	10	2.5	40.1	8	0.5 to 0.6	14
VSP-MC10R□-6T		4				
VSP-MC15R(A)□-4T	15	2.5	41.1 (42.1)	9 (10)	0.5 to 0.6	15 (15)
VSP-MC15R(A)□-6T		4				
VSP-MC20R(A)□-4T	20	2.5	50.1 (51.1)	10 (11)	1 to 1.3	23 (23)
VSP-MC20R(A)□-6T		4				
VSP-MC25R(A)□-4T	25	2.5	51.1 (52.1)	11 (12)	1 to 1.3	24 (24)
VSP-MC25R(A)□-6T		4				
VSP-MC30R(A)□-4T	30	2.5	51.1 (54.1)	11 (14)	1 to 1.3	25 (25)
VSP-MC30R(A)□-6T		4				
VSP-MC40R(A)□-4T	40	2.5	54.1 (57.6)	14 (17.5)	1 to 1.3	33 (33)
VSP-MC40R(A)□-6T		4				
VSP-MC50R(A)□-4T	50	2.5	55.1 (58.1)	15 (18)	1 to 1.3	40 (40)
VSP-MC50R(A)□-6T		4				

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Push-in Fitting)

●VSP-MD0.7 to 4RM□2/4 ●VSP-MD6, 8R□2/4 ●VSP-MD10R□-2/4/6 ●VSP-MD20 to 50R(A)□-2/4/6
●VSP-MD15R(A)□-2/4/6



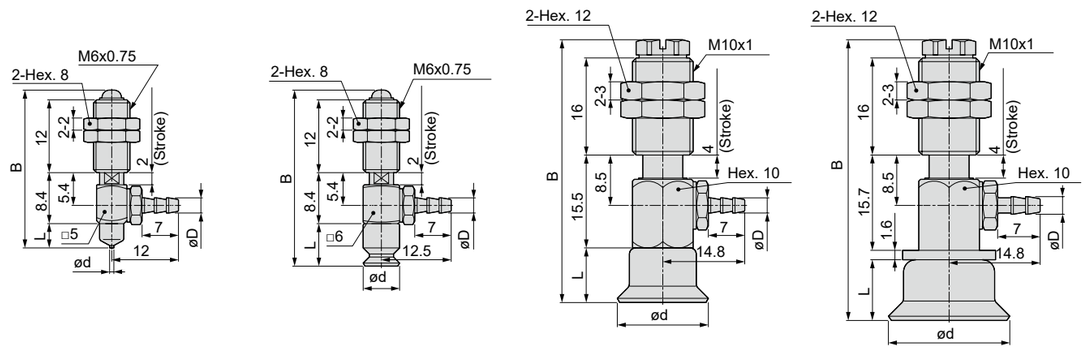
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Spring Force (N)	Weight (g)
VSP-MD0.7RM□-2	0.7	1.8	26	4	8.4	12.1	0.2 to 0.3	5.3
VSP-MD0.7RM□-4		4			11.2	15.4		6.7
VSP-MD1RM□-2	1	1.8	26	4	8.4	12.1	0.2 to 0.3	5.3
VSP-MD1RM□-4		4			11.2	15.4		6.7
VSP-MD1.5RM□-2	1.5	1.8	26	4	8.4	12.1	0.2 to 0.3	5.3
VSP-MD1.5RM□-4		4			11.2	15.4		6.7
VSP-MD2RM□-2	2	1.8	26	4	8.4	12.1	0.2 to 0.3	5.3
VSP-MD2RM□-4		4			11.2	15.4		6.7
VSP-MD3RM□-2	3	1.8	26	4	8.4	12.1	0.2 to 0.3	5.3
VSP-MD3RM□-4		4			11.2	15.4		6.7
VSP-MD4RM□-2	4	1.8	26	4	8.4	12.1	0.2 to 0.3	5.3
VSP-MD4RM□-4		4			11.2	15.4		6.7
VSP-MD6R□-2	6	1.8	29	7	8.4	12.6	0.5 to 0.6	6.1
VSP-MD6R□-4		4			11.2	15.9		7.5
VSP-MD8R□-2	8	1.8	27.5	5.5	8.4	12.6	0.5 to 0.6	6.1
VSP-MD8R□-4		4			11.2	15.9		7.5
VSP-MD10R□-2	10	1.8	42.5	8	8.4	13.6	1 to 1.3	22
VSP-MD10R□-4		4			11.2	17.7		23
VSP-MD10R□-6		6			11.9	19.5		25
VSP-MD15R(A)□-2	15	1.8	43.5 (44.5)	9 (10)	8.4	13.6	1 to 1.3	23 (23)
VSP-MD15R(A)□-4		4			11.2	17.7		24 (24)
VSP-MD15R(A)□-6		6			11.9	19.5		26 (26)
VSP-MD20R(A)□-2	20	1.8	46.3 (47.3)	10 (11)	8.4	13.6	1 to 1.3	27 (27)
VSP-MD20R(A)□-4		4			11.2	17.7		28 (28)
VSP-MD20R(A)□-6		6			11.9	19.5		30 (30)
VSP-MD25R(A)□-2	25	1.8	47.3 (48.3)	11 (12)	8.4	13.6	1 to 1.3	27 (27)
VSP-MD25R(A)□-4		4			11.2	17.7		28 (28)
VSP-MD25R(A)□-6		6			11.9	19.5		30 (30)
VSP-MD30R(A)□-2	30	1.8	47.3 (50.3)	11 (14)	8.4	13.6	1 to 1.3	29 (29)
VSP-MD30R(A)□-4		4			11.2	17.7		30 (30)
VSP-MD30R(A)□-6		6			11.9	19.5		32 (32)
VSP-MD40R(A)□-2	40	1.8	50.3 (53.8)	14 (17.5)	8.4	13.6	1 to 1.3	36 (36)
VSP-MD40R(A)□-4		4			11.2	17.7		37 (37)
VSP-MD40R(A)□-6		6			11.9	19.5		39 (39)
VSP-MD50R(A)□-2	50	1.8	51.3 (54.3)	15 (18)	8.4	13.6	1 to 1.3	42 (42)
VSP-MD50R(A)□-4		4			11.2	17.7		43 (43)
VSP-MD50R(A)□-6		6			11.9	19.5		45 (45)

*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Barb Fitting)

●VSP-MD0.7 to 4RM□-4T/6T ●VSP-MD6, 8R□-4T/6T ●VSP-MD10R□-4T/6T ●VSP-MD20 to 50R(A)□-4T/6T
●VSP-MD15R(A)□-4T/6T



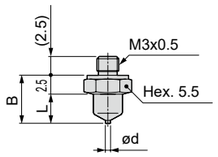
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MD0.7RM□-4T	0.7	2.5	26	4	0.2 to 0.3	5.5
VSP-MD0.7RM□-6T		4				
VSP-MD1RM□-4T	1	2.5	26	4	0.2 to 0.3	5.5
VSP-MD1RM□-6T		4				
VSP-MD1.5RM□-4T	1.5	2.5	26	4	0.2 to 0.3	5.5
VSP-MD1.5RM□-6T		4				
VSP-MD2RM□-4T	2	2.5	26	4	0.2 to 0.3	5.5
VSP-MD2RM□-6T		4				
VSP-MD3RM□-4T	3	2.5	26	4	0.2 to 0.3	5.5
VSP-MD3RM□-6T		4				
VSP-MD4RM□-4T	4	2.5	26	4	0.2 to 0.3	5.5
VSP-MD4RM□-6T		4				
VSP-MD6R□-4T	6	2.5	29	7	0.5 to 0.6	6.2
VSP-MD6R□-6T		4				
VSP-MD8R□-4T	8	2.5	27.5	5.5	0.5 to 0.6	6.2
VSP-MD8R□-6T		4				
VSP-MD10R□-4T	10	2.5	42.5	8	1 to 1.3	22
VSP-MD10R□-6T		4				
VSP-MD15R(A)□-4T	15	2.5	43.5 (44.5)	9 (10)	1 to 1.3	22 (22)
VSP-MD15R(A)□-6T		4				
VSP-MD20R(A)□-4T	20	2.5	46.3 (47.3)	10 (11)	1 to 1.3	26 (26)
VSP-MD20R(A)□-6T		4				
VSP-MD25R(A)□-4T	25	2.5	47.3 (48.3)	11 (12)	1 to 1.3	27 (27)
VSP-MD25R(A)□-6T		4				
VSP-MD30R(A)□-4T	30	2.5	47.3 (50.3)	11 (14)	1 to 1.3	29 (29)
VSP-MD30R(A)□-6T		4				
VSP-MD40R(A)□-4T	40	2.5	50.3 (53.8)	14 (17.5)	1 to 1.3	37 (37)
VSP-MD40R(A)□-6T		4				
VSP-MD50R(A)□-4T	50	2.5	51.3 (54.3)	15 (18)	1 to 1.3	44 (44)
VSP-MD50R(A)□-6T		4				

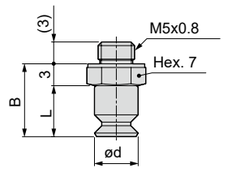
*Dimensions in ( ) are for deep type pads.

Outline Dimension Drawing (Compact Fixed Type, Direct Mount, VSP-ME, Male Thread)

●VSP-ME0.7 to 4RM□-M3



●VSP-ME6, 8R□-M5

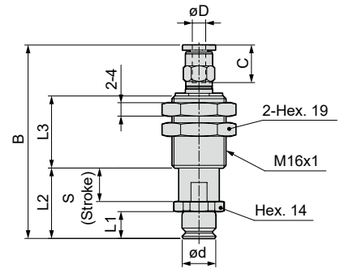


Unit: mm

Model No.	Pad Diameter ød	B	L	Weight (g)
VSP-ME0.7RM□-M3	0.7	6.5	4	0.6
VSP-ME1RM□-M3	1	6.5	4	0.6
VSP-ME1.5RM□-M3	1.5	6.5	4	0.6
VSP-ME2RM□-M3	2	6.5	4	0.6
VSP-ME3RM□-M3	3	6.5	4	0.6
VSP-ME4RM□-M3	4	6.5	4	0.6
VSP-ME6R□-M5	6	10	7	1.6
VSP-ME8R□-M5	8	8.5	5.5	1.6

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC10-□R□-2/4/6
●VSP-HC15-□R(A)□-2/4/6



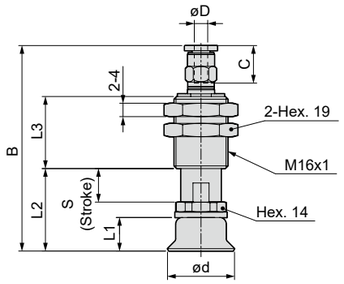
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10-10R□-2	10	1.8	53.6	8	21	21.5	8.4	10	1.0 to 2.4	22
VSP-HC10-10R□-4		4	57.7				11.2			23
VSP-HC10-10R□-6		6	59				11.9			24
VSP-HC10-15R□-2		1.8	63.6		26	26.5	8.4	15	1.0 to 2.7	24
VSP-HC10-15R□-4		4	67.7				11.2			25
VSP-HC10-15R□-6		6	69				11.9			26
VSP-HC10-20R□-2		1.8	73.6		31	31.5	8.4	20	1.0 to 3.0	26
VSP-HC10-20R□-4		4	77.7				11.2			27
VSP-HC10-20R□-6		6	79				11.9			28
VSP-HC10-25R□-2		1.8	84.1		36	37	8.4	25	1.0 to 3.0	28
VSP-HC10-25R□-4		4	88.2				11.2			29
VSP-HC10-25R□-6		6	89.5				11.9			30
VSP-HC10-30R□-2		1.8	95.1		41	43	8.4	30	1.0 to 3.0	30
VSP-HC10-30R□-4		4	99.2				11.2			31
VSP-HC10-30R□-6		6	100.5				11.9			32
VSP-HC10-40R□-2		1.8	117.1		51	55	8.4	40	1.0 to 3.0	34
VSP-HC10-40R□-4		4	121.2				11.2			35
VSP-HC10-40R□-6		6	122.5				11.9			36
VSP-HC10-50R□-2		1.8	138.6		61	66.5	8.4	50	1.0 to 3.1	39
VSP-HC10-50R□-4		4	142.7				11.2			40
VSP-HC10-50R□-6		6	144				11.9			41
VSP-HC15-10R(A)□-2	15	1.8	54.6 (55.6)	9 (10)	22 (23)	21.5	8.4	10	1.0 to 2.4	22 (22)
VSP-HC15-10R(A)□-4		4	58.7 (59.7)				11.2			23 (23)
VSP-HC15-10R(A)□-6		6	60 (61)				11.9			24 (24)
VSP-HC15-15R(A)□-2		1.8	64.6 (65.6)		27 (28)	26.5	8.4	15	1.0 to 2.7	24 (24)
VSP-HC15-15R(A)□-4		4	68.7 (69.7)				11.2			25 (25)
VSP-HC15-15R(A)□-6		6	70 (71)				11.9			26 (26)
VSP-HC15-20R(A)□-2		1.8	74.6 (75.6)		32 (33)	31.5	8.4	20	1.0 to 3.0	26 (26)
VSP-HC15-20R(A)□-4		4	78.7 (79.7)				11.2			27 (27)
VSP-HC15-20R(A)□-6		6	80 (81)				11.9			28 (28)
VSP-HC15-25R(A)□-2		1.8	85.1 (86.1)		37 (38)	37	8.4	25	1.0 to 3.0	28 (28)
VSP-HC15-25R(A)□-4		4	89.2 (90.2)				11.2			29 (29)
VSP-HC15-25R(A)□-6		6	90.5 (91.5)				11.9			30 (30)
VSP-HC15-30R(A)□-2		1.8	96.1 (97.1)		42 (43)	43	8.4	30	1.0 to 3.0	30 (30)
VSP-HC15-30R(A)□-4		4	100.2 (101.2)				11.2			31 (31)
VSP-HC15-30R(A)□-6		6	101.5 (102.5)				11.9			32 (32)
VSP-HC15-40R(A)□-2		1.8	118.1 (119.1)		52 (53)	55	8.4	40	1.0 to 3.0	34 (34)
VSP-HC15-40R(A)□-4		4	122.2 (123.2)				11.2			35 (35)
VSP-HC15-40R(A)□-6		6	123.5 (124.5)				11.9			36 (36)
VSP-HC15-50R(A)□-2		1.8	139.6 (140.6)		62 (63)	66.5	8.4	50	1.0 to 3.1	39 (39)
VSP-HC15-50R(A)□-4		4	143.7 (144.7)				11.2			40 (40)
VSP-HC15-50R(A)□-6		6	145 (146)				11.9			41 (41)

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC20, 25-□R(A)□-2/4/6



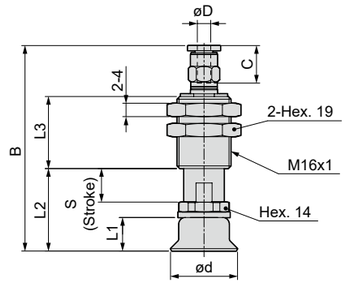
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20-10R(A)□-2		1.8	57.2 (58.2)				8.4			27 (27)
VSP-HC20-10R(A)□-4		4	61.3 (62.3)		24.6 (25.6)	21.5	11.2	10	1.0 to 2.4	28 (28)
VSP-HC20-10R(A)□-6		6	62.6 (63.6)				11.9			29 (29)
VSP-HC20-15R(A)□-2		1.8	67.2 (68.2)				8.4			29 (29)
VSP-HC20-15R(A)□-4		4	71.3 (72.3)		29.6 (30.6)	26.5	11.2	15	1.0 to 2.7	30 (30)
VSP-HC20-15R(A)□-6		6	72.6 (73.6)				11.9			31 (31)
VSP-HC20-20R(A)□-2		1.8	77.2 (78.2)				8.4			31 (31)
VSP-HC20-20R(A)□-4		4	81.3 (82.3)		34.6 (35.6)	31.5	11.2	20	1.0 to 3.0	32 (32)
VSP-HC20-20R(A)□-6		6	82.6 (83.6)				11.9			33 (33)
VSP-HC20-25R(A)□-2		1.8	87.7 (88.7)				8.4			33 (33)
VSP-HC20-25R(A)□-4	20	4	91.8 (92.8)	10 (11)	39.6 (40.6)	37	11.2	25	1.0 to 3.0	34 (34)
VSP-HC20-25R(A)□-6		6	93.1 (94.1)				11.9			35 (35)
VSP-HC20-30R(A)□-2		1.8	98.7 (99.7)				8.4			35 (35)
VSP-HC20-30R(A)□-4		4	102.8 (103.8)		44.6 (45.6)	43	11.2	30	1.0 to 3.0	36 (36)
VSP-HC20-30R(A)□-6		6	104.1 (105.1)				11.9			37 (37)
VSP-HC20-40R(A)□-2		1.8	120.7 (121.7)				8.4			39 (39)
VSP-HC20-40R(A)□-4		4	124.8 (125.8)		54.6 (55.6)	55	11.2	40	1.0 to 3.0	40 (40)
VSP-HC20-40R(A)□-6		6	126.1 (127.1)				11.9			41 (41)
VSP-HC20-50R(A)□-2		1.8	142.2 (143.2)				8.4			43 (43)
VSP-HC20-50R(A)□-4		4	146.3 (147.3)		64.6 (65.6)	66.5	11.2	50	1.0 to 3.1	44 (44)
VSP-HC20-50R(A)□-6		6	147.6 (148.6)				11.9			45 (45)
VSP-HC25-10R(A)□-2		1.8	58.2 (59.2)				8.4			27 (27)
VSP-HC25-10R(A)□-4		4	62.3 (63.3)		24.6 (25.6)	21.5	11.2	10	1.0 to 2.4	28 (28)
VSP-HC25-10R(A)□-6		6	63.6 (64.6)				11.9			29 (29)
VSP-HC25-15R(A)□-2		1.8	68.2 (69.2)				8.4			29 (29)
VSP-HC25-15R(A)□-4		4	72.3 (73.3)		29.6 (30.6)	26.5	11.2	15	1.0 to 2.7	30 (30)
VSP-HC25-15R(A)□-6		6	73.6 (74.6)				11.9			31 (31)
VSP-HC25-20R(A)□-2		1.8	78.2 (79.2)				8.4			31 (31)
VSP-HC25-20R(A)□-4		4	82.3 (83.3)		34.6 (35.6)	31.5	11.2	20	1.0 to 3.0	32 (32)
VSP-HC25-20R(A)□-6		6	83.6 (84.6)				11.9			33 (33)
VSP-HC25-25R(A)□-2		1.8	88.7 (89.7)				8.4			33 (33)
VSP-HC25-25R(A)□-4	25	4	92.8 (93.8)	11 (12)	39.6 (40.6)	37	11.2	25	1.0 to 3.0	34 (34)
VSP-HC25-25R(A)□-6		6	94.1 (95.1)				11.9			35 (35)
VSP-HC25-30R(A)□-2		1.8	99.7 (100.7)				8.4			35 (35)
VSP-HC25-30R(A)□-4		4	103.8 (104.8)		44.6 (45.6)	43	11.2	30	1.0 to 3.0	36 (36)
VSP-HC25-30R(A)□-6		6	105.1 (106.1)				11.9			37 (37)
VSP-HC25-40R(A)□-2		1.8	121.7 (122.7)				8.4			39 (39)
VSP-HC25-40R(A)□-4		4	125.8 (126.8)		54.6 (55.6)	55	11.2	40	1.0 to 3.0	40 (40)
VSP-HC25-40R(A)□-6		6	127.1 (128.1)				11.9			41 (41)
VSP-HC25-50R(A)□-2		1.8	143.2 (144.2)				8.4			43 (43)
VSP-HC25-50R(A)□-4		4	147.3 (148.3)		64.6 (65.6)	66.5	11.2	50	1.0 to 3.1	44 (44)
VSP-HC25-50R(A)□-6		6	148.6 (149.6)				11.9			45 (45)

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC30, 40-□R(A)□-2/4/6



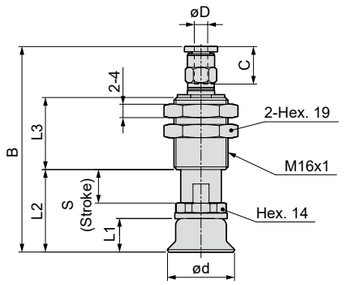
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC30-10R(A)□-2		1.8	58.2 (61.2)				8.4			29 (30)
VSP-HC30-10R(A)□-4		4	62.3 (65.3)		25.6 (28.6)	21.5	11.2	10	1.0 to 2.4	30 (31)
VSP-HC30-10R(A)□-6		6	63.6 (66.6)				11.9			31 (32)
VSP-HC30-15R(A)□-2		1.8	68.2 (71.2)				8.4			31 (32)
VSP-HC30-15R(A)□-4		4	72.3 (75.3)		30.6 (33.6)	26.5	11.2	15	1.0 to 2.7	32 (33)
VSP-HC30-15R(A)□-6		6	73.6 (76.6)				11.9			33 (34)
VSP-HC30-20R(A)□-2		1.8	78.2 (81.2)				8.4			33 (34)
VSP-HC30-20R(A)□-4		4	82.3 (85.3)		35.6 (38.6)	31.5	11.2	20	1.0 to 3.0	34 (35)
VSP-HC30-20R(A)□-6		6	83.6 (86.6)				11.9			35 (36)
VSP-HC30-25R(A)□-2		1.8	88.7 (91.7)				8.4			35 (36)
VSP-HC30-25R(A)□-4	30	4	92.8 (95.8)	11 (14)	40.6 (43.6)	37	11.2	25	1.0 to 3.0	36 (37)
VSP-HC30-25R(A)□-6		6	94.1 (97.1)				11.9			37 (38)
VSP-HC30-30R(A)□-2		1.8	99.7 (102.7)				8.4			37 (38)
VSP-HC30-30R(A)□-4		4	103.8 (106.8)		45.6 (48.6)	43	11.2	30	1.0 to 3.0	38 (39)
VSP-HC30-30R(A)□-6		6	105.1 (108.1)				11.9			39 (40)
VSP-HC30-40R(A)□-2		1.8	121.7 (124.7)				8.4			41 (42)
VSP-HC30-40R(A)□-4		4	125.8 (128.8)		55.6 (58.6)	55	11.2	40	1.0 to 3.0	42 (43)
VSP-HC30-40R(A)□-6		6	127.1 (130.1)				11.9			43 (44)
VSP-HC30-50R(A)□-2		1.8	143.2 (146.2)				8.4			45 (46)
VSP-HC30-50R(A)□-4		4	147.3 (150.3)		65.6 (68.6)	66.5	11.2	50	1.0 to 3.1	46 (47)
VSP-HC30-50R(A)□-6		6	148.6 (151.6)				11.9			47 (48)
VSP-HC40-10R(A)□-2		1.8	61.2 (64.7)				8.4			34 (35)
VSP-HC40-10R(A)□-4		4	65.3 (68.8)		28.6 (32.1)	21.5	11.2	10	1.0 to 2.4	35 (36)
VSP-HC40-10R(A)□-6		6	66.6 (70.1)				11.9			36 (37)
VSP-HC40-15R(A)□-2		1.8	68.2 (71.7)				8.4			36 (37)
VSP-HC40-15R(A)□-4		4	72.3 (75.8)		33.6 (37.1)	26.5	11.2	15	1.0 to 2.7	37 (38)
VSP-HC40-15R(A)□-6		6	73.6 (77.1)				11.9			38 (39)
VSP-HC40-20R(A)□-2		1.8	78.2 (81.7)				8.4			38 (39)
VSP-HC40-20R(A)□-4		4	82.3 (85.8)		38.6 (42.1)	31.5	11.2	20	1.0 to 3.0	39 (40)
VSP-HC40-20R(A)□-6		6	83.6 (87.1)				11.9			40 (41)
VSP-HC40-25R(A)□-2		1.8	88.7 (92.2)				8.4			40 (41)
VSP-HC40-25R(A)□-4	40	4	92.8 (96.3)	14 (17.5)	43.6 (47.1)	37	11.2	25	1.0 to 3.0	41 (42)
VSP-HC40-25R(A)□-6		6	94.1 (97.6)				11.9			42 (43)
VSP-HC40-30R(A)□-2		1.8	99.7 (103.2)				8.4			42 (43)
VSP-HC40-30R(A)□-4		4	103.8 (107.3)		48.6 (52.1)	43	11.2	30	1.0 to 3.0	43 (44)
VSP-HC40-30R(A)□-6		6	105.1 (108.6)				11.9			44 (45)
VSP-HC40-40R(A)□-2		1.8	121.7 (125.2)				8.4			46 (47)
VSP-HC40-40R(A)□-4		4	125.8 (129.3)		58.6 (62.1)	55	11.2	40	1.0 to 3.0	47 (48)
VSP-HC40-40R(A)□-6		6	127.1 (130.6)				11.9			48 (49)
VSP-HC40-50R(A)□-2		1.8	143.2 (146.7)				8.4			50 (51)
VSP-HC40-50R(A)□-4		4	147.3 (150.8)		68.6 (72.1)	66.5	11.2	50	1.0 to 3.1	51 (52)
VSP-HC40-50R(A)□-6		6	148.6 (152.1)				11.9			52 (53)

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC50-□R(A)□-2/4/6



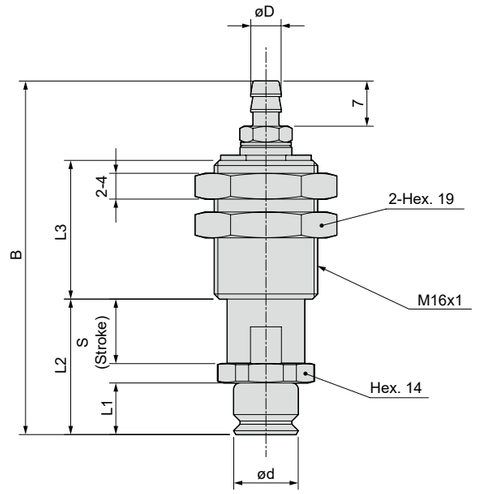
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC50-10R(A)□-2	50	1.8	62.2 (65.2)	15 (18)	29.6 (32.6)	21.5	8.4	10	1.0 to 2.4	46 (47)
VSP-HC50-10R(A)□-4		4	66.3 (69.3)				11.2			47 (48)
VSP-HC50-10R(A)□-6		6	67.6 (70.6)				11.9			48 (49)
VSP-HC50-15R(A)□-2		1.8	72.2 (75.2)		34.6 (37.6)	26.5	8.4	15	1.0 to 2.7	48 (49)
VSP-HC50-15R(A)□-4		4	76.3 (79.3)				11.2			49 (50)
VSP-HC50-15R(A)□-6		6	77.6 (80.6)				11.9			50 (51)
VSP-HC50-20R(A)□-2		1.8	82.2 (85.2)		39.6 (42.6)	31.5	8.4	20	1.0 to 3.0	50 (51)
VSP-HC50-20R(A)□-4		4	86.3 (89.3)				11.2			51 (52)
VSP-HC50-20R(A)□-6		6	87.6 (90.6)				11.9			52 (53)
VSP-HC50-25R(A)□-2		1.8	92.7 (95.7)		44.6 (47.6)	37	8.4	25	1.0 to 3.0	52 (53)
VSP-HC50-25R(A)□-4		4	96.8 (99.8)				11.2			53 (54)
VSP-HC50-25R(A)□-6		6	98.1 (101.1)				11.9			54 (55)
VSP-HC50-30R(A)□-2		1.8	103.7 (106.7)		49.6 (52.6)	43	8.4	30	1.0 to 3.0	54 (55)
VSP-HC50-30R(A)□-4		4	107.8 (110.8)				11.2			55 (56)
VSP-HC50-30R(A)□-6		6	109.1 (112.1)				11.9			56 (57)
VSP-HC50-40R(A)□-2		1.8	125.7 (128.7)		59.6 (62.6)	55	8.4	40	1.0 to 3.0	58 (59)
VSP-HC50-40R(A)□-4		4	129.8 (132.8)				11.2			59 (60)
VSP-HC50-40R(A)□-6		6	131.1 (134.1)				11.9			60 (61)
VSP-HC50-50R(A)□-2		1.8	147.2 (150.2)		69.6 (72.6)	66.5	8.4	50	1.0 to 3.1	62 (63)
VSP-HC50-50R(A)□-4		4	151.3 (154.3)				11.2			63 (64)
VSP-HC50-50R(A)□-6		6	152.6 (155.6)				11.9			64 (65)

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC10-□R□-4T/6T
●VSP-HC15-□R(A)□-4T/6T



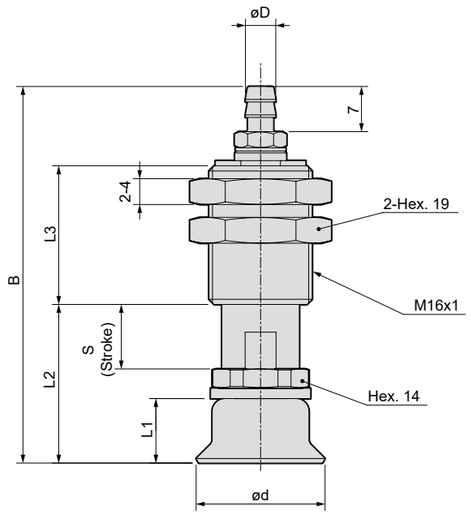
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10-10R□-4T	10	2.5	54.8	8	21	21.5	10	1.0 to 2.4	21
VSP-HC10-10R□-6T		4							
VSP-HC10-15R□-4T		2.5	64.8		26	26.5	15	1.0 to 2.7	23
VSP-HC10-15R□-6T		4							
VSP-HC10-20R□-4T		2.5	74.8		31	31.5	20	1.0 to 3.0	25
VSP-HC10-20R□-6T		4							
VSP-HC10-25R□-4T		2.5	85.3		36	37	25	1.0 to 3.0	28
VSP-HC10-25R□-6T		4							
VSP-HC10-30R□-4T		2.5	96.3		41	43	30	1.0 to 3.0	30
VSP-HC10-30R□-6T		4							
VSP-HC10-40R□-4T		2.5	118.3		51	55	40	1.0 to 3.0	34
VSP-HC10-40R□-6T		4							
VSP-HC10-50R□-4T		2.5	139.8		61	66.5	50	1.0 to 3.1	38
VSP-HC10-50R□-6T		4							
VSP-HC15-10R(A)□-4T	15	2.5	55.8 (56.8)	9 (10)	22 (23)	21.5	10	1.0 to 2.4	21 (22)
VSP-HC15-10R(A)□-6T		4							
VSP-HC15-15R(A)□-4T		2.5	65.8 (66.8)		27 (28)	26.5	15	1.0 to 2.7	23 (24)
VSP-HC15-15R(A)□-6T		4							
VSP-HC15-20R(A)□-4T		2.5	75.8 (76.8)		32 (33)	31.5	20	1.0 to 3.0	25 (26)
VSP-HC15-20R(A)□-6T		4							
VSP-HC15-25R(A)□-4T		2.5	86.3 (87.3)		37 (38)	37	25	1.0 to 3.0	28 (29)
VSP-HC15-25R(A)□-6T		4							
VSP-HC15-30R(A)□-4T		2.5	97.3 (98.3)		42 (43)	43	30	1.0 to 3.0	30 (31)
VSP-HC15-30R(A)□-6T		4							
VSP-HC15-40R(A)□-4T		2.5	119.3 (120.3)		52 (53)	55	40	1.0 to 3.0	34 (35)
VSP-HC15-40R(A)□-6T		4							
VSP-HC15-50R(A)□-4T		2.5	140.8 (141.8)		62 (63)	66.5	50	1.0 to 3.1	38 (39)
VSP-HC15-50R(A)□-6T		4							

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC20, 25-□R(A)□-4T/6T



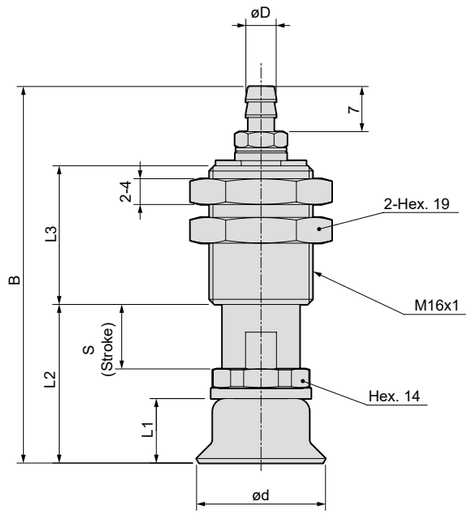
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20-10R(A)□-4T	20	2.5	58.4 (59.4)	10 (11)	24.6 (25.6)	21.5	10	1.0 to 2.4	25 (26)
VSP-HC20-10R(A)□-6T		4							
VSP-HC20-15R(A)□-4T		2.5	68.4 (69.4)		29.6 (30.6)	26.5	15	1.0 to 2.7	27 (28)
VSP-HC20-15R(A)□-6T		4							
VSP-HC20-20R(A)□-4T		2.5	78.4 (79.4)		34.6 (35.6)	31.5	20	1.0 to 3.0	29 (30)
VSP-HC20-20R(A)□-6T		4							
VSP-HC20-25R(A)□-4T		2.5	88.9 (89.9)		39.6 (40.6)	37	25	1.0 to 3.0	31 (32)
VSP-HC20-25R(A)□-6T		4							
VSP-HC20-30R(A)□-4T		2.5	99.9 (100.9)		44.6 (45.6)	43	30	1.0 to 3.0	34 (35)
VSP-HC20-30R(A)□-6T		4							
VSP-HC20-40R(A)□-4T		2.5	121.9 (122.9)		54.6 (55.6)	55	40	1.0 to 3.0	38 (39)
VSP-HC20-40R(A)□-6T		4							
VSP-HC20-50R(A)□-4T		2.5	143.4 (144.4)		64.6 (65.6)	66.5	50	1.0 to 3.1	42 (41)
VSP-HC20-50R(A)□-6T		4							
VSP-HC25-10R(A)□-4T	25	2.5	59.4 (60.4)	11 (12)	25.6 (26.6)	21.5	10	1.0 to 2.4	26 (27)
VSP-HC25-10R(A)□-6T		4							
VSP-HC25-15R(A)□-4T		2.5	69.4 (70.4)		30.6 (31.6)	26.5	15	1.0 to 2.7	28 (29)
VSP-HC25-15R(A)□-6T		4							
VSP-HC25-20R(A)□-4T		2.5	79.4 (80.4)		35.6 (36.6)	31.5	20	1.0 to 3.0	30 (31)
VSP-HC25-20R(A)□-6T		4							
VSP-HC25-25R(A)□-4T		2.5	89.9 (90.9)		40.6 (41.6)	37	25	1.0 to 3.0	32 (33)
VSP-HC25-25R(A)□-6T		4							
VSP-HC25-30R(A)□-4T		2.5	100.9 (101.9)		45.6 (46.6)	43	30	1.0 to 3.0	35 (36)
VSP-HC25-30R(A)□-6T		4							
VSP-HC25-40R(A)□-4T		2.5	122.9 (123.9)		55.6 (56.6)	55	40	1.0 to 3.0	39 (40)
VSP-HC25-40R(A)□-6T		4							
VSP-HC25-50R(A)□-4T		2.5	144.4 (145.4)		65.6 (66.6)	66.5	50	1.0 to 3.1	43 (44)
VSP-HC25-50R(A)□-6T		4							

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC30, 40-□R(A)□-4T/6T



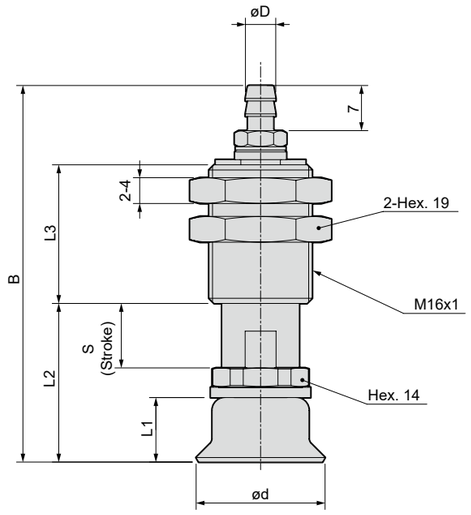
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC30-10R(A)□-4T	30	2.5	59.4 (62.4)	11 (14)	25.6 (28.6)	21.5	10	1.0 to 2.4	28 (29)
VSP-HC30-10R(A)□-6T		4							
VSP-HC30-15R(A)□-4T		2.5	69.4 (72.4)		30.6 (33.6)	26.5	15	1.0 to 2.7	30 (31)
VSP-HC30-15R(A)□-6T		4							
VSP-HC30-20R(A)□-4T		2.5	79.4 (82.4)		35.6 (38.6)	31.5	20	1.0 to 3.0	32 (33)
VSP-HC30-20R(A)□-6T		4							
VSP-HC30-25R(A)□-4T		2.5	89.9 (92.9)		40.6 (43.6)	37	25	1.0 to 3.0	34 (35)
VSP-HC30-25R(A)□-6T		4							
VSP-HC30-30R(A)□-4T		2.5	100.9 (103.9)		45.6 (48.6)	43	30	1.0 to 3.0	37 (38)
VSP-HC30-30R(A)□-6T		4							
VSP-HC30-40R(A)□-4T		2.5	122.9 (125.9)		55.6 (58.6)	55	40	1.0 to 3.0	41 (42)
VSP-HC30-40R(A)□-6T		4							
VSP-HC30-50R(A)□-4T		2.5	144.4 (147.4)		65.6 (68.6)	66.5	50	1.0 to 3.1	46 (47)
VSP-HC30-50R(A)□-6T		4							
VSP-HC40-10R(A)□-4T	40	2.5	62.4 (65.9)	14 (17.5)	28.6 (32.1)	21.5	10	1.0 to 2.4	29 (30)
VSP-HC40-10R(A)□-6T		4							
VSP-HC40-15R(A)□-4T		2.5	72.4 (75.9)		33.6 (37.1)	26.5	15	1.0 to 2.7	31 (32)
VSP-HC40-15R(A)□-6T		4							
VSP-HC40-20R(A)□-4T		2.5	82.4 (85.9)		38.6 (42.1)	31.5	20	1.0 to 3.0	33 (34)
VSP-HC40-20R(A)□-6T		4							
VSP-HC40-25R(A)□-4T		2.5	92.9 (96.4)		43.6 (47.1)	37	25	1.0 to 3.0	35 (36)
VSP-HC40-25R(A)□-6T		4							
VSP-HC40-30R(A)□-4T		2.5	103.9 (107.4)		48.6 (52.1)	43	30	1.0 to 3.0	38 (39)
VSP-HC40-30R(A)□-6T		4							
VSP-HC40-40R(A)□-4T		2.5	125.9 (129.4)		58.6 (62.1)	55	40	1.0 to 3.0	42 (41)
VSP-HC40-40R(A)□-6T		4							
VSP-HC40-50R(A)□-4T		2.5	147.4 (150.9)		68.6 (72.1)	66.5	50	1.0 to 3.1	47 (46)
VSP-HC40-50R(A)□-6T		4							

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC50-□R(A)□-4T/6T



Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC50-10R(A)□-4T	50	2.5	60.6 (63.6)	15 (18)	29.6 (32.6)	21.5	10	1.0 to 2.4	54 (55)
VSP-HC50-10R(A)□-6T		4							
VSP-HC50-15R(A)□-4T		2.5	70.6 (73.6)		34.6 (37.6)	26.5	15	1.0 to 2.7	56 (57)
VSP-HC50-15R(A)□-6T		4							
VSP-HC50-20R(A)□-4T		2.5	80.6 (83.6)		39.6 (42.6)	31.5	20	1.0 to 3.0	58 (59)
VSP-HC50-20R(A)□-6T		4							
VSP-HC50-25R(A)□-4T		2.5	91.1 (94.1)		44.6 (47.6)	37	25	1.0 to 3.0	60 (61)
VSP-HC50-25R(A)□-6T		4							
VSP-HC50-30R(A)□-4T		2.5	102.1 (105.1)		49.6 (52.6)	43	30	1.0 to 3.0	63 (64)
VSP-HC50-30R(A)□-6T		4							
VSP-HC50-40R(A)□-4T		2.5	124.1 (127.1)		59.6 (62.6)	55	40	1.0 to 3.0	67 (68)
VSP-HC50-40R(A)□-6T		4							
VSP-HC50-50R(A)□-4T		2.5	145.6 (148.6)		69.6 (72.6)	66.5	50	1.0 to 3.1	71 (72)
VSP-HC50-50R(A)□-6T		4							

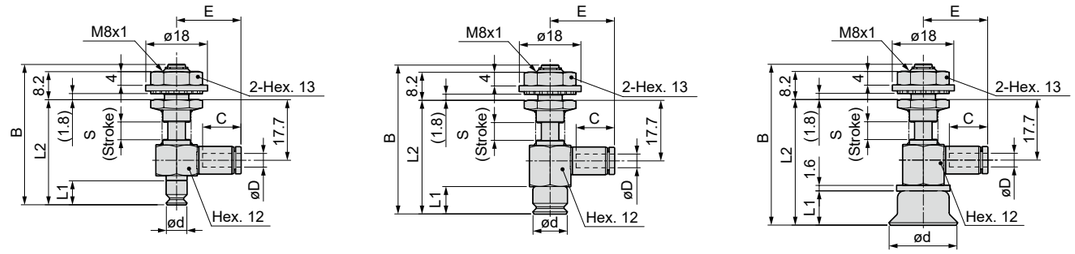
*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing(Lightweight Buffer Type, Vacuum Outlet on Side, VSP-HD, Push-in fitting)

●VSP-HD6, 8R□-2/4/6

●VSP-HD10R□-2/4/6
●VSP-HD15R(A)□-2/4/6

●VSP-HD20 to 50R(A)□-2/4/6



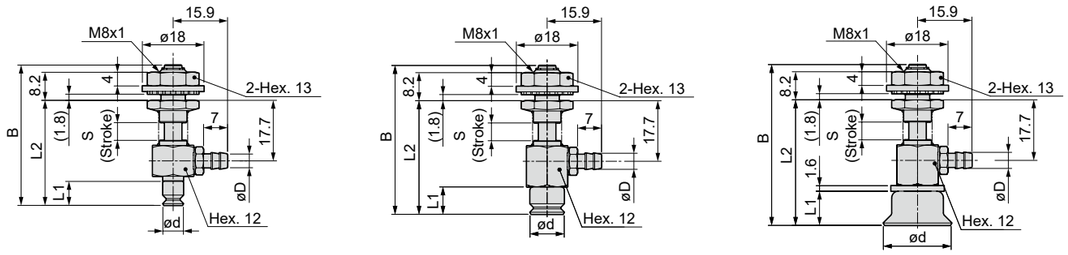
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HD6R□-2	6	1.8	41	7	30.7	8.4	14.7	5.2	1.6 to 2.9	28
VSP-HD6R□-4		4				11.2	18.8			29
VSP-HD6R□-6		6				11.9	20.6			30
VSP-HD8R□-2	8	1.8	39.5	5.5	29.2	8.4	14.7	5.2	1.6 to 2.9	28
VSP-HD8R□-4		4				11.2	18.8			29
VSP-HD8R□-6		6				11.9	20.6			30
VSP-HD10R□-2	10	1.8	43.5	8	33.2	8.4	14.7	5.2	1.6 to 2.9	32
VSP-HD10R□-4		4				11.2	18.8			33
VSP-HD10R□-6		6				11.9	20.6			34
VSP-HD15R(A)□-2	15	1.8	44.5 (45.5)	9 (10)	34.2 (35.2)	8.4	14.7	5.2	1.6 to 2.9	33 (34)
VSP-HD15R(A)□-4		4				11.2	18.8			34 (35)
VSP-HD15R(A)□-6		6				11.9	20.6			35 (36)
VSP-HD20R(A)□-2	20	1.8	47 (48)	10 (11)	36.7 (37.7)	8.4	14.7	5.2	1.6 to 2.9	36 (37)
VSP-HD20R(A)□-4		4				11.2	18.8			37 (38)
VSP-HD20R(A)□-6		6				11.9	20.6			38 (39)
VSP-HD25R(A)□-2	25	1.8	48 (49)	11 (12)	37.7 (38.7)	8.4	14.7	5.2	1.6 to 2.9	37 (38)
VSP-HD25R(A)□-4		4				11.2	18.8			38 (39)
VSP-HD25R(A)□-6		6				11.9	20.6			39 (40)
VSP-HD30R(A)□-2	30	1.8	48 (51)	11 (14)	37.7 (40.7)	8.4	14.7	5.2	1.6 to 2.9	39 (40)
VSP-HD30R(A)□-4		4				11.2	18.8			40 (41)
VSP-HD30R(A)□-6		6				11.9	20.6			41 (42)
VSP-HD40R(A)□-2	40	1.8	51 (54.5)	14 (17.5)	40.7 (44.2)	8.4	14.7	5.2	1.6 to 2.9	44 (43)
VSP-HD40R(A)□-4		4				11.2	18.8			45 (44)
VSP-HD40R(A)□-6		6				11.9	20.6			46 (45)
VSP-HD50R(A)□-2	50	1.8	52 (55)	15 (18)	41.7 (44.7)	8.4	14.7	5.2	1.6 to 2.9	54 (55)
VSP-HD50R(A)□-4		4				11.2	18.8			55 (56)
VSP-HD50R(A)□-6		6				11.9	20.6			56 (57)

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side, VSP-HD, Barb Fitting)

●VSP-HD6, 8R□-4T/6T
●VSP-HD10R□-4T/6T
●VSP-HD15R(A)□-4T/6T
●VSP-HD20 to 50R(A)□-4T/6T



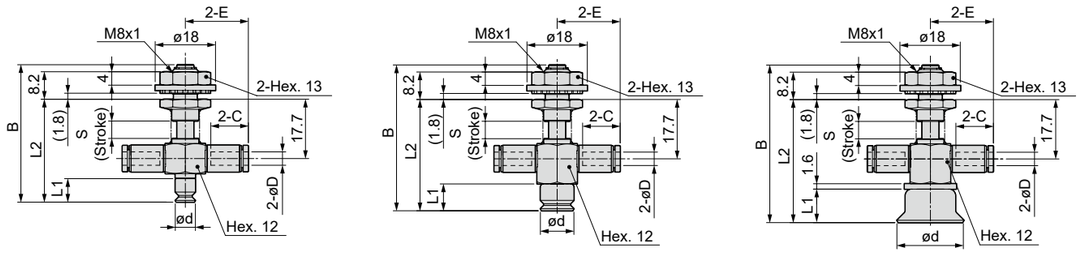
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HD6R□-4T	6	2.5	41	7	30.7	5.2	1.6 to 2.9	28
VSP-HD6R□-6T		4						
VSP-HD8R□-4T	8	2.5	39.5	5.5	29.2	5.2	1.6 to 2.9	28
VSP-HD8R□-6T		4						
VSP-HD10R□-4T	10	2.5	43.5	8	33.2	5.2	1.6 to 2.9	31
VSP-HD10R□-6T		4						
VSP-HD15R(A)□-4T	15	2.5	44.5 (45.5)	9 (10)	34.2 (35.2)	5.2	1.6 to 2.9	32
VSP-HD15R(A)□-6T		4						
VSP-HD20R(A)□-4T	20	2.5	47 (48)	10 (11)	36.7 (37.7)	5.2	1.6 to 2.9	36
VSP-HD20R(A)□-6T		4						
VSP-HD25R(A)□-4T	25	2.5	48 (49)	11 (12)	37.7 (38.7)	5.2	1.6 to 2.9	37
VSP-HD25R(A)□-6T		4						
VSP-HD30R(A)□-4T	30	2.5	48 (51)	11 (14)	37.7 (40.7)	5.2	1.6 to 2.9	38
VSP-HD30R(A)□-6T		4						
VSP-HD40R(A)□-4T	40	2.5	51 (54.5)	14 (17.5)	40.7 (44.2)	5.2	1.6 to 2.9	45
VSP-HD40R(A)□-6T		4						
VSP-HD50R(A)□-4T	50	2.5	52 (55)	15 (18)	41.7 (44.7)	5.2	1.6 to 2.9	51
VSP-HD50R(A)□-6T		4						

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides, VSP-HDW, Push-in fitting)

●VSP-HDW6, 8R□-2/4/6
●VSP-HDW10R□-2/4/6
●VSP-HDW15R(A)□-2/4/6
●VSP-HDW20R(A)□-2/4/6



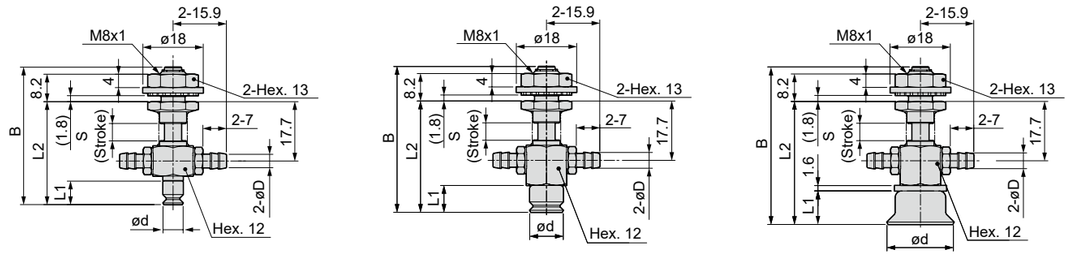
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW6R□-2	6	1.8	41	7	30.7	8.4	14.7	5.2	1.6 to 2.9	30
VSP-HDW6R□-4		4				11.2	18.8			32
VSP-HDW6R□-6		6				11.9	20.6			34
VSP-HDW8R□-2	8	1.8	39.5	5.5	29.2	8.4	14.7	5.2	1.6 to 2.9	30
VSP-HDW8R□-4		4				11.2	18.8			32
VSP-HDW8R□-6		6				11.9	20.6			34
VSP-HDW10R□-2	10	1.8	43.5	8	33.2	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HDW10R□-4		4				11.2	18.8			35
VSP-HDW10R□-6		6				11.9	20.6			37
VSP-HDW15R(A)□-2	15	1.8	44.5 (45.5)	9 (10)	34.2 (35.2)	8.4	14.7	5.2	1.6 to 2.9	34
VSP-HDW15R(A)□-4		4				11.2	18.8			36
VSP-HDW15R(A)□-6		6				11.9	20.6			38
VSP-HDW20R(A)□-2	20	1.8	47 (48)	10 (11)	36.7 (37.7)	8.4	14.7	5.2	1.6 to 2.9	38
VSP-HDW20R(A)□-4		4				11.2	18.8			40
VSP-HDW20R(A)□-6		6				11.9	20.6			42
VSP-HDW25R(A)□-2	25	1.8	48 (49)	11 (12)	37.7 (38.7)	8.4	14.7	5.2	1.6 to 2.9	39
VSP-HDW25R(A)□-4		4				11.2	18.8			41
VSP-HDW25R(A)□-6		6				11.9	20.6			43
VSP-HDW30R(A)□-2	30	1.8	48 (51)	11 (14)	37.7 (40.7)	8.4	14.7	5.2	1.6 to 2.9	40
VSP-HDW30R(A)□-4		4				11.2	18.8			42
VSP-HDW30R(A)□-6		6				11.9	20.6			44
VSP-HDW40R(A)□-2	40	1.8	51 (54.5)	14 (17.5)	40.7 (44.2)	8.4	14.7	5.2	1.6 to 2.9	49
VSP-HDW40R(A)□-4		4				11.2	18.8			51
VSP-HDW40R(A)□-6		6				11.9	20.6			53
VSP-HDW50R(A)□-2	50	1.8	52 (55)	15 (18)	41.7 (44.7)	8.4	14.7	5.2	1.6 to 2.9	55
VSP-HDW50R(A)□-4		4				11.2	18.8			57
VSP-HDW50R(A)□-6		6				11.9	20.6			59

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides, VSP-HDW, Barb Fitting)

●VSP-HDW6, 8R□-4T/6T
●VSP-HDW10R□-4T/6T
●VSP-HDW15R(A)□-4T/6T
●VSP-HDW20 to 50R(A)□-4T/6T



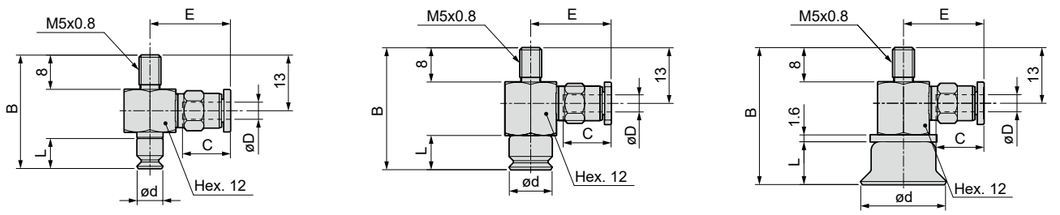
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW6R□-4T	6	2.5	41	7	30.7	5.2	1.6 to 2.9	28
VSP-HDW6R□-6T		4						
VSP-HDW8R□-4T	8	2.5	39.5	5.5	29.2	5.2	1.6 to 2.9	28
VSP-HDW8R□-6T		4						
VSP-HDW10R□-4T	10	2.5	43.5	8	33.2	5.2	1.6 to 2.9	32
VSP-HDW10R□-6T		4						
VSP-HDW15R(A)□-4T	15	2.5	44.5 (45.5)	9 (10)	34.2 (35.2)	5.2	1.6 to 2.9	33
VSP-HDW15R(A)□-6T		4						
VSP-HDW20R(A)□-4T	20	2.5	47 (48)	10 (11)	36.7 (37.7)	5.2	1.6 to 2.9	37
VSP-HDW20R(A)□-6T		4						
VSP-HDW25R(A)□-4T	25	2.5	48 (49)	11 (12)	37.7 (38.7)	5.2	1.6 to 2.9	38
VSP-HDW25R(A)□-6T		4						
VSP-HDW30R(A)□-4T	30	2.5	48 (51)	11 (14)	37.7 (40.7)	5.2	1.6 to 2.9	41
VSP-HDW30R(A)□-6T		4						
VSP-HDW40R(A)□-4T	40	2.5	51 (54.5)	14 (17.5)	40.7 (44.2)	5.2	1.6 to 2.9	48
VSP-HDW40R(A)□-6T		4						
VSP-HDW50R(A)□-4T	50	2.5	52 (55)	15 (18)	41.7 (44.7)	5.2	1.6 to 2.9	54
VSP-HDW50R(A)□-6T		4						

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side, VSP-HE, Push-in fitting)

●VSP-HE6, 8R□-2/4/6
●VSP-HE10R□-2/4/6
●VSP-HE15R(A)□-2/4/6
●VSP-HE20 to 50R(A)□-2/4/6



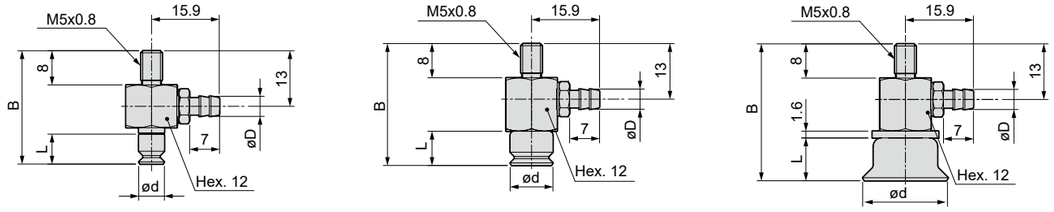
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HE6R□-2	6	1.8	26.5	7	8.4	14.7	14
VSP-HE6R□-4		4			11.2	18.8	15
VSP-HE6R□-6		6			11.9	20.6	16
VSP-HE8R□-2	8	1.8	25	5.5	8.4	14.7	14
VSP-HE8R□-4		4			11.2	18.8	15
VSP-HE8R□-6		6			11.9	20.6	16
VSP-HE10R□-2	10	1.8	28.5	8	8.4	14.7	17
VSP-HE10R□-4		4			11.2	18.8	18
VSP-HE10R□-6		6			11.9	20.6	19
VSP-HE15R(A)□-2	15	1.8	29.5 (30.5)	9 (10)	8.4	14.7	17 (18)
VSP-HE15R(A)□-4		4			11.2	18.8	18 (19)
VSP-HE15R(A)□-6		6			11.9	20.6	19 (20)
VSP-HE20R(A)□-2	20	1.8	32 (33)	10 (11)	8.4	14.7	22 (23)
VSP-HE20R(A)□-4		4			11.2	18.8	23 (24)
VSP-HE20R(A)□-6		6			11.9	20.6	24 (25)
VSP-HE25R(A)□-2	25	1.8	33 (34)	11 (12)	8.4	14.7	22 (23)
VSP-HE25R(A)□-4		4			11.2	18.8	23 (24)
VSP-HE25R(A)□-6		6			11.9	20.6	24 (25)
VSP-HE30R(A)□-2	30	1.8	33 (36)	11 (14)	8.4	14.7	24 (25)
VSP-HE30R(A)□-4		4			11.2	18.8	25 (26)
VSP-HE30R(A)□-6		6			11.9	20.6	26 (27)
VSP-HE40R(A)□-2	40	1.8	36 (39.5)	14 (17.5)	8.4	14.7	31 (32)
VSP-HE40R(A)□-4		4			11.2	18.8	32 (33)
VSP-HE40R(A)□-6		6			11.9	20.6	33 (34)
VSP-HE50R(A)□-2	50	1.8	37 (40)	15 (18)	8.4	14.7	41 (42)
VSP-HE50R(A)□-4		4			11.2	18.8	42 (43)
VSP-HE50R(A)□-6		6			11.9	20.6	43 (44)

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side, VSP-HE, Barb Fitting)

●VSP-HE6, 8R□-4T/6T
●VSP-HE10R□-4T/6T
●VSP-HE15R(A)□-4T/6T
●VSP-HE20 to 50R(A)□-4T/6T



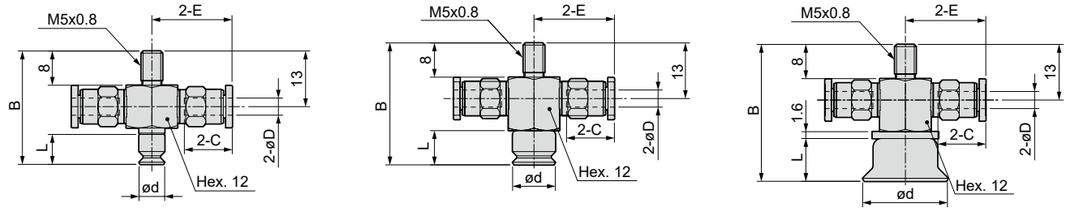
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HE6R□-4T	6	2.5	26.5	7	13
VSP-HE6R□-6T		4			
VSP-HE8R□-4T	8	2.5	25	5.5	13
VSP-HE8R□-6T		4			
VSP-HE10R□-4T	10	2.5	28.5	8	16
VSP-HE10R□-6T		4			
VSP-HE15R(A)□-4T	15	2.5	29.5 (30.5)	9 (10)	16 (17)
VSP-HE15R(A)□-6T		4			
VSP-HE20R(A)□-4T	20	2.5	32 (33)	10 (11)	20 (21)
VSP-HE20R(A)□-6T		4			
VSP-HE25R(A)□-4T	25	2.5	33 (34)	11 (12)	21 (22)
VSP-HE25R(A)□-6T		4			
VSP-HE30R(A)□-4T	30	2.5	33 (36)	11 (14)	23 (24)
VSP-HE30R(A)□-6T		4			
VSP-HE40R(A)□-4T	40	2.5	36 (39.5)	14 (17.5)	29 (30)
VSP-HE40R(A)□-6T		4			
VSP-HE50R(A)□-4T	50	2.5	37 (40)	15 (18)	39 (40)
VSP-HE50R(A)□-6T		4			

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet Both Sides, VSP-HE, Push-in fitting)

●VSP-HEW6, 8R□-2/4/6
●VSP-HEW10R□-2/4/6
●VSP-HEW15R(A)□-2/4/6
●VSP-HEW20 to 50R(A)□-2/4/6



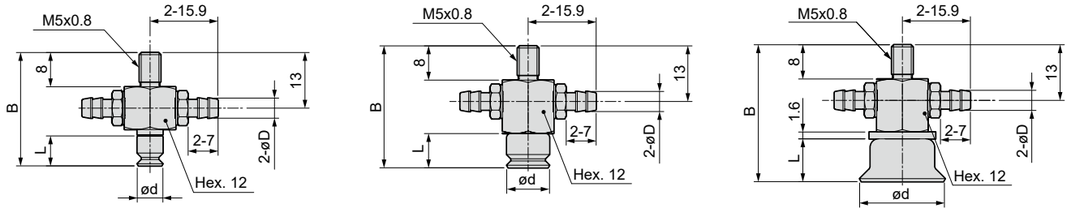
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HEW6R□-2	6	1.8	26.5	7	8.4	14.7	16
VSP-HEW6R□-4		4			11.2	18.8	18
VSP-HEW6R□-6		6			11.9	20.6	20
VSP-HEW8R□-2	8	1.8	25	5.5	8.4	14.7	16
VSP-HEW8R□-4		4			11.2	18.8	18
VSP-HEW8R□-6		6			11.9	20.6	20
VSP-HEW10R□-2	10	1.8	28.5	8	8.4	14.7	19
VSP-HEW10R□-4		4			11.2	18.8	21
VSP-HEW10R□-6		6			11.9	20.6	23
VSP-HEW15R(A)□-2	15	1.8	29.5 (30.5)	9 (10)	8.4	14.7	20
VSP-HEW15R(A)□-4		4			11.2	18.8	22
VSP-HEW15R(A)□-6		6			11.9	20.6	24
VSP-HEW20R(A)□-2	20	1.8	32 (33)	10 (11)	8.4	14.7	22 (23)
VSP-HEW20R(A)□-4		4			11.2	18.8	24 (25)
VSP-HEW20R(A)□-6		6			11.9	20.6	26 (27)
VSP-HEW25R(A)□-2	25	1.8	33 (34)	11 (12)	8.4	14.7	23 (24)
VSP-HEW25R(A)□-4		4			11.2	18.8	25 (26)
VSP-HEW25R(A)□-6		6			11.9	20.6	27 (28)
VSP-HEW30R(A)□-2	30	1.8	33 (36)	11 (14)	8.4	14.7	24 (25)
VSP-HEW30R(A)□-4		4			11.2	18.8	26 (27)
VSP-HEW30R(A)□-6		6			11.9	20.6	28 (29)
VSP-HEW40R(A)□-2	40	1.8	36 (39.5)	14 (17.5)	8.4	14.7	31 (32)
VSP-HEW40R(A)□-4		4			11.2	18.8	33 (34)
VSP-HEW40R(A)□-6		6			11.9	20.6	35 (36)
VSP-HEW50R(A)□-2	50	1.8	37 (40)	15 (18)	8.4	14.7	41 (42)
VSP-HEW50R(A)□-4		4			11.2	18.8	43 (44)
VSP-HEW50R(A)□-6		6			11.9	20.6	45 (46)

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Low Profile Buffer Type, Vacuum Outlet Both Sides, VSP-HEW, Barb Fitting)

●VSP-HEW6, 8R□-4T/6T
●VSP-HEW10R□-4T/6T
●VSP-HEW15R(A)□-4T/6T
●VSP-HEW20 to 50R(A)□-4T/6T



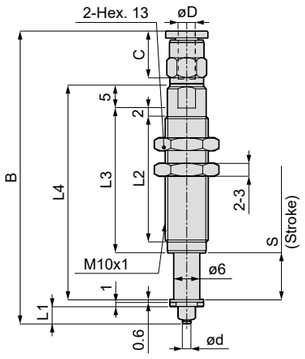
Unit: mm

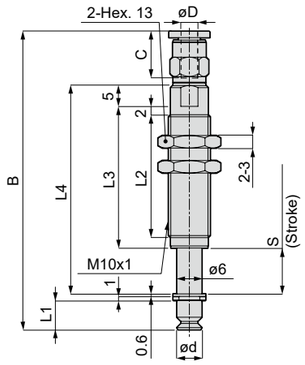
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Weight (g)
VSP-HEW6R□-4T	6	2.5	26.5	7	14
VSP-HEW6R□-6T		4			
VSP-HEW8R□-4T	8	2.5	25	5.5	14
VSP-HEW8R□-6T		4			
VSP-HEW10R□-4T	10	2.5	28.5	8	17
VSP-HEW10R□-6T		4			
VSP-HEW15R(A)□-4T	15	2.5	29.5 (30.5)	9 (10)	17 (18)
VSP-HEW15R(A)□-6T		4			
VSP-HEW20R(A)□-4T	20	2.5	32 (33)	10 (11)	21 (22)
VSP-HEW20R(A)□-6T		4			
VSP-HEW25R(A)□-4T	25	2.5	33 (34)	11 (12)	22 (23)
VSP-HEW25R(A)□-6T		4			
VSP-HEW30R(A)□-4T	30	2.5	33 (36)	11 (14)	24 (25)
VSP-HEW30R(A)□-6T		4			
VSP-HEW40R(A)□-4T	40	2.5	36 (39.5)	14 (17.5)	31 (32)
VSP-HEW40R(A)□-6T		4			
VSP-HEW50R(A)□-4T	50	2.5	37 (40)	15 (18)	40 (41)
VSP-HEW50R(A)□-6T		4			

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC0.7 to 4-□RM□-4
●VSP-LFC6, 8-□R□-4





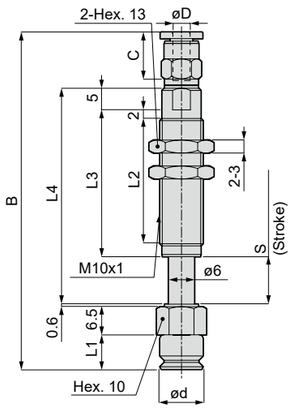
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC0.7-2RM□-4	0.7	4	52.6	4	21.5	26	34	11.2	2	1.3 to 1.8	25
VSP-LFC0.7-5RM□-4			58.6		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	27
VSP-LFC0.7-10RM□-4			68.6		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	29
VSP-LFC0.7-15RM□-4			78.6		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	31
VSP-LFC0.7-20RM□-4			88.6		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	33
VSP-LFC1-2RM□-4	1	4	52.6	4	21.5	26	34	11.2	2	1.3 to 1.8	25
VSP-LFC1-5RM□-4			58.6		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	27
VSP-LFC1-10RM□-4			68.6		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	29
VSP-LFC1-15RM□-4			78.6		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	31
VSP-LFC1-20RM□-4			88.6		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	33
VSP-LFC1.5-2RM□-4	1.5	4	52.6	4	21.5	26	34	11.2	2	1.3 to 1.8	25
VSP-LFC1.5-5RM□-4			58.6		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	27
VSP-LFC1.5-10RM□-4			68.6		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	29
VSP-LFC1.5-15RM□-4			78.6		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	31
VSP-LFC1.5-20RM□-4			88.6		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	33
VSP-LFC2-2RM□-4	2	4	52.6	4	21.5	26	34	11.2	2	1.3 to 1.8	25
VSP-LFC2-5RM□-4			58.6		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	27
VSP-LFC2-10RM□-4			68.6		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	29
VSP-LFC2-15RM□-4			78.6		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	31
VSP-LFC2-20RM□-4			88.6		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	33
VSP-LFC3-2RM□-4	3	4	52.6	4	21.5	26	34	11.2	2	1.3 to 1.8	25
VSP-LFC3-5RM□-4			58.6		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	27
VSP-LFC3-10RM□-4			68.6		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	29
VSP-LFC3-15RM□-4			78.6		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	31
VSP-LFC3-20RM□-4			88.6		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	33
VSP-LFC4-2RM□-4	4	4	52.6	4	21.5	26	34	11.2	2	1.3 to 1.8	25
VSP-LFC4-5RM□-4			58.6		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	27
VSP-LFC4-10RM□-4			68.6		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	29
VSP-LFC4-15RM□-4			78.6		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	31
VSP-LFC4-20RM□-4			88.6		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	33
VSP-LFC6-2R□-4	6	4	55.6	7	21.5	26	34	11.2	2	1.3 to 1.8	25
VSP-LFC6-5R□-4			61.6		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	27
VSP-LFC6-10R□-4			71.6		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	29
VSP-LFC6-15R□-4			81.6		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	31
VSP-LFC6-20R□-4			91.6		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	33
VSP-LFC8-2R□-4	8	4	55.6	5.5	21.5	26	34	11.2	2	1.3 to 1.8	25
VSP-LFC8-5R□-4			61.6		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	27
VSP-LFC8-10R□-4			71.6		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	29
VSP-LFC8-15R□-4			81.6		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	31
VSP-LFC8-20R□-4			91.6		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	33

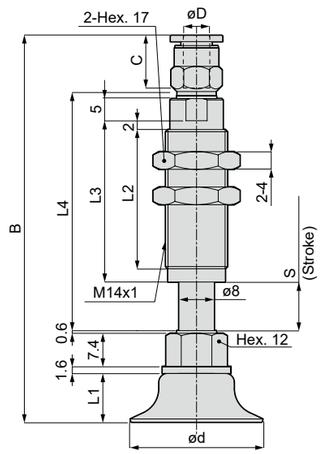
*Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC10-□R□-4
●VSP-LFC15R-□(A)□-4



●VSP-LFC20 to 25-□R(A)□-4/6



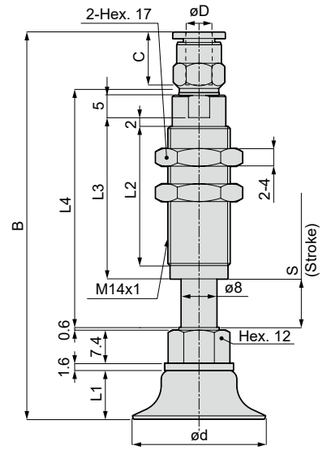
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC10-2R□-4	10	4	62.1	8	21.5	26	34	11.2	2	1.3 to 1.8	28
VSP-LFC10-5R□-4			68.1		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	30
VSP-LFC10-10R□-4			78.1		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	32
VSP-LFC10-15R□-4			88.1		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	34
VSP-LFC10-20R□-4			98.1		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	35
VSP-LFC15-2R(A)□-4	15	4	63.1 (64.1)	9 (10)	21.5	26	34	11.2	2	1.3 to 1.8	28 (29)
VSP-LFC15-5R(A)□-4			69.1 (70.1)		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	30 (31)
VSP-LFC15-10R(A)□-4			79.1 (80.1)		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	32 (33)
VSP-LFC15-15R(A)□-4			89.1 (90.1)		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	34 (35)
VSP-LFC15-20R(A)□-4			99.1 (100.1)		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	35 (36)
VSP-LFC20-5R(A)□-4	20	4	75.1 (76.1)	10 (11)	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	57 (58)
VSP-LFC20-5R(A)□-6		6	76.4 (77.4)					11.9			58 (59)
VSP-LFC20-10R(A)□-4		4	85.1 (86.1)		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	59 (60)
VSP-LFC20-10R(A)□-6		6	86.4 (87.4)					11.9			60 (61)
VSP-LFC20-15R(A)□-4		4	95.1 (96.1)		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	62 (63)
VSP-LFC20-15R(A)□-6		6	96.4 (97.4)					11.9			63 (64)
VSP-LFC20-20R(A)□-4		4	105.1 (106.1)		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	65 (66)
VSP-LFC20-20R(A)□-6		6	106.4 (107.4)					11.9			66 (67)
VSP-LFC25-5R(A)□-4	25	4	76.1 (77.1)	11 (12)	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	58 (59)
VSP-LFC25-5R(A)□-6		6	77.4 (78.4)					11.9			59 (60)
VSP-LFC25-10R(A)□-4		4	86.1 (87.1)		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	60 (61)
VSP-LFC25-10R(A)□-6		6	87.4 (88.4)					11.9			61 (62)
VSP-LFC25-15R(A)□-4		4	96.1 (97.1)		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	63 (64)
VSP-LFC25-15R(A)□-6		6	97.4 (98.4)					11.9			64 (65)
VSP-LFC25-20R(A)□-4		4	106.1 (107.1)		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	66 (67)
VSP-LFC25-20R(A)□-6		6	107.4 (108.4)					11.9			67 (68)

*1: Dimensions in ( ) are for the deep type pad.
*2: Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC30 to 50-□R(A)□-4/6



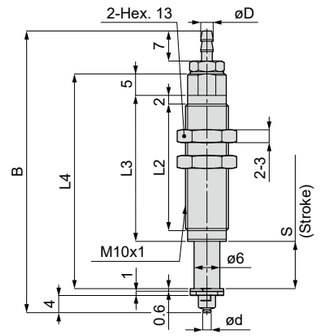
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC30-5R(A)□-4	30	4	76.1 (79.1)	11 (14)	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	60 (61)
VSP-LFC30-5R(A)□-6		6	77.4 (80.4)					11.9			61 (62)
VSP-LFC30-10R(A)□-4		4	86.1 (89.1)		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	62 (63)
VSP-LFC30-10R(A)□-6		6	87.4 (90.4)					11.9			63 (64)
VSP-LFC30-15R(A)□-4		4	96.1 (99.1)		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	65 (66)
VSP-LFC30-15R(A)□-6		6	97.4 (100.4)					11.9			66 (67)
VSP-LFC30-20R(A)□-4		4	106.1 (109.1)		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	68 (69)
VSP-LFC30-20R(A)□-6		6	107.4 (110.4)					11.9			69 (70)
VSP-LFC40-5R(A)□-4	40	4	79.1 (82.6)	14 (17.5)	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	71 (72)
VSP-LFC40-5R(A)□-6		6	80.4 (83.9)					11.9			72 (73)
VSP-LFC40-10R(A)□-4		4	89.1 (92.6)		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	73 (74)
VSP-LFC40-10R(A)□-6		6	90.4 (93.9)					11.9			74 (75)
VSP-LFC40-15R(A)□-4		4	99.1 (102.6)		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	76 (77)
VSP-LFC40-15R(A)□-6		6	100.4 (103.9)					11.9			77 (78)
VSP-LFC40-20R(A)□-4		4	109.1 (112.6)		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	79 (80)
VSP-LFC40-20R(A)□-6		6	110.4 (113.9)					11.9			80 (81)
VSP-LFC50-5R(A)□-4	50	4	80.1 (83.1)	15 (18)	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	77 (78)
VSP-LFC50-5R(A)□-6		6	81.4 (84.4)					11.9			78 (79)
VSP-LFC50-10R(A)□-4		4	90.1 (93.1)		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	79 (80)
VSP-LFC50-10R(A)□-6		6	91.4 (94.4)					11.9			80 (81)
VSP-LFC50-15R(A)□-4		4	100.1 (103.1)		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	82 (83)
VSP-LFC50-15R(A)□-6		6	101.4 (104.4)					11.9			83 (84)
VSP-LFC50-20R(A)□-4		4	110.1 (113.1)		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	85 (86)
VSP-LFC50-20R(A)□-6		6	111.4 (114.4)					11.9			86 (87)

*1: Dimensions in ( ) are for the deep type pad.
*2: Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC0.7 to 4-□RM□-4T/6T



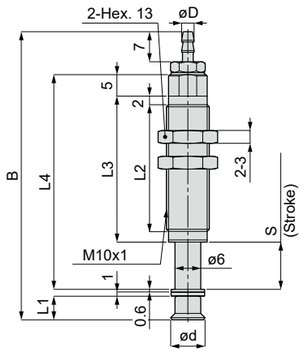
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC0.7-2RM□-4T	0.7	2.5	49.7	4	21.5	26	34	2	1.3 to 1.8	23
VSP-LFC0.7-2RM□-6T		4								
VSP-LFC0.7-5RM□-4T		2.5	55.7		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	25
VSP-LFC0.7-5RM□-6T		4								
VSP-LFC0.7-10RM□-4T		2.5	65.7		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	27
VSP-LFC0.7-10RM□-6T		4								
VSP-LFC0.7-15RM□-4T		2.5	75.7		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	29
VSP-LFC0.7-15RM□-6T		4								
VSP-LFC0.7-20RM□-4T		2.5	85.7		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	31
VSP-LFC0.7-20RM□-6T		4								
VSP-LFC1-2RM□-4T	1	2.5	49.7	4	21.5	26	34	2	1.3 to 1.8	23
VSP-LFC1-2RM□-6T		4								
VSP-LFC1-5RM□-4T		2.5	55.7		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	25
VSP-LFC1-5RM□-6T		4								
VSP-LFC1-10RM□-4T		2.5	65.7		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	27
VSP-LFC1-10RM□-6T		4								
VSP-LFC1-15RM□-4T		2.5	75.7		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	29
VSP-LFC1-15RM□-6T		4								
VSP-LFC1-20RM□-4T		2.5	85.7		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	31
VSP-LFC1-20RM□-6T		4								
VSP-LFC1.5-2RM□-4T	1.5	2.5	49.7	4	21.5	26	34	2	1.3 to 1.8	23
VSP-LFC1.5-2RM□-6T		4								
VSP-LFC1.5-5RM□-4T		2.5	55.7		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	25
VSP-LFC1.5-5RM□-6T		4								
VSP-LFC1.5-10RM□-4T		2.5	65.7		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	27
VSP-LFC1.5-10RM□-6T		4								
VSP-LFC1.5-15RM□-4T		2.5	75.7		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	29
VSP-LFC1.5-15RM□-6T		4								
VSP-LFC1.5-20RM□-4T		2.5	85.7		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	31
VSP-LFC1.5-20RM□-6T		4								
VSP-LFC2-2RM□-4T	2	2.5	49.7	4	21.5	26	34	2	1.3 to 1.8	23
VSP-LFC2-2RM□-6T		4								
VSP-LFC2-5RM□-4T		2.5	55.7		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	25
VSP-LFC2-5RM□-6T		4								
VSP-LFC2-10RM□-4T		2.5	65.7		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	27
VSP-LFC2-10RM□-6T		4								
VSP-LFC2-15RM□-4T		2.5	75.7		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	29
VSP-LFC2-15RM□-6T		4								
VSP-LFC2-20RM□-4T		2.5	85.7		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	31
VSP-LFC2-20RM□-6T		4								
VSP-LFC3-2RM□-4T	3	2.5	49.7	4	21.5	26	34	2	1.3 to 1.8	23
VSP-LFC3-2RM□-6T		4								
VSP-LFC3-5RM□-4T		2.5	55.7		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	25
VSP-LFC3-5RM□-6T		4								
VSP-LFC3-10RM□-4T		2.5	65.7		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	27
VSP-LFC3-10RM□-6T		4								
VSP-LFC3-15RM□-4T		2.5	75.7		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	29
VSP-LFC3-15RM□-6T		4								
VSP-LFC3-20RM□-4T		2.5	85.7		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	31
VSP-LFC3-20RM□-6T		4								
VSP-LFC4-2RM□-4T	4	2.5	49.7	4	21.5	26	34	2	1.3 to 1.8	23
VSP-LFC4-2RM□-6T		4								
VSP-LFC4-5RM□-4T		2.5	55.7		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	25
VSP-LFC4-5RM□-6T		4								
VSP-LFC4-10RM□-4T		2.5	65.7		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	27
VSP-LFC4-10RM□-6T		4								
VSP-LFC4-15RM□-4T		2.5	75.7		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	29
VSP-LFC4-15RM□-6T		4								
VSP-LFC4-20RM□-4T		2.5	85.7		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	31
VSP-LFC4-20RM□-6T		4								

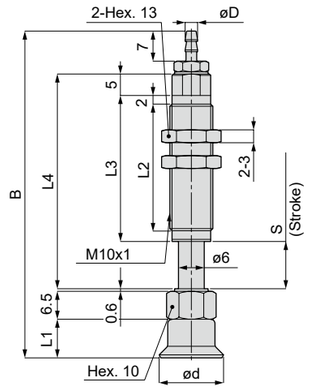
*Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC6, 8-□R□-4T/6T



●VSP-LFC10-□R□-4T/6T
●VSP-LFC15R-□(A)□-4T/6T



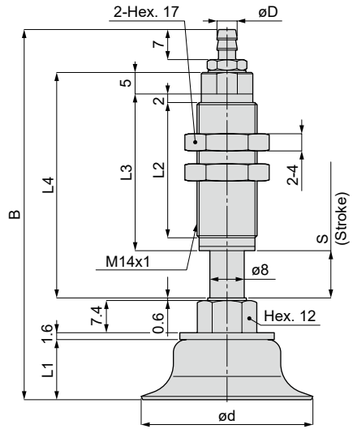
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC6-2R□-4T	6	2.5	52.7	7	21.5	26	34	2	1.3 to 1.8	24
VSP-LFC6-2R□-6T		4								
VSP-LFC6-5R□-4T		2.5	58.7		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	26
VSP-LFC6-5R□-6T		4								
VSP-LFC6-10R□-4T		2.5	68.7		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	28
VSP-LFC6-10R□-6T		4								
VSP-LFC6-15R□-4T		2.5	78.7		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	30
VSP-LFC6-15R□-6T		4								
VSP-LFC6-20R□-4T		2.5	88.7		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	31
VSP-LFC6-20R□-6T		4								
VSP-LFC8-2R□-4T	8	2.5	51.2	5.5	21.5	26	34	2	1.3 to 1.8	24
VSP-LFC8-2R□-6T		4								
VSP-LFC8-5R□-4T		2.5	57.2		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	26
VSP-LFC8-5R□-6T		4								
VSP-LFC8-10R□-4T		2.5	67.2		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	28
VSP-LFC8-10R□-6T		4								
VSP-LFC8-15R□-4T		2.5	77.2		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	30
VSP-LFC8-15R□-6T		4								
VSP-LFC8-20R□-4T		2.5	87.2		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	31
VSP-LFC8-20R□-6T		4								
VSP-LFC10-2R□-4T	10	2.5	59.2	8	21.5	26	34	2	1.3 to 1.8	26
VSP-LFC10-2R□-6T		4								
VSP-LFC10-5R□-4T		2.5	65.2		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	28
VSP-LFC10-5R□-6T		4								
VSP-LFC10-10R□-4T		2.5	75.2		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	30
VSP-LFC10-10R□-6T		4								
VSP-LFC10-15R□-4T		2.5	85.2		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	32
VSP-LFC10-15R□-6T		4								
VSP-LFC10-20R□-4T		2.5	95.2		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	34
VSP-LFC10-20R□-6T		4								
VSP-LFC15-2R(A)□-4T	15	2.5	60.2 (61.2)	9 (10)	21.5	26	34	2	1.3 to 1.8	26 (27)
VSP-LFC15-2R(A)□-6T		4								
VSP-LFC15-5R(A)□-4T		2.5	66.2 (67.2)		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	28 (29)
VSP-LFC15-5R(A)□-6T		4								
VSP-LFC15-10R(A)□-4T		2.5	76.2 (77.2)		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	30 (31)
VSP-LFC15-10R(A)□-6T		4								
VSP-LFC15-15R(A)□-4T		2.5	86.2 (87.2)		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	32 (33)
VSP-LFC15-15R(A)□-6T		4								
VSP-LFC15-20R(A)□-4T		2.5	96.2 (97.2)		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	34 (35)
VSP-LFC15-20R(A)□-6T		4								

*1: Dimensions in ( ) are for the deep type pad.
*2: Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC20 to 50-□R(A)□-4T/6T



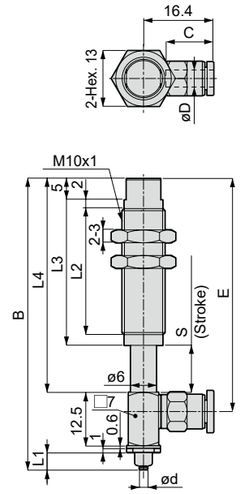
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC20-5R(A)□-4T	20	2.5	72.2 (73.2)	10 (11)	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	52 (53)
VSP-LFC20-5R(A)□-6T		4								
VSP-LFC20-10R(A)□-4T		2.5	82.2 (83.2)		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	54 (55)
VSP-LFC20-10R(A)□-6T		4								
VSP-LFC20-15R(A)□-4T		2.5	92.2 (93.2)		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	57 (58)
VSP-LFC20-15R(A)□-6T		4								
VSP-LFC20-20R(A)□-4T		2.5	102.2 (103.2)		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	60 (61)
VSP-LFC20-20R(A)□-6T		4								
VSP-LFC25-5R(A)□-4T	25	2.5	73.2 (74.2)	11 (12)	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	53 (54)
VSP-LFC25-5R(A)□-6T		4								
VSP-LFC25-10R(A)□-4T		2.5	83.2 (84.2)		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	55 (56)
VSP-LFC25-10R(A)□-6T		4								
VSP-LFC25-15R(A)□-4T		2.5	93.2 (94.2)		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	58 (59)
VSP-LFC25-15R(A)□-6T		4								
VSP-LFC25-20R(A)□-4T		2.5	103.2 (104.2)		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	61 (62)
VSP-LFC25-20R(A)□-6T		4								
VSP-LFC30-5R(A)□-4T	30	2.5	73.2 (76.2)	11 (14)	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	54 (55)
VSP-LFC30-5R(A)□-6T		4								
VSP-LFC30-10R(A)□-4T		2.5	83.2 (86.2)		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	56 (57)
VSP-LFC30-10R(A)□-6T		4								
VSP-LFC30-15R(A)□-4T		2.5	93.2 (96.2)		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	59 (60)
VSP-LFC30-15R(A)□-6T		4								
VSP-LFC30-20R(A)□-4T		2.5	103.2 (106.2)		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	62 (63)
VSP-LFC30-20R(A)□-6T		4								
VSP-LFC40-5R(A)□-4T	40	2.5	76.2 (79.7)	14 (17.5)	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	65 (66)
VSP-LFC40-5R(A)□-6T		4								
VSP-LFC40-10R(A)□-4T		2.5	86.2 (89.7)		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	67 (68)
VSP-LFC40-10R(A)□-6T		4								
VSP-LFC40-15R(A)□-4T		2.5	96.2 (99.7)		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	70 (71)
VSP-LFC40-15R(A)□-6T		4								
VSP-LFC40-20R(A)□-4T		2.5	106.2 (109.7)		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	73 (74)
VSP-LFC40-20R(A)□-6T		4								
VSP-LFC50-5R(A)□-4T	50	2.5	77.2 (80.2)	15 (18)	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	71 (72)
VSP-LFC50-5R(A)□-6T		4								
VSP-LFC50-10R(A)□-4T		2.5	87.2 (90.2)		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	73 (74)
VSP-LFC50-10R(A)□-6T		4								
VSP-LFC50-15R(A)□-4T		2.5	97.2 (100.2)		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	76 (77)
VSP-LFC50-15R(A)□-6T		4								
VSP-LFC50-20R(A)□-4T		2.5	107.2 (110.2)		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	79 (80)
VSP-LFC50-20R(A)□-6T		4								

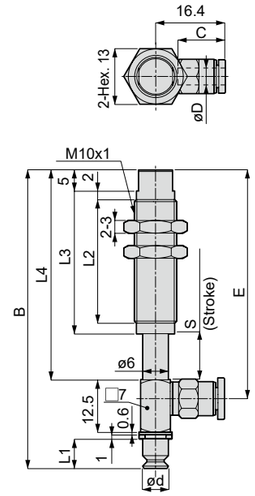
*1: Dimensions in ( ) are for the deep type pad.
*2: Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Push-in fitting)

●VSP-LFD0.7 to 4-□RM□-4



●VSP-LFD6, 8-□R□-4

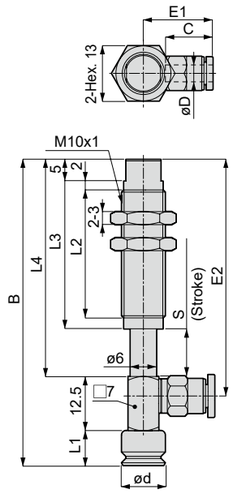


Unit: mm

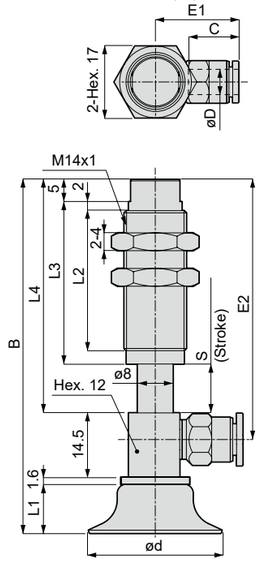
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD0.7-5RM□-4	0.7	4	58.1	4	24.5	29	40	11.2	44.5	5	1.3 to 2.4	31
VSP-LFD0.7-10RM□-4			68.1		29.5	34	50		54.5	10	1.3 to 3.3	33
VSP-LFD0.7-15RM□-4			78.1		34.5	39	60		64.5	15	1.3 to 4.2	35
VSP-LFD0.7-20RM□-4			88.1		39.5	44	70		74.5	20	1.3 to 5.1	37
VSP-LFD1-5RM□-4	1	4	58.1	4	24.5	29	40	11.2	44.5	5	1.3 to 2.4	31
VSP-LFD1-10RM□-4			68.1		29.5	34	50		54.5	10	1.3 to 3.3	33
VSP-LFD1-15RM□-4			78.1		34.5	39	60		64.5	15	1.3 to 4.2	35
VSP-LFD1-20RM□-4			88.1		39.5	44	70		74.5	20	1.3 to 5.1	37
VSP-LFD1.5-5RM□-4	1.5	4	58.1	4	24.5	29	40	11.2	44.5	5	1.3 to 2.4	31
VSP-LFD1.5-10RM□-4			68.1		29.5	34	50		54.5	10	1.3 to 3.3	33
VSP-LFD1.5-15RM□-4			78.1		34.5	39	60		64.5	15	1.3 to 4.2	35
VSP-LFD1.5-20RM□-4			88.1		39.5	44	70		74.5	20	1.3 to 5.1	37
VSP-LFD2-5RM□-4	2	4	58.1	4	24.5	29	40	11.2	44.5	5	1.3 to 2.4	31
VSP-LFD2-10RM□-4			68.1		29.5	34	50		54.5	10	1.3 to 3.3	33
VSP-LFD2-15RM□-4			78.1		34.5	39	60		64.5	15	1.3 to 4.2	35
VSP-LFD2-20RM□-4			88.1		39.5	44	70		74.5	20	1.3 to 5.1	37
VSP-LFD3-5RM□-4	3	4	58.1	4	24.5	29	40	11.2	44.5	5	1.3 to 2.4	31
VSP-LFD3-10RM□-4			68.1		29.5	34	50		54.5	10	1.3 to 3.3	33
VSP-LFD3-15RM□-4			78.1		34.5	39	60		64.5	15	1.3 to 4.2	35
VSP-LFD3-20RM□-4			88.1		39.5	44	70		74.5	20	1.3 to 5.1	37
VSP-LFD4-5RM□-4	4	4	58.1	4	24.5	29	40	11.2	44.5	5	1.3 to 2.4	31
VSP-LFD4-10RM□-4			68.1		29.5	34	50		54.5	10	1.3 to 3.3	33
VSP-LFD4-15RM□-4			78.1		34.5	39	60		64.5	15	1.3 to 4.2	35
VSP-LFD4-20RM□-4			88.1		39.5	44	70		74.5	20	1.3 to 5.1	37
VSP-LFD6-5R□-4	6	4	61.1	7	24.5	29	40	11.2	44.5	5	1.3 to 2.4	31
VSP-LFD6-10R□-4			71.1		29.5	34	50		54.5	10	1.3 to 3.3	33
VSP-LFD6-15R□-4			81.1		34.5	39	60		64.5	15	1.3 to 4.2	35
VSP-LFD6-20R□-4			91.1		39.5	44	70		74.5	20	1.3 to 5.1	37
VSP-LFD8-5R□-4	8	4	59.6	5.5	24.5	29	40	11.2	44.5	5	1.3 to 2.4	31
VSP-LFD8-10R□-4			69.6		29.5	34	50		54.5	10	1.3 to 3.3	33
VSP-LFD8-15R□-4			79.6		34.5	39	60		64.5	15	1.3 to 4.2	35
VSP-LFD8-20R□-4			89.6		39.5	44	70		74.5	20	1.3 to 5.1	37

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Push-in fitting)

●VSP-LFD10-□R□-4
●VSP-LFD15-□R(A)□-4



●VSP-LFD20 to 50-□R(A)□-4/6



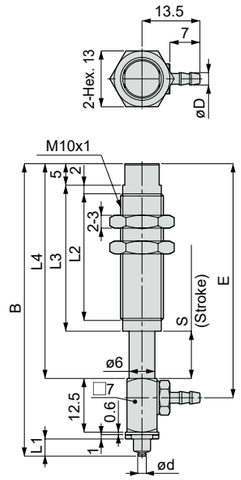
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD10-5R□-4	10	4	60.5	8	24.5	29	40	11.2	16.4	44.5	5	1.3 to 2.4	26
VSP-LFD10-10R□-4			70.5		29.5	34	50			54.5	10	1.3 to 3.3	28
VSP-LFD10-15R□-4			80.5		34.5	39	60			64.5	15	1.3 to 4.2	30
VSP-LFD10-20R□-4			90.5		39.5	44	70			74.5	20	1.3 to 5.1	32
VSP-LFD15-5R(A)□-4	15	4	61.5 (62.5)	9 (10)	24.5	29	40	11.2	16.4	44.5	5	1.3 to 2.4	26 (27)
VSP-LFD15-10R(A)□-4			71.5 (72.5)		29.5	34	50			54.5	10	1.3 to 3.3	28 (29)
VSP-LFD15-15R(A)□-4			81.5 (82.5)		34.5	39	60			64.5	15	1.3 to 4.2	30 (31)
VSP-LFD15-20R(A)□-4			91.5 (92.5)		39.5	44	70			74.5	20	1.3 to 5.1	32 (33)
VSP-LFD20-5R(A)□-4	20	4	68.5	10 (11)	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	58 (59)
VSP-LFD20-5R(A)□-6		6	(69.5)					11.9	19.7				59 (60)
VSP-LFD20-10R(A)□-4		4	78.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	62 (63)
VSP-LFD20-10R(A)□-6		6	(79.5)					11.9	19.7				63 (64)
VSP-LFD20-15R(A)□-4		4	88.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	66 (67)
VSP-LFD20-15R(A)□-6		6	(89.5)					11.9	19.7				67 (68)
VSP-LFD20-20R(A)□-4		4	98.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	70 (71)
VSP-LFD20-20R(A)□-6		6	(99.5)					11.9	19.7				71 (72)
VSP-LFD25-5R(A)□-4	25	4	69.5	11 (12)	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	59 (60)
VSP-LFD25-5R(A)□-6		6	(70.5)					11.9	19.7				60 (61)
VSP-LFD25-10R(A)□-4		4	79.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	63 (64)
VSP-LFD25-10R(A)□-6		6	(80.5)					11.9	19.7				64 (65)
VSP-LFD25-15R(A)□-4		4	89.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	67 (68)
VSP-LFD25-15R(A)□-6		6	(90.5)					11.9	19.7				68 (69)
VSP-LFD25-20R(A)□-4		4	99.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	71 (72)
VSP-LFD25-20R(A)□-6		6	(100.5)					11.9	19.7				72 (73)
VSP-LFD30-5R(A)□-4	30	4	69.5	11 (14)	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	60 (61)
VSP-LFD30-5R(A)□-6		6	(72.5)					11.9	19.7				61 (62)
VSP-LFD30-10R(A)□-4		4	79.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	64 (65)
VSP-LFD30-10R(A)□-6		6	(82.5)					11.9	19.7				65 (66)
VSP-LFD30-15R(A)□-4		4	89.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	68 (69)
VSP-LFD30-15R(A)□-6		6	(92.5)					11.9	19.7				69 (70)
VSP-LFD30-20R(A)□-4		4	99.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	72 (73)
VSP-LFD30-20R(A)□-6		6	(102.5)					11.9	19.7				73 (74)
VSP-LFD40-5R(A)□-4	40	4	72.5 (76)	14 (17.5)	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	71 (72)
VSP-LFD40-5R(A)□-6		6						11.9	19.7				72 (73)
VSP-LFD40-10R(A)□-4		4	82.5 (86)		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	75 (76)
VSP-LFD40-10R(A)□-6		6						11.9	19.7				76 (77)
VSP-LFD40-15R(A)□-4		4	92.5 (96)		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	79 (80)
VSP-LFD40-15R(A)□-6		6						11.9	19.7				80 (81)
VSP-LFD40-20R(A)□-4		4	102.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	83 (84)
VSP-LFD40-20R(A)□-6		6	(106)					11.9	19.7				84 (85)
VSP-LFD50-5R(A)□-4	50	4	73.5	15 (18)	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	76 (77)
VSP-LFD50-5R(A)□-6		6	(76.5)					11.9	19.7				77 (78)
VSP-LFD50-10R(A)□-4		4	83.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	81 (82)
VSP-LFD50-10R(A)□-6		6	(86.5)					11.9	19.7				82 (83)
VSP-LFD50-15R(A)□-4		4	93.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	85 (86)
VSP-LFD50-15R(A)□-6		6	(96.5)					11.9	19.7				86 (87)
VSP-LFD50-20R(A)□-4		4	103.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	89 (90)
VSP-LFD50-20R(A)□-6		6	(106.5)					11.9	19.7				90 (91)

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Barb Fitting)

●VSP-LFD0.7 to 4-□RM□-4T/6T

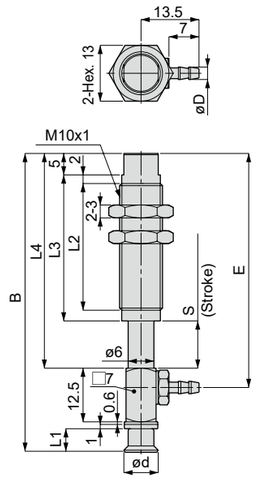


Unit: mm

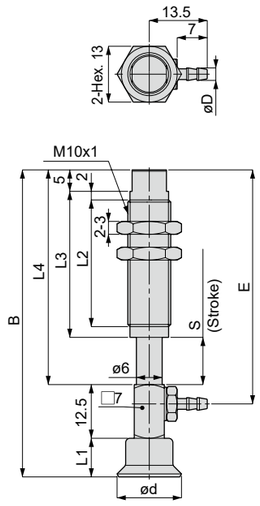
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD0.7-5RM□-4T	0.7	2.5	58.1	4	24.5	29	40	44.5	5	1.3 to 2.4	30
VSP-LFD0.7-5RM□-6T		4									
VSP-LFD0.7-10RM□-4T		2.5	68.1		29.5	34	50	54.5	10	1.3 to 3.3	32
VSP-LFD0.7-10RM□-6T		4									
VSP-LFD0.7-15RM□-4T		2.5	78.1		34.5	39	60	64.5	15	1.3 to 4.2	34
VSP-LFD0.7-15RM□-6T		4									
VSP-LFD0.7-20RM□-4T		2.5	88.1		39.5	44	70	74.5	20	1.3 to 5.1	36
VSP-LFD0.7-20RM□-6T		4									
VSP-LFD1-5RM□-4T	1	2.5	58.1	4	24.5	29	40	44.5	5	1.3 to 2.4	30
VSP-LFD1-5RM□-6T		4									
VSP-LFD1-10RM□-4T		2.5	68.1		29.5	34	50	54.5	10	1.3 to 3.3	32
VSP-LFD1-10RM□-6T		4									
VSP-LFD1-15RM□-4T		2.5	78.1		34.5	39	60	64.5	15	1.3 to 4.2	34
VSP-LFD1-15RM□-6T		4									
VSP-LFD1-20RM□-4T		2.5	88.1		39.5	44	70	74.5	20	1.3 to 5.1	36
VSP-LFD1-20RM□-6T		4									
VSP-LFD1.5-5RM□-4T	1.5	2.5	58.1	4	24.5	29	40	44.5	5	1.3 to 2.4	30
VSP-LFD1.5-5RM□-6T		4									
VSP-LFD1.5-10RM□-4T		2.5	68.1		29.5	34	50	54.5	10	1.3 to 3.3	32
VSP-LFD1.5-10RM□-6T		4									
VSP-LFD1.5-15RM□-4T		2.5	78.1		34.5	39	60	64.5	15	1.3 to 4.2	34
VSP-LFD1.5-15RM□-6T		4									
VSP-LFD1.5-20RM□-4T		2.5	88.1		39.5	44	70	74.5	20	1.3 to 5.1	36
VSP-LFD1.5-20RM□-6T		4									
VSP-LFD2-5RM□-4T	2	2.5	58.1	4	24.5	29	40	44.5	5	1.3 to 2.4	30
VSP-LFD2-5RM□-6T		4									
VSP-LFD2-10RM□-4T		2.5	68.1		29.5	34	50	54.5	10	1.3 to 3.3	32
VSP-LFD2-10RM□-6T		4									
VSP-LFD2-15RM□-4T		2.5	78.1		34.5	39	60	64.5	15	1.3 to 4.2	34
VSP-LFD2-15RM□-6T		4									
VSP-LFD2-20RM□-4T		2.5	88.1		39.5	44	70	74.5	20	1.3 to 5.1	36
VSP-LFD2-20RM□-6T		4									
VSP-LFD3-5RM□-4T	3	2.5	58.1	4	24.5	29	40	44.5	5	1.3 to 2.4	30
VSP-LFD3-5RM□-6T		4									
VSP-LFD3-10RM□-4T		2.5	68.1		29.5	34	50	54.5	10	1.3 to 3.3	32
VSP-LFD3-10RM□-6T		4									
VSP-LFD3-15RM□-4T		2.5	78.1		34.5	39	60	64.5	15	1.3 to 4.2	34
VSP-LFD3-15RM□-6T		4									
VSP-LFD3-20RM□-4T		2.5	88.1		39.5	44	70	74.5	20	1.3 to 5.1	36
VSP-LFD3-20RM□-6T		4									
VSP-LFD4-5RM□-4T	4	2.5	58.1	4	24.5	29	40	44.5	5	1.3 to 2.4	30
VSP-LFD4-5RM□-6T		4									
VSP-LFD4-10RM□-4T		2.5	68.1		29.5	34	50	54.5	10	1.3 to 3.3	32
VSP-LFD4-10RM□-6T		4									
VSP-LFD4-15RM□-4T		2.5	78.1		34.5	39	60	64.5	15	1.3 to 4.2	34
VSP-LFD4-15RM□-6T		4									
VSP-LFD4-20RM□-4T		2.5	88.1		39.5	44	70	74.5	20	1.3 to 5.1	36
VSP-LFD4-20RM□-6T		4									

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Barb Fitting)

●VSP-LFD6, 8-□R□-4T/6T



●VSP-LFD10-□R□-4T/6T
●VSP-LFD15-□R(A)□-4T/6T



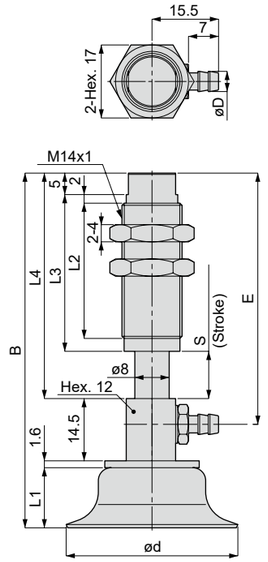
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD6-5R□-4T	6	2.5	61.1	7	24.5	29	40	44.5	5	1.3 to 2.4	30
VSP-LFD6-5R□-6T		4									
VSP-LFD6-10R□-4T		2.5	71.1		29.5	34	50	54.5	10	1.3 to 3.3	32
VSP-LFD6-10R□-6T		4									
VSP-LFD6-15R□-4T		2.5	81.1		34.5	39	60	64.5	15	1.3 to 4.2	34
VSP-LFD6-15R□-6T		4									
VSP-LFD6-20R□-4T		2.5	91.1		39.5	44	70	74.5	20	1.3 to 5.1	36
VSP-LFD6-20R□-6T		4									
VSP-LFD8-5R□-4T	8	2.5	59.6	5.5	24.5	29	40	44.5	5	1.3 to 2.4	30
VSP-LFD8-5R□-6T		4									
VSP-LFD8-10R□-4T		2.5	69.6		29.5	34	50	54.5	10	1.3 to 3.3	32
VSP-LFD8-10R□-6T		4									
VSP-LFD8-15R□-4T		2.5	79.6		34.5	39	60	64.5	15	1.3 to 4.2	34
VSP-LFD8-15R□-6T		4									
VSP-LFD8-20R□-4T		2.5	89.6		39.5	44	70	74.5	20	1.3 to 5.1	36
VSP-LFD8-20R□-6T		4									
VSP-LFD10-5R□-4T	10	2.5	60.5	8	24.5	29	40	44.5	5	1.3 to 2.4	25
VSP-LFD10-5R□-6T		4									
VSP-LFD10-10R□-4T		2.5	70.5		29.5	34	50	54.5	10	1.3 to 3.3	27
VSP-LFD10-10R□-6T		4									
VSP-LFD10-15R□-4T		2.5	80.5		34.5	39	60	64.5	15	1.3 to 4.2	29
VSP-LFD10-15R□-6T		4									
VSP-LFD10-20R□-4T		2.5	90.5		39.5	44	70	74.5	20	1.3 to 5.1	31
VSP-LFD10-20R□-6T		4									
VSP-LFD15-5R(A)□-4T	15	2.5	61.5 (62.5)	9 (10)	24.5	29	40	44.5	5	1.3 to 2.4	25 (26)
VSP-LFD15-5R(A)□-6T		4									
VSP-LFD15-10R(A)□-4T		2.5	71.5 (72.5)		29.5	34	50	54.5	10	1.3 to 3.3	27 (28)
VSP-LFD15-10R(A)□-6T		4									
VSP-LFD15-15R(A)□-4T		2.5	81.5 (82.5)		34.5	39	60	64.5	15	1.3 to 4.2	29 (30)
VSP-LFD15-15R(A)□-6T		4									
VSP-LFD15-20R(A)□-4T		2.5	91.5 (92.5)		39.5	44	70	74.5	20	1.3 to 5.1	31 (32)
VSP-LFD15-20R(A)□-6T		4									

*Dimensions in ( ) are for Deep type pads.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Barb Fitting)

●VSP-LFD20 to 50-□R(A)□-4T/6T



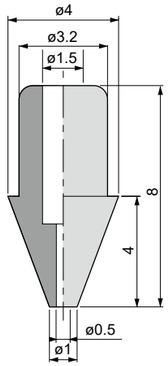
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD20-5R(A)□-4T	20	2.5	68.5 (69.5)	10 (11)	26.5	31.5	42.5	48.5	5	4.5 to 6.5	54 (55)
VSP-LFD20-5R(A)□-6T		4									
VSP-LFD20-10R(A)□-4T		2.5	78.5 (79.5)		31.5	36.5	52.5	58.5	10	4.5 to 8.2	57 (58)
VSP-LFD20-10R(A)□-6T		4									
VSP-LFD20-15R(A)□-4T		2.5	88.5 (89.5)		36.5	41.5	62.5	68.5	15	4.5 to 9.9	61 (62)
VSP-LFD20-15R(A)□-6T		4									
VSP-LFD20-20R(A)□-4T		2.5	98.5 (99.5)		41.5	46.5	72.5	78.5	20	4.5 to 14.9	65 (66)
VSP-LFD20-20R(A)□-6T		4									
VSP-LFD25-5R(A)□-4T	25	2.5	69.5 (70.5)	11 (12)	26.5	31.5	42.5	48.5	5	4.5 to 6.5	55 (56)
VSP-LFD25-5R(A)□-6T		4									
VSP-LFD25-10R(A)□-4T		2.5	79.5 (80.5)		31.5	36.5	52.5	58.5	10	4.5 to 8.2	58 (59)
VSP-LFD25-10R(A)□-6T		4									
VSP-LFD25-15R(A)□-4T		2.5	89.5 (90.5)		36.5	41.5	62.5	68.5	15	4.5 to 9.9	62 (63)
VSP-LFD25-15R(A)□-6T		4									
VSP-LFD25-20R(A)□-4T		2.5	99.5 (100.5)		41.5	46.5	72.5	78.5	20	4.5 to 14.9	66 (67)
VSP-LFD25-20R(A)□-6T		4									
VSP-LFD30-5R(A)□-4T	30	2.5	69.5 (72.5)	11 (14)	26.5	31.5	42.5	48.5	5	4.5 to 6.5	56 (57)
VSP-LFD30-5R(A)□-6T		4									
VSP-LFD30-10R(A)□-4T		2.5	79.5 (82.5)		31.5	36.5	52.5	58.5	10	4.5 to 8.2	59 (60)
VSP-LFD30-10R(A)□-6T		4									
VSP-LFD30-15R(A)□-4T		2.5	89.5 (92.5)		36.5	41.5	62.5	68.5	15	4.5 to 9.9	63 (64)
VSP-LFD30-15R(A)□-6T		4									
VSP-LFD30-20R(A)□-4T		2.5	99.5 (102.5)		41.5	46.5	72.5	78.5	20	4.5 to 14.9	67 (68)
VSP-LFD30-20R(A)□-6T		4									
VSP-LFD40-5R(A)□-4T	40	2.5	72.5 (76)	14 (17.5)	26.5	31.5	42.5	48.5	5	4.5 to 6.5	67 (68)
VSP-LFD40-5R(A)□-6T		4									
VSP-LFD40-10R(A)□-4T		2.5	82.5 (86)		31.5	36.5	52.5	58.5	10	4.5 to 8.2	70 (71)
VSP-LFD40-10R(A)□-6T		4									
VSP-LFD40-15R(A)□-4T		2.5	92.5 (96)		36.5	41.5	62.5	68.5	15	4.5 to 9.9	74 (75)
VSP-LFD40-15R(A)□-6T		4									
VSP-LFD40-20R(A)□-4T		2.5	102.5 (106)		41.5	46.5	72.5	78.5	20	4.5 to 14.9	78 (79)
VSP-LFD40-20R(A)□-6T		4									
VSP-LFD50-5R(A)□-4T	50	2.5	73.5 (76.5)	15 (18)	26.5	31.5	42.5	48.5	5	4.5 to 6.5	73 (74)
VSP-LFD50-5R(A)□-6T		4									
VSP-LFD50-10R(A)□-4T		2.5	83.5 (86.5)		31.5	36.5	52.5	58.5	10	4.5 to 8.2	76 (77)
VSP-LFD50-10R(A)□-6T		4									
VSP-LFD50-15R(A)□-4T		2.5	93.5 (96.5)		36.5	41.5	62.5	68.5	15	4.5 to 9.9	80 (81)
VSP-LFD50-15R(A)□-6T		4									
VSP-LFD50-20R(A)□-4T		2.5	103.5 (106.5)		41.5	46.5	72.5	78.5	20	4.5 to 14.9	84 (85)
VSP-LFD50-20R(A)□-6T		4									

*Dimensions in ( ) are for Deep type pads.

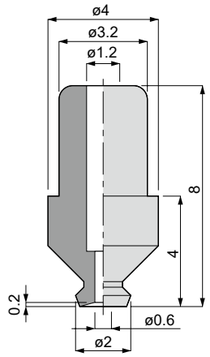
Pad Rubber Only Outline Dimension Drawing (General-type)

●VSPG-1R□



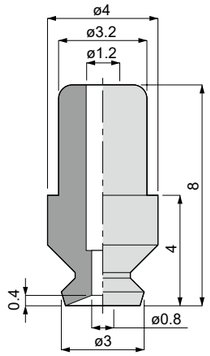
Weight: 0.1 g [0.2 g]

●VSPG-2R□



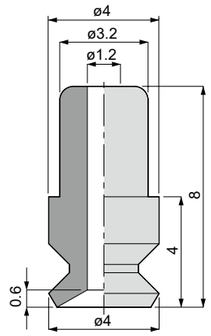
Weight: 0.1 g [0.2 g]

●VSPG-3R□



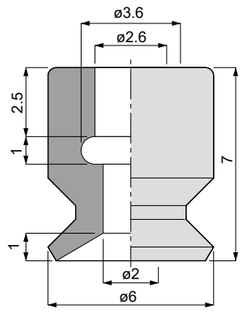
Weight: 0.1 g [0.2 g]

●VSPG-4R□



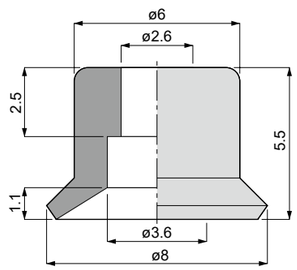
Weight: 0.1 g [0.2 g]

●VSPG-6R□



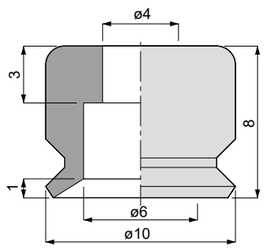
Weight: 0.2 g [0.3 g]

●VSPG-8R□



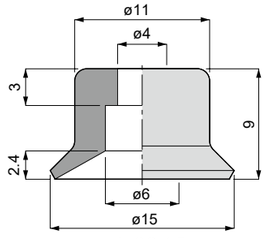
Weight: 0.2 g [0.3 g]

●VSPG-10R□



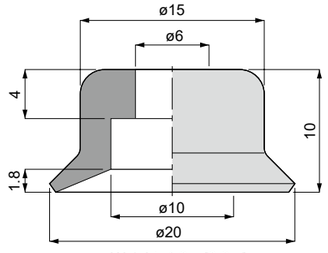
Weight: 0.5 g [0.9 g]

●VSPG-15R□



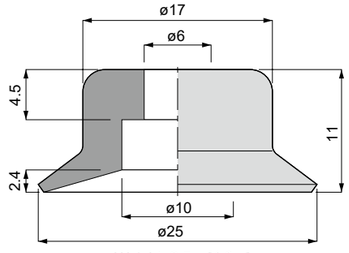
Weight: 0.9 [1.5 g]

●VSPG-20R□



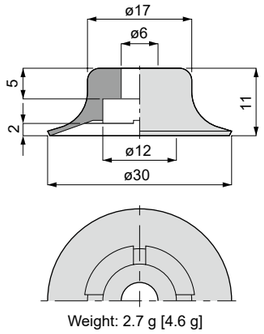
Weight: 1.6 g [2.8 g]

●VSPG-25R□



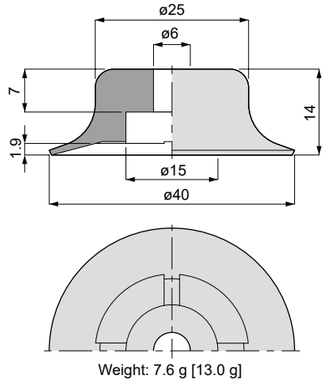
Weight: 2.5 g [4.3 g]

●VSPG-30R□



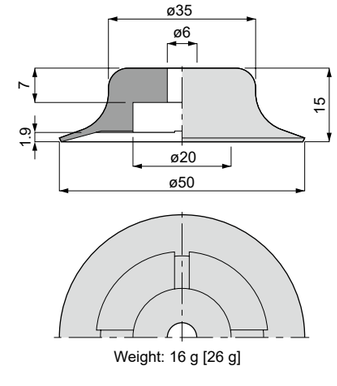
Weight: 2.7 g [4.6 g]

●VSPG-40R□



Weight: 7.6 g [13.0 g]

●VSPG-50R□

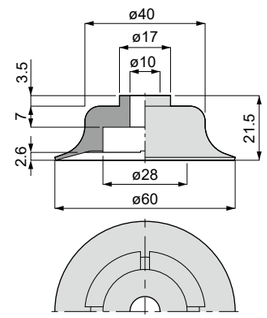


Weight: 16 g [26 g]

Weight: Only for fluoro rubber, values are inside [ ].

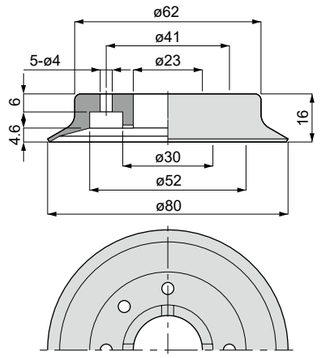
Pad Rubber Only Outline Dimension Drawing (General-type)

●VSPG-60R□



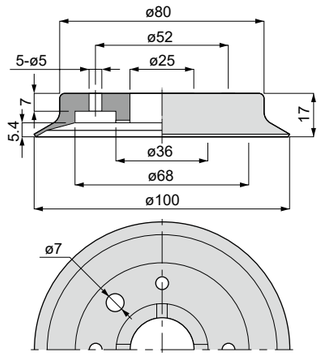
Weight: 22 g [38 g]

●VSPG-80R□



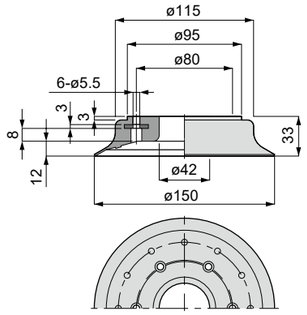
Weight: 33 g [57 g]

●VSPG-100R□



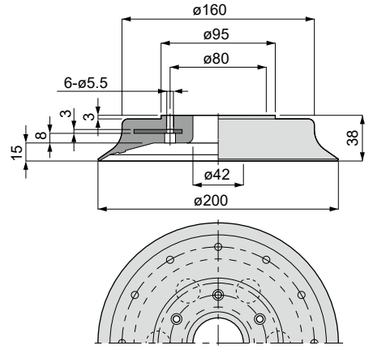
Weight: 60 g [104 g]

●VSPG-150R□



Weight: 393 g [630 g]

●VSPG-200R□

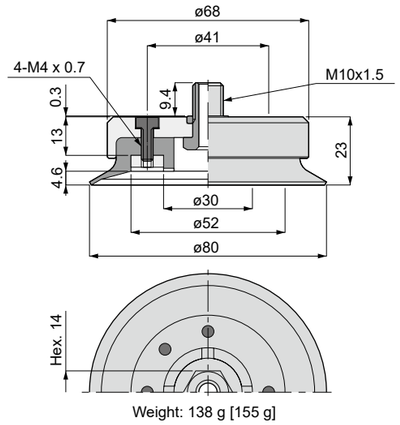


Weight: 919 g [1476 g]

Weight: Only for fluoro rubber, values are inside [ ].

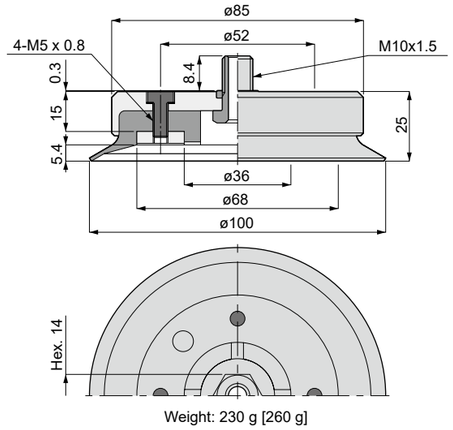
Pad Rubber + Set with Fixing Screw Outline Dimension Drawing (General-type)

●VSPG-80RøA



Weight: 138 g [155 g]

●VSPG-100RøA



Weight: 230 g [260 g]

●VSPG-150RøA

Weight: 762 g [999 g]

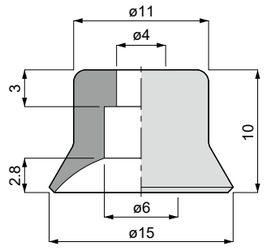
●VSPG-200RøA

Weight: 1288 g [1845 g]

Weight: Only for fluoro rubber, values are inside [ ].

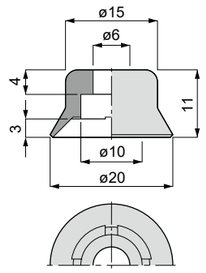
Pad Rubber Only Outline Dimension Drawing (Deep)

●VSPG-15A□



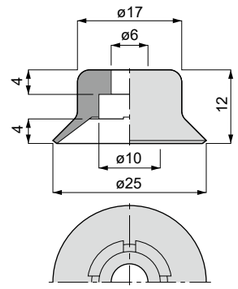
Weight: 1 g [1.6 g]

●VSPG-20A□



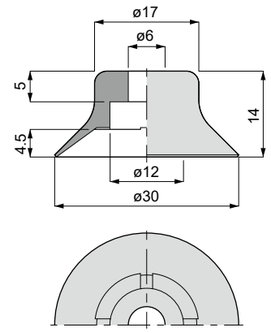
Weight: 1.7 g [2.7 g]

●VSPG-25A□



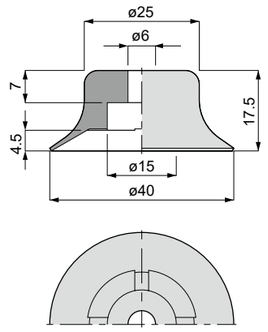
Weight: 2.5 g [3.9 g]

●VSPG-30A□



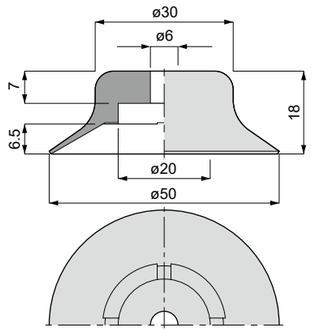
Weight: 3.1 g [5.0 g]

●VSPG-40A□



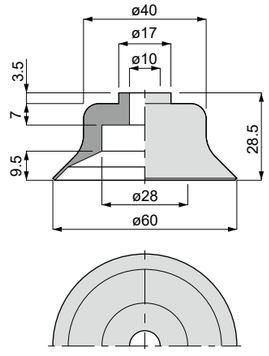
Weight: 9.1 g [14.6 g]

●VSPG-50A□



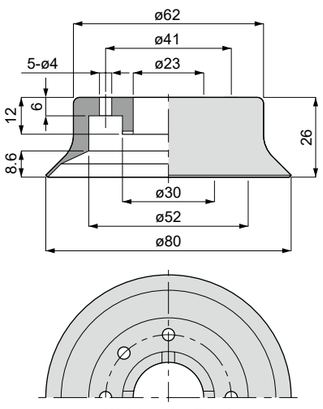
Weight: 14 g [22 g]

●VSPG-60A□



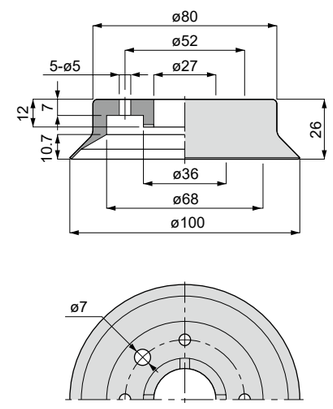
Weight: 24 g [38 g]

●VSPG-80A□



Weight: 46 g [74 g]

●VSPG-100A□

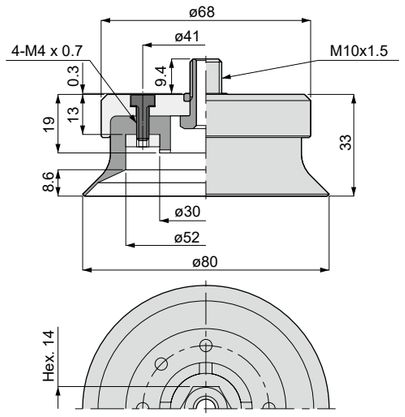


Weight: 72 g [116 g]

Weight: Only for fluoro rubber, values are inside [ ].

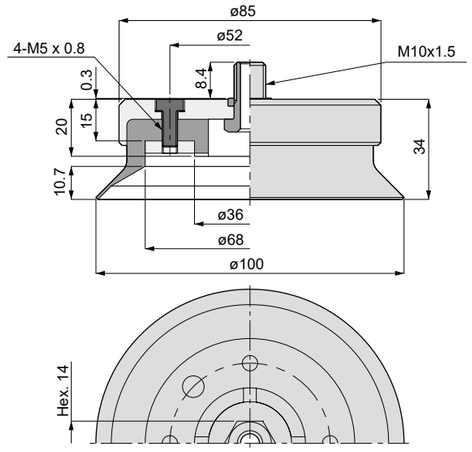
Pad Rubber + Set with Fixing Screw Outline Dimension Drawing (Deep)

●VSPG-80AøA



Weight: 140 g [168 g]

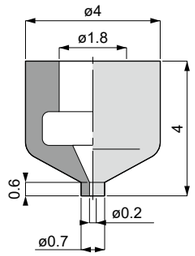
●VSPG-100AøA



Weight: 240 g [284 g]

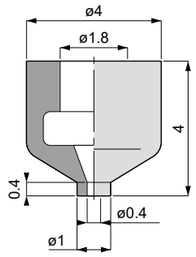
Pad Rubber Only Outline Dimension Drawing (Compact)

●VSPG-0.7RM□



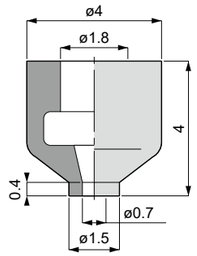
Weight: 0.1 g [0.1 g]

●VSPG-1RM□



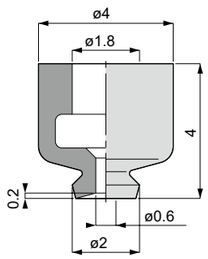
Weight: 0.1 g [0.1 g]

●VSPG-1.5RM□



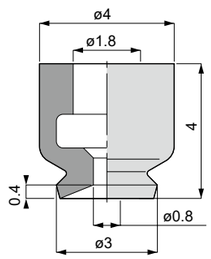
Weight: 0.1 g [0.1 g]

●VSPG-2RM□



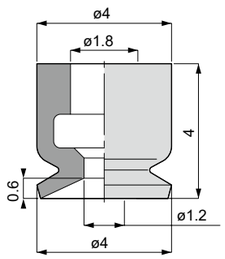
Weight: 0.1 g [0.1 g]

●VSPG-3RM□



Weight: 0.1 g [0.1 g]

●VSPG-4RM□

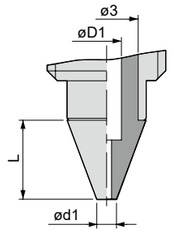


Weight: 0.1 g [0.1 g]

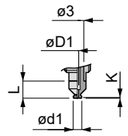
Weight: Only for fluoro rubber, values are inside [ ].

Detail Drawing of Pad and Holder Connection Part(General-type)

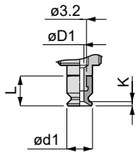
●VSPG-1R□



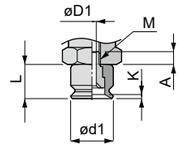
●VSPG-2 to 4R□



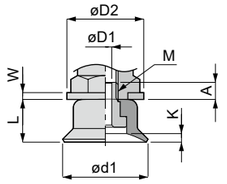
●VSPG-6, 8R□



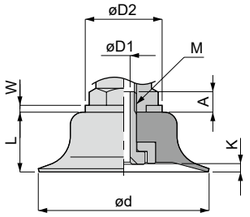
●VSPG-10, 15RøA



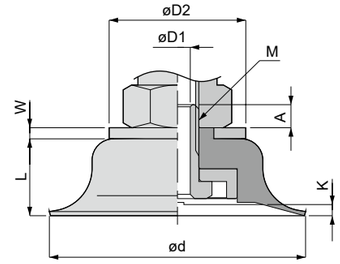
●VSPG-20 to 30RøA



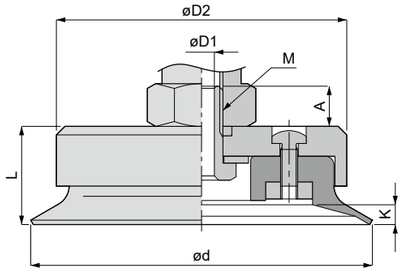
●VSPG-40, 50R□



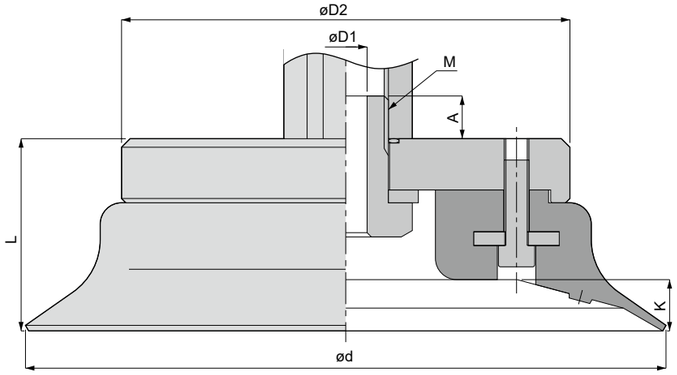
●VSPG-60RøA



●VSPG-80, 100RøA



●VSPG-150, 200RøA

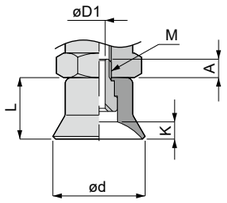


Unit: mm

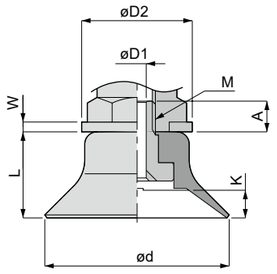
Model No.	Pad Diameter ød	L	Lip Inner Height K	Fixing Screw M	A	øD1	øD2	W
VSPG-1R□	1	4	-	-	-	0.5	-	-
VSPG-2R□	2	4	0.2	-	-	0.6	-	-
VSPG-3R□	3	4	0.2	-	-	0.8	-	-
VSPG-4R□	4	4	0.6	-	-	1.2	-	-
VSPG-6R□	6	7	1	-	-	2	-	-
VSPG-8R□	8	5.5	1.1	-	-	2	-	-
VSPG-10R□A	10	8	1	M4x0.7	3	2	-	-
VSPG-15R□A	15	9	2.4	M4x0.7	3	2	-	-
VSPG-20R□A	20	10	1.8	M6x1	4	4.5	15.5	1.6
VSPG-25R□A	25	11	2.6	M6x1	3.5	4.5	15.5	1.6
VSPG-30R□A	30	11	2	M6x1	5	4.5	15.5	1.6
VSPG-40R□A	40	14	1.9	M6x1	5	4.1	22	1.6
VSPG-50R□A	50	15	1.9	M6x1	5	4.1	22	1.6
VSPG-60R□A	60	18	2.6	M10x1.5	5.4	6	32	2.6
VSPG-80R□A	80	23	4.6	M10x1.5	9.4	6	68	-
VSPG-100R□A	100	25	5.4	M10x1.5	8.4	6	85	-
VSPG-150R□A	150	45	12	M20x2	11	10	105	-
VSPG-200R□A	200	50	15	M20x2	11	10	105	-

Detail Drawing of Pad and Holder Fixing Part (Deep)

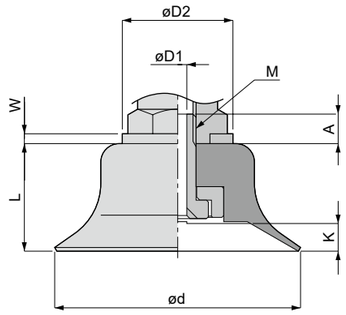
●VSPG-15AøA



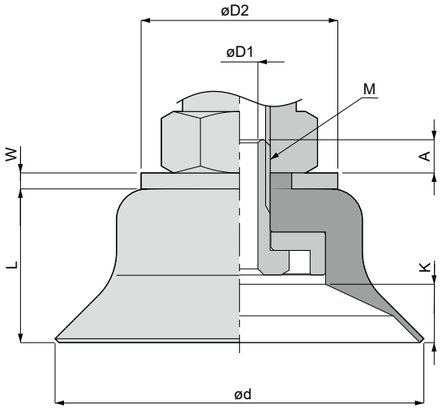
●VSPG-20 to 30AøA



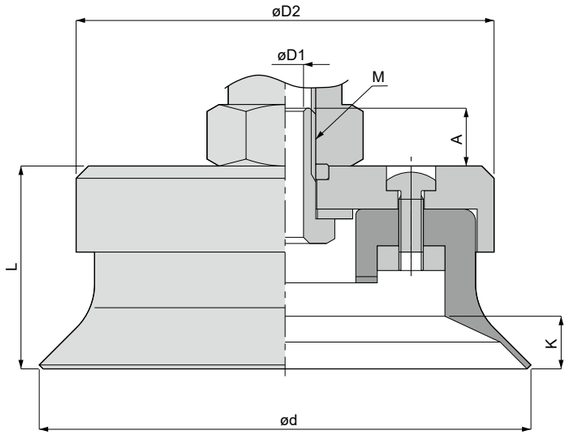
●VSPG-40, 50AøA



●VSPG-60AøA



●VSPG-80, 100AøA

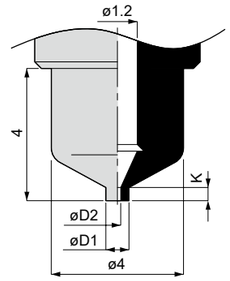


Unit: mm

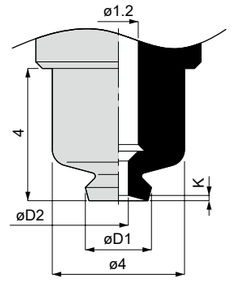
Model No.	Pad Diameter ød	L	Lip Inner Height K	Fixing Screw M	A	øD1	øD2	W
VSPG-15A□A	15	10	2.8	M4x0.7	3	2	-	-
VSPG-20A□A	20	11	3	M6x1	4	4.5	15.5	1.6
VSPG-25A□A	25	12	4	M6x1	4	4.5	15.5	1.6
VSPG-30A□A	30	14	4.5	M6x1	5	4.5	15.5	1.6
VSPG-40A□A	40	17.5	4.5	M6x1	5	4.1	22	1.6
VSPG-50A□A	50	18	6.5	M6x1	5	4.1	22	1.6
VSPG-60A□A	60	25	9.5	M10x1.5	5.4	6	32	2.6
VSPG-80A□A	80	33	8.6	M10x1.5	9.4	6	68	-
VSPG-100A□A	100	34	10.7	M10x1.5	8.4	6	85	-

Detail Drawing of Pad and Holder Fixing Part (Compact)

●VSPG-0.7RM□, VSPG-1RM□, VSPG-1.5RM□



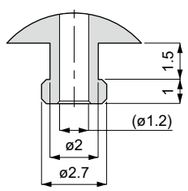
●VSPG-2RM□, VSPG-3RM□, VSPG-4RM□



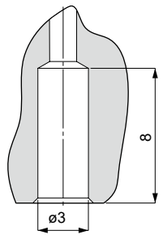
Model No.	Pad Outer Diameter øD1	Pad Inner Diameter øD2	K
VSPG-0.7RM□	0.7	0.2	0.6
VSPG-1RM□	1	0.4	0.4
VSPG-1.5RM□	1.5	0.7	0.4
VSPG-2RM□	2	0.6	0.2
VSPG-3RM□	3	0.8	0.4
VSPG-4RM□	4	1.2	0.6

Pad Rubber Fitting Part Dimensions(General-type Compact)

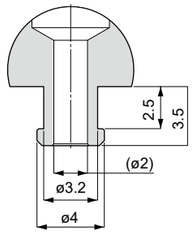
●VSPG-0.7 to 4RM□



●VSPG-1 to 4R□



●VSPG-6 to 8R□



Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, refer to Intro 15 for details.

Individual Precautions: Suction Pad Standard Type (General-type, Deep Type, Compact) VSP-□R□,□A□, □RM□ Series

Design / Selection

Caution

■Standard general-type suction pads VSP-□1R□ to □4R□ cannot be mounted on compact suction pad holders. These pads are compatible with standard suction pad holders.

■For mounting compact suction pads with pad diameters ø0.7, ø1, ø1.5 mm, set so that a load of 0.4 (N) or more is not applied to the lip part during suction. Applying excessive load to the lip part may cause the pad inner diameter to collapse due to rubber elasticity, preventing workpiece suction and potentially causing suction confirmation signal malfunction.

■Pad frames with pad outer diameter ø80 mm or more are not conductive. When using suction pads made of static dissipative rubber, conductive rubber (low resistance-type), or conductive NBR (low resistance-type), take measures to discharge electricity directly from the pad rubber.

■When replacing pad rubber for standard type pads with diameters ø80, ø100 mm, confirm the configuration diagram in the main text, use appropriate tools referring to the recommended tightening torque below, and use the holder outer diameter hexagonal part to confirm there is no loosening after tightening.

●Recommended Tightening Torque

Screw Size (mm)	Tightening Torque
M4x0.7	0.5 to 0.7 N·m
M5x0.8	

MEMO



Suction Pad Sponge-type

VSP-□S□ Series

Sponge-like suction pad with countless pores inside

RoHS

Single-cell sponge part absorbs workpiece unevenness, optimal for transporting workpieces like building exterior materials, small stones, or shells.

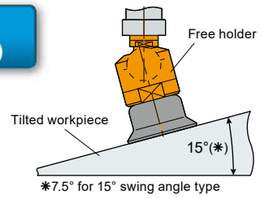
Abundant holder variations

Shape	16 types	Piping Connection	7 types	Stroke	10 types
●Standard5 types ●CompactClass 4 ●Low dust generation ..... 2 types	●Lightweight3 types ●Low back2 types	●Push-in fitting (ø1.8 to ø8)4 types ●Barbed fitting (ø4, ø6) ..... 2 types ●Screw-in (G1/8) ..... 1 type		4 mm to 50 mm (Depends on pad diameter, holder)	

Low particle generation holders (LFC, LFD) with less abrasion powder from sliding and low noise are available

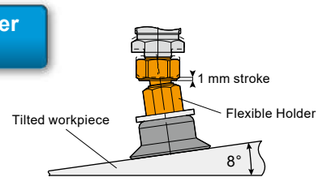
Assembly option for swing (free holder, flexible holder) that follows inclined workpiece surfaces is supported

Free holder (F1:30°, F2:15°)



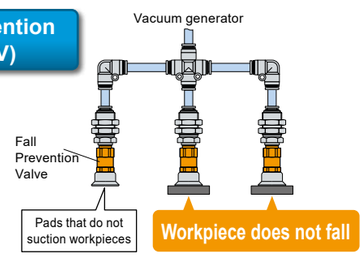
Flexible Holder (CF)

After removing the workpiece, returns to the normal position (vertical)



Assembly option for drop prevention valve (V) that reduces vacuum drop in separate circuits even without a workpiece is supported

Drop Prevention Valve (V)



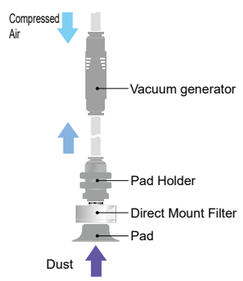
Removes dust during workpiece suction

Direct Mount Filter (T1, T2)

Filtration Area

T1: 1.7 cm², T2: 7 cm²





Pad Shape



Chloroprene

Soft cushioning allows flexible following of uneven workpieces.



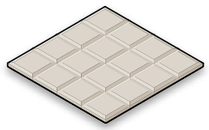
Silicone (s)

High sponge density provides relatively high strength and suppresses distortion under compression



Recommended Workpiece

Building exterior materials, small stones, shells, etc.



Pad Diameter

9 types	10	15	20	25	30	35	50	70	100

Pad Material

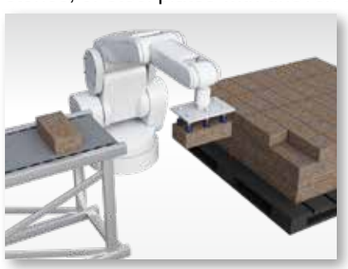
2 types	Silicone	Chloroprene

*Silicone (S) conforms to the Food Sanitation Act. (Holder is not compliant / Suction pad is compliant only for workpiece contact area)

Solution Examples

Workpieces with uneven surfaces

Can flexibly follow and adhere to building materials like bricks and stones, or steel plates with uneven surfaces.





Frozen foods, etc.

By selecting silicone rubber, it can also be used for handling food products.



Model No. Notation

●Sponge-type

Suction Pad

VSP – C – 30 – -20 – S – S – 6 – [ ] – F1 – V – T1

VSP	C	30	-20	S	S	6	[ ]	F1	V	T1
Model No.	❶ Holder Shape	❷ Pad Diameter	❸ Stroke Option	❹ Pad Shape	❺ Pad Material	❻ Connection Size/Shape	❼ Buffer Load	❽ Pad Swinging	❾ Drop Prevention Valve	❿ Direct Mount Filter

Pad Rubber Only

VSPG – 30 – S – S

VSPG	30	S	S
Model No.	❷	❹	❺

Pad Rubber + Set with Fixing Screw

VSPG – 30 – S – S – A

VSPG	30	S	S	A
Model No.	❷ Pad Diameter	❹ Pad Shape	❺ Pad Material	

❶ Holder Shape

Buffer Present/Absent	Type	Vacuum Outlet	Code	
Fixed Type	Standard	Top Direction	A	
	Compact		MA	
	Standard	Side Direction	B	
	Compact		MB	
	Low Profile		HE	
		Both Sides Direction	HEW	
Buffer Type	Standard	Top Direction	C	
	Compact		MC	
	Low Particle Generation		LFC	
	Lightweight		HC	
	Standard	Side Direction	D	
	Compact		MD	
	Low Particle Generation		LFD	
			HD	
	Light-weight	Both Sides Direction	HDW	
	Stan-dard	Direct Mount Type	F	

❷ Pad Diameter

Code	Content
10	ø10
15	ø15
20	ø20
25	ø25
30	ø30
35	ø35
50	ø50
70	ø70
100	ø100

❸ Stroke Option

Content	Holder Shape C	D	HC	LFC	LFD	Code
Specified Stroke, or No Buffer	●	●				Blank *2
Stroke 5 mm				●	●	-5
Stroke 10 mm	●	●	●	●	●	-10
Stroke 15 mm	●	●	●	●	●	-15
Stroke 20 mm	●	●	●	●	●	-20
Stroke 25 mm			●			-25
Stroke 30 mm	●	●	●			-30
Stroke 40 mm	●	●	●			-40
Stroke 50 mm	●	●	●			-50

*1: For ❶ Holder Shape other than C, D, HC, LFC, and LFD, ❸ is 'Blank'.
*2: For the specified stroke of ❸ 'Blank', please confirm the stroke dimension on the external dimension drawing.
*3: When ❷ Pad Diameter is 10 to 50, -30, -40, and -50 can be selected for ❸.
*4: When ❷ Pad Diameter is 70 or 100, ❸ is 'Blank'.

❹ Pad Shape

Code	Content	
S	Sponge-type	

❺ Pad Material

Code	Content	
Blank	Chloroprene Rubber	
S	Silicone Rubber	

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

●Design compatible with rechargeable battery manufacturing process

VSP – ..... – P4*

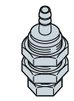
*Please inquire for details.

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

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

VSP – ..... – FP*

❻ Connection Size/Shape

Content	Holder Shape A	B	C	D	MA	MB	MC	MD	LFC	LFD	HC	HD	HDW	HE	HEW	Code	
(❶: When F)																Blank	
ø1.8, Push-in fitting						●	●	●			●	●	●	●	●	2	
ø4, Push-in fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4	
ø6, Push-in fitting	●	●	●	●		●		●	●	●	●	●	●	●	●	6	
ø8, Push-in fitting	●	●	●	●												8	
ø4, Push-in fitting, without spring cover			●	●												4C	
ø6, Push-in fitting, without spring cover			●	●												6C	
ø4 Barb fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4T	
ø6 Barb fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	6T	
ø4 Barb fitting, without spring cover			●	●												4TC	
ø6 Barb fitting, without spring cover			●	●												6TC	
G1/8	●	●	●	●												6A	

*1: For ❶ Holder Shape C and D with ❸ Stroke Option -20 to -50, options 4C, 6C, 4TC, and 6TC can be selected for ❻. Additionally, for ❸ Stroke Option -30 to -50, only 4C, 6C, 4TC, and 6TC can be selected for ❻.
*2: SThe selectable Port Size/Shape varies depending on the ❷ Pad Diameter. Please check the combination table below.

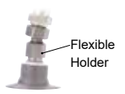
❼ Buffer Load

*1

Code	Content
Blank	Standard Load or No Buffer
L	Low Load (1/4 of Standard Load)

*1: For ❶ Holder Shape other than LFC, ❼ is 'Blank'.

❽ Pad Swing

Code	Content	
Blank	None	
F1	With Free Holder (Angle 30°)	 Free Holder
F2	With Free Holder (Angle 15°)	
*1 CF	With flexible holder (Angle 8°)	 Flexible Holder

*1: ❽CF can be selected when ❷ Pad Diameter is 10 to 50.
*2: For dimensions with the pad swivel function, please refer to P. 1060 and P. 1062.

❾ Drop Prevention Valve

Code	Content	
Blank	None	
V	With Drop Prevention Valve	 Drop Prevention Valve

*1: For dimensions with the drop prevention valve, please refer to P. 1083 and P. 1084.

❿ Direct Mount Filter

Code	Content	
Blank	None	
T1	With Direct Mount Filter (Filtration Area 1.7 cm²)	 Direct Mount Filter
T2	With Direct Mount Filter (Filtration Area 7 cm²)	

*1: ❿ T1 and T2 can be selected when ❷ Pad Diameter is 10 to 50.
*2: For dimensions with the direct mount filter, please refer to P. 1064.

Holder Shape - Pad Diameter - Pad Shape - Connection Size/Shape Combination Table

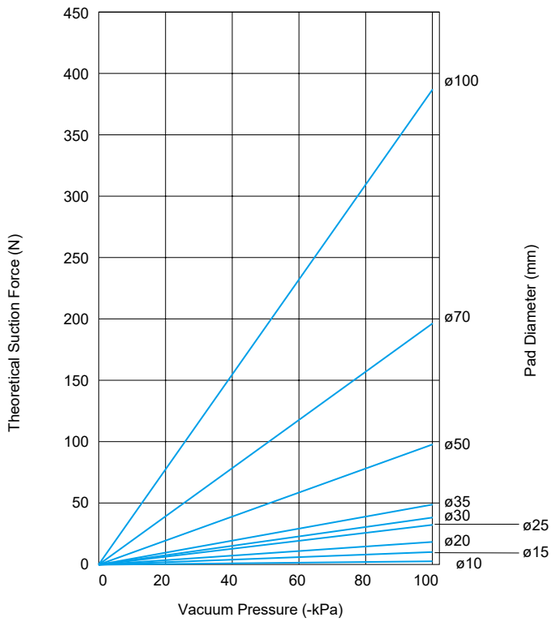
Holder Shape	Pad Diameter	Push-in fitting ø4 4	4C	ø6 6	6C	ø8 8	Barb fitting ø4 4T	4TC	ø6 6T	6TC	Thread G1/8 6A
A	ø10 to ø50	●		●			●		●		
	ø70, ø100	●		●		●					●
B	ø10 to ø50	●		●			●		●		
	ø70, ø100	●		●		●					●
C	ø10 to ø50	●	●	●	●		●	●	●	●	
	ø70, ø100	●		●		●					●
D	ø10 to ø50	●	●	●	●		●	●	●	●	
	ø70, ø100	●		●		●					●

Holder Shape	Pad Diameter	Thread M14 Blank
F	ø10 to ø50	●

Holder Shape	Pad Diameter	Push-in fitting ø1.8 2	ø4 4	ø6 6	Barb fitting ø4 4T	ø6 6T
MA	ø10 to ø50		●		●	●
MB	ø10 to ø50	●	●	●	●	●
MC	ø10 to ø50	●	●		●	●
MD	ø10 to ø50	●	●	●	●	●
LFC	ø10 to ø50		●	●	●	●
LFD	ø10 to ø50		●	●	●	●
HC	ø10 to ø50	●	●	●	●	●
HD	ø10 to ø50	●	●	●	●	●
HDW	ø10 to ø50	●	●	●	●	●
HE	ø10 to ø50	●	●	●	●	●
HEW	ø10 to ø50	●	●	●	●	●

Theoretical Suction Force

●Pad Diameter: ø10 mm to ø100 mm



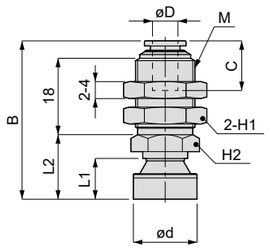
Theoretical suction force is a value under static conditions. For actual use, consider a safety factor of 1/4 for horizontal lifting and 1/8 for vertical lifting. Regarding the suction force of the sponge-type, due to the characteristics of the pad, the calculated suction force (theoretical suction force x safety factor) may not be secured due to the influence of vacuum level, pad material, adsorbed object, etc. Refer to "Suction Pads selection method" (P. 412) Use the suction force obtained with this formula as a guide, and make sure that there is no problem with the suction capacity on the actual machine.

MEMO

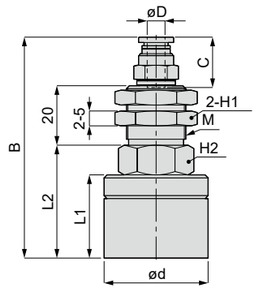
Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechanical Break Function
Ending

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Push-in fitting)

●VSP-A10 to 50S□-4/6



●VSP-A70, 100S□-4/6/8

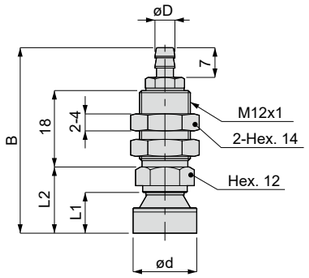


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	Tube End C	Width Across Flats H1	Width Across Flats H2	Weight (g)
VSP-A10S□-4	10	4	M12x1	46.4	9.5	15.5	11.2	14	12	26
VSP-A10S□-6		6	M14x1	37.4		15.1	11.9			32
VSP-A15S□-4	15	4	M12x1	46.4	9.5	15.5	11.2	14	12	26
VSP-A15S□-6		6	M14x1	37.4		15.1	11.9			32
VSP-A20S□-4	20	4	M12x1	52.4	15.5	21.5	11.2	17	12	28
VSP-A20S□-6		6	M14x1	43.4		21.1	11.9			34
VSP-A25S□-4	25	4	M12x1	52.4	15.5	21.5	11.2	17	12	29
VSP-A25S□-6		6	M14x1	43.4		21.1	11.9			35
VSP-A30S□-4	30	4	M12x1	52.4	15.5	21.5	11.2	17	12	29
VSP-A30S□-6		6	M14x1	43.4		21.1	11.9			35
VSP-A35S□-4	35	4	M12x1	64.9	28	34	11.2	17	12	65
VSP-A35S□-6		6	M14x1	55.9		33.6	11.9			71
VSP-A50S□-4	50	4	M12x1	64.9	28	34	11.2	17	12	108
VSP-A50S□-6		6	M14x1	55.9		33.6	11.9			114
VSP-A70S□-4	70	4	M20x1	70.6	30	40	11.2	24	22	252
VSP-A70S□-6		6		72.8			11.9			253
VSP-A70S□-8		8		81.2			18.2			258
VSP-A100S□-4	100	4	M20x1	70.6	30	40	11.2	24	22	383
VSP-A100S□-6		6		72.8			11.9			384
VSP-A100S□-8		8		81.2			18.2			389

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Barb Fitting)

●VSP-A10 to 50S□-4T/6T

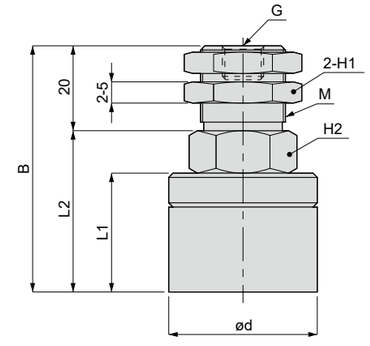


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Weight (g)
VSP-A10S□-4T	10	2.5	43.5	9.5	15.5	25
VSP-A10S□-6T		4				
VSP-A15S□-4T	15	2.5	43.5	9.5	15.5	26
VSP-A15S□-6T		4				
VSP-A20S□-4T	20	2.5	49.5	15.5	21.5	27
VSP-A20S□-6T		4				
VSP-A25S□-4T	25	2.5	49.5	15.5	21.5	29
VSP-A25S□-6T		4				
VSP-A30S□-4T	30	2.5	49.5	15.5	21.5	29
VSP-A30S□-6T		4				
VSP-A35S□-4T	35	2.5	62	28	34	65
VSP-A35S□-6T		4				
VSP-A50S□-4T	50	2.5	62	28	34	108
VSP-A50S□-6T		4				

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Female Thread)

●VSP-A70, 100S□-6A

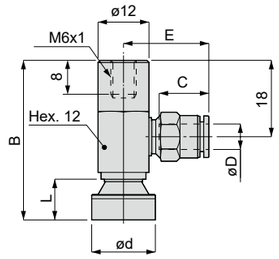


Unit: mm

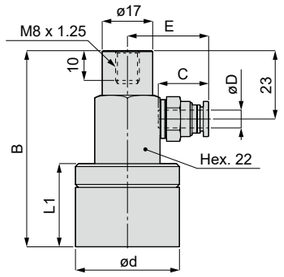
Model No.	Pad Diameter ød	Vacuum Outlet Size G	Mounting screw M	B	L1	L2	Width Across Flats H1	Width Across Flats H2	Weight (g)
VSP-A70S□-6A	70	G1/8	M20x1	60	30	40	24	22	244
VSP-A100S□-6A	100	G1/8	M20x1	60	30	40	24	22	375

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Push-in fitting)

●VSP-B10 to 50S□-4/6



●VSP-B70, 100S□-4/6/8

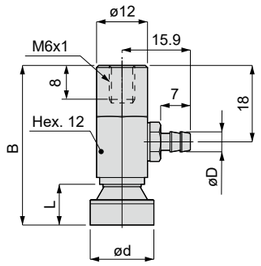


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-B10S□-4	10	4	37.5	9.5	11.2	18.8	28
VSP-B10S□-6		6			11.9	20.1	29
VSP-B15S□-4	15	4	37.5	9.5	11.2	18.8	29
VSP-B15S□-6		6			11.9	20.1	30
VSP-B20S□-4	20	4	43.5	15.5	11.2	18.8	30
VSP-B20S□-6		6			11.9	20.1	31
VSP-B25S□-4	25	4	43.5	15.5	11.2	18.8	32
VSP-B25S□-6		6			11.9	20.1	33
VSP-B30S□-4	30	4	43.5	15.5	11.2	18.8	32
VSP-B30S□-6		6			11.9	20.1	33
VSP-B35S□-4	35	4	56	28	11.2	18.8	68
VSP-B35S□-6		6			11.9	20.1	69
VSP-B50S□-4	50	4	56	28	11.2	18.8	111
VSP-B50S□-6		6			11.9	20.1	112
VSP-B70S□-4	70	4	68	30	11.2	21.5	259
VSP-B70S□-6		6			11.9	23.7	260
VSP-B70S□-8		8			18.2	32.1	265
VSP-B100S□-4	100	4	68	30	11.2	21.5	389
VSP-B100S□-6		6			11.9	23.7	390
VSP-B100S□-8		8			18.2	32.1	395

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Barb Fitting)

●VSP-B10 to 50S□-4T/6T

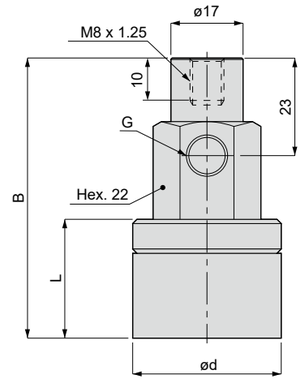


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-B10S□-4	10	2.5	37.5	9.5	25
VSP-B10S□-6		4			
VSP-B15S□-4	15	2.5	37.5	9.5	26
VSP-B15S□-6		4			
VSP-B20S□-4	20	2.5	43.5	15.5	27
VSP-B20S□-6		4			
VSP-B25S□-4	25	2.5	43.5	15.5	29
VSP-B25S□-6		4			
VSP-B30S□-4	30	2.5	43.5	15.5	29
VSP-B30S□-6		4			
VSP-B35S□-4	35	2.5	56	28	65
VSP-B35S□-6		4			
VSP-B50S□-4	50	2.5	56	28	108
VSP-B50S□-6		4			

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Female Thread)

●VSP-B70, 100S□-6A

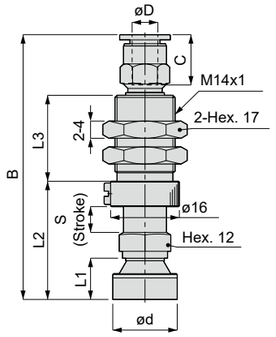


Unit: mm

Model No.	Pad Diameter ød	Vacuum Outlet Size G	B	L	Weight (g)
VSP-B70S□-6A	70	G1/8	68	30	251
VSP-B100S□-6A	100	G1/8	68	30	381

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C10 to 30S□-4/6
●VSP-C10 to 30-□S□-4/6

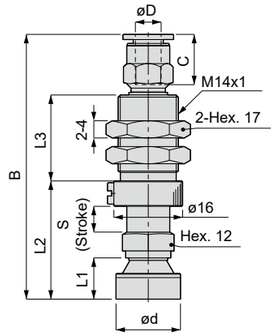


Unit: mm

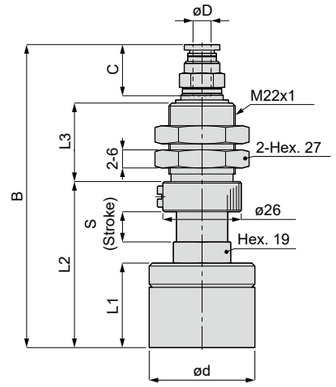
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C10S□-4	10	4	60.5	9.5	27.5	20	11.2	6	7.0 to 12.6	34
VSP-C10S□-6		6	61.8				11.9			35
VSP-C10-10S□-4		4	66.5		33.5		11.2	10	3.3 to 10.0	37
VSP-C10-10S□-6		6	67.8				11.9			38
VSP-C10-15S□-4		4	76.5		38.5	25	11.2	15	3.3 to 10.4	41
VSP-C10-15S□-6		6	77.8				11.9			42
VSP-C10-20S□-4		4	92.5		45.5	34	11.2	20	2.0 to 8.7	48
VSP-C10-20S□-6		6	93.8				11.9			49
VSP-C15S□-4	15	4	60.5	9.5	27.5	20	11.2	6	7.0 to 12.6	35
VSP-C15S□-6		6	61.8				11.9			36
VSP-C15-10S□-4		4	66.5		33.5		11.2	10	3.3 to 10.0	37
VSP-C15-10S□-6		6	67.8				11.9			38
VSP-C15-15S□-4		4	76.5		38.5	25	11.2	15	3.3 to 10.4	42
VSP-C15-15S□-6		6	77.8				11.9			43
VSP-C15-20S□-4		4	92.5		45.5	34	11.2	20	2.0 to 8.7	49
VSP-C15-20S□-6		6	93.8				11.9			50
VSP-C20S□-4	20	4	66.5	15.5	33.5	20	11.2	6	7.0 to 12.6	36
VSP-C20S□-6		6	67.8				11.9			37
VSP-C20-10S□-4		4	72.5		39.5		11.2	10	3.3 to 10.0	39
VSP-C20-10S□-6		6	73.8				11.9			40
VSP-C20-15S□-4		4	82.5		44.5	25	11.2	15	3.3 to 10.4	43
VSP-C20-15S□-6		6	83.8				11.9			44
VSP-C20-20S□-4		4	98.5		51.5	34	11.2	20	2.0 to 8.7	50
VSP-C20-20S□-6		6	99.8				11.9			51
VSP-C25S□-4	25	4	66.5	15.5	33.5	20	11.2	6	7.0 to 12.6	38
VSP-C25S□-6		6	67.8				11.9			39
VSP-C25-10S□-4		4	72.5		39.5		11.2	10	3.3 to 10.0	40
VSP-C25-10S□-6		6	73.8				11.9			41
VSP-C25-15S□-4		4	82.5		44.5	25	11.2	15	3.3 to 10.4	45
VSP-C25-15S□-6		6	83.8				11.9			46
VSP-C25-20S□-4		4	98.5		51.5	34	11.2	20	2.0 to 8.7	52
VSP-C25-20S□-6		6	99.8				11.9			53
VSP-C30S□-4	30	4	66.5	15.5	33.5	20	11.2	6	7.0 to 12.6	38
VSP-C30S□-6		6	67.8				11.9			39
VSP-C30-10S□-4		4	72.5		39.5		11.2	10	3.3 to 10.0	40
VSP-C30-10S□-6		6	73.8				11.9			41
VSP-C30-15S□-4		4	82.5		44.5	25	11.2	15	3.3 to 10.4	45
VSP-C30-15S□-6		6	83.8				11.9			46
VSP-C30-20S□-4		4	98.5		51.5	34	11.2	20	2.0 to 8.7	52
VSP-C30-20S□-6		6	99.8				11.9			53

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C35, 50S□4/6
●VSP-C35, 50-□S□-4/6



●VSP-C70, 100S□-4/6/8

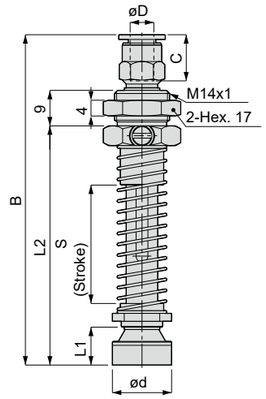


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C35S□-4	35	4	79	28	46	20	11.2	6	7.0 to 12.6	73
VSP-C35S□-6		6	80.3				11.9			74
VSP-C35-10S□-4		4	85		52		11.2	10	3.3 to 10.0	76
VSP-C35-10S□-6		6	86.3				11.9			77
VSP-C35-15S□-4		4	95		57	25	11.2	15	3.3 to 10.4	81
VSP-C35-15S□-6		6	96.3				11.9			82
VSP-C35-20S□-4		4	111		64	34	11.2	20	2.0 to 8.7	87
VSP-C35-20S□-6		6	112.3				11.9			88
VSP-C50S□-4	50	4	79	28	46	20	11.2	6	7.0 to 12.6	73
VSP-C50S□-6		6	80.3				11.9			74
VSP-C50-10S□-4		4	85		52		11.2	10	3.3 to 10.0	76
VSP-C50-10S□-6		6	86.3				11.9			77
VSP-C50-15S□-4		4	95		57	25	11.2	15	3.3 to 10.4	81
VSP-C50-15S□-6		6	96.3				11.9			82
VSP-C50-20S□-4		4	111		64	34	11.2	20	2.0 to 8.7	87
VSP-C50-20S□-6		6	112.3				11.9			88
VSP-C70S□-4	70	4	96.6	30	57	26	11.2	10	10.1 to 15.8	280
VSP-C70S□-6		6	98.8				11.9			281
VSP-C70S□-8		8	107.2				18.2			286
VSP-C100S□-4	100	4	96.6	30	57	26	11.2	10	10.1 to 15.8	411
VSP-C100S□-6		6	98.8				11.9			412
VSP-C100S□-8		8	107.2				18.2			417

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting without Spring Cover)

●VSP-C10 to 30-□S□-4C/6C

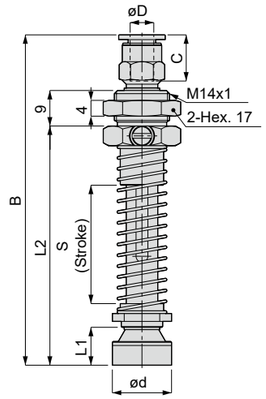


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C10-20S□-4C	10	4	69.5	9.5	47.5	11.2	20	1.5 to 4.9	44
VSP-C10-20S□-6C		6	70.8			11.9			45
VSP-C10-30S□-4C		4	82.5		60.5	11.2	30	1.1 to 4.8	49
VSP-C10-30S□-6C		6	83.8			11.9			50
VSP-C10-40S□-4C		4	95.5		73.5	11.2	40	1.0 to 4.5	54
VSP-C10-40S□-6C		6	96.8			11.9			55
VSP-C10-50S□-4C		4	108.5		86.5	11.2	50	0.9 to 4.5	60
VSP-C10-50S□-6C		6	109.8			11.9			61
VSP-C15-20S□-4C	15	4	69.5	9.5	47.5	11.2	20	1.5 to 4.9	44
VSP-C15-20S□-6C		6	70.8			11.9			45
VSP-C15-30S□-4C		4	82.5		60.5	11.2	30	1.1 to 4.8	50
VSP-C15-30S□-6C		6	83.8			11.9			51
VSP-C15-40S□-4C		4	95.5		73.5	11.2	40	1.0 to 4.5	55
VSP-C15-40S□-6C		6	96.8			11.9			56
VSP-C15-50S□-4C		4	108.5		86.5	11.2	50	0.9 to 4.5	60
VSP-C15-50S□-6C		6	109.8			11.9			61
VSP-C20-20S□-4C	20	4	75.5	15.5	53.5	11.2	20	1.5 to 4.9	46
VSP-C20-20S□-6C		6	76.8			11.9			47
VSP-C20-30S□-4C		4	88.5		66.5	11.2	30	1.1 to 4.8	51
VSP-C20-30S□-6C		6	89.8			11.9			52
VSP-C20-40S□-4C		4	101.5		79.5	11.2	40	1.0 to 4.5	56
VSP-C20-40S□-6C		6	102.8			11.9			57
VSP-C20-50S□-4C		4	114.5		92.5	11.2	50	0.9 to 4.5	62
VSP-C20-50S□-6C		6	115.8			11.9			63
VSP-C25-20S□-4C	25	4	75.5	15.5	53.5	11.2	20	1.5 to 4.9	47
VSP-C25-20S□-6C		6	76.8			11.9			48
VSP-C25-30S□-4C		4	88.5		66.5	11.2	30	1.1 to 4.8	53
VSP-C25-30S□-6C		6	89.8			11.9			54
VSP-C25-40S□-4C		4	101.5		79.5	11.2	40	1.0 to 4.5	58
VSP-C25-40S□-6C		6	102.8			11.9			59
VSP-C25-50S□-4C		4	114.5		92.5	11.2	50	0.9 to 4.5	63
VSP-C25-50S□-6C		6	115.8			11.9			64
VSP-C30-20S□-4C	30	4	75.5	15.5	53.5	11.2	20	1.5 to 4.9	47
VSP-C30-20S□-6C		6	76.8			11.9			48
VSP-C30-30S□-4C		4	88.5		66.5	11.2	30	1.1 to 4.8	53
VSP-C30-30S□-6C		6	89.8			11.9			54
VSP-C30-40S□-4C		4	101.5		79.5	11.2	40	1.0 to 4.5	58
VSP-C30-40S□-6C		6	102.8			11.9			59
VSP-C30-50S□-4C		4	114.5		92.5	11.2	50	0.9 to 4.5	63
VSP-C30-50S□-6C		6	115.8			11.9			64

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting Type without Spring Cover)

●VSP-C35, 50-□S□-4C/6C

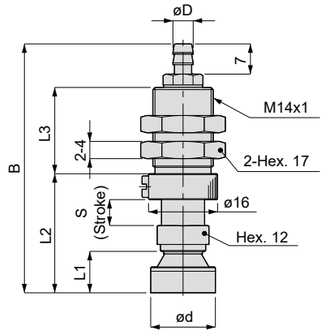


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C35-20S□-4C	35	4	89	28	66	11.2	20	1.5 to 4.9	83
VSP-C35-20S□-6C		6	89.3			11.9			84
VSP-C35-30S□-4C		4	101		79	11.2	30	1.1 to 4.8	88
VSP-C35-30S□-6C		6	102.3			11.9			89
VSP-C35-40S□-4C		4	114		92	11.2	40	1.0 to 4.5	94
VSP-C35-40S□-6C		6	115.3			11.9			95
VSP-C35-50S□-4C		4	127		105	11.2	50	0.9 to 4.5	99
VSP-C35-50S□-6C		6	128.3			11.9			100
VSP-C50-20S□-4C	50	4	88	28	66	11.2	20	1.5 to 4.9	126
VSP-C50-20S□-6C		6	89.3			11.9			127
VSP-C50-30S□-4C		4	101		79	11.2	30	1.1 to 4.8	131
VSP-C50-30S□-6C		6	102.3			11.9			132
VSP-C50-40S□-4C		4	114		92	11.2	40	1.0 to 4.5	137
VSP-C50-40S□-6C		6	115.3			11.9			138
VSP-C50-50S□-4C		4	127		105	11.2	50	0.9 to 4.5	142
VSP-C50-50S□-6C		6	128.3			11.9			143

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C10 to 30S□-4T/6T
●VSP-C10 to 30-□S□-4T/6T

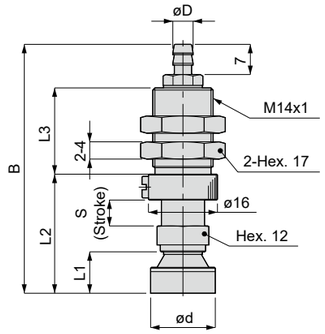


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-C10S□-4T	10	2.5	57.6	9.5	27.5	20	6	7.0 to 12.6	35
VSP-C10S□-6T		4							
VSP-C10-10S□-4T		2.5	63.6		33.5		10	3.3 to 10.0	38
VSP-C10-10S□-6T		4							
VSP-C10-15S□-4T		2.5	73.6		38.5	25	15	3.3 to 10.4	42
VSP-C10-15S□-6T		4							
VSP-C10-20S□-4T		2.5	89.6		45.5	34	20	2.0 to 8.7	49
VSP-C10-20S□-6T		4							
VSP-C15S□-4T	15	4	57.6	9.5	27.5	20	6	7.0 to 12.6	36
VSP-C15S□-6T		6							
VSP-C15-10S□-4T		4	63.6		33.5		10	3.3 to 10.0	38
VSP-C15-10S□-6T		6							
VSP-C15-15S□-4T		4	73.6		38.5	25	15	3.3 to 10.4	43
VSP-C15-15S□-6T		6							
VSP-C15-20S□-4T		4	89.6		45.5	34	20	2.0 to 8.7	50
VSP-C15-20S□-6T		6							
VSP-C20S□-4T	20	4	63.6	15.5	33.5	20	6	7.0 to 12.6	37
VSP-C20S□-6T		6							
VSP-C20-10S□-4T		4	69.6		39.5		10	3.3 to 10.0	40
VSP-C20-10S□-6T		6							
VSP-C20-15S□-4T		4	79.6		44.5	25	15	3.3 to 10.4	44
VSP-C20-15S□-6T		6							
VSP-C20-20S□-4T		4	95.6		51.5	34	20	2.0 to 8.7	51
VSP-C20-20S□-6T		6							
VSP-C25S□-4T	25	4	63.6	15.5	33.5	20	6	7.0 to 12.6	39
VSP-C25S□-6T		6							
VSP-C25-10S□-4T		4	69.6		39.5		10	3.3 to 10.0	41
VSP-C25-10S□-6T		6							
VSP-C25-15S□-4T		4	79.6		44.5	25	15	3.3 to 10.4	46
VSP-C25-15S□-6T		6							
VSP-C25-20S□-4T		4	95.6		51.5	34	20	2.0 to 8.7	53
VSP-C25-20S□-6T		6							
VSP-C30S□-4T	30	4	63.6	15.5	33.5	20	6	7.0 to 12.6	39
VSP-C30S□-6T		6							
VSP-C30-10S□-4T		4	69.6		39.5		10	3.3 to 10.0	41
VSP-C30-10S□-6T		6							
VSP-C30-15S□-4T		4	79.6		44.5	25	15	3.3 to 10.4	46
VSP-C30-15S□-6T		6							
VSP-C30-20S□-4T		4	95.6		51.5	34	20	2.0 to 8.7	53
VSP-C30-20S□-6T		6							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C35, 50S□-4T/6T
●VSP-C35, 50-□S□-4T/6T

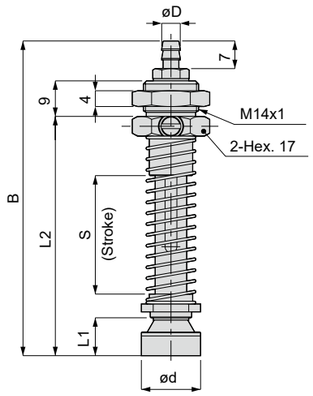


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-C35S□-4T	35	2.5	76.1	28	46	20	6	7.0 to 12.6	74
VSP-C35S□-6T		4							
VSP-C35-10S□-4T		2.5	82.1		52		10	3.3 to 10.0	77
VSP-C35-10S□-6T		4							
VSP-C35-15S□-4T		2.5	92.1		57	25	15	3.3 to 10.4	82
VSP-C35-15S□-6T		4							
VSP-C35-20S□-4T		2.5	108.1		64	34	20	2.0 to 8.7	88
VSP-C35-20S□-6T		4							
VSP-C50S□-4T	50	2.5	76.1	28	46	20	6	7.0 to 12.6	74
VSP-C50S□-6T		4							
VSP-C50-10S□-4T		2.5	82.1		52		10	3.3 to 10.0	77
VSP-C50-10S□-6T		4							
VSP-C50-15S□-4T		2.5	92.1		57	25	15	3.3 to 10.4	82
VSP-C50-15S□-6T		4							
VSP-C50-20S□-4T		2.5	108.1		64	34	20	2.0 to 8.7	88
VSP-C50-20S□-6T		4							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C Barb Fitting without Spring Cover)

●VSP-C10 to 30-□S□-4TC/6TC

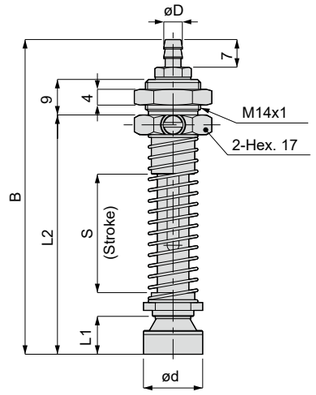


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C10-20S□-4TC	10	2.5	66.6	9.5	47.5	20	1.5 to 4.9	43
VSP-C10-20S□-6TC		4						
VSP-C10-30S□-4TC		2.5	79.6		60.5	30	1.1 to 4.8	48
VSP-C10-30S□-6TC		4						
VSP-C10-40S□-4TC		2.5	92.6		73.5	40	1.0 to 4.5	53
VSP-C10-40S□-6TC		4						
VSP-C10-50S□-4TC		2.5	105.6		86.5	50	0.9 to 4.5	59
VSP-C10-50S□-6TC		4						
VSP-C15-20S□-4TC	15	2.5	66.6	9.5	47.5	20	1.5 to 4.9	43
VSP-C15-20S□-6TC		4						
VSP-C15-30S□-4TC		2.5	79.6		60.5	30	1.1 to 4.8	49
VSP-C15-30S□-6TC		4						
VSP-C15-40S□-4TC		2.5	92.6		73.5	40	1.0 to 4.5	54
VSP-C15-40S□-6TC		4						
VSP-C15-50S□-4TC		2.5	105.6		86.5	50	0.9 to 4.5	59
VSP-C15-50S□-6TC		4						
VSP-C20-20S□-4TC	20	2.5	72.6	15.5	53.5	20	1.5 to 4.9	45
VSP-C20-20S□-6TC		4						
VSP-C20-30S□-4TC		2.5	85.6		66.5	30	1.1 to 4.8	50
VSP-C20-30S□-6TC		4						
VSP-C20-40S□-4TC		2.5	98.6		79.5	40	1.0 to 4.5	55
VSP-C20-40S□-6TC		4						
VSP-C20-50S□-4TC		2.5	111.6		92.5	50	0.9 to 4.5	61
VSP-C20-50S□-6TC		4						
VSP-C25-20S□-4TC	25	2.5	72.6	15.5	53.5	20	1.5 to 4.9	46
VSP-C25-20S□-6TC		4						
VSP-C25-30S□-4TC		2.5	85.6		66.5	30	1.1 to 4.8	52
VSP-C25-30S□-6TC		4						
VSP-C25-40S□-4TC		2.5	98.6		79.5	40	1.0 to 4.5	57
VSP-C25-40S□-6TC		4						
VSP-C25-50S□-4TC		2.5	111.6		92.5	50	0.9 to 4.5	62
VSP-C25-50S□-6TC		4						
VSP-C30-20S□-4TC	30	2.5	72.6	15.5	53.5	20	1.5 to 4.9	46
VSP-C30-20S□-6TC		4						
VSP-C30-30S□-4TC		2.5	85.6		66.5	30	1.1 to 4.8	52
VSP-C30-30S□-6TC		4						
VSP-C30-40S□-4TC		2.5	98.6		79.5	40	1.0 to 4.5	57
VSP-C30-40S□-6TC		4						
VSP-C30-50S□-4TC		2.5	111.6		92.5	50	0.9 to 4.5	62
VSP-C30-50S□-6TC		4						

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C Barb Fitting without Spring Cover)

●VSP-C35, 50-□S□-4TC/6TC

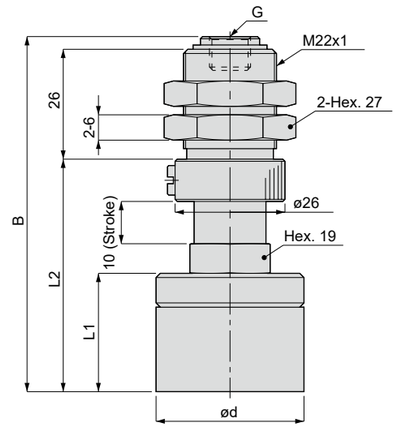


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C35-20S□-4TC	35	2.5	85.1	28	66	20	1.5 to 4.9	82
VSP-C35-20S□-6TC		4						
VSP-C35-30S□-4TC		2.5	98.1		79	30	1.1 to 4.8	87
VSP-C35-30S□-6TC		4						
VSP-C35-40S□-4TC		2.5	111.1		92	40	1.0 to 4.5	92
VSP-C35-40S□-6TC		4						
VSP-C35-50S□-4TC		2.5	124.1		105	50	0.9 to 4.5	90
VSP-C35-50S□-6TC		4						
VSP-C50-20S□-4TC	50	2.5	85.1	28	66	20	1.5 to 4.9	125
VSP-C50-20S□-6TC		4						
VSP-C50-30S□-4TC		2.5	98.1		79	30	1.1 to 4.8	130
VSP-C50-30S□-6TC		4						
VSP-C50-40S□-4TC		2.5	111.1		92	40	1.0 to 4.5	135
VSP-C50-40S□-6TC		4						
VSP-C50-50S□-4TC		2.5	124.1		105	50	0.9 to 4.5	133
VSP-C50-50S□-6TC		4						

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C Female Thread)

●VSP-C70, 100S□-6A

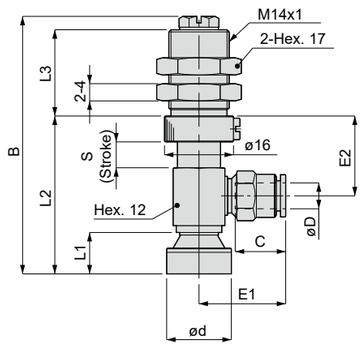


Unit: mm

Model No.	Pad Diameter ød	Vacuum Outlet Size G	B	L1	L2	Spring Force (N)	Weight (g)
VSP-C70S□-6A	70	G1/8	86	30	57	10.1 to 15.8	272
VSP-C100S□-6A	100	G1/8	86	30	57	10.1 to 15.8	403

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D10 to 30S□-4/6
●VSP-D10 to 30-□S□-4/6

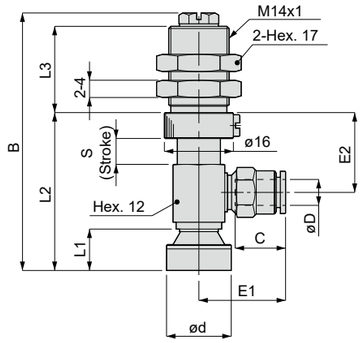


Unit: mm

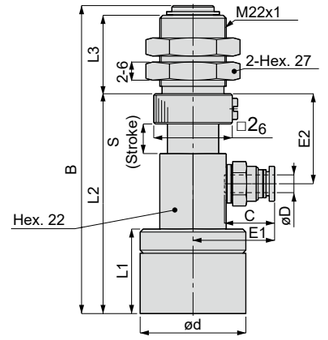
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D10S□-4	10	4	59.6	9.5	36.5	20	11.2	18.8	18.5	6	7.0 to 12.6	46
VSP-D10S□-6		6					11.9	20.1				47
VSP-D10-10S□-4		4	65.6		42.5		11.2	18.8	24.5	10	3.3 to 10.0	50
VSP-D10-10S□-6		6					11.9	20.1				51
VSP-D10-15S□-4		4	75.6		47.5	25	11.2	18.8	29.5	15	3.3 to 10.4	56
VSP-D10-15S□-6		6					11.9	20.1				57
VSP-D10-20S□-4		4	91.6		54.5	34	11.2	18.8	36.5	20	2.0 to 8.7	66
VSP-D10-20S□-6		6					11.9	20.1				67
VSP-D15S□-4	15	4	59.6	9.5	36.5	20	11.2	18.8	18.5	6	7.0 to 12.6	46
VSP-D15S□-6		6					11.9	20.1				47
VSP-D15-10S□-4		4	65.6		42.5		11.2	18.8	24.5	10	3.3 to 10.0	50
VSP-D15-10S□-6		6					11.9	20.1				51
VSP-D15-15S□-4		4	75.6		47.5	25	11.2	18.8	29.5	15	3.3 to 10.4	56
VSP-D15-15S□-6		6					11.9	20.1				57
VSP-D15-20S□-4		4	91.6		54.5	34	11.2	18.8	36.5	20	2.0 to 8.7	66
VSP-D15-20S□-6		6					11.9	20.1				67
VSP-D20S□-4	20	4	65.6	15.5	42.5	20	11.2	18.8	18.5	6	7.0 to 12.6	48
VSP-D20S□-6		6					11.9	20.1				49
VSP-D20-10S□-4		4	71.6		48.5		11.2	18.8	24.5	10	3.3 to 10.0	52
VSP-D20-10S□-6		6					11.9	20.1				53
VSP-D20-15S□-4		4	81.6		53.5	25	11.2	18.8	29.5	15	3.3 to 10.4	58
VSP-D20-15S□-6		6					11.9	20.1				59
VSP-D20-20S□-4		4	97.6		60.5	34	11.2	18.8	36.5	20	2.0 to 8.7	68
VSP-D20-20S□-6		6					11.9	20.1				69
VSP-D25S□-4	25	4	65.6	15.5	42.5	20	11.2	18.8	18.5	6	7.0 to 12.6	49
VSP-D25S□-6		6					11.9	20.1				50
VSP-D25-10S□-4		4	71.6		48.5		11.2	18.8	24.5	10	3.3 to 10.0	53
VSP-D25-10S□-6		6					11.9	20.1				54
VSP-D25-15S□-4		4	81.6		53.5	25	11.2	18.8	29.5	15	3.3 to 10.4	59
VSP-D25-15S□-6		6					11.9	20.1				60
VSP-D25-20S□-4		4	97.6		60.5	34	11.2	18.8	36.5	20	2.0 to 8.7	69
VSP-D25-20S□-6		6					11.9	20.1				70
VSP-D30S□-4	30	4	65.6	15.5	42.5	20	11.2	18.8	18.5	6	7.0 to 12.6	49
VSP-D30S□-6		6					11.9	20.1				50
VSP-D30-10S□-4		4	71.6		48.5		11.2	18.8	24.5	10	3.3 to 10.0	53
VSP-D30-10S□-6		6					11.9	20.1				54
VSP-D30-15S□-4		4	81.6		53.5	25	11.2	18.8	29.5	15	3.3 to 10.4	59
VSP-D30-15S□-6		6					11.9	20.1				60
VSP-D30-20S□-4		4	97.6		60.5	34	11.2	18.8	36.5	20	2.0 to 8.7	69
VSP-D30-20S□-6		6					11.9	20.1				70

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D35, 50S□4/6
●VSP-D35, 50-□S□-4/6



●VSP-D70, 100S□-4/6/8

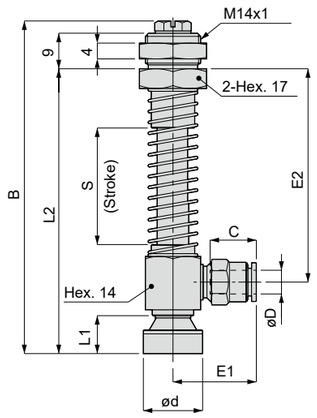


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D35S□-4	35	4	78.1	28	55	20	11.2	18.8	18.5	6	7.0 to 12.6	73
VSP-D35S□-6		6					11.9	20.1				74
VSP-D35-10S□-4		4	84.1		61		11.2	18.8	24.5	10	3.3 to 10.0	89
VSP-D35-10S□-6		6					11.9	20.1				90
VSP-D35-15S□-4		4	94.1		66	25	11.2	18.8	29.5	15	3.3 to 10.4	95
VSP-D35-15S□-6		6					11.9	20.1				96
VSP-D35-20S□-4		4	110.1		73	34	11.2	18.8	36.5	20	2.0 to 8.7	105
VSP-D35-20S□-6		6					11.9	20.1				106
VSP-D50S□-4	50	4	78.1	28	55	20	11.2	18.8	18.5	6	7.0 to 12.6	116
VSP-D50S□-6		6					11.9	20.1				117
VSP-D50-10S□-4		4	84.1		61		11.2	18.8	24.5	10	3.3 to 10.0	132
VSP-D50-10S□-6		6					11.9	20.1				133
VSP-D50-15S□-4		4	94.1		66	25	11.2	18.8	29.5	15	3.3 to 10.4	138
VSP-D50-15S□-6		6					11.9	20.1				139
VSP-D50-20S□-4		4	110.1		73	34	11.2	18.8	36.5	20	2.0 to 8.7	148
VSP-D50-20S□-6		6					11.9	20.1				149
VSP-D70S□-4	70	4	104	30	75	26	11.2	21.5	30	10	10.1 to 15.8	363
VSP-D70S□-6		6					11.9	23.7				364
VSP-D70S□-8		8					18.2	32.1				369
VSP-D100S□-4	100	4	104	30	75	26	11.2	21.5	30	10	10.1 to 15.8	493
VSP-D100S□-6		6					11.9	23.7				494
VSP-D100S□-8		8					18.2	32.1				499

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting without Spring Cover)

●VSP-D10 to 30-□S□-4C/6C

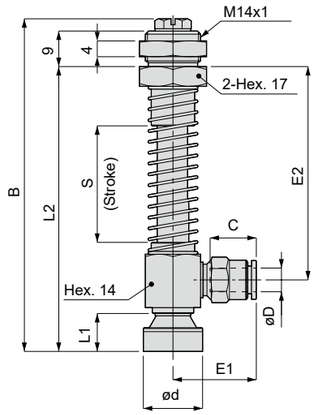


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D10-20S□-4C	10	4	71.1	9.5	59	11.2	19.8	41	20	1.5 to 4.9	64
VSP-D10-20S□-6C		6				11.9	21.1				65
VSP-D10-30S□-4C		4	84.1		72	11.2	19.8	54	30	1.1 to 4.8	71
VSP-D10-30S□-6C		6				11.9	21.1				72
VSP-D10-40S□-4C		4	97.1		85	11.2	19.8	67	40	1.0 to 4.5	78
VSP-D10-40S□-6C		6				11.9	21.1				79
VSP-D10-50S□-4C		4	110.1		98	11.2	19.8	80	50	0.9 to 4.5	84
VSP-D10-50S□-6C		6				11.9	21.1				85
VSP-D15-20S□-4C	15	4	71.1	9.5	59	11.2	19.8	41	20	1.5 to 4.9	65
VSP-D15-20S□-6C		6				11.9	21.1				66
VSP-D15-30S□-4C		4	84.1		72	11.2	19.8	54	30	1.1 to 4.8	71
VSP-D15-30S□-6C		6				11.9	21.1				72
VSP-D15-40S□-4C		4	97.1		85	11.2	19.8	67	40	1.0 to 4.5	78
VSP-D15-40S□-6C		6				11.9	21.1				79
VSP-D15-50S□-4C		4	110.1		98	11.2	19.8	80	50	0.9 to 4.5	85
VSP-D15-50S□-6C		6				11.9	21.1				86
VSP-D20-20S□-4C	20	4	77.1	15.5	65	11.2	19.8	41	20	1.5 to 4.9	66
VSP-D20-20S□-6C		6				11.9	21.1				67
VSP-D20-30S□-4C		4	90.1		78	11.2	19.8	54	30	1.1 to 4.8	73
VSP-D20-30S□-6C		6				11.9	21.1				74
VSP-D20-40S□-4C		4	103.1		91	11.2	19.8	67	40	1.0 to 4.5	80
VSP-D20-40S□-6C		6				11.9	21.1				81
VSP-D20-50S□-4C		4	116.1		104	11.2	19.8	80	50	0.9 to 4.5	86
VSP-D20-50S□-6C		6				11.9	21.1				87
VSP-D25-20S□-4C	25	4	77.1	15.5	65	11.2	19.8	41	20	1.5 to 4.9	68
VSP-D25-20S□-6C		6				11.9	21.1				69
VSP-D25-30S□-4C		4	90.1		78	11.2	19.8	54	30	1.1 to 4.8	74
VSP-D25-30S□-6C		6				11.9	21.1				75
VSP-D25-40S□-4C		4	103.1		91	11.2	19.8	67	40	1.0 to 4.5	81
VSP-D25-40S□-6C		6				11.9	21.1				82
VSP-D25-50S□-4C		4	116.1		104	11.2	19.8	80	50	0.9 to 4.5	88
VSP-D25-50S□-6C		6				11.9	21.1				89
VSP-D30-20S□-4C	30	4	77.1	15.5	65	11.2	19.8	41	20	1.5 to 4.9	68
VSP-D30-20S□-6C		6				11.9	21.1				69
VSP-D30-30S□-4C		4	90.1		78	11.2	19.8	54	30	1.1 to 4.8	74
VSP-D30-30S□-6C		6				11.9	21.1				75
VSP-D30-40S□-4C		4	103.1		91	11.2	19.8	67	40	1.0 to 4.5	81
VSP-D30-40S□-6C		6				11.9	21.1				82
VSP-D30-50S□-4C		4	116.1		104	11.2	19.8	80	50	0.9 to 4.5	88
VSP-D30-50S□-6C		6				11.9	21.1				89

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting without Spring Cover)

●VSP-D35, 50-□S□-4C/6C

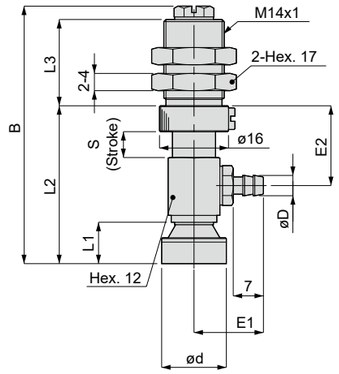


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D35-20S□-4C	35	4	89.6	28	77.5	11.2	19.8	41	20	1.5 to 4.9	103
VSP-D35-20S□-6C		6				11.9	21.1				104
VSP-D35-30S□-4C		4	102.6		90.5	11.2	19.8	54	30	1.1 to 4.8	110
VSP-D35-30S□-6C		6				11.9	21.1				111
VSP-D35-40S□-4C		4	115.6		103.5	11.2	19.8	67	40	1.0 to 4.5	117
VSP-D35-40S□-6C		6				11.9	21.1				118
VSP-D35-50S□-4C		4	128.6		116.5	11.2	19.8	80	50	0.9 to 4.5	124
VSP-D35-50S□-6C		6				11.9	21.1				125
VSP-D50-20S□-4C	50	4	89.6	28	77.5	11.2	19.8	41	20	1.5 to 4.9	146
VSP-D50-20S□-6C		6				11.9	21.1				147
VSP-D50-30S□-4C		4	102.6		90.5	11.2	19.8	54	30	1.1 to 4.8	153
VSP-D50-30S□-6C		6				11.9	21.1				154
VSP-D50-40S□-4C		4	115.6		103.5	11.2	19.8	67	40	1.0 to 4.5	160
VSP-D50-40S□-6C		6				11.9	21.1				161
VSP-D50-50S□-4C		4	128.6		116.5	11.2	19.8	80	50	0.9 to 4.5	167
VSP-D50-50S□-6C		6				11.9	21.1				168

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D10 to 30S□-4T/6T
●VSP-D10 to 30-□S□-4T/6T

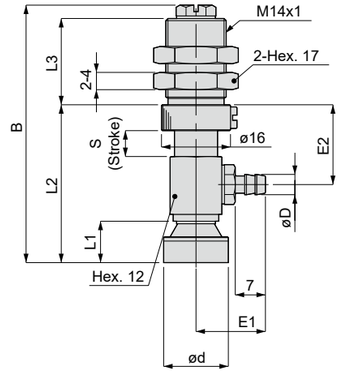


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D10S□-4T	10	4	59.6	9.5	36.5	20	15.9	18.5	6	7.0 to 12.6	45
VSP-D10S□-6T		6									
VSP-D10-10S□-4T		4	65.6		42.5			24.5	10	3.3 to 10.0	51
VSP-D10-10S□-6T		6									
VSP-D10-15S□-4T		4	75.6		47.5	25		29.5	15	3.3 to 10.4	57
VSP-D10-15S□-6T		6									
VSP-D10-20S□-4T		4	91.6		54.5	34		36.5	20	2.0 to 8.7	67
VSP-D10-20S□-6T		6									
VSP-D15S□-4T	15	4	59.6	9.5	36.5	20	15.9	18.5	6	7.0 to 12.6	45
VSP-D15S□-6T		6									
VSP-D15-10S□-4T		4	65.6		42.5			24.5	10	3.3 to 10.0	51
VSP-D15-10S□-6T		6									
VSP-D15-15S□-4T		4	75.6		47.5	25		29.5	15	3.3 to 10.4	57
VSP-D15-15S□-6T		6									
VSP-D15-20S□-4T		4	91.6		54.5	34		36.5	20	2.0 to 8.7	67
VSP-D15-20S□-6T		6									
VSP-D20S□-4T	20	4	65.6	15.5	42.5	20	15.9	18.5	6	7.0 to 12.6	47
VSP-D20S□-6T		6									
VSP-D20-10S□-4T		4	71.6		48.5			24.5	10	3.3 to 10.0	53
VSP-D20-10S□-6T		6									
VSP-D20-15S□-4T		4	81.6		53.5	25		29.5	15	3.3 to 10.4	59
VSP-D20-15S□-6T		6									
VSP-D20-20S□-4T		4	97.6		60.5	34		36.5	20	2.0 to 8.7	69
VSP-D20-20S□-6T		6									
VSP-D25S□-4T	25	4	65.6	15.5	42.5	20	15.9	18.5	6	7.0 to 12.6	48
VSP-D25S□-6T		6									
VSP-D25-10S□-4T		4	71.6		48.5			24.5	10	3.3 to 10.0	54
VSP-D25-10S□-6T		6									
VSP-D25-15S□-4T		4	81.6		53.5	25		29.5	15	3.3 to 10.4	60
VSP-D25-15S□-6T		6									
VSP-D25-20S□-4T		4	97.6		60.5	34		36.5	20	2.0 to 8.7	70
VSP-D25-20S□-6T		6									
VSP-D30S□-4T	30	4	65.6	15.5	42.5	20	15.9	18.5	6	7.0 to 12.6	48
VSP-D30S□-6T		6									
VSP-D30-10S□-4T		4	71.6		48.5			24.5	10	3.3 to 10.0	54
VSP-D30-10S□-6T		6									
VSP-D30-15S□-4T		4	81.6		53.5	25		29.5	15	3.3 to 10.4	60
VSP-D30-15S□-6T		6									
VSP-D30-20S□-4T		4	97.6		60.5	34		36.5	20	2.0 to 8.7	70
VSP-D30-20S□-6T		6									

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D35, 50S□-4T/6T
●VSP-D35, 50-□S□-4T/6T

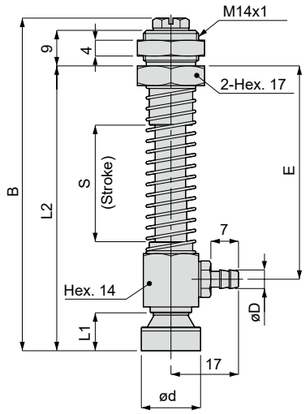


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D35S□-4T	35	4	78.1	28	55	20	15.9	18.5	6	7.0 to 12.6	84
VSP-D35S□-6T		6									
VSP-D35-10S□-4T		4	84.1		61			24.5	10	3.3 to 10.0	88
VSP-D35-10S□-6T		6									
VSP-D35-15S□-4T		4	94.1		66	25		29.5	15	3.3 to 10.4	94
VSP-D35-15S□-6T		6									
VSP-D35-20S□-4T		4	110.1		73	34		36.5	20	2.0 to 8.7	95
VSP-D35-20S□-6T		6									
VSP-D50S□-4T	50	4	78.1	28	55	20	15.9	18.5	6	7.0 to 12.6	127
VSP-D50S□-6T		6									
VSP-D50-10S□-4T		4	84.1		61			24.5	10	3.3 to 10.0	131
VSP-D50-10S□-6T		6									
VSP-D50-15S□-4T		4	94.1		66	25		29.5	15	3.3 to 10.4	137
VSP-D50-15S□-6T		6									
VSP-D50-20S□-4T		4	110.1		73	34		36.5	20	2.0 to 8.7	139
VSP-D50-20S□-6T		6									

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D10 to 30-□S□-4TC/6TC

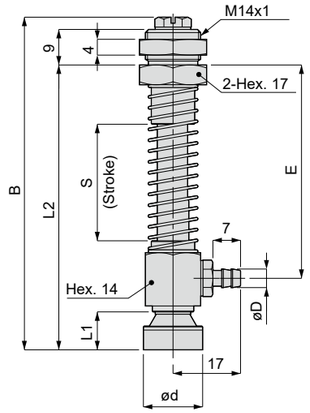


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D10-20S□-4TC	10	4	71.1	9.5	59	41	20	1.5 to 4.9	63
VSP-D10-20S□-6TC		6							
VSP-D10-30S□-4TC		4	84.1		72	54	30	1.1 to 4.8	70
VSP-D10-30S□-6TC		6							
VSP-D10-40S□-4TC		4	97.1		85	67	40	1.0 to 4.5	77
VSP-D10-40S□-6TC		6							
VSP-D10-50S□-4TC		4	110.1		98	80	50	0.9 to 4.5	83
VSP-D10-50S□-6TC		6							
VSP-D15-20S□-4TC	15	4	71.1	9.5	59	41	20	1.5 to 4.9	64
VSP-D15-20S□-6TC		6							
VSP-D15-30S□-4TC		4	84.1		72	54	30	1.1 to 4.8	70
VSP-D15-30S□-6TC		6							
VSP-D15-40S□-4TC		4	97.1		85	67	40	1.0 to 4.5	77
VSP-D15-40S□-6TC		6							
VSP-D15-50S□-4TC		4	110.1		98	80	50	0.9 to 4.5	84
VSP-D15-50S□-6TC		6							
VSP-D20-20S□-4TC	20	4	77.1	15.5	65	41	20	1.5 to 4.9	65
VSP-D20-20S□-6TC		6							
VSP-D20-30S□-4TC		4	90.1		78	54	30	1.1 to 4.8	72
VSP-D20-30S□-6TC		6							
VSP-D20-40S□-4TC		4	103.1		91	67	40	1.0 to 4.5	79
VSP-D20-40S□-6TC		6							
VSP-D20-50S□-4TC		4	116.1		104	80	50	0.9 to 4.5	85
VSP-D20-50S□-6TC		6							
VSP-D25-20S□-4TC	25	4	77.1	15.5	65	41	20	1.5 to 4.9	67
VSP-D25-20S□-6TC		6							
VSP-D25-30S□-4TC		4	90.1		78	54	30	1.1 to 4.8	73
VSP-D25-30S□-6TC		6							
VSP-D25-40S□-4TC		4	103.1		91	67	40	1.0 to 4.5	80
VSP-D25-40S□-6TC		6							
VSP-D25-50S□-4TC		4	116.1		104	80	50	0.9 to 4.5	87
VSP-D25-50S□-6TC		6							
VSP-D30-20S□-4TC	30	4	77.1	15.5	65	41	20	1.5 to 4.9	67
VSP-D30-20S□-6TC		6							
VSP-D30-30S□-4TC		4	90.1		78	54	30	1.1 to 4.8	73
VSP-D30-30S□-6TC		6							
VSP-D30-40S□-4TC		4	103.1		91	67	40	1.0 to 4.5	80
VSP-D30-40S□-6TC		6							
VSP-D30-50S□-4TC		4	116.1		104	80	50	0.9 to 4.5	87
VSP-D30-50S□-6TC		6							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting without Spring Cover)

●VSP-D35, 50-□S□-4TC/6TC

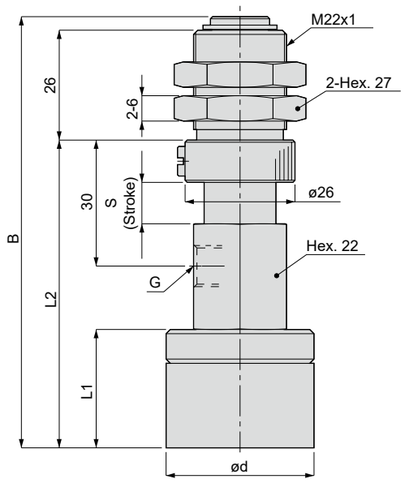


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D35-20S□-4TC	35	4	89.6	28	77.5	41	20	1.5 to 4.9	102
VSP-D35-20S□-6TC		6							
VSP-D35-30S□-4TC		4	102.6		90.5	54	30	1.1 to 4.8	109
VSP-D35-30S□-6TC		6							
VSP-D35-40S□-4TC		4	115.6		103.5	67	40	1.0 to 4.5	116
VSP-D35-40S□-6TC		6							
VSP-D35-50S□-4TC		4	128.6		116.5	80	50	0.9 to 4.5	123
VSP-D35-50S□-6TC		6							
VSP-D50-20S□-4TC	50	4	89.6	28	77.5	41	20	1.5 to 4.9	145
VSP-D50-20S□-6TC		6							
VSP-D50-30S□-4TC		4	102.6		90.5	54	30	1.1 to 4.8	152
VSP-D50-30S□-6TC		6							
VSP-D50-40S□-4TC		4	115.6		103.5	67	40	1.0 to 4.5	159
VSP-D50-40S□-6TC		6							
VSP-D50-50S□-4TC		4	128.6		116.5	80	50	0.9 to 4.5	167
VSP-D50-50S□-6TC		6							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Female Thread)

●VSP-D70, 100S□-6A

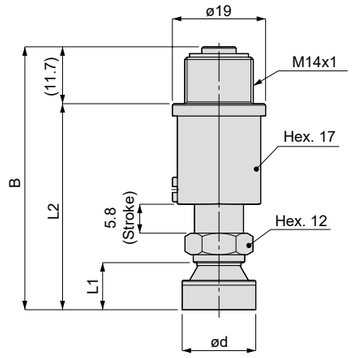


Unit: mm

Model No.	Pad Diameter ød	Vacuum Outlet Size G	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-D70S□-6A	70	G1/8	104	30	75	10	10.1 to 15.8	355
VSP-D100S□-6A	100	G1/8	104	30	75	10	10.1 to 15.8	485

Outline Dimension Drawing (Buffer Type, Direct Mount, VSP-F, Male Thread)

●VSP-F10 to 50S□

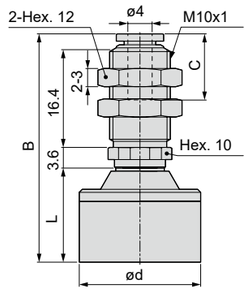


Unit: mm

Model No.	Pad Diameter ød	B	L1	L2	Spring Force (N)	Weight (g)
VSP-F10S□	10	53.5	9.5	41.8	7.9 to 15	54
VSP-F15S□	15	53.5	9.5	41.8	7.9 to 15	55
VSP-F20S□	20	59.5	15.5	47.8	7.9 to 15	56
VSP-F25S□	25	59.5	15.5	47.8	7.9 to 15	58
VSP-F30S□	30	59.5	15.5	47.8	7.9 to 15	58
VSP-F35S□	35	72	28	60.3	7.9 to 15	93
VSP-F50S□	50	72	28	60.3	7.9 to 15	136

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Push-in fitting)

●VSP-MA10 to 50S□-4

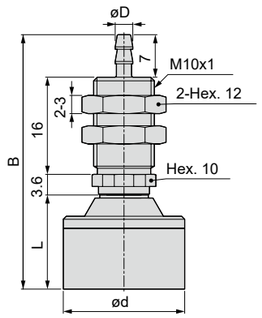


Unit: mm

Model No.	Pad Diameter ød	B	L	Tube End C	Weight (g)
VSP-MA10S□-4	10	32.1	9.5	11.2	7.6
VSP-MA15S□-4	15	32.1	9.5	11.2	7.9
VSP-MA20S□-4	20	38.1	15.5	11.2	9.5
VSP-MA25S□-4	25	38.1	15.5	11.2	11
VSP-MA30S□-4	30	38.1	15.5	11.2	11
VSP-MA35S□-4	35	50.6	28	11.2	45
VSP-MA50S□-4	50	50.6	28	11.2	90

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Barb Fitting)

●VSP-MA10 to 50S□-4T/6T

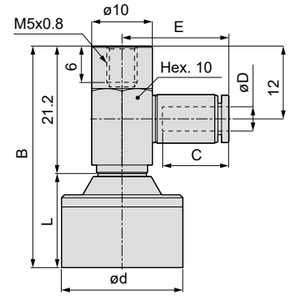


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-MA10S□-4T	10	2.5	36.1	9.5	7.6
VSP-MA10S□-6T		4			
VSP-MA15S□-4T	15	2.5	36.1	9.5	7.9
VSP-MA15S□-6T		4			
VSP-MA20S□-4T	20	2.5	42.1	15.5	9.5
VSP-MA20S□-6T		4			
VSP-MA25S□-4T	25	2.5	42.1	15.5	11
VSP-MA25S□-6T		4			
VSP-MA30S□-4T	30	2.5	42.1	15.5	11
VSP-MA30S□-6T		4			
VSP-MA35S□-4T	35	2.5	54.6	28	45
VSP-MA35S□-6T		4			
VSP-MA50S□-4T	50	2.5	54.6	28	90
VSP-MA50S□-6T		4			

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Push-in fitting)

●VSP-MB10 to 50S□-2/4/6

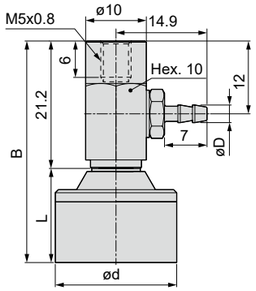


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-MB10S□-2	10	1.8	30.7	9.5	8.4	13.7	7.8
VSP-MB10S□-4		4			11.2	17.8	8.5
VSP-MB10S□-6		6			11.9	19.6	9.9
VSP-MB15S□-2	15	1.8	30.7	9.5	8.4	13.7	8.1
VSP-MB15S□-4		4			11.2	17.8	8.8
VSP-MB15S□-6		6			11.9	19.6	10.2
VSP-MB20S□-2	20	1.8	36.7	15.5	8.4	13.7	10
VSP-MB20S□-4		4			11.2	17.8	11
VSP-MB20S□-6		6			11.9	19.6	12
VSP-MB25S□-2	25	1.8	36.7	15.5	8.4	13.7	11
VSP-MB25S□-4		4			11.2	17.8	12
VSP-MB25S□-6		6			11.9	19.6	13
VSP-MB30S□-2	30	1.8	36.7	15.5	8.4	13.7	11
VSP-MB30S□-4		4			11.2	17.8	12
VSP-MB30S□-6		6			11.9	19.6	13
VSP-MB35S□-2	35	1.8	49.2	28	8.4	13.7	44
VSP-MB35S□-4		4			11.2	17.8	45
VSP-MB35S□-6		6			11.9	19.6	46
VSP-MB50S□-2	50	1.8	49.2	28	8.4	13.7	90
VSP-MB50S□-4		4			11.2	17.8	91
VSP-MB50S□-6		6			11.9	19.6	92

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Barb Fitting)

●VSP-MB10 to 50S□-4T/6T

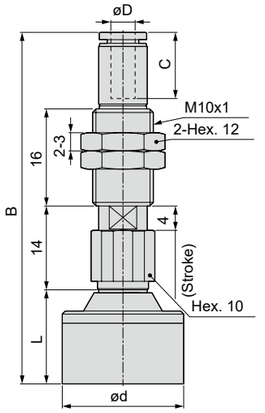


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. D	B	L	Weight (g)
VSP-MB10S□-4T	10	2.5	30.7	9.5	7.3
VSP-MB10S□-6T		4			
VSP-MB15S□-4T	15	2.5	30.7	9.5	7.6
VSP-MB15S□-6T		4			
VSP-MB20S□-4T	20	2.5	36.7	15.5	9.3
VSP-MB20S□-6T		4			
VSP-MB25S□-4T	25	2.5	36.7	15.5	11
VSP-MB25S□-6T		4			
VSP-MB30S□-4T	30	2.5	36.7	15.5	11
VSP-MB30S□-6T		4			
VSP-MB35S□-4T	35	2.5	49.2	28	45
VSP-MB35S□-6T		4			
VSP-MB50S□-4T	50	2.5	49.2	28	90
VSP-MB50S□-6T		4			

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Push-in fitting)

●VSP-MC10 to 50S□-2/4

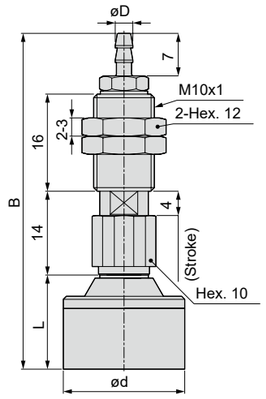


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	Spring Force (N)	Weight (g)
VSP-MC10S□-2	10	1.8	48.4	9.5	8.4	1 to 1.3	19
VSP-MC10S□-4		4	52.5		11.2		20
VSP-MC15S□-2	15	1.8	48.4	9.5	8.4	1 to 1.3	19
VSP-MC15S□-4		4	52.5		11.2		20
VSP-MC20S□-2	20	1.8	54.4	15.5	8.4	1 to 1.3	21
VSP-MC20S□-4		4	58.5		11.2		22
VSP-MC25S□-2	25	1.8	54.4	15.5	8.4	1 to 1.3	22
VSP-MC25S□-4		4	58.5		11.2		23
VSP-MC30S□-2	30	1.8	54.4	15.5	8.4	1 to 1.3	22
VSP-MC30S□-4		4	58.5		11.2		23
VSP-MC35S□-2	35	1.8	66.9	28	8.4	1 to 1.3	56
VSP-MC35S□-4		4	71		11.2		57
VSP-MC50S□-2	50	1.8	66.9	28	8.4	1 to 1.3	101
VSP-MC50S□-4		4	71		11.2		102

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Barb Fitting)

●VSP-MC10 to 50S□-4T/6T

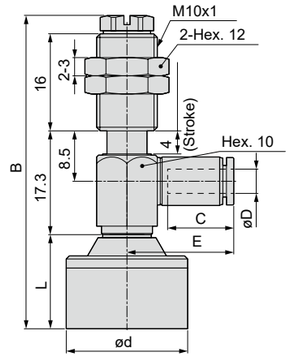


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MC10S□-4T	10	2.5	49.6	9.5	1 to 1.3	19
VSP-MC10S□-6T		4				
VSP-MC15S□-4T	15	2.5	49.6	9.5	1 to 1.3	19
VSP-MC15S□-6T		4				
VSP-MC20S□-4T	20	2.5	55.6	15.5	1 to 1.3	21
VSP-MC20S□-6T		4				
VSP-MC25S□-4T	25	2.5	55.6	15.5	1 to 1.3	22
VSP-MC25S□-6T		4				
VSP-MC30S□-4T	30	2.5	55.6	15.5	1 to 1.3	23
VSP-MC30S□-6T		4				
VSP-MC35S□-4T	35	2.5	68.1	28	1 to 1.3	57
VSP-MC35S□-6T		4				
VSP-MC50S□-4T	50	2.5	68.1	28	1 to 1.3	102
VSP-MC50S□-6T		4				

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Push-in fitting)

●VSP-MD10 to 50S□-2/4/6

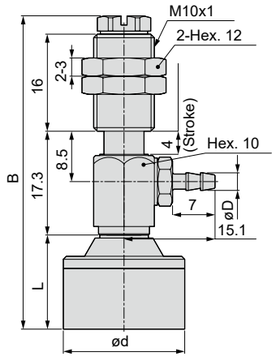


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Spring Force (N)	Weight (g)
VSP-MD10S□-2	10	1.8	45.8	9.5	8.4	13.6	1 to 1.3	22
VSP-MD10S□-4		4			11.2	17.7		23
VSP-MD10S□-6		6			11.9	19.5		24
VSP-MD15S□-2	15	1.8	45.8	9.5	8.4	13.6	1 to 1.3	23
VSP-MD15S□-4		4			11.2	17.7		24
VSP-MD15S□-6		6			11.9	19.5		25
VSP-MD20S□-2	20	1.8	51.8	15.5	8.4	13.6	1 to 1.3	24
VSP-MD20S□-4		4			11.2	17.7		25
VSP-MD20S□-6		6			11.9	19.5		26
VSP-MD25S□-2	25	1.8	51.8	15.5	8.4	13.6	1 to 1.3	26
VSP-MD25S□-4		4			11.2	17.7		27
VSP-MD25S□-6		6			11.9	19.5		28
VSP-MD30S□-2	30	1.8	51.8	15.5	8.4	13.6	1 to 1.3	26
VSP-MD30S□-4		4			11.2	17.7		27
VSP-MD30S□-6		6			11.9	19.5		28
VSP-MD35S□-2	35	1.8	64.3	28	8.4	13.6	1 to 1.3	60
VSP-MD35S□-4		4			11.2	17.7		61
VSP-MD35S□-6		6			11.9	19.5		62
VSP-MD50S□-2	50	1.8	64.3	28	8.4	13.6	1 to 1.3	105
VSP-MD50S□-4		4			11.2	17.7		106
VSP-MD50S□-6		6			11.9	19.5		107

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Barb Fitting)

●VSP-MD10 to 50S□-4T/6T

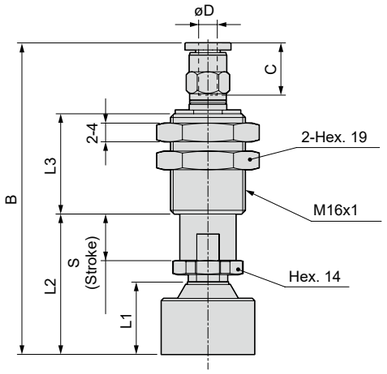


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MD10S□-4T	10	2.5	45.8	9.5	1 to 1.3	22
VSP-MD10S□-6T		4				
VSP-MD15S□-4T	15	2.5	45.8	9.5	1 to 1.3	23
VSP-MD15S□-6T		4				
VSP-MD20S□-4T	20	2.5	51.8	15.5	1 to 1.3	24
VSP-MD20S□-6T		4				
VSP-MD25S□-4T	25	2.5	51.8	15.5	1 to 1.3	26
VSP-MD25S□-6T		4				
VSP-MD30S□-4T	30	2.5	51.8	15.5	1 to 1.3	26
VSP-MD30S□-6T		4				
VSP-MD35S□-4T	35	2.5	64.3	28	1 to 1.3	60
VSP-MD35S□-6T		4				
VSP-MD50S□-4T	50	2.5	64.3	28	1 to 1.3	105
VSP-MD50S□-6T		4				

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC10, 15-□S□-2/4/6

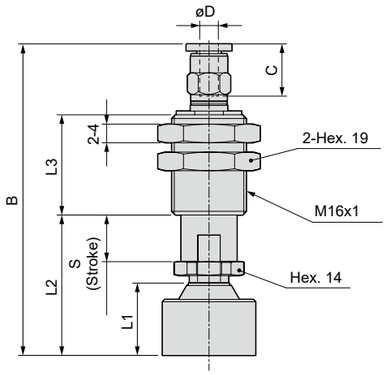


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10-10S□-2	10	1.8	56.7	9.5	24.1	21.5	8.4	10	1.0 to 2.4	26
VSP-HC10-10S□-4		4	60.8				11.2			27
VSP-HC10-10S□-6		6	62.1				11.9			28
VSP-HC10-15S□-2		1.8	66.7		29.1	26.5	8.4	15	1.0 to 2.7	28
VSP-HC10-15S□-4		4	70.8				11.2			29
VSP-HC10-15S□-6		6	72.1				11.9			30
VSP-HC10-20S□-2		1.8	76.7		34.1	31.5	8.4	20	1.0 to 3.0	30
VSP-HC10-20S□-4		4	80.8				11.2			31
VSP-HC10-20S□-6		6	82.1				11.9			32
VSP-HC10-25S□-2		1.8	87.2		39.1	37	8.4	25	1.0 to 3.0	32
VSP-HC10-25S□-4		4	91.3				11.2			33
VSP-HC10-25S□-6		6	92.6				11.9			34
VSP-HC10-30S□-2		1.8	98.2		44.1	43	8.4	30	1.0 to 3.0	34
VSP-HC10-30S□-4		4	102.3				11.2			35
VSP-HC10-30S□-6		6	103.6				11.9			36
VSP-HC10-40S□-2		1.8	120.2		54.1	55	8.4	40	1.0 to 3.0	38
VSP-HC10-40S□-4		4	124.3				11.2			39
VSP-HC10-40S□-6		6	125.6				11.9			40
VSP-HC10-50S□-2		1.8	141.7		64.1	66.5	8.4	50	1.0 to 3.1	42
VSP-HC10-50S□-4		4	145.8				11.2			43
VSP-HC10-50S□-6		6	147.1				11.9			44
VSP-HC15-10S□-2	15	1.8	56.7	9.5	24.1	21.5	8.4	10	1.0 to 2.4	26
VSP-HC15-10S□-4		4	60.8				11.2			27
VSP-HC15-10S□-6		6	62.1				11.9			28
VSP-HC15-15S□-2		1.8	66.7		29.1	26.5	8.4	15	1.0 to 2.7	28
VSP-HC15-15S□-4		4	70.8				11.2			29
VSP-HC15-15S□-6		6	72.1				11.9			30
VSP-HC15-20S□-2		1.8	76.7		34.1	31.5	8.4	20	1.0 to 3.0	30
VSP-HC15-20S□-4		4	80.8				11.2			31
VSP-HC15-20S□-6		6	82.1				11.9			32
VSP-HC15-25S□-2		1.8	87.2		39.1	37	8.4	25	1.0 to 3.0	32
VSP-HC15-25S□-4		4	91.3				11.2			33
VSP-HC15-25S□-6		6	92.6				11.9			34
VSP-HC15-30S□-2		1.8	98.2		44.1	43	8.4	30	1.0 to 3.0	34
VSP-HC15-30S□-4		4	102.3				11.2			35
VSP-HC15-30S□-6		6	103.6				11.9			36
VSP-HC15-40S□-2		1.8	120.2		54.1	55	8.4	40	1.0 to 3.0	38
VSP-HC15-40S□-4		4	124.3				11.2			39
VSP-HC15-40S□-6		6	125.6				11.9			40
VSP-HC15-50S□-2		1.8	141.7		64.1	66.5	8.4	50	1.0 to 3.1	42
VSP-HC15-50S□-4		4	145.8				11.2			43
VSP-HC15-50S□-6		6	147.1				11.9			44

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC20, 25-□S□-2/4/6

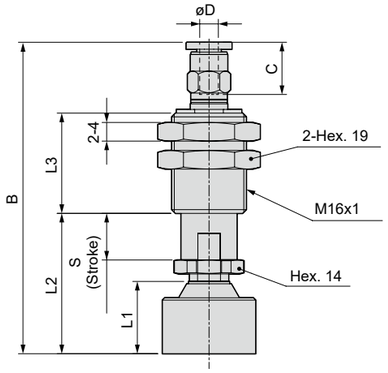


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20-10S□-2	20	1.8	62.7	15.5	30.1	21.5	8.4	10	1.0 to 2.4	28
VSP-HC20-10S□-4		4	66.8				11.2			29
VSP-HC20-10S□-6		6	68.1				11.9			30
VSP-HC20-15S□-2		1.8	72.7		35.1	26.5	8.4	15	1.0 to 2.7	30
VSP-HC20-15S□-4		4	76.8				11.2			31
VSP-HC20-15S□-6		6	78.1				11.9			32
VSP-HC20-20S□-2		1.8	82.7		40.1	31.5	8.4	20	1.0 to 3.0	32
VSP-HC20-20S□-4		4	86.8				11.2			33
VSP-HC20-20S□-6		6	88.1				11.9			34
VSP-HC20-25S□-2		1.8	93.2		45.1	37	8.4	25	1.0 to 3.0	34
VSP-HC20-25S□-4		4	97.3				11.2			35
VSP-HC20-25S□-6		6	98.6				11.9			36
VSP-HC20-30S□-2		1.8	104.2		50.1	43	8.4	30	1.0 to 3.0	36
VSP-HC20-30S□-4		4	108.3				11.2			37
VSP-HC20-30S□-6		6	109.6				11.9			38
VSP-HC20-40S□-2		1.8	126.2		60.1	55	8.4	40	1.0 to 3.0	40
VSP-HC20-40S□-4		4	130.3				11.2			41
VSP-HC20-40S□-6		6	131.6				11.9			42
VSP-HC20-50S□-2		1.8	147.7		70.1	66.5	8.4	50	1.0 to 3.1	44
VSP-HC20-50S□-4		4	151.8				11.2			45
VSP-HC20-50S□-6		6	153.1				11.9			46
VSP-HC25-10S□-2	25	1.8	62.7	15.5	30.1	21.5	8.4	10	1.0 to 2.4	29
VSP-HC25-10S□-4		4	66.8				11.2			30
VSP-HC25-10S□-6		6	68.1				11.9			31
VSP-HC25-15S□-2		1.8	72.7		35.1	26.5	8.4	15	1.0 to 2.7	31
VSP-HC25-15S□-4		4	76.8				11.2			32
VSP-HC25-15S□-6		6	78.1				11.9			33
VSP-HC25-20S□-2		1.8	82.7		40.1	31.5	8.4	20	1.0 to 3.0	33
VSP-HC25-20S□-4		4	86.8				11.2			34
VSP-HC25-20S□-6		6	88.1				11.9			35
VSP-HC25-25S□-2		1.8	93.2		45.1	37	8.4	25	1.0 to 3.0	35
VSP-HC25-25S□-4		4	97.3				11.2			36
VSP-HC25-25S□-6		6	98.6				11.9			37
VSP-HC25-30S□-2		1.8	104.2		50.1	43	8.4	30	1.0 to 3.0	37
VSP-HC25-30S□-4		4	108.3				11.2			38
VSP-HC25-30S□-6		6	109.6				11.9			39
VSP-HC25-40S□-2		1.8	126.2		60.1	55	8.4	40	1.0 to 3.0	41
VSP-HC25-40S□-4		4	130.3				11.2			42
VSP-HC25-40S□-6		6	131.6				11.9			43
VSP-HC25-50S□-2		1.8	147.7		70.1	66.5	8.4	50	1.0 to 3.1	45
VSP-HC25-50S□-4		4	151.8				11.2			46
VSP-HC25-50S□-6		6	153.1				11.9			47

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC30-□S□-2/4/6

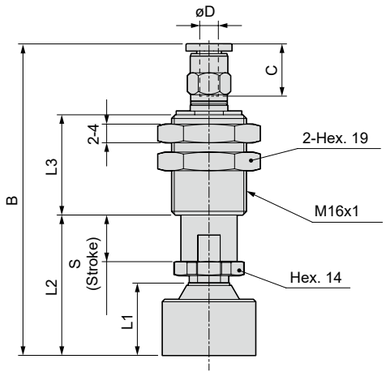


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC30-10S□-2	30	1.8	62.7	15.5	30.1	21.5	8.4	10	1.0 to 2.4	30
VSP-HC30-10S□-4		4	66.8				11.2			31
VSP-HC30-10S□-6		6	68.1				11.9			32
VSP-HC30-15S□-2		1.8	72.7		35.1	26.5	8.4	15	1.0 to 2.7	32
VSP-HC30-15S□-4		4	76.8				11.2			33
VSP-HC30-15S□-6		6	78.1				11.9			34
VSP-HC30-20S□-2		1.8	82.7		40.1	31.5	8.4	20	1.0 to 3.0	34
VSP-HC30-20S□-4		4	86.8				11.2			35
VSP-HC30-20S□-6		6	88.1				11.9			36
VSP-HC30-25S□-2		1.8	93.2		45.1	37	8.4	25	1.0 to 3.0	36
VSP-HC30-25S□-4		4	97.3				11.2			37
VSP-HC30-25S□-6		6	98.6				11.9			38
VSP-HC30-30S□-2		1.8	104.2		50.1	43	8.4	30	1.0 to 3.0	38
VSP-HC30-30S□-4		4	108.3				11.2			39
VSP-HC30-30S□-6		6	109.6				11.9			40
VSP-HC30-40S□-2		1.8	126.2		60.1	55	8.4	40	1.0 to 3.0	42
VSP-HC30-40S□-4		4	130.3				11.2			43
VSP-HC30-40S□-6		6	131.6				11.9			44
VSP-HC30-50S□-2		1.8	147.7		70.1	66.5	8.4	50	1.0 to 3.1	46
VSP-HC30-50S□-4		4	151.8				11.2			47
VSP-HC30-50S□-6		6	153.1				11.9			48

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC35, 50-□S□-2/4/6

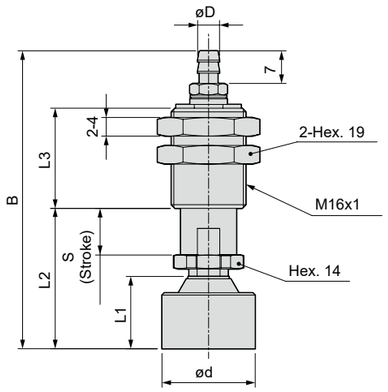


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC35-10S□-2	35	1.8	75.2	28	42.6	21.5	8.4	10	1.0 to 2.4	59
VSP-HC35-10S□-4		4	79.3				11.2			60
VSP-HC35-10S□-6		6	80.6				11.9			61
VSP-HC35-15S□-2		1.8	85.2		47.6	26.5	8.4	15	1.0 to 2.7	61
VSP-HC35-15S□-4		4	89.3				11.2			62
VSP-HC35-15S□-6		6	90.6				11.9			63
VSP-HC35-20S□-2		1.8	95.2		52.6	31.5	8.4	20	1.0 to 3.0	63
VSP-HC35-20S□-4		4	99.3				11.2			64
VSP-HC35-20S□-6		6	100.6				11.9			65
VSP-HC35-25S□-2		1.8	105.7		57.6	37	8.4	25	1.0 to 3.0	65
VSP-HC35-25S□-4		4	109.8				11.2			66
VSP-HC35-25S□-6		6	111.1				11.9			67
VSP-HC35-30S□-2		1.8	116.7		62.6	43	8.4	30	1.0 to 3.0	67
VSP-HC35-30S□-4		4	120.8				11.2			68
VSP-HC35-30S□-6		6	122.1				11.9			69
VSP-HC35-40S□-2		1.8	138.7		72.6	55	8.4	40	1.0 to 3.0	71
VSP-HC35-40S□-4		4	142.8				11.2			72
VSP-HC35-40S□-6		6	144.1				11.9			73
VSP-HC35-50S□-2		1.8	160.2		82.6	66.5	8.4	50	1.0 to 3.1	75
VSP-HC35-50S□-4		4	164.3				11.2			76
VSP-HC35-50S□-6		6	165.6				11.9			77
VSP-HC50-10S□-2	50	1.8	75.2	28	42.6	21.5	8.4	10	1.0 to 2.4	100
VSP-HC50-10S□-4		4	79.3				11.2			101
VSP-HC50-10S□-6		6	80.6				11.9			102
VSP-HC50-15S□-2		1.8	85.2		47.6	26.5	8.4	15	1.0 to 2.7	102
VSP-HC50-15S□-4		4	89.3				11.2			103
VSP-HC50-15S□-6		6	90.6				11.9			104
VSP-HC50-20S□-2		1.8	95.2		52.6	31.5	8.4	20	1.0 to 3.0	104
VSP-HC50-20S□-4		4	99.3				11.2			105
VSP-HC50-20S□-6		6	100.6				11.9			106
VSP-HC50-25S□-2		1.8	105.7		57.6	37	8.4	25	1.0 to 3.0	106
VSP-HC50-25S□-4		4	109.8				11.2			107
VSP-HC50-25S□-6		6	111.1				11.9			108
VSP-HC50-30S□-2		1.8	116.7		62.6	43	8.4	30	1.0 to 3.0	108
VSP-HC50-30S□-4		4	120.8				11.2			109
VSP-HC50-30S□-6		6	122.1				11.9			110
VSP-HC50-40S□-2		1.8	138.7		72.6	55	8.4	40	1.0 to 3.0	112
VSP-HC50-40S□-4		4	142.8				11.2			113
VSP-HC50-40S□-6		6	144.1				11.9			114
VSP-HC50-50S□-2		1.8	160.2		82.6	66.5	8.4	50	1.0 to 3.1	116
VSP-HC50-50S□-4		4	164.3				11.2			117
VSP-HC50-50S□-6		6	165.6				11.9			118

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC10, 15-□S□-4T/6T

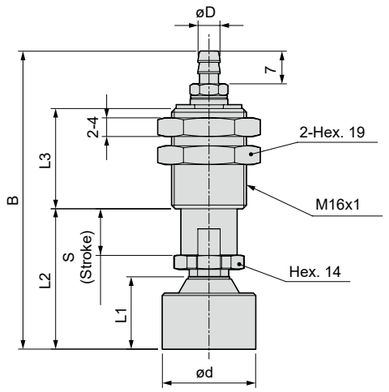


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10-10S□-4T	10	2.5	56.3	9.5	22.5	21.5	10	1.0 to 2.4	22
VSP-HC10-10S□-6T		4							
VSP-HC10-15S□-4T		2.5	66.3		27.5	26.5	15	1.0 to 2.7	24
VSP-HC10-15S□-6T		4							
VSP-HC10-20S□-4T		2.5	76.3		32.5	31.5	20	1.0 to 3.0	26
VSP-HC10-20S□-6T		4							
VSP-HC10-25S□-4T		2.5	86.8		37.5	37	25	1.0 to 3.0	29
VSP-HC10-25S□-6T		4							
VSP-HC10-30S□-4T		2.5	97.8		42.5	43	30	1.0 to 3.0	31
VSP-HC10-30S□-6T		4							
VSP-HC10-40S□-4T		2.5	119.8		52.5	55	40	1.0 to 3.0	35
VSP-HC10-40S□-6T		4							
VSP-HC10-50S□-4T		2.5	141.3		62.5	66.5	50	1.0 to 3.1	39
VSP-HC10-50S□-6T		4							
VSP-HC15-10S□-4T	15	2.5	56.3	9.5	22.5	21.5	10	1.0 to 2.4	22
VSP-HC15-10S□-6T		4							
VSP-HC15-15S□-4T		2.5	66.3		27.5	26.5	15	1.0 to 2.7	24
VSP-HC15-15S□-6T		4							
VSP-HC15-20S□-4T		2.5	76.3		32.5	31.5	20	1.0 to 3.0	26
VSP-HC15-20S□-6T		4							
VSP-HC15-25S□-4T		2.5	86.8		37.5	37	25	1.0 to 3.0	29
VSP-HC15-25S□-6T		4							
VSP-HC15-30S□-4T		2.5	97.8		42.5	43	30	1.0 to 3.0	31
VSP-HC15-30S□-6T		4							
VSP-HC15-40S□-4T		2.5	119.8		52.5	55	40	1.0 to 3.0	35
VSP-HC15-40S□-6T		4							
VSP-HC15-50S□-4T		2.5	141.3		62.5	66.5	50	1.0 to 3.1	39
VSP-HC15-50S□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC20 to 30-□S□-4T/6T

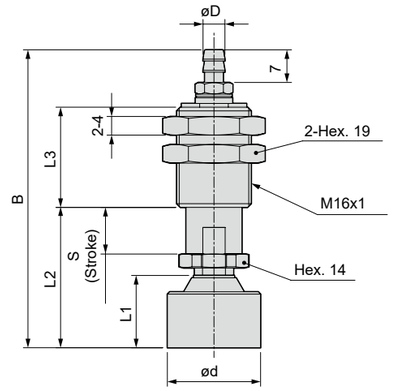


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20-10S□-4T	20	2.5	63.9	15.5	30.1	21.5	10	1.0 to 2.4	26
VSP-HC20-10S□-6T		4							
VSP-HC20-15S□-4T		2.5	73.9		35.1	26.5	15	1.0 to 2.7	28
VSP-HC20-15S□-6T		4							
VSP-HC20-20S□-4T		2.5	83.9		40.1	31.5	20	1.0 to 3.0	30
VSP-HC20-20S□-6T		4							
VSP-HC20-25S□-4T		2.5	94.4		45.1	37	25	1.0 to 3.0	32
VSP-HC20-25S□-6T		4							
VSP-HC20-30S□-4T		2.5	105.4		50.1	43	30	1.0 to 3.0	35
VSP-HC20-30S□-6T		4							
VSP-HC20-40S□-4T		2.5	127.4		60.1	55	40	1.0 to 3.0	39
VSP-HC20-40S□-6T		4							
VSP-HC20-50S□-4T		2.5	148.9		70.1	66.5	50	1.0 to 3.1	43
VSP-HC20-50S□-6T		4							
VSP-HC25-10S□-4T	25	2.5	63.9	15.5	30.1	21.5	10	1.0 to 2.4	27
VSP-HC25-10S□-6T		4							
VSP-HC25-15S□-4T		2.5	73.9		35.1	26.5	15	1.0 to 2.7	29
VSP-HC25-15S□-6T		4							
VSP-HC25-20S□-4T		2.5	83.9		40.1	31.5	20	1.0 to 3.0	31
VSP-HC25-20S□-6T		4							
VSP-HC25-25S□-4T		2.5	94.4		45.1	37	25	1.0 to 3.0	33
VSP-HC25-25S□-6T		4							
VSP-HC25-30S□-4T		2.5	105.4		50.1	43	30	1.0 to 3.0	36
VSP-HC25-30S□-6T		4							
VSP-HC25-40S□-4T		2.5	127.4		60.1	55	40	1.0 to 3.0	40
VSP-HC25-40S□-6T		4							
VSP-HC25-50S□-4T		2.5	148.9		70.1	66.5	50	1.0 to 3.1	44
VSP-HC25-50S□-6T		4							
VSP-HC30-10S□-4T	30	2.5	63.9	15.5	30.1	21.5	10	1.0 to 2.4	28
VSP-HC30-10S□-6T		4							
VSP-HC30-15S□-4T		2.5	73.9		35.1	26.5	15	1.0 to 2.7	30
VSP-HC30-15S□-6T		4							
VSP-HC30-20S□-4T		2.5	83.9		40.1	31.5	20	1.0 to 3.0	32
VSP-HC30-20S□-6T		4							
VSP-HC30-25S□-4T		2.5	94.4		45.1	37	25	1.0 to 3.0	34
VSP-HC30-25S□-6T		4							
VSP-HC30-30S□-4T		2.5	105.4		50.1	43	30	1.0 to 3.0	37
VSP-HC30-30S□-6T		4							
VSP-HC30-40S□-4T		2.5	127.4		60.1	55	40	1.0 to 3.0	41
VSP-HC30-40S□-6T		4							
VSP-HC30-50S□-4T		2.5	148.9		70.1	66.5	50	1.0 to 3.1	45
VSP-HC30-50S□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC35, 50-□S□-4T/6T

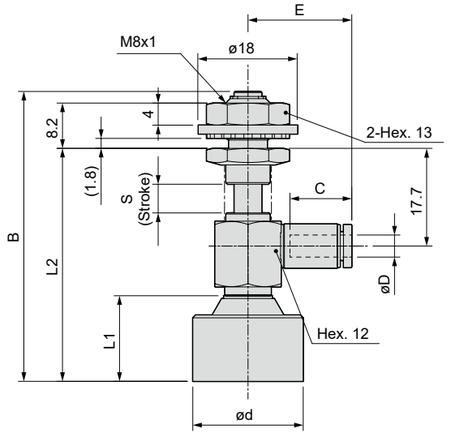


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC35-10S□-4T	35	2.5	76.4	28	42.6	21.5	10	1.0 to 2.4	47
VSP-HC35-10S□-6T		4							
VSP-HC35-15S□-4T		2.5	86.4		47.6	26.5	15	1.0 to 2.7	49
VSP-HC35-15S□-6T		4							
VSP-HC35-20S□-4T		2.5	96.4		52.6	31.5	20	1.0 to 3.0	52
VSP-HC35-20S□-6T		4							
VSP-HC35-25S□-4T		2.5	106.9		57.6	37	25	1.0 to 3.0	54
VSP-HC35-25S□-6T		4							
VSP-HC35-30S□-4T		2.5	117.9		62.6	43	30	1.0 to 3.0	57
VSP-HC35-30S□-6T		4							
VSP-HC35-40S□-4T		2.5	139.9		72.6	55	40	1.0 to 3.0	61
VSP-HC35-40S□-6T		4							
VSP-HC35-50S□-4T		2.5	161.4		82.6	66.5	50	1.0 to 3.1	66
VSP-HC35-50S□-6T		4							
VSP-HC50-10S□-4T	50	2.5	76.4	28	42.6	21.5	10	1.0 to 2.4	88
VSP-HC50-10S□-6T		4							
VSP-HC50-15S□-4T		2.5	86.4		47.6	26.5	15	1.0 to 2.7	90
VSP-HC50-15S□-6T		4							
VSP-HC50-20S□-4T		2.5	96.4		52.6	31.5	20	1.0 to 3.0	92
VSP-HC50-20S□-6T		4							
VSP-HC50-25S□-4T		2.5	106.9		57.6	37	25	1.0 to 3.0	94
VSP-HC50-25S□-6T		4							
VSP-HC50-30S□-4T		2.5	117.9		62.6	43	30	1.0 to 3.0	97
VSP-HC50-30S□-6T		4							
VSP-HC50-40S□-4T		2.5	139.9		72.6	55	40	1.0 to 3.0	101
VSP-HC50-40S□-6T		4							
VSP-HC50-50S□-4T		2.5	161.4		82.6	66.5	50	1.0 to 3.1	106
VSP-HC50-50S□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side, VSP-HD, Push-in fitting)

●VSP-HD10 to 50S□-2/4/6

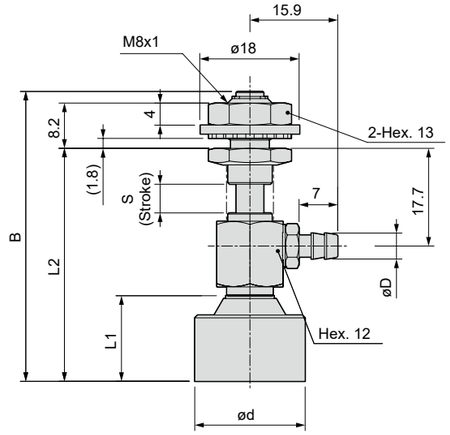


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HD10S□-2	10	1.8	46.5	9.5	36.2	8.4	14.7	5.2	1.6 to 2.9	35
VSP-HD10S□-4		4				11.2	18.8			36
VSP-HD10S□-6		6				11.9	20.6			37
VSP-HD15S□-2	15	1.8	46.5	9.5	36.2	8.4	14.7	5.2	1.6 to 2.9	35
VSP-HD15S□-4		4				11.2	18.8			36
VSP-HD15S□-6		6				11.9	20.6			37
VSP-HD20S□-2	20	1.8	52.5	15.5	42.2	8.4	14.7	5.2	1.6 to 2.9	37
VSP-HD20S□-4		4				11.2	18.8			38
VSP-HD20S□-6		6				11.9	20.6			39
VSP-HD25S□-2	25	1.8	52.5	15.5	42.2	8.4	14.7	5.2	1.6 to 2.9	38
VSP-HD25S□-4		4				11.2	18.8			39
VSP-HD25S□-6		6				11.9	20.6			40
VSP-HD30S□-2	30	1.8	52.5	15.5	42.2	8.4	14.7	5.2	1.6 to 2.9	39
VSP-HD30S□-4		4				11.2	18.8			40
VSP-HD30S□-6		6				11.9	20.6			41
VSP-HD35S□-2	35	1.8	65	28	54.7	8.4	14.7	5.2	1.6 to 2.9	68
VSP-HD35S□-4		4				11.2	18.8			69
VSP-HD35S□-6		6				11.9	20.6			70
VSP-HD50S□-2	50	1.8	65	28	54.7	8.4	14.7	5.2	1.6 to 2.9	109
VSP-HD50S□-4		4				11.2	18.8			110
VSP-HD50S□-6		6				11.9	20.6			112

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side, VSP-HD, Barb Fitting)

●VSP-HD10 to 50S□-4T/6T

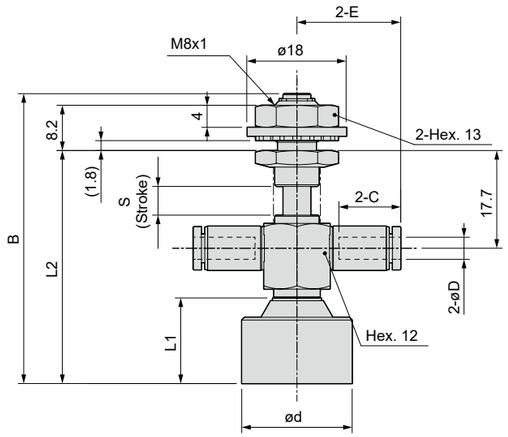


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HD10S□-4T	10	1.8	46.5	9.5	36.2	5.2	1.6 to 2.9	35
VSP-HD10S□-6T		4						
VSP-HD15S□-4T	15	1.8	46.5	9.5	36.2	5.2	1.6 to 2.9	35
VSP-HD15S□-6T		4						
VSP-HD20S□-4T	20	1.8	52.5	15.5	42.2	5.2	1.6 to 2.9	37
VSP-HD20S□-6T		4						
VSP-HD25S□-4T	25	1.8	52.5	15.5	42.2	5.2	1.6 to 2.9	38
VSP-HD25S□-6T		4						
VSP-HD30S□-4T	30	1.8	52.5	15.5	42.2	5.2	1.6 to 2.9	39
VSP-HD30S□-6T		4						
VSP-HD35S□-4T	35	1.8	65	28	54.7	5.2	1.6 to 2.9	68
VSP-HD35S□-6T		4						
VSP-HD50S□-4T	50	1.8	65	28	54.7	5.2	1.6 to 2.9	119
VSP-HD50S□-6T		4						

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides, VSP-HDW, Push-in fitting)

●VSP-HDW10 to 50S□-2/4/6

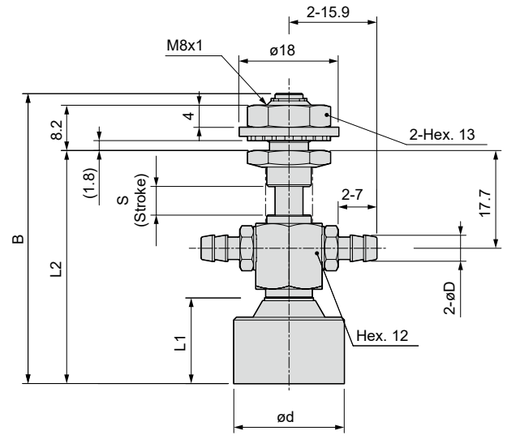


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW10S□-2	10	1.8	46.5	9.5	36.2	8.4	14.7	5.2	1.6 to 2.9	37
VSP-HDW10S□-4		4				11.2	18.8			39
VSP-HDW10S□-6		6				11.9	20.6			41
VSP-HDW15S□-2	15	1.8	46.5	9.5	36.2	8.4	14.7	5.2	1.6 to 2.9	37
VSP-HDW15S□-4		4				11.2	18.8			39
VSP-HDW15S□-6		6				11.9	20.6			41
VSP-HDW20S□-2	20	1.8	52.5	15.5	42.2	8.4	14.7	5.2	1.6 to 2.9	39
VSP-HDW20S□-4		4				11.2	18.8			41
VSP-HDW20S□-6		6				11.9	20.6			43
VSP-HDW25S□-2	25	1.8	52.5	15.5	42.2	8.4	14.7	5.2	1.6 to 2.9	40
VSP-HDW25S□-4		4				11.2	18.8			42
VSP-HDW25S□-6		6				11.9	20.6			44
VSP-HDW30S□-2	30	1.8	52.5	15.5	42.2	8.4	14.7	5.2	1.6 to 2.9	41
VSP-HDW30S□-4		4				11.2	18.8			43
VSP-HDW30S□-6		6				11.9	20.6			45
VSP-HDW35S□-2	35	1.8	65	28	54.7	8.4	14.7	5.2	1.6 to 2.9	70
VSP-HDW35S□-4		4				11.2	18.8			72
VSP-HDW35S□-6		6				11.9	20.6			74
VSP-HDW50S□-2	50	1.8	65	28	54.7	8.4	14.7	5.2	1.6 to 2.9	111
VSP-HDW50S□-4		4				11.2	18.8			113
VSP-HDW50S□-6		6				11.9	20.6			115

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides, VSP-HDW, Barb Fitting)

●VSP-HDW10 to 50S□-4T/6T

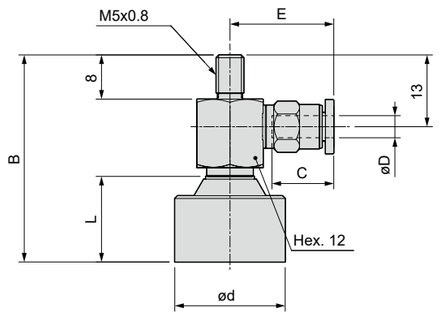


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW10S□-4T	10	1.8	46.5	9.5	36.2	5.2	1.6 to 2.9	36
VSP-HDW10S□-6T		4						
VSP-HDW15S□-4T	15	1.8	46.5	9.5	36.2	5.2	1.6 to 2.9	36
VSP-HDW15S□-6T		4						
VSP-HDW20S□-4T	20	1.8	52.5	15.5	42.2	5.2	1.6 to 2.9	38
VSP-HDW20S□-6T		4						
VSP-HDW25S□-4T	25	1.8	52.5	15.5	42.2	5.2	1.6 to 2.9	38
VSP-HDW25S□-6T		4						
VSP-HDW30S□-4T	30	1.8	52.5	15.5	42.2	5.2	1.6 to 2.9	39
VSP-HDW30S□-6T		4						
VSP-HDW35S□-4T	35	1.8	65	28	54.7	5.2	1.6 to 2.9	71
VSP-HDW35S□-6T		4						
VSP-HDW50S□-4T	50	1.8	65	28	54.7	5.2	1.6 to 2.9	112
VSP-HDW50S□-6T		4						

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side, VSP-HE, Push-in fitting)

●VSP-HE10 to 50S□-2/4/6

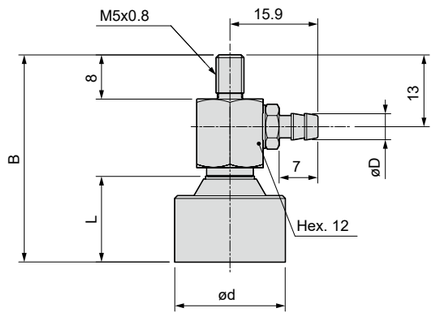


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HE10S□-2	10	1.8	31.5	9.5	8.4	14.7	21
VSP-HE10S□-4		4			11.2	18.8	22
VSP-HE10S□-6		6			11.9	20.6	23
VSP-HE15S□-2	15	1.8	31.5	9.5	8.4	14.7	21
VSP-HE15S□-4		4			11.2	18.8	22
VSP-HE15S□-6		6			11.9	20.6	23
VSP-HE20S□-2	20	1.8	37.5	15.5	8.4	14.7	23
VSP-HE20S□-4		4			11.2	18.8	24
VSP-HE20S□-6		6			11.9	20.6	25
VSP-HE25S□-2	25	1.8	37.5	15.5	8.4	14.7	24
VSP-HE25S□-4		4			11.2	18.8	25
VSP-HE25S□-6		6			11.9	20.6	26
VSP-HE30S□-2	30	1.8	37.5	15.5	8.4	14.7	25
VSP-HE30S□-4		4			11.2	18.8	26
VSP-HE30S□-6		6			11.9	20.6	27
VSP-HE35S□-2	35	1.8	50	28	8.4	14.7	54
VSP-HE35S□-4		4			11.2	18.8	55
VSP-HE35S□-6		6			11.9	20.6	56
VSP-HE50S□-2	50	1.8	50	28	8.4	14.7	95
VSP-HE50S□-4		4			11.2	18.8	96
VSP-HE50S□-6		6			11.9	20.6	97

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side, VSP-HE, Barb Fitting)

●VSP-HE10 to 50S□-4T/6T

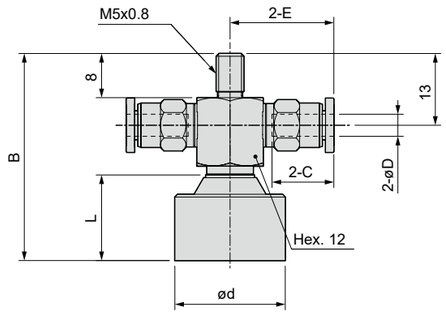


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Weight (g)
VSP-HE10S□-4T	10	1.8	31.5	9.5	16
VSP-HE10S□-6T		4			
VSP-HE15S□-4T	15	1.8	31.5	9.5	16
VSP-HE15S□-6T		4			
VSP-HE20S□-4T	20	1.8	37.5	15.5	22
VSP-HE20S□-6T		4			
VSP-HE25S□-4T	25	1.8	37.5	15.5	23
VSP-HE25S□-6T		4			
VSP-HE30S□-4T	30	1.8	37.5	15.5	24
VSP-HE30S□-6T		4			
VSP-HE35S□-4T	35	1.8	50	28	53
VSP-HE35S□-6T		4			
VSP-HE50S□-4T	50	1.8	50	28	94
VSP-HE50S□-6T		4			

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Push-in fitting)

●VSP-HEW10 to 50S□-2/4/6

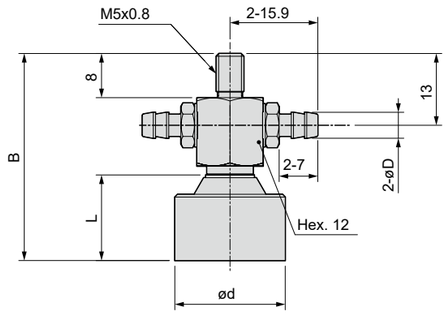


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HEW10S□-2	10	1.8	31.5	9.5	8.4	14.7	15
VSP-HEW10S□-4		4			11.2	18.8	17
VSP-HEW10S□-6		6			11.9	20.6	19
VSP-HEW15S□-2	15	1.8	31.5	9.5	8.4	14.7	15
VSP-HEW15S□-4		4			11.2	18.8	17
VSP-HEW15S□-6		6			11.9	20.6	19
VSP-HEW20S□-2	20	1.8	37.5	15.5	8.4	14.7	17
VSP-HEW20S□-4		4			11.2	18.8	19
VSP-HEW20S□-6		6			11.9	20.6	21
VSP-HEW25S□-2	25	1.8	37.5	15.5	8.4	14.7	18
VSP-HEW25S□-4		4			11.2	18.8	20
VSP-HEW25S□-6		6			11.9	20.6	22
VSP-HEW30S□-2	30	1.8	37.5	15.5	8.4	14.7	19
VSP-HEW30S□-4		4			11.2	18.8	21
VSP-HEW30S□-6		6			11.9	20.6	23
VSP-HEW35S□-2	35	1.8	50	28	8.4	14.7	48
VSP-HEW35S□-4		4			11.2	18.8	50
VSP-HEW35S□-6		6			11.9	20.6	52
VSP-HEW50S□-2	50	1.8	50	28	8.4	14.7	89
VSP-HEW50S□-4		4			11.2	18.8	91
VSP-HEW50S□-6		6			11.9	20.6	93

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Barb Fitting)

●VSP-HEW10 to 50S□-4T/6T

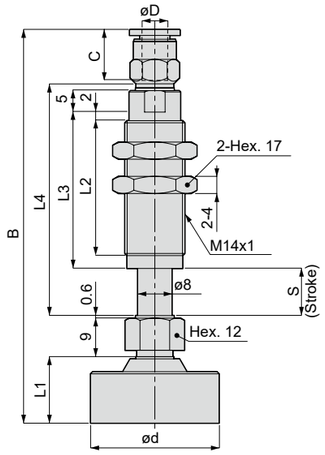


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HEW10S□-4T	10	1.8	31.5	9.5	16
VSP-HEW10S□-6T		4			
VSP-HEW15S□-4T	15	1.8	31.5	9.5	16
VSP-HEW15S□-6T		4			
VSP-HEW20S□-4T	20	1.8	37.5	15.5	22
VSP-HEW20S□-6T		4			
VSP-HEW25S□-4T	25	1.8	37.5	15.5	23
VSP-HEW25S□-6T		4			
VSP-HEW30S□-4T	30	1.8	37.5	15.5	24
VSP-HEW30S□-6T		4			
VSP-HEW35S□-4T	35	1.8	50	28	53
VSP-HEW35S□-6T		4			
VSP-HEW50S□-4T	50	1.8	50	28	94
VSP-HEW50S□-6T		4			

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC10 to 30-□S□-4/6



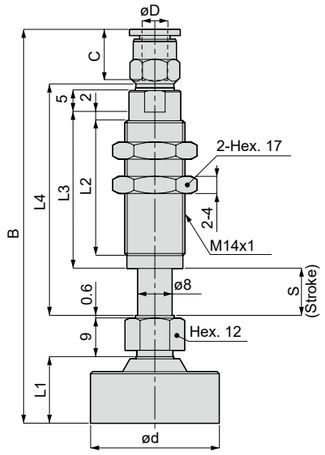
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC10-5S□-4	10	4	74.6	9.5	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	53
VSP-LFC10-5S□-6		6	75.9					11.9			54
VSP-LFC10-10S□-4		4	84.6		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	55
VSP-LFC10-10S□-6		6	85.9					11.9			56
VSP-LFC10-15S□-4		4	94.6		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	58
VSP-LFC10-15S□-6		6	95.9					11.9			59
VSP-LFC10-20S□-4		4	104.6		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	61
VSP-LFC10-20S□-6		6	105.9					11.9			62
VSP-LFC15-5S□-4	15	4	74.6	9.5	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	54
VSP-LFC15-5S□-6		6	75.9					11.9			55
VSP-LFC15-10S□-4		4	84.6		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	56
VSP-LFC15-10S□-6		6	85.9					11.9			57
VSP-LFC15-15S□-4		4	94.6		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	59
VSP-LFC15-15S□-6		6	95.9					11.9			60
VSP-LFC15-20S□-4		4	104.6		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	62
VSP-LFC15-20S□-6		6	105.9					11.9			63
VSP-LFC20-5S□-4	20	4	80.6	15.5	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	55
VSP-LFC20-5S□-6		6	81.9					11.9			56
VSP-LFC20-10S□-4		4	90.6		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	57
VSP-LFC20-10S□-6		6	91.9					11.9			58
VSP-LFC20-15S□-4		4	100.6		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	60
VSP-LFC20-15S□-6		6	101.9					11.9			61
VSP-LFC20-20S□-4		4	110.6		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	63
VSP-LFC20-20S□-6		6	111.9					11.9			64
VSP-LFC25-5S□-4	25	4	80.6	15.5	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	56
VSP-LFC25-5S□-6		6	81.9					11.9			57
VSP-LFC25-10S□-4		4	90.6		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	58
VSP-LFC25-10S□-6		6	91.9					11.9			59
VSP-LFC25-15S□-4		4	100.6		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	61
VSP-LFC25-15S□-6		6	101.9					11.9			62
VSP-LFC25-20S□-4		4	110.6		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	64
VSP-LFC25-20S□-6		6	111.9					11.9			65
VSP-LFC30-5S□-4	30	4	80.6	15.5	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	57
VSP-LFC30-5S□-6		6	81.9					11.9			58
VSP-LFC30-10S□-4		4	90.6		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	59
VSP-LFC30-10S□-6		6	91.9					11.9			60
VSP-LFC30-15S□-4		4	100.6		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	62
VSP-LFC30-15S□-6		6	101.9					11.9			63
VSP-LFC30-20S□-4		4	110.6		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	65
VSP-LFC30-20S□-6		6	111.9					11.9			66

*Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC35, 50-□S□-4/6



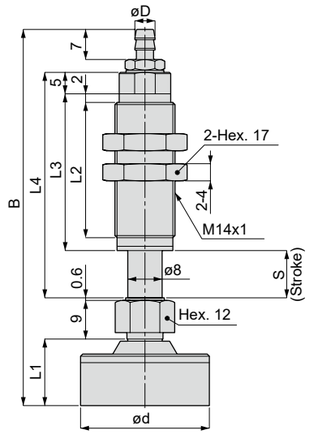
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC35-5S□-4	35	4	93.1	28	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	86
VSP-LFC35-5S□-6		6	94.4					11.9			87
VSP-LFC35-10S□-4		4	103.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	88
VSP-LFC35-10S□-6		6	104.4					11.9			89
VSP-LFC35-15S□-4		4	113.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	91
VSP-LFC35-15S□-6		6	114.4					11.9			92
VSP-LFC35-20S□-4		4	123.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	94
VSP-LFC35-20S□-6		6	124.4					11.9			95
VSP-LFC50-5S□-4	50	4	93.1	28	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	127
VSP-LFC50-5S□-6		6	94.4					11.9			128
VSP-LFC50-10S□-4		4	103.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	129
VSP-LFC50-10S□-6		6	104.4					11.9			130
VSP-LFC50-15S□-4		4	113.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	132
VSP-LFC50-15S□-6		6	114.4					11.9			133
VSP-LFC50-20S□-4		4	123.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	135
VSP-LFC50-20S□-6		6	124.4					11.9			136

*Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC10 to 30-□S□-4T/6T



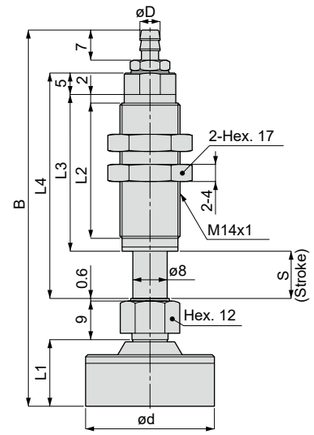
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC10-5S□-4T	10	2.5	71.7	9.5	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	48
VSP-LFC10-5S□-6T		4								
VSP-LFC10-10S□-4T		2.5	81.7		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	50
VSP-LFC10-10S□-6T		4								
VSP-LFC10-15S□-4T		2.5	91.7		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	53
VSP-LFC10-15S□-6T		4								
VSP-LFC10-20S□-4T		2.5	101.7		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	56
VSP-LFC10-20S□-6T		4								
VSP-LFC15-5S□-4T	15	2.5	71.7	9.5	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	49
VSP-LFC15-5S□-6T		4								
VSP-LFC15-10S□-4T		2.5	81.7		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	51
VSP-LFC15-10S□-6T		4								
VSP-LFC15-15S□-4T		2.5	91.7		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	54
VSP-LFC15-15S□-6T		4								
VSP-LFC15-20S□-4T		2.5	101.7		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	57
VSP-LFC15-20S□-6T		4								
VSP-LFC20-5S□-4T	20	2.5	77.7	15.5	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	50
VSP-LFC20-5S□-6T		4								
VSP-LFC20-10S□-4T		2.5	87.7		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	52
VSP-LFC20-10S□-6T		4								
VSP-LFC20-15S□-4T		2.5	97.7		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	55
VSP-LFC20-15S□-6T		4								
VSP-LFC20-20S□-4T		2.5	107.7		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	58
VSP-LFC20-20S□-6T		4								
VSP-LFC25-5S□-4T	25	2.5	77.7	15.5	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	51
VSP-LFC25-5S□-6T		4								
VSP-LFC25-10S□-4T		2.5	87.7		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	53
VSP-LFC25-10S□-6T		4								
VSP-LFC25-15S□-4T		2.5	97.7		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	56
VSP-LFC25-15S□-6T		4								
VSP-LFC25-20S□-4T		2.5	107.7		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	59
VSP-LFC25-20S□-6T		4								
VSP-LFC30-5S□-4T	30	2.5	77.7	15.5	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	52
VSP-LFC30-5S□-6T		4								
VSP-LFC30-10S□-4T		2.5	87.7		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	54
VSP-LFC30-10S□-6T		4								
VSP-LFC30-15S□-4T		2.5	97.7		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	57
VSP-LFC30-15S□-6T		4								
VSP-LFC30-20S□-4T		2.5	107.7		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	60
VSP-LFC30-20S□-6T		4								

*Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC35, 50-□S□-4T/6T



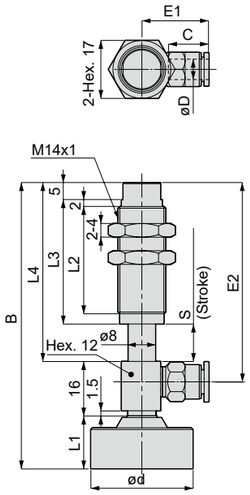
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC35-5S□-4T	35	2.5	90.2	28	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	81
VSP-LFC35-5S□-6T		4								
VSP-LFC35-10S□-4T		2.5	100.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	83
VSP-LFC35-10S□-6T		4								
VSP-LFC35-15S□-4T		2.5	110.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	86
VSP-LFC35-15S□-6T		4								
VSP-LFC35-20S□-4T		2.5	120.1		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	89
VSP-LFC35-20S□-6T		4								
VSP-LFC50-5S□-4T	50	2.5	90.2	28	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	122
VSP-LFC50-5S□-6T		4								
VSP-LFC50-10S□-4T		2.5	100.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	124
VSP-LFC50-10S□-6T		4								
VSP-LFC50-15S□-4T		2.5	110.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	127
VSP-LFC50-15S□-6T		4								
VSP-LFC50-20S□-4T		2.5	120.1		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	130
VSP-LFC50-20S□-6T		4								

*Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Push-in fitting)

●VSP-LFD10 to 30-□S□-4/6

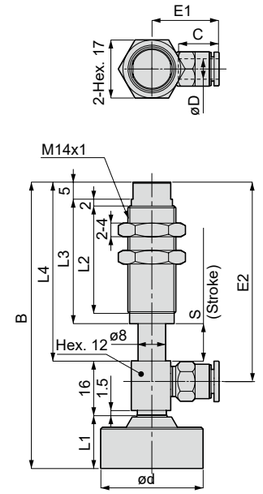


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD10-5S□-4	10	4	68	9.5	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	54
VSP-LFD10-5S□-6		6						11.9	19.7				55
VSP-LFD10-10S□-4		4	78		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	58
VSP-LFD10-10S□-6		6						11.9	19.7				59
VSP-LFD10-15S□-4		4	88		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	62
VSP-LFD10-15S□-6		6						11.9	19.7				63
VSP-LFD10-20S□-4		4	98		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	66
VSP-LFD10-20S□-6		6						11.9	19.7				67
VSP-LFD15-5S□-4	15	4	68	9.5	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	55
VSP-LFD15-5S□-6		6						11.9	19.7				56
VSP-LFD15-10S□-4		4	78		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	59
VSP-LFD15-10S□-6		6						11.9	19.7				60
VSP-LFD15-15S□-4		4	88		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	63
VSP-LFD15-15S□-6		6						11.9	19.7				64
VSP-LFD15-20S□-4		4	98		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	67
VSP-LFD15-20S□-6		6						11.9	19.7				68
VSP-LFD20-5S□-4	20	4	74	15.5	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	56
VSP-LFD20-5S□-6		6						11.9	19.7				57
VSP-LFD20-10S□-4		4	84		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	60
VSP-LFD20-10S□-6		6						11.9	19.7				61
VSP-LFD20-15S□-4		4	94		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	64
VSP-LFD20-15S□-6		6						11.9	19.7				65
VSP-LFD20-20S□-4		4	104		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	68
VSP-LFD20-20S□-6		6						11.9	19.7				69
VSP-LFD25-5S□-4	25	4	74	15.5	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	57
VSP-LFD25-5S□-6		6						11.9	19.7				58
VSP-LFD25-10S□-4		4	84		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	61
VSP-LFD25-10S□-6		6						11.9	19.7				62
VSP-LFD25-15S□-4		4	94		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	65
VSP-LFD25-15S□-6		6						11.9	19.7				66
VSP-LFD25-20S□-4		4	104		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	69
VSP-LFD25-20S□-6		6						11.9	19.7				70
VSP-LFD30-5S□-4	30	4	74	15.5	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	58
VSP-LFD30-5S□-6		6						11.9	19.7				59
VSP-LFD30-10S□-4		4	84		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	62
VSP-LFD30-10S□-6		6						11.9	19.7				63
VSP-LFD30-15S□-4		4	94		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	66
VSP-LFD30-15S□-6		6						11.9	19.7				67
VSP-LFD30-20S□-4		4	104		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	70
VSP-LFD30-20S□-6		6						11.9	19.7				71

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Push-in fitting)

●VSP-LFD35, 50-□S□-4/6

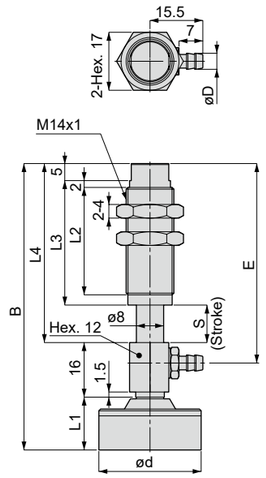


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD35-5S□-4	35	4	86.5	28	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	87
VSP-LFD35-5S□-6		6						11.9	19.7				88
VSP-LFD35-10S□-4		4	96.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	91
VSP-LFD35-10S□-6		6						11.9	19.7				92
VSP-LFD35-15S□-4		4	106.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	95
VSP-LFD35-15S□-6		6						11.9	19.7				96
VSP-LFD35-20S□-4		4	116.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	99
VSP-LFD35-20S□-6		6						11.9	19.7				100
VSP-LFD50-5S□-4	50	4	86.5	28	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	128
VSP-LFD50-5S□-6		6						11.9	19.7				129
VSP-LFD50-10S□-4		4	96.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	132
VSP-LFD50-10S□-6		6						11.9	19.7				133
VSP-LFD50-15S□-4		4	106.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	136
VSP-LFD50-15S□-6		6						11.9	19.7				137
VSP-LFD50-20S□-4		4	116.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	140
VSP-LFD50-20S□-6		6						11.9	19.7				141

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Barb Fitting)

●VSP-LFD10 to 30-□S□-4T/6T

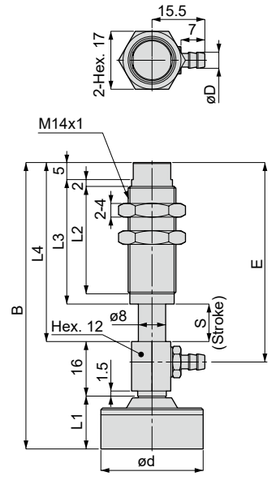


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD10-5S□-4T	10	2.5	68	9.5	26.5	31.5	42.5	48.5	5	4.5 to 6.5	50
VSP-LFD10-5S□-6T		4									
VSP-LFD10-10S□-4T		2.5	78		31.5	36.5	52.5	58.5	10	4.5 to 8.2	53
VSP-LFD10-10S□-6T		4									
VSP-LFD10-15S□-4T		2.5	88		36.5	41.5	62.5	68.5	15	4.5 to 9.9	57
VSP-LFD10-15S□-6T		4									
VSP-LFD10-20S□-4T		2.5	98		41.5	46.5	72.5	78.5	20	4.5 to 14.9	61
VSP-LFD10-20S□-6T		4									
VSP-LFD15-5S□-4T	15	2.5	68	9.5	26.5	31.5	42.5	48.5	5	4.5 to 6.5	51
VSP-LFD15-5S□-6T		4									
VSP-LFD15-10S□-4T		2.5	78		31.5	36.5	52.5	58.5	10	4.5 to 8.2	54
VSP-LFD15-10S□-6T		4									
VSP-LFD15-15S□-4T		2.5	88		36.5	41.5	62.5	68.5	15	4.5 to 9.9	58
VSP-LFD15-15S□-6T		4									
VSP-LFD15-20S□-4T		2.5	98		41.5	46.5	72.5	78.5	20	4.5 to 14.9	62
VSP-LFD15-20S□-6T		4									
VSP-LFD20-5S□-4T	20	2.5	74	15.5	26.5	31.5	42.5	48.5	5	4.5 to 6.5	52
VSP-LFD20-5S□-6T		4									
VSP-LFD20-10S□-4T		2.5	84		31.5	36.5	52.5	58.5	10	4.5 to 8.2	55
VSP-LFD20-10S□-6T		4									
VSP-LFD20-15S□-4T		2.5	94		36.5	41.5	62.5	68.5	15	4.5 to 9.9	59
VSP-LFD20-15S□-6T		4									
VSP-LFD20-20S□-4T		2.5	104		41.5	46.5	72.5	78.5	20	4.5 to 14.9	63
VSP-LFD20-20S□-6T		4									
VSP-LFD25-5S□-4T	25	2.5	74	15.5	26.5	31.5	42.5	48.5	5	4.5 to 6.5	53
VSP-LFD25-5S□-6T		4									
VSP-LFD25-10S□-4T		2.5	84		31.5	36.5	52.5	58.5	10	4.5 to 8.2	57
VSP-LFD25-10S□-6T		4									
VSP-LFD25-15S□-4T		2.5	94		36.5	41.5	62.5	68.5	15	4.5 to 9.9	60
VSP-LFD25-15S□-6T		4									
VSP-LFD25-20S□-4T		2.5	104		41.5	46.5	72.5	78.5	20	4.5 to 14.9	64
VSP-LFD25-20S□-6T		4									
VSP-LFD30-5S□-4T	30	2.5	74	15.5	26.5	31.5	42.5	48.5	5	4.5 to 6.5	57
VSP-LFD30-5S□-6T		4									
VSP-LFD30-10S□-4T		2.5	84		31.5	36.5	52.5	58.5	10	4.5 to 8.2	58
VSP-LFD30-10S□-6T		4									
VSP-LFD30-15S□-4T		2.5	94		36.5	41.5	62.5	68.5	15	4.5 to 9.9	61
VSP-LFD30-15S□-6T		4									
VSP-LFD30-20S□-4T		2.5	104		41.5	46.5	72.5	78.5	20	4.5 to 14.9	65
VSP-LFD30-20S□-6T		4									

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Barb Fitting)

●VSP-LFD35, 50-□S□-4T/6T



Unit: mm

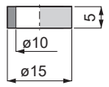
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD35-5S□-4T	35	2.5	86.5	28	26.5	31.5	42.5	48.5	5	4.5 to 6.5	83
VSP-LFD35-5S□-6T		4									
VSP-LFD35-10S□-4T		2.5	96.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	87
VSP-LFD35-10S□-6T		4									
VSP-LFD35-15S□-4T		2.5	106.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	90
VSP-LFD35-15S□-6T		4									
VSP-LFD35-20S□-4T		2.5	116.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	94
VSP-LFD35-20S□-6T		4									
VSP-LFD50-5S□-4T	50	2.5	86.5	28	26.5	31.5	42.5	48.5	5	4.5 to 6.5	124
VSP-LFD50-5S□-6T		4									
VSP-LFD50-10S□-4T		2.5	96.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	128
VSP-LFD50-10S□-6T		4									
VSP-LFD50-15S□-4T		2.5	106.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	131
VSP-LFD50-15S□-6T		4									
VSP-LFD50-20S□-4T		2.5	116.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	135
VSP-LFD50-20S□-6T		4									

Pad Rubber Only External Dimension Diagram

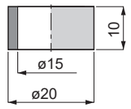
●VSPG-10S□ Weight: 0.1 g [0.2 g]



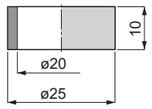
●VSPG-15S□ Weight: 0.2 g [0.3 g]



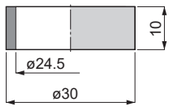
●VSPG-20S□ Weight: 0.3 g [0.8 g]



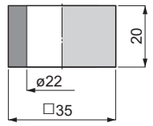
●VSPG-25S□ Weight: 0.4 g [1.0 g]



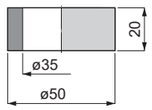
●VSPG-30S□ Weight: 0.5 g [1.4 g]



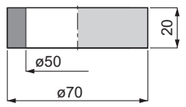
●VSPG-35S□ Weight: 2.1 g [5.1 g]



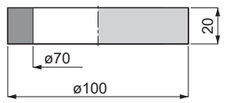
●VSPG-50S□ Weight: 3.6 g [8.1 g]



●VSPG-70S□ Weight: 6.3 g [17 g]



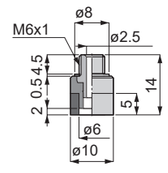
●VSPG-100S□ Weight: 14.0 g [32 g]



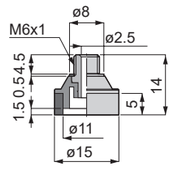
Weight: Values in [ ] are for silicone rubber only.

Pad Rubber + Set with Fixing Screw External Dimension Diagram

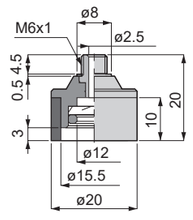
●VSPG-10S□A Weight: 1.9 g [1.9 g]



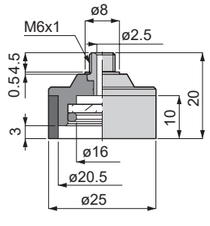
●VSPG-15S□A Weight: 2.1 g [2.3 g]



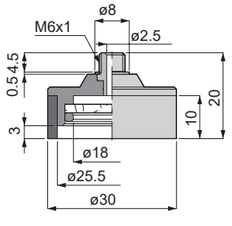
●VSPG-20S□A Weight: 3.9 g [4.4 g]



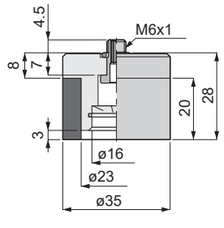
●VSPG-25S□A Weight: 5.2 g [5.9 g]



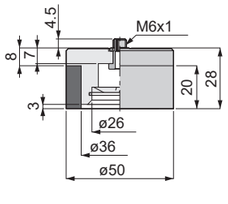
●VSPG-30S□A Weight: 6.2 g [7.1 g]



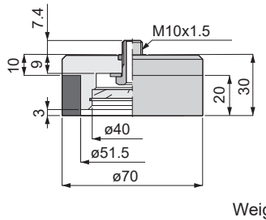
●VSPG-35S□A Weight: 35 g [38 g]



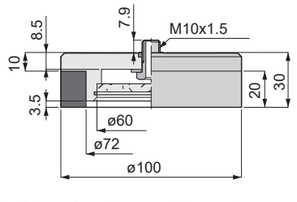
●VSPG-50S□A Weight: 76 g [80 g]



●VSPG-70S□A Weight: 142 g [152 g]



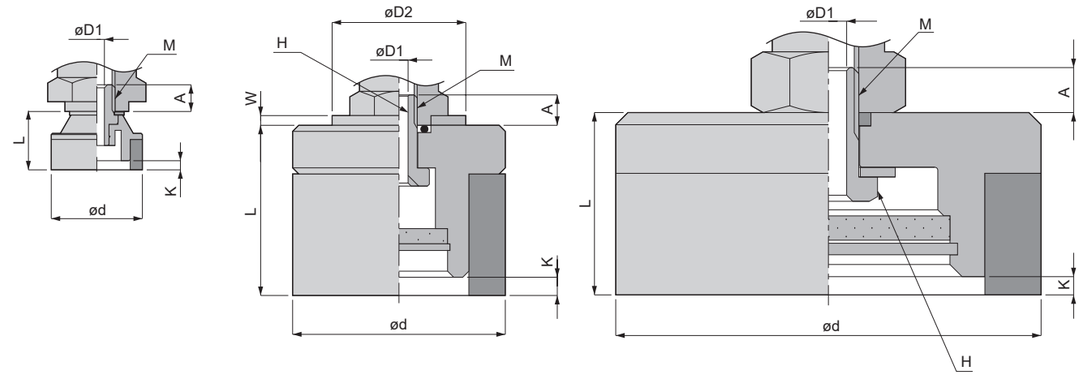
●VSPG-100S□A Weight: 272 g [290 g]



Weight: Values in [ ] are for silicone rubber only.

Detailed Diagram of Pad and Holder Connection Part

●VSPG-10 to 30S□A ●VSPG-35, 50S□A ●VSPG-70, 100S□A



Unit: mm

Model No.	Pad Diameter ød	L	Lip Internal Height K	Fixing Screw M	A	Width Across Flats H	øD1	øD2	W
VSPG-10S□A	10	9.5	1.5	M6x1	4.5	-	3	-	-
VSPG-15S□A	15	9.5	1.5	M6x1	4.5	-	3	-	-
VSPG-20S□A	20	15.5	3	M6x1	4.5	-	3	-	-
VSPG-25S□A	25	15.5	3	M6x1	4.5	-	3	-	-
VSPG-30S□A	30	15.5	3	M6x1	4.5	-	3	-	-
VSPG-35S□A	35	28	3	M6x1	4.5	3	-	22	1.6
VSPG-50S□A	50	28	3	M6x1	4.5	3	-	22	1.6
VSPG-70S□A	70	30	3	M10x1.5	6	14	6	-	-
VSPG-100S□A	100	30	3.5	M10x1.5	6	14	6	-	-

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, refer to Intro 15 for details.

Individual Precautions: Suction Pad Sponge-type VSP-□S□ Series

Design / Selection

Caution

■When replacing the suction pad, for pad diameters ø10 to ø30 mm, hand-tighten firmly until it bottoms out against the end face. For pad diameters ø35 to ø100 mm, use an appropriate tool to tighten according to the torque specified in the “Common Precautions for Suction Pads” (from Intro 20) and confirm that it is not loose.

■When installing the pad frame (for pad diameters ø10 to ø30 mm), use an appropriate tool to tighten to a torque of 0.45 to 0.55 N·m and confirm that it is not loose.

MEMO

Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechanical Break Function
Ending



Suction Pad Bellows Type

VSP-□B□ Series

Suction pad with bellows structure that softly conforms to the workpiece

RoHS

The bellows (bellows) part follows curved workpieces, making it ideal for transporting bags containing retort pouches, food, etc.

Abundant holder variations

Shape 18 types
- Standard .... 6 types
- Compact..... Class 5
- Low dust generation 2 types
- Lightweight 3 types
- Low back ...2 types

Piping Connection 9 types
- Push-in fitting (ø1.8 to ø8) .....4 types
- Barbed fitting (ø4, ø6)..... 2 types
- Screw-in (M3, M5, G1/8)..... 3 types

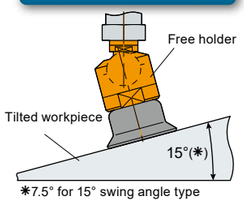
Stroke 12 types

2 mm to 50 mm
(Depends on pad diameter, holder)

Low particle generation holders (LFC, LFD) with less abrasion powder from sliding and low noise are available

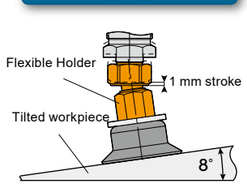
Assembly option for swing (free holder, flexible holder) that follows inclined workpiece surfaces

Free holder (F1:30°, F2:15°)



✳7.5° for 15° swing angle type

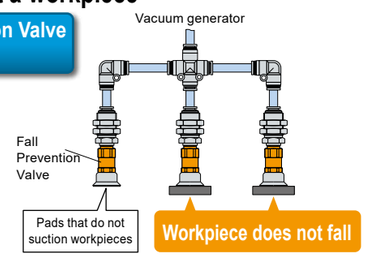
Flexible Holder (CF)



After removing the workpiece, returns to the normal position (vertical)

Assembly option for drop prevention valve (V) that reduces vacuum drop in separate circuits even without a workpiece

Drop Prevention Valve (V)



Simply attach a dedicated resin attachment to the bellows pad to handle workpieces sensitive to suction marks.

Size 5 types ø10 to ø30

Material 3 types
- PEEK
- POM
- Conductive PEEK

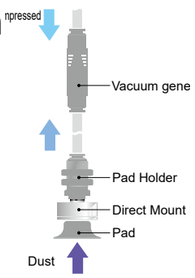


Removes dust during workpiece suction

Direct Mount Filter (T1, T2)

Filtration Area
T1: 1.7 cm², T2: 7 cm²





Pad surface treatment (option) with special processing to reduce adsorption marks is available

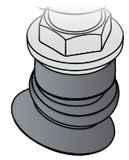
	-NF	-SF	-DL	-ER	-FG
Surface Treatment	Fiber Raised		Sticking Prevention	Adsorption Mark Reduction	Fluorine Coating
	Nylon	Silk			
					
Compatible Material	Silicone Fluorine	Silicone Fluorine	Silicone Fluorine Conductive Silicone	Nitrile Conductive NBR (Low Resistance-type)	Silicone Conductive Silicone Ultra Soft Silicone
Features	Fibers(nylon or silk) on the pad surface prevent direct contact with the workpiece, thus preventing rubber material transfer.		Special coating with good slippage. Effective for preventing sticking of lightweight workpieces and thin workpieces.	Surface modification with environmentally friendly chemicals reduces adsorption marks.	Surface modification with special treatment prevents sticking to the workpiece. Improved pad durability and abrasion resistance.

Pad Shape



1-Stage Bellows

Can follow changes in the height of the contacting workpiece and surface inclination.



Recommended Workpiece

Bags containing retort pouches, food items, etc.



Pad Diameter

14 types

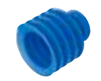
2 | 4 | 6 | 8 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 80 | 100

Pad Material

10 types

Nitrile | Silicone | Urethane | Fluorine | Conductive Silicone | Conductive NBR (Low Resistance-type) | HNBR | EPDM | Ultra Soft Silicone Hardness 20° | Ultra Soft Silicone Hardness 40°


Hardness 20° Type


Hardness 40° Type

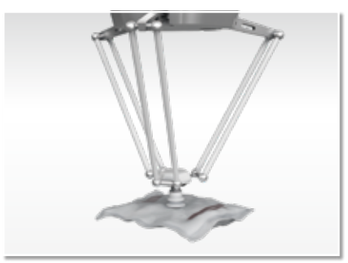
Ultra Soft Silicone

*Ultra soft silicone (YS2, YS4) conforms to the Food Sanitation Act, FDA compliant. Silicone (S) conforms to the Food Sanitation Act. (Holder is not compliant / Suction pad is compliant only for workpiece contact area)

Solution Examples

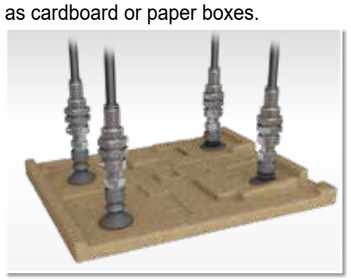
Workpieces with uneven suction surfaces

Flexibly follows workpieces with irregularities such as retort pouches.



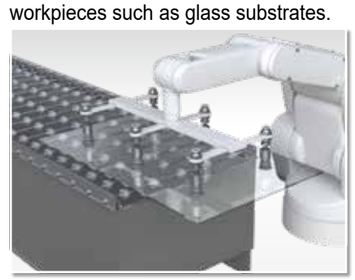
Workpieces with variations in suction surface height

Can follow and adsorb workpieces with changing suction surface heights, such as cardboard or paper boxes.



Workpieces sensitive to suction marks

By using the optional suction mark prevention attachment, it also supports workpieces such as glass substrates.



Model No. Notation

●Bellows Type

Suction Pad

VSP - C - 30 - -20 - B - N - -ER - 6 - [ ] - F1 - V - T1

VSP	C	30	-20	B	N	-ER	6	[ ]	F1	V	T1
Model No.	❶ Holder Shape	❷ Pad Diameter	❸ Stroke Option	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment	❼ Connection Size/Shape	❽ Buffer Load	❾ Pad Swinging	❿ Drop Prevention Valve	⓫ Direct Mount Filter

Pad Rubber Only

VSPG - 30 - B - N - -ER

VSPG	30	B	N	-ER
Model No.	❷	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment

Pad Rubber + Set with Fixing Screw

VSPG - 30 - B - N - -ER A

VSPG	30	B	N	-ER	A
Model No.	❷ Pad Diameter	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment	

*1: For ❷ Pad Diameter 10 to 100, the "Pad Rubber + Set Screw Set" can be selected.

❶ Holder Shape

Buffer Present/Absent	Type	Vacuum Outlet	Code
Fixed Type	Standard	Top Direction	A
	Compact		MA
	Standard	Side Direction	B
	Compact		MB
	Low Profile		HE
	Low Profile	Both Sides Direction	HEW
	Standard	Direct Mount Type	E
	Compact		ME

Buffer Present/Absent	Type	Vacuum Outlet	Code
Buffer Type	Standard	Top Direction	C
	Compact		MC
	Low Particle Generation		LFC
	Lightweight		HC
	Standard	Side Direction	D
	Compact		MD
	Low Particle Generation		LFD
	Lightweight	Both Sides Direction	HDW
	Standard	Direct Mount Type	F

❷ Pad Diameter

Pad Shape	B										Code
Pad Material	N	S	YS2	YS4	U	F	SE	NE	HN	EP	
Pad Diameter											
ø2	●	●									2
ø4	●	●					●				4
ø6	●	●			●	●	●	●	●	●	6
ø8	●	●			●	●	●	●	●	●	8
ø10	●	●	*1	*1	●	●	●	●	●	●	10
ø15	●	●	*1	●	●	●	●	●	●	●	15
ø20	●	●	●	●	●	●	●	●	●	●	20
ø25	●	●	●	●	●	●	●	●	●	●	25
ø30	●	●	●	●	●	●	●	●	●	●	30
ø40	●	●	●	●	●	●	●	●	●	●	40
ø50	●	●	●	●	●	●	●	●	●	●	50
ø60	●	●			●	●	●	●	●	●	60
ø80	●	●			●	●	●	●	●	●	80
ø100	●	●			●	●	●	●	●	●	100

*1: ❺ Pad Material YS2 and YS4 for ❷ 10, and ❺ Pad Material YS2 for ❷ 15, can only be selected when ❻ Surface Treatment is -FG.

❸ Stroke Option

Content	Holder Shape C	D	HC	LFC	LFD	Code
Specified Stroke, or No Buffer	●	●				Blank
Stroke 2 mm				●		-2
Stroke 5 mm				●	●	-5
Stroke 10 mm	●	●	●	●	●	-10
Stroke 15 mm	●	●	●	●	●	-15
Stroke 20 mm	●	●	●	●	●	-20
Stroke 25 mm			●			-25
Stroke 30 mm	●	●	●			-30
Stroke 40 mm	●	●	●			-40
Stroke 50 mm	●	●	●			-50

*1, *2

*1: For ❶ Holder Shape other than C, D, HC, LFC, and LFD, ❸ is 'Blank'.
*2: For the specified stroke of ❸ 'Blank', please confirm the stroke dimension on the external dimension drawing.
*3: When ❷ Pad Diameter is 6 to 15, -2 can be selected for ❸.
*4: When ❷ Pad Diameter is 6 to 50, -30, -40, and -50 can be selected for ❸.
*5: When ❷ Pad Diameter is 60 to 100, ❸ is 'Blank'.

❹ Pad Shape

Code	Content	
B	Bellows Type	

❺ Pad Material

Code	Content
N	Nitrile rubber
S	Silicone Rubber
YS2	Ultra Soft Silicone Rubber (Hardness 20°)
YS4	Ultra Soft Silicone Rubber (Hardness 40°)
U	Urethane rubber
F	Fluororubber
SE	Conductive Silicone Rubber
NE	Conductive NBR (Low Resistance-type)
HN	HNBR
EP	EPDM

❻ Surface Treatment

Content	Compatible Pad Material N	S	YS2	YS4	F	SE	NE	Compatible Pad Diameter Bellows (B)	Code
No surface treatment	All pad materials, all pad diameters								Blank
Fiber Raised (Nylon)		●			●			ø15 to ø80	-NF
Fiber Raised (Silk)		●			●			ø15 to ø80	-SF
Anti-Adhesion Special Coating		●			●	●		ø6 to ø50	-DL
Suction Mark Reduction Surface Modification	●						●	ø6 to ø60	-ER
Fluorine Coating		●	●	●		●		ø6 to ø100	-FG

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

● Structure usable in rechargeable battery manufacturing processes

VSP - ..... - P4*

*Please inquire for details.

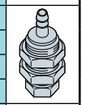
Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Uses food-grade lubricant usable in food manufacturing processes, and resin/rubber materials conforming to the Food Sanitation Act

VSP - ..... - FP*

❼ Connection Size/Shape

Content	Holder Shape A	B	C	D	MA	MB	MC	MD	ME	LFC	LFD	HC	HD	HDW	HE	HEW	Code
(❶: For E and F)																	Blank
ø1.8, Push-in fitting		●	●	●	●	●	●	●				●	●	●	●	●	2
ø4, Push-in fitting	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	4
ø6, Push-in fitting	●	●	●	●		●		●		●	●	●	●	●	●	●	6
ø8, Push-in fitting	●	●	●	●													8
ø4, Push-in fitting, without spring cover			●	●													4C
ø6, Push-in fitting, without spring cover			●	●													6C
ø4 Barb fitting	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	4T
ø6 Barb fitting	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	6T
ø4 Barb fitting, without spring cover			●	●													4TC
ø6 Barb fitting, without spring cover			●	●													6TC
M5×0.8									●								M5
G1/8	●	●	●	●													6A


*1: For ❶ Holder Shape C and D with ❸ Stroke Option -20 to -50, options 4C, 6C, 4TC, and 6TC can be selected for ❼. Additionally, for ❸ Stroke Option -30 to -50, only 4C, 6C, 4TC, and 6TC can be selected for ❼.
*2: The selectable Port Size/Shape varies depending on the ❷ Pad Diameter. Please check the combination table below.

❽ Buffer Load

Code	Content
Blank	Standard Load or No Buffer
L	Low Load (1/4 of standard load)

*1
*2

*1: For ❶ Holder Shape other than LFC, (8) is 'Blank'.
*2: For ❸ Stroke Option -2, (8) is 'Blank'.

❾ Pad Swing

Code	Content	
Blank	None	
F1	With Free Holder (Angle 30°)	Free Holder
F2	With Free Holder (Angle 15°)	
CF	With flexible holder (Angle 8°)	Flexible Holder

*1
*1
*2

*1: ❾ F1 and F2 can be selected when ❷ Pad Diameter is 10 to 100.
*2: ❾ CF can be selected in the following cases: with ❶ Holder Shape E and ❷ Pad Diameter 6 or 8; with ❶ Holder Shape ME; and with ❷ Pad Diameter 10 to 50.
*3: For dimensions with the pad swivel function, please refer to P. 1060 and P. 1062.

❿ Drop Prevention Valve

Code	Content	
Blank	None	
V	With Drop Prevention Valve	Drop Prevention Valve

*2
*1

*1: ❿ V can only be selected for ❶ Holder Shape E and ME, and for ❷ Pad Diameter 10 to 100.
*2: For ❻ -NF and -SF, ❿ is 'Blank'.
*3: For dimensions with the drop prevention valve, please refer to P. 1083 and P. 1084.

⓫ Direct Mount Filter

Code	Content	
Blank	None	
T1	With Direct Mount Filter (Filtration Area 1.7 cm²)	Direct Mount Filter
T2	With Direct Mount Filter (Filtration Area 7 cm²)	

*1
*2

*1: ⓫ T1 can be selected when ❷ Pad Diameter is 10 to 50.
*2: For dimensions with the pad swivel function, please refer to P. 1060 and P. 1062.
*3: For dimensions with the direct mount filter, please refer to P. 1064.

⓬ Resin Attachment Material

Code	Content	
K	PEEK	
M	POM	
KE	Conductive PEEK	

Holder Shape - Pad Diameter - Pad Shape - Connection Size/Shape Combination Table

Holder Shape	Pad Diameter	Push-in fitting ø1.8	ø4		ø6		ø8	Barb fitting ø4		ø6		Thread G1/8
		2	4	4C	6	6C	8	4T	4TC	6T	6TC	6A
A	ø2 to ø4		●					●				
	ø6 to ø8		●		●			●		●		
	ø10 to ø15				●					●		
	ø20 to ø50		●		●			●		●		
	ø60 to ø100		●		●		●					●
B	ø2 to ø4	●	●					●		●		
	ø6 to ø8	●	●		●			●		●		
	ø10 to ø50		●		●			●		●		
	ø60 to ø100		●		●		●					●
C	ø2 to ø4	●	●		●			●		●		
	ø6 to ø8	●	●	●	●	●		●	●	●	●	
	ø10 to ø50		●	●	●	●		●	●	●	●	
	ø60 to ø100		●		●		●					●
D	ø2 to ø4	●	●		●			●		●		
	ø6 to ø8	●	●	●	●	●		●	●	●	●	
	ø10 to ø50		●	●	●	●		●	●	●	●	
	ø60 to ø100		●		●		●					●

Holder Shape	Pad Diameter	Push-in fitting ø1.8	ø4	ø6	Barb fitting ø4	ø6
		2	4	6	4T	6T
MA	ø6 to ø8	●			●	
	ø10 to ø15		●		●	
	ø20 to ø50		●		●	●
MB	ø6 to ø8	●	●		●	●
	ø10 to ø50	●	●	●	●	●
MC	ø6 to ø8	●			●	●
	ø10 to ø50	●	●		●	●
MD	ø6 to ø8	●	●		●	●
	ø10 to ø50	●	●	●	●	●

Holder Shape	Pad Diameter	Push-in fitting ø1.8	ø4	ø6	Barb fitting ø4	ø6
		2	4	6	4T	6T
LFC	ø6 to ø15		●		●	●
	ø20 to ø50		●	●	●	●
LFD	ø6 to ø15		●		●	●
	ø20 to ø50		●	●	●	●
HC	ø10 to ø50	●	●	●	●	●
HD	ø6 to ø50	●	●	●	●	●
HDW	ø6 to ø50	●	●	●	●	●
HE	ø6 to ø50	●	●	●	●	●
HEW	ø6 to ø50	●	●	●	●	●

Holder Shape	Pad Diameter	Thread M3	M5
		Blank	
E	ø2 to ø4	●	
	ø6 to ø8		●

Holder Shape	Pad Diameter	Thread M10	M14
		Blank	
F	ø2 to ø8	●	
	ø10 to ø50		●

Holder Shape	Pad Diameter	Thread M5
		M5
ME	ø6 to ø8	●

●Suction mark prevention resin attachment for bellows pad only

VSPG - 30 - BQ - K

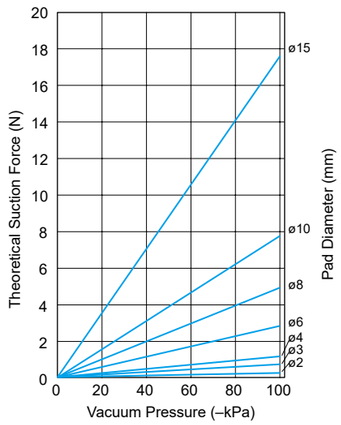
VSPG	30	BQ	K
Model No.	❷ Pad Diameter		⓬ Resin Attachment Material

*: For ❷ 10 to 30, only the resin attachment can be selected.

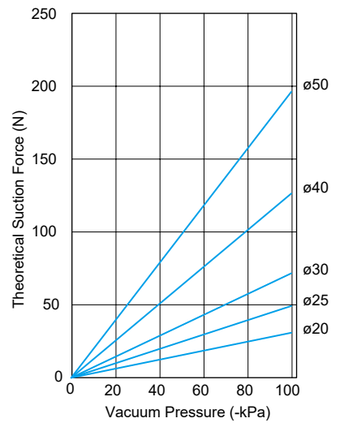


Theoretical Suction Force

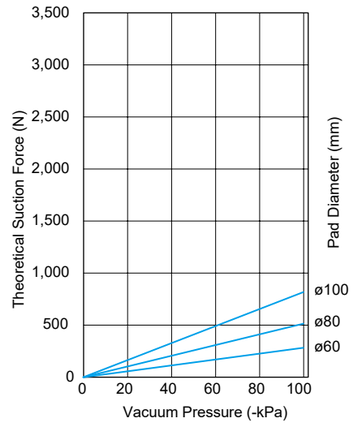
● Pad Diameter: ø2 mm to ø15 mm



●Pad Diameter: ø20 mm to ø50 mm



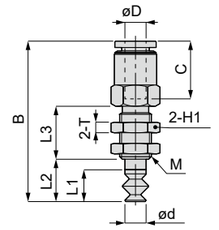
●Pad dia.: ø60 mm to ø100 mm



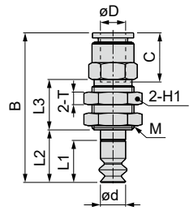
Theoretical suction force is a value under static conditions. For actual use, consider a safety factor of 1/4 for horizontal lifting and 1/8 for vertical lifting. Regarding the suction force of the bellows type, due to pad characteristics, it may not be possible to secure the calculated suction force (theoretical suction force x safety factor) due to factors such as vacuum level, pad material, and adsorbed object. For selection, refer to "How to select Suction Pads" (P. 412) Use the suction force obtained with as a guide, and confirm that there is no problem with the suction capacity on the actual machine.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Push-in fitting)

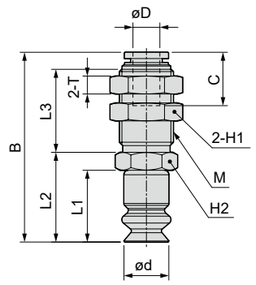
●VSP-A2, 4B□4



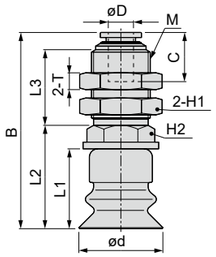
●VSP-A6, 8B□4/6



●VSP-A10, 15B□6



●VSP-A20 to 50B□-4/6

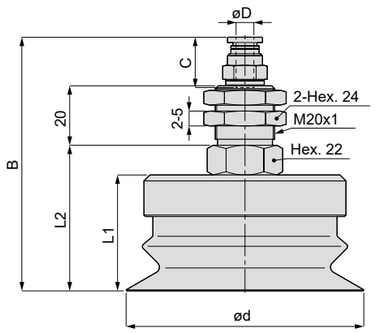


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	L3	Tube End C	Width Across Flats H1	Width Across Flats H2	T	Weight (g)
VSP-A2B□-4	2	4	M6x0.75	30.6	6	8	10	11.2	8	-	2	5.7
VSP-A4B□-4	4	4	M6x0.75	30.6	6	8	10	11.2	8	-	2	5.7
VSP-A6B□-4	6	4	M8x0.75	35.1	10	12.5	12	11.2	10	-	2	8.5
VSP-A6B□-6		6	M10x1	35.8				11.9	12		3	13
VSP-A8B□-4	8	4	M8x0.75	35.1	10	12.5	12	11.2	10	-	2	8.5
VSP-A8B□-6		6	M10x1	35.8				11.9	12		3	13
VSP-A10B□-6	10	6	M12x1	42.3	16	20	18.5	11.9	14	12	4	22
VSP-A15B□-6	15	6	M12x1	42.3	16	20	18.5	11.9	14	12	4	22
VSP-A20B□-4	20	4	M12x1	55.9	19	25	18	11.2	14	12	4	31
VSP-A20B□-6		6	M14x1	46.9		24.6		11.9	17	14		37
VSP-A25B□-4	25	4	M12x1	55.9	19	25	18	11.2	14	12	4	32
VSP-A25B□-6		6	M14x1	46.9		24.6		11.9	17	14		38
VSP-A30B□-4	30	4	M12x1	59.9	23	29	18	11.2	14	12	4	34
VSP-A30B□-6		6	M14x1	50.9		28.6		11.9	17	14		40
VSP-A40B□-4	40	4	M12x1	66.9	30	36	18	11.2	14	12	4	43
VSP-A40B□-6		6	M14x1	57.9		35.6		11.9	17	14		49
VSP-A50B□-4	50	4	M12x1	68.9	32	38	18	11.2	14	12	4	49
VSP-A50B□-6		6	M14x1	59.9		37.6		11.9	17	14		55

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Push-in fitting)

●VSP-A60 to 100B□-4/6/8

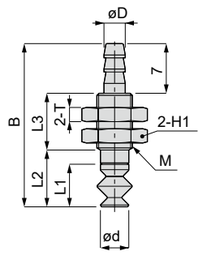


Unit: mm

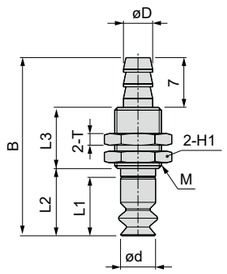
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Weight (g)
VSP-A60B□-4	60	4	80.2	37	49.6	11.2	149
VSP-A60B□-6		6	82.4			11.9	150
VSP-A60B□-8		8	90.8			18.2	155
VSP-A80B□-4	80	4	79.6	39	49	11.2	231
VSP-A80B□-6		6	81.8			11.9	232
VSP-A80B□-8		8	90.2			18.2	237
VSP-A100B□-4	100	4	85.6	45	55	11.2	330
VSP-A100B□-6		6	87.8			11.9	331
VSP-A100B□-8		8	96.2			18.2	336

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Barb Fitting)

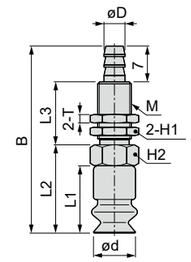
●VSP-A2 to 4B□-4T



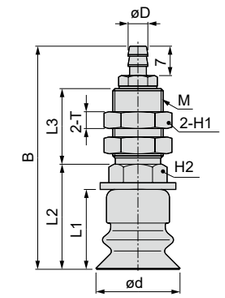
●VSP-A6, 8B□-4T/6T



●VSP-A10, 15B□-6T



●VSP-A20 to 50B□-4T/6T

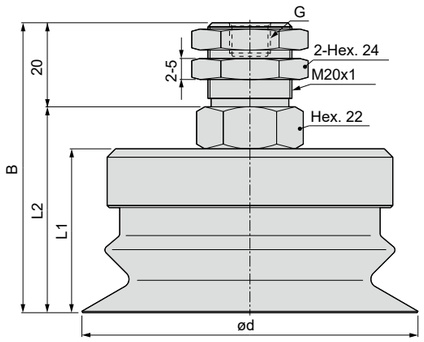


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	L3	Width Across Flats H1	Width Across Flats H2	T	Weight (g)
VSP-A2B□-4T	2	2.5	M5x0.5	23	6	8	8	8	-	2	4
VSP-A4B□-4T	4	2.5	M5x0.5	23	6	8	8	8	-	2	4
VSP-A6B□-4T	6	2.5	M5x0.5	27.5	10	12.5	8	8	-	2	6
VSP-A6B□-6T		4	M8x0.75	29		11.5	10.5	10			8
VSP-A8B□-4T	8	2.5	M5x0.5	27.5	10	12.5	8	8	-	2	6
VSP-A8B□-6T		4	M8x0.75	29		11.5	10.5	10			8
VSP-A10B□-6T	10	4	M8x0.75	43	16	21	15	10	10	2	12
VSP-A15B□-6T	15	4	M8x0.75	43	16	21	15	10	10	2	13
VSP-A20B□-4T	20	2.5	M12x1	53	19	25	18	14	12	4	30
VSP-A20B□-6T		4									
VSP-A25B□-4T	25	2.5	M12x1	53	19	25	18	14	12	4	31
VSP-A25B□-6T		4									
VSP-A30B□-4T	30	2.5	M12x1	57	23	29	18	14	12	4	34
VSP-A30B□-6T		4									
VSP-A40B□-4T	40	2.5	M12x1	64	30	36	18	14	12	4	42
VSP-A40B□-6T		4									
VSP-A50B□-4T	50	2.5	M12x1	66	32	38	18	14	12	4	48
VSP-A50B□-6T		4									

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Female Thread)

●VSP-A60 to 100B□-6A

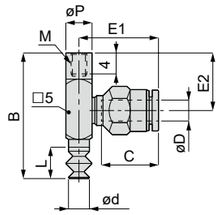


Unit: mm

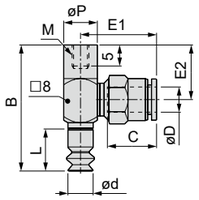
Model No.	Pad Diameter ød	Vacuum Outlet Size G	B	L1	L2	Weight (g)
VSP-A60B□-6A	60	G1/8	69.6	37	49.6	141
VSP-A80B□-6A	80	G1/8	69	39	49	223
VSP-A100B□-6A	100	G1/8	75	45	55	322

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Push-in fitting)

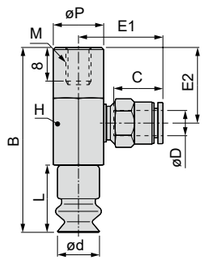
●VSP-B2, 4B□-2/4



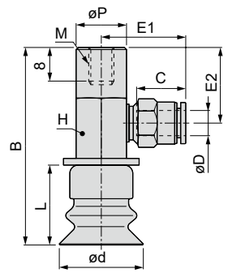
●VSP-B6, 8B□-2/4/6



●VSP-B10, 15B□-4/6



●VSP-B20 to 50B□-4/6

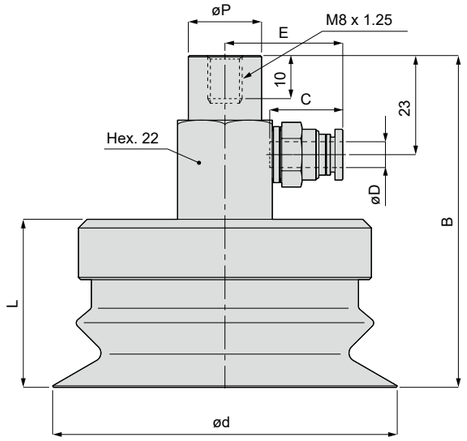


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L	Tube End C	øP	E1	E2	Width Across Flats H	Weight (g)
VSP-B2B□-2	2	1.8	M3x0.5	24	6	8.4	5	12	11	-	5
VSP-B2B□-4		4				11.2		15.3			6
VSP-B4B□-2	4	1.8	M3x0.5	24	6	8.4	5	12	11	-	5
VSP-B4B□-4		4				11.2		15.3			6
VSP-B6B□-2	6	1.8	M4x0.7	30	10	8.4	8	12.7	13	-	12
VSP-B6B□-4		4				11.2		16.8			13
VSP-B6B□-6		6				11.9		18.6			14
VSP-B8B□-2	8	1.8	M4x0.7	30	10	8.4	8	12.7	13	-	12
VSP-B8B□-4		4				11.2		16.8			13
VSP-B8B□-6		6				11.9		18.6			14
VSP-B10B□-4	10	4	M6x1	44	16	11.2	12	18.8	18	12	30
VSP-B10B□-6		6				11.9		20.1			31
VSP-B15B□-4	15	4	M6x1	44	16	11.2	12	18.8	18	12	30
VSP-B15B□-6		6				11.9		20.1			31
VSP-B20B□-4	20	4	M6x1	47	19	11.2	12	18.8	18	12	33
VSP-B20B□-6		6				11.9		20.1			34
VSP-B25B□-4	25	4	M6x1	47	19	11.2	12	18.8	18	12	34
VSP-B25B□-6		6				11.9		20.1			35
VSP-B30B□-4	30	4	M6x1	51	23	11.2	12	18.8	18	12	37
VSP-B30B□-6		6				11.9		20.1			38
VSP-B40B□-4	40	4	M6x1	58	30	11.2	12	18.8	18	12	45
VSP-B40B□-6		6				11.9		20.1			46
VSP-B50B□-4	50	4	M6x1	60	32	11.2	12	18.8	18	12	51
VSP-B50B□-6		6				11.9		20.1			52

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Push-in fitting)

●VSP-B60 to 100B□-4/6/8

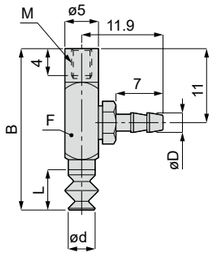


Unit: mm

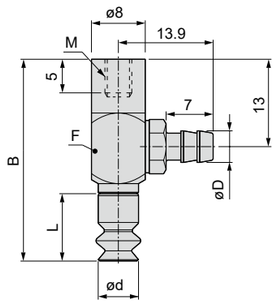
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	øP	E	Weight (g)
VSP-B60B□-4	60	4	77.6	37	11.2	17	21.5	155
VSP-B60B□-6		6			11.9		23.7	156
VSP-B60B□-8		8			18.2		32.1	161
VSP-B80B□-4	80	4	77	39	11.2	17	21.5	238
VSP-B80B□-6		6			11.9		23.7	239
VSP-B80B□-8		8			18.2		32.1	244
VSP-B100B□-4	100	4	83	45	11.2	17	21.5	337
VSP-B100B□-6		6			11.9		23.7	338
VSP-B100B□-8		8			18.2		32.1	343

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Barb Fitting)

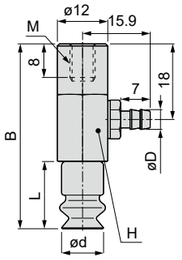
●VSP-B2, 4B□-4T/6T



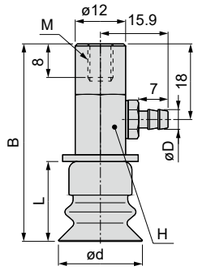
●VSP-B6, 8B□-4T/6T



●VSP-B10, 15B□-4T/6T



●VSP-B20 to 50B□-4T/6T

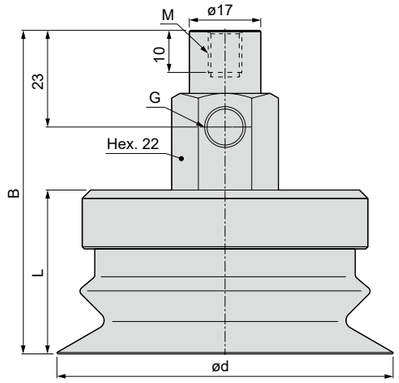


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L	Width Across Flats H	□F	Weight (g)
VSP-B2B□-4T	2	2.5	M3x0.5	24	6	-	5	5
VSP-B2B□-6T		4						
VSP-B4B□-4T	4	2.5	M3x0.5	24	6	-	5	5
VSP-B4B□-6T		4						
VSP-B6B□-4T	6	2.5	M4x0.7	30	10	-	8	12
VSP-B6B□-6T		4						
VSP-B8B□-4T	8	2.5	M4x0.7	30	10	-	8	12
VSP-B8B□-6T		4						
VSP-B10B□-4T	10	2.5	M6x1	44	16	12	-	29
VSP-B10B□-6T		4						
VSP-B15B□-4T	15	2.5	M6x1	44	16	12	-	30
VSP-B15B□-6T		4						
VSP-B20B□-4T	20	2.5	M6x1	47	19	12	-	32
VSP-B20B□-6T		4						
VSP-B25B□-4T	25	2.5	M6x1	47	19	12	-	33
VSP-B25B□-6T		4						
VSP-B30B□-4T	30	2.5	M6x1	51	23	12	-	36
VSP-B30B□-6T		4						
VSP-B40B□-4T	40	2.5	M6x1	58	30	12	-	44
VSP-B40B□-6T		4						
VSP-B50B□-4T	50	2.5	M6x1	60	32	12	-	50
VSP-B50B□-6T		4						

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Female Thread)

●VSP-B60 to 100B□-6A

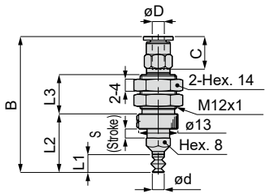


Unit: mm

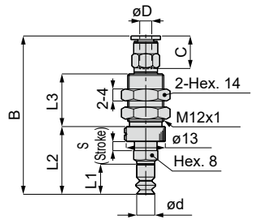
Model No.	Pad Diameter ød	Vacuum Outlet Size G	Mounting screw M	B	L	Weight (g)
VSP-B60B□-6A	60	G1/8	M8 x 1.25	77.6	37	147
VSP-B80B□-6A	80	G1/8	M8 x 1.25	77	39	230
VSP-B100B□-6A	100	G1/8	M8 x 1.25	83	45	329

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C2 to 4B□-2/4/6
●VSP-C2 to 4-□B□-2/4/6



●VSP-C6, 8B□-2/4/6
●VSP-C6, 8-□B□-2/4/6

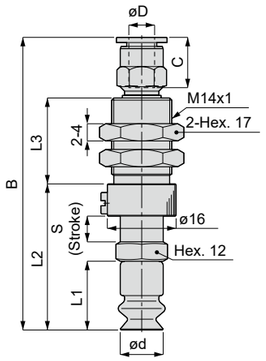


Unit: mm

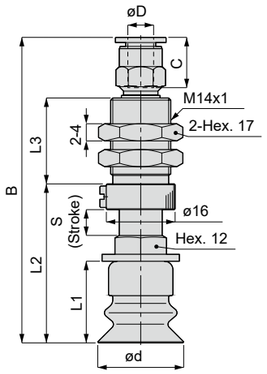
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C2B□-2	2	1.8	41.4	6	19.5	13	8.4	3	0.9 to 1.9	16
VSP-C2B□-4		4	45.5				11.2			17
VSP-C2B□-6		6	47.3				11.9			18
VSP-C2-10B□-2		1.8	55.4		29	17.5	8.4	10	0.6 to 1.7	20
VSP-C2-10B□-4		4	59.5				11.2			21
VSP-C2-10B□-6		6	61.3				11.9			22
VSP-C2-15B□-2		1.8	66.4		34	23.5	8.4	15	0.4 to 1.7	23
VSP-C2-15B□-4		4	70.5				11.2			24
VSP-C2-15B□-6		6	72.3				11.9			25
VSP-C2-20B□-2		1.8	76.4		39	28.5	8.4	20	0.3 to 1.8	26
VSP-C2-20B□-4		4	80.5				11.2			27
VSP-C2-20B□-6		6	82.3				11.9			28
VSP-C4B□-2	4	1.8	41.4	6	19.5	13	8.4	3	0.9 to 1.9	16
VSP-C4B□-4		4	45.5				11.2			17
VSP-C4B□-6		6	47.3				11.9			18
VSP-C4-10B□-2		1.8	55.4		29	17.5	8.4	10	0.6 to 1.7	20
VSP-C4-10B□-4		4	59.5				11.2			21
VSP-C4-10B□-6		6	61.3				11.9			22
VSP-C4-15B□-2		1.8	66.4		34	23.5	8.4	15	0.4 to 1.7	23
VSP-C4-15B□-4		4	70.5				11.2			24
VSP-C4-15B□-6		6	72.3				11.9			25
VSP-C4-20B□-2		1.8	76.4		39	28.5	8.4	20	0.3 to 1.8	26
VSP-C4-20B□-4		4	80.5				11.2			27
VSP-C4-20B□-6		6	82.3				11.9			28
VSP-C6B□-2	6	1.8	44.4	10	22.5	13	8.4	3	0.9 to 1.9	17
VSP-C6B□-4		4	48.5				11.2			18
VSP-C6B□-6		6	50.3				11.9			19
VSP-C6-10B□-2		1.8	58.4		29.5	17.5	8.4	10	0.8 to 2.7	18
VSP-C6-10B□-4		4	62.5				11.2			19
VSP-C6-10B□-6		6	64.3				11.9			20
VSP-C6-15B□-2		1.8	69.4		34.5	23.5	8.4	15	0.7 to 3.0	22
VSP-C6-15B□-4		4	73.5				11.2			23
VSP-C6-15B□-6		6	75.3				11.9			24
VSP-C6-20B□-2		1.8	79.4		39.5	28.5	8.4	20	0.9 to 3.4	24
VSP-C6-20B□-4		4	83.5				11.2			25
VSP-C6-20B□-6		6	85.3				11.9			26
VSP-C8B□-2	8	1.8	44.4	10	22.5	13	8.4	3	0.9 to 1.9	17
VSP-C8B□-4		4	48.5				11.2			18
VSP-C8B□-6		6	50.3				11.9			19
VSP-C8-10B□-2		1.8	58.4		29.5	17.5	8.4	10	0.8 to 2.7	18
VSP-C8-10B□-4		4	62.5				11.2			19
VSP-C8-10B□-6		6	64.3				11.9			20
VSP-C8-15B□-2		1.8	69.4		34.5	23.5	8.4	15	0.7 to 3.0	22
VSP-C8-15B□-4		4	73.5				11.2			23
VSP-C8-15B□-6		6	75.3				11.9			24
VSP-C8-20B□-2		1.8	79.4		39.5	28.5	8.4	20	0.9 to 3.4	24
VSP-C8-20B□-4		4	83.5				11.2			25
VSP-C8-20B□-6		6	85.3				11.9			26

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C10, 15B□-4/6
●VSP-C10, 15-□B□-4/6



●VSP-C20 to 50B□-4/6
●VSP-C20 to 50-□B□-4/6

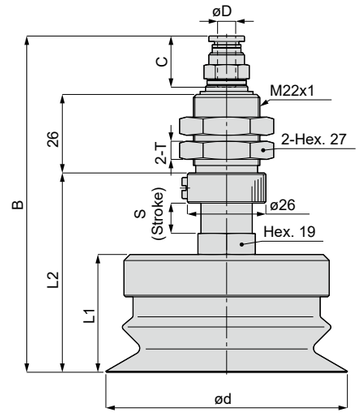


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C10B□-4	10	4	67	16	34	20	11.2	6	4.0 to 7.1	35
VSP-C10B□-6		6	68.3				11.9			36
VSP-C10-10B□-4		4	71.5		38.5		11.2	10	2.0 to 5.2	36
VSP-C10-10B□-6		6	72.8				11.9			37
VSP-C10-15B□-4		4	81.5		43.5	25	11.2	15	2.0 to 5.9	41
VSP-C10-15B□-6		6	82.8				11.9			42
VSP-C10-20B□-4		4	97.5		50.5	34	11.2	20	1.1 to 4.8	49
VSP-C10-20B□-6		6	98.8				11.9			50
VSP-C15B□-4	15	4	67	16	34	20	11.2	6	4.0 to 7.1	36
VSP-C15B□-6		6	68.3				11.9			37
VSP-C15-10B□-4		4	71.5		38.5		11.2	10	2.0 to 5.2	37
VSP-C15-10B□-6		6	72.8				11.9			38
VSP-C15-15B□-4		4	81.5		43.5	25	11.2	15	2.0 to 5.9	42
VSP-C15-15B□-6		6	82.8				11.9			43
VSP-C15-20B□-4		4	97.5		50.5	34	11.2	20	1.1 to 4.8	49
VSP-C15-20B□-6		6	98.8				11.9			50
VSP-C20B□-4	20	4	70	19	37	20	11.2	6	7.0 to 12.6	39
VSP-C20B□-6		6	71.3				11.9			40
VSP-C20-10B□-4		4	76		43		11.2	10	3.3 to 10.0	41
VSP-C20-10B□-6		6	77.3				11.9			42
VSP-C20-15B□-4		4	86		48	25	11.2	15	3.3 to 10.4	46
VSP-C20-15B□-6		6	87.3				11.9			47
VSP-C20-20B□-4		4	102		55	34	11.2	20	2.0 to 8.7	53
VSP-C20-20B□-6		6	103.3				11.9			54
VSP-C25B□-4	25	4	70	19	37	20	11.2	6	7.0 to 12.6	40
VSP-C25B□-6		6	71.3				11.9			41
VSP-C25-10B□-4		4	76		43		11.2	10	3.3 to 10.0	42
VSP-C25-10B□-6		6	77.3				11.9			43
VSP-C25-15B□-4		4	86		48	25	11.2	15	3.3 to 10.4	47
VSP-C25-15B□-6		6	87.3				11.9			48
VSP-C25-20B□-4		4	102		55	34	11.2	20	2.0 to 8.7	54
VSP-C25-20B□-6		6	103.3				11.9			55
VSP-C30B□-4	30	4	74	23	41	20	11.2	6	7.0 to 12.6	43
VSP-C30B□-6		6	75.3				11.9			44
VSP-C30-10B□-4		4	80		47		11.2	10	3.3 to 10.0	47
VSP-C30-10B□-6		6	81.3				11.9			48
VSP-C30-15B□-4		4	90		52	25	11.2	15	3.3 to 10.4	50
VSP-C30-15B□-6		6	91.3				11.9			51
VSP-C30-20B□-4		4	106		59	34	11.2	20	2.0 to 8.7	57
VSP-C30-20B□-6		6	107.3				11.9			58
VSP-C40B□-4	40	4	81	30	48	20	11.2	6	7.0 to 12.6	51
VSP-C40B□-6		6	82.3				11.9			52
VSP-C40-10B□-4		4	87		54		11.2	10	3.3 to 10.0	54
VSP-C40-10B□-6		6	88.3				11.9			55
VSP-C40-15B□-4		4	97		59	25	11.2	15	3.3 to 10.4	58
VSP-C40-15B□-6		6	98.3				11.9			59
VSP-C40-20B□-4		4	113		66	34	11.2	20	2.0 to 8.7	65
VSP-C40-20B□-6		6	114.3				11.9			66
VSP-C50B□-4	50	4	83	32	50	20	11.2	6	7.0 to 12.6	57
VSP-C50B□-6		6	84.3				11.9			58
VSP-C50-10B□-4		4	89		56		11.2	10	3.3 to 10.0	59
VSP-C50-10B□-6		6	90.3				11.9			60
VSP-C50-15B□-4		4	99		61	25	11.2	15	3.3 to 10.4	65
VSP-C50-15B□-6		6	100.3				11.9			66
VSP-C50-20B□-4		4	115		68	34	11.2	20	2.0 to 8.7	71
VSP-C50-20B□-6		6	116.3				11.9			72

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C60 to 100B□-4/6/8

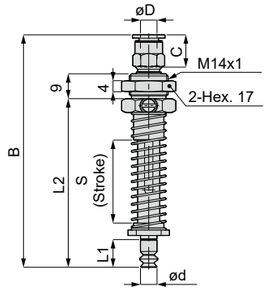


Unit: mm

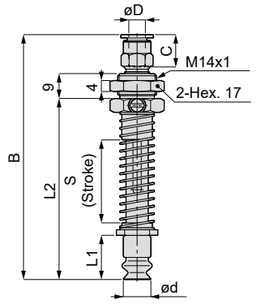
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	T	Stroke S	Spring Force (N)	Weight (g)
VSP-C60B□-4	60	4	106.2	37	66.6	11.2	6	10	10.1 to 15.8	177
VSP-C60B□-6		6	108.4			11.9				178
VSP-C60B□-8		8	116.8			18.2				183
VSP-C80B□-4	80	4	105.6	39	66	11.2	6	10	10.1 to 15.8	259
VSP-C80B□-6		6	107.8			11.9				260
VSP-C80B□-8		8	116.2			18.2				265
VSP-C100B□-4	100	4	111.6	45	72	11.2	6	10	10.1 to 15.8	358
VSP-C100B□-6		6	113.8			11.9				359
VSP-C100B□-8		8	122.2			18.2				364

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting Type without Spring Cover)

●VSP-C6, 8-□B□-4C/6C



●VSP-C10, 15-□B□-4C/6C

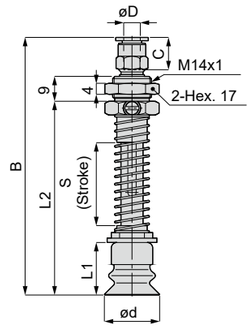


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C6-20B□-4C	6	4	70	10	48	11.2	20	1.5 to 4.9	43
VSP-C6-20B□-6C		6	71.3			11.9			44
VSP-C6-30B□-4C		4	83		61	11.2	30	1.1 to 4.8	48
VSP-C6-30B□-6C		6	84.3			11.9			49
VSP-C6-40B□-4C		4	96		74	11.2	40	1.0 to 4.5	54
VSP-C6-40B□-6C		6	97.9			11.9			55
VSP-C6-50B□-4C		4	109		87	11.2	50	0.9 to 4.5	59
VSP-C6-50B□-6C		6	110.9			11.9			60
VSP-C8-20B□-4C	8	4	70	10	48	11.2	20	1.5 to 4.9	43
VSP-C8-20B□-6C		6	71.3			11.9			44
VSP-C8-30B□-4C		4	83		61	11.2	30	1.1 to 4.8	48
VSP-C8-30B□-6C		6	84.3			11.9			49
VSP-C8-40B□-4C		4	96		74	11.2	40	1.0 to 4.5	54
VSP-C8-40B□-6C		6	97.9			11.9			55
VSP-C8-50B□-4C		4	109		87	11.2	50	0.9 to 4.5	59
VSP-C8-50B□-6C		6	110.9			11.9			60
VSP-C10-20B□-4C	10	4	74.5	16	52.5	11.2	20	1.5 to 4.9	43
VSP-C10-20B□-6C		6	75.8			11.9			44
VSP-C10-30B□-4C		4	87.5		65.5	11.2	30	1.1 to 4.8	48
VSP-C10-30B□-6C		6	88.8			11.9			49
VSP-C10-40B□-4C		4	100.5		78.5	11.2	40	1.0 to 4.5	54
VSP-C10-40B□-6C		6	101.8			11.9			55
VSP-C10-50B□-4C		4	113.5		91.5	11.2	50	0.9 to 4.5	59
VSP-C10-50B□-6C		6	114.8			11.9			60
VSP-C15-20B□-4C	15	4	74.5	16	52.5	11.2	20	1.5 to 4.9	43
VSP-C15-20B□-6C		6	75.8			11.9			44
VSP-C15-30B□-4C		4	87.5		65.5	11.2	30	1.1 to 4.8	48
VSP-C15-30B□-6C		6	88.8			11.9			49
VSP-C15-40B□-4C		4	100.5		78.5	11.2	40	1.0 to 4.5	54
VSP-C15-40B□-6C		6	101.8			11.9			55
VSP-C15-50B□-4C		4	113.5		91.5	11.2	50	0.9 to 4.5	59
VSP-C15-50B□-6C		6	114.8			11.9			60

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting without Spring Cover)

●VSP-C20 to 50-□B□-4C/6C

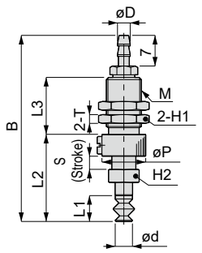


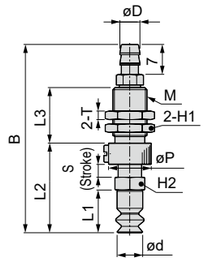
Unit: mm

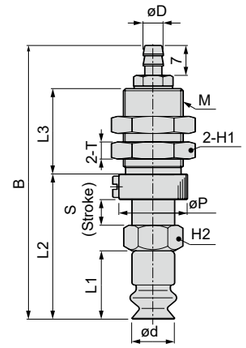
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C20-20B□-4C	20	4	79	19	57	11.2	20	1.5 to 4.9	49
VSP-C20-20B□-6C		6	80.3			11.9			50
VSP-C20-30B□-4C		4	92		70	11.2	30	1.1 to 4.8	54
VSP-C20-30B□-6C		6	93.3			11.9			55
VSP-C20-40B□-4C		4	105		83	11.2	40	1.0 to 4.5	59
VSP-C20-40B□-6C		6	106.3			11.9			60
VSP-C20-50B□-4C		4	118		96	11.2	50	0.9 to 4.5	64
VSP-C20-50B□-6C		6	119.3			11.9			65
VSP-C25-20B□-4C	25	4	79	19	57	11.2	20	1.5 to 4.9	50
VSP-C25-20B□-6C		6	80.3			11.9			51
VSP-C25-30B□-4C		4	92		70	11.2	30	1.1 to 4.8	55
VSP-C25-30B□-6C		6	93.3			11.9			56
VSP-C25-40B□-4C		4	105		83	11.2	40	1.0 to 4.5	60
VSP-C25-40B□-6C		6	106.3			11.9			61
VSP-C25-50B□-4C		4	118		96	11.2	50	0.9 to 4.5	65
VSP-C25-50B□-6C		6	119.3			11.9			66
VSP-C30-20B□-4C	30	4	83	23	61	11.2	20	1.5 to 4.9	52
VSP-C30-20S□-6C		6	84.3			11.9			53
VSP-C30-30B□-4C		4	96		74	11.2	30	1.1 to 4.8	57
VSP-C30-30S□-6C		6	97.3			11.9			58
VSP-C30-40B□-4C		4	109		87	11.2	40	1.0 to 4.5	63
VSP-C30-40S□-6C		6	110.3			11.9			64
VSP-C30-50B□-4C		4	122		100	11.2	50	0.9 to 4.5	68
VSP-C30-50S□-6C		6	123.3			11.9			69
VSP-C40-20B□-4C	40	4	90	30	68	11.2	20	1.5 to 4.9	61
VSP-C40-20S□-6C		6	91.3			11.9			62
VSP-C40-30B□-4C		4	103		81	11.2	30	1.1 to 4.8	66
VSP-C40-30S□-6C		6	104.3			11.9			67
VSP-C40-40B□-4C		4	116		94	11.2	40	1.0 to 4.5	71
VSP-C40-40S□-6C		6	117.3			11.9			72
VSP-C40-50B□-4C		4	129		107	11.2	50	0.9 to 4.5	77
VSP-C40-50S□-6C		6	130.3			11.9			78
VSP-C50-20B□-4C	50	4	92	32	70	11.2	20	1.5 to 4.9	67
VSP-C50-20S□-6C		6	93.3			11.9			68
VSP-C50-30B□-4C		4	105		83	11.2	30	1.1 to 4.8	72
VSP-C50-30S□-6C		6	106.3			11.9			73
VSP-C50-40B□-4C		4	118		96	11.2	40	1.0 to 4.5	77
VSP-C50-40S□-6C		6	119.3			11.9			78
VSP-C50-50B□-4C		4	131		109	11.2	50	0.9 to 4.5	82
VSP-C50-50S□-6C		6	132.3			11.9			83

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C2, 4B□-4T/6T
●VSP-C2, 4-□B□-4T/6T
●VSP-C6, 8B□-4T/6T
●VSP-C6, 8-□B□-4T/6T
●VSP-C10, 15B□-4T/6T
●VSP-C10, 15-□B□-4T/6T





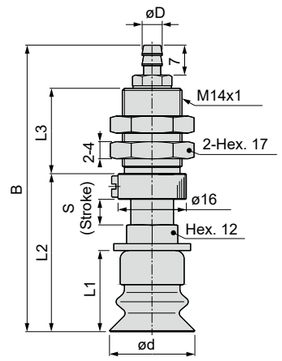


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	L3	øP	Width Across Flats H1	Width Across Flats H2	T	Stroke S	Spring Force (N)	Weight (g)
VSP-C2B□-4T	2	2.5	M8x0.75	42.6	6	20	13	10	10	7	2	3	0.9 to 1.9	8
VSP-C2B□-6T		4												
VSP-C2-10B□-4T		2.5	M12x1	56.6		29	17.5	13	14	8	4	10	0.6 to 1.7	19
VSP-C2-10B□-6T		4												
VSP-C2-15B□-4T		2.5		67.6		34	23.5					15	0.4 to 1.7	22
VSP-C2-15B□-6T		4												
VSP-C2-20B□-4T		2.5		77.6		39	28.5					20	0.3 to 1.8	25
VSP-C2-20B□-6T		4												
VSP-C4B□-4T	4	2.5	M8x0.75	42.6	6	20	13	10	10	7	2	3	0.9 to 1.9	8
VSP-C4B□-6T		4												
VSP-C4-10B□-4T		2.5	M12x1	56.6		29	17.5	13	14	8	4	10	0.6 to 1.7	19
VSP-C4-10B□-6T		4												
VSP-C4-15B□-4T		2.5		67.6		34	23.5					15	0.4 to 1.7	22
VSP-C4-15B□-6T		4												
VSP-C4-20B□-4T		2.5		77.6		39	28.5					20	0.3 to 1.8	25
VSP-C4-20B□-6T		4												
VSP-C6B□-4T	6	2.5	M8x0.75	43.6	10	21	13	10	10	7	2	3	0.9 to 1.9	9
VSP-C6B□-6T		4												
VSP-C6-10B□-4T		2.5	M12x1	57.1		29.5	17.5	13	14	8	4	10	0.8 to 2.7	19
VSP-C6-10B□-6T		4												
VSP-C6-15B□-4T		2.5		68.1		34.5	23.5					15	0.7 to 3.0	22
VSP-C6-15B□-6T		4												
VSP-C6-20B□-4T		2.5		78.1		39.5	28.5					20	0.9 to 3.4	24
VSP-C6-20B□-6T		4												
VSP-C8B□-4T	8	2.5	M8x0.75	43.6	10	21	13	10	10	7	2	3	0.9 to 1.9	9
VSP-C8B□-6T		4												
VSP-C8-10B□-4T		2.5	M12x1	57.1		29.5	17.5	13	14	8	4	10	0.8 to 2.7	19
VSP-C8-10B□-6T		4												
VSP-C8-15B□-4T		2.5		68.1		34.5	23.5					15	0.7 to 3.0	22
VSP-C8-15B□-6T		4												
VSP-C8-20B□-4T		2.5		78.1		39.5	28.5					20	0.9 to 3.4	24
VSP-C8-20B□-6T		4												
VSP-C10B□-4T	10	2.5	M14x1	64.1	16	34	20	16	17	12	4	6	4.0 to 7.1	34
VSP-C10B□-6T		4												
VSP-C10-10B□-4T		2.5		68.6		38.5						10	2.0 to 5.2	35
VSP-C10-10B□-6T		4												
VSP-C10-15B□-4T		2.5		78.6		43.5	25					15	2.0 to 5.9	40
VSP-C10-15B□-6T		4												
VSP-C10-20B□-4T		2.5		94.6		50.5	34					20	1.1 to 4.8	48
VSP-C10-20B□-6T		4												
VSP-C15B□-4T	15	2.5	M14x1	64.1	16	34	20	16	17	12	4	6	4.0 to 7.1	35
VSP-C15B□-6T		4												
VSP-C15-10B□-4T		2.5		68.6		38.5						10	2.0 to 5.2	36
VSP-C15-10B□-6T		4												
VSP-C15-15B□-4T		2.5		78.6		43.5	25					15	2.0 to 5.9	41
VSP-C15-15B□-6T		4												
VSP-C15-20B□-4T		2.5		94.6		50.5	34					20	1.1 to 4.8	48
VSP-C15-20B□-6T		4												

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C20 to 50B□-4T/6T
●VSP-C20 to 50-□B□-4T/6T

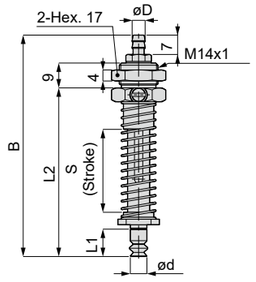


Unit: mm

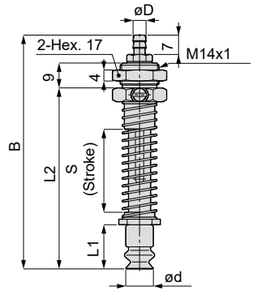
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-C20B□-4T	20	2.5	67.1	19	37	20	6	7.0 to 12.6	38
VSP-C20B□-6T		4							
VSP-C20-10B□-4T		2.5	73.1		43		10	3.3 to 10.0	40
VSP-C20-10B□-6T		4							
VSP-C20-15B□-4T		2.5	83.1		48	25	15	3.3 to 10.4	45
VSP-C20-15B□-6T		4							
VSP-C20-20B□-4T		2.5	99.1		55	34	20	2.0 to 8.7	52
VSP-C20-20B□-6T		4							
VSP-C25B□-4T	25	2.5	67.1	19	37	20	6	7.0 to 12.6	39
VSP-C25B□-6T		4							
VSP-C25-10B□-4T		2.5	73.1		43		10	3.3 to 10.0	41
VSP-C25-10B□-6T		4							
VSP-C25-15B□-4T		2.5	83.1		48	25	15	3.3 to 10.4	46
VSP-C25-15B□-6T		4							
VSP-C25-20B□-4T		2.5	99.1		55	34	20	2.0 to 8.7	53
VSP-C25-20B□-6T		4							
VSP-C30B□-4T	30	2.5	71.1	23	41	20	6	7.0 to 12.6	41
VSP-C30B□-6T		4							
VSP-C30-10B□-4T		2.5	77.1		47		10	3.3 to 10.0	44
VSP-C30-10B□-6T		4							
VSP-C30-15B□-4T		2.5	87.1		52	25	15	3.3 to 10.4	49
VSP-C30-15B□-6T		4							
VSP-C30-20B□-4T		2.5	103.1		59	34	20	2.0 to 8.7	55
VSP-C30-20B□-6T		4							
VSP-C40B□-4T	40	2.5	78.1	32	48	20	6	7.0 to 12.6	50
VSP-C40B□-6T		4							
VSP-C40-10B□-4T		2.5	84.1		54		10	3.3 to 10.0	52
VSP-C40-10B□-6T		4							
VSP-C40-15B□-4T		2.5	94.1		59	25	15	3.3 to 10.4	57
VSP-C40-15B□-6T		4							
VSP-C40-20B□-4T		2.5	110.1		66	34	20	2.0 to 8.7	64
VSP-C40-20B□-6T		4							
VSP-C50B□-4T	50	2.5	80.1	40	50	20	6	7.0 to 12.6	56
VSP-C50B□-6T		4							
VSP-C50-10B□-4T		2.5	86.1		56		10	3.3 to 10.0	58
VSP-C50-10B□-6T		4							
VSP-C50-15B□-4T		2.5	96.1		61	25	15	3.3 to 10.4	63
VSP-C50-15B□-6T		4							
VSP-C50-20B□-4T		2.5	112.1		68	34	20	2.0 to 8.7	70
VSP-C50-20B□-6T		4							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C Barb Fitting Type without Spring Cover)

●VSP-C6, 8-□B□-4TC/6TC



●VSP-C10, 15-□B□-4TC/6TC

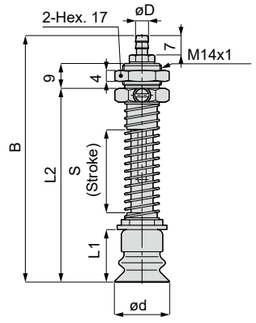


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C6-20B□-4TC	6	2.5	67.1	10	48	20	1.5 to 4.9	42
VSP-C6-20B□-6TC		4						
VSP-C6-30B□-4TC		2.5	80.1		61	30	1.1 to 4.8	47
VSP-C6-30B□-6TC		4						
VSP-C6-40B□-4TC		2.5	93.1		74	40	1.0 to 4.5	52
VSP-C6-40B□-6TC		4						
VSP-C6-50B□-4TC		2.5	106.1		87	50	0.9 to 4.5	58
VSP-C6-50B□-6TC		4						
VSP-C8-20B□-4TC	8	2.5	67.1	10	48	20	1.5 to 4.9	42
VSP-C8-20B□-6TC		4						
VSP-C8-30B□-4TC		2.5	80.1		61	30	1.1 to 4.8	47
VSP-C8-30B□-6TC		4						
VSP-C8-40B□-4TC		2.5	93.1		74	40	1.0 to 4.5	52
VSP-C8-40B□-6TC		4						
VSP-C8-50B□-4TC		2.5	106.1		87	50	0.9 to 4.5	58
VSP-C8-50B□-6TC		4						
VSP-C10-20B□-4TC	10	2.5	71.6	16	52.5	20	1.5 to 4.9	43
VSP-C10-20B□-6TC		4						
VSP-C10-30B□-4TC		2.5	84.6		65.5	30	1.1 to 4.8	48
VSP-C10-30B□-6TC		4						
VSP-C10-40B□-4TC		2.5	97.6		78.5	40	1.0 to 4.5	53
VSP-C10-40B□-6TC		4						
VSP-C10-50B□-4TC		2.5	110.6		91.5	50	0.9 to 4.5	59
VSP-C10-50B□-6TC		4						
VSP-C15-20B□-4TC	15	2.5	71.6	16	52.5	20	1.5 to 4.9	43
VSP-C15-20B□-6TC		4						
VSP-C15-30B□-4TC		2.5	84.6		65.5	30	1.1 to 4.8	48
VSP-C15-30B□-6TC		4						
VSP-C15-40B□-4TC		2.5	97.6		78.5	40	1.0 to 4.5	53
VSP-C15-40B□-6TC		4						
VSP-C15-50B□-4TC		2.5	110.6		91.5	50	0.9 to 4.5	59
VSP-C15-50B□-6TC		4						

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C Barb Fitting without Spring Cover)

●VSP-C20 to 50-□B□-4TC/6TC

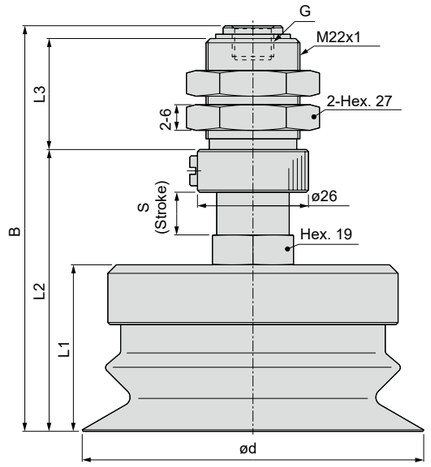


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C20-20B□-4TC	20	2.5	76.1	19	57	20	1.5 to 4.9	48
VSP-C20-20B□-6TC		4						
VSP-C20-30B□-4TC		2.5	89.1		70	30	1.1 to 4.8	53
VSP-C20-30B□-6TC		4						
VSP-C20-40B□-4TC		2.5	102.1		83	40	1.0 to 4.5	58
VSP-C20-40B□-6TC		4						
VSP-C20-50B□-4TC		2.5	115.1		96	50	0.9 to 4.5	63
VSP-C20-50B□-6TC		4						
VSP-C25-20B□-4TC	25	2.5	76.1	19	57	20	1.5 to 4.9	49
VSP-C25-20B□-6TC		4						
VSP-C25-30B□-4TC		2.5	89.1		70	30	1.1 to 4.8	54
VSP-C25-30B□-6TC		4						
VSP-C25-40B□-4TC		2.5	102.1		83	40	1.0 to 4.5	59
VSP-C25-40B□-6TC		4						
VSP-C25-50B□-4TC		2.5	115.1		96	50	0.9 to 4.5	64
VSP-C25-50B□-6TC		4						
VSP-C30-20B□-4TC	30	2.5	80.1	23	61	20	1.5 to 4.9	50
VSP-C30-20B□-6TC		4						
VSP-C30-30B□-4TC		2.5	93.1		74	30	1.1 to 4.8	55
VSP-C30-30B□-6TC		4						
VSP-C30-40B□-4TC		2.5	106.1		87	40	1.0 to 4.5	60
VSP-C30-40B□-6TC		4						
VSP-C30-50B□-4TC		2.5	119.1		100	50	0.9 to 4.5	65
VSP-C30-50B□-6TC		4						
VSP-C40-20B□-4TC	40	2.5	87.1	30	68	20	1.5 to 4.9	60
VSP-C40-20B□-6TC		4						
VSP-C40-30B□-4TC		2.5	100.1		81	30	1.1 to 4.8	65
VSP-C40-30B□-6TC		4						
VSP-C40-40B□-4TC		2.5	113.1		94	40	1.0 to 4.5	70
VSP-C40-40B□-6TC		4						
VSP-C40-50B□-4TC		2.5	126.1		107	50	0.9 to 4.5	75
VSP-C40-50B□-6TC		4						
VSP-C50-20B□-4TC	50	2.5	89.1	32	70	20	1.5 to 4.9	66
VSP-C50-20B□-6TC		4						
VSP-C50-30B□-4TC		2.5	102.1		83	30	1.1 to 4.8	71
VSP-C50-30B□-6TC		4						
VSP-C50-40B□-4TC		2.5	115.1		96	40	1.0 to 4.5	76
VSP-C50-40B□-6TC		4						
VSP-C50-50B□-4TC		2.5	128.1		109	50	0.9 to 4.5	81
VSP-C50-50B□-6TC		4						

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C Female Thread)

●VSP-C60 to 100B□-6A

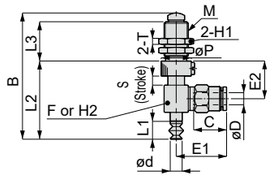


Unit: mm

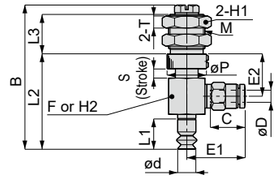
Model No.	Pad Diameter ød	Vacuum Outlet Size G	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-C60B□-6A	60	G1/8	95.6	37	66.6	26	10	10.1 to 15.8	169
VSP-C80B□-6A	80	G1/8	95	39	66	26	10	10.1 to 15.8	251
VSP-C100B□-6A	100	G1/8	101	45	72	26	10	10.1 to 15.8	350

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D2, 4B□-2/4/6
●VSP-D2, 4-□B□-2/-4/-6



●VSP-D6, 8B□-2/4/6
●VSP-D6, 8-□B□-2/4/6

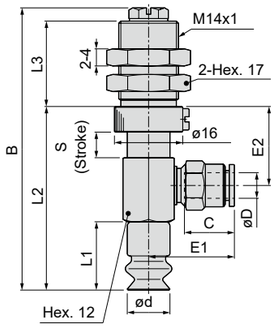


Unit: mm

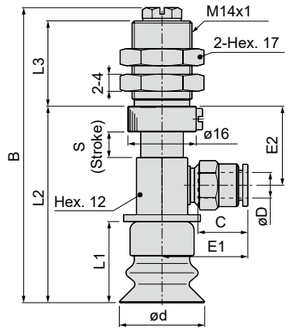
Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	L3	øP	Tube End C	E1	E2	Width Across Flats H1	Width Across Flats H2	□F	T	Stroke S	Spring Force (N)	Weight (g)
VSP-D2B□-2	2	1.8	M8x0.75	42	6	26	13	10	8.4	12.7	12.5	10	-	8	2	3	0.9 to 1.9	14
VSP-D2B□-4		4							11.2	16.8								15
VSP-D2B□-6		6							11.9	18.6								16
VSP-D2-10B□-2		1.8	M12x1	57.6		37	17.5	13	8.4	13.7	21	14	10	-	4	10	0.6 to 1.7	30
VSP-D2-10B□-4		4							11.2	17.8								31
VSP-D2-10B□-6		6							11.9	19.1								32
VSP-D2-15B□-2		1.8		68.6		40	23.5		8.4	13.7	26					15	0.4 to 1.7	34
VSP-D2-15B□-4		4							11.2	17.8								35
VSP-D2-15B□-6		6							11.9	19.1								36
VSP-D2-20B□-2		1.8		78.6		47	28.5		8.4	13.7	31					20	0.3 to 1.8	37
VSP-D2-20B□-4		4							11.2	17.8								38
VSP-D2-20B□-6		6							11.9	19.1								39
VSP-D4B□-2	4	1.8	M8x0.75	42	6	26	13	10	8.4	12.7	12.5	10	-	8	2	3	0.9 to 1.9	14
VSP-D4B□-4		4							11.2	16.8								15
VSP-D4B□-6		6							11.9	18.6								16
VSP-D4-10B□-2		1.8	M12x1	57.6		37	17.5	13	8.4	13.7	21	14	10	-	4	10	0.6 to 1.7	30
VSP-D4-10B□-4		4							11.2	17.8								31
VSP-D4-10B□-6		6							11.9	19.1								32
VSP-D4-15B□-2		1.8		68.6		40	23.5		8.4	13.7	26					15	0.4 to 1.7	34
VSP-D4-15B□-4		4							11.2	17.8								35
VSP-D4-15B□-6		6							11.9	19.1								36
VSP-D4-20B□-2		1.8		78.6		47	28.5		8.4	13.7	31					20	0.3 to 1.8	37
VSP-D4-20B□-4		4							11.2	17.8								38
VSP-D4-20B□-6		6							11.9	19.1								39
VSP-D6B□-2	6	1.8	M8x0.75	44	10	28	13	10	8.4	12.7	13	10	-	8	2	3	0.9 to 1.9	15
VSP-D6B□-4		4							11.2	16.8								16
VSP-D6B□-6		6							11.9	18.6								17
VSP-D6-10B□-2		1.8	M12x1	59.1		38.5	17.5	13	8.4	14.7	21	14	12	-	4	10	0.6 to 1.7	33
VSP-D6-10B□-4		4							11.2	18.8								34
VSP-D6-10B□-6		6							11.9	20.1								35
VSP-D6-15B□-2		1.8		70.1		43.5	23.5		8.4	14.7	26					15	0.4 to 1.7	37
VSP-D6-15B□-4		4							11.2	18.8								38
VSP-D6-15B□-6		6							11.9	20.1								39
VSP-D6-20B□-2		1.8		80.1		48.5	28.5		8.4	14.7	31					20	0.3 to 1.8	40
VSP-D6-20B□-4		4							11.2	18.8								41
VSP-D6-20B□-6		6							11.9	20.1								42
VSP-D8B□-2	8	1.8	M8x0.75	44	10	28	13	10	8.4	12.7	13	10	-	8	2	3	0.9 to 1.9	15
VSP-D8B□-4		4							11.2	16.8								16
VSP-D8B□-6		6							11.9	18.6								17
VSP-D8-10B□-2		1.8	M12x1	59.1		38.5	17.5	13	8.4	14.7	21	14	12	-	4	10	0.6 to 1.7	33
VSP-D8-10B□-4		4							11.2	18.8								34
VSP-D8-10B□-6		6							11.9	20.1								35
VSP-D8-15B□-2		1.8		70.1		43.5	23.5		8.4	14.7	26					15	0.4 to 1.7	37
VSP-D8-15B□-4		4							11.2	18.8								38
VSP-D8-15B□-6		6							11.9	20.1								39
VSP-D8-20B□-2		1.8		80.1		48.5	28.5		8.4	14.7	31					20	0.3 to 1.8	40
VSP-D8-20B□-4		4							11.2	18.8								41
VSP-D8-20B□-6		6							11.9	20.1								42

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D10, 15B□4/6
●VSP-D10, 15-□B□-4/-6



●VSP-D20 to 50B□-4/6
●VSP-D20 to 50-□B□-4/-6

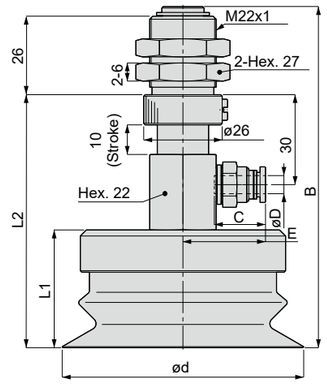


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D10B□-4	10	4	66.1	16	43	20	11.2	18.8	18.5	6	4.0 to 7.1	47
VSP-D10B□-6		6					11.9	20.1				48
VSP-D10-10B□-4		4	71.1		48		11.2	18.8	25	10	2.0 to 5.2	50
VSP-D10-10B□-6		6					11.9	20.1				51
VSP-D10-15B□-4		4	81.1		53	25	11.2	18.8	30	15	2.0 to 5.9	56
VSP-D10-15B□-6		6					11.9	20.1				57
VSP-D10-20B□-4		4	97.1		60	34	11.2	18.8	37	20	1.1 to 4.8	66
VSP-D10-20B□-6		6					11.9	20.1				67
VSP-D15B□-4	15	4	66.1	16	43	20	11.2	18.8	18.5	6	4.0 to 7.1	48
VSP-D15B□-6		6					11.9	20.1				49
VSP-D15-10B□-4		4	71.1		48		11.2	18.8	25	10	2.0 to 5.2	51
VSP-D15-10B□-6		6					11.9	20.1				52
VSP-D15-15B□-4		4	81.1		53	25	11.2	18.8	30	15	2.0 to 5.9	56
VSP-D15-15B□-6		6					11.9	20.1				57
VSP-D15-20B□-4		4	97.1		60	34	11.2	18.8	37	20	1.1 to 4.8	67
VSP-D15-20B□-6		6					11.9	20.1				68
VSP-D20B□-4	20	4	69.1	19	46	20	11.2	18.8	18.5	6	7.0 to 12.6	51
VSP-D20B□-6		6					11.9	20.1				52
VSP-D20-10B□-4		4	75.1		52		11.2	18.8	24.5	10	3.3 to 10.0	54
VSP-D20-10B□-6		6					11.9	20.1				55
VSP-D20-15B□-4		4	85.1		57	25	11.2	18.8	29.5	15	3.3 to 10.4	61
VSP-D20-15B□-6		6					11.9	20.1				62
VSP-D20-20B□-4		4	101.1		64	34	11.2	18.8	36.5	20	2.0 to 8.7	71
VSP-D20-20B□-6		6					11.9	20.1				72
VSP-D25B□-4	25	4	69.1	19	46	20	11.2	18.8	18.5	6	7.0 to 12.6	52
VSP-D25B□-6		6					11.9	20.1				53
VSP-D25-10B□-4		4	75.1		52		11.2	18.8	24.5	10	3.3 to 10.0	55
VSP-D25-10B□-6		6					11.9	20.1				56
VSP-D25-15B□-4		4	85.1		57	25	11.2	18.8	29.5	15	3.3 to 10.4	61
VSP-D25-15B□-6		6					11.9	20.1				62
VSP-D25-20B□-4		4	101.1		64	34	11.2	18.8	36.5	20	2.0 to 8.7	72
VSP-D25-20B□-6		6					11.9	20.1				73
VSP-D30B□-4	30	4	73.1	23	50	20	11.2	18.8	18.5	6	7.0 to 12.6	54
VSP-D30B□-6		6					11.9	20.1				55
VSP-D30-10B□-4		4	79.1		56		11.2	18.8	24.5	10	3.3 to 10.0	58
VSP-D30-10B□-6		6					11.9	20.1				59
VSP-D30-15B□-4		4	89.1		61	25	11.2	18.8	29.5	15	3.3 to 10.4	64
VSP-D30-15B□-6		6					11.9	20.1				65
VSP-D30-20B□-4		4	105.1		68	34	11.2	18.8	36.5	20	2.0 to 8.7	74
VSP-D30-20B□-6		6					11.9	20.1				75
VSP-D40B□-4	40	4	80.1	30	57	20	11.2	18.8	18.5	6	7.0 to 12.6	63
VSP-D40B□-6		6					11.9	20.1				64
VSP-D40-10B□-4		4	86.1		63		11.2	18.8	24.5	10	3.3 to 10.0	58
VSP-D40-10B□-6		6					11.9	20.1				59
VSP-D40-15B□-4		4	96.1		68	25	11.2	18.8	29.5	15	3.3 to 10.4	64
VSP-D40-15B□-6		6					11.9	20.1				65
VSP-D40-20B□-4		4	112.1		75	34	11.2	18.8	36.5	20	2.0 to 8.7	74
VSP-D40-20B□-6		6					11.9	20.1				75
VSP-D50B□-4	50	4	82.1	32	59	20	11.2	18.8	18.5	6	7.0 to 12.6	69
VSP-D50B□-6		6					11.9	20.1				70
VSP-D50-10B□-4		4	88.1		65		11.2	18.8	24.5	10	3.3 to 10.0	72
VSP-D50-10B□-6		6					11.9	20.1				73
VSP-D50-15B□-4		4	98.1		70	25	11.2	18.8	29.5	15	3.3 to 10.4	79
VSP-D50-15B□-6		6					11.9	20.1				80
VSP-D50-20B□-4		4	1141		77	34	11.2	18.8	36.5	20	2.0 to 8.7	89
VSP-D50-20B□-6		6					11.9	20.1				90

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D60 to 100B□-4/6/8

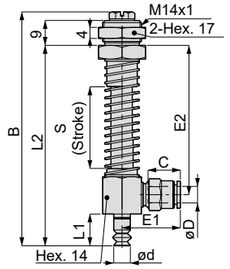


Unit: mm

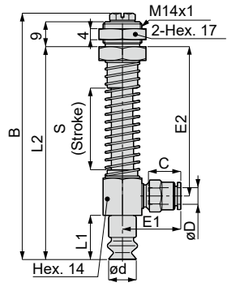
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D60B□-4	60	4	113.6	37	84.6	11.2	21.5	10	10.1 to 15.8	259
VSP-D60B□-6		6				11.9	23.7			260
VSP-D60B□-8		8				18.2	32.1			265
VSP-D80B□-4	80	4	113	39	84	11.2	21.5	10	10.1 to 15.8	342
VSP-D80B□-6		6				11.9	23.7			343
VSP-D80B□-8		8				18.2	32.1			348
VSP-D100B□-4	100	4	119	45	90	11.2	21.5	10	10.1 to 15.8	441
VSP-D100B□-6		6				11.9	23.7			442
VSP-D100B□-8		8				18.2	32.1			447

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting without Spring Cover)

●VSP-D6, 8-□B□-4C/6C



●VSP-D10, 15-□B□-4C/6C

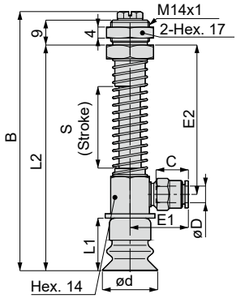


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D6-20B□-4C	6	4	70.1	10	58	11.2	19.8	40.5	20	1.5 to 4.9	62
VSP-D6-20B□-6C		6				83.1	21.1				63
VSP-D6-30B□-4C		4	83.1		71	11.2	19.8	53.5	30	1.1 to 4.8	68
VSP-D6-30B□-6C		6				109.1	21.1				69
VSP-D6-40B□-4C		4	96.1		84	11.2	19.8	66.5	40	1.0 to 4.5	75
VSP-D6-40B□-6C		6				83.1	21.1				76
VSP-D6-50B□-4C		4	109.1		97	11.2	19.8	79.5	50	0.9 to 4.5	82
VSP-D6-50B□-6C		6				109.1	21.1				83
VSP-D8-20B□-4C	8	4	70.1	10	58	11.2	19.8	40.5	20	1.5 to 4.9	62
VSP-D8-20B□-6C		6				89.1	21.1				63
VSP-D8-30B□-4C		4	83.1		71	11.2	19.8	53.5	30	1.1 to 4.8	68
VSP-D8-30B□-6C		6				115.1	21.1				69
VSP-D8-40B□-4C		4	96.1		84	11.2	19.8	66.5	40	1.0 to 4.5	75
VSP-D8-40B□-6C		6				89.1	21.1				76
VSP-D8-50B□-4C		4	109.1		97	11.2	19.8	79.5	50	0.9 to 4.5	82
VSP-D8-50B□-6C		6				115.1	21.1				83
VSP-D10-20B□-4C	10	4	76.1	16	64	11.2	19.8	40.5	20	1.5 to 4.9	69
VSP-D10-20B□-6C		6				11.9	21.1				70
VSP-D10-30B□-4C		4	89.1		77	11.2	19.8	53.5	30	1.1 to 4.8	75
VSP-D10-30B□-6C		6				11.9	21.1				76
VSP-D10-40B□-4C		4	102.1		90	11.2	19.8	66.5	40	1.0 to 4.5	82
VSP-D10-40B□-6C		6				11.9	21.1				83
VSP-D10-50B□-4C		4	115.1		103	11.2	19.8	79.5	50	0.9 to 4.5	89
VSP-D10-50B□-6C		6				11.9	21.1				90
VSP-D15-20B□-4C	15	4	76.1	16	64	11.2	19.8	40.5	20	1.5 to 4.9	69
VSP-D15-20B□-6C		6				11.9	21.1				70
VSP-D15-30B□-4C		4	89.1		77	11.2	19.8	53.5	30	1.1 to 4.8	75
VSP-D15-30B□-6C		6				11.9	21.1				76
VSP-D15-40B□-4C		4	102.1		90	11.2	19.8	66.5	40	1.0 to 4.5	82
VSP-D15-40B□-6C		6				11.9	21.1				83
VSP-D15-50B□-4C		4	115.1		103	11.2	19.8	79.5	50	0.9 to 4.5	89
VSP-D15-50B□-6C		6				11.9	21.1				90

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting without Spring Cover)

●VSP-D20 to 50-□B□-4C/6C

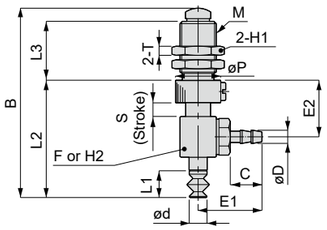


Unit: mm

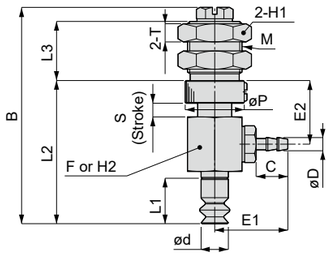
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D20-20B□-4C	20	4	80.6	19	68.5	11.2	19.8	41	20	1.5 to 4.9	70
VSP-D20-20B□-6C		6				11.9	21.1				71
VSP-D20-30B□-4C		4	93.6		81.5	11.2	19.8	54	30	1.1 to 4.8	77
VSP-D20-30B□-6C		6				11.9	21.1				78
VSP-D20-40B□-4C		4	106.6		94.5	11.2	19.8	67	40	1.0 to 4.5	82
VSP-D20-40B□-6C		6				11.9	21.1				83
VSP-D20-50B□-4C		4	119.6		107.5	11.2	19.8	80	50	0.9 to 4.5	90
VSP-D20-50B□-6C		6				11.9	21.1				91
VSP-D25-20B□-4C	25	4	80.6	19	68.5	11.2	19.8	41	20	1.5 to 4.9	71
VSP-D25-20B□-6C		6				11.9	21.1				72
VSP-D25-30B□-4C		4	93.6		81.5	11.2	19.8	54	30	1.1 to 4.8	78
VSP-D25-30B□-6C		6				11.9	21.1				79
VSP-D25-40B□-4C		4	106.6		94.5	11.2	19.8	67	40	1.0 to 4.5	83
VSP-D25-40B□-6C		6				11.9	21.1				84
VSP-D25-50B□-4C		4	119.6		107.5	11.2	19.8	80	50	0.9 to 4.5	91
VSP-D25-50B□-6C		6				11.9	21.1				92
VSP-D30-20B□-4C	30	4	84.6	23	72.5	11.2	19.8	41	20	1.5 to 4.9	75
VSP-D30-20B□-6C		6				11.9	21.1				76
VSP-D30-30B□-4C		4	97.6		85.5	11.2	19.8	54	30	1.1 to 4.8	82
VSP-D30-30B□-6C		6				11.9	21.1				83
VSP-D30-40B□-4C		4	110.6		98.5	11.2	19.8	67	40	1.0 to 4.5	87
VSP-D30-40B□-6C		6				11.9	21.1				88
VSP-D30-50B□-4C		4	123.6		111.5	11.2	19.8	80	50	0.9 to 4.5	95
VSP-D30-50B□-6C		6				11.9	21.1				96
VSP-D40-20B□-4C	40	4	91.6	30	79.5	11.2	19.8	41	20	1.5 to 4.9	86
VSP-D40-20B□-6C		6				11.9	21.1				87
VSP-D40-30B□-4C		4	104.6		92.5	11.2	19.8	54	30	1.1 to 4.8	93
VSP-D40-30B□-6C		6				11.9	21.1				94
VSP-D40-40B□-4C		4	117.6		105.5	11.2	19.8	67	40	1.0 to 4.5	100
VSP-D40-40B□-6C		6				11.9	21.1				101
VSP-D40-50B□-4C		4	130.6		118.5	11.2	19.8	80	50	0.9 to 4.5	107
VSP-D40-50B□-6C		6				11.9	21.1				108
VSP-D50-20B□-4C	50	4	93.6	32	81.5	11.2	19.8	41	20	1.5 to 4.9	92
VSP-D50-20B□-6C		6				11.9	21.1				93
VSP-D50-30B□-4C		4	106.6		94.5	11.2	19.8	54	30	1.1 to 4.8	100
VSP-D50-30B□-6C		6				11.9	21.1				101
VSP-D50-40B□-4C		4	119.6		107.5	11.2	19.8	67	40	1.0 to 4.5	107
VSP-D50-40B□-6C		6				11.9	21.1				108
VSP-D50-50B□-4C		4	132.6		120.5	11.2	19.8	80	50	0.9 to 4.5	114
VSP-D50-50B□-6C		6				11.9	21.1				115

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D2, 4B□-4T/6T
●VSP-D2, 4-□B-4T/6T



●VSP-D6, 8B□-4T/6T
●VSP-D6, 8-□B-4T/6T

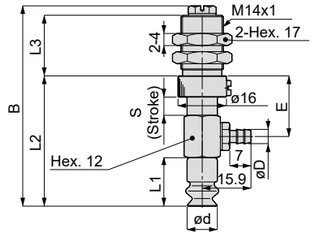


Unit: mm

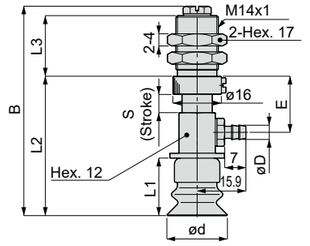
Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	L3	øP	E1	E2	Width across flats H1	Width across flats H2	□F	T	Stroke S	Spring Force (N)	Weight (g)
VSP-D2B□-4T	2	2.5	M8x0.75	42	6	26	13	10	13.9	12.5	10	-	8	2	3	0.9 to 1.9	12
VSP-D2B□-6T		4															
VSP-D2-10B□-4T		2.5	M12x1	57.6		37	17.5	13	14.9	21	14	10	-	4	10	0.6 to 1.7	27
VSP-D2-10B□-6T		4															
VSP-D2-15B□-4T		2.5		68.6		42	23.5			26					15	0.4 to 1.7	32
VSP-D2-15B□-6T		4															
VSP-D2-20B□-4T		2.5		78.6		47	28.5			31					20	0.3 to 1.8	35
VSP-D2-20B□-6T		4															
VSP-D4B□-4T	4	2.5	M8x0.75	42	6	26	13	10	13.9	12.5	10	-	8	2	3	0.9 to 1.9	12
VSP-D4B□-6T		4															
VSP-D4-10B□-4T		2.5	M12x1	57.6		37	17.5	13	14.9	21	14	10	-	4	10	0.6 to 1.7	27
VSP-D4-10B□-6T		4															
VSP-D4-15B□-4T		2.5		68.6		42	23.5			26					15	0.4 to 1.7	32
VSP-D4-15B□-6T		4															
VSP-D4-20B□-4T		2.5		78.6		47	28.5			31					20	0.3 to 1.8	35
VSP-D4-20B□-6T		4															
VSP-D6B□-4T	6	2.5	M8x0.75	44	10	28	13	10	13.9	13	10	-	8	2	3	0.9 to 1.9	13
VSP-D6B□-6T		4															
VSP-D6-10B□-4T		2.5	M12x1	59.1		38.5	17.5	13	15.9	21	14	12	-	4	10	0.6 to 1.7	32
VSP-D6-10B□-6T		4															
VSP-D6-15B□-4T		2.5		70.1		43.5	23.5			26					15	0.4 to 1.7	36
VSP-D6-15B□-6T		4															
VSP-D6-20B□-4T		2.5		80.1		48.5	28.5			31					20	0.3 to 1.8	39
VSP-D6-20B□-6T		4															
VSP-D8B□-4T	8	2.5	M8x0.75	44	10	28	13	10	13.9	13	10	-	8	2	3	0.9 to 1.9	13
VSP-D8B□-6T		4															
VSP-D8-10B□-4T		2.5	M12x1	59.1		38.5	17.5	13	15.9	21	14	12	-	4	10	0.6 to 1.7	32
VSP-D8-10B□-6T		4															
VSP-D8-15B□-4T		2.5		70.1		43.5	23.5			26					15	0.4 to 1.7	36
VSP-D8-15B□-6T		4															
VSP-D8-20B□-4T		2.5		80.1		48.5	28.5			31					20	0.3 to 1.8	39
VSP-D8-20B□-6T		4															

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D10, 15B□-4T/6T
●VSP-D10, 15-□B□-4T/6T



●VSP-D20 to 50B□-4T/6T
●VSP-D20 to 50-□B□-4T/6T

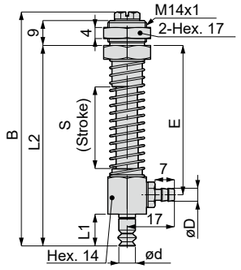


Unit: mm

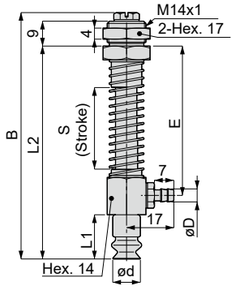
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D10B□-4T	10	2.5	66.1	16	43	20	18.5	6	4.0 to 7.1	47
VSP-D10B□-6T		4								
VSP-D10-10B□-4T		2.5	71.1		48		25	10	2.0 to 5.2	50
VSP-D10-10B□-6T		4								
VSP-D10-15B□-4T		2.5	81.1		53	25	30	15	2.0 to 5.9	55
VSP-D10-15B□-6T		4								
VSP-D10-20B□-4T		2.5	97.1		60	34	37	20	1.1 to 4.8	66
VSP-D10-20B□-6T		4								
VSP-D15B□-4T	15	2.5	66.1	16	43	20	18.5	6	4.0 to 7.1	47
VSP-D15B□-6T		4								
VSP-D15-10B□-4T		2.5	71.1		48		25	10	2.0 to 5.2	50
VSP-D15-10B□-6T		4								
VSP-D15-15B□-4T		2.5	81.1		53	25	30	15	2.0 to 5.9	55
VSP-D15-15B□-6T		4								
VSP-D15-20B□-4T		2.5	97.1		60	34	37	20	1.1 to 4.8	66
VSP-D15-20B□-6T		4								
VSP-D20B□-4T	20	2.5	69.1	19	46	20	18.5	6	7.0 to 12.6	50
VSP-D20B□-6T		4								
VSP-D20-10B□-4T		2.5	75.1		52		24.5	10	3.3 to 10.0	54
VSP-D20-10B□-6T		4								
VSP-D20-15B□-4T		2.5	85.1		57	25	29.5	15	3.3 to 10.4	61
VSP-D20-15B□-6T		4								
VSP-D20-20B□-4T		2.5	101.1		64	34	36.5	20	2.0 to 8.7	71
VSP-D20-20B□-6T		4								
VSP-D25B□-4T	25	2.5	69.1	19	46	20	18.5	6	7.0 to 12.6	51
VSP-D25B□-6T		4								
VSP-D25-10B□-4T		2.5	75.1		52		24.5	10	3.3 to 10.0	55
VSP-D25-10B□-6T		4								
VSP-D25-15B□-4T		2.5	85.1		57	25	29.5	15	3.3 to 10.4	61
VSP-D25-15B□-6T		4								
VSP-D25-20B□-4T		2.5	101.1		64	34	36.5	20	2.0 to 8.7	71
VSP-D25-20B□-6T		4								
VSP-D30B□-4T	30	2.5	73.1	23	50	20	18.5	6	7.0 to 12.6	53
VSP-D30B□-6T		4								
VSP-D30-10B□-4T		2.5	79.1		56		24.5	10	3.3 to 10.0	55
VSP-D30-10B□-6T		4								
VSP-D30-15B□-4T		2.5	89.1		61	25	29.5	15	3.3 to 10.4	62
VSP-D30-15B□-6T		4								
VSP-D30-20B□-4T		2.5	105.1		68	34	36.5	20	2.0 to 8.7	72
VSP-D30-20B□-6T		4								
VSP-D40B□-4T	40	2.5	80.1	30	57	20	18.5	6	7.0 to 12.6	59
VSP-D40B□-6T		4								
VSP-D40-10B□-4T		2.5	86.1		63		24.5	10	3.3 to 10.0	66
VSP-D40-10B□-6T		4								
VSP-D40-15B□-4T		2.5	96.1		68	25	29.5	15	3.3 to 10.4	72
VSP-D40-15B□-6T		4								
VSP-D40-20B□-4T		2.5	112.1		75	34	36.5	20	2.0 to 8.7	82
VSP-D40-20B□-6T		4								
VSP-D50B□-4T	50	2.5	82.1	32	59	20	18.5	6	7.0 to 12.6	68
VSP-D50B□-6T		4								
VSP-D50-10B□-4T		2.5	88.1		65		24.5	10	3.3 to 10.0	72
VSP-D50-10B□-6T		4								
VSP-D50-15B□-4T		2.5	98.1		70	25	29.5	15	3.3 to 10.4	78
VSP-D50-15B□-6T		4								
VSP-D50-20B□-4T		2.5	114.1		77	34	36.5	20	2.0 to 8.7	88
VSP-D50-20B□-6T		4								

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D6, 8-□B□-4TC/6TC



●VSP-D10, 15-□B□-4TC/6TC

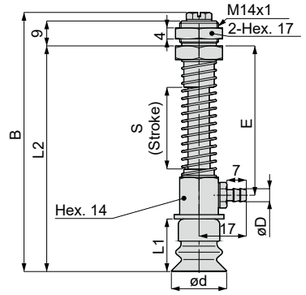


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D6-20B□-4TC	6	2.5	70.1	10	58	40.5	20	1.5 to 4.9	60
VSP-D6-20B□-6TC		4							
VSP-D6-30B□-4TC		2.5	83.1		71	53.5	30	1.1 to 4.8	67
VSP-D6-30B□-6TC		4							
VSP-D6-40B□-4TC		2.5	96.1		84	66.5	40	1.0 to 4.5	74
VSP-D6-40B□-6TC		4							
VSP-D6-50B□-4TC		2.5	109.1		97	79.5	50	0.9 to 4.5	80
VSP-D6-50B□-6TC		4							
VSP-D8-20B□-4TC	8	2.5	70.1	10	58	40.5	20	1.5 to 4.9	60
VSP-D8-20B□-6TC		4							
VSP-D8-30B□-4TC		2.5	83.1		71	53.5	30	1.1 to 4.8	67
VSP-D8-30B□-6TC		4							
VSP-D8-40B□-4TC		2.5	96.1		84	66.5	40	1.0 to 4.5	74
VSP-D8-40B□-6TC		4							
VSP-D8-50B□-4TC		2.5	109.1		97	79.5	50	0.9 to 4.5	80
VSP-D8-50B□-6TC		4							
VSP-D10-20B□-4TC	10	2.5	76.1	16	64	40.5	20	1.5 to 4.9	60
VSP-D10-20B□-6TC		4							
VSP-D10-30B□-4TC		2.5	89.1		77	53.5	30	1.1 to 4.8	67
VSP-D10-30B□-6TC		4							
VSP-D10-40B□-4TC		2.5	102.1		90	66.5	40	1.0 to 4.5	74
VSP-D10-40B□-6TC		4							
VSP-D10-50B□-4TC		2.5	115.1		103	79.5	50	0.9 to 4.5	80
VSP-D10-50B□-6TC		4							
VSP-D15-20B□-4TC	15	2.5	76.1	16	64	40.5	20	1.5 to 4.9	61
VSP-D15-20B□-6TC		4							
VSP-D15-30B□-4TC		2.5	89.1		77	53.5	30	1.1 to 4.8	68
VSP-D15-30B□-6TC		4							
VSP-D15-40B□-4TC		2.5	102.1		90	66.5	40	1.0 to 4.5	75
VSP-D15-40B□-6TC		4							
VSP-D15-50B□-4TC		2.5	115.1		103	79.5	50	0.9 to 4.5	81
VSP-D15-50B□-6TC		4							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D20 to 50-□B□-4TC/6TC

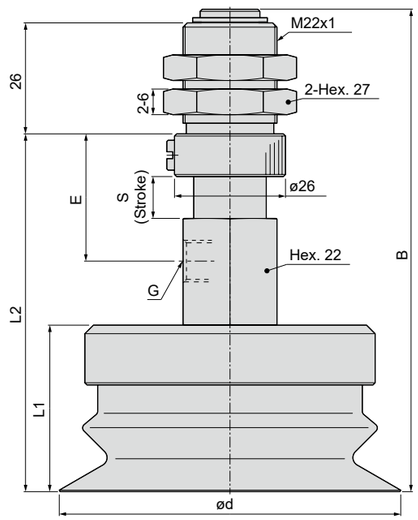


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D20-20B□-4TC	20	4	80.6	19	68.5	41	20	1.5 to 4.9	68
VSP-D20-20B□-6TC		6							
VSP-D20-30B□-4TC		4	93.6		81.5	54	30	1.1 to 4.8	75
VSP-D20-30B□-6TC		6							
VSP-D20-40B□-4TC		4	106.6		94.5	67	40	1.0 to 4.5	81
VSP-D20-40B□-6TC		6							
VSP-D20-50B□-4TC		4	119.6		107.5	80	50	0.9 to 4.5	88
VSP-D20-50B□-6TC		6							
VSP-D25-20B□-4TC	25	4	80.6	19	68.5	41	20	1.5 to 4.9	68
VSP-D25-20B□-6TC		6							
VSP-D25-30B□-4TC		4	93.6		81.5	54	30	1.1 to 4.8	75
VSP-D25-30B□-6TC		6							
VSP-D25-40B□-4TC		4	106.6		94.5	67	40	1.0 to 4.5	82
VSP-D25-40B□-6TC		6							
VSP-D25-50B□-4TC		4	119.6		107.5	80	50	0.9 to 4.5	89
VSP-D25-50B□-6TC		6							
VSP-D30-20B□-4TC	30	4	84.6	23	72.5	41	20	1.5 to 4.9	70
VSP-D30-20B□-6TC		6							
VSP-D30-30B□-4TC		4	97.6		85.5	54	30	1.1 to 4.8	77
VSP-D30-30B□-6TC		6							
VSP-D30-40B□-4TC		4	110.6		98.5	67	40	1.0 to 4.5	83
VSP-D30-40B□-6TC		6							
VSP-D30-50B□-4TC		4	123.6		111.5	80	50	0.9 to 4.5	90
VSP-D30-50B□-6TC		6							
VSP-D40-20B□-4TC	40	4	91.6	30	79.5	41	20	1.5 to 4.9	80
VSP-D40-20B□-6TC		6							
VSP-D40-30B□-4TC		4	104.6		92.5	54	30	1.1 to 4.8	87
VSP-D40-30B□-6TC		6							
VSP-D40-40B□-4TC		4	117.6		105.5	67	40	1.0 to 4.5	94
VSP-D40-40B□-6TC		6							
VSP-D40-50B□-4TC		4	130.6		118.5	80	50	0.9 to 4.5	100
VSP-D40-50B□-6TC		6							
VSP-D50-20B□-4TC	50	4	93.6	32	81.5	41	20	1.5 to 4.9	86
VSP-D50-20B□-6TC		6							
VSP-D50-30B□-4TC		4	106.6		94.5	54	30	1.1 to 4.8	93
VSP-D50-30B□-6TC		6							
VSP-D50-40B□-4TC		4	119.6		107.5	67	40	1.0 to 4.5	99
VSP-D50-40B□-6TC		6							
VSP-D50-50B□-4TC		4	132.6		120.5	80	50	0.9 to 4.5	106
VSP-D50-50B□-6TC		6							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Female Thread)

●VSP-D60 to 100B□-6A

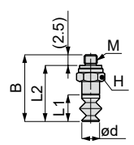


Unit: mm

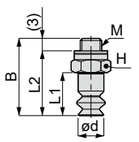
Model No.	Pad Diameter ød	Vacuum Outlet Size G	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-D60B□-6A	60	G1/8	113.6	37	84.6	10	10.1 to 15.8	251
VSP-D80B□-6A	80	G1/8	113	39	84	10	10.1 to 15.8	334
VSP-D100B□-6A	100	G1/8	119	45	90	10	10.1 to 15.8	433

Outline Dimension Drawing (Fixed Type, Direct Mount, VSP-E, Male Thread)

●VSP-E2, 4B□



●VSP-E6, 8B□

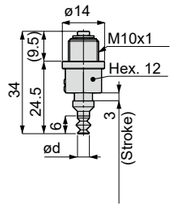


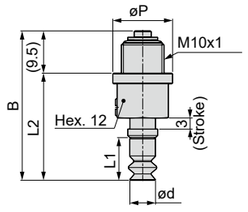
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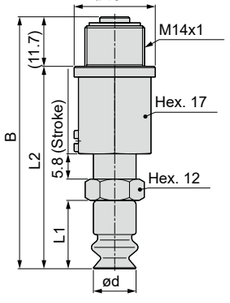
Model No.	Pad Diameter ød	M	B	L1	L2	Width Across Flats H	Weight (g)
VSP-E2B□	2	M3x0.5	15	6	12.5	5.5	1.8
VSP-E4B□	4	M3x0.5	15	6	12.5	5.5	1.8
VSP-E6B□	6	M5x0.8	18	10	15	8	3.2
VSP-E8B□	8	M5x0.8	18	10	15	8	3.2

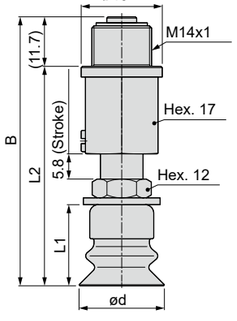
Outline Dimension Drawing (Buffer Type, Direct Mount, VSP-F, Male Thread)

●VSP-F2, 4B□ ●VSP-F6, 8B□ ●VSP-F10, 15B□ ●VSP-F20 to 50B□







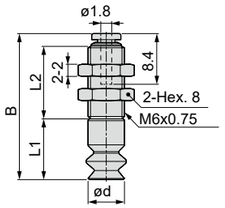


Unit: mm

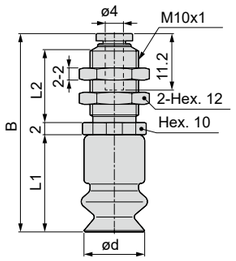
Model No.	Pad Diameter ød	B	L1	L2	Spring Force (N)	Weight (g)
VSP-F2B□	2	34	6	24.5	2.3 to 3.9	16
VSP-F4B□	4	34	6	24.5	2.3 to 3.9	16
VSP-F6B□	6	35	10	25.5	2.3 to 3.9	16
VSP-F8B□	8	35	10	25.5	2.3 to 3.9	16
VSP-F10B□	10	59	16	47.3	7.9 to 15	58
VSP-F15B□	15	59	16	47.3	7.9 to 15	58
VSP-F20B□	20	63	19	51.3	7.9 to 15	62
VSP-F25B□	25	63	19	51.3	7.9 to 15	62
VSP-F30B□	30	67	23	55.3	7.9 to 15	63
VSP-F40B□	40	74	30	62.3	7.9 to 15	70
VSP-F50B□	50	76	32	64.3	7.9 to 15	76

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Push-in fitting)

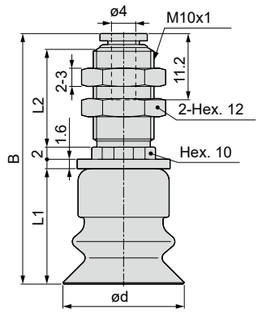
●VSP-MA6, 8B□2



●VSP-MA10, 15B□4



●VSP-MA20 to 50B□-4

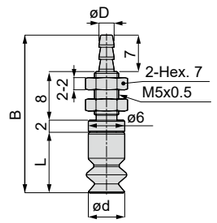


Unit: mm

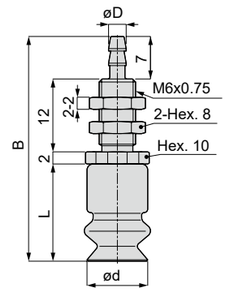
Model No.	Pad Diameter ød	B	L1	L2	Weight (g)
VSP-MA6B□-2	6	24.1	10	12	2.5
VSP-MA8B□-2	8	24.1	10	12	2.5
VSP-MA10B□-4	10	37	16	16.4	6.6
VSP-MA15B□-4	15	37	16	16.4	7.1
VSP-MA20B□-4	20	41.6	19	16.4	12
VSP-MA25B□-4	25	41.6	19	16.4	13
VSP-MA30B□-4	30	45.6	23	16.4	16
VSP-MA40B□-4	40	52.6	30	16.4	24
VSP-MA50B□-4	50	54.6	32	16.4	30

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Barb Fitting)

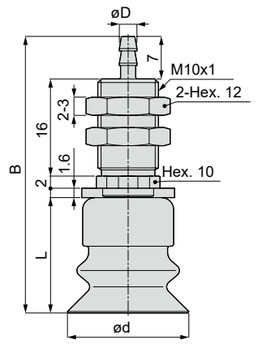
●VSP-MA6, 8B□-4T



●VSP-MA10, 15B□-4T



●VSP-MA20 to 50B□-4T/6T

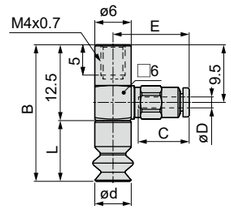


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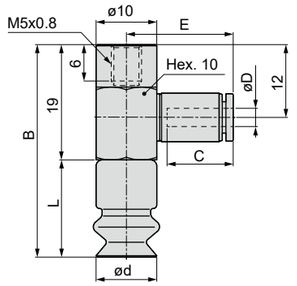
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-MA6B□-4T	6	2.5	27	10	2.1
VSP-MA8B□-4T	8	2.5	27	10	2.1
VSP-MA10B□-4T	10	2.5	37	16	3.8
VSP-MA15B□-4T	15	2.5	37	16	4.3
VSP-MA20B□-4T	20	2.5	45.6	19	12
VSP-MA20B□-6T		4			
VSP-MA25B□-4T	25	2.5	45.6	19	13
VSP-MA25B□-6T		4			
VSP-MA30B□-4T	30	2.5	49.6	23	16
VSP-MA30B□-6T		4			
VSP-MA40B□-4T	40	2.5	56.6	30	23
VSP-MA40B□-6T		4			
VSP-MA50B□-4T	50	2.5	58.6	32	30
VSP-MA50B□-6T		4			

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Push-in fitting)

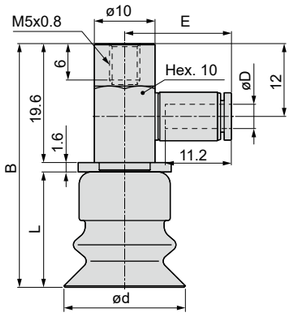
●VSP-MB6, 8B□2/4



●VSP-MB10, 15B□-2/4/6



●VSP-MB20 to 50B□-2/4/6

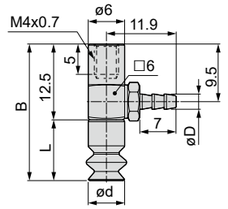


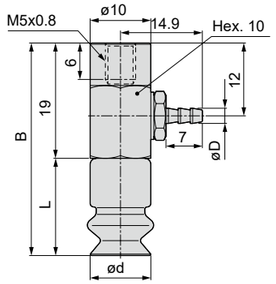
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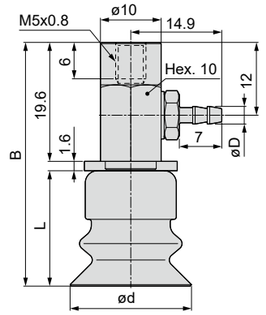
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-MB6B□-2	6	1.8	22.5	10	8.4	12.5	2.5
VSP-MB6B□-4		4			11.2	15.8	4
VSP-MB8B□-2	8	1.8	22.5	10	8.4	12.5	2.5
VSP-MB8B□-4		4			11.2	15.8	4
VSP-MB10B□-2	10	1.8	35	16	8.4	13.7	7.7
VSP-MB10B□-4		4			11.2	17.8	8.4
VSP-MB10B□-6		6			11.9	19.6	9.8
VSP-MB15B□-2	15	1.8	35	16	8.4	13.7	8.2
VSP-MB15B□-4		4			11.2	17.8	8.9
VSP-MB15B□-6		6			11.9	19.6	10.3
VSP-MB20B□-2	20	1.8	40.2	19	8.4	13.7	12
VSP-MB20B□-4		4			11.2	17.8	13
VSP-MB20B□-6		6			11.9	19.6	14
VSP-MB25B□-2	25	1.8	40.2	19	8.4	13.7	13
VSP-MB25B□-4		4			11.2	17.8	14
VSP-MB25B□-6		6			11.9	19.6	15
VSP-MB30B□-2	30	1.8	44.2	23	8.4	13.7	16
VSP-MB30B□-4		4			11.2	17.8	17
VSP-MB30B□-6		6			11.9	19.6	18
VSP-MB40B□-2	40	1.8	51.2	30	8.4	13.7	23
VSP-MB40B□-4		4			11.2	17.8	24
VSP-MB40B□-6		6			11.9	19.6	25
VSP-MB50B□-2	50	1.8	53.2	32	8.4	13.7	29
VSP-MB50B□-4		4			11.2	17.8	30
VSP-MB50B□-6		6			11.9	19.6	31

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Barb Fitting)

●VSP-MB6, 8B□-4T/6T ●VSP-MB10, 15B□-4T/6T ●VSP-MB20 to 50B□-4T/6T





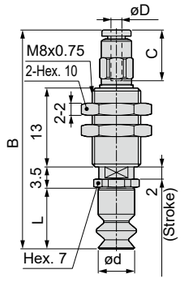


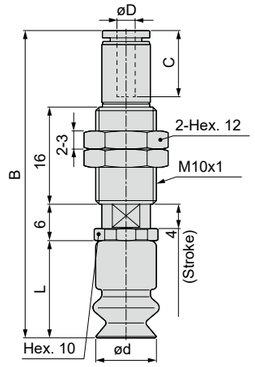
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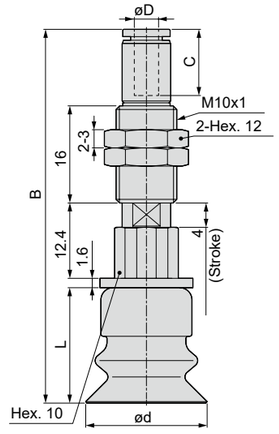
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Weight (g)
VSP-MB6B□-4T	6	2.5	22.5	10	2.6
VSP-MB6B□-6T		4			
VSP-MB8B□-4T	8	2.5	22.5	10	2.6
VSP-MB8B□-6T		4			
VSP-MB10B□-4T	10	2.5	35	16	7.2
VSP-MB10B□-6T		4			
VSP-MB15B□-4T	15	2.5	35	16	7.7
VSP-MB15B□-6T		4			
VSP-MB20B□-4T	20	2.5	40.2	19	12
VSP-MB20B□-6T		4			
VSP-MB25B□-4T	25	2.5	40.2	19	13
VSP-MB25B□-6T		4			
VSP-MB30B□-4T	30	2.5	44.2	23	15
VSP-MB30B□-6T		4			
VSP-MB40B□-4T	40	2.5	51.2	30	23
VSP-MB40B□-6T		4			
VSP-MB50B□-4T	50	2.5	53.2	32	30
VSP-MB50B□-6T		4			

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Push-in fitting)

●VSP-MC6, 8B□2 ●VSP-MC10, 15B□2/4 ●VSP-MC20 to 50B□-2/4





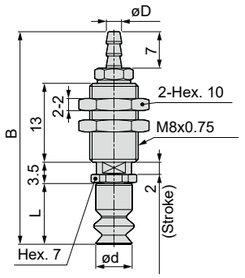


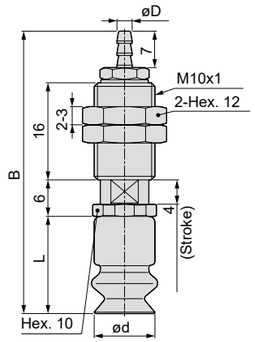
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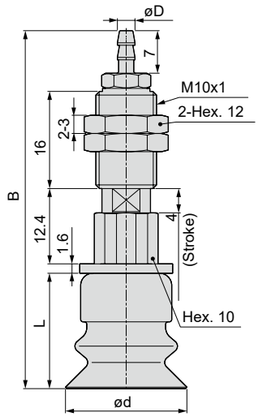
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	Spring Force (N)	Weight (g)
VSP-MC6B□-2	6	1.8	36.2	10	8.4	0.2 to 0.3	7.3
VSP-MC8B□-2	8	1.8	36.2	10	8.4	0.2 to 0.3	7.3
VSP-MC10B□-2	10	1.8	46.9	16	8.4	0.5 to 0.6	15
VSP-MC10B□-4		4	51		11.2		16
VSP-MC15B□-2	15	1.8	46.9	16	8.4	0.5 to 0.6	16
VSP-MC15B□-4		4	51		11.2		17
VSP-MC20B□-2	20	1.8	57.9	19	8.4	1 to 1.3	23
VSP-MC20B□-4		4	62		11.2		24
VSP-MC25B□-2	25	1.8	57.9	19	8.4	1 to 1.3	24
VSP-MC25B□-4		4	62		11.2		25
VSP-MC30B□-2	30	1.8	61.9	23	8.4	1 to 1.3	27
VSP-MC30B□-4		4	66		11.2		28
VSP-MC40B□-2	40	1.8	68.9	30	8.4	1 to 1.3	34
VSP-MC40B□-4		4	73		11.2		35
VSP-MC50B□-2	50	1.8	70.9	32	8.4	1 to 1.3	40
VSP-MC50B□-4		4	75		11.2		41

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Barb Fitting)

●VSP-MC6, 8B□-4T/6T ●VSP-MC10, 15B□-4T/6T ●VSP-MC20 to 50B□-4T/6T





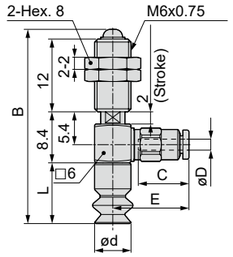


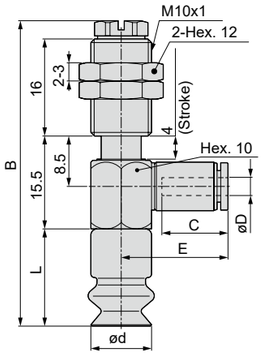
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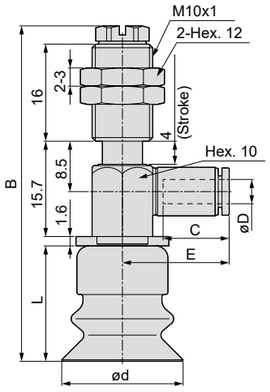
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MC6B□-4T	6	2.5	36.1	10	0.2 to 0.3	7.4
VSP-MC6B□-6T		4				
VSP-MC8B□-4T	8	2.5	36.1	10	0.2 to 0.3	7.4
VSP-MC8B□-6T		4				
VSP-MC10B□-4T	10	2.5	48.1	16	0.5 to 0.6	15
VSP-MC10B□-6T		4				
VSP-MC15B□-4T	15	2.5	48.1	16	0.5 to 0.6	16
VSP-MC15B□-6T		4				
VSP-MC20B□-4T	20	2.5	59.1	19	1 to 1.3	23
VSP-MC20B□-6T		4				
VSP-MC25B□-4T	25	2.5	59.1	19	1 to 1.3	24
VSP-MC25B□-6T		4				
VSP-MC30B□-4T	30	2.5	63.1	23	1 to 1.3	26
VSP-MC30B□-6T		4				
VSP-MC40B□-4T	40	2.5	70.1	30	1 to 1.3	34
VSP-MC40B□-6T		4				
VSP-MC50B□-4T	50	2.5	72.1	32	1 to 1.3	41
VSP-MC50B□-6T		4				

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Push-in fitting)

●VSP-MD6, 8B□2/4 ●VSP-MD10, 15B□-2/4/6 ●VSP-MD20 to 50B□-2/4/6





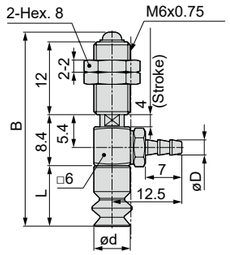


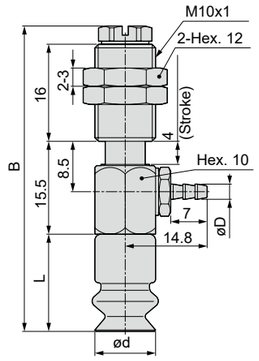
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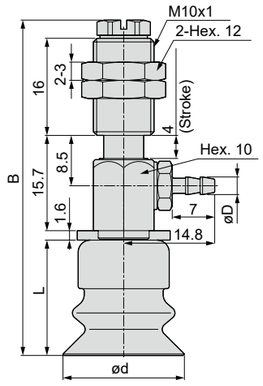
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Spring Force (N)	Weight (g)
VSP-MD6B□-2	6	1.8	32	10	8.4	12.6	0.5 to 0.6	6.6
VSP-MD6B□-4		4			11.2	15.9		8
VSP-MD8B□-2	8	1.8	32	10	8.4	12.6	0.5 to 0.6	6.6
VSP-MD8B□-4		4			11.2	15.9		8
VSP-MD10B□-2	10	1.8	50.5	16	8.4	13.6	1 to 1.3	23
VSP-MD10B□-4		4			11.2	17.7		24
VSP-MD10B□-6		6			11.9	19.5		25
VSP-MD15B□-2	15	1.8	50.5	16	8.4	13.6	1 to 1.3	24
VSP-MD15B□-4		4			11.2	17.7		25
VSP-MD15B□-6		6			11.9	19.5		26
VSP-MD20B□-2	20	1.8	55.3	19	8.4	13.6	1 to 1.3	27
VSP-MD20B□-4		4			11.2	17.7		28
VSP-MD20B□-6		6			11.9	19.5		29
VSP-MD25B□-2	25	1.8	55.3	19	8.4	13.6	1 to 1.3	28
VSP-MD25B□-4		4			11.2	17.7		29
VSP-MD25B□-6		6			11.9	19.5		30
VSP-MD30B□-2	30	1.8	59.3	23	8.4	13.6	1 to 1.3	30
VSP-MD30B□-4		4			11.2	17.7		31
VSP-MD30B□-6		6			11.9	19.5		32
VSP-MD40B□-2	40	1.8	66.3	30	8.4	13.6	1 to 1.3	37
VSP-MD40B□-4		4			11.2	17.7		38
VSP-MD40B□-6		6			11.9	19.5		39
VSP-MD50B□-2	50	1.8	68.3	32	8.4	13.6	1 to 1.3	43
VSP-MD50B□-4		4			11.2	17.7		44
VSP-MD50B□-6		6			11.9	19.5		45

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Barb Fitting)

●VSP-MD6, 8B□-4T/6T ●VSP-MD10, 15B□-4T/6T ●VSP-MD20 to 50B□-4T/6T





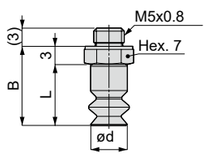


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MD6B□-4T	6	2.5	32	10	0.5 to 0.6	6.7
VSP-MD6B□-6T		4				
VSP-MD8B□-4T	8	2.5	32	10	0.5 to 0.6	6.7
VSP-MD8B□-6T		4				
VSP-MD10B□-4T	10	2.5	50.5	16	1 to 1.3	22
VSP-MD10B□-6T		4				
VSP-MD15B□-4T	15	2.5	50.5	16	1 to 1.3	23
VSP-MD15B□-6T		4				
VSP-MD20B□-4T	20	2.5	55.3	19	1 to 1.3	27
VSP-MD20B□-6T		4				
VSP-MD25B□-4T	25	2.5	55.3	19	1 to 1.3	28
VSP-MD25B□-6T		4				
VSP-MD30B□-4T	30	2.5	59.3	23	1 to 1.3	30
VSP-MD30B□-6T		4				
VSP-MD40B□-4T	40	2.5	66.3	30	1 to 1.3	38
VSP-MD40B□-6T		4				
VSP-MD50B□-4T	50	2.5	68.3	32	1 to 1.3	45
VSP-MD50B□-6T		4				

External Dimension Diagram (Compact, Direct Mount, VSP-ME, Male Thread)

●VSP-ME6, 8B□-M5

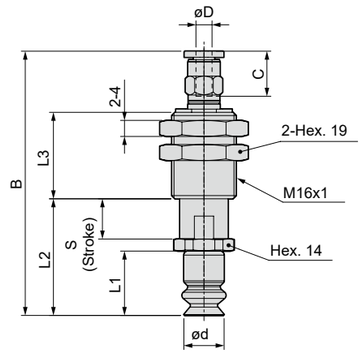


Unit: mm

Model No.	Pad Diameter ød	B	L	Weight (g)
VSP-ME6B□-M5	6	10	7	2
VSP-ME8B□-M5	8	8.5	5.5	2

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC10, 15-□B□-2/4/6

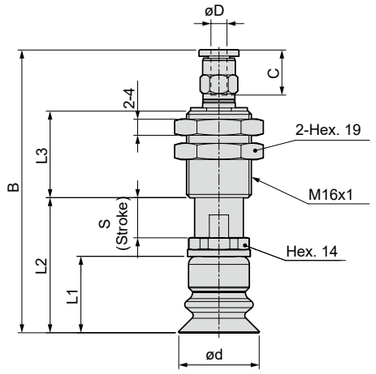


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10-10B□-2	10	1.8	61.6	16	29	21.5	8.4	10	1.0 to 2.4	22
VSP-HC10-10B□-4		4	65.7				11.2			23
VSP-HC10-10B□-6		6	67				11.9			24
VSP-HC10-15B□-2		1.8	71.6		34	26.5	8.4	15	1.0 to 2.7	24
VSP-HC10-15B□-4		4	75.7				11.2			25
VSP-HC10-15B□-6		6	77				11.9			26
VSP-HC10-20B□-2		1.8	81.6		39	31.5	8.4	20	1.0 to 3.0	26
VSP-HC10-20B□-4		4	85.7				11.2			27
VSP-HC10-20B□-6		6	87				11.9			28
VSP-HC10-25B□-2		1.8	92.1		44	37	8.4	25	1.0 to 3.0	28
VSP-HC10-25B□-4		4	96.2				11.2			29
VSP-HC10-25B□-6		6	97.5				11.9			30
VSP-HC10-30B□-2		1.8	103.1		49	43	8.4	30	1.0 to 3.0	30
VSP-HC10-30B□-4		4	107.2				11.2			31
VSP-HC10-30B□-6		6	108.5				11.9			32
VSP-HC10-40B□-2		1.8	125.1		59	55	8.4	40	1.0 to 3.0	34
VSP-HC10-40B□-4		4	129.2				11.2			35
VSP-HC10-40B□-6		6	130.5				11.9			36
VSP-HC10-50B□-2		1.8	146.6		69	66.5	8.4	50	1.0 to 3.1	39
VSP-HC10-50B□-4		4	150.7				11.2			40
VSP-HC10-50B□-6		6	152				11.9			41
VSP-HC15-10B□-2	15	1.8	61.6	16	29	21.5	8.4	10	1.0 to 2.4	22
VSP-HC15-10B□-4		4	65.7				11.2			23
VSP-HC15-10B□-6		6	67				11.9			24
VSP-HC15-15B□-2		1.8	71.6		34	26.5	8.4	15	1.0 to 2.7	24
VSP-HC15-15B□-4		4	75.7				11.2			25
VSP-HC15-15B□-6		6	77				11.9			26
VSP-HC15-20B□-2		1.8	81.6		39	31.5	8.4	20	1.0 to 3.0	26
VSP-HC15-20B□-4		4	85.7				11.2			27
VSP-HC15-20B□-6		6	87				11.9			28
VSP-HC15-25B□-2		1.8	92.1		44	37	8.4	25	1.0 to 3.0	28
VSP-HC15-25B□-4		4	96.2				11.2			29
VSP-HC15-25B□-6		6	97.5				11.9			30
VSP-HC15-30B□-2		1.8	103.1		49	43	8.4	30	1.0 to 3.0	30
VSP-HC15-30B□-4		4	107.2				11.2			31
VSP-HC15-30B□-6		6	108.5				11.9			32
VSP-HC15-40B□-2		1.8	125.1		59	55	8.4	40	1.0 to 3.0	34
VSP-HC15-40B□-4		4	129.2				11.2			35
VSP-HC15-40B□-6		6	130.5				11.9			36
VSP-HC15-50B□-2		1.8	146.6		69	66.5	8.4	50	1.0 to 3.1	39
VSP-HC15-50B□-4		4	150.7				11.2			40
VSP-HC15-50B□-6		6	152				11.9			41

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC20, 25-□B□-2/4/6

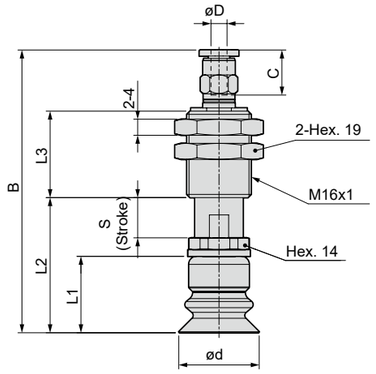


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20-10B□-2	20	1.8	66.2	19	33.6	21.5	8.4	10	1.0 to 2.4	27
VSP-HC20-10B□-4		4	70.3				11.2			28
VSP-HC20-10B□-6		6	71.6				11.9			29
VSP-HC20-15B□-2		1.8	76.2		38.6	26.5	8.4	15	1.0 to 2.7	29
VSP-HC20-15B□-4		4	80.3				11.2			30
VSP-HC20-15B□-6		6	81.6				11.9			31
VSP-HC20-20B□-2		1.8	86.2		43.6	31.5	8.4	20	1.0 to 3.0	31
VSP-HC20-20B□-4		4	90.3				11.2			32
VSP-HC20-20B□-6		6	91.6				11.9			33
VSP-HC20-25B□-2		1.8	96.7		48.6	37	8.4	25	1.0 to 3.0	33
VSP-HC20-25B□-4		4	100.8				11.2			34
VSP-HC20-25B□-6		6	102.1				11.9			35
VSP-HC20-30B□-2		1.8	107.7		53.6	43	8.4	30	1.0 to 3.0	35
VSP-HC20-30B□-4		4	111.8				11.2			36
VSP-HC20-30B□-6		6	113.1				11.9			37
VSP-HC20-40B□-2		1.8	129.7		63.6	55	8.4	40	1.0 to 3.0	39
VSP-HC20-40B□-4		4	133.8				11.2			40
VSP-HC20-40B□-6		6	135.1				11.9			41
VSP-HC20-50B□-2		1.8	151.2		73.6	66.5	8.4	50	1.0 to 3.1	43
VSP-HC20-50B□-4		4	155.3				11.2			44
VSP-HC20-50B□-6		6	156.6				11.9			45
VSP-HC25-10B□-2	25	1.8	66.2	19	33.6	21.5	8.4	10	1.0 to 2.4	27
VSP-HC25-10B□-4		4	70.3				11.2			28
VSP-HC25-10B□-6		6	71.6				11.9			29
VSP-HC25-15B□-2		1.8	76.2		38.6	26.5	8.4	15	1.0 to 2.7	29
VSP-HC25-15B□-4		4	80.3				11.2			30
VSP-HC25-15B□-6		6	81.6				11.9			31
VSP-HC25-20B□-2		1.8	86.2		43.6	31.5	8.4	20	1.0 to 3.0	31
VSP-HC25-20B□-4		4	90.3				11.2			32
VSP-HC25-20B□-6		6	91.6				11.9			33
VSP-HC25-25B□-2		1.8	96.7		48.6	37	8.4	25	1.0 to 3.0	33
VSP-HC25-25B□-4		4	100.8				11.2			34
VSP-HC25-25B□-6		6	102.1				11.9			35
VSP-HC25-30B□-2		1.8	107.7		53.6	43	8.4	30	1.0 to 3.0	35
VSP-HC25-30B□-4		4	111.8				11.2			36
VSP-HC25-30B□-6		6	113.1				11.9			37
VSP-HC25-40B□-2		1.8	129.7		63.6	55	8.4	40	1.0 to 3.0	39
VSP-HC25-40B□-4		4	133.8				11.2			40
VSP-HC25-40B□-6		6	135.1				11.9			41
VSP-HC25-50B□-2		1.8	151.2		73.6	66.5	8.4	50	1.0 to 3.1	43
VSP-HC25-50B□-4		4	155.3				11.2			44
VSP-HC25-50B□-6		6	156.6				11.9			45

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC30, 40-□B□-2/4/6

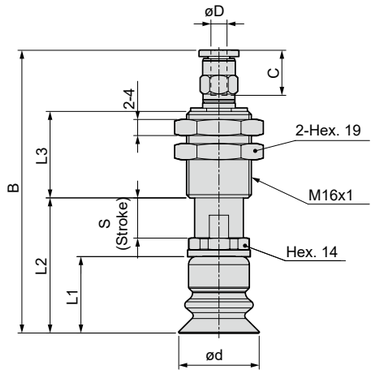


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC30-10B□-2	30	1.8	70.2	23	37.6	21.5	8.4	10	1.0 to 2.4	30
VSP-HC30-10B□-4		4	74.3				11.2			31
VSP-HC30-10B□-6		6	75.6				11.9			32
VSP-HC30-15B□-2		1.8	80.2		42.6	26.5	8.4	15	1.0 to 2.7	32
VSP-HC30-15B□-4		4	84.3				11.2			33
VSP-HC30-15B□-6		6	85.6				11.9			34
VSP-HC30-20B□-2		1.8	90.2		47.6	31.5	8.4	20	1.0 to 3.0	34
VSP-HC30-20B□-4		4	94.3				11.2			35
VSP-HC30-20B□-6		6	95.6				11.9			36
VSP-HC30-25B□-2		1.8	100.7		52.6	37	8.4	25	1.0 to 3.0	36
VSP-HC30-25B□-4		4	104.8				11.2			37
VSP-HC30-25B□-6		6	106.1				11.9			38
VSP-HC30-30B□-2		1.8	111.7		57.6	43	8.4	30	1.0 to 3.0	38
VSP-HC30-30B□-4		4	115.8				11.2			39
VSP-HC30-30B□-6		6	117.1				11.9			40
VSP-HC30-40B□-2		1.8	133.7		67.6	55	8.4	40	1.0 to 3.0	42
VSP-HC30-40B□-4		4	137.8				11.2			43
VSP-HC30-40B□-6		6	139.1				11.9			44
VSP-HC30-50B□-2		1.8	155.2		77.6	66.5	8.4	50	1.0 to 3.1	46
VSP-HC30-50B□-4		4	159.3				11.2			47
VSP-HC30-50B□-6		6	160.6				11.9			48
VSP-HC40-10B□-2	40	1.8	77.2	30	44.6	21.5	8.4	10	1.0 to 2.4	37
VSP-HC40-10B□-4		4	81.3				11.2			38
VSP-HC40-10B□-6		6	82.6				11.9			39
VSP-HC40-15B□-2		1.8	87.2		49.6	26.5	8.4	15	1.0 to 2.7	39
VSP-HC40-15B□-4		4	91.3				11.2			40
VSP-HC40-15B□-6		6	92.6				11.9			41
VSP-HC40-20B□-2		1.8	97.2		54.6	31.5	8.4	20	1.0 to 3.0	41
VSP-HC40-20B□-4		4	101.3				11.2			42
VSP-HC40-20B□-6		6	102.6				11.9			43
VSP-HC40-25B□-2		1.8	107.7		59.6	37	8.4	25	1.0 to 3.0	43
VSP-HC40-25B□-4		4	111.8				11.2			44
VSP-HC40-25B□-6		6	113.1				11.9			45
VSP-HC40-30B□-2		1.8	118.7		64.6	43	8.4	30	1.0 to 3.0	45
VSP-HC40-30B□-4		4	122.8				11.2			46
VSP-HC40-30B□-6		6	124.1				11.9			47
VSP-HC40-40B□-2		1.8	140.7		74.6	55	8.4	40	1.0 to 3.0	49
VSP-HC40-40B□-4		4	144.8				11.2			50
VSP-HC40-40B□-6		6	146.1				11.9			51
VSP-HC40-50B□-2		1.8	162.2		84.6	66.5	8.4	50	1.0 to 3.1	53
VSP-HC40-50B□-4		4	166.3				11.2			54
VSP-HC40-50B□-6		6	167.6				11.9			55

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC50-□B□-2/4/6

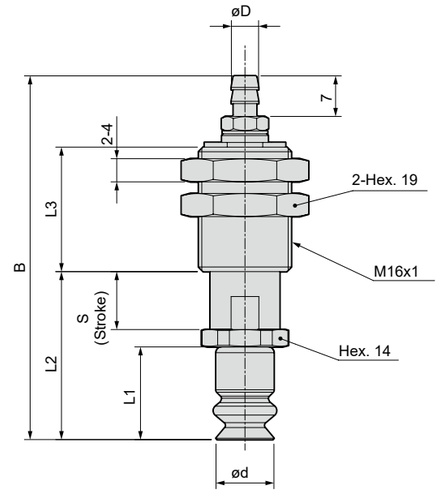


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC50-10B□-2	50	1.8	79.2	32	46.6	21.5	8.4	10	1.0 to 2.4	45
VSP-HC50-10B□-4		4	83.3				11.2			46
VSP-HC50-10B□-6		6	84.6				11.9			47
VSP-HC50-15B□-2		1.8	89.2		52.6	26.5	8.4	15	1.0 to 2.7	47
VSP-HC50-15B□-4		4	93.3				11.2			48
VSP-HC50-15B□-6		6	94.6				11.9			49
VSP-HC50-20B□-2		1.8	99.2		58.6	31.5	8.4	20	1.0 to 3.0	50
VSP-HC50-20B□-4		4	103.3				11.2			51
VSP-HC50-20B□-6		6	104.6				11.9			52
VSP-HC50-25B□-2		1.8	109.7		64.6	37	8.4	25	1.0 to 3.0	52
VSP-HC50-25B□-4		4	113.8				11.2			53
VSP-HC50-25B□-6		6	115.1				11.9			54
VSP-HC50-30B□-2		1.8	120.7		70.6	43	8.4	30	1.0 to 3.0	54
VSP-HC50-30B□-4		4	124.8				11.2			55
VSP-HC50-30B□-6		6	126.1				11.9			56
VSP-HC50-40B□-2		1.8	142.7		81.6	55	8.4	40	1.0 to 3.0	58
VSP-HC50-40B□-4		4	146.8				11.2			59
VSP-HC50-40B□-6		6	148.1				11.9			60
VSP-HC50-50B□-2		1.8	164.2		92.6	66.5	8.4	50	1.0 to 3.1	62
VSP-HC50-50B□-4		4	168.3				11.2			63
VSP-HC50-50B□-6		6	169.6				11.9			64

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC10, 15-□B□-4T/6T

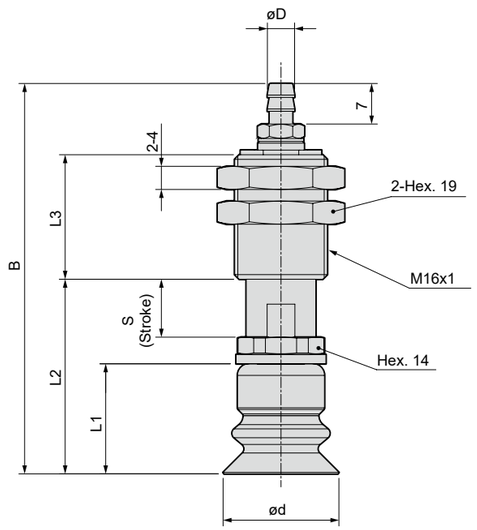


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10-10B□-4T	10	2.5	62.8	16	29	21.5	10	1.0 to 2.4	21
VSP-HC10-10B□-6T		4							
VSP-HC10-15B□-4T		2.5	72.8		34	26.5	15	1.0 to 2.7	23
VSP-HC10-15B□-6T		4							
VSP-HC10-20B□-4T		2.5	82.8		39	31.5	20	1.0 to 3.0	25
VSP-HC10-20B□-6T		4							
VSP-HC10-25B□-4T		2.5	93.3		44	37	25	1.0 to 3.0	28
VSP-HC10-25B□-6T		4							
VSP-HC10-30B□-4T		2.5	104.3		49	43	30	1.0 to 3.0	30
VSP-HC10-30B□-6T		4							
VSP-HC10-40B□-4T		2.5	126.3		59	55	40	1.0 to 3.0	34
VSP-HC10-40B□-6T		4							
VSP-HC10-50B□-4T		2.5	147.8		69	66.5	50	1.0 to 3.1	38
VSP-HC10-50B□-6T		4							
VSP-HC15-10B□-4T	15	2.5	62.8	16	29	21.5	10	1.0 to 2.4	21
VSP-HC15-10B□-6T		4							
VSP-HC15-15B□-4T		2.5	72.8		34	26.5	15	1.0 to 2.7	23
VSP-HC15-15B□-6T		4							
VSP-HC15-20B□-4T		2.5	82.8		39	31.5	20	1.0 to 3.0	25
VSP-HC15-20B□-6T		4							
VSP-HC15-25B□-4T		2.5	93.3		44	37	25	1.0 to 3.0	28
VSP-HC15-25B□-6T		4							
VSP-HC15-30B□-4T		2.5	104.3		49	43	30	1.0 to 3.0	30
VSP-HC15-30B□-6T		4							
VSP-HC15-40B□-4T		2.5	126.3		59	55	40	1.0 to 3.0	34
VSP-HC15-40B□-6T		4							
VSP-HC15-50B□-4T		2.5	147.8		69	66.5	50	1.0 to 3.1	38
VSP-HC15-50B□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC20, 25-□B□-4T/6T

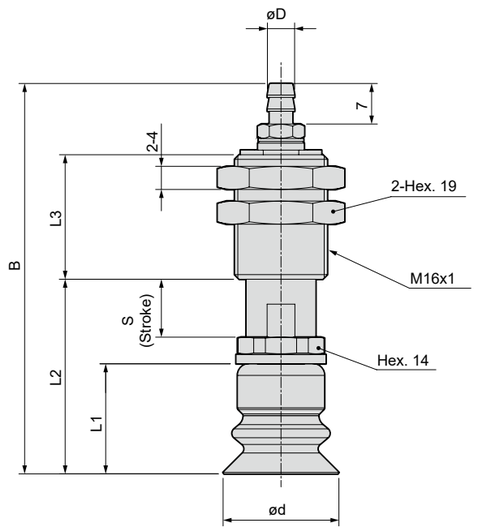


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20-10B□-4T	20	2.5	67.4	19	33.6	21.5	10	1.0 to 2.4	25
VSP-HC20-10B□-6T		4							
VSP-HC20-15B□-4T		2.5	77.4		38.6	26.5	15	1.0 to 2.7	27
VSP-HC20-15B□-6T		4							
VSP-HC20-20B□-4T		2.5	87.4		43.6	31.5	20	1.0 to 3.0	29
VSP-HC20-20B□-6T		4							
VSP-HC20-25B□-4T		2.5	97.9		48.6	37	25	1.0 to 3.0	31
VSP-HC20-25B□-6T		4							
VSP-HC20-30B□-4T		2.5	108.9		53.6	43	30	1.0 to 3.0	34
VSP-HC20-30B□-6T		4							
VSP-HC20-40B□-4T		2.5	130.9		63.6	55	40	1.0 to 3.0	38
VSP-HC20-40B□-6T		4							
VSP-HC20-50B□-4T		2.5	152.4		73.6	66.5	50	1.0 to 3.1	42
VSP-HC20-50B□-6T		4							
VSP-HC25-10B□-4T	25	2.5	67.4	19	33.6	21.5	10	1.0 to 2.4	26
VSP-HC25-10B□-6T		4							
VSP-HC25-15B□-4T		2.5	77.4		38.6	26.5	15	1.0 to 2.7	28
VSP-HC25-15B□-6T		4							
VSP-HC25-20B□-4T		2.5	87.4		43.6	31.5	20	1.0 to 3.0	30
VSP-HC25-20B□-6T		4							
VSP-HC25-25B□-4T		2.5	97.9		48.6	37	25	1.0 to 3.0	32
VSP-HC25-25B□-6T		4							
VSP-HC25-30B□-4T		2.5	108.9		53.6	43	30	1.0 to 3.0	35
VSP-HC25-30B□-6T		4							
VSP-HC25-40B□-4T		2.5	130.9		63.6	55	40	1.0 to 3.0	39
VSP-HC25-40B□-6T		4							
VSP-HC25-50B□-4T		2.5	152.4		73.6	66.5	50	1.0 to 3.1	43
VSP-HC25-50B□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC30, 40-□B□-4T/6T

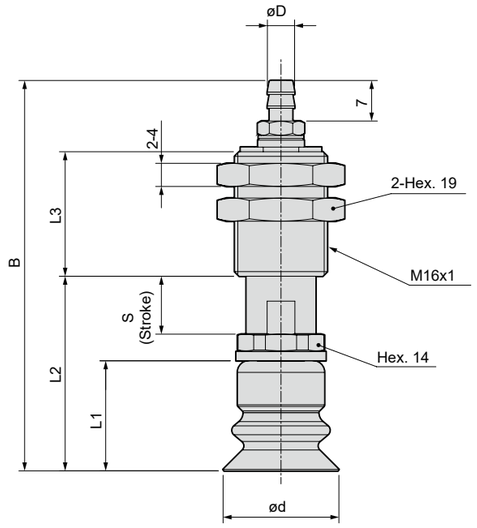


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC30-10B□-4T	30	2.5	71.4	23	37.6	21.5	10	1.0 to 2.4	29
VSP-HC30-10B□-6T		4							
VSP-HC30-15B□-4T		2.5	81.4		42.6	26.5	15	1.0 to 2.7	31
VSP-HC30-15B□-6T		4							
VSP-HC30-20B□-4T		2.5	91.4		47.6	31.5	20	1.0 to 3.0	33
VSP-HC30-20B□-6T		4							
VSP-HC30-25B□-4T		2.5	101.9		52.6	37	25	1.0 to 3.0	35
VSP-HC30-25B□-6T		4							
VSP-HC30-30B□-4T		2.5	112.9		57.6	43	30	1.0 to 3.0	38
VSP-HC30-30B□-6T		4							
VSP-HC30-40B□-4T		2.5	134.9		67.6	55	40	1.0 to 3.0	42
VSP-HC30-40B□-6T		4							
VSP-HC30-50B□-4T		2.5	156.4		77.6	66.5	50	1.0 to 3.1	47
VSP-HC30-50B□-6T		4							
VSP-HC40-10B□-4T	40	2.5	78.4	30	44.6	21.5	10	1.0 to 2.4	31
VSP-HC40-10B□-6T		4							
VSP-HC40-15B□-4T		2.5	88.4		49.6	26.5	15	1.0 to 2.7	33
VSP-HC40-15B□-6T		4							
VSP-HC40-20B□-4T		2.5	98.4		54.6	31.5	20	1.0 to 3.0	35
VSP-HC40-20B□-6T		4							
VSP-HC40-25B□-4T		2.5	108.9		59.6	37	25	1.0 to 3.0	37
VSP-HC40-25B□-6T		4							
VSP-HC40-30B□-4T		2.5	119.9		64.6	43	30	1.0 to 3.0	40
VSP-HC40-30B□-6T		4							
VSP-HC40-40B□-4T		2.5	141.9		74.6	55	40	1.0 to 3.0	44
VSP-HC40-40B□-6T		4							
VSP-HC40-50B□-4T		2.5	163.4		84.6	66.5	50	1.0 to 3.1	49
VSP-HC40-50B□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC50-□B□-4T/6T

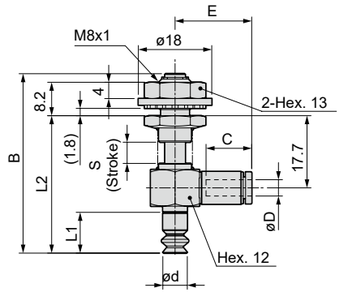


Unit: mm

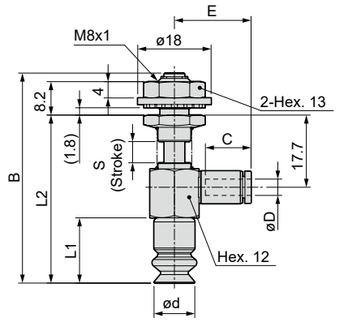
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC50-10B□-4T	50	2.5	80.4	32	46.6	21.5	10	1.0 to 2.4	52
VSP-HC50-10B□-6T		4							
VSP-HC50-15B□-4T		2.5	90.4		51.6	26.5	15	1.0 to 2.7	54
VSP-HC50-15B□-6T		4							
VSP-HC50-20B□-4T		2.5	100.4		56.6	31.5	20	1.0 to 3.0	56
VSP-HC50-20B□-6T		4							
VSP-HC50-25B□-4T		2.5	110.9		61.6	37	25	1.0 to 3.0	58
VSP-HC50-25B□-6T		4							
VSP-HC50-30B□-4T		2.5	121.9		66.6	43	30	1.0 to 3.0	61
VSP-HC50-30B□-6T		4							
VSP-HC50-40B□-4T		2.5	143.9		76.6	55	40	1.0 to 3.0	65
VSP-HC50-40B□-6T		4							
VSP-HC50-50B□-4T		2.5	165.4		86.6	66.5	50	1.0 to 3.1	69
VSP-HC50-50B□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side, VSP-HD, Push-in fitting)

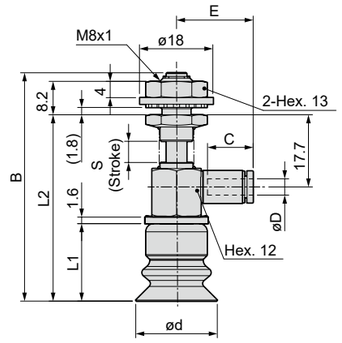
●VSP-HD6, 8B□-2/4/6



●VSP-HD10, 15B□-2/4/6



●VSP-HD20 to 50B□-2/4/6

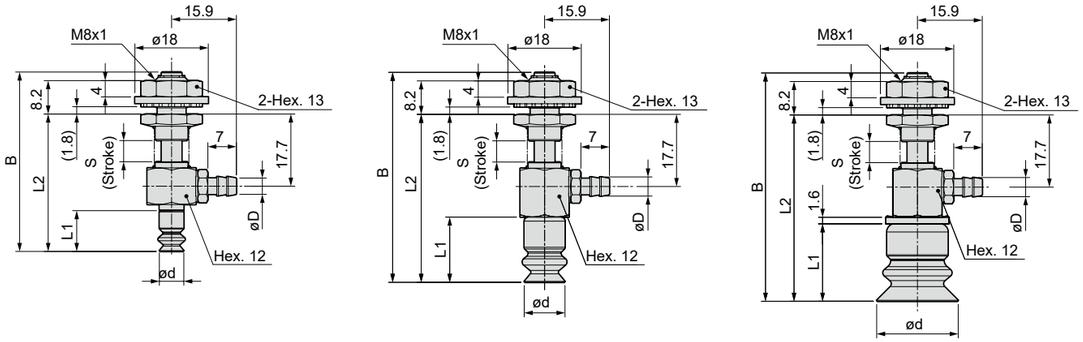


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HD6B□-2	6	1.8	44	10	33.7	8.4	14.7	5.2	1.6 to 2.9	28
VSP-HD6B□-4		4				11.2	18.8			29
VSP-HD6B□-6		6				11.9	20.6			30
VSP-HD8B□-2	8	1.8	44	10	33.7	8.4	14.7	5.2	1.6 to 2.9	28
VSP-HD8B□-4		4				11.2	18.8			29
VSP-HD8B□-6		6				11.9	20.6			30
VSP-HD10B□-2	10	1.8	51.5	16	41.2	8.4	14.7	5.2	1.6 to 2.9	32
VSP-HD10B□-4		4				11.2	18.8			33
VSP-HD10B□-6		6				11.9	20.6			34
VSP-HD15B□-2	15	1.8	51.5	16	41.2	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HD15B□-4		4				11.2	18.8			34
VSP-HD15B□-6		6				11.9	20.6			35
VSP-HD20B□-2	20	1.8	56	19	45.7	8.4	14.7	5.2	1.6 to 2.9	36
VSP-HD20B□-4		4				11.2	18.8			37
VSP-HD20B□-6		6				11.9	20.6			38
VSP-HD25B□-2	25	1.8	56	19	45.7	8.4	14.7	5.2	1.6 to 2.9	37
VSP-HD25B□-4		4				11.2	18.8			38
VSP-HD25B□-6		6				11.9	20.6			39
VSP-HD30B□-2	30	1.8	60	23	49.7	8.4	14.7	5.2	1.6 to 2.9	39
VSP-HD30B□-4		4				11.2	18.8			40
VSP-HD30B□-6		6				11.9	20.6			41
VSP-HD40B□-2	40	1.8	67	30	56.7	8.4	14.7	5.2	1.6 to 2.9	46
VSP-HD40B□-4		4				11.2	18.8			47
VSP-HD40B□-6		6				11.9	20.6			48
VSP-HD50B□-2	50	1.8	69	32	58.7	8.4	14.7	5.2	1.6 to 2.9	53
VSP-HD50B□-4		4				11.2	18.8			54
VSP-HD50B□-6		6				11.9	20.6			55

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side, VSP-HD, Barb Fitting)

●VSP-HD6, 8B□-4T/6T ●VSP-HD10, 15B□-4T/6T ●VSP-HD20 to 50B□-4T/6T

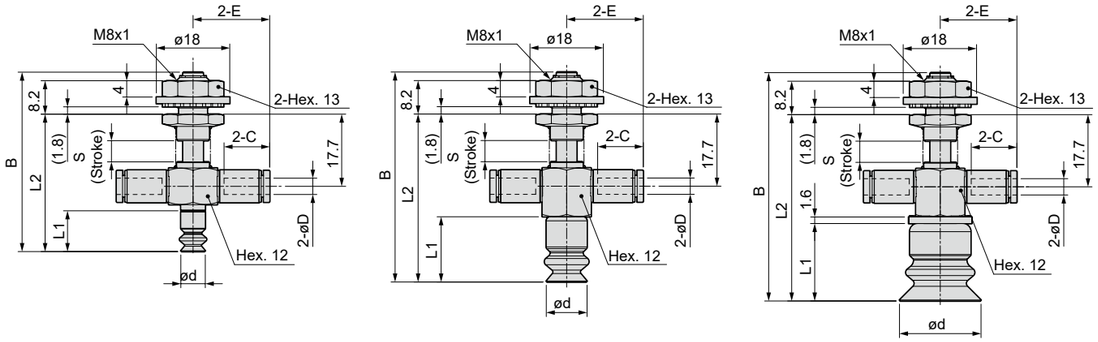


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HD6B□-4T	6	2.5	44	10	33.7	5.2	1.6 to 2.9	28
VSP-HD6B□-6T		4						
VSP-HD8B□-4T	8	2.5	44	10	33.7	5.2	1.6 to 2.9	28
VSP-HD8B□-6T		4						
VSP-HD10B□-4T	10	2.5	51.5	16	41.2	5.2	1.6 to 2.9	31
VSP-HD10B□-6T		4						
VSP-HD15B□-4T	15	2.5	51.5	16	41.2	5.2	1.6 to 2.9	32
VSP-HD15B□-6T		4						
VSP-HD20B□-4T	20	2.5	56	19	45.7	5.2	1.6 to 2.9	36
VSP-HD20B□-6T		4						
VSP-HD25B□-4T	25	2.5	56	19	45.7	5.2	1.6 to 2.9	37
VSP-HD25B□-6T		4						
VSP-HD30B□-4T	30	2.5	60	23	49.7	5.2	1.6 to 2.9	39
VSP-HD30B□-6T		4						
VSP-HD40B□-4T	40	2.5	67	30	56.7	5.2	1.6 to 2.9	47
VSP-HD40B□-6T		4						
VSP-HD50B□-4T	50	2.5	69	32	58.7	5.2	1.6 to 2.9	53
VSP-HD50B□-6T		4						

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides, VSP-HDW, Push-in fitting)

●VSP-HDW6, 8B□-2/4/6 ●VSP-HDW10, 15B□-2/4/6 ●VSP-HDW20 to 50B□-2/4/6

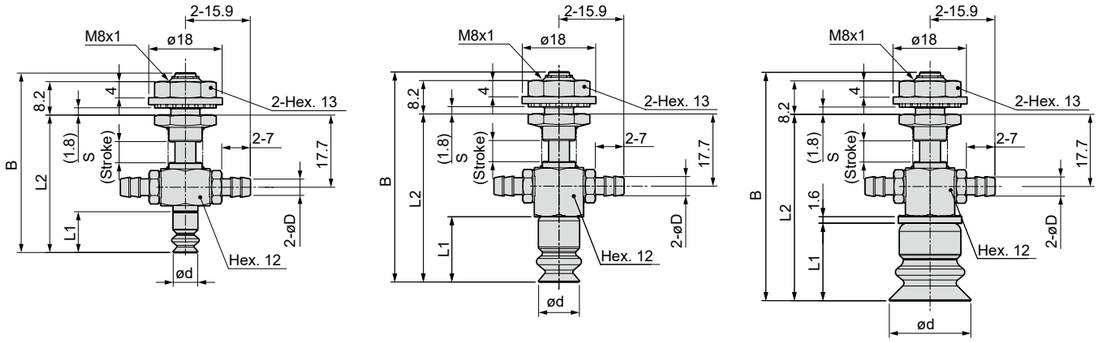


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW6B□-2	6	1.8	44	10	33.7	8.4	14.7	5.2	1.6 to 2.9	30
VSP-HDW6B□-4		4				11.2	18.8			32
VSP-HDW6B□-6		6				11.9	20.6			34
VSP-HDW8B□-2	8	1.8	44	10	33.7	8.4	14.7	5.2	1.6 to 2.9	30
VSP-HDW8B□-4		4				11.2	18.8			32
VSP-HDW8B□-6		6				11.9	20.6			34
VSP-HDW10B□-2	10	1.8	51.5	16	41.2	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HDW10B□-4		4				11.2	18.8			35
VSP-HDW10B□-6		6				11.9	20.6			37
VSP-HDW15B□-2	15	1.8	51.5	16	41.2	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HDW15B□-4		4				11.2	18.8			35
VSP-HDW15B□-6		6				11.9	20.6			37
VSP-HDW20B□-2	20	1.8	56	19	45.7	8.4	14.7	5.2	1.6 to 2.9	37
VSP-HDW20B□-4		4				11.2	18.8			39
VSP-HDW20B□-6		6				11.9	20.6			41
VSP-HDW25B□-2	25	1.8	56	19	45.7	8.4	14.7	5.2	1.6 to 2.9	38
VSP-HDW25B□-4		4				11.2	18.8			40
VSP-HDW25B□-6		6				11.9	20.6			42
VSP-HDW30B□-2	30	1.8	60	23	49.7	8.4	14.7	5.2	1.6 to 2.9	41
VSP-HDW30B□-4		4				11.2	18.8			43
VSP-HDW30B□-6		6				11.9	20.6			45
VSP-HDW40B□-2	40	1.8	67	30	56.7	8.4	14.7	5.2	1.6 to 2.9	49
VSP-HDW40B□-4		4				11.2	18.8			51
VSP-HDW40B□-6		6				11.9	20.6			53
VSP-HDW50B□-2	50	1.8	69	32	58.7	8.4	14.7	5.2	1.6 to 2.9	55
VSP-HDW50B□-4		4				11.2	18.8			57
VSP-HDW50B□-6		6				11.9	20.6			59

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides, VSP-HDW, Barb Fitting)

●VSP-HDW6, 8B□-4T/6T ●VSP-HDW10, 15B□-4T/6T ●VSP-HDW20 to 50B□-4T/6T

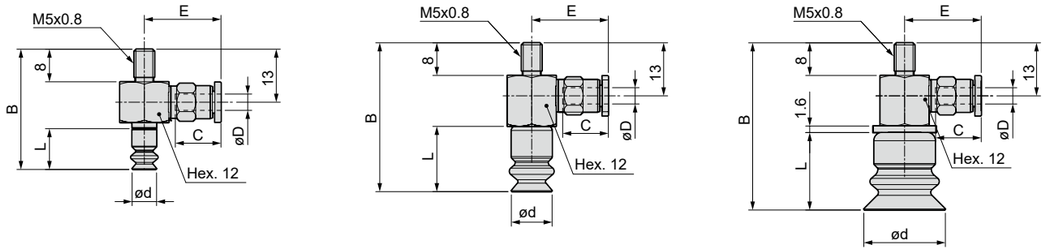


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW6B□-4T	6	2.5	44	10	33.7	5.2	1.6 to 2.9	28
VSP-HDW6B□-6T		4						
VSP-HDW8B□-4T	8	2.5	44	10	33.7	5.2	1.6 to 2.9	28
VSP-HDW8B□-6T		4						
VSP-HDW10B□-4T	10	2.5	51.5	16	41.2	5.2	1.6 to 2.9	32
VSP-HDW10B□-6T		4						
VSP-HDW15B□-4T	15	2.5	51.5	16	41.2	5.2	1.6 to 2.9	32
VSP-HDW15B□-6T		4						
VSP-HDW20B□-4T	20	2.5	56	19	45.7	5.2	1.6 to 2.9	37
VSP-HDW20B□-6T		4						
VSP-HDW25B□-4T	25	2.5	56	19	45.7	5.2	1.6 to 2.9	37
VSP-HDW25B□-6T		4						
VSP-HDW30B□-4T	30	2.5	60	23	49.7	5.2	1.6 to 2.9	39
VSP-HDW30B□-6T		4						
VSP-HDW40B□-4T	40	2.5	67	30	56.7	5.2	1.6 to 2.9	48
VSP-HDW40B□-6T		4						
VSP-HDW50B□-4T	50	2.5	69	32	58.7	5.2	1.6 to 2.9	55
VSP-HDW50B□-6T		4						

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side, VSP-HE, Push-in fitting)

●VSP-HE6, 8B□-2/4/6 ●VSP-HE10, 15B□-2/4/6 ●VSP-HE20 to 50B□-2/4/6

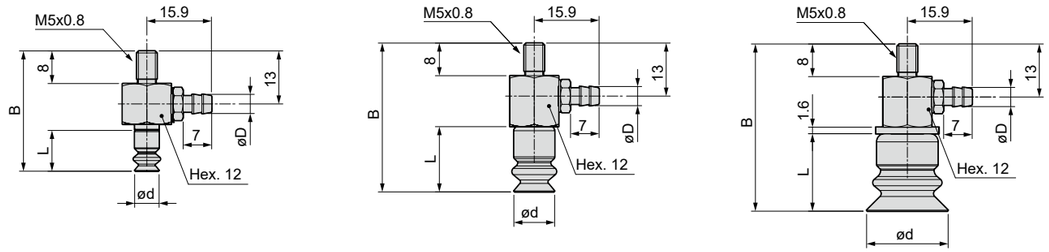


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HE6B□-2	6	1.8	29.5	10	8.4	14.7	14
VSP-HE6B□-4		4			11.2	18.8	15
VSP-HE6B□-6		6			11.9	20.6	16
VSP-HE8B□-2	8	1.8	29.5	10	8.4	14.7	14
VSP-HE8B□-4		4			11.2	18.8	15
VSP-HE8B□-6		6			11.9	20.6	16
VSP-HE10B□-2	10	1.8	36.5	16	8.4	14.7	17
VSP-HE10B□-4		4			11.2	18.8	18
VSP-HE10B□-6		6			11.9	20.6	19
VSP-HE15B□-2	15	1.8	36.5	16	8.4	14.7	17
VSP-HE15B□-4		4			11.2	18.8	18
VSP-HE15B□-6		6			11.9	20.6	19
VSP-HE20B□-2	20	1.8	41	19	8.4	14.7	22
VSP-HE20B□-4		4			11.2	18.8	23
VSP-HE20B□-6		6			11.9	20.6	24
VSP-HE25B□-2	25	1.8	41	19	8.4	14.7	22
VSP-HE25B□-4		4			11.2	18.8	23
VSP-HE25B□-6		6			11.9	20.6	24
VSP-HE30B□-2	30	1.8	47	23	8.4	14.7	25
VSP-HE30B□-4		4			11.2	18.8	26
VSP-HE30B□-6		6			11.9	20.6	27
VSP-HE40B□-2	40	1.8	52	30	8.4	14.7	33
VSP-HE40B□-4		4			11.2	18.8	34
VSP-HE40B□-6		6			11.9	20.6	35
VSP-HE50B□-2	50	1.8	54	32	8.4	14.7	41
VSP-HE50B□-4		4			11.2	18.8	42
VSP-HE50B□-6		6			11.9	20.6	43

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side, VSP-HE, Barb Fitting)

●VSP-HE6, 8B□-4T/6T ●VSP-HE10, 15B□-4T/6T ●VSP-HE20 to 50B□-4T/6T

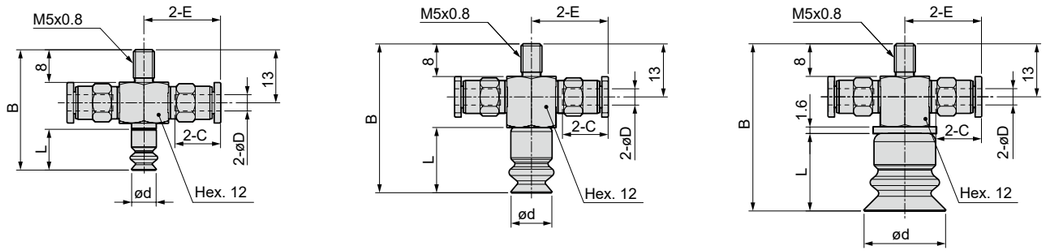


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HE6B□-4T	6	2.5	29.5	10	13
VSP-HE6B□-6T		4			
VSP-HE8B□-4T	8	2.5	29.5	10	13
VSP-HE8B□-6T		4			
VSP-HE10B□-4T	10	2.5	36.5	16	16
VSP-HE10B□-6T		4			
VSP-HE15B□-4T	15	2.5	36.5	16	16
VSP-HE15B□-6T		4			
VSP-HE20B□-4T	20	2.5	41	19	21
VSP-HE20B□-6T		4			
VSP-HE25B□-4T	25	2.5	41	19	21
VSP-HE25B□-6T		4			
VSP-HE30B□-4T	30	2.5	47	23	24
VSP-HE30B□-6T		4			
VSP-HE40B□-4T	40	2.5	52	30	32
VSP-HE40B□-6T		4			
VSP-HE50B□-4T	50	2.5	54	32	40
VSP-HE50B□-6T		4			

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet Both Sides, VSP-HE, Push-in fitting)

●VSP-HEW6, 8B□-2/4/6 ●VSP-HEW10, 15B□-2/4/6 ●VSP-HEW20 to 50B□-2/4/6

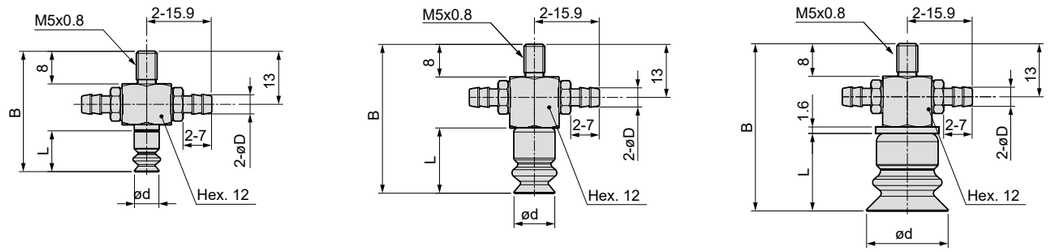


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HEW6B□-2	6	1.8	29.5	10	8.4	14.7	16
VSP-HEW6B□-4		4			11.2	18.8	18
VSP-HEW6B□-6		6			11.9	20.6	20
VSP-HEW8B□-2	8	1.8	29.5	10	8.4	14.7	16
VSP-HEW8B□-4		4			11.2	18.8	18
VSP-HEW8B□-6		6			11.9	20.6	20
VSP-HEW10B□-2	10	1.8	36.5	16	8.4	14.7	19
VSP-HEW10B□-4		4			11.2	18.8	21
VSP-HEW10B□-6		6			11.9	20.6	23
VSP-HEW15B□-2	15	1.8	36.5	16	8.4	14.7	20
VSP-HEW15B□-4		4			11.2	18.8	22
VSP-HEW15B□-6		6			11.9	20.6	24
VSP-HEW20B□-2	20	1.8	41	19	8.4	14.7	23
VSP-HEW20B□-4		4			11.2	18.8	25
VSP-HEW20B□-6		6			11.9	20.6	27
VSP-HEW25B□-2	25	1.8	41	19	8.4	14.7	24
VSP-HEW25B□-4		4			11.2	18.8	26
VSP-HEW25B□-6		6			11.9	20.6	28
VSP-HEW30B□-2	30	1.8	47	23	8.4	14.7	28
VSP-HEW30B□-4		4			11.2	18.8	30
VSP-HEW30B□-6		6			11.9	20.6	32
VSP-HEW40B□-2	40	1.8	52	30	8.4	14.7	34
VSP-HEW40B□-4		4			11.2	18.8	36
VSP-HEW40B□-6		6			11.9	20.6	38
VSP-HEW50B□-2	50	1.8	54	32	8.4	14.7	41
VSP-HEW50B□-4		4			11.2	18.8	43
VSP-HEW50B□-6		6			11.9	20.6	45

Outline Dimension Drawing (Low Profile Buffer Type, Vacuum Outlet Both Sides, VSP-HEW, Barb Fitting)

●VSP-HEW6, 8B□-4T/6T ●VSP-HEW10, 15B□-4T/6T ●VSP-HEW20 to 50B□-4T/6T

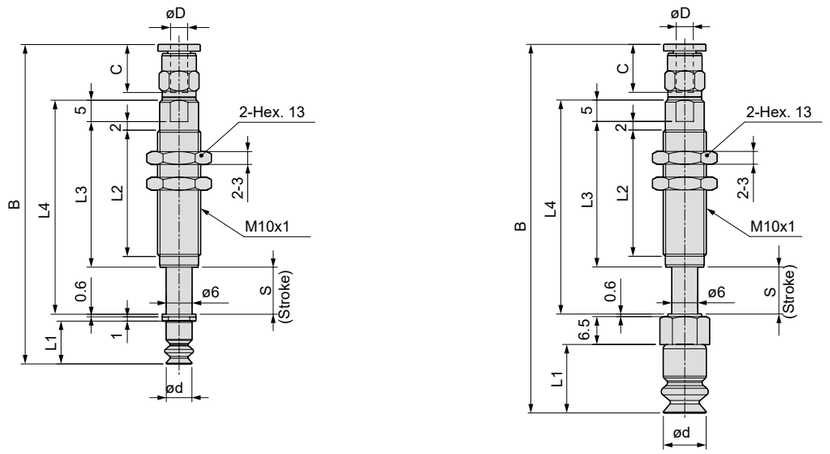


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HEW6B□-4T	6	2.5	29.5	10	14
VSP-HEW6B□-6T		4			
VSP-HEW8B□-4T	8	2.5	29.5	10	14
VSP-HEW8B□-6T		4			
VSP-HEW10B□-4T	10	2.5	36.5	16	17
VSP-HEW10B□-6T		4			
VSP-HEW15B□-4T	15	2.5	36.5	16	17
VSP-HEW15B□-6T		4			
VSP-HEW20B□-4T	20	2.5	41	19	21
VSP-HEW20B□-6T		4			
VSP-HEW25B□-4T	25	2.5	41	19	22
VSP-HEW25B□-6T		4			
VSP-HEW30B□-4T	30	2.5	47	23	25
VSP-HEW30B□-6T		4			
VSP-HEW40B□-4T	40	2.5	52	30	33
VSP-HEW40B□-6T		4			
VSP-HEW50B□-4T	50	2.5	54	32	40
VSP-HEW50B□-6T		4			

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC6, 8-□B□-4 ●VSP-LFC10, 15-□B□-4



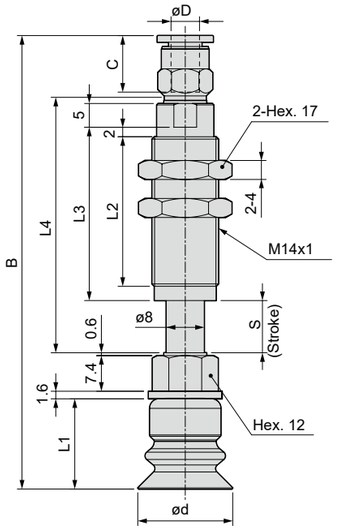
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC6-2B□-4	6	4	58.6	10	21.5	26	34	11.2	2	1.3 to 1.8	25
VSP-LFC6-5B□-4			64.6		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	27
VSP-LFC6-10B□-4			74.6		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	29
VSP-LFC6-15B□-4			84.6		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	31
VSP-LFC6-20B□-4			94.6		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	33
VSP-LFC8-2B□-4	8	4	58.6	10	21.5	26	34	11.2	2	1.3 to 1.8	25
VSP-LFC8-5B□-4			64.6		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	27
VSP-LFC8-10B□-4			74.6		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	29
VSP-LFC8-15B□-4			84.6		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	31
VSP-LFC8-20B□-4			94.6		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	33
VSP-LFC10-2B□-4	10	4	70.1	16	21.5	26	34	11.2	2	1.3 to 1.8	28
VSP-LFC10-5B□-4			76.1		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	30
VSP-LFC10-10B□-4			86.1		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	32
VSP-LFC10-15B□-4			96.1		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	34
VSP-LFC10-20B□-4			106.1		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	36
VSP-LFC15-2B□-4	15	4	70.1	16	21.5	26	34	11.2	2	1.3 to 1.8	28
VSP-LFC15-5B□-4			76.1		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	30
VSP-LFC15-10B□-4			86.1		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	32
VSP-LFC15-15B□-4			96.1		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	34
VSP-LFC15-20B□-4			106.1		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	36

*Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC20 to 50-□B□-4/6



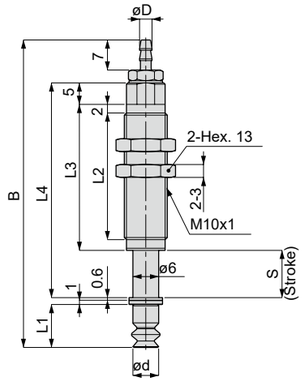
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC20-5B□-4	20	4	84.1	19	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	57
VSP-LFC20-5B□-6		6	85.4					11.9			58
VSP-LFC20-10B□-4		4	94.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	59
VSP-LFC20-10B□-6		6	95.4					11.9			60
VSP-LFC20-15B□-4		4	104.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	62
VSP-LFC20-15B□-6		6	105.4					11.9			63
VSP-LFC20-20B□-4		4	114.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	65
VSP-LFC20-20B□-6		6	115.4					11.9			66
VSP-LFC25-5B□-4	25	4	84.1	19	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	58
VSP-LFC25-5B□-6		6	85.4					11.9			59
VSP-LFC25-10B□-4		4	94.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	60
VSP-LFC25-10B□-6		6	95.4					11.9			61
VSP-LFC25-15B□-4		4	104.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	63
VSP-LFC25-15B□-6		6	105.4					11.9			64
VSP-LFC25-20B□-4		4	114.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	66
VSP-LFC25-20B□-6		6	115.4					11.9			67
VSP-LFC30-5B□-4	30	4	88.1	23	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	59
VSP-LFC30-5S□-6		6	89.4					11.9			60
VSP-LFC30-10B□-4		4	98.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	61
VSP-LFC30-10S□-6		6	99.4					11.9			62
VSP-LFC30-15B□-4		4	108.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	64
VSP-LFC30-15S□-6		6	109.4					11.9			65
VSP-LFC30-20B□-4		4	118.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	67
VSP-LFC30-20S□-6		6	119.4					11.9			68
VSP-LFC40-5B□-4	40	4	95.1	30	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	70
VSP-LFC40-5S□-6		6	96.4					11.9			71
VSP-LFC40-10B□-4		4	105.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	72
VSP-LFC40-10S□-6		6	106.4					11.9			73
VSP-LFC40-15B□-4		4	115.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	75
VSP-LFC40-15S□-6		6	116.4					11.9			76
VSP-LFC40-20B□-4		4	125.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	78
VSP-LFC40-20S□-6		6	126.4					11.9			79
VSP-LFC50-5B□-4	50	4	97.1	32	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	76
VSP-LFC50-5S□-6		6	98.4					11.9			77
VSP-LFC50-10B□-4		4	107.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	78
VSP-LFC50-10S□-6		6	108.4					11.9			79
VSP-LFC50-15B□-4		4	117.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	81
VSP-LFC50-15S□-6		6	118.4					11.9			82
VSP-LFC50-20B□-4		4	127.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	84
VSP-LFC50-20S□-6		6	128.4					11.9			85

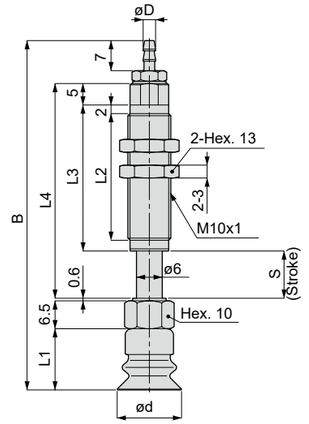
*Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC6, 8-□B□-4T/6T



●VSP-LFC10, 15-□B□-4T/6T



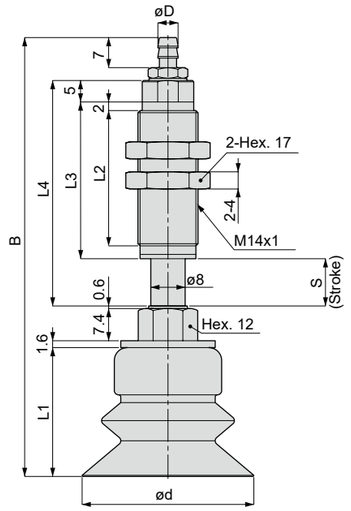
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC6-2B□-4T	6	2.5	55.7	10	21.5	26	34	2	1.3 to 1.8	24
VSP-LFC6-2B□-6T		4								
VSP-LFC6-5B□-4T		2.5	61.7		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	26
VSP-LFC6-5B□-6T		4								
VSP-LFC6-10B□-4T		2.5	71.7		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	28
VSP-LFC6-10B□-6T		4								
VSP-LFC6-15B□-4T		2.5	81.7		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	30
VSP-LFC6-15B□-6T		4								
VSP-LFC6-20B□-4T		2.5	91.7		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	32
VSP-LFC6-20B□-6T		4								
VSP-LFC8-2B□-4T	8	2.5	55.7	10	21.5	26	34	2	1.3 to 1.8	24
VSP-LFC8-2B□-6T		4								
VSP-LFC8-5B□-4T		2.5	61.7		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	26
VSP-LFC8-5B□-6T		4								
VSP-LFC8-10B□-4T		2.5	71.7		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	28
VSP-LFC8-10B□-6T		4								
VSP-LFC8-15B□-4T		2.5	81.7		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	30
VSP-LFC8-15B□-6T		4								
VSP-LFC8-20B□-4T		2.5	91.7		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	32
VSP-LFC8-20B□-6T		4								
VSP-LFC10-2B□-4T	10	2.5	67.2	16	21.5	26	34	2	1.3 to 1.8	27
VSP-LFC10-2B□-6T		4								
VSP-LFC10-5B□-4T		2.5	73.2		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	29
VSP-LFC10-5B□-6T		4								
VSP-LFC10-10B□-4T		2.5	83.2		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	31
VSP-LFC10-10B□-6T		4								
VSP-LFC10-15B□-4T		2.5	93.2		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	33
VSP-LFC10-15B□-6T		4								
VSP-LFC10-20B□-4T		2.5	103.2		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	35
VSP-LFC10-20B□-6T		4								
VSP-LFC15-2B□-4T	15	2.5	67.2	16	21.5	26	34	2	1.3 to 1.8	27
VSP-LFC15-2B□-6T		4								
VSP-LFC15-5B□-4T		2.5	73.2		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	29
VSP-LFC15-5B□-6T		4								
VSP-LFC15-10B□-4T		2.5	83.2		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	31
VSP-LFC15-10B□-6T		4								
VSP-LFC15-15B□-4T		2.5	93.2		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	33
VSP-LFC15-15B□-6T		4								
VSP-LFC15-20B□-4T		2.5	103.2		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	35
VSP-LFC15-20B□-6T		4								

*Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC20 to 50-□B□-4T/6T



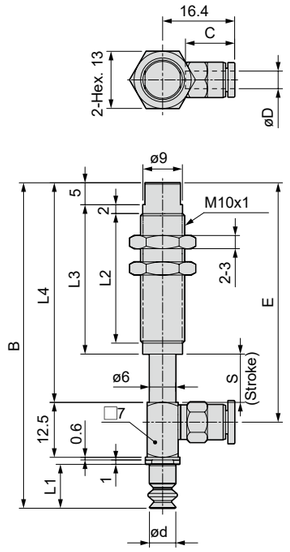
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC20-5B□-4T	20	2.5	81.2	19	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	53
VSP-LFC20-5B□-6T		4								
VSP-LFC20-10B□-4T		2.5	91.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	55
VSP-LFC20-10B□-6T		4								
VSP-LFC20-15B□-4T		2.5	101.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	58
VSP-LFC20-15B□-6T		4								
VSP-LFC20-20B□-4T		2.5	111.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	61
VSP-LFC20-20B□-6T		4								
VSP-LFC25-5B□-4T	25	2.5	81.2	19	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	54
VSP-LFC25-5B□-6T		4								
VSP-LFC25-10B□-4T		2.5	91.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	56
VSP-LFC25-10B□-6T		4								
VSP-LFC25-15B□-4T		2.5	101.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	59
VSP-LFC25-15B□-6T		4								
VSP-LFC25-20B□-4T		2.5	111.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	62
VSP-LFC25-20B□-6T		4								
VSP-LFC30-5B□-4T	30	2.5	85.2	23	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	55
VSP-LFC30-5S□-6T		4								
VSP-LFC30-10B□-4T		2.5	95.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	57
VSP-LFC30-10S□-6T		4								
VSP-LFC30-15B□-4T		2.5	105.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	60
VSP-LFC30-15S□-6T		4								
VSP-LFC30-20B□-4T		2.5	115.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	63
VSP-LFC30-20B□-6T		4								
VSP-LFC40-5B□-4T	40	2.5	92.2	30	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	66
VSP-LFC40-5B□-6T		4								
VSP-LFC40-10B□-4T		2.5	102.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	68
VSP-LFC40-10B□-6T		4								
VSP-LFC40-15B□-4T		2.5	112.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	71
VSP-LFC40-15B□-6T		4								
VSP-LFC40-20B□-4T		2.5	122.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	74
VSP-LFC40-20B□-6T		4								
VSP-LFC50-5B□-4T	50	2.5	94.2	32	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	72
VSP-LFC50-5B□-6T		4								
VSP-LFC50-10B□-4T		2.5	104.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	74
VSP-LFC50-10B□-6T		4								
VSP-LFC50-15B□-4T		2.5	114.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	77
VSP-LFC50-15B□-6T		4								
VSP-LFC50-20B□-4T		2.5	124.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	80
VSP-LFC50-20B□-6T		4								

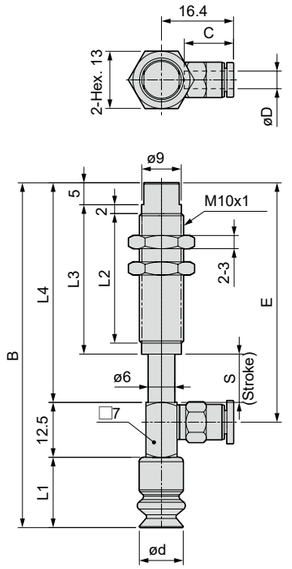
*Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Push-in fitting)

●VSP-LFD6, 8-□B□-4



●VSP-LFD10, 15-□B□-4

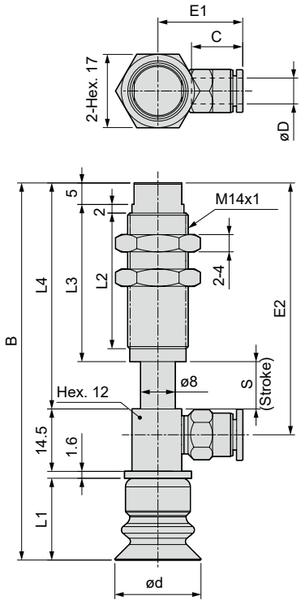


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD6-5B□-4	6	4	64.1	10	24.5	29	40	11.2	44.5	5	1.3 to 2.4	31
VSP-LFD6-10B□-4			74.1		29.5	34	50		54.5	10	1.3 to 3.3	34
VSP-LFD6-15B□-4			84.1		34.5	39	60		64.5	15	1.3 to 4.2	36
VSP-LFD6-20B□-4			94.1		39.5	44	70		74.5	20	1.3 to 5.1	38
VSP-LFD8-5B□-4	8	4	64.1	10	24.5	29	40	11.2	44.5	5	1.3 to 2.4	31
VSP-LFD8-10B□-4			74.1		29.5	34	50		54.5	10	1.3 to 3.3	34
VSP-LFD8-15B□-4			84.1		34.5	39	60		64.5	15	1.3 to 4.2	36
VSP-LFD8-20B□-4			94.1		39.5	44	70		74.5	20	1.3 to 5.1	38
VSP-LFD10-5B□-4	10	4	68.5	16	24.5	29	40	11.2	44.5	5	1.3 to 2.4	26
VSP-LFD10-10B□-4			78.5		29.5	34	50		54.5	10	1.3 to 3.3	28
VSP-LFD10-15B□-4			88.5		34.5	39	60		64.5	15	1.3 to 4.2	30
VSP-LFD10-20B□-4			98.5		39.5	44	70		74.5	20	1.3 to 5.1	32
VSP-LFD15-5B□-4	15	4	68.5	16	24.5	29	40	11.2	44.5	5	1.3 to 2.4	26
VSP-LFD15-10B□-4			78.5		29.5	34	50		54.5	10	1.3 to 3.3	28
VSP-LFD15-15B□-4			88.5		34.5	39	60		64.5	15	1.3 to 4.2	30
VSP-LFD15-20B□-4			98.5		39.5	44	70		74.5	20	1.3 to 5.1	32

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Push-in fitting)

●VSP-LFD20 to 50-□B□-4/6



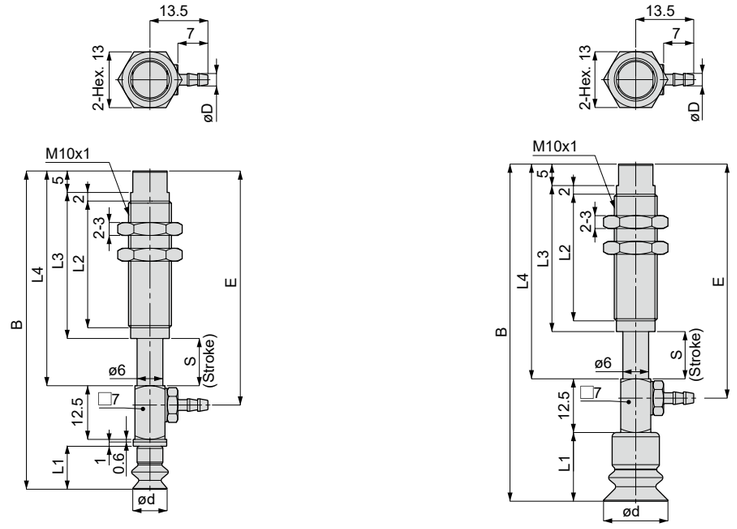
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD20-5B□-4	20	4	77.5	19	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	58
VSP-LFD20-5B□-6		6						11.9	19.7				59
VSP-LFD20-10B□-4		4	87.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	62
VSP-LFD20-10B□-6		6						11.9	19.7				63
VSP-LFD20-15B□-4		4	97.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	66
VSP-LFD20-15B□-6		6						11.9	19.7				67
VSP-LFD20-20B□-4		4	107.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	70
VSP-LFD20-20B□-6		6						11.9	19.7				71
VSP-LFD25-5B□-4	25	4	77.5	19	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	59
VSP-LFD25-5B□-6		6						11.9	19.7				60
VSP-LFD25-10B□-4		4	87.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	63
VSP-LFD25-10B□-6		6						11.9	19.7				64
VSP-LFD25-15B□-4		4	97.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	67
VSP-LFD25-15B□-6		6						11.9	19.7				68
VSP-LFD25-20B□-4		4	107.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	71
VSP-LFD25-20B□-6		6						11.9	19.7				72
VSP-LFD30-5B□-4	30	4	81.5	23	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	60
VSP-LFD30-5B□-6		6						11.9	19.7				61
VSP-LFD30-10B□-4		4	91.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	64
VSP-LFD30-10B□-6		6						11.9	19.7				65
VSP-LFD30-15B□-4		4	101.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	68
VSP-LFD30-15B□-6		6						11.9	19.7				69
VSP-LFD30-20B□-4		4	111.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	72
VSP-LFD30-20B□-6		6						11.9	19.7				73
VSP-LFD40-5B□-4	40	4	88.5	30	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	71
VSP-LFD40-5B□-6		6						11.9	19.7				72
VSP-LFD40-10B□-4		4	98.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	75
VSP-LFD40-10B□-6		6						11.9	19.7				76
VSP-LFD40-15B□-4		4	108.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	79
VSP-LFD40-15B□-6		6						11.9	19.7				80
VSP-LFD40-20B□-4		4	118.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	84
VSP-LFD40-20B□-6		6						11.9	19.7				85
VSP-LFD50-5B□-4	50	4	90.5	32	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	77
VSP-LFD50-5B□-6		6						11.9	19.7				78
VSP-LFD50-10B□-4		4	100.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	81
VSP-LFD50-10B□-6		6						11.9	19.7				82
VSP-LFD50-15B□-4		4	118.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	85
VSP-LFD50-15B□-6		6						11.9	19.7				86
VSP-LFD50-20B□-4		4	128.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	90
VSP-LFD50-20B□-6		6						11.9	19.7				91

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Barb Fitting)

●VSP-LFD6, 8-□B□-4T/6T

●VSP-LFD10 to 15-□B□-4T/6T

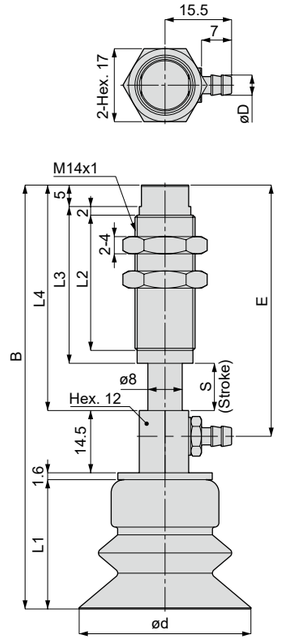


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD6-5B□-4T	6	2.5	64.1	10	24.5	29	40	44.5	5	1.3 to 2.4	30
VSP-LFD6-5B□-6T		4									
VSP-LFD6-10B□-4T		2.5	74.1		29.5	34	50	54.5	10	1.3 to 3.3	32
VSP-LFD6-10B□-6T		4									
VSP-LFD6-15B□-4T		2.5	84.1		34.5	39	60	64.5	15	1.3 to 4.2	34
VSP-LFD6-15B□-6T		4									
VSP-LFD6-20B□-4T		2.5	94.1		39.5	44	70	74.5	20	1.3 to 5.1	36
VSP-LFD6-20B□-6T		4									
VSP-LFD8-5B□-4T	8	2.5	64.1	10	24.5	29	40	44.5	5	1.3 to 2.4	30
VSP-LFD8-5B□-6T		4									
VSP-LFD8-10B□-4T		2.5	74.1		29.5	34	50	54.5	10	1.3 to 3.3	32
VSP-LFD8-10B□-6T		4									
VSP-LFD8-15B□-4T		2.5	84.1		34.5	39	60	64.5	15	1.3 to 4.2	34
VSP-LFD8-15B□-6T		4									
VSP-LFD8-20B□-4T		2.5	94.1		39.5	44	70	74.5	20	1.3 to 5.1	36
VSP-LFD8-20B□-6T		4									
VSP-LFD10-5B□-4T	10	2.5	68.5	16	24.5	29	40	44.5	5	1.3 to 2.4	26
VSP-LFD10-5B□-6T		4									
VSP-LFD10-10B□-4T		2.5	78.5		29.5	34	50	54.5	10	1.3 to 3.3	27
VSP-LFD10-10B□-6T		4									
VSP-LFD10-15B□-4T		2.5	88.5		34.5	39	60	64.5	15	1.3 to 4.2	29
VSP-LFD10-15B□-6T		4									
VSP-LFD10-20B□-4T		2.5	98.5		39.5	44	70	74.5	20	1.3 to 5.1	31
VSP-LFD10-20B□-6T		4									
VSP-LFD15-5B□-4T	15	2.5	68.5	16	24.5	29	40	44.5	5	1.3 to 2.4	26
VSP-LFD15-5B□-6T		4									
VSP-LFD15-10B□-4T		2.5	78.5		29.5	34	50	54.5	10	1.3 to 3.3	27
VSP-LFD15-10B□-6T		4									
VSP-LFD15-15B□-4T		2.5	88.5		34.5	39	60	64.5	15	1.3 to 4.2	29
VSP-LFD15-15B□-6T		4									
VSP-LFD15-20B□-4T		2.5	98.5		39.5	44	70	74.5	20	1.3 to 5.1	31
VSP-LFD15-20B□-6T		4									

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Barb Fitting)

●VSP-LFD20 to 50-□B□-4T/6T



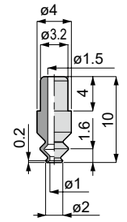
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD20-5B□-4T	20	2.5	77.5	19	26.5	31.5	42.5	48.5	5	4.5 to 6.5	54
VSP-LFD20-5B□-6T		4									
VSP-LFD20-10B□-4T		2.5	87.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	57
VSP-LFD20-10B□-6T		4									
VSP-LFD20-15B□-4T		2.5	97.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	61
VSP-LFD20-15B□-6T		4									
VSP-LFD20-20B□-4T		2.5	107.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	65
VSP-LFD20-20B□-6T		4									
VSP-LFD25-5B□-4T	25	2.5	77.5	19	26.5	31.5	42.5	48.5	5	4.5 to 6.5	55
VSP-LFD25-5B□-6T		4									
VSP-LFD25-10B□-4T		2.5	87.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	58
VSP-LFD25-10B□-6T		4									
VSP-LFD25-15B□-4T		2.5	97.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	62
VSP-LFD25-15B□-6T		4									
VSP-LFD25-20B□-4T		2.5	107.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	66
VSP-LFD25-20B□-6T		4									
VSP-LFD30-5B□-4T	30	2.5	81.5	23	26.5	31.5	42.5	48.5	5	4.5 to 6.5	56
VSP-LFD30-5B□-6T		4									
VSP-LFD30-10B□-4T		2.5	91.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	59
VSP-LFD30-10B□-6T		4									
VSP-LFD30-15B□-4T		2.5	101.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	63
VSP-LFD30-15B□-6T		4									
VSP-LFD30-20B□-4T		2.5	111.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	67
VSP-LFD30-20B□-6T		4									
VSP-LFD40-5B□-4T	40	2.5	88.5	30	26.5	31.5	42.5	48.5	5	4.5 to 6.5	67
VSP-LFD40-5B□-6T		4									
VSP-LFD40-10B□-4T		2.5	98.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	70
VSP-LFD40-10B□-6T		4									
VSP-LFD40-15B□-4T		2.5	108.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	74
VSP-LFD40-15B□-6T		4									
VSP-LFD40-20B□-4T		2.5	118.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	78
VSP-LFD40-20B□-6T		4									
VSP-LFD50-5B□-4T	50	2.5	90.5	32	26.5	31.5	42.5	48.5	5	4.5 to 6.5	73
VSP-LFD50-5B□-6T		4									
VSP-LFD50-10B□-4T		2.5	100.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	76
VSP-LFD50-10B□-6T		4									
VSP-LFD50-15B□-4T		2.5	118.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	80
VSP-LFD50-15B□-6T		4									
VSP-LFD50-20B□-4T		2.5	128.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	84
VSP-LFD50-20B□-6T		4									

External Dimension Drawings

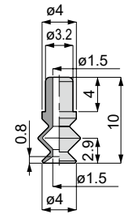
Pad Rubber Only External Dimension Diagram

●VSPG-2B□



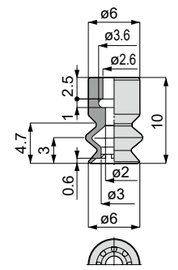
Weight: 0.2 g [0.3 g]

●VSPG-4B□



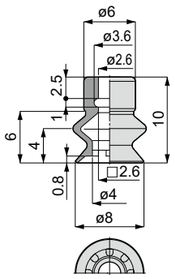
Weight: 0.2 g [0.3 g]

●VSPG-6B□



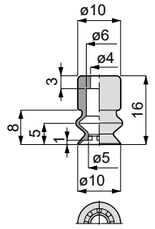
Weight: 0.3 g [0.4 g]

●VSPG-8B□



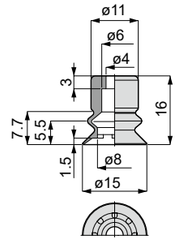
Weight: 0.3 g [0.4 g]

●VSPG-10B□



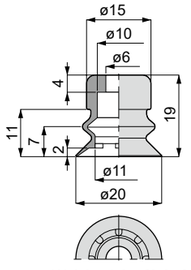
Weight: 0.8 g [1.2 g]

●VSPG-15B□



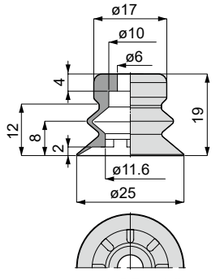
Weight: 1.1 g [1.7 g]

●VSPG-20B□



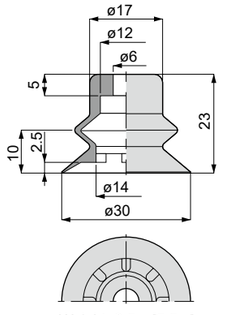
Weight: 1.9 g [3.0 g]

●VSPG-25B□



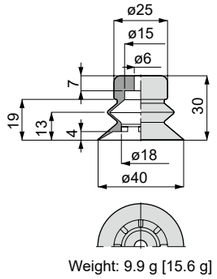
Weight: 2.7 g [4.2 g]

●VSPG-30B□



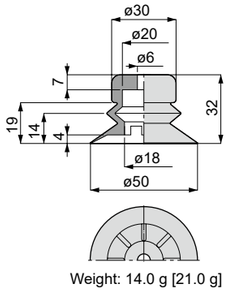
Weight: 3.5 g [5.5 g]

●VSPG-40B□



Weight: 9.9 g [15.6 g]

●VSPG-50B□



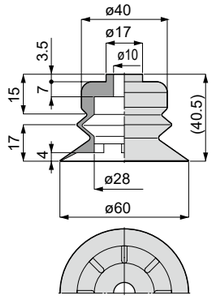
Weight: 14.0 g [21.0 g]

Weight: Values in [ ] are for fluororubber only.

Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechanical Break Function
Ending

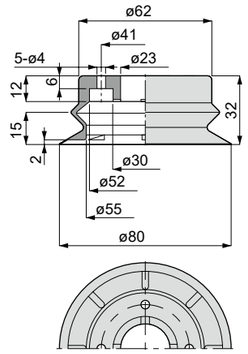
Pad Rubber Only External Dimension Diagram

●VSPG-60B□



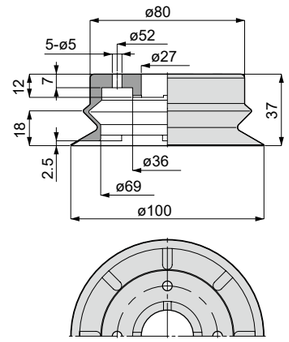
Weight: 25 g [39 g]

●VSPG-80B□



Weight: 39 g [61 g]

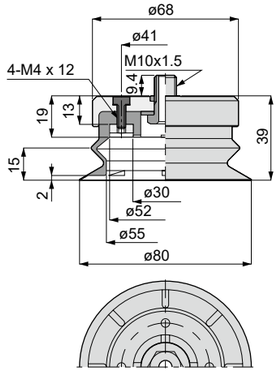
●VSPG-100B□



Weight: 70 g [110 g]

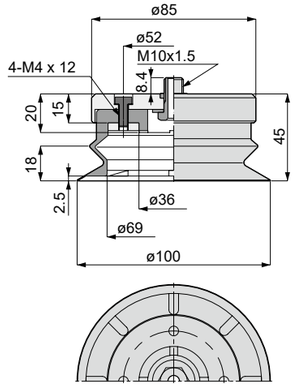
Pad Rubber + Set with Fixing Screw External Dimension Diagram

●VSPG-80B□A



Weight: 131 g [155 g]

●VSPG-100B□A

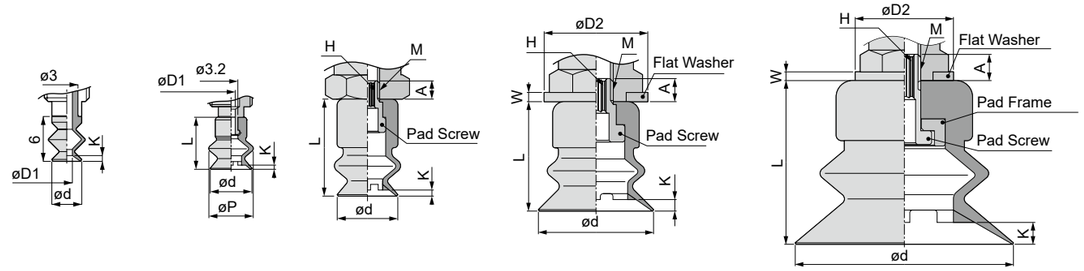


Weight: 238 g [278 g]

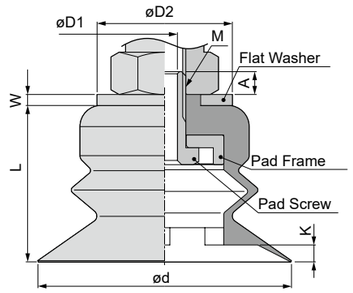
Weight: Values in [ ] are for fluororubber only.

Detailed Diagram of Pad and Holder Connection Part

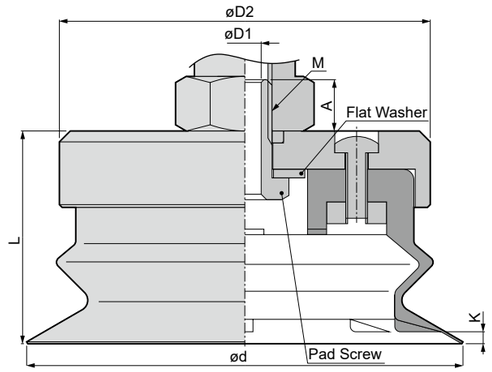
●VSPG-2, 4B□ ●VSPG-6, 8B□ ●VSPG-10, 15B□A ●VSPG-20, 25, 30B□A ●VSPG-40, 50B□A



●VSPG-60BøA



●VSPG-80, 100BøA

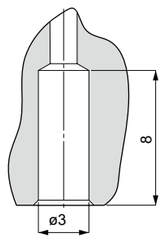


Unit: mm

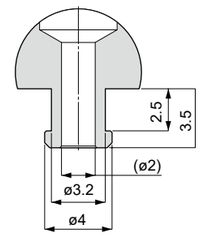
Model No.	Pad Diameter ød	L	Lip Internal Height K	Fixing Screw M	A	Width Across Flats H	øD1	øD2	øP	W
VSPG-2B□	2	6	0.2	–	–	–	1	–	–	–
VSPG-4B□	4	6	0.8	–	–	–	1.5	–	–	–
VSPG-6B□	6	10	0.6	–	–	–	2	–	6.7	–
VSPG-8B□	8	10	0.8	–	–	–	2	–	8.6	–
VSPG-10B□A	10	16	1	M4x0.7	3	2	–	–	–	–
VSPG-15B□A	15	16	1.5	M4x0.7	3	2	–	–	–	–
VSPG-20B□A	20	19	2	M6x1	4	3	–	15.5	–	1.6
VSPG-25B□A	25	19	2	M6x1	4	3	–	15.5	–	1.6
VSPG-30B□A	30	23	2.5	M6x1	5	3	–	15.5	–	1.6
VSPG-40B□A	40	30	4	M6x1	5	3	–	22	–	1.6
VSPG-50B□A	50	32	4	M6x1	5	3	–	22	–	1.6
VSPG-60B□A	60	40.5	4	M10x1.5	5.4	14	6	32	–	2.6
VSPG-80B□A	80	39	2	M10x1.5	9.4	14	6	68	–	–
VSPG-100B□A	100	45	2.5	M10x1.5	8.4	14	6	85	–	–

Pad Rubber Fitting Part Dimension

●VSPG-2, 4B□

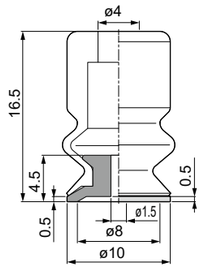


●VSPG-6, 8B□



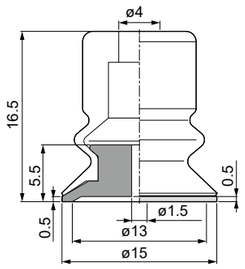
External Dimension Diagram (Detailed Diagram When Resin Attachment is Mounted)

●VSPG-10BQ□



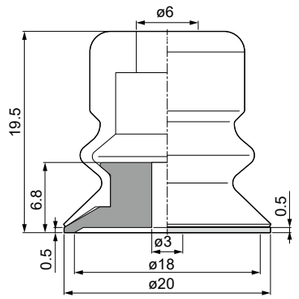
Weight: 0.3 g

●VSPG-15BQ□



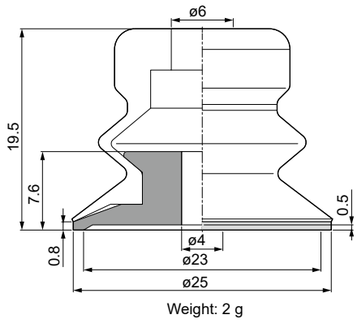
Weight: 0.6 g

●VSPG-20BQ□



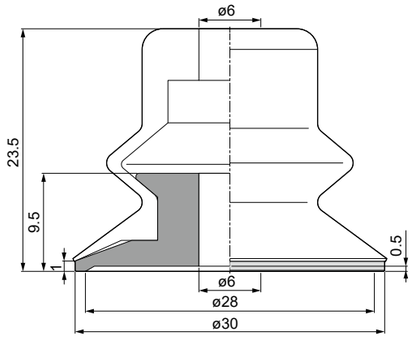
Weight: 1.3 g

●VSPG-25BQ□



Weight: 2 g

●VSPG-30BQ□



Weight: 3.4 g

Weight: Values are for the resin attachment only.

MEMO

Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechanical Break Function
Ending

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Suction Pad Bellows Type VSP-øB□Series

Design / Selection

Warning

■ Use CKD's "Suction Pads bellows type" for the pad rubber for mounting the suction mark prevention resin attachment. If the shape of the suction mark prevention resin attachment and the pad rubber is not appropriate, the resin attachment may come off or excessive leakage may occur.

■ Status Because of the characteristics of the bellows pad material, the pads may stick to each other, so please check with the actual device.
Also, tackiness may increase depending on the operating environment or pad wear. Review the pad shape, material, quantity, etc., as necessary.

■ Use the bellows so that it does not overcrush. Excessive crushing may accelerate wear of the bellows part, cause cracks in the lip part, or lead to deformation due to strain, potentially causing suction failure.

Caution

■ Compared to conventional rubber Suction Pads, the suction mark prevention resin attachment reduces suction marks by using resin for the lip portion; however, confirm with an actual device that the effects of suction marks on the workpieces are acceptable.

■ The suction mark prevention resin attachment has a greater impact on leakage from the suction surface than conventional rubber Suction Pads. Please note that it cannot be used for vacuum holding. Also, secure the vacuum flow rate as large as possible to minimize pressure drop due to leakage.

■ Clean the suction surface of the Suction Pads before use. Adhered substances may remain as suction marks. Furthermore, when cleaning, be careful not to scratch the suction surface, and do not use organic solvents.

■ Select a material that suits the working conditions for the pad rubber for mounting the suction mark prevention resin attachment.

■ Pad Rubber Material: Do not use the suction mark prevention resin attachment with suction pads made of ultra soft silicone or those with selected surface treatment options.

■ Pad O.D.: Pad frames of ø80 mm or greater have no conductivity. When using vacuum pads made of conductive material, take measures to dissipate electricity directly from the pad rubber.

■ When replacing the pad rubber with bellows pad diameter: ø80mm, be sure to check the configuration diagram in the catalog, use appropriate tools according to the recommended tightening torque below and tighten without looseness using the hexagonal part of the holder outer diameter.

●Recommended Tightening Torque

Screw Size (mm)	Tightening Torque
M4x0.7	0.5 to 0.7 N·m
M5x0.8	

MEMO



Suction Pad Multi-stage Bellows Type

VSP-□W□ Series

Suction pad with multi-stage bellows structure that softly conforms to the workpiece

RoHS

The 4-stage bellows (bellows) part follows curved workpieces and ensures reliable suction through bellows expansion/contraction, making it ideal for transporting bags containing retort pouches, food, etc.

Abundant holder variations

Shape 18 types

- Standard6 types
- CompactClass 5
- Low dust generation .....2 types
- Lightweight3 types
- Low back2 types

Piping Connection 6 types

- Push-in fitting (ø1.8 to ø6)3 types
- Barbed fitting (ø4, ø6) .....2 types
- Screw-in (M5).....1 type

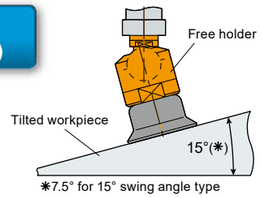
Stroke 12 types

2 mm to 50 mm
(Depends on pad diameter, holder type)

Low particle generation holders (LFC, LFD) with less abrasion powder from sliding and low noise are available

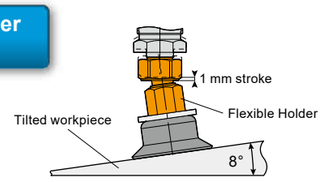
Assembly option for swing (free holder, flexible holder) that follows inclined workpiece surfaces is supported

Free holder (F1:30°, F2:15°)



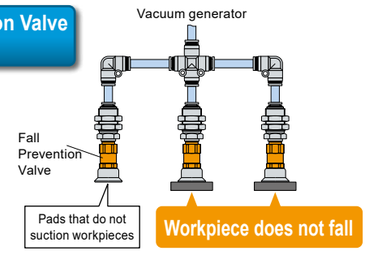
Flexible Holder (CF)

After removing the workpiece, returns to the normal position (vertical)



Assembly option for drop prevention valve (V) that reduces vacuum drop in separate circuits even without a workpiece is supported

Drop Prevention Valve (V)

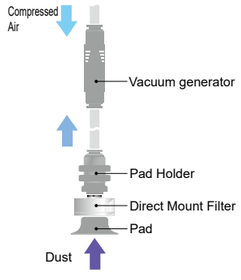


Removes dust during workpiece suction

Direct Mount Filter (T1, T2)

Filtration Area
T1: 1.7 cm², T2: 7 cm²





Pad surface treatment (option) with special processing to reduce adsorption marks is available

	-DL	-ER	-FG
Surface Treatment	Sticking Prevention	Adsorption Mark Reduction	Fluorine Coating
			
Compatible Material	Silicone Fluorine Conductive Silicone	Nitrile Conductive NBR (Low Resistance-type)	Silicone Conductive Silicone Ultra Soft Silicone
Features	Special coating with good slippage. Effective for preventing sticking of lightweight workpieces and thin workpieces.	Surface modification with environmentally friendly chemicals reduces adsorption marks.	Surface modification with special treatment prevents sticking to the workpiece. Improved pad durability and abrasion resistance.

Pad Shape

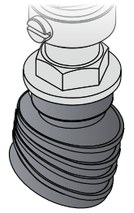






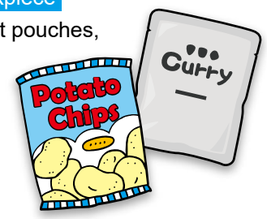
4-Stage Bellows

Can significantly follow changes in the height of the contacting workpiece and surface inclination.



Recommended Workpiece

Bags containing retort pouches, food items, etc.



Pad Diameter

7 types 6 | 8 | 10 | 20 | 30 | 40 | 50

Pad Material

10 types

Nitrile | Silicone | Urethane | Fluorine | Conductive NBR (Low Resistance-type) | Food Sanitation Act Compliant NBR | HNBR | EPDM | Ultra Soft Silicone Hardness 20° | Ultra Soft Silicone Hardness 40°


Hardness 20° Type


Hardness 40° Type

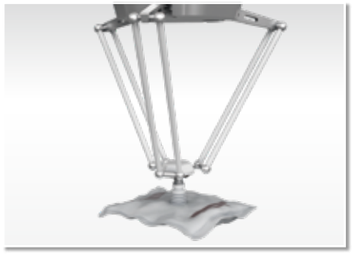
Ultra Soft Silicone

*Ultra soft silicone (YS2, YS4) conforms to the Food Sanitation Act, FDA compliant. Food Sanitation Act compliant NBR (G), Silicone (S) conforms to the Food Sanitation Act. (Holder is not compliant / Suction pad is compliant only for workpiece contact area)

Solution Examples

Workpieces with uneven suction surfaces

Flexibly follows and adsorbs workpieces with irregularities such as retort pouches or those with changing suction surface heights.



Workpieces with curved suction surfaces

Bellows can follow the inclination of the workpiece surface for suction.



Workpieces with irregular suction surfaces

Demonstrates high conformability to workpieces with irregular surface shapes, like packaged candies.



Model No. Notation

●Multi-stage Bellows Type

Suction Pad

VSP - C - 30 - -20 - W - N - -ER - 6 - [ ] - F1 - V - T1

Model No.	❶ Holder Shape	❷ Pad Diameter	❸ Stroke Option	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment	❼ Connection Size/Shape	❽ Buffer Load	❾ Pad Swinging	❿ Drop Prevention Valve	⓫ Direct Mount Filter

Pad Rubber Only

VSPG - 30 - W - N - -ER

Model No.	❷	❹	❺	❻

Pad Rubber + Set with Fixing Screw

VSPG - 30 - W - N - -ER A

Model No.	❷ Pad Diameter	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment

*1: For ❷ Pad Diameter 10 to 50, the "Pad Rubber + Set Screw Set" can be selected.

❶ Holder Shape

Buffer Present/Absent	Type	Vacuum Outlet	Code	
Fixed Type	Standard	Top Direction	A	
	Compact		MA	
	Standard	Side Direction	B	
	Compact		MB	
	Low Profile		HE	
		Both Sides Direction	HEW	
	Standard	Direct Mount Type	E	
	Compact		ME	

Buffer Present/Absent	Type	Vacuum Outlet	Code	
Buffer Type	Standard	Top Direction	C	
	Compact		MC	
	Low Particle Generation		LFC	
	Lightweight		HC	
	Standard	Side Direction	D	
	Compact		MD	
	Low Particle Generation		LFD	
			HD	
	Lightweight	Both Sides Direction	HDW	
	Standard	Direct Mount Type	F	

❷ Pad Diameter

Pad Diameter	Pad Material N	S	YS2	YS4	U	F	NE	G	HN	EP	Code
ø6	●	●				●	●	●	●	●	6
ø8	●	●				●	●	●	●	●	8
ø10	●	●	*1	*1	●	●	●	●	●	●	10
ø20	●	●	●	●	●	●	●	●	●	●	20
ø30	●	●	●	●	●	●	●	●	●	●	30
ø40	●	●	●	●	●	●	●	●	●	●	40
ø50	●	●	●	●	●	●	●	●	●	●	50

*1: For ❷ 10, ❺ Pad Material YS2 and YS4 can only be selected when ❻ Surface Treatment is -FG.

❸ Stroke Option

Content	Holder Shape C	D	HC	LFC	LFD	Code	
Specified Stroke, or No Buffer	●	●				Blank	*1, *2
Stroke 2 mm				●		–2	*3
Stroke 5 mm				●	●	–5	
Stroke 10 mm	●	●	●	●	●	–10	
Stroke 15 mm	●	●	●	●	●	–15	
Stroke 20 mm	●	●	●	●	●	–20	
Stroke 25 mm			●			–25	
Stroke 30 mm	●	●	●			–30	
Stroke 40 mm	●	●	●			–40	
Stroke 50 mm	●	●	●			–50	

*1: For ❶ Holder Shape other than C, D, HC, LFC, and LFD, ❸ is 'Blank'.
*2: For the specified stroke of ❸ 'Blank', please confirm the stroke dimension on the external dimension drawing.
*3: When ❷ Pad Diameter is 6 to 10, -2 can be selected for ❸.

❹ Pad Shape

Code	Content	
W	Multi-stage Bellows Type	

❺ Pad Material

Code	Content
N	Nitrile rubber
S	Silicone Rubber
YS2	Ultra Soft Silicone Rubber (Hardness 20°)
YS4	Ultra Soft Silicone Rubber (Hardness 40°)
U	Urethane rubber
F	Fluororubber
NE	Conductive NBR (Low Resistance-type)
G	Food Sanitation Act Compliant NBR
HN	HNBR
EP	EPDM

❻ Surface Treatment

Content	Compatible Pad Material N	S	YS2	YS4	F	NE	Compatible Pad Diameter Multi-stage Bellows (W)	Code
No surface treatment	All pad materials, all pad diameters							Blank
Anti-Adhesion Special Coating		●			●		*10, *20	–DL
Suction Mark Reduction Surface Modification	●					●	*6 to ø50	–ER
Fluorine Coating		●	●	●			*6 to ø50	–FG

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

●Design compatible with rechargeable battery manufacturing process

VSP - ..... - P4*

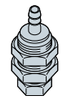
*Please inquire for details.

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

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

VSP - ..... - FP*

❼ Connection Size/Shape

Content	Holder Shape A	B	C	D	MA	MB	MC	MD	ME	LFC	LFD	HC	HD	HDW	HE	HEW	Code	
(❶: For E and F)																	Blank	
ø1.8, Push-in fitting		●	●	●	●	●	●	●				●	●	●	●	●	2	
ø4, Push-in fitting	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	4	
ø6, Push-in fitting	●	●	●	●		●		●		●	●	●	●	●	●	●	6	
ø4, Push-in fitting, without spring cover			●	●													4C	
ø6, Push-in fitting, without spring cover			●	●													6C	
ø4, Barb fitting	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	4T	
ø6, Barb fitting	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	6T	
ø4, Barb fitting, without spring cover			●	●													4TC	
ø6, Barb fitting, without spring cover			●	●													6TC	
M5×0.8									●								M5	

*1: For ❶ Holder Shape C and D with ❸ Stroke Option -20 to -50, options 4C, 6C, 4TC, and 6TC can be selected for ❼. Additionally, for ❸ Stroke Option -30 to -50, only 4C, 6C, 4TC, and 6TC can be selected for ❼.
*2: The selectable Port Size/Shape varies depending on the ❷ Pad Diameter. Please check the combination table below.

❽ Buffer Load

Code	Content
Blank	Standard Load or No Buffer
L	Low Load (1/4 of Standard Load)

*1, *2

*1: For ❶ Holder Shape other than LFC, ❽ is 'Blank'.
*2: For ❸ Stroke Option -2, ❽ is 'Blank'.

⓫ Direct Mount Filter

Code	Content	
Blank	None	
T1	With Direct Mount Filter (Filtration Area 1.7 cm²)	
T2	With direct-mount filter (filtration area 7 cm²)	

*1
*2

*1: ⓫ T1 can be selected when ❷ Pad Diameter is 10 to 50.
*2: ⓫ T2 can be selected when ❷ Pad Diameter is 20 to 50.
*3: For dimensions with the direct mount filter, please refer to P. 1064.

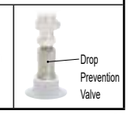
❾ Pad Swing

Code	Content	
Blank	None	
F1	With Free Holder (Angle 30°)	
F2	With Free Holder (Angle 15°)	
CF	With flexible holder (Angle 8°)	

*1
*1
*2

*1: ❾ F1 and F2 can be selected when ❷ Pad Diameter is 10 to 50.
*2 ❾ CF can be selected for ❶ Holder Shape E and ME, and when ❷ Pad Diameter is 10 to 50.
*3: For dimensions with the pad swivel function, please refer to P. 1060 and P. 1062.

❿ Drop Prevention Valve

Code	Content	
Blank	None	
V	With Drop Prevention Valve	

*1

*1: ❿ V can be selected for ❶ Holder Shape E and ME, and when ❷ Pad Diameter is 10 to 50.
*2: For dimensions with the drop prevention valve, please refer to P. 1083 and P. 1084.

Holder Shape - Pad Diameter - Pad Shape - Connection Size/Shape Combination Table

Holder Shape	Pad Diameter	Push-in fitting ø1.8	ø4		ø6		Barb fitting ø4		ø6	
		2	4	4C	6	6C	4T	4TC	6T	6TC
A	ø6 to ø8		●		●		●		●	
	ø10				●				●	
	ø20 to ø50		●		●		●		●	
B	ø6 to ø8	●	●		●		●		●	
	ø10 to ø50		●		●		●		●	
C	ø6 to ø8	●	●	●	●	●	●	●	●	●
	ø10 to ø50		●	●	●	●	●	●	●	●
D	ø6 to ø8	●	●	●	●	●	●	●	●	●
	ø10 to ø50		●	●	●	●	●	●	●	●

Holder Shape	Pad Diameter	Thread M5
		Blank
E	ø6 to ø8	●

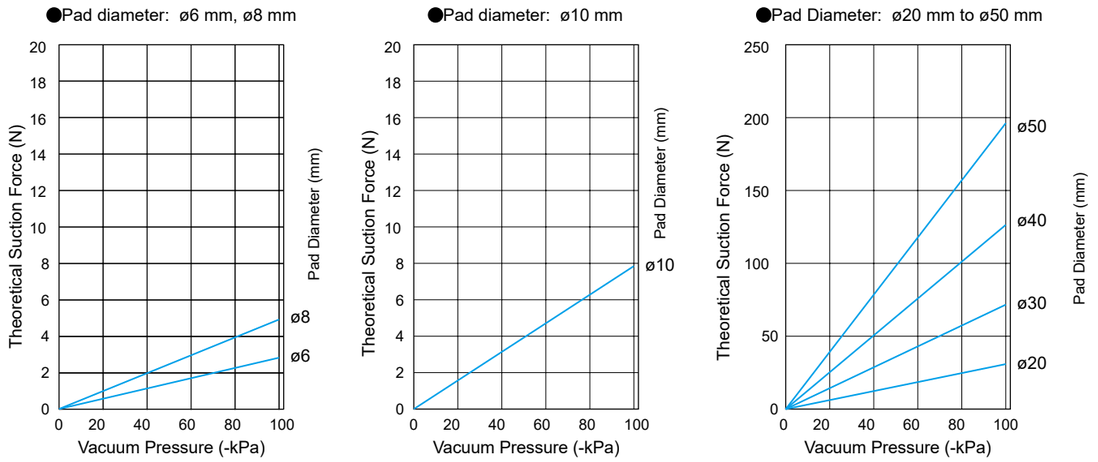
Holder Shape	Pad Diameter	Thread M10	M14
		Blank	
F	ø6 to ø8	●	
	ø10 to ø50		●

Holder Shape	Pad Diameter	Thread M5
		M5
ME	ø6 to ø8	●

Holder Shape	Pad Diameter	Push-in fitting ø1.8	ø4	ø6	Barb fitting ø4	ø6
		2	4	6	4T	6T
MA	ø6 to ø8	●			●	
	ø10		●		●	
	ø20 to ø50		●		●	●
MB	ø6 to ø8	●	●		●	●
	ø10 to ø50	●	●	●	●	●
MC	ø6 to ø8	●			●	●
	ø10 to ø50	●	●		●	●
MD	ø6 to ø8	●	●		●	●
	ø10 to ø50	●	●	●	●	●

Holder Shape	Pad Diameter	Push-in fitting ø1.8	ø4	ø6	Barb fitting ø4	ø6
		2	4	6	4T	6T
LFC	ø6 to ø10		●		●	●
	ø20 to ø50		●	●	●	●
LFD	ø6 to ø10		●		●	●
	ø20 to ø50		●	●	●	●
HC	ø10 to ø50	●	●	●	●	●
HD	All sizes	●	●	●	●	●
HDW	All sizes	●	●	●	●	●
HE	All sizes	●	●	●	●	●
HEW	All sizes	●	●	●	●	●

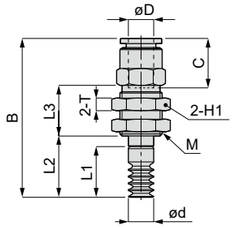
Theoretical Suction Force



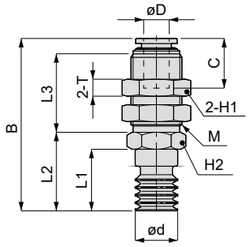
Regarding the suction force of the multi-stage bellows type, due to pad characteristics, it may not be possible to secure the calculated suction force (theoretical suction force x safety factor) due to factors such as vacuum level, pad material, and adsorbed object. For selection, read the precautions in "How to select a Suction Pads" P. 412 Use the suction force obtained by as a guide, and confirm that there is no problem with the suction capacity on the actual machine. Also, the multi-stage bellows type is not suitable for vertical lifting. When using, please sufficiently check with the actual machine.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Push-in fitting)

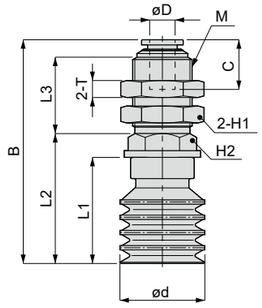
●VSP-A6, 8W□-4/6



●VSP-A10W□-6



●VSP-A20 to 50W□-4/6

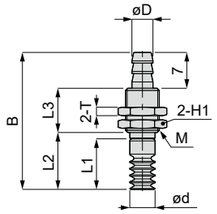


Unit: mm

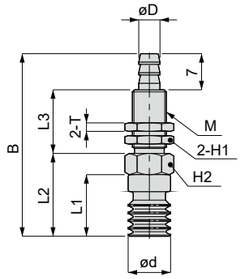
Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	L3	Tube End C	Width Across Flats H1	Width Across Flats H2	T	Weight (g)
VSP-A6W□-4	6	4	M8x0.75	37.1	12	14.5	12	11.2	10	-	2	8.5
VSP-A6W□-6		6	M10x1	37.8				11.9	12		3	13
VSP-A8W□-4	8	4	M8x0.75	37.6	12.5	15	12	11.2	10	-	2	8.5
VSP-A8W□-6		6	M10x1	38.3				11.9	12		3	13
VSP-A10W□-6	10	6	M12x1	40.8	14.5	18.5	18.5	11.9	14	12	4	22
VSP-A20W□-4	20	4	M12x1	61.9	25	31	18	11.2	14	12	4	31
VSP-A20W□-6		6	M14x1	52.9		30.6		11.9	17	14		37
VSP-A30W□-4	30	4	M12x1	75.4	38.5	44.5	18	11.2	14	12	4	37
VSP-A30W□-6		6	M14x1	66.4		44.1		11.9	17	14		43
VSP-A40W□-4	40	4	M12x1	81.9	45	51	18	11.2	14	12	4	47
VSP-A40W□-6		6	M14x1	72.9		50.6		11.9	17	14		53
VSP-A50W□-4	50	4	M12x1	92.9	56	62	18	11.2	14	12	4	58
VSP-A50W□-6		6	M14x1	83.9		61.6		11.9	17	14		64

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Barb fitting)

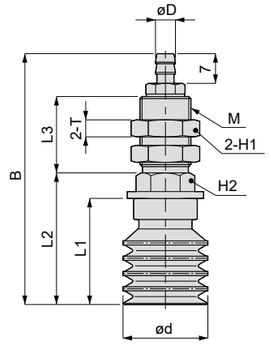
●VSP-A6, 8W□-4T/6T



●VSP-A10W□-6T



●VSP-A20 to 50W□-4T/6T

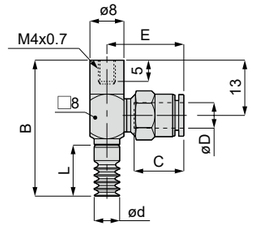


Unit: mm

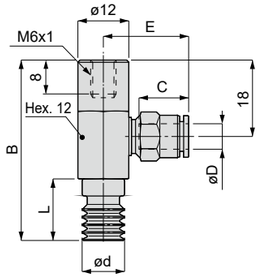
Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	L3	Width Across Flats H1	Width Across Flats H2	T	Weight (g)
VSP-A6W□-4T	6	2.5	M5x0.5	29.5	12	14.5	8	8	-	2	6
VSP-A6W□-6T		4	M8x0.75	31		13.5	10.5	10			8
VSP-A8W□-4T	8	2.5	M5x0.5	30	12.5	15	8	8	-	2	6
VSP-A8W□-6T		4	M8x0.75	31.5		14	10.5	10			8
VSP-A10W□-6T	10	4	M8x0.75	41.5	14.5	19.5	15	10	10	2	12
VSP-A20W□-4T	20	2.5	M12x1	59	25	31	18	14	12	4	31
VSP-A20W□-6T		4									
VSP-A30W□-4T	30	2.5	M12x1	72.5	38.5	44.5	18	14	12	4	37
VSP-A30W□-6T		4									
VSP-A40W□-4T	40	2.5	M12x1	79	45	51	18	14	12	4	46
VSP-A40W□-6T		4									
VSP-A50W□-4T	50	2.5	M12x1	90	56	62	18	14	12	4	58
VSP-A50W□-6T		4									

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Push-in fitting)

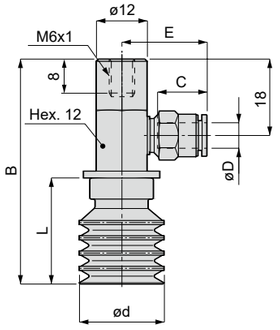
●VSP-B6, 8W□-2/4/6



●VSP-B10W□-4/6



●VSP-B20 to 50W□-4/6

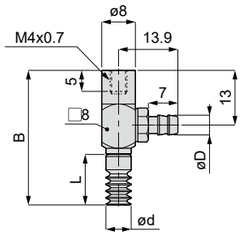


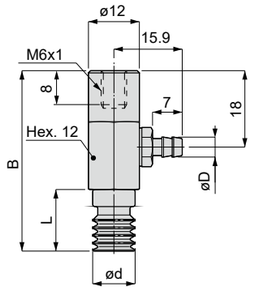
Unit: mm

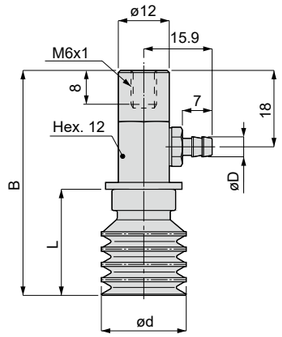
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-B6W□-2	6	1.8	32	12	8.4	12.7	12
VSP-B6W□-4		4			11.2	16.8	13
VSP-B6W□-6		6			11.9	18.6	14
VSP-B8W□-2	8	1.8	32.5	12.5	8.4	12.7	12
VSP-B8W□-4		4			11.2	16.8	13
VSP-B8W□-6		6			11.9	18.6	14
VSP-B10W□-4	10	4	42.5	14.5	11.2	18.8	30
VSP-B10W□-6		6			11.9	20.1	31
VSP-B20W□-4	20	4	53	25	11.2	18.8	34
VSP-B20W□-6		6			11.9	20.1	35
VSP-B30W□-4	30	4	66.5	38.5	11.2	18.8	40
VSP-B30W□-6		6			11.9	20.1	41
VSP-B40W□-4	40	4	73	45	11.2	18.8	49
VSP-B40W□-6		6			11.9	20.1	50
VSP-B50W□-4	50	4	84	56	11.2	18.8	61
VSP-B50W□-6		6			11.9	20.1	62

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Barb Fitting)

●VSP-B6, 8W□-4T/6T ●VSP-B10W□-4T/6T ●VSP-B20 to 50W□-4T/6T





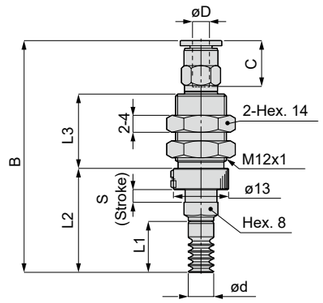


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-B6W□-4T	6	2.5	32	12	13
VSP-B6W□-6T		4			
VSP-B8W□-4T	8	2.5	32.5	12.5	13
VSP-B8W□-6T		4			
VSP-B10W□-4T	10	2.5	42.5	14.5	29
VSP-B10W□-6T		4			
VSP-B20W□-4T	20	2.5	53	25	33
VSP-B20W□-6T		4			
VSP-B30W□-4T	30	2.5	66.5	38.5	39
VSP-B30W□-6T		4			
VSP-B40W□-4T	40	2.5	73	45	48
VSP-B40W□-6T		4			
VSP-B50W□-4T	50	2.5	84	56	60
VSP-B50W□-6T		4			

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C6, 8W□-2/4/6
●VSP-C6, 8-□W□-2/4/6

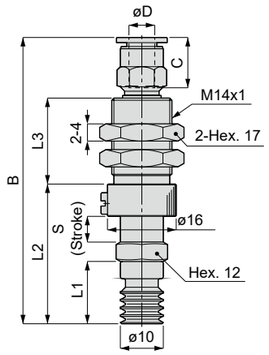


Unit: mm

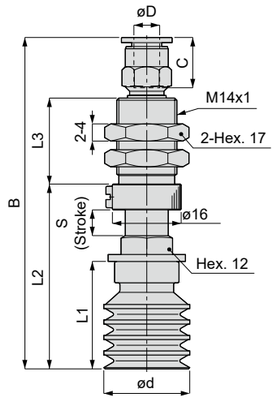
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C6W□-2	6	1.8	46.4	12	24.5	13	8.4	3	0.9 to 1.9	18
VSP-C6W□-4		4	50.5				11.2			19
VSP-C6W□-6		6	52.3				11.9			20
VSP-C6-10W□-2		1.8	57.9		31.5	17.5	8.4	10	0.8 to 2.7	19
VSP-C6-10W□-4		4	62				11.2			20
VSP-C6-10W□-6		6	63.8				11.9			21
VSP-C6-15W□-2		1.8	68.9		36.5	23.5	8.4	15	0.7 to 3.0	23
VSP-C6-15W□-4		4	73				11.2			24
VSP-C6-15W□-6		6	74.8				11.9			25
VSP-C6-20W□-2		1.8	78.9		41.5	28.5	8.4	20	0.9 to 3.4	24
VSP-C6-20W□-4		4	83				11.2			25
VSP-C6-20W□-6		6	84.8				11.9			26
VSP-C8W□-2	8	1.8	46.9	12.5	25	13	8.4	3	0.9 to 1.9	18
VSP-C8W□-4		4	51				11.2			19
VSP-C8W□-6		6	52.8				11.9			20
VSP-C8-10W□-2		1.8	58.4		32	17.5	8.4	10	0.8 to 2.7	19
VSP-C8-10W□-4		4	62.5				11.2			20
VSP-C8-10W□-6		6	64.3				11.9			21
VSP-C8-15W□-2		1.8	69.4		37	23.5	8.4	15	0.7 to 3.0	23
VSP-C8-15W□-4		4	73.5				11.2			24
VSP-C8-15W□-6		6	75.3				11.9			25
VSP-C8-20W□-2		1.8	79.4		42	28.5	8.4	20	0.9 to 3.4	25
VSP-C8-20W□-4		4	83.5				11.2			26
VSP-C8-20W□-6		6	85.3				11.9			27

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C10W□-4/6
●VSP-C10-□W□-4/6



●VSP-C20 to 50W□-4/6
●VSP-C20 to 50-□W□-4/6

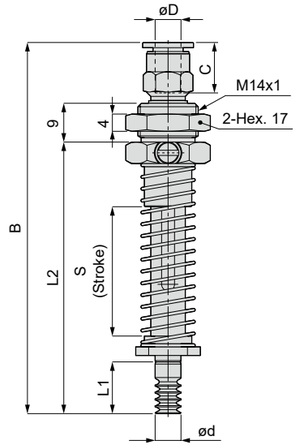


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C10W□-4	10	4	65.5	14.5	32.5	20	11.2	6	4.0 to 7.1	35
VSP-C10W□-6		6	66.8				11.9			36
VSP-C10-10W□-4		4	70		37		11.2	10	2.0 to 5.2	36
VSP-C10-10W□-6		6	71.3				11.9			37
VSP-C10-15W□-4		4	80		42	25	11.2	15	2.0 to 5.9	41
VSP-C10-15W□6		6	81.3				11.9			42
VSP-C10-20W□-4		4	96		49	34	11.2	20	1.1 to 4.8	49
VSP-C10-20W□-6		6	97.3				11.9			50
VSP-C20W□-4	20	4	76	25	43	20	11.2	6	7.0 to 12.6	39
VSP-C20W□-6		6	77.3				11.9			40
VSP-C20-10W□-4		4	82		49		11.2	10	3.3 to 10.0	41
VSP-C20-10W□-6		6	83.3				11.9			42
VSP-C20-15W□-4		4	92		54	25	11.2	15	3.3 to 10.4	46
VSP-C20-15W□-6		6	93.3				11.9			47
VSP-C20-20W□-4		4	110		61	34	11.2	20	2.0 to 8.7	53
VSP-C20-20W□-6		6	109.3				11.9			54
VSP-C30W□-4	30	4	89.5	38.5	56.5	20	11.2	6	7.0 to 12.6	46
VSP-C30W□-6		6	90.8				11.9			47
VSP-C30-10W□-4		4	95.5		62.5		11.2	10	3.3 to 10.0	49
VSP-C30-10W□-6		6	96.8				11.9			50
VSP-C30-15W□-4		4	105.5		67.5	25	11.2	15	3.3 to 10.4	52
VSP-C30-15W□-6		6	106.8				11.9			53
VSP-C30-20W□-4		4	121.5		74.5	34	11.2	20	2.0 to 8.7	59
VSP-C30-20W□-6		6	122.8				11.9			60
VSP-C40W□-4	40	4	96	45	63	20	11.2	6	7.0 to 12.6	55
VSP-C40W□-6		6	97.3				11.9			56
VSP-C40-10W□-4		4	102		69		11.2	10	3.3 to 10.0	59
VSP-C40-10W□-6		6	103.3				11.9			60
VSP-C40-15W□-4		4	112		74	25	11.2	15	3.3 to 10.4	63
VSP-C40-15W□-6		6	113.3				11.9			64
VSP-C40-20W□-4		4	128		81	34	11.2	20	2.0 to 8.7	69
VSP-C40-20W□-6		6	129.3				11.9			70
VSP-C50W□-4	50	4	107	56	74	20	11.2	6	7.0 to 12.6	66
VSP-C50W□-6		6	108.3				11.9			67
VSP-C50-10W□-4		4	113		80		11.2	10	3.3 to 10.0	70
VSP-C50-10W□-6		6	114.3				11.9			71
VSP-C50-15W□-4		4	123		85	25	11.2	15	3.3 to 10.4	74
VSP-C50-15W□-6		6	124.3				11.9			75
VSP-C50-20W□-4		4	139		92	34	11.2	20	2.0 to 8.7	80
VSP-C50-20W□-6		6	140.3				11.9			81

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting without Spring Cover)

●VSP-C6, 8-□W□-4C/6C

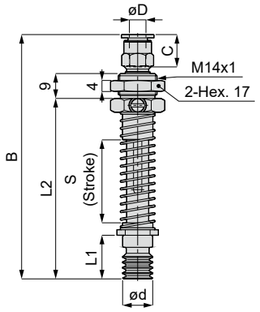


Unit: mm

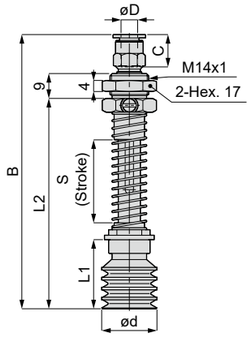
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C6-20W□-4C	6	4	72	12	50	11.2	20	1.5 to 4.9	43
VSP-C6-20W□-6C		6	73.3			11.9			44
VSP-C6-30W□-4C		4	85		63	11.2	30	1.1 to 4.8	48
VSP-C6-30W□-6C		6	86.3			11.9			49
VSP-C6-40W□-4C		4	98		76	11.2	40	1.0 to 4.5	54
VSP-C6-40W□-6C		6	99.3			11.9			55
VSP-C6-50W□-4C		4	111		89	11.2	50	0.9 to 4.5	59
VSP-C6-50W□-6C		6	112.3			11.9			60
VSP-C8-20W□-4C	8	4	72.5	12.5	50.5	11.2	20	1.5 to 4.9	43
VSP-C8-20W□-6C		6	73.8			11.9			44
VSP-C8-30W□-4C		4	85.5		63.5	11.2	30	1.1 to 4.8	48
VSP-C8-30W□-6C		6	86.8			11.9			49
VSP-C8-40W□-4C		4	98.5		76.5	11.2	40	1.0 to 4.5	54
VSP-C8-40W□-6C		6	99.8			11.9			55
VSP-C8-50W□-4C		4	111.5		89.5	11.2	50	0.9 to 4.5	59
VSP-C8-50W□-6C		6	112.8			11.9			60

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting without Spring Cover)

●VSP-C10-□W□-4C/6C



●VSP-C20 to 50-□W□-4C/6C

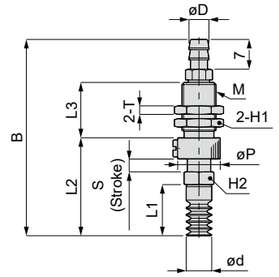


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C10-20W□-4C	10	4	73	14.5	51	11.2	20	1.5 to 4.9	43
VSP-C10-20W□-6C		6	74.3			11.9			44
VSP-C10-30W□-4C		4	86		64	11.2	30	1.1 to 4.8	49
VSP-C10-30W□-6C		6	87.3			11.9			50
VSP-C10-40W□-4C		4	99		77	11.2	40	1.0 to 4.5	54
VSP-C10-40W□-6C		6	100.3			11.9			55
VSP-C10-50W□-4C		4	112		90	11.2	50	0.9 to 4.5	59
VSP-C10-50W□-6C		6	113.3			11.9			60
VSP-C20-20W□-4C	20	4	85	25	63	11.2	20	1.5 to 4.9	49
VSP-C20-20W□-6C		6	86.3			11.9			50
VSP-C20-30W□-4C		4	98		76	11.2	30	1.1 to 4.8	54
VSP-C20-30W□-6C		6	99.3			11.9			55
VSP-C20-40W□-4C		4	111		89	11.2	40	1.0 to 4.5	59
VSP-C20-40W□-6C		6	112.3			11.9			60
VSP-C20-50W□-4C		4	124		102	11.2	50	0.9 to 4.5	64
VSP-C20-50W□-6C		6	125.3			11.9			65
VSP-C30-20W□-4C	30	4	98.5	38.5	76.5	11.2	20	1.5 to 4.9	52
VSP-C30-20W□-6C		6	99.8			11.9			53
VSP-C30-30W□-4C		4	111.5		89.5	11.2	30	1.1 to 4.8	57
VSP-C30-30W□-6C		6	112.8			11.9			58
VSP-C30-40W□-4C		4	124.5		102.5	11.2	40	1.0 to 4.5	63
VSP-C30-40W□-6C		6	125.8			11.9			64
VSP-C30-50W□-4C		4	137.5		115.5	11.2	50	0.9 to 4.5	68
VSP-C30-50W□-6C		6	138.8			11.9			69
VSP-C40-20W□-4C	40	4	105	45	73	11.2	20	1.5 to 4.9	61
VSP-C40-20W□-6C		6	106.3			11.9			62
VSP-C40-30W□-4C		4	118		86	11.2	30	1.1 to 4.8	66
VSP-C40-30W□-6C		6	119.3			11.9			67
VSP-C40-40W□-4C		4	131		99	11.2	40	1.0 to 4.5	71
VSP-C40-40W□-6C		6	132.3			11.9			72
VSP-C40-50W□-4C		4	144		112	11.2	50	0.9 to 4.5	77
VSP-C40-50W□-6C		6	145.3			11.9			78
VSP-C50-20W□-4C	50	4	116	56	84	11.2	20	1.5 to 4.9	67
VSP-C50-20W□-6C		6	117.3			11.9			68
VSP-C50-30W□-4C		4	129		97	11.2	30	1.1 to 4.8	72
VSP-C50-30W□-6C		6	130.3			11.9			73
VSP-C50-40W□-4C		4	142		110	11.2	40	1.0 to 4.5	77
VSP-C50-40W□-6C		6	143.3			11.9			78
VSP-C50-50W□-4C		4	155		123	11.2	50	0.9 to 4.5	82
VSP-C50-50W□-6C		6	156.3			11.9			83

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C6, 8W□-4T/6T
●VSP-C6, 8-□W□-4T/6T

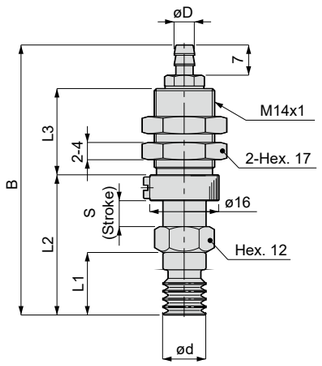


Unit: mm

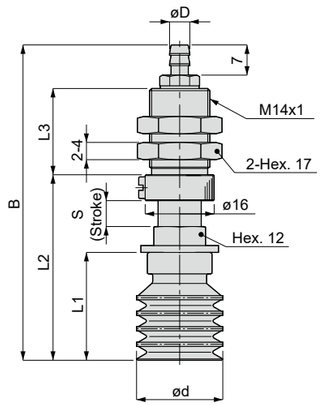
Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	L3	øP	Width Across Flats H1	Width Across Flats H2	T	Stroke S	Spring Force (N)	Weight (g)
VSP-C6W□-4T	6	2.5	M8x0.75	45.6	12	23	13	10	10	7	2	3	0.9 to 1.9	10
VSP-C6W□-6T		4												
VSP-C6-10W□-4T		2.5	M12x1	59.1		31.5	17.5	13	14	8	4	10	0.8 to 2.7	19
VSP-C6-10W□-6T		4												
VSP-C6-15W□-4T		2.5		70.1		36.5	23.5					15	0.7 to 3.0	23
VSP-C6-15W□-6T		4												
VSP-C6-20W□-4T		2.5		80.1		41.5	28.5					20	0.9 to 3.4	25
VSP-C6-20W□-6T		4												
VSP-C8W□-4T	8	2.5	M8x0.75	46.1	12.5	23	13	10	10	7	2	3	0.9 to 1.9	10
VSP-C8W□-6T		4												
VSP-C8-10W□-4T		2.5	M12x1	59.6		31.5	17.5	13	14	8	4	10	0.8 to 2.7	19
VSP-C8-10W□-6T		4												
VSP-C8-15W□-4T		2.5		70.6		36.5	23.5					15	0.7 to 3.0	23
VSP-C8-15W□-6T		4												
VSP-C8-20W□-4T		2.5		80.6		41.5	28.5					20	0.9 to 3.4	25
VSP-C8-20W□-6T		4												

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C10W□-4T/6T
●VSP-C10-□W□-4T/6T



●VSP-C20 to 50W□-4T/6T
●VSP-C20 to 50-□W□-4T/6T

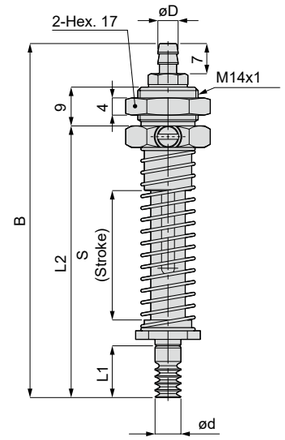


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-C10W□-4T	10	2.5	62.6	14.5	32.5	20	6	4.0 to 7.1	34
VSP-C10W□-6T		4							
VSP-C10-10W□-4T		2.5	67.1		37		10	2.0 to 5.2	35
VSP-C10-10W□-6T		4							
VSP-C10-15W□-4T		2.5	77.1		42	25	15	2.0 to 5.9	40
VSP-C10-15W□-6T		4							
VSP-C10-20W□-4T		2.5	93.1		49	34	20	1.1 to 4.8	48
VSP-C10-20W□-6T		4							
VSP-C20W□-4T	20	2.5	73.1	25	43	20	6	7.0 to 12.6	38
VSP-C20W□-6T		4							
VSP-C20-10W□-4T		2.5	79.1		49		10	3.3 to 10.0	40
VSP-C20-10W□-6T		4							
VSP-C20-15W□-4T		2.5	89.1		54	25	15	3.3 to 10.4	45
VSP-C20-15W□-6T		4							
VSP-C20-20W□-4T		2.5	105.1		61	34	20	2.0 to 8.7	52
VSP-C20-20W□-6T		4							
VSP-C30W□-4T	30	2.5	86.6	38.5	56.5	20	6	7.0 to 12.6	41
VSP-C30W□-6T		4							
VSP-C30-10W□-4T		2.5	92.6		62.5		10	3.3 to 10.0	44
VSP-C30-10W□-6T		4							
VSP-C30-15W□-4T		2.5	102.6		67.5	25	15	3.3 to 10.4	49
VSP-C30-15W□-6T		4							
VSP-C30-20W□-4T		2.5	118.6		74.5	34	20	2.0 to 8.7	55
VSP-C30-20W□-6T		4							
VSP-C40W□-4T	40	2.5	93.1	45	63	20	6	7.0 to 12.6	50
VSP-C40W□-6T		4							
VSP-C40-10W□-4T		2.5	99.1		69		10	3.3 to 10.0	52
VSP-C40-10W□-6T		4							
VSP-C40-15W□-4T		2.5	109.1		74	25	15	3.3 to 10.4	57
VSP-C40-15W□-6T		4							
VSP-C40-20W□-4T		2.5	125.1		81	34	20	2.0 to 8.7	64
VSP-C40-20W□-6T		4							
VSP-C50W□-4T	50	2.5	104.1	56	74	20	6	7.0 to 12.6	56
VSP-C50W□-6T		4							
VSP-C50-10W□-4T		2.5	110.1		80		10	3.3 to 10.0	58
VSP-C50-10W□-6T		4							
VSP-C50-15W□-4T		2.5	120.1		85	25	15	3.3 to 10.4	63
VSP-C50-15W□-6T		4							
VSP-C50-20W□-4T		2.5	136.1		92	34	20	2.0 to 8.7	70
VSP-C50-20W□-6T		4							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting without Spring Cover)

●VSP-C6, 8-□W□-4TC/6TC

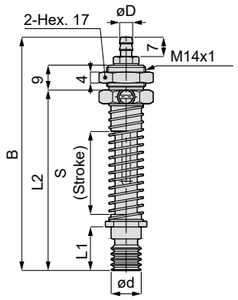


Unit: mm

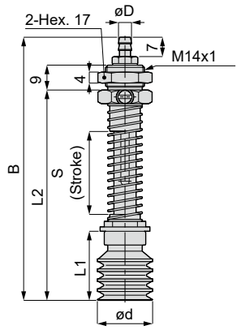
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C6-20W□-4TC	6	2.5	69.1	12	50	20	1.5 to 4.9	42
VSP-C6-20W□-6TC		4						
VSP-C6-30W□-4TC		2.5	82.1		63	30	1.1 to 4.8	47
VSP-C6-30W□-6TC		4						
VSP-C6-40W□-4TC		2.5	95.1		76	40	1.0 to 4.5	52
VSP-C6-40W□-6TC		4						
VSP-C6-50W□-4TC		2.5	108.1		89	50	0.9 to 4.5	58
VSP-C6-50W□-6TC		4						
VSP-C8-20W□-4TC	8	2.5	69.6	12.5	50.5	20	1.5 to 4.9	42
VSP-C8-20W□-6TC		4						
VSP-C8-30W□-4TC		2.5	82.6		63.5	30	1.1 to 4.8	47
VSP-C8-30W□-6TC		4						
VSP-C8-40W□-4TC		2.5	95.6		76.5	40	1.0 to 4.5	52
VSP-C8-40W□-6TC		4						
VSP-C8-50W□-4TC		2.5	108.6		89.5	50	0.9 to 4.5	58
VSP-C8-50W□-6TC		4						

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting without Spring Cover)

●VSP-C10-□W□-4TC/6TC



●VSP-C20 to 50-□W□-4TC/6TC

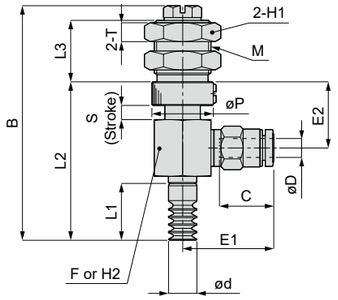


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C10-20W□-4TC	10	2.5	70.1	14.5	51	20	1.5 to 4.9	43
VSP-C10-20W□-6TC		4						
VSP-C10-30W□-4TC		2.5	83.1		64	30	1.1 to 4.8	48
VSP-C10-30W□-6TC		4						
VSP-C10-40W□-4TC		2.5	96.1		77	40	1.0 to 4.5	53
VSP-C10-40W□-6TC		4						
VSP-C10-50W□-4TC		2.5	109.1		90	50	0.9 to 4.5	59
VSP-C10-50W□-6TC		4						
VSP-C20-20W□-4TC	20	2.5	82.1	25	63	20	1.5 to 4.9	48
VSP-C20-20W□-6TC		4						
VSP-C20-30W□-4TC		2.5	95.1		76	30	1.1 to 4.8	53
VSP-C20-30W□-6TC		4						
VSP-C20-40W□-4TC		2.5	108.1		89	40	1.0 to 4.5	58
VSP-C20-40W□-6TC		4						
VSP-C20-50W□-4TC		2.5	121.1		102	50	0.9 to 4.5	63
VSP-C20-50W□-6TC		4						
VSP-C30-20W□-4TC	30	2.5	95.6	38.5	76.5	20	1.5 to 4.9	50
VSP-C30-20W□-6TC		4						
VSP-C30-30W□-4TC		2.5	108.6		89.5	30	1.1 to 4.8	55
VSP-C30-30W□-6TC		4						
VSP-C30-40W□-4TC		2.5	121.6		102.5	40	1.0 to 4.5	60
VSP-C30-40W□-6TC		4						
VSP-C30-50W□-4TC		2.5	134.6		115.5	50	0.9 to 4.5	65
VSP-C30-50W□-6TC		4						
VSP-C40-20W□-4TC	40	2.5	102.1	45	73	20	1.5 to 4.9	60
VSP-C40-20W□-6TC		4						
VSP-C40-30W□-4TC		2.5	115.1		86	30	1.1 to 4.8	65
VSP-C40-30W□-6TC		4						
VSP-C40-40W□-4TC		2.5	128.1		99	40	1.0 to 4.5	70
VSP-C40-40W□-6TC		4						
VSP-C40-50W□-4TC		2.5	141.1		112	50	0.9 to 4.5	75
VSP-C40-50W□-6TC		4						
VSP-C50-20W□-4TC	50	2.5	113.1	56	84	20	1.5 to 4.9	68
VSP-C50-20W□-6TC		4						
VSP-C50-30W□-4TC		2.5	126.1		97	30	1.1 to 4.8	71
VSP-C50-30W□-6TC		4						
VSP-C50-40W□-4TC		2.5	139.1		110	40	1.0 to 4.5	76
VSP-C50-40W□-6TC		4						
VSP-C50-50W□-4TC		2.5	152.1		123	50	0.9 to 4.5	81
VSP-C50-50W□-6TC		4						

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D6, 8W□-2/4/6
●VSP-D6, 8-□W□-2/4/6

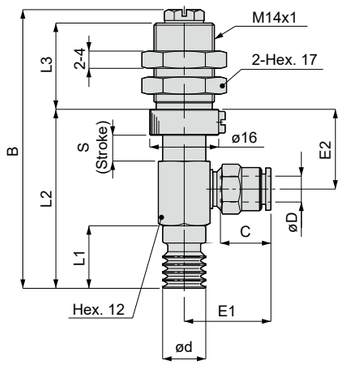


Unit: mm

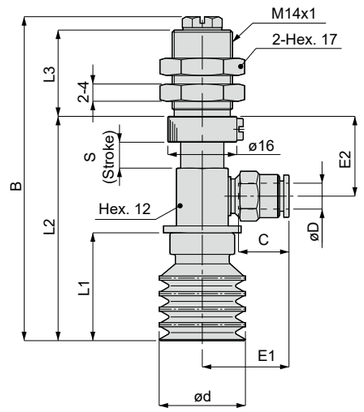
Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	L3	øP	Tube End C	E1	E2	Width Across Flats H1	Width Across Flats H2	□F	T	Stroke S	Spring Force (N)	Weight (g)
VSP-D6W□-2	6	1.8	M8x0.75	46	12	30	13	10	8.4	12.7	13	10	-	8	2	3	0.9 to 1.9	15
VSP-D6W□-4		4							11.2	16.8								16
VSP-D6W□-6		6							11.9	18.6								17
VSP-D6-10W□-2		1.8	M12x1	61.1		40.5	17.5	13	8.4	14.7	21	14	12	-	4	10	0.6 to 1.7	33
VSP-D6-10W□-4		4							11.2	18.8								34
VSP-D6-10W□-6		6							11.9	20.1								35
VSP-D6-15W□-2		1.8		72.1		45.5	23.5		8.4	14.7	26					15	0.4 to 1.7	37
VSP-D6-15W□-4		4							11.2	18.8								38
VSP-D6-15W□-6		6							11.9	20.1								39
VSP-D6-20W□-2		1.8		82.1		50.5	28.5		8.4	14.7	31					20	0.3 to 1.8	40
VSP-D6-20W□-4		4							11.2	18.8								41
VSP-D6-20W□-6		6							11.9	20.1								42
VSP-D8W□-2	8	1.8	M8x0.75	46.5	12.5	30.5	13	10	8.4	12.7	13	10	-	8	2	3	0.9 to 1.9	15
VSP-D8W□-4		4							11.2	16.8								16
VSP-D8W□-6		6							11.9	18.6								17
VSP-D8-10W□-2		1.8	M12x1	61.6		41	17.5	13	8.4	14.7	21	14	12	-	4	10	0.6 to 1.7	33
VSP-D8-10W□-4		4							11.2	18.8								34
VSP-D8-10W□-6		6							11.9	20.1								35
VSP-D8-15W□-2		1.8		72.6		46	23.5		8.4	14.7	26					15	0.4 to 1.7	37
VSP-D8-15W□-4		4							11.2	18.8								38
VSP-D8-15W□-6		6							11.9	20.1								39
VSP-D8-20W□-2		1.8		82.6		51	28.5		8.4	14.7	31					20	0.3 to 1.8	40
VSP-D8-20W□-4		4							11.2	18.8								41
VSP-D8-20W□-6		6							11.9	20.1								42

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D10W□-4/6
●VSP-D10-□W□-4/-6



●VSP-D20 to 50W□-4/6
●VSP-D20 to 50-□W□-4/-6

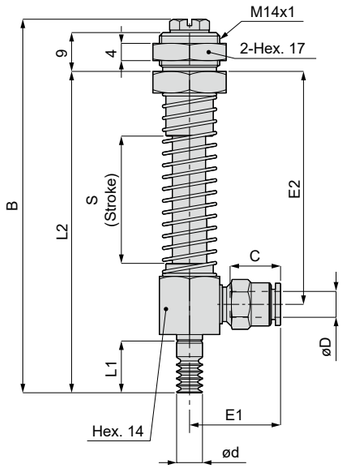


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D10W□-4	10	4	64.6	14.5	41.5	20	11.2	18.8	18.5	6	4.0 to 7.1	47
VSP-D10W□-6		6					11.9	20.1				48
VSP-D10-10W□-4		4	69.6		46.5		11.2	18.8	25	10	2.0 to 5.2	50
VSP-D10-10W□-6		6					11.9	20.1				51
VSP-D10-15W□-4		4	79.6		51.5	25	11.2	18.8	30	15	2.0 to 5.9	56
VSP-D10-15W□-6		6					11.9	20.1				57
VSP-D10-20W□-4		4	95.6		58.5	34	11.2	18.8	37	20	1.1 to 4.8	66
VSP-D10-20W□-6		6					11.9	20.1				67
VSP-D20W□-4	20	4	75.1	25	52	20	11.2	18.8	18.5	6	7.0 to 12.6	51
VSP-D20W□-6		6					11.9	20.1				52
VSP-D20-10W□-4		4	81.1		58		11.2	18.8	24.5	10	3.3 to 10.0	54
VSP-D20-10W□-6		6					11.9	20.1				55
VSP-D20-15W□-4		4	91.1		63	25	11.2	18.8	29.5	15	3.3 to 10.4	61
VSP-D20-15W□-6		6					11.9	20.1				62
VSP-D20-20W□-4		4	107.1		70	34	11.2	18.8	36.5	20	2.0 to 8.7	71
VSP-D20-20W□-6		6					11.9	20.1				72
VSP-D30W□-4	30	4	88.6	38.5	65.5	20	11.2	18.8	18.5	6	7.0 to 12.6	57
VSP-D30W□-6		6					11.9	20.1				58
VSP-D30-10W□-4		4	94.6		71.5		11.2	18.8	24.5	10	3.3 to 10.0	61
VSP-D30-10W□-6		6					11.9	20.1				62
VSP-D30-15W□-4		4	104.6		76.5	25	11.2	18.8	29.5	15	3.3 to 10.4	67
VSP-D30-15W□-6		6					11.9	20.1				68
VSP-D30-20W□-4		4	120.6		83.5	34	11.2	18.8	36.5	20	2.0 to 8.7	77
VSP-D30-20W□-6		6					11.9	20.1				78
VSP-D40W□-4	40	4	95.1	45	72	20	11.2	18.8	18.5	6	7.0 to 12.6	67
VSP-D40W□-6		6					11.9	20.1				68
VSP-D40-10W□-4		4	101.1		78		11.2	18.8	24.5	10	3.3 to 10.0	62
VSP-D40-10W□-6		6					11.9	20.1				63
VSP-D40-15W□-4		4	111.1		83	25	11.2	18.8	29.5	15	3.3 to 10.4	68
VSP-D40-15W□-6		6					11.9	20.1				69
VSP-D40-20W□-4		4	127.1		90	34	11.2	18.8	36.5	20	2.0 to 8.7	78
VSP-D40-20W□-6		6					11.9	20.1				79
VSP-D50W□-4	50	4	106.1	56	83	20	11.2	18.8	18.5	6	7.0 to 12.6	78
VSP-D50W□-6		6					11.9	20.1				79
VSP-D50-10W□-4		4	112.1		89		11.2	18.8	24.5	10	3.3 to 10.0	81
VSP-D50-10W□-6		6					11.9	20.1				82
VSP-D50-15W□-4		4	122.1		94	25	11.2	18.8	29.5	15	3.3 to 10.4	88
VSP-D50-15W□-6		6					11.9	20.1				89
VSP-D50-20W□-4		4	138.1		101	34	11.2	18.8	36.5	20	2.0 to 8.7	97
VSP-D50-20W□-6		6					11.9	20.1				98

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in Fitting without Spring Cover)

●VSP-D6, 8-□W□-4C/6C

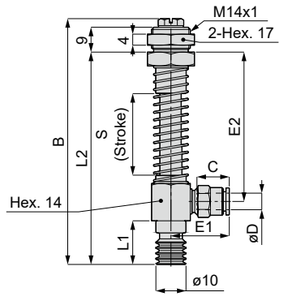


Unit: mm

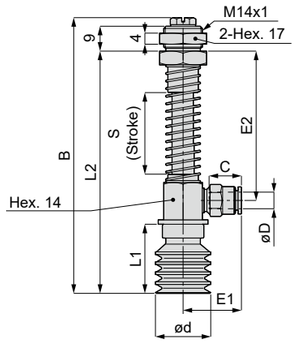
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D6-20W□-4C	6	4	72.1	12	60	11.2	19.8	40.5	20	1.5 to 4.9	62
VSP-D6-20W□-6C		6				11.9	21.1				63
VSP-D6-30W□-4C		4	85.1		73	11.2	19.8	53.5	30	1.1 to 4.8	68
VSP-D6-30W□-6C		6				11.9	21.1				69
VSP-D6-40W□-4C		4	98.1		86	11.2	19.8	66.5	40	1.0 to 4.5	75
VSP-D6-40W□-6C		6				11.9	21.1				76
VSP-D6-50W□-4C		4	111.1		99	11.2	19.8	79.5	50	0.9 to 4.5	82
VSP-D6-50W□-6C		6				11.9	21.1				83
VSP-D8-20W□-4C	8	4	72.6	12.5	60.5	11.2	19.8	40.5	20	1.5 to 4.9	62
VSP-D8-20W□-6C		6				11.9	21.1				63
VSP-D8-30W□-4C		4	85.6		73.5	11.2	19.8	53.5	30	1.1 to 4.8	68
VSP-D8-30W□-6C		6				11.9	21.1				69
VSP-D8-40W□-4C		4	98.6		86.5	11.2	19.8	66.5	40	1.0 to 4.5	75
VSP-D8-40W□-6C		6				11.9	21.1				76
VSP-D8-50W□-4C		4	111.6		99.5	11.2	19.8	79.5	50	0.9 to 4.5	82
VSP-D8-50W□-6C		6				11.9	21.1				83

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in Fitting without Spring Cover)

●VSP-D10-□W□-4C/6C



●VSP-D20 to 50-□W□-4C/6C

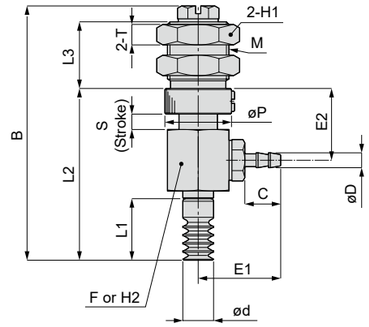


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D10-20W□-4C	10	4	74.6	14.5	62.5	11.2	19.8	40.5	20	1.5 to 4.9	69
VSP-D10-20W□-6C		6				11.9	21.1				70
VSP-D10-30W□-4C		4	87.6		75.5	11.2	19.8	53.5	30	1.1 to 4.8	75
VSP-D10-30W□-6C		6				11.9	21.1				76
VSP-D10-40W□-4C		4	100.6		88.5	11.2	19.8	66.5	40	1.0 to 4.5	82
VSP-D10-40W□-6C		6				11.9	21.1				83
VSP-D10-50W□-4C		4	113.6		101.5	11.2	19.8	79.5	50	0.9 to 4.5	89
VSP-D10-50W□-6C		6				11.9	21.1				90
VSP-D20-20W□-4C	20	4	86.6	25	74.5	11.2	19.8	41	20	1.5 to 4.9	70
VSP-D20-20W□-6C		6				11.9	21.1				71
VSP-D20-30W□-4C		4	99.6		87.5	11.2	19.8	54	30	1.1 to 4.8	77
VSP-D20-30W□-6C		6				11.9	21.1				78
VSP-D20-40W□-4C		4	112.6		100.5	11.2	19.8	67	40	1.0 to 4.5	82
VSP-D20-40W□-6C		6				11.9	21.1				83
VSP-D20-50W□-4C		4	125.6		113.5	11.2	19.8	80	50	0.9 to 4.5	90
VSP-D20-50W□-6C		6				11.9	21.1				91
VSP-D30-20W□-4C	30	4	100.1	38.5	88	11.2	19.8	41	20	1.5 to 4.9	75
VSP-D30-20W□-6C		6				11.9	21.1				76
VSP-D30-30W□-4C		4	113.1		101	11.2	19.8	54	30	1.1 to 4.8	82
VSP-D30-30W□-6C		6				11.9	21.1				83
VSP-D30-40W□-4C		4	126.1		114	11.2	19.8	67	40	1.0 to 4.5	87
VSP-D30-40W□-6C		6				11.9	21.1				88
VSP-D30-50W□-4C		4	139.1		127	11.2	19.8	80	50	0.9 to 4.5	95
VSP-D30-50W□-6C		6				11.9	21.1				96
VSP-D40-20W□-4C	40	4	106.6	45	94.5	11.2	19.8	41	20	1.5 to 4.9	86
VSP-D40-20W□-6C		6				11.9	21.1				87
VSP-D40-30W□-4C		4	119.6		107.5	11.2	19.8	54	30	1.1 to 4.8	93
VSP-D40-30W□-6C		6				11.9	21.1				94
VSP-D40-40W□-4C		4	132.6		120.5	11.2	19.8	67	40	1.0 to 4.5	100
VSP-D40-40W□-6C		6				11.9	21.1				101
VSP-D40-50W□-4C		4	145.6		133.5	11.2	19.8	80	50	0.9 to 4.5	107
VSP-D40-50W□-6C		6				11.9	21.1				108
VSP-D50-20W□-4C	50	4	117.6	56	105.5	11.2	19.8	41	20	1.5 to 4.9	92
VSP-D50-20W□-6C		6				11.9	21.1				93
VSP-D50-30W□-4C		4	130.6		118.5	11.2	19.8	54	30	1.1 to 4.8	100
VSP-D50-30W□-6C		6				11.9	21.1				101
VSP-D50-40W□-4C		4	143.6		131.5	11.2	19.8	67	40	1.0 to 4.5	107
VSP-D50-40W□-6C		6				11.9	21.1				108
VSP-D50-50W□-4C		4	156.6		144.5	11.2	19.8	80	50	0.9 to 4.5	114
VSP-D50-50W□-6C		6				11.9	21.1				115

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D6, 8W□-4T/6T
●VSP-D6, 8-□W-4T/6T

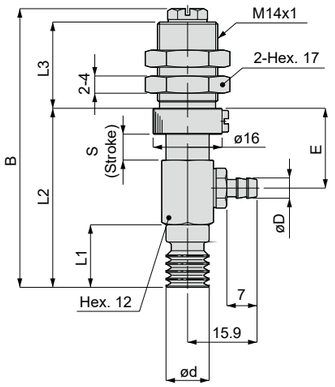


Unit: mm

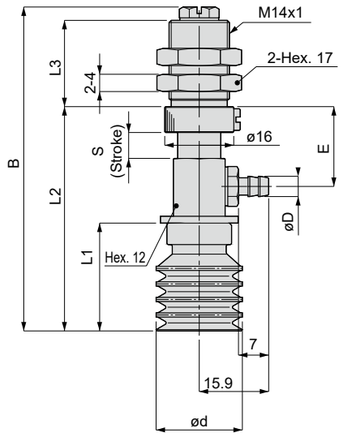
Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	L3	øP	E1	E2	Width Across Flats H1	Width Across Flats H2	□F	T	Stroke S	Spring Force (N)	Weight (g)
VSP-D6W□-4T	6	2.5	M8x0.75	46	12	30	13	10	13.9	13	10	-	8	2	3	0.9 to 1.9	13
VSP-D6W□-6T		4															
VSP-D6-10W□-4T		2.5	M12x1	61.1		40.5	17.5	13	15.9	21	14	12	-	4	10	0.6 to 1.7	32
VSP-D6-10W□-6T		4															
VSP-D6-15W□-4T		2.5		72.1		45.5	23.5			26					15	0.4 to 1.7	36
VSP-D6-15W□-6T		4															
VSP-D6-20W□-4T		2.5		82.1		50.5	28.5			31					20	0.3 to 1.8	39
VSP-D6-20W□-6T		4															
VSP-D8W□-4T	8	2.5	M8x0.75	46.5	12.5	30.5	13	10	13.9	13	10	-	8	2	3	0.9 to 1.9	13
VSP-D8W□-6T		4															
VSP-D8-10W□-4T		2.5	M12x1	61.6		41	17.5	13	15.9	21	14	12	-	4	10	0.6 to 1.7	32
VSP-D8-10W□-6T		4															
VSP-D8-15W□-4T		2.5		72.6		46	23.5			26					15	0.4 to 1.7	36
VSP-D8-15W□-6T		4															
VSP-D8-20W□-4T		2.5		82.6		51	28.5			31					20	0.3 to 1.8	39
VSP-D8-20W□-6T		4															

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D10W□-4T/6T
●VSP-D10-□W□-4T/6T



●VSP-D20 to 50W□-4T/6T
●VSP-D20 to 50-□W□-4T/6T

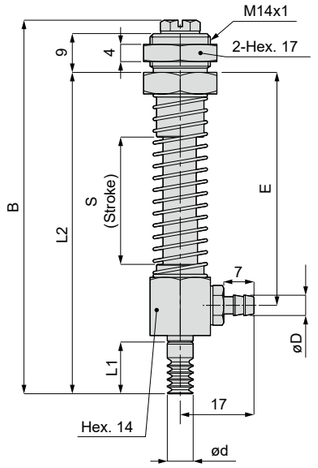


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D10W□-4T	10	2.5	64.6	14.5	41.5	20	18.5	6	4.0 to 7.1	48
VSP-D10W□-6T		4								
VSP-D10-10W□-4T		2.5	69.6		46.5		25	10	2.0 to 5.2	49
VSP-D10-10W□-6T		4								
VSP-D10-15W□-4T		2.5	79.6		51.5	25	30	15	2.0 to 5.9	55
VSP-D10-15W□-6T		4								
VSP-D10-20W□-4T		2.5	95.6		58.5	34	37	20	1.1 to 4.8	65
VSP-D10-20W□-6T		4								
VSP-D20W□-4T	20	2.5	75.1	25	52	20	18.5	6	7.0 to 12.6	52
VSP-D20W□-6T		4								
VSP-D20-10W□-4T		2.5	81.1		58		24.5	10	3.3 to 10.0	53
VSP-D20-10W□-6T		4								
VSP-D20-15W□-4T		2.5	91.1		63	25	29.5	15	3.3 to 10.4	60
VSP-D20-15W□-6T		4								
VSP-D20-20W□-4T		2.5	107.1		70	34	36.5	20	2.0 to 8.7	70
VSP-D20-20W□-6T		4								
VSP-D30W□-4T	30	2.5	88.6	38.5	65.5	20	18.5	6	7.0 to 12.6	58
VSP-D30W□-6T		4								
VSP-D30-10W□-4T		2.5	94.6		71.5		24.5	10	3.3 to 10.0	59
VSP-D30-10W□-6T		4								
VSP-D30-15W□-4T		2.5	104.6		76.5	25	29.5	15	3.3 to 10.4	63
VSP-D30-15W□-6T		4								
VSP-D30-20W□-4T		2.5	120.6		83.5	34	36.5	20	2.0 to 8.7	74
VSP-D30-20W□-6T		4								
VSP-D40W□-4T	40	2.5	95.1	45	72	20	18.5	6	7.0 to 12.6	68
VSP-D40W□-6T		4								
VSP-D40-10W□-4T		2.5	101.1		78		24.5	10	3.3 to 10.0	69
VSP-D40-10W□-6T		4								
VSP-D40-15W□-4T		2.5	111.1		83	25	29.5	15	3.3 to 10.4	74
VSP-D40-15W□-6T		4								
VSP-D40-20W□-4T		2.5	127.1		90	34	36.5	20	2.0 to 8.7	84
VSP-D40-20W□-6T		4								
VSP-D50W□-4T	50	2.5	106.1	56	83	20	18.5	6	7.0 to 12.6	79
VSP-D50W□-6T		4								
VSP-D50-10W□-4T		2.5	112.1		89		24.5	10	3.3 to 10.0	80
VSP-D50-10W□-6T		4								
VSP-D50-15W□-4T		2.5	122.1		94	25	29.5	15	3.3 to 10.4	84
VSP-D50-15W□-6T		4								
VSP-D50-20W□-4T		2.5	138.1		101	34	36.5	20	2.0 to 8.7	94
VSP-D50-20W□-6T		4								

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D6, 8-□W□-4TC/6TC

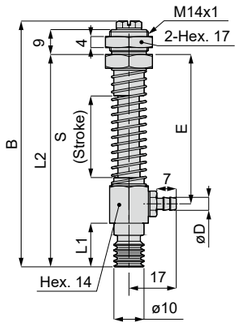


Unit: mm

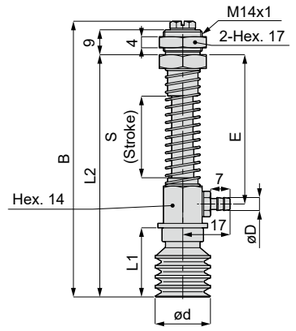
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D6-20W□-4TC	6	2.5	72.1	12	60	40.5	20	1.5 to 4.9	60
VSP-D6-20W□-6TC		4							
VSP-D6-30W□-4TC		2.5	85.1		73	53.5	30	1.1 to 4.8	67
VSP-D6-30W□-6TC		4							
VSP-D6-40W□-4TC		2.5	98.1		86	66.5	40	1.0 to 4.5	74
VSP-D6-40W□-6TC		4							
VSP-D6-50W□-4TC		2.5	111.1		99	79.5	50	0.9 to 4.5	80
VSP-D6-50W□-6TC		4							
VSP-D8-20W□-4TC	8	2.5	72.6	12.5	60.5	40.5	20	1.5 to 4.9	60
VSP-D8-20W□-6TC		4							
VSP-D8-30W□-4TC		2.5	85.6		73.5	53.5	30	1.1 to 4.8	67
VSP-D8-30W□-6TC		4							
VSP-D8-40W□-4TC		2.5	98.6		86.5	66.5	40	1.0 to 4.5	74
VSP-D8-40W□-6TC		4							
VSP-D8-50W□-4TC		2.5	111.6		99.5	79.5	50	0.9 to 4.5	80
VSP-D8-50W□-6TC		4							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D10-□W□-4TC/6TC



●VSP-D20 to 50-□W□-4TC/6TC

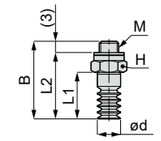


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D10-20W□-4TC	10	2.5	74.6	14.5	62.5	40.5	20	1.5 to 4.9	67
VSP-D10-20W□-6TC		4							
VSP-D10-30W□-4TC		2.5	87.6		75.5	53.5	30	1.1 to 4.8	74
VSP-D10-30W□-6TC		4							
VSP-D10-40W□-4TC		2.5	100.6		88.5	66.5	40	1.0 to 4.5	81
VSP-D10-40W□-6TC		4							
VSP-D10-50W□-4TC		2.5	113.6		101.5	79.5	50	0.9 to 4.5	87
VSP-D10-50W□-6TC		4							
VSP-D20-20W□-4TC	20	4	86.6	25	74.5	41	20	1.5 to 4.9	68
VSP-D20-20W□-6TC		6							
VSP-D20-30W□-4TC		4	99.6		87.5	54	30	1.1 to 4.8	75
VSP-D20-30W□-6TC		6							
VSP-D20-40W□-4TC		4	112.6		100.5	67	40	1.0 to 4.5	81
VSP-D20-40W□-6TC		6							
VSP-D20-50W□-4TC		4	125.6		113.5	80	50	0.9 to 4.5	88
VSP-D20-50W□-6TC		6							
VSP-D30-20W□-4TC	30	4	100.1	38.5	88	41	20	1.5 to 4.9	70
VSP-D30-20W□-6TC		6							
VSP-D30-30W□-4TC		4	113.1		101	54	30	1.1 to 4.8	77
VSP-D30-30W□-6TC		6							
VSP-D30-40W□-4TC		4	126.1		114	67	40	1.0 to 4.5	83
VSP-D30-40W□-6TC		6							
VSP-D30-50W□-4TC		4	139.1		127	80	50	0.9 to 4.5	90
VSP-D30-50W□-6TC		6							
VSP-D40-20W□-4TC	40	4	106.6	45	94.5	41	20	1.5 to 4.9	80
VSP-D40-20W□-6TC		6							
VSP-D40-30W□-4TC		4	119.6		107.5	54	30	1.1 to 4.8	87
VSP-D40-30W□-6TC		6							
VSP-D40-40W□-4TC		4	132.6		120.5	67	40	1.0 to 4.5	94
VSP-D40-40W□-6TC		6							
VSP-D40-50W□-4TC		4	145.6		133.5	80	50	0.9 to 4.5	100
VSP-D40-50W□-6TC		6							
VSP-D50-20W□-4TC	50	4	117.6	56	105.5	41	20	1.5 to 4.9	86
VSP-D50-20W□-6TC		6							
VSP-D50-30W□-4TC		4	130.6		118.5	54	30	1.1 to 4.8	93
VSP-D50-30W□-6TC		6							
VSP-D50-40W□-4TC		4	143.6		131.5	67	40	1.0 to 4.5	99
VSP-D50-40W□-6TC		6							
VSP-D50-50W□-4TC		4	156.6		144.5	80	50	0.9 to 4.5	106
VSP-D50-50W□-6TC		6							

Outline Dimension Drawing (Fixed Type, Direct Mount Type, VSP-E, Male Thread Type)

●VSP-E6, 8W□

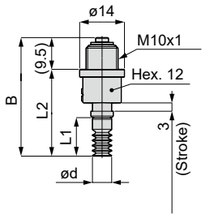


Unit: mm

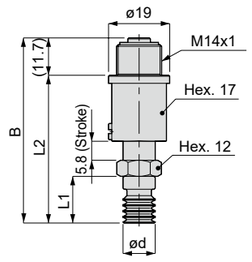
Model No.	Pad Diameter ød	M	B	L1	L2	Width Across Flats H	Weight (g)
VSP-E6W□	6	M5x0.8	20	12	17	8	3
VSP-E8W□	8	M5x0.8	20.5	12.5	17.5	8	3

Outline Dimension Drawing (Buffer Type, Direct Mount Type, VSP-F, Male Thread Type)

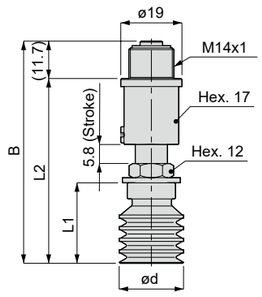
●VSP-F6, 8W□



●VSP-F10W□



●VSP-F20 to 50W□

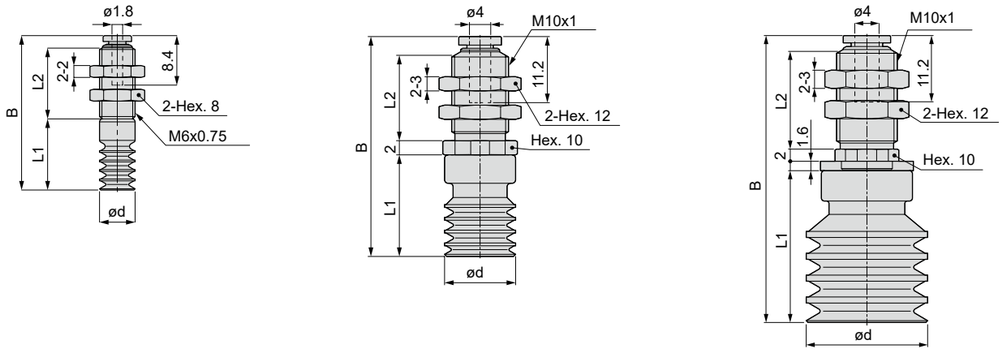


Unit: mm

Model No.	Pad Diameter ød	B	L1	L2	Spring Force (N)	Weight (g)
VSP-F6W□	6	37	12	27.5	2.3 to 3.9	16
VSP-F8W□	8	37.5	12.5	28	2.3 to 3.9	16
VSP-F10W□	10	57.5	14.5	45.8	7.9 to 15	57
VSP-F20W□	20	69	25	57.3	7.9 to 15	60
VSP-F30W□	30	82.5	38.5	70.8	7.9 to 15	66
VSP-F40W□	40	89	45	77.3	7.9 to 15	76
VSP-F50W□	50	100	56	88.3	7.9 to 15	87

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Push-in fitting)

●VSP-MA6, 8W□2 ●VSP-MA10W□-4 ●VSP-MA20 to 50W□-4

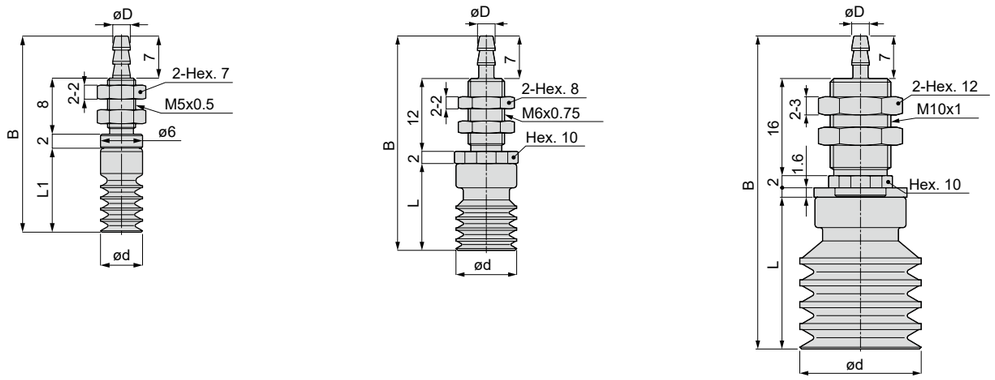


Unit: mm

Model No.	Pad Diameter ød	B	L1	L2	Weight (g)
VSP-MA6W□-2	6	26.1	12	12	2.5
VSP-MA8W□-2	8	26.6	12.5	12	2.5
VSP-MA10W□-4	10	35.5	14.5	16.4	6.6
VSP-MA20W□-4	20	47.6	25	16.4	13
VSP-MA30W□-4	30	61.1	38.5	16.4	19
VSP-MA40W□-4	40	52.6	45	16.4	26
VSP-MA50W□-4	50	54.6	56	16.4	32

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Barb Fitting)

●VSP-MA6, 8W□-4T ●VSP-MA10W□-4T ●VSP-MA20 to 50W□-4T/6T

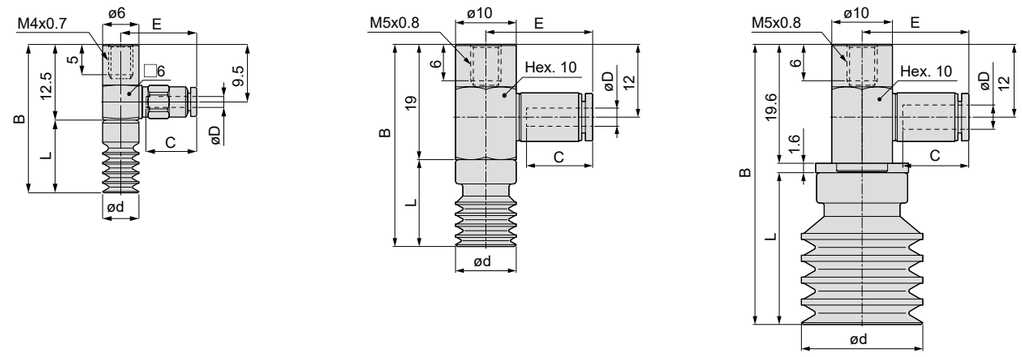


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-MA6W□-4T	6	2.5	29	12	2.1
VSP-MA8W□-4T	8	2.5	29.5	12.5	2.1
VSP-MA10W□-4T	10	2.5	35.5	14.5	3.8
VSP-MA20W□-4T	20	2.5	51.6	25	13
VSP-MA20W□-6T		4			
VSP-MA30W□-4T	30	2.5	65.1	38.5	19
VSP-MA30W□-6T		4			
VSP-MA40W□-4T	40	2.5	71.6	45	25
VSP-MA40W□-6T		4			
VSP-MA50W□-4T	50	2.5	82.6	56	32
VSP-MA50W□-6T		4			

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Push-in fitting)

●VSP-MB6, 8W□2/4 ●VSP-MB10W□-2/4/6 ●VSP-MB20 to 50W□-2/4/6

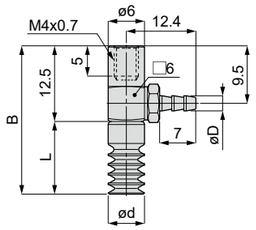


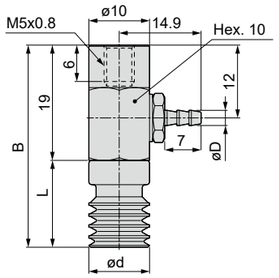
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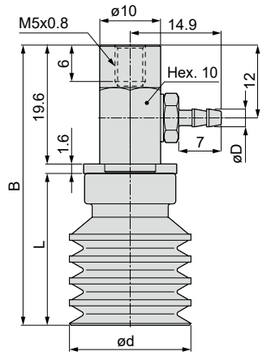
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-MB6W□-2	6	1.8	24.5	12	8.4	12.5	2.5
VSP-MB6W□-4		4			11.2	15.8	4
VSP-MB8W□-2	8	1.8	25	12.5	8.4	12.5	2.5
VSP-MB8W□-4		4			11.2	15.8	4
VSP-MB10W□-2	10	1.8	33.5	14.5	8.4	13.7	7.7
VSP-MB10W□-4		4			11.2	17.8	8.4
VSP-MB10W□-6		6			11.9	19.6	9.8
VSP-MB20W□-2	20	1.8	46.2	25	8.4	13.7	12
VSP-MB20W□-4		4			11.2	17.8	13
VSP-MB20W□-6		6			11.9	19.6	14
VSP-MB30W□-2	30	1.8	59.7	38.5	8.4	13.7	18
VSP-MB30W□-4		4			11.2	17.8	19
VSP-MB30W□-6		6			11.9	19.6	20
VSP-MB40W□-2	40	1.8	66.2	45	8.4	13.7	25
VSP-MB40W□-4		4			11.2	17.8	26
VSP-MB40W□-6		6			11.9	19.6	27
VSP-MB50W□-2	50	1.8	77.2	56	8.4	13.7	32
VSP-MB50W□-4		4			11.2	17.8	33
VSP-MB50W□-6		6			11.9	19.6	34

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Barb Fitting)

●VSP-MB6, 8W□-4T/6T ●VSP-MB10W□-4T/6T ●VSP-MB20 to 50W□-4T/6T





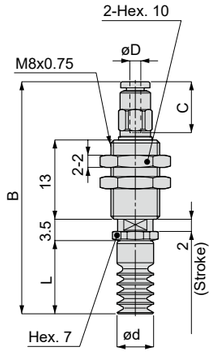


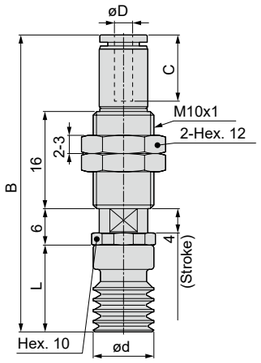
Unit: mm

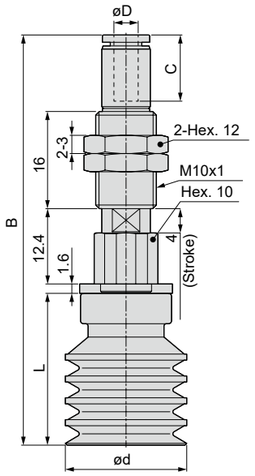
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Weight (g)
VSP-MB6W□-4T	6	2.5	24.5	12	2.7
VSP-MB6W□-6T		4			
VSP-MB8W□-4T	8	2.5	25	12.5	2.7
VSP-MB8W□-6T		4			
VSP-MB10W□-4T	10	2.5	33.5	14.5	7.3
VSP-MB10W□-6T		4			
VSP-MB20W□-4T	20	2.5	46.2	25	13
VSP-MB20W□-6T		4			
VSP-MB30W□-4T	30	2.5	59.7	38.5	18
VSP-MB30W□-6T		4			
VSP-MB40W□-4T	40	2.5	66.2	45	27
VSP-MB40W□-6T		4			
VSP-MB50W□-4T	50	2.5	77.2	56	35
VSP-MB50W□-6T		4			

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Push-in fitting)

●VSP-MC6, 8W□2 ●VSP-MC10W□2/4 ●VSP-MC20 to 50W□-2/4





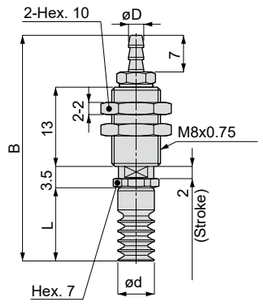


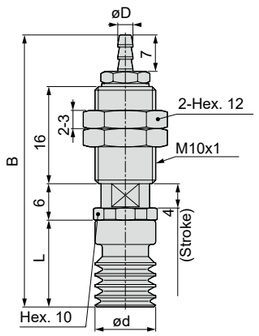
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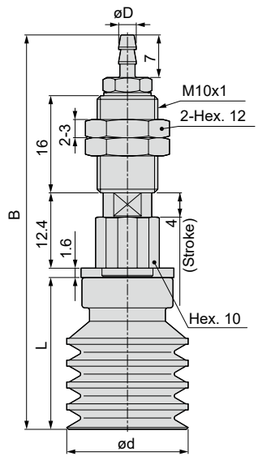
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	Spring Force (N)	Weight (g)
VSP-MC6W□2	6	1.8	38.2	12	8.4	0.2 to 0.3	7.3
VSP-MC8W□2	8	1.8	38.7	12.5	8.4	0.2 to 0.3	7.3
VSP-MC10W□2	10	1.8	45.4	14.5	8.4	0.5 to 0.6	15
VSP-MC10W□-4		4	49.5		11.2		16
VSP-MC20W□2	20	1.8	63.9	25	8.4	1 to 1.3	24
VSP-MC20W□-4		4	68		11.2		25
VSP-MC30W□2	30	1.8	77.4	38.5	8.4	1 to 1.3	30
VSP-MC30W□-4		4	81.5		11.2		31
VSP-MC40W□2	40	1.8	83.9	45	8.4	1 to 1.3	38
VSP-MC40W□-4		4	88		11.2		39
VSP-MC50W□2	50	1.8	94.9	56	8.4	1 to 1.3	45
VSP-MC50W□-4		4	99		11.2		46

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Barb Fitting)

●VSP-MC6, 8W□-4T/6T ●VSP-MC10W□-4T/6T ●VSP-MC20 to 50W□-4T/6T





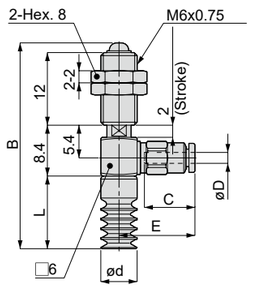


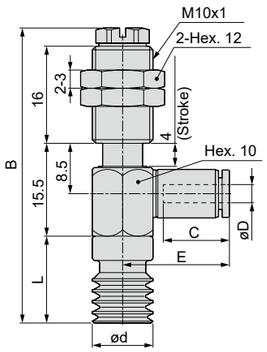
Unit: mm

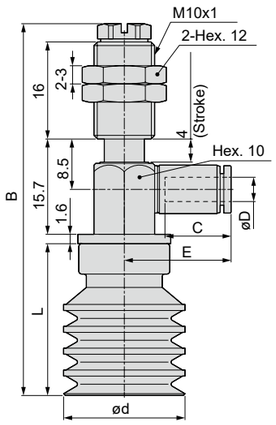
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MC6W□-4T	6	2.5	38.1	12	0.2 to 0.3	7.5
VSP-MC6W□-6T		4				
VSP-MC8W□-4T	8	2.5	38.6	12.5	0.2 to 0.3	7.5
VSP-MC8W□-6T		4				
VSP-MC10W□-4T	10	2.5	46.6	14.5	0.5 to 0.6	15
VSP-MC10W□-6T		4				
VSP-MC20W□-4T	20	2.5	65.1	25	1 to 1.3	24
VSP-MC20W□-6T		4				
VSP-MC30W□-4T	30	2.5	78.6	38.5	1 to 1.3	29
VSP-MC30W□-6T		4				
VSP-MC40W□-4T	40	2.5	85.1	45	1 to 1.3	38
VSP-MC40W□-6T		4				
VSP-MC50W□-4T	50	2.5	96.1	56	1 to 1.3	46
VSP-MC50W□-6T		4				

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Push-in fitting)

●VSP-MD6, 8W□2/4 ●VSP-MD10W□-2/4/6 ●VSP-MD20 to 50W□-2/4/6





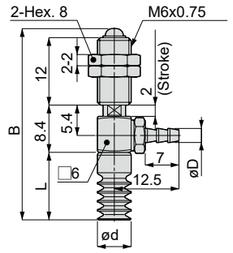


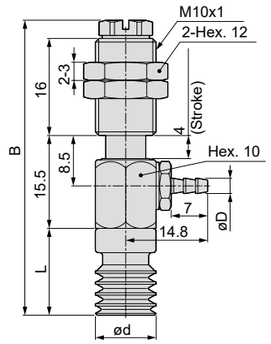
Unit: mm

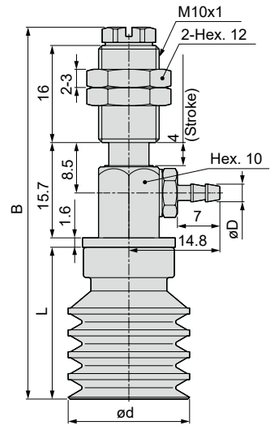
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Spring Force (N)	Weight (g)
VSP-MD6W□2	6	1.8	34	12	8.4	12.6	0.5 to 0.6	6.6
VSP-MD6W□-4		4			11.2	15.9		8
VSP-MD8W□2	8	1.8	34.5	12.5	8.4	12.6	0.5 to 0.6	6.6
VSP-MD8W□-4		4			11.2	15.9		8
VSP-MD10W□2	10	1.8	49	14.5	8.4	13.6	1 to 1.3	23
VSP-MD10W□-4		4			11.2	17.7		24
VSP-MD10W□6		6			11.9	19.5		25
VSP-MD20W□2	20	1.8	61.3	25	8.4	13.6	1 to 1.3	27
VSP-MD20W□-4		4			11.2	17.7		28
VSP-MD20W□6		6			11.9	19.5		29
VSP-MD30W□2	30	1.8	74.8	38.5	8.4	13.6	1 to 1.3	33
VSP-MD30W□-4		4			11.2	17.7		34
VSP-MD30W□6		6			11.9	19.5		35
VSP-MD40W□2	40	1.8	81.3	45	8.4	13.6	1 to 1.3	42
VSP-MD40W□-4		4			11.2	17.7		43
VSP-MD40W□6		6			11.9	19.5		44
VSP-MD50W□2	50	1.8	92.3	56	8.4	13.6	1 to 1.3	51
VSP-MD50W□-4		4			11.2	17.7		50
VSP-MD50W□6		6			11.9	19.5		52

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Barb Fitting)

●VSP-MD6, 8W□-4T/6T ●VSP-MD10W□-4T/6T ●VSP-MD20 to 50W□-4T/6T





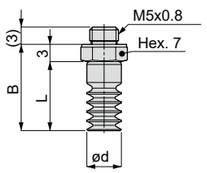


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MD6W□-4T	6	2.5	34	12	0.5 to 0.6	6.4
VSP-MD6W□-6T		4				
VSP-MD8W□-4T	8	2.5	34.5	12.5	0.5 to 0.6	6.4
VSP-MD8W□-6T		4				
VSP-MD10W□-4T	10	2.5	49	14.5	1 to 1.3	22
VSP-MD10W□-6T		4				
VSP-MD20W□-4T	20	2.5	61.3	25	1 to 1.3	27
VSP-MD20W□-6T		4				
VSP-MD30W□-4T	30	2.5	74.8	38	1 to 1.3	33
VSP-MD30W□-6T		4				
VSP-MD40W□-4T	40	2.5	81.3	45	1 to 1.3	40
VSP-MD40W□-6T		4				
VSP-MD50W□-4T	50	2.5	92.3	56	1 to 1.3	48
VSP-MD50W□-6T		4				

External Dimension Diagram (Compact, Direct Mount Type, VSP-ME, Male Thread)

●VSP-ME6, 8W□-M5

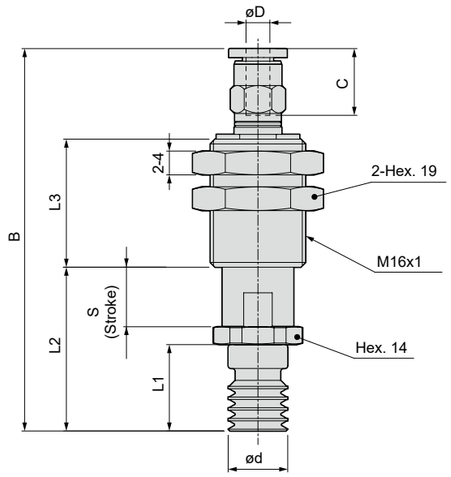


Unit: mm

Model No.	Pad Diameter ød	B	L	Weight (g)
VSP-ME6W□-M5	6	20	12	3
VSP-ME8W□-M5	8	20.5	12.5	3

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC10-□W□-2/4/6

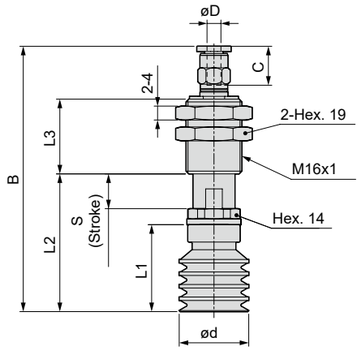


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10-10W□2	10	1.8	60.1	14.5	27.5	21.5	8.4	10	1.0 to 2.4	22
VSP-HC10-10W□-4		4	64.2				11.2			23
VSP-HC10-10W□6		6	65.5				11.9			24
VSP-HC10-15W□2		1.8	70.1		32.5	26.5	8.4	15	1.0 to 2.7	24
VSP-HC10-15W□-4		4	74.2				11.2			25
VSP-HC10-15W□6		6	75.5				11.9			26
VSP-HC10-20W□2		1.8	80.1		37.5	31.5	8.4	20	1.0 to 3.0	26
VSP-HC10-20W□-4		4	84.2				11.2			27
VSP-HC10-20W□6		6	85.5				11.9			28
VSP-HC10-25W□2		1.8	90.6		42.5	37	8.4	25	1.0 to 3.0	28
VSP-HC10-25W□-4		4	94.7				11.2			29
VSP-HC10-25W□6		6	96				11.9			30
VSP-HC10-30W□2		1.8	101.6		47.5	43	8.4	30	1.0 to 3.0	30
VSP-HC10-30W□-4		4	105.7				11.2			31
VSP-HC10-30W□6		6	107				11.9			32
VSP-HC10-40W□2		1.8	123.6		57.5	55	8.4	40	1.0 to 3.0	34
VSP-HC10-40W□-4		4	127.7				11.2			35
VSP-HC10-40W□6		6	129				11.9			36
VSP-HC10-50W□2		1.8	145.1		67.5	66.5	8.4	50	1.0 to 3.1	39
VSP-HC10-50W□-4		4	149.2				11.2			40
VSP-HC10-50W□6		6	150.5				11.9			41

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC20, 30-□W□-2/4/6

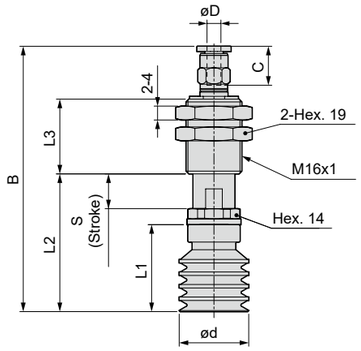


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20-10W□2	20	1.8	72.2	25	39.6	21.5	8.4	10	1.0 to 2.4	27
VSP-HC20-10W□-4		4	76.3				11.2			28
VSP-HC20-10W□6		6	77.6				11.9			29
VSP-HC20-15W□2		1.8	82.2		44.6	26.5	8.4	15	1.0 to 2.7	29
VSP-HC20-15W□-4		4	86.3				11.2			30
VSP-HC20-15W□6		6	87.6				11.9			31
VSP-HC20-20W□2		1.8	92.2		49.6	31.5	8.4	20	1.0 to 3.0	31
VSP-HC20-20W□-4		4	96.3				11.2			32
VSP-HC20-20W□6		6	97.6				11.9			33
VSP-HC20-25W□2		1.8	102.7		54.6	37	8.4	25	1.0 to 3.0	33
VSP-HC20-25W□-4		4	106.8				11.2			34
VSP-HC20-25W□6		6	108.1				11.9			35
VSP-HC20-30W□2		1.8	113.7		59.6	43	8.4	30	1.0 to 3.0	35
VSP-HC20-30W□-4		4	117.8				11.2			36
VSP-HC20-30W□6		6	119.1				11.9			37
VSP-HC20-40W□2		1.8	135.7		69.6	55	8.4	40	1.0 to 3.0	39
VSP-HC20-40W□-4		4	139.8				11.2			40
VSP-HC20-40W□6		6	141.1				11.9			41
VSP-HC20-50W□2		1.8	157.2		79.6	66.5	8.4	50	1.0 to 3.1	43
VSP-HC20-50W□-4		4	161.3				11.2			44
VSP-HC20-50W□6		6	162.6				11.9			45
VSP-HC30-10W□2	30	1.8	85.7	38.5	53.1	21.5	8.4	10	1.0 to 2.4	33
VSP-HC30-10W□-4		4	89.8				11.2			34
VSP-HC30-10W□6		6	91.1				11.9			35
VSP-HC30-15W□2		1.8	95.7		58.1	26.5	8.4	15	1.0 to 2.7	35
VSP-HC30-15W□-4		4	99.8				11.2			36
VSP-HC30-15W□6		6	101.1				11.9			37
VSP-HC30-20W□2		1.8	105.7		63.1	31.5	8.4	20	1.0 to 3.0	37
VSP-HC30-20W□-4		4	109.8				11.2			38
VSP-HC30-20W□6		6	111.1				11.9			39
VSP-HC30-25W□2		1.8	116.2		68.1	37	8.4	25	1.0 to 3.0	39
VSP-HC30-25W□-4		4	120.3				11.2			40
VSP-HC30-25W□6		6	121.6				11.9			41
VSP-HC30-30W□2		1.8	127.2		73.1	43	8.4	30	1.0 to 3.0	41
VSP-HC30-30W□-4		4	131.3				11.2			42
VSP-HC30-30W□6		6	132.6				11.9			43
VSP-HC30-40W□2		1.8	149.2		83.1	55	8.4	40	1.0 to 3.0	45
VSP-HC30-40W□-4		4	153.3				11.2			46
VSP-HC30-40W□6		6	154.6				11.9			47
VSP-HC30-50W□2		1.8	170.7		93.1	66.5	8.4	50	1.0 to 3.1	49
VSP-HC30-50W□-4		4	174.8				11.2			50
VSP-HC30-50W□6		6	176.1				11.9			51

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC40, 50-□W□-2/4/6

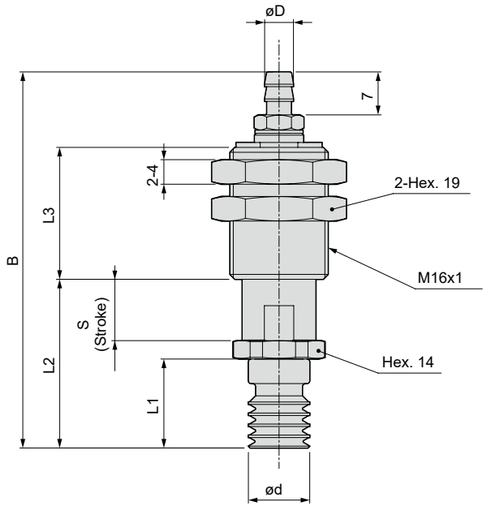


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC40-10W□2	40	1.8	92.2	45	59.6	21.5	8.4	10	1.0 to 2.4	43
VSP-HC40-10W□-4		4	96.3				11.2			44
VSP-HC40-10W□6		6	97.6				11.9			45
VSP-HC40-15W□2		1.8	102.2		64.6	26.5	8.4	15	1.0 to 2.7	45
VSP-HC40-15W□-4		4	106.3				11.2			46
VSP-HC40-15W□6		6	107.6				11.9			47
VSP-HC40-20W□2		1.8	112.2		69.6	31.5	8.4	20	1.0 to 3.0	47
VSP-HC40-20W□-4		4	116.3				11.2			48
VSP-HC40-20W□6		6	117.6				11.9			49
VSP-HC40-25W□2		1.8	122.7		74.6	37	8.4	25	1.0 to 3.0	49
VSP-HC40-25W□-4		4	126.8				11.2			50
VSP-HC40-25W□6		6	128.1				11.9			51
VSP-HC40-30W□2		1.8	133.7		79.6	43	8.4	30	1.0 to 3.0	51
VSP-HC40-30W□-4		4	137.8				11.2			52
VSP-HC40-30W□6		6	139.1				11.9			53
VSP-HC40-40W□2		1.8	155.7		89.6	55	8.4	40	1.0 to 3.0	55
VSP-HC40-40W□-4		4	159.8				11.2			56
VSP-HC40-40W□6		6	161.1				11.9			57
VSP-HC40-50W□2		1.8	177.2		99.6	66.5	8.4	50	1.0 to 3.1	59
VSP-HC40-50W□-4		4	181.3				11.2			60
VSP-HC40-50W□6		6	182.6				11.9			61
VSP-HC50-10W□2	50	1.8	103.2	56	70.6	21.5	8.4	10	1.0 to 2.4	55
VSP-HC50-10W□-4		4	107.3				11.2			56
VSP-HC50-10W□6		6	108.6				11.9			57
VSP-HC50-15W□2		1.8	113.2		75.6	26.5	8.4	15	1.0 to 2.7	57
VSP-HC50-15W□-4		4	117.3				11.2			58
VSP-HC50-15W□6		6	118.6				11.9			59
VSP-HC50-20W□2		1.8	123.2		80.6	31.5	8.4	20	1.0 to 3.0	59
VSP-HC50-20W□-4		4	127.3				11.2			60
VSP-HC50-20W□6		6	128.6				11.9			61
VSP-HC50-25W□2		1.8	133.7		85.6	37	8.4	25	1.0 to 3.0	61
VSP-HC50-25W□-4		4	137.8				11.2			62
VSP-HC50-25W□6		6	139.1				11.9			63
VSP-HC50-30W□2		1.8	144.7		90.6	43	8.4	30	1.0 to 3.0	63
VSP-HC50-30W□-4		4	148.8				11.2			64
VSP-HC50-30W□6		6	150.1				11.9			65
VSP-HC50-40W□2		1.8	166.7		100.6	55	8.4	40	1.0 to 3.0	67
VSP-HC50-40W□-4		4	170.8				11.2			68
VSP-HC50-40W□6		6	172.1				11.9			69
VSP-HC50-50W□2		1.8	188.2		110.6	66.5	8.4	50	1.0 to 3.1	71
VSP-HC50-50W□-4		4	192.3				11.2			72
VSP-HC50-50W□6		6	193.6				11.9			73

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC10-□W□-4T/6T

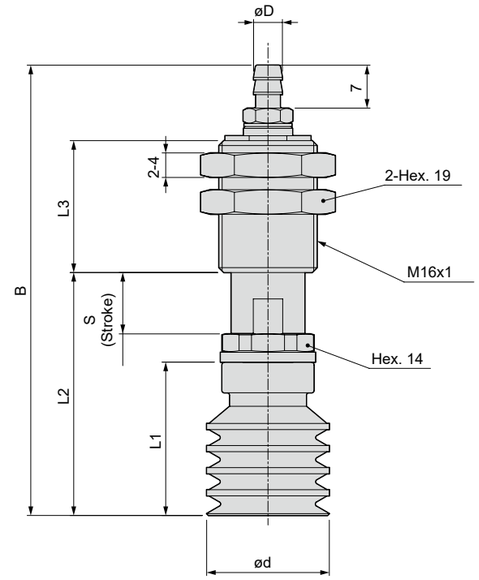


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10-10W□-4T	10	2.5	61.3	14.5	27.5	21.5	10	1.0 to 2.4	21
VSP-HC10-10W□-6T		4							
VSP-HC10-15W□-4T		2.5	71.3		32.5	26.5	15	1.0 to 2.7	23
VSP-HC10-15W□-6T		4							
VSP-HC10-20W□-4T		2.5	81.3		37.5	31.5	20	1.0 to 3.0	25
VSP-HC10-20W□-6T		4							
VSP-HC10-25W□-4T		2.5	91.8		42.5	37	25	1.0 to 3.0	28
VSP-HC10-25W□-6T		4							
VSP-HC10-30W□-4T		2.5	102.8		47.5	43	30	1.0 to 3.0	30
VSP-HC10-30W□-6T		4							
VSP-HC10-40W□-4T		2.5	124.8		57.5	55	40	1.0 to 3.0	34
VSP-HC10-40W□-6T		4							
VSP-HC10-50W□-4T		2.5	146.3		67.5	66.5	50	1.0 to 3.1	38
VSP-HC10-50W□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC20, 30-□W□-4T/6T

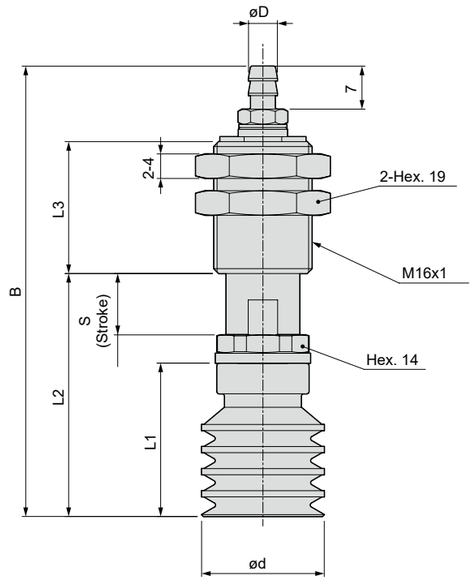


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20-10W□-4T	20	2.5	73.4	25	39.6	21.5	10	1.0 to 2.4	26
VSP-HC20-10W□-6T		4							
VSP-HC20-15W□-4T		2.5	83.4		44.6	26.5	15	1.0 to 2.7	28
VSP-HC20-15W□-6T		4							
VSP-HC20-20W□-4T		2.5	93.4		49.6	31.5	20	1.0 to 3.0	30
VSP-HC20-20W□-6T		4							
VSP-HC20-25W□-4T		2.5	103.9		54.6	37	25	1.0 to 3.0	32
VSP-HC20-25W□-6T		4							
VSP-HC20-30W□-4T		2.5	114.9		59.6	43	30	1.0 to 3.0	35
VSP-HC20-30W□-6T		4							
VSP-HC20-40W□-4T		2.5	136.9		69.6	55	40	1.0 to 3.0	39
VSP-HC20-40W□-6T		4							
VSP-HC20-50W□-4T		2.5	158.4		79.6	66.5	50	1.0 to 3.1	43
VSP-HC20-50W□-6T		4							
VSP-HC30-10W□-4T	30	2.5	86.9	38.5	53.1	21.5	10	1.0 to 2.4	32
VSP-HC30-10W□-6T		4							
VSP-HC30-15W□-4T		2.5	96.9		58.1	26.5	15	1.0 to 2.7	34
VSP-HC30-15W□-6T		4							
VSP-HC30-20W□-4T		2.5	106.9		63.1	31.5	20	1.0 to 3.0	36
VSP-HC30-20W□-6T		4							
VSP-HC30-25W□-4T		2.5	117.4		68.1	37	25	1.0 to 3.0	38
VSP-HC30-25W□-6T		4							
VSP-HC30-30W□-4T		2.5	128.4		73.1	43	30	1.0 to 3.0	41
VSP-HC30-30W□-6T		4							
VSP-HC30-40W□-4T		2.5	150.4		83.1	55	40	1.0 to 3.0	45
VSP-HC30-40W□-6T		4							
VSP-HC30-50W□-4T		2.5	171.9		93.1	66.5	50	1.0 to 3.1	49
VSP-HC30-50W□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC40, 50-□W□-4T/6T

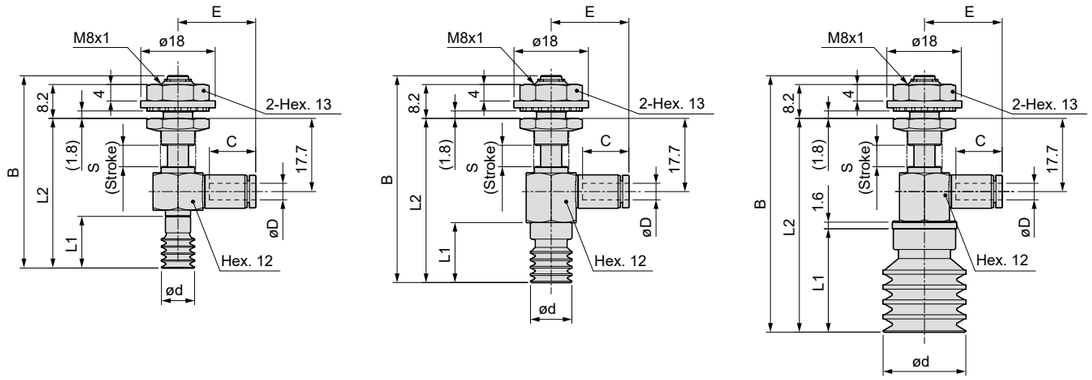


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC40-10W□-4T	40	2.5	93.4	45	59.6	21.5	10	1.0 to 2.4	42
VSP-HC40-10W□-6T		4							
VSP-HC40-15W□-4T		2.5	103.4		64.6	26.5	15	1.0 to 2.7	44
VSP-HC40-15W□-6T		4							
VSP-HC40-20W□-4T		2.5	113.4		69.6	31.5	20	1.0 to 3.0	46
VSP-HC40-20W□-6T		4							
VSP-HC40-25W□-4T		2.5	124		74.6	37	25	1.0 to 3.0	48
VSP-HC40-25W□-6T		4							
VSP-HC40-30W□-4T		2.5	134.9		79.6	43	30	1.0 to 3.0	51
VSP-HC40-30W□-6T		4							
VSP-HC40-40W□-4T		2.5	156.9		89.6	55	40	1.0 to 3.0	55
VSP-HC40-40W□-6T		4							
VSP-HC40-50W□-4T		2.5	178.4		99.6	66.5	50	1.0 to 3.1	59
VSP-HC40-50W□-6T		4							
VSP-HC50-10W□-4T	50	2.5	104.4	56	70.6	21.5	10	1.0 to 2.4	54
VSP-HC50-10W□-6T		4							
VSP-HC50-15W□-4T		2.5	114.4		75.6	26.5	15	1.0 to 2.7	56
VSP-HC50-15W□-6T		4							
VSP-HC50-20W□-4T		2.5	124.4		80.6	31.5	20	1.0 to 3.0	58
VSP-HC50-20W□-6T		4							
VSP-HC50-25W□-4T		2.5	134.9		85.6	37	25	1.0 to 3.0	60
VSP-HC50-25W□-6T		4							
VSP-HC50-30W□-4T		2.5	145.9		90.6	43	30	1.0 to 3.0	63
VSP-HC50-30W□-6T		4							
VSP-HC50-40W□-4T		2.5	167.9		100.6	55	40	1.0 to 3.0	67
VSP-HC50-40W□-6T		4							
VSP-HC50-50W□-4T		2.5	189.4		110.6	66.5	50	1.0 to 3.1	71
VSP-HC50-50W□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side, VSP-HD, Push-in fitting)

●VSP-HD6, 8W□-2/4/6 ●VSP-HD10W□-2/4/6 ●VSP-HD20 to 50W□-2/4/6

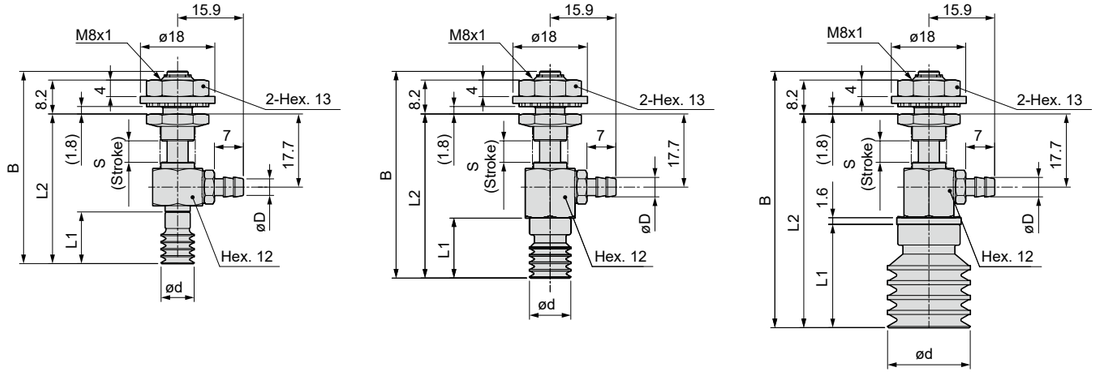


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HD6W□2	6	1.8	46	12	35.7	8.4	14.7	5.2	1.6 to 2.9	28
VSP-HD6W□-4		4				11.2	18.8			29
VSP-HD6W□6		6				11.9	20.6			30
VSP-HD8W□2	8	1.8	46.5	12.5	36.2	8.4	14.7	5.2	1.6 to 2.9	28
VSP-HD8W□-4		4				11.2	18.8			29
VSP-HD8W□6		6				11.9	20.6			30
VSP-HD10W□2	10	1.8	50	14.5	39.7	8.4	14.7	5.2	1.6 to 2.9	32
VSP-HD10W□-4		4				11.2	18.8			33
VSP-HD10W□6		6				11.9	20.6			34
VSP-HD20W□2	20	1.8	62	25	51.7	8.4	14.7	5.2	1.6 to 2.9	36
VSP-HD20W□-4		4				11.2	18.8			37
VSP-HD20W□6		6				11.9	20.6			38
VSP-HD30W□2	30	1.8	75.5	38.5	65.2	8.4	14.7	5.2	1.6 to 2.9	42
VSP-HD30W□-4		4				11.2	18.8			43
VSP-HD30W□6		6				11.9	20.6			44
VSP-HD40W□2	40	1.8	82	45	71.7	8.4	14.7	5.2	1.6 to 2.9	52
VSP-HD40W□-4		4				11.2	18.8			53
VSP-HD40W□6		6				11.9	20.6			54
VSP-HD50W□2	50	1.8	93	56	82.7	8.4	14.7	5.2	1.6 to 2.9	64
VSP-HD50W□-4		4				11.2	18.8			65
VSP-HD50W□6		6				11.9	20.6			66

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side, VSP-HD, Barb Fitting)

●VSP-HD6, 8W□-4T/6T ●VSP-HD10W□-4T/6T ●VSP-HD20 to 50W□-4T/6T

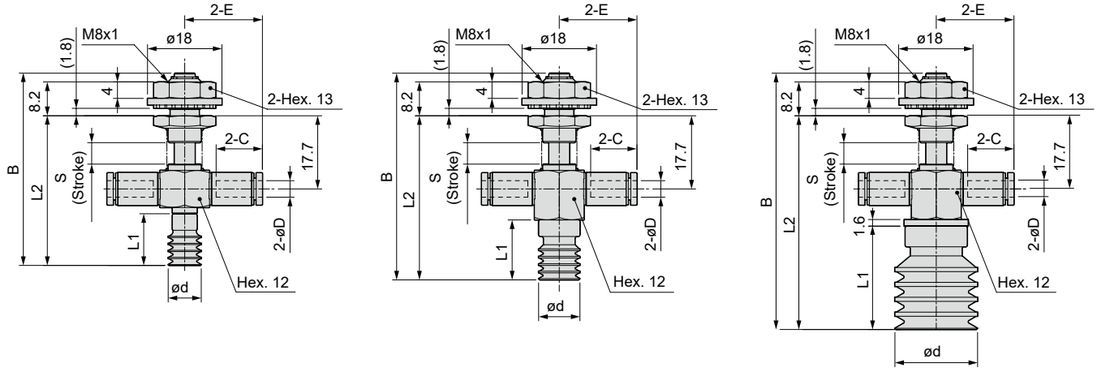


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HD6W□-4T	6	2.5	46	12	35.7	5.2	1.6 to 2.9	28
VSP-HD6W□-6T		4						
VSP-HD8W□-4T	8	2.5	46.5	12.5	36.2	5.2	1.6 to 2.9	28
VSP-HD8W□-6T		4						
VSP-HD10W□-4T	10	2.5	50	14.5	39.7	5.2	1.6 to 2.9	31
VSP-HD10W□-6T		4						
VSP-HD20W□-4T	20	2.5	62	25	51.7	5.2	1.6 to 2.9	36
VSP-HD20W□-6T		4						
VSP-HD30W□-4T	30	2.5	75.5	38.5	65.2	5.2	1.6 to 2.9	42
VSP-HD30W□-6T		4						
VSP-HD40W□-4T	40	2.5	82	45	71.7	5.2	1.6 to 2.9	52
VSP-HD40W□-6T		4						
VSP-HD50W□-4T	50	2.5	93	56	82.7	5.2	1.6 to 2.9	64
VSP-HD50W□-6T		4						

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides, VSP-HDW, Push-in fitting)

●VSP-HDW6, 8W□-2/4/6 ●VSP-HDW10W□-2/4/6 ●VSP-HDW20 to 50W□-2/4/6

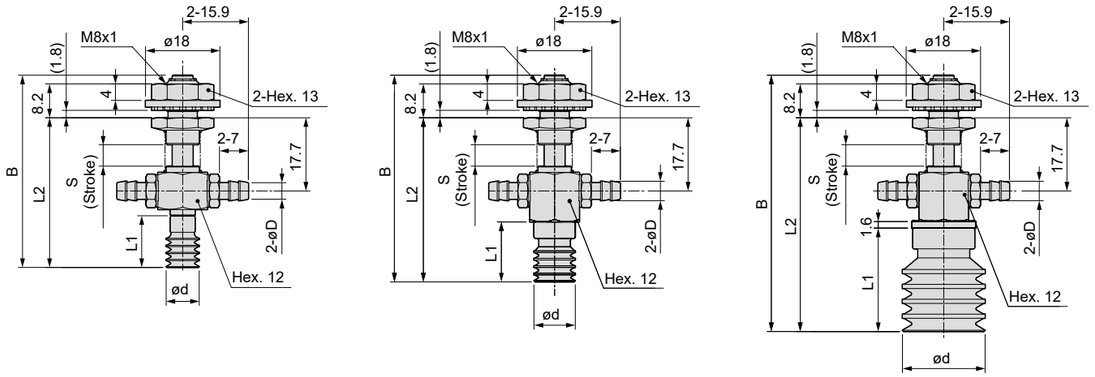


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW6W□2	6	1.8	46	12	35.7	8.4	14.7	5.2	1.6 to 2.9	30
VSP-HDW6W□-4		4				11.2	18.8			32
VSP-HDW6W□6		6				11.9	20.6			34
VSP-HDW8W□2	8	1.8	46.5	12.5	36.2	8.4	14.7	5.2	1.6 to 2.9	30
VSP-HDW8W□-4		4				11.2	18.8			32
VSP-HDW8W□6		6				11.9	20.6			34
VSP-HDW10W□2	10	1.8	50	14.5	39.7	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HDW10W□-4		4				11.2	18.8			35
VSP-HDW10W□6		6				11.9	20.6			37
VSP-HDW20W□2	20	1.8	62	25	51.7	8.4	14.7	5.2	1.6 to 2.9	38
VSP-HDW20W□-4		4				11.2	18.8			40
VSP-HDW20W□6		6				11.9	20.6			42
VSP-HDW30W□2	30	1.8	75.5	38.5	65.2	8.4	14.7	5.2	1.6 to 2.9	44
VSP-HDW30W□-4		4				11.2	18.8			46
VSP-HDW30W□6		6				11.9	20.6			48
VSP-HDW40W□2	40	1.8	82	45	71.7	8.4	14.7	5.2	1.6 to 2.9	54
VSP-HDW40W□-4		4				11.2	18.8			56
VSP-HDW40W□6		6				11.9	20.6			58
VSP-HDW50W□2	50	1.8	93	56	82.7	8.4	14.7	5.2	1.6 to 2.9	66
VSP-HDW50W□-4		4				11.2	18.8			68
VSP-HDW50W□6		6				11.9	20.6			70

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides, VSP-HDW, Barb Fitting)

●VSP-HDW6, 8W□-4T/6T ●VSP-HDW10W□-4T/6T ●VSP-HDW20 to 50W□-4T/6T

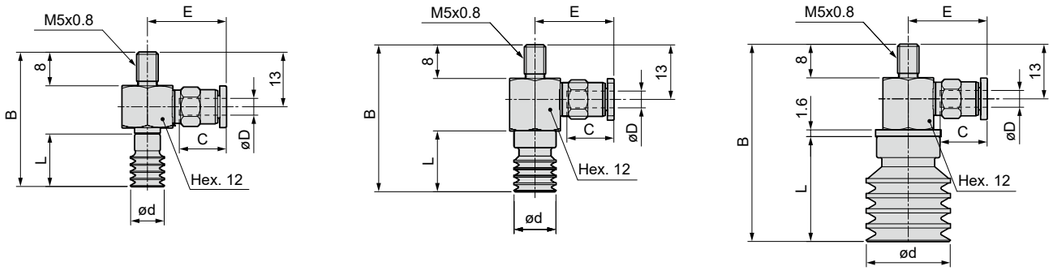


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW6W□-4T	6	2.5	46	12	35.7	5.2	1.6 to 2.9	28
VSP-HDW6W□-6T		4						
VSP-HDW8W□-4T	8	2.5	46.5	12.5	36.2	5.2	1.6 to 2.9	28
VSP-HDW8W□-6T		4						
VSP-HDW10W□-4T	10	2.5	50	14.5	39.7	5.2	1.6 to 2.9	32
VSP-HDW10W□-6T		4						
VSP-HDW20W□-4T	20	2.5	62	25	51.7	5.2	1.6 to 2.9	37
VSP-HDW20W□-6T		4						
VSP-HDW30W□-4T	30	2.5	75.5	38.5	65.2	5.2	1.6 to 2.9	43
VSP-HDW30W□-6T		4						
VSP-HDW40W□-4T	40	2.5	82	45	71.7	5.2	1.6 to 2.9	53
VSP-HDW40W□-6T		4						
VSP-HDW50W□-4T	50	2.5	93	56	82.7	5.2	1.6 to 2.9	65
VSP-HDW50W□-6T		4						

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side, VSP-HE, Push-in fitting)

●VSP-HE6, 8W□-2/4/6 ●VSP-HE10W□-2/4/6 ●VSP-HE20 to 50W□-2/4/6

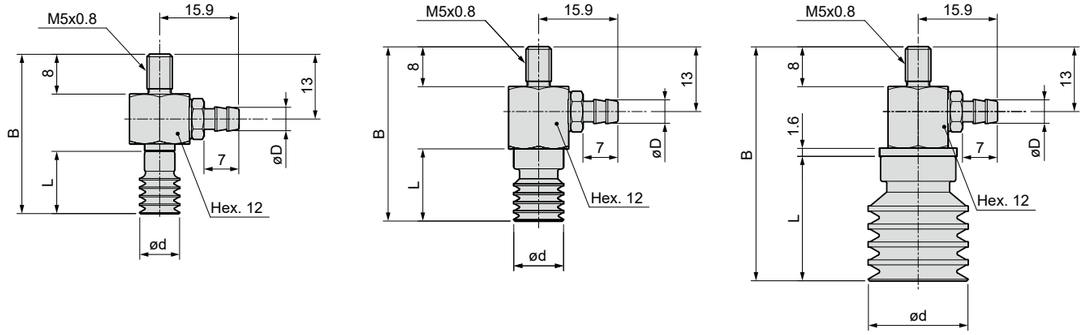


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HE6W□-2	6	1.8	31.5	12	8.4	14.7	14
VSP-HE6W□-4		4			11.2	18.8	15
VSP-HE6W□-6		6			11.9	20.6	16
VSP-HE8W□-2	8	1.8	32	12.5	8.4	14.7	14
VSP-HE8W□-4		4			11.2	18.8	15
VSP-HE8W□-6		6			11.9	20.6	16
VSP-HE10W□-2	10	1.8	35	14.5	8.4	14.7	17
VSP-HE10W□-4		4			11.2	18.8	18
VSP-HE10W□-6		6			11.9	20.6	19
VSP-HE20W□-2	20	1.8	47	25	8.4	14.7	22
VSP-HE20W□-4		4			11.2	18.8	23
VSP-HE20W□-6		6			11.9	20.6	24
VSP-HE30W□-2	30	1.8	60.5	38.5	8.4	14.7	28
VSP-HE30W□-4		4			11.2	18.8	29
VSP-HE30W□-6		6			11.9	20.6	30
VSP-HE40W□-2	40	1.8	67	45	8.4	14.7	38
VSP-HE40W□-4		4			11.2	18.8	39
VSP-HE40W□-6		6			11.9	20.6	40
VSP-HE50W□-2	50	1.8	78	56	8.4	14.7	50
VSP-HE50W□-4		4			11.2	18.8	51
VSP-HE50W□-6		6			11.9	20.6	52

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side, VSP-HE, Barb Fitting)

●VSP-HE6, 8W□-4T/6T ●VSP-HE10W□-4T/6T ●VSP-HE20 to 50W□-4T/6T

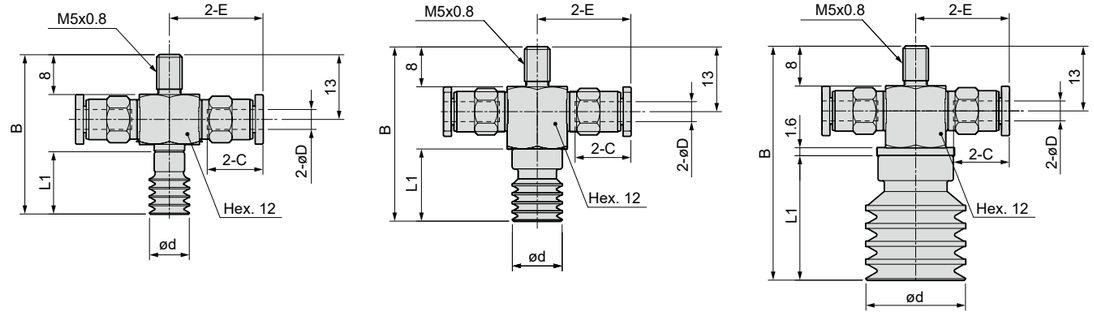


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HE6W□-4T	6	2.5	31.5	12	13
VSP-HE6W□-6T		4			
VSP-HE8W□-4T	8	2.5	29.5	12.5	13
VSP-HE8W□-6T		4			
VSP-HE10W□-4T	10	2.5	35	14.5	16
VSP-HE10W□-6T		4			
VSP-HE20W□-4T	20	2.5	47	25	21
VSP-HE20W□-6T		4			
VSP-HE30W□-4T	30	2.5	60.5	38.5	27
VSP-HE30W□-6T		4			
VSP-HE40W□-4T	40	2.5	67	45	37
VSP-HE40W□-6T		4			
VSP-HE50W□-4T	50	2.5	78	56	49
VSP-HE50W□-6T		4			

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Push-in fitting)

●VSP-HEW6, 8W□-2/4/6 ●VSP-HEW10W□-2/4/6 ●VSP-HEW20 to 50W□-2/4/6

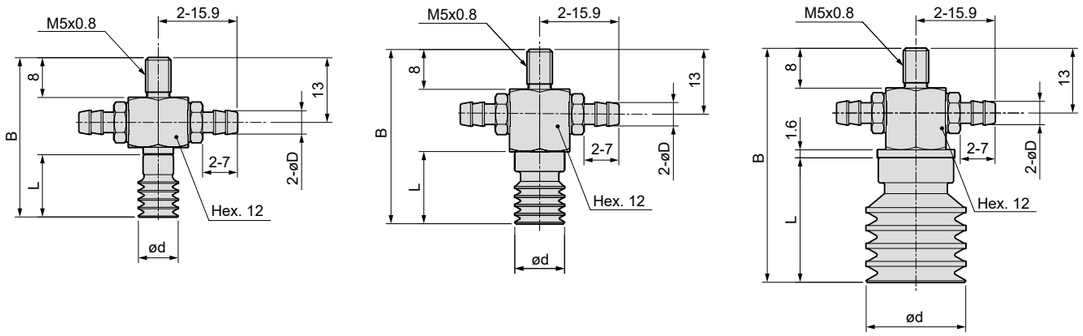


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HEW6W□-2	6	1.8	31.5	12	8.4	14.7	16
VSP-HEW6W□-4		4			11.2	18.8	18
VSP-HEW6W□-6		6			11.9	20.6	20
VSP-HEW8W□-2	8	1.8	32	12.5	8.4	14.7	16
VSP-HEW8W□-4		4			11.2	18.8	18
VSP-HEW8W□-6		6			11.9	20.6	20
VSP-HEW10W□-2	10	1.8	35	14.5	8.4	14.7	19
VSP-HEW10W□-4		4			11.2	18.8	21
VSP-HEW10W□-6		6			11.9	20.6	23
VSP-HEW20W□-2	20	1.8	47	25	8.4	14.7	23
VSP-HEW20W□-4		4			11.2	18.8	25
VSP-HEW20W□-6		6			11.9	20.6	27
VSP-HEW30W□-2	30	1.8	60.5	38.5	8.4	14.7	29
VSP-HEW30W□-4		4			11.2	18.8	31
VSP-HEW30W□-6		6			11.9	20.6	33
VSP-HEW40W□-2	40	1.8	67	45	8.4	14.7	39
VSP-HEW40W□-4		4			11.2	18.8	41
VSP-HEW40W□-6		6			11.9	20.6	43
VSP-HEW50W□-2	50	1.8	78	56	8.4	14.7	51
VSP-HEW50W□-4		4			11.2	18.8	53
VSP-HEW50W□-6		6			11.9	20.6	55

Outline Dimension Drawing (Low Profile Buffer Type, Vacuum Outlet Both Sides, VSP-HEW, Barb Fitting)

●VSP-HEW6, 8W□-4T/6T ●VSP-HEW10W□-4T/6T ●VSP-HEW20 to 50W□-4T/6T

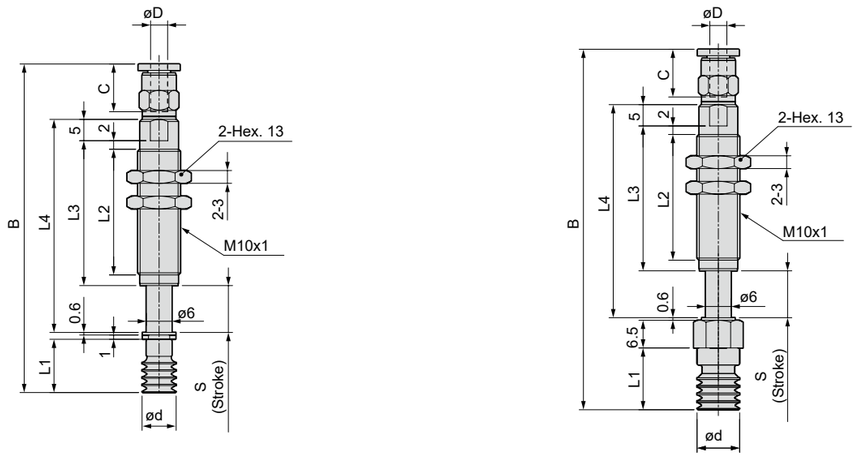


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HEW6W□-4T	6	2.5	31.5	12	14
VSP-HEW6W□-6T		4			
VSP-HEW8W□-4T	8	2.5	29.5	12.5	14
VSP-HEW8W□-6T		4			
VSP-HEW10W□-4T	10	2.5	35	14.5	17
VSP-HEW10W□-6T		4			
VSP-HEW20W□-4T	20	2.5	47	25	22
VSP-HEW20W□-6T		4			
VSP-HEW30W□-4T	30	2.5	60.5	38.5	28
VSP-HEW30W□-6T		4			
VSP-HEW40W□-4T	40	2.5	67	45	38
VSP-HEW40W□-6T		4			
VSP-HEW50W□-4T	50	2.5	78	56	50
VSP-HEW50W□-6T		4			

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC6, 8-□W□-4 ●VSP-LFC10-□W□-4



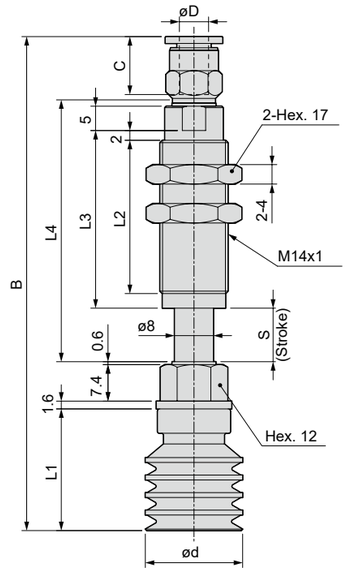
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC6-2W□-4	6	4	60.6	12	21.5	26	34	11.2	2	1.3 to 1.8	25
VSP-LFC6-5W□-4			66.6		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	27
VSP-LFC6-10W□-4			76.6		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	29
VSP-LFC6-15W□-4			86.6		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	31
VSP-LFC6-20W□-4			96.6		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	33
VSP-LFC8-2W□-4	8	4	61.1	12.5	21.5	26	34	11.2	2	1.3 to 1.8	25
VSP-LFC8-5W□-4			67.1		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	27
VSP-LFC8-10W□-4			77.1		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	29
VSP-LFC8-15W□-4			87.1		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	31
VSP-LFC8-20W□-4			97.1		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	33
VSP-LFC10-2W□-4	10	4	68.6	14.5	21.5	26	34	11.2	2	1.3 to 1.8	28
VSP-LFC10-5W□-4			74.6		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	30
VSP-LFC10-10W□-4			84.6		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	32
VSP-LFC10-15W□-4			94.6		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	34
VSP-LFC10-20W□-4			104.6		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	35

* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC20 to 50-□W□-4/6



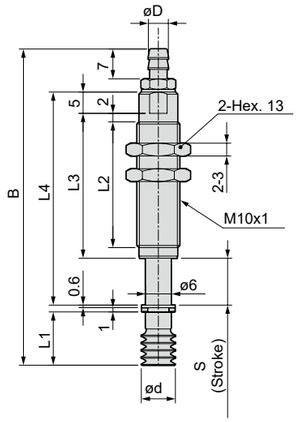
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC20-5W□-4	20	4	90.1	25	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	58
VSP-LFC20-5W□-6		6	91.4					11.9			59
VSP-LFC20-10W□-4		4	100.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	60
VSP-LFC20-10W□-6		6	101.4					11.9			61
VSP-LFC20-15W□-4		4	110.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	63
VSP-LFC20-15W□-6		6	111.4					11.9			64
VSP-LFC20-20W□-4		4	120.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	66
VSP-LFC20-20W□-6		6	121.4					11.9			67
VSP-LFC30-5W□-4	30	4	103.6	38.5	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	64
VSP-LFC30-5W□-6		6	104.9					11.9			65
VSP-LFC30-10W□-4		4	113.6		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	66
VSP-LFC30-10W□-6		6	114.9					11.9			67
VSP-LFC30-15W□-4		4	123.6		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	69
VSP-LFC30-15W□-6		6	124.9					11.9			70
VSP-LFC30-20W□-4		4	133.6		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	72
VSP-LFC30-20W□-6		6	134.9					11.9			73
VSP-LFC40-5W□-4	40	4	110.1	45	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	74
VSP-LFC40-5W□-6		6	111.4					11.9			75
VSP-LFC40-10W□-4		4	120.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	76
VSP-LFC40-10W□-6		6	121.4					11.9			77
VSP-LFC40-15W□-4		4	130.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	79
VSP-LFC40-15W□-6		6	131.4					11.9			80
VSP-LFC40-20W□-4		4	140.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	82
VSP-LFC40-20W□-6		6	141.4					11.9			83
VSP-LFC50-5W□-4	50	4	121.1	56	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	86
VSP-LFC50-5W□-6		6	122.4					11.9			87
VSP-LFC50-10W□-4		4	131.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	88
VSP-LFC50-10W□-6		6	132.4					11.9			89
VSP-LFC50-15W□-4		4	141.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	91
VSP-LFC50-15W□-6		6	142.4					11.9			92
VSP-LFC50-20W□-4		4	151.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	94
VSP-LFC50-20W□-6		6	152.4					11.9			95

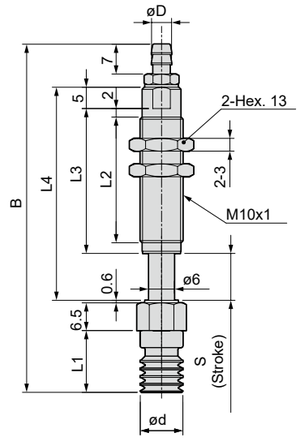
* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC6, 8-□W□-4T/6T



●VSP-LFC10-□W□-4T/6T



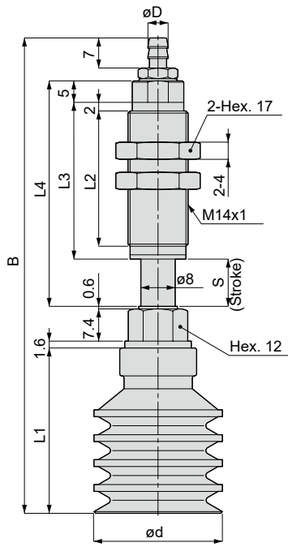
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC6-2W□-4T	6	2.5	57.7	12	21.5	26	34	2	1.3 to 1.8	24
VSP-LFC6-2W□-6T		4								
VSP-LFC6-5W□-4T		2.5	63.7		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	26
VSP-LFC6-5W□-6T		4								
VSP-LFC6-10W□-4T		2.5	73.7		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	28
VSP-LFC6-10W□-6T		4								
VSP-LFC6-15W□-4T		2.5	83.7		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	30
VSP-LFC6-15W□-6T		4								
VSP-LFC6-20W□-4T		2.5	93.7		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	31
VSP-LFC6-20W□-6T		4								
VSP-LFC8-2W□-4T	8	2.5	58.2	12.5	21.5	26	34	2	1.3 to 1.8	24
VSP-LFC8-2W□-6T		4								
VSP-LFC8-5W□-4T		2.5	64.2		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	26
VSP-LFC8-5W□-6T		4								
VSP-LFC8-10W□-4T		2.5	74.2		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	28
VSP-LFC8-10W□-6T		4								
VSP-LFC8-15W□-4T		2.5	84.2		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	30
VSP-LFC8-15W□-6T		4								
VSP-LFC8-20W□-4T		2.5	94.2		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	31
VSP-LFC8-20W□-6T		4								
VSP-LFC10-2W□-4T	10	2.5	65.7	14.5	21.5	26	34	2	1.3 to 1.8	26
VSP-LFC10-2W□-6T		4								
VSP-LFC10-5W□-4T		2.5	71.7		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	28
VSP-LFC10-5W□-6T		4								
VSP-LFC10-10W□-4T		2.5	81.7		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	30
VSP-LFC10-10W□-6T		4								
VSP-LFC10-15W□-4T		2.5	91.7		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	32
VSP-LFC10-15W□-6T		4								
VSP-LFC10-20W□-4T		2.5	101.7		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	34
VSP-LFC10-20W□-6T		4								

* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC20 to 50-□W□-4T/6T



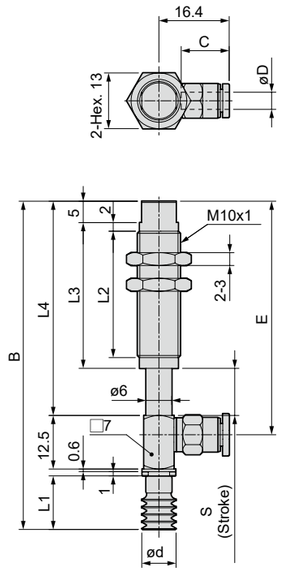
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC20-5W□-4T	20	2.5	87.2	25	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	53
VSP-LFC20-5W□-6T		4								
VSP-LFC20-10W□-4T		2.5	97.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	55
VSP-LFC20-10W□-6T		4								
VSP-LFC20-15W□-4T		2.5	107.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	58
VSP-LFC20-15W□-6T		4								
VSP-LFC20-20W□-4T		2.5	117.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	61
VSP-LFC20-20W□-6T		4								
VSP-LFC30-5W□-4T	30	2.5	100.7	38.5	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	59
VSP-LFC30-5W□-6T		4								
VSP-LFC30-10W□-4T		2.5	110.7		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	61
VSP-LFC30-10W□-6T		4								
VSP-LFC30-15W□-4T		2.5	120.7		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	64
VSP-LFC30-15W□-6T		4								
VSP-LFC30-20W□-4T		2.5	130.7		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	67
VSP-LFC30-20W□-6T		4								
VSP-LFC40-5W□-4T	40	2.5	107.2	45	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	69
VSP-LFC40-5W□-6T		4								
VSP-LFC40-10W□-4T		2.5	117.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	71
VSP-LFC40-10W□-6T		4								
VSP-LFC40-15W□-4T		2.5	127.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	74
VSP-LFC40-15W□-6T		4								
VSP-LFC40-20W□-4T		2.5	137.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	77
VSP-LFC40-20W□-6T		4								
VSP-LFC50-5W□-4T	50	2.5	118.2	56	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	81
VSP-LFC50-5W□-6T		4								
VSP-LFC50-10W□-4T		2.5	128.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	83
VSP-LFC50-10W□-6T		4								
VSP-LFC50-15W□-4T		2.5	138.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	86
VSP-LFC50-15W□-6T		4								
VSP-LFC50-20W□-4T		2.5	148.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	89
VSP-LFC50-20W□-6T		4								

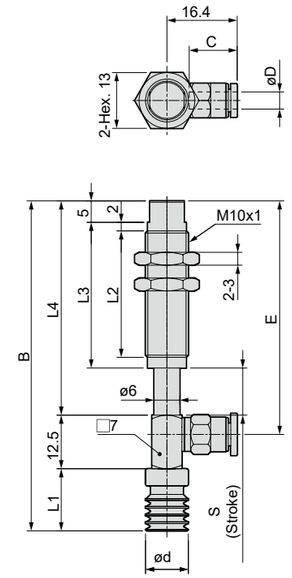
* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Push-in fitting)

●VSP-LFD6, 8-□W□-4



●VSP-LFD10-□W□-4

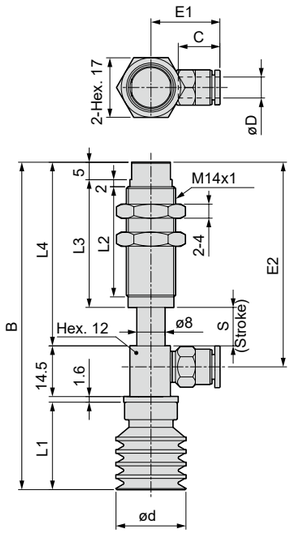


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD6-5W□-4	6	4	66.1	12	24.5	29	40	11.2	44.5	5	1.3 to 2.4	31
VSP-LFD6-10W□-4			76.1		29.5	34	50		54.5	10	1.3 to 3.3	34
VSP-LFD6-15W□-4			86.1		34.5	39	60		64.5	15	1.3 to 4.2	36
VSP-LFD6-20W□-4			96.1		39.5	44	70		74.5	20	1.3 to 5.1	38
VSP-LFD8-5W□-4	8	4	66.6	12.5	24.5	29	40	11.2	44.5	5	1.3 to 2.4	31
VSP-LFD8-10W□-4			76.6		29.5	34	50		54.5	10	1.3 to 3.3	34
VSP-LFD8-15W□-4			86.6		34.5	39	60		64.5	15	1.3 to 4.2	36
VSP-LFD8-20W□-4			96.6		39.5	44	70		74.5	20	1.3 to 5.1	38
VSP-LFD10-5W□-4	10	4	67	14.5	24.5	29	40	11.2	44.5	5	1.3 to 2.4	26
VSP-LFD10-10W□-4			77		29.5	34	50		54.5	10	1.3 to 3.3	28
VSP-LFD10-15W□-4			87		34.5	39	60		64.5	15	1.3 to 4.2	30
VSP-LFD10-20W□-4			97		39.5	44	70		74.5	20	1.3 to 5.1	32

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Push-in fitting)

●VSP-LFD20 to 50-□W□-4/6

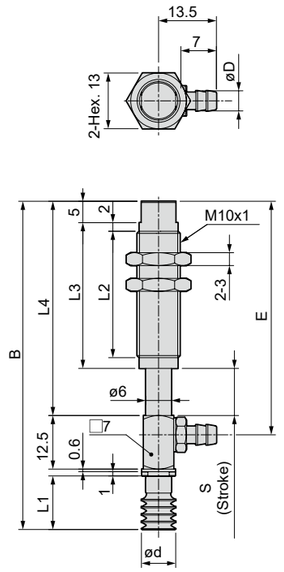


Unit: mm

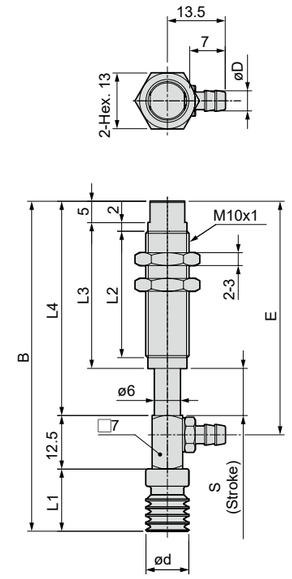
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD20-5W□-4	20	4	83.5	25	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	59
VSP-LFD20-5W□-6		6						11.9	19.7				60
VSP-LFD20-10W□-4		4	93.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	63
VSP-LFD20-10W□-6		6						11.9	19.7				64
VSP-LFD20-15W□-4		4	103.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	67
VSP-LFD20-15W□-6		6						11.9	19.7				68
VSP-LFD20-20W□-4		4	113.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	71
VSP-LFD20-20W□-6		6						11.9	19.7				72
VSP-LFD30-5W□-4	30	4	97	38.5	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	65
VSP-LFD30-5W□-6		6						11.9	19.7				66
VSP-LFD30-10W□-4		4	107		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	69
VSP-LFD30-10W□-6		6						11.9	19.7				70
VSP-LFD30-15W□-4		4	117		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	73
VSP-LFD30-15W□-6		6						11.9	19.7				74
VSP-LFD30-20W□-4		4	127		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	77
VSP-LFD30-20W□-6		6						11.9	19.7				78
VSP-LFD40-5W□-4	40	4	103.5	45	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	75
VSP-LFD40-5W□-6		6						11.9	19.7				76
VSP-LFD40-10W□-4		4	113.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	79
VSP-LFD40-10W□-6		6						11.9	19.7				80
VSP-LFD40-15W□-4		4	123.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	83
VSP-LFD40-15W□-6		6						11.9	19.7				84
VSP-LFD40-20W□-4		4	133.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	87
VSP-LFD40-20W□-6		6						11.9	19.7				88
VSP-LFD50-5W□-4	50	4	114.5	56	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	87
VSP-LFD50-5W□-6		6						11.9	19.7				88
VSP-LFD50-10W□-4		4	124.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	91
VSP-LFD50-10W□-6		6						11.9	19.7				92
VSP-LFD50-15W□-4		4	134.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	94
VSP-LFD50-15W□-6		6						11.9	19.7				95
VSP-LFD50-20W□-4		4	144.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	99
VSP-LFD50-20W□-6		6						11.9	19.7				100

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Barb Fitting)

●VSP-LFD6, 8-□W□-4T/6T



●VSP-LFD10-□W□-4T/6T

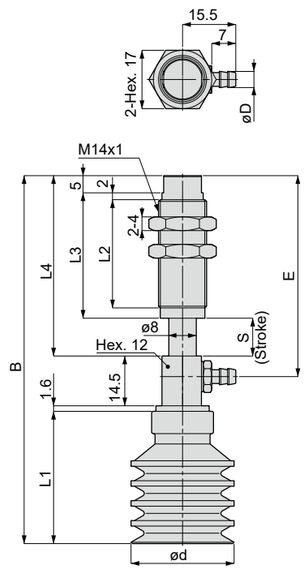


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD6-5W□-4T	6	2.5	66.1	12	24.5	29	40	44.5	5	1.3 to 2.4	30
VSP-LFD6-5W□-6T		4									
VSP-LFD6-10W□-4T		2.5	76.1		29.5	34	50	54.5	10	1.3 to 3.3	32
VSP-LFD6-10W□-6T		4									
VSP-LFD6-15W□-4T		2.5	86.1		34.5	39	60	64.5	15	1.3 to 4.2	34
VSP-LFD6-15W□-6T		4									
VSP-LFD6-20W□-4T		2.5	96.1		39.5	44	70	74.5	20	1.3 to 5.1	36
VSP-LFD6-20W□-6T		4									
VSP-LFD8-5W□-4T	8	2.5	66.6	12.5	24.5	29	40	44.5	5	1.3 to 2.4	30
VSP-LFD8-5W□-6T		4									
VSP-LFD8-10W□-4T		2.5	76.6		29.5	34	50	54.5	10	1.3 to 3.3	32
VSP-LFD8-10W□-6T		4									
VSP-LFD8-15W□-4T		2.5	86.6		34.5	39	60	64.5	15	1.3 to 4.2	34
VSP-LFD8-15W□-6T		4									
VSP-LFD8-20W□-4T		2.5	96.6		39.5	44	70	74.5	20	1.3 to 5.1	36
VSP-LFD8-20W□-6T		4									
VSP-LFD10-5W□-4T	10	2.5	67	14.5	24.5	29	40	44.5	5	1.3 to 2.4	25
VSP-LFD10-5W□-6T		4									
VSP-LFD10-10W□-4T		2.5	77		29.5	34	50	54.5	10	1.3 to 3.3	27
VSP-LFD10-10W□-6T		4									
VSP-LFD10-15W□-4T		2.5	87		34.5	39	60	64.5	15	1.3 to 4.2	29
VSP-LFD10-15W□-6T		4									
VSP-LFD10-20W□-4T		2.5	97		39.5	44	70	74.5	20	1.3 to 5.1	31
VSP-LFD10-20W□-6T		4									

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Barb Fitting)

●VSP-LFD20 to 50-□W□-4T/6T



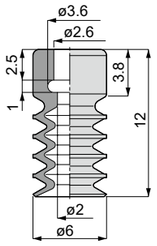
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD20-5W□-4T	20	2.5	83.5	25	26.5	31.5	42.5	48.5	5	4.5 to 6.5	55
VSP-LFD20-5W□-6T		4									
VSP-LFD20-10W□-4T		2.5	93.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	58
VSP-LFD20-10W□-6T		4									
VSP-LFD20-15W□-4T		2.5	103.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	62
VSP-LFD20-15W□-6T		4									
VSP-LFD20-20W□-4T		2.5	113.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	66
VSP-LFD20-20W□-6T		4									
VSP-LFD30-5W□-4T	30	2.5	97	38.5	26.5	31.5	42.5	48.5	5	4.5 to 6.5	61
VSP-LFD30-5W□-6T		4									
VSP-LFD30-10W□-4T		2.5	107		31.5	36.5	52.5	58.5	10	4.5 to 8.2	64
VSP-LFD30-10W□-6T		4									
VSP-LFD30-15W□-4T		2.5	117		36.5	41.5	62.5	68.5	15	4.5 to 9.9	68
VSP-LFD30-15W□-6T		4									
VSP-LFD30-20W□-4T		2.5	127		41.5	46.5	72.5	78.5	20	4.5 to 14.9	72
VSP-LFD30-20W□-6T		4									
VSP-LFD40-5W□-4T	40	2.5	103.5	45	26.5	31.5	42.5	48.5	5	4.5 to 6.5	71
VSP-LFD40-5W□-6T		4									
VSP-LFD40-10W□-4T		2.5	113.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	74
VSP-LFD40-10W□-6T		4									
VSP-LFD40-15W□-4T		2.5	123.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	78
VSP-LFD40-15W□-6T		4									
VSP-LFD40-20W□-4T		2.5	133.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	82
VSP-LFD40-20W□-6T		4									
VSP-LFD50-5W□-4T	50	2.5	114.5	56	26.5	31.5	42.5	48.5	5	4.5 to 6.5	83
VSP-LFD50-5W□-6T		4									
VSP-LFD50-10W□-4T		2.5	124.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	86
VSP-LFD50-10W□-6T		4									
VSP-LFD50-15W□-4T		2.5	134.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	90
VSP-LFD50-15W□-6T		4									
VSP-LFD50-20W□-4T		2.5	144.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	94
VSP-LFD50-20W□-6T		4									

MEMO

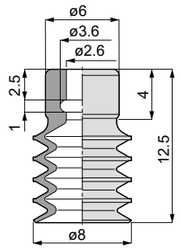
Pad Rubber Only External Dimension Diagram

●VSPG-6W□



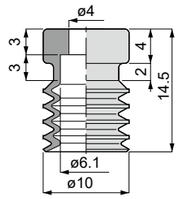
Weight: 0.4 g [0.6 g]

●VSPG-8W□



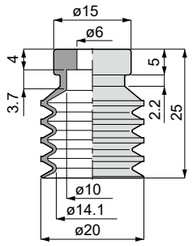
Weight: 0.5 g [0.8 g]

●VSPG-10W□



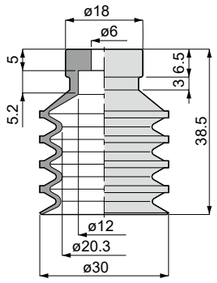
Weight: 0.6 g [1.0 g]

●VSPG-20W□



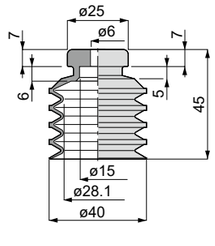
Weight: 2.4 g [3.6 g]

●VSPG-30W□



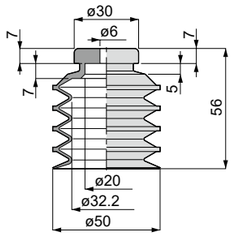
Weight: 6.7 g [10.1 g]

●VSPG-40W□



Weight: 15 g [23 g]

●VSPG-50W□

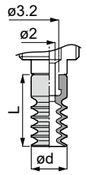


Weight: 25 g [37.5 g]

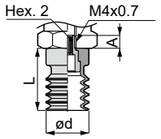
Weight: Values in [ ] are for fluororubber only.

Detailed Diagram of Pad and Holder Connection Part

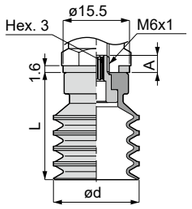
●VSPG-6, 8W□



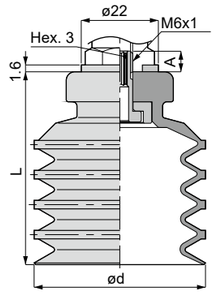
●VSPG-10WøA



●VSPG-20, 30WøA



●VSPG-40, 50WøA

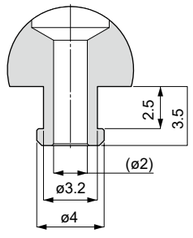


Unit: mm

Model No.	Pad Outer Diameter ød	L	Fixing Screw	A
VSPG-6W□	6	6	-	-
VSPG-8W□	8	8	-	-
VSPG-10WøA	10	10	10	3
VSPG-20WøA	20	20	20	4
VSPG-30WøA	30	30	30	5
VSPG-40WøA	40	40	40	5
VSPG-50WøA	50	50	50	5

Pad Rubber Fitting Part Dimension

●VSPG-6, 8W□



Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro Page 15 for details.

Individual Precautions: Suction Pad Multi-stage Bellows Type, VSP-□W□Series

Design / Selection

Warning

- Since the multi-stage bellows type pads may adhere together due to working Status and material characteristics, confirm performance with an actual device. Also, tackiness may increase depending on the operating environment or pad wear. Review the pad shape, material, quantity, etc., as necessary.
- Do not use the multi-stage bellows type in a way that it is excessively crushed. Excessive crushing may accelerate wear of the bellows part, cause cracks in the lip part, or lead to deformation due to strain, potentially causing suction failure.

MEMO

Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechanical Break Function
Ending



Suction Pad Oblong Type

VSP-□E□ Series

Oblong-shaped suction pad convenient for cases where a circular suction surface cannot be secured

RoHS

Ideal for transporting long workpieces such as substrates or semiconductors

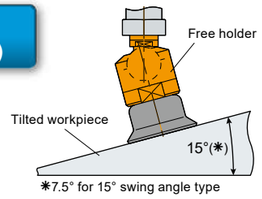
Abundant holder variations

Shape	Piping Connection	Stroke
16 types	5 types	10 types
●Standard .5 types ●Compact Class 4 ●Low dust generation .....2 types ●Lightweight3 types ●Low back 2 types	●Push-in fitting (ø1.8 to ø6)3 types ●Barbed fitting (ø4, ø6) .....2 types	4 mm to 50 mm (Depending on pad size, holder type)

Low particle generation holders (LFC, LFD) with less abrasion powder from sliding and low noise are available

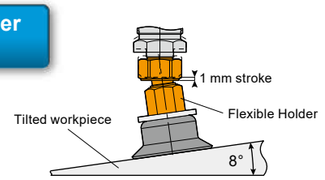
Assembly option for swing (free holder, flexible holder) that follows inclined workpiece surfaces is supported

Free holder (F1:30°, F2:15°)



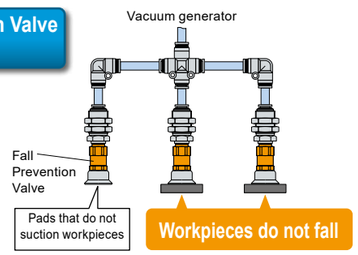
Flexible Holder (CF)

After removing the workpiece, returns to the normal position (vertical)



Assembly option for drop prevention valve (V) that reduces vacuum drop in separate circuits even without a workpiece is supported

Drop Prevention Valve (V)

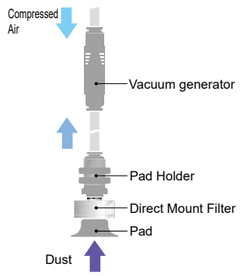


Removes dust during workpiece suction

Direct Mount Filter (T1, T2)

Filtration Area
T1: 1.7 cm², T2: 7 cm²





Pad surface treatment (option) with special processing to reduce adsorption marks is available

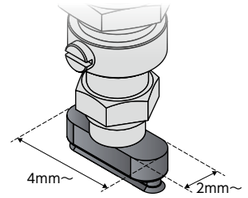
Code	-DL	-ER	-FG
Surface Treatment	Sticking Prevention	Adsorption Mark Reduction	Fluorine Coating
			
Compatible Material	Silicone Fluorine Conductive Silicone	Nitrile Conductive NBR (Low Resistance-type)	Silicone Conductive Silicone
Features	Special coating with good slippage. Effective for preventing sticking of lightweight workpieces and thin workpieces.	Surface modification with environmentally friendly chemicals reduces adsorption marks.	Surface modification with special treatment prevents sticking to the workpiece. Improved pad durability and abrasion resistance.

Pad Shape



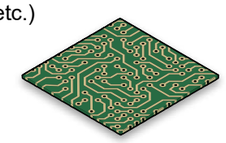
Wide suction area with oblong shape

Available from 2 mm x 4 mm to accommodate small suction spaces. Securing suction area is possible even in narrow spaces.



Recommended Workpiece

Workpieces with limited suction space (substrates, semiconductors, round bars, etc.)



Pad Size

13 types							
	2x4	3.5x7	4x10	5x10	6 x 10	4x20	5 x 20
	6 x 20	8 x 20	4 x 30	5 x 30	6 x 30	8 x 30	

Pad Material

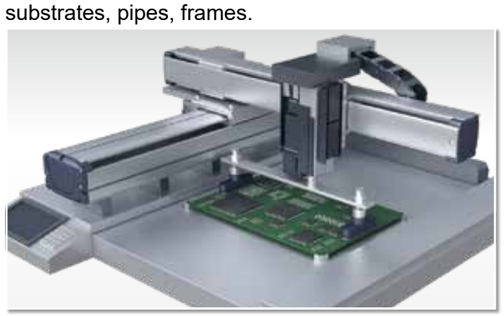
8 types						
	Nitrile	Silicone	Urethane	Fluorine	Conductive Silicone	
	Conductive NBR (Low Resistance-type)	HNBR	EPDM			

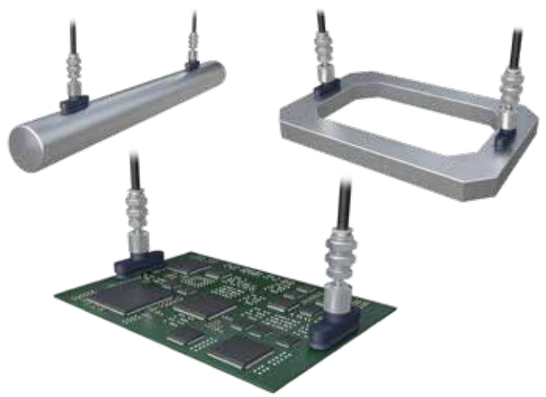
*Silicone (S) conforms to the Food Sanitation Act. (Holder is not compliant / Suction pad is compliant only for workpiece contact area)

Solution Examples

Long, narrow workpieces

Supports workpieces where securing suction area is difficult with circular pads, such as electronic substrates, pipes, frames.





Model No. Notation

●Oval-type

Suction Pad

VSP	C	2×4	-20	E	N	-ER	6			F1	V	T1
Model No.	❶ Holder Shape	❷ Pad Size	❸ Stroke Option	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment	❼ Connection Size/Shape	❽ Buffer Load		❾ Pad Swinging	❿ Drop Prevention Valve	⓫ Direct Mount Filter

Pad Rubber Only

VSPG	2×4		E	N	-ER
Model No.	❷		❹	❺	❻

Pad Rubber + Set with Fixing Screw

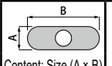
VSPG	2×4		E	N	-ER	A
Model No.	❷ Pad Size		❹ Pad Shape	❺ Pad Material	❻ Surface Treatment	

❶ Holder Shape

Buffer Present/Absent	Type	Vacuum Outlet	Code	
Fixed Type	Standard	Top Direction	A	
	Compact		MA	
	Screw Fastening		AE	
	Standard	Side Direction	B	
	Compact		MB	
	Low Profile		HE	
	Low Profile	Both Sides Direction	HEW	
	Screw Fastening	Side Direction	BE	

Buffer Present/Absent	Type	Vacuum Outlet	Code	
Buffer Type	Standard	Top Direction	C	
	Compact		MC	
	Low Particle Generation		LFC	
	Lightweight		HC	
	Standard	Side Direction	D	
	Compact		MD	
	Low Particle Generation		LFD	
	Lightweight		HD	
	Lightweight	Both Sides Direction	HDW	
	Standard	Direct Mount Type	F	

❷ Pad Size

Pad Shape	E									
Pad Material	N	S	U	F	SE	E	NE	HN	EP	Code
 Content: Size (A × B)										
2 mm × 4 mm	●	●	●	●	●		●	●	●	2×4
3.5 mm × 7 mm	●	●	●	●	●		●	●	●	3.5×7
4 mm × 10 mm	●	●	●	●	●	●	●	●	●	4×10
4 mm × 20 mm	●	●	●	●	●	●	●	●	●	4×20
4 mm × 30 mm	●	●			●	●	●	●	●	4 × 30
5 mm × 10 mm	●	●	●	●	●	●	●	●	●	5×10
5 mm × 20 mm	●	●	●	●	●	●	●	●	●	5 × 20
5 mm × 30 mm	●	●	●	●	●	●	●	●	●	5 × 30
6 mm × 10 mm	●	●	●	●	●	●	●	●	●	6 × 10
6 mm × 20 mm	●	●	●	●	●	●	●	●	●	6 × 20
6 mm × 30 mm	●	●	●	●	●	●	●	●	●	6 × 30
8 mm × 20 mm	●	●	●	●	●	●	●	●	●	8 × 20
8 mm × 30 mm	●	●	●	●	●	●	●	●	●	8 × 30

❸ Stroke Option

Content	Holder Shape C	D	HC	LFC	LFD	Code	
Specified Stroke, or No Buffer	●	●				Blank	*1, *2
Stroke 5 mm				●	●	–5	
Stroke 10 mm	●	●	●	●	●	–10	
Stroke 15 mm	●	●	●	●	●	–15	
Stroke 20 mm	●	●	●	●	●	–20	
Stroke 25 mm			●			–25	
Stroke 30 mm	●	●	●			–30	
Stroke 40 mm	●	●	●			–40	
Stroke 50 mm	●	●	●			–50	

*1: For ❶ Holder Shape other than C, D, HC, LFC, and LFD, ❸ is 'Blank'.
*2: For the specified stroke of ❸ 'Blank', please confirm the stroke dimension on the external dimension drawing.

❹ Pad Shape

Code	Content	
E	Oval-type	

❺ Pad Material

Code	Content
N	Nitrile rubber
S	Silicone Rubber
U	Urethane rubber
F	Fluororubber
SE	Conductive Silicone Rubber
NE	Conductive NBR (Low Resistance-type)
HN	HNBR
EP	EPDM

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

●Design compatible with rechargeable battery manufacturing process

VSP –... –P4*

*Please inquire for details.

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

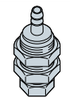
●Uses food-grade lubricant and Food Sanitation Act compliant resin/rubber materials suitable for food manufacturing processes.

VSP –... –FP*

❻ Surface Treatment

Content	Compatible Pad Material N	S	F	SE	NE	Compatible Pad Diameter Oblong (E)	Code
No surface treatment	All pad materials, all pad sizes						Blank
Anti-Adhesion Special Coating		●	●	●		All sizes	–DL
Suction Mark Reduction Surface Modification	●				●	All sizes	–ER
Fluorine Coating		●		●		All sizes	–FG

❼ Connection Size/Shape

Content	Holder Shape A	B	C	D	MA	MB	MC	MD	LFC	LFD	HC	HD	HDW	HE	HEW	AE	BE	Code	
(❶: When F)																		Blank	
ø1.8, Push-in fitting						●	●	●			●	●	●	●	●	●	●	2	
ø4, Push-in fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4	
ø6, Push-in fitting	●	●	●	●		●		●	●	●	●	●	●	●	●	●	●	6	
ø4, Push-in fitting, without spring cover			●	●														4C	
ø6, Push-in fitting, without spring cover			●	●														6C	
ø4, Barb fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4T	
ø6, Barb fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	6T	
ø4, Barb fitting, without spring cover			●	●														4TC	
ø6, Barb fitting, without spring cover			●	●														6TC	

*1: For ❶ Holder Shape C and D with ❸ Stroke Option -20 to -50, options 4C, 6C, 4TC, and 6TC can be selected for (7). Additionally, for (3) Stroke Option -30 to -50, only 4C, 6C, 4TC, and 6TC can be selected for ❼.

❽ Buffer Load

Code	Content	
Blank	Standard Load or No Buffer	*1
L	Low Load (1/4 of Standard Load)	

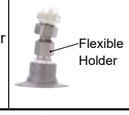
*1: For ❶ Holder Shape other than LFC, ❽ is 'Blank'.

⓫ Direct Mount Filter

Code	Content		
Blank	None		*1
T1	With Direct Mount Filter (Filtration Area 1.7 cm²)	 Direct Mount Filter	
T2	With Direct Mount Filter (Filtration Area 7 cm²)		

*1: For ❶ Holder Shape AE and BE, ⓫ is 'Blank'.
*2: For dimensions with the direct mount filter, please refer to P. 1064.

❾ Pad Swing

Code	Content		
Blank	None		*1
F1	With Free Holder (Angle 30°)	 Free Holder	
F2	With Free Holder (Angle 15°)		
CF	With Flexible Holder (Angle 8°)	 Flexible Holder	

*1: For ❶ Holder Shape AE and BE, ❾ is 'Blank'.
*2: For dimensions with the pad swivel function, please refer to P. 1060 and P. 1062.

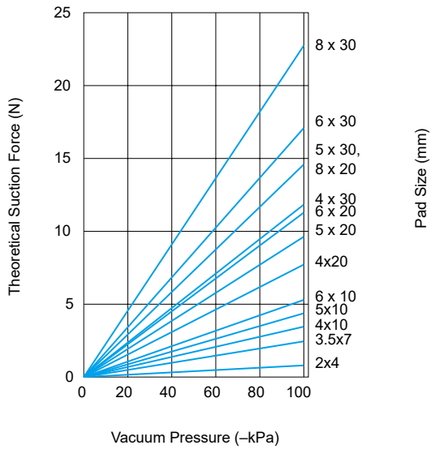
❿ Drop Prevention Valve

Code	Content		
Blank	None		*1
V	With Drop Prevention Valve	 Drop Prevention Valve	

*1: For ❶ Holder Shape AE and BE, ❿ is 'Blank'.
*2: For dimensions with the drop prevention valve, please refer to P. 1083 and P. 1084.

Theoretical Suction Force

● Pad Size: 2 x 4 mm, 3.5 x 7 mm, □ x 10 mm, □ x 20 mm, □ x 30 mm

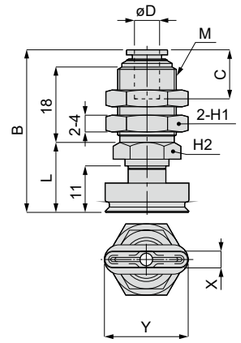


*The theoretical suction force is a value under static conditions. When actually using, apply a safety factor of 1/4 for horizontal lifting and 1/8 for vertical lifting.

Refer to "Suction Pads selection method" (P. 412) Use the suction force obtained with this formula as a guide, and make sure that there is no problem with the suction capacity on the actual machine.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Push-in fitting)

●VSP-A□E□-4/6

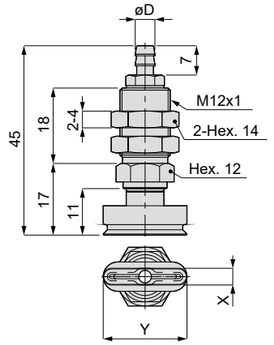


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	Mounting screw M	B	L	Tube End C	Width Across Flats H1	Width Across Flats H2	Weight (g)
VSP-A2x4E□-4	2	4	4	M12x1	47.9	17	11.2	14	12	26
VSP-A2x4E□-6			6	M14x1	38.9	16.6	11.9	17	14	32
VSP-A3.5x7E□-4	3.5	7	4	M12x1	47.9	17	11.2	14	12	26
VSP-A3.5x7E□-6			6	M14x1	38.9	16.6	11.9	17	14	32
VSP-A4x10E□-4	4	10	4	M12x1	47.9	17	11.2	14	12	26
VSP-A4x10E□-6			6	M14x1	38.9	16.6	11.9	17	14	32
VSP-A4x20E□-4		20	4	M12x1	47.9	17	11.2	14	12	26
VSP-A4x20E□-6			6	M14x1	38.9	16.6	11.9	17	14	32
VSP-A4x30E□-4		30	4	M12x1	47.9	17	11.2	14	12	27
VSP-A4x30E□-6			6	M14x1	38.9	16.6	11.9	17	14	33
VSP-A5x10E□-4	5	10	4	M12x1	47.9	17	11.2	14	12	26
VSP-A5x10E□-6			6	M14x1	38.9	16.6	11.9	17	14	32
VSP-A5x20E□-4		20	4	M12x1	47.9	17	11.2	14	12	26
VSP-A5x20E□-6			6	M14x1	38.9	16.6	11.9	17	14	32
VSP-A5x30E□-4		30	4	M12x1	47.9	17	11.2	14	12	26
VSP-A5x30E□-6			6	M14x1	38.9	16.6	11.9	17	14	32
VSP-A6x10E□-4	6	10	4	M12x1	47.9	17	11.2	14	12	26
VSP-A6x10E□-6			6	M14x1	38.9	16.6	11.9	17	14	32
VSP-A6x20E□-4		20	4	M12x1	47.9	17	11.2	14	12	26
VSP-A6x20E□-6			6	M14x1	38.9	16.6	11.9	17	14	32
VSP-A6x30E□-4		30	4	M12x1	47.9	17	11.2	14	12	27
VSP-A6x30E□-6			6	M14x1	38.9	16.6	11.9	17	14	33
VSP-A8x20E□-4	8	20	4	M12x1	47.9	17	11.2	14	12	26
VSP-A8x20E□-6			6	M14x1	38.9	16.6	11.9	17	14	32
VSP-A8x30E□-4		30	4	M12x1	47.9	17	11.2	14	12	27
VSP-A8x30E□-6			6	M14x1	38.9	16.6	11.9	17	14	33

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Barb fitting)

●VSP-A□E□-4T/6T

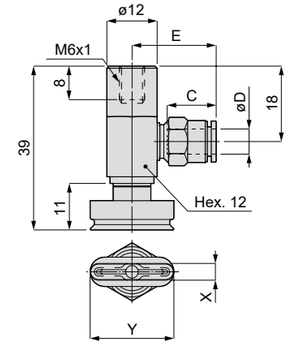


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	Weight (g)
VSP-A2x4E□-4T	2	4	2.5	25
VSP-A2x4E□-6T			4	
VSP-A3.5x7E□-4T	3.5	7	2.5	25
VSP-A3.5x7E□-6T			4	
VSP-A4x10E□-4T	4	10	2.5	25
VSP-A4x10E□-6T			4	
VSP-A4x20E□-4T		20	2.5	26
VSP-A4x20E□-6T			4	
VSP-A4x30E□-4T		30	2.5	26
VSP-A4x30E□-6T			4	
VSP-A5x10E□-4T	5	10	2.5	25
VSP-A5x10E□-6T			4	
VSP-A5x20E□-4T		20	2.5	26
VSP-A5x20E□-6T			4	
VSP-A5x30E□-4T		30	2.5	26
VSP-A5x30E□-6T			4	
VSP-A6x10E□-4T	6	10	2.5	25
VSP-A6x10E□-6T			4	
VSP-A6x20E□-4T		20	2.5	26
VSP-A6x20E□-6T			4	
VSP-A6x30E□-4T		30	2.5	26
VSP-A6x30E□-6T			4	
VSP-A8x20E□-4T	8	20	2.5	26
VSP-A8x20E□-6T			4	
VSP-A8x30E□-4T		30	2.5	26
VSP-A8x30E□-6T			4	

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Push-in fitting)

●VSP-B□E□-4/6

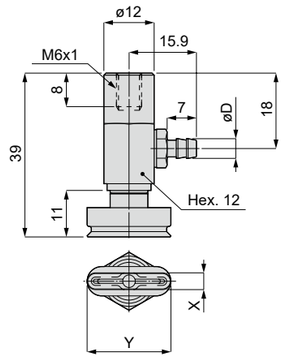


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	Tube End C	E	Weight (g)
VSP-B2x4E□-4	2	4	4	11.2	18.8	28
VSP-B2x4E□-6			6	11.9	20.1	29
VSP-B3.5x7E□-4	3.5	7	4	11.2	18.8	28
VSP-B3.5x7E□-6			6	11.9	20.1	29
VSP-B4x10E□-4	4	10	4	11.2	18.8	28
VSP-B4x10E□-6			6	11.9	20.1	29
VSP-B4x20E□-4		20	4	11.2	18.8	29
VSP-B4x20E□-6			6	11.9	20.1	30
VSP-B4x30E□-4		30	4	11.2	18.8	29
VSP-B4x30E□-6			6	11.9	20.1	30
VSP-B5x10E□-4	5	10	4	11.2	18.8	28
VSP-B5x10E□-6			6	11.9	20.1	29
VSP-B5x20E□-4		20	4	11.2	18.8	29
VSP-B5x20E□-6			6	11.9	20.1	30
VSP-B5x30E□-4		30	4	11.2	18.8	29
VSP-B5x30E□-6			6	11.9	20.1	30
VSP-B6x10E□-4	6	10	4	11.2	18.8	28
VSP-B6x10E□-6			6	11.9	20.1	29
VSP-B6x20E□-4		20	4	11.2	18.8	29
VSP-B6x20E□-6			6	11.9	20.1	30
VSP-B6x30E□-4		30	4	11.2	18.8	29
VSP-B6x30E□-6			6	11.9	20.1	30
VSP-B8x20E□-4	8	20	4	11.2	18.8	29
VSP-B8x20E□-6			6	11.9	20.1	30
VSP-B8x30E□-4		30	4	11.2	18.8	29
VSP-B8x30E□-6			6	11.9	20.1	30

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Barb Fitting)

●VSP-B□E□-4T/6T

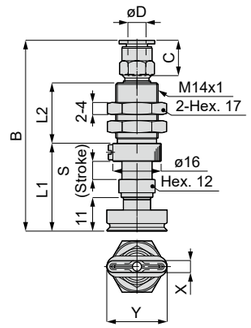


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	Weight (g)
VSP-B2x4E□-4T	2	4	2.5	27
VSP-B2x4E□-6T			4	
VSP-B3.5x7E□-4T	3.5	7	2.5	27
VSP-B3.5x7E□-6T			4	
VSP-B4x10E□-4T	4	10	2.5	27
VSP-B4x10E□-6T			4	
VSP-B4x20E□-4T		20	2.5	28
VSP-B4x20E□-6T			4	
VSP-B4x30E□-4T		30	2.5	28
VSP-B4x30E□-6T			4	
VSP-B5x10E□-4T	5	10	2.5	27
VSP-B5x10E□-6T			4	
VSP-B5x20E□-4T		20	2.5	28
VSP-B5x20E□-6T			4	
VSP-B5x30E□-4T		30	2.5	28
VSP-B5x30E□-6T			4	
VSP-B6x10E□-4T	6	10	2.5	27
VSP-B6x10E□-6T			4	
VSP-B6x20E□-4T		20	2.5	28
VSP-B6x20E□-6T			4	
VSP-B6x30E□-4T		30	2.5	28
VSP-B6x30E□-6T			4	
VSP-B8x20E□-4T	8	20	2.5	28
VSP-B8x20E□-6T			4	
VSP-B8x30E□-4T		30	2.5	28
VSP-B8x30E□-6T			4	

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C□E□-4/6
●VSP-C□-□E□-4/6

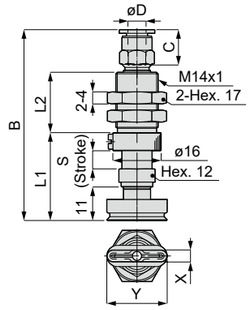


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C2x4E□-4	2	4	4	62	29	20	11.2	6	7.0 to 12.6	34
VSP-C2x4E□-6			6	63.3			11.9			35
VSP-C2x4-10E□-4			4	68	35		11.2	10	3.3 to 10.0	37
VSP-C2x4-10E□-6			6	69.3			11.9			38
VSP-C2x4-15E□-4			4	78	40	25	11.2	15	3.3 to 10.4	41
VSP-C2x4-15E□-6			6	79.3			11.9			42
VSP-C2x4-20E□-4			4	94	47	34	11.2	20	2.0 to 8.7	46
VSP-C2x4-20E□-6			6	95.3			11.9			47
VSP-C3.5x7E□-4	3.5	7	4	62	29	20	11.2	6	7.0 to 12.6	34
VSP-C3.5x7E□-6			6	63.3			11.9			35
VSP-C3.5x7-10E□-4			4	68	35		11.2	10	3.3 to 10.0	37
VSP-C3.5x7-10E□-6			6	69.3			11.9			38
VSP-C3.5x7-15E□-4			4	78	40	25	11.2	15	3.3 to 10.4	41
VSP-C3.5x7-15E□-6			6	79.3			11.9			42
VSP-C3.5x7-20E□-4			4	94	47	34	11.2	20	2.0 to 8.7	48
VSP-C3.5x7-20E□-6			6	95.3			11.9			49
VSP-C4x10E□-4	4	10	4	62	29	20	11.2	6	7.0 to 12.6	34
VSP-C4x10E□-6			6	63.3			11.9			35
VSP-C4x10-10E□-4			4	68	35		11.2	10	3.3 to 10.0	37
VSP-C4x10-10E□-6			6	69.3			11.9			38
VSP-C4x10-15E□-4			4	78	40	25	11.2	15	3.3 to 10.4	41
VSP-C4x10-15E□-6			6	79.3			11.9			42
VSP-C4x10-20E□-4			4	94	47	34	11.2	20	2.0 to 8.7	48
VSP-C4x10-20E□-6			6	95.3			11.9			49
VSP-C4x20E□-4		20	4	62	29	20	11.2	6	7.0 to 12.6	35
VSP-C4x20E□-6			6	63.3			11.9			36
VSP-C4x20-10E□-4			4	68	35		11.2	10	3.3 to 10.0	37
VSP-C4x20-10E□-6			6	69.3			11.9			38
VSP-C4x20-15E□-4			4	78	40	25	11.2	15	3.3 to 10.4	42
VSP-C4x20-15E□-6			6	79.3			11.9			43
VSP-C4x20-20E□-4			4	94	47	34	11.2	20	2.0 to 8.7	49
VSP-C4x20-20E□-6			6	95.3			11.9			50
VSP-C4x30E□-4		30	4	62	29	20	11.2	6	7.0 to 12.6	35
VSP-C4x30E□-6			6	63.3			11.9			36
VSP-C4x30-10E□-4			4	68	35		11.2	10	3.3 to 10.0	38
VSP-C4x30-10E□-6			6	69.3			11.9			39
VSP-C4x30-15E□-4			4	78	40	25	11.2	15	3.3 to 10.4	42
VSP-C4x30-15E□-6			6	79.3			11.9			43
VSP-C4x30-20E□-4			4	94	47	34	11.2	20	2.0 to 8.7	49
VSP-C4x30-20E□-6			6	95.3			11.9			50

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C□E□-4/6
●VSP-C□-□E□-4/6

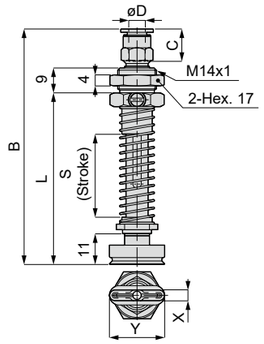


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C5x10E□-4	5	10	4	62	29	20	11.2	6	7.0 to 12.6	34
VSP-C5x10E□-6			6	63.3			11.9			35
VSP-C5x10-10E□-4			4	68	35		11.2	10	3.3 to 10.0	37
VSP-C5x10-10E□-6			6	69.3			11.9			38
VSP-C5x10-15E□-4			4	78	40	25	11.2	15	3.3 to 10.4	41
VSP-C5x10-15E□-6			6	79.3			11.9			42
VSP-C5x10-20E□-4			4	94	47	34	11.2	20	2.0 to 8.7	48
VSP-C5x10-20E□-6			6	95.3			11.9			49
VSP-C5x20E□-4		20	4	62	29	20	11.2	6	7.0 to 12.6	35
VSP-C5x20E□-6			6	63.3			11.9			36
VSP-C5x20-10E□-4			4	68	35		11.2	10	3.3 to 10.0	37
VSP-C5x20-10E□-6			6	69.3			11.9			38
VSP-C5x20-15E□-4			4	78	40	25	11.2	15	3.3 to 10.4	42
VSP-C5x20-15E□-6			6	79.3			11.9			43
VSP-C5x20-20E□-4			4	94	47	34	11.2	20	2.0 to 8.7	49
VSP-C5x20-20E□-6			6	95.3			11.9			50
VSP-C5x30E□-4		30	4	62	29	20	11.2	6	7.0 to 12.6	35
VSP-C5x30E□-6			6	63.3			11.9			36
VSP-C5x30-10E□-4			4	68	35		11.2	10	3.3 to 10.0	38
VSP-C5x30-10E□-6			6	69.3			11.9			39
VSP-C5x30-15E□-4			4	78	40	25	11.2	15	3.3 to 10.4	42
VSP-C5x30-15E□-6			6	79.3			11.9			43
VSP-C5x30-20E□-4			4	94	47	34	11.2	20	2.0 to 8.7	49
VSP-C5x30-20E□-6			6	95.3			11.9			50
VSP-C6x10E□-4	6	10	4	62	29	20	11.2	6	7.0 to 12.6	34
VSP-C6x10E□-6			6	63.3			11.9			35
VSP-C6x10-10E□-4			4	68	35		11.2	10	3.3 to 10.0	37
VSP-C6x10-10E□-6			6	69.3			11.9			38
VSP-C6x10-15E□-4			4	78	40	25	11.2	15	3.3 to 10.4	41
VSP-C6x10-15E□-6			6	79.3			11.9			42
VSP-C6x10-20E□-4			4	94	47	34	11.2	20	2.0 to 8.7	48
VSP-C6x10-20E□-6			6	95.3			11.9			49
VSP-C6x20E□-4		20	4	62	29	20	11.2	6	7.0 to 12.6	35
VSP-C6x20E□-6			6	63.3			11.9			36
VSP-C6x20-10E□-4			4	68	35		11.2	10	3.3 to 10.0	37
VSP-C6x20-10E□-6			6	69.3			11.9			38
VSP-C6x20-15E□-4			4	78	40	25	11.2	15	3.3 to 10.4	42
VSP-C6x20-15E□-6			6	79.3			11.9			43
VSP-C6x20-20E□-4			4	94	47	34	11.2	20	2.0 to 8.7	49
VSP-C6x20-20E□-6			6	95.3			11.9			50
VSP-C6x30E□-4		30	4	62	29	20	11.2	6	7.0 to 12.6	35
VSP-C6x30E□-6			6	63.3			11.9			36
VSP-C6x30-10E□-4			4	68	35		11.2	10	3.3 to 10.0	38
VSP-C6x30-10E□-6			6	69.3			11.9			39
VSP-C6x30-15E□-4			4	78	40	25	11.2	15	3.3 to 10.4	42
VSP-C6x30-15E□-6			6	79.3			11.9			43
VSP-C6x30-20E□-4			4	94	47	34	11.2	20	2.0 to 8.7	49
VSP-C6x30-20E□-6			6	95.3			11.9			50
VSP-C8x20E□-4	8	20	4	62	29	20	11.2	6	7.0 to 12.6	35
VSP-C8x20E□-6			6	63.3			11.9			36
VSP-C8x20-10E□-4			4	68	35		11.2	10	3.3 to 10.0	37
VSP-C8x20-10E□-6			6	69.3			11.9			38
VSP-C8x20-15E□-4			4	78	40	25	11.2	15	3.3 to 10.4	42
VSP-C8x20-15E□-6			6	79.3			11.9			43
VSP-C8x20-20E□-4			4	94	47	34	11.2	20	2.0 to 8.7	49
VSP-C8x20-20E□-6			6	95.3			11.9			50
VSP-C8x30E□-4		30	4	62	29	20	11.2	6	7.0 to 12.6	35
VSP-C8x30E□-6			6	63.3			11.9			36
VSP-C8x30-10E□-4			4	68	35		11.2	10	3.3 to 10.0	38
VSP-C8x30-10E□-6			6	69.3			11.9			39
VSP-C8x30-15E□-4			4	78	40	25	11.2	15	3.3 to 10.4	42
VSP-C8x30-15E□-6			6	79.3			11.9			43
VSP-C8x30-20E□-4			4	94	47	34	11.2	20	2.0 to 8.7	49
VSP-C8x30-20E□-6			6	95.3			11.9			50

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting without Spring Cover)

●VSP-C□-□E□-4C/6C

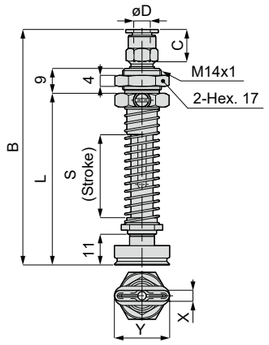


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C2x4-20E□-4C	2	4	4	71	49	11.2	20	1.5 to 4.9	44
VSP-C2x4-20E□-6C			6	72.3		11.9			45
VSP-C2x4-30E□-4C			4	84	62	11.2	30	1.1 to 4.8	49
VSP-C2x4-30E□-6C			6	85.3		11.9			50
VSP-C2x4-40E□-4C			4	97	75	11.2	40	1.0 to 4.5	54
VSP-C2x4-40E□-6C			6	98.3		11.9			55
VSP-C2x4-50E□-4C			4	110	88	11.2	50	0.9 to 4.5	60
VSP-C2x4-50E□-6C			6	111.3		11.9			61
VSP-C3.5x7-20E□-4C	3.5	7	4	71	49	11.2	20	1.5 to 4.9	44
VSP-C3.5x7-20E□-6C			6	72.3		11.9			45
VSP-C3.5x7-30E□-4C			4	84	62	11.2	30	1.1 to 4.8	49
VSP-C3.5x7-30E□-6C			6	85.3		11.9			50
VSP-C3.5x7-40E□-4C			4	97	75	11.2	40	1.0 to 4.5	54
VSP-C3.5x7-40E□-6C			6	98.3		11.9			55
VSP-C3.5x7-50E□-4C			4	110	88	11.2	50	0.9 to 4.5	60
VSP-C3.5x7-50E□-6C			6	111.3		11.9			61
VSP-C4x10-20E□-4C	4	10	4	71	49	11.2	20	1.5 to 4.9	44
VSP-C4x10-20E□-6C			6	72.3		11.9			45
VSP-C4x10-30E□-4C			4	84	62	11.2	30	1.1 to 4.8	50
VSP-C4x10-30E□-6C			6	85.3		11.9			51
VSP-C4x10-40E□-4C			4	97	75	11.2	40	1.0 to 4.5	55
VSP-C4x10-40E□-6C			6	98.3		11.9			56
VSP-C4x10-50E□-4C			4	110	88	11.2	50	0.9 to 4.5	60
VSP-C4x10-50E□-6C			6	111.3		11.9			61
VSP-C4x20-20E□-4C		20	4	71	49	11.2	20	1.5 to 4.9	45
VSP-C4x20-20E□-6C			6	72.3		11.9			46
VSP-C4x20-30E□-4C			4	84	62	11.2	30	1.1 to 4.8	50
VSP-C4x20-30E□-6C			6	85.3		11.9			51
VSP-C4x20-40E□-4C			4	97	75	11.2	40	1.0 to 4.5	55
VSP-C4x20-40E□-6C			6	98.3		11.9			56
VSP-C4x20-50E□-4C			4	110	88	11.2	50	0.9 to 4.5	61
VSP-C4x20-50E□-6C			6	111.3		11.9			62
VSP-C4x30-20E□-4C		30	4	71	49	11.2	20	1.5 to 4.9	45
VSP-C4x30-20E□-6C			6	72.3		11.9			46
VSP-C4x30-30E□-4C			4	84	62	11.2	30	1.1 to 4.8	50
VSP-C4x30-30E□-6C			6	85.3		11.9			51
VSP-C4x30-40E□-4C			4	97	75	11.2	40	1.0 to 4.5	55
VSP-C4x30-40E□-6C			6	98.3		11.9			56
VSP-C4x30-50E□-4C			4	110	88	11.2	50	0.9 to 4.5	60
VSP-C4x30-50E□-6C			6	111.3		11.9			61

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting without Spring Cover)

●VSP-C□-□E□-4C/6C

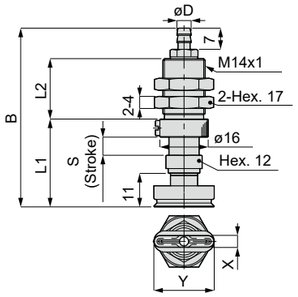


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C5x10-20E□-4C	5	10	4	71	49	11.2	20	1.5 to 4.9	44
VSP-C5x10-20E□-6C			6	72.3		11.9			45
VSP-C5x10-30E□-4C			4	84	62	11.2	30	1.1 to 4.8	49
VSP-C5x10-30E□-6C			6	85.3		11.9			50
VSP-C5x10-40E□-4C			4	97	75	11.2	40	1.0 to 4.5	54
VSP-C5x10-40E□-6C			6	98.3		11.9			55
VSP-C5x10-50E□-4C			4	110	88	11.2	50	0.9 to 4.5	60
VSP-C5x10-50E□-6C			6	111.3		11.9			61
VSP-C5x20-20E□-4C		20	4	71	49	11.2	20	1.5 to 4.9	44
VSP-C5x20-20E□-6C			6	72.3		11.9			45
VSP-C5x20-30E□-4C			4	84	62	11.2	30	1.1 to 4.8	50
VSP-C5x20-30E□-6C			6	85.3		11.9			51
VSP-C5x20-40E□-4C			4	97	75	11.2	40	1.0 to 4.5	55
VSP-C5x20-40E□-6C			6	98.3		11.9			56
VSP-C5x20-50E□-4C			4	110	88	11.2	50	0.9 to 4.5	60
VSP-C5x20-50E□-6C			6	111.3		11.9			61
VSP-C5x30-20E□-4C		30	4	71	49	11.2	20	1.5 to 4.9	45
VSP-C5x30-20E□-6C			6	72.3		11.9			46
VSP-C5x30-30E□-4C			4	84	62	11.2	30	1.1 to 4.8	50
VSP-C5x30-30E□-6C			6	85.3		11.9			51
VSP-C5x30-40E□-4C			4	97	75	11.2	40	1.0 to 4.5	55
VSP-C5x30-40E□-6C			6	98.3		11.9			56
VSP-C5x30-50E□-4C			4	110	88	11.2	50	0.9 to 4.5	61
VSP-C5x30-50E□-6C			6	111.3		11.9			62
VSP-C6x10-20E□-4C	6	10	4	71	49	11.2	20	1.5 to 4.9	44
VSP-C6x10-20E□-6C			6	72.3		11.9			45
VSP-C6x10-30E□-4C			4	84	62	11.2	30	1.1 to 4.8	49
VSP-C6x10-30E□-6C			6	85.3		11.9			50
VSP-C6x10-40E□-4C			4	97	75	11.2	40	1.0 to 4.5	54
VSP-C6x10-40E□-6C			6	98.3		11.9			55
VSP-C6x10-50E□-4C			4	110	88	11.2	50	0.9 to 4.5	60
VSP-C6x10-50E□-6C			6	111.3		11.9			61
VSP-C6x20-20E□-4C		20	4	71	49	11.2	20	1.5 to 4.9	44
VSP-C6x20-20E□-6C			6	72.3		11.9			45
VSP-C6x20-30E□-4C			4	84	62	11.2	30	1.1 to 4.8	50
VSP-C6x20-30E□-6C			6	85.3		11.9			51
VSP-C6x20-40E□-4C			4	97	75	11.2	40	1.0 to 4.5	55
VSP-C6x20-40E□-6C			6	98.3		11.9			56
VSP-C6x20-50E□-4C			4	110	88	11.2	50	0.9 to 4.5	60
VSP-C6x20-50E□-6C			6	111.3		11.9			61
VSP-C6x30-20E□-4C		30	4	71	49	11.2	20	1.5 to 4.9	45
VSP-C6x30-20E□-6C			6	72.3		11.9			46
VSP-C6x30-30E□-4C			4	84	62	11.2	30	1.1 to 4.8	50
VSP-C6x30-30E□-6C			6	85.3		11.9			51
VSP-C6x30-40E□-4C			4	97	75	11.2	40	1.0 to 4.5	55
VSP-C6x30-40E□-6C			6	98.3		11.9			56
VSP-C6x30-50E□-4C			4	110	88	11.2	50	0.9 to 4.5	61
VSP-C6x30-50E□-6C			6	111.3		11.9			62
VSP-C8x20-20E□-4C	8	20	4	71	49	11.2	20	1.5 to 4.9	44
VSP-C8x20-20E□-6C			6	72.3		11.9			45
VSP-C8x20-30E□-4C			4	84	62	11.2	30	1.1 to 4.8	50
VSP-C8x20-30E□-6C			6	85.3		11.9			51
VSP-C8x20-40E□-4C			4	97	75	11.2	40	1.0 to 4.5	55
VSP-C8x20-40E□-6C			6	98.3		11.9			56
VSP-C8x20-50E□-4C			4	110	88	11.2	50	0.9 to 4.5	60
VSP-C8x20-50E□-6C			6	111.3		11.9			61
VSP-C8x30-20E□-4C		30	4	71	49	11.2	20	1.5 to 4.9	45
VSP-C8x30-20E□-6C			6	72.3		11.9			46
VSP-C8x30-30E□-4C			4	84	62	11.2	30	1.1 to 4.8	50
VSP-C8x30-30E□-6C			6	85.3		11.9			51
VSP-C8x30-40E□-4C			4	97	75	11.2	40	1.0 to 4.5	55
VSP-C8x30-40E□-6C			6	98.3		11.9			56
VSP-C8x30-50E□-4C			4	110	88	11.2	50	0.9 to 4.5	61
VSP-C8x30-50E□-6C			6	111.3		11.9			62

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C□E□-4T/6T
●VSP-C□-□E□-4T/6T

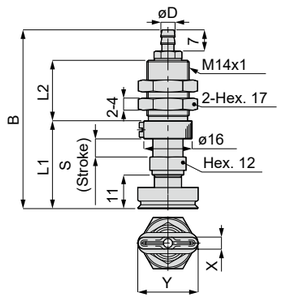


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C2x4E□-4T	2	4	2.5	59.1	29	20	6	7.0 to 12.6	33
VSP-C2x4E□-6T			4						
VSP-C2x4-10E□-4T			2.5	65.1	35		10	3.3 to 10.0	36
VSP-C2x4-10E□-6T			4						
VSP-C2x4-15E□-4T			2.5	75.1	40	25	15	3.3 to 10.4	40
VSP-C2x4-15E□-6T			4						
VSP-C2x4-20E□-4T			2.5	91.1	47	34	20	2.0 to 8.7	47
VSP-C2x4-20E□-6T			4						
VSP-C3.5x7E□-4T	3.5	7	2.5	59.1	29	20	6	7.0 to 12.6	33
VSP-C3.5x7E□-6T			4						
VSP-C3.5x7-10E□-4T			2.5	65.1	35		10	3.3 to 10.0	36
VSP-C3.5x7-10E□-6T			4						
VSP-C3.5x7-15E□-4T			2.5	75.1	40	25	15	3.3 to 10.4	40
VSP-C3.5x7-15E□-6T			4						
VSP-C3.5x7-20E□-4T			2.5	91.1	47	34	20	2.0 to 8.7	47
VSP-C3.5x7-20E□-6T			4						
VSP-C4x10E□-4T	4	10	2.5	59.1	29	20	6	7.0 to 12.6	33
VSP-C4x10E□-6T			4						
VSP-C4x10-10E□-4T			2.5	65.1	35		10	3.3 to 10.0	36
VSP-C4x10-10E□-6T			4						
VSP-C4x10-15E□-4T			2.5	75.1	40	25	15	3.3 to 10.4	40
VSP-C4x10-15E□-6T			4						
VSP-C4x10-20E□-4T			2.5	91.1	47	34	20	2.0 to 8.7	47
VSP-C4x10-20E□-6T			4						
VSP-C4x20E□-4T		20	2.5	59.1	29	20	6	7.0 to 12.6	34
VSP-C4x20E□-6T			4						
VSP-C4x20-10E□-4T			2.5	65.1	35		10	3.3 to 10.0	36
VSP-C4x20-10E□-6T			4						
VSP-C4x20-15E□-4T			2.5	75.1	40	25	15	3.3 to 10.4	41
VSP-C4x20-15E□-6T			4						
VSP-C4x20-20E□-4T			2.5	91.1	47	34	20	2.0 to 8.7	48
VSP-C4x20-20E□-6T			4						
VSP-C4x30E□-4T		30	2.5	59.1	29	20	6	7.0 to 12.6	34
VSP-C4x30E□-6T			4						
VSP-C4x30-10E□-4T			2.5	65.1	35		10	3.3 to 10.0	37
VSP-C4x30-10E□-6T			4						
VSP-C4x30-15E□-4T			2.5	75.1	40	25	15	3.3 to 10.4	41
VSP-C4x30-15E□-6T			4						
VSP-C4x30-20E□-4T			2.5	91.1	47	34	20	2.0 to 8.7	48
VSP-C4x30-20E□-6T			4						

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C□E□-4T/6T
●VSP-C□-□E□-4T/6T

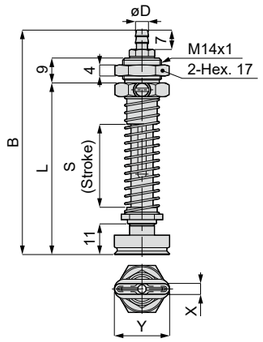


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C5x10E□-4T	5	10	4	59.1	29	20	6	7.0 to 12.6	33
VSP-C5x10E□-6T			6						
VSP-C5x10-10E□-4T			4	65.1	35		10	3.3 to 10.0	36
VSP-C5x10-10E□-6T			6						
VSP-C5x10-15E□-4T			4	75.1	40	25	15	3.3 to 10.4	40
VSP-C5x10-15E□-6T			6						
VSP-C5x10-20E□-4T			4	91.1	47	34	20	2.0 to 8.7	47
VSP-C5x10-20E□-6T			6						
VSP-C5x20E□-4T		20	4	59.1	29	20	6	7.0 to 12.6	34
VSP-C5x20E□-6T			6						
VSP-C5x20-10E□-4T			4	65.1	35		10	3.3 to 10.0	36
VSP-C5x20-10E□-6T			6						
VSP-C5x20-15E□-4T			4	75.1	40	25	15	3.3 to 10.4	41
VSP-C5x20-15E□-6T			6						
VSP-C5x20-20E□-4T			4	91.1	47	34	20	2.0 to 8.7	48
VSP-C5x20-20E□-6T			6						
VSP-C5x30E□-4T		30	4	59.1	29	20	6	7.0 to 12.6	34
VSP-C5x30E□-6T			6						
VSP-C5x30-10E□-4T			4	65.1	35		10	3.3 to 10.0	37
VSP-C5x30-10E□-6T			6						
VSP-C5x30-15E□-4T			4	75.1	40	25	15	3.3 to 10.4	41
VSP-C5x30-15E□-6T			6						
VSP-C5x30-20E□-4T			4	91.1	47	34	20	2.0 to 8.7	48
VSP-C5x30-20E□-6T			6						
VSP-C6x10E□-4T	6	10	4	59.1	29	20	6	7.0 to 12.6	33
VSP-C6x10E□-6T			6						
VSP-C6x10-10E□-4T			4	65.1	35		10	3.3 to 10.0	36
VSP-C6x10-10E□-6T			6						
VSP-C6x10-15E□-4T			4	75.1	40	25	15	3.3 to 10.4	40
VSP-C6x10-15E□-6T			6						
VSP-C6x10-20E□-4T			4	91.1	47	34	20	2.0 to 8.7	47
VSP-C6x10-20E□-6T			6						
VSP-C6x20E□-4T		20	4	59.1	29	20	6	7.0 to 12.6	34
VSP-C6x20E□-6T			6						
VSP-C6x20-10E□-4T			4	65.1	35		10	3.3 to 10.0	36
VSP-C6x20-10E□-6T			6						
VSP-C6x20-15E□-4T			4	75.1	40	25	15	3.3 to 10.4	41
VSP-C6x20-15E□-6T			6						
VSP-C6x20-20E□-4T			4	91.1	47	34	20	2.0 to 8.7	48
VSP-C6x20-20E□-6T			6						
VSP-C6x30E□-4T		30	4	59.1	29	20	6	7.0 to 12.6	34
VSP-C6x30E□-6T			6						
VSP-C6x30-10E□-4T			4	65.1	35		10	3.3 to 10.0	37
VSP-C6x30-10E□-6T			6						
VSP-C6x30-15E□-4T			4	75.1	40	25	15	3.3 to 10.4	41
VSP-C6x30-15E□-6T			6						
VSP-C6x30-20E□-4T			4	91.1	47	34	20	2.0 to 8.7	48
VSP-C6x30-20E□-6T			6						
VSP-C8x20E□-4T	8	20	4	59.1	29	20	6	7.0 to 12.6	34
VSP-C8x20E□-6T			6						
VSP-C8x20-10E□-4T			4	65.1	35		10	3.3 to 10.0	36
VSP-C8x20-10E□-6T			6						
VSP-C8x20-15E□-4T			4	75.1	40	25	15	3.3 to 10.4	41
VSP-C8x20-15E□-6T			6						
VSP-C8x20-20E□-4T			4	91.1	47	34	20	2.0 to 8.7	48
VSP-C8x20-20E□-6T			6						
VSP-C8x30E□-4T		30	4	59.1	29	20	6	7.0 to 12.6	34
VSP-C8x30E□-6T			6						
VSP-C8x30-10E□-4T			4	65.1	35		10	3.3 to 10.0	37
VSP-C8x30-10E□-6T			6						
VSP-C8x30-15E□-4T			4	75.1	40	25	15	3.3 to 10.4	41
VSP-C8x30-15E□-6T			6						
VSP-C8x30-20E□-4T			4	91.1	47	34	20	2.0 to 8.7	48
VSP-C8x30-20E□-6T			6						

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting without Spring Cover)

●VSP-C□-□E□-4TC/6TC

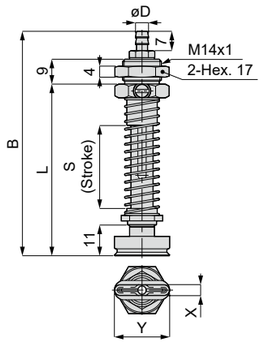


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L	Stroke S	Spring Force (N)	Weight (g)
VSP-C2x4-20E□-4TC	2	4	4	68.1	49	20	1.5 to 4.9	45
VSP-C2x4-20E□-6TC			6					
VSP-C2x4-30E□-4TC			4	81.1	62	30	1.1 to 4.8	50
VSP-C2x4-30E□-6TC			6					
VSP-C2x4-40E□-4TC			4	94.1	75	40	1.0 to 4.5	55
VSP-C2x4-40E□-6TC			6					
VSP-C2x4-50E□-4TC			4	107.1	88	50	0.9 to 4.5	61
VSP-C2x4-50E□-6TC			6					
VSP-C3.5x7-20E□-4TC	3.5	7	4	68.1	49	20	1.5 to 4.9	45
VSP-C3.5x7-20E□-6TC			6					
VSP-C3.5x7-30E□-4TC			4	81.1	62	30	1.1 to 4.8	50
VSP-C3.5x7-30E□-6TC			6					
VSP-C3.5x7-40E□-4TC			4	94.1	75	40	1.0 to 4.5	55
VSP-C3.5x7-40E□-6TC			6					
VSP-C3.5x7-50E□-4TC			4	107.1	88	50	0.9 to 4.5	61
VSP-C3.5x7-50E□-6TC			6					
VSP-C4x10-20E□-4TC	4	10	4	68.1	49	20	1.5 to 4.9	45
VSP-C4x10-20E□-6TC			6					
VSP-C4x10-30E□-4TC			4	81.1	62	30	1.1 to 4.8	50
VSP-C4x10-30E□-6TC			6					
VSP-C4x10-40E□-4TC			4	94.1	75	40	1.0 to 4.5	55
VSP-C4x10-40E□-6TC			6					
VSP-C4x10-50E□-4TC			4	107.1	88	50	0.9 to 4.5	61
VSP-C4x10-50E□-6TC			6					
VSP-C4x20-20E□-4TC		20	4	68.1	49	20	1.5 to 4.9	45
VSP-C4x20-20E□-6TC			6					
VSP-C4x20-30E□-4TC			4	81.1	62	30	1.1 to 4.8	51
VSP-C4x20-30E□-6TC			6					
VSP-C4x20-40E□-4TC			4	94.1	75	40	1.0 to 4.5	56
VSP-C4x20-40E□-6TC			6					
VSP-C4x20-50E□-4TC			4	107.1	88	50	0.9 to 4.5	61
VSP-C4x20-50E□-6TC			6					
VSP-C4x30-20E□-4TC		30	4	68.1	49	20	1.5 to 4.9	46
VSP-C4x30-20E□-6TC			6					
VSP-C4x30-30E□-4TC			4	81.1	62	30	1.1 to 4.8	51
VSP-C4x30-30E□-6TC			6					
VSP-C4x30-40E□-4TC			4	94.1	75	40	1.0 to 4.5	56
VSP-C4x30-40E□-6TC			6					
VSP-C4x30-50E□-4TC			4	107.1	88	50	0.9 to 4.5	62
VSP-C4x30-50E□-6TC			6					

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting without Spring Cover)

●VSP-C□-□E□-4TC/6TC

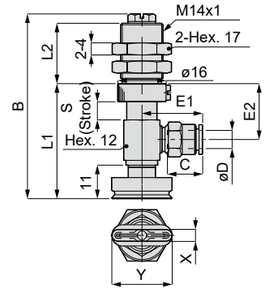


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L	Stroke S	Spring Force (N)	Weight (g)
VSP-C5x10-20E□-4TC	5	10	4	68.1	49	20	1.5 to 4.9	45
VSP-C5x10-20E□-6TC			6					
VSP-C5x10-30E□-4TC			4	81.1	62	30	1.1 to 4.8	50
VSP-C5x10-30E□-6TC			6					
VSP-C5x10-40E□-4TC			4	94.1	75	40	1.0 to 4.5	55
VSP-C5x10-40E□-6TC			6					
VSP-C5x10-50E□-4TC			4	107.1	88	50	0.9 to 4.5	61
VSP-C5x10-50E□-6TC			6					
VSP-C5x20-20E□-4TC		20	4	68.1	49	20	1.5 to 4.9	45
VSP-C5x20-20E□-6TC			6					
VSP-C5x20-30E□-4TC			4	81.1	62	30	1.1 to 4.8	51
VSP-C5x20-30E□-6TC			6					
VSP-C5x20-40E□-4TC			4	94.1	75	40	1.0 to 4.5	56
VSP-C5x20-40E□-6TC			6					
VSP-C5x20-50E□-4TC			4	107.1	88	50	0.9 to 4.5	61
VSP-C5x20-50E□-6TC			6					
VSP-C5x30-20E□-4TC		30	4	68.1	49	20	1.5 to 4.9	46
VSP-C5x30-20E□-6TC			6					
VSP-C5x30-30E□-4TC			4	81.1	62	30	1.1 to 4.8	51
VSP-C5x30-30E□-6TC			6					
VSP-C5x30-40E□-4TC			4	94.1	75	40	1.0 to 4.5	56
VSP-C5x30-40E□-6TC			6					
VSP-C5x30-50E□-4TC			4	107.1	88	50	0.9 to 4.5	62
VSP-C5x30-50E□-6TC			6					
VSP-C6x10-20E□-4TC	6	10	4	68.1	49	20	1.5 to 4.9	45
VSP-C6x10-20E□-6TC			6					
VSP-C6x10-30E□-4TC			4	81.1	62	30	1.1 to 4.8	50
VSP-C6x10-30E□-6TC			6					
VSP-C6x10-40E□-4TC			4	94.1	75	40	1.0 to 4.5	55
VSP-C6x10-40E□-6TC			6					
VSP-C6x10-50E□-4TC			4	107.1	88	50	0.9 to 4.5	61
VSP-C6x10-50E□-6TC			6					
VSP-C6x20-20E□-4TC		20	4	68.1	49	20	1.5 to 4.9	45
VSP-C6x20-20E□-6TC			6					
VSP-C6x20-30E□-4TC			4	81.1	62	30	1.1 to 4.8	51
VSP-C6x20-30E□-6TC			6					
VSP-C6x20-40E□-4TC			4	94.1	75	40	1.0 to 4.5	56
VSP-C6x20-40E□-6TC			6					
VSP-C6x20-50E□-4TC			4	107.1	88	50	0.9 to 4.5	61
VSP-C6x20-50E□-6TC			6					
VSP-C6x30-20E□-4TC		30	4	68.1	49	20	1.5 to 4.9	46
VSP-C6x30-20E□-6TC			6					
VSP-C6x30-30E□-4TC			4	81.1	62	30	1.1 to 4.8	51
VSP-C6x30-30E□-6TC			6					
VSP-C6x30-40E□-4TC			4	94.1	75	40	1.0 to 4.5	56
VSP-C6x30-40E□-6TC			6					
VSP-C6x30-50E□-4TC			4	107.1	88	50	0.9 to 4.5	62
VSP-C6x30-50E□-6TC			6					
VSP-C8x20-20E□-4TC	8	20	4	68.1	49	20	1.5 to 4.9	45
VSP-C8x20-20E□-6TC			6					
VSP-C8x20-30E□-4TC			4	81.1	62	30	1.1 to 4.8	51
VSP-C8x20-30E□-6TC			6					
VSP-C8x20-40E□-4TC			4	94.1	75	40	1.0 to 4.5	56
VSP-C8x20-40E□-6TC			6					
VSP-C8x20-50E□-4TC			4	107.1	88	50	0.9 to 4.5	61
VSP-C8x20-50E□-6TC			6					
VSP-C8x30-20E□-4TC		30	4	68.1	49	20	1.5 to 4.9	46
VSP-C8x30-20E□-6TC			6					
VSP-C8x30-30E□-4TC			4	81.1	62	30	1.1 to 4.8	51
VSP-C8x30-30E□-6TC			6					
VSP-C8x30-40E□-4TC			4	94.1	75	40	1.0 to 4.5	56
VSP-C8x30-40E□-6TC			6					
VSP-C8x30-50E□-4TC			4	107.1	88	50	0.9 to 4.5	62
VSP-C8x30-50E□-6TC			6					

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D□E□-4/6
●VSP-D□-□E□-4/6

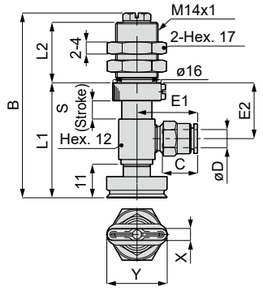


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D2x4E□-4	2	4	4	61.1	38	20	11.2	18.8	18.5	6	7.0 to 12.6	46
VSP-D2x4E□-6			6				11.9	20.1				47
VSP-D2x4-10E□-4			4	67.1	44		11.2	18.8	24.5	10	3.3 to 10.0	50
VSP-D2x4-10E□-6			6				11.9	20.1				51
VSP-D2x4-15E□-4			4	77.1	49	25	11.2	18.8	29.5	15	3.3 to 10.4	56
VSP-D2x4-15E□-6			6				11.9	20.1				57
VSP-D2x4-20E□-4			4	93.1	56	34	11.2	18.8	36.5	20	2.0 to 8.7	66
VSP-D2x4-20E□-6			6				11.9	20.1				67
VSP-D3.5x7E□-4	3.5	7	4	61.1	38	20	11.2	18.8	18.5	6	7.0 to 12.6	46
VSP-D3.5x7E□-6			6				11.9	20.1				47
VSP-D3.5x7-10E□-4			4	67.1	44		11.2	18.8	24.5	10	3.3 to 10.0	50
VSP-D3.5x7-10E□-6			6				11.9	20.1				51
VSP-D3.5x7-15E□-4			4	77.1	49	25	11.2	18.8	29.5	15	3.3 to 10.4	56
VSP-D3.5x7-15E□-6			6				11.9	20.1				57
VSP-D3.5x7-20E□-4			4	93.1	56	34	11.2	18.8	36.5	20	2.0 to 8.7	66
VSP-D3.5x7-20E□-6			6				11.9	20.1				67
VSP-D4x10E□-4	4	10	4	61.1	38	20	11.2	18.8	18.5	6	7.0 to 12.6	46
VSP-D4x10E□-6			6				11.9	20.1				47
VSP-D4x10-10E□-4			4	67.1	44		11.2	18.8	24.5	10	3.3 to 10.0	50
VSP-D4x10-10E□-6			6				11.9	20.1				51
VSP-D4x10-15E□-4			4	77.1	49	25	11.2	18.8	29.5	15	3.3 to 10.4	56
VSP-D4x10-15E□-6			6				11.9	20.1				57
VSP-D4x10-20E□-4			4	93.1	56	34	11.2	18.8	36.5	20	2.0 to 8.7	66
VSP-D4x10-20E□-6			6				11.9	20.1				67
VSP-D4x20E□-4		20	4	61.1	38	20	11.2	18.8	18.5	6	7.0 to 12.6	46
VSP-D4x20E□-6			6				11.9	20.1				47
VSP-D4x20-10E□-4			4	67.1	44		11.2	18.8	24.5	10	3.3 to 10.0	50
VSP-D4x20-10E□-6			6				11.9	20.1				51
VSP-D4x20-15E□-4			4	77.1	49	25	11.2	18.8	29.5	15	3.3 to 10.4	56
VSP-D4x20-15E□-6			6				11.9	20.1				57
VSP-D4x20-20E□-4			4	93.1	56	34	11.2	18.8	36.5	20	2.0 to 8.7	66
VSP-D4x20-20E□-6			6				11.9	20.1				67
VSP-D4x30E□-4		30	4	61.1	38	20	11.2	18.8	18.5	6	7.0 to 12.6	47
VSP-D4x30E□-6			6				11.9	20.1				48
VSP-D4x30-10E□-4			4	67.1	44		11.2	18.8	24.5	10	3.3 to 10.0	51
VSP-D4x30-10E□-6			6				11.9	20.1				52
VSP-D4x30-15E□-4			4	77.1	49	25	11.2	18.8	29.5	15	3.3 to 10.4	57
VSP-D4x30-15E□-6			6				11.9	20.1				58
VSP-D4x30-20E□-4			4	93.1	56	34	11.2	18.8	36.5	20	2.0 to 8.7	67
VSP-D4x30-20E□-6			6				11.9	20.1				68

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D□E□-4/6
●VSP-D□-□E□-4/6

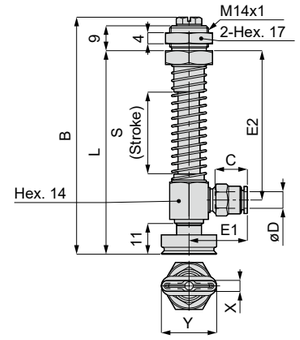


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D5x10E□-4	5	10	4	61.1	38	20	11.2	18.8	18.5	6	7.0 to 12.6	46
VSP-D5x10E□-6			6				11.9	20.1				47
VSP-D5x10-10E□-4			4	67.1	44		11.2	18.8	24.5	10	3.3 to 10.0	50
VSP-D5x10-10E□-6			6				11.9	20.1				51
VSP-D5x10-15E□-4			4	77.1	49	25	11.2	18.8	29.5	15	3.3 to 10.4	56
VSP-D5x10-15E□-6			6				11.9	20.1				57
VSP-D5x10-20E□-4			4	93.1	56	34	11.2	18.8	36.5	20	2.0 to 8.7	66
VSP-D5x10-20E□-6			6				11.9	20.1				67
VSP-D5x20E□-4		20	4	61.1	38	20	11.2	18.8	18.5	6	7.0 to 12.6	46
VSP-D5x20E□-6			6				11.9	20.1				47
VSP-D5x20-10E□-4			4	67.1	44		11.2	18.8	24.5	10	3.3 to 10.0	50
VSP-D5x20-10E□-6			6				11.9	20.1				51
VSP-D5x20-15E□-4			4	77.1	49	25	11.2	18.8	29.5	15	3.3 to 10.4	56
VSP-D5x20-15E□-6			6				11.9	20.1				57
VSP-D5x20-20E□-4			4	93.1	56	34	11.2	18.8	36.5	20	2.0 to 8.7	66
VSP-D5x20-20E□-6			6				11.9	20.1				67
VSP-D5x30E□-4		30	4	61.1	38	20	11.2	18.8	18.5	6	7.0 to 12.6	47
VSP-D5x30E□-6			6				11.9	20.1				48
VSP-D5x30-10E□-4			4	67.1	44		11.2	18.8	24.5	10	3.3 to 10.0	51
VSP-D5x30-10E□-6			6				11.9	20.1				52
VSP-D5x30-15E□-4			4	77.1	49	25	11.2	18.8	29.5	15	3.3 to 10.4	57
VSP-D5x30-15E□-6			6				11.9	20.1				58
VSP-D5x30-20E□-4			4	93.1	56	34	11.2	18.8	36.5	20	2.0 to 8.7	67
VSP-D5x30-20E□-6			6				11.9	20.1				68
VSP-D6x10E□-4	6	10	4	61.1	38	20	11.2	18.8	18.5	6	7.0 to 12.6	46
VSP-D6x10E□-6			6				11.9	20.1				47
VSP-D6x10-10E□-4			4	67.1	44		11.2	18.8	24.5	10	3.3 to 10.0	50
VSP-D6x10-10E□-6			6				11.9	20.1				51
VSP-D6x10-15E□-4			4	77.1	49	25	11.2	18.8	29.5	15	3.3 to 10.4	56
VSP-D6x10-15E□-6			6				11.9	20.1				57
VSP-D6x10-20E□-4			4	93.1	56	34	11.2	18.8	36.5	20	2.0 to 8.7	66
VSP-D6x10-20E□-6			6				11.9	20.1				67
VSP-D6x20E□-4		20	4	61.1	38	20	11.2	18.8	18.5	6	7.0 to 12.6	46
VSP-D6x20E□-6			6				11.9	20.1				47
VSP-D6x20-10E□-4			4	67.1	44		11.2	18.8	24.5	10	3.3 to 10.0	50
VSP-D6x20-10E□-6			6				11.9	20.1				51
VSP-D6x20-15E□-4			4	77.1	49	25	11.2	18.8	29.5	15	3.3 to 10.4	56
VSP-D6x20-15E□-6			6				11.9	20.1				57
VSP-D6x20-20E□-4			4	93.1	56	34	11.2	18.8	36.5	20	2.0 to 8.7	66
VSP-D6x20-20E□-6			6				11.9	20.1				67
VSP-D6x30E□-4		30	4	61.1	38	20	11.2	18.8	18.5	6	7.0 to 12.6	47
VSP-D6x30E□-6			6				11.9	20.1				48
VSP-D6x30-10E□-4			4	67.1	44		11.2	18.8	24.5	10	3.3 to 10.0	51
VSP-D6x30-10E□-6			6				11.9	20.1				52
VSP-D6x30-15E□-4			4	77.1	49	25	11.2	18.8	29.5	15	3.3 to 10.4	57
VSP-D6x30-15E□-6			6				11.9	20.1				58
VSP-D6x30-20E□-4			4	93.1	56	34	11.2	18.8	36.5	20	2.0 to 8.7	67
VSP-D6x30-20E□-6			6				11.9	20.1				68
VSP-D8x20E□-4	8	20	4	61.1	38	20	11.2	18.8	18.5	6	7.0 to 12.6	46
VSP-D8x20E□-6			6				11.9	20.1				47
VSP-D8x20-10E□-4			4	67.1	44		11.2	18.8	24.5	10	3.3 to 10.0	50
VSP-D8x20-10E□-6			6				11.9	20.1				51
VSP-D8x20-15E□-4			4	77.1	49	25	11.2	18.8	29.5	15	3.3 to 10.4	56
VSP-D8x20-15E□-6			6				11.9	20.1				57
VSP-D8x20-20E□-4			4	93.1	56	34	11.2	18.8	36.5	20	2.0 to 8.7	66
VSP-D8x20-20E□-6			6				11.9	20.1				67
VSP-D8x30E□-4		30	4	61.1	38	20	11.2	18.8	18.5	6	7.0 to 12.6	47
VSP-D8x30E□-6			6				11.9	20.1				48
VSP-D8x30-10E□-4			4	67.1	44		11.2	18.8	24.5	10	3.3 to 10.0	51
VSP-D8x30-10E□-6			6				11.9	20.1				52
VSP-D8x30-15E□-4			4	77.1	49	25	11.2	18.8	29.5	15	3.3 to 10.4	57
VSP-D8x30-15E□-6			6				11.9	20.1				58
VSP-D8x30-20E□-4			4	93.1	56	34	11.2	18.8	36.5	20	2.0 to 8.7	67
VSP-D8x30-20E□-6			6				11.9	20.1				68

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in Fitting without Spring Cover)

●VSP-D□-□E□-4C/6C

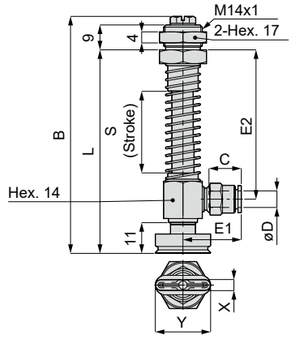


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D2x4-20E□-4C	2	4	4	72.6	60.5	11.2	19.8	41	20	1.5 to 4.9	64
VSP-D2x4-20E□-6C			6			11.9	21.1				65
VSP-D2x4-30E□-4C			4	85.6	73.5	11.2	19.8	54	30	1.1 to 4.8	71
VSP-D2x4-30E□-6C			6			11.9	21.1				72
VSP-D2x4-40E□-4C			4	98.6	86.5	11.2	19.8	67	40	1.0 to 4.5	78
VSP-D2x4-40E□-6C			6			11.9	21.1				79
VSP-D2x4-50E□-4C			4	111.6	99.5	11.2	19.8	80	50	0.9 to 4.5	84
VSP-D2x4-50E□-6C			6			11.9	21.1				85
VSP-D3.5x7-20E□-4C	3.5	7	4	72.6	60.5	11.2	19.8	41	20	1.5 to 4.9	64
VSP-D3.5x7-20E□-6C			6			11.9	21.1				65
VSP-D3.5x7-30E□-4C			4	85.6	73.5	11.2	19.8	54	30	1.1 to 4.8	71
VSP-D3.5x7-30E□-6C			6			11.9	21.1				72
VSP-D3.5x7-40E□-4C			4	98.6	86.5	11.2	19.8	67	40	1.0 to 4.5	78
VSP-D3.5x7-40E□-6C			6			11.9	21.1				79
VSP-D3.5x7-50E□-4C			4	111.6	99.5	11.2	19.8	80	50	0.9 to 4.5	84
VSP-D3.5x7-50E□-6C			6			11.9	21.1				85
VSP-D4x10-20E□-4C	4	10	4	72.6	60.5	11.2	19.8	41	20	1.5 to 4.9	64
VSP-D4x10-20E□-6C			6			11.9	21.1				65
VSP-D4x10-30E□-4C			4	85.6	73.5	11.2	19.8	54	30	1.1 to 4.8	71
VSP-D4x10-30E□-6C			6			11.9	21.1				72
VSP-D4x10-40E□-4C			4	98.6	86.5	11.2	19.8	67	40	1.0 to 4.5	78
VSP-D4x10-40E□-6C			6			11.9	21.1				79
VSP-D4x10-50E□-4C			4	111.6	99.5	11.2	19.8	80	50	0.9 to 4.5	84
VSP-D4x10-50E□-6C			6			11.9	21.1				85
VSP-D4x20-20E□-4C		20	4	72.6	60.5	11.2	19.8	41	20	1.5 to 4.9	65
VSP-D4x20-20E□-6C			6			11.9	21.1				66
VSP-D4x20-30E□-4C			4	85.6	73.5	11.2	19.8	54	30	1.1 to 4.8	71
VSP-D4x20-30E□-6C			6			11.9	21.1				72
VSP-D4x20-40E□-4C			4	98.6	86.5	11.2	19.8	67	40	1.0 to 4.5	78
VSP-D4x20-40E□-6C			6			11.9	21.1				79
VSP-D4x20-50E□-4C			4	111.6	99.5	11.2	19.8	80	50	0.9 to 4.5	84
VSP-D4x20-50E□-6C			6			11.9	21.1				85
VSP-D4x30-20E□-4C		30	4	72.6	60.5	11.2	19.8	41	20	1.5 to 4.9	64
VSP-D4x30-20E□-6C			6			11.9	21.1				66
VSP-D4x30-30E□-4C			4	85.6	73.5	11.2	19.8	54	30	1.1 to 4.8	72
VSP-D4x30-30E□-6C			6			11.9	21.1				73
VSP-D4x30-40E□-4C			4	98.6	86.5	11.2	19.8	67	40	1.0 to 4.5	79
VSP-D4x30-40E□-6C			6			11.9	21.1				80
VSP-D4x30-50E□-4C			4	111.6	99.5	11.2	19.8	80	50	0.9 to 4.5	85
VSP-D4x30-50E□-6C			6			11.9	21.1				86

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in Fitting without Spring Cover)

●VSP-D□-□E□-4C/6C

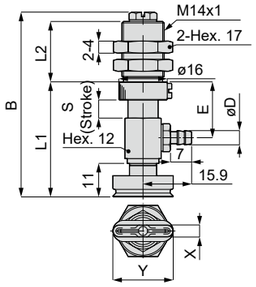


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D5x10-20E□-4C	5	10	4	72.6	60.5	11.2	19.8	41	20	1.5 to 4.9	64
VSP-D5x10-20E□-6C			6			11.9	21.1				65
VSP-D5x10-30E□-4C			4	85.6	73.5	11.2	19.8	54	30	1.1 to 4.8	71
VSP-D5x10-30E□-6C			6			11.9	21.1				72
VSP-D5x10-40E□-4C			4	98.6	86.5	11.2	19.8	67	40	1.0 to 4.5	78
VSP-D5x10-40E□-6C			6			11.9	21.1				79
VSP-D5x10-50E□-4C			4	111.6	99.5	11.2	19.8	80	50	0.9 to 4.5	84
VSP-D5x10-50E□-6C			6			11.9	21.1				85
VSP-D5x20-20E□-4C		20	4	72.6	60.5	11.2	19.8	41	20	1.5 to 4.9	65
VSP-D5x20-20E□-6C			6			11.9	21.1				66
VSP-D5x20-30E□-4C			4	85.6	73.5	11.2	19.8	54	30	1.1 to 4.8	71
VSP-D5x20-30E□-6C			6			11.9	21.1				72
VSP-D5x20-40E□-4C			4	98.6	86.5	11.2	19.8	67	40	1.0 to 4.5	78
VSP-D5x20-40E□-6C			6			11.9	21.1				79
VSP-D5x20-50E□-4C			4	111.6	99.5	11.2	19.8	80	50	0.9 to 4.5	84
VSP-D5x20-50E□-6C			6			11.9	21.1				85
VSP-D5x30-20E□-4C		30	4	72.6	60.5	11.2	19.8	41	20	1.5 to 4.9	65
VSP-D5x30-20E□-6C			6			11.9	21.1				66
VSP-D5x30-30E□-4C			4	85.6	73.5	11.2	19.8	54	30	1.1 to 4.8	72
VSP-D5x30-30E□-6C			6			11.9	21.1				73
VSP-D5x30-40E□-4C			4	98.6	86.5	11.2	19.8	67	40	1.0 to 4.5	79
VSP-D5x30-40E□-6C			6			11.9	21.1				80
VSP-D5x30-50E□-4C			4	111.6	99.5	11.2	19.8	80	50	0.9 to 4.5	85
VSP-D5x30-50E□-6C			6			11.9	21.1				86
VSP-D6x10-20E□-4C	6	10	4	72.6	60.5	11.2	19.8	41	20	1.5 to 4.9	64
VSP-D6x10-20E□-6C			6			11.9	21.1				65
VSP-D6x10-30E□-4C			4	85.6	73.5	11.2	19.8	54	30	1.1 to 4.8	71
VSP-D6x10-30E□-6C			6			11.9	21.1				72
VSP-D6x10-40E□-4C			4	98.6	86.5	11.2	19.8	67	40	1.0 to 4.5	78
VSP-D6x10-40E□-6C			6			11.9	21.1				79
VSP-D6x10-50E□-4C			4	111.6	99.5	11.2	19.8	80	50	0.9 to 4.5	84
VSP-D6x10-50E□-6C			6			11.9	21.1				85
VSP-D6x20-20E□-4C		20	4	72.6	60.5	11.2	19.8	41	20	1.5 to 4.9	65
VSP-D6x20-20E□-6C			6			11.9	21.1				66
VSP-D6x20-30E□-4C			4	85.6	73.5	11.2	19.8	54	30	1.1 to 4.8	71
VSP-D6x20-30E□-6C			6			11.9	21.1				72
VSP-D6x20-40E□-4C			4	98.6	86.5	11.2	19.8	67	40	1.0 to 4.5	78
VSP-D6x20-40E□-6C			6			11.9	21.1				79
VSP-D6x20-50E□-4C			4	111.6	99.5	11.2	19.8	80	50	0.9 to 4.5	84
VSP-D6x20-50E□-6C			6			11.9	21.1				85
VSP-D6x30-20E□-4C		30	4	72.6	60.5	11.2	19.8	41	20	1.5 to 4.9	65
VSP-D6x30-20E□-6C			6			11.9	21.1				66
VSP-D6x30-30E□-4C			4	85.6	73.5	11.2	19.8	54	30	1.1 to 4.8	72
VSP-D6x30-30E□-6C			6			11.9	21.1				73
VSP-D6x30-40E□-4C			4	98.6	86.5	11.2	19.8	67	40	1.0 to 4.5	79
VSP-D6x30-40E□-6C			6			11.9	21.1				80
VSP-D6x30-50E□-4C			4	111.6	99.5	11.2	19.8	80	50	0.9 to 4.5	85
VSP-D6x30-50E□-6C			6			11.9	21.1				86
VSP-D8x20-20E□-4C	8	20	4	72.6	60.5	11.2	19.8	41	20	1.5 to 4.9	65
VSP-D8x20-20E□-6C			6			11.9	21.1				66
VSP-D8x20-30E□-4C			4	85.6	73.5	11.2	19.8	54	30	1.1 to 4.8	71
VSP-D8x20-30E□-6C			6			11.9	21.1				72
VSP-D8x20-40E□-4C			4	98.6	86.5	11.2	19.8	67	40	1.0 to 4.5	78
VSP-D8x20-40E□-6C			6			11.9	21.1				79
VSP-D8x20-50E□-4C			4	111.6	99.5	11.2	19.8	80	50	0.9 to 4.5	84
VSP-D8x20-50E□-6C			6			11.9	21.1				85
VSP-D8x30-20E□-4C		30	4	72.6	60.5	11.2	19.8	41	20	1.5 to 4.9	65
VSP-D8x30-20E□-6C			6			11.9	21.1				66
VSP-D8x30-30E□-4C			4	85.6	73.5	11.2	19.8	54	30	1.1 to 4.8	72
VSP-D8x30-30E□-6C			6			11.9	21.1				73
VSP-D8x30-40E□-4C			4	98.6	86.5	11.2	19.8	67	40	1.0 to 4.5	79
VSP-D8x30-40E□-6C			6			11.9	21.1				80
VSP-D8x30-50E□-4C			4	111.6	99.5	11.2	19.8	80	50	0.9 to 4.5	85
VSP-D8x30-50E□-6C			6			11.9	21.1				86

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D□E□-4T/6T
●VSP-D□-□E□-4T/6T

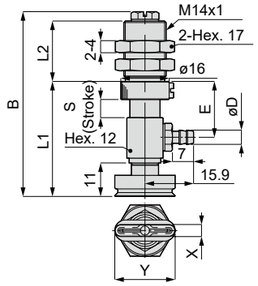


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D2x4E□-4T	2	4	4	61.1	38	20	18.5	6	7.0 to 12.6	47
VSP-D2x4E□-6T			6							
VSP-D2x4-10E□-4T			4	67.1	44		24.5	10	3.3 to 10.0	51
VSP-D2x4-10E□-6T			6							
VSP-D2x4-15E□-4T			4	77.1	49	25	29.5	15	3.3 to 10.4	57
VSP-D2x4-15E□-6T			6							
VSP-D2x4-20E□-4T			4	93.1	56	34	36.5	20	2.0 to 8.7	67
VSP-D2x4-20E□-6T			6							
VSP-D3.5x7E□-4T	3.5	7	4	61.1	38	20	18.5	6	7.0 to 12.6	47
VSP-D3.5x7E□-6T			6							
VSP-D3.5x7-10E□-4T			4	67.1	44		24.5	10	3.3 to 10.0	51
VSP-D3.5x7-10E□-6T			6							
VSP-D3.5x7-15E□-4T			4	77.1	49	25	29.5	15	3.3 to 10.4	57
VSP-D3.5x7-15E□-6T			6							
VSP-D3.5x7-20E□-4T			4	93.1	56	34	36.5	20	2.0 to 8.7	67
VSP-D3.5x7-20E□-6T			6							
VSP-D4x10E□-4T	4	10	4	61.1	38	20	18.5	6	7.0 to 12.6	47
VSP-D4x10E□-6T			6							
VSP-D4x10-10E□-4T			4	67.1	44		24.5	10	3.3 to 10.0	51
VSP-D4x10-10E□-6T			6							
VSP-D4x10-15E□-4T			4	77.1	49	25	29.5	15	3.3 to 10.4	57
VSP-D4x10-15E□-6T			6							
VSP-D4x10-20E□-4T			4	93.1	56	34	36.5	20	2.0 to 8.7	67
VSP-D4x10-20E□-6T			6							
VSP-D4x20E□-4T		20	4	61.1	38	20	18.5	6	7.0 to 12.6	47
VSP-D4x20E□-6T			6							
VSP-D4x20-10E□-4T			4	67.1	44		24.5	10	3.3 to 10.0	51
VSP-D4x20-10E□-6T			6							
VSP-D4x20-15E□-4T			4	77.1	49	25	29.5	15	3.3 to 10.4	57
VSP-D4x20-15E□-6T			6							
VSP-D4x20-20E□-4T			4	93.1	56	34	36.5	20	2.0 to 8.7	67
VSP-D4x20-20E□-6T			6							
VSP-D4x30E□-4T		30	4	61.1	38	20	18.5	6	7.0 to 12.6	48
VSP-D4x30E□-6T			6							
VSP-D4x30-10E□-4T			4	67.1	44		24.5	10	3.3 to 10.0	52
VSP-D4x30-10E□-6T			6							
VSP-D4x30-15E□-4T			4	77.1	49	25	29.5	15	3.3 to 10.4	58
VSP-D4x30-15E□-6T			6							
VSP-D4x30-20E□-4T			4	93.1	56	34	36.5	20	2.0 to 8.7	68
VSP-D4x30-20E□-6T			6							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D□E□-4T/6T
●VSP-D□-□E□-4T/6T

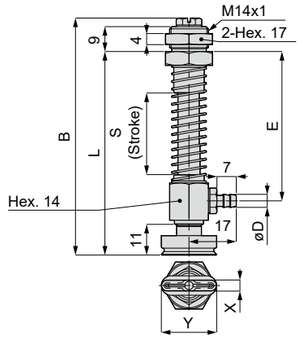


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D5x10E□-4T	5	10	4	61.1	38	20	18.5	6	7.0 to 12.6	45
VSP-D5x10E□-6T			6							
VSP-D5x10-10E□-4T			4	67.1	44		24.5	10	3.3 to 10.0	49
VSP-D5x10-10E□-6T			6							
VSP-D5x10-15E□-4T			4	77.1	49	25	29.5	15	3.3 to 10.4	55
VSP-D5x10-15E□-6T			6							
VSP-D5x10-20E□-4T			4	93.1	56	34	36.5	20	2.0 to 8.7	65
VSP-D5x10-20E□-6T			6							
VSP-D5x20E□-4T		20	4	61.1	38	20	18.5	6	7.0 to 12.6	45
VSP-D5x20E□-6T			6							
VSP-D5x20-10E□-4T			4	67.1	44		24.5	10	3.3 to 10.0	49
VSP-D5x20-10E□-6T			6							
VSP-D5x20-15E□-4T			4	77.1	49	25	29.5	15	3.3 to 10.4	55
VSP-D5x20-15E□-6T			6							
VSP-D5x20-20E□-4T			4	93.1	56	34	36.5	20	2.0 to 8.7	65
VSP-D5x20-20E□-6T			6							
VSP-D5x30E□-4T		30	4	61.1	38	20	18.5	6	7.0 to 12.6	46
VSP-D5x30E□-6T			6							
VSP-D5x30-10E□-4T			4	67.1	44		24.5	10	3.3 to 10.0	50
VSP-D5x30-10E□-6T			6							
VSP-D5x30-15E□-4T			4	77.1	49	25	29.5	15	3.3 to 10.4	56
VSP-D5x30-15E□-6T			6							
VSP-D5x30-20E□-4T			4	93.1	56	34	36.5	20	2.0 to 8.7	66
VSP-D5x30-20E□-6T			6							
VSP-D6x10E□-4T	6	10	4	61.1	38	20	18.5	6	7.0 to 12.6	45
VSP-D6x10E□-6T			6							
VSP-D6x10-10E□-4T			4	67.1	44		24.5	10	3.3 to 10.0	49
VSP-D6x10-10E□-6T			6							
VSP-D6x10-15E□-4T			4	77.1	49	25	29.5	15	3.3 to 10.4	55
VSP-D6x10-15E□-6T			6							
VSP-D6x10-20E□-4T			4	93.1	56	34	36.5	20	2.0 to 8.7	65
VSP-D6x10-20E□-6T			6							
VSP-D6x20E□-4T		20	4	61.1	38	20	18.5	6	7.0 to 12.6	45
VSP-D6x20E□-6T			6							
VSP-D6x20-10E□-4T			4	67.1	44		24.5	10	3.3 to 10.0	49
VSP-D6x20-10E□-6T			6							
VSP-D6x20-15E□-4T			4	77.1	49	25	29.5	15	3.3 to 10.4	55
VSP-D6x20-15E□-6T			6							
VSP-D6x20-20E□-4T			4	93.1	56	34	36.5	20	2.0 to 8.7	65
VSP-D6x20-20E□-6T			6							
VSP-D6x30E□-4T		30	4	61.1	38	20	18.5	6	7.0 to 12.6	46
VSP-D6x30E□-6T			6							
VSP-D6x30-10E□-4T			4	67.1	44		24.5	10	3.3 to 10.0	50
VSP-D6x30-10E□-6T			6							
VSP-D6x30-15E□-4T			4	77.1	49	25	29.5	15	3.3 to 10.4	56
VSP-D6x30-15E□-6T			6							
VSP-D6x30-20E□-4T			4	93.1	56	34	36.5	20	2.0 to 8.7	66
VSP-D6x30-20E□-6T			6							
VSP-D8x20E□-4T	8	20	4	61.1	38	20	18.5	6	7.0 to 12.6	45
VSP-D8x20E□-6T			6							
VSP-D8x20-10E□-4T			4	67.1	44		24.5	10	3.3 to 10.0	49
VSP-D8x20-10E□-6T			6							
VSP-D8x20-15E□-4T			4	77.1	49	25	29.5	15	3.3 to 10.4	55
VSP-D8x20-15E□-6T			6							
VSP-D8x20-20E□-4T			4	93.1	56	34	36.5	20	2.0 to 8.7	65
VSP-D8x20-20E□-6T			6							
VSP-D8x30E□-4T		30	4	61.1	38	20	18.5	6	7.0 to 12.6	46
VSP-D8x30E□-6T			6							
VSP-D8x30-10E□-4T			4	67.1	44		24.5	10	3.3 to 10.0	50
VSP-D8x30-10E□-6T			6							
VSP-D8x30-15E□-4T			4	77.1	49	25	29.5	15	3.3 to 10.4	56
VSP-D8x30-15E□-6T			6							
VSP-D8x30-20E□-4T			4	93.1	56	34	36.5	20	2.0 to 8.7	66
VSP-D8x30-20E□-6T			6							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D□-□E□-4TC/6TC

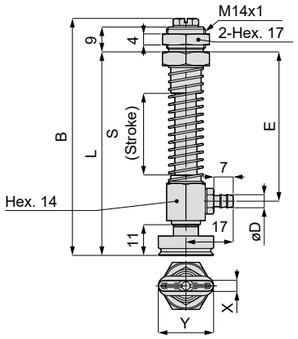


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D2x4-20E□-4TC	2	4	4	72.6	60.5	41	20	1.5 to 4.9	63
VSP-D2x4-20E□-6TC			6						
VSP-D2x4-30E□-4TC			4	85.6	73.5	54	30	1.1 to 4.8	70
VSP-D2x4-30E□-6TC			6						
VSP-D2x4-40E□-4TC			4	98.6	86.5	67	40	1.0 to 4.5	77
VSP-D2x4-40E□-6TC			6						
VSP-D2x4-50E□-4TC			4	111.6	99.5	80	50	0.9 to 4.5	83
VSP-D2x4-50E□-6TC			6						
VSP-D3.5x7-20E□-4TC	3.5	7	4	72.6	60.5	41	20	1.5 to 4.9	63
VSP-D3.5x7-20E□-6TC			6						
VSP-D3.5x7-30E□-4TC			4	85.6	73.5	54	30	1.1 to 4.8	70
VSP-D3.5x7-30E□-6TC			6						
VSP-D3.5x7-40E□-4TC			4	98.6	86.5	67	40	1.0 to 4.5	77
VSP-D3.5x7-40E□-6TC			6						
VSP-D3.5x7-50E□-4TC			4	111.6	99.5	80	50	0.9 to 4.5	83
VSP-D3.5x7-50E□-6TC			6						
VSP-D4x10-20E□-4TC	4	10	4	72.6	60.5	41	20	1.5 to 4.9	63
VSP-D4x10-20E□-6TC			6						
VSP-D4x10-30E□-4TC			4	85.6	73.5	54	30	1.1 to 4.8	70
VSP-D4x10-30E□-6TC			6						
VSP-D4x10-40E□-4TC			4	98.6	86.5	67	40	1.0 to 4.5	77
VSP-D4x10-40E□-6TC			6						
VSP-D4x10-50E□-4TC			4	111.6	99.5	80	50	0.9 to 4.5	83
VSP-D4x10-50E□-6TC			6						
VSP-D4x20-20E□-4TC		20	4	72.6	60.5	41	20	1.5 to 4.9	64
VSP-D4x20-20E□-6TC			6						
VSP-D4x20-30E□-4TC			4	85.6	73.5	54	30	1.1 to 4.8	70
VSP-D4x20-30E□-6TC			6						
VSP-D4x20-40E□-4TC			4	98.6	86.5	67	40	1.0 to 4.5	77
VSP-D4x20-40E□-6TC			6						
VSP-D4x20-50E□-4TC			4	111.6	99.5	80	50	0.9 to 4.5	84
VSP-D4x20-50E□-6TC			6						
VSP-D4x30-20E□-4TC		30	4	72.6	60.5	41	20	1.5 to 4.9	64
VSP-D4x30-20E□-6TC			6						
VSP-D4x30-30E□-4TC			4	85.6	73.5	54	30	1.1 to 4.8	71
VSP-D4x30-30E□-6TC			6						
VSP-D4x30-40E□-4TC			4	98.6	86.5	67	40	1.0 to 4.5	78
VSP-D4x30-40E□-6TC			6						
VSP-D4x30-50E□-4TC			4	111.6	99.5	80	50	0.9 to 4.5	84
VSP-D4x30-50E□-6TC			6						

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D□-□E□-4TC/6TC

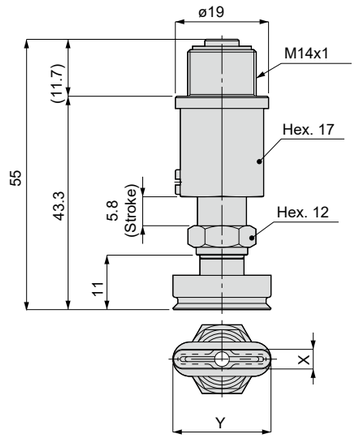


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D5x10-20E□-4TC	5	10	4	72.6	60.5	41	20	1.5 to 4.9	63
VSP-D5x10-20E□-6TC			6						
VSP-D5x10-30E□-4TC			4	85.6	73.5	54	30	1.1 to 4.8	70
VSP-D5x10-30E□-6TC			6						
VSP-D5x10-40E□-4TC			4	98.6	86.5	67	40	1.0 to 4.5	77
VSP-D5x10-40E□-6TC			6						
VSP-D5x10-50E□-4TC			4	111.6	99.5	80	50	0.9 to 4.5	83
VSP-D5x10-50E□-6TC			6						
VSP-D5x20-20E□-4TC		20	4	72.6	60.5	41	20	1.5 to 4.9	64
VSP-D5x20-20E□-6TC			6						
VSP-D5x20-30E□-4TC			4	85.6	73.5	54	30	1.1 to 4.8	70
VSP-D5x20-30E□-6TC			6						
VSP-D5x20-40E□-4TC			4	98.6	86.5	67	40	1.0 to 4.5	77
VSP-D5x20-40E□-6TC			6						
VSP-D5x20-50E□-4TC			4	111.6	99.5	80	50	0.9 to 4.5	84
VSP-D5x20-50E□-6TC			6						
VSP-D5x30-20E□-4TC		30	4	72.6	60.5	41	20	1.5 to 4.9	64
VSP-D5x30-20E□-6TC			6						
VSP-D5x30-30E□-4TC			4	85.6	73.5	54	30	1.1 to 4.8	71
VSP-D5x30-30E□-6TC			6						
VSP-D5x30-40E□-4TC			4	98.6	86.5	67	40	1.0 to 4.5	78
VSP-D5x30-40E□-6TC			6						
VSP-D5x30-50E□-4TC			4	111.6	99.5	80	50	0.9 to 4.5	84
VSP-D5x30-50E□-6TC			6						
VSP-D6x10-20E□-4TC	6	10	4	72.6	60.5	41	20	1.5 to 4.9	63
VSP-D6x10-20E□-6TC			6						
VSP-D6x10-30E□-4TC			4	85.6	73.5	54	30	1.1 to 4.8	70
VSP-D6x10-30E□-6TC			6						
VSP-D6x10-40E□-4TC			4	98.6	86.5	67	40	1.0 to 4.5	77
VSP-D6x10-40E□-6TC			6						
VSP-D6x10-50E□-4TC			4	111.6	99.5	80	50	0.9 to 4.5	83
VSP-D6x10-50E□-6TC			6						
VSP-D6x20-20E□-4TC		20	4	72.6	60.5	41	20	1.5 to 4.9	64
VSP-D6x20-20E□-6TC			6						
VSP-D6x20-30E□-4TC			4	85.6	73.5	54	30	1.1 to 4.8	70
VSP-D6x20-30E□-6TC			6						
VSP-D6x20-40E□-4TC			4	98.6	86.5	67	40	1.0 to 4.5	77
VSP-D6x20-40E□-6TC			6						
VSP-D6x20-50E□-4TC			4	111.6	99.5	80	50	0.9 to 4.5	83
VSP-D6x20-50E□-6TC			6						
VSP-D6x30-20E□-4TC		30	4	72.6	60.5	41	20	1.5 to 4.9	64
VSP-D6x30-20E□-6TC			6						
VSP-D6x30-30E□-4TC			4	85.6	73.5	54	30	1.1 to 4.8	71
VSP-D6x30-30E□-6TC			6						
VSP-D6x30-40E□-4TC			4	98.6	86.5	67	40	1.0 to 4.5	78
VSP-D6x30-40E□-6TC			6						
VSP-D6x30-50E□-4TC			4	111.6	99.5	80	50	0.9 to 4.5	84
VSP-D6x30-50E□-6TC			6						
VSP-D8x20-20E□-4TC	8	20	4	72.6	60.5	41	20	1.5 to 4.9	64
VSP-D8x20-20E□-6TC			6						
VSP-D8x20-30E□-4TC			4	85.6	73.5	54	30	1.1 to 4.8	71
VSP-D8x20-30E□-6TC			6						
VSP-D8x20-40E□-4TC			4	98.6	86.5	67	40	1.0 to 4.5	77
VSP-D8x20-40E□-6TC			6						
VSP-D8x20-50E□-4TC			4	111.6	99.5	80	50	0.9 to 4.5	84
VSP-D8x20-50E□-6TC			6						
VSP-D8x30-20E□-4TC		30	4	72.6	60.5	41	20	1.5 to 4.9	64
VSP-D8x30-20E□-6TC			6						
VSP-D8x30-30E□-4TC			4	85.6	73.5	54	30	1.1 to 4.8	71
VSP-D8x30-30E□-6TC			6						
VSP-D8x30-40E□-4TC			4	98.6	86.5	67	40	1.0 to 4.5	78
VSP-D8x30-40E□-6TC			6						
VSP-D8x30-50E□-4TC			4	111.6	99.5	80	50	0.9 to 4.5	84
VSP-D8x30-50E□-6TC			6						

External Dimension Diagram (Direct Mount, Buffer Type, VSP-F Male Thread Type)

●VSP-F □E□

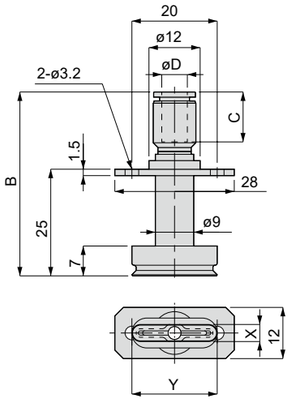


Unit: mm

Model No.	Pad Size X	Pad Size Y	Spring Force (N)	Weight (g)
VSP-F2x4E□	2	4	7.9 to 15	54
VSP-F3.5x7E□	3.5	7	7.9 to 15	54
VSP-F4x10E□	4	10	7.9 to 15	54
VSP-F4x20E□		20		55
VSP-F4x30E□		30		
VSP-F5x10E□	5	10	7.9 to 15	54
VSP-F5x20E□		20		55
VSP-F5x30E□		30		
VSP-F6x10E□	6	10	7.9 to 15	54
VSP-F6x20E□		20		55
VSP-F6x30E□		30		
VSP-F8x20E□	8	20	7.9 to 15	55
VSP-F8x30E□		30		

External Dimension Diagram (Screw Mount, Fixed Type, Vacuum Outlet on Top, VSP-AE)

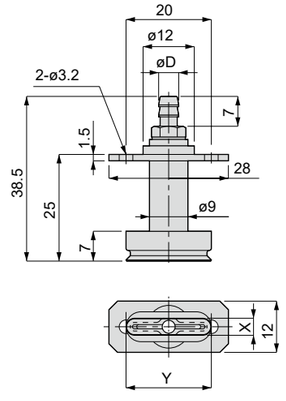
●Push-in fitting VSP-AE□E□-2/4/6



Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	Tube End C	Weight (g)
VSP-AE2x4E□-2	2	4	1.8	37.3	8.4	5
VSP-AE2x4E□-4			4	41.4	11.2	6
VSP-AE2x4E□-6			6	42.7	11.9	7
VSP-AE3.5x7E□-2	3.5	7	1.8	37.3	8.4	5
VSP-AE3.5x7E□-4			4	41.4	11.2	6
VSP-AE3.5x7E□-6			6	42.7	11.9	7
VSP-AE4x10E□-2	4	10	1.8	37.3	8.4	5
VSP-AE4x10E□-4			4	41.4	11.2	6
VSP-AE4x10E□-6			6	42.7	11.9	7
VSP-AE4x20E□-2		20	1.8	37.3	8.4	5.5
VSP-AE4x20E□-4			4	41.4	11.2	6.5
VSP-AE4x20E□-6			6	42.7	11.9	7.5
VSP-AE4x30E□-2		30	1.8	37.3	8.4	6
VSP-AE4x30E□-4			4	41.4	11.2	7
VSP-AE4x30E□-6			6	42.7	11.9	8
VSP-AE5x10E□-2	5	10	1.8	37.3	8.4	5
VSP-AE5x10E□-4			4	41.4	11.2	6
VSP-AE5x10E□-6			6	42.7	11.9	7
VSP-AE5x20E□-2		20	1.8	37.3	8.4	5.5
VSP-AE5x20E□-4			4	41.4	11.2	6.5
VSP-AE5x20E□-6			6	42.7	11.9	7.5
VSP-AE5x30E□-2		30	1.8	37.3	8.4	6
VSP-AE5x30E□-4			4	41.4	11.2	7
VSP-AE5x30E□-6			6	42.7	11.9	8
VSP-AE6x10E□-2	6	10	1.8	37.3	8.4	5
VSP-AE6x10E□-4			4	41.4	11.2	6
VSP-AE6x10E□-6			6	42.7	11.9	7
VSP-AE6x20E□-2		20	1.8	37.3	8.4	5.5
VSP-AE6x20E□-4			4	41.4	11.2	6.5
VSP-AE6x20E□-6			6	42.7	11.9	7.5
VSP-AE6x30E□-2		30	1.8	37.3	8.4	6
VSP-AE6x30E□-4			4	41.4	11.2	7
VSP-AE6x30E□-6			6	42.7	11.9	8
VSP-AE8x20E□-2	8	20	1.8	37.3	8.4	5.5
VSP-AE8x20E□-4			4	41.4	11.2	6.5
VSP-AE8x20E□-6			6	42.7	11.9	7.5
VSP-AE8x30E□-2		30	1.8	37.3	8.4	6
VSP-AE8x30E□-4			4	41.4	11.2	7
VSP-AE8x30E□-6			6	42.7	11.9	8

●Barbed fitting VSP-AE□E□-4T/6T

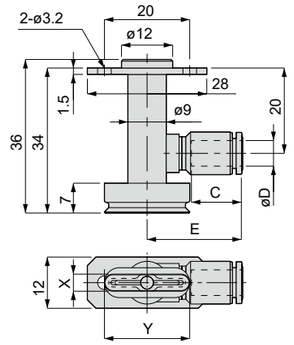


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	Weight (g)
VSP-AE2x4E□-4T	2	4	2.5	5
VSP-AE2x4E□-6T			4	
VSP-AE3.5x7E□-4T	3.5	7	2.5	5
VSP-AE3.5x7E□-6T			4	
VSP-AE4x10E□-4T	4	10	2.5	5
VSP-AE4x10E□-6T			4	
VSP-AE4x20E□-4T		20	2.5	5.5
VSP-AE4x20E□-6T			4	
VSP-AE4x30E□-4T		30	2.5	6
VSP-AE4x30E□-6T			4	
VSP-AE5x10E□-4T	5	10	2.5	5
VSP-AE5x10E□-6T			4	
VSP-AE5x20E□-4T		20	2.5	5.5
VSP-AE5x20E□-6T			4	
VSP-AE5x30E□-4T		30	2.5	6
VSP-AE5x30E□-6T			4	
VSP-AE6x10E□-4T	6	10	2.5	5
VSP-AE6x10E□-6T			4	
VSP-AE6x20E□-4T		20	2.5	5.5
VSP-AE6x20E□-6T			4	
VSP-AE6x30E□-4T		30	2.5	6
VSP-AE6x30E□-6T			4	
VSP-AE8x20E□-4T	8	20	2.5	5.5
VSP-AE8x20E□-6T			4	
VSP-AE8x30E□-4T		30	2.5	6
VSP-AE8x30E□-6T			4	

External Dimension Diagram (Screw Mount, Fixed Type, Vacuum Outlet on Side, VSP-BE)

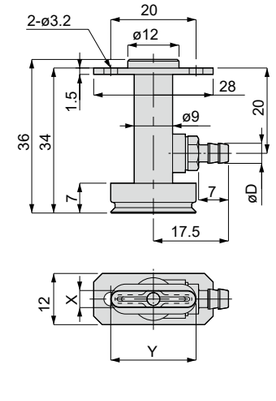
●Push-in fitting VSP-BE□E□-2/4/6



Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	Tube End C	Weight (g)
VSP-BE2x4E□-2	2	4	1.8	16.3	8.4	6
VSP-BE2x4E□-4			4	20.4	11.2	7
VSP-BE2x4E□-6			6	21.7	11.9	8
VSP-BE3.5x7E□-2	3.5	7	1.8	16.3	8.4	6
VSP-BE3.5x7E□-4			4	20.4	11.2	7
VSP-BE3.5x7E□-6			6	21.7	11.9	8
VSP-BE4x10E□-2	4	10	1.8	16.3	8.4	6
VSP-BE4x10E□-4			4	20.4	11.2	7
VSP-BE4x10E□-6			6	21.7	11.9	8
VSP-BE4x20E□-2		20	1.8	16.3	8.4	6
VSP-BE4x20E□-4			4	20.4	11.2	7
VSP-BE4x20E□-6			6	21.7	11.9	8
VSP-BE4x30E□-2		30	1.8	16.3	8.4	6.5
VSP-BE4x30E□-4			4	20.4	11.2	7.5
VSP-BE4x30E□-6			6	21.7	11.9	8.5
VSP-BE5x10E□-2	5	10	1.8	16.3	8.4	6
VSP-BE5x10E□-4			4	20.4	11.2	7
VSP-BE5x10E□-6			6	21.7	11.9	8
VSP-BE5x20E□-2		20	1.8	16.3	8.4	6
VSP-BE5x20E□-4			4	20.4	11.2	7
VSP-BE5x20E□-6			6	21.7	11.9	8
VSP-BE5x30E□-2		30	1.8	16.3	8.4	6.5
VSP-BE5x30E□-4			4	20.4	11.2	7.5
VSP-BE5x30E□-6			6	21.7	11.9	8.5
VSP-BE6x10E□-2	6	10	1.8	16.3	8.4	6
VSP-BE6x10E□-4			4	20.4	11.2	7
VSP-BE6x10E□-6			6	21.7	11.9	8
VSP-BE6x20E□-2		20	1.8	16.3	8.4	6
VSP-BE6x20E□-4			4	20.4	11.2	7
VSP-BE6x20E□-6			6	21.7	11.9	8
VSP-BE6x30E□-2		30	1.8	16.3	8.4	6.5
VSP-BE6x30E□-4			4	20.4	11.2	7.5
VSP-BE6x30E□-6			6	21.7	11.9	8.5
VSP-BE8x20E□-2	8	20	1.8	16.3	8.4	6
VSP-BE8x20E□-4			4	20.4	11.2	7
VSP-BE8x20E□-6			6	21.7	11.9	8
VSP-BE8x30E□-2		30	1.8	16.3	8.4	6.5
VSP-BE8x30E□-4			4	20.4	11.2	7.5
VSP-BE8x30E□-6			6	21.7	11.9	8.5

●Barbed fitting VSP-BE□E□-4T/6T

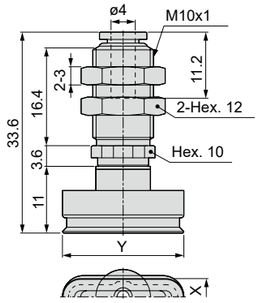


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	Weight (g)
VSP-BE2x4E□-4T	2	4	2.5	6
VSP-BE2x4E□-6T			4	
VSP-BE3.5x7E□-4T	3.5	7	2.5	6
VSP-BE3.5x7E□-6T			4	
VSP-BE4x10E□-4T	4	10	2.5	6
VSP-BE4x10E□-6T			4	
VSP-BE4x20E□-4T		20	2.5	6
VSP-BE4x20E□-6T			4	
VSP-BE4x30E□-4T		30	2.5	6.5
VSP-BE4x30E□-6T			4	
VSP-BE5x10E□-4T	5	10	2.5	6
VSP-BE5x10E□-6T			4	
VSP-BE5x20E□-4T		20	2.5	6
VSP-BE5x20E□-6T			4	
VSP-BE5x30E□-4T		30	2.5	6.5
VSP-BE5x30E□-6T			4	
VSP-BE6x10E□-4T	6	10	2.5	6
VSP-BE6x10E□-6T			4	
VSP-BE6x20E□-4T		20	2.5	6
VSP-BE6x20E□-6T			4	
VSP-BE6x30E□-4T		30	2.5	6.5
VSP-BE6x30E□-6T			4	
VSP-BE8x20E□-4T	8	20	2.5	6
VSP-BE8x20E□-6T			4	
VSP-BE8x30E□-4T		30	2.5	6.5
VSP-BE8x30E□-6T			4	

External Dimension Diagram (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA)

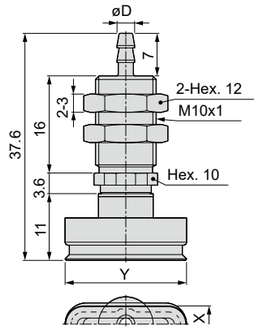
●Push-in fitting VSP-MA□E□-4



Unit: mm

Model No.	Pad Size X	Pad Size Y	Weight (g)
VSP-MA2x4E□-4	2	4	6
VSP-MA3.5x7E□-4	3.5	7	6
VSP-MA4x10E□-4	4	10	6
VSP-MA4x20E□-4		20	6.3
VSP-MA4x30E□-4		30	6.7
VSP-MA5x10E□-4	5	10	6
VSP-MA5x20E□-4		20	6.3
VSP-MA5x30E□-4		30	6.6
VSP-MA6x10E□-4	6	10	6
VSP-MA6x20E□-4		20	6.3
VSP-MA6x30E□-4		30	6.7
VSP-MA8x20E□-4	8	20	6.3
VSP-MA8x30E□-4		30	6.8

●Barbed fitting VSP-MA□E□-4T/6T

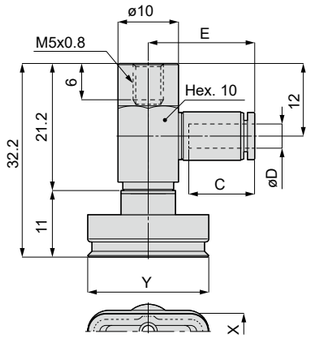


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	Weight (g)
VSP-MA2x4E□-4T	2	4	2.5	6
VSP-MA2x4E□-6T			4	
VSP-MA3.5x7E□-4T	3.5	7	2.5	6
VSP-MA3.5x7E□-6T			4	
VSP-MA4x10E□-4T	4	10	2.5	6
VSP-MA4x10E□-6T			4	
VSP-MA4x20E□-4T		20	2.5	6.3
VSP-MA4x20E□-6T			4	
VSP-MA4x30E□-4T		30	2.5	6.7
VSP-MA4x30E□-6T			4	
VSP-MA5x10E□-4T	5	10	2.5	6
VSP-MA5x10E□-6T			4	
VSP-MA5x20E□-4T		20	2.5	6.3
VSP-MA5x20E□-6T			4	
VSP-MA5x30E□-4T		30	2.5	6.7
VSP-MA5x30E□-6T			4	
VSP-MA6x10E□-4T	6	10	2.5	6
VSP-MA6x10E□-6T			4	
VSP-MA6x20E□-4T		20	2.5	6.3
VSP-MA6x20E□-6T			4	
VSP-MA6x30E□-4T		30	2.5	6.7
VSP-MA6x30E□-6T			4	
VSP-MA8x20E□-4T	8	20	2.5	6.4
VSP-MA8x20E□-6T			4	
VSP-MA8x30E□-4T		30	2.5	6.9
VSP-MA8x30E□-6T			4	

External Dimension Diagram (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB)

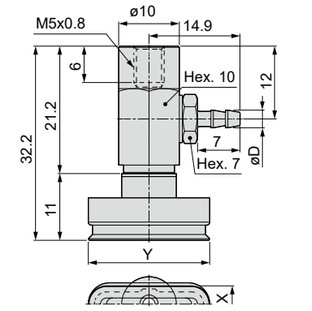
●Push-in fitting VSP-MB□E□-2/4/6



Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	Tube End C	E	Weight (g)
VSP-MB2x4E□-2	2	4	1.8	8.4	13.7	6.8
VSP-MB2x4E□-4			4	11.2	17.8	6.9
VSP-MB2x4E□-6			6	11.9	19.6	7.0
VSP-MB3.5x7E□-2	3.5	7	1.8	8.4	13.7	6.8
VSP-MB3.5x7E□-4			4	11.2	17.8	6.9
VSP-MB3.5x7E□-6			6	11.9	19.6	7.0
VSP-MB4x10E□-2	4	10	1.8	8.4	13.7	6.8
VSP-MB4x10E□-4			4	11.2	17.8	6.9
VSP-MB4x10E□-6			6	11.9	19.6	7.0
VSP-MB4x20E□-2		20	1.8	8.4	13.7	7.1
VSP-MB4x20E□-4			4	11.2	17.8	7.2
VSP-MB4x20E□-6			6	11.9	19.6	7.3
VSP-MB4x30E□-2		30	1.8	8.4	13.7	7.5
VSP-MB4x30E□-4			4	11.2	17.8	7.6
VSP-MB4x30E□-6			6	11.9	19.6	7.7
VSP-MB5x10E□-2	5	10	1.8	8.4	13.7	6.8
VSP-MB5x10E□-4			4	11.2	17.8	6.9
VSP-MB5x10E□-6			6	11.9	19.6	7.0
VSP-MB5x20E□-2		20	1.8	8.4	13.7	7.1
VSP-MB5x20E□-4			4	11.2	17.8	7.2
VSP-MB5x20E□-6			6	11.9	19.6	7.3
VSP-MB5x30E□-2		30	1.8	8.4	13.7	7.5
VSP-MB5x30E□-4			4	11.2	17.8	7.6
VSP-MB5x30E□-6			6	11.9	19.6	7.7
VSP-MB6x10E□-2	6	10	1.8	8.4	13.7	6.8
VSP-MB6x10E□-4			4	11.2	17.8	6.9
VSP-MB6x10E□-6			6	11.9	19.6	7.0
VSP-MB6x20E□-2		20	1.8	8.4	13.7	7.1
VSP-MB6x20E□-4			4	11.2	17.8	7.2
VSP-MB6x20E□-6			6	11.9	19.6	7.3
VSP-MB6x30E□-2		30	1.8	8.4	13.7	7.5
VSP-MB6x30E□-4			4	11.2	17.8	7.6
VSP-MB6x30E□-6			6	11.9	19.6	7.7
VSP-MB8x20E□-2	8	20	1.8	8.4	13.7	7.2
VSP-MB8x20E□-4			4	11.2	17.8	7.3
VSP-MB8x20E□-6			6	11.9	19.6	7.4
VSP-MB8x30E□-2		30	1.8	8.4	13.7	7.6
VSP-MB8x30E□-4			4	11.2	17.8	7.7
VSP-MB8x30E□-6			6	11.9	19.6	7.8

●Barbed fitting VSP-MB□E□-4T/6T

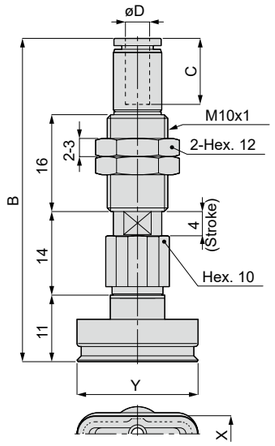


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	Weight (g)
VSP-MB2x4E□-4T	2	4	2.5	5.7
VSP-MB2x4E□-6T			4	
VSP-MB3.5x7E□-4T	3.5	7	2.5	5.7
VSP-MB3.5x7E□-6T			4	
VSP-MB4x10E□-4T	4	10	2.5	5.7
VSP-MB4x10E□-6T			4	
VSP-MB4x20E□-4T		20	2.5	6.0
VSP-MB4x20E□-6T			4	
VSP-MB4x30E□-4T		30	2.5	6.4
VSP-MB4x30E□-6T			4	
VSP-MB5x10E□-4T	5	10	2.5	5.7
VSP-MB5x10E□-6T			4	
VSP-MB5x20E□-4T		20	2.5	6.1
VSP-MB5x20E□-6T			4	
VSP-MB5x30E□-4T		30	2.5	6.4
VSP-MB5x30E□-6T			4	
VSP-MB6x10E□-4T	6	10	2.5	5.8
VSP-MB6x10E□-6T			4	
VSP-MB6x20E□-4T		20	2.5	6.1
VSP-MB6x20E□-6T			4	
VSP-MB6x30E□-4T		30	2.5	6.5
VSP-MB6x30E□-6T			4	
VSP-MB8x20E□-4T	8	20	2.5	6.1
VSP-MB8x20E□-6T			4	
VSP-MB8x30E□-4T		30	2.5	6.6
VSP-MB8x30E□-6T			4	

External Dimension Diagram (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC)

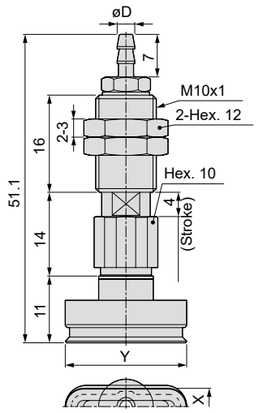
●Push-in fitting VSP-MC□E□-2/4



Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	Tube End C	Spring Force (N)	Weight (g)
VSP-MC2x4E□-2	2	4	1.8	49.9	8.4	1.0 to 1.3	21
VSP-MC2x4E□-4			4	54	11.2		22
VSP-MC3.5x7E□-2	3.5	7	1.8	49.9	8.4	1.0 to 1.3	21
VSP-MC3.5x7E□-4			4	54	11.2		22
VSP-MC4x10E□-2	4	10	1.8	49.9	8.4	1.0 to 1.3	21
VSP-MC4x10E□-4			4	54	11.2		22
VSP-MC4x20E□-2		20	1.8	49.9	8.4	1.0 to 1.3	21
VSP-MC4x20E□-4			4	54	11.2		22
VSP-MC4x30E□-2		30	1.8	49.9	8.4	1.0 to 1.3	22
VSP-MC4x30E□-4			4	54	11.2		23
VSP-MC5x10E□-2	5	10	1.8	49.9	8.4	1.0 to 1.3	21
VSP-MC5x10E□-4			4	54	11.2		22
VSP-MC5x20E□-2		20	1.8	49.9	8.4	1.0 to 1.3	21
VSP-MC5x20E□-4			4	54	11.2		22
VSP-MC5x30E□-2		30	1.8	49.9	8.4	1.0 to 1.3	22
VSP-MC5x30E□-4			4	54	11.2		23
VSP-MC6x10E□-2	6	10	1.8	49.9	8.4	1.0 to 1.3	21
VSP-MC6x10E□-4			4	54	11.2		22
VSP-MC6x20E□-2		20	1.8	49.9	8.4	1.0 to 1.3	21
VSP-MC6x20E□-4			4	54	11.2		22
VSP-MC6x30E□-2		30	1.8	49.9	8.4	1.0 to 1.3	22
VSP-MC6x30E□-4			4	54	11.2		23
VSP-MC8x20E□-2	8	20	1.8	49.9	8.4	1.0 to 1.3	21
VSP-MC8x20E□-4			4	54	11.2		22
VSP-MC8x30E□-2		30	1.8	49.9	8.4	1.0 to 1.3	22
VSP-MC8x30E□-4			4	54	11.2		23

●Barbed fitting VSP-MC□E□-4T/6T

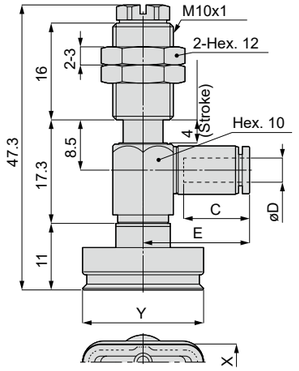


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	Spring Force (N)	Weight (g)
VSP-MC2x4E□-4T	2	4	2.5	1 to 1.3	17
VSP-MC2x4E□-6T			4		
VSP-MC3.5x7E□-4T	3.5	7	2.5	1 to 1.3	17
VSP-MC3.5x7E□-6T			4		
VSP-MC4x10E□-4T	4	10	2.5	1 to 1.3	17
VSP-MC4x10E□-6T			4		
VSP-MC4x20E□-4T		20	2.5		17
VSP-MC4x20E□-6T			4		
VSP-MC4x30E□-4T		30	2.5		18
VSP-MC4x30E□-6T			4		
VSP-MC5x10E□-4T	5	10	2.5	1 to 1.3	17
VSP-MC5x10E□-6T			4		
VSP-MC5x20E□-4T		20	2.5		17
VSP-MC5x20E□-6T			4		
VSP-MC5x30E□-4T		30	2.5		18
VSP-MC5x30E□-6T			4		
VSP-MC6x10E□-4T	6	10	2.5	1 to 1.3	17
VSP-MC6x10E□-6T			4		
VSP-MC6x20E□-4T		20	2.5		17
VSP-MC6x20E□-6T			4		
VSP-MC6x30E□-4T		30	2.5		18
VSP-MC6x30E□-6T			4		
VSP-MC8x20E□-4T	8	20	2.5	1 to 1.3	18
VSP-MC8x20E□-6T			4		
VSP-MC8x30E□-4T		30	2.5		
VSP-MC8x30E□-6T			4		

External Dimension Diagram (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD)

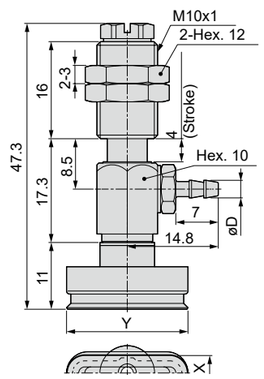
●Push-in fitting VSP-MD□E□-2/4/6



Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	Tube End C	E	Spring Force (N)	Weight (g)
VSP-MD2x4E□-2	2	4	1.8	8.4	13.7	1.0 to 1.3	21
VSP-MD2x4E□-4			4	11.2	17.7		22
VSP-MD2x4E□-6			6	11.9	19.5		23
VSP-MD3.5x7E□-2	3.5	7	1.8	8.4	13.7	1.0 to 1.3	21
VSP-MD3.5x7E□-4			4	11.2	17.7		22
VSP-MD3.5x7E□-6			6	11.9	19.5		23
VSP-MD4x10E□-2	4	10	1.8	8.4	13.7	1.0 to 1.3	21
VSP-MD4x10E□-4			4	11.2	17.7		22
VSP-MD4x10E□-6			6	11.9	19.5		23
VSP-MD4x20E□-2		20	1.8	8.4	13.7	1.0 to 1.3	21
VSP-MD4x20E□-4			4	11.2	17.7		22
VSP-MD4x20E□-6			6	11.9	19.5		23
VSP-MD4x30E□-2		30	1.8	8.4	13.7	1.0 to 1.3	22
VSP-MD4x30E□-4			4	11.2	17.7		23
VSP-MD4x30E□-6			6	11.9	19.5		24
VSP-MD5x10E□-2	5	10	1.8	8.4	13.7	1.0 to 1.3	21
VSP-MD5x10E□-4			4	11.2	17.7		22
VSP-MD5x10E□-6			6	11.9	19.5		23
VSP-MD5x20E□-2		20	1.8	8.4	13.7	1.0 to 1.3	21
VSP-MD5x20E□-4			4	11.2	17.7		22
VSP-MD5x20E□-6			6	11.9	19.5		23
VSP-MD5x30E□-2		30	1.8	8.4	13.7	1.0 to 1.3	22
VSP-MD5x30E□-4			4	11.2	17.7		23
VSP-MD5x30E□-6			6	11.9	19.5		24
VSP-MD6x10E□-2	6	10	1.8	8.4	13.7	1.0 to 1.3	21
VSP-MD6x10E□-4			4	11.2	17.7		22
VSP-MD6x10E□-6			6	11.9	19.5		23
VSP-MD6x20E□-2		20	1.8	8.4	13.7	1.0 to 1.3	21
VSP-MD6x20E□-4			4	11.2	17.7		22
VSP-MD6x20E□-6			6	11.9	19.5		23
VSP-MD6x30E□-2		30	1.8	8.4	13.7	1.0 to 1.3	22
VSP-MD6x30E□-4			4	11.2	17.7		23
VSP-MD6x30E□-6			6	11.9	19.5		24
VSP-MD8x20E□-2	8	20	1.8	8.4	13.7	1.0 to 1.3	21
VSP-MD8x20E□-4			4	11.2	17.7		22
VSP-MD8x20E□-6			6	11.9	19.5		23
VSP-MD8x30E□-2		30	1.8	8.4	13.7	1.0 to 1.3	22
VSP-MD8x30E□-4			4	11.2	17.7		23
VSP-MD8x30E□-6			6	11.9	19.5		24

●Barbed fitting VSP-MD□E□-4T/6T

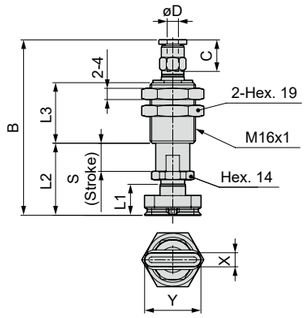


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	Spring Force (N)	Weight (g)
VSP-MD2x4E□-4T	2	4	2.5	1 to 1.3	21
VSP-MD2x4E□-6T			4		
VSP-MD3.5x7E□-4T	3.5	7	2.5	1 to 1.3	21
VSP-MD3.5x7E□-6T			4		
VSP-MD4x10E□-4T	4	10	2.5	1 to 1.3	21
VSP-MD4x10E□-6T			4		
VSP-MD4x20E□-4T		20	2.5		
VSP-MD4x20E□-6T			4		
VSP-MD4x30E□-4T		30	2.5		
VSP-MD4x30E□-6T			4		
VSP-MD5x10E□-4T	5	10	2.5	1 to 1.3	21
VSP-MD5x10E□-6T			4		
VSP-MD5x20E□-4T		20	2.5		
VSP-MD5x20E□-6T			4		
VSP-MD5x30E□-4T		30	2.5		
VSP-MD5x30E□-6T			4		
VSP-MD6x10E□-4T	6	10	2.5	1 to 1.3	20
VSP-MD6x10E□-6T			4		
VSP-MD6x20E□-4T		20	2.5		21
VSP-MD6x20E□-6T			4		
VSP-MD6x30E□-4T		30	2.5		21
VSP-MD6x30E□-6T			4		
VSP-MD8x20E□-4T	8	20	2.5	1 to 1.3	21
VSP-MD8x20E□-6T			4		
VSP-MD8x30E□-4T		30	2.5		
VSP-MD8x30E□-6T			4		

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC2x4-□E□-2/4/6
●VSP-HC3.5x7-□E□-2/4/6

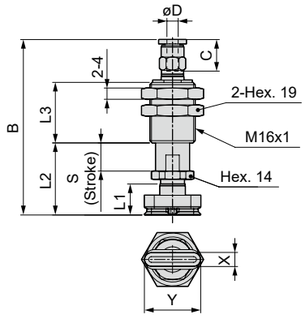


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC2x4-10E□-2			1.8	58.2				8.4			22
VSP-HC2x4-10E□-4			4	62.3		25.6	21.5	11.2	10	1.0 to 2.4	23
VSP-HC2x4-10E□-6			6	63.6				11.9			24
VSP-HC2x4-15E□-2			1.8	68.2				8.4			24
VSP-HC2x4-15E□-4			4	72.3		30.6	26.5	11.2	15	1.0 to 2.7	25
VSP-HC2x4-15E□-6			6	73.6				11.9			26
VSP-HC2x4-20E□-2			1.8	78.2				8.4			26
VSP-HC2x4-20E□-4			4	82.3		35.6	31.5	11.2	20	1.0 to 3.0	27
VSP-HC2x4-20E□-6			6	83.6				11.9			28
VSP-HC2x4-25E□-2			1.8	88.7				8.4			28
VSP-HC2x4-25E□-4	2.5	4	4	92.8	11	40.6	37	11.2	25	1.0 to 3.0	29
VSP-HC2x4-25E□-6			6	94.1				11.9			30
VSP-HC2x4-30E□-2			1.8	99.7				8.4			30
VSP-HC2x4-30E□-4			4	103.8		45.6	43	11.2	30	1.0 to 3.0	31
VSP-HC2x4-30E□-6			6	105.1				11.9			32
VSP-HC2x4-40E□-2			1.8	121.7				8.4			34
VSP-HC2x4-40E□-4			4	125.8		55.6	55	11.2	40	1.0 to 3.0	35
VSP-HC2x4-40E□-6			6	117.2				11.9			36
VSP-HC2x4-50E□-2			1.8	143.2				8.4			38
VSP-HC2x4-50E□-4			4	147.3		65.6	66.5	11.2	50	1.0 to 3.1	39
VSP-HC2x4-50E□-6			6	148.6				11.9			40
VSP-HC3.5x7-10E□-2			1.8	58.2				8.4			22
VSP-HC3.5x7-10E□-4			4	62.3		25.6	21.5	11.2	10	1.0 to 2.4	23
VSP-HC3.5x7-10E□-6			6	63.6				11.9			24
VSP-HC3.5x7-15E□-2			1.8	68.2				8.4			24
VSP-HC3.5x7-15E□-4			4	72.3		30.6	26.5	11.2	15	1.0 to 2.7	25
VSP-HC3.5x7-15E□-6			6	73.6				11.9			26
VSP-HC3.5x7-20E□-2			1.8	78.2				8.4			26
VSP-HC3.5x7-20E□-4			4	82.3		35.6	31.5	11.2	20	1.0 to 3.0	27
VSP-HC3.5x7-20E□-6			6	83.6				11.9			28
VSP-HC3.5x7-25E□-2			1.8	88.7				8.4			28
VSP-HC3.5x7-25E□-4	3.5	7	4	92.8	11	40.6	37	11.2	25	1.0 to 3.0	29
VSP-HC3.5x7-25E□-6			6	94.1				11.9			30
VSP-HC3.5x7-30E□-2			1.8	99.7				8.4			30
VSP-HC3.5x7-30E□-4			4	103.8		45.6	43	11.2	30	1.0 to 3.0	31
VSP-HC3.5x7-30E□-6			6	105.1				11.9			32
VSP-HC3.5x7-40E□-2			1.8	121.7				8.4			34
VSP-HC3.5x7-40E□-4			4	125.8		55.6	55	11.2	40	1.0 to 3.0	35
VSP-HC3.5x7-40E□-6			6	117.2				11.9			36
VSP-HC3.5x7-50E□-2			1.8	143.2				8.4			38
VSP-HC3.5x7-50E□-4			4	147.3		65.6	66.5	11.2	50	1.0 to 3.1	39
VSP-HC3.5x7-50E□-6			6	148.6				11.9			40

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC4x10-□E□-2/4/6
●VSP-HC4x20-□E□-2/4/6
●VSP-HC4x30-□E□-2/4/6

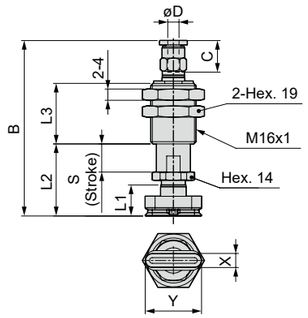


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC4x10-10E□-2			1.8	58.2				8.4			22
VSP-HC4x10-10E□-4			4	62.3		25.6	21.5	11.2	10	1.0 to 2.4	23
VSP-HC4x10-10E□-6			6	63.6				11.9			24
VSP-HC4x10-15E□-2			1.8	68.2				8.4			24
VSP-HC4x10-15E□-4			4	72.3		30.6	26.5	11.2	15	1.0 to 2.7	25
VSP-HC4x10-15E□-6			6	73.6				11.9			26
VSP-HC4x10-20E□-2			1.8	78.2				8.4			26
VSP-HC4x10-20E□-4			4	82.3		35.6	31.5	11.2	20	1.0 to 3.0	27
VSP-HC4x10-20E□-6			6	83.6				11.9			28
VSP-HC4x10-25E□-2			1.8	88.7				8.4			28
VSP-HC4x10-25E□-4		10	4	92.8	11	40.6	37	11.2	25	1.0 to 3.0	29
VSP-HC4x10-25E□-6			6	94.1				11.9			30
VSP-HC4x10-30E□-2			1.8	99.7				8.4			30
VSP-HC4x10-30E□-4			4	103.8		45.6	43	11.2	30	1.0 to 3.0	31
VSP-HC4x10-30E□-6			6	105.1				11.9			32
VSP-HC4x10-40E□-2			1.8	121.7				8.4			34
VSP-HC4x10-40E□-4			4	125.8		55.6	55	11.2	40	1.0 to 3.0	35
VSP-HC4x10-40E□-6			6	117.2				11.9			36
VSP-HC4x10-50E□-2			1.8	143.2				8.4			38
VSP-HC4x10-50E□-4			4	147.3		65.6	66.5	11.2	50	1.0 to 3.1	39
VSP-HC4x10-50E□-6			6	148.6				11.9			40
VSP-HC4x20-10E□-2			1.8	58.2				8.4			23
VSP-HC4x20-10E□-4			4	62.3		25.6	21.5	11.2	10	1.0 to 2.4	24
VSP-HC4x20-10E□-6			6	63.6				11.9			25
VSP-HC4x20-15E□-2			1.8	68.2				8.4			25
VSP-HC4x20-15E□-4			4	72.3		30.6	26.5	11.2	15	1.0 to 2.7	26
VSP-HC4x20-15E□-6			6	73.6				11.9			27
VSP-HC4x20-20E□-2			1.8	78.2				8.4			27
VSP-HC4x20-20E□-4			4	82.3		35.6	31.5	11.2	20	1.0 to 3.0	28
VSP-HC4x20-20E□-6			6	83.6				11.9			29
VSP-HC4x20-25E□-2			1.8	88.7				8.4			29
VSP-HC4x20-25E□-4	4	20	4	92.8	11	40.6	37	11.2	25	1.0 to 3.0	30
VSP-HC4x20-25E□-6			6	94.1				11.9			31
VSP-HC4x20-30E□-2			1.8	99.7				8.4			31
VSP-HC4x20-30E□-4			4	103.8		45.6	43	11.2	30	1.0 to 3.0	32
VSP-HC4x20-30E□-6			6	105.1				11.9			33
VSP-HC4x20-40E□-2			1.8	121.7				8.4			35
VSP-HC4x20-40E□-4			4	125.8		55.6	55	11.2	40	1.0 to 3.0	36
VSP-HC4x20-40E□-6			6	117.2				11.9			37
VSP-HC4x20-50E□-2			1.8	143.2				8.4			39
VSP-HC4x20-50E□-4			4	147.3		65.6	66.5	11.2	50	1.0 to 3.1	40
VSP-HC4x20-50E□-6			6	148.6				11.9			41
VSP-HC4x30-10E□-2			1.8	58.2				8.4			23
VSP-HC4x30-10E□-4			4	62.3		25.6	21.5	11.2	10	1.0 to 2.4	24
VSP-HC4x30-10E□-6			6	63.6				11.9			25
VSP-HC4x30-15E□-2			1.8	68.2				8.4			25
VSP-HC4x30-15E□-4			4	72.3		30.6	26.5	11.2	15	1.0 to 2.7	26
VSP-HC4x30-15E□-6			6	73.6				11.9			27
VSP-HC4x30-20E□-2			1.8	78.2				8.4			27
VSP-HC4x30-20E□-4			4	82.3		35.6	31.5	11.2	20	1.0 to 3.0	28
VSP-HC4x30-20E□-6			6	83.6				11.9			29
VSP-HC4x30-25E□-2			1.8	88.7				8.4			29
VSP-HC4x30-25E□-4		30	4	92.8	11	40.6	37	11.2	25	1.0 to 3.0	30
VSP-HC4x30-25E□-6			6	94.1				11.9			31
VSP-HC4x30-30E□-2			1.8	99.7				8.4			31
VSP-HC4x30-30E□-4			4	103.8		45.6	43	11.2	30	1.0 to 3.0	32
VSP-HC4x30-30E□-6			6	105.1				11.9			33
VSP-HC4x30-40E□-2			1.8	121.7				8.4			35
VSP-HC4x30-40E□-4			4	125.8		55.6	55	11.2	40	1.0 to 3.0	36
VSP-HC4x30-40E□-6			6	117.2				11.9			37
VSP-HC4x30-50E□-2			1.8	143.2				8.4			39
VSP-HC4x30-50E□-4			4	147.3		65.6	66.5	11.2	50	1.0 to 3.1	40
VSP-HC4x30-50E□-6			6	148.6				11.9			41

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC5x10-□E□-2/4/6
●VSP-HC5x20-□E□-2/4/6
●VSP-HC5x30-□E□-2/4/6

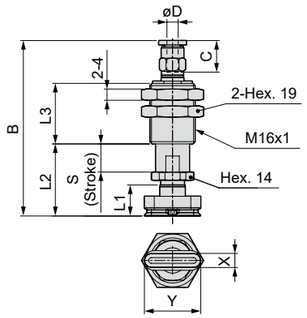


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC5x10-10E□-2			1.8	58.2				8.4			22
VSP-HC5x10-10E□-4			4	62.3		25.6	21.5	11.2	10	1.0 to 2.4	23
VSP-HC5x10-10E□-6			6	63.6				11.9			24
VSP-HC5x10-15E□-2			1.8	68.2				8.4			24
VSP-HC5x10-15E□-4			4	72.3		30.6	26.5	11.2	15	1.0 to 2.7	25
VSP-HC5x10-15E□-6			6	73.6				11.9			26
VSP-HC5x10-20E□-2			1.8	78.2				8.4			26
VSP-HC5x10-20E□-4			4	82.3		35.6	31.5	11.2	20	1.0 to 3.0	27
VSP-HC5x10-20E□-6			6	83.6				11.9			28
VSP-HC5x10-25E□-2			1.8	88.7				8.4			28
VSP-HC5x10-25E□-4		10	4	92.8	11	40.6	37	11.2	25	1.0 to 3.0	29
VSP-HC5x10-25E□-6			6	94.1				11.9			30
VSP-HC5x10-30E□-2			1.8	99.7				8.4			30
VSP-HC5x10-30E□-4			4	103.8		45.6	43	11.2	30	1.0 to 3.0	31
VSP-HC5x10-30E□-6			6	105.1				11.9			32
VSP-HC5x10-40E□-2			1.8	121.7				8.4			34
VSP-HC5x10-40E□-4			4	125.8		55.6	55	11.2	40	1.0 to 3.0	35
VSP-HC5x10-40E□-6			6	117.2				11.9			36
VSP-HC5x10-50E□-2			1.8	143.2				8.4			38
VSP-HC5x10-50E□-4			4	147.3		65.6	66.5	11.2	50	1.0 to 3.1	39
VSP-HC5x10-50E□-6			6	148.6				11.9			40
VSP-HC5x20-10E□-2			1.8	58.2				8.4			23
VSP-HC5x20-10E□-4			4	62.3		25.6	21.5	11.2	10	1.0 to 2.4	24
VSP-HC5x20-10E□-6			6	63.6				11.9			25
VSP-HC5x20-15E□-2			1.8	68.2				8.4			25
VSP-HC5x20-15E□-4			4	72.3		30.6	26.5	11.2	15	1.0 to 2.7	26
VSP-HC5x20-15E□-6			6	73.6				11.9			27
VSP-HC5x20-20E□-2			1.8	78.2				8.4			27
VSP-HC5x20-20E□-4			4	82.3		35.6	31.5	11.2	20	1.0 to 3.0	28
VSP-HC5x20-20E□-6			6	83.6				11.9			29
VSP-HC5x20-25E□-2			1.8	88.7				8.4			29
VSP-HC5x20-25E□-4	5	20	4	92.8	11	40.6	37	11.2	25	1.0 to 3.0	30
VSP-HC5x20-25E□-6			6	94.1				11.9			31
VSP-HC5x20-30E□-2			1.8	99.7				8.4			31
VSP-HC5x20-30E□-4			4	103.8		45.6	43	11.2	30	1.0 to 3.0	32
VSP-HC5x20-30E□-6			6	105.1				11.9			33
VSP-HC5x20-40E□-2			1.8	121.7				8.4			35
VSP-HC5x20-40E□-4			4	125.8		55.6	55	11.2	40	1.0 to 3.0	36
VSP-HC5x20-40E□-6			6	117.2				11.9			37
VSP-HC5x20-50E□-2			1.8	143.2				8.4			39
VSP-HC5x20-50E□-4			4	147.3		65.6	66.5	11.2	50	1.0 to 3.1	40
VSP-HC5x20-50E□-6			6	148.6				11.9			41
VSP-HC5x30-10E□-2			1.8	58.2				8.4			23
VSP-HC5x30-10E□-4			4	62.3		25.6	21.5	11.2	10	1.0 to 2.4	24
VSP-HC5x30-10E□-6			6	63.6				11.9			25
VSP-HC5x30-15E□-2			1.8	68.2				8.4			25
VSP-HC5x30-15E□-4			4	72.3		30.6	26.5	11.2	15	1.0 to 2.7	26
VSP-HC5x30-15E□-6			6	73.6				11.9			27
VSP-HC5x30-20E□-2			1.8	78.2				8.4			27
VSP-HC5x30-20E□-4			4	82.3		35.6	31.5	11.2	20	1.0 to 3.0	28
VSP-HC5x30-20E□-6			6	83.6				11.9			29
VSP-HC5x30-25E□-2			1.8	88.7				8.4			29
VSP-HC5x30-25E□-4		30	4	92.8	11	40.6	37	11.2	25	1.0 to 3.0	30
VSP-HC5x30-25E□-6			6	94.1				11.9			31
VSP-HC5x30-30E□-2			1.8	99.7				8.4			31
VSP-HC5x30-30E□-4			4	103.8		45.6	43	11.2	30	1.0 to 3.0	32
VSP-HC5x30-30E□-6			6	105.1				11.9			33
VSP-HC5x30-40E□-2			1.8	121.7				8.4			35
VSP-HC5x30-40E□-4			4	125.8		55.6	55	11.2	40	1.0 to 3.0	36
VSP-HC5x30-40E□-6			6	117.2				11.9			37
VSP-HC5x30-50E□-2			1.8	143.2				8.4			39
VSP-HC5x30-50E□-4			4	147.3		65.6	66.5	11.2	50	1.0 to 3.1	40
VSP-HC5x30-50E□-6			6	148.6				11.9			41

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC6x10-□E□-2/4/6
●VSP-HC6x20-□E□-2/4/6
●VSP-HC6x30-□E□-2/4/6

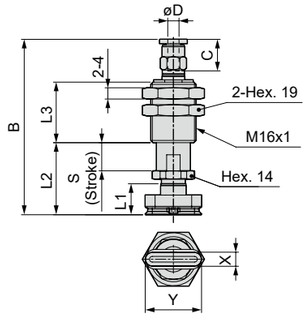


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC6x10-10E□-2			1.8	58.2				8.4			22
VSP-HC6x10-10E□-4			4	62.3		25.6	21.5	11.2	10	1.0 to 2.4	23
VSP-HC6x10-10E□-6			6	63.6				11.9			24
VSP-HC6x10-15E□-2			1.8	68.2				8.4			24
VSP-HC6x10-15E□-4			4	72.3		30.6	26.5	11.2	15	1.0 to 2.7	25
VSP-HC6x10-15E□-6			6	73.6				11.9			26
VSP-HC6x10-20E□-2			1.8	78.2				8.4			26
VSP-HC6x10-20E□-4			4	82.3		35.6	31.5	11.2	20	1.0 to 3.0	27
VSP-HC6x10-20E□-6			6	83.6				11.9			28
VSP-HC6x10-25E□-2			1.8	88.7				8.4			28
VSP-HC6x10-25E□-4		10	4	92.8	11	40.6	37	11.2	25	1.0 to 3.0	29
VSP-HC6x10-25E□-6			6	94.1				11.9			30
VSP-HC6x10-30E□-2			1.8	99.7				8.4			30
VSP-HC6x10-30E□-4			4	103.8		45.6	43	11.2	30	1.0 to 3.0	31
VSP-HC6x10-30E□-6			6	105.1				11.9			32
VSP-HC6x10-40E□-2			1.8	121.7				8.4			34
VSP-HC6x10-40E□-4			4	125.8		55.6	55	11.2	40	1.0 to 3.0	35
VSP-HC6x10-40E□-6			6	117.2				11.9			36
VSP-HC6x10-50E□-2			1.8	143.2				8.4			38
VSP-HC6x10-50E□-4			4	147.3		65.6	66.5	11.2	50	1.0 to 3.1	39
VSP-HC6x10-50E□-6			6	148.6				11.9			40
VSP-HC6x20-10E□-2			1.8	58.2				8.4			23
VSP-HC6x20-10E□-4			4	62.3		25.6	21.5	11.2	10	1.0 to 2.4	24
VSP-HC6x20-10E□-6			6	63.6				11.9			25
VSP-HC6x20-15E□-2			1.8	68.2				8.4			25
VSP-HC6x20-15E□-4			4	72.3		30.6	26.5	11.2	15	1.0 to 2.7	26
VSP-HC6x20-15E□-6			6	73.6				11.9			27
VSP-HC6x20-20E□-2			1.8	78.2				8.4			27
VSP-HC6x20-20E□-4			4	82.3		35.6	31.5	11.2	20	1.0 to 3.0	28
VSP-HC6x20-20E□-6			6	83.6				11.9			29
VSP-HC6x20-25E□-2			1.8	88.7				8.4			29
VSP-HC6x20-25E□-4	6	20	4	92.8	11	40.6	37	11.2	25	1.0 to 3.0	30
VSP-HC6x20-25E□-6			6	94.1				11.9			31
VSP-HC6x20-30E□-2			1.8	99.7				8.4			31
VSP-HC6x20-30E□-4			4	103.8		45.6	43	11.2	30	1.0 to 3.0	32
VSP-HC6x20-30E□-6			6	105.1				11.9			33
VSP-HC6x20-40E□-2			1.8	121.7				8.4			35
VSP-HC6x20-40E□-4			4	125.8		55.6	55	11.2	40	1.0 to 3.0	36
VSP-HC6x20-40E□-6			6	117.2				11.9			37
VSP-HC6x20-50E□-2			1.8	143.2				8.4			39
VSP-HC6x20-50E□-4			4	147.3		65.6	66.5	11.2	50	1.0 to 3.1	40
VSP-HC6x20-50E□-6			6	148.6				11.9			41
VSP-HC6x30-10E□-2			1.8	58.2				8.4			23
VSP-HC6x30-10E□-4			4	62.3		25.6	21.5	11.2	10	1.0 to 2.4	24
VSP-HC6x30-10E□-6			6	63.6				11.9			25
VSP-HC6x30-15E□-2			1.8	68.2				8.4			25
VSP-HC6x30-15E□-4			4	72.3		30.6	26.5	11.2	15	1.0 to 2.7	26
VSP-HC6x30-15E□-6			6	73.6				11.9			27
VSP-HC6x30-20E□-2			1.8	78.2				8.4			27
VSP-HC6x30-20E□-4			4	82.3		35.6	31.5	11.2	20	1.0 to 3.0	28
VSP-HC6x30-20E□-6			6	83.6				11.9			29
VSP-HC6x30-25E□-2			1.8	88.7				8.4			29
VSP-HC6x30-25E□-4		30	4	92.8	11	40.6	37	11.2	25	1.0 to 3.0	30
VSP-HC6x30-25E□-6			6	94.1				11.9			31
VSP-HC6x30-30E□-2			1.8	99.7				8.4			31
VSP-HC6x30-30E□-4			4	103.8		45.6	43	11.2	30	1.0 to 3.0	32
VSP-HC6x30-30E□-6			6	105.1				11.9			33
VSP-HC6x30-40E□-2			1.8	121.7				8.4			35
VSP-HC6x30-40E□-4			4	125.8		55.6	55	11.2	40	1.0 to 3.0	36
VSP-HC6x30-40E□-6			6	117.2				11.9			37
VSP-HC6x30-50E□-2			1.8	143.2				8.4			39
VSP-HC6x30-50E□-4			4	147.3		65.6	66.5	11.2	50	1.0 to 3.1	40
VSP-HC6x30-50E□-6			6	148.6				11.9			41

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC8x20-□E□-2/4/6
●VSP-HC8x30-□E□-2/4/6

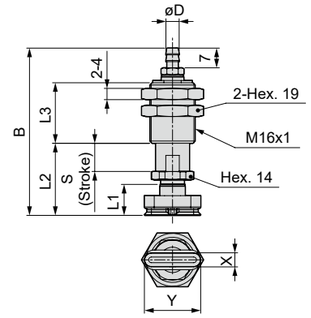


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC8x20-10E□-2			1.8	58.2				8.4			23
VSP-HC8x20-10E□-4			4	62.3		25.6	21.5	11.2	10	1.0 to 2.4	24
VSP-HC8x20-10E□-6			6	63.6				11.9			25
VSP-HC8x20-15E□-2			1.8	68.2				8.4			25
VSP-HC8x20-15E□-4			4	72.3		30.6	26.5	11.2	15	1.0 to 2.7	26
VSP-HC8x20-15E□-6			6	73.6				11.9			27
VSP-HC8x20-20E□-2			1.8	78.2				8.4			27
VSP-HC8x20-20E□-4			4	82.3		35.6	31.5	11.2	20	1.0 to 3.0	28
VSP-HC8x20-20E□-6			6	83.6				11.9			29
VSP-HC8x20-25E□-2			1.8	88.7				8.4			29
VSP-HC8x20-25E□-4		20	4	92.8	11	40.6	37	11.2	25	1.0 to 3.0	30
VSP-HC8x20-25E□-6			6	94.1				11.9			31
VSP-HC8x20-30E□-2			1.8	99.7				8.4			31
VSP-HC8x20-30E□-4			4	103.8		45.6	43	11.2	30	1.0 to 3.0	32
VSP-HC8x20-30E□-6			6	105.1				11.9			33
VSP-HC8x20-40E□-2			1.8	121.7				8.4			35
VSP-HC8x20-40E□-4			4	125.8		55.6	55	11.2	40	1.0 to 3.0	36
VSP-HC8x20-40E□-6			6	117.2				11.9			37
VSP-HC8x20-50E□-2			1.8	143.2				8.4			39
VSP-HC8x20-50E□-4			4	147.3		65.6	66.5	11.2	50	1.0 to 3.1	40
VSP-HC8x20-50E□-6			6	148.6				11.9			41
VSP-HC8x30-10E□-2	8		1.8	58.2				8.4			23
VSP-HC8x30-10E□-4			4	62.3		25.6	21.5	11.2	10	1.0 to 2.4	24
VSP-HC8x30-10E□-6			6	63.6				11.9			25
VSP-HC8x30-15E□-2			1.8	68.2				8.4			25
VSP-HC8x30-15E□-4			4	72.3		30.6	26.5	11.2	15	1.0 to 2.7	26
VSP-HC8x30-15E□-6			6	73.6				11.9			27
VSP-HC8x30-20E□-2			1.8	78.2				8.4			27
VSP-HC8x30-20E□-4			4	82.3		35.6	31.5	11.2	20	1.0 to 3.0	28
VSP-HC8x30-20E□-6			6	83.6				11.9			29
VSP-HC8x30-25E□-2			1.8	88.7				8.4			29
VSP-HC8x30-25E□-4		30	4	92.8	11	40.6	37	11.2	25	1.0 to 3.0	30
VSP-HC8x30-25E□-6			6	94.1				11.9			31
VSP-HC8x30-30E□-2			1.8	99.7				8.4			31
VSP-HC8x30-30E□-4			4	103.8		45.6	43	11.2	30	1.0 to 3.0	32
VSP-HC8x30-30E□-6			6	105.1				11.9			33
VSP-HC8x30-40E□-2			1.8	121.7				8.4			35
VSP-HC8x30-40E□-4			4	125.8		55.6	55	11.2	40	1.0 to 3.0	36
VSP-HC8x30-40E□-6			6	117.2				11.9			37
VSP-HC8x30-50E□-2			1.8	143.2				8.4			39
VSP-HC8x30-50E□-4			4	147.3		65.6	66.5	11.2	50	1.0 to 3.1	40
VSP-HC8x30-50E□-6			6	148.6				11.9			41

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC2x4-□E□-4T/6T
●VSP-HC3.5x7-□E□-4T/6T

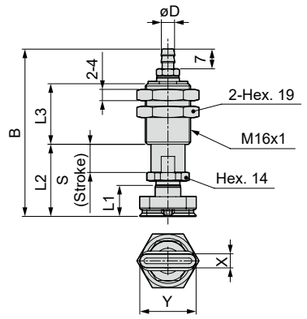


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC2x4-10E□-4T			2.5	59.4		25.6	21.5	10	1.0 to 2.4	21
VSP-HC2x4-10E□-6T			4							
VSP-HC2x4-15E□-4T			2.5	69.4		30.6	26.5	15	1.0 to 2.7	23
VSP-HC2x4-15E□-6T			4							
VSP-HC2x4-20E□-4T			2.5	79.4		35.6	31.5	20	1.0 to 3.0	25
VSP-HC2x4-20E□-6T			4							
VSP-HC2x4-25E□-4T			2.5	89.9		40.6	37	25	1.0 to 3.0	27
VSP-HC2x4-25E□-6T			4							
VSP-HC2x4-30E□-4T			2.5	100.9		45.6	43	30	1.0 to 3.0	30
VSP-HC2x4-30E□-6T			4							
VSP-HC2x4-40E□-4T			2.5	122.9		55.6	55	40	1.0 to 3.0	34
VSP-HC2x4-40E□-6T			4							
VSP-HC2x4-50E□-4T			2.5	144.4		65.6	66.5	50	1.0 to 3.1	38
VSP-HC2x4-50E□-6T			4							
VSP-HC3.5x7-10E□-4T			2.5	59.4		25.6	21.5	10	1.0 to 2.4	21
VSP-HC3.5x7-10E□-6T			4							
VSP-HC3.5x7-15E□-4T			2.5	69.4		30.6	26.5	15	1.0 to 2.7	23
VSP-HC3.5x7-15E□-6T			4							
VSP-HC3.5x7-20E□-4T			2.5	79.4		35.6	31.5	20	1.0 to 3.0	25
VSP-HC3.5x7-20E□-6T			4							
VSP-HC3.5x7-25E□-4T			2.5	89.9		40.6	37	25	1.0 to 3.0	27
VSP-HC3.5x7-25E□-6T			4							
VSP-HC3.5x7-30E□-4T			2.5	100.9		45.6	43	30	1.0 to 3.0	30
VSP-HC3.5x7-30E□-6T			4							
VSP-HC3.5x7-40E□-4T			2.5	122.9		55.6	55	40	1.0 to 3.0	34
VSP-HC3.5x7-40E□-6T			4							
VSP-HC3.5x7-50E□-4T			2.5	144.4		65.6	66.5	50	1.0 to 3.1	38
VSP-HC3.5x7-50E□-6T			4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC4x10-□E□-4T/6T
●VSP-HC4x20-□E□-4T/6T
●VSP-HC4x30-□E□-4T/6T

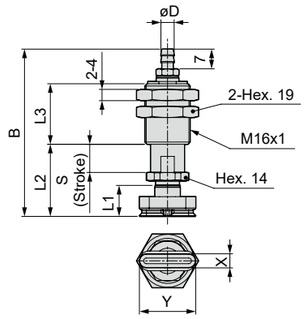


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC4x10-10E□-4T			2.5	59.4		25.6	21.5	10	1.0 to 2.4	21
VSP-HC4x10-10E□-6T			4							
VSP-HC4x10-15E□-4T			2.5	69.4		30.6	26.5	15	1.0 to 2.7	23
VSP-HC4x10-15E□-6T			4							
VSP-HC4x10-20E□-4T			2.5	79.4		35.6	31.5	20	1.0 to 3.0	25
VSP-HC4x10-20E□-6T			4							
VSP-HC4x10-25E□-4T			2.5	89.9		40.6	37	25	1.0 to 3.0	27
VSP-HC4x10-25E□-6T			4							
VSP-HC4x10-30E□-4T			2.5	100.9		45.6	43	30	1.0 to 3.0	30
VSP-HC4x10-30E□-6T			4							
VSP-HC4x10-40E□-4T			2.5	122.9		55.6	55	40	1.0 to 3.0	34
VSP-HC4x10-40E□-6T			4							
VSP-HC4x10-50E□-4T			2.5	144.4		65.6	66.5	50	1.0 to 3.1	38
VSP-HC4x10-50E□-6T			4							
VSP-HC4x20-10E□-4T			2.5	59.4		25.6	21.5	10	1.0 to 2.4	22
VSP-HC4x20-10E□-6T			4							
VSP-HC4x20-15E□-4T			2.5	69.4		30.6	26.5	15	1.0 to 2.7	24
VSP-HC4x20-15E□-6T			4							
VSP-HC4x20-20E□-4T			2.5	79.4		35.6	31.5	20	1.0 to 3.0	26
VSP-HC4x20-20E□-6T			4							
VSP-HC4x20-25E□-4T	4	20	2.5	89.9	11	40.6	37	25	1.0 to 3.0	28
VSP-HC4x20-25E□-6T			4							
VSP-HC4x20-30E□-4T			2.5	100.9		45.6	43	30	1.0 to 3.0	31
VSP-HC4x20-30E□-6T			4							
VSP-HC4x20-40E□-4T			2.5	122.9		55.6	55	40	1.0 to 3.0	35
VSP-HC4x20-40E□-6T			4							
VSP-HC4x20-50E□-4T			2.5	144.4		65.6	66.5	50	1.0 to 3.1	39
VSP-HC4x20-50E□-6T			4							
VSP-HC4x30-10E□-4T			2.5	59.4		25.6	21.5	10	1.0 to 2.4	22
VSP-HC4x30-10E□-6T			4							
VSP-HC4x30-15E□-4T			2.5	69.4		30.6	26.5	15	1.0 to 2.7	24
VSP-HC4x30-15E□-6T			4							
VSP-HC4x30-20E□-4T			2.5	79.4		35.6	31.5	20	1.0 to 3.0	26
VSP-HC4x30-20E□-6T			4							
VSP-HC4x30-25E□-4T			2.5	89.9		40.6	37	25	1.0 to 3.0	28
VSP-HC4x30-25E□-6T		30	4		11					
VSP-HC4x30-30E□-4T			2.5	100.9		45.6	43	30	1.0 to 3.0	31
VSP-HC4x30-30E□-6T			4							
VSP-HC4x30-40E□-4T			2.5	122.9		55.6	55	40	1.0 to 3.0	35
VSP-HC4x30-40E□-6T			4							
VSP-HC4x30-50E□-4T			2.5	144.4		65.6	66.5	50	1.0 to 3.1	39
VSP-HC4x30-50E□-6T			4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC5x10-□E□-4T/6T
●VSP-HC5x20-□E□-4T/6T
●VSP-HC5x30-□E□-4T/6T

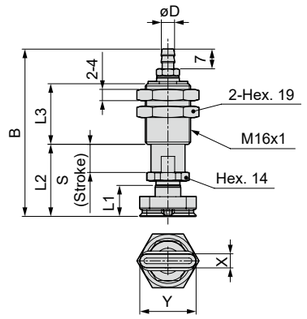


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC5x10-10E□-4T			2.5	59.4		25.6	21.5	10	1.0 to 2.4	21
VSP-HC5x10-10E□-6T			4							
VSP-HC5x10-15E□-4T			2.5	69.4		30.6	26.5	15	1.0 to 2.7	23
VSP-HC5x10-15E□-6T			4							
VSP-HC5x10-20E□-4T			2.5	79.4		35.6	31.5	20	1.0 to 3.0	25
VSP-HC5x10-20E□-6T			4							
VSP-HC5x10-25E□-4T			2.5	89.9		40.6	37	25	1.0 to 3.0	27
VSP-HC5x10-25E□-6T			4							
VSP-HC5x10-30E□-4T			2.5	100.9		45.6	43	30	1.0 to 3.0	30
VSP-HC5x10-30E□-6T			4							
VSP-HC5x10-40E□-4T			2.5	122.9		55.6	55	40	1.0 to 3.0	34
VSP-HC5x10-40E□-6T			4							
VSP-HC5x10-50E□-4T			2.5	144.4		65.6	66.5	50	1.0 to 3.1	38
VSP-HC5x10-50E□-6T			4							
VSP-HC5x20-10E□-4T			2.5	59.4		25.6	21.5	10	1.0 to 2.4	22
VSP-HC5x20-10E□-6T			4							
VSP-HC5x20-15E□-4T			2.5	69.4		30.6	26.5	15	1.0 to 2.7	24
VSP-HC5x20-15E□-6T			4							
VSP-HC5x20-20E□-4T			2.5	79.4		35.6	31.5	20	1.0 to 3.0	26
VSP-HC5x20-20E□-6T			4							
VSP-HC5x20-25E□-4T	5	20	2.5	89.9	11	40.6	37	25	1.0 to 3.0	28
VSP-HC5x20-25E□-6T			4							
VSP-HC5x20-30E□-4T			2.5	100.9		45.6	43	30	1.0 to 3.0	31
VSP-HC5x20-30E□-6T			4							
VSP-HC5x20-40E□-4T			2.5	122.9		55.6	55	40	1.0 to 3.0	35
VSP-HC5x20-40E□-6T			4							
VSP-HC5x20-50E□-4T			2.5	144.4		65.6	66.5	50	1.0 to 3.1	39
VSP-HC5x20-50E□-6T			4							
VSP-HC5x30-10E□-4T			2.5	59.4		25.6	21.5	10	1.0 to 2.4	22
VSP-HC5x30-10E□-6T			4							
VSP-HC5x30-15E□-4T			2.5	69.4		30.6	26.5	15	1.0 to 2.7	24
VSP-HC5x30-15E□-6T			4							
VSP-HC5x30-20E□-4T			2.5	79.4		35.6	31.5	20	1.0 to 3.0	26
VSP-HC5x30-20E□-6T			4							
VSP-HC5x30-25E□-4T			2.5	89.9		40.6	37	25	1.0 to 3.0	28
VSP-HC5x30-25E□-6T		30	4		11					
VSP-HC5x30-30E□-4T			2.5	100.9		45.6	43	30	1.0 to 3.0	31
VSP-HC5x30-30E□-6T			4							
VSP-HC5x30-40E□-4T			2.5	122.9		55.6	55	40	1.0 to 3.0	35
VSP-HC5x30-40E□-6T			4							
VSP-HC5x30-50E□-4T			2.5	144.4		65.6	66.5	50	1.0 to 3.1	39
VSP-HC5x30-50E□-6T			4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC6x10-□E□-4T/6T
●VSP-HC6x20-□E□-4T/6T
●VSP-HC6x30-□E□-4T/6T

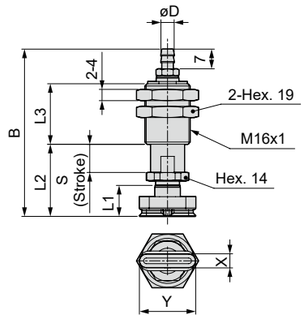


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC6x10-10E□-4T	6	10	2.5	59.4	11	25.6	21.5	10	1.0 to 2.4	21
VSP-HC6x10-10E□-6T			4							
VSP-HC6x10-15E□-4T			2.5	69.4		30.6	26.5	15	1.0 to 2.7	23
VSP-HC6x10-15E□-6T			4							
VSP-HC6x10-20E□-4T			2.5	79.4		35.6	31.5	20	1.0 to 3.0	25
VSP-HC6x10-20E□-6T			4							
VSP-HC6x10-25E□-4T			2.5	89.9		40.6	37	25	1.0 to 3.0	27
VSP-HC6x10-25E□-6T			4							
VSP-HC6x10-30E□-4T			2.5	100.9		45.6	43	30	1.0 to 3.0	30
VSP-HC6x10-30E□-6T			4							
VSP-HC6x10-40E□-4T			2.5	122.9		55.6	55	40	1.0 to 3.0	34
VSP-HC6x10-40E□-6T			4							
VSP-HC6x10-50E□-4T			2.5	144.4		65.6	66.5	50	1.0 to 3.1	38
VSP-HC6x10-50E□-6T			4							
VSP-HC6x20-10E□-4T		20	2.5	59.4		25.6	21.5	10	1.0 to 2.4	22
VSP-HC6x20-10E□-6T			4							
VSP-HC6x20-15E□-4T			2.5	69.4		30.6	26.5	15	1.0 to 2.7	24
VSP-HC6x20-15E□-6T			4							
VSP-HC6x20-20E□-4T			2.5	79.4		35.6	31.5	20	1.0 to 3.0	26
VSP-HC6x20-20E□-6T			4							
VSP-HC6x20-25E□-4T			2.5	89.9		40.6	37	25	1.0 to 3.0	28
VSP-HC6x20-25E□-6T			4							
VSP-HC6x20-30E□-4T			2.5	100.9		45.6	43	30	1.0 to 3.0	31
VSP-HC6x20-30E□-6T			4							
VSP-HC6x20-40E□-4T			2.5	122.9		55.6	55	40	1.0 to 3.0	35
VSP-HC6x20-40E□-6T			4							
VSP-HC6x20-50E□-4T			2.5	144.4		65.6	66.5	50	1.0 to 3.1	39
VSP-HC6x20-50E□-6T			4							
VSP-HC6x30-10E□-4T		30	2.5	59.4		25.6	21.5	10	1.0 to 2.4	22
VSP-HC6x30-10E□-6T			4							
VSP-HC6x30-15E□-4T			2.5	69.4		30.6	26.5	15	1.0 to 2.7	24
VSP-HC6x30-15E□-6T			4							
VSP-HC6x30-20E□-4T			2.5	79.4		35.6	31.5	20	1.0 to 3.0	26
VSP-HC6x30-20E□-6T			4							
VSP-HC6x30-25E□-4T			2.5	89.9		40.6	37	25	1.0 to 3.0	28
VSP-HC6x30-25E□-6T			4							
VSP-HC6x30-30E□-4T			2.5	100.9		45.6	43	30	1.0 to 3.0	31
VSP-HC6x30-30E□-6T			4							
VSP-HC6x30-40E□-4T			2.5	122.9		55.6	55	40	1.0 to 3.0	35
VSP-HC6x30-40E□-6T			4							
VSP-HC6x30-50E□-4T			2.5	144.4		65.6	66.5	50	1.0 to 3.1	39
VSP-HC6x30-50E□-6T			4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC8x20-□E□-4T/6T
●VSP-HC8x30-□E□-4T/6T

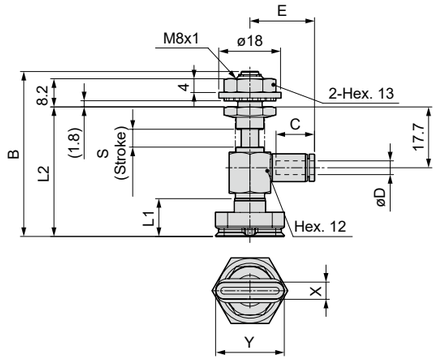


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC8x20-10E□-4T	8	20	2.5	59.4	11	25.6	21.5	10	1.0 to 2.4	22
VSP-HC8x20-10E□-6T			4							
VSP-HC8x20-15E□-4T			2.5	69.4		30.6	26.5	15	1.0 to 2.7	24
VSP-HC8x20-15E□-6T			4							
VSP-HC8x20-20E□-4T			2.5	79.4		35.6	31.5	20	1.0 to 3.0	26
VSP-HC8x20-20E□-6T			4							
VSP-HC8x20-25E□-4T			2.5	89.9		40.6	37	25	1.0 to 3.0	28
VSP-HC8x20-25E□-6T			4							
VSP-HC8x20-30E□-4T			2.5	100.9		45.6	43	30	1.0 to 3.0	31
VSP-HC8x20-30E□-6T			4							
VSP-HC8x20-40E□-4T			2.5	122.9		55.6	55	40	1.0 to 3.0	35
VSP-HC8x20-40E□-6T			4							
VSP-HC8x20-50E□-4T			2.5	144.4		65.6	66.5	50	1.0 to 3.1	39
VSP-HC8x20-50E□-6T			4							
VSP-HC8x30-10E□-4T		30	2.5	59.4		25.6	21.5	10	1.0 to 2.4	22
VSP-HC8x30-10E□-6T			4							
VSP-HC8x30-15E□-4T			2.5	69.4		30.6	26.5	15	1.0 to 2.7	24
VSP-HC8x30-15E□-6T			4							
VSP-HC8x30-20E□-4T			2.5	79.4		35.6	31.5	20	1.0 to 3.0	26
VSP-HC8x30-20E□-6T			4							
VSP-HC8x30-25E□-4T			2.5	89.9		40.6	37	25	1.0 to 3.0	28
VSP-HC8x30-25E□-6T			4							
VSP-HC8x30-30E□-4T			2.5	100.9		45.6	43	30	1.0 to 3.0	31
VSP-HC8x30-30E□-6T			4							
VSP-HC8x30-40E□-4T			2.5	122.9		55.6	55	40	1.0 to 3.0	35
VSP-HC8x30-40E□-6T			4							
VSP-HC8x30-50E□-4T			2.5	144.4		65.6	66.5	50	1.0 to 3.1	39
VSP-HC8x30-50E□-6T			4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side, VSP-HD, Push-in fitting)

●VSP-HD□E□-2/4/6

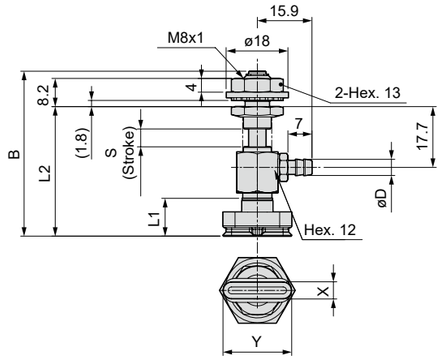


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HD2x4E□-2	2	4	1.8	48	11	37.7	8.4	14.7	5.2	1.6 to 2.9	31
VSP-HD2x4E□-4			4				11.2	18.8			32
VSP-HD2x4E□-6			6				11.9	20.6			33
VSP-HD3.5x7E□-2	3.5	7	1.8	48	11	37.7	8.4	14.7	5.2	1.6 to 2.9	31
VSP-HD3.5x7E□-4			4				11.2	18.8			32
VSP-HD3.5x7E□-6			6				11.9	20.6			33
VSP-HD4x10E□-2	4	10	1.8	48	11	37.7	8.4	14.7	5.2	1.6 to 2.9	31
VSP-HD4x10E□-4			4				11.2	18.8			32
VSP-HD4x10E□-6			6				11.9	20.6			33
VSP-HD4x20E□-2		20	1.8				8.4	14.7			32
VSP-HD4x20E□-4			4				11.2	18.8			33
VSP-HD4x20E□-6			6				11.9	20.6			34
VSP-HD4x30E□-2		30	1.8				8.4	14.7			32
VSP-HD4x30E□-4			4				11.2	18.8			33
VSP-HD4x30E□-6			6				11.9	20.6			34
VSP-HD5x10E□-2	5	10	1.8	48	11	37.7	8.4	14.7	5.2	1.6 to 2.9	31
VSP-HD5x10E□-4			4				11.2	18.8			32
VSP-HD5x10E□-6			6				11.9	20.6			33
VSP-HD5x20E□-2		20	1.8				8.4	14.7			32
VSP-HD5x20E□-4			4				11.2	18.8			33
VSP-HD5x20E□-6			6				11.9	20.6			34
VSP-HD5x30E□-2		30	1.8				8.4	14.7			32
VSP-HD5x30E□-4			4				11.2	18.8			33
VSP-HD5x30E□-6			6				11.9	20.6			34
VSP-HD6x10E□-2	6	10	1.8	48	11	37.7	8.4	14.7	5.2	1.6 to 2.9	31
VSP-HD6x10E□-4			4				11.2	18.8			32
VSP-HD6x10E□-6			6				11.9	20.6			33
VSP-HD6x20E□-2		20	1.8				8.4	14.7			32
VSP-HD6x20E□-4			4				11.2	18.8			33
VSP-HD6x20E□-6			6				11.9	20.6			34
VSP-HD6x30E□-2		30	1.8				8.4	14.7			32
VSP-HD6x30E□-4			4				11.2	18.8			33
VSP-HD6x30E□-6			6				11.9	20.6			34
VSP-HD8x20E□-2	8	20	1.8	48	11	37.7	8.4	14.7	5.2	1.6 to 2.9	32
VSP-HD8x20E□-4			4				11.2	18.8			33
VSP-HD8x20E□-6			6				11.9	20.6			34
VSP-HD8x30E□-2		30	1.8				8.4	14.7			32
VSP-HD8x30E□-4			4				11.2	18.8			33
VSP-HD8x30E□-6			6				11.9	20.6			34

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side, VSP-HD, Barb Fitting)

●VSP-HD□E□-4T/6T

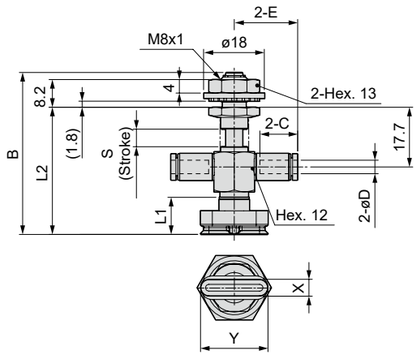


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HD2x4E□-4T	2	4	1.8	48	11	37.7	5.2	1.6 to 2.9	30
VSP-HD2x4E□-6T			6						31
VSP-HD3.5x7E□-4T	3.5	7	1.8	48	11	37.7	5.2	1.6 to 2.9	30
VSP-HD3.5x7E□-6T			6						31
VSP-HD4x10E□-4T	4	10	1.8	48	11	37.7	5.2	1.6 to 2.9	30
VSP-HD4x10E□-6T			6						31
VSP-HD4x20E□-4T		20	1.8						31
VSP-HD4x20E□-6T			6						32
VSP-HD4x30E□-4T		30	1.8						31
VSP-HD4x30E□-6T			6						32
VSP-HD5x10E□-4T	5	10	1.8	48	11	37.7	5.2	1.6 to 2.9	30
VSP-HD5x10E□-6T			6						31
VSP-HD5x20E□-4T		20	1.8						31
VSP-HD5x20E□-6T			6						32
VSP-HD5x30E□-4T		30	1.8						31
VSP-HD5x30E□-6T			6						32
VSP-HD6x10E□-4T	6	10	1.8	48	11	37.7	5.2	1.6 to 2.9	30
VSP-HD6x10E□-6T			6						31
VSP-HD6x20E□-4T		20	1.8						31
VSP-HD6x20E□-6T			6						32
VSP-HD6x30E□-4T		30	1.8						31
VSP-HD6x30E□-6T			6						32
VSP-HD8x20E□-4T	8	20	1.8	48	11	37.7	5.2	1.6 to 2.9	31
VSP-HD8x20E□-6T			6						32
VSP-HD8x30E□-4T		30	1.8						31
VSP-HD8x30E□-6T			6						32

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides, VSP-HDW, Push-in fitting)

●VSP-HDW□E□-2/4/6

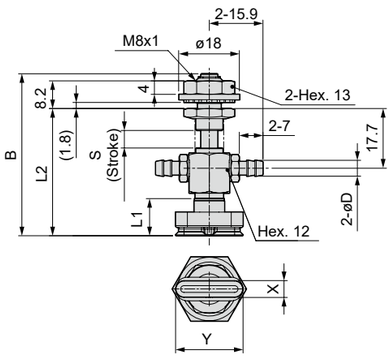


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW2x4E□-2	2	4	1.8	48	11	37.7	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HDW2x4E□-4			4				11.2	18.8			35
VSP-HDW2x4E□-6			6				11.9	20.6			37
VSP-HDW3.5x7E□-2	3.5	7	1.8	48	11	37.7	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HDW3.5x7E□-4			4				11.2	18.8			35
VSP-HDW3.5x7E□-6			6				11.9	20.6			37
VSP-HDW4x10E□-2	4	10	1.8	48	11	37.7	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HDW4x10E□-4			4				11.2	18.8			35
VSP-HDW4x10E□-6			6				11.9	20.6			37
VSP-HDW4x20E□-2		20	1.8				8.4	14.7			34
VSP-HDW4x20E□-4			4				11.2	18.8			36
VSP-HDW4x20E□-6			6				11.9	20.6			38
VSP-HDW4x30E□-2		30	1.8				8.4	14.7			34
VSP-HDW4x30E□-4			4				11.2	18.8			36
VSP-HDW4x30E□-6			6				11.9	20.6			38
VSP-HDW5x10E□-2	5	10	1.8	48	11	37.7	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HDW5x10E□-4			4				11.2	18.8			35
VSP-HDW5x10E□-6			6				11.9	20.6			37
VSP-HDW5x20E□-2		20	1.8				8.4	14.7			34
VSP-HDW5x20E□-4			4				11.2	18.8			36
VSP-HDW5x20E□-6			6				11.9	20.6			38
VSP-HDW5x30E□-2		30	1.8				8.4	14.7			34
VSP-HDW5x30E□-4			4				11.2	18.8			36
VSP-HDW5x30E□-6			6				11.9	20.6			38
VSP-HDW6x10E□-2	6	10	1.8	48	11	37.7	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HDW6x10E□-4			4				11.2	18.8			35
VSP-HDW6x10E□-6			6				11.9	20.6			37
VSP-HDW6x20E□-2		20	1.8				8.4	14.7			34
VSP-HDW6x20E□-4			4				11.2	18.8			36
VSP-HDW6x20E□-6			6				11.9	20.6			38
VSP-HDW6x30E□-2		30	1.8				8.4	14.7			34
VSP-HDW6x30E□-4			4				11.2	18.8			36
VSP-HDW6x30E□-6			6				11.9	20.6			38
VSP-HDW8x20E□-2	8	20	1.8	48	11	37.7	8.4	14.7	5.2	1.6 to 2.9	34
VSP-HDW8x20E□-4			4				11.2	18.8			36
VSP-HDW8x20E□-6			6				11.9	20.6			38
VSP-HDW8x30E□-2		30	1.8				8.4	14.7			34
VSP-HDW8x30E□-4			4				11.2	18.8			36
VSP-HDW8x30E□-6			6				11.9	20.6			38

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides, VSP-HDW, Barb Fitting)

●VSP-HDW□E□-4T/6T

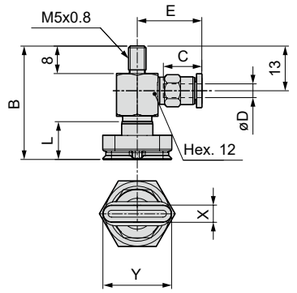


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW2x4E□-4T	2	4	1.8	48	11	37.7	5.2	1.6 to 2.9	32
VSP-HDW2x4E□-6T			6						
VSP-HDW3.5x7E□-4T	3.5	7	1.8	48	11	37.7	5.2	1.6 to 2.9	32
VSP-HDW3.5x7E□-6T			6						
VSP-HDW4x10E□-4T	4	10	1.8	48	11	37.7	5.2	1.6 to 2.9	32
VSP-HDW4x10E□-6T			6						
VSP-HDW4x20E□-4T		20	1.8						33
VSP-HDW4x20E□-6T			6						
VSP-HDW4x30E□-4T		30	1.8						33
VSP-HDW4x30E□-6T			6						
VSP-HDW5x10E□-4T	5	10	1.8	48	11	37.7	5.2	1.6 to 2.9	32
VSP-HDW5x10E□-6T			6						
VSP-HDW5x20E□-4T		20	1.8						33
VSP-HDW5x20E□-6T			6						
VSP-HDW5x30E□-4T		30	1.8						33
VSP-HDW5x30E□-6T			6						
VSP-HDW6x10E□-4T	6	10	1.8	48	11	37.7	5.2	1.6 to 2.9	32
VSP-HDW6x10E□-6T			6						
VSP-HDW6x20E□-4T		20	1.8						33
VSP-HDW6x20E□-6T			6						
VSP-HDW6x30E□-4T		30	1.8						33
VSP-HDW6x30E□-6T			6						
VSP-HDW8x20E□-4T	8	20	1.8	48	11	37.7	5.2	1.6 to 2.9	33
VSP-HDW8x20E□-6T			6						
VSP-HDW8x30E□-4T		30	1.8						
VSP-HDW8x30E□-6T			6						

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side, VSP-HE, Push-in fitting)

●VSP-HE□E□-2/4/6

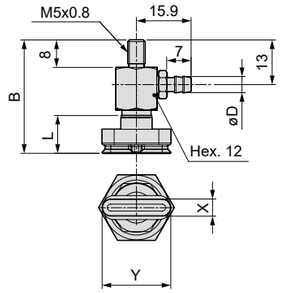


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HE2x4E□-2	2	4	1.8	48	11	8.4	14.7	16
VSP-HE2x4E□-4			4			11.2	18.8	17
VSP-HE2x4E□-6			6			11.9	20.6	18
VSP-HE3.5x7E□-2	3.5	7	1.8	48	11	8.4	14.7	16
VSP-HE3.5x7E□-4			4			11.2	18.8	17
VSP-HE3.5x7E□-6			6			11.9	20.6	18
VSP-HE4x10E□-2	4	10	1.8	48	11	8.4	14.7	16
VSP-HE4x10E□-4			4			11.2	18.8	17
VSP-HE4x10E□-6			6			11.9	20.6	18
VSP-HE4x20E□-2		20	1.8			8.4	14.7	17
VSP-HE4x20E□-4			4			11.2	18.8	18
VSP-HE4x20E□-6			6			11.9	20.6	19
VSP-HE4x30E□-2		30	1.8			8.4	14.7	17
VSP-HE4x30E□-4			4			11.2	18.8	18
VSP-HE4x30E□-6			6			11.9	20.6	19
VSP-HE5x10E□-2	5	10	1.8	48	11	8.4	14.7	16
VSP-HE5x10E□-4			4			11.2	18.8	17
VSP-HE5x10E□-6			6			11.9	20.6	18
VSP-HE5x20E□-2		20	1.8			8.4	14.7	17
VSP-HE5x20E□-4			4			11.2	18.8	18
VSP-HE5x20E□-6			6			11.9	20.6	19
VSP-HE5x30E□-2		30	1.8			8.4	14.7	17
VSP-HE5x30E□-4			4			11.2	18.8	18
VSP-HE5x30E□-6			6			11.9	20.6	19
VSP-HE6x10E□-2	6	10	1.8	48	11	8.4	14.7	16
VSP-HE6x10E□-4			4			11.2	18.8	17
VSP-HE6x10E□-6			6			11.9	20.6	18
VSP-HE6x20E□-2		20	1.8			8.4	14.7	17
VSP-HE6x20E□-4			4			11.2	18.8	18
VSP-HE6x20E□-6			6			11.9	20.6	19
VSP-HE6x30E□-2		30	1.8			8.4	14.7	17
VSP-HE6x30E□-4			4			11.2	18.8	18
VSP-HE6x30E□-6			6			11.9	20.6	19
VSP-HE8x20E□-2	8	20	1.8	48	11	8.4	14.7	17
VSP-HE8x20E□-4			4			11.2	18.8	18
VSP-HE8x20E□-6			6			11.9	20.6	19
VSP-HE8x30E□-2		30	1.8			8.4	14.7	17
VSP-HE8x30E□-4			4			11.2	18.8	18
VSP-HE8x30E□-6			6			11.9	20.6	19

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side, VSP-HE, Barb Fitting)

●VSP-HE□E□-4T/6T



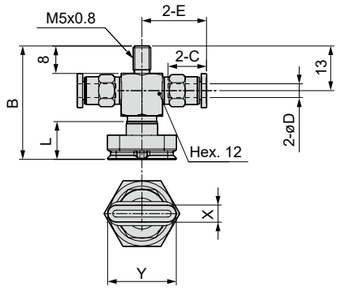
Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L	Weight (g)
VSP-HE2x4E□-4T	2	4	1.8	48	11	16
VSP-HE2x4E□-6T			6			
VSP-HE3.5x7E□-4T	3.5	7	1.8	48	11	16
VSP-HE3.5x7E□-6T			6			
VSP-HE4x10E□-4T	4	10	1.8	48	11	16
VSP-HE4x10E□-6T			6			
VSP-HE4x20E□-4T		20	1.8			17
VSP-HE4x20E□-6T			6			
VSP-HE4x30E□-4T		30	1.8			17
VSP-HE4x30E□-6T			6			
VSP-HE5x10E□-4T	5	10	1.8	48	11	16
VSP-HE5x10E□-6T			6			
VSP-HE5x20E□-4T		20	1.8			17
VSP-HE5x20E□-6T			6			
VSP-HE5x30E□-4T		30	1.8			17
VSP-HE5x30E□-6T			6			
VSP-HE6x10E□-4T	6	10	1.8	48	11	16
VSP-HE6x10E□-6T			6			
VSP-HE6x20E□-4T		20	1.8			17
VSP-HE6x20E□-6T			6			
VSP-HE6x30E□-4T		30	1.8			17
VSP-HE6x30E□-6T			6			
VSP-HE8x20E□-4T	8	20	1.8	48	11	17
VSP-HE8x20E□-6T			6			
VSP-HE8x30E□-4T		30	1.8			17
VSP-HE8x30E□-6T			6			

Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechanical Break Function
Ending

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Push-in fitting)

●VSP-HEW□E□-2/4/6

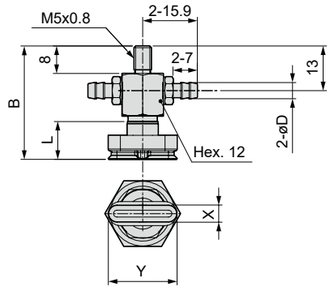


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HEW2x4E□-2	2	4	1.8	48	11	8.4	14.7	17
VSP-HEW2x4E□-4			4			11.2	18.8	19
VSP-HEW2x4E□-6			6			11.9	20.6	21
VSP-HEW3.5x7E□-2	3.5	7	1.8	48	11	8.4	14.7	17
VSP-HEW3.5x7E□-4			4			11.2	18.8	19
VSP-HEW3.5x7E□-6			6			11.9	20.6	21
VSP-HEW4x10E□-2	4	10	1.8	48	11	8.4	14.7	17
VSP-HEW4x10E□-4			4			11.2	18.8	19
VSP-HEW4x10E□-6			6			11.9	20.6	21
VSP-HEW4x20E□-2		20	1.8			8.4	14.7	18
VSP-HEW4x20E□-4			4			11.2	18.8	20
VSP-HEW4x20E□-6			6			11.9	20.6	22
VSP-HEW4x30E□-2		30	1.8			8.4	14.7	18
VSP-HEW4x30E□-4			4			11.2	18.8	20
VSP-HEW4x30E□-6			6			11.9	20.6	22
VSP-HEW5x10E□-2	5	10	1.8	48	11	8.4	14.7	17
VSP-HEW5x10E□-4			4			11.2	18.8	19
VSP-HEW5x10E□-6			6			11.9	20.6	21
VSP-HEW5x20E□-2		20	1.8			8.4	14.7	18
VSP-HEW5x20E□-4			4			11.2	18.8	20
VSP-HEW5x20E□-6			6			11.9	20.6	22
VSP-HEW5x30E□-2		30	1.8			8.4	14.7	18
VSP-HEW5x30E□-4			4			11.2	18.8	20
VSP-HEW5x30E□-6			6			11.9	20.6	22
VSP-HEW6x10E□-2	6	10	1.8	48	11	8.4	14.7	17
VSP-HEW6x10E□-4			4			11.2	18.8	19
VSP-HEW6x10E□-6			6			11.9	20.6	21
VSP-HEW6x20E□-2		20	1.8			8.4	14.7	18
VSP-HEW6x20E□-4			4			11.2	18.8	20
VSP-HEW6x20E□-6			6			11.9	20.6	22
VSP-HEW6x30E□-2		30	1.8			8.4	14.7	18
VSP-HEW6x30E□-4			4			11.2	18.8	20
VSP-HEW6x30E□-6			6			11.9	20.6	22
VSP-HEW8x20E□-2	8	20	1.8	48	11	8.4	14.7	18
VSP-HEW8x20E□-4			4			11.2	18.8	20
VSP-HEW8x20E□-6			6			11.9	20.6	22
VSP-HEW8x30E□-2		30	1.8			8.4	14.7	18
VSP-HEW8x30E□-4			4			11.2	18.8	20
VSP-HEW8x30E□-6			6			11.9	20.6	22

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Barb Fitting)

●VSP-HEW□E□-4T/6T



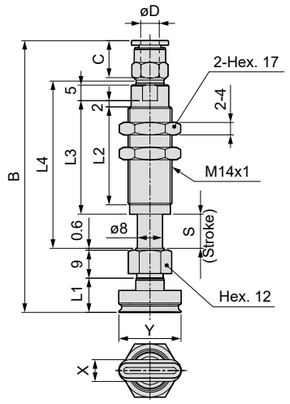
Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L	Weight (g)
VSP-HEW2x4E□-4T	2	4	1.8	48	11	17
VSP-HEW2x4E□-6T			6			
VSP-HEW3.5x7E□-4T	3.5	7	1.8	48	11	17
VSP-HEW3.5x7E□-6T			6			
VSP-HEW4x10E□-4T	4	10	1.8	48	11	17
VSP-HEW4x10E□-6T			6			
VSP-HEW4x20E□-4T		20	1.8			18
VSP-HEW4x20E□-6T			6			
VSP-HEW4x30E□-4T		30	1.8			18
VSP-HEW4x30E□-6T			6			
VSP-HEW5x10E□-4T	5	10	1.8	48	11	17
VSP-HEW5x10E□-6T			6			
VSP-HEW5x20E□-4T		20	1.8			18
VSP-HEW5x20E□-6T			6			
VSP-HEW5x30E□-4T		30	1.8			18
VSP-HEW5x30E□-6T			6			
VSP-HEW6x10E□-4T	6	10	1.8	48	11	17
VSP-HEW6x10E□-6T			6			
VSP-HEW6x20E□-4T		20	1.8			18
VSP-HEW6x20E□-6T			6			
VSP-HEW6x30E□-4T		30	1.8			18
VSP-HEW6x30E□-6T			6			
VSP-HEW8x20E□-4T	8	20	1.8	48	11	18
VSP-HEW8x20E□-6T			6			
VSP-HEW8x30E□-4T		30	1.8			18
VSP-HEW8x30E□-6T			6			

Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechanical Break Function
Ending

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC2x4-□E□-4/6
●VSP-LFC3.5x7-□E□-4/6
●VSP-LFC4x□-□E□-4/6



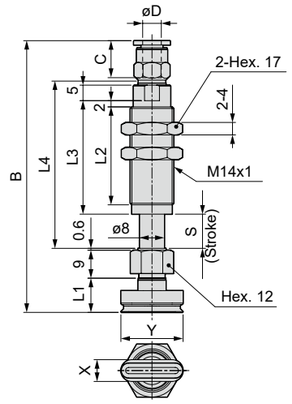
Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC2x4-5E□-4	2	4	4	76.1	11	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	53
VSP-LFC2x4-5E□-6			6	77.4					11.9			54
VSP-LFC2x4-10E□-4			4	86.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	55
VSP-LFC2x4-10E□-6			6	87.4					11.9			56
VSP-LFC2x4-15E□-4			4	96.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	58
VSP-LFC2x4-15E□-6			6	97.4					11.9			59
VSP-LFC2x4-20E□-4			4	106.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	61
VSP-LFC2x4-20E□-6			6	107.4					11.9			62
VSP-LFC3.5x7-5E□-4	3.5	7	4	76.1	11	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	53
VSP-LFC3.5x7-5E□-6			6	77.4					11.9			54
VSP-LFC3.5x710E□-4			4	86.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	55
VSP-LFC3.5x7-10E□-6			6	87.4					11.9			56
VSP-LFC3.5x7-15E□-4			4	96.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	58
VSP-LFC3.5x7-15E□-6			6	97.4					11.9			59
VSP-LFC3.5x7-20E□-4			4	106.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	61
VSP-LFC3.5x7-20E□-6			6	107.4					11.9			62
VSP-LFC4x10-5E□-4	4	10	4	76.1	11	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	53
VSP-LFC4x10-5E□-6			6	77.4					11.9			54
VSP-LFC4x10-10E□-4			4	86.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	55
VSP-LFC4x10-10E□-6			6	87.4					11.9			56
VSP-LFC4x10-15E□-4			4	96.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	58
VSP-LFC4x10-15E□-6			6	97.4					11.9			59
VSP-LFC4x10-20E□-4			4	106.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	61
VSP-LFC4x10-20E□-6			6	107.4					11.9			62
VSP-LFC4x20-5E□-4		20	4	76.1		26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	54
VSP-LFC4x20-5E□-6			6	77.4					11.9			55
VSP-LFC4x20-10E□-4			4	86.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	56
VSP-LFC4x20-10E□-6			6	87.4					11.9			57
VSP-LFC4x20-15E□-4			4	96.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	59
VSP-LFC4x20-15E□-6			6	97.4					11.9			60
VSP-LFC4x20-20E□-4			4	106.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	62
VSP-LFC4x20-20E□-6			6	107.4					11.9			63
VSP-LFC4x30-5E□-4		30	4	76.1		26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	54
VSP-LFC4x30-5E□-6			6	77.4					11.9			55
VSP-LFC4x30-10E□-4			4	86.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	56
VSP-LFC4x30-10E□-6			6	87.4					11.9			57
VSP-LFC4x30-15E□-4			4	96.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	59
VSP-LFC4x30-15E□-6			6	97.4					11.9			60
VSP-LFC4x30-20E□-4			4	106.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	62
VSP-LFC4x30-20E□-6			6	107.4					11.9			63

* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC5x□-□E□-4/6
●VSP-LFC6x□-□E□-4/6



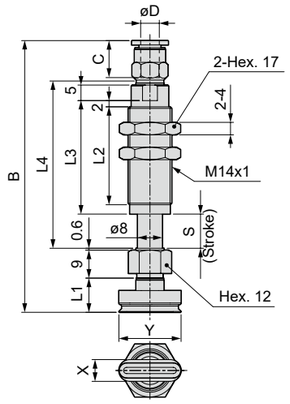
Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC5x10-5E□-4	5	10	4	76.1	11	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	53
VSP-LFC5x10-5E□-6			6	77.4					11.9			54
VSP-LFC5x10-10E□-4			4	86.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	55
VSP-LFC5x10-10E□-6			6	87.4					11.9			56
VSP-LFC5x10-15E□-4			4	96.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	58
VSP-LFC5x10-15E□-6			6	97.4					11.9			59
VSP-LFC5x10-20E□-4			4	106.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	61
VSP-LFC5x10-20E□-6			6	107.4					11.9			62
VSP-LFC5x20-5E□-4		20	4	76.1		26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	54
VSP-LFC5x20-5E□-6			6	77.4					11.9			55
VSP-LFC5x20-10E□-4			4	86.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	56
VSP-LFC5x20-10E□-6			6	87.4					11.9			57
VSP-LFC5x20-15E□-4			4	96.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	59
VSP-LFC5x20-15E□-6			6	97.4					11.9			60
VSP-LFC5x20-20E□-4			4	106.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	62
VSP-LFC5x20-20E□-6			6	107.4					11.9			63
VSP-LFC5x30-5E□-4		30	4	76.1		26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	54
VSP-LFC5x30-5E□-6			6	77.4					11.9			55
VSP-LFC5x30-10E□-4			4	86.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	56
VSP-LFC5x30-10E□-6			6	87.4					11.9			57
VSP-LFC5x30-15E□-4			4	96.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	59
VSP-LFC5x30-15E□-6			6	97.4					11.9			60
VSP-LFC5x30-20E□-4			4	106.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	62
VSP-LFC5x30-20E□-6			6	107.4					11.9			63
VSP-LFC6x10-5E□-4	6	10	4	76.1	11	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	53
VSP-LFC6x10-5E□-6			6	77.4					11.9			54
VSP-LFC6x10-10E□-4			4	86.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	55
VSP-LFC6x10-10E□-6			6	87.4					11.9			56
VSP-LFC6x10-15E□-4			4	96.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	58
VSP-LFC6x10-15E□-6			6	97.4					11.9			59
VSP-LFC6x10-20E□-4			4	106.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	61
VSP-LFC6x10-20E□-6			6	107.4					11.9			62
VSP-LFC6x20-5E□-4		20	4	76.1		26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	54
VSP-LFC6x20-5E□-6			6	77.4					11.9			55
VSP-LFC6x20-10E□-4			4	86.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	56
VSP-LFC6x20-10E□-6			6	87.4					11.9			57
VSP-LFC6x20-15E□-4			4	96.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	59
VSP-LFC6x20-15E□-6			6	97.4					11.9			60
VSP-LFC6x20-20E□-4			4	106.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	62
VSP-LFC6x20-20E□-6			6	107.4					11.9			63
VSP-LFC6x30-5E□-4		30	4	76.1		26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	54
VSP-LFC6x30-5E□-6			6	77.4					11.9			55
VSP-LFC6x30-10E□-4			4	86.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	56
VSP-LFC6x30-10E□-6			6	87.4					11.9			57
VSP-LFC6x30-15E□-4			4	96.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	59
VSP-LFC6x30-15E□-6			6	97.4					11.9			60
VSP-LFC6x30-20E□-4			4	106.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	62
VSP-LFC6x30-20E□-6			6	107.4					11.9			63

* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC8x□-□E□-4/6



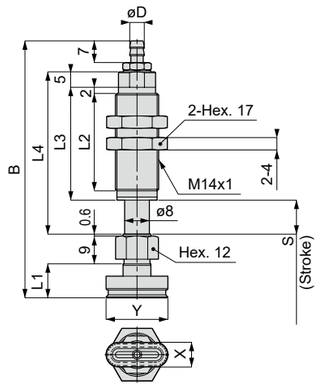
Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC8x20-5E□-4	8	20	4	76.1	11	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	54
VSP-LFC8x20-5E□-6			6	77.4					11.9			55
VSP-LFC8x20-10E□-4			4	86.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	56
VSP-LFC8x20-10E□-6			6	87.4					11.9			57
VSP-LFC8x20-15E□-4			4	96.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	59
VSP-LFC8x20-15E□-6			6	97.4					11.9			60
VSP-LFC8x20-20E□-4			4	106.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	62
VSP-LFC8x20-20E□-6			6	107.4					11.9			63
VSP-LFC8x30-5E□-4		30	4	76.1		26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	54
VSP-LFC8x30-5E□-6			6	77.4					11.9			55
VSP-LFC8x30-10E□-4			4	86.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	56
VSP-LFC8x30-10E□-6			6	87.4					11.9			57
VSP-LFC8x30-15E□-4			4	96.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	59
VSP-LFC8x30-15E□-6			6	97.4					11.9			60
VSP-LFC8x30-20E□-4			4	106.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	62
VSP-LFC8x30-20E□-6			6	107.4					11.9			63

* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC2x4-□E□-4T/6T
●VSP-LFC3.5x7-□E□-4T/6T
●VSP-LFC4x□-□E□-4T/6T



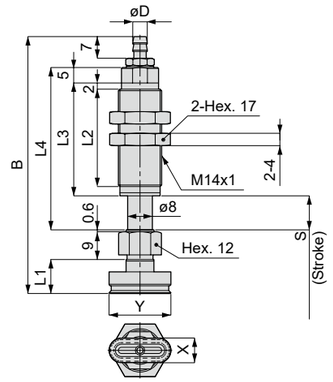
Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC2x4-5E□-4T	2	4	2.5	73.2	11	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	48
VSP-LFC2x4-5E□-6T			4								
VSP-LFC2x4-10E□-4T			2.5	83.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	50
VSP-LFC2x4-10E□-6T			4								
VSP-LFC2x4-15E□-4T			2.5	93.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	53
VSP-LFC2x4-15E□-6T			4								
VSP-LFC2x4-20E□-4T			2.5	103.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	56
VSP-LFC2x4-20E□-6T			4								
VSP-LFC3.5x7-5E□-4T	3.5	7	2.5	73.2		26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	48
VSP-LFC3.5x7-5E□-6T			4								
VSP-LFC3.5x7-10E□-4T			2.5	83.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	50
VSP-LFC3.5x7-10E□-6T			4								
VSP-LFC3.5x7-15E□-4T			2.5	93.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	53
VSP-LFC3.5x7-15E□-6T			4								
VSP-LFC3.5x7-20E□-4T			2.5	103.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	56
VSP-LFC3.5x7-20E□-6T			4								
VSP-LFC4x10-5E□-4T	4	10	2.5	73.2		26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	48
VSP-LFC4x10-5E□-6T			4								
VSP-LFC4x10-10E□-4T			2.5	83.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	50
VSP-LFC4x10-10E□-6T			4								
VSP-LFC4x10-15E□-4T			2.5	93.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	53
VSP-LFC4x10-15E□-6T			4								
VSP-LFC4x10-20E□-4T			2.5	103.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	56
VSP-LFC4x10-20E□-6T			4								
VSP-LFC4x20-5E□-4T		20	2.5	73.2		26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	49
VSP-LFC4x20-5E□-6T			4								
VSP-LFC4x20-10E□-4T			2.5	83.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	51
VSP-LFC4x20-10E□-6T			4								
VSP-LFC4x20-15E□-4T			2.5	93.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	54
VSP-LFC4x20-15E□-6T			4								
VSP-LFC4x20-20E□-4T			2.5	103.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	57
VSP-LFC4x20-20E□-6T			4								
VSP-LFC4x30-5E□-4T		30	2.5	73.2		26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	49
VSP-LFC4x30-5E□-6T			4								
VSP-LFC4x30-10E□-4T			2.5	83.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	51
VSP-LFC4x30-10E□-6T			4								
VSP-LFC4x30-15E□-4T			2.5	93.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	54
VSP-LFC4x30-15E□-6T			4								
VSP-LFC4x30-20E□-4T			2.5	103.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	57
VSP-LFC4x30-20E□-6T			4								

* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC5x□-□E□-4T/6T
●VSP-LFC6x□-□E□-4T/6T



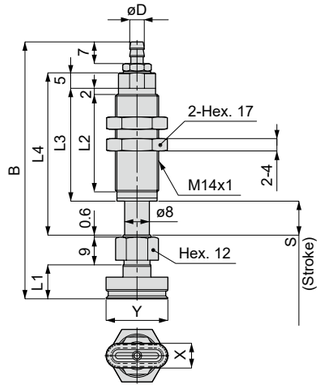
Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC5x10-5E□-4T	5	10	2.5	73.2	11	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	48
VSP-LFC5x10-5E□-6T			4								
VSP-LFC5x10-10E□-4T			2.5	83.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	50
VSP-LFC5x10-10E□-6T			4								
VSP-LFC5x10-15E□-4T			2.5	93.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	53
VSP-LFC5x10-15E□-6T			4								
VSP-LFC5x10-20E□-4T			2.5	103.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	56
VSP-LFC5x10-20E□-6T			4								
VSP-LFC5x20-5E□-4T		20	2.5	73.2		26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	49
VSP-LFC5x20-5E□-6T			4								
VSP-LFC5x20-10E□-4T			2.5	83.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	51
VSP-LFC5x20-10E□-6T			4								
VSP-LFC5x20-15E□-4T			2.5	93.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	54
VSP-LFC5x20-15E□-6T			4								
VSP-LFC5x20-20E□-4T			2.5	103.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	57
VSP-LFC5x20-20E□-6T			4								
VSP-LFC5x30-5E□-4T		30	2.5	73.2		26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	49
VSP-LFC5x30-5E□-6T			4								
VSP-LFC5x30-10E□-4T			2.5	83.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	51
VSP-LFC5x30-10E□-6T			4								
VSP-LFC5x30-15E□-4T			2.5	93.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	54
VSP-LFC5x30-15E□-6T			4								
VSP-LFC5x30-20E□-4T			2.5	103.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	57
VSP-LFC5x30-20E□-6T			4								
VSP-LFC6x10-5E□-4T	6	10	2.5	73.2	11	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	48
VSP-LFC6x10-5E□-6T			4								
VSP-LFC6x10-10E□-4T			2.5	83.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	50
VSP-LFC6x10-10E□-6T			4								
VSP-LFC6x10-15E□-4T			2.5	93.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	53
VSP-LFC6x10-15E□-6T			4								
VSP-LFC6x10-20E□-4T			2.5	103.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	56
VSP-LFC6x10-20E□-6T			4								
VSP-LFC6x20-5E□-4T		20	2.5	73.2		26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	49
VSP-LFC6x20-5E□-6T			4								
VSP-LFC6x20-10E□-4T			2.5	83.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	51
VSP-LFC6x20-10E□-6T			4								
VSP-LFC6x20-15E□-4T			2.5	93.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	54
VSP-LFC6x20-15E□-6T			4								
VSP-LFC6x20-20E□-4T			2.5	103.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	57
VSP-LFC6x20-20E□-6T			4								
VSP-LFC6x30-5E□-4T		30	2.5	73.2		26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	49
VSP-LFC6x30-5E□-6T			4								
VSP-LFC6x30-10E□-4T			2.5	83.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	51
VSP-LFC6x30-10E□-6T			4								
VSP-LFC6x30-15E□-4T			2.5	93.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	54
VSP-LFC6x30-15E□-6T			4								
VSP-LFC6x30-20E□-4T			2.5	103.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	57
VSP-LFC6x30-20E□-6T			4								

* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC8x□-□E□-4T/6T



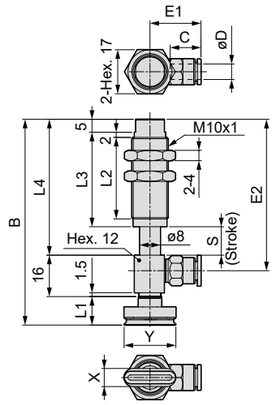
Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC8x20-5E□-4T	8	20	2.5	73.2	11	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	49
VSP-LFC8x20-5E□-6T			4								
VSP-LFC8x20-10E□-4T			2.5	83.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	51
VSP-LFC8x20-10E□-6T			4								
VSP-LFC8x20-15E□-4T			2.5	93.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	54
VSP-LFC8x20-15E□-6T			4								
VSP-LFC8x20-20E□-4T			2.5	103.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	57
VSP-LFC8x20-20E□-6T			4								
VSP-LFC8x30-5E□-4T		30	2.5	73.2		26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	49
VSP-LFC8x30-5E□-6T			4								
VSP-LFC8x30-10E□-4T			2.5	83.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	51
VSP-LFC8x30-10E□-6T			4								
VSP-LFC8x30-15E□-4T			2.5	93.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	54
VSP-LFC8x30-15E□-6T			4								
VSP-LFC8x30-20E□-4T			2.5	103.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	57
VSP-LFC8x30-20E□-6T			4								

* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Push-in fitting)

●VSP-LFD2x4-□E□-4/6
●VSP-LFD3.5x7-□E□-4/6
●VSP-LFD4x□-□E□-4/6

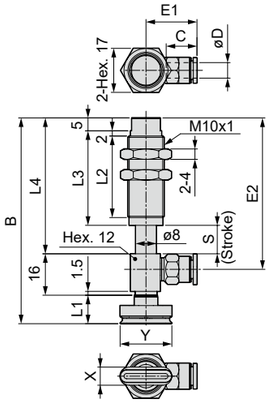


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD2x4-5E□-4	2	4	4	69.5	11	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	50
VSP-LFD2x4-5E□-6			6						11.9	19.7				
VSP-LFD2x4-10E□-4			4	79.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	53
VSP-LFD2x4-10E□-6			6						11.9	19.7				
VSP-LFD2x4-15E□-4			4	89.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	57
VSP-LFD2x4-15E□-6			6						11.9	19.7				
VSP-LFD2x4-20E□-4			4	99.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	61
VSP-LFD2x4-20E□-6			6						11.9	19.7				
VSP-LFD3.5x7-5E□-4	3.5	7	4	69.5	11	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	50
VSP-LFD3.5x7-5E□-6			6						11.9	19.7				
VSP-LFD3.5x7-10E□-4			4	79.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	53
VSP-LFD3.5x7-10E□-6			6						11.9	19.7				
VSP-LFD3.5x7-15E□-4			4	89.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	57
VSP-LFD3.5x7-15E□-6			6						11.9	19.7				
VSP-LFD3.5x7-20E□-4			4	99.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	61
VSP-LFD3.5x7-20E□-6			6						11.9	19.7				
VSP-LFD4x10-5E□-4	4	10	4	69.5	11	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	50
VSP-LFD4x10-5E□-6			6						11.9	19.7				
VSP-LFD4x10-10E□-4			4	79.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	53
VSP-LFD4x10-10E□-6			6						11.9	19.7				
VSP-LFD4x10-15E□-4			4	89.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	57
VSP-LFD4x10-15E□-6			6						11.9	19.7				
VSP-LFD4x10-20E□-4			4	99.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	61
VSP-LFD4x10-20E□-6			6						11.9	19.7				
VSP-LFD4x20-5E□-4		20	4	69.5		26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	51
VSP-LFD4x20-5E□-6			6						11.9	19.7				
VSP-LFD4x20-10E□-4			4	79.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	54
VSP-LFD4x20-10E□-6			6						11.9	19.7				
VSP-LFD4x20-15E□-4			4	89.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	58
VSP-LFD4x20-15E□-6			6						11.9	19.7				
VSP-LFD4x20-20E□-4			4	99.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	62
VSP-LFD4x20-20E□-6			6						11.9	19.7				
VSP-LFD4x30-5E□-4		30	4	69.5		26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	51
VSP-LFD4x30-5E□-6			6						11.9	19.7				
VSP-LFD4x30-10E□-4			4	79.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	54
VSP-LFD4x30-10E□-6			6						11.9	19.7				
VSP-LFD4x30-15E□-4			4	89.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	58
VSP-LFD4x30-15E□-6			6						11.9	19.7				
VSP-LFD4x30-20E□-4			4	99.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	62
VSP-LFD4x30-20E□-6			6						11.9	19.7				

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Push-in fitting)

●VSP-LFD5x□-□E□-4/6
●VSP-LFD6x□-□E□-4/6

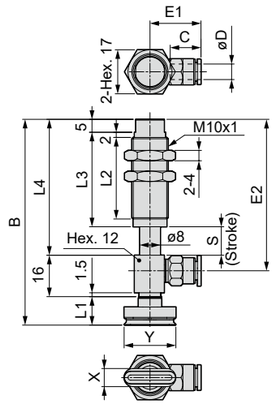


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD5x10-5E□-4	5	10	4	69.5	11	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	50
VSP-LFD5x10-5E□-6			6						11.9	19.7				
VSP-LFD5x10-10E□-4			4	79.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	53
VSP-LFD5x10-10E□-6			6						11.9	19.7				
VSP-LFD5x10-15E□-4			4	89.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	57
VSP-LFD5x10-15E□-6			6						11.9	19.7				
VSP-LFD5x10-20E□-4			4	99.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	61
VSP-LFD5x10-20E□-6			6						11.9	19.7				
VSP-LFD5x20-5E□-4		20	4	69.5		26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	51
VSP-LFD5x20-5E□-6			6						11.9	19.7				
VSP-LFD5x20-10E□-4			4	79.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	54
VSP-LFD5x20-10E□-6			6						11.9	19.7				
VSP-LFD5x20-15E□-4			4	89.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	58
VSP-LFD5x20-15E□-6			6						11.9	19.7				
VSP-LFD5x20-20E□-4			4	99.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	62
VSP-LFD5x20-20E□-6			6						11.9	19.7				
VSP-LFD5x30-5E□-4		30	4	69.5		26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	51
VSP-LFD5x30-5E□-6			6						11.9	19.7				
VSP-LFD5x30-10E□-4			4	79.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	54
VSP-LFD5x30-10E□-6			6						11.9	19.7				
VSP-LFD5x30-15E□-4			4	89.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	58
VSP-LFD5x30-15E□-6			6						11.9	19.7				
VSP-LFD5x30-20E□-4			4	99.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	62
VSP-LFD5x30-20E□-6			6						11.9	19.7				
VSP-LFD6x10-5E□-4	6	10	4	69.5	11	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	50
VSP-LFD6x10-5E□-6			6						11.9	19.7				
VSP-LFD6x10-10E□-4			4	79.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	53
VSP-LFD6x10-10E□-6			6						11.9	19.7				
VSP-LFD6x10-15E□-4			4	89.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	57
VSP-LFD6x10-15E□-6			6						11.9	19.7				
VSP-LFD6x10-20E□-4			4	99.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	61
VSP-LFD6x10-20E□-6			6						11.9	19.7				
VSP-LFD6x20-5E□-4		20	4	69.5		26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	51
VSP-LFD6x20-5E□-6			6						11.9	19.7				
VSP-LFD6x20-10E□-4			4	79.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	54
VSP-LFD6x20-10E□-6			6						11.9	19.7				
VSP-LFD6x20-15E□-4			4	89.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	58
VSP-LFD6x20-15E□-6			6						11.9	19.7				
VSP-LFD6x20-20E□-4			4	99.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	62
VSP-LFD6x20-20E□-6			6						11.9	19.7				
VSP-LFD6x30-5E□-4		30	4	69.5		26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	51
VSP-LFD6x30-5E□-6			6						11.9	19.7				
VSP-LFD6x30-10E□-4			4	79.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	54
VSP-LFD6x30-10E□-6			6						11.9	19.7				
VSP-LFD6x30-15E□-4			4	89.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	58
VSP-LFD6x30-15E□-6			6						11.9	19.7				
VSP-LFD6x30-20E□-4			4	99.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	62
VSP-LFD6x30-20E□-6			6						11.9	19.7				

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Push-in fitting)

●VSP-LFD8x□-□E□-4/6

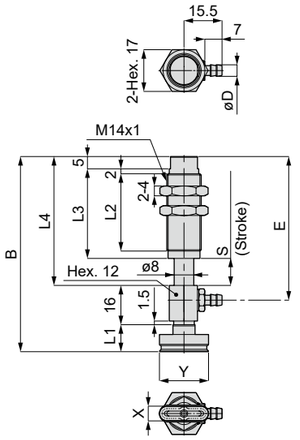


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD8x20-5E□-4	8	20	4	69.5	11	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	51
VSP-LFD8x20-5E□-6			6						11.9	19.7				
VSP-LFD8x20-10E□-4			4	79.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	54
VSP-LFD8x20-10E□-6			6						11.9	19.7				
VSP-LFD8x20-15E□-4			4	89.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	58
VSP-LFD8x20-15E□-6			6						11.9	19.7				
VSP-LFD8x20-20E□-4			4	99.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	62
VSP-LFD8x20-20E□-6			6						11.9	19.7				
VSP-LFD8x30-5E□-4		30	4	69.5		26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	51
VSP-LFD8x30-5E□-6			6						11.9	19.7				
VSP-LFD8x30-10E□-4			4	79.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	54
VSP-LFD8x30-10E□-6			6						11.9	19.7				
VSP-LFD8x30-15E□-4			4	89.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	58
VSP-LFD8x30-15E□-6			6						11.9	19.7				
VSP-LFD8x30-20E□-4			4	99.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	62
VSP-LFD8x30-20E□-6			6						11.9	19.7				

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Barb Fitting)

●VSP-LFD2x4-□E□-4T/6T
●VSP-LFD3.5x7-□E□-4T/6T
●VSP-LFD4x□-□E□-4T/6T

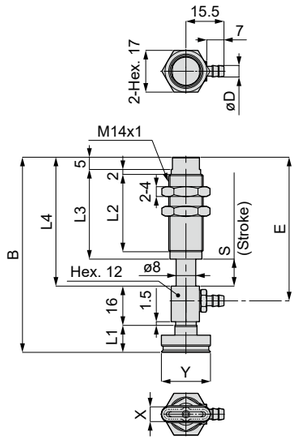


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD2x4-5E□-4T	2	4	2.5	69.5	11	26.5	31.5	42.5	48.5	5	4.5 to 6.5	50
VSP-LFD2x4-5E□-6T			4									
VSP-LFD2x4-10E□-4T			2.5	79.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	53
VSP-LFD2x4-10E□-6T			4									
VSP-LFD2x4-15E□-4T			2.5	89.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	57
VSP-LFD2x4-15E□-6T			4									
VSP-LFD2x4-20E□-4T			2.5	99.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	61
VSP-LFD2x4-20E□-6T			4									
VSP-LFD3.5x7-5E□-4T	3.5	7	2.5	69.5	11	26.5	31.5	42.5	48.5	5	4.5 to 6.5	50
VSP-LFD3.5x7-5E□-6T			4									
VSP-LFD3.5x7-10E□-4T			2.5	79.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	53
VSP-LFD3.5x7-10E□-6T			4									
VSP-LFD3.5x7-15E□-4T			2.5	89.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	57
VSP-LFD3.5x7-15E□-6T			4									
VSP-LFD3.5x7-20E□-4T			2.5	99.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	61
VSP-LFD3.5x7-20E□-6T			4									
VSP-LFD4x10-5E□-4T	4	10	2.5	69.5	11	26.5	31.5	42.5	48.5	5	4.5 to 6.5	50
VSP-LFD4x10-5E□-6T			4									
VSP-LFD4x10-10E□-4T			2.5	79.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	53
VSP-LFD4x10-10E□-6T			4									
VSP-LFD4x10-15E□-4T			2.5	89.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	57
VSP-LFD4x10-15E□-6T			4									
VSP-LFD4x10-20E□-4T			2.5	99.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	61
VSP-LFD4x10-20E□-6T			4									
VSP-LFD4x20-5E□-4T		20	2.5	69.5		26.5	31.5	42.5	48.5	5	4.5 to 6.5	51
VSP-LFD4x20-5E□-6T			4									
VSP-LFD4x20-10E□-4T			2.5	79.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	54
VSP-LFD4x20-10E□-6T			4									
VSP-LFD4x20-15E□-4T			2.5	89.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	58
VSP-LFD4x20-15E□-6T			4									
VSP-LFD4x20-20E□-4T			2.5	99.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	62
VSP-LFD4x20-20E□-6T			4									
VSP-LFD4x30-5E□-4T		30	2.5	69.5		26.5	31.5	42.5	48.5	5	4.5 to 6.5	51
VSP-LFD4x30-5E□-6T			4									
VSP-LFD4x30-10E□-4T			2.5	79.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	54
VSP-LFD4x30-10E□-6T			4									
VSP-LFD4x30-15E□-4T			2.5	89.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	58
VSP-LFD4x30-15E□-6T			4									
VSP-LFD4x30-20E□-4T			2.5	99.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	62
VSP-LFD4x30-20E□-6T			4									

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Barb Fitting)

●VSP-LFD5x□-□E□-4T/6T
●VSP-LFD6x□-□E□-4T/6T

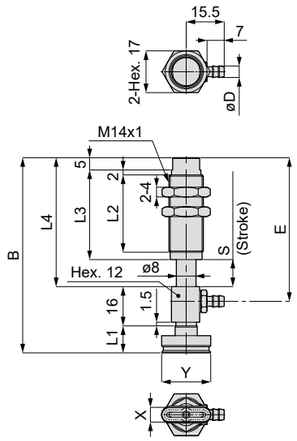


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD5x10-5E□-4T	5	10	2.5	69.5	11	26.5	31.5	42.5	48.5	5	4.5 to 6.5	50
VSP-LFD5x10-5E□-6T			4									
VSP-LFD5x10-10E□-4T			2.5	79.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	53
VSP-LFD5x10-10E□-6T			4									
VSP-LFD5x10-15E□-4T			2.5	89.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	57
VSP-LFD5x10-15E□-6T			4									
VSP-LFD5x10-20E□-4T			2.5	99.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	61
VSP-LFD5x10-20E□-6T			4									
VSP-LFD5x20-5E□-4T		20	2.5	69.5		26.5	31.5	42.5	48.5	5	4.5 to 6.5	51
VSP-LFD5x20-5E□-6T			4									
VSP-LFD5x20-10E□-4T			2.5	79.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	54
VSP-LFD5x20-10E□-6T			4									
VSP-LFD5x20-15E□-4T			2.5	89.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	58
VSP-LFD5x20-15E□-6T			4									
VSP-LFD5x20-20E□-4T			2.5	99.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	62
VSP-LFD5x20-20E□-6T			4									
VSP-LFD5x30-5E□-4T		30	2.5	69.5		26.5	31.5	42.5	48.5	5	4.5 to 6.5	51
VSP-LFD5x30-5E□-6T			4									
VSP-LFD5x30-10E□-4T			2.5	79.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	54
VSP-LFD5x30-10E□-6T			4									
VSP-LFD5x30-15E□-4T			2.5	89.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	58
VSP-LFD5x30-15E□-6T			4									
VSP-LFD5x30-20E□-4T			2.5	99.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	62
VSP-LFD5x30-20E□-6T			4									
VSP-LFD6x10-5E□-4T	6	10	2.5	69.5	11	26.5	31.5	42.5	48.5	5	4.5 to 6.5	50
VSP-LFD6x10-5E□-6T			4									
VSP-LFD6x10-10E□-4T			2.5	79.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	53
VSP-LFD6x10-10E□-6T			4									
VSP-LFD6x10-15E□-4T			2.5	89.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	57
VSP-LFD6x10-15E□-6T			4									
VSP-LFD6x10-20E□-4T			2.5	99.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	61
VSP-LFD6x10-20E□-6T			4									
VSP-LFD6x20-5E□-4T		20	2.5	69.5		26.5	31.5	42.5	48.5	5	4.5 to 6.5	51
VSP-LFD6x20-5E□-6T			4									
VSP-LFD6x20-10E□-4T			2.5	79.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	54
VSP-LFD6x20-10E□-6T			4									
VSP-LFD6x20-15E□-4T			2.5	89.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	58
VSP-LFD6x20-15E□-6T			4									
VSP-LFD6x20-20E□-4T			2.5	99.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	62
VSP-LFD6x20-20E□-6T			4									
VSP-LFD6x30-5E□-4T		30	2.5	69.5		26.5	31.5	42.5	48.5	5	4.5 to 6.5	51
VSP-LFD6x30-5E□-6T			4									
VSP-LFD6x30-10E□-4T			2.5	79.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	54
VSP-LFD6x30-10E□-6T			4									
VSP-LFD6x30-15E□-4T			2.5	89.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	58
VSP-LFD6x30-15E□-6T			4									
VSP-LFD6x30-20E□-4T			2.5	99.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	62
VSP-LFD6x30-20E□-6T			4									

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Barb Fitting)

●VSP-LFD8x□-□E□-4T/6T

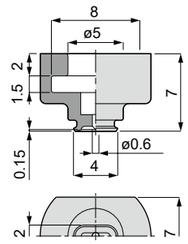


Unit: mm

Model No.	Pad Size X	Pad Size Y	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD8x20-5E□-4T	8	20	2.5	69.5	11	26.5	31.5	42.5	48.5	5	4.5 to 6.5	51
VSP-LFD8x20-5E□-6T			4									
VSP-LFD8x20-10E□-4T			2.5	79.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	54
VSP-LFD8x20-10E□-6T			4									
VSP-LFD8x20-15E□-4T			2.5	89.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	58
VSP-LFD8x20-15E□-6T			4									
VSP-LFD8x20-20E□-4T			2.5	99.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	62
VSP-LFD8x20-20E□-6T			4									
VSP-LFD8x30-5E□-4T		30	2.5	69.5		26.5	31.5	42.5	48.5	5	4.5 to 6.5	51
VSP-LFD8x30-5E□-6T			4									
VSP-LFD8x30-10E□-4T			2.5	79.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	54
VSP-LFD8x30-10E□-6T			4									
VSP-LFD8x30-15E□-4T			2.5	89.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	58
VSP-LFD8x30-15E□-6T			4									
VSP-LFD8x30-20E□-4T			2.5	99.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	62
VSP-LFD8x30-20E□-6T			4									

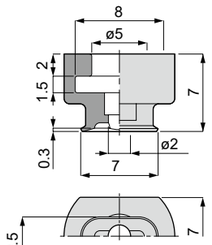
Pad Rubber Only External Dimension Diagram

●VSPG-2x4E□



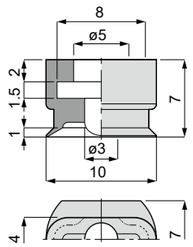
Weight: 0.3 g [0.4 g]

●VSPG-3.5x7E□



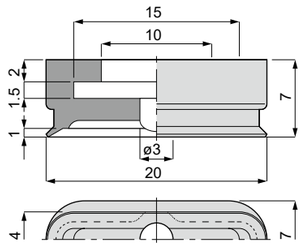
Weight: 0.3 g [0.4 g]

●VSPG-4x10E□



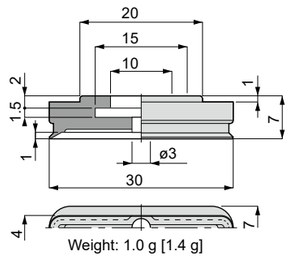
Weight: 0.3 g [0.4 g]

●VSPG-4x20E□



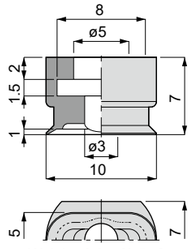
Weight: 0.6 g [0.9 g]

●VSPG-4x30E□



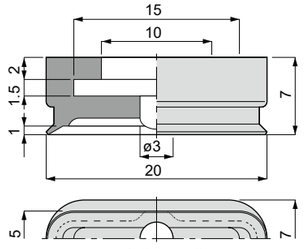
Weight: 1.0 g [1.4 g]

●VSPG-5x10E□



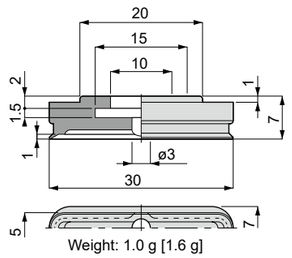
Weight: 0.3 g [0.5 g]

●VSPG-5x20E□



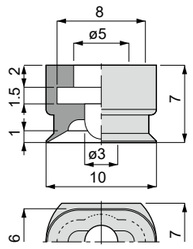
Weight: 0.6 g [1.0 g]

●VSPG-5x30E□



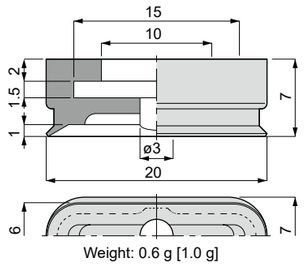
Weight: 1.0 g [1.6 g]

●VSPG-6x10E□



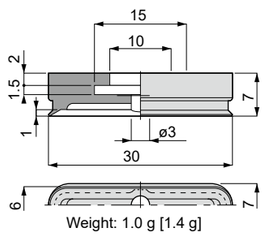
Weight: 0.3 g [0.5 g]

●VSPG-6x20E□



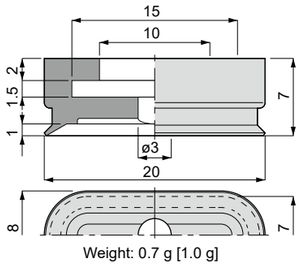
Weight: 0.6 g [1.0 g]

●VSPG-6x30E□



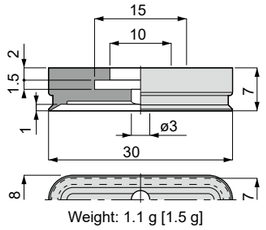
Weight: 1.0 g [1.4 g]

●VSPG-8x20E□



Weight: 0.7 g [1.0 g]

●VSPG-8x30E□

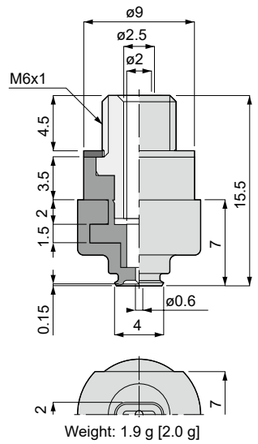


Weight: 1.1 g [1.5 g]

Weight: Only for fluoro rubber, values are inside [ ].

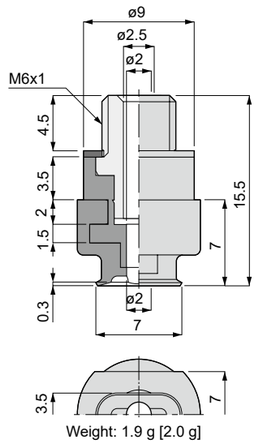
Pad Rubber + Set with Fixing Screw External Dimension Diagram

●VSPG-2x4E□A



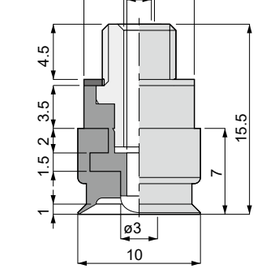
Weight: 1.9 g [2.0 g]

●VSPG-3.5x7E□A



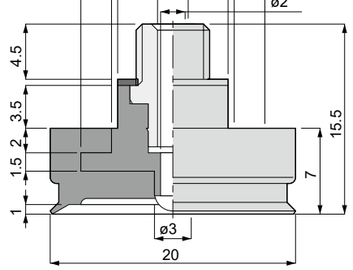
Weight: 1.9 g [2.0 g]

●VSPG-4x10E□A



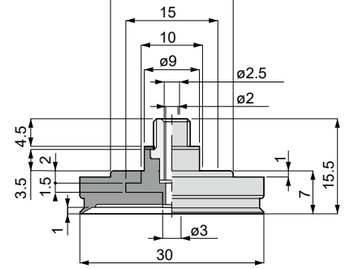
Weight: 1.9 g [2.0 g]

●VSPG-4x20E□A



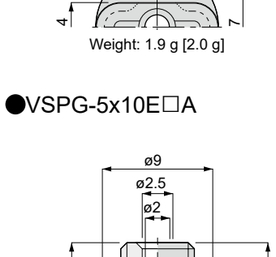
Weight: 2.4 g [2.7 g]

●VSPG-4x30E□A



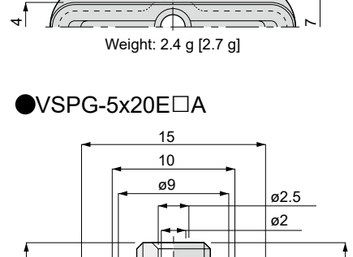
Weight: 2.8 g [3.2 g]

●VSPG-5x10E□A



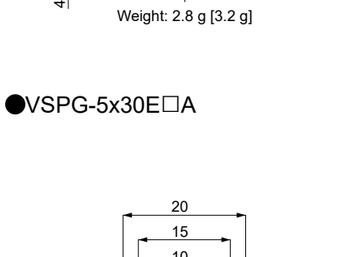
Weight: 1.9 g [2.1 g]

●VSPG-5x20E□A



Weight: 2.4 g [2.8 g]

●VSPG-5x30E□A

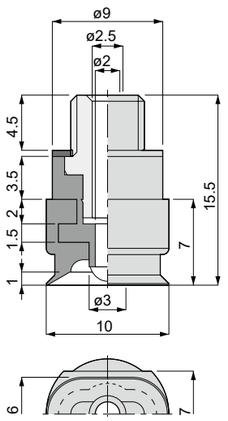


Weight: 2.7 g [3.3 g]

Weight: Only for fluoro rubber, values are inside [ ].

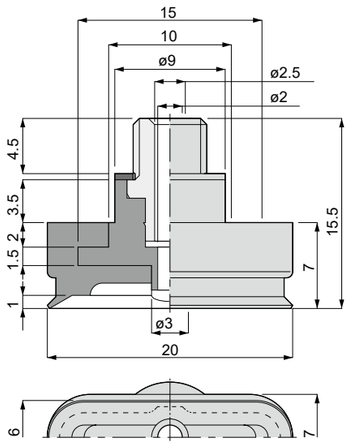
Pad Rubber + Set with Fixing Screw External Dimension Diagram

●VSPG-6x10E□A



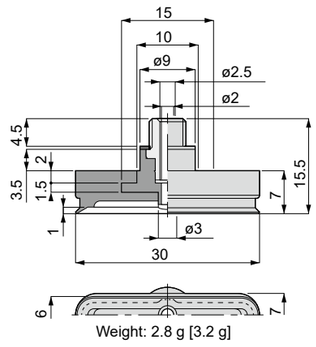
Weight: 1.9 g [2.0 g]

●VSPG-6x20E□A



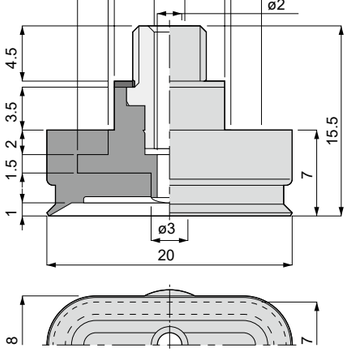
Weight: 2.4 g [2.8 g]

●VSPG-6x30E□A



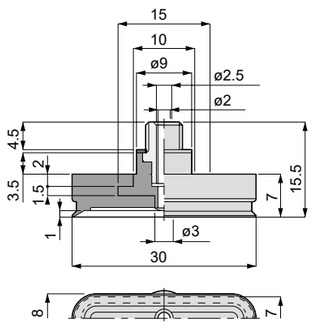
Weight: 2.8 g [3.2 g]

●VSPG-8x20E□A



Weight: 2.5 g [2.8 g]

●VSPG-8x30E□A

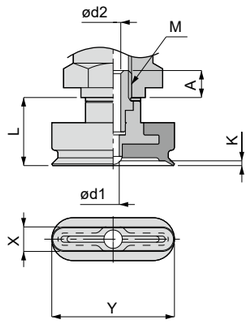


Weight: 2.9 g [3.3 g]

Weight: Only for fluoro rubber, values are inside [ ].

Detailed Diagram of Pad and Holder Connection Part

●VSPG-□E□A

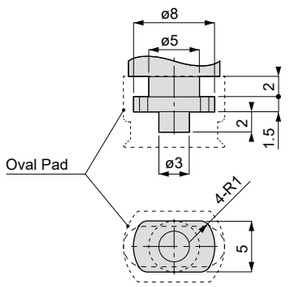


Unit: mm

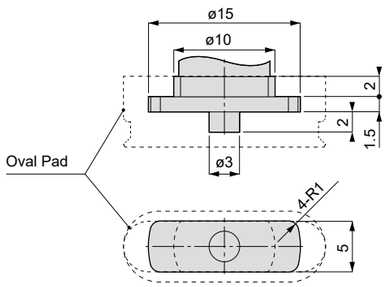
Model No.	Pad Size X	Pad Size Y	Fixing Screw M	A	Lip Internal Height K	L	ød1	ød2
VSPG-2x4E□	2	4	-	-	0.15	-	-	-
VSPG-3.5x7E□	3.5	7	-	-	0.3	-	-	-
VSPG-4x10E□	4	10	-	-	0.8	-	-	-
VSPG-4x20E□		20						
VSPG-4x30E□		30						
VSPG-5x10E□	5	10	-	-	0.8	-	-	-
VSPG-5x20E□		20						
VSPG-5x30E□		30						
VSPG-6x10E□	6	10	-	-	1	-	-	-
VSPG-6x20E□		20						
VSPG-6x30E□		30						
VSPG-8x20E□	8	20	-	-	1	-	-	-
VSPG-8x30E□		30						
VSPG-2x4EøA	2	4	M6x1	3.4	0.15	11	2	2.5
VSPG-3.5x7EøA	3.5	7	M6x1	3.4	0.3	11	2	2.5
VSPG-4x10EøA	4	10	M6x1	3.4	0.8	11	2	2.5
VSPG-4x20EøA		20						
VSPG-4x30EøA		30						
VSPG-5x10EøA	5	10	M6x1	3.4	0.8	11	2	2.5
VSPG-5x20EøA		20						
VSPG-5x30EøA		30						
VSPG-6x10EøA	6	10	M6x1	3.4	1	11	2	2.5
VSPG-6x20EøA		20						
VSPG-6x30EøA		30						
VSPG-8x20EøA	8	20	M6x1	3.4	1	11	2	2.5
VSPG-8x30EøA		30						

Pad Rubber Fitting Part Dimension

●VSPG-2x4E□
3.5x7E□
□x10E□



●VSPG-□x20E□
□x30E□



Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Suction Pad Oblong Type, VSP-□E□Series

Design / Selection

Warning

■Use appropriate torque to tighten and fix the oval pad rubber holder. Also, tighten using a tool that does not damage the frame, and confirm there is no looseness.

Model	Fixing Screw Size	Tightening Torque
All oblong type models	M6x1	0.27 to 0.33 N·m

Caution

■The oval pad fixing holder has no conductivity. When using vacuum pads made of conductive material, take measures to dissipate electricity directly from the pad rubber.

MEMO



Suction Pad Soft Type

VSP-□L□ Series

Suction pad with excellent flexibility, gentle on workpieces

RoHS

Ideal for removing molded products and transporting easily scratched workpieces

Abundant holder variations

Shape 16 types
- ●Standard...5 types
- ●Compact...Class 4
- ●Low dust generation .....2 types
- ●Lightweight..3 types
- ●Low back..2 types

Piping Connection 5 types
- ●Push-in fitting (ø1.8 to ø6)3 types
- ●Barbed fitting (ø4, ø6) .....2 types

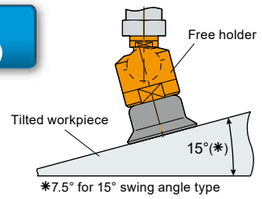
Stroke 12 types

2 mm to 50 mm
(Depending on pad size, holder type)

Low particle generation holders (LFC, LFD) with less abrasion powder from sliding and low noise are available

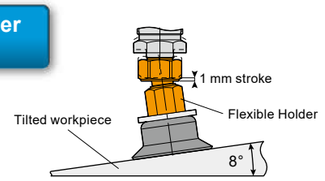
Assembly option for swing (free holder, flexible holder) that follows inclined workpiece surfaces is supported

Free holder (F1:30°, F2:15°)



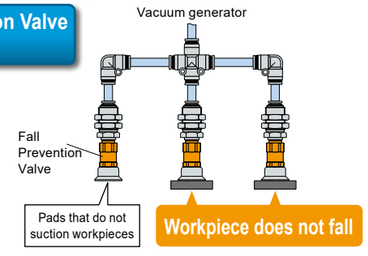
Flexible Holder (CF)

After removing the workpiece, returns to the normal position (vertical)



Assembly option for drop prevention valve (V) that reduces vacuum drop in separate circuits even without a workpiece is supported

Drop Prevention Valve (V)

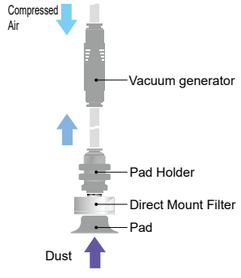


Removes dust during workpiece suction

Direct Mount Filter (T1, T2)

Filtration Area
T1: 1.7 cm², T2: 7 cm²





Pad surface treatment (option) with special processing to reduce adsorption marks is available

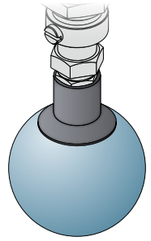
	-NF	-SF	-DL	-ER	-FG
Surface Treatment	Fiber Raised		Sticking Prevention	Adsorption Mark Reduction	Fluorine Coating
	Nylon	Silk			
					
Compatible Material	Silicone	Silicone	Silicone Conductive Silicone	Nitrile Conductive NBR (Low Resistance-type)	Silicone Conductive Silicone
Features	Fibers(nylon or silk) on the pad surface prevent direct contact with the workpiece, thus preventing rubber material transfer.		Special coating with good slippage. Effective for preventing sticking of lightweight workpieces and thin workpieces.	Surface modification with environmentally friendly chemicals reduces adsorption marks.	Surface modification with special treatment prevents sticking to the workpiece. Improved pad durability and abrasion resistance.

Pad Shape



Softness that does not scratch workpieces

Available from rubber hardness A40. The lip is soft and closely follows workpieces with irregular shapes.



Recommended Workpiece

Easily scratched workpieces such as molded products



Pad Diameter

8 types 4 | 6 | 8 | 10 | 15 | 20 | 30 | 40

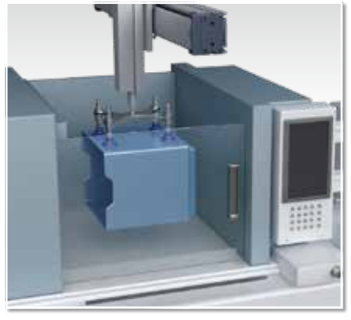
Pad Material

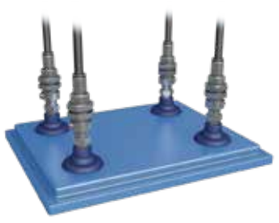
5 types Nitrile | Silicone | Conductive Silicone | Conductive NBR (Low Resistance-type) | Fluorosilicone

*Silicone (S) conforms to the Food Sanitation Act. (Holder is not compliant / Suction pad is compliant only for workpiece contact area)

Solution Examples

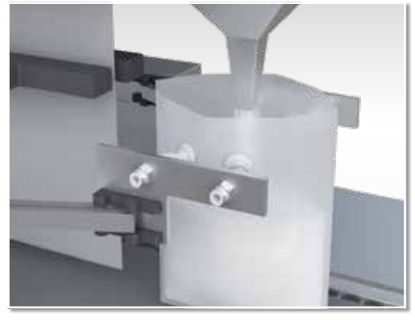
Delicate resin molded products, etc.
Easily scratched workpieces can be gently unloaded.





Opening/closing packaging bags, etc.

The soft lip follows even workpieces with irregular shapes such as packaging bags.



Model No. Notation

●Soft Type

Suction Pad

VSP – C – 30 – -20 – L – N – -ER – 6 – [ ] – F1 – V – T1

VSP	C	30	-20	L	N	-ER	6	[ ]	F1	V	T1
Model No.	❶ Holder Shape	❷ Pad Diameter	❸ Stroke Option	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment	❼ Connection Size/Shape	❽ Buffer Load	❾ Pad Swivel	❿ Drop Prevention Valve	⓫ Direct Mount Filter

Pad Rubber Only

VSPG – 30 – L – N – -ER

VSPG	30	L	N	-ER
Model No.	❷	❹	❺	❻

Pad Rubber + Set with Fixing Screw

VSPG – 30 – L – N – -ER **A**

VSPG	30	L	N	-ER	A
Model No.	❷ Pad Diameter	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment	

❶ Holder Shape

Buffer Present/Absent	Type	Vacuum Outlet	Code	
Fixed Type	Standard	Top Direction	A	
	Compact		MA	
	Standard	Side Direction	B	
	Compact		MB	
	Low Profile		HE	
		Both Sides Direction	HEW	
Buffer Type	Standard	Top Direction	C	
	Compact		MC	
	Low Particle Generation		LFC	
	Lightweight		HC	
	Standard	Side Direction	D	
	Compact		MD	
	Low Particle Generation		LFD	
			HD	
	Lightweight	Both Sides Direction	HDW	
	Standard	Direct Mount Type	F	

❷ Pad Diameter

Code	Content
4	ø4
6	ø6
8	ø8
10	ø10
15	ø15
20	ø20
30	ø30
40	ø40

❸ Stroke Option

Content	Holder Shape C	D	HC	LFC	LFD	Code	
Specified Stroke, or No Buffer	●	●	●			Blank	*1, *2
Stroke 2 mm				●		-2	*3
Stroke 5 mm				●	●	-5	
Stroke 10 mm	●	●	●	●	●	-10	
Stroke 15 mm	●	●	●	●	●	-15	
Stroke 20 mm	●	●	●	●	●	-20	
Stroke 25 mm			●			-25	
Stroke 30 mm	●	●	●			-30	
Stroke 40 mm	●	●	●			-40	
Stroke 50 mm	●	●	●			-50	

*1: For ❶ Holder Shape other than C, D, HC, LFC, and LFD, ❸ is 'Blank'.
*2: For the specified stroke of ❸ 'Blank', please confirm the stroke dimension on the external dimension drawing.
*3: When ❷ Pad Diameter is 4 to 15, -2 can be selected for ❸.

❹ Pad Shape

Code	Content	
L	Soft Type	

❺ Pad Material

Code	Content
N	Nitrile rubber
S	Silicone Rubber
FS	Fluorosilicone Rubber
SE	Conductive Silicone Rubber
NE	Conductive NBR (Low Resistance-type)

❻ Surface Treatment

Content	Compatible Pad Material N	S	SE	NE	Compatible Pad Diameter Soft (L)	Code
No surface treatment	All pad materials, all pad diameters					Blank
Fiber Raised (Nylon)		●			*10 to *40	-NF
Fiber Raised (Silk)		●			*10 to *40	-SF
Anti-Adhesion Special Coating		●	●		All sizes	-DL
Suction Mark Reduction Surface Modification	●			●	All sizes	-ER
Fluorine Coating		●	●		All sizes	-FG

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

●Design compatible with rechargeable battery manufacturing process

VSP – ..... – P4□

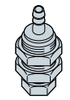
*Please inquire for details.

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

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

VSP – ..... – FP□

❼ Connection Size/Shape

Content	Holder Shape A	B	C	D	MA	MB	MC	MD	LFC	LFD	HC	HD	HDW	HE	HEW	Code	
(❶: When F)																Blank	
ø1.8, Push-in fitting						●	●	●			●	●	●	●	●	2	
ø4, Push-in fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4	
ø6, Push-in fitting	●	●	●	●		●		●	●	●	●	●	●	●	●	6	
ø4, Push-in fitting, without spring cover			●	●												4C	
ø6, Push-in fitting, without spring cover			●	●												6C	
ø4, Barb fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4T	
ø6, Barb fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	6T	
ø4, Barb fitting, without spring cover			●	●												4TC	
ø6, Barb fitting, without spring cover			●	●												6TC	

*1: For ❶ Holder Shape C and D with ❸ Stroke Option -20 to -50, options 4C, 6C, 4TC, and 6TC can be selected for ❼s. Additionally, for ❸ Stroke Option -30 to -50, only 4C, 6C, 4TC, and 6TC can be selected for ❼.
*2: The selectable Port Size/Shape varies depending on the ❷ Pad Diameter. Please check the combination table below.

❽ Buffer Load

Code	Content
Blank	Standard Load or No Buffer
L	Low Load (1/4 of Standard Load)

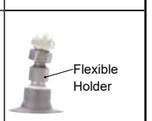
*1: For ❶ Holder Shape other than LFC, ❽ is 'Blank'.
*2: For ❸ Stroke Option -2, ❽ is 'Blank'.

⓫ Direct Mount Filter

Code	Content	
Blank	None	
T1	With Direct Mount Filter (Filtration Area 1.7 cm²)	 Direct Mount Filter
T2	With Direct Mount Filter (Filtration Area 7 cm²)	

*1: For ❶ Holder Shape HD, HE, HDW, and HEW, ⓫is 'Blank'.
*2: For ❶ Holder Shape HC with ❸ Stroke Option 'Blank', ⓫ is 'Blank'.
*3: ⓫T2 can be selected when ❷ Pad Diameter is 20 to 40.
*4: For dimensions with the direct mount filter, please refer to P. 1064.

❾ Pad Swing

Code	Content	
Blank	None	
F1	With Free Holder (Angle 30°)	 Free Holder
F2	With Free Holder (Angle 15°)	
CF	With Flexible Holder (Angle 8°)	 Flexible Holder

*1: For ❶ HD, HE, HDW, and HEW, ❾ is 'Blank'.
*2: For ❶ Holder Shape HC with ❸ Stroke Option 'Blank', ❾ is 'Blank'.
*3: For dimensions with the pad swivel function, please refer to P. 1060 and P. 1062.

❿ Drop Prevention Valve

Code	Content	
Blank	None	
V	With Drop Prevention Valve	 Drop Prevention Valve

*1: For ❶ Holder Shape HD, HE, HDW, and HEW, ❿ is 'Blank'.
*2: For ❶ Holder Shape HC with ❸ Stroke Option 'Blank', ❿ is 'Blank'.
*3: For ❻ Surface Treatment -NF and -SF, ❿ is 'Blank'.
*4: For dimensions with the drop prevention valve, please refer to P. 1083 and P. 1084.

Holder Shape - Pad Diameter - Pad Shape - Connection Size/Shape Combination Table

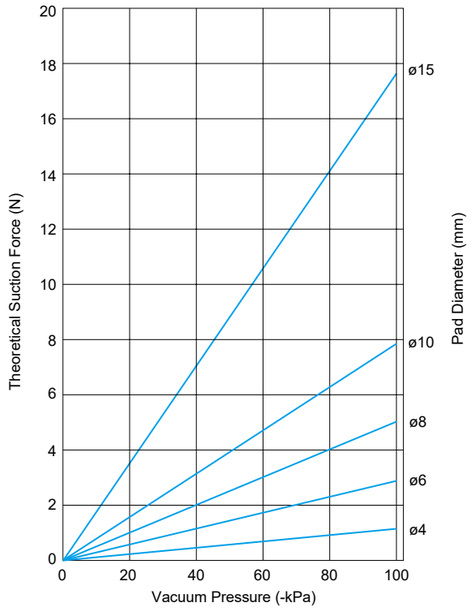
Holder Shape	Pad Diameter	Push-in fitting ø4 4	ø4 4C	ø6 6	ø6 6C	Barb fitting ø4 4T	ø4 4TC	ø6 6T	ø6 6TC
A	ø4 to ø15			●				●	
	ø20 to ø40	●		●		●		●	
B	All sizes	●		●		●		●	
C	All sizes	●	●	●	●	●	●	●	●
D	All sizes	●	●	●	●	●	●	●	●

Holder Shape	Pad Diameter	Thread M14	Blank
F	All sizes		●

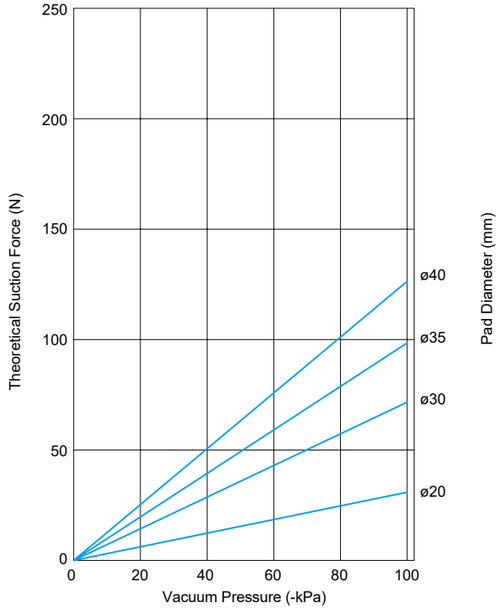
Holder Shape	Pad Diameter	Push-in fitting ø1.8 2	ø4 4	ø6 6	Barb fitting ø4 4T	ø6 6T
MA	ø4 to ø15		●		●	
	ø20 to ø40		●		●	●
MB	All sizes	●	●	●	●	●
MC	All sizes	●	●		●	●
MD	All sizes	●	●	●	●	●
LFC	ø4 to ø15		●		●	●
	ø20 to ø40		●	●	●	●
LFD	ø4 to ø15		●		●	●
	ø20 to ø40		●	●	●	●
HC	All sizes	●	●	●	●	●
HD	All sizes	●	●	●	●	●
HDW	All sizes	●	●	●	●	●
HE	All sizes	●	●	●	●	●
HEW	All sizes	●	●	●	●	●

Theoretical Suction Force

●Pad diameter: ø4 mm to ø15 mm



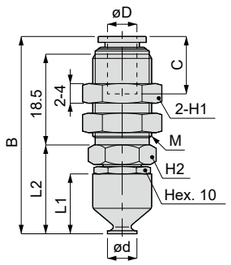
●Pad diameter: ø20 mm to ø40 mm



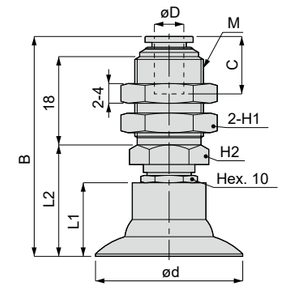
Regarding the suction force of the soft type, due to pad characteristics, influenced by factors such as vacuum level, pad material, and adsorbed object, it may not be possible to secure the calculated suction force (theoretical suction force x safety factor). Refer to "Suction Pads selection method" (P. 412) Use the suction force obtained with this formula as a guide, and make sure that there is no problem with the suction capacity on the actual machine.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Push-in fitting)

●VSP-A4 to 15L□-6



●VSP-A20 to 40L□-4/6

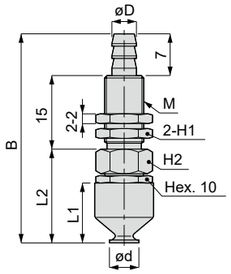


Unit: mm

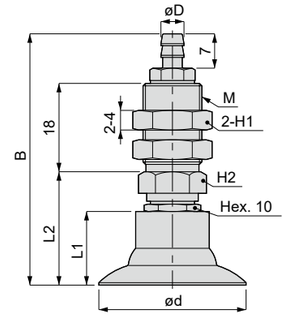
Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	Tube End C	Width Across Flats H1	Width Across Flats H2	Weight (g)
VSP-A4L□-6	4	6	M12x1	40.6	12.2	18.3	11.9	14	12	24
VSP-A6L□-6	6	6	M12x1	40.6	12.2	18.3	11.9	14	12	24
VSP-A8L□-6	8	6	M12x1	40.6	12.2	18.3	11.9	14	12	24
VSP-A10L□-6	10	6	M12x1	42.4	14	20.1	11.9	14	12	25
VSP-A15L□-6	15	6	M12x1	42.4	14	20.1	11.9	14	12	25
VSP-A20L□-4	20	4	M12x1	53.9	15	23	11.2	14	12	35
VSP-A20L□-6		6	M14x1	44.9		22.6	11.9	17	14	41
VSP-A30L□-4	30	4	M12x1	53.9	15	23	11.2	14	12	38
VSP-A30L□-6		6	M14x1	44.9		22.6	11.9	17	14	44
VSP-A40L□-4	40	4	M12x1	53.9	15	23	11.2	14	12	44
VSP-A40L□-6		6	M14x1	44.9		22.6	11.9	17	14	50

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Barb fitting)

●VSP-A4 to 15L□-6T



●VSP-A20 to 40L□-4T/6T

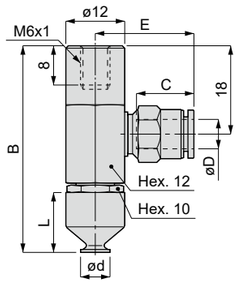


Unit: mm

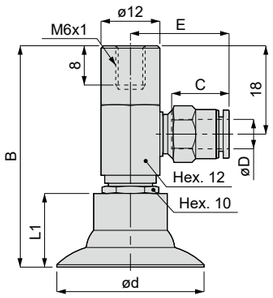
Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	Width Across Flats H1	Width Across Flats H2	Weight (g)
VSP-A4L□-6T	4	4	M8x0.75	41.3	12.2	19.3	10	10	14
VSP-A6L□-6T	6	4	M8x0.75	41.3	12.2	19.3	10	10	14
VSP-A8L□-6T	8	4	M8x0.75	41.3	12.2	19.3	10	10	14
VSP-A10L□-6T	10	4	M8x0.75	43.1	14	21.1	10	10	15
VSP-A15L□-6T	15	4	M8x0.75	43.1	14	21.1	10	10	15
VSP-A20L□-4T	20	2.5	M12x1	51	15	23	14	12	34
VSP-A20L□-6T		4							
VSP-A30L□-4T	30	2.5	M12x1	51	15	23	14	12	37
VSP-A30L□-6T		4							
VSP-A40L□-4T	40	2.5	M12x1	51	15	23	14	12	44
VSP-A40L□-6T		4							

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Push-in fitting)

●VSP-B4 to 15L□-4/6



●VSP-B20 to 40L□-4/6

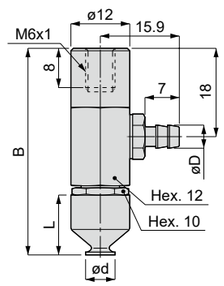


Unit: mm

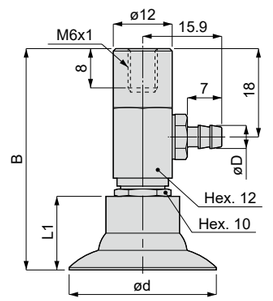
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-B4L□-4	4	4	42.3	12.2	11.2	18.8	32
VSP-B4L□-6		6			11.9	20.1	33
VSP-B6L□-4	6	4	42.3	12.2	11.2	18.8	32
VSP-B6L□-6		6			11.9	20.1	33
VSP-B8L□-4	8	4	42.3	12.2	11.2	18.8	32
VSP-B8L□-6		6			11.9	20.1	33
VSP-B10L□-4	10	4	44.1	14	11.2	18.8	33
VSP-B10L□-6		6			11.9	20.1	34
VSP-B15L□-4	15	4	44.1	14	11.2	18.8	33
VSP-B15L□-6		6			11.9	20.1	34
VSP-B20L□-4	20	4	45	15	11.2	18.8	37
VSP-B20L□-6		6			11.9	20.1	38
VSP-B30L□-4	30	4	45	15	11.2	18.8	40
VSP-B30L□-6		6			11.9	20.1	41
VSP-B40L□-4	40	4	45	15	11.2	18.8	47
VSP-B40L□-6		6			11.9	20.1	48

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Barb Fitting)

●VSP-B4 to 15L□-4T/6T



●VSP-B20 to 40L□-4T/6T

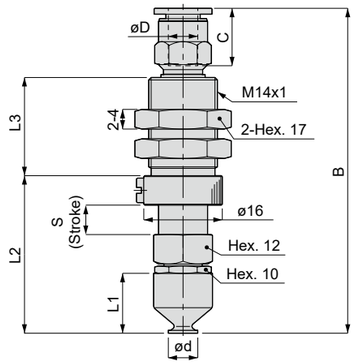


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-B4L□-4T	4	2.5	42.3	12.2	31
VSP-B4L□-6T		4			
VSP-B6L□-4T	6	2.5	42.3	12.2	32
VSP-B6L□-6T		4			
VSP-B8L□-4T	8	2.5	42.3	12.2	32
VSP-B8L□-6T		4			
VSP-B10L□-4T	10	2.5	44.1	14	32
VSP-B10L□-6T		4			
VSP-B15L□-4T	15	2.5	44.1	14	32
VSP-B15L□-6T		4			
VSP-B20L□-4T	20	2.5	45	15	36
VSP-B20L□-6T		4			
VSP-B30L□-4T	30	2.5	45	15	39
VSP-B30L□-6T		4			
VSP-B40L□-4T	40	2.5	45	15	46
VSP-B40L□-6T		4			

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C4 to 15L□-4/6
●VSP-C4 to 15-□L□-4/6

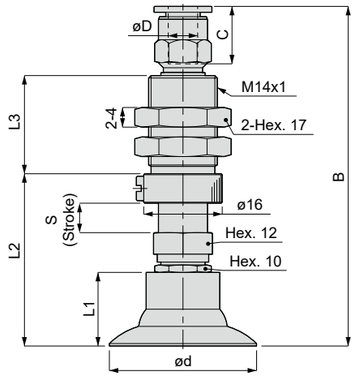


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C4L□-4	4	4	65.3	12.2	32.3	20	11.2	6	4.0 to 7.1	37
VSP-C4L□-6		6	66.6				11.9			38
VSP-C4-10L□-4		4	69.8		36.8		11.2	10	2.0 to 5.2	39
VSP-C4-10L□-6		6	71.1				11.9			40
VSP-C4-15L□-4		4	79.8		41.8	25	11.2	15	2.0 to 5.9	44
VSP-C4-15L□-6		6	81.1				11.9			45
VSP-C4-20L□-4		4	95.8		48.8	34	11.2	20	1.1 to 4.8	51
VSP-C4-20L□-6		6	97.1				11.9			52
VSP-C6L□-4	6	4	65.3	12.2	32.3	20	11.2	6	4.0 to 7.1	37
VSP-C6L□-6		6	66.6				11.9			38
VSP-C6-10L□-4		4	69.8		36.8		11.2	10	2.0 to 5.2	39
VSP-C6-10L□-6		6	71.1				11.9			40
VSP-C6-15L□-4		4	79.8		41.8	25	11.2	15	2.0 to 5.9	44
VSP-C6-15L□-6		6	81.1				11.9			45
VSP-C6-20L□-4		4	95.8		48.8	34	11.2	20	1.1 to 4.8	51
VSP-C6-20L□-6		6	97.1				11.9			52
VSP-C8L□-4	8	4	65.3	12.2	32.3	20	11.2	6	4.0 to 7.1	37
VSP-C8L□-6		6	66.6				11.9			38
VSP-C8-10L□-4		4	69.8		36.8		11.2	10	2.0 to 5.2	39
VSP-C8-10L□-6		6	71.1				11.9			40
VSP-C8-15L□-4		4	79.8		41.8	25	11.2	15	2.0 to 5.9	44
VSP-C8-15L□-6		6	81.1				11.9			45
VSP-C8-20L□-4		4	95.8		48.8	34	11.2	20	1.1 to 4.8	51
VSP-C8-20L□-6		6	97.1				11.9			52
VSP-C10L□-4	10	4	67.1	14	34.1	20	11.2	6	4.0 to 7.1	38
VSP-C10L□-6		6	68.5				11.9			39
VSP-C10-10L□-4		4	71.6		38.6		11.2	10	2.0 to 5.2	40
VSP-C10-10L□-6		6	72.9				11.9			41
VSP-C10-15L□-4		4	81.6		43.6	25	11.2	15	2.0 to 5.9	45
VSP-C10-15L□-6		6	82.9				11.9			46
VSP-C10-20L□-4		4	97.6		50.6	34	11.2	20	1.1 to 4.8	52
VSP-C10-20L□-6		6	98.9				11.9			53
VSP-C15L□-4	15	4	67.1	14	34.1	20	11.2	6	4.0 to 7.1	38
VSP-C15L□-6		6	68.5				11.9			39
VSP-C15-10L□-4		4	71.6		38.6		11.2	10	2.0 to 5.2	40
VSP-C15-10L□-6		6	72.9				11.9			41
VSP-C15-15L□-4		4	81.6		43.6	25	11.2	15	2.0 to 5.9	45
VSP-C15-15L□-6		6	82.9				11.9			46
VSP-C15-20L□-4		4	97.6		50.6	34	11.2	20	1.1 to 4.8	52
VSP-C15-20L□-6		6	98.9				11.9			53

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C20 to 40L□-4/6
●VSP-C20 to 40-□L□-4/6

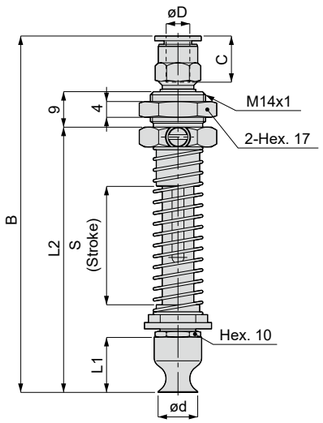


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C20L□-4	20	4	68	15	35	20	11.2	6	7.0 to 12.6	43
VSP-C20L□-6		6	69.3				11.9			44
VSP-C20-10L□-4		4	74		41		11.2	10	3.3 to 10.0	47
VSP-C20-10L□-6		6	75.3				11.9			48
VSP-C20-15L□-4		4	84		46	25	11.2	15	3.3 to 10.4	52
VSP-C20-15L□-6		6	85.3				11.9			53
VSP-C20-20L□-4		4	100		53	34	11.2	20	2.0 to 8.7	58
VSP-C20-20L□-6		6	101.3				11.9			59
VSP-C30L□-4	30	4	68	15	35	20	11.2	6	7.0 to 12.6	46
VSP-C30L□-6		6	69.3				11.9			47
VSP-C30-10L□-4		4	74		41		11.2	10	3.3 to 10.0	50
VSP-C30-10L□-6		6	75.3				11.9			51
VSP-C30-15L□-4		4	84		46	25	11.2	15	3.3 to 10.4	55
VSP-C30-15L□-6		6	85.3				11.9			56
VSP-C30-20L□-4		4	100		53	34	11.2	20	2.0 to 8.7	61
VSP-C30-20L□-6		6	101.3				11.9			62
VSP-C40L□-4	40	4	68	15	35	20	11.2	6	7.0 to 12.6	53
VSP-C40L□-6		6	69.3				11.9			54
VSP-C40-10L□-4		4	74		41		11.2	10	3.3 to 10.0	57
VSP-C40-10L□-6		6	75.3				11.9			58
VSP-C40-15L□-4		4	84		46	25	11.2	15	3.3 to 10.4	62
VSP-C40-15L□-6		6	85.3				11.9			63
VSP-C40-20L□-4		4	100		53	34	11.2	20	2.0 to 8.7	68
VSP-C40-20L□-6		6	101.3				11.9			69

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in Fitting without Spring Cover)

●VSP-C4 to 15-□L□-4C/6C

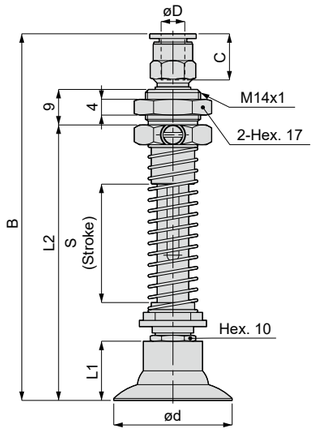


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C4-20L□-4C	4	4	72.8	12.2	50.8	11.2	20	1.5 to 4.9	45
VSP-C4-20L□-6C		6	74.1			11.9			46
VSP-C4-30L□-4C		4	85.8		63.8	11.2	30	1.1 to 4.8	51
VSP-C4-30L□-6C		6	87.1			11.9			52
VSP-C4-40L□-4C		4	98.8		76.8	11.2	40	1.0 to 4.5	56
VSP-C4-40L□-6C		6	100.1			11.9			57
VSP-C4-50L□-4C		4	111.8		89.8	11.2	50	0.9 to 4.5	61
VSP-C4-50L□-6C		6	113.1			11.9			62
VSP-C6-20L□-4C	6	4	72.8	12.2	50.8	11.2	20	1.5 to 4.9	45
VSP-C6-20L□-6C		6	74.1			11.9			46
VSP-C6-30L□-4C		4	85.8		63.8	11.2	30	1.1 to 4.8	51
VSP-C6-30L□-6C		6	87.1			11.9			52
VSP-C6-40L□-4C		4	98.8		76.8	11.2	40	1.0 to 4.5	56
VSP-C6-40L□-6C		6	100.1			11.9			57
VSP-C6-50L□-4C		4	111.8		89.8	11.2	50	0.9 to 4.5	61
VSP-C6-50L□-6C		6	113.1			11.9			62
VSP-C8-20L□-4C	8	4	72.8	12.2	50.8	11.2	20	1.5 to 4.9	45
VSP-C8-20L□-6C		6	74.1			11.9			46
VSP-C8-30L□-4C		4	85.8		63.8	11.2	30	1.1 to 4.8	51
VSP-C8-30L□-6C		6	87.1			11.9			52
VSP-C8-40L□-4C		4	98.8		76.8	11.2	40	1.0 to 4.5	56
VSP-C8-40L□-6C		6	100.1			11.9			57
VSP-C8-50L□-4C		4	111.8		89.8	11.2	50	0.9 to 4.5	61
VSP-C8-50L□-6C		6	113.1			11.9			62
VSP-C10-20L□-4C	10	4	74.6	14	52.6	11.2	20	1.5 to 4.9	45
VSP-C10-20L□-6C		6	75.9			11.9			46
VSP-C10-30L□-4C		4	87.6		65.6	11.2	30	1.1 to 4.8	51
VSP-C10-30L□-6C		6	88.9			11.9			52
VSP-C10-40L□-4C		4	100.6		78.6	11.2	40	1.0 to 4.5	56
VSP-C10-40L□-6C		6	101.9			11.9			57
VSP-C10-50L□-4C		4	113.6		91.6	11.2	50	0.9 to 4.5	61
VSP-C10-50L□-6C		6	114.9			11.9			62
VSP-C15-20L□-4C	15	4	74.6	14	52.6	11.2	20	1.5 to 4.9	45
VSP-C15-20L□-6C		6	75.9			11.9			46
VSP-C15-30L□-4C		4	87.6		65.6	11.2	30	1.1 to 4.8	51
VSP-C15-30L□-6C		6	88.9			11.9			52
VSP-C15-40L□-4C		4	100.6		78.6	11.2	40	1.0 to 4.5	56
VSP-C15-40L□-6C		6	101.9			11.9			57
VSP-C15-50L□-4C		4	113.6		91.6	11.2	50	0.9 to 4.5	61
VSP-C15-50L□-6C		6	114.9			11.9			62

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in Fitting without Spring Cover)

●VSP-C20 to 40-□L□-4C/6C

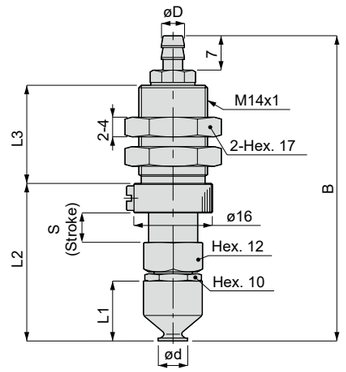


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C20-20L□-4C	20	4	77	15	55	11.2	20	1.5 to 4.9	50
VSP-C20-20L□-6C		6	78.3			11.9			51
VSP-C20-30L□-4C		4	90		68	11.2	30	1.1 to 4.8	55
VSP-C20-30L□-6C		6	91.3			11.9			56
VSP-C20-40L□-4C		4	103		81	11.2	40	1.0 to 4.5	60
VSP-C20-40L□-6C		6	104.3			11.9			61
VSP-C20-50L□-4C		4	116		94	11.2	50	0.9 to 4.5	65
VSP-C20-50L□-6C		6	117.3			11.9			66
VSP-C30-20L□-4C	30	4	77	15	55	11.2	20	1.5 to 4.9	53
VSP-C30-20L□-6C		6	78.3			11.9			54
VSP-C30-30L□-4C		4	90		68	11.2	30	1.1 to 4.8	58
VSP-C30-30L□-6C		6	91.3			11.9			59
VSP-C30-40L□-4C		4	103		81	11.2	40	1.0 to 4.5	63
VSP-C30-40L□-6C		6	104.3			11.9			64
VSP-C30-50L□-4C		4	116		94	11.2	50	0.9 to 4.5	68
VSP-C30-50L□-6C		6	117.3			11.9			69
VSP-C40-20L□-4C	40	4	77	15	55	11.2	20	1.5 to 4.9	57
VSP-C40-20L□-6C		6	78.3			11.9			58
VSP-C40-30L□-4C		4	90		68	11.2	30	1.1 to 4.8	62
VSP-C40-30L□-6C		6	91.3			11.9			63
VSP-C40-40L□-4C		4	103		81	11.2	40	1.0 to 4.5	67
VSP-C40-40L□-6C		6	104.3			11.9			68
VSP-C40-50L□-4C		4	116		94	11.2	50	0.9 to 4.5	72
VSP-C40-50L□-6C		6	117.3			11.9			73

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C4 to 15L□-4T/6T
●VSP-C4 to 15-□L□-4T/6T

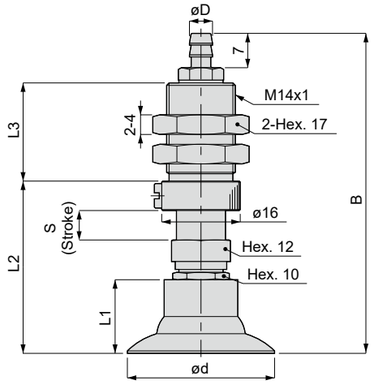


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-C4L□-4T	4	4	62.4	12.2	32.3	20	6	4.0 to 7.1	37
VSP-C4L□-6T		6							
VSP-C4-10L□-4T		4	66.9		36.8		10	2.0 to 5.2	40
VSP-C4-10L□-6T		6							
VSP-C4-15L□-4T		4	76.9		41.8	25	15	2.0 to 5.9	45
VSP-C4-15L□-6T		6							
VSP-C4-20L□-4T		4	92.9		48.8	34	20	1.1 to 4.8	51
VSP-C4-20L□-6T		6							
VSP-C6L□-4T	6	4	62.4	12.2	32.3	20	6	4.0 to 7.1	37
VSP-C6L□-6T		6							
VSP-C6-10L□-4T		4	66.9		36.8		10	2.0 to 5.2	40
VSP-C6-10L□-6T		6							
VSP-C6-15L□-4T		4	76.9		41.8	25	15	2.0 to 5.9	45
VSP-C6-15L□-6T		6							
VSP-C6-20L□-4T		4	92.9		48.8	34	20	1.1 to 4.8	51
VSP-C6-20L□-6T		6							
VSP-C8L□-4T	8	4	62.4	12.2	32.3	20	6	4.0 to 7.1	37
VSP-C8L□-6T		6							
VSP-C8-10L□-4T		4	66.9		36.8		10	2.0 to 5.2	40
VSP-C8-10L□-6T		6							
VSP-C8-15L□-4T		4	76.9		41.8	25	15	2.0 to 5.9	45
VSP-C8-15L□-6T		6							
VSP-C8-20L□-4T		4	92.9		48.8	34	20	1.1 to 4.8	51
VSP-C8-20L□-6T		6							
VSP-C10L□-4T	10	4	64.2	14	34.1	20	6	4.0 to 7.1	37
VSP-C10L□-6T		6							
VSP-C10-10L□-4T		4	68.7		38.6		10	2.0 to 5.2	40
VSP-C10-10L□-6T		6							
VSP-C10-15L□-4T		4	78.7		43.6	25	15	2.0 to 5.9	45
VSP-C10-15L□-6T		6							
VSP-C10-20L□-4T		4	94.7		50.6	34	20	1.1 to 4.8	51
VSP-C10-20L□-6T		6							
VSP-C15L□-4T	15	4	64.2	14	34.1	20	6	4.0 to 7.1	37
VSP-C15L□-6T		6							
VSP-C15-10L□-4T		4	68.7		38.6		10	2.0 to 5.2	40
VSP-C15-10L□-6T		6							
VSP-C15-15L□-4T		4	78.7		43.6	25	15	2.0 to 5.9	45
VSP-C15-15L□-6T		6							
VSP-C15-20L□-4T		4	94.7		50.6	34	20	1.1 to 4.8	51
VSP-C15-20L□-6T		6							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C20 to 40L□-4T/6T
●VSP-C20 to 40-□L□-4T/6T

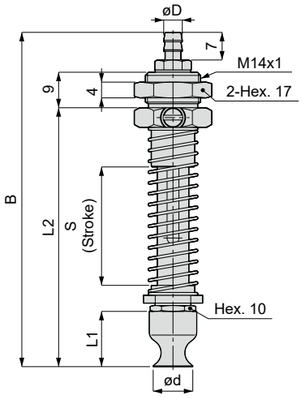


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C20L□-4T	20	4	65.1	15	35	20	11.2	6	7.0 to 12.6	42
VSP-C20L□-6T		6					11.9			
VSP-C20-10L□-4T		4	71.1		41		11.2	10	3.3 to 10.0	46
VSP-C20-10L□-6T		6					11.9			
VSP-C20-15L□-4T		4	81.1		46	25	11.2	15	3.3 to 10.4	51
VSP-C20-15L□-6T		6					11.9			
VSP-C20-20L□-4T		4	97.1		53	34	11.2	20	2.0 to 8.7	57
VSP-C20-20L□-6T		6					11.9			
VSP-C30L□-4T	30	4	65.1	15	35	20	11.2	6	7.0 to 12.6	45
VSP-C30L□-6T		6					11.9			
VSP-C30-10L□-4T		4	71.1		41		11.2	10	3.3 to 10.0	49
VSP-C30-10L□-6T		6					11.9			
VSP-C30-15L□-4T		4	81.1		46	25	11.2	15	3.3 to 10.4	54
VSP-C30-15L□-6T		6					11.9			
VSP-C30-20L□-4T		4	97.1		53	34	11.2	20	2.0 to 8.7	60
VSP-C30-20L□-6T		6					11.9			
VSP-C40L□-4T	40	4	65.1	15	35	20	11.2	6	7.0 to 12.6	51
VSP-C40L□-6T		6					11.9			
VSP-C40-10L□-4T		4	71.1		41		11.2	10	3.3 to 10.0	55
VSP-C40-10L□-6T		6					11.9			
VSP-C40-15L□-4T		4	81.1		46	25	11.2	15	3.3 to 10.4	59
VSP-C40-15L□-6T		6					11.9			
VSP-C40-20L□-4T		4	97.1		53	34	11.2	20	2.0 to 8.7	65
VSP-C40-20L□-6T		6					11.9			

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting without Spring Cover)

●VSP-C4 to 15-□L□-4TC/6TC

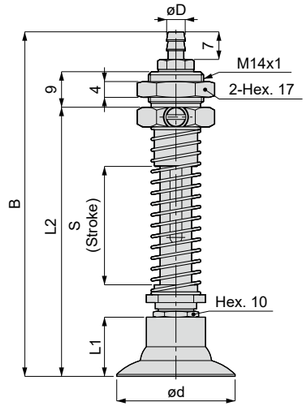


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C4-20L□-4TC	4	4	69.9	12.2	50.8	20	1.5 to 4.9	44
VSP-C4-20L□-6TC		6						
VSP-C4-30L□-4TC		4	82.9		63.8	30	1.1 to 4.8	50
VSP-C4-30L□-6TC		6						
VSP-C4-40L□-4TC		4	95.9		76.8	40	1.0 to 4.5	55
VSP-C4-40L□-6TC		6						
VSP-C4-50L□-4TC		4	108.9		89.8	50	0.9 to 4.5	60
VSP-C4-50L□-6TC		6						
VSP-C6-20L□-4TC	6	4	69.9	12.2	50.8	20	1.5 to 4.9	44
VSP-C6-20L□-6TC		6						
VSP-C6-30L□-4TC		4	82.9		63.8	30	1.1 to 4.8	50
VSP-C6-30L□-6TC		6						
VSP-C6-40L□-4TC		4	95.9		76.8	40	1.0 to 4.5	55
VSP-C6-40L□-6TC		6						
VSP-C6-50L□-4TC		4	108.9		89.8	50	0.9 to 4.5	60
VSP-C6-50L□-6TC		6						
VSP-C8-20L□-4TC	8	4	69.9	12.2	50.8	20	1.5 to 4.9	44
VSP-C8-20L□-6TC		6						
VSP-C8-30L□-4TC		4	82.9		63.8	30	1.1 to 4.8	50
VSP-C8-30L□-6TC		6						
VSP-C8-40L□-4TC		4	95.9		76.8	40	1.0 to 4.5	55
VSP-C8-40L□-6TC		6						
VSP-C8-50L□-4TC		4	108.9		89.8	50	0.9 to 4.5	60
VSP-C8-50L□-6TC		6						
VSP-C10-20L□-4TC	10	4	71.7	14	52.6	20	1.5 to 4.9	44
VSP-C10-20L□-6TC		6						
VSP-C10-30L□-4TC		4	84.7		65.6	30	1.1 to 4.8	50
VSP-C10-30L□-6TC		6						
VSP-C10-40L□-4TC		4	97.7		78.6	40	1.0 to 4.5	55
VSP-C10-40L□-6TC		6						
VSP-C10-50L□-4TC		4	110.7		91.6	50	0.9 to 4.5	60
VSP-C10-50L□-6TC		6						
VSP-C15-20L□-4TC	15	4	71.7	14	52.6	20	1.5 to 4.9	44
VSP-C15-20L□-6TC		6						
VSP-C15-30L□-4TC		4	84.7		65.6	30	1.1 to 4.8	50
VSP-C15-30L□-6TC		6						
VSP-C15-40L□-4TC		4	97.7		78.6	40	1.0 to 4.5	55
VSP-C15-40L□-6TC		6						
VSP-C15-50L□-4TC		4	110.7		91.6	50	0.9 to 4.5	60
VSP-C15-50L□-6TC		6						

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting without Spring Cover)

●VSP-C20 to 40-□L□-4TC/6TC

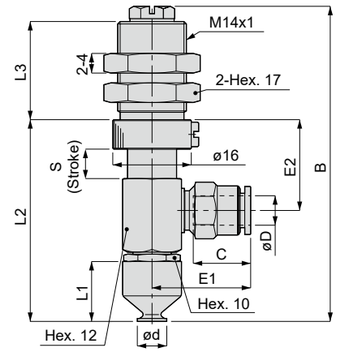


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C20-20L□-4TC	20	4	74.1	15	55	20	1.5 to 4.9	44
VSP-C20-20L□-6TC		6						
VSP-C20-30L□-4TC		4	87.1		68	30	1.1 to 4.8	50
VSP-C20-30L□-6TC		6						
VSP-C20-40L□-4TC		4	110.1		81	40	1.0 to 4.5	55
VSP-C20-40L□-6TC		6						
VSP-C20-50L□-4TC		4	123.1		94	50	0.9 to 4.5	60
VSP-C20-50L□-6TC		6						
VSP-C30-20L□-4TC	30	4	74.1	15	55	20	1.5 to 4.9	44
VSP-C30-20L□-6TC		6						
VSP-C30-30L□-4TC		4	87.1		68	30	1.1 to 4.8	50
VSP-C30-30L□-6TC		6						
VSP-C30-40L□-4TC		4	110.1		81	40	1.0 to 4.5	55
VSP-C30-40L□-6TC		6						
VSP-C30-50L□-4TC		4	123.1		94	50	0.9 to 4.5	60
VSP-C30-50L□-6TC		6						
VSP-C40-20L□-4TC	40	4	74.1	15	55	20	1.5 to 4.9	44
VSP-C40-20L□-6TC		6						
VSP-C40-30L□-4TC		4	87.1		68	30	1.1 to 4.8	50
VSP-C40-30L□-6TC		6						
VSP-C40-40L□-4TC		4	110.1		81	40	1.0 to 4.5	55
VSP-C40-40L□-6TC		6						
VSP-C40-50L□-4TC		4	123.1		94	50	0.9 to 4.5	60
VSP-C40-50L□-6TC		6						

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D4 to 15L□-4/6
●VSP-D4 to 15-□L□-4/6

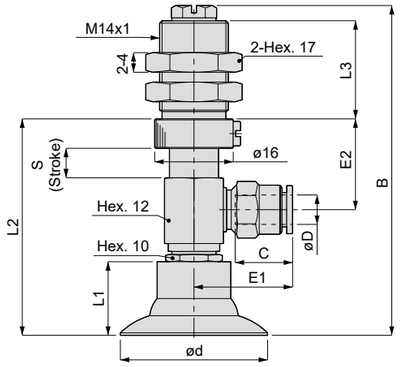


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D4L□-4	4	4	64.4	12.2	41.3	20	11.2	18.8	18.5	6	4.0 to 7.1	49
VSP-D4L□-6		6					11.9	20.1				50
VSP-D4-10L□-4		4	69.4		46.3		11.2	18.8	25	10	2.0 to 5.2	52
VSP-D4-10L□-6		6					11.9	20.1				53
VSP-D4-15L□-4		4	79.4		51.3	25	11.2	18.8	30	15	2.0 to 5.9	58
VSP-D4-15L□-6		6					11.9	20.1				59
VSP-D4-20L□-4		4	95.4		58.3	34	11.2	18.8	37	20	1.1 to 4.8	68
VSP-D4-20L□-6		6					11.9	20.1				69
VSP-D6L□-4	6	4	64.4	12.2	41.3	20	11.2	18.8	18.5	6	4.0 to 7.1	49
VSP-D6L□-6		6					11.9	20.1				50
VSP-D6-10L□-4		4	69.4		46.3		11.2	18.8	25	10	2.0 to 5.2	52
VSP-D6-10L□-6		6					11.9	20.1				53
VSP-D6-15L□-4		4	79.4		51.3	25	11.2	18.8	30	15	2.0 to 5.9	58
VSP-D6-20L□-6		6					11.9	20.1				59
VSP-D6-20L□-4		4	95.4		58.3	34	11.2	18.8	37	20	1.1 to 4.8	68
VSP-D6-20L□-6		6					11.9	20.1				69
VSP-D8L□-4	8	4	64.4	12.2	41.3	20	11.2	18.8	18.5	6	4.0 to 7.1	49
VSP-D8L□-6		6					11.9	20.1				50
VSP-D8-10L□-4		4	69.4		46.3		11.2	18.8	25	10	2.0 to 5.2	52
VSP-D8-10L□-6		6					11.9	20.1				53
VSP-D8-15L□-4		4	79.4		51.3	25	11.2	18.8	30	15	2.0 to 5.9	58
VSP-D8-20L□-6		6					11.9	20.1				59
VSP-D8-20L□-4		4	95.4		58.3	34	11.2	18.8	37	20	1.1 to 4.8	68
VSP-D8-20L□-6		6					11.9	20.1				69
VSP-D10L□-4	10	4	66.2	14	43.1	20	11.2	18.8	18.5	6	4.0 to 7.1	50
VSP-D10L□-6		6					11.9	20.1				51
VSP-D10-10L□-4		4	71.2		48.1		11.2	18.8	25	10	2.0 to 5.2	53
VSP-D10-10L□-6		6					11.9	20.1				54
VSP-D10-15L□-4		4	81.2		53.1	25	11.2	18.8	30	15	2.0 to 5.9	59
VSP-D10-20L□-6		6					11.9	20.1				60
VSP-D10-20L□-4		4	97.2		60.1	34	11.2	18.8	37	20	1.1 to 4.8	69
VSP-D10-20L□-6		6					11.9	20.1				70
VSP-D15L□-4	15	4	66.2	14	43.1	20	11.2	18.8	18.5	6	4.0 to 7.1	50
VSP-D15L□-6		6					11.9	20.1				51
VSP-D15-10L□-4		4	71.2		48.1		11.2	18.8	25	10	2.0 to 5.2	53
VSP-D15-10L□-6		6					11.9	20.1				54
VSP-D15-15L□-4		4	81.2		53.1	25	11.2	18.8	30	15	2.0 to 5.9	59
VSP-D15-20L□-6		6					11.9	20.1				60
VSP-D15-20L□-4		4	97.2		60.1	34	11.2	18.8	37	20	1.1 to 4.8	69
VSP-D15-20L□-6		6					11.9	20.1				70

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D20 to 40L□-4/6
●VSP-D20 to 40-□L□-4/6

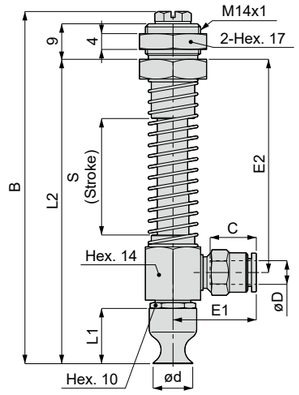


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D20L□-4	20	4	67.1	15	44	20	11.2	18.8	18.5	6	7.0 to 12.6	55
VSP-D20L□-6		6					11.9	20.1				56
VSP-D20-10L□-4		4	73.1		50		11.2	18.8	24.5	10	3.3 to 10.0	58
VSP-D20-10L□-6		6					11.9	20.1				59
VSP-D20-15L□-4		4	83.1		55	25	11.2	18.8	29.5	15	3.3 to 10.4	63
VSP-D20-15L□-6		6					11.9	20.1				64
VSP-D20-20L□-4		4	99.1		62	34	11.2	18.8	36.5	20	2.0 to 8.7	73
VSP-D20-20L□-6		6					11.9	20.1				74
VSP-D30L□-4	30	4	67.1	15	44	20	11.2	18.8	18.5	6	7.0 to 12.6	58
VSP-D30L□-6		6					11.9	20.1				59
VSP-D30-10L□-4		4	73.1		50		11.2	18.8	24.5	10	3.3 to 10.0	61
VSP-D30-10L□-6		6					11.9	20.1				62
VSP-D30-15L□-4		4	83.1		55	25	11.2	18.8	29.5	15	3.3 to 10.4	66
VSP-D30-15L□-6		6					11.9	20.1				67
VSP-D30-20L□-4		4	99.1		62	34	11.2	18.8	36.5	20	2.0 to 8.7	76
VSP-D30-20L□-6		6					11.9	20.1				77
VSP-D40L□-4	40	4	67.1	15	44	20	11.2	18.8	18.5	6	7.0 to 12.6	59
VSP-D40L□-6		6					11.9	20.1				60
VSP-D40-10L□-4		4	73.1		50		11.2	18.8	24.5	10	3.3 to 10.0	62
VSP-D40-10L□-6		6					11.9	20.1				63
VSP-D40-15L□-4		4	83.1		55	25	11.2	18.8	29.5	15	3.3 to 10.4	67
VSP-D40-15L□-6		6					11.9	20.1				68
VSP-D40-20L□-4		4	99.1		62	34	11.2	18.8	36.5	20	2.0 to 8.7	77
VSP-D40-20L□-6		6					11.9	20.1				78

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in Fitting without Spring Cover)

●VSP-D4 to 15-□L□-4C/6C

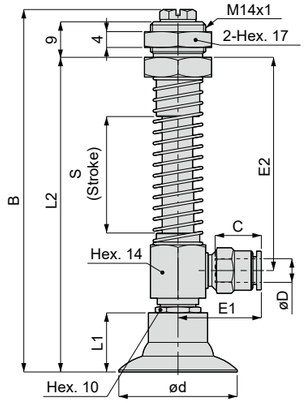


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D4-20L□-4C	4	4	74.4	12.2	62.3	11.2	19.8	40.5	20	1.5 to 4.9	71
VSP-D4-20L□-6C		6				11.9	21.1				72
VSP-D4-30L□-4C		4	87.4		75.3	11.2	19.8	53.5	30	1.1 to 4.8	77
VSP-D4-30L□-6C		6				11.9	21.1				78
VSP-D4-40L□-4C		4	100.4		88.3	11.2	19.8	66.5	40	1.0 to 4.5	84
VSP-D4-40L□-6C		6				11.9	21.1				85
VSP-D4-50L□-4C		4	113.4		101.3	11.2	19.8	79.5	50	0.9 to 4.5	91
VSP-D4-50L□-6C		6				11.9	21.1				92
VSP-D6-20L□-4C	6	4	74.4	12.2	62.3	11.2	19.8	40.5	20	1.5 to 4.9	71
VSP-D6-20L□-6C		6				11.9	21.1				72
VSP-D6-30L□-4C		4	87.4		75.3	11.2	19.8	53.5	30	1.1 to 4.8	77
VSP-D6-30L□-6C		6				11.9	21.1				78
VSP-D6-40L□-4C		4	100.4		88.3	11.2	19.8	66.5	40	1.0 to 4.5	84
VSP-D6-40L□-6C		6				11.9	21.1				85
VSP-D6-50L□-4C		4	113.4		101.3	11.2	19.8	79.5	50	0.9 to 4.5	91
VSP-D6-50L□-6C		6				11.9	21.1				92
VSP-D8-20L□-4C	8	4	74.4	12.2	62.3	11.2	19.8	40.5	20	1.5 to 4.9	71
VSP-D8-20L□-6C		6				11.9	21.1				72
VSP-D8-30L□-4C		4	87.4		75.3	11.2	19.8	53.5	30	1.1 to 4.8	77
VSP-D8-30L□-6C		6				11.9	21.1				78
VSP-D8-40L□-4C		4	100.4		88.3	11.2	19.8	66.5	40	1.0 to 4.5	84
VSP-D8-40L□-6C		6				11.9	21.1				85
VSP-D8-50L□-4C		4	113.4		101.3	11.2	19.8	79.5	50	0.9 to 4.5	91
VSP-D8-50L□-6C		6				11.9	21.1				92
VSP-D10-20L□-4C	10	4	76.2	14	64.1	11.2	19.8	40.5	20	1.5 to 4.9	71
VSP-D10-20L□-6C		6				11.9	21.1				72
VSP-D10-30L□-4C		4	89.2		77.1	11.2	19.8	53.5	30	1.1 to 4.8	77
VSP-D10-30L□-6C		6				11.9	21.1				78
VSP-D10-40L□-4C		4	102.2		90.1	11.2	19.8	66.5	40	1.0 to 4.5	84
VSP-D10-40L□-6C		6				11.9	21.1				85
VSP-D10-50L□-4C		4	115.2		103.1	11.2	19.8	79.5	50	0.9 to 4.5	91
VSP-D10-50L□-6C		6				11.9	21.1				92
VSP-D15-20L□-4C	15	4	76.2	14	64.1	11.2	19.8	40.5	20	1.5 to 4.9	71
VSP-D15-20L□-6C		6				11.9	21.1				72
VSP-D15-30L□-4C		4	89.2		77.1	11.2	19.8	53.5	30	1.1 to 4.8	77
VSP-D15-30L□-6C		6				11.9	21.1				78
VSP-D15-40L□-4C		4	102.2		90.1	11.2	19.8	66.5	40	1.0 to 4.5	84
VSP-D15-40L□-6C		6				11.9	21.1				85
VSP-D15-50L□-4C		4	115.2		103.1	11.2	19.8	79.5	50	0.9 to 4.5	91
VSP-D15-50L□-6C		6				11.9	21.1				92

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in Fitting without Spring Cover)

●VSP-D20 to 40-□L□-4C/6C

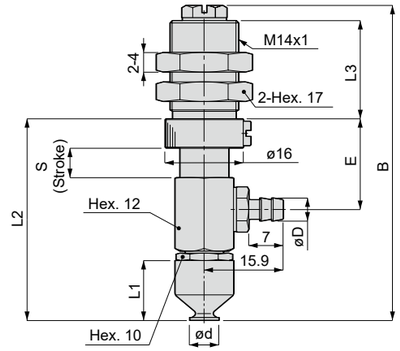


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D20-20L□-4C	20	4	78.6	15	66.5	11.2	19.8	41	20	1.5 to 4.9	72
VSP-D20-20L□-6C		6				11.9	21.1				73
VSP-D20-30L□-4C		4	91.6		79.5	11.2	19.8	54	30	1.1 to 4.8	79
VSP-D20-30L□-6C		6				11.9	21.1				80
VSP-D20-40L□-4C		4	104.6		92.5	11.2	19.8	67	40	1.0 to 4.5	84
VSP-D20-40L□-6C		6				11.9	21.1				85
VSP-D20-50L□-4C		4	117.6		105.5	11.2	19.8	80	50	0.9 to 4.5	92
VSP-D20-50L□-6C		6				11.9	21.1				93
VSP-D30-20L□-4C	30	4	78.6	15	66.5	11.2	19.8	41	20	1.5 to 4.9	75
VSP-D30-20L□-6C		6				11.9	21.1				76
VSP-D30-30L□-4C		4	91.6		79.5	11.2	19.8	54	30	1.1 to 4.8	82
VSP-D30-30L□-6C		6				11.9	21.1				83
VSP-D30-40L□-4C		4	104.6		92.5	11.2	19.8	67	40	1.0 to 4.5	87
VSP-D30-40L□-6C		6				11.9	21.1				88
VSP-D30-50L□-4C		4	117.6		105.5	11.2	19.8	80	50	0.9 to 4.5	95
VSP-D30-50L□-6C		6				11.9	21.1				96
VSP-D40-20L□-4C	40	4	78.6	15	66.5	11.2	19.8	41	20	1.5 to 4.9	79
VSP-D40-20L□-6C		6				11.9	21.1				80
VSP-D40-30L□-4C		4	91.6		79.5	11.2	19.8	54	30	1.1 to 4.8	86
VSP-D40-30L□-6C		6				11.9	21.1				87
VSP-D40-40L□-4C		4	104.6		92.5	11.2	19.8	67	40	1.0 to 4.5	91
VSP-D40-40L□-6C		6				11.9	21.1				92
VSP-D40-50L□-4C		4	117.6		105.5	11.2	19.8	80	50	0.9 to 4.5	99
VSP-D40-50L□-6C		6				11.9	21.1				100

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D4 to 15L□-4T/6T
●VSP-D4 to 15-□L□-4T/6T

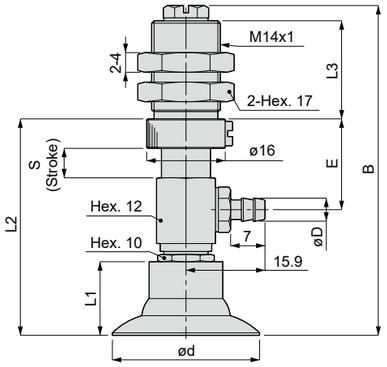


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D4L□-4T	4	2.5	64.4	12.2	41.3	20	18.5	6	4.0 to 7.1	48
VSP-D4L□-6T		4								
VSP-D4-10L□-4T		2.5	69.4		46.3		25	10	2.0 to 5.2	49
VSP-D4-10L□-6T		4								
VSP-D4-15L□-4T		2.5	79.4		51.3	25	30	15	2.0 to 5.9	55
VSP-D4-15L□-6T		4								
VSP-D4-20L□-4T		2.5	95.4		58.3	34	37	20	1.1 to 4.8	65
VSP-D4-20L□-6T		4								
VSP-D6L□-4T	6	2.5	64.4	12.2	41.3	20	18.5	6	4.0 to 7.1	49
VSP-D6L□-6T		4								
VSP-D6-10L□-4T		2.5	69.4		46.3		25	10	2.0 to 5.2	50
VSP-D6-10L□-6T		4								
VSP-D6-15L□-4T		2.5	79.4		51.3	25	30	15	2.0 to 5.9	56
VSP-D6-15L□-6T		4								
VSP-D6-20L□-4T		2.5	95.4		58.3	34	37	20	1.1 to 4.8	66
VSP-D6-20L□-6T		4								
VSP-D8L□-4T	8	2.5	64.4	12.2	41.3	20	18.5	6	4.0 to 7.1	49
VSP-D8L□-6T		4								
VSP-D8-10L□-4T		2.5	69.4		46.3		25	10	2.0 to 5.2	50
VSP-D8-10L□-6T		4								
VSP-D8-15L□-4T		2.5	79.4		51.3	25	30	15	2.0 to 5.9	56
VSP-D8-15L□-6T		4								
VSP-D8-20L□-4T		2.5	95.4		58.3	34	37	20	1.1 to 4.8	66
VSP-D8-20L□-6T		4								
VSP-D10L□-4T	10	2.5	66.2	14	43.1	20	18.5	6	4.0 to 7.1	49
VSP-D10L□-6T		4								
VSP-D10-10L□-4T		2.5	71.2		48.1		25	10	2.0 to 5.2	50
VSP-D10-10L□-6T		4								
VSP-D10-15L□-4T		2.5	81.2		53.1	25	30	15	2.0 to 5.9	56
VSP-D10-15L□-6T		4								
VSP-D10-20L□-4T		2.5	97.2		60.1	34	37	20	1.1 to 4.8	66
VSP-D10-20L□-6T		4								
VSP-D15L□-4T	15	2.5	66.2	14	43.1	20	18.5	6	4.0 to 7.1	49
VSP-D15L□-6T		4								
VSP-D15-10L□-4T		2.5	71.2		48.1		25	10	2.0 to 5.2	50
VSP-D15-10L□-6T		4								
VSP-D15-15L□-4T		2.5	81.2		53.1	25	30	15	2.0 to 5.9	56
VSP-D15-15L□-6T		4								
VSP-D15-20L□-4T		2.5	97.2		60.1	34	37	20	1.1 to 4.8	66
VSP-D15-20L□-6T		4								

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D20 to 40L□-4T/6T
●VSP-D20 to 40-□L□-4T/6T

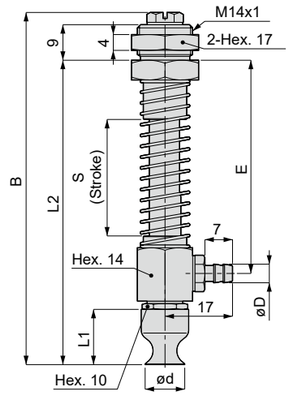


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D20L□-4T	20	2.5	67.1	15	44	20	18.5	6	7.0 to 12.6	53
VSP-D20L□-6T		4								
VSP-D20-10L□-4T		2.5	73.1		50		24.5	10	3.3 to 10.0	54
VSP-D20-10L□-6T		4								
VSP-D20-15L□-4T		2.5	83.1		55	25	29.5	15	3.3 to 10.4	61
VSP-D20-15L□-6T		4								
VSP-D20-20L□-4T		2.5	99.1		62	34	36.5	20	2.0 to 8.7	71
VSP-D20-20L□-6T		4								
VSP-D30L□-4T	30	2.5	67.1	15	44	20	18.5	6	7.0 to 12.6	56
VSP-D30L□-6T		4								
VSP-D30-10L□-4T		2.5	73.1		50		24.5	10	3.3 to 10.0	57
VSP-D30-10L□-6T		4								
VSP-D30-15L□-4T		2.5	83.1		55	25	29.5	15	3.3 to 10.4	64
VSP-D30-15L□-6T		4								
VSP-D30-20L□-4T		2.5	99.1		62	34	36.5	20	2.0 to 8.7	74
VSP-D30-20L□-6T		4								
VSP-D40L□-4T	40	2.5	67.1	15	44	20	18.5	6	7.0 to 12.6	61
VSP-D40L□-6T		4								
VSP-D40-10L□-4T		2.5	73.1		50		24.5	10	3.3 to 10.0	62
VSP-D40-10L□-6T		4								
VSP-D40-15L□-4T		2.5	83.1		55	25	29.5	15	3.3 to 10.4	69
VSP-D40-15L□-6T		4								
VSP-D40-20L□-4T		2.5	99.1		62	34	36.5	20	2.0 to 8.7	79
VSP-D40-20L□-6T		4								

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D4 to 15-□L□-4TC/6TC

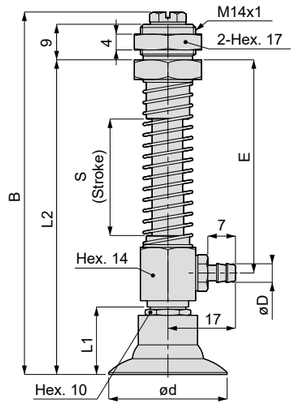


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D4-20L□-4TC	4	2.5	74.4	12.2	62.3	40.5	20	1.5 to 4.9	67
VSP-D4-20L□-6TC		4							
VSP-D4-30L□-4TC		2.5	87.4		75.3	53.5	30	1.1 to 4.8	74
VSP-D4-30L□-6TC		4							
VSP-D4-40L□-4TC		2.5	100.4		88.3	66.5	40	1.0 to 4.5	81
VSP-D4-40L□-6TC		4							
VSP-D4-50L□-4TC		2.5	113.4		101.3	79.5	50	0.9 to 4.5	87
VSP-D4-50L□-6TC		4							
VSP-D6-20L□-4TC	6	2.5	74.4	12.2	62.3	40.5	20	1.5 to 4.9	68
VSP-D6-20L□-6TC		4							
VSP-D6-30L□-4TC		2.5	87.4		75.3	53.5	30	1.1 to 4.8	75
VSP-D6-30L□-6TC		4							
VSP-D6-40L□-4TC		2.5	100.4		88.3	66.5	40	1.0 to 4.5	82
VSP-D6-40L□-6TC		4							
VSP-D6-50L□-4TC		2.5	113.4		101.3	79.5	50	0.9 to 4.5	88
VSP-D6-50L□-6TC		4							
VSP-D8-20L□-4TC	8	2.5	74.4	12.2	62.3	40.5	20	1.5 to 4.9	68
VSP-D8-20L□-6TC		4							
VSP-D8-30L□-4TC		2.5	87.4		75.3	53.5	30	1.1 to 4.8	75
VSP-D8-30L□-6TC		4							
VSP-D8-40L□-4TC		2.5	100.4		88.3	66.5	40	1.0 to 4.5	82
VSP-D8-40L□-6TC		4							
VSP-D8-50L□-4TC		2.5	113.4		101.3	79.5	50	0.9 to 4.5	88
VSP-D8-50L□-6TC		4							
VSP-D10-20L□-4TC	10	2.5	76.2	14	64.1	40.5	20	1.5 to 4.9	68
VSP-D10-20L□-6TC		4							
VSP-D10-30L□-4TC		2.5	89.4		77.1	53.5	30	1.1 to 4.8	75
VSP-D10-30L□-6TC		4							
VSP-D10-40L□-4TC		2.5	102.4		90.1	66.5	40	1.0 to 4.5	82
VSP-D10-40L□-6TC		4							
VSP-D10-50L□-4TC		2.5	115.4		103.1	79.5	50	0.9 to 4.5	88
VSP-D10-50L□-6TC		4							
VSP-D15-20L□-4TC	15	2.5	76.2	14	64.1	40.5	20	1.5 to 4.9	68
VSP-D15-20L□-6TC		4							
VSP-D15-30L□-4TC		2.5	89.4		77.1	53.5	30	1.1 to 4.8	75
VSP-D15-30L□-6TC		4							
VSP-D15-40L□-4TC		2.5	102.4		90.1	66.5	40	1.0 to 4.5	82
VSP-D15-40L□-6TC		4							
VSP-D15-50L□-4TC		2.5	115.4		103.1	79.5	50	0.9 to 4.5	88
VSP-D15-50L□-6TC		4							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D20 to 50-□L□-4TC/6TC

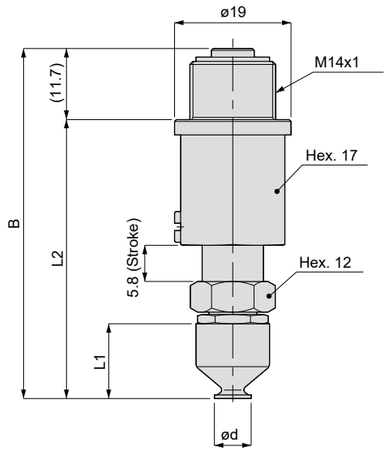


Unit: mm

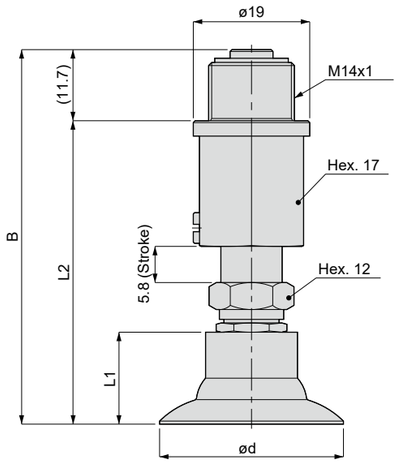
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D20-20L□-4TC	20	4	78.6	15	66.5	41	20	1.5 to 4.9	70
VSP-D20-20L□-6TC		6							
VSP-D20-30L□-4TC		4	91.6		79.5	54	30	1.1 to 4.8	77
VSP-D20-30L□-6TC		6							
VSP-D20-40L□-4TC		4	104.6		92.5	67	40	1.0 to 4.5	84
VSP-D20-40L□-6TC		6							
VSP-D20-50L□-4TC		4	117.6		105.5	80	50	0.9 to 4.5	90
VSP-D20-50L□-6TC		6							
VSP-D30-20L□-4TC	30	4	78.6	15	66.5	41	20	1.5 to 4.9	70
VSP-D30-20L□-6TC		6							
VSP-D30-30L□-4TC		4	91.6		79.5	54	30	1.1 to 4.8	77
VSP-D30-30L□-6TC		6							
VSP-D30-40L□-4TC		4	104.6		92.5	67	40	1.0 to 4.5	84
VSP-D30-40L□-6TC		6							
VSP-D30-50L□-4TC		4	117.6		105.5	80	50	0.9 to 4.5	90
VSP-D30-50L□-6TC		6							
VSP-D40-20L□-4TC	40	4	78.6	15	66.5	41	20	1.5 to 4.9	70
VSP-D40-20L□-6TC		6							
VSP-D40-30L□-4TC		4	91.6		79.5	54	30	1.1 to 4.8	77
VSP-D40-30L□-6TC		6							
VSP-D40-40L□-4TC		4	104.6		92.5	67	40	1.0 to 4.5	84
VSP-D40-40L□-6TC		6							
VSP-D40-50L□-4TC		4	117.6		105.5	80	50	0.9 to 4.5	90
VSP-D40-50L□-6TC		6							

External Dimension Diagram (Direct Mount, Buffer Type, VSP-F Male Thread Type)

●VSP-F4 to 15L□



●VSP-F20 to 40L□

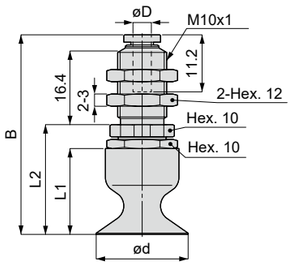


Unit: mm

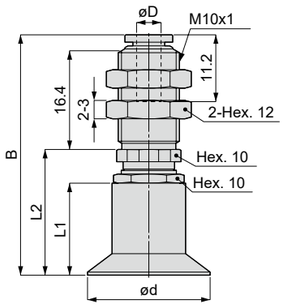
Model No.	Pad Diameter ød	B	L1	L2	Spring Force (N)	Weight (g)
VSP-F4L□	4	57.3	12.2	45.6	7.9 to 15	58
VSP-F6L□	6	57.3	12.2	45.6	7.9 to 15	58
VSP-F8L□	8	57.3	12.2	45.6	7.9 to 15	58
VSP-F10L□	10	59.1	14	47.4	7.9 to 15	59
VSP-F15L□	15	59.1	14	47.4	7.9 to 15	59
VSP-F20L□	20	61.2	15	49.5	7.9 to 15	63
VSP-F30L□	30	61.2	15	49.5	7.9 to 15	66
VSP-F40L□	40	61.2	15	49.5	7.9 to 15	72

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Push-in fitting)

●VSP-MA4 to 15L□-4



●VSP-MA20 to 40L□-4

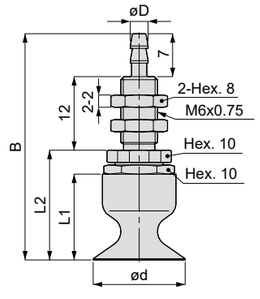


Unit: mm

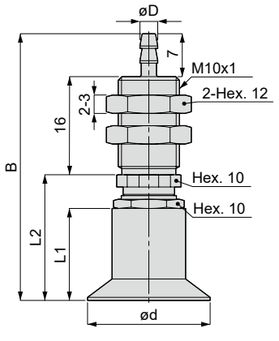
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Weight (g)
VSP-MA4L□-4	4	4	35.3	12.2	16.3	8.7
VSP-MA6L□-4	6	4	35.3	12.2	16.3	8.6
VSP-MA8L□-4	8	4	35.3	12.2	16.3	8.5
VSP-MA10L□-4	10	4	37.1	14	18.1	8.6
VSP-MA15L□-4	15	4	37.1	14	18.1	8.6
VSP-MA20L□-4	20	4	39.6	15	20.6	11
VSP-MA30L□-4	30	4	39.6	15	20.6	13
VSP-MA40L□-4	40	4	39.6	15	20.6	19

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Barb Fitting)

●VSP-MA4 to 15L□-4T



●VSP-MA20 to 40L□-4T/6T

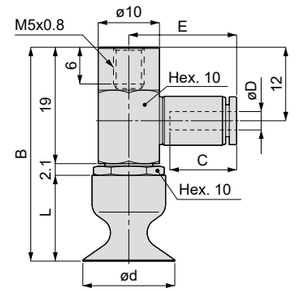


Unit: mm

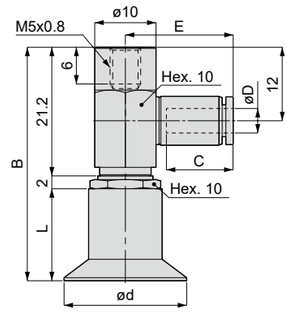
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Weight (g)
VSP-MA4L□-4T	4	2.5	35.3	12.2	16.3	5.9
VSP-MA6L□-4T	6	2.5	35.3	12.2	16.3	5.8
VSP-MA8L□-4T	8	2.5	35.3	12.2	16.3	5.7
VSP-MA10L□-4T	10	2.5	37.1	14	18.1	5.8
VSP-MA15L□-4T	15	2.5	37.1	14	18.1	5.8
VSP-MA20L□-4T	20	2.5	43.6	15	20.6	11
VSP-MA20L□-6T		4				
VSP-MA30L□-4T	30	2.5	43.6	15	20.6	13
VSP-MA30L□-6T		4				
VSP-MA40L□-4T	40	2.5	43.6	15	20.6	19
VSP-MA40L□-6T		4				

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Push-in fitting)

●VSP-MB4 to 15L□-2/4/6



●VSP-MB20 to 40L□-2/4/6

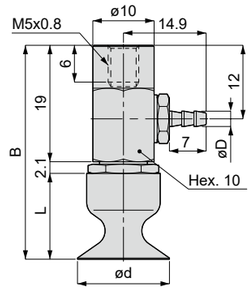


Unit: mm

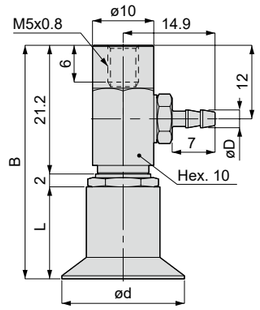
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-MB4L□-2	4	1.8	33.3	12.2	8.4	13.7	10
VSP-MB4L□-4		4			11.2	17.8	11
VSP-MB4L□-6		6			11.9	19.6	12
VSP-MB6L□-2	6	1.8	33.3	12.2	8.4	13.7	10
VSP-MB6L□-4		4			11.2	17.8	11
VSP-MB6L□-6		6			11.9	19.6	12
VSP-MB8L□-2	8	1.8	33.3	12.2	8.4	13.7	10
VSP-MB8L□-4		4			11.2	17.8	11
VSP-MB8L□-6		6			11.9	19.6	12
VSP-MB10L□-2	10	1.8	35.1	14	8.4	13.7	10
VSP-MB10L□-4		4			11.2	17.8	11
VSP-MB10L□-6		6			11.9	19.6	12
VSP-MB15L□-2	15	1.8	35.1	14	8.4	13.7	10
VSP-MB15L□-4		4			11.2	17.8	11
VSP-MB15L□-6		6			11.9	19.6	12
VSP-MB20L□-2	20	1.8	38.2	15	8.4	13.7	11
VSP-MB20L□-4		4			11.2	17.8	12
VSP-MB20L□-6		6			11.9	19.6	13
VSP-MB30L□-2	30	1.8	38.2	15	8.4	13.7	13
VSP-MB30L□-4		4			11.2	17.8	14
VSP-MB30L□-6		6			11.9	19.6	15
VSP-MB40L□-2	40	1.8	38.2	15	8.4	13.7	19
VSP-MB40L□-4		4			11.2	17.8	20
VSP-MB40L□-6		6			11.9	19.6	21

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Barb Fitting)

●VSP-MB4 to 15L□-4T/6T



●VSP-MB20 to 40L□-4T/6T

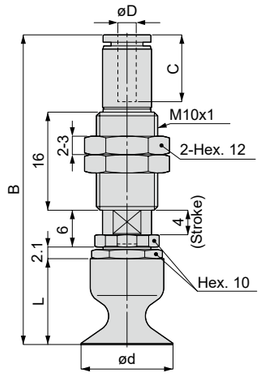


Unit: mm

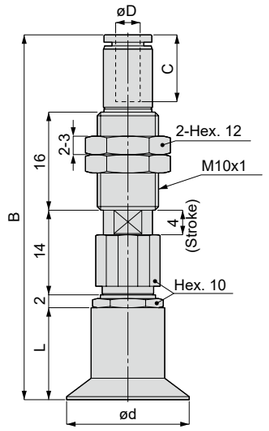
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-MB4L□-4T	4	2.5	33.3	12.2	9
VSP-MB4L□-6T		4			
VSP-MB6L□-4T	6	2.5	33.3	12.2	8.9
VSP-MB6L□-6T		4			
VSP-MB8L□-4T	8	2.5	33.3	12.2	8.8
VSP-MB8L□-6T		4			
VSP-MB10L□-4T	10	2.5	35.1	14	8.9
VSP-MB10L□-6T		4			
VSP-MB15L□-4T	15	2.5	35.1	14	8.9
VSP-MB15L□-6T		4			
VSP-MB20L□-4T	20	2.5	38.2	15	11
VSP-MB20L□-6T		4			
VSP-MB30L□-4T	30	2.5	38.2	15	13
VSP-MB30L□-6T		4			
VSP-MB40L□-4T	40	2.5	38.2	15	19
VSP-MB40L□-6T		4			

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Push-in fitting)

●VSP-MC4 to 15L□-2/4



●VSP-MC20 to 40L□-2/4

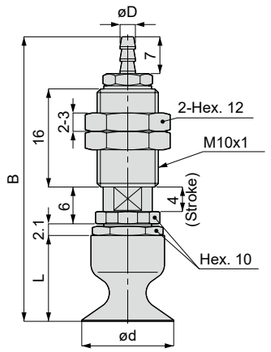


Unit: mm

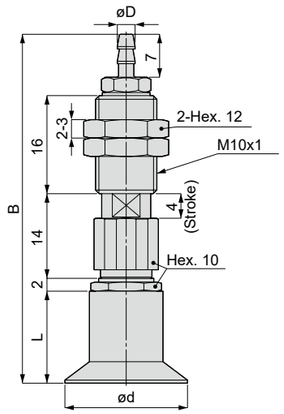
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	Spring Force (N)	Weight (g)
VSP-MC4L□-2	4	1.8	45.2	12.2	8.4	1 to 1.3	17
VSP-MC4L□-4		4	49.3		11.2		18
VSP-MC6L□-2	6	1.8	45.2	12.2	8.4	1 to 1.3	17
VSP-MC6L□-4		4	49.3		11.2		18
VSP-MC8L□-2	8	1.8	45.2	12.2	8.4	1 to 1.3	17
VSP-MC8L□-4		4	49.3		11.2		18
VSP-MC10L□-2	10	1.8	47	14	8.4	1 to 1.3	17
VSP-MC10L□-4		4	51.1		11.2		18
VSP-MC15L□-2	15	1.8	47	14	8.4	1 to 1.3	17
VSP-MC15L□-4		4	51.1		11.2		18
VSP-MC20L□-2	20	1.8	55.9	15	8.4	1 to 1.3	22
VSP-MC20L□-4		4	60		11.2		23
VSP-MC30L□-2	30	1.8	55.9	15	8.4	1 to 1.3	22
VSP-MC30L□-4		4	60		11.2		23
VSP-MC40L□-2	40	1.8	55.9	15	8.4	1 to 1.3	28
VSP-MC40L□-4		4	60		11.2		29

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Barb Fitting)

●VSP-MC4 to 15L□-4T/6T



●VSP-MC20 to 40L□-4T/6T

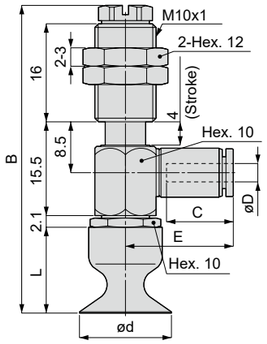


Unit: mm

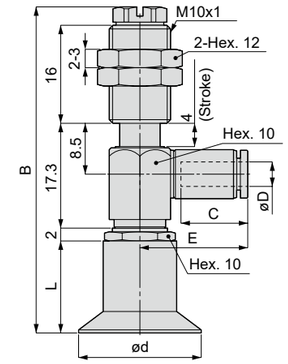
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MC4L□-4T	4	2.5	46.4	12.2	0.5 to 0.6	17
VSP-MC4L□-6T		4				
VSP-MC6L□-4T	6	2.5	46.4	12.2	0.5 to 0.6	17
VSP-MC6L□-6T		4				
VSP-MC8L□-4T	8	2.5	46.4	12.2	0.5 to 0.6	17
VSP-MC8L□-6T		4				
VSP-MC10L□-4T	10	2.5	48.2	14	0.5 to 0.6	17
VSP-MC10L□-6T		4				
VSP-MC15L□-4T	15	2.5	48.2	14	0.5 to 0.6	17
VSP-MC15L□-6T		4				
VSP-MC20L□-4T	20	2.5	57.1	15	1 to 1.3	22
VSP-MC20L□-6T		4				
VSP-MC30L□-4T	30	2.5	57.1	15	1 to 1.3	24
VSP-MC30L□-6T		4				
VSP-MC40L□-4T	40	2.5	57.1	15	1 to 1.3	30
VSP-MC40L□-6T		4				

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Push-in fitting)

●VSP-MD4 to 15L□-2/4/6



●VSP-MD20 to 40L□-2/4/6

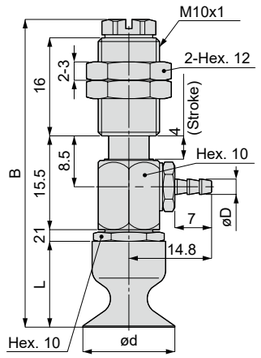


Unit: mm

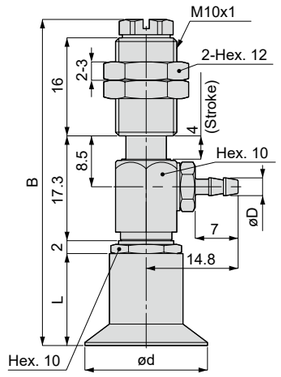
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Spring Force (N)	Weight (g)
VSP-MD4L□-2	4	1.8	48.8	12.2	8.4	13.6	1 to 1.3	25
VSP-MD4L□-4		4			11.2	17.7		26
VSP-MD4L□-6		6			11.9	19.5		27
VSP-MD6L□-2	6	1.8	48.8	12.2	8.4	13.6	1 to 1.3	25
VSP-MD6L□-4		4			11.2	17.7		26
VSP-MD6L□-6		6			11.9	19.5		27
VSP-MD8L□-2	8	1.8	48.8	12.2	8.4	13.6	1 to 1.3	25
VSP-MD8L□-4		4			11.2	17.7		26
VSP-MD8L□-6		6			11.9	19.5		27
VSP-MD10L□-2	10	1.8	50.6	14	8.4	13.6	1 to 1.3	25
VSP-MD10L□-4		4			11.2	17.7		26
VSP-MD10L□-6		6			11.9	19.5		27
VSP-MD15L□-2	15	1.8	50.6	14	8.4	13.6	1 to 1.3	25
VSP-MD15L□-4		4			11.2	17.7		26
VSP-MD15L□-6		6			11.9	19.5		27
VSP-MD20L□-2	20	1.8	53.3	15	8.4	13.6	1 to 1.3	26
VSP-MD20L□-4		4			11.2	17.7		27
VSP-MD20L□-6		6			11.9	19.5		28
VSP-MD30L□-2	30	1.8	53.3	15	8.4	13.6	1 to 1.3	27
VSP-MD30L□-4		4			11.2	17.7		28
VSP-MD30L□-6		6			11.9	19.5		29
VSP-MD40L□-2	40	1.8	53.3	15	8.4	13.6	1 to 1.3	33
VSP-MD40L□-4		4			11.2	17.7		34
VSP-MD40L□-6		6			11.9	19.5		35

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Barb Fitting)

●VSP-MD4 to 15L□-4T/6T



●VSP-MD20 to 40L□-4T/6T

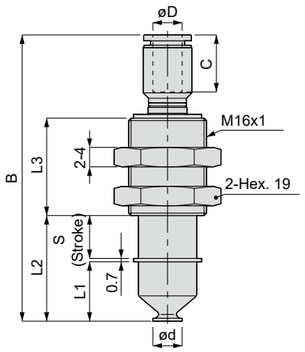


Unit: mm

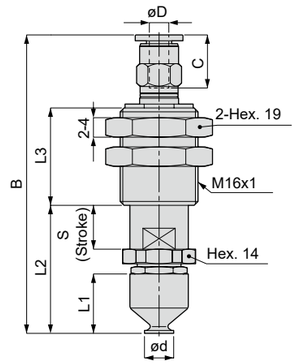
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MD4L□-4T	4	2.5	48.8	12.2	1 to 1.3	24
VSP-MD4L□-6T		4				
VSP-MD6L□-4T	6	2.5	48.8	12.2	1 to 1.3	24
VSP-MD6L□-6T		4				
VSP-MD8L□-4T	8	2.5	48.8	12.2	1 to 1.3	24
VSP-MD8L□-6T		4				
VSP-MD10L□-4T	10	2.5	50.6	14	1 to 1.3	24
VSP-MD10L□-6T		4				
VSP-MD15L□-4T	15	2.5	50.6	14	1 to 1.3	24
VSP-MD15L□-6T		4				
VSP-MD20L□-4T	20	2.5	53.3	15	1 to 1.3	26
VSP-MD20L□-6T		4				
VSP-MD30L□-4T	30	2.5	53.3	15	1 to 1.3	27
VSP-MD30L□-6T		4				
VSP-MD40L□-4T	40	2.5	53.3	15	1 to 1.3	33
VSP-MD40L□-6T		4				

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC4L□-2/4/6



●VSP-HC4-□L□-2/4/6

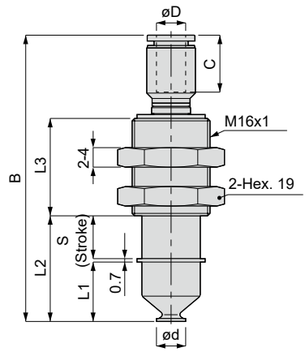


Unit: mm

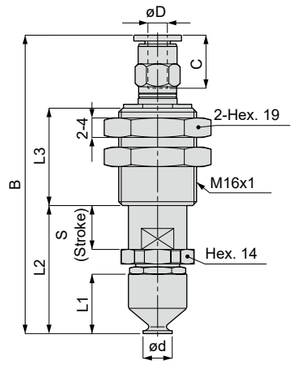
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC4L□-2	4	1.8	53.1	12.2	21.9	20	8.4	9	0.9 to 2.7	19
VSP-HC4L□-4		4	57.1				11.2			20
VSP-HC4L□-6		6	58.4				11.9			21
VSP-HC4-10L□-2		1.8	59.9		27.3	21.5	8.4	10	1.0 to 2.4	24
VSP-HC4-10L□-4		4	64				11.2			25
VSP-HC4-10L□-6		6	65.3				11.9			26
VSP-HC4-15L□-2		1.8	69.9		32.3	26.5	8.4	15	1.0 to 2.7	26
VSP-HC4-15L□-4		4	74				11.2			27
VSP-HC4-15L□-6		6	75.3				11.9			28
VSP-HC4-20L□-2		1.8	79.9		37.3	31.5	8.4	20	1.0 to 3.0	28
VSP-HC4-20L□-4		4	84				11.2			29
VSP-HC4-20L□-6		6	85.3				11.9			30
VSP-HC4-25L□-2		1.8	90.4		42.3	37	8.4	25	1.0 to 3.0	30
VSP-HC4-25L□-4		4	94.5				11.2			31
VSP-HC4-25L□-6		6	95.8				11.9			32
VSP-HC4-30L□-2		1.8	101.4		47.3	43	8.4	30	1.0 to 3.0	32
VSP-HC4-30L□-4		4	105.5				11.2			33
VSP-HC4-30L□-6		6	106.8				11.9			34
VSP-HC4-40L□-2		1.8	123.4		57.3	55	8.4	40	1.0 to 3.0	35
VSP-HC4-40L□-4		4	127.5				11.2			36
VSP-HC4-40L□-6		6	128.8				11.9			37
VSP-HC4-50L□-2		1.8	144.9		67.3	66.5	8.4	50	1.0 to 3.1	39
VSP-HC4-50L□-4		4	149				11.2			40
VSP-HC4-50L□-6		6	150.3				11.9			41

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC6, 8L□-2/4/6



●VSP-HC6, 8-□L□-2/4/6

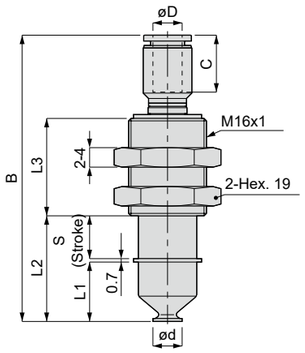


Unit: mm

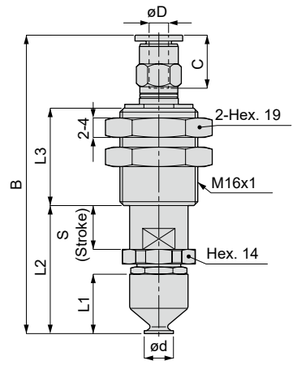
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC6L□-2	6	1.8	53.1	12.2	21.9	20	8.4	9	0.9 to 2.7	20
VSP-HC6L□-4		4	57.1				11.2			21
VSP-HC6L□-6		6	58.4				11.9			22
VSP-HC6-10L□-2		1.8	59.9		27.3	21.5	8.4	10	1.0 to 2.4	24
VSP-HC6-10L□-4		4	64				11.2			25
VSP-HC6-10L□-6		6	65.3				11.9			26
VSP-HC6-15L□-2		1.8	69.9		32.3	26.5	8.4	15	1.0 to 2.7	26
VSP-HC6-15L□-4		4	74				11.2			27
VSP-HC6-15L□-6		6	75.3				11.9			28
VSP-HC6-20L□-2		1.8	79.9		37.3	31.5	8.4	20	1.0 to 3.0	28
VSP-HC6-20L□-4		4	84				11.2			29
VSP-HC6-20L□-6		6	85.3				11.9			30
VSP-HC6-25L□-2		1.8	90.4		42.3	37	8.4	25	1.0 to 3.0	30
VSP-HC6-25L□-4		4	94.5				11.2			31
VSP-HC6-25L□-6		6	95.8				11.9			32
VSP-HC6-30L□-2		1.8	101.4		47.3	43	8.4	30	1.0 to 3.0	32
VSP-HC6-30L□-4		4	105.5				11.2			33
VSP-HC6-30L□-6		6	106.8				11.9			34
VSP-HC6-40L□-2		1.8	123.4		57.3	55	8.4	40	1.0 to 3.0	35
VSP-HC6-40L□-4		4	127.5				11.2			36
VSP-HC6-40L□-6		6	128.8				11.9			37
VSP-HC6-50L□-2		1.8	144.9		67.3	66.5	8.4	50	1.0 to 3.1	39
VSP-HC6-50L□-4		4	149				11.2			40
VSP-HC6-50L□-6		6	150.3				11.9			41
VSP-HC8L□-2	8	1.8	53.1	12.2	21.9	20	8.4	9	0.9 to 2.7	20
VSP-HC8L□-4		4	57.1				11.2			21
VSP-HC8L□-6		6	58.4				11.9			22
VSP-HC8-10L□-2		1.8	59.9		27.3	21.5	8.4	10	1.0 to 2.4	24
VSP-HC8-10L□-4		4	64				11.2			25
VSP-HC8-10L□-6		6	65.3				11.9			26
VSP-HC8-15L□-2		1.8	69.9		32.3	26.5	8.4	15	1.0 to 2.7	26
VSP-HC8-15L□-4		4	74				11.2			27
VSP-HC8-15L□-6		6	75.3				11.9			28
VSP-HC8-20L□-2		1.8	79.9		37.3	31.5	8.4	20	1.0 to 3.0	28
VSP-HC8-20L□-4		4	84				11.2			29
VSP-HC8-20L□-6		6	85.3				11.9			30
VSP-HC8-25L□-2		1.8	90.4		42.3	37	8.4	25	1.0 to 3.0	30
VSP-HC8-25L□-4		4	94.5				11.2			31
VSP-HC8-25L□-6		6	95.8				11.9			32
VSP-HC8-30L□-2		1.8	101.4		47.3	43	8.4	30	1.0 to 3.0	32
VSP-HC8-30L□-4		4	105.5				11.2			33
VSP-HC8-30L□-6		6	106.8				11.9			34
VSP-HC8-40L□-2		1.8	123.4		57.3	55	8.4	40	1.0 to 3.0	35
VSP-HC8-40L□-4		4	127.5				11.2			36
VSP-HC8-40L□-6		6	128.8				11.9			37
VSP-HC8-50L□-2		1.8	144.9		67.3	66.5	8.4	50	1.0 to 3.1	39
VSP-HC8-50L□-4		4	149				11.2			40
VSP-HC8-50L□-6		6	150.3				11.9			41

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC10, 15L□-2/4/6



●VSP-HC10, 15-□L□-2/4/6

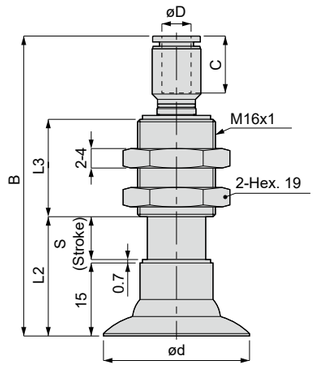


Unit: mm

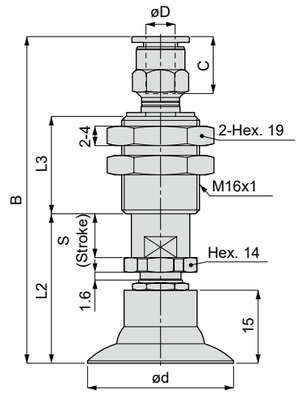
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10L□-2	10	1.8	54.9	14	23.7	20	8.4	9	0.9 to 2.7	20
VSP-HC10L□-4		4	58.9				11.2			21
VSP-HC10L□-6		6	60.2				11.9			22
VSP-HC10-10L□-2		1.8	61.7		29.1	21.5	8.4	10	1.0 to 2.4	24
VSP-HC10-10L□-4		4	65.8				11.2			25
VSP-HC10-10L□-6		6	67.1				11.9			26
VSP-HC10-15L□-2		1.8	71.7		34.1	26.5	8.4	15	1.0 to 2.7	26
VSP-HC10-15L□-4		4	75.8				11.2			27
VSP-HC10-15L□-6		6	77.1				11.9			28
VSP-HC10-20L□-2		1.8	81.7		39.1	31.5	8.4	20	1.0 to 3.0	28
VSP-HC10-20L□-4		4	85.8				11.2			29
VSP-HC10-20L□-6		6	87.1				11.9			30
VSP-HC10-25L□-2		1.8	92.2		44.1	37	8.4	25	1.0 to 3.0	30
VSP-HC10-25L□-4		4	96.3				11.2			31
VSP-HC10-25L□-6		6	97.6				11.9			32
VSP-HC10-30L□-2		1.8	103.2		49.1	43	8.4	30	1.0 to 3.0	32
VSP-HC10-30L□-4		4	107.3				11.2			33
VSP-HC10-30L□-6		6	108.6				11.9			34
VSP-HC10-40L□-2		1.8	125.2		59.1	55	8.4	40	1.0 to 3.0	35
VSP-HC10-40L□-4		4	129.3				11.2			36
VSP-HC10-40L□-6		6	130.6				11.9			37
VSP-HC10-50L□-2		1.8	146.7		69.1	66.5	8.4	50	1.0 to 3.1	39
VSP-HC10-50L□-4		4	150.8				11.2			40
VSP-HC10-50L□-6		6	152.1				11.9			41
VSP-HC15L□-2	15	1.8	54.9	14	23.7	20	8.4	9	0.9 to 2.7	20
VSP-HC15L□-4		4	58.9				11.2			21
VSP-HC15L□-6		6	60.2				11.9			22
VSP-HC15-10L□-2		1.8	61.7		29.1	21.5	8.4	10	1.0 to 2.4	24
VSP-HC15-10L□-4		4	65.8				11.2			25
VSP-HC15-10L□-6		6	67.1				11.9			26
VSP-HC15-15L□-2		1.8	71.7		34.1	26.5	8.4	15	1.0 to 2.7	26
VSP-HC15-15L□-4		4	75.8				11.2			27
VSP-HC15-15L□-6		6	77.1				11.9			28
VSP-HC15-20L□-2		1.8	81.7		39.1	31.5	8.4	20	1.0 to 3.0	28
VSP-HC15-20L□-4		4	85.8				11.2			29
VSP-HC15-20L□-6		6	87.1				11.9			30
VSP-HC15-25L□-2		1.8	92.2		44.1	37	8.4	25	1.0 to 3.0	30
VSP-HC15-25L□-4		4	96.3				11.2			31
VSP-HC15-25L□-6		6	97.6				11.9			32
VSP-HC15-30L□-2		1.8	103.2		49.1	43	8.4	30	1.0 to 3.0	32
VSP-HC15-30L□-4		4	107.3				11.2			33
VSP-HC15-30L□-6		6	108.6				11.9			34
VSP-HC15-40L□-2		1.8	125.2		59.1	55	8.4	40	1.0 to 3.0	35
VSP-HC15-40L□-4		4	129.3				11.2			36
VSP-HC15-40L□-6		6	130.6				11.9			37
VSP-HC15-50L□-2		1.8	146.7		69.1	66.5	8.4	50	1.0 to 3.1	39
VSP-HC15-50L□-4		4	150.8				11.2			40
VSP-HC15-50L□-6		6	152.1				11.9			41

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC20, 30L□-2/4/6



●VSP-HC20, 30-□L□-2/4/6

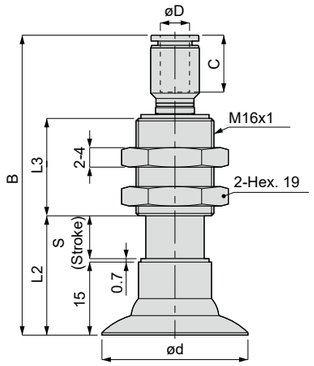


Unit: mm

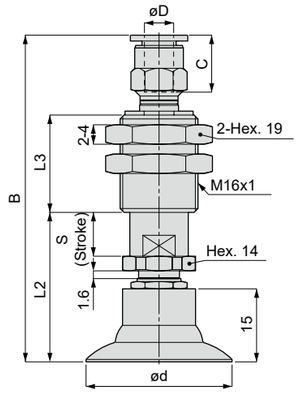
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20L□-2	20	1.8	55.9	15	24.7	20	8.4	9	0.9 to 2.7	21
VSP-HC20L□-4		4	59.9				11.2			22
VSP-HC20L□-6		6	61.2				11.9			23
VSP-HC20-10L□-2		1.8	64.2		30	21.5	8.4	10	1.0 to 2.4	27
VSP-HC20-10L□-4		4	68.3				11.2			28
VSP-HC20-10L□-6		6	69.6				11.9			29
VSP-HC20-15L□-2		1.8	74.2		35	26.5	8.4	15	1.0 to 2.7	29
VSP-HC20-15L□-4		4	78.3				11.2			30
VSP-HC20-15L□-6		6	79.6				11.9			31
VSP-HC20-20L□-2		1.8	84.2		40	31.5	8.4	20	1.0 to 3.0	31
VSP-HC20-20L□-4		4	88.3				11.2			32
VSP-HC20-20L□-6		6	89.6				11.9			33
VSP-HC20-25L□-2		1.8	94.7		45	37	8.4	25	1.0 to 3.0	33
VSP-HC20-25L□-4		4	98.8				11.2			34
VSP-HC20-25L□-6		6	100.1				11.9			35
VSP-HC20-30L□-2		1.8	105.7		50	43	8.4	30	1.0 to 3.0	35
VSP-HC20-30L□-4		4	109.8				11.2			36
VSP-HC20-30L□-6		6	111.1				11.9			37
VSP-HC20-40L□-2		1.8	127.7		60	55	8.4	40	1.0 to 3.0	39
VSP-HC20-40L□-4		4	131.8				11.2			40
VSP-HC20-40L□-6		6	133.1				11.9			41
VSP-HC20-50L□-2		1.8	149.2		70	66.5	8.4	50	1.0 to 3.1	43
VSP-HC20-50L□-4		4	153.3				11.2			44
VSP-HC20-50L□-6		6	154.6				11.9			45
VSP-HC30L□-2	30	1.8	55.9	15	24.7	20	8.4	9	0.9 to 2.7	22
VSP-HC30L□-4		4	59.9				11.2			23
VSP-HC30L□-6		6	61.2				11.9			24
VSP-HC30-10L□-2		1.8	64.2		30	21.5	8.4	10	1.0 to 2.4	29
VSP-HC30-10L□-4		4	68.3				11.2			30
VSP-HC30-10L□-6		6	69.6				11.9			31
VSP-HC30-15L□-2		1.8	74.2		35	26.5	8.4	15	1.0 to 2.7	31
VSP-HC30-15L□-4		4	78.3				11.2			32
VSP-HC30-15L□-6		6	79.6				11.9			33
VSP-HC30-20L□-2		1.8	84.2		40	31.5	8.4	20	1.0 to 3.0	33
VSP-HC30-20L□-4		4	88.3				11.2			34
VSP-HC30-20L□-6		6	89.6				11.9			35
VSP-HC30-25L□-2		1.8	94.7		45	37	8.4	25	1.0 to 3.0	35
VSP-HC30-25L□-4		4	98.8				11.2			36
VSP-HC30-25L□-6		6	100.1				11.9			37
VSP-HC30-30L□-2		1.8	105.7		50	43	8.4	30	1.0 to 3.0	37
VSP-HC30-30L□-4		4	109.8				11.2			38
VSP-HC30-30L□-6		6	111.1				11.9			39
VSP-HC30-40L□-2		1.8	127.7		60	55	8.4	40	1.0 to 3.0	41
VSP-HC30-40L□-4		4	131.8				11.2			42
VSP-HC30-40L□-6		6	133.1				11.9			43
VSP-HC30-50L□-2		1.8	149.2		70	66.5	8.4	50	1.0 to 3.1	45
VSP-HC30-50L□-4		4	153.3				11.2			46
VSP-HC30-50L□-6		6	154.6				11.9			47

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC40L□-2/4/6



●VSP-HC40-□L□-2/4/6

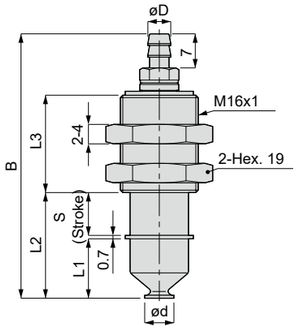


Unit: mm

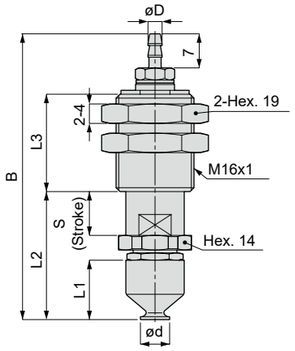
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC40L□-2	40	1.8	55.9	15	24.7	20	8.4	9	0.9 to 2.7	26
VSP-HC40L□-4		4	59.9				11.2			27
VSP-HC40L□-6		6	61.2				11.9			28
VSP-HC40-10L□-2		1.8	64.2		30	21.5	8.4	10	1.0 to 2.4	33
VSP-HC40-10L□-4		4	68.3				11.2			34
VSP-HC40-10L□-6		6	69.6				11.9			35
VSP-HC40-15L□-2		1.8	74.2		35	26.5	8.4	15	1.0 to 2.7	35
VSP-HC40-15L□-4		4	78.3				11.2			36
VSP-HC40-15L□-6		6	79.6				11.9			37
VSP-HC40-20L□-2		1.8	84.2		40	31.5	8.4	20	1.0 to 3.0	37
VSP-HC40-20L□-4		4	88.3				11.2			38
VSP-HC40-20L□-6		6	89.6				11.9			39
VSP-HC40-25L□-2		1.8	94.7		45	37	8.4	25	1.0 to 3.0	39
VSP-HC40-25L□-4		4	98.8				11.2			40
VSP-HC40-25L□-6		6	100.1				11.9			41
VSP-HC40-30L□-2		1.8	105.7		50	43	8.4	30	1.0 to 3.0	41
VSP-HC40-30L□-4		4	109.8				11.2			42
VSP-HC40-30L□-6		6	111.1				11.9			43
VSP-HC40-40L□-2		1.8	127.7		60	55	8.4	40	1.0 to 3.0	45
VSP-HC40-40L□-4		4	131.8				11.2			46
VSP-HC40-40L□-6		6	133.1				11.9			47
VSP-HC40-50L□-2		1.8	149.2		70	66.5	8.4	50	1.0 to 3.1	49
VSP-HC40-50L□-4		4	153.3				11.2			50
VSP-HC40-50L□-6		6	154.6				11.9			51

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC4 to 8L□-4T/6T



●VSP-HC4 to 8-□L□-4T/6T

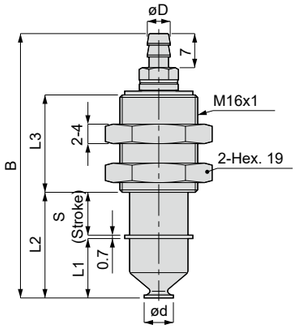


Unit: mm

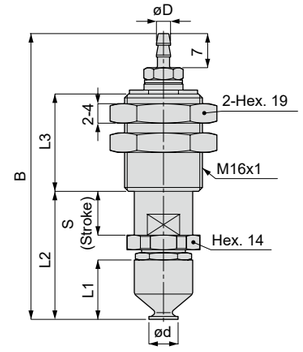
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC4L□-4T	4	2.5	54.3	12.2	21.9	20	9	0.9 to 2.7	18
VSP-HC4L□-6T		4							
VSP-HC4-10L□-4T		2.5	61.1		27.3	21.5	10	1.0 to 2.4	23
VSP-HC4-10L□-6T		4							
VSP-HC4-15L□-4T		2.5	71.1		32.3	26.5	15	1.0 to 2.7	25
VSP-HC4-15L□-6T		4							
VSP-HC4-20L□-4T		2.5	81.1		37.3	31.5	20	1.0 to 3.0	27
VSP-HC4-20L□-6T		4							
VSP-HC4-25L□-4T		2.5	91.6		42.3	37	25	1.0 to 3.0	30
VSP-HC4-25L□-6T		4							
VSP-HC4-30L□-4T		2.5	102.6		47.3	43	30	1.0 to 3.0	32
VSP-HC4-30L□-6T		4							
VSP-HC4-40L□-4T		2.5	124.6		57.3	55	40	1.0 to 3.0	36
VSP-HC4-40L□-6T		4							
VSP-HC4-50L□-4T		2.5	146.1		67.3	66.5	50	1.0 to 3.1	40
VSP-HC4-50L□-6T		4							
VSP-HC6L□-4T	6	2.5	54.3	12.2	21.9	20	9	0.9 to 2.7	20
VSP-HC6L□-6T		4							
VSP-HC6-10L□-4T		2.5	61.1		27.3	21.5	10	1.0 to 2.4	24
VSP-HC6-10L□-6T		4							
VSP-HC6-15L□-4T		2.5	71.1		32.3	26.5	15	1.0 to 2.7	26
VSP-HC6-15L□-6T		4							
VSP-HC6-20L□-4T		2.5	81.1		37.3	31.5	20	1.0 to 3.0	28
VSP-HC6-20L□-6T		4							
VSP-HC6-25L□-4T		2.5	91.6		42.3	37	25	1.0 to 3.0	31
VSP-HC6-25L□-6T		4							
VSP-HC6-30L□-4T		2.5	102.6		47.3	43	30	1.0 to 3.0	33
VSP-HC6-30L□-6T		4							
VSP-HC6-40L□-4T		2.5	124.6		57.3	55	40	1.0 to 3.0	37
VSP-HC6-40L□-6T		4							
VSP-HC6-50L□-4T		2.5	146.1		67.3	66.5	50	1.0 to 3.1	41
VSP-HC6-50L□-6T		4							
VSP-HC8L□-4T	8	2.5	54.3	12.2	21.9	20	9	0.9 to 2.7	20
VSP-HC8L□-6T		4							
VSP-HC8-10L□-4T		2.5	61.1		27.3	21.5	10	1.0 to 2.4	24
VSP-HC8-10L□-6T		4							
VSP-HC8-15L□-4T		2.5	71.1		32.3	26.5	15	1.0 to 2.7	26
VSP-HC8-15L□-6T		4							
VSP-HC8-20L□-4T		2.5	81.1		37.3	31.5	20	1.0 to 3.0	28
VSP-HC8-20L□-6T		4							
VSP-HC8-25L□-4T		2.5	91.6		42.3	37	25	1.0 to 3.0	31
VSP-HC8-25L□-6T		4							
VSP-HC8-30L□-4T		2.5	102.6		47.3	43	30	1.0 to 3.0	33
VSP-HC8-30L□-6T		4							
VSP-HC8-40L□-4T		2.5	124.6		57.3	55	40	1.0 to 3.0	37
VSP-HC8-40L□-6T		4							
VSP-HC8-50L□-4T		2.5	146.1		67.3	66.5	50	1.0 to 3.1	41
VSP-HC8-50L□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC10, 15L□-4T/6T



●VSP-HC10, 15-□L□-4T/6T

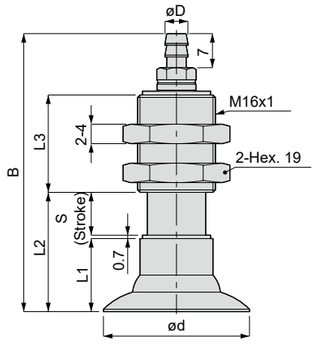


Unit: mm

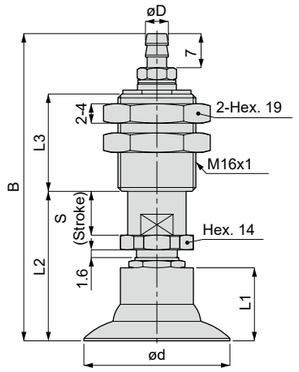
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10L□-4T	10	2.5	56.1	14	23.7	20	9	0.9 to 2.7	20
VSP-HC10L□-6T		4							
VSP-HC10-10L□-4T		2.5	62.9		29.1	21.5	10	1.0 to 2.4	24
VSP-HC10-10L□-6T		4							
VSP-HC10-15L□-4T		2.5	72.9		34.1	26.5	15	1.0 to 2.7	26
VSP-HC10-15L□-6T		4							
VSP-HC10-20L□-4T		2.5	82.9		39.1	31.5	20	1.0 to 3.0	28
VSP-HC10-20L□-6T		4							
VSP-HC10-25L□-4T		2.5	93.4		44.1	37	25	1.0 to 3.0	31
VSP-HC10-25L□-6T		4							
VSP-HC10-30L□-4T		2.5	104.4		49.1	43	30	1.0 to 3.0	33
VSP-HC10-30L□-6T		4							
VSP-HC10-40L□-4T		2.5	126.4		59.1	55	40	1.0 to 3.0	37
VSP-HC10-40L□-6T		4							
VSP-HC10-50L□-4T		2.5	147.9		69.1	66.5	50	1.0 to 3.1	41
VSP-HC10-50L□-6T		4							
VSP-HC15L□-4T	15	2.5	56.1	14	23.7	20	9	0.9 to 2.7	20
VSP-HC15L□-6T		4							
VSP-HC15-10L□-4T		2.5	62.9		29.1	21.5	10	1.0 to 2.4	24
VSP-HC15-10L□-6T		4							
VSP-HC15-15L□-4T		2.5	72.9		34.1	26.5	15	1.0 to 2.7	26
VSP-HC15-15L□-6T		4							
VSP-HC15-20L□-4T		2.5	82.9		39.1	31.5	20	1.0 to 3.0	28
VSP-HC15-20L□-6T		4							
VSP-HC15-25L□-4T		2.5	93.4		44.1	37	25	1.0 to 3.0	31
VSP-HC15-25L□-6T		4							
VSP-HC15-30L□-4T		2.5	104.4		49.1	43	30	1.0 to 3.0	33
VSP-HC15-30L□-6T		4							
VSP-HC15-40L□-4T		2.5	126.4		59.1	55	40	1.0 to 3.0	37
VSP-HC15-40L□-6T		4							
VSP-HC15-50L□-4T		2.5	147.9		69.1	66.5	50	1.0 to 3.1	41
VSP-HC15-50L□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC20 to 40L□-4T/6T



●VSP-HC20 to 40-□L□-4T/6T

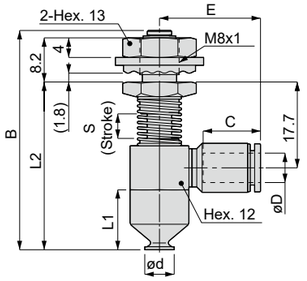


Unit: mm

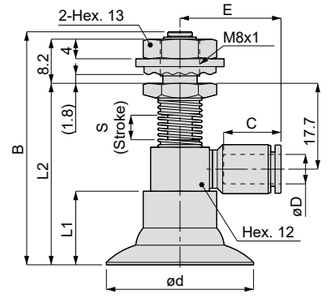
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20L□-4T	20	2.5	57.1	15	24.7	20	9	0.9 to 2.7	21
VSP-HC20L□-6T		4							
VSP-HC20-10L□-4T		2.5	65.4		30	21.5	10	1.0 to 2.4	26
VSP-HC20-10L□-6T		4							
VSP-HC20-15L□-4T		2.5	75.4		35	26.5	15	1.0 to 2.7	28
VSP-HC20-15L□-6T		4							
VSP-HC20-20L□-4T		2.5	85.4		40	31.5	20	1.0 to 3.0	30
VSP-HC20-20L□-6T		4							
VSP-HC20-25L□-4T		2.5	95.9		45	37	25	1.0 to 3.0	32
VSP-HC20-25L□-6T		4							
VSP-HC20-30L□-4T		2.5	106.9		50	43	30	1.0 to 3.0	35
VSP-HC20-30L□-6T		4							
VSP-HC20-40L□-4T		2.5	128.9		60	55	40	1.0 to 3.0	39
VSP-HC20-40L□-6T		4							
VSP-HC20-50L□-4T		2.5	150.4		70	66.5	50	1.0 to 3.1	43
VSP-HC20-50L□-6T		4							
VSP-HC30L□-4T	30	2.5	57.1	15	24.7	20	9	0.9 to 2.7	23
VSP-HC30L□-6T		4							
VSP-HC30-10L□-4T		2.5	65.4		30	21.5	10	1.0 to 2.4	28
VSP-HC30-10L□-6T		4							
VSP-HC30-15L□-4T		2.5	75.4		35	26.5	15	1.0 to 2.7	30
VSP-HC30-15L□-6T		4							
VSP-HC30-20L□-4T		2.5	85.4		40	31.5	20	1.0 to 3.0	32
VSP-HC30-20L□-6T		4							
VSP-HC30-25L□-4T		2.5	95.9		45	37	25	1.0 to 3.0	34
VSP-HC30-25L□-6T		4							
VSP-HC30-30L□-4T		2.5	106.9		50	43	30	1.0 to 3.0	37
VSP-HC30-30L□-6T		4							
VSP-HC30-40L□-4T		2.5	128.9		60	55	40	1.0 to 3.0	41
VSP-HC30-40L□-6T		4							
VSP-HC30-50L□-4T		2.5	150.4		70	66.5	50	1.0 to 3.1	45
VSP-HC30-50L□-6T		4							
VSP-HC40L□-4T	40	2.5	57.1	15	24.7	20	9	0.9 to 2.7	27
VSP-HC40L□-6T		4							
VSP-HC40-10L□-4T		2.5	65.4		30	21.5	10	1.0 to 2.4	32
VSP-HC40-10L□-6T		4							
VSP-HC40-15L□-4T		2.5	75.4		35	26.5	15	1.0 to 2.7	34
VSP-HC40-15L□-6T		4							
VSP-HC40-20L□-4T		2.5	85.4		40	31.5	20	1.0 to 3.0	36
VSP-HC40-20L□-6T		4							
VSP-HC40-25L□-4T		2.5	95.9		45	37	25	1.0 to 3.0	38
VSP-HC40-25L□-6T		4							
VSP-HC40-30L□-4T		2.5	106.9		50	43	30	1.0 to 3.0	41
VSP-HC40-30L□-6T		4							
VSP-HC40-40L□-4T		2.5	128.9		60	55	40	1.0 to 3.0	45
VSP-HC40-40L□-6T		4							
VSP-HC40-50L□-4T		2.5	150.4		70	66.5	50	1.0 to 3.1	49
VSP-HC40-50L□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side, VSP-HD, Push-in fitting)

●VSP-HD4 to 15L□-2/4/6



●VSP-HD20 to 40L□-2/4/6

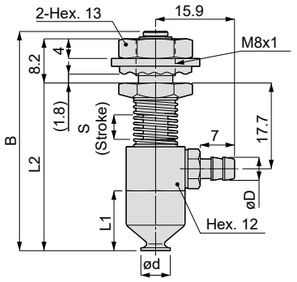


Unit: mm

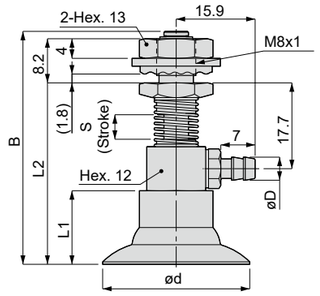
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HD4L□-2	4	1.8	44.7	12.2	34.4	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HD4L□-4		4				11.2	18.8			30
VSP-HD4L□-6		6				11.9	20.6			31
VSP-HD6L□-2	6	1.8	44.7	12.2	34.4	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HD6L□-4		4				11.2	18.8			30
VSP-HD6L□-6		6				11.9	20.6			31
VSP-HD8L□-2	8	1.8	44.7	12.2	34.4	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HD8L□-4		4				11.2	18.8			30
VSP-HD8L□-6		6				11.9	20.6			31
VSP-HD10L□-2	10	1.8	46.5	14	36.2	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HD10L□-4		4				11.2	18.8			30
VSP-HD10L□-6		6				11.9	20.6			31
VSP-HD15L□-2	15	1.8	46.5	14	36.2	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HD15L□-4		4				11.2	18.8			30
VSP-HD15L□-6		6				11.9	20.6			31
VSP-HD20L□-2	20	1.8	47.5	15	37.2	8.4	14.7	5.2	1.6 to 2.9	31
VSP-HD20L□-4		4				11.2	18.8			32
VSP-HD20L□-6		6				11.9	20.6			33
VSP-HD30L□-2	30	1.8	47.5	15	37.2	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HD30L□-4		4				11.2	18.8			34
VSP-HD30L□-6		6				11.9	20.6			35
VSP-HD40L□-2	40	1.8	47.5	15	37.2	8.4	14.7	5.2	1.6 to 2.9	37
VSP-HD40L□-4		4				11.2	18.8			38
VSP-HD40L□-6		6				11.9	20.6			39

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side, VSP-HD, Barb Fitting)

●VSP-HD4 to 15L□-4T/6T



●VSP-HD20 to 40L□-4T/6T

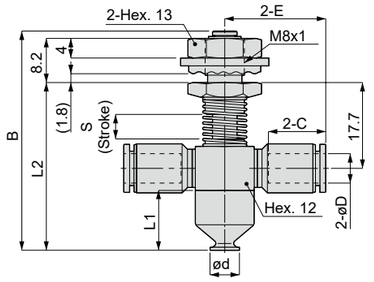


Unit: mm

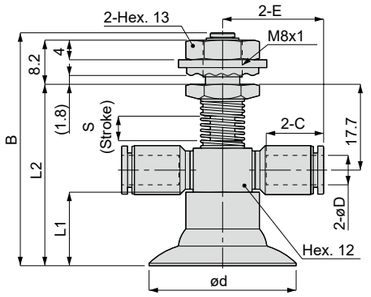
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HD4L□-4T	4	2.5	44.7	12.2	34.4	5.2	1.6 to 2.9	27
VSP-HD4L□-6T		4						
VSP-HD6L□-4T	6	2.5	44.7	12.2	34.4	5.2	1.6 to 2.9	30
VSP-HD6L□-6T		4						
VSP-HD8L□-4T	8	2.5	44.7	12.2	34.4	5.2	1.6 to 2.9	30
VSP-HD8L□-6T		4						
VSP-HD10L□-4T	10	2.5	46.5	14	36.2	5.2	1.6 to 2.9	30
VSP-HD10L□-6T		4						
VSP-HD15L□-4T	15	2.5	46.5	14	36.2	5.2	1.6 to 2.9	30
VSP-HD15L□-6T		4						
VSP-HD20L□-4T	20	2.5	47.5	15	37.2	5.2	1.6 to 2.9	32
VSP-HD20L□-6T		4						
VSP-HD30L□-4T	30	2.5	47.5	15	37.2	5.2	1.6 to 2.9	33
VSP-HD30L□-6T		4						
VSP-HD40L□-4T	40	2.5	47.5	15	37.2	5.2	1.6 to 2.9	37
VSP-HD40L□-6T		4						

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides, VSP-HDW, Push-in fitting)

●VSP-HDW4 to 15L□-2/4/6



●VSP-HDW20 to 40L□-2/4/6

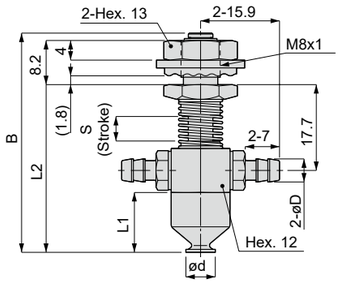


Unit: mm

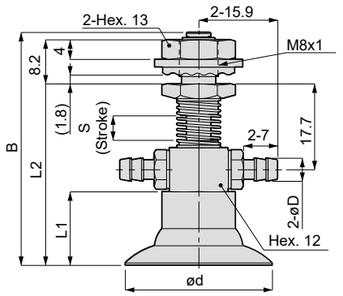
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW4L□-2	4	1.8	44.7	12.2	34.4	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HDW4L□-4		4				11.2	18.8			30
VSP-HDW4L□-6		6				11.9	20.6			31
VSP-HDW6L□-2	6	1.8	44.7	12.2	34.4	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HDW6L□-4		4				11.2	18.8			30
VSP-HDW6L□-6		6				11.9	20.6			31
VSP-HDW8L□-2	8	1.8	44.7	12.2	34.4	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HDW8L□-4		4				11.2	18.8			30
VSP-HDW8L□-6		6				11.9	20.6			31
VSP-HDW10L□-2	10	1.8	46.5	14	36.2	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HDW10L□-4		4				11.2	18.8			30
VSP-HDW10L□-6		6				11.9	20.6			31
VSP-HDW15L□-2	15	1.8	46.5	14	36.2	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HDW15L□-4		4				11.2	18.8			30
VSP-HDW15L□-6		6				11.9	20.6			31
VSP-HDW20L□-2	20	1.8	47.5	15	37.2	8.4	14.7	5.2	1.6 to 2.9	31
VSP-HDW20L□-4		4				11.2	18.8			32
VSP-HDW20L□-6		6				11.9	20.6			33
VSP-HDW30L□-2	30	1.8	47.5	15	37.2	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HDW30L□-4		4				11.2	18.8			34
VSP-HDW30L□-6		6				11.9	20.6			35
VSP-HDW40L□-2	40	1.8	47.5	15	37.2	8.4	14.7	5.2	1.6 to 2.9	37
VSP-HDW40L□-4		4				11.2	18.8			38
VSP-HDW40L□-6		6				11.9	20.6			39

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides, VSP-HDW, Barb Fitting)

●VSP-HDW4 to 15L□-4T/6T



●VSP-HDW20 to 40L□-4T/6T

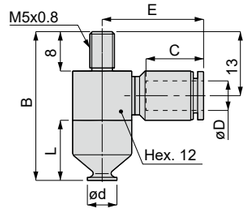


Unit: mm

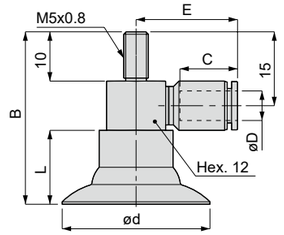
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW4L□-4T	4	2.5	44.7	12.2	34.4	5.2	1.6 to 2.9	27
VSP-HDW4L□-6T		4						
VSP-HDW6L□-4T	6	2.5	44.7	12.2	34.4	5.2	1.6 to 2.9	30
VSP-HDW6L□-6T		4						
VSP-HDW8L□-4T	8	2.5	44.7	12.2	34.4	5.2	1.6 to 2.9	30
VSP-HDW8L□-6T		4						
VSP-HDW10L□-4T	10	2.5	46.5	14	36.2	5.2	1.6 to 2.9	30
VSP-HDW10L□-6T		4						
VSP-HDW15L□-4T	15	2.5	46.5	14	36.2	5.2	1.6 to 2.9	30
VSP-HDW15L□-6T		4						
VSP-HDW20L□-4T	20	2.5	47.5	15	37.2	5.2	1.6 to 2.9	32
VSP-HDW20L□-6T		4						
VSP-HDW30L□-4T	30	2.5	47.5	15	37.2	5.2	1.6 to 2.9	33
VSP-HDW30L□-6T		4						
VSP-HDW40L□-4T	40	2.5	47.5	15	37.2	5.2	1.6 to 2.9	37
VSP-HDW40L□-6T		4						

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side, VSP-HE, Push-in fitting)

●VSP-HE4 to 15L□-2/4/6



●VSP-HE20 to 40L□-2/4/6

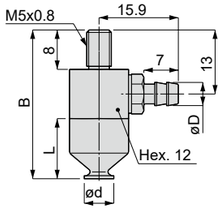


Unit: mm

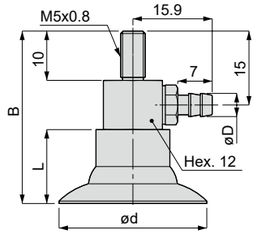
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HE4L□-2	4	1.8	30.2	12.2	8.4	14.7	14
VSP-HE4L□-4		4			11.2	18.8	15
VSP-HE4L□-6		6			11.9	20.6	16
VSP-HE6L□-2	6	1.8	30.2	12.2	8.4	14.7	15
VSP-HE6L□-4		4			11.2	18.8	16
VSP-HE6L□-6		6			11.9	20.6	17
VSP-HE8L□-2	8	1.8	30.2	12.2	8.4	14.7	15
VSP-HE8L□-4		4			11.2	18.8	16
VSP-HE8L□-6		6			11.9	20.6	17
VSP-HE10L□-2	10	1.8	32	12.2	8.4	14.7	14
VSP-HE10L□-4		4			11.2	18.8	15
VSP-HE10L□-6		6			11.9	20.6	17
VSP-HE15L□-2	15	1.8	32	14	8.4	14.7	14
VSP-HE15L□-4		4			11.2	18.8	15
VSP-HE15L□-6		6			11.9	20.6	17
VSP-HE20L□-2	20	1.8	35	14	8.4	14.7	17
VSP-HE20L□-4		4			11.2	18.8	18
VSP-HE20L□-6		6			11.9	20.6	19
VSP-HE30L□-2	30	1.8	35	15	8.4	14.7	19
VSP-HE30L□-4		4			11.2	18.8	20
VSP-HE30L□-6		6			11.9	20.6	21
VSP-HE40L□-2	40	1.8	35	15	8.4	14.7	23
VSP-HE40L□-4		4			11.2	18.8	24
VSP-HE40L□-6		6			11.9	20.6	25

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side, VSP-HE, Barb Fitting)

●VSP-HE4 to 15L□-4T/6T



●VSP-HE20 to 40L□-4T/6T

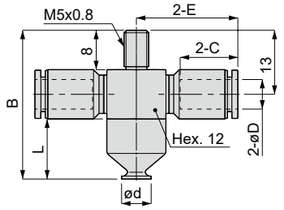


Unit: mm

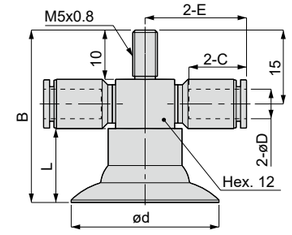
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HE4L□-4T	4	2.5	30.2	12.2	13
VSP-HE4L□-6T		4			
VSP-HE6L□-4T	6	2.5	30.2	12.2	15
VSP-HE6L□-6T		4			
VSP-HE8L□-4T	8	2.5	30.2	12.2	15
VSP-HE8L□-6T		4			
VSP-HE10L□-4T	10	2.5	32	14	15
VSP-HE10L□-6T		4			
VSP-HE15L□-4T	15	2.5	32	14	15
VSP-HE15L□-6T		4			
VSP-HE20L□-4T	20	2.5	35	15	18
VSP-HE20L□-6T		4			
VSP-HE30L□-4T	30	2.5	35	15	19
VSP-HE30L□-6T		4			
VSP-HE40L□-4T	40	2.5	35	15	23
VSP-HE40L□-6T		4			

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Push-in fitting)

●VSP-HEW4 to 15L□-2/4/6



●VSP-HEW20 to 40L□-2/4/6

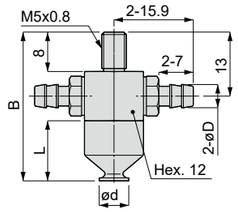


Unit: mm

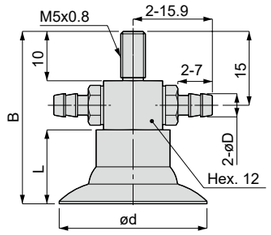
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HEW4L□-2	4	1.8	30.2	12.2	8.4	14.7	14
VSP-HEW4L□-4		4			11.2	18.8	15
VSP-HEW4L□-6		6			11.9	20.6	16
VSP-HEW6L□-2	6	1.8	30.2	12.2	8.4	14.7	15
VSP-HEW6L□-4		4			11.2	18.8	16
VSP-HEW6L□-6		6			11.9	20.6	17
VSP-HEW8L□-2	8	1.8	30.2	12.2	8.4	14.7	15
VSP-HEW8L□-4		4			11.2	18.8	16
VSP-HEW8L□-6		6			11.9	20.6	17
VSP-HEW10L□-2	10	1.8	32	12.2	8.4	14.7	15
VSP-HEW10L□-4		4			11.2	18.8	16
VSP-HEW10L□-6		6			11.9	20.6	17
VSP-HEW15L□-2	15	1.8	32	14	8.4	14.7	15
VSP-HEW15L□-4		4			11.2	18.8	16
VSP-HEW15L□-6		6			11.9	20.6	17
VSP-HEW20L□-2	20	1.8	35	14	8.4	14.7	17
VSP-HEW20L□-4		4			11.2	18.8	18
VSP-HEW20L□-6		6			11.9	20.6	19
VSP-HEW30L□-2	30	1.8	35	15	8.4	14.7	19
VSP-HEW30L□-4		4			11.2	18.8	20
VSP-HEW30L□-6		6			11.9	20.6	21
VSP-HEW40L□-2	40	1.8	35	15	8.4	14.7	23
VSP-HEW40L□-4		4			11.2	18.8	24
VSP-HEW40L□-6		6			11.9	20.6	25

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Barb Fitting)

●VSP-HEW4 to 15L□-4T/6T



●VSP-HEW20 to 40L□-4T/6T

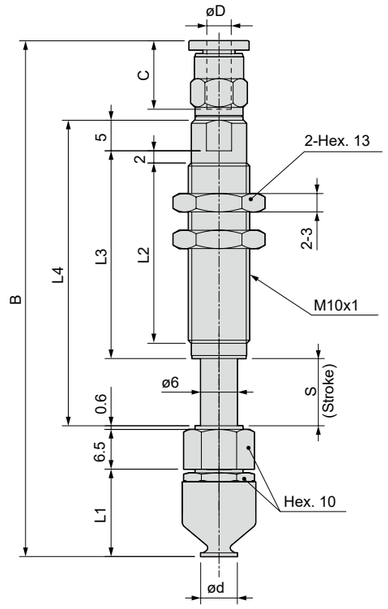


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HEW4L□-4T	4	2.5	30.2	12.2	13
VSP-HEW4L□-6T		4			
VSP-HEW6L□-4T	6	2.5	30.2	12.2	15
VSP-HEW6L□-6T		4			
VSP-HEW8L□-4T	8	2.5	30.2	12.2	15
VSP-HEW8L□-6T		4			
VSP-HEW10L□-4T	10	2.5	32	14	15
VSP-HEW10L□-6T		4			
VSP-HEW15L□-4T	15	2.5	32	14	15
VSP-HEW15L□-6T		4			
VSP-HEW20L□-4T	20	2.5	35	15	18
VSP-HEW20L□-6T		4			
VSP-HEW30L□-4T	30	2.5	35	15	19
VSP-HEW30L□-6T		4			
VSP-HEW40L□-4T	40	2.5	35	15	23
VSP-HEW40L□-6T		4			

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC4 to 15-□L□-4



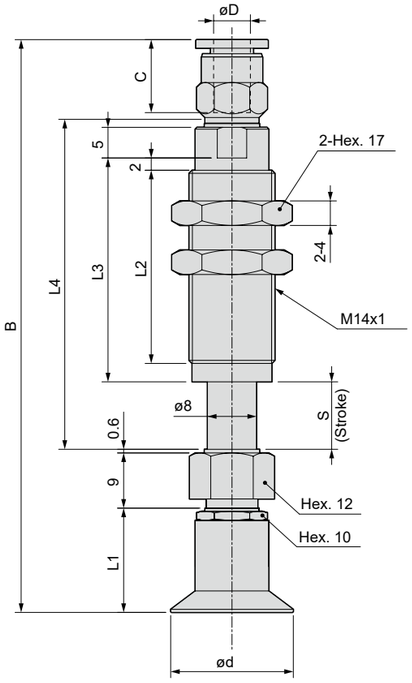
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC4-2L□-4	4	4	68.4	12.2	21.5	26	34	11.2	2	1.3 to 1.8	30
VSP-LFC4-5L□-4			74.4		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	32
VSP-LFC4-10L□-4			84.4		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	34
VSP-LFC4-15L□-4			94.4		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	36
VSP-LFC4-20L□-4			104.4		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	38
VSP-LFC6-2L□-4	6	4	68.4	12.2	21.5	26	34	11.2	2	1.3 to 1.8	30
VSP-LFC6-5L□-4			74.4		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	32
VSP-LFC6-10L□-4			84.4		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	34
VSP-LFC6-15L□-4			94.4		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	36
VSP-LFC6-20L□-4			104.4		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	38
VSP-LFC8-2L□-4	8	4	68.4	12.2	21.5	26	34	11.2	2	1.3 to 1.8	30
VSP-LFC8-5L□-4			74.4		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	32
VSP-LFC8-10L□-4			84.4		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	34
VSP-LFC8-15L□-4			94.4		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	36
VSP-LFC8-20L□-4			104.4		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	38
VSP-LFC10-2L□-4	10	4	70.2	14	21.5	26	34	11.2	2	1.3 to 1.8	30
VSP-LFC10-5L□-4			76.2		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	32
VSP-LFC10-10L□-4			86.2		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	34
VSP-LFC10-15L□-4			96.2		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	36
VSP-LFC10-20L□-4			106.2		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	38
VSP-LFC15-2L□-4	15	4	70.2	14	21.5	26	34	11.2	2	1.3 to 1.8	30
VSP-LFC15-5L□-4			76.2		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	32
VSP-LFC15-10L□-4			86.2		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	34
VSP-LFC15-15L□-4			96.2		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	36
VSP-LFC15-20L□-4			106.2		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	38

* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC20 to 40-□L□-4/6



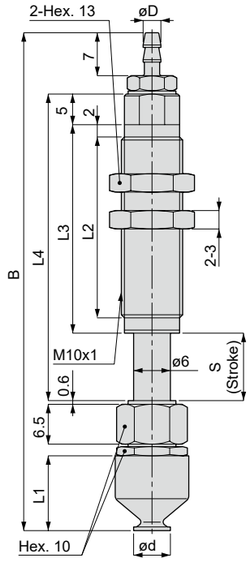
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC20-5L□-4	20	4	82.1	15	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	57
VSP-LFC20-5L□-6		6	83.4					11.9			58
VSP-LFC20-10L□-4		4	92.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	59
VSP-LFC20-10L□-6		6	93.4					11.9			60
VSP-LFC20-15L□-4		4	102.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	62
VSP-LFC20-15L□-6		6	103.4					11.9			63
VSP-LFC20-20L□-4		4	112.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	65
VSP-LFC20-20L□-6		6	113.4					11.9			66
VSP-LFC30-5L□-4	30	4	82.1	15	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	59
VSP-LFC30-5L□-6		6	83.4					11.9			60
VSP-LFC30-10L□-4		4	92.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	61
VSP-LFC30-10L□-6		6	93.4					11.9			62
VSP-LFC30-15L□-4		4	102.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	64
VSP-LFC30-15L□-6		6	103.4					11.9			65
VSP-LFC30-20L□-4		4	112.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	67
VSP-LFC30-20L□-6		6	113.4					11.9			68
VSP-LFC40-5L□-4	40	4	82.1	15	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	64
VSP-LFC40-5L□-6		6	83.4					11.9			65
VSP-LFC40-10L□-4		4	92.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	66
VSP-LFC40-10L□-6		6	93.4					11.9			67
VSP-LFC40-15L□-4		4	102.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	69
VSP-LFC40-15L□-6		6	103.4					11.9			70
VSP-LFC40-20L□-4		4	112.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	72
VSP-LFC40-20L□-6		6	113.4					11.9			73

* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC4 to 8-□L□-4T/6T



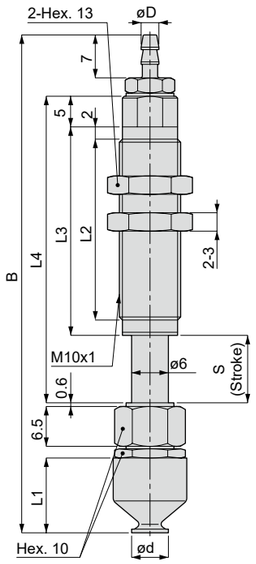
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC4-2L□-4T	4	2.5	65.5	12.2	21.5	26	34	2	1.3 to 1.8	28
VSP-LFC4-2L□-6T		4								
VSP-LFC4-5L□-4T		2.5	71.5		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	30
VSP-LFC4-5L□-6T		4								
VSP-LFC4-10L□-4T		2.5	81.5		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	32
VSP-LFC4-10L□-6T		4								
VSP-LFC4-15L□-4T		2.5	91.5		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	34
VSP-LFC4-15L□-6T		4								
VSP-LFC4-20L□-4T		2.5	101.5		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	36
VSP-LFC4-20L□-6T		4								
VSP-LFC6-2L□-4T	6	2.5	65.5	12.2	21.5	26	34	2	1.3 to 1.8	28
VSP-LFC6-2L□-6T		4								
VSP-LFC6-5L□-4T		2.5	71.5		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	30
VSP-LFC6-5L□-6T		4								
VSP-LFC6-10L□-4T		2.5	81.5		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	32
VSP-LFC6-10L□-6T		4								
VSP-LFC6-15L□-4T		2.5	91.5		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	34
VSP-LFC6-15L□-6T		4								
VSP-LFC6-20L□-4T		2.5	101.5		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	36
VSP-LFC6-20L□-6T		4								
VSP-LFC8-2L□-4T	8	2.5	65.5	12.2	21.5	26	34	2	1.3 to 1.8	28
VSP-LFC8-2L□-6T		4								
VSP-LFC8-5L□-4T		2.5	71.5		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	30
VSP-LFC8-5L□-6T		4								
VSP-LFC8-10L□-4T		2.5	81.5		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	32
VSP-LFC8-10L□-6T		4								
VSP-LFC8-15L□-4T		2.5	91.5		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	34
VSP-LFC8-15L□-6T		4								
VSP-LFC8-20L□-4T		2.5	101.5		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	36
VSP-LFC8-20L□-6T		4								

* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC10, 15-□L□-4T/6T



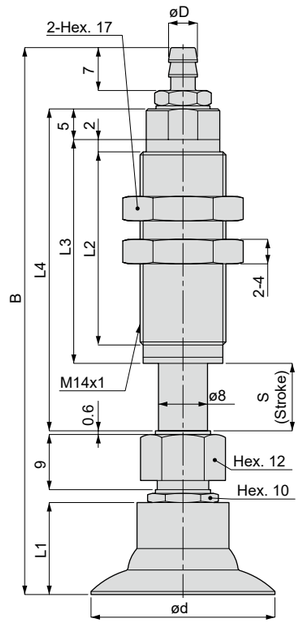
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC10-2L□-4T	10	2.5	67.3	14	21.5	26	34	2	1.3 to 1.8	28
VSP-LFC10-2L□-6T		4								
VSP-LFC10-5L□-4T		2.5	73.3		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	30
VSP-LFC10-5L□-6T		4								
VSP-LFC10-10L□-4T		2.5	83.3		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	32
VSP-LFC10-10L□-6T		4								
VSP-LFC10-15L□-4T		2.5	93.3		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	34
VSP-LFC10-15L□-6T		4								
VSP-LFC10-20L□-4T		2.5	103.3		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	36
VSP-LFC10-20L□-6T		4								
VSP-LFC15-2L□-4T	15	2.5	67.3	14	21.5	26	34	2	1.3 to 1.8	28
VSP-LFC15-2L□-6T		4								
VSP-LFC15-5L□-4T		2.5	73.3		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	30
VSP-LFC15-5L□-6T		4								
VSP-LFC15-10L□-4T		2.5	83.3		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	32
VSP-LFC15-10L□-6T		4								
VSP-LFC15-15L□-4T		2.5	93.3		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	34
VSP-LFC15-15L□-6T		4								
VSP-LFC15-20L□-4T		2.5	103.3		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	36
VSP-LFC15-20L□-6T		4								

* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC20 to 40-□L□-4T/6T



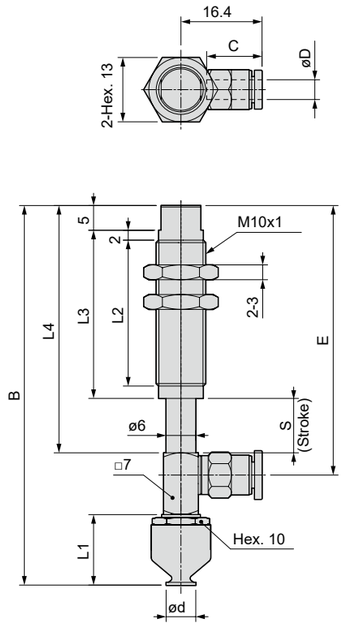
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC20-5L□-4T	20	2.5	79.2	15	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	52
VSP-LFC20-5L□-6T		4								
VSP-LFC20-10L□-4T		2.5	89.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	54
VSP-LFC20-10L□-6T		4								
VSP-LFC20-15L□-4T		2.5	99.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	57
VSP-LFC20-15L□-6T		4								
VSP-LFC20-20L□-4T		2.5	109.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	60
VSP-LFC20-20L□-6T		4								
VSP-LFC30-5L□-4T	30	2.5	79.2	15	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	54
VSP-LFC30-5L□-6T		4								
VSP-LFC30-10L□-4T		2.5	89.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	56
VSP-LFC30-10L□-6T		4								
VSP-LFC30-15L□-4T		2.5	99.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	59
VSP-LFC30-15L□-6T		4								
VSP-LFC30-20L□-4T		2.5	109.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	62
VSP-LFC30-20L□-6T		4								
VSP-LFC40-5L□-4T	40	2.5	79.2	15	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	59
VSP-LFC40-5L□-6T		4								
VSP-LFC40-10L□-4T		2.5	89.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	61
VSP-LFC40-10L□-6T		4								
VSP-LFC40-15L□-4T		2.5	99.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	64
VSP-LFC40-15L□-6T		4								
VSP-LFC40-20L□-4T		2.5	109.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	67
VSP-LFC40-20L□-6T		4								

* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Push-in fitting)

●VSP-LFD4 to 15-□L□-4

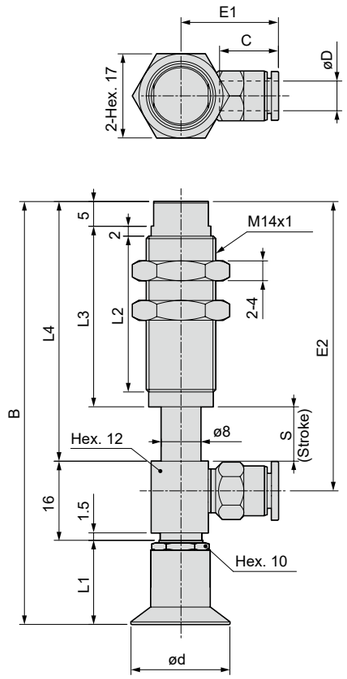


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD4-5L□-4	4	4	66.8	12.2	24.5	29	40	11.2	44.5	5	1.3 to 2.4	28
VSP-LFD4-10L□-4			76.8		29.5	34	50		54.5	10	1.3 to 3.3	30
VSP-LFD4-15L□-4			86.8		34.5	39	60		64.5	15	1.3 to 4.2	32
VSP-LFD4-20L□-4			96.8		39.5	44	70		74.5	20	1.3 to 5.1	34
VSP-LFD6-5L□-4	6	4	66.8	12.2	24.5	29	40	11.2	44.5	5	1.3 to 2.4	28
VSP-LFD6-10L□-4			76.8		29.5	34	50		54.5	10	1.3 to 3.3	30
VSP-LFD6-15L□-4			86.8		34.5	39	60		64.5	15	1.3 to 4.2	32
VSP-LFD6-20L□-4			96.8		39.5	44	70		74.5	20	1.3 to 5.1	34
VSP-LFD8-5L□-4	8	4	66.8	12.2	24.5	29	40	11.2	44.5	5	1.3 to 2.4	28
VSP-LFD8-10L□-4			76.8		29.5	34	50		54.5	10	1.3 to 3.3	30
VSP-LFD8-15L□-4			86.8		34.5	39	60		64.5	15	1.3 to 4.2	32
VSP-LFD8-20L□-4			96.8		39.5	44	70		74.5	20	1.3 to 5.1	34
VSP-LFD10-5L□-4	10	4	68.6	14	24.5	29	40	11.2	44.5	5	1.3 to 2.4	28
VSP-LFD10-10L□-4			78.6		29.5	34	50		54.5	10	1.3 to 3.3	30
VSP-LFD10-15L□-4			88.6		34.5	39	60		64.5	15	1.3 to 4.2	32
VSP-LFD10-20L□-4			98.6		39.5	44	70		74.5	20	1.3 to 5.1	34
VSP-LFD15-5L□-4	15	4	68.6	14	24.5	29	40	11.2	44.5	5	1.3 to 2.4	28
VSP-LFD15-10L□-4			78.6		29.5	34	50		54.5	10	1.3 to 3.3	30
VSP-LFD15-15L□-4			88.6		34.5	39	60		64.5	15	1.3 to 4.2	32
VSP-LFD15-20L□-4			98.6		39.5	44	70		74.5	20	1.3 to 5.1	34

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Push-in fitting)

●VSP-LFD20 to 40-□L□-4/6

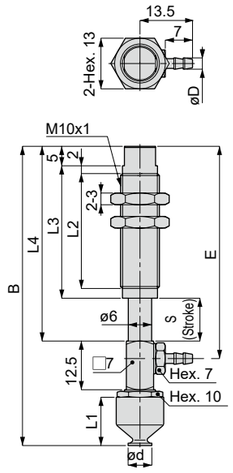


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD20-5L□-4	20	4	75.5	15	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	58
VSP-LFD20-5L□-6		6						11.9	19.7				59
VSP-LFD20-10L□-4		4	85.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	62
VSP-LFD20-10L□-6		6						11.9	19.7				63
VSP-LFD20-15L□-4		4	95.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	66
VSP-LFD20-15L□-6		6						11.9	19.7				67
VSP-LFD20-20L□-4		4	105.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	70
VSP-LFD20-20L□-6		6						11.9	19.7				71
VSP-LFD30-5L□-4	30	4	75.5	15	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	60
VSP-LFD30-5L□-6		6						11.9	19.7				61
VSP-LFD30-10L□-4		4	85.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	64
VSP-LFD30-10L□-6		6						11.9	19.7				65
VSP-LFD30-15L□-4		4	95.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	68
VSP-LFD30-15L□-6		6						11.9	19.7				69
VSP-LFD30-20L□-4		4	105.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	72
VSP-LFD30-20L□-6		6						11.9	19.7				73
VSP-LFD40-5L□-4	40	4	75.5	15	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	65
VSP-LFD40-5L□-6		6						11.9	19.7				66
VSP-LFD40-10L□-4		4	85.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	69
VSP-LFD40-10L□-6		6						11.9	19.7				70
VSP-LFD40-15L□-4		4	95.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	73
VSP-LFD40-15L□-6		6						11.9	19.7				74
VSP-LFD40-20L□-4		4	105.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	77
VSP-LFD40-20L□-6		6						11.9	19.7				78

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Barb Fitting)

●VSP-LFD4 to 15-□L□-4T/6T

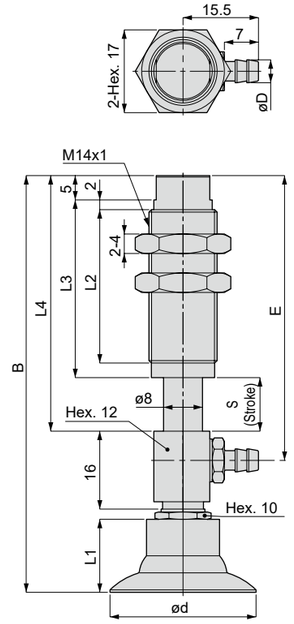


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD4-5L□-4T	4	2.5	66.8	12.2	24.5	29	40	44.5	5	1.3 to 2.4	27
VSP-LFD4-5L□-6T		4									
VSP-LFD4-10L□-4T		2.5	76.8		29.5	34	50	54.5	10	1.3 to 3.3	29
VSP-LFD4-10L□-6T		4									
VSP-LFD4-15L□-4T		2.5	86.8		34.5	39	60	64.5	15	1.3 to 4.2	31
VSP-LFD4-15L□-6T		4									
VSP-LFD4-20L□-4T		2.5	96.8		39.5	44	70	74.5	20	1.3 to 5.1	33
VSP-LFD4-20L□-6T		4									
VSP-LFD6-5L□-4T	6	2.5	66.8	12.2	24.5	29	40	44.5	5	1.3 to 2.4	27
VSP-LFD6-5L□-6T		4									
VSP-LFD6-10L□-4T		2.5	76.8		29.5	34	50	54.5	10	1.3 to 3.3	29
VSP-LFD6-10L□-6T		4									
VSP-LFD6-15L□-4T		2.5	86.8		34.5	39	60	64.5	15	1.3 to 4.2	31
VSP-LFD6-15L□-6T		4									
VSP-LFD6-20L□-4T		2.5	96.8		39.5	44	70	74.5	20	1.3 to 5.1	33
VSP-LFD6-20L□-6T		4									
VSP-LFD8-5L□-4T	8	2.5	66.8	12.2	24.5	29	40	44.5	5	1.3 to 2.4	27
VSP-LFD8-5L□-6T		4									
VSP-LFD8-10L□-4T		2.5	76.8		29.5	34	50	54.5	10	1.3 to 3.3	29
VSP-LFD8-10L□-6T		4									
VSP-LFD8-15L□-4T		2.5	86.8		34.5	39	60	64.5	15	1.3 to 4.2	31
VSP-LFD8-15L□-6T		4									
VSP-LFD8-20L□-4T		2.5	96.8		39.5	44	70	74.5	20	1.3 to 5.1	33
VSP-LFD8-20L□-6T		4									
VSP-LFD10-5L□-4T	10	2.5	68.6	14	24.5	29	40	44.5	5	1.3 to 2.4	27
VSP-LFD10-5L□-6T		4									
VSP-LFD10-10L□-4T		2.5	78.6		29.5	34	50	54.5	10	1.3 to 3.3	29
VSP-LFD10-10L□-6T		4									
VSP-LFD10-15L□-4T		2.5	88.6		34.5	39	60	64.5	15	1.3 to 4.2	31
VSP-LFD10-15L□-6T		4									
VSP-LFD10-20L□-4T		2.5	98.6		39.5	44	70	74.5	20	1.3 to 5.1	33
VSP-LFD10-20L□-6T		4									
VSP-LFD15-5L□-4T	15	2.5	68.6	14	24.5	29	40	44.5	5	1.3 to 2.4	27
VSP-LFD15-5L□-6T		4									
VSP-LFD15-10L□-4T		2.5	78.6		29.5	34	50	54.5	10	1.3 to 3.3	29
VSP-LFD15-10L□-6T		4									
VSP-LFD15-15L□-4T		2.5	88.6		34.5	39	60	64.5	15	1.3 to 4.2	31
VSP-LFD15-15L□-6T		4									
VSP-LFD15-20L□-4T		2.5	98.6		39.5	44	70	74.5	20	1.3 to 5.1	33
VSP-LFD15-20L□-6T		4									

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Barb Fitting)

●VSP-LFD20 to 40-□L□-4T/6T

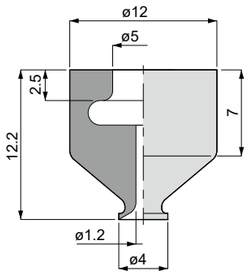


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD20-5L□-4T	20	2.5	75.5	15	26.5	31.5	42.5	48.5	5	4.5 to 6.5	54
VSP-LFD20-5L□-6T		4									
VSP-LFD20-10L□-4T		2.5	85.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	57
VSP-LFD20-10L□-6T		4									
VSP-LFD20-15L□-4T		2.5	95.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	61
VSP-LFD20-15L□-6T		4									
VSP-LFD20-20L□-4T		2.5	105.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	65
VSP-LFD20-20L□-6T		4									
VSP-LFD30-5L□-4T	30	2.5	75.5	15	26.5	31.5	42.5	48.5	5	4.5 to 6.5	56
VSP-LFD30-5L□-6T		4									
VSP-LFD30-10L□-4T		2.5	85.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	59
VSP-LFD30-10L□-6T		4									
VSP-LFD30-15L□-4T		2.5	95.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	63
VSP-LFD30-15L□-6T		4									
VSP-LFD30-20L□-4T		2.5	105.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	67
VSP-LFD30-20L□-6T		4									
VSP-LFD40-5L□-4T	40	2.5	75.5	15	26.5	31.5	42.5	48.5	5	4.5 to 6.5	61
VSP-LFD40-5L□-6T		4									
VSP-LFD40-10L□-4T		2.5	85.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	64
VSP-LFD40-10L□-6T		4									
VSP-LFD40-15L□-4T		2.5	95.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	68
VSP-LFD40-15L□-6T		4									
VSP-LFD40-20L□-4T		2.5	105.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	72
VSP-LFD40-20L□-6T		4									

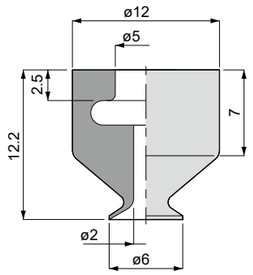
Pad Rubber Only External Dimension Diagram

●VSPG-4L□



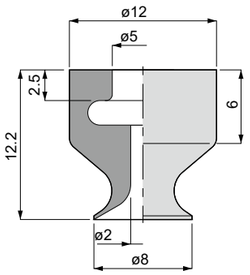
Weight: 1.2 g

●VSPG-6L□



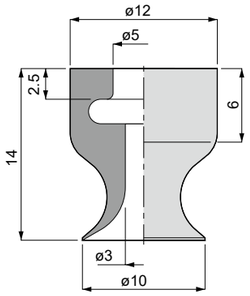
Weight: 1.2 g

●VSPG-8L□



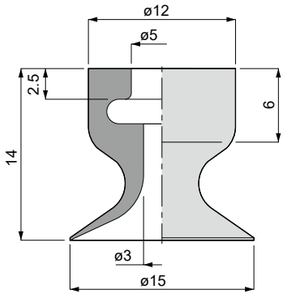
Weight: 1.1 g

●VSPG-10L□



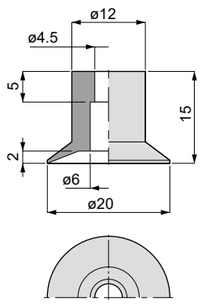
Weight: 1.2 g

●VSPG-15L□



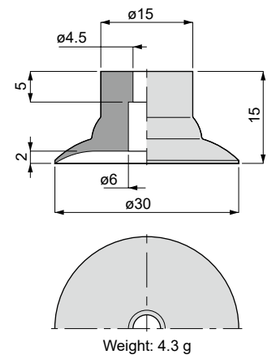
Weight: 1.2 g

●VSPG-20L□



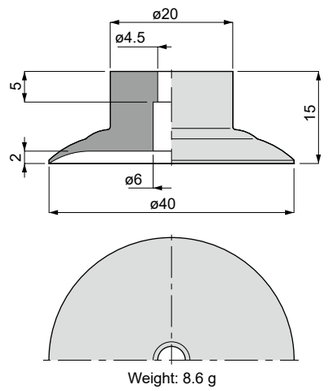
Weight: 2 g

●VSPG-30L□



Weight: 4.3 g

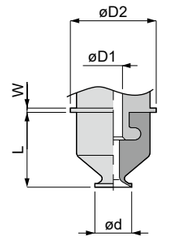
●VSPG-40L□



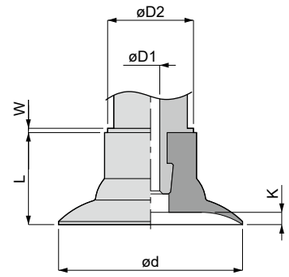
Weight: 8.6 g

Detailed Diagram of Pad and Holder Connection Part

●VSPG-4 to 15L□A



●VSPG-20 to 40L□A



Unit: mm

Model No.	Pad Diameter ød	L	Lip Internal Height K	øD1	øD2	W
VSPG-4L□A	4	12.2	-	3	14	0.7
VSPG-6L□A	6	12.2	-	3	14	0.7
VSPG-8L□A	8	12.2	-	3	14	0.7
VSPG-10L□A	10	14	-	3	14	0.7
VSPG-15L□A	15	14	-	3	14	0.7
VSPG-20L□A	20	15	2	3	14	0.7
VSPG-30L□A	30	15	2	3	14	0.7
VSPG-40L□A	40	15	2	3	14	0.7

* The D2 and W dimensions in the dimension table are only for the VSP-HC type.

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Suction Pad Soft Type, VSP-□L□Series

Design / Selection

Caution

▪The VPHC type holder is not conductive. When using suction pads made of conductive material, take measures to discharge electricity directly from the pad rubber.

▪When replacing the pad adapter of the soft type, check the suction pad configuration diagram in the main text, refer to the recommended tightening torque below, use appropriate tools, utilize the holder outer diameter hexagonal part, and confirm there is no looseness after tightening.

●Recommended Tightening Torque

Pad Thread Size (mm)	Tightening Torque
M4x0.7	0.7 to 0.8 N·m
M6x1	1.5 to 2.0 N·m

MEMO

Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechanical Break Function
Ending



Suction Pad Soft Bellows Type

VSP-□LB□ Series

Suction pad with excellent pad rubber flexibility and a bellows structure that softly conforms to the workpiece.

RoHS

The bellows part expands and contracts on easily scratched or tilted molded products, reducing the load on the workpiece.

Abundant holder variations

Shape 16 types
- Standard....5 types
- Compact... Class 4
- Low dust generation ..... 2 types
- Lightweight. 3 types
- Low back.... 2 types

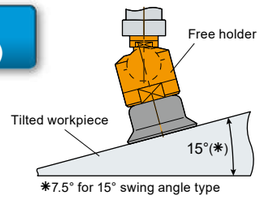
Piping Connection 5 types
- Push-in fitting (ø1.8 to ø6)3 types
- Barbed fitting (ø4, ø6) ..... 2 types

Stroke 12 types
2 mm to 50 mm
(Depends on pad diameter, holder type)

Low particle generation holders (LFC, LFD) with less abrasion powder from sliding and low noise are available

Assembly option for swing (free holder, flexible holder) that follows inclined workpiece surfaces is supported

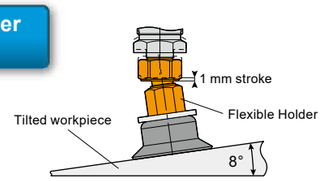
Free holder (F1:30°, F2:15°)



✱7.5° for 15° swing angle type

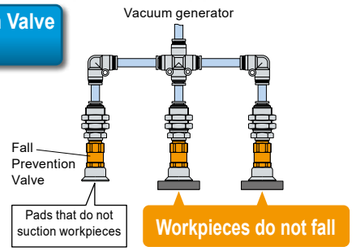
Flexible Holder (CF)

After removing the workpiece, returns to the normal position (vertical)



Assembly option for drop prevention valve (V) that reduces vacuum drop in separate circuits even without a workpiece is supported

Drop Prevention Valve (V)

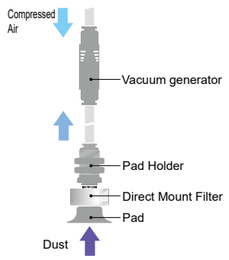


Removes dust during workpiece suction

Direct Mount Filter (T1, T2)

Filtration Area
T1: 1.7 cm², T2: 7 cm²





Pad surface treatment (option) with special processing to reduce adsorption marks is available

	-NF	-SF	-DL	-ER	-FG
Surface Treatment	Fiber Raised: Nylon	Fiber Raised: Silk	Sticking Prevention	Adsorption Mark Reduction	Fluorine Coating
Compatible Material	Silicone	Silicone	Silicone Conductive Silicone	Nitrile Nitrile Conductive NBR	Silicone Conductive Silicone
Features	Fibers(nylon or silk) on the pad surface prevent direct contact with the workpiece, thus preventing rubber material transfer.		Special coating with good slippage. Effective for preventing sticking of lightweight workpieces and thin workpieces.	Surface modification with environmentally friendly chemicals reduces adsorption marks.	Surface modification with special treatment prevents sticking to the workpiece. Improved pad durability and abrasion resistance.

Pad Shape

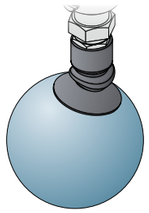






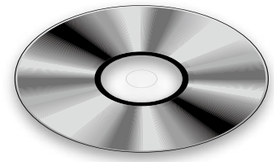
Softness that doesn't scratch the workpiece + 1-stage bellows structure

Available from rubber hardness A40. The lip is soft and closely follows workpieces with irregular shapes. It also has a bellows structure, enabling it to follow changes in the height of the contacting workpiece and surface inclination.



Recommended Workpiece

Easily scratched workpieces such as molded products



Pad Diameter

5 types 6 | 8 | 10 | 15 | 20

Pad Material

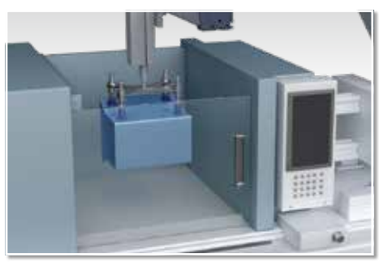
7 types
- Nitrile
- Silicone
- Urethane
- Conductive Silicone
- Conductive NBR (Low Resistance-type)
- HNBR
- EPDM

*Silicone (S) conforms to the Food Sanitation Act. (Holder is not compliant / Suction pad is compliant only for workpiece contact area)

Solution Examples

Delicate resin molded products, etc.

Easily scratched workpieces can be gently unloaded. Furthermore, the bellows structure follows height differences and workpiece inclination.





Transport of pharmaceuticals, etc.

The bellows structure expands and contracts on easily scratched or tilted workpieces, reducing the load on the workpiece.



Model No. Notation

●Soft Bellows Type

Suction Pad

VSP – C – 20 – -20 – LB – N – -ER – 6 – [ ] – F1 – V – T1

VSP	C	20	-20	LB	N	-ER	6	[ ]	F1	V	T1
Model No.	❶ Holder Shape	❷ Pad Diameter	❸ Stroke Option	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment	❼ Connection Size/Shape	❽ Buffer Load	❾ Pad Swing	❿ Drop Prevention Valve	⓫ Direct Mount Filter

Pad Rubber Only

VSPG – 20 — LB – N – -ER

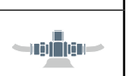
VSPG	20	LB	N	-ER
Model No.	❷ Pad Diameter	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment

Pad Rubber + Set with Fixing Screw

VSPG – 20 — LB – N – -ER A

VSPG	20	LB	N	-ER	A
Model No.	❷ Pad Diameter	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment	

❶ Holder Shape

Buffer Present/Absent	Type	Vacuum Outlet	Code	
Fixed Type	Standard	Top Direction	A	
	Compact		MA	
	Standard	Side Direction	B	
	Compact		MB	
	Low Profile		HE	
		Both Sides Direction	HEW	
Buffer Type	Standard	Top Direction	C	
	Compact		MC	
	Low Particle Generation		LFC	
	Lightweight		HC	
	Standard	Side Direction	D	
	Compact		MD	
	Low Particle Generation		LFD	
	Lightweight		HD	
	Lightweight	Both Sides Direction	HDW	
	Standard	Direct Mount Type	F	

❷ Pad Diameter

Code	Content
6	ø6
8	ø8
10	ø10
15	ø15
20	ø20

❸ Stroke Option

Content	Holder Shape C	D	HC	LFC	LFD	Code	
Specified Stroke, or No Buffer	●	●	●			Blank	*1, *2
Stroke 2 mm				●		–2	*3
Stroke 5 mm				●	●	–5	
Stroke 10 mm	●	●	●	●	●	–10	
Stroke 15 mm	●	●	●	●	●	–15	
Stroke 20 mm	●	●	●	●	●	–20	
Stroke 25 mm			●			–25	
Stroke 30 mm	●	●	●			–30	
Stroke 40 mm	●	●	●			–40	
Stroke 50 mm	●	●	●			–50	

*1: For ❶ Holder Shape other than C, D, HC, LFC, and LFD, ❸ is 'Blank'.
*2: For the specified stroke of ❸ 'Blank', please confirm the stroke dimension on the external dimension drawing.
*3: When ❷ Pad Diameter is 6 to 15, -2 can be selected for ❸.

❹ Pad Shape

Code	Content	
LB	Soft Bellows Type	

❺ Pad Material

Code	Content
N	Nitrile rubber
S	Silicone Rubber
U	Urethane rubber
SE	Conductive Silicone Rubber
NE	Conductive NBR (Low Resistance-type)
HN	HNBR
EP	EPDM

❻ Surface Treatment

Content	Compatible Pad Material N	S	SE	NE	Compatible Pad Diameter Soft Bellows (LB)	Code
No surface treatment	All pad materials, all pad diameters					Blank
Fiber Raised (Nylon)		●			*10 to *20	–NF
Fiber Raised (Silk)		●			*10 to *20	–SF
Anti-Adhesion Special Coating		●	●		All sizes	–DL
Suction Mark Reduction Surface Modification	●			●	All sizes	–ER
Fluorine Coating		●	●		All sizes	–FG

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

●Design compatible with rechargeable battery manufacturing process

VSP –..... – P4*

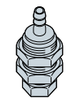
*Please inquire for details.

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

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

VSP –..... – FP*

❼ Connection Size/Shape

Content	Holder Shape A	B	C	D	MA	MB	MC	MD	LFC	LFD	HC	HD	HDW	HE	HEW	Code	
(❶: When F)																Blank	
ø1.8, Push-in fitting						●	●	●			●	●	●	●	●	2	
ø4, Push-in fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4	
ø6, Push-in fitting	●	●	●	●		●		●	●	●	●	●	●	●	●	6	
ø4, Push-in fitting, without spring cover			●	●												4C	
ø6, Push-in fitting, without spring cover			●	●												6C	
ø4, Barb fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4T	
ø6, Barb fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	6T	
ø4, Barb fitting, without spring cover			●	●												4TC	
ø6, Barb fitting, without spring cover			●	●												6TC	

*1: For ❶ Holder Shape C and D with ❸ Stroke Option -20 to -50, options 4C, 6C, 4TC, and 6TC can be selected for ❼. Additionally, for ❸ Stroke Option -30 to -50, only 4C, 6C, 4TC, and 6TC can be selected for ❼.
*2: The selectable Port Size/Shape varies depending on the ❷ Pad Diameter. Please check the combination table below.

❽ Buffer Load

Code	Content
Blank	Standard Load or No Buffer
L	Low Load (1/4 of Standard Load)

*1: For ❶ Holder Shape other than LFC, ❽ is 'Blank'.
*2: For ❸ Stroke Option -2, ❽ is 'Blank'.

⓫ Direct Mount Filter

Code	Content	
Blank	None	
T1	With Direct Mount Filter (Filtration Area 1.7 cm²)	 Direct Mount Filter
T2	With Direct Mount Filter (Filtration Area 7 cm²)	

*1: For ❶ Holder Shape HD, HE, HDW, and HEW, ⓫ is 'Blank'.
*2: For ❶ Holder Shape HC with ❸ Stroke Option 'Blank', ⓫ is 'Blank'.
*3: ⓫ T2 can be selected when ❷ Pad Diameter is 20.
*4: For dimensions with the direct mount filter, please refer to P. 1064.

❾ Pad Swing

Code	Content	
Blank	None	
F1	With Free Holder (Angle 30°)	 Free Holder
F2	With Free Holder (Angle 15°)	
CF	With Flexible Holder (Angle 8°)	 Flex-ible Holder

*1: For ❶ HD, HE, HDW, and HEW, ❾ is 'Blank'.
*2: For ❶ Holder Shape HC with ❸ Stroke Option 'Blank', ❾ is 'Blank'.
*3: For dimensions with the pad swivel function, please refer to P. 1060 and P. 1062.

❿ Drop Prevention Valve

Code	Content	
Blank	None	
V	With Drop Prevention Valve	 Drop Prevention Valve

*1: For ❶ Holder Shape HD, HE, HDW, and HEW, ❿ is 'Blank'.
*2: For ❶ HC with ❸ Stroke Option 'Blank', ❿ is 'Blank'.
*3: For ❻ Surface Treatment -NF and -SF, ❿ is 'Blank'.
*4: For dimensions with the drop prevention valve, please refer to P. 1083 and P. 1084.

Holder Shape - Pad Diameter - Pad Shape - Connection Size/Shape Combination Table

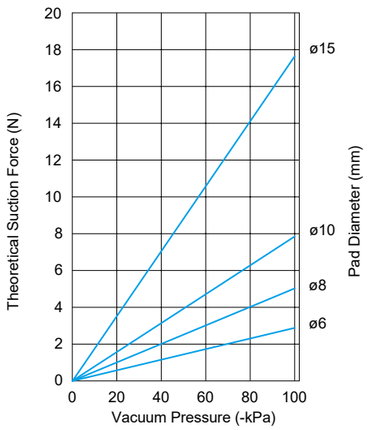
Holder Shape	Pad Diameter	Push-in fitting ø4 4	4C	ø6 6	6C	Barb fitting ø4 4T	4TC	ø6 6T	6TC
A	ø6 to ø15			●				●	
	ø20	●		●		●		●	
B	All sizes	●		●		●		●	
C	All sizes	●	●	●	●	●	●	●	●
D	All sizes	●	●	●	●	●	●	●	●

Holder Shape	Pad Diameter	Thread M14	Blank
F	All sizes		●

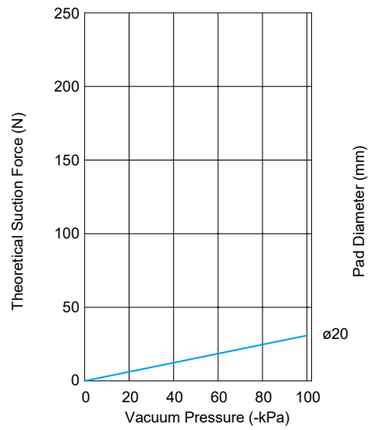
Holder Shape	Pad Diameter	Push-in fitting ø1.8 2	ø4 4	ø6 6	Barb fitting ø4 4T	ø6 6T
MA	ø6 to ø15		●		●	
	ø20		●		●	●
MB	All sizes	●	●	●	●	●
MC	All sizes	●	●		●	●
MD	All sizes	●	●	●	●	●
LFC	ø6 to ø15		●		●	●
	ø20		●	●	●	●
LFD	ø6 to ø15		●		●	●
	ø20		●	●	●	●
HC	All sizes	●	●	●	●	●
HD	All sizes	●	●	●	●	●
HDW	All sizes	●	●	●	●	●
HE	All sizes	●	●	●	●	●
HEW	All sizes	●	●	●	●	●

Theoretical Suction Force

●Pad diameter: ø6 mm to ø15 mm



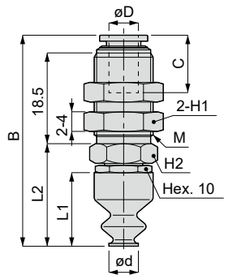
●Pad diameter: ø20 mm



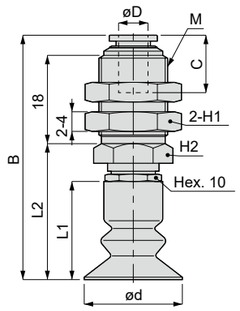
Regarding the suction force of the soft bellows type, due to pad characteristics, it may not be possible to secure the calculated suction force (theoretical suction force x safety factor) due to factors such as vacuum level, pad material, and adsorbed object. Refer to "Suction Pads selection method" (P. 412) Use the suction force obtained with this formula as a guide, and make sure that there is no problem with the suction capacity on the actual machine. Also, the soft bellows type is not suitable for vertical lifting. When using, please sufficiently check with the actual machine.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Push-in fitting)

●VSP-A6 to 15LB□-6



●VSP-A20LB□4/6

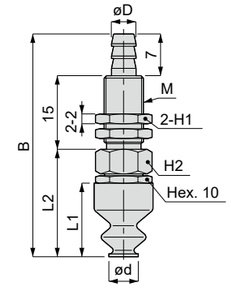


Unit: mm

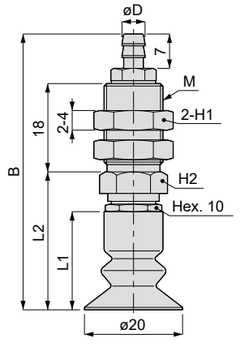
Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	Tube End C	Width Across Flats H1	Width Across Flats H2	Weight (g)
VSP-A6LB□-6	6	6	M12x1	43.4	15	21.1	11.9	14	12	24
VSP-A8LB□-6	8	6	M12x1	43.4	15	21.1	11.9	14	12	24
VSP-A10LB□-6	10	6	M12x1	43.9	15.5	21.6	11.9	14	12	25
VSP-A15LB□-6	15	6	M12x1	45.9	17.5	23.6	11.9	14	12	25
VSP-A20LB□-4	20	4	M12x1	58.9	20	28	11.2	14	12	35
VSP-A20LB□-6		6	M14x1	49.9		27.6	11.9	17	14	41

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Barb fitting)

●VSP-A6 to 15LB□-6T



●VSP-A20LB□-4T/6T

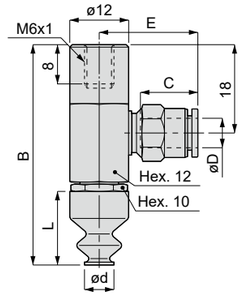


Unit: mm

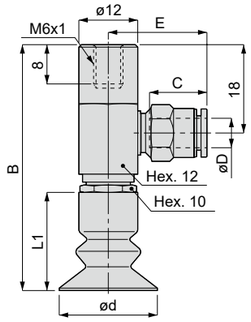
Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	Width Across Flats H1	Width Across Flats H2	Weight (g)
VSP-A6LB□-6T	6	4	M8x0.75	44.1	15	22.1	10	10	14
VSP-A8LB□-6T	8	4	M8x0.75	44.1	15	22.1	10	10	14
VSP-A10LB□-6T	10	4	M8x0.75	44.6	15.5	22.6	10	10	15
VSP-A15LB□-6T	15	4	M8x0.75	46.6	17.5	24.6	10	10	16
VSP-A20LB□-4T	20	2.5	M12x1	56	20	28	14	12	34
VSP-A20LB□-6T		4							

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Push-in fitting)

●VSP-B6 to 15LB□-4/6



●VSP-B20LB□4/6

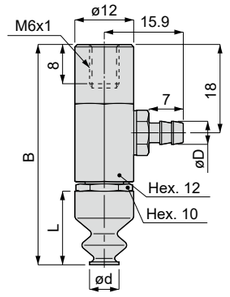


Unit: mm

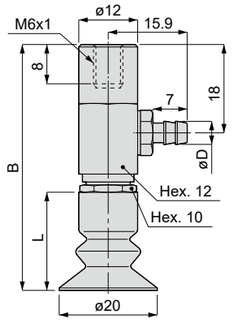
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-B6LB□-4	6	4	45.1	15	11.2	18.8	32
VSP-B6LB□-6		6			11.9	20.1	33
VSP-B8LB□-4	8	4	45.1	15	11.2	18.8	32
VSP-B8LB□-6		6			11.9	20.1	33
VSP-B10LB□-4	10	4	45.6	15.5	11.2	18.8	33
VSP-B10LB□-6		6			11.9	20.1	34
VSP-B15LB□-4	15	4	47.6	17.5	11.2	18.8	33
VSP-B15LB□-6		6			11.9	20.1	34
VSP-B20LB□-4	20	4	50	20	11.2	18.8	37
VSP-B20LB□-6		6			11.9	20.1	38

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Barb Fitting)

●VSP-B6 to 15LB□-4T/6T



●VSP-B20LB□-4T/6T

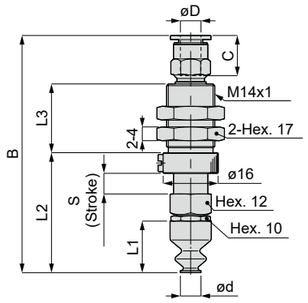


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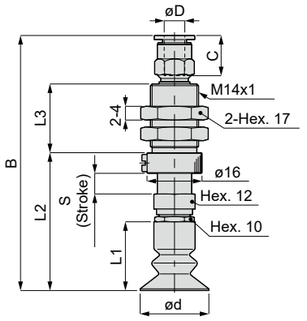
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-B6LB□-4T	6	2.5	42.3	12.2	32
VSP-B6LB□-6T		4			
VSP-B8LB□-4T	8	2.5	42.3	12.2	32
VSP-B8LB□-6T		4			
VSP-B10LB□-4T	10	2.5	44.1	14	32
VSP-B10LB□-6T		4			
VSP-B15LB□-4T	15	2.5	44.1	14	33
VSP-B15LB□-6T		4			
VSP-B20LB□-4T	20	2.5	45	15	38
VSP-B20LB□-6T		4			

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C6 to 15LB□-4/6
●VSP-C6 to 15-□LB□-4/6



●VSP-C20LB□4/6
●VSP-C20-□LB□-4/6

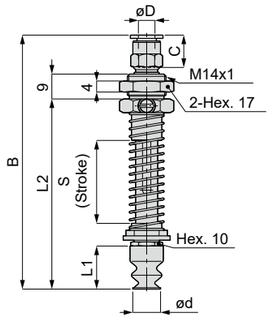


Unit: mm

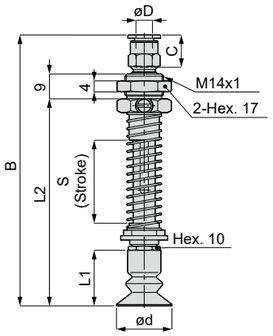
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C6LB□-4	6	4	68.1	15	35.1	20	11.2	6	4.0 to 7.1	38
VSP-C6LB□-6		6	69.4				11.9			39
VSP-C6-10LB□-4		4	72.6		39.6		11.2	10	2.0 to 5.2	40
VSP-C6-10LB□-6		6	73.9				11.9			41
VSP-C6-15LB□-4		4	82.6		44.6	25	11.2	15	2.0 to 5.9	46
VSP-C6-15LB□-6		6	83.9				11.9			47
VSP-C6-20LB□-4		4	98.5		51.6	34	11.2	20	1.1 to 4.8	53
VSP-C6-20LB□-6		6	99.9				11.9			54
VSP-C8LB□-4	8	4	68.1	15	35.1	20	11.2	6	4.0 to 7.1	38
VSP-C8LB□-6		6	69.4				11.9			39
VSP-C8-10LB□-4		4	72.6		39.6		11.2	10	2.0 to 5.2	40
VSP-C8-10LB□-6		6	73.9				11.9			41
VSP-C8-15LB□-4		4	82.6		44.6	25	11.2	15	2.0 to 5.9	46
VSP-C8-15LB□-6		6	83.9				11.9			47
VSP-C8-20LB□-4		4	98.5		51.6	34	11.2	20	1.1 to 4.8	53
VSP-C8-20LB□-6		6	99.9				11.9			54
VSP-C10LB□-4	10	4	68.6	15.5	35.6	20	11.2	6	4.0 to 7.1	38
VSP-C10LB□-6		6	69.9				11.9			39
VSP-C10-10LB□-4		4	73.1		40.1		11.2	10	2.0 to 5.2	40
VSP-C10-10LB□-6		6	74.4				11.9			41
VSP-C10-15LB□-4		4	83.1		45.1	25	11.2	15	2.0 to 5.9	45
VSP-C10-15LB□-6		6	84.4				11.9			46
VSP-C10-20LB□-4		4	99.1		52.1	34	11.2	20	1.1 to 4.8	52
VSP-C10-20LB□-6		6	100.4				11.9			53
VSP-C15LB□-4	15	4	70.6	17.5	37.6	20	11.2	6	4.0 to 7.1	39
VSP-C15LB□-6		6	71.9				11.9			40
VSP-C15-10LB□-4		4	75.1		42.1		11.2	10	2.0 to 5.2	41
VSP-C15-10LB□-6		6	76.4				11.9			42
VSP-C15-15LB□-4		4	85.1		47.1	25	11.2	15	2.0 to 5.9	46
VSP-C15-15LB□-6		6	86.4				11.9			47
VSP-C15-20LB□-4		4	101.1		54.1	34	11.2	20	1.1 to 4.8	53
VSP-C15-20LB□-6		6	102.4				11.9			54
VSP-C20LB□-4	20	4	73	20	40	20	11.2	6	7.0 to 12.6	43
VSP-C20LB□-6		6	74.3				11.9			44
VSP-C20-10LB□-4		4	79		46		11.2	10	3.3 to 10.0	47
VSP-C20-10LB□-6		6	80.3				11.9			48
VSP-C20-15LB□-4		4	89		51	25	11.2	15	3.3 to 10.4	52
VSP-C20-15LB□-6		6	90.3				11.9			53
VSP-C20-20LB□-4		4	105		58	34	11.2	20	2.0 to 8.7	58
VSP-C20-20LB□-6		6	106.3				11.9			59

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in Fitting without Spring Cover)

●VSP-C6 to 15-□LB□-4C/6C



●VSP-C20-□LB□-4C/6C

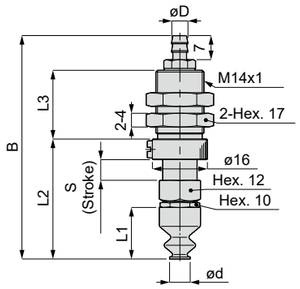


Unit: mm

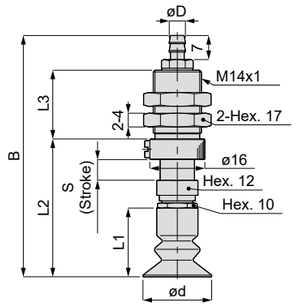
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C6-20LB□-4C	6	4	75.6	15	53.6	11.2	20	1.5 to 4.9	45
VSP-C6-20LB□-6C		6	76.9			11.9			46
VSP-C6-30LB□-4C		4	88.6		66.6	11.2	30	1.1 to 4.8	51
VSP-C6-30LB□-6C		6	89.9			11.9			52
VSP-C6-40LB□-4C		4	101.6		79.6	11.2	40	1.0 to 4.5	56
VSP-C6-40LB□-6C		6	102.9			11.9			57
VSP-C6-50LB□-4C		4	114.6		92.6	11.2	50	0.9 to 4.5	61
VSP-C6-50LB□-6C		6	115.9			11.9			62
VSP-C8-20LB□-4C	8	4	75.6	15	53.6	11.2	20	1.5 to 4.9	45
VSP-C8-20LB□-6C		6	76.9			11.9			46
VSP-C8-30LB□-4C		4	88.6		66.6	11.2	30	1.1 to 4.8	51
VSP-C8-30LB□-6C		6	89.9			11.9			52
VSP-C8-40LB□-4C		4	101.6		79.6	11.2	40	1.0 to 4.5	56
VSP-C8-40LB□-6C		6	102.9			11.9			57
VSP-C8-50LB□-4C		4	114.6		92.6	11.2	50	0.9 to 4.5	61
VSP-C8-50LB□-6C		6	115.9			11.9			62
VSP-C10-20LB□-4C	10	4	76.1	15.5	54.1	11.2	20	1.5 to 4.9	45
VSP-C10-20LB□-6C		6	77.4			11.9			46
VSP-C10-30LB□-4C		4	89.1		67.1	11.2	30	1.1 to 4.8	51
VSP-C10-30LB□-6C		6	90.4			11.9			52
VSP-C10-40LB□-4C		4	102.1		80.1	11.2	40	1.0 to 4.5	56
VSP-C10-40LB□-6C		6	103.4			11.9			57
VSP-C10-50LB□-4C		4	115.1		93.1	11.2	50	0.9 to 4.5	61
VSP-C10-50LB□-6C		6	116.4			11.9			62
VSP-C15-20LB□-4C	15	4	78.1	17.5	56.1	11.2	20	1.5 to 4.9	45
VSP-C15-20LB□-6C		6	79.4			11.9			46
VSP-C15-30LB□-4C		4	91.1		69.1	11.2	30	1.1 to 4.8	51
VSP-C15-30LB□-6C		6	92.4			11.9			52
VSP-C15-40LB□-4C		4	104.1		82.1	11.2	40	1.0 to 4.5	56
VSP-C15-40LB□-6C		6	105.4			11.9			57
VSP-C15-50LB□-4C		4	117.1		95.1	11.2	50	0.9 to 4.5	61
VSP-C15-50LB□-6C		6	118.4			11.9			62
VSP-C20-20LB□-4C	20	4	82	20	60	11.2	20	1.5 to 4.9	50
VSP-C20-20LB□-6C		6	83.3			11.9			51
VSP-C20-30LB□-4C		4	95		73	11.2	30	1.1 to 4.8	55
VSP-C20-30LB□-6C		6	96.3			11.9			56
VSP-C20-40LB□-4C		4	108		86	11.2	40	1.0 to 4.5	60
VSP-C20-40LB□-6C		6	109.3			11.9			61
VSP-C20-50LB□-4C		4	121		99	11.2	50	0.9 to 4.5	65
VSP-C20-50LB□-6C		6	122.3			11.9			66

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C6 to 15LB□-4T/6T
●VSP-C6 to 15-□LB□-4T/6T



●VSP-C20LB□-4T/6T
●VSP-C20-□LB□-4T/6T

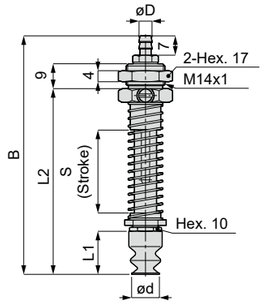


Unit: mm

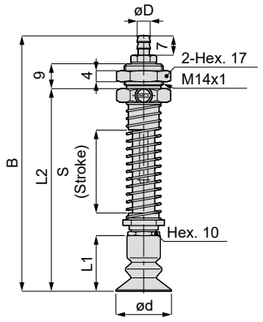
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-C6LB□-4T	6	4	65.2	15	35.1	20	6	4.0 to 7.1	37
VSP-C6LB□-6T		6							
VSP-C6-10LB□-4T		4	69.7		39.6		10	2.0 to 5.2	40
VSP-C6-10LB□-6T		6							
VSP-C6-15LB□-4T		4	79.7		44.6	25	15	2.0 to 5.9	45
VSP-C6-15LB□-6T		6							
VSP-C6-20LB□-4T		4	95.7		51.6	34	20	1.1 to 4.8	51
VSP-C6-20LB□-6T		6							
VSP-C8LB□-4T	8	4	65.2	15	35.1	20	6	4.0 to 7.1	37
VSP-C8LB□-6T		6							
VSP-C8-10LB□-4T		4	69.7		39.6		10	2.0 to 5.2	40
VSP-C8-10LB□-6T		6							
VSP-C8-15LB□-4T		4	79.7		44.6	25	15	2.0 to 5.9	45
VSP-C8-15LB□-6T		6							
VSP-C8-20LB□-4T		4	95.7		51.6	34	20	1.1 to 4.8	51
VSP-C8-20LB□-6T		6							
VSP-C10LB□-4T	10	4	65.7	15.5	35.6	20	6	4.0 to 7.1	37
VSP-C10LB□-6T		6							
VSP-C10-10LB□-4T		4	70.2		40.1		10	2.0 to 5.2	40
VSP-C10-10LB□-6T		6							
VSP-C10-15LB□-4T		4	80.2		45.1	25	15	2.0 to 5.9	45
VSP-C10-15LB□-6T		6							
VSP-C10-20LB□-4T		4	96.2		52.1	34	20	1.1 to 4.8	51
VSP-C10-20LB□-6T		6							
VSP-C15LB□-4T	15	4	67.7	17.5	37.6	20	6	4.0 to 7.1	38
VSP-C15LB□-6T		6							
VSP-C15-10LB□-4T		4	72.2		42.1		10	2.0 to 5.2	41
VSP-C15-10LB□-6T		6							
VSP-C15-15LB□-4T		4	82.2		47.1	25	15	2.0 to 5.9	46
VSP-C15-15LB□-6T		6							
VSP-C15-20LB□-4T		4	98.2		54.1	34	20	1.1 to 4.8	52
VSP-C15-20LB□-6T		6							
VSP-C20LB□-4T	20	4	70.1	20	40	20	6	7.0 to 12.6	42
VSP-C20LB□-6T		6							
VSP-C20-10LB□-4T		4	76.1		46		10	3.3 to 10.0	46
VSP-C20-10LB□-6T		6							
VSP-C20-15LB□-4T		4	86.1		51	25	15	3.3 to 10.4	51
VSP-C20-15LB□-6T		6							
VSP-C20-20LB□-4T		4	102.1		58	34	20	2.0 to 8.7	57
VSP-C20-20LB□-6T		6							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting without Spring Cover)

●VSP-C6 to 15-□LB□-4TC/6TC



●VSP-C20-□LB□-4TC/6TC

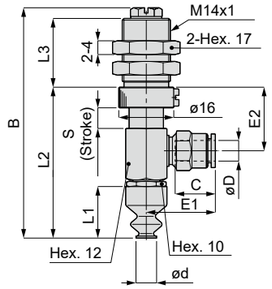


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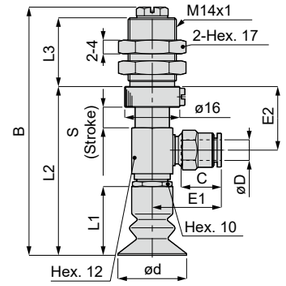
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C6-20LB□-4TC	6	4	72.7	15	53.6	20	1.5 to 4.9	44
VSP-C6-20LB□-6TC		6						
VSP-C6-30LB□-4TC		4	85.7		66.6	30	1.1 to 4.8	50
VSP-C6-30LB□-6TC		6						
VSP-C6-40LB□-4TC		4	98.7		79.6	40	1.0 to 4.5	55
VSP-C6-40LB□-6TC		6						
VSP-C6-50LB□-4TC		4	111.7		92.6	50	0.9 to 4.5	60
VSP-C6-50LB□-6TC		6						
VSP-C8-20LB□-4TC	8	4	72.7	15	53.6	20	1.5 to 4.9	44
VSP-C8-20LB□-6TC		6						
VSP-C8-30LB□-4TC		4	85.7		66.6	30	1.1 to 4.8	50
VSP-C8-30LB□-6TC		6						
VSP-C8-40LB□-4TC		4	98.7		79.6	40	1.0 to 4.5	55
VSP-C8-40LB□-6TC		6						
VSP-C8-50LB□-4TC		4	111.7		92.6	50	0.9 to 4.5	60
VSP-C8-50LB□-6TC		6						
VSP-C10-20LB□-4TC	10	4	73.2	15.5	54.1	20	1.5 to 4.9	44
VSP-C10-20LB□-6TC		6						
VSP-C10-30LB□-4TC		4	86.2		67.1	30	1.1 to 4.8	50
VSP-C10-30LB□-6TC		6						
VSP-C10-40LB□-4TC		4	99.2		80.1	40	1.0 to 4.5	55
VSP-C10-40LB□-6TC		6						
VSP-C10-50LB□-4TC		4	112.2		93.1	50	0.9 to 4.5	60
VSP-C10-50LB□-6TC		6						
VSP-C15-20LB□-4TC	15	4	75.2	17.5	56.1	20	1.5 to 4.9	44
VSP-C15-20LB□-6TC		6						
VSP-C15-30LB□-4TC		4	88.2		69.1	30	1.1 to 4.8	50
VSP-C15-30LB□-6TC		6						
VSP-C15-40LB□-4TC		4	101.2		82.1	40	1.0 to 4.5	55
VSP-C15-40LB□-6TC		6						
VSP-C15-50LB□-4TC		4	114.2		95.1	50	0.9 to 4.5	60
VSP-C15-50LB□-6TC		6						
VSP-C20-20LB□-4TC	20	4	79.1	20	60	20	1.5 to 4.9	53
VSP-C20-20LB□-6TC		6						
VSP-C20-30LB□-4TC		4	92.1		73	30	1.1 to 4.8	58
VSP-C20-30LB□-6TC		6						
VSP-C20-40LB□-4TC		4	105.1		86	40	1.0 to 4.5	63
VSP-C20-40LB□-6TC		6						
VSP-C20-50LB□-4TC		4	118.1		99	50	0.9 to 4.5	68
VSP-C20-50LB□-6TC		6						

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D6 to 15LB□-4/6
●VSP-D6 to 15-□LB□-4/6



●VSP-D20LB□4/6
●VSP-D20-□LB□-4/6

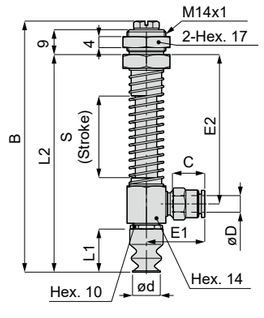


Unit: mm

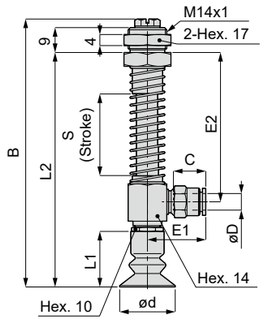
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D6LB□-4	6	4	67.2	15	44.1	20	11.2	18.8	18.5	6	4.0 to 7.1	49
VSP-D6LB□-6		6					11.9	20.1				50
VSP-D6-10LB□-4		4	72.2		49.1		11.2	18.8	25	10	2.0 to 5.2	52
VSP-D6-10LB□-6		6					11.9	20.1				53
VSP-D6-15LB□-4		4	82.2		54.1	25	11.2	18.8	30	15	2.0 to 5.9	58
VSP-D6-15LB□-6		6					11.9	20.1				59
VSP-D6-20LB□-4		4	98.2		61.1	34	11.2	18.8	37	20	1.1 to 4.8	68
VSP-D6-20LB□-6		6					11.9	20.1				69
VSP-D8LB□-4	8	4	67.2	15	44.1	20	11.2	18.8	18.5	6	4.0 to 7.1	49
VSP-D8LB□-6		6					11.9	20.1				50
VSP-D8-10LB□-4		4	72.2		49.1		11.2	18.8	25	10	2.0 to 5.2	52
VSP-D8-10LB□-6		6					11.9	20.1				53
VSP-D8-15LB□-4		4	82.2		54.1	25	11.2	18.8	30	15	2.0 to 5.9	58
VSP-D8-15LB□-6		6					11.9	20.1				59
VSP-D8-20LB□-4		4	98.2		61.1	34	11.2	18.8	37	20	1.1 to 4.8	68
VSP-D8-20LB□-6		6					11.9	20.1				69
VSP-D10LB□-4	10	4	67.7	15.5	44.6	20	11.2	18.8	18.5	6	4.0 to 7.1	50
VSP-D10LB□-6		6					11.9	20.1				51
VSP-D10-10LB□-4		4	72.7		49.6		11.2	18.8	25	10	2.0 to 5.2	53
VSP-D10-10LB□-6		6					11.9	20.1				54
VSP-D10-15LB□-4		4	82.7		54.6	25	11.2	18.8	30	15	2.0 to 5.9	59
VSP-D10-15LB□-6		6					11.9	20.1				60
VSP-D10-20LB□-4		4	98.7		61.6	34	11.2	18.8	37	20	1.1 to 4.8	69
VSP-D10-20LB□-6		6					11.9	20.1				70
VSP-D15LB□-4	15	4	69.7	17.5	46.6	20	11.2	18.8	18.5	6	4.0 to 7.1	51
VSP-D15LB□-6		6					11.9	20.1				52
VSP-D15-10LB□-4		4	74.7		51.6		11.2	18.8	25	10	2.0 to 5.2	54
VSP-D15-10LB□-6		6					11.9	20.1				55
VSP-D15-15LB□-4		4	84.7		56.6	25	11.2	18.8	30	15	2.0 to 5.9	60
VSP-D15-15LB□-6		6					11.9	20.1				61
VSP-D15-20LB□-4		4	100.7		63.6	34	11.2	18.8	37	20	1.1 to 4.8	70
VSP-D15-20LB□-6		6					11.9	20.1				71
VSP-D20LB□-4	20	4	72.1	20	49	20	11.2	18.8	18.5	6	7.0 to 12.6	55
VSP-D20LB□-6		6					11.9	20.1				56
VSP-D20-10LB□-4		4	78.1		55		11.2	18.8	24.5	10	3.3 to 10.0	58
VSP-D20-10LB□-6		6					11.9	20.1				59
VSP-D20-15LB□-4		4	88.1		60	25	11.2	18.8	29.5	15	3.3 to 10.4	63
VSP-D20-15LB□-6		6					11.9	20.1				64
VSP-D20-20LB□-4		4	104.1		67	34	11.2	18.8	36.5	20	2.0 to 8.7	73
VSP-D20-20LB□-6		6					11.9	20.1				74

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in Fitting without Spring Cover)

●VSP-D6 to 15-□LB□-4C/6C



●VSP-D20-□LB□-4C/6C

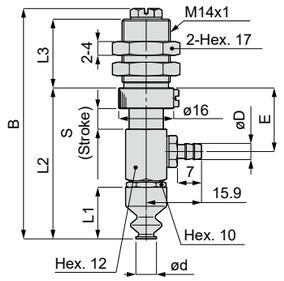


Unit: mm

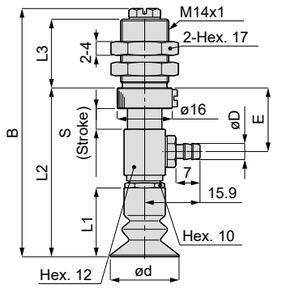
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D6-20LB□-4C	6	4	77.2	15	65.1	11.2	19.8	40.5	20	1.5 to 4.9	71
VSP-D6-20LB□-6C		6				11.9	21.1				72
VSP-D6-30LB□-4C		4	90.2		78.1	11.2	19.8	53.5	30	1.1 to 4.8	77
VSP-D6-30LB□-6C		6				11.9	21.1				78
VSP-D6-40LB□-4C		4	103.2		91.1	11.2	19.8	66.5	40	1.0 to 4.5	84
VSP-D6-40LB□-6C		6				11.9	21.1				85
VSP-D6-50LB□-4C		4	116.2		104.1	11.2	19.8	79.5	50	0.9 to 4.5	91
VSP-D6-50LB□-6C		6				11.9	21.1				92
VSP-D8-20LB□-4C	8	4	77.2	15	65.1	11.2	19.8	40.5	20	1.5 to 4.9	71
VSP-D8-20LB□-6C		6				11.9	21.1				72
VSP-D8-30LB□-4C		4	90.2		78.1	11.2	19.8	53.5	30	1.1 to 4.8	77
VSP-D8-30LB□-6C		6				11.9	21.1				78
VSP-D8-40LB□-4C		4	103.2		91.1	11.2	19.8	66.5	40	1.0 to 4.5	84
VSP-D8-40LB□-6C		6				11.9	21.1				85
VSP-D8-50LB□-4C		4	116.2		104.1	11.2	19.8	79.5	50	0.9 to 4.5	91
VSP-D8-50LB□-6C		6				11.9	21.1				92
VSP-D10-20LB□-4C	10	4	77.7	15.5	65.6	11.2	19.8	40.5	20	1.5 to 4.9	71
VSP-D10-20LB□-6C		6				11.9	21.1				72
VSP-D10-30LB□-4C		4	90.7		78.6	11.2	19.8	53.5	30	1.1 to 4.8	77
VSP-D10-30LB□-6C		6				11.9	21.1				78
VSP-D10-40LB□-4C		4	103.7		91.6	11.2	19.8	66.5	40	1.0 to 4.5	84
VSP-D10-40LB□-6C		6				11.9	21.1				85
VSP-D10-50LB□-4C		4	116.7		104.6	11.2	19.8	79.5	50	0.9 to 4.5	91
VSP-D10-50LB□-6C		6				11.9	21.1				92
VSP-D15-20LB□-4C	15	4	79.7	17.5	67.6	11.2	19.8	40.5	20	1.5 to 4.9	71
VSP-D15-20LB□-6C		6				11.9	21.1				72
VSP-D15-30LB□-4C		4	92.7		80.6	11.2	19.8	53.5	30	1.1 to 4.8	77
VSP-D15-30LB□-6C		6				11.9	21.1				78
VSP-D15-40LB□-4C		4	105.7		93.6	11.2	19.8	66.5	40	1.0 to 4.5	84
VSP-D15-40LB□-6C		6				11.9	21.1				85
VSP-D15-50LB□-4C		4	118.7		106.6	11.2	19.8	79.5	50	0.9 to 4.5	91
VSP-D15-50LB□-6C		6				11.9	21.1				92
VSP-D20-20LB□-4C	20	4	83.6	20	71.5	11.2	19.8	41	20	1.5 to 4.9	72
VSP-D20-20LB□-6C		6				11.9	21.1				73
VSP-D20-30LB□-4C		4	96.6		84.5	11.2	19.8	54	30	1.1 to 4.8	79
VSP-D20-30LB□-6C		6				11.9	21.1				80
VSP-D20-40LB□-4C		4	109.6		97.5	11.2	19.8	67	40	1.0 to 4.5	84
VSP-D20-40LB□-6C		6				11.9	21.1				85
VSP-D20-50LB□-4C		4	122.6		110.5	11.2	19.8	80	50	0.9 to 4.5	92
VSP-D20-50LB□-6C		6				11.9	21.1				93

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D6 to 15LB□-4T/6T
●VSP-D6 to 15-□LB□-4T/6T



●VSP-D20LB□-4T/6T
●VSP-D20-□LB□-4T/6T

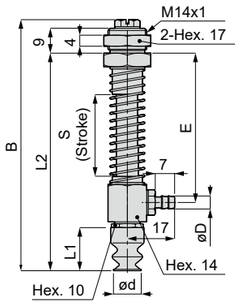


Unit: mm

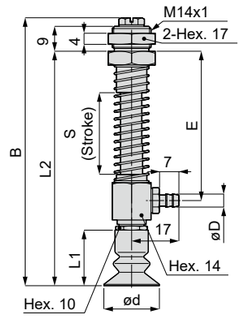
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D6LB□-4T	6	2.5	67.2	15	44.1	20	18.5	6	4.0 to 7.1	49
VSP-D6LB□-6T		4								
VSP-D6-10LB□-4T		2.5	72.2		49.1		25	10	2.0 to 5.2	50
VSP-D6-10LB□-6T		4								
VSP-D6-15LB□-4T		2.5	82.2		54.1	25	30	15	2.0 to 5.9	56
VSP-D6-15LB□-6T		4								
VSP-D6-20LB□-4T		2.5	98.2		61.1	34	37	20	1.1 to 4.8	66
VSP-D6-20LB□-6T		4								
VSP-D8LB□-4T	8	2.5	67.2	15	44.1	20	18.5	6	4.0 to 7.1	48
VSP-D8LB□-6T		4								
VSP-D8-10LB□-4T		2.5	72.2		49.1		25	10	2.0 to 5.2	50
VSP-D8-10LB□-6T		4								
VSP-D8-15LB□-4T		2.5	82.2		54.1	25	30	15	2.0 to 5.9	56
VSP-D8-15LB□-6T		4								
VSP-D8-20LB□-4T		2.5	98.2		61.1	34	37	20	1.1 to 4.8	66
VSP-D8-20LB□-6T		4								
VSP-D10LB□-4T	10	2.5	67.7	15.5	44.6	20	18.5	6	4.0 to 7.1	49
VSP-D10LB□-6T		4								
VSP-D10-10LB□-4T		2.5	72.7		49.6		25	10	2.0 to 5.2	50
VSP-D10-10LB□-6T		4								
VSP-D10-15LB□-4T		2.5	82.7		54.6	25	30	15	2.0 to 5.9	56
VSP-D10-15LB□-6T		4								
VSP-D10-20LB□-4T		2.5	98.2		61.6	34	37	20	1.1 to 4.8	66
VSP-D10-20LB□-6T		4								
VSP-D15LB□-4T	15	2.5	69.7	17.5	46.6	20	18.5	6	4.0 to 7.1	50
VSP-D15LB□-6T		4								
VSP-D15-10LB□-4T		2.5	74.7		51.6		25	10	2.0 to 5.2	51
VSP-D15-10LB□-6T		4								
VSP-D15-15LB□-4T		2.5	84.7		56.6	25	30	15	2.0 to 5.9	57
VSP-D15-15LB□-6T		4								
VSP-D15-20LB□-4T		2.5	100.7		63.6	34	37	20	1.1 to 4.8	67
VSP-D15-20LB□-6T		4								
VSP-D20LB□-4T	20	2.5	72.1	20	49	20	18.5	6	7.0 to 12.6	53
VSP-D20LB□-6T		4								
VSP-D20-10LB□-4T		2.5	78.1		55		24.5	10	3.3 to 10.0	54
VSP-D20-10LB□-6T		4								
VSP-D20-15LB□-4T		2.5	88.1		60	25	29.5	15	3.3 to 10.4	61
VSP-D20-15LB□-6T		4								
VSP-D20-20LB□-4T		2.5	104.1		67	34	36.5	20	2.0 to 8.7	71
VSP-D20-20LB□-6T		4								

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D6 to 15-□LB□-4TC/6TC



●VSP-D20-□LB□-4TC/6TC

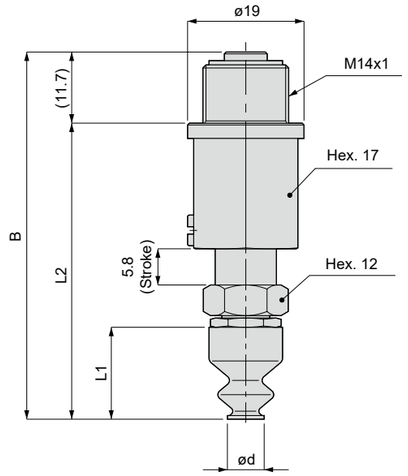


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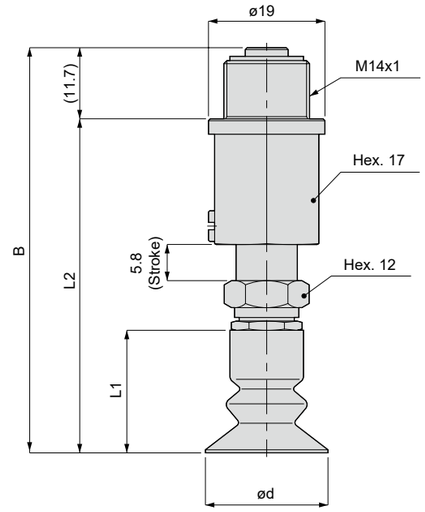
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D6-20LB□-4TC	6	2.5	77.2	15	65.1	40.5	20	1.5 to 4.9	67
VSP-D6-20LB□-6TC		4							
VSP-D6-30LB□-4TC		2.5	90.2		78.1	53.5	30	1.1 to 4.8	74
VSP-D6-30LB□-6TC		4							
VSP-D6-40LB□-4TC		2.5	103.2		91.1	66.5	40	1.0 to 4.5	81
VSP-D6-40LB□-6TC		4							
VSP-D6-50LB□-4TC		2.5	116.2		104.1	79.5	50	0.9 to 4.5	87
VSP-D6-50LB□-6TC		4							
VSP-D8-20LB□-4TC	8	2.5	77.2	15	65.1	40.5	20	1.5 to 4.9	68
VSP-D8-20LB□-6TC		4							
VSP-D8-30LB□-4TC		2.5	90.2		78.1	53.5	30	1.1 to 4.8	75
VSP-D8-30LB□-6TC		4							
VSP-D8-40LB□-4TC		2.5	103.2		91.1	66.5	40	1.0 to 4.5	82
VSP-D8-40LB□-6TC		4							
VSP-D8-50LB□-4TC		2.5	116.2		104.1	79.5	50	0.9 to 4.5	88
VSP-D8-50LB□-6TC		4							
VSP-D10-20LB□-4TC	10	2.5	77.7	15.5	65.6	40.5	20	1.5 to 4.9	68
VSP-D10-20LB□-6TC		4							
VSP-D10-30LB□-4TC		2.5	90.7		78.6	53.5	30	1.1 to 4.8	75
VSP-D10-30LB□-6TC		4							
VSP-D10-40LB□-4TC		2.5	103.7		91.6	66.5	40	1.0 to 4.5	82
VSP-D10-40LB□-6TC		4							
VSP-D10-50LB□-4TC		2.5	116.7		104.6	79.5	50	0.9 to 4.5	88
VSP-D10-50LB□-6TC		4							
VSP-D15-20LB□-4TC	15	2.5	79.7	17.5	67.6	40.5	20	1.5 to 4.9	68
VSP-D15-20LB□-6TC		4							
VSP-D15-30LB□-4TC		2.5	92.7		80.6	53.5	30	1.1 to 4.8	75
VSP-D15-30LB□-6TC		4							
VSP-D15-40LB□-4TC		2.5	105.7		93.6	66.5	40	1.0 to 4.5	82
VSP-D15-40LB□-6TC		4							
VSP-D15-50LB□-4TC		2.5	118.7		106.6	79.5	50	0.9 to 4.5	88
VSP-D15-50LB□-6TC		4							
VSP-D20-20LB□-4TC	20	4	83.6	20	71.5	41	20	1.5 to 4.9	70
VSP-D20-20LB□-6TC		6							
VSP-D20-30LB□-4TC		4	96.6		84.5	54	30	1.1 to 4.8	77
VSP-D20-30LB□-6TC		6							
VSP-D20-40LB□-4TC		4	109.6		97.5	67	40	1.0 to 4.5	84
VSP-D20-40LB□-6TC		6							
VSP-D20-50LB□-4TC		4	122.6		110.5	80	50	0.9 to 4.5	90
VSP-D20-50LB□-6TC		6							

External Dimension Diagram (Direct Mount, Buffer Type, VSP-F, Male Thread Type)

●VSP-F6 to 15LB□



●VSP-F20LB□

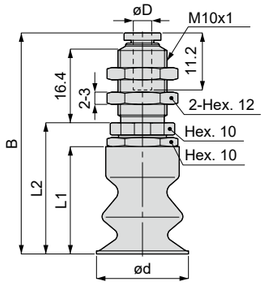


Unit: mm

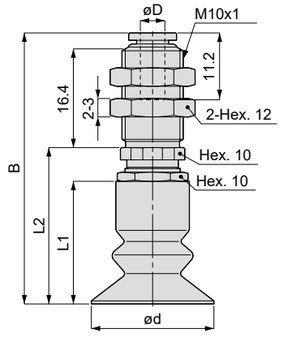
Model No.	Pad Diameter ød	B	L1	L2	Spring Force (N)	Weight (g)
VSP-F6LB□	6	60.1	15	48.4	8.8 to 12.7	58
VSP-F8LB□	8	60.1	15	48.4	8.8 to 12.7	58
VSP-F10LB□	10	60.6	15.5	48.9	8.8 to 12.7	59
VSP-F15LB□	15	62.6	17.5	50.9	8.8 to 12.7	60
VSP-F20LB□	20	66.2	20	54.5	8.8 to 12.7	63

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Push-in fitting)

●VSP-MA6 to 15LB□-4



●VSP-MA20LB□-4

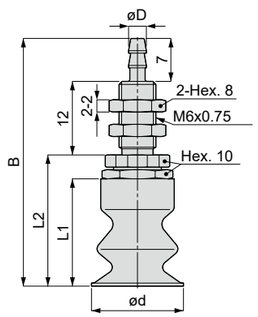


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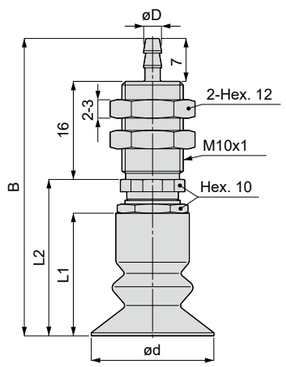
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Weight (g)
VSP-MA6LB□-4	6	4	38.1	15	19.1	8.6
VSP-MA8LB□-4	8	4	38.1	15	19.1	8.6
VSP-MA10LB□-4	10	4	38.6	15.5	19.6	8.6
VSP-MA15LB□-4	15	4	40.6	17.5	21.6	8.8
VSP-MA20LB□-4	20	4	44.6	20	25.6	12

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Barb Fitting)

●VSP-MA6 to 15LB□-4T



●VSP-MA20LB□-4T/6T

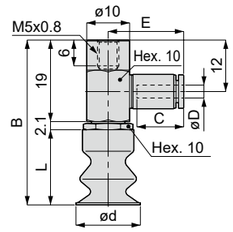


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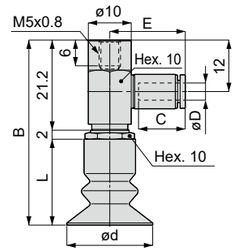
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Weight (g)
VSP-MA6LB□-4T	6	2.5	38.1	15	19.1	5.8
VSP-MA8LB□-4T	8	2.5	38.1	15	19.1	5.8
VSP-MA10LB□-4T	10	2.5	38.6	15.5	19.6	5.8
VSP-MA15LB□-4T	15	2.5	40.6	17.5	21.6	6
VSP-MA20LB□-4T	20	2.5	48.6	20	25.6	12
VSP-MA20LB□-6T		4				

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Push-in fitting)

●VSP-MB6 to 15LB□-2/4/6



●VSP-MB20LB□-2/4/6

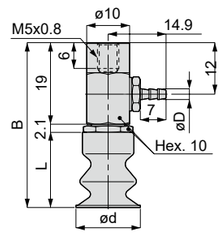


Unit: mm

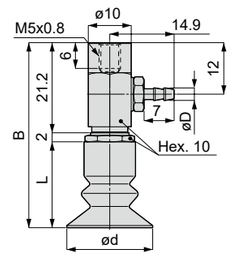
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-MB6LB□-2	6	1.8	36.1	15	8.4	13.7	10
VSP-MB6LB□-4		4			11.2	17.8	11
VSP-MB6LB□-6		6			11.9	19.6	12
VSP-MB8LB□-2	8	1.8	36.1	15	8.4	13.7	10
VSP-MB8LB□-4		4			11.2	17.8	11
VSP-MB8LB□-6		6			11.9	19.6	12
VSP-MB10LB□-2	10	1.8	36.6	15.5	8.4	13.7	10
VSP-MB10LB□-4		4			11.2	17.8	11
VSP-MB10LB□-6		6			11.9	19.6	12
VSP-MB15LB□-2	15	1.8	38.6	17.5	8.4	13.7	10
VSP-MB15LB□-4		4			11.2	17.8	11
VSP-MB15LB□-6		6			11.9	19.6	12
VSP-MB20LB□-2	20	1.8	43.2	20	8.4	13.7	12
VSP-MB20LB□-4		4			11.2	17.8	13
VSP-MB20LB□-6		6			11.9	19.6	14

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Barb Fitting)

●VSP-MB6 to 15LB□-4T/6T



●VSP-MB20LB□-4T/6T

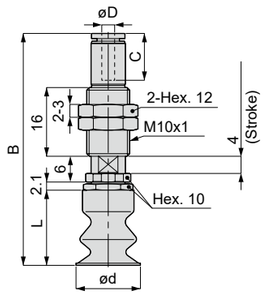


Unit: mm

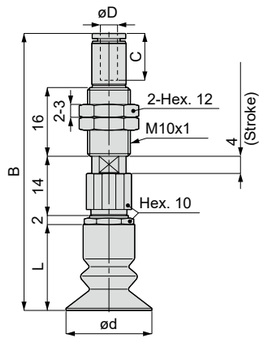
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-MB6LB□-4T	6	2.5	36.1	15	8.9
VSP-MB6LB□-6T		4			
VSP-MB8LB□-4T	8	2.5	36.1	15	8.9
VSP-MB8LB□-6T		4			
VSP-MB10LB□-4T	10	2.5	36.6	15.5	9
VSP-MB10LB□-6T		4			
VSP-MB15LB□-4T	15	2.5	38.6	17.5	9.1
VSP-MB15LB□-6T		4			
VSP-MB20LB□-4T	20	2.5	43.2	20	11
VSP-MB20LB□-6T		4			

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Push-in fitting)

●VSP-MC6 to 15LB□2/4



●VSP-MC20LB□2/4

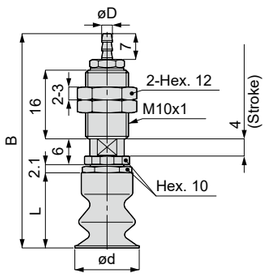


Unit: mm

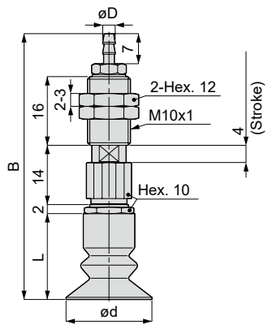
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	Spring Force (N)	Weight (g)
VSP-MC6LB□-2	6	1.8	48	15	8.4	1 to 1.3	17
VSP-MC6LB□-4		4	52.1		11.2		18
VSP-MC8LB□-2	8	1.8	48	15	8.4	1 to 1.3	17
VSP-MC8LB□-4		4	52.1		11.2		18
VSP-MC10LB□-2	10	1.8	48.5	15.5	8.4	1 to 1.3	17
VSP-MC10LB□-4		4	52.6		11.2		18
VSP-MC15LB□-2	15	1.8	50.5	17.5	8.4	1 to 1.3	17
VSP-MC15LB□-4		4	54.6		11.2		18
VSP-MC20LB□-2	20	1.8	60.9	20	8.4	1 to 1.3	22
VSP-MC20LB□-4		4	65		11.2		23

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Barb Fitting)

●VSP-MC6 to 15LB□-4T/6T



●VSP-MC20LB□-4T/6T

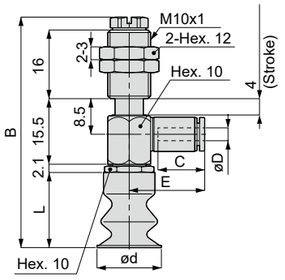


Unit: mm

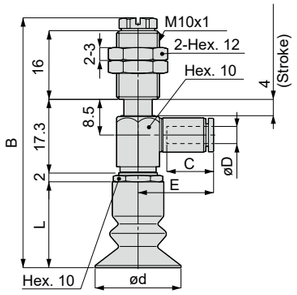
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MC6LB□-4T	6	2.5	49.2	15	0.5 to 0.6	17
VSP-MC6LB□-6T		4				
VSP-MC8LB□-4T	8	2.5	49.2	15	0.5 to 0.6	17
VSP-MC8LB□-6T		4				
VSP-MC10LB□-4T	10	2.5	49.7	15.5	0.5 to 0.6	17
VSP-MC10LB□-6T		4				
VSP-MC15LB□-4T	15	2.5	51.7	17.5	0.5 to 0.6	17
VSP-MC15LB□-6T		4				
VSP-MC20LB□-4T	20	2.5	62.1	20	1 to 1.3	22
VSP-MC20LB□-6T		4				

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Push-in fitting)

●VSP-MD6 to 15LB□-2/4/6



●VSP-MD20LB□-2/4/6

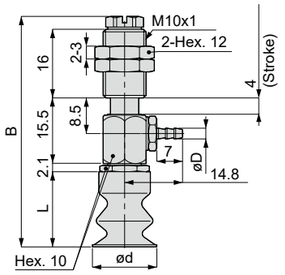


Unit: mm

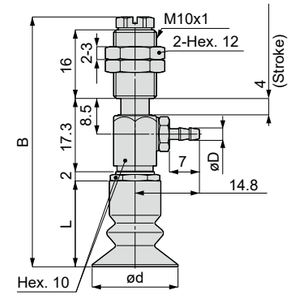
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Spring Force (N)	Weight (g)
VSP-MD6LB□-2	6	1.8	51.6	15	8.4	13.6	1 to 1.3	25
VSP-MD6LB□-4		4			11.2	17.7		26
VSP-MD6LB□-6		6			11.9	19.5		27
VSP-MD8LB□-2	8	1.8	51.6	15	8.4	13.6	1 to 1.3	25
VSP-MD8LB□-4		4			11.2	17.7		26
VSP-MD8LB□-6		6			11.9	19.5		27
VSP-MD10LB□-2	10	1.8	52.1	15.5	8.4	13.6	1 to 1.3	25
VSP-MD10LB□-4		4			11.2	17.7		26
VSP-MD10LB□-6		6			11.9	19.5		27
VSP-MD15LB□-2	15	1.8	54.1	17.5	8.4	13.6	1 to 1.3	25
VSP-MD15LB□-4		4			11.2	17.7		26
VSP-MD15LB□-6		6			11.9	19.5		27
VSP-MD20LB□-2	20	1.8	58.3	20	8.4	13.6	1 to 1.3	26
VSP-MD20LB□-4		4			11.2	17.7		27
VSP-MD20LB□-6		6			11.9	19.5		28

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Barb Fitting)

●VSP-MD6 to 15LB□-4T/6T



●VSP-MD20LB□-4T/6T

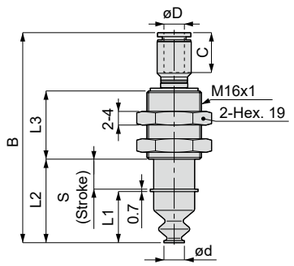


Unit: mm

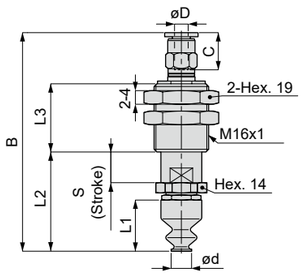
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MD6LB□-4T	6	2.5	51.6	15	1 to 1.3	24
VSP-MD6LB□-6T		4				
VSP-MD8LB□-4T	8	2.5	51.6	15	1 to 1.3	24
VSP-MD8LB□-6T		4				
VSP-MD10LB□-4T	10	2.5	52.1	15.5	1 to 1.3	24
VSP-MD10LB□-6T		4				
VSP-MD15LB□-4T	15	2.5	54.1	17.5	1 to 1.3	24
VSP-MD15LB□-6T		4				
VSP-MD20LB□-4T	20	2.5	58.3	20	1 to 1.3	26
VSP-MD20LB□-6T		4				

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC6, 8LB□-2/4/6



●VSP-HC6, 8-□LB□-2/4/6

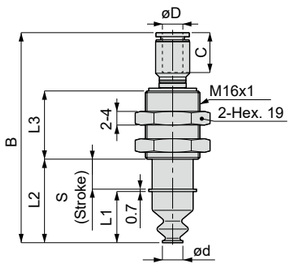


Unit: mm

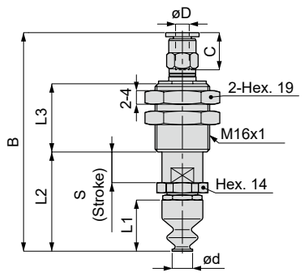
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC6LB□-2	6	1.8	55.9	15	24.7	20	8.4	9	0.9 to 2.7	20
VSP-HC6LB□-4		4	59.9				11.2			21
VSP-HC6LB□-6		6	61.2				11.9			22
VSP-HC6-10LB□-2		1.8	62.7		30.1	21.5	8.4	10	1.0 to 2.4	24
VSP-HC6-10LB□-4		4	66.8				11.2			25
VSP-HC6-10LB□-6		6	68.1				11.9			26
VSP-HC6-15LB□-2		1.8	72.7		35.1	26.5	8.4	15	1.0 to 2.7	26
VSP-HC6-15LB□-4		4	76.8				11.2			27
VSP-HC6-15LB□-6		6	78.1				11.9			28
VSP-HC6-20LB□-2		1.8	82.7		40.1	31.5	8.4	20	1.0 to 3.0	28
VSP-HC6-20LB□-4		4	86.8				11.2			29
VSP-HC6-20LB□-6		6	88.1				11.9			30
VSP-HC6-25LB□-2		1.8	93.2		45.1	37	8.4	25	1.0 to 3.0	30
VSP-HC6-25LB□-4		4	97.3				11.2			31
VSP-HC6-25LB□-6		6	98.6				11.9			32
VSP-HC6-30LB□-2		1.8	104.2		50.1	43	8.4	30	1.0 to 3.0	32
VSP-HC6-30LB□-4		4	108.3				11.2			33
VSP-HC6-30LB□-6		6	109.6				11.9			34
VSP-HC6-40LB□-2		1.8	126.2		60.1	55	8.4	40	1.0 to 3.0	35
VSP-HC6-40LB□-4		4	130.3				11.2			36
VSP-HC6-40LB□-6		6	131.6				11.9			37
VSP-HC6-50LB□-2		1.8	147.7		70.1	66.5	8.4	50	1.0 to 3.1	39
VSP-HC6-50LB□-4		4	151.8				11.2			40
VSP-HC6-50LB□-6		6	153.1				11.9			41
VSP-HC8LB□-2	8	1.8	55.9	15	24.7	20	8.4	9	0.9 to 2.7	20
VSP-HC8LB□-4		4	59.9				11.2			21
VSP-HC8LB□-6		6	61.2				11.9			22
VSP-HC8-10LB□-2		1.8	62.7		30.1	21.5	8.4	10	1.0 to 2.4	24
VSP-HC8-10LB□-4		4	66.8				11.2			25
VSP-HC8-10LB□-6		6	68.1				11.9			26
VSP-HC8-15LB□-2		1.8	72.7		35.1	26.5	8.4	15	1.0 to 2.7	26
VSP-HC8-15LB□-4		4	76.8				11.2			27
VSP-HC8-15LB□-6		6	78.1				11.9			28
VSP-HC8-20LB□-2		1.8	82.7		40.1	31.5	8.4	20	1.0 to 3.0	28
VSP-HC8-20LB□-4		4	86.8				11.2			29
VSP-HC8-20LB□-6		6	88.1				11.9			30
VSP-HC8-25LB□-2		1.8	93.2		45.1	37	8.4	25	1.0 to 3.0	30
VSP-HC8-25LB□-4		4	97.3				11.2			31
VSP-HC8-25LB□-6		6	98.6				11.9			32
VSP-HC8-30LB□-2		1.8	104.2		50.1	43	8.4	30	1.0 to 3.0	32
VSP-HC8-30LB□-4		4	108.3				11.2			33
VSP-HC8-30LB□-6		6	109.6				11.9			34
VSP-HC8-40LB□-2		1.8	126.2		60.1	55	8.4	40	1.0 to 3.0	35
VSP-HC8-40LB□-4		4	130.3				11.2			36
VSP-HC8-40LB□-6		6	131.6				11.9			37
VSP-HC8-50LB□-2		1.8	147.7		70.1	66.5	8.4	50	1.0 to 3.1	39
VSP-HC8-50LB□-4		4	151.8				11.2			40
VSP-HC8-50LB□-6		6	153.1				11.9			41

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC10, 15LB□-2/4/6



●VSP-HC10, 15-□LB□-2/4/6

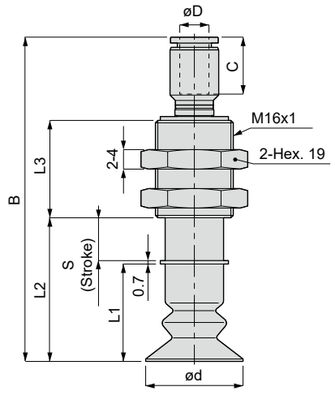


Unit: mm

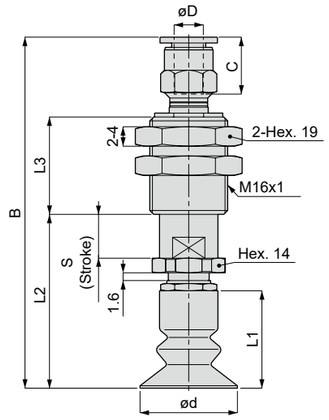
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10LB□-2	10	1.8	56.4	15.5	25.2	20	8.4	9	0.9 to 2.7	20
VSP-HC10LB□-4		4	60.4				11.2			21
VSP-HC10LB□-6		6	61.7				11.9			22
VSP-HC10-10LB□-2		1.8	63.2		30.6	21.5	8.4	10	1.0 to 2.4	24
VSP-HC10-10LB□-4		4	67.3				11.2			25
VSP-HC10-10LB□-6		6	68.6				11.9			26
VSP-HC10-15LB□-2		1.8	73.2		35.6	26.5	8.4	15	1.0 to 2.7	26
VSP-HC10-15LB□-4		4	77.3				11.2			27
VSP-HC10-15LB□-6		6	78.6				11.9			28
VSP-HC10-20LB□-2		1.8	83.2		40.6	31.5	8.4	20	1.0 to 3.0	28
VSP-HC10-20LB□-4		4	87.3				11.2			29
VSP-HC10-20LB□-6		6	88.6				11.9			30
VSP-HC10-25LB□-2		1.8	93.7		45.6	37	8.4	25	1.0 to 3.0	30
VSP-HC10-25LB□-4		4	97.8				11.2			31
VSP-HC10-25LB□-6		6	99.1				11.9			32
VSP-HC10-30LB□-2		1.8	104.7		50.6	43	8.4	30	1.0 to 3.0	32
VSP-HC10-30LB□-4		4	108.8				11.2			33
VSP-HC10-30LB□-6		6	110.1				11.9			34
VSP-HC10-40LB□-2		1.8	126.7		60.6	55	8.4	40	1.0 to 3.0	35
VSP-HC10-40LB□-4		4	130.8				11.2			36
VSP-HC10-40LB□-6		6	132.1				11.9			37
VSP-HC10-50LB□-2		1.8	148.2		70.6	66.5	8.4	50	1.0 to 3.1	39
VSP-HC10-50LB□-4		4	152.3				11.2			40
VSP-HC10-50LB□-6		6	153.6				11.9			41
VSP-HC15LB□-2	15	1.8	58.4	17.5	27.2	20	8.4	9	0.9 to 2.7	20
VSP-HC15LB□-4		4	62.4				11.2			21
VSP-HC15LB□-6		6	63.7				11.9			22
VSP-HC15-10LB□-2		1.8	65.2		32.6	21.5	8.4	10	1.0 to 2.4	24
VSP-HC15-10LB□-4		4	69.3				11.2			25
VSP-HC15-10LB□-6		6	70.6				11.9			26
VSP-HC15-15LB□-2		1.8	75.2		37.6	26.5	8.4	15	1.0 to 2.7	26
VSP-HC15-15LB□-4		4	79.3				11.2			27
VSP-HC15-15LB□-6		6	80.6				11.9			28
VSP-HC15-20LB□-2		1.8	85.2		42.6	31.5	8.4	20	1.0 to 3.0	28
VSP-HC15-20LB□-4		4	89.3				11.2			29
VSP-HC15-20LB□-6		6	90.6				11.9			30
VSP-HC15-25LB□-2		1.8	95.7		47.6	37	8.4	25	1.0 to 3.0	30
VSP-HC15-25LB□-4		4	99.8				11.2			31
VSP-HC15-25LB□-6		6	101.1				11.9			32
VSP-HC15-30LB□-2		1.8	106.7		52.6	43	8.4	30	1.0 to 3.0	32
VSP-HC15-30LB□-4		4	110.8				11.2			33
VSP-HC15-30LB□-6		6	112.1				11.9			34
VSP-HC15-40LB□-2		1.8	128.7		62.6	55	8.4	40	1.0 to 3.0	35
VSP-HC15-40LB□-4		4	132.8				11.2			36
VSP-HC15-40LB□-6		6	134.1				11.9			37
VSP-HC15-50LB□-2		1.8	150.2		72.6	66.5	8.4	50	1.0 to 3.1	39
VSP-HC15-50LB□-4		4	154.3				11.2			40
VSP-HC15-50LB□-6		6	155.6				11.9			41

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC20LB□-2/4/6



●VSP-HC20-□LB□-2/4/6

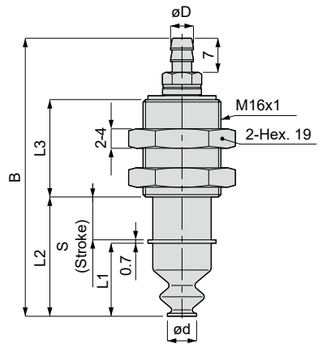


Unit: mm

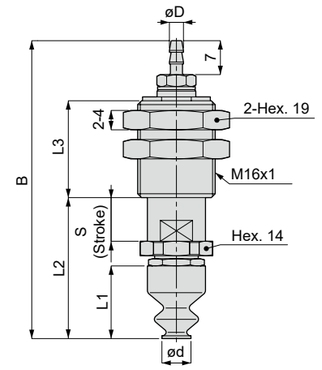
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20LB□-2	20	1.8	60.9	20	29.7	20	8.4	9	0.9 to 2.7	21
VSP-HC20LB□-4		4	64.9				11.2			22
VSP-HC20LB□-6		6	66.2				11.9			23
VSP-HC20-10LB□-2		1.8	69.2		35	21.5	8.4	10	1.0 to 2.4	27
VSP-HC20-10LB□-4		4	73.3				11.2			28
VSP-HC20-10LB□-6		6	74.6				11.9			29
VSP-HC20-15LB□-2		1.8	79.2		40	26.5	8.4	15	1.0 to 2.7	29
VSP-HC20-15LB□-4		4	83.3				11.2			30
VSP-HC20-15LB□-6		6	84.6				11.9			31
VSP-HC20-20LB□-2		1.8	89.2		45	31.5	8.4	20	1.0 to 3.0	31
VSP-HC20-20LB□-4		4	93.3				11.2			32
VSP-HC20-20LB□-6		6	94.6				11.9			33
VSP-HC20-25LB□-2		1.8	99.7		50	37	8.4	25	1.0 to 3.0	33
VSP-HC20-25LB□-4		4	103.8				11.2			34
VSP-HC20-25LB□-6		6	105.1				11.9			35
VSP-HC20-30LB□-2		1.8	110.7		55	43	8.4	30	1.0 to 3.0	35
VSP-HC20-30LB□-4		4	114.8				11.2			36
VSP-HC20-30LB□-6		6	116.1				11.9			37
VSP-HC20-40LB□-2		1.8	132.7		65	55	8.4	40	1.0 to 3.0	39
VSP-HC20-40LB□-4		4	136.8				11.2			40
VSP-HC20-40LB□-6		6	138.1				11.9			41
VSP-HC20-50LB□-2		1.8	154.2		75	66.5	8.4	50	1.0 to 3.1	43
VSP-HC20-50LB□-4		4	158.3				11.2			44
VSP-HC20-50LB□-6		6	159.6				11.9			45

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC6, 8LB□-4T/6T



●VSP-HC6, 8-□LB□-4T/6T

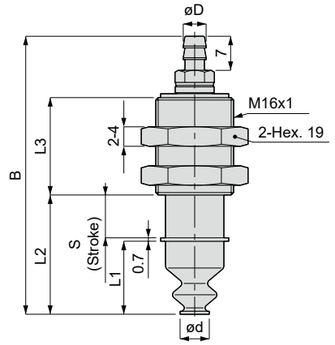


Unit: mm

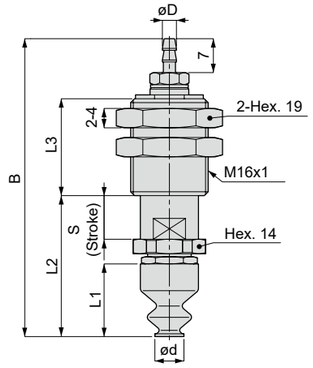
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC6LB□-4T	6	2.5	57.1	15	24.7	20	9	0.9 to 2.7	20
VSP-HC6LB□-6T		4							
VSP-HC6-10LB□-4T		2.5	63.9		30.1	21.5	10	1.0 to 2.4	24
VSP-HC6-10LB□-6T		4							
VSP-HC6-15LB□-4T		2.5	73.9		35.1	26.5	15	1.0 to 2.7	26
VSP-HC6-15LB□-6T		4							
VSP-HC6-20LB□-4T		2.5	83.9		40.1	31.5	20	1.0 to 3.0	28
VSP-HC6-20LB□-6T		4							
VSP-HC6-25LB□-4T		2.5	94.4		45.1	37	25	1.0 to 3.0	31
VSP-HC6-25LB□-6T		4							
VSP-HC6-30LB□-4T		2.5	105.4		50.1	43	30	1.0 to 3.0	33
VSP-HC6-30LB□-6T		4							
VSP-HC6-40LB□-4T		2.5	127.4		60.1	55	40	1.0 to 3.0	37
VSP-HC6-40LB□-6T		4							
VSP-HC6-50LB□-4T		2.5	148.9		70.1	66.5	50	1.0 to 3.1	41
VSP-HC6-50LB□-6T		4							
VSP-HC8LB□-4T	8	2.5	57.1	15	24.7	20	9	0.9 to 2.7	20
VSP-HC8LB□-6T		4							
VSP-HC8-10LB□-4T		2.5	63.9		30.1	21.5	10	1.0 to 2.4	24
VSP-HC8-10LB□-6T		4							
VSP-HC8-15LB□-4T		2.5	73.9		35.1	26.5	15	1.0 to 2.7	26
VSP-HC8-15LB□-6T		4							
VSP-HC8-20LB□-4T		2.5	83.9		40.1	31.5	20	1.0 to 3.0	28
VSP-HC8-20LB□-6T		4							
VSP-HC8-25LB□-4T		2.5	94.4		45.1	37	25	1.0 to 3.0	31
VSP-HC8-25LB□-6T		4							
VSP-HC8-30LB□-4T		2.5	105.4		50.1	43	30	1.0 to 3.0	33
VSP-HC8-30LB□-6T		4							
VSP-HC8-40LB□-4T		2.5	127.4		60.1	55	40	1.0 to 3.0	37
VSP-HC8-40LB□-6T		4							
VSP-HC8-50LB□-4T		2.5	148.9		70.1	66.5	50	1.0 to 3.1	41
VSP-HC8-50LB□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC10, 15LB□-4T/6T



●VSP-HC10, 15-□LB□-4T/6T

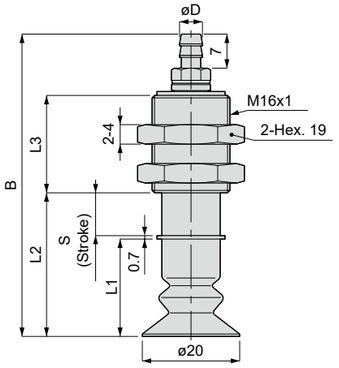


Unit: mm

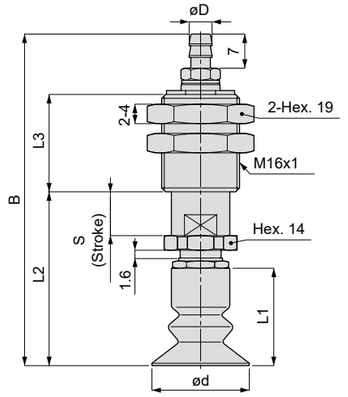
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10LB□-4T	10	2.5	57.6	15.5	25.2	20	9	0.9 to 2.7	20
VSP-HC10LB□-6T		4							
VSP-HC10-10LB□-4T		2.5	64.4		30.6	21.5	10	1.0 to 2.4	24
VSP-HC10-10LB□-6T		4							
VSP-HC10-15LB□-4T		2.5	74.4		35.6	26.5	15	1.0 to 2.7	26
VSP-HC10-15LB□-6T		4							
VSP-HC10-20LB□-4T		2.5	84.4		40.6	31.5	20	1.0 to 3.0	28
VSP-HC10-20LB□-6T		4							
VSP-HC10-25LB□-4T		2.5	94.9		45.6	37	25	1.0 to 3.0	31
VSP-HC10-25LB□-6T		4							
VSP-HC10-30LB□-4T		2.5	105.9		50.6	43	30	1.0 to 3.0	33
VSP-HC10-30LB□-6T		4							
VSP-HC10-40LB□-4T		2.5	127.9		60.6	55	40	1.0 to 3.0	37
VSP-HC10-40LB□-6T		4							
VSP-HC10-50LB□-4T		2.5	149.4		70.6	66.5	50	1.0 to 3.1	41
VSP-HC10-50LB□-6T		4							
VSP-HC15LB□-4T	15	2.5	59.6	17.5	27.2	20	9	0.9 to 2.7	20
VSP-HC15LB□-6T		4							
VSP-HC15-10LB□-4T		2.5	66.4		32.6	21.5	10	1.0 to 2.4	24
VSP-HC15-10LB□-6T		4							
VSP-HC15-15LB□-4T		2.5	76.4		37.6	26.5	15	1.0 to 2.7	26
VSP-HC15-15LB□-6T		4							
VSP-HC15-20LB□-4T		2.5	86.4		42.6	31.5	20	1.0 to 3.0	28
VSP-HC15-20LB□-6T		4							
VSP-HC15-25LB□-4T		2.5	96.9		47.6	37	25	1.0 to 3.0	31
VSP-HC15-25LB□-6T		4							
VSP-HC15-30LB□-4T		2.5	107.9		52.6	43	30	1.0 to 3.0	33
VSP-HC15-30LB□-6T		4							
VSP-HC15-40LB□-4T		2.5	129.9		62.6	55	40	1.0 to 3.0	37
VSP-HC15-40LB□-6T		4							
VSP-HC15-50LB□-4T		2.5	151.4		72.6	66.5	50	1.0 to 3.1	41
VSP-HC15-50LB□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC20LB□-4T/6T



●VSP-HC20-□LB□-4T/6T

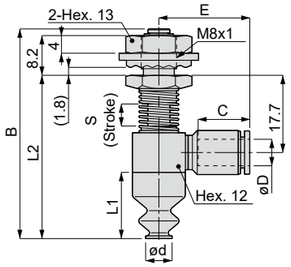


Unit: mm

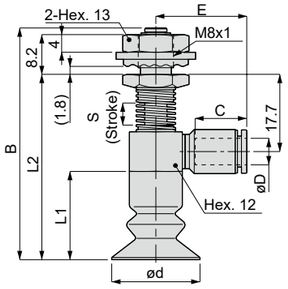
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20LB□-4T	20	2.5	57.1	20	29.7	20	9	0.9 to 2.7	21
VSP-HC20LB□-6T		4							
VSP-HC20-10LB□-4T		2.5	70.4		35	21.5	10	1.0 to 2.4	26
VSP-HC20-10LB□-6T		4							
VSP-HC20-15LB□-4T		2.5	80.4		40	26.5	15	1.0 to 2.7	28
VSP-HC20-15LB□-6T		4							
VSP-HC20-20LB□-4T		2.5	90.4		45	31.5	20	1.0 to 3.0	30
VSP-HC20-20LB□-6T		4							
VSP-HC20-25LB□-4T		2.5	100.9		50	37	25	1.0 to 3.0	32
VSP-HC20-25LB□-6T		4							
VSP-HC20-30LB□-4T		2.5	111.9		55	43	30	1.0 to 3.0	35
VSP-HC20-30LB□-6T		4							
VSP-HC20-40LB□-4T		2.5	133.9		65	55	40	1.0 to 3.0	39
VSP-HC20-40LB□-6T		4							
VSP-HC20-50LB□-4T		2.5	155.4		75	66.5	50	1.0 to 3.1	43
VSP-HC20-50LB□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side, VSP-HD, Push-in fitting)

●VSP-HD6 to 15LB□-2/4/6



●VSP-HD20LB□-2/4/6

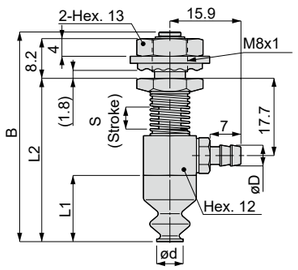


Unit: mm

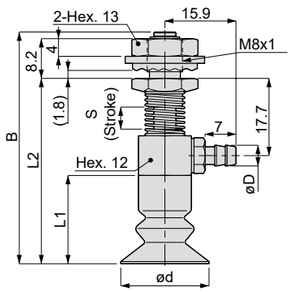
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HD6LB□-2	6	1.8	47.5	15	37.2	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HD6LB□-4		4				11.2	18.8			30
VSP-HD6LB□-6		6				11.9	20.6			31
VSP-HD8LB□-2	8	1.8	47.5	15	37.2	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HD8LB□-4		4				11.2	18.8			30
VSP-HD8LB□-6		6				11.9	20.6			31
VSP-HD10LB□-2	10	1.8	48	15.5	37.7	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HD10LB□-4		4				11.2	18.8			30
VSP-HD10LB□-6		6				11.9	20.6			31
VSP-HD15LB□-2	15	1.8	50	17.5	39.7	8.4	14.7	5.2	1.6 to 2.9	30
VSP-HD15LB□-4		4				11.2	18.8			31
VSP-HD15LB□-6		6				11.9	20.6			32
VSP-HD20LB□-2	20	1.8	52.5	20	42.2	8.4	14.7	5.2	1.6 to 2.9	31
VSP-HD20LB□-4		4				11.2	18.8			32
VSP-HD20LB□-6		6				11.9	20.6			33

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side, VSP-HD, Barb Fitting)

●VSP-HD6 to 15LB□-4T/6T



●VSP-HD20LB□-4T/6T

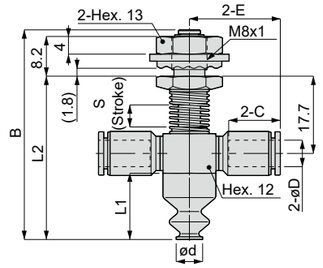


Unit: mm

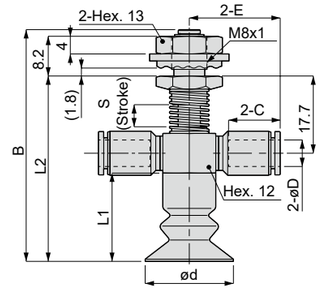
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HD6LB□-4T	6	2.5	47.5	15	37.2	5.2	1.6 to 2.9	30
VSP-HD6LB□-6T		4						
VSP-HD8LB□-4T	8	2.5	47.5	15	37.2	5.2	1.6 to 2.9	30
VSP-HD8LB□-6T		4						
VSP-HD10LB□-4T	10	2.5	48	15.5	37.7	5.2	1.6 to 2.9	30
VSP-HD10LB□-6T		4						
VSP-HD15LB□-4T	15	2.5	50	17.5	39.7	5.2	1.6 to 2.9	30
VSP-HD15LB□-6T		4						
VSP-HD20LB□-4T	20	2.5	52.5	20	52.5	5.2	1.6 to 2.9	32
VSP-HD20LB□-6T		4						

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides, VSP-HDW, Push-in fitting)

●VSP-HDW6 to 15LB□-2/4/6



●VSP-HDW20LB□-2/4/6

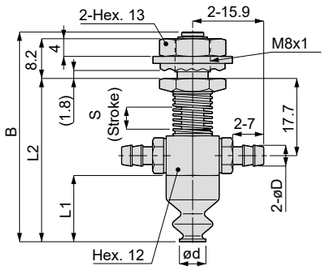


Unit: mm

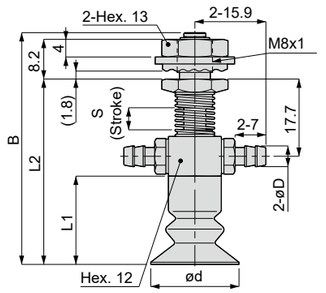
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW6LB□-2	6	1.8	47.5	12.2	37.2	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HDW6LB□-4		4				11.2	18.8			30
VSP-HDW6LB□-6		6				11.9	20.6			31
VSP-HDW8LB□-2	8	1.8	47.5	12.2	37.2	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HDW8LB□-4		4				11.2	18.8			30
VSP-HDW8LB□-6		6				11.9	20.6			31
VSP-HDW10LB□-2	10	1.8	48	14	37.7	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HDW10LB□-4		4				11.2	18.8			30
VSP-HDW10LB□-6		6				11.9	20.6			31
VSP-HDW15LB□-2	15	1.8	50	14	39.7	8.4	14.7	5.2	1.6 to 2.9	30
VSP-HDW15LB□-4		4				11.2	18.8			31
VSP-HDW15LB□-6		6				11.9	20.6			32
VSP-HDW20LB□-2	20	1.8	52.5	15	42.2	8.4	14.7	5.2	1.6 to 2.9	31
VSP-HDW20LB□-4		4				11.2	18.8			32
VSP-HDW20LB□-6		6				11.9	20.6			33

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides, VSP-HDW, Barb Fitting)

●VSP-HDW6 to 15LB□-4T/6T



●VSP-HDW20LB□-4T/6T

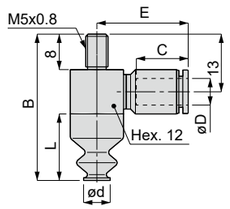


Unit: mm

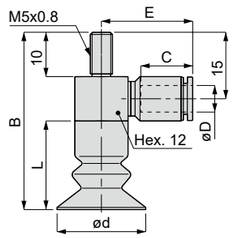
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW6LB□-4T	6	2.5	47.5	15	37.2	5.2	1.6 to 2.9	30
VSP-HDW6LB□-6T		4						
VSP-HDW8LB□-4T	8	2.5	47.5	15	37.2	5.2	1.6 to 2.9	30
VSP-HDW8LB□-6T		4						
VSP-HDW10LB□-4T	10	2.5	48	15.5	37.7	5.2	1.6 to 2.9	30
VSP-HDW10LB□-6T		4						
VSP-HDW15LB□-4T	15	2.5	50	17.5	39.7	5.2	1.6 to 2.9	30
VSP-HDW15LB□-6T		4						
VSP-HDW20LB□-4T	20	2.5	52.5	20	52.5	5.2	1.6 to 2.9	32
VSP-HDW20LB□-6T		4						

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side, VSP-HE, Push-in fitting)

●VSP-HE6 to 15LB□-2/4/6



●VSP-HE20LB□-2/4/6

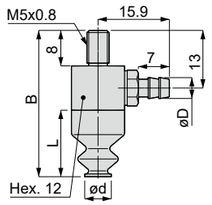


Unit: mm

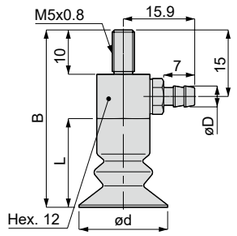
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HE6LB□-2	6	1.8	33	15	8.4	14.7	15
VSP-HE6LB□-4		4			11.2	18.8	16
VSP-HE6LB□-6		6			11.9	20.6	17
VSP-HE8LB□-2	8	1.8	33	15	8.4	14.7	15
VSP-HE8LB□-4		4			11.2	18.8	16
VSP-HE8LB□-6		6			11.9	20.6	17
VSP-HE10LB□-2	10	1.8	33.5	15.5	8.4	14.7	15
VSP-HE10LB□-4		4			11.2	18.8	16
VSP-HE10LB□-6		6			11.9	20.6	17
VSP-HE15LB□-2	15	1.8	35.5	17.5	8.4	14.7	15
VSP-HE15LB□-4		4			11.2	18.8	16
VSP-HE15LB□-6		6			11.9	20.6	17
VSP-HE20LB□-2	20	1.8	40	20	8.4	14.7	17
VSP-HE20LB□-4		4			11.2	18.8	18
VSP-HE20LB□-6		6			11.9	20.6	19

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side, VSP-HE, Barb Fitting)

●VSP-HE6 to 15LB□-4T/6T



●VSP-HE20LB□-4T/6T

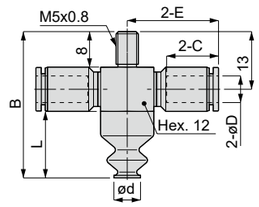


Unit: mm

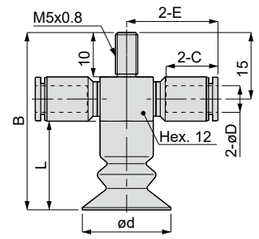
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HE6LB□-4T	6	2.5	33	15	15
VSP-HE6LB□-6T		4			
VSP-HE8LB□-4T	8	2.5	33	15	15
VSP-HE8LB□-6T		4			
VSP-HE10LB□-4T	10	2.5	33.5	15.5	15
VSP-HE10LB□-6T		4			
VSP-HE15LB□-4T	15	2.5	35.5	17.5	16
VSP-HE15LB□-6T		4			
VSP-HE20LB□-4T	20	2.5	40	20	18
VSP-HE20LB□-6T		4			

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Push-in fitting)

●VSP-HEW6 to 15LB□-2/4/6



●VSP-HEW20LB□-2/4/6

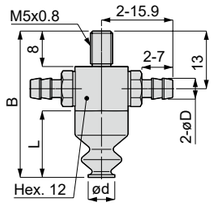


Unit: mm

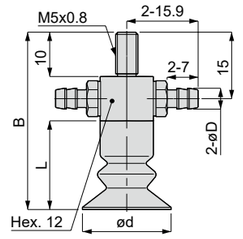
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HEW6LB□-2	6	1.8	33	15	8.4	14.7	15
VSP-HEW6LB□-4		4			11.2	18.8	16
VSP-HEW6LB□-6		6			11.9	20.6	17
VSP-HEW8LB□-2	8	1.8	33	15	8.4	14.7	15
VSP-HEW8LB□-4		4			11.2	18.8	16
VSP-HEW8LB□-6		6			11.9	20.6	17
VSP-HEW10LB□-2	10	1.8	33.5	15.5	8.4	14.7	15
VSP-HEW10LB□-4		4			11.2	18.8	16
VSP-HEW10LB□-6		6			11.9	20.6	17
VSP-HEW15LB□-2	15	1.8	35.5	17.5	8.4	14.7	15
VSP-HEW15LB□-4		4			11.2	18.8	16
VSP-HEW15LB□-6		6			11.9	20.6	17
VSP-HEW20LB□-2	20	1.8	40	20	8.4	14.7	17
VSP-HEW20LB□-4		4			11.2	18.8	18
VSP-HEW20LB□-6		6			11.9	20.6	19

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Barb Fitting)

●VSP-HEW6 to 15LB□-4T/6T



●VSP-HEW20LB□-4T/6T

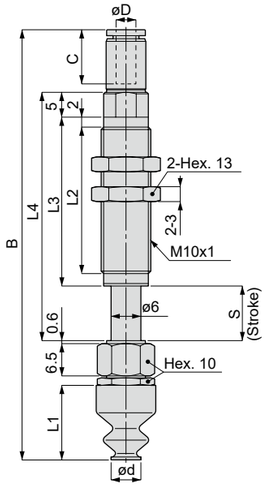


Unit: mm

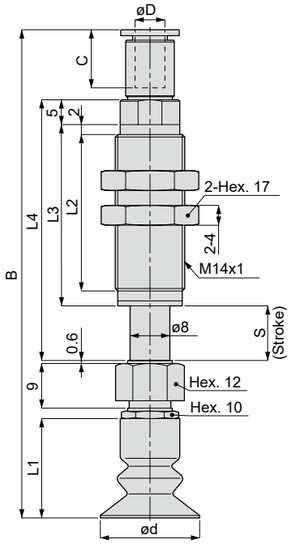
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HEW6LB□-4T	6	2.5	33	15	15
VSP-HEW6LB□-6T		4			
VSP-HEW8LB□-4T	8	2.5	33	15	15
VSP-HEW8LB□-6T		4			
VSP-HEW10LB□-4T	10	2.5	33.5	15.5	15
VSP-HEW10LB□-6T		4			
VSP-HEW15LB□-4T	15	2.5	35.5	17.5	16
VSP-HEW15LB□-6T		4			
VSP-HEW20LB□-4T	20	2.5	40	20	18
VSP-HEW20LB□-6T		4			

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC6 to 15-□LB□-4



●VSP-LFC20-□LB□-4



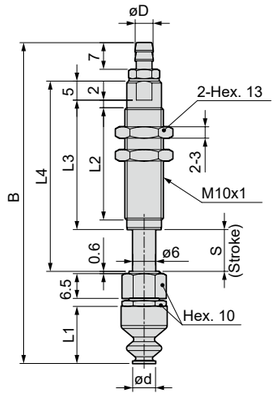
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC6-2LB□-4	6	4	71.2	15	21.5	26	34	11.2	2	1.3 to 1.8	30
VSP-LFC6-5LB□-4			77.2		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	32
VSP-LFC6-10LB□-4			87.2		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	34
VSP-LFC6-15LB□-4			97.2		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	36
VSP-LFC6-20LB□-4			107.2		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	38
VSP-LFC8-2LB□-4	8	4	71.2	15	21.5	26	34	11.2	2	1.3 to 1.8	30
VSP-LFC8-5LB□-4			77.2		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	32
VSP-LFC8-10LB□-4			87.2		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	34
VSP-LFC8-15LB□-4			97.2		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	36
VSP-LFC8-20LB□-4			107.2		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	38
VSP-LFC10-2LB□-4	10	4	71.7	15.5	21.5	26	34	11.2	2	1.3 to 1.8	30
VSP-LFC10-5LB□-4			77.7		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	32
VSP-LFC10-10LB□-4			87.7		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	34
VSP-LFC10-15LB□-4			97.7		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	36
VSP-LFC10-20LB□-4			107.7		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	38
VSP-LFC15-2LB□-4	15	4	73.7	17.5	21.5	26	34	11.2	2	1.3 to 1.8	30
VSP-LFC15-5LB□-4			79.7		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	32
VSP-LFC15-10LB□-4			89.7		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	34
VSP-LFC15-15LB□-4			99.7		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	36
VSP-LFC15-20LB□-4			109.7		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	38
VSP-LFC20-5LB□-4	20	4	87.1	20	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	57
VSP-LFC20-5LB□-6		6	88.4					11.9			58
VSP-LFC20-10LB□-4		4	97.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	59
VSP-LFC20-10LB□-6		6	98.4					11.9			60
VSP-LFC20-15LB□-4		4	107.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	62
VSP-LFC20-15LB□-6		6	108.4					11.9			63
VSP-LFC20-20LB□-4		4	117.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	65
VSP-LFC20-20LB□-6		6	118.4					11.9			66

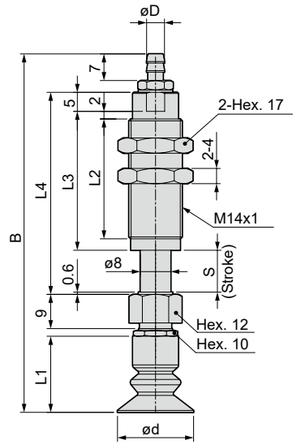
* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC6 to 15-□LB□-4T/6T



●VSP-LFC20-□LB□-4T/6T



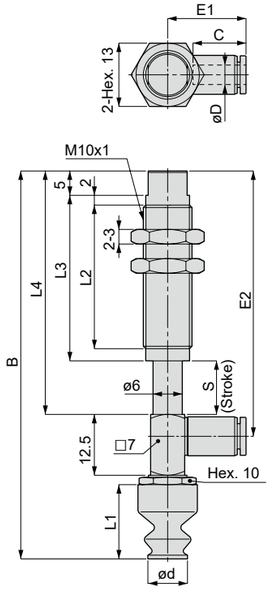
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC6-2LB□-4T	6	2.5	68.3	15	21.5	26	34	2	1.3 to 1.8	28
VSP-LFC6-2LB□-6T		4								
VSP-LFC6-5LB□-4T		2.5	74.3		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	30
VSP-LFC6-5LB□-6T		4								
VSP-LFC6-10LB□-4T		2.5	84.3		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	32
VSP-LFC6-10LB□-6T		4								
VSP-LFC6-15LB□-4T		2.5	94.3		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	34
VSP-LFC6-15LB□-6T		4								
VSP-LFC6-20LB□-4T		2.5	104.3		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	36
VSP-LFC6-20LB□-6T		4								
VSP-LFC8-2LB□-4T	8	2.5	68.3	15	21.5	26	34	2	1.3 to 1.8	28
VSP-LFC8-2LB□-6T		4								
VSP-LFC8-5LB□-4T		2.5	74.3		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	30
VSP-LFC8-5LB□-6T		4								
VSP-LFC8-10LB□-4T		2.5	84.3		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	32
VSP-LFC8-10LB□-6T		4								
VSP-LFC8-15LB□-4T		2.5	94.3		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	34
VSP-LFC8-15LB□-6T		4								
VSP-LFC8-20LB□-4T		2.5	104.3		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	36
VSP-LFC8-20LB□-6T		4								
VSP-LFC10-2LB□-4T	10	2.5	68.8	15.5	21.5	26	34	2	1.3 to 1.8	28
VSP-LFC10-2LB□-6T		4								
VSP-LFC10-5LB□-4T		2.5	74.8		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	30
VSP-LFC10-5LB□-6T		4								
VSP-LFC10-10LB□-4T		2.5	84.8		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	32
VSP-LFC10-10LB□-6T		4								
VSP-LFC10-15LB□-4T		2.5	94.8		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	34
VSP-LFC10-15LB□-6T		4								
VSP-LFC10-20LB□-4T		2.5	104.8		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	36
VSP-LFC10-20LB□-6T		4								
VSP-LFC15-2LB□-4T	15	2.5	70.8	17.5	21.5	26	34	2	1.3 to 1.8	28
VSP-LFC15-2LB□-6T		4								
VSP-LFC15-5LB□-4T		2.5	76.8		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	30
VSP-LFC15-5LB□-6T		4								
VSP-LFC15-10LB□-4T		2.5	86.8		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	32
VSP-LFC15-10LB□-6T		4								
VSP-LFC15-15LB□-4T		2.5	96.8		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	34
VSP-LFC15-15LB□-6T		4								
VSP-LFC15-20LB□-4T		2.5	106.8		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	36
VSP-LFC15-20LB□-6T		4								
VSP-LFC20-5LB□-4T	20	2.5	84.2	20	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	52
VSP-LFC20-5LB□-6T		4								
VSP-LFC20-10LB□-4T		2.5	94.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	54
VSP-LFC20-10LB□-6T		4								
VSP-LFC20-15LB□-4T		2.5	104.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	57
VSP-LFC20-15LB□-6T		4								
VSP-LFC20-20LB□-4T		2.5	114.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	60
VSP-LFC20-20LB□-6T		4								

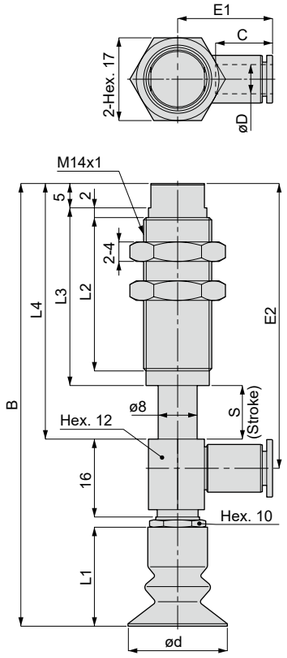
* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Push-in fitting)

●VSP-LFD6 to 15-□LB□-4



●VSP-LFD20-□LB□-4/6

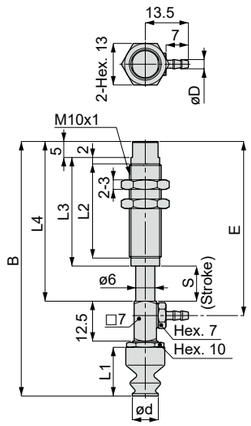


Unit: mm

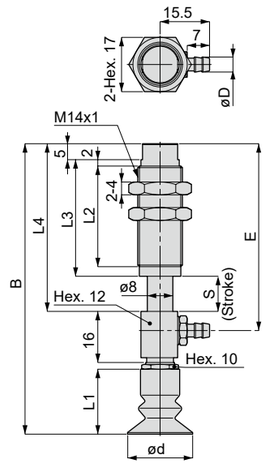
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD6-5LB□-4	6	4	69.6	15	24.5	29	40	11.2	16.4	44.5	5	1.3 to 2.4	28
VSP-LFD6-10LB□-4			79.6		29.5	34	50			54.5	10	1.3 to 3.3	30
VSP-LFD6-15LB□-4			89.6		34.5	39	60			64.5	15	1.3 to 4.2	32
VSP-LFD6-20LB□-4			99.6		39.5	44	70			74.5	20	1.3 to 5.1	34
VSP-LFD8-5LB□-4	8	4	69.6	15	24.5	29	40	11.2	16.4	44.5	5	1.3 to 2.4	28
VSP-LFD8-10LB□-4			79.6		29.5	34	50			54.5	10	1.3 to 3.3	30
VSP-LFD8-15LB□-4			89.6		34.5	39	60			64.5	15	1.3 to 4.2	32
VSP-LFD8-20LB□-4			99.6		39.5	44	70			74.5	20	1.3 to 5.1	34
VSP-LFD10-5LB□-4	10	4	70.1	15.5	24.5	29	40	11.2	16.4	44.5	5	1.3 to 2.4	28
VSP-LFD10-10LB□-4			80.1		29.5	34	50			54.5	10	1.3 to 3.3	30
VSP-LFD10-15LB□-4			90.1		34.5	39	60			64.5	15	1.3 to 4.2	32
VSP-LFD10-20LB□-4			100.1		39.5	44	70			74.5	20	1.3 to 5.1	34
VSP-LFD15-5LB□-4	15	4	72.1	17.5	24.5	29	40	11.2	16.4	44.5	5	1.3 to 2.4	28
VSP-LFD15-10LB□-4			82.1		29.5	34	50			54.5	10	1.3 to 3.3	30
VSP-LFD15-15LB□-4			92.1		34.5	39	60			64.5	15	1.3 to 4.2	32
VSP-LFD15-20LB□-4			102.1		39.5	44	70			74.5	20	1.3 to 5.1	34
VSP-LFD20-5LB□-4	20	4	80.5	20	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	58
VSP-LFD20-5LB□-6		6						11.9	19.7				59
VSP-LFD20-10LB□-4		4	90.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	62
VSP-LFD20-10LB□-6		6						11.9	19.7				63
VSP-LFD20-15LB□-4		4	100.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	66
VSP-LFD20-15LB□-6		6						11.9	19.7				67
VSP-LFD20-20LB□-4		4	110.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	70
VSP-LFD20-20LB□-6		6						11.9	19.7				71

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Barb Fitting)

●VSP-LFD6 to 15-□LB□-4T/6T



●VSP-LFD20-□LB□-4T/6T

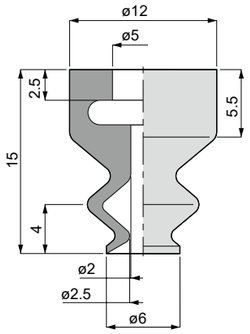


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD6-5LB□-4T	6	2.5	69.6	15	24.5	29	40	44.5	5	1.3 to 2.4	27
VSP-LFD6-5LB□-6T		4									
VSP-LFD6-10LB□-4T		2.5	79.6		29.5	34	50	54.5	10	1.3 to 3.3	29
VSP-LFD6-10LB□-6T		4									
VSP-LFD6-15LB□-4T		2.5	89.6		34.5	39	60	64.5	15	1.3 to 4.2	31
VSP-LFD6-15LB□-6T		4									
VSP-LFD6-20LB□-4T		2.5	99.6		39.5	44	70	74.5	20	1.3 to 5.1	33
VSP-LFD6-20LB□-6T		4									
VSP-LFD8-5LB□-4T	8	2.5	69.6	15	24.5	29	40	44.5	5	1.3 to 2.4	27
VSP-LFD8-5LB□-6T		4									
VSP-LFD8-10LB□-4T		2.5	79.6		29.5	34	50	54.5	10	1.3 to 3.3	29
VSP-LFD8-10LB□-6T		4									
VSP-LFD8-15LB□-4T		2.5	89.6		34.5	39	60	64.5	15	1.3 to 4.2	31
VSP-LFD8-15LB□-6T		4									
VSP-LFD8-20LB□-4T		2.5	99.6		39.5	44	70	74.5	20	1.3 to 5.1	33
VSP-LFD8-20LB□-6T		4									
VSP-LFD10-5LB□-4T	10	2.5	70.1	15.5	24.5	29	40	44.5	5	1.3 to 2.4	27
VSP-LFD10-5LB□-6T		4									
VSP-LFD10-10LB□-4T		2.5	80.1		29.5	34	50	54.5	10	1.3 to 3.3	29
VSP-LFD10-10LB□-6T		4									
VSP-LFD10-15LB□-4T		2.5	90.1		34.5	39	60	64.5	15	1.3 to 4.2	31
VSP-LFD10-15LB□-6T		4									
VSP-LFD10-20LB□-4T		2.5	100.1		39.5	44	70	74.5	20	1.3 to 5.1	33
VSP-LFD10-20LB□-6T		4									
VSP-LFD15-5LB□-4T	15	2.5	72.1	17.5	24.5	29	40	44.5	5	1.3 to 2.4	27
VSP-LFD15-5LB□-6T		4									
VSP-LFD15-10LB□-4T		2.5	82.1		29.5	34	50	54.5	10	1.3 to 3.3	29
VSP-LFD15-10LB□-6T		4									
VSP-LFD15-15LB□-4T		2.5	92.1		34.5	39	60	64.5	15	1.3 to 4.2	31
VSP-LFD15-15LB□-6T		4									
VSP-LFD15-20LB□-4T		2.5	102.1		39.5	44	70	74.5	20	1.3 to 5.1	33
VSP-LFD15-20LB□-6T		4									
VSP-LFD20-5LB□-4T	20	2.5	80.5	20	26.5	31.5	42.5	48.5	5	4.5 to 6.5	54
VSP-LFD20-5LB□-6T		4									
VSP-LFD20-10LB□-4T		2.5	90.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	57
VSP-LFD20-10LB□-6T		4									
VSP-LFD20-15LB□-4T		2.5	100.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	61
VSP-LFD20-15LB□-6T		4									
VSP-LFD20-20LB□-4T		2.5	110.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	65
VSP-LFD20-20LB□-6T		4									

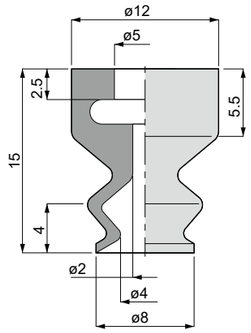
Pad Rubber Only External Dimension Diagram

●VSPG-6LB□



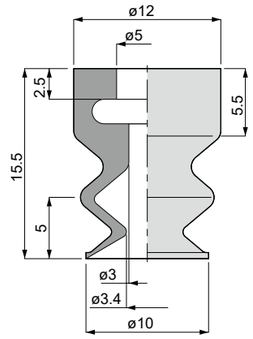
Weight: 1 g

●VSPG-8LB□



Weight: 1 g

●VSPG-10LB□



Weight: 1.1 g

●VSPG-15LB□

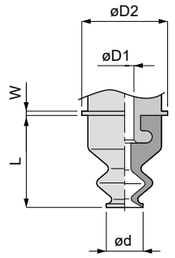
Weight: 1.2 g

●VSPG-20LB□

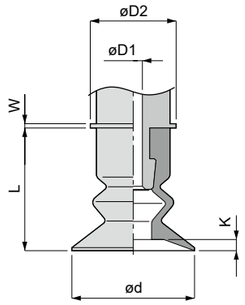
Weight: 2 g

Detailed Diagram of Pad and Holder Connection Part

●VSPG-6 to 15LB□A



●VSPG-20LB□A



Unit: mm

Model No.	Pad Diameter ød	L	øD1	øD2	W
VSPG-6LB□A	6	15	3	14	0.7
VSPG-8LB□A	8	15	3	14	0.7
VSPG-10LB□A	10	15.5	3	14	0.7
VSPG-15LB□A	15	17.5	3	14	0.7
VSPG-20LB□A	20	20	3	14	0.7

* The øD2 and W dimensions in the dimension table apply only to the VPHC type.

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Suction Pad Soft Bellows Type, VSP-□LB□Series

Design / Selection

Warning

■Since soft bellows type pads may adhere together due to working Status and material characteristics, confirm performance with an actual device. Also, tackiness may increase depending on the operating environment or pad wear. Review the pad shape, material, quantity, etc., as necessary.

Caution

■The VPHC type holder has no conductivity. When using vacuum pads made of conductive material, take measures to discharge electricity directly from the pad rubber.

■Use the soft bellows so that they do not overcrush. Excessive crushing may accelerate wear of the bellows part, cause cracks in the lip part, or lead to deformation due to strain, potentially causing suction failure.

■When replacing a soft bellows type pad adaptor, be sure to check the Suction Pads configuration diagram in the catalog, use appropriate tools according to the recommended tightening torque below and tighten without looseness using the hexagonal part of the holder outer diameter.

●Recommended Tightening Torque

Pad Thread Size (mm)	Tightening Torque
M4x0.7	0.7 to 0.8 N·m
M6x1	1.5 to 2.0 N·m

MEMO



Suction Pad Non-slip Type

VSP-□K□ Series

Suction pad with a non-slip structure on the pad's suction surface to grip the workpiece

RoHS

Ideal for transporting workpieces with adhering oil, such as press parts

Abundant holder variations

Shape 16 types

- Standard...5 types
- Compact...Class 4
- Low dust generation .....2 types
- Lightweight...3 types
- Low back : 2 types

Piping Connection 5 types

- Push-in fitting (ø1.8 to ø6) ..... 3 types
- Barbed fitting (ø4, ø6) .....2 types

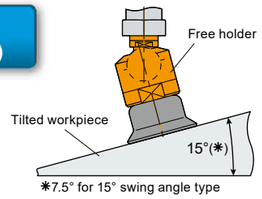
Stroke 11 types

2 mm to 50 mm
(Depends on pad diameter, holder type)

Low particle generation holders (LFC, LFD) with less abrasion powder from sliding and low noise are available

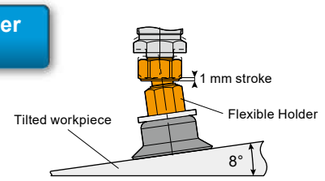
Assembly option for swing (free holder, flexible holder) that follows inclined workpiece surfaces is supported

Free holder (F1:30°, F2:15°)



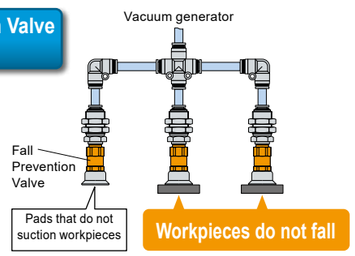
Flexible Holder (CF)

After removing the workpiece, returns to the normal position (vertical)



Assembly option for drop prevention valve (V) that reduces vacuum drop in separate circuits even without a workpiece is supported

Drop Prevention Valve (V)

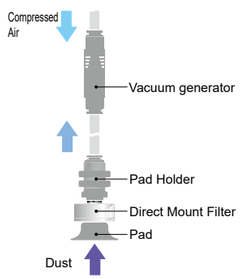


Removes dust during workpiece suction

Direct Mount Filter (T1, T2)

Filtration Area
T1: 1.7 cm², T2: 7 cm²



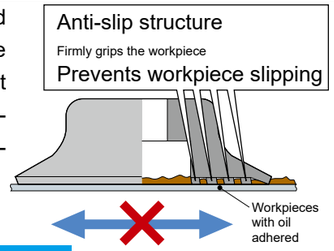


Pad Shape



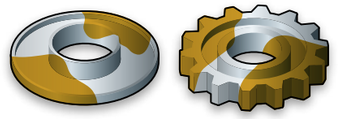
Oil Resistance

Fluororubber and oil-resistant nitrile rubber with excellent durability in oily environments are available.



Recommended Workpiece

Press parts with adhering oil, etc.



Pad Diameter

5 types | 10 | 20 | 30 | 40 | 50

Pad Material

5 types | Oil Resistant NBR | Silicone | Urethane | Fluorine | Conductive NBR (Low Resistance-type)

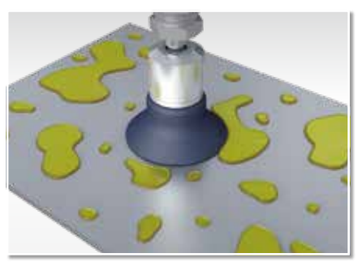
*Silicone (S) conforms to the Food Sanitation Act. (Holder is not compliant / Suction pad is compliant only for workpiece contact area)

Solution Examples

Slippery parts with adhering oil

Workpieces with adhering oil such as press parts, automobile parts. Pad material can be selected according to the properties of the target workpiece.





Transport of heavy steel plates

Press working, laser processing, etc.



Model No. Notation

Anti-slip Type

Suction Pad

VSP – C – 30 – -20 – K – NH – 6 – [ ] – F1 – V – T1

VSP	C	30	-20	K	NH	6	[ ]	F1	V	T1
Model No.	❶ Holder Shape	❷ Pad Diameter	❸ Stroke Option	❹ Pad Shape	❺ Pad Material	❻ Connection Size/Shape	❼ Buffer Load	❽ Pad Swing	❾ Drop Prevention Valve	❿ Direct Mount Filter

Pad Rubber Only

VSPG – 30 – K – NH

VSPG	30	K	NH
Model No.	❷	❹	❺

Pad Rubber + Set with Fixing Screw

VSPG – 30 – K – NH – A

VSPG	30	K	NH	A
Model No.	❷ Pad Diameter	❹ Pad Shape	❺ Pad Material	

❶ Holder Shape

Buffer Present/Absent	Type	Vacuum Outlet	Code	
Fixed Type	Standard	Top Direction	A	
	Compact		MA	
	Standard	Side Direction	B	
	Compact		MB	
	Low Profile		HE	
		Both Sides Direction	HEW	
Buffer Type	Standard	Top Direction	C	
	Compact		MC	
	Low Particle Generation		LFC	
	Lightweight		HC	
	Standard	Side Direction	D	
	Compact		MD	
	Low Particle Generation		LFD	
	Lightweight		HD	
		Both Sides Direction	HDW	
	Standard	Direct Mount Type	F	

❷ Pad Diameter

Code	Content
10	ø10
20	ø20
30	ø30
40	ø40
50	ø50

❸ Stroke Option

Content	Holder Shape C	D	HC	LFC	LFD	Code
Specified Stroke, or No Buffer	●	●				Blank *1, *2
Stroke 2 mm				●		–2 *3
Stroke 5 mm				●	●	–5
Stroke 10 mm	●	●	●	●	●	–10
Stroke 15 mm	●	●	●	●	●	–15
Stroke 20 mm	●	●	●	●	●	–20
Stroke 25 mm			●			–25
Stroke 30 mm	●	●	●			–30
Stroke 40 mm	●	●	●			–40
Stroke 50 mm	●	●	●			–50

*1: For ❶ Holder Shape other than C, D, HC, LFC, and LFD, ❸ is 'Blank'.
*2: For the specified stroke of ❸ 'Blank', please confirm the stroke dimension on the external dimension drawing.
*3: When ❷ Pad Diameter is 10, -2 can be selected for ❸.

❹ Pad Shape

Code	Content	
K	Anti-slip Type	

❺ Pad Material

Code	Content
NH	Oil Resistant NBR
S	Silicone Rubber
U	Urethane rubber
F	Fluororubber
NE	Conductive NBR (Low Resistance-type)

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

●Design compatible with rechargeable battery manufacturing process

VSP – ..... – P4□

*Please inquire for details.

❻ Connection Size/Shape

Content	Holder Shape A	B	C	D	MA	MB	MC	MD	LFC	LFD	HC	HD	HDW	HE	HEW	Code	
(❶: When F)																Blank	
ø1.8, Push-in fitting						●	●	●			●	●	●	●	●	2	
ø4, Push-in fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4	
ø6, Push-in fitting	●	●	●	●		●		●	●	●	●	●	●	●	●	6	
ø4, Push-in fitting, without spring cover			●	●												4C	
ø6, Push-in fitting, without spring cover			●	●												6C	
ø4, Barb fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4T	
ø6, Barb fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	6T	
ø4, Barb fitting, without spring cover			●	●												4TC	
ø6, Barb fitting, without spring cover			●	●												6TC	

*1: For ❶ Holder Shape C and D with ❸ Stroke Option -20 to -50, options 4C, 6C, 4TC, and 6TC can be selected for ❻. Additionally, for ❸ Stroke Option -30 to -50, only 4C, 6C, 4TC, and 6TC can be selected for ❻.
*2: The selectable Port Size/Shape varies depending on the ❷ Pad Diameter. Please check the combination table below.

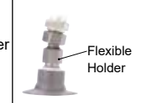
❼ Buffer Load

Code	Content
Blank	Standard Load or No Buffer
L	Low Load (1/4 of Standard Load)

*1 *2

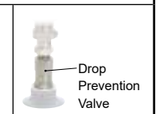
*1: For ❶ Holder Shape other than LFC, ❼ is 'Blank'.
*2: For ❸ stroke option -2, ❼ is blank.

❽ Pad Swing

Code	Content	
Blank	None	
F1	With Free Holder (Angle 30°)	 Free Holder
F2	With Free Holder (Angle 15°)	
CF	With Flexible Holder (Angle 8°)	 Flexible Holder

*1: For dimensions with the pad swivel function, please refer to P. 1060 and P. 1062.

❾ Drop Prevention Valve

Code	Content	
Blank	None	
V	With Drop Prevention Valve	 Drop Prevention Valve

*1: For dimensions with the drop prevention valve, please refer to P. 1083 and P. 1084.

❿ Direct Mount Filter

Code	Content	
Blank	None	
T1	With Direct Mount Filter (Filtration Area 1.7 cm²)	 Direct Mount Filter
T2	With Direct Mount Filter (Filtration Area 7 cm²)	

*1 *1: ❿ T2 can be selected when ❷ Pad Diameter is 20 to 50.
*2: For dimensions with the direct mount filter, please refer to P. 1064.

Holder Shape - Pad Diameter - Pad Shape - Connection Size/Shape Combination Table

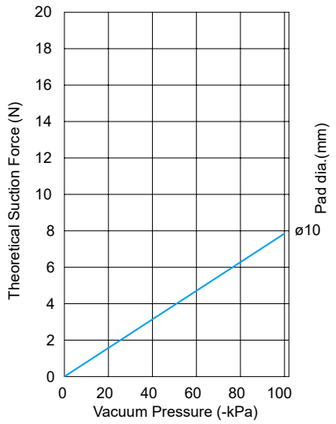
Holder Shape	Pad Diameter	Push-in fitting ø4 4	ø4 4C	ø6 6	ø6 6C	Barb fitting ø4 4T	ø4 4TC	ø6 6T	ø6 6TC
A	ø10			●				●	
	ø20 to ø50	●		●		●		●	
B	All sizes	●		●		●		●	
C	All sizes	●	●	●	●	●	●	●	●
D	All sizes	●	●	●	●	●	●	●	●

Holder Shape	Pad Diameter	Thread M14	Blank
F	All sizes		●

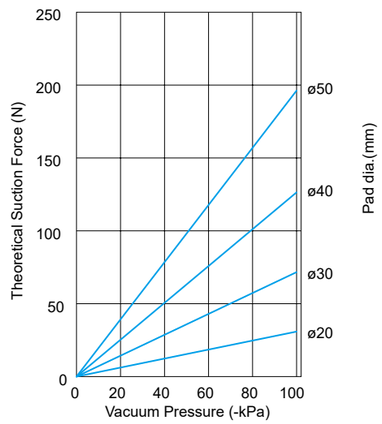
Holder Shape	Pad Diameter	Push-in fitting ø1.8 2	ø4 4	ø6 6	Barb fitting ø4 4T	ø6 6T
MA	ø10		●		●	
	ø20 to ø50		●		●	●
MB	All sizes	●	●	●	●	●
MC	All sizes	●	●		●	●
MD	All sizes	●	●	●	●	●
LFC	ø10		●		●	●
	ø20 to ø50		●	●	●	●
LFD	ø10		●		●	●
	ø20 to ø50		●	●	●	●
HC	All sizes	●	●	●	●	●
HD	All sizes	●	●	●	●	●
HDW	All sizes	●	●	●	●	●
HE	All sizes	●	●	●	●	●
HEW	All sizes	●	●	●	●	●

Theoretical Suction Force

●Pad diameter: ø10 mm



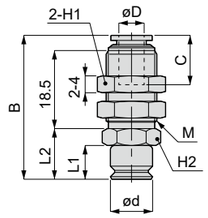
●Pad diameter: ø20 mm to ø50 mm



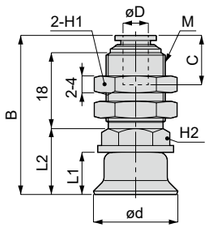
* The theoretical suction force is a value under static conditions. When actually using, apply a safety factor of 1/4 for horizontal lifting and 1/8 for vertical lifting.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Push-in fitting)

●VSP-A10K□-6



●VSP-A20 to 50K□-4/6

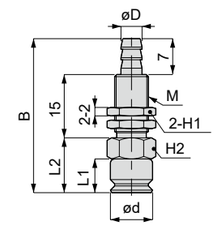


Unit: mm

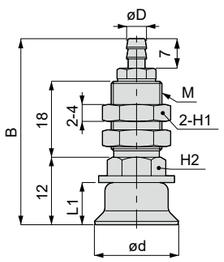
Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	Tube End C	Width Across Flats H1	Width Across Flats H2	Weight (g)
VSP-A10K□-6	10	6	M12x1	34.3	8	12	11.9	14	12	22
VSP-A20K□-4	20	4	M12x1	46.9	10	16	11.2	14	12	30
VSP-A20K□-6		6	M14x1	37.9			11.9	17	14	36
VSP-A30K□-4	30	4	M12x1	48.9	12	18	11.2	14	12	34
VSP-A30K□-6		6	M14x1	39.9			11.9	17	14	40
VSP-A40K□-4	40	4	M12x1	52.9	16	22	11.2	14	12	43
VSP-A40K□-6		6	M14x1	43.9			11.9	17	14	49
VSP-A50K□-4	50	4	M12x1	53.9	17	23	11.2	14	12	49
VSP-A50K□-6		6	M14x1	44.9			11.9	17	14	55

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Barb fitting)

●VSP-A10K□-6T



●VSP-A20 to 50K□-4T/6T

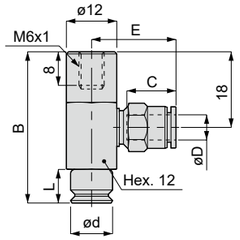


Unit: mm

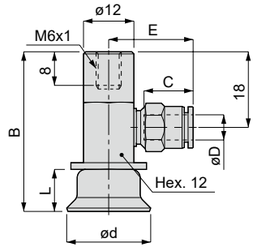
Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	Width Across Flats H1	Width Across Flats H2	Weight (g)
VSP-A10K□-6T	10	4	M8x0.75	35	8	12	10	10	12
VSP-A20K□-4T	20	2.5	M12x1	44	10	16	14	12	30
VSP-A20K□-6T		4							
VSP-A30K□-4T	30	2.5	M12x1	46	12	18	14	12	34
VSP-A30K□-6T		4							
VSP-A40K□-4T	40	2.5	M12x1	50	16	22	14	12	43
VSP-A40K□-6T		4							
VSP-A50K□-4T	50	2.5	M12x1	51	17	23	14	12	49
VSP-A50K□-6T		4							

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Push-in fitting)

●VSP-B10K□4/6



●VSP-B20 to 50K□-4/6

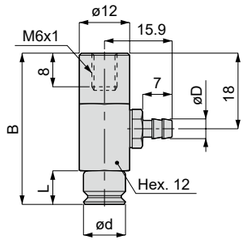


Unit: mm

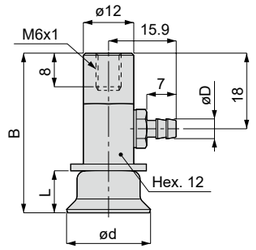
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-B10K□-4	10	4	36	8	11.2	18.8	30
VSP-B10K□-6		6			11.9	20.1	31
VSP-B20K□-4	20	4	38	10	11.2	18.8	33
VSP-B20K□-6		6			11.9	20.1	34
VSP-B30K□-4	30	4	40	12	11.2	18.8	37
VSP-B30K□-6		6			11.9	20.1	38
VSP-B40K□-4	40	4	44	16	11.2	18.8	46
VSP-B40K□-6		6			11.9	20.1	47
VSP-B50K□-4	50	4	45	17	11.2	18.8	52
VSP-B50K□-6		6			11.9	20.1	53

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Barb Fitting)

●VSP-B10K□-4T/6T



●VSP-B20 to 50K□-4T/6T

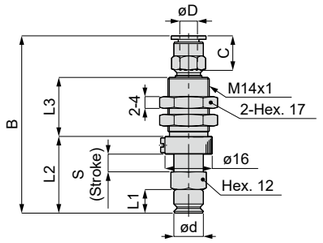


Unit: mm

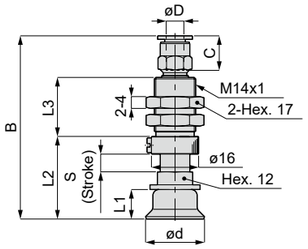
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-B10K□-4T	10	2.5	36	8	29
VSP-B10K□-6T		4			
VSP-B20K□-4T	20	2.5	38	10	32
VSP-B20K□-6T		4			
VSP-B30K□-4T	30	2.5	40	12	36
VSP-B30K□-6T		4			
VSP-B40K□-4T	40	2.5	44	16	45
VSP-B40K□-6T		4			
VSP-B50K□-4T	50	2.5	45	17	51
VSP-B50K□-6T		4			

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C10K□4/6
●VSP-C10-□K□-4/6



●VSP-C20 to 50K□-4/6
●VSP-C20 to 50-□K□-4/6

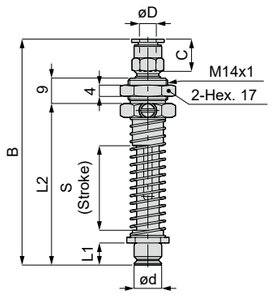


Unit: mm

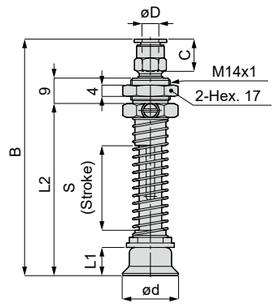
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C10K□-4	10	4	59	8	26	20	11.2	6	4.0 to 7.1	35
VSP-C10K□-6		6	60.3				11.9			36
VSP-C10-10K□-4		4	63.5		30.5		11.2	10	2.0 to 5.2	36
VSP-C10-10K□-6		6	64.8				11.9			37
VSP-C10-15K□-4		4	73.5		35.5	25	11.2	15	2.0 to 5.9	42
VSP-C10-15K□-6		6	74.8				11.9			43
VSP-C10-20K□-4		4	89.5		34	34	11.2	20	1.1 to 4.8	49
VSP-C10-20K□-6		6	90.8				11.9			50
VSP-C20K□-4	20	4	61	10	28	20	11.2	6	7.0 to 12.6	39
VSP-C20K□-6		6	62.3				11.9			40
VSP-C20-10K□-4		4	67		34		11.2	10	3.3 to 10.0	41
VSP-C20-10K□-6		6	68.3				11.9			42
VSP-C20-15K□-4		4	77		39	25	11.2	15	3.3 to 10.4	46
VSP-C20-15K□-6		6	78.3				11.9			47
VSP-C20-20K□-4		4	93		46	34	11.2	20	2.0 to 8.7	53
VSP-C20-20K□-6		6	94.3				11.9			54
VSP-C30K□-4	30	4	63	12	30	20	11.2	6	7.0 to 12.6	43
VSP-C30K□-6		6	64.3				11.9			44
VSP-C30-10K□-4		4	69		36		11.2	10	3.3 to 10.0	45
VSP-C30-10K□-6		6	70.3				11.9			46
VSP-C30-15K□-4		4	79		41	25	11.2	15	3.3 to 10.4	50
VSP-C30-15K□-6		6	80.3				11.9			51
VSP-C30-20K□-4		4	95		48	34	11.2	20	2.0 to 8.7	57
VSP-C30-20K□-6		6	96.3				11.9			58
VSP-C40K□-4	40	4	67	16	34	20	11.2	6	7.0 to 12.6	51
VSP-C40K□-6		6	68.3				11.9			52
VSP-C40-10K□-4		4	73		40		11.2	10	3.3 to 10.0	54
VSP-C40-10K□-6		6	74.3				11.9			55
VSP-C40-15K□-4		4	83		45	25	11.2	15	3.3 to 10.4	59
VSP-C40-15K□-6		6	84.3				11.9			60
VSP-C40-20K□-4		4	99		52	34	11.2	20	2.0 to 8.7	65
VSP-C40-20K□-6		6	100.3				11.9			66
VSP-C50K□-4	50	4	68	17	35	20	11.2	6	7.0 to 12.6	58
VSP-C50K□-6		6	69.3				11.9			59
VSP-C50-10K□-4		4	74		41		11.2	10	3.3 to 10.0	60
VSP-C50-10K□-6		6	75.3				11.9			61
VSP-C50-15K□-4		4	84		46	25	11.2	15	3.3 to 10.4	65
VSP-C50-15K□-6		6	85.3				11.9			66
VSP-C50-20K□-4		4	100		53	34	11.2	20	2.0 to 8.7	72
VSP-C50-20K□-6		6	101.3				11.9			73

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting without Spring Cover)

●VSP-C10-□K□-4C/6C



●VSP-C20 to 50-□K□-4C/6C

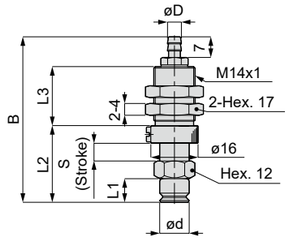


Unit: mm

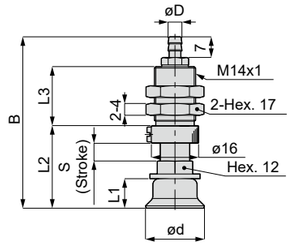
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C10-20K□-4C	10	4	66.5	8	44.5	11.2	20	1.5 to 4.9	44
VSP-C10-20K□-6C		6	67.8			11.9			45
VSP-C10-30K□-4C		4	79.5		57.5	11.2	30	1.1 to 4.8	49
VSP-C10-30K□-6C		6	80.8			11.9			50
VSP-C10-40K□-4C		4	92.5		70.5	11.2	40	1.0 to 4.5	54
VSP-C10-40K□-6C		6	93.8			11.9			55
VSP-C10-50K□-4C		4	105.5		83.5	11.2	50	0.9 to 4.5	59
VSP-C10-50K□-6C		6	106.8			11.9			60
VSP-C20-20K□-4C	20	4	70	10	48	11.2	20	1.5 to 4.9	49
VSP-C20-20K□-6C		6	71.3			11.9			50
VSP-C20-30K□-4C		4	83		61	11.2	30	1.1 to 4.8	54
VSP-C20-30K□-6C		6	84.3			11.9			55
VSP-C20-40K□-4C		4	96		74	11.2	40	1.0 to 4.5	59
VSP-C20-40K□-6C		6	97.3			11.9			60
VSP-C20-50K□-4C		4	109		87	11.2	50	0.9 to 4.5	64
VSP-C20-50K□-6C		6	110.3			11.9			65
VSP-C30-20K□-4C	30	4	72	12	50	11.2	20	1.5 to 4.9	53
VSP-C30-20K□-6C		6	73.3			11.9			54
VSP-C30-30K□-4C		4	85		63	11.2	30	1.1 to 4.8	58
VSP-C30-30K□-6C		6	86.3			11.9			59
VSP-C30-40K□-4C		4	98		76	11.2	40	1.0 to 4.5	63
VSP-C30-40K□-6C		6	99.3			11.9			64
VSP-C30-50K□-4C		4	111		89	11.2	50	0.9 to 4.5	68
VSP-C30-50K□-6C		6	112.3			11.9			69
VSP-C40-20K□-4C	40	4	76	16	54	11.2	20	1.5 to 4.9	61
VSP-C40-20K□-6C		6	77.3			11.9			62
VSP-C40-30K□-4C		4	89		67	11.2	30	1.1 to 4.8	66
VSP-C40-30K□-6C		6	90.3			11.9			67
VSP-C40-40K□-4C		4	102		80	11.2	40	1.0 to 4.5	71
VSP-C40-40K□-6C		6	103.3			11.9			72
VSP-C40-50K□-4C		4	115		93	11.2	50	0.9 to 4.5	77
VSP-C40-50K□-6C		6	116.3			11.9			78
VSP-C50-20K□-4C	50	4	77	17	55	11.2	20	1.5 to 4.9	68
VSP-C50-20K□-6C		6	78.3			11.9			69
VSP-C50-30K□-4C		4	90		68	11.2	30	1.1 to 4.8	73
VSP-C50-30K□-6C		6	91.3			11.9			74
VSP-C50-40K□-4C		4	103		81	11.2	40	1.0 to 4.5	78
VSP-C50-40K□-6C		6	104.3			11.9			79
VSP-C50-50K□-4C		4	116		94	11.2	50	0.9 to 4.5	83
VSP-C50-50K□-6C		6	117.3			11.9			84

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C10K□-4T/6T
●VSP-C10-□K□-4T/6T



●VSP-C20 to 50K□-4T/6T
●VSP-C20 to 50/K□-4T/6T

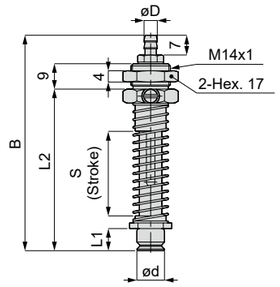


Unit: mm

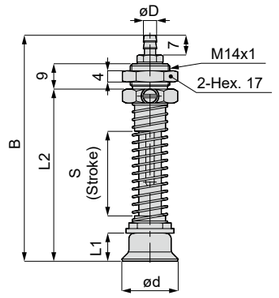
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-C10K□-4T	10	4	56.1	8	26	20	6	4.0 to 7.1	34
VSP-C10K□-6T		6							
VSP-C10-10K□-4T		4	60.6		30.5		10	2.0 to 5.2	35
VSP-C10-10K□-6T		6							
VSP-C10-15K□-4T		4	70.6		35.5	25	15	2.0 to 5.9	41
VSP-C10-15K□-6T		6							
VSP-C10-20K□-4T		4	86.6		42.5	34	20	1.1 to 4.8	48
VSP-C10-20K□-6T		6							
VSP-C20K□-4T	20	4	58.1	10	28	20	6	7.0 to 12.6	38
VSP-C20K□-6T		6							
VSP-C20-10K□-4T		4	64.1		34		10	3.3 to 10.0	40
VSP-C20-10K□-6T		6							
VSP-C20-15K□-4T		4	74.1		39	25	15	3.3 to 10.4	45
VSP-C20-15K□-6T		6							
VSP-C20-20K□-4T		4	90.1		46	34	20	2.0 to 8.7	52
VSP-C20-20K□-6T		6							
VSP-C30K□-4T	30	4	60.1	12	30	20	6	7.0 to 12.6	42
VSP-C30K□-6T		6							
VSP-C30-10K□-4T		4	66.1		36		10	3.3 to 10.0	44
VSP-C30-10K□-6T		6							
VSP-C30-15K□-4T		4	76.1		41	25	15	3.3 to 10.4	49
VSP-C30-15K□-6T		6							
VSP-C30-20K□-4T		4	92.1		48	34	20	2.0 to 8.7	56
VSP-C30-20K□-6T		6							
VSP-C40K□-4T	40	4	64.1	16	34	20	6	7.0 to 12.6	50
VSP-C40K□-6T		6							
VSP-C40-10K□-4T		4	70.1		40		10	3.3 to 10.0	53
VSP-C40-10K□-6T		6							
VSP-C40-15K□-4T		4	80.1		45	25	15	3.3 to 10.4	58
VSP-C40-15K□-6T		6							
VSP-C40-20K□-4T		4	96.1		52	34	20	2.0 to 8.7	64
VSP-C40-20K□-6T		6							
VSP-C50K□-4T	50	4	65.1	17	35	20	6	7.0 to 12.6	57
VSP-C50K□-6T		6							
VSP-C50-10K□-4T		4	71.1		41		10	3.3 to 10.0	59
VSP-C50-10K□-6T		6							
VSP-C50-15K□-4T		4	81.1		46	25	15	3.3 to 10.4	64
VSP-C50-15K□-6T		6							
VSP-C50-20K□-4T		4	97.1		53	34	20	2.0 to 8.7	71
VSP-C50-20K□-6T		6							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting without Spring Cover)

●VSP-C10-□K□-4TC/6TC



●VSP-C20 to 50-□K□-4TC/6TC

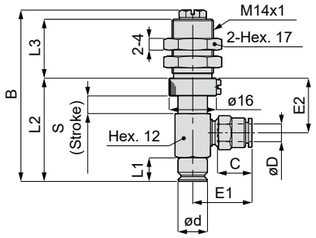


Unit: mm

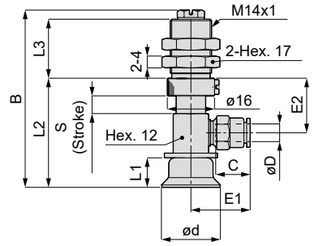
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C10-20K□-4TC	10	4	63.6	8	44.5	20	1.5 to 4.9	43
VSP-C10-20K□-6TC		6						
VSP-C10-30K□-4TC		4	76.6		57.5	30	1.1 to 4.8	48
VSP-C10-30K□-6TC		6						
VSP-C10-40K□-4TC		4	89.6		70.5	40	1.0 to 4.5	53
VSP-C10-40K□-6TC		6						
VSP-C10-50K□-4TC		4	102.6		83.5	50	0.9 to 4.5	58
VSP-C10-50K□-6TC		6						
VSP-C20-20K□-4TC	20	4	67.1	10	48	20	1.5 to 4.9	48
VSP-C20-20K□-6TC		6						
VSP-C20-30K□-4TC		4	80.1		61	30	1.1 to 4.8	53
VSP-C20-30K□-6TC		6						
VSP-C20-40K□-4TC		4	93.1		74	40	1.0 to 4.5	58
VSP-C20-40K□-6TC		6						
VSP-C20-50K□-4TC		4	106.1		87	50	0.9 to 4.5	63
VSP-C20-50K□-6TC		6						
VSP-C30-20K□-4TC	30	4	69.1	12	50	20	1.5 to 4.9	52
VSP-C30-20K□-6TC		6						
VSP-C30-30K□-4TC		4	82.1		63	30	1.1 to 4.8	57
VSP-C30-30K□-6TC		6						
VSP-C30-40K□-4TC		4	95.1		76	40	1.0 to 4.5	62
VSP-C30-40K□-6TC		6						
VSP-C30-50K□-4TC		4	108.1		89	50	0.9 to 4.5	67
VSP-C30-50K□-6TC		6						
VSP-C40-20K□-4TC	40	4	73.1	16	54	20	1.5 to 4.9	60
VSP-C40-20K□-6TC		6						
VSP-C40-30K□-4TC		4	86.1		67	30	1.1 to 4.8	65
VSP-C40-30K□-6TC		6						
VSP-C40-40K□-4TC		4	99.1		80	40	1.0 to 4.5	70
VSP-C40-40K□-6TC		6						
VSP-C40-50K□-4TC		4	112.1		93	50	0.9 to 4.5	76
VSP-C40-50K□-6TC		6						
VSP-C50-20K□-4TC	50	4	74.1	17	55	20	1.5 to 4.9	67
VSP-C50-20K□-6TC		6						
VSP-C50-30K□-4TC		4	87.1		68	30	1.1 to 4.8	72
VSP-C50-30K□-6TC		6						
VSP-C50-40K□-4TC		4	100.1		81	40	1.0 to 4.5	77
VSP-C50-40K□-6TC		6						
VSP-C50-50K□-4TC		4	113.1		94	50	0.9 to 4.5	82
VSP-C50-50K□-6TC		6						

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D10K□4/6
●VSP-D10-□K□-4/6



●VSP-D20 to 50K□-4/6
●VSP-D20 to 50-□K□-4/6

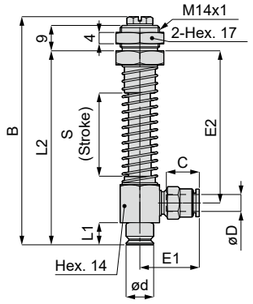


Unit: mm

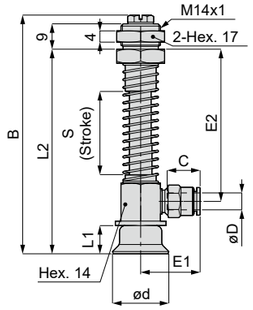
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D10K□-4	10	4	58.1	8	35	20	11.2	18.8	18.5	6	4.0 to 7.1	47
VSP-D10K□-6		6					11.9	20.1				48
VSP-D10-10K□-4		4	63.1		40		11.2	18.8	25	10	2.0 to 5.2	51
VSP-D10-10K□-6		6					11.9	20.1				52
VSP-D10-15K□-4		4	73.1		45	25	11.2	18.8	30	15	2.0 to 5.9	56
VSP-D10-15K□-6		6					11.9	20.1				57
VSP-D10-20K□-4		4	89.1		52	34	11.2	18.8	37	20	1.1 to 4.8	66
VSP-D10-20K□-6		6					11.9	20.1				67
VSP-D20K□-4	20	4	60.1	10	37	20	11.2	18.8	18.5	6	7.0 to 12.6	50
VSP-D20K□-6		6					11.9	20.1				51
VSP-D20-10K□-4		4	66.1		43		11.2	18.8	24.5	10	3.3 to 10.0	54
VSP-D20-10K□-6		6					11.9	20.1				55
VSP-D20-15K□-4		4	76.1		48	25	11.2	18.8	29.5	15	3.3 to 10.4	61
VSP-D20-15K□-6		6					11.9	20.1				62
VSP-D20-20K□-4		4	92.1		55	34	11.2	18.8	36.5	20	2.0 to 8.7	71
VSP-D20-20K□-6		6					11.9	20.1				72
VSP-D30K□-4	30	4	62.1	12	39	20	11.2	18.8	18.5	6	7.0 to 12.6	54
VSP-D30K□-6		6					11.9	20.1				55
VSP-D30-10K□-4		4	68.1		45		11.2	18.8	24.5	10	3.3 to 10.0	58
VSP-D30-10K□-6		6					11.9	20.1				59
VSP-D30-15K□-4		4	78.1		50	25	11.2	18.8	29.5	15	3.3 to 10.4	65
VSP-D30-15K□-6		6					11.9	20.1				66
VSP-D30-20K□-4		4	94.1		57	34	11.2	18.8	36.5	20	2.0 to 8.7	75
VSP-D30-20K□-6		6					11.9	20.1				76
VSP-D40K□-4	40	4	66.1	16	43	20	11.2	18.8	18.5	6	7.0 to 12.6	63
VSP-D40K□-6		6					11.9	20.1				64
VSP-D40-10K□-4		4	72.1		49		11.2	18.8	24.5	10	3.3 to 10.0	67
VSP-D40-10K□-6		6					11.9	20.1				68
VSP-D40-15K□-4		4	82.1		54	25	11.2	18.8	29.5	15	3.3 to 10.4	73
VSP-D40-15K□-6		6					11.9	20.1				74
VSP-D40-20K□-4		4	98.1		61	34	11.2	18.8	36.5	20	2.0 to 8.7	83
VSP-D40-20K□-6		6					11.9	20.1				84
VSP-D50K□-4	50	4	67.1	17	44	20	11.2	18.8	18.5	6	7.0 to 12.6	69
VSP-D50K□-6		6					11.9	20.1				70
VSP-D50-10K□-4		4	73.1		50		11.2	18.8	24.5	10	3.3 to 10.0	73
VSP-D50-10K□-6		6					11.9	20.1				74
VSP-D50-15K□-4		4	83.1		55	25	11.2	18.8	29.5	15	3.3 to 10.4	80
VSP-D50-15K□-6		6					11.9	20.1				81
VSP-D50-20K□-4		4	99.1		62	34	11.2	18.8	36.5	20	2.0 to 8.7	90
VSP-D50-20K□-6		6					11.9	20.1				91

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in Fitting without Spring Cover)

●VSP-D10-□K□-4C/6C



●VSP-D20 to 50-□K□-4C/6C

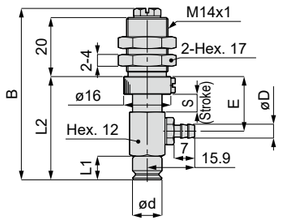


Unit: mm

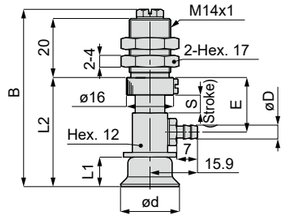
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D10-20K□-4C	10	4	68.1	8	56	11.2	19.8	40.5	20	1.5 to 4.9	68
VSP-D10-20K□-6C		6				11.9	21.1				69
VSP-D10-30K□-4C		4	81.1		69	11.2	19.8	53.5	30	1.1 to 4.8	74
VSP-D10-30K□-6C		6				11.9	21.1				75
VSP-D10-40K□-4C		4	94.1		82	11.2	19.8	66.5	40	1.0 to 4.5	81
VSP-D10-40K□-6C		6				11.9	21.1				82
VSP-D10-50K□-4C		4	107.1		95	11.2	19.8	79.5	50	0.9 to 4.5	88
VSP-D10-50K□-6C		6				11.9	21.1				89
VSP-D20-20K□-4C	20	4	71.6	10	59.5	11.2	19.8	41	20	1.5 to 4.9	69
VSP-D20-20K□-6C		6				11.9	21.1				70
VSP-D20-30K□-4C		4	84.6		72.5	11.2	19.8	54	30	1.1 to 4.8	76
VSP-D20-30K□-6C		6				11.9	21.1				77
VSP-D20-40K□-4C		4	97.6		85.5	11.2	19.8	67	40	1.0 to 4.5	82
VSP-D20-40K□-6C		6				11.9	21.1				83
VSP-D20-50K□-4C		4	110.6		98.5	11.2	19.8	80	50	0.9 to 4.5	89
VSP-D20-50K□-6C		6				11.9	21.1				90
VSP-D30-20K□-4C	30	4	73.6	12	61.5	11.2	19.8	41	20	1.5 to 4.9	73
VSP-D30-20K□-6C		6				11.9	21.1				74
VSP-D30-30K□-4C		4	86.6		74.5	11.2	19.8	54	30	1.1 to 4.8	80
VSP-D30-30K□-6C		6				11.9	21.1				81
VSP-D30-40K□-4C		4	99.6		87.5	11.2	19.8	67	40	1.0 to 4.5	86
VSP-D30-40K□-6C		6				11.9	21.1				87
VSP-D30-50K□-4C		4	112.6		100.5	11.2	19.8	80	50	0.9 to 4.5	93
VSP-D30-50K□-6C		6				11.9	21.1				94
VSP-D40-20K□-4C	40	4	77.6	16	65.5	11.2	19.8	41	20	1.5 to 4.9	81
VSP-D40-20K□-6C		6				11.9	21.1				82
VSP-D40-30K□-4C		4	90.6		78.5	11.2	19.8	54	30	1.1 to 4.8	88
VSP-D40-30K□-6C		6				11.9	21.1				89
VSP-D40-40K□-4C		4	103.6		91.5	11.2	19.8	67	40	1.0 to 4.5	95
VSP-D40-40K□-6C		6				11.9	21.1				96
VSP-D40-50K□-4C		4	116.6		104.5	11.2	19.8	80	50	0.9 to 4.5	102
VSP-D40-50K□-6C		6				11.9	21.1				103
VSP-D50-20K□-4C	50	4	78.6	17	66.5	11.2	19.8	41	20	1.5 to 4.9	88
VSP-D50-20K□-6C		6				11.9	21.1				89
VSP-D50-30K□-4C		4	91.6		79.5	11.2	19.8	54	30	1.1 to 4.8	95
VSP-D50-30K□-6C		6				11.9	21.1				96
VSP-D50-40K□-4C		4	104.6		92.5	11.2	19.8	67	40	1.0 to 4.5	101
VSP-D50-40K□-6C		6				11.9	21.1				102
VSP-D50-50K□-4C		4	117.6		105.5	11.2	19.8	80	50	0.9 to 4.5	108
VSP-D50-50K□-6C		6				11.9	21.1				109

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D10K□-4T/6T
●VSP-D10-□K□-4T/6T



●VSP-D20 to 50K□-4T/6T
●VSP-D20 to 50-□K□-4T/6T

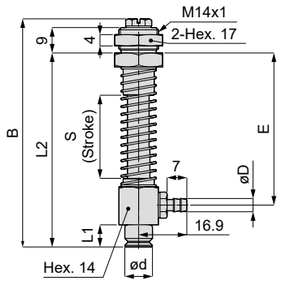


Unit: mm

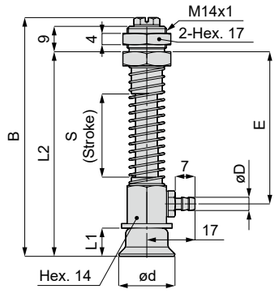
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D10K□-4T	10	2.5	58.1	8	35	20	18.5	6	4.0 to 7.1	46
VSP-D10K□-6T		4								
VSP-D10-10K□-4T		2.5	63.1		40		25	10	2.0 to 5.2	50
VSP-D10-10K□-6T		4								
VSP-D10-15K□-4T		2.5	73.1		45	25	30	15	2.0 to 5.9	55
VSP-D10-15K□-6T		4								
VSP-D10-20K□-4T		2.5	89.1		52	34	37	20	1.1 to 4.8	65
VSP-D10-20K□-6T		4								
VSP-D20K□-4T	20	2.5	60.1	10	37	20	18.5	6	7.0 to 12.6	49
VSP-D20K□-6T		4								
VSP-D20-10K□-4T		2.5	66.1		43		24.5	10	3.3 to 10.0	53
VSP-D20-10K□-6T		4								
VSP-D20-15K□-4T		2.5	76.1		48	25	29.5	15	3.3 to 10.4	60
VSP-D20-15K□-6T		4								
VSP-D20-20K□-4T		2.5	92.1		55	34	36.5	20	2.0 to 8.7	70
VSP-D20-20K□-6T		4								
VSP-D30K□-4T	30	2.5	62.1	12	39	20	18.5	6	7.0 to 12.6	53
VSP-D30K□-6T		4								
VSP-D30-10K□-4T		2.5	68.1		45		24.5	10	3.3 to 10.0	57
VSP-D30-10K□-6T		4								
VSP-D30-15K□-4T		2.5	78.1		50	25	29.5	15	3.3 to 10.4	64
VSP-D30-15K□-6T		4								
VSP-D30-20K□-4T		2.5	94.1		57	34	36.5	20	2.0 to 8.7	74
VSP-D30-20K□-6T		4								
VSP-D40K□-4T	40	2.5	66.1	16	43	20	18.5	6	7.0 to 12.6	62
VSP-D40K□-6T		4								
VSP-D40-10K□-4T		2.5	72.1		49		24.5	10	3.3 to 10.0	66
VSP-D40-10K□-6T		4								
VSP-D40-15K□-4T		2.5	82.1		54	25	29.5	15	3.3 to 10.4	72
VSP-D40-15K□-6T		4								
VSP-D40-20K□-4T		2.5	98.1		61	34	36.5	20	2.0 to 8.7	82
VSP-D40-20K□-6T		4								
VSP-D50K□-4T	50	2.5	67.1	17	44	20	18.5	6	7.0 to 12.6	68
VSP-D50K□-6T		4								
VSP-D50-10K□-4T		2.5	73.1		50		24.5	10	3.3 to 10.0	72
VSP-D50-10K□-6T		4								
VSP-D50-15K□-4T		2.5	83.1		55	25	29.5	15	3.3 to 10.4	79
VSP-D50-15K□-6T		4								
VSP-D50-20K□-4T		2.5	99.1		62	34	36.5	20	2.0 to 8.7	89
VSP-D50-20K□-6T		4								

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D10-□K□-4TC/6TC



●VSP-D20 to 50-□K□-4TC/6TC

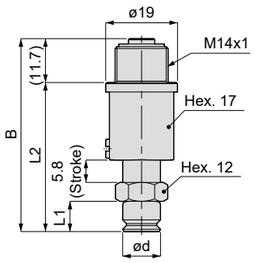


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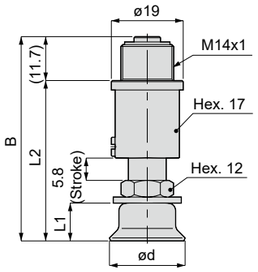
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D10-20K□-4TC	10	2.5	68.1	8	56	40.5	20	1.5 to 4.9	67
VSP-D10-20K□-6TC		4							
VSP-D10-30K□-4TC		2.5	81.1		69	53.5	30	1.1 to 4.8	74
VSP-D10-30K□-6TC		4							
VSP-D10-40K□-4TC		2.5	94.1		82	66.5	40	1.0 to 4.5	80
VSP-D10-40K□-6TC		4							
VSP-D10-50K□-4TC		2.5	107.1		95	79.5	50	0.9 to 4.5	87
VSP-D10-50K□-6TC		4							
VSP-D20-20K□-4TC	20	4	71.6	10	59.5	41	20	1.5 to 4.9	68
VSP-D20-20K□-6TC		6							
VSP-D20-30K□-4TC		4	84.6		72.5	54	30	1.1 to 4.8	75
VSP-D20-30K□-6TC		6							
VSP-D20-40K□-4TC		4	97.6		85.5	67	40	1.0 to 4.5	81
VSP-D20-40K□-6TC		6							
VSP-D20-50K□-4TC		4	110.6		98.5	80	50	0.9 to 4.5	88
VSP-D20-50K□-6TC		6							
VSP-D30-20K□-4TC	30	4	73.6	12	61.5	41	20	1.5 to 4.9	72
VSP-D30-20K□-6TC		6							
VSP-D30-30K□-4TC		4	86.6		74.5	54	30	1.1 to 4.8	79
VSP-D30-30K□-6TC		6							
VSP-D30-40K□-4TC		4	99.6		87.5	67	40	1.0 to 4.5	85
VSP-D30-40K□-6TC		6							
VSP-D30-50K□-4TC		4	112.6		100.5	80	50	0.9 to 4.5	92
VSP-D30-50K□-6TC		6							
VSP-D40-20K□-4TC	40	4	77.6	16	65.5	41	20	1.5 to 4.9	80
VSP-D40-20K□-6TC		6							
VSP-D40-30K□-4TC		4	90.6		78.5	54	30	1.1 to 4.8	87
VSP-D40-30K□-6TC		6							
VSP-D40-40K□-4TC		4	103.6		91.5	67	40	1.0 to 4.5	94
VSP-D40-40K□-6TC		6							
VSP-D40-50K□-4TC		4	116.6		104.5	80	50	0.9 to 4.5	101
VSP-D40-50K□-6TC		6							
VSP-D50-20K□-4TC	50	4	78.6	17	66.5	41	20	1.5 to 4.9	87
VSP-D50-20K□-6TC		6							
VSP-D50-30K□-4TC		4	91.6		79.5	54	30	1.1 to 4.8	94
VSP-D50-30K□-6TC		6							
VSP-D50-40K□-4TC		4	104.6		92.5	67	40	1.0 to 4.5	100
VSP-D50-40K□-6TC		6							
VSP-D50-50K□-4TC		4	117.6		105.5	80	50	0.9 to 4.5	107
VSP-D50-50K□-6TC		6							

External Dimension Diagram (Direct Mount, Buffer Type, VSP-F, Male Thread Type)

●VSP-F10K□



●VSP-F20 to 50K□

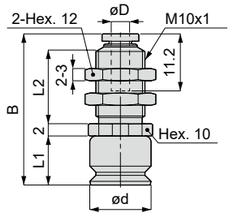


Unit: mm

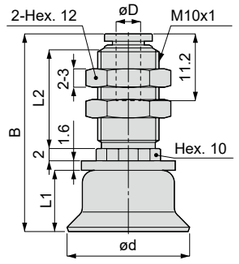
Model No.	Pad Diameter ød	B	L1	L2	Spring Force (N)	Weight (g)
VSP-F10K□	10	51	8	39.3	7.9 to 15	56
VSP-F20K□	20	54	10	42.3	7.9 to 15	59
VSP-F30K□	30	56	12	44.3	7.9 to 15	63
VSP-F40K□	40	60	16	48.3	7.9 to 15	71
VSP-F50K□	50	61	17	49.3	7.9 to 15	78

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Push-in fitting)

●VSP-MA10K□-4



●VSP-MA20 to 50K□-4

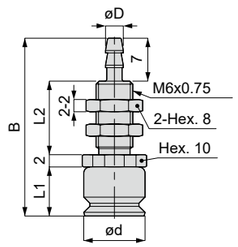


Unit: mm

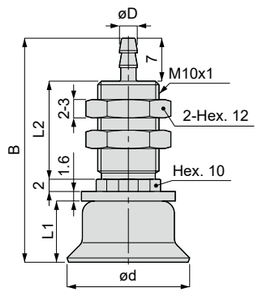
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Weight (g)
VSP-MA10K□-4	10	4	29	8	16.4	6.4
VSP-MA20K□-4	20	4	32.6	10	16.4	12
VSP-MA30K□-4	30	4	34.6	12	16.4	16
VSP-MA40K□-4	40	4	38.6	16	16.4	25
VSP-MA50K□-4	50	4	39.6	17	16.4	36

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Barb Fitting)

●VSP-MA10K□-4T



●VSP-MA20 to 50K□-4T/6T

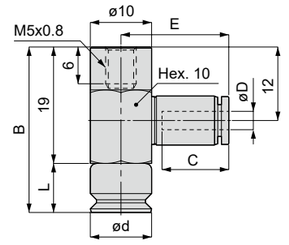


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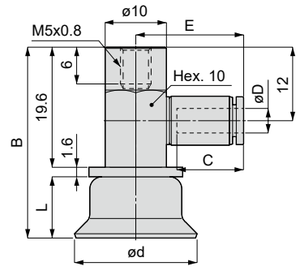
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Weight (g)
VSP-MA10K□-4T	10	2.5	29	8	12	3.6
VSP-MA20K□-4T	20	2.5	36.6	10	16	12
VSP-MA20K□-6T		4				
VSP-MA30K□-4T	30	2.5	38.6	12	16	16
VSP-MA30K□-6T		4				
VSP-MA40K□-4T	40	2.5	42.6	16	16	25
VSP-MA40K□-6T		4				
VSP-MA50K□-4T	50	2.5	43.6	17	16	36
VSP-MA50K□-6T		4				

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Push-in fitting)

●VSP-MB10K□-2/4/6



●VSP-MB20 to 50K□-2/4/6

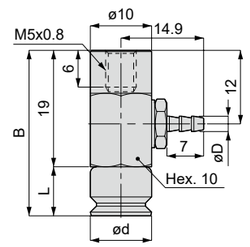


Unit: mm

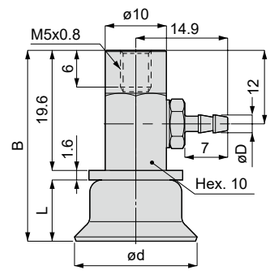
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-MB10K□-2	10	1.8	27	8	8.4	13.7	7.1
VSP-MB10K□-4		4			11.2	17.8	8.1
VSP-MB10K□-6		6			11.9	19.6	9.1
VSP-MB20K□-2	20	1.8	31.2	10	8.4	13.7	12
VSP-MB20K□-4		4			11.2	17.8	13
VSP-MB20K□-6		6			11.9	19.6	14
VSP-MB30K□-2	30	1.8	33.2	12	8.4	13.7	16
VSP-MB30K□-4		4			11.2	17.8	17
VSP-MB30K□-6		6			11.9	19.6	18
VSP-MB40K□-2	40	1.8	37.2	16	8.4	13.7	25
VSP-MB40K□-4		4			11.2	17.8	26
VSP-MB40K□-6		6			11.9	19.6	27
VSP-MB50K□-2	50	1.8	38.2	17	8.4	13.7	36
VSP-MB50K□-4		4			11.2	17.8	37
VSP-MB50K□-6		6			11.9	19.6	38

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Barb Fitting)

●VSP-MB10K□-4T/6T



●VSP-MB20 to 50K□-4T/6T

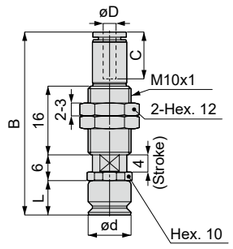


Unit: mm

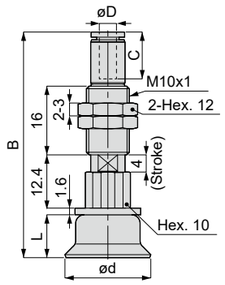
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-MB10K□-4T	10	2.5	27	8	6.7
VSP-MB10K□-6T		4			
VSP-MB20K□-4T	20	2.5	31.2	10	12
VSP-MB20K□-6T		4			
VSP-MB30K□-4T	30	2.5	33.2	12	16
VSP-MB30K□-6T		4			
VSP-MB40K□-4T	40	2.5	37.2	16	25
VSP-MB40K□-6T		4			
VSP-MB50K□-4T	50	2.5	38.2	17	36
VSP-MB50K□-6T		4			

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Push-in fitting)

●VSP-MC10K□-2/4



●VSP-MC20 to 50K□-2/4

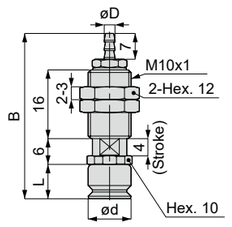


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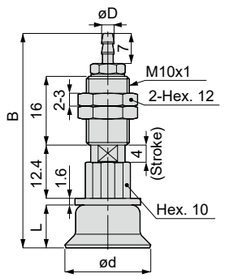
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	Spring Force (N)	Weight (g)
VSP-MC10K□-2	10	1.8	38.9	8	8.4	1 to 1.3	15
VSP-MC10K□-4		4	43		11.2		16
VSP-MC20K□-2	20	1.8	48.9	10	8.4	1 to 1.3	23
VSP-MC20K□-4		4	53		11.2		24
VSP-MC30K□-2	30	1.8	50.9	12	8.4	1 to 1.3	27
VSP-MC30K□-4		4	55		11.2		28
VSP-MC40K□-2	40	1.8	54.9	16	8.4	1 to 1.3	36
VSP-MC40K□-4		4	59		11.2		37
VSP-MC50K□-2	50	1.8	55.9	17	8.4	1 to 1.3	47
VSP-MC50K□-4		4	60		11.2		48

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Barb Fitting)

●VSP-MC10K□-4T/6T



●VSP-MC20 to 50K□-4T/6T

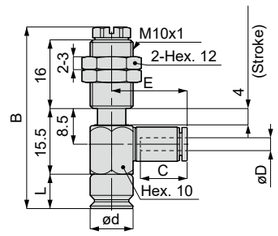


Unit: mm

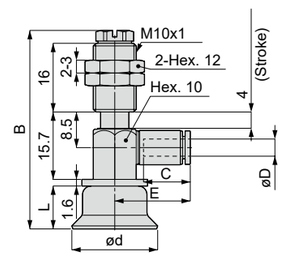
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MC10K□-4T	10	2.5	40.1	8	0.5 to 0.6	15
VSP-MC10K□-6T		4				
VSP-MC20K□-4T	20	2.5	50.1	10	1 to 1.3	23
VSP-MC20K□-6T		4				
VSP-MC30K□-4T	30	2.5	52.1	12	1 to 1.3	27
VSP-MC30K□-6T		4				
VSP-MC40K□-4T	40	2.5	56.1	16	1 to 1.3	36
VSP-MC40K□-6T		4				
VSP-MC50K□-4T	50	2.5	57.1	17	1 to 1.3	47
VSP-MC50K□-6T		4				

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Push-in fitting)

●VSP-MD10K□-2/4/6



●VSP-MD20 to 50K□-2/4/6

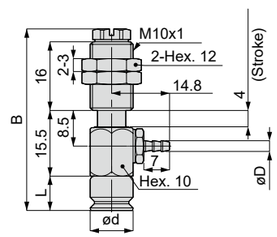


Unit: mm

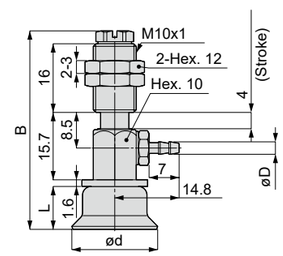
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Spring Force (N)	Weight (g)
VSP-MD10K□-2	10	1.8	42.5	8	8.4	13.6	1 to 1.3	22
VSP-MD10K□-4		4			11.2	17.7		23
VSP-MD10K□-6		6			11.9	19.5		24
VSP-MD20K□-2	20	1.8	46.3	10	8.4	13.6	1 to 1.3	26
VSP-MD20K□-4		4			11.2	17.7		27
VSP-MD20K□-6		6			11.9	19.5		28
VSP-MD30K□-2	30	1.8	48.3	12	8.4	13.6	1 to 1.3	30
VSP-MD30K□-4		4			11.2	17.7		31
VSP-MD30K□-6		6			11.9	19.5		32
VSP-MD40K□-2	40	1.8	52.3	16	8.4	13.6	1 to 1.3	39
VSP-MD40K□-4		4			11.2	17.7		40
VSP-MD40K□-6		6			11.9	19.5		41
VSP-MD50K□-2	50	1.8	53.3	17	8.4	13.6	1 to 1.3	48
VSP-MD50K□-4		4			11.2	17.7		49
VSP-MD50K□-6		6			11.9	19.5		50

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Barb Fitting)

●VSP-MD10K□-4T/6T



●VSP-MD20 to 50K□-4T/6T

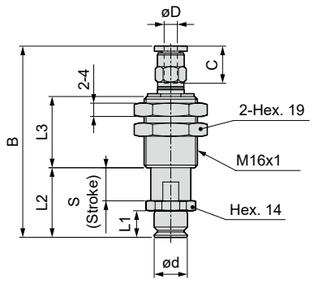


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MD10K□-4T	10	2.5	42.5	8	1 to 1.3	22
VSP-MD10K□-6T		4				
VSP-MD20K□-4T	20	2.5	46.3	10	1 to 1.3	26
VSP-MD20K□-6T		4				
VSP-MD30K□-4T	30	2.5	48.3	12	1 to 1.3	30
VSP-MD30K□-6T		4				
VSP-MD40K□-4T	40	2.5	52.3	16	1 to 1.3	39
VSP-MD40K□-6T		4				
VSP-MD50K□-4T	50	2.5	53.3	17	1 to 1.3	50
VSP-MD50K□-6T		4				

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC10-□K□-2/4/6

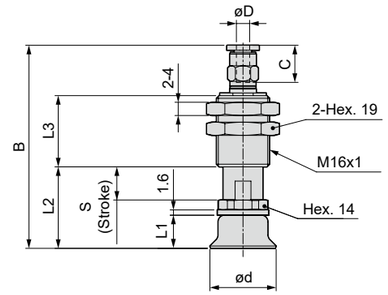


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10-10K□-2	10	1.8	53.6	8	21	21.5	8.4	10	1.0 to 2.4	22
VSP-HC10-10K□-4		4	57.7				11.2			23
VSP-HC10-10K□-6		6	59				11.9			24
VSP-HC10-15K□-2		1.8	63.6		26	26.5	8.4	15	1.0 to 2.7	24
VSP-HC10-15K□-4		4	67.7				11.2			25
VSP-HC10-15K□-6		6	69				11.9			26
VSP-HC10-20K□-2		1.8	73.6		31	31.5	8.4	20	1.0 to 3.0	26
VSP-HC10-20K□-4		4	77.7				11.2			27
VSP-HC10-20K□-6		6	79				11.9			28
VSP-HC10-25K□-2		1.8	84.1		36	37	8.4	25	1.0 to 3.0	28
VSP-HC10-25K□-4		4	88.2				11.2			29
VSP-HC10-25K□-6		6	89.5				11.9			30
VSP-HC10-30K□-2		1.8	95.1		41	43	8.4	30	1.0 to 3.0	30
VSP-HC10-30K□-4		4	99.2				11.2			31
VSP-HC10-30K□-6		6	100.5				11.9			32
VSP-HC10-40K□-2		1.8	117.1		51	55	8.4	40	1.0 to 3.0	34
VSP-HC10-40K□-4		4	121.2				11.2			35
VSP-HC10-40K□-6		6	122.5				11.9			36
VSP-HC10-50K□-2		1.8	138.6		61	66.5	8.4	50	1.0 to 3.1	39
VSP-HC10-50K□-4		4	142.7				11.2			40
VSP-HC10-50K□-6		6	144				11.9			41

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC20, 30-□K□-2/4/6

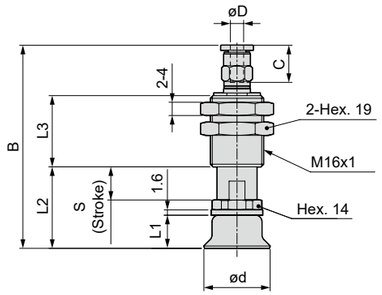


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20-10K□-2	20	1.8	57.2	10	24.6	21.5	8.4	10	1.0 to 2.4	27
VSP-HC20-10K□-4		4	61.3				11.2			28
VSP-HC20-10K□-6		6	62.6				11.9			29
VSP-HC20-15K□-2		1.8	67.2		29.6	26.5	8.4	15	1.0 to 2.7	29
VSP-HC20-15K□-4		4	71.3				11.2			30
VSP-HC20-15K□-6		6	72.6				11.9			31
VSP-HC20-20K□-2		1.8	77.2		34.6	31.5	8.4	20	1.0 to 3.0	31
VSP-HC20-20K□-4		4	81.3				11.2			32
VSP-HC20-20K□-6		6	82.6				11.9			33
VSP-HC20-25K□-2		1.8	87.7		39.6	37	8.4	25	1.0 to 3.0	33
VSP-HC20-25K□-4		4	91.8				11.2			34
VSP-HC20-25K□-6		6	93.1				11.9			35
VSP-HC20-30K□-2		1.8	98.7		44.6	43	8.4	30	1.0 to 3.0	35
VSP-HC20-30K□-4		4	102.8				11.2			36
VSP-HC20-30K□-6		6	104.1				11.9			37
VSP-HC20-40K□-2		1.8	120.7		54.6	55	8.4	40	1.0 to 3.0	39
VSP-HC20-40K□-4		4	124.8				11.2			40
VSP-HC20-40K□-6		6	126.1				11.9			41
VSP-HC20-50K□-2		1.8	142.2		64.6	66.5	8.4	50	1.0 to 3.1	43
VSP-HC20-50K□-4		4	146.3				11.2			44
VSP-HC20-50K□-6		6	147.6				11.9			45
VSP-HC30-10K□-2	30	1.8	59.2	12	26.6	21.5	8.4	10	1.0 to 2.4	30
VSP-HC30-10K□-4		4	63.3				11.2			31
VSP-HC30-10K□-6		6	64.6				11.9			32
VSP-HC30-15K□-2		1.8	69.2		31.6	26.5	8.4	15	1.0 to 2.7	32
VSP-HC30-15K□-4		4	73.3				11.2			33
VSP-HC30-15K□-6		6	74.6				11.9			34
VSP-HC30-20K□-2		1.8	79.2		36.6	31.5	8.4	20	1.0 to 3.0	34
VSP-HC30-20K□-4		4	83.3				11.2			35
VSP-HC30-20K□-6		6	84.6				11.9			36
VSP-HC30-25K□-2		1.8	89.7		41.6	37	8.4	25	1.0 to 3.0	36
VSP-HC30-25K□-4		4	93.8				11.2			37
VSP-HC30-25K□-6		6	95.1				11.9			38
VSP-HC30-30K□-2		1.8	100.7		46.6	43	8.4	30	1.0 to 3.0	38
VSP-HC30-30K□-4		4	104.8				11.2			39
VSP-HC30-30K□-6		6	106.1				11.9			40
VSP-HC30-40K□-2		1.8	122.7		56.5	55	8.4	40	1.0 to 3.0	42
VSP-HC30-40K□-4		4	126.8				11.2			43
VSP-HC30-40K□-6		6	128.1				11.9			44
VSP-HC30-50K□-2		1.8	144.2		66.6	66.5	8.4	50	1.0 to 3.1	46
VSP-HC30-50K□-4		4	148.3				11.2			47
VSP-HC30-50K□-6		6	149.6				11.9			48

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC40, 50-□K□-2/4/6

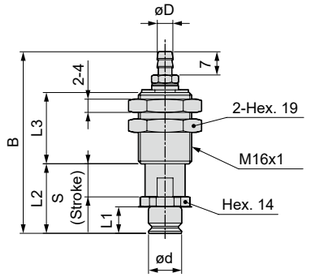


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC40-10K□-2	40	1.8	63.2	16	30.6	21.5	8.4	10	1.0 to 2.4	37
VSP-HC40-10K□-4		4	67.3				11.2			38
VSP-HC40-10K□-6		6	68.6				11.9			39
VSP-HC40-15K□-2		1.8	73.2		35.6	26.5	8.4	15	1.0 to 2.7	39
VSP-HC40-15K□-4		4	77.3				11.2			40
VSP-HC40-15K□-6		6	78.6				11.9			41
VSP-HC40-20K□-2		1.8	83.2		40.6	31.5	8.4	20	1.0 to 3.0	41
VSP-HC40-20K□-4		4	87.3				11.2			42
VSP-HC40-20K□-6		6	88.6				11.9			43
VSP-HC40-25K□-2		1.8	93.7		45.6	37	8.4	25	1.0 to 3.0	43
VSP-HC40-25K□-4		4	97.8				11.2			44
VSP-HC40-25K□-6		6	99.1				11.9			45
VSP-HC40-30K□-2		1.8	104.7		50.6	43	8.4	30	1.0 to 3.0	46
VSP-HC40-30K□-4		4	108.8				11.2			46
VSP-HC40-30K□-6		6	110.1				11.9			47
VSP-HC40-40K□-2		1.8	126.7		60.6	55	8.4	40	1.0 to 3.0	49
VSP-HC40-40K□-4		4	130.8				11.2			50
VSP-HC40-40K□-6		6	132.1				11.9			51
VSP-HC40-50K□-2		1.8	148.2		70.6	66.5	8.4	50	1.0 to 3.1	53
VSP-HC40-50K□-4		4	152.3				11.2			54
VSP-HC40-50K□-6		6	153.6				11.9			55
VSP-HC50-10K□-2	50	1.8	64.2	17	31.6	21.5	8.4	10	1.0 to 2.4	43
VSP-HC50-10K□-4		4	68.3				11.2			44
VSP-HC50-10K□-6		6	69.6				11.9			45
VSP-HC50-15K□-2		1.8	74.2		36.6	26.5	8.4	15	1.0 to 2.7	45
VSP-HC50-15K□-4		4	78.3				11.2			46
VSP-HC50-15K□-6		6	79.6				11.9			47
VSP-HC50-20K□-2		1.8	84.2		41.6	31.5	8.4	20	1.0 to 3.0	47
VSP-HC50-20K□-4		4	88.3				11.2			48
VSP-HC50-20K□-6		6	89.6				11.9			49
VSP-HC50-25K□-2		1.8	94.7		46.6	37	8.4	25	1.0 to 3.0	49
VSP-HC50-25K□-4		4	98.8				11.2			50
VSP-HC50-25K□-6		6	100.1				11.9			51
VSP-HC50-30K□-2		1.8	105.7		51.6	43	8.4	30	1.0 to 3.0	51
VSP-HC50-30K□-4		4	109.8				11.2			52
VSP-HC50-30K□-6		6	111.1				11.9			53
VSP-HC50-40K□-2		1.8	127.7		61.6	55	8.4	40	1.0 to 3.0	55
VSP-HC50-40K□-4		4	131.8				11.2			56
VSP-HC50-40K□-6		6	133.1				11.9			57
VSP-HC50-50K□-2		1.8	149.2		71.6	66.5	8.4	50	1.0 to 3.1	59
VSP-HC50-50K□-4		4	153.3				11.2			60
VSP-HC50-50K□-6		6	154.6				11.9			61

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC10-□K□-4T/6T

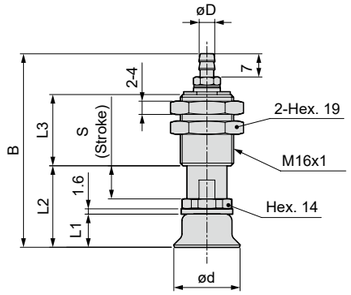


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10-10K□-4T	10	2.5	54.8	8	21	21.5	10	1.0 to 2.4	21
VSP-HC10-10K□-6T		4							
VSP-HC10-15K□-4T		2.5	64.8		26	26.5	15	1.0 to 2.7	23
VSP-HC10-15K□-6T		4							
VSP-HC10-20K□-4T		2.5	74.8		31	31.5	20	1.0 to 3.0	25
VSP-HC10-20K□-6T		4							
VSP-HC10-25K□-4T		2.5	85.3		36	37	25	1.0 to 3.0	28
VSP-HC10-25K□-6T		4							
VSP-HC10-30K□-4T		2.5	96.3		41	43	30	1.0 to 3.0	30
VSP-HC10-30K□-6T		4							
VSP-HC10-40K□-4T		2.5	118.3		51	55	40	1.0 to 3.0	34
VSP-HC10-40K□-6T		4							
VSP-HC10-50K□-4T		2.5	139.8		61	66.5	50	1.0 to 3.1	38
VSP-HC10-50K□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC20, 30-□K□-4T/6T

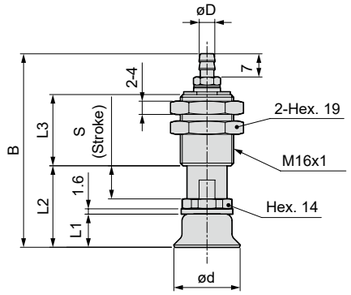


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20-10K□-4T	20	2.5	58.4	10	24.6	21.5	10	1.0 to 2.4	25
VSP-HC20-10K□-6T		4							
VSP-HC20-15K□-4T		2.5	68.4		29.6	26.5	15	1.0 to 2.7	27
VSP-HC20-15K□-6T		4							
VSP-HC20-20K□-4T		2.5	78.4		34.6	31.5	20	1.0 to 3.0	29
VSP-HC20-20K□-6T		4							
VSP-HC20-25K□-4T		2.5	88.9		39.6	37	25	1.0 to 3.0	31
VSP-HC20-25K□-6T		4							
VSP-HC20-30K□-4T		2.5	99.9		44.6	43	30	1.0 to 3.0	33
VSP-HC20-30K□-6T		4							
VSP-HC20-40K□-4T		2.5	121.9		54.6	55	40	1.0 to 3.0	38
VSP-HC20-40K□-6T		4							
VSP-HC20-50K□-4T		2.5	143.4		64.6	66.5	50	1.0 to 3.1	42
VSP-HC20-50K□-6T		4							
VSP-HC30-10K□-4T	30	2.5	60.4	12	26.6	21.5	10	1.0 to 2.4	28
VSP-HC30-10K□-6T		4							
VSP-HC30-15K□-4T		2.5	70.4		31.6	26.5	15	1.0 to 2.7	30
VSP-HC30-15K□-6T		4							
VSP-HC30-20K□-4T		2.5	80.4		36.6	31.5	20	1.0 to 3.0	32
VSP-HC30-20K□-6T		4							
VSP-HC30-25K□-4T		2.5	90.9		41.6	37	25	1.0 to 3.0	34
VSP-HC30-25K□-6T		4							
VSP-HC30-30K□-4T		2.5	101.9		46.6	43	30	1.0 to 3.0	36
VSP-HC30-30K□-6T		4							
VSP-HC30-40K□-4T		2.5	124		56.6	55	40	1.0 to 3.0	41
VSP-HC30-40K□-6T		4							
VSP-HC30-50K□-4T		2.5	145.4		66.6	66.5	50	1.0 to 3.1	45
VSP-HC30-50K□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC40, 50-□K□-4T/6T

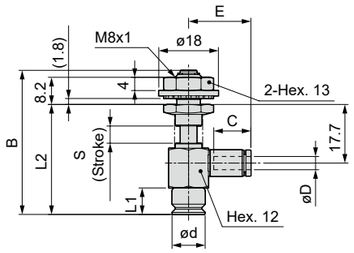


Unit: mm

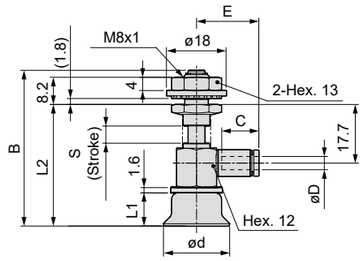
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC40-10K□-4T	40	2.5	64.4	16	30.6	21.5	10	1.0 to 2.4	35
VSP-HC40-10K□-6T		4							
VSP-HC40-15K□-4T		2.5	74.4		35.6	26.5	15	1.0 to 2.7	37
VSP-HC40-15K□-6T		4							
VSP-HC40-20K□-4T		2.5	84.4		40.6	31.5	20	1.0 to 3.0	39
VSP-HC40-20K□-6T		4							
VSP-HC40-25K□-4T		2.5	94.9		45.6	37	25	1.0 to 3.0	41
VSP-HC40-25K□-6T		4							
VSP-HC40-30K□-4T		2.5	105.9		50.6	43	30	1.0 to 3.0	43
VSP-HC40-30K□-6T		4							
VSP-HC40-40K□-4T		2.5	127.9		60.6	55	40	1.0 to 3.0	48
VSP-HC40-40K□-6T		4							
VSP-HC40-50K□-4T		2.5	149.4		70.6	66.5	50	1.0 to 3.1	52
VSP-HC40-50K□-6T		4							
VSP-HC50-10K□-4T	50	2.5	65.4	17	31.6	21.5	10	1.0 to 2.4	41
VSP-HC50-10K□-6T		4							
VSP-HC50-15K□-4T		2.5	75.4		36.6	26.5	15	1.0 to 2.7	43
VSP-HC50-15K□-6T		4							
VSP-HC50-20K□-4T		2.5	85.4		41.6	31.5	20	1.0 to 3.0	45
VSP-HC50-20K□-6T		4							
VSP-HC50-25K□-4T		2.5	95.9		46.6	37	25	1.0 to 3.0	47
VSP-HC50-25K□-6T		4							
VSP-HC50-30K□-4T		2.5	106.9		51.6	43	30	1.0 to 3.0	49
VSP-HC50-30K□-6T		4							
VSP-HC50-40K□-4T		2.5	128.9		61.6	55	40	1.0 to 3.0	54
VSP-HC50-40K□-6T		4							
VSP-HC50-50K□-4T		2.5	150.4		71.6	66.5	50	1.0 to 3.1	58
VSP-HC50-50K□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side ,VSP-HD, Push-in fitting)

●VSP-HD10K□-2/4/6



●VSP-HD20 to 50K□-2/4/6

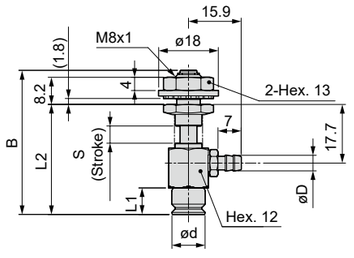


Unit: mm

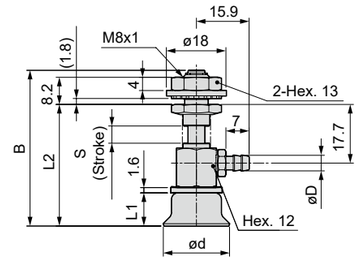
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HD10K□-2	10	1.8	43.5	8	33.2	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HD10K□-4		4				11.2	18.8			34
VSP-HD10K□-6		6				11.9	20.6			35
VSP-HD20K□-2	20	1.8	47	10	36.7	8.4	14.7	5.2	1.6 to 2.9	36
VSP-HD20K□-4		4				11.2	18.8			37
VSP-HD20K□-6		6				11.9	20.6			38
VSP-HD30K□-2	30	1.8	49	12	38.7	8.4	14.7	5.2	1.6 to 2.9	39
VSP-HD30K□-4		4				11.2	18.8			40
VSP-HD30K□-6		6				11.9	20.6			41
VSP-HD40K□-2	40	1.8	53	16	42.7	8.4	14.7	5.2	1.6 to 2.9	46
VSP-HD40K□-4		4				11.2	18.8			47
VSP-HD40K□-6		6				11.9	20.6			48
VSP-HD50K□-2	50	1.8	54	17	43.7	8.4	14.7	5.2	1.6 to 2.9	52
VSP-HD50K□-4		4				11.2	18.8			53
VSP-HD50K□-6		6				11.9	20.6			54

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side ,VSP-HD, Barb Fitting)

●VSP-HD10K□-4T/6T



●VSP-HD20 to 50K□-4T/6T

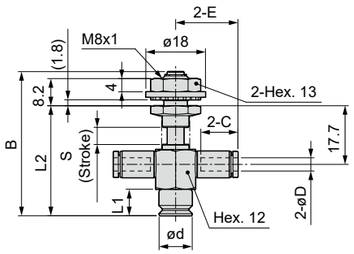


Unit: mm

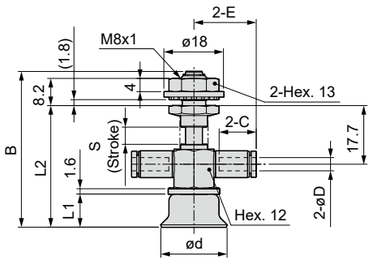
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HD10K□-4T	10	2.5	43.5	8	33.2	5.2	1.6 to 2.9	29
VSP-HD10K□-6T		4						
VSP-HD20K□-4T	20	2.5	47	10	36.7	5.2	1.6 to 2.9	36
VSP-HD20K□-6T		4						
VSP-HD30K□-4T	30	2.5	49	12	38.7	5.2	1.6 to 2.9	39
VSP-HD30K□-6T		4						
VSP-HD40K□-4T	40	2.5	53	16	42.7	5.2	1.6 to 2.9	46
VSP-HD40K□-6T		4						
VSP-HD50K□-4T	50	2.5	54	17	43.7	5.2	1.6 to 2.9	52
VSP-HD50K□-6T		4						

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides VSP-HDW, Push-in fitting)

●VSP-HDW10K□-2/4/6



●VSP-HDW20 to 50K□-2/4/6

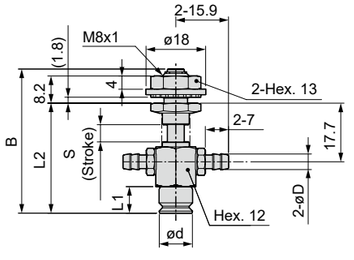


Unit: mm

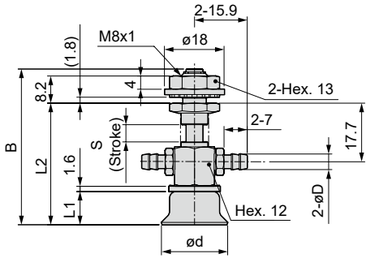
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW10K□-2	10	1.8	43.5	8	33.2	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HDW10K□-4		4				11.2	18.8			35
VSP-HDW10K□-6		6				11.9	20.6			37
VSP-HDW20K□-2	20	1.8	47	10	36.7	8.4	14.7	5.2	1.6 to 2.9	38
VSP-HDW20K□-4		4				11.2	18.8			40
VSP-HDW20K□-6		6				11.9	20.6			42
VSP-HDW30K□-2	30	1.8	49	12	38.7	8.4	14.7	5.2	1.6 to 2.9	41
VSP-HDW30K□-4		4				11.2	18.8			43
VSP-HDW30K□-6		6				11.9	20.6			45
VSP-HDW40K□-2	40	1.8	53	16	42.7	8.4	14.7	5.2	1.6 to 2.9	48
VSP-HDW40K□-4		4				11.2	18.8			50
VSP-HDW40K□-6		6				11.9	20.6			52
VSP-HDW50K□-2	50	1.8	54	17	43.7	8.4	14.7	5.2	1.6 to 2.9	54
VSP-HDW50K□-4		4				11.2	18.8			56
VSP-HDW50K□-6		6				11.9	20.6			58

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides VSP-HDW, Barb Fitting)

●VSP-HDW10K□-4T/6T



●VSP-HDW20 to 50K□-4T/6T

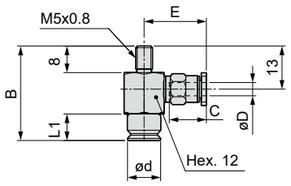


Unit: mm

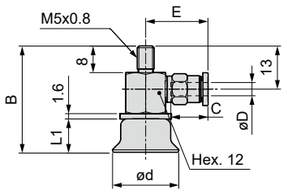
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW10K□-4T	10	2.5	43.5	8	33.2	5.2	1.6 to 2.9	32
VSP-HDW10K□-6T		4						
VSP-HDW20K□-4T	20	2.5	47	10	36.7	5.2	1.6 to 2.9	37
VSP-HDW20K□-6T		4						
VSP-HDW30K□-4T	30	2.5	49	12	38.7	5.2	1.6 to 2.9	40
VSP-HDW30K□-6T		4						
VSP-HDW40K□-4T	40	2.5	53	16	42.7	5.2	1.6 to 2.9	47
VSP-HDW40K□-6T		4						
VSP-HDW50K□-4T	50	2.5	54	17	43.7	5.2	1.6 to 2.9	53
VSP-HDW50K□-6T		4						

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side ,VSP-HE, Push-in fitting)

●VSP-HE10K□-2/4/6



●VSP-HE20 to 50K□-2/4/6

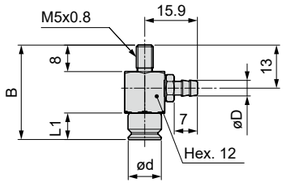


Unit: mm

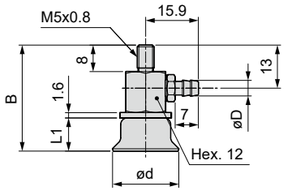
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HE10K□-2	10	1.8	28.5	8	8.4	14.7	17
VSP-HE10K□-4		4			11.2	18.8	18
VSP-HE10K□-6		6			11.9	20.6	19
VSP-HE20K□-2	20	1.8	32	10	8.4	14.7	22
VSP-HE20K□-4		4			11.2	18.8	23
VSP-HE20K□-6		6			11.9	20.6	24
VSP-HE30K□-2	30	1.8	34	12	8.4	14.7	25
VSP-HE30K□-4		4			11.2	18.8	26
VSP-HE30K□-6		6			11.9	20.6	27
VSP-HE40K□-2	40	1.8	38	16	8.4	14.7	32
VSP-HE40K□-4		4			11.2	18.8	33
VSP-HE40K□-6		6			11.9	20.6	34
VSP-HE50K□-2	50	1.8	39	17	8.4	14.7	38
VSP-HE50K□-4		4			11.2	18.8	39
VSP-HE50K□-6		6			11.9	20.6	40

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side ,VSP-HE, Barb Fitting)

●VSP-HE10K□-4T/6T



●VSP-HE20 to 50K□-4T/6T

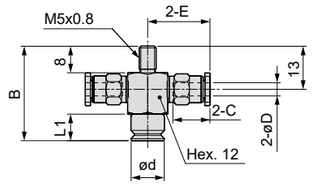


Unit: mm

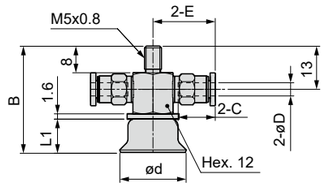
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HE10K□-4T	10	2.5	28.5	8	17
VSP-HE10K□-6T		4			
VSP-HE20K□-4T	20	2.5	32	10	21
VSP-HE20K□-6T		4			
VSP-HE30K□-4T	30	2.5	34	12	24
VSP-HE30K□-6T		4			
VSP-HE40K□-4T	40	2.5	38	16	31
VSP-HE40K□-6T		4			
VSP-HE50K□-4T	50	2.5	39	17	37
VSP-HE50K□-6T		4			

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Push-in fitting)

●VSP-HEW10K□-2/4/6



●VSP-HEW20 to 50K□-2/4/6

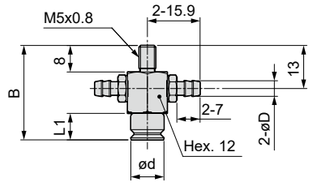


Unit: mm

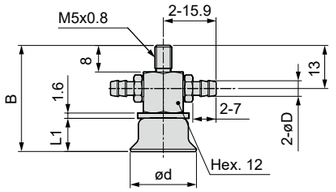
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HEW10K□-2	10	1.8	28.5	8	8.4	14.7	19
VSP-HEW10K□-4		4			11.2	18.8	21
VSP-HEW10K□-6		6			11.9	20.6	23
VSP-HEW20K□-2	20	1.8	32	10	8.4	14.7	23
VSP-HEW20K□-4		4			11.2	18.8	25
VSP-HEW20K□-6		6			11.9	20.6	27
VSP-HEW30K□-2	30	1.8	34	12	8.4	14.7	26
VSP-HEW30K□-4		4			11.2	18.8	28
VSP-HEW30K□-6		6			11.9	20.6	30
VSP-HEW40K□-2	40	1.8	38	16	8.4	14.7	33
VSP-HEW40K□-4		4			11.2	18.8	35
VSP-HEW40K□-6		6			11.9	20.6	37
VSP-HEW50K□-2	50	1.8	39	17	8.4	14.7	39
VSP-HEW50K□-4		4			11.2	18.8	41
VSP-HEW50K□-6		6			11.9	20.6	43

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Barb Fitting)

●VSP-HEW10K□-4T/6T



●VSP-HEW20 to 50K□-4T/6T

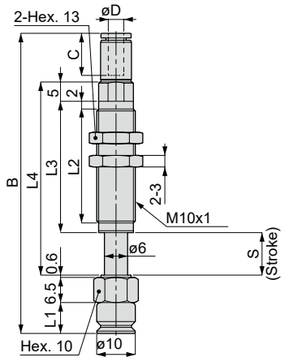


Unit: mm

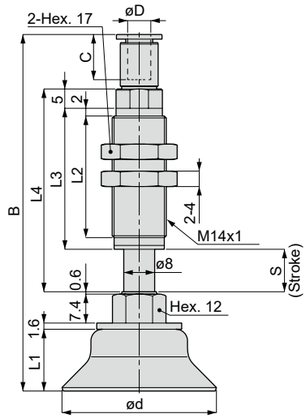
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HEW10K□-4T	10	2.5	28.5	8	18
VSP-HEW10K□-6T		4			
VSP-HEW20K□-4T	20	2.5	32	10	22
VSP-HEW20K□-6T		4			
VSP-HEW30K□-4T	30	2.5	34	12	25
VSP-HEW30K□-6T		4			
VSP-HEW40K□-4T	40	2.5	38	16	32
VSP-HEW40K□-6T		4			
VSP-HEW50K□-4T	50	2.5	39	17	38
VSP-HEW50K□-6T		4			

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC10-□K□-4



●VSP-LFC20 to 50-□K□-4/6



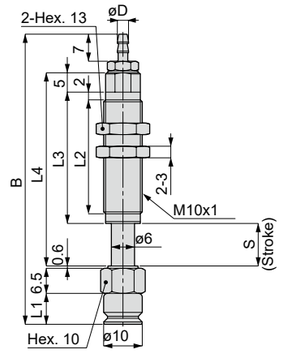
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC10-2K□-4	10	4	62.1	8	21.5	26	34	11.2	2	1.3 to 1.8	28
VSP-LFC10-5K□-4			68.1		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	30
VSP-LFC10-10K□-4			78.1		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	32
VSP-LFC10-15K□-4			88.1		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	34
VSP-LFC10-20K□-4			98.1		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	36
VSP-LFC20-5K□-4	20	4	75.1	10	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	57
VSP-LFC20-5K□-6		6	76.4					11.9			58
VSP-LFC20-10K□-4		4	85.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	59
VSP-LFC20-10K□-6		6	86.4					11.9			60
VSP-LFC20-15K□-4		4	95.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	62
VSP-LFC20-15K□-6		6	96.4					11.9			63
VSP-LFC20-20K□-4		4	105.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	65
VSP-LFC20-20K□-6		6	106.4					11.9			66
VSP-LFC30-5K□-4	30	4	77.1	12	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	60
VSP-LFC30-5K□-6		6	78.4					11.9			61
VSP-LFC30-10K□-4		4	87.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	62
VSP-LFC30-10K□-6		6	88.4					11.9			63
VSP-LFC30-15K□-4		4	97.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	65
VSP-LFC30-15K□-6		6	98.4					11.9			66
VSP-LFC30-20K□-4		4	107.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	68
VSP-LFC30-20K□-6		6	108.4					11.9			69
VSP-LFC40-5K□-4	40	4	81.1	16	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	69
VSP-LFC40-5K□-6		6	82.4					11.9			70
VSP-LFC40-10K□-4		4	91.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	71
VSP-LFC40-10K□-6		6	92.4					11.9			72
VSP-LFC40-15K□-4		4	101.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	74
VSP-LFC40-15K□-6		6	102.4					11.9			75
VSP-LFC40-20K□-4		4	111.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	77
VSP-LFC40-20K□-6		6	112.4					11.9			78
VSP-LFC50-5K□-4	50	4	82.1	17	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	76
VSP-LFC50-5K□-6		6	83.4					11.9			77
VSP-LFC50-10K□-4		4	92.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	78
VSP-LFC50-10K□-6		6	93.4					11.9			79
VSP-LFC50-15K□-4		4	102.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	81
VSP-LFC50-15K□-6		6	103.4					11.9			82
VSP-LFC50-20K□-4		4	112.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	84
VSP-LFC50-20K□-6		6	113.4					11.9			85

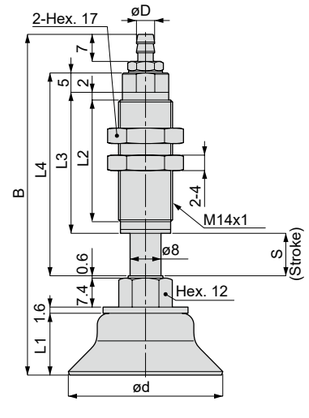
*Values inSide ,brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC10-□K□-4T/6T



●VSP-LFC20 to 50-□K□-4T/6T



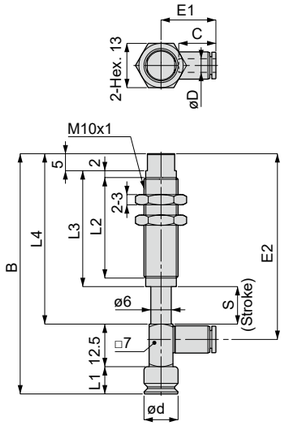
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC10-2K□-4T	10	2.5	59.2	8	21.5	26	34	2	1.3 to 1.8	26
VSP-LFC10-2K□-6T		4								
VSP-LFC10-5K□-4T		2.5	65.2		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	28
VSP-LFC10-5K□-6T		4								
VSP-LFC10-10K□-4T		2.5	75.2		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	30
VSP-LFC10-10K□-6T		4								
VSP-LFC10-15K□-4T		2.5	85.2		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	32
VSP-LFC10-15K□-6T		4								
VSP-LFC10-20K□-4T		2.5	95.2		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	34
VSP-LFC10-20K□-6T		4								
VSP-LFC20-5K□-4T	20	2.5	72.2	10	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	52
VSP-LFC20-5K□-6T		4								
VSP-LFC20-10K□-4T		2.5	82.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	54
VSP-LFC20-10K□-6T		4								
VSP-LFC20-15K□-4T		2.5	92.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	57
VSP-LFC20-15K□-6T		4								
VSP-LFC20-20K□-4T		2.5	102.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	60
VSP-LFC20-20K□-6T		4								
VSP-LFC30-5K□-4T	30	2.5	74.2	12	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	55
VSP-LFC30-5K□-6T		4								
VSP-LFC30-10K□-4T		2.5	84.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	57
VSP-LFC30-10K□-6T		4								
VSP-LFC30-15K□-4T		2.5	94.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	60
VSP-LFC30-15K□-6T		4								
VSP-LFC30-20K□-4T		2.5	104.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	63
VSP-LFC30-20K□-6T		4								
VSP-LFC40-5K□-4T	40	2.5	78.2	16	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	64
VSP-LFC40-5K□-6T		4								
VSP-LFC40-10K□-4T		2.5	88.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	66
VSP-LFC40-10K□-6T		4								
VSP-LFC40-15K□-4T		2.5	98.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	69
VSP-LFC40-15K□-6T		4								
VSP-LFC40-20K□-4T		2.5	108.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	72
VSP-LFC40-20K□-6T		4								
VSP-LFC50-5K□-4T	50	2.5	79.2	17	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	71
VSP-LFC50-5K□-6T		4								
VSP-LFC50-10K□-4T		2.5	89.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	73
VSP-LFC50-10K□-6T		4								
VSP-LFC50-15K□-4T		2.5	99.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	76
VSP-LFC50-15K□-6T		4								
VSP-LFC50-20K□-4T		2.5	109.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	78
VSP-LFC50-20K□-6T		4								

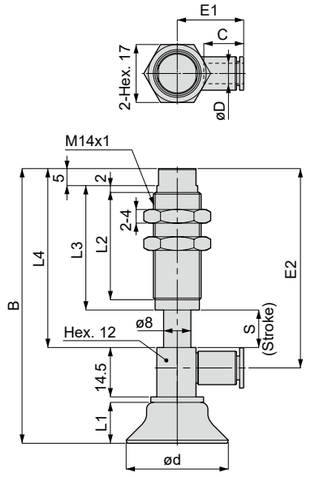
*Values inSide ,brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side ,VSP-LFD, Push-in fitting)

●VSP-LFD10-□K□-4



●VSP-LFD20 to 50-□K□-4/6

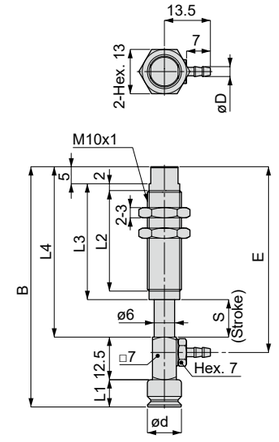


Unit: mm

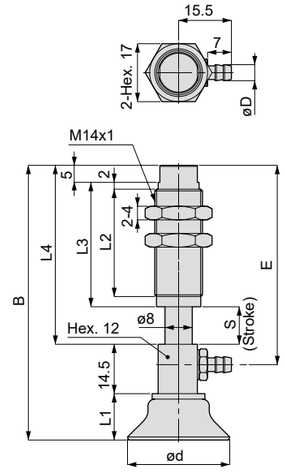
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD10-5K□-4	10	4	60.5	8	24.5	29	40	11.2	16.4	44.5	5	1.3 to 2.4	26
VSP-LFD10-10K□-4			70.5		29.5	34	50			54.5	10	1.3 to 3.3	28
VSP-LFD10-15K□-4			80.5		34.5	39	60			64.5	15	1.3 to 4.2	30
VSP-LFD10-20K□-4			90.5		39.5	44	70			74.5	20	1.3 to 5.1	32
VSP-LFD20-5K□-4	20	4	68.5	10	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	58
VSP-LFD20-5K□-6		6						11.9	19.7				59
VSP-LFD20-10K□-4		4	78.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	62
VSP-LFD20-10K□-6		6						11.9	19.7				63
VSP-LFD20-15K□-4		4	88.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	66
VSP-LFD20-15K□-6		6						11.9	19.7				67
VSP-LFD20-20K□-4		4	98.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	70
VSP-LFD20-20K□-6		6						11.9	19.7				71
VSP-LFD30-5K□-4	30	4	70.5	12	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	61
VSP-LFD30-5K□-6		6						11.9	19.7				62
VSP-LFD30-10K□-4		4	80.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	65
VSP-LFD30-10K□-6		6						11.9	19.7				66
VSP-LFD30-15K□-4		4	90.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	69
VSP-LFD30-15K□-6		6						11.9	19.7				70
VSP-LFD30-20K□-4		4	100.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	73
VSP-LFD30-20K□-6		6						11.9	19.7				74
VSP-LFD40-5K□-4	40	4	74.5	16	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	70
VSP-LFD40-5K□-6		6						11.9	19.7				71
VSP-LFD40-10K□-4		4	84.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	74
VSP-LFD40-10K□-6		6						11.9	19.7				75
VSP-LFD40-15K□-4		4	94.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	78
VSP-LFD40-15K□-6		6						11.9	19.7				79
VSP-LFD40-20K□-4		4	104.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	82
VSP-LFD40-20K□-6		6						11.9	19.7				83
VSP-LFD50-5K□-4	50	4	75.5	17	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	77
VSP-LFD50-5K□-6		6						11.9	19.7				78
VSP-LFD50-10K□-4		4	85.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	81
VSP-LFD50-10K□-6		6						11.9	19.7				82
VSP-LFD50-15K□-4		4	95.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	85
VSP-LFD50-15K□-6		6						11.9	19.7				86
VSP-LFD50-20K□-4		4	105.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	89
VSP-LFD50-20K□-6		6						11.9	19.7				90

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side ,VSP-LFD, Barb Fitting)

●VSP-LFD10-□K□-4T/6T



●VSP-LFD20 to 50-□K□-4T/6T

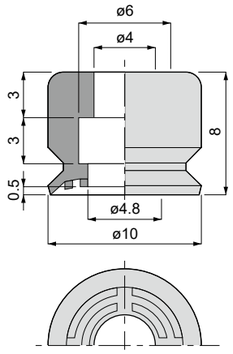


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD10-5K□-4T	10	2.5	60.5	8	24.5	29	40	44.5	5	1.3 to 2.4	25
VSP-LFD10-5K□-6T		4									
VSP-LFD10-10K□-4T		2.5	70.5		29.5	34	50	54.5	10	1.3 to 3.3	27
VSP-LFD10-10K□-6T		4									
VSP-LFD10-15K□-4T		2.5	80.5		34.5	39	60	64.5	15	1.3 to 4.2	29
VSP-LFD10-15K□-6T		4									
VSP-LFD10-20K□-4T		2.5	90.5		39.5	44	70	74.5	20	1.3 to 5.1	31
VSP-LFD10-20K□-6T		4									
VSP-LFD20-5K□-4T	20	2.5	68.5	10	26.5	31.5	42.5	48.5	5	4.5 to 6.5	54
VSP-LFD20-5K□-6T		4									
VSP-LFD20-10K□-4T		2.5	78.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	57
VSP-LFD20-10K□-6T		4									
VSP-LFD20-15K□-4T		2.5	88.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	61
VSP-LFD20-15K□-6T		4									
VSP-LFD20-20K□-4T		2.5	98.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	65
VSP-LFD20-20K□-6T		4									
VSP-LFD30-5K□-4T	30	2.5	70.5	12	26.5	31.5	42.5	48.5	5	4.5 to 6.5	57
VSP-LFD30-5K□-6T		4									
VSP-LFD30-10K□-4T		2.5	80.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	60
VSP-LFD30-10K□-6T		4									
VSP-LFD30-15K□-4T		2.5	90.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	64
VSP-LFD30-15K□-6T		4									
VSP-LFD30-20K□-4T		2.5	100.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	68
VSP-LFD30-20K□-6T		4									
VSP-LFD40-5K□-4T	40	2.5	74.5	16	26.5	31.5	42.5	48.5	5	4.5 to 6.5	66
VSP-LFD40-5K□-6T		4									
VSP-LFD40-10K□-4T		2.5	84.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	69
VSP-LFD40-10K□-6T		4									
VSP-LFD40-15K□-4T		2.5	94.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	73
VSP-LFD40-15K□-6T		4									
VSP-LFD40-20K□-4T		2.5	104.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	77
VSP-LFD40-20K□-6T		4									
VSP-LFD50-5K□-4T	50	2.5	75.5	17	26.5	31.5	42.5	48.5	5	4.5 to 6.5	73
VSP-LFD50-5K□-6T		4									
VSP-LFD50-10K□-4T		2.5	85.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	76
VSP-LFD50-10K□-6T		4									
VSP-LFD50-15K□-4T		2.5	95.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	80
VSP-LFD50-15K□-6T		4									
VSP-LFD50-20K□-4T		2.5	105.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	84
VSP-LFD50-20K□-6T		4									

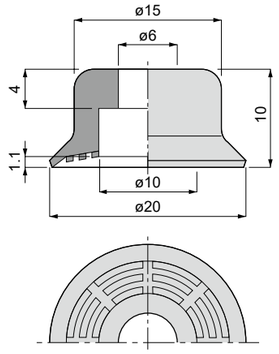
Pad Rubber Only External Dimension Diagram

●VSPG-10K□



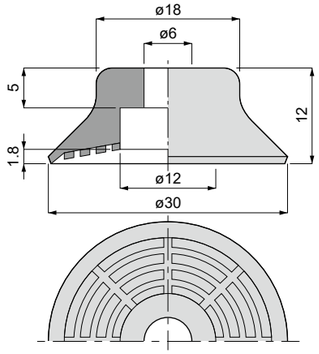
Weight: 0.6 g [0.9 g]

●VSPG-20K□



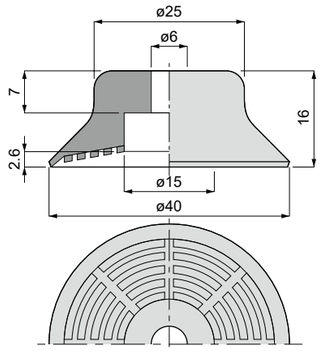
Weight: 1.7 g [2.6 g]

●VSPG-30K□



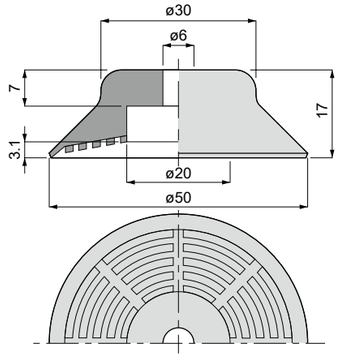
Weight: 4.1 g [6.5 g]

●VSPG-40K□



Weight: 10 g [16 g]

●VSPG-50K□

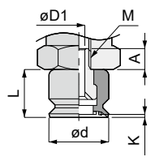


Weight: 16 g [23 g]

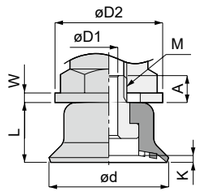
Weight: Values in [ ] are for fluororubber only.

Detailed Diagram of Pad and Holder Connection Part

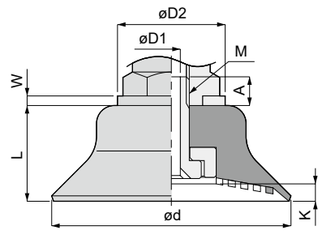
●VSPG-10K□A



●VSPG-20, 30K□A



●VSPG-40, 50K□A



Unit: mm

Model No.	Pad Diameter ød	L	Lip Inner Height K	Fixing Screw M	A	øD1	øD2	W
VSPG-10K□A	10	8	0.5	M4x0.7	3.5	2	-	-
VSPG-20K□A	20	10	1.1	M6x1	4.5	3	18	1.6
VSPG-30K□A	30	12	1.8	M6x1	5.5	3	18	1.6
VSPG-40K□A	40	16	2.6	M6x1	5.3	3	22	1.6
VSPG-50K□A	50	17	3.1	M6x1	5.3	3	22	1.6

MEMO

Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechanical Break Function
Ending



Suction Pad Thin Workpiece-type

VSP-□P□ Series

Suction pad with a thin lip and no ribs, emphasizing adhesion to the workpiece

RoHS

Ideal for thin workpieces such as copy paper and vinyl. Soft pad lip reduces workpiece wrinkling and mitigates double-picking (picking two sheets)

Abundant holder variations

Shape 17 types

- Standard..6 types
- Compact Class 5
- Low dust generation .....2 types
- Lightweight...2 types
- Low back.....2 types

Piping Connection 6 types

- Push-in fitting (ø1.8 to ø6)3 types
- Barbed fitting (ø4, ø6) .....2 types
- Screw-in (M5).....1 type

Stroke 10 types

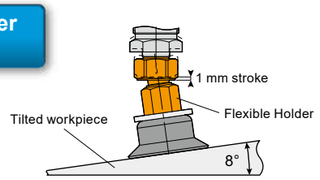
2 mm to 50 mm
(Depending on pad size, holder)

Low particle generation holders (LFC, LFD) with less abrasion powder from sliding and low noise are available

Supports assembly options for swiveling (flexible holder) that follows inclined workpiece surfaces

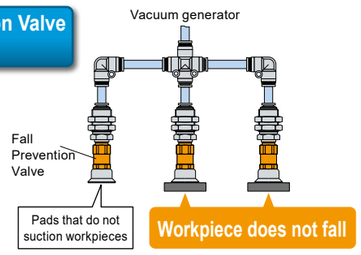
Flexible Holder (CF)

After removing the workpiece, returns to the normal position (vertical)



Assembly option for drop prevention valve (V) that reduces vacuum drop in separate circuits even without a workpiece is supported

Drop Prevention Valve (V)



Pad surface treatment (option) with special processing to reduce adsorption marks is available

	-DL	-ER	-FG
Surface Treatment	Sticking Prevention	Adsorption Mark Reduction	Fluorine Coating
			
Compatible Material	Silicone Fluorine Conductive Silicone	Nitrile Nitrile Conductive NBR	Silicone Conductive Silicone Ultra Soft Silicone
Features	Special coating with good slippage. Effective for preventing sticking of lightweight workpieces and thin workpieces.	Surface modification with environmentally friendly chemicals reduces adsorption marks.	Surface modification with special treatment prevents sticking to the workpiece. Improved pad durability and abrasion resistance.

Pad Shape

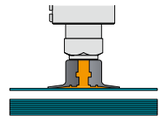






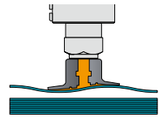
Double-picking mitigation

No ribs on the lip surface; pad adheres closely to the workpiece during suction. At this time, the effective suction area becomes smaller, making it difficult to lift the second sheet.



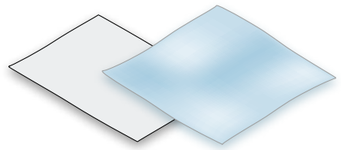
Ideal for thin workpieces

No ribs allow close adhesion to the workpiece, preventing deformation. Additionally, the thin lip follows workpiece waviness well.



Recommended Workpiece

Thin workpieces such as sheets and vinyl



Pad Diameter

4 types 8 10 15 20

Pad Material

6 types Nitrile Silicone Urethane Fluorine Conductive NBR (Low Resistance-type) Fluorosilicone

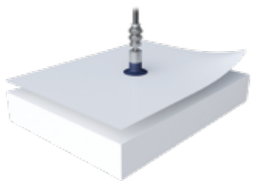
*Silicone (S) conforms to the Food Sanitation Act. (Holder is not compliant / Suction pad is compliant only for workpiece contact area)

Solution Examples

Thin Workpieces

Reduces double-picking of thin workpieces like films and permeable workpieces like paper/drawing paper.





Permeable workpieces such as paper/drawing paper



Thin workpieces such as films

Model No. Notation

●For Thin Objects Type

Suction Pad

VSP – ME – 20 – [ ] – P – N – -ER – M5 – [ ] – CF – V

VSP	ME	20	[ ]	P	N	-ER	M5	[ ]	CF	V
Model No.	❶ Holder Shape	❷ Pad Diameter	❸ Stroke Option	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment	❼ Connection Port Shape	❽ Buffer Load	❾ Pad Swing	❿ Drop Prevention Valve

Pad Rubber Only

VSPG — 20 — P — N — -ER

VSPG	20	P	N	-ER
Model No.	❷ Pad Diameter	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment

❶ Holder Shape

Buffer Present/Absent	Type	Vacuum Outlet	Code	
Fixed Type	Standard	Top Direction	A	
	Compact		MA	
	Standard	Side ,Direction	B	
	Compact		MB	
	Low Profile		HE	
		Both Sides Direction	HEW	
	Standard	Direct Mount Type	E	
	Compact		ME	
Buffer Type	Standard	Top Direction	C	
	Compact		MC	
	Low Particle Generation		LFC	
	Standard	Side ,Direction	D	
	Compact		MD	
	Low Particle Generation		LFD	
	Lightweight		HD	
		Both Sides Direction	HDW	
	Standard	Direct Mount Type	F	

❷ Pad Diameter

Code	Content
8	ø8
10	ø10
15	ø15
20	ø20

❸ Stroke Option

Content	Holder Shape C	Holder Shape D	Holder Shape LFC	Holder Shape LFD	Code
Specified Stroke, or No Buffer	●	●			Blank
Stroke 2 mm			●		–2
Stroke 5 mm			●	●	–5
Stroke 10 mm	●	●	●	●	–10
Stroke 15 mm	●	●	●	●	–15
Stroke 20 mm	●	●	●	●	–20
Stroke 30 mm	●	●			–30
Stroke 40 mm	●	●			–40
Stroke 50 mm	●	●			–50

*1, *2

*1: For ❶ Holder Shape other than C, D, LFC, and LFD, ❸ is 'Blank'.
*2: For the specified stroke of ❸ 'Blank', please confirm the stroke dimension on the external dimension drawing.

❹ Pad Shape

Code	Content	
P	For Thin Objects Type	

❺ Pad Material

Code	Content
N	Nitrile rubber
S	Silicone Rubber
U	Urethane rubber
F	Fluororubber
FS	Fluorosilicone Rubber
NE	Conductive NBR (Low Resistance-type)

❻ Surface Treatment

Content	Compatible Pad Material N	S	F	NE	Compatible Pad Diameter For Thin Workpieces(P)	Code
No surface treatment	All pad materials, all pad diameters					Blank
Anti-Adhesion Special Coating		●	●		All sizes	–DL
Suction Mark Reduction Surface Modification	●			●	All sizes	–ER
Fluorine Coating		●			All sizes	–FG

Model No. Notation

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

●Design compatible with rechargeable battery manufacturing process

VSP – ..... – P4*

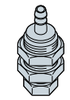
Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

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

VSP – ..... – FP*

*Please inquire for details.

❼ Connection Size/Shape

Content	Holder Shape A	B	C	D	MA	MB	MC	MD	ME	LFC	LFD	HD	HDW	HE	HEW	Code	
(❶: For E and F)																Blank	
ø1.8, Push-in fitting		●	●	●	●	●	●	●				●	●	●	●	2	
ø4, Push-in fitting	●	●	●	●	●	●	●	●		●	●	●	●	●	●	4	
ø6, Push-in fitting	●	●	●	●		●		●		●	●	●	●	●	●	6	
ø4, Push-in fitting, without spring cover			●	●												4C	
ø6, Push-in fitting, without spring cover			●	●												6C	
ø4, Barb fitting	●	●	●	●	●	●	●	●		●	●	●	●	●	●	4T	
ø6, Barb fitting	●	●	●	●	●	●	●	●		●	●	●	●	●	●	6T	
ø4, Barb fitting, without spring cover			●	●												4TC	
ø6, Barb fitting, without spring cover			●	●												6TC	
M5 x 0.8									●							M5	

*1: For ❶ Holder Shape C and D with ❸ Stroke Option -20 to -50, options 4C, 6C, 4TC, and 6TC can be selected for ❼. Additionally, for ❸ Stroke Option -30 to -50, only 4C, 6C, 4TC, and 6TC can be selected for ❼.
*2: For ❶ C with ❸ 'Blank', only 2, 4, 4T, and 6T can be selected for ❼.

❽ Buffer Load

Code	Content
Blank	Standard Load or No Buffer
L	Low Load (1/4 of Standard Load)

*1
*2

*1: For ❶ Holder Shape other than LFC, ❽ is 'Blank'.
*2: For ❸ Stroke Option -2, ❽ is 'Blank'.

❾ Pad Swing

Code	Content		
Blank	None		
CF	With Flexible Holder (Angle 8°)		Flexible Holder

*1

*1: ❾CF can be selected for ❶ Holder Shape E and ME.
*2: For dimensions with the pad swivel function, please refer to P. 1060 and P. 1062.

❿ Drop Prevention Valve

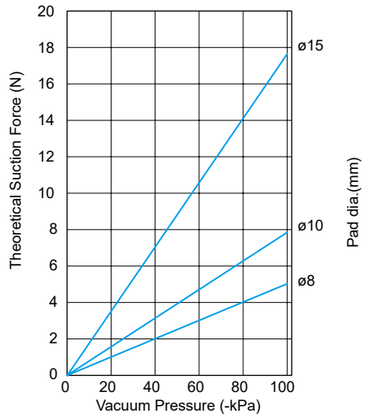
Code	Content		
Blank	None		
V	With Drop Prevention Valve		Drop Prevention Valve

*1

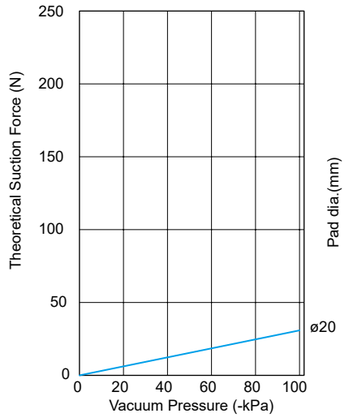
*1: ❿V can be selected for ❶ Holder Shape E and ME.
*2: For dimensions with the drop prevention valve, please refer to P. 1083 and P. 1084.

Theoretical Suction Force

●Pad diameter: ø8 mm to 15 mm



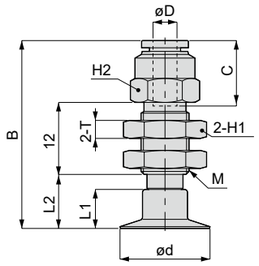
●Pad diameter: ø20 mm



Regarding the suction force of the thin workpiece-type, due to pad characteristics, it may not be possible to secure the calculated suction force (theoretical suction force x safety factor) due to factors such as vacuum level, pad material, and adsorbed object. Refer to "Suction Pads selection method" (P. 412) Use the suction force obtained with this formula as a guide, and make sure that there is no problem with the suction capacity on the actual machine.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Push-in fitting)

●VSP-A8 to 20P□-4/6

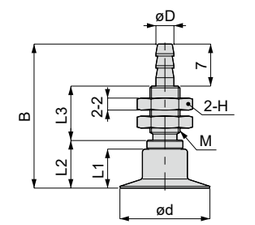


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	Tube End C	Width Across Flats H1	Width Across Flats H2	T	Weight (g)
VSP-A8P□-4	8	4	M8x0.75	30.6	5.5	8	11.2	10	8	2	10.2
VSP-A8P□-6		6	M10x1	31.3			11.9	12	10	3	13.8
VSP-A10P□-4	10	4	M8x0.75	30.9	5.8	8.3	11.2	10	8	2	10.3
VSP-A10P□-6		6	M10x1	31.6			11.9	12	10	3	13.9
VSP-A15P□-4	15	4	M8x0.75	31.6	6.5	9	11.2	10	8	2	10.4
VSP-A15P□-6		6	M10x1	32.3			11.9	12	10	3	14
VSP-A20P□-4	20	4	M8x0.75	32.4	7.3	9.8	11.2	10	8	2	10.5
VSP-A20P□-6		6	M10x1	33.1			11.9	12	10	3	14.1

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Barb fitting)

●VSP-A8 to 20P□-4T/6T

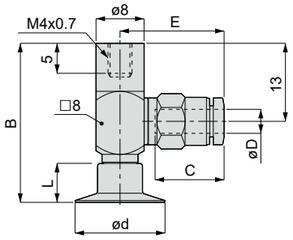


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	L3	Width Across Flats H	Weight (g)
VSP-A8P□-4T	8	2.5	M5x0.5	23	5.5	7	9	8	3.2
VSP-A8P□-6T		4	M8x0.75	24.5			10.5	10	14
VSP-A10P□-4T	10	2.5	M5x0.5	23.3	5.8	7.3	9	8	3.2
VSP-A10P□-6T		4	M8x0.75	24.8			10.5	10	14
VSP-A15P□-4T	15	2.5	M5x0.5	24	6.5	8	9	8	3.3
VSP-A15P□-6T		4	M8x0.75	25.5			10.5	10	14
VSP-A20P□-4T	20	2.5	M5x0.5	24.8	7.3	8.8	9	8	3.4
VSP-A20P□-6T		4	M8x0.75	26.3			10.5	10	14

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Push-in fitting)

●VSP-B8 to 20P□-2/4/6

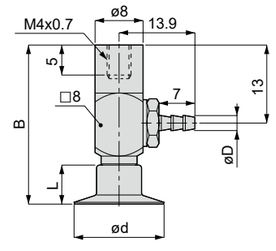


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-B8P□-2	8	1.8	25.5	5.5	8.4	12.7	12
VSP-B8P□-4		4			11.2	16.8	13
VSP-B8P□-6		6			11.9	18.6	14
VSP-B10P□-2	10	1.8	25.8	5.8	8.4	12.7	12
VSP-B10P□-4		4			11.2	16.8	13
VSP-B10P□-6		6			11.9	18.6	14
VSP-B15P□-2	15	1.8	26.5	6.5	8.4	12.7	12
VSP-B15P□-4		4			11.2	16.8	13
VSP-B15P□-6		6			11.9	18.6	14
VSP-B20P□-2	20	1.8	27.3	7.3	8.4	12.7	12
VSP-B20P□-4		4			11.2	16.8	13
VSP-B20P□-6		6			11.9	18.6	14

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Barb Fitting)

●VSP-B8 to 20P□-4T/6T

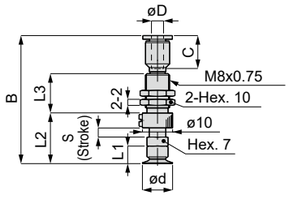


Unit: mm

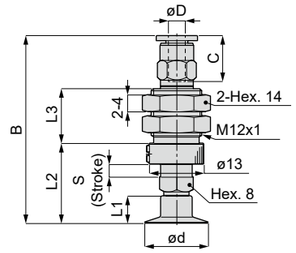
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-B8P□-4T	8	2.5	25.5	5.5	10
VSP-B8P□-6T		4			
VSP-B10P□-4T	10	2.5	25.8	5.8	10
VSP-B10P□-6T		4			
VSP-B15P□-4T	15	2.5	26.5	6.5	10
VSP-B15P□-6T		4			
VSP-B20P□-4T	20	2.5	27.3	7.3	10
VSP-B20P□-6T		4			

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C8 to 20P□-2/4/6



●VSP-C8 to 20-□P□-2/4/6

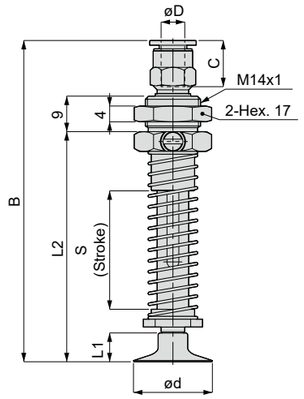


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C8P□-2	8	1.8	39.2	5.5	16.5	13	8.4	3	0.9 to 1.9	8
VSP-C8P□-4		4	42.5				11.2			9
VSP-C8-10P□-2		1.8	51.4		25	17.5	8.4	10	0.8 to 2.7	21
VSP-C8-10P□-4		4	55.5				11.2			22
VSP-C8-10P□-6		6	57.3				11.9			23
VSP-C8-15P□-2		1.8	62.4		30	23.5	8.4	15	0.7 to 3.0	25
VSP-C8-15P□-4		4	66.5				11.2			26
VSP-C8-15P□-6		6	68.3				11.9			27
VSP-C8-20P□-2		1.8	72.4		35	28.5	8.4	20	0.9 to 3.4	27
VSP-C8-20P□-4		4	76.5				11.2			28
VSP-C8-20P□-6		6	78.3				11.9			29
VSP-C10P□-2	10	1.8	39.5	5.8	16.8	13	8.4	3	0.9 to 1.9	8
VSP-C10P□-4		4	42.8				11.2			9
VSP-C10-10P□-2		1.8	51.7		25.3	17.5	8.4	10	0.8 to 2.7	21
VSP-C10-10P□-4		4	55.8				11.2			22
VSP-C10-10P□-6		6	57.6				11.9			23
VSP-C10-15P□-2		1.8	62.7		30.3	23.5	8.4	15	0.7 to 3.0	25
VSP-C10-15P□-4		4	66.8				11.2			26
VSP-C10-15P□-6		6	68.6				11.9			27
VSP-C10-20P□-2		1.8	72.7		35.3	28.5	8.4	20	0.9 to 3.4	27
VSP-C10-20P□-4		4	76.8				11.2			28
VSP-C10-20P□-6		6	78.6				11.9			29
VSP-C15P□-2	15	1.8	40.2	6.5	17.5	13	8.4	3	0.9 to 1.9	8
VSP-C15P□-4		4	43.5				11.2			9
VSP-C15-10P□-2		1.8	52.4		26	17.5	8.4	10	0.8 to 2.7	21
VSP-C15-10P□-4		4	56.5				11.2			22
VSP-C15-10P□-6		6	58.3				11.9			23
VSP-C15-15P□-2		1.8	63.4		31	23.5	8.4	15	0.7 to 3.0	25
VSP-C15-15P□-4		4	67.5				11.2			26
VSP-C15-15P□-6		6	69.3				11.9			27
VSP-C15-20P□-2		1.8	73.4		36	28.5	8.4	20	0.9 to 3.4	27
VSP-C15-20P□-4		4	77.5				11.2			28
VSP-C15-20P□-6		6	79.3				11.9			29
VSP-C20P□-2	20	1.8	41	7.3	18.3	13	8.4	3	0.9 to 1.9	8
VSP-C20P□-4		4	44.3				11.2			9
VSP-C20-10P□-2		1.8	53.2		26.8	17.5	8.4	10	0.8 to 2.7	21
VSP-C20-10P□-4		4	57.3				11.2			22
VSP-C20-10P□-6		6	59.1				11.9			23
VSP-C20-15P□-2		1.8	64.2		31.8	23.5	8.4	15	0.7 to 3.0	25
VSP-C20-15P□-4		4	68.3				11.2			26
VSP-C20-15P□-6		6	70.1				11.9			27
VSP-C20-20P□-2		1.8	74.2		36.8	28.5	8.4	20	0.9 to 3.4	27
VSP-C20-20P□-4		4	78.3				11.2			28
VSP-C20-20P□-6		6	80.1				11.9			29

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting without Spring Cover)

●VSP-C8 to 20-□P□-4C/6C

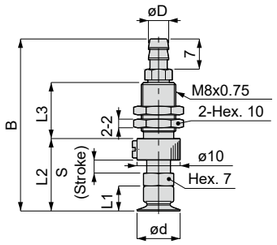


Unit: mm

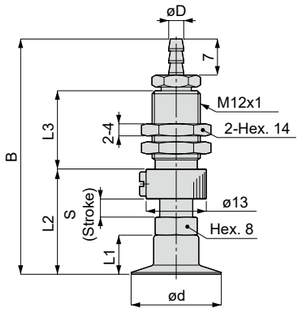
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C8-20P□-4C	8	4	65.5	5.5	43.5	11.2	20	1.5 to 4.9	43
VSP-C8-20P□-6C		6	66.8			11.9			44
VSP-C8-30P□-4C		4	78.5		56.5	11.2	30	1.1 to 4.8	48
VSP-C8-30P□-6C		6	79.8			11.9			49
VSP-C8-40P□-4C		4	91.5		69.5	11.2	40	1.0 to 4.5	54
VSP-C8-40P□-6C		6	92.8			11.9			55
VSP-C8-50P□-4C		4	104.5		82.5	11.2	50	0.9 to 4.5	59
VSP-C8-50P□-6C		6	105.8			11.9			60
VSP-C10-20P□-4C	10	4	65.8	5.8	43.8	11.2	20	1.5 to 4.9	43
VSP-C10-20P□-6C		6	67.1			11.9			44
VSP-C10-30P□-4C		4	78.8		56.8	11.2	30	1.1 to 4.8	48
VSP-C10-30P□-6C		6	80.1			11.9			49
VSP-C10-40P□-4C		4	91.8		69.8	11.2	40	1.0 to 4.5	54
VSP-C10-40P□-6C		6	93.1			11.9			55
VSP-C10-50P□-4C		4	104.8		82.8	11.2	50	0.9 to 4.5	59
VSP-C10-50P□-6C		6	106.1			11.9			60
VSP-C15-20P□-4C	15	4	66.5	6.5	44.5	11.2	20	1.5 to 4.9	43
VSP-C15-20P□-6C		6	67.8			11.9			44
VSP-C15-30P□-4C		4	79.5		57.5	11.2	30	1.1 to 4.8	48
VSP-C15-30P□-6C		6	80.8			11.9			49
VSP-C15-40P□-4C		4	92.5		70.5	11.2	40	1.0 to 4.5	54
VSP-C15-40P□-6C		6	93.8			11.9			55
VSP-C15-50P□-4C		4	105.5		83.5	11.2	50	0.9 to 4.5	59
VSP-C15-50P□-6C		6	106.8			11.9			60
VSP-C20-20P□-4C	20	4	67.3	7.3	45.3	11.2	20	1.5 to 4.9	43
VSP-C20-20P□-6C		6	68.6			11.9			44
VSP-C20-30P□-4C		4	80.3		58.3	11.2	30	1.1 to 4.8	48
VSP-C20-30P□-6C		6	81.6			11.9			49
VSP-C20-40P□-4C		4	93.3		71.3	11.2	40	1.0 to 4.5	54
VSP-C20-40P□-6C		6	94.6			11.9			55
VSP-C20-50P□-4C		4	106.3		84.3	11.2	50	0.9 to 4.5	59
VSP-C20-50P□-6C		6	107.6			11.9			60

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C8 to 20P□-4T/6T



●VSP-C8 to 20-□P□-4T/6T

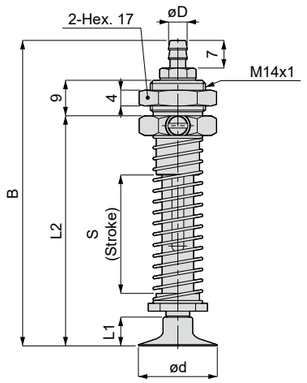


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-C8P□-4T	8	2.5	39.1	5.5	16.5	13	3	0.9 to 1.9	8
VSP-C8P□-6T		4							
VSP-C8-10P□-4T		2.5	52.6		25	17.5	10	0.8 to 2.7	21
VSP-C8-10P□-6T		4							
VSP-C8-15P□-4T		2.5	63.6		30	23.5	15	0.7 to 3.0	25
VSP-C8-15P□-6T		4							
VSP-C8-20P□-4T		2.5	73.6		35	28.5	20	0.9 to 3.4	27
VSP-C8-20P□-6T		4							
VSP-C10P□-4T	10	2.5	39.4	5.8	16.8	13	3	0.9 to 1.9	8
VSP-C10P□-6T		4							
VSP-C10-10P□-4T		2.5	52.9		25.3	17.5	10	0.8 to 2.7	21
VSP-C10-10P□-6T		4							
VSP-C10-15P□-4T		2.5	63.9		30.3	23.5	15	0.7 to 3.0	25
VSP-C10-15P□-6T		4							
VSP-C10-20P□-4T		2.5	73.9		35.3	28.5	20	0.9 to 3.4	27
VSP-C10-20P□-6T		4							
VSP-C15P□-4T	15	2.5	40.1	6.5	17.5	13	3	0.9 to 1.9	8
VSP-C15P□-6T		4							
VSP-C15-10P□-4T		2.5	53.6		26	17.5	10	0.8 to 2.7	21
VSP-C15-10P□-6T		4							
VSP-C15-15P□-4T		2.5	64.6		31	23.5	15	0.7 to 3.0	25
VSP-C15-15P□-6T		4							
VSP-C15-20P□-4T		2.5	74.6		36	28.5	20	0.9 to 3.4	27
VSP-C15-20P□-6T		4							
VSP-C20P□-4T	20	2.5	40.9	7.3	18.3	13	3	0.9 to 1.9	8
VSP-C20P□-6T		4							
VSP-C20-10P□-4T		2.5	54.4		26.8	17.5	10	0.8 to 2.7	21
VSP-C20-10P□-6T		4							
VSP-C20-15P□-4T		2.5	65.4		31.8	23.5	15	0.7 to 3.0	25
VSP-C20-15P□-6T		4							
VSP-C20-20P□-4T		2.5	75.4		36.8	28.5	20	0.9 to 3.4	27
VSP-C20-20P□-6T		4							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting without Spring Cover)

●VSP-C8 to 20-□P□-4TC/6TC

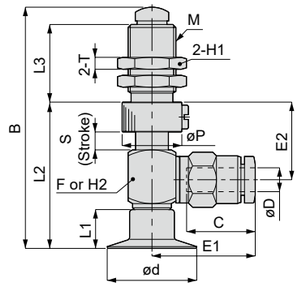


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C8-20P□-4TC	8	2.5	62.6	5.5	43.5	20	1.5 to 4.9	42
VSP-C8-20P□-6TC		4						
VSP-C8-30P□-4TC		2.5	75.6		56.5	30	1.1 to 4.8	47
VSP-C8-30P□-6TC		4						
VSP-C8-40P□-4TC		2.5	88.6		69.5	40	1.0 to 4.5	52
VSP-C8-40P□-6TC		4						
VSP-C8-50P□-4TC		2.5	101.6		82.5	50	0.9 to 4.5	58
VSP-C8-50P□-6TC		4						
VSP-C10-20P□-4TC	10	2.5	62.9	5.8	43.8	20	1.5 to 4.9	42
VSP-C10-20P□-6TC		4						
VSP-C10-30P□-4TC		2.5	75.9		56.8	30	1.1 to 4.8	47
VSP-C10-30P□-6TC		4						
VSP-C10-40P□-4TC		2.5	88.9		69.8	40	1.0 to 4.5	52
VSP-C10-40P□-6TC		4						
VSP-C10-50P□-4TC		2.5	101.9		82.8	50	0.9 to 4.5	58
VSP-C10-50P□-6TC		4						
VSP-C15-20P□-4TC	15	2.5	63.6	6.5	44.5	20	1.5 to 4.9	42
VSP-C15-20P□-6TC		4						
VSP-C15-30P□-4TC		2.5	76.6		57.5	30	1.1 to 4.8	47
VSP-C15-30P□-6TC		4						
VSP-C15-40P□-4TC		2.5	89.6		70.5	40	1.0 to 4.5	52
VSP-C15-40P□-6TC		4						
VSP-C15-50P□-4TC		2.5	102.6		83.5	50	0.9 to 4.5	58
VSP-C15-50P□-6TC		4						
VSP-C20-20P□-4TC	20	2.5	64.4	7.3	45.3	20	1.5 to 4.9	42
VSP-C20-20P□-6TC		4						
VSP-C20-30P□-4TC		2.5	77.4		58.3	30	1.1 to 4.8	47
VSP-C20-30P□-6TC		4						
VSP-C20-40P□-4TC		2.5	90.4		71.3	40	1.0 to 4.5	52
VSP-C20-40P□-6TC		4						
VSP-C20-50P□-4TC		2.5	103.4		84.3	50	0.9 to 4.5	58
VSP-C20-50P□-6TC		4						

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D8 to 20P□-2/4/6
●VSP-D8 to 20-□P□-2/4/6

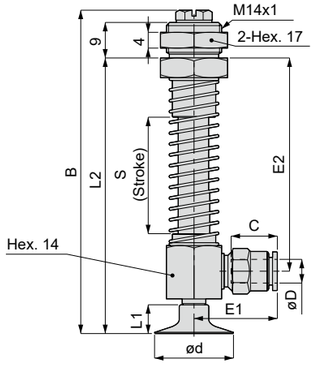


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	L3	øP	Tube End C	E1	E2	Width Across Flats H1	Width Across Flats H2	F	T	Stroke S	Spring Force (N)	Weight (g)
VSP-D8P□-2	8	1.8	M8x0.75	39.5	5.5	23.5	13	10	8.4	12.7	13	10	-	□8	2	3	0.9 to 1.9	13
VSP-D8P□-4		4							11.2	16.8								14
VSP-D8P□-6		6							11.9	18.6								15
VSP-D8-10P□-2		1.8	M12x1	54.6		34	17.5	13	8.4	14.7	21	14	12	-	4	10	0.6 to 1.7	33
VSP-D8-10P□-4		4							11.2	18.8								34
VSP-D8-10P□-6		6							11.9	20.1								35
VSP-D8-15P□-2		1.8		65.6		39	23.5		8.4	14.7	26					15	0.4 to 1.7	37
VSP-D8-15P□-4		4							11.2	18.8								38
VSP-D8-15P□-6		6							11.9	20.1								39
VSP-D8-20P□-2		1.8		75.6		44	28.5		8.4	14.7	31					20	0.3 to 1.8	40
VSP-D8-20P□-4		4							11.2	18.8								41
VSP-D8-20P□-6		6							11.9	20.1								42
VSP-D10P□-2	10	1.8	M8x0.75	39.8	5.8	23.8	13	10	8.4	12.7	13	10	-	□8	2	3	0.9 to 1.9	13
VSP-D10P□-4		4							11.2	16.8								14
VSP-D10P□-6		6							11.9	18.6								15
VSP-D10-10P□-2		1.8	M12x1	54.9		34.3	17.5	13	8.4	14.7	21	14	12	-	4	10	0.6 to 1.7	33
VSP-D10-10P□-4		4							11.2	18.8								34
VSP-D10-10P□-6		6							11.9	20.1								35
VSP-D10-15P□-2		1.8		65.9		39.3	23.5		8.4	14.7	26					15	0.4 to 1.7	37
VSP-D10-15P□-4		4							11.2	18.8								38
VSP-D10-15P□-6		6							11.9	20.1								39
VSP-D10-20P□-2		1.8		75.9		44.3	28.5		8.4	14.7	31					20	0.3 to 1.8	40
VSP-D10-20P□-4		4							11.2	18.8								41
VSP-D10-20P□-6		6							11.9	20.1								42
VSP-D15P□-2	15	1.8	M8x0.75	40.5	6.5	24.5	13	10	8.4	12.7	13	10	-	□8	2	3	0.9 to 1.9	13
VSP-D15P□-4		4							11.2	16.8								14
VSP-D15P□-6		6							11.9	18.6								15
VSP-D15-10P□-2		1.8	M12x1	55.6		35	17.5	13	8.4	14.7	21	14	12	-	4	10	0.6 to 1.7	33
VSP-D15-10P□-4		4							11.2	18.8								34
VSP-D15-10P□-6		6							11.9	20.1								35
VSP-D15-15P□-2		1.8		66.6		40	23.5		8.4	14.7	26					15	0.4 to 1.7	37
VSP-D15-15P□-4		4							11.2	18.8								38
VSP-D15-15P□-6		6							11.9	20.1								39
VSP-D15-20P□-2		1.8		76.6		45	28.5		8.4	14.7	31					20	0.3 to 1.8	40
VSP-D15-20P□-4		4							11.2	18.8								41
VSP-D15-20P□-6		6							11.9	20.1								42
VSP-D20P□-2	20	1.8	M8x0.75	41.3	7.3	25.3	13	10	8.4	12.7	13	10	-	□8	2	3	0.9 to 1.9	13
VSP-D20P□-4		4							11.2	16.8								14
VSP-D20P□-6		6							11.9	18.6								15
VSP-D20-10P□-2		1.8	M12x1	56.4		35.8	17.5	13	8.4	14.7	21	14	12	-	4	10	0.6 to 1.7	33
VSP-D20-10P□-4		4							11.2	18.8								34
VSP-D20-10P□-6		6							11.9	20.1								35
VSP-D20-15P□-2		1.8		67.4		40.8	23.5		8.4	14.7	26					15	0.4 to 1.7	37
VSP-D20-15P□-4		4							11.2	18.8								38
VSP-D20-15P□-6		6							11.9	20.1								39
VSP-D20-20P□-2		1.8		77.4		45.8	28.5		8.4	14.7	31					20	0.3 to 1.8	40
VSP-D20-20P□-4		4							11.2	18.8								41
VSP-D20-20P□-6		6							11.9	20.1								42

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in Fitting without Spring Cover)

●VSP-D8 to 20-□P□-4C/6C

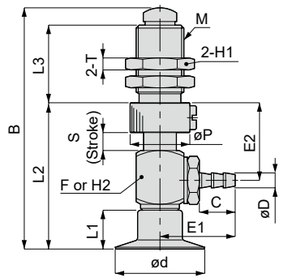


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D8-20P□-4C	8	4	65.6	5.5	53.5	11.2	19.8	40.5	20	1.5 to 4.9	62
VSP-D8-20P□-6C		6				11.9	21.1				63
VSP-D8-30P□-4C		4	78.6		66.5	11.2	19.8	53.5	30	1.1 to 4.8	68
VSP-D8-30P□-6C		6				11.9	21.1				69
VSP-D8-40P□-4C		4	91.6		79.5	11.2	19.8	66.5	40	1.0 to 4.5	75
VSP-D8-40P□-6C		6				11.9	21.1				76
VSP-D8-50P□-4C		4	104.6		92.5	11.2	19.8	79.5	50	0.9 to 4.5	82
VSP-D8-50P□-6C		6				11.9	21.1				83
VSP-D10-20P□-4C	10	4	65.9	5.8	53.8	11.2	19.8	40.5	20	1.5 to 4.9	62
VSP-D10-20P□-6C		6				11.9	21.1				63
VSP-D10-30P□-4C		4	78.9		66.8	11.2	19.8	53.5	30	1.1 to 4.8	68
VSP-D10-30P□-6C		6				11.9	21.1				69
VSP-D10-40P□-4C		4	91.9		79.8	11.2	19.8	66.5	40	1.0 to 4.5	75
VSP-D10-40P□-6C		6				11.9	21.1				76
VSP-D10-50P□-4C		4	104.9		92.8	11.2	19.8	79.5	50	0.9 to 4.5	82
VSP-D10-50P□-6C		6				11.9	21.1				83
VSP-D15-20P□-4C	15	4	66.6	6.5	54.5	11.2	19.8	40.5	20	1.5 to 4.9	62
VSP-D15-20P□-6C		6				11.9	21.1				63
VSP-D15-30P□-4C		4	79.6		67.5	11.2	19.8	53.5	30	1.1 to 4.8	68
VSP-D15-30P□-6C		6				11.9	21.1				69
VSP-D15-40P□-4C		4	92.6		80.5	11.2	19.8	66.5	40	1.0 to 4.5	75
VSP-D15-40P□-6C		6				11.9	21.1				76
VSP-D15-50P□-4C		4	105.6		93.5	11.2	19.8	79.5	50	0.9 to 4.5	82
VSP-D15-50P□-6C		6				11.9	21.1				83
VSP-D20-20P□-4C	20	4	67.4	7.3	55.3	11.2	19.8	40.5	20	1.5 to 4.9	62
VSP-D20-20P□-6C		6				11.9	21.1				63
VSP-D20-30P□-4C		4	80.4		68.3	11.2	19.8	53.5	30	1.1 to 4.8	68
VSP-D20-30P□-6C		6				11.9	21.1				69
VSP-D20-40P□-4C		4	93.4		81.3	11.2	19.8	66.5	40	1.0 to 4.5	75
VSP-D20-40P□-6C		6				11.9	21.1				76
VSP-D20-50P□-4C		4	106.4		94.3	11.2	19.8	79.5	50	0.9 to 4.5	82
VSP-D20-50P□-6C		6				11.9	21.1				83

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D8 to 20P□-4T/6T
●VSP-D8 to 20-□P□-4T/6T

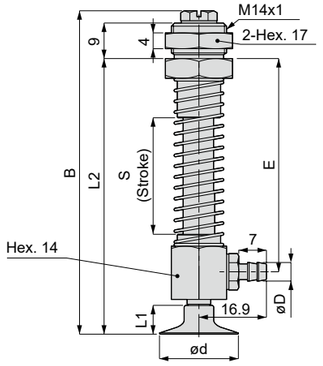


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	L3	øP	E1	E2	Width Across Flats H1	Width Across Flats H2	F	T	Stroke S	Spring Force (N)	Weight (g)
VSP-D8P□-4T	8	2.5	M8x0.75	39.5	5.5	23.5	13	10	13.9	13	10	-	□8	2	3	0.9 to 1.9	14
VSP-D8P□-6T		4															
VSP-D8-10P□-4T		2.5	M12x1	54.6		34	17.5	13	15.9	21	14	12	-	4	10	0.6 to 1.7	34
VSP-D8-10P□-6T		4															
VSP-D8-15P□-4T		2.5		65.6		39	23.5			26					15	0.4 to 1.7	38
VSP-D8-15P□-6T		4															
VSP-D8-20P□-4T		2.5		75.6		44	28.5			31					20	0.3 to 1.8	41
VSP-D8-20P□-6T		4															
VSP-D10P□-4T	10	2.5	M8x0.75	39.8	5.8	23.8	13	10	13.9	13	10	-	□8	2	3	0.9 to 1.9	14
VSP-D10P□-6T		4															
VSP-D10-10P□-4T		2.5	M12x1	54.9		34.3	17.5	13	15.9	21	14	12	-	4	10	0.6 to 1.7	34
VSP-D10-10P□-6T		4															
VSP-D10-15P□-4T		2.5		65.9		39.3	23.5			26					15	0.4 to 1.7	38
VSP-D10-15P□-6T		4															
VSP-D10-20P□-4T		2.5		75.9		44.3	28.5			31					20	0.3 to 1.8	41
VSP-D10-20P□-6T		4															
VSP-D15P□-4T	15	2.5	M8x0.75	40.5	6.5	24.5	13	10	13.9	13	10	-	□8	2	3	0.9 to 1.9	14
VSP-D15P□-6T		4															
VSP-D15-10P□-4T		2.5	M12x1	55.6		35	17.5	13	15.9	21	14	12	-	4	10	0.6 to 1.7	34
VSP-D15-10P□-6T		4															
VSP-D15-15P□-4T		2.5		66.6		40	23.5			26					15	0.4 to 1.7	38
VSP-D15-15P□-6T		4															
VSP-D15-20P□-4T		2.5		76.6		45	28.5			31					20	0.3 to 1.8	41
VSP-D15-20P□-6T		4															
VSP-D20P□-4T	20	2.5	M8x0.75	41.3	7.3	25.3	13	10	13.9	13	10	-	□8	2	3	0.9 to 1.9	14
VSP-D20P□-6T		4															
VSP-D20-10P□-4T		2.5	M12x1	56.4		35.8	17.5	13	15.9	21	14	12	-	4	10	0.6 to 1.7	34
VSP-D20-10P□-6T		4															
VSP-D20-15P□-4T		2.5		67.5		40.8	23.5			26					15	0.4 to 1.7	38
VSP-D20-15P□-6T		4															
VSP-D20-20P□-4T		2.5		77.4		45.8	28.5			31					20	0.3 to 1.8	41
VSP-D20-20P□-6T		4															

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D8 to 20-□P□-4TC/6TC

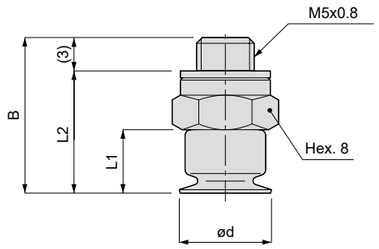


Unit: mm

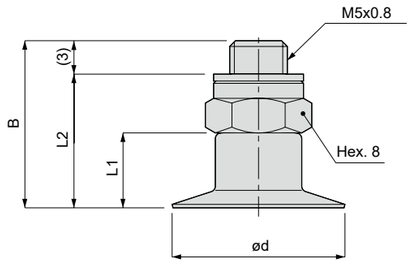
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D8-20P□-4TC	8	2.5	65.6	5.5	53.5	40.5	20	1.5 to 4.9	60
VSP-D8-20P□-6TC		4							
VSP-D8-30P□-4TC		2.5	78.6		66.5	53.5	30	1.1 to 4.8	67
VSP-D8-30P□-6TC		4							
VSP-D8-40P□-4TC		2.5	91.6		79.5	66.5	40	1.0 to 4.5	74
VSP-D8-40P□-6TC		4							
VSP-D8-50P□-4TC		2.5	104.6		92.5	79.5	50	0.9 to 4.5	80
VSP-D8-50P□-6TC		4							
VSP-D10-20P□-4TC	10	2.5	65.9	5.8	53.8	40.5	20	1.5 to 4.9	60
VSP-D10-20P□-6TC		4							
VSP-D10-30P□-4TC		2.5	78.9		66.8	53.5	30	1.1 to 4.8	67
VSP-D10-30P□-6TC		4							
VSP-D10-40P□-4TC		2.5	91.9		79.8	66.5	40	1.0 to 4.5	74
VSP-D10-40P□-6TC		4							
VSP-D10-50P□-4TC		2.5	104.9		92.8	79.5	50	0.9 to 4.5	80
VSP-D10-50P□-6TC		4							
VSP-D15-20P□-4TC	15	2.5	66.6	6.5	54.5	40.5	20	1.5 to 4.9	60
VSP-D15-20P□-6TC		4							
VSP-D15-30P□-4TC		2.5	79.6		67.5	53.5	30	1.1 to 4.8	67
VSP-D15-30P□-6TC		4							
VSP-D15-40P□-4TC		2.5	92.6		80.5	66.5	40	1.0 to 4.5	74
VSP-D15-40P□-6TC		4							
VSP-D15-50P□-4TC		2.5	105.6		93.5	79.5	50	0.9 to 4.5	80
VSP-D15-50P□-6TC		4							
VSP-D20-20P□-4TC	20	2.5	67.4	7.3	55.3	40.5	20	1.5 to 4.9	60
VSP-D20-20P□-6TC		4							
VSP-D20-30P□-4TC		2.5	80.4		68.3	53.5	30	1.1 to 4.8	67
VSP-D20-30P□-6TC		4							
VSP-D20-40P□-4TC		2.5	93.4		81.3	66.5	40	1.0 to 4.5	74
VSP-D20-40P□-6TC		4							
VSP-D20-50P□-4TC		2.5	106.4		94.3	79.5	50	0.9 to 4.5	80
VSP-D20-50P□-6TC		4							

External Dimension Diagram (Direct Mount, Fixed Type, VSP-E, Male Thread)

●VSP-E8, 10P□



●VSP-E15, 20P□

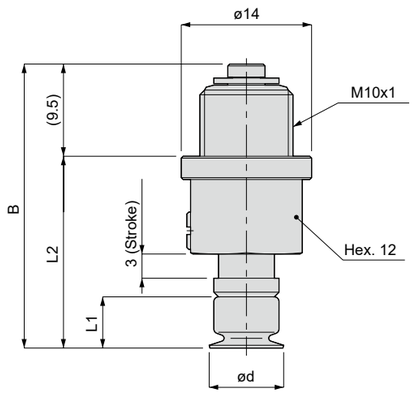


Unit: mm

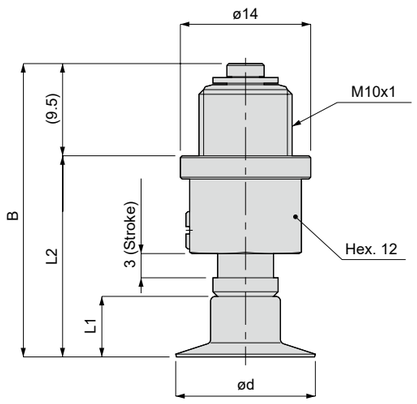
Model No.	Pad Diameter ød	B	L1	L2	Weight (g)
VSP-E8P□	8	13.5	5.5	10.5	2.7
VSP-E10P□	10	13.8	5.8	10.8	2.8
VSP-E15P□	15	14.5	6.5	11.5	2.9
VSP-E20P□	20	15.3	7.3	12.3	3

External Dimension Diagram (Direct Mount Type, Buffer Type, VSP-F, Male Thread)

●VSP-F8, 10P□



●VSP-F15, 20P□

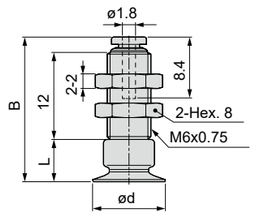


Unit: mm

Model No.	Pad Diameter ød	B	L1	L2	Spring Force (N)	Weight (g)
VSP-F8P□	8	30.5	5.5	21	2.3 to 3.9	14.2
VSP-F10P□	10	30.8	5.8	21.3	2.3 to 3.9	14.3
VSP-F15P□	15	31.5	6.5	22	2.3 to 3.9	14.4
VSP-F20P□	20	32.3	7.3	22.8	2.3 to 3.9	14.5

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Push-in fitting)

●VSP-MA8 to 20P□-2

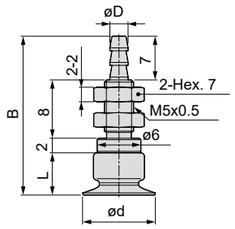


Unit: mm

Model No.	Pad Diameter ød	B	L	Weight (g)
VSP-MA8P□-2	8	19.6	5.5	2.1
VSP-MA10P□-2	10	19.9	5.8	2.1
VSP-MA15P□-2	15	20.6	6.5	2.2
VSP-MA20P□-2	20	21.4	7.3	2.2

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Barb Fitting)

●VSP-MA8 to 20P□-4T

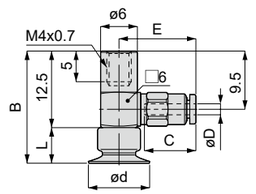


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-MA8P□-4T	8	2.5	22.5	5.5	1.6
VSP-MA10P□-4T	10	2.5	22.8	5.8	1.6
VSP-MA15P□-4T	15	2.5	23.5	6.5	1.7
VSP-MA20P□-4T	20	2.5	24.3	7.3	1.7

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Push-in fitting)

●VSP-MB8 to 20P□-2/4

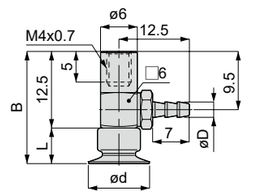


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-MB8P□-2	8	1.8	18	5.5	8.4	12.5	2.1
VSP-MB8P□-4		4			11.2	15.8	3
VSP-MB10P□-2	10	1.8	18.3	5.8	8.4	12.5	2.1
VSP-MB10P□-4		4			11.2	15.8	3
VSP-MB15P□-2	15	1.8	19	6.5	8.4	12.5	2.2
VSP-MB15P□-4		4			11.2	15.8	3
VSP-MB20P□-2	20	1.8	19.8	7.3	8.4	12.5	2.2
VSP-MB20P□-4		4			11.2	15.8	3

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Barb Fitting)

●VSP-MB8 to 20P□-4T/6T

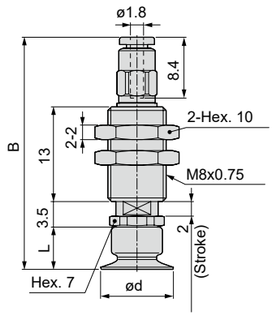


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-MB8P□-4T	8	2.5	18	5.5	2
VSP-MB8P□-6T		4			
VSP-MB10P□-4T	10	2.5	18.3	5.8	2
VSP-MB10P□-6T		4			
VSP-MB15P□-4T	15	2.5	19	6.5	2
VSP-MB15P□-6T		4			
VSP-MB20P□-4T	20	2.5	19.8	7.3	2
VSP-MB20P□-6T		4			

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Push-in fitting)

●VSP-MC8 to 20P□-2

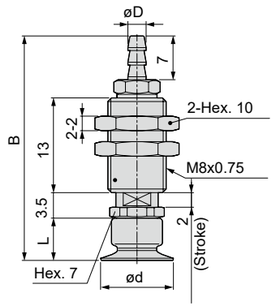


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MC8P□-2	8	1.8	31.7	5.5	0.5 to 0.6	1.8
VSP-MC10P□-2	10	1.8	32	5.8	0.5 to 0.6	1.8
VSP-MC15P□-2	15	1.8	32.7	6.5	0.5 to 0.6	1.8
VSP-MC20P□-2	20	1.8	33.5	7.3	0.5 to 0.6	1.8

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Barb Fitting)

●VSP-MC8 to 20P□-4T/6T

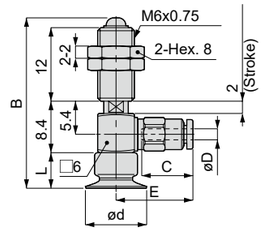


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MC8P□-4T	8	2.5	31.6	5.5	0.5 to 0.6	1.6
VSP-MC8P□-6T		4				
VSP-MC10P□-4T	10	2.5	31.9	5.8	0.5 to 0.6	1.6
VSP-MC10P□-6T		4				
VSP-MC15P□-4T	15	2.5	32.6	6.5	0.5 to 0.6	1.6
VSP-MC15P□-6T		4				
VSP-MC20P□-4T	20	2.5	33.4	7.3	0.5 to 0.6	1.6
VSP-MC20P□-6T		4				

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Push-in fitting)

●VSP-MD8 to 20P□-2/4

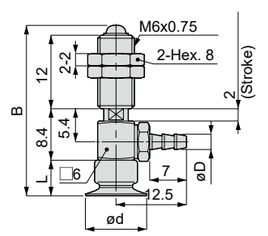


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Spring Force (N)	Weight (g)
VSP-MD8P□-2	8	1.8	27.5	5.5	8.4	12.6	0.5 to 0.6	6.1
VSP-MD8P□-4		4			11.2	15.9		7
VSP-MD10P□-2	10	1.8	27.8	5.8	8.4	12.6	0.5 to 0.6	6.2
VSP-MD10P□-4		4			11.2	15.9		7
VSP-MD15P□-2	15	1.8	28.5	6.5	8.4	12.6	0.5 to 0.6	6.2
VSP-MD15P□-4		4			11.2	15.9		7
VSP-MD20P□-2	20	1.8	29.3	7.3	8.4	12.6	0.5 to 0.6	6.3
VSP-MD20P□-4		4			11.2	15.9		7

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Barb Fitting)

●VSP-MD8 to 20P□-4T/6T

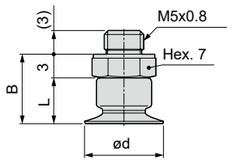


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MD8P□-4T	8	2.5	27.5	5.5	0.5 to 0.6	6
VSP-MD8P□-6T		4				
VSP-MD10P□-4T	10	2.5	27.8	5.8	0.5 to 0.6	6
VSP-MD10P□-6T		4				
VSP-MD15P□-4T	15	2.5	28.5	6.5	0.5 to 0.6	6.1
VSP-MD15P□-6T		4				
VSP-MD20P□-4T	20	2.5	29.3	7.3	0.5 to 0.6	6.1
VSP-MD20P□-6T		4				

External Dimension Diagram (Compact, Direct Mount, Fixed Type, VSP-ME, Male Thread)

●VSP-ME8 to 20P□-M5

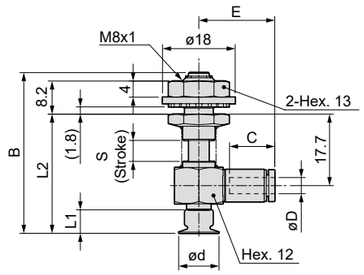


Unit: mm

Model No.	Pad Diameter ød	B	L	Weight (g)
VSP-ME8P□-M5	8	8.5	5.5	8
VSP-ME10P□-M5	10	8.8	5.8	10
VSP-ME15P□-M5	15	9.5	6.5	15
VSP-ME20P□-M5	20	10.3	7.3	20

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side ,VSP-HD, Push-in fitting)

●VSP-HD8 to 20P□-2/4/6

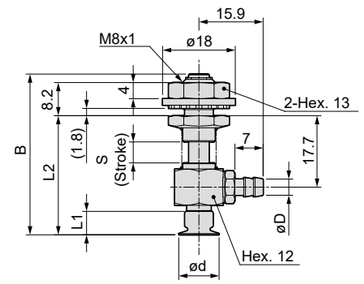


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HD8P□-2	8	1.8	39.5	5.5	29.2	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HD8P□-4		4				11.2	18.8			30
VSP-HD8P□-6		6				11.9	20.6			31
VSP-HD10P□-2	10	1.8	39.8	5.8	29.5	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HD10P□-4		4				11.2	18.8			30
VSP-HD10P□-6		6				11.9	20.6			31
VSP-HD15P□-2	15	1.8	40.5	6.5	30.2	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HD15P□-4		4				11.2	18.8			30
VSP-HD15P□-6		6				11.9	20.6			31
VSP-HD20P□-2	20	1.8	41.3	7.3	31	8.4	14.7	5.2	1.6 to 2.9	29
VSP-HD20P□-4		4				11.2	18.8			30
VSP-HD20P□-6		6				11.9	20.6			31

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side ,VSP-HD, Barb Fitting)

●VSP-HD8 to 20P□-4T/6T

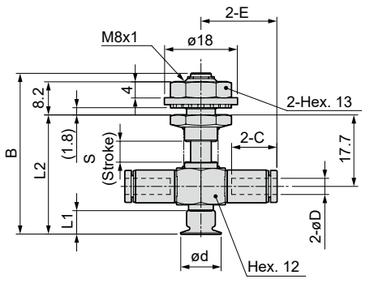


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HD8P□-4T	8	2.5	39.5	5.5	29.2	5.2	1.6 to 2.9	28
VSP-HD8P□-6T		4						
VSP-HD10P□-4T	10	2.5	39.8	5.8	29.5	5.2	1.6 to 2.9	28
VSP-HD10P□-6T		4						
VSP-HD15P□-4T	15	2.5	40.5	6.5	30.2	5.2	1.6 to 2.9	28
VSP-HD15P□-6T		4						
VSP-HD20P□-4T	20	2.5	41.3	7.3	31	5.2	1.6 to 2.9	28
VSP-HD20P□-6T		4						

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides VSP-HDW, Push-in fitting)

●VSP-HDW8 to 20P□-2/4/6

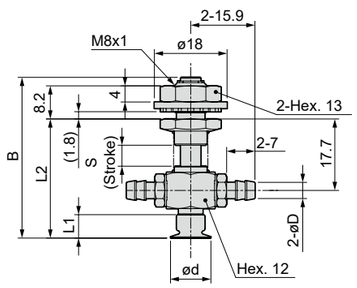


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW8P□-2	8	1.8	39.5	5.5	29.2	8.4	14.7	5.2	1.6 to 2.9	31
VSP-HDW8P□-4		4				11.2	18.8			33
VSP-HDW8P□-6		6				11.9	20.6			35
VSP-HDW10P□-2	10	1.8	39.8	5.8	29.5	8.4	14.7	5.2	1.6 to 2.9	31
VSP-HDW10P□-4		4				11.2	18.8			33
VSP-HDW10P□-6		6				11.9	20.6			35
VSP-HDW15P□-2	15	1.8	40.5	6.5	30.2	8.4	14.7	5.2	1.6 to 2.9	31
VSP-HDW15P□-4		4				11.2	18.8			33
VSP-HDW15P□-6		6				11.9	20.6			35
VSP-HDW20P□-2	20	1.8	41.3	7.3	31	8.4	14.7	5.2	1.6 to 2.9	31
VSP-HDW20P□-4		4				11.2	18.8			33
VSP-HDW20P□-6		6				11.9	20.6			35

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides VSP-HDW, Barb Fitting)

●VSP-HDW8 to 20P□-4T/6T

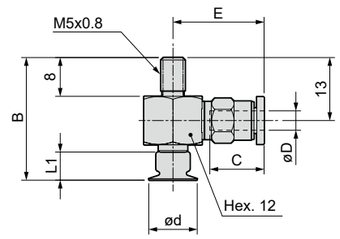


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW8P□-4T	8	2.5	39.5	5.5	29.2	5.2	1.6 to 2.9	29
VSP-HDW8P□-6T		4						
VSP-HDW10P□-4T	10	2.5	39.8	5.8	29.5	5.2	1.6 to 2.9	29
VSP-HDW10P□-6T		4						
VSP-HDW15P□-4T	15	2.5	40.5	6.5	30.2	5.2	1.6 to 2.9	29
VSP-HDW15P□-6T		4						
VSP-HDW20P□-4T	20	2.5	41.3	7.3	31	5.2	1.6 to 2.9	29
VSP-HDW20P□-6T		4						

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side ,VSP-HE, Push-in fitting)

●VSP-HE8 to 20P□-2/4/6

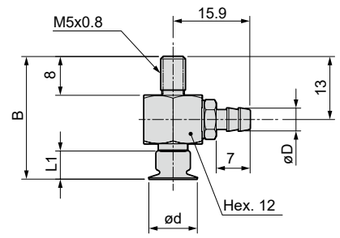


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HE8P□-2	8	1.8	25	5.5	8.4	14.7	15
VSP-HE8P□-4		4			11.2	18.8	16
VSP-HE8P□-6		6			11.9	20.6	17
VSP-HE10P□-2	10	1.8	25.3	5.8	8.4	14.7	15
VSP-HE10P□-4		4			11.2	18.8	16
VSP-HE10P□-6		6			11.9	20.6	17
VSP-HE15P□-2	15	1.8	26	6.5	8.4	14.7	15
VSP-HE15P□-4		4			11.2	18.8	16
VSP-HE15P□-6		6			11.9	20.6	17
VSP-HE20P□-2	20	1.8	26.8	7.3	8.4	14.7	15
VSP-HE20P□-4		4			11.2	18.8	16
VSP-HE20P□-6		6			11.9	20.6	17

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side ,VSP-HE, Barb Fitting)

●VSP-HE8 to 20P□-4T/6T

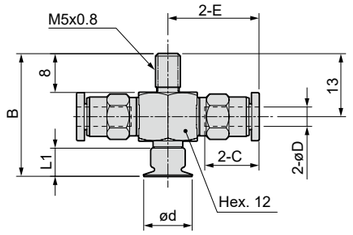


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HE8P□-4T	8	2.5	25	5.5	14
VSP-HE8P□-6T		4			
VSP-HE10P□-4T	10	2.5	25.3	5.8	14
VSP-HE10P□-6T		4			
VSP-HE15P□-4T	15	2.5	26	6.5	14
VSP-HE15P□-6T		4			
VSP-HE20P□-4T	20	2.5	26.8	7.3	14
VSP-HE20P□-6T		4			

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Push-in fitting)

●VSP-HEW8 to 20P□-2/4/6

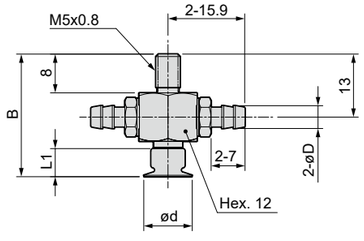


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HEW8P□-2	8	1.8	25	5.5	8.4	14.7	16
VSP-HEW8P□-4		4			11.2	18.8	18
VSP-HEW8P□-6		6			11.9	20.6	20
VSP-HEW10P□-2	10	1.8	25.3	5.8	8.4	14.7	16
VSP-HEW10P□-4		4			11.2	18.8	18
VSP-HEW10P□-6		6			11.9	20.6	20
VSP-HEW15P□-2	15	1.8	26	6.5	8.4	14.7	16
VSP-HEW15P□-4		4			11.2	18.8	18
VSP-HEW15P□-6		6			11.9	20.6	20
VSP-HEW20P□-2	20	1.8	26.8	7.3	8.4	14.7	16
VSP-HEW20P□-4		4			11.2	18.8	18
VSP-HEW20P□-6		6			11.9	20.6	20

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Barb Fitting)

●VSP-HEW8 to 20P□-4T/6T

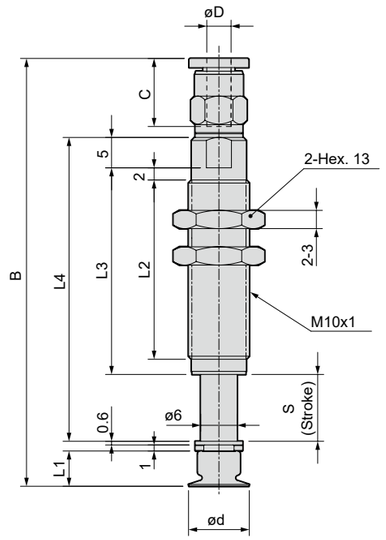


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HEW8P□-4T	8	2.5	25	5.5	15
VSP-HEW8P□-6T		4			
VSP-HEW10P□-4T	10	2.5	25.3	5.8	15
VSP-HEW10P□-6T		4			
VSP-HEW15P□-4T	15	2.5	26	6.5	15
VSP-HEW15P□-6T		4			
VSP-HEW20P□-4T	20	2.5	26.8	7.3	15
VSP-HEW20P□-6T		4			

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC8 to 20-□P□-4



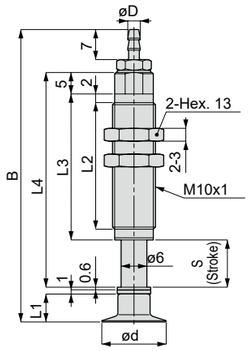
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC8-2P□-4	8	4	54.1	5.5	21.5	26	34	11.2	2	1.3 to 1.8	25
VSP-LFC8-5P□-4			60.1		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	27
VSP-LFC8-10P□-4			70.1		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	29
VSP-LFC8-15P□-4			80.1		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	31
VSP-LFC8-20P□-4			90.1		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	33
VSP-LFC10-2P□-4	10	4	54.4	5.8	21.5	26	34	11.2	2	1.3 to 1.8	25
VSP-LFC10-5P□-4			60.4		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	27
VSP-LFC10-10P□-4			70.4		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	29
VSP-LFC10-15P□-4			80.4		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	31
VSP-LFC10-20P□-4			90.4		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	33
VSP-LFC15-2P□-4	15	4	55.1	6.5	21.5	26	34	11.2	2	1.3 to 1.8	26
VSP-LFC15-5P□-4			61.1		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	28
VSP-LFC15-10P□-4			71.1		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	30
VSP-LFC15-15P□-4			81.1		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	32
VSP-LFC15-20P□-4			91.1		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	34
VSP-LFC20-2P□-4	20	4	55.9	7.3	21.5	26	34	11.2	2	1.3 to 1.8	26
VSP-LFC20-5P□-4			61.9		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	28
VSP-LFC20-10P□-4			71.9		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	30
VSP-LFC20-15P□-4			81.9		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	32
VSP-LFC20-20P□-4			91.9		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	34

* Values inSide ,brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC8 to 20-□P□-4T/6T



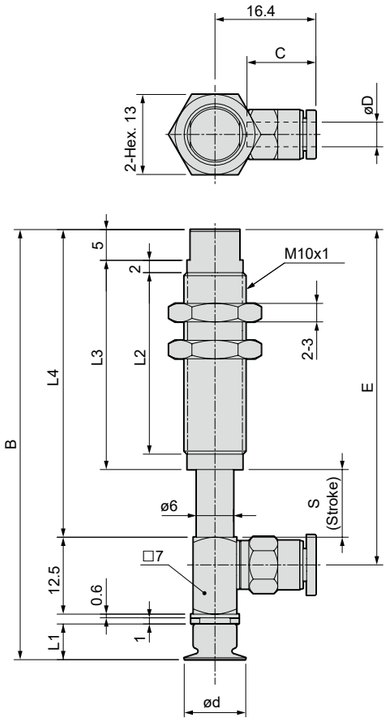
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC8-2P□-4T	8	2.5	51.2	5.5	21.5	26	34	2	1.3 to 1.8	24
VSP-LFC8-2P□-6T		4								
VSP-LFC8-5P□-4T		2.5	57.2		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	26
VSP-LFC8-5P□-6T		4								
VSP-LFC8-10P□-4T		2.5	67.2		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	28
VSP-LFC8-10P□-6T		4								
VSP-LFC8-15P□-4T		2.5	77.2		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	30
VSP-LFC8-15P□-6T		4								
VSP-LFC8-20P□-4T		2.5	87.2		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	31
VSP-LFC8-20P□-6T		4								
VSP-LFC10-2P□-4T	10	2.5	51.5	5.8	21.5	26	34	2	1.3 to 1.8	24
VSP-LFC10-2P□-6T		4								
VSP-LFC10-5P□-4T		2.5	57.5		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	26
VSP-LFC10-5P□-6T		4								
VSP-LFC10-10P□-4T		2.5	67.5		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	28
VSP-LFC10-10P□-6T		4								
VSP-LFC10-15P□-4T		2.5	77.5		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	30
VSP-LFC10-15P□-6T		4								
VSP-LFC10-20P□-4T		2.5	87.5		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	31
VSP-LFC10-20P□-6T		4								
VSP-LFC15-2P□-4T	15	2.5	52.2	6.5	21.5	26	34	2	1.3 to 1.8	25
VSP-LFC15-2P□-6T		4								
VSP-LFC15-5P□-4T		2.5	58.2		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	27
VSP-LFC15-5P□-6T		4								
VSP-LFC15-10P□-4T		2.5	68.2		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	29
VSP-LFC15-10P□-6T		4								
VSP-LFC15-15P□-4T		2.5	78.2		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	31
VSP-LFC15-15P□-6T		4								
VSP-LFC15-20P□-4T		2.5	88.2		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	32
VSP-LFC15-20P□-6T		4								
VSP-LFC20-2P□-4T	20	2.5	53	7.3	21.5	26	34	2	1.3 to 1.8	25
VSP-LFC20-2P□-6T		4								
VSP-LFC20-5P□-4T		2.5	59		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	27
VSP-LFC20-5P□-6T		4								
VSP-LFC20-10P□-4T		2.5	69		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	29
VSP-LFC20-10P□-6T		4								
VSP-LFC20-15P□-4T		2.5	79		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	31
VSP-LFC20-15P□-6T		4								
VSP-LFC20-20P□-4T		2.5	89		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	32
VSP-LFC20-20P□-6T		4								

* Values inSide ,brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side ,VSP-LFD, Push-in fitting)

●VSP-LFD8 to 20-□P□-4

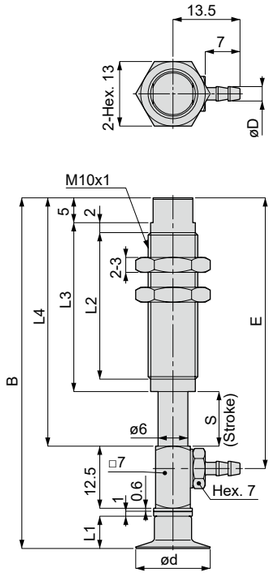


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD8-5P□-4	8	4	59.6	5.5	24.5	29	40	11.2	44.5	5	1.3 to 2.4	30
VSP-LFD8-10P□-4			69.6		29.5	34	50		54.5	10	1.3 to 3.3	33
VSP-LFD8-15P□-4			79.6		34.5	39	60		64.5	15	1.3 to 4.2	35
VSP-LFD8-20P□-4			89.6		39.5	44	70		74.5	20	1.3 to 5.1	37
VSP-LFD10-5P□-4	10	4	59.9	5.8	24.5	29	40	11.2	44.5	5	1.3 to 2.4	30
VSP-LFD10-10P□-4			69.9		29.5	34	50		54.5	10	1.3 to 3.3	33
VSP-LFD10-15P□-4			79.9		34.5	39	60		64.5	15	1.3 to 4.2	35
VSP-LFD10-20P□-4			89.9		39.5	44	70		74.5	20	1.3 to 5.1	37
VSP-LFD15-5P□-4	15	4	60.6	6.5	24.5	29	40	11.2	44.5	5	1.3 to 2.4	31
VSP-LFD15-10P□-4			70.6		29.5	34	50		54.5	10	1.3 to 3.3	34
VSP-LFD15-15P□-4			80.6		34.5	39	60		64.5	15	1.3 to 4.2	36
VSP-LFD15-20P□-4			90.6		39.5	44	70		74.5	20	1.3 to 5.1	38
VSP-LFD20-5P□-4	20	4	61.4	7.3	24.5	29	40	11.2	44.5	5	1.3 to 2.4	31
VSP-LFD20-10P□-4			71.4		29.5	34	50		54.5	10	1.3 to 3.3	34
VSP-LFD20-15P□-4			81.4		34.5	39	60		64.5	15	1.3 to 4.2	36
VSP-LFD20-20P□-4			91.4		39.5	44	70		74.5	20	1.3 to 5.1	38

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side ,VSP-LFD, Barb Fitting)

●VSP-LFD8 to 20-□P□-4T/6T

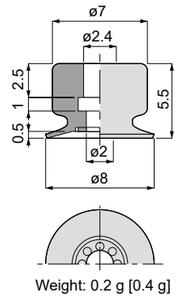


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD8-5P□-4T	8	2.5	59.6	5.5	24.5	29	40	44.5	5	1.3 to 2.4	29
VSP-LFD8-5P□-6T		4									
VSP-LFD8-10P□-4T		2.5	69.6		29.5	34	50	54.5	10	1.3 to 3.3	31
VSP-LFD8-10P□-6T		4									
VSP-LFD8-15P□-4T		2.5	79.6		34.5	39	60	64.5	15	1.3 to 4.2	33
VSP-LFD8-15P□-6T		4									
VSP-LFD8-20P□-4T		2.5	89.6		39.5	44	70	74.5	20	1.3 to 5.1	35
VSP-LFD8-20P□-6T		4									
VSP-LFD10-5P□-4T	10	2.5	59.9	5.8	24.5	29	40	44.5	5	1.3 to 2.4	29
VSP-LFD10-5P□-6T		4									
VSP-LFD10-10P□-4T		2.5	69.9		29.5	34	50	54.5	10	1.3 to 3.3	31
VSP-LFD10-10P□-6T		4									
VSP-LFD10-15P□-4T		2.5	79.9		34.5	39	60	64.5	15	1.3 to 4.2	33
VSP-LFD10-15P□-6T		4									
VSP-LFD10-20P□-4T		2.5	89.9		39.5	44	70	74.5	20	1.3 to 5.1	35
VSP-LFD10-20P□-6T		4									
VSP-LFD15-5P□-4T	15	2.5	60.6	6.5	24.5	29	40	44.5	5	1.3 to 2.4	30
VSP-LFD15-5P□-6T		4									
VSP-LFD15-10P□-4T		2.5	70.6		29.5	34	50	54.5	10	1.3 to 3.3	32
VSP-LFD15-10P□-6T		4									
VSP-LFD15-15P□-4T		2.5	80.6		34.5	39	60	64.5	15	1.3 to 4.2	34
VSP-LFD15-15P□-6T		4									
VSP-LFD15-20P□-4T		2.5	90.6		39.5	44	70	74.5	20	1.3 to 5.1	36
VSP-LFD15-20P□-6T		4									
VSP-LFD20-5P□-4T	20	2.5	61.4	7.3	24.5	29	40	44.5	5	1.3 to 2.4	30
VSP-LFD20-5P□-6T		4									
VSP-LFD20-10P□-4T		2.5	71.4		29.5	34	50	54.5	10	1.3 to 3.3	32
VSP-LFD20-10P□-6T		4									
VSP-LFD20-15P□-4T		2.5	81.4		34.5	39	60	64.5	15	1.3 to 4.2	34
VSP-LFD20-15P□-6T		4									
VSP-LFD20-20P□-4T		2.5	91.4		39.5	44	70	74.5	20	1.3 to 5.1	36
VSP-LFD20-20P□-6T		4									

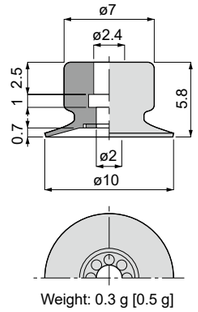
Pad Rubber Only External Dimension Diagram

●VSPG-8P□



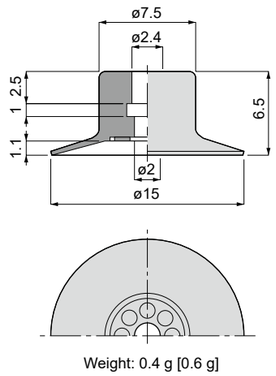
Weight: 0.2 g [0.4 g]

●VSPG-10P□



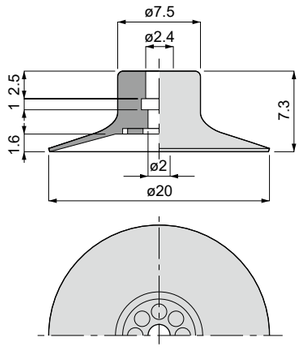
Weight: 0.3 g [0.5 g]

●VSPG-15P□



Weight: 0.4 g [0.6 g]

●VSPG-20P□

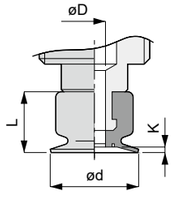


Weight: 0.5 g [0.8 g]

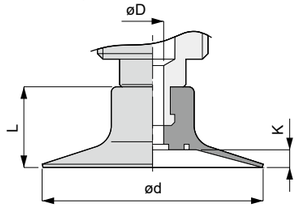
Weight: Values in [ ] are for fluororubber only.

Detailed Diagram of Pad and Holder Connection Part

●VSPG-8, 10P□A



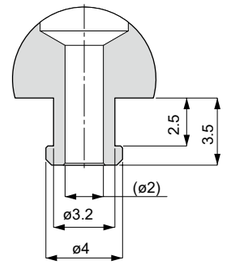
●VSPG-15, 20P□A



Unit: mm

Model No.	Pad Diameter ød	L	Lip Internal Height K	øD
VSPG-8P□A	8	5.5	0.5	2
VSPG-10P□A	10	5.8	0.7	2
VSPG-15P□A	15	6.5	1.1	2
VSPG-20P□A	20	7.3	1.6	2

Pad Fitting Part Dimensions



Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Suction Pad, Thin Object Type, VSP-□P□Series

Design / Selection

Warning

For thin object type pads, depending on usage conditions and material properties, the pad may stick to the workpiece. Please confirm with the actual machine.

MEMO

Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechan-ical Break Function
Ending



Suction Pad, Flat Type / Flat Increased Suction Flow RatE-type

VSP-□F□, □FH□ Series

Suction pad with a flat suction surface that prevents thin workpieces from deforming or wrinkling.

RoHS

By forming grooves on the flat suction surface, changes in the workpiece during suction are suppressed, reducing wrinkling.

Abundant holder variations

Shape 16 types

- Standard... 5 types
- Compact... Class 4
- Low dust generation
- .....2 types
- Lightweight.. 3 types
- Low back2 types

Piping Connection 5 types

- Push-in fitting (ø1.8 to ø6)3 types
- Barbed fitting (ø4, ø6) ..... 2 types

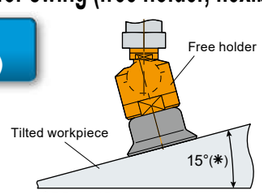
Stroke 11 types

2 mm to 50 mm
(Depends on pad diameter, holder)

Low particle generation holders (LFC, LFD) with less abrasion powder from sliding and low noise are available

Assembly option for swing (free holder, flexible holder) that follows inclined workpiece surfaces is supported

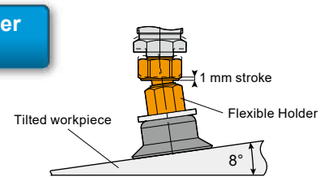
Free holder (F1:30°, F2:15°)



*7.5° for 15° swing angle type

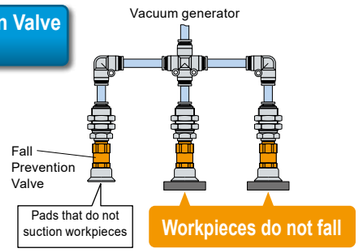
Flexible Holder (CF)

After removing the workpiece, returns to the normal position (vertical)



Assembly option for drop prevention valve (V) that reduces vacuum drop in separate circuits even without a workpiece is supported

Drop Prevention Valve (V)

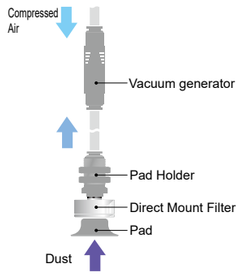


Removes dust during workpiece suction

Direct Mount Filter (T1, T2)

Filtration Area
T1: 1.7 cm², T2: 7 cm²





Pad surface treatment (option) with special processing to reduce adsorption marks is available

	-DL	-ER	-FG
Surface Treatment	Sticking Prevention	Adsorption Mark Reduction	Fluorine Coating
			
Compatible Material	Silicone Fluorine Conductive Silicone	Nitrile Nitrile Conductive NBR	Silicone Conductive Silicone
Features	Special coating with good slippage. Effective for preventing sticking of lightweight workpieces and thin workpieces.	Surface modification with environmentally friendly chemicals reduces adsorption marks.	Surface modification with special treatment prevents sticking to the workpiece. Improved pad durability and abrasion resistance.

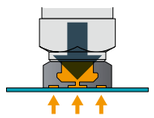
Pad Shape



Flat Shape

Standard Type (F)

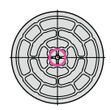
The flat-shaped suction surface holds down the workpiece, suppressing workpiece deformation. On the other hand, since the suction area is limited to the groove parts, the suction force is not very large.



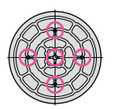
Increased Suction Flow RatE-type (FH)

Increased flow path holes significantly improve suction flow rate and suction force.

Standard



Intake flow rate increase type

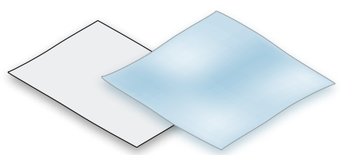


Suction Flow Rate Max. 2.5x
Suction force Max. 6x

Flow Path
4-hole addition

Recommended Workpiece

Thin workpieces such as sheets and vinyl



Pad Diameter

5 types 10 15 20 25 30

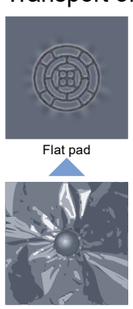
Pad Material

6 types Nitrile Silicone Urethane Fluorine Conductive Silicone Conductive NBR (Low Resistance-type)

*No urethane option for Increased Suction Flow RatE-type (FH). Silicone (S) conforms to the Food Sanitation Act. (Holder is not compliant / Suction pad is compliant only for workpiece contact area)

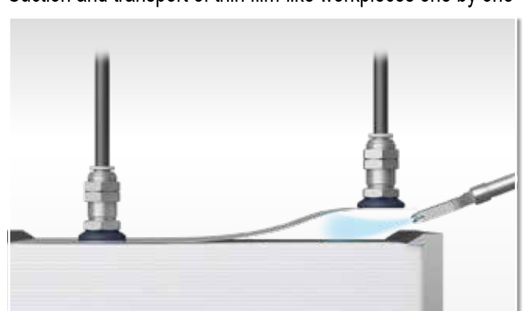
Solution Examples

Transport of thin and easily deformable workpieces





Suction and transport of thin film-like workpieces one by one



Model No. Notation

●Flat type/intake flow rate increase-type

Suction Pad

VSP – C – 30 – -20 – F – N – -ER – 6 – [ ] – F1 – V – T1

VSP	C	30	-20	F	N	-ER	6	[ ]	F1	V	T1
Model No.	❶ Holder Shape	❷ Pad Diameter	❸ Stroke Option	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment	❼ Connection Port Shape	❽ Buffer Load	❾ Pad Swing	❿ Drop Prevention Valve	⓫ Direct Mount Filter

Pad Rubber Only

VSPG – 30 F N -ER

VSPG	30	F	N	-ER
Model No.	❷	❹	❺	❻

Pad Rubber + Set with Fixing Screw

VSPG – 30 F N -ER A

VSPG	30	F	N	-ER	A
Model No.	❷ Pad Diameter	❹ Pad Shape	❺ Pad Material	❻ Surface Treatment	

❶ Holder Shape

Buffer Present/Absent	Type	Vacuum Outlet	Code	
Fixed Type	Standard	Top Direction	A	
	Compact		MA	
	Standard	Side Direction	B	
	Compact		MB	
	Low Profile		HE	
		Both Sides Direction	HEW	
Buffer Type	Standard	Top Direction	C	
	Compact		MC	
	Low Particle Generation		LFC	
	Lightweight		HC	
	Standard	Side Direction	D	
	Compact		MD	
	Low Particle Generation		LFD	
	Lightweight		HD	
		Both Sides Direction	HDW	
	Standard	Direct Mount Type	F	

❷ Pad Diameter

Code	Content
10	ø10
15	ø15
20	ø20
25	ø25
30	ø30

❸ Stroke Option

Content	Holder Shape C	D	HC	LFC	LFD	Code	
Specified Stroke, or No Buffer	●	●				Blank	*1, *2
Stroke 2 mm				●		–2	*3
Stroke 5 mm				●	●	–5	
Stroke 10 mm	●	●	●	●	●	–10	
Stroke 15 mm	●	●	●	●	●	–15	
Stroke 20 mm	●	●	●	●	●	–20	
Stroke 25 mm			●			–25	
Stroke 30 mm	●	●	●			–30	
Stroke 40 mm	●	●	●			–40	
Stroke 50 mm	●	●	●			–50	

*1: For ❶ Holder Shape other than C, D, HC, LFC, and LFD, ❸ is 'Blank'.
*2: For the specified stroke of ❸ 'Blank', please confirm the stroke dimension on the external dimension drawing.
*3: When ❷ Pad Diameter is 10 or 15, -2 can be selected for ❸.

❹ Pad Shape

Code	Content	
F	Flat Type	
FH	Flat Increased Suction Flow Type	

❺ Pad Material

Code	Content
N	Nitrile rubber
S	Silicone Rubber
U	Urethane rubber
F	Fluororubber
SE	Conductive Silicone Rubber
NE	Conductive NBR (Low Resistance-type)

*1: When ❹ Pad Shape is FH, ❺ U cannot be selected.

❻ Surface Treatment

Content	Compatible Pad Material N	S	F	SE	NE	Compatible Pad Diameter Flat(F/FH)	Code
No surface treatment	All pad materials, all pad diameters						Blank
Anti-Adhesion Special Coating		●	●	●		All sizes	–DL
Suction Mark Reduction Surface Modification	●				●	All sizes	–ER
Fluorine Coating		●		●		All sizes	–FG

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

●Structure usable in rechargeable battery manufacturing processes

VSP –..... – P4*

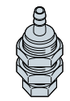
*Please inquire for details.

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

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

VSP –..... – FP*

❼ Connection Size/Shape

Content	Holder Shape A	B	C	D	MA	MB	MC	MD	LFC	LFD	HC	HD	HDW	HE	HEW	Code	
(❶: When F)																Blank	
ø1.8 Push-in fitting						●	●	●			●	●	●	●	●	2	
ø4 Push-in fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4	
ø6 Push-in fitting	●	●	●	●		●		●	●	●	●	●	●	●	●	6	
ø4 Push-in fitting, without spring cover			●	●												4C	
ø6 Push-in fitting, without spring cover			●	●												6C	
ø4 Barb fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4T	
ø6 Barb fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	6T	
ø4 Barb fitting, without spring cover			●	●												4TC	
ø6 Barb fitting, without spring cover			●	●												6TC	

*1: For ❶ Holder Shape C and D with ❸ Stroke Option -20 to -50, options 4C, 6C, 4TC, and 6TC can be selected for (7). Additionally, for (3) Stroke Option -30 to -50, only 4C, 6C, 4TC, and 6TC can be selected for ❼.
*2: The selectable Port Size/Shape varies depending on the ❷ Pad Diameter. Please check the combination table below.

❽ Buffer Load

Code	Content
Blank	Standard Load or No Buffer
L	Low Load (1/4 of Standard Load)

*1 *2

*1: For ❶ Holder Shape other than LFC, ❽ is 'Blank'.
*2: For ❸ Stroke Option -2, ❽ is 'Blank'.

❾ Pad Swing

Code	Content	
Blank	None	
F1	With free holder (angle 30°)	 Free Holder
F2	With Free Holder (Angle 15°)	
CF	With Flexible Holder (Angle 8°)	 Flexible Holder

*1: For dimensions with the pad swivel function, please refer to P. 1060 and P. 1062.

❿ Drop Prevention Valve

Code	Content	
Blank	None	
V	With Drop Prevention Valve	 Drop Prevention Valve

*1: For dimensions with the drop prevention valve, please refer to P. 1083 and P. 1084.

⓫ Direct Mount Filter

Code	Content	
Blank	None	
T1	With Direct Mount Filter (Filtration Area 1.7 cm²)	 Direct Mount Filter
T2	With Direct Mount Filter (Filtration Area 7 cm²)	

*1 *1: ⓫T2 can be selected when ❷ Pad Diameter is 20 to 30.
*2: For dimensions with the direct mount filter, please refer to P. 1064.

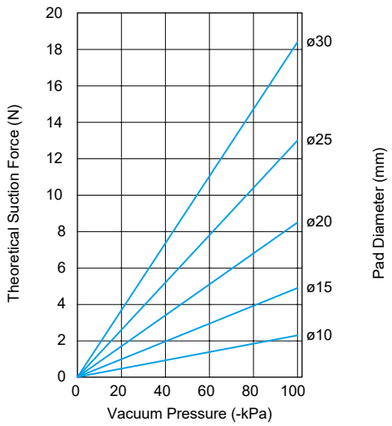
Holder Shape - Pad Diameter - Pad Shape - Connection Size/Shape Combination Table

Holder Shape	Pad Diameter	Push-in fitting ø4 4	ø4 4C	ø6 6	ø6 6C	Barb fitting ø4 4T	ø4 4TC	ø6 6T	ø6 6TC
A	ø10, ø15			●				●	
	ø20 to ø30	●		●		●		●	
B	All sizes	●		●		●		●	
C	All sizes	●	●	●	●	●	●	●	●
D	All sizes	●	●	●	●	●	●	●	●

Holder Shape	Pad Diameter	Thread M14	Thread Blank
F	All sizes		●

Holder Shape	Pad Diameter	Push-in fitting ø1.8 2	ø4 4	ø6 6	Barb fitting ø4 4T	ø6 6T
MA	ø10, ø15		●		●	
	ø20 to ø30		●		●	●
MB	All sizes	●	●	●	●	●
MC	All sizes	●	●		●	●
MD	All sizes	●	●	●	●	●
LFC	ø10, ø15		●		●	●
	ø20 to ø30		●	●	●	●
LFD	ø10, ø15		●		●	●
	ø20 to ø30		●	●	●	●
HC	All sizes	●	●	●	●	●
HD	All sizes	●	●	●	●	●
HDW	All sizes	●	●	●	●	●
HE	All sizes	●	●	●	●	●
HEW	All sizes	●	●	●	●	●

Theoretical Suction Force

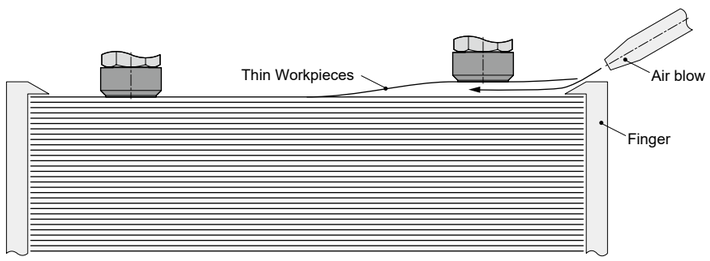


*Theoretical suction force is a value under static conditions. For actual use, apply a safety factor of 1/4 for horizontal lifting and 1/8 for vertical lifting.

Reference Material for Use

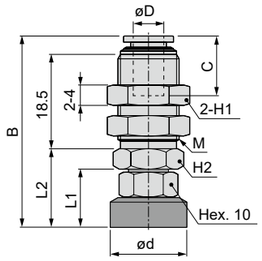
■When Sucking Multiple Stacked Thin Workpieces

Multiple workpieces may be sucked at once. Therefore, it is necessary to use a small diameter pad and further lower the vacuum pressure. Also, one method to prevent suction of multiple workpieces is to use air blow or Fingers as shown in the diagram below.

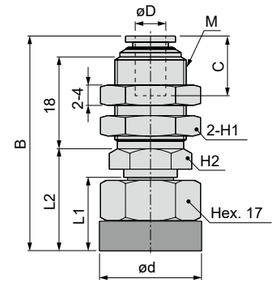


Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Push-in fitting)

●VSP-A10, 15F (FH)□-6



●VSP-A20 to 30F (FH)□-4/6



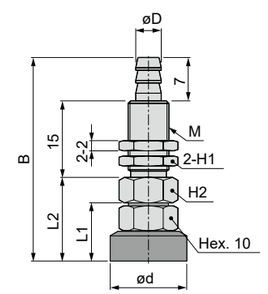
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	Tube End C	Width Across Flats H1	Width Across Flats H2	Weight (g)
VSP-A10F (FH)□-6	10	6	M12x1	37.7 (35.9)	11.4 (9.6)	15.4 (13.6)	11.9	14	12	25 (24)
VSP-A15F (FH)□-6	15	6	M12x1	37.7 (35.9)	11.4 (9.6)	15.4 (13.6)	11.9	14	12	25 (24)
VSP-A20F (FH)□-4	20	4	M12x1	51.2 (46.4)	14.3 (9.5)	20.3 (15.5)	11.2	14	12	48 (38)
VSP-A20F (FH)□-6		6	M14x1	42.2 (37.4)		19.9 (15.1)	11.9	17	14	54 (44)
VSP-A25F (FH)□-4	25	4	M12x1	51.2 (46.4)	14.3 (9.5)	20.3 (15.5)	11.2	14	12	49 (39)
VSP-A25F (FH)□-6		6	M14x1	42.2 (37.4)		19.9 (15.1)	11.9	17	14	55 (45)
VSP-A30F (FH)□-4	30	4	M12x1	51.2 (46.4)	14.3 (9.5)	20.3 (15.5)	11.2	14	12	49 (39)
VSP-A30F (FH)□-6		6	M14x1	42.2 (37.4)		19.9 (15.1)	11.9	17	14	55 (45)

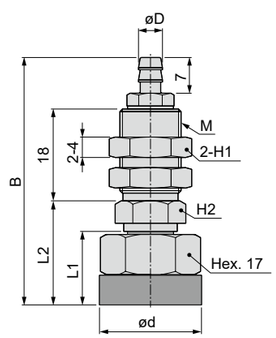
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Barb fitting)

●VSP-A10, 15F (FH)□-6T



●VSP-A20 to 30F (FH)□-4T/6T



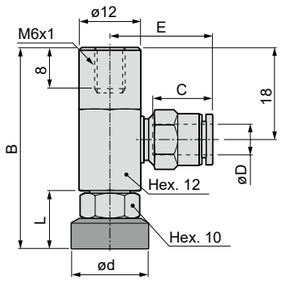
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	Width Across Flats H1	Width Across Flats H2	Weight (g)
VSP-A10F (FH)□-6T	10	6	M8x0.75	38.4 (36.6)	11.4 (9.6)	16.4 (14.6)	10	10	15 (14)
VSP-A15F (FH)□-6T	15	6	M8x0.75	38.4 (36.6)	11.4 (9.6)	16.4 (14.6)	10	10	16 (15)
VSP-A20F (FH)□-4T	20	4	M12x1	48.3 (43.5)	14.3 (9.5)	20.3 (15.5)	14	12	47 (37)
VSP-A20F (FH)□-6T		6							
VSP-A25F (FH)□-4T	25	4	M12x1	48.3 (43.5)	14.3 (9.5)	20.3 (15.5)	14	12	48 (38)
VSP-A25F (FH)□-6T		6							
VSP-A30F (FH)□-4T	30	4	M12x1	48.3 (43.5)	14.3 (9.5)	20.3 (15.5)	14	12	49 (39)
VSP-A30F (FH)□-6T		6							

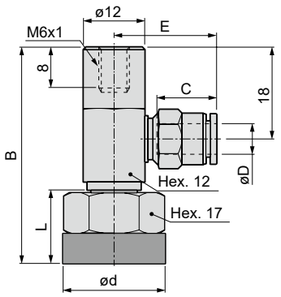
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Push-in fitting)

●VSP-B10, 15F (FH)□-4/6



●VSP-B20 to 30F (FH)□-4/6



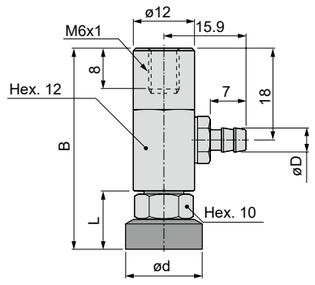
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-B10F (FH)□-4	10	4	39.4 (37.6)	11.4 (9.6)	11.2	18.8	33 (32)
VSP-B10F (FH)□-6		6			11.9	20.1	34 (33)
VSP-B15F (FH)□-4	15	4	39.4 (37.6)	11.4 (9.6)	11.2	18.8	33 (32)
VSP-B15F (FH)□-6		6			11.9	20.1	34 (33)
VSP-B20F (FH)□-4	20	4	42.3 (37.5)	14.3 (9.5)	11.2	18.8	50 (40)
VSP-B20F (FH)□-6		6			11.9	20.1	51 (41)
VSP-B25F (FH)□-4	25	4	42.3 (37.5)	14.3 (9.5)	11.2	18.8	51 (41)
VSP-B25F (FH)□-6		6			11.9	20.1	52 (42)
VSP-B30F (FH)□-4	30	4	42.3 (37.5)	14.3 (9.5)	11.2	18.8	52 (42)
VSP-B30F (FH)□-6		6			11.9	20.1	53 (43)

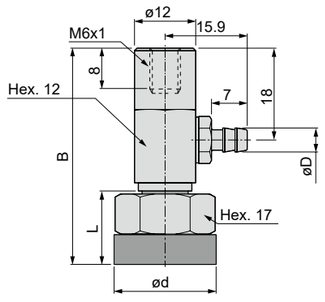
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Barb Fitting)

●VSP-B10, 15F (FH)□-4T/6T



●VSP-B20 to 30F (FH)□-4T/6T



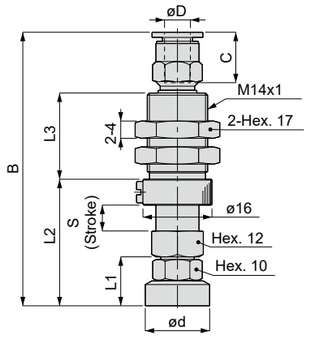
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-B10F (FH)□-4T	10	2.5	39.4 (37.6)	11.4 (9.6)	32 (31)
VSP-B10F (FH)□-6T		4			
VSP-B15F (FH)□-4T	15	2.5	39.4 (37.6)	11.4 (9.6)	33 (32)
VSP-B15F (FH)□-6T		4			
VSP-B20F (FH)□-4T	20	2.5	42.3 (37.5)	14.3 (9.5)	49 (39)
VSP-B20F (FH)□-6T		4			
VSP-B25F (FH)□-4T	25	2.5	42.3 (37.5)	14.3 (9.5)	50 (40)
VSP-B25F (FH)□-6T		4			
VSP-B30F (FH)□-4T	30	2.5	42.3 (37.5)	14.3 (9.5)	51 (41)
VSP-B30F (FH)□-6T		4			

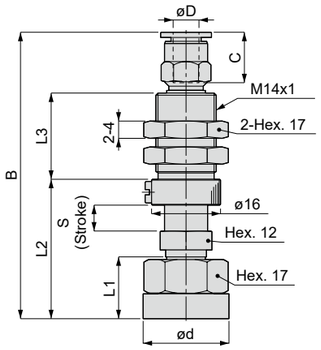
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C10, 15F (FH)□-4/6
●VSP-C10, 15-□F (F)□-4/6



●VSP-C20 to 30F (FH)□-4/6
●VSP-C20 to 30-□F (FH)□-4/6



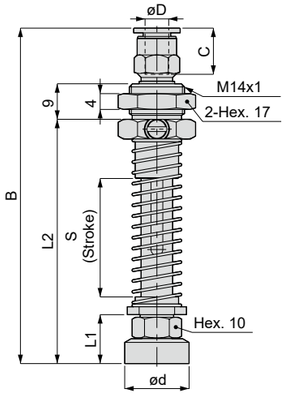
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C10F (FH)□-4	10	4	62.4 (60.6)	11.4 (9.6)	29.4 (27.6)	20	11.2	6	4.0 to 7.1	38 (37)
VSP-C10F (FH)□-6		6	63.7 (61.9)				11.9			39 (38)
VSP-C10-10F (FH)□-4		4	66.9 (65.1)		33.9 (32.1)		11.2	10	2.0 to 5.2	40 (39)
VSP-C10-10F (FH)□-6		6	68.2 (66.4)				11.9			41 (40)
VSP-C10-15F (FH)□-4		4	76.9 (75.1)		38.9 (37.1)	25	11.2	15	2.0 to 5.9	45 (44)
VSP-C10-15F (FH)□-6		6	78.2 (76.4)				11.9			46 (45)
VSP-C10-20F (FH)□-4		4	92.9 (91.1)		45.9 (44.1)	34	11.2	20	1.1 to 4.8	52 (51)
VSP-C10-20F (FH)□-6		6	94.2 (92.4)				11.9			53 (52)
VSP-C15F (FH)□-4	15	4	62.4 (60.6)	11.4 (9.6)	29.4 (27.6)	20	11.2	6	4.0 to 7.1	39 (38)
VSP-C15F (FH)□-6		6	63.7 (61.9)				11.9			40 (39)
VSP-C15-10F (FH)□-4		4	66.9 (65.1)		33.9 (32.1)		11.2	10	2.0 to 5.2	40 (39)
VSP-C15-10F (FH)□-6		6	68.2 (66.4)				11.9			41 (40)
VSP-C15-15F (FH)□-4		4	76.9 (75.1)		38.9 (37.1)	25	11.2	15	2.0 to 5.9	45 (44)
VSP-C15-15F (FH)□-6		6	78.2 (76.4)				11.9			46 (45)
VSP-C15-20F (FH)□-4		4	92.9 (91.1)		45.9 (44.1)	34	11.2	20	1.1 to 4.8	52 (51)
VSP-C15-20F (FH)□-6		6	94.2 (92.4)				11.9			53 (52)
VSP-C20F (FH)□-4	20	4	65.3 (60.5)	14.3 (9.5)	32.3 (27.5)	20	11.2	6	7.0 to 12.6	56 (46)
VSP-C20F (FH)□-6		6	66.6 (61.8)				11.9			57 (47)
VSP-C20-10F (FH)□-4		4	71.3 (66.5)		38.3 (33.5)		11.2	10	3.3 to 10.0	59 (49)
VSP-C20-10F (FH)□-6		6	72.6 (67.8)				11.9			60 (50)
VSP-C20-15F (FH)□-4		4	81.3 (76.5)		43.3 (38.5)	25	11.2	15	3.3 to 10.4	64 (54)
VSP-C20-15F (FH)□-6		6	82.6 (77.8)				11.9			65 (55)
VSP-C20-20F (FH)□-4		4	97.3 (92.5)		50.3 (45.5)	34	11.2	20	2.0 to 8.7	70 (60)
VSP-C20-20F (FH)□-6		6	98.6 (93.8)				11.9			71 (61)
VSP-C25F (FH)□-4	25	4	65.3 (60.5)	14.3 (9.5)	32.3 (27.5)	20	11.2	6	7.0 to 12.6	57 (47)
VSP-C25F (FH)□-6		6	66.6 (61.8)				11.9			58 (48)
VSP-C25-10F (FH)□-4		4	71.3 (66.5)		38.3 (33.5)		11.2	10	3.3 to 10.0	60 (50)
VSP-C25-10F (FH)□-6		6	72.6 (67.8)				11.9			61 (51)
VSP-C25-15F (FH)□-4		4	81.3 (76.5)		43.3 (38.5)	25	11.2	15	3.3 to 10.4	65 (55)
VSP-C25-15F (FH)□-6		6	82.6 (77.8)				11.9			66 (56)
VSP-C25-20F (FH)□-4		4	97.3 (92.5)		50.3 (45.5)	34	11.2	20	2.0 to 8.7	71 (61)
VSP-C25-20F (FH)□-6		6	98.6 (93.8)				11.9			72 (62)
VSP-C30F (FH)□-4	30	4	65.3 (60.5)	14.3 (9.5)	32.3 (27.5)	20	11.2	6	7.0 to 12.6	58 (48)
VSP-C30F (FH)□-6		6	66.6 (61.8)				11.9			59 (49)
VSP-C30-10F (FH)□-4		4	71.3 (66.5)		38.3 (33.5)		11.2	10	3.3 to 10.0	60 (50)
VSP-C30-10F (FH)□-6		6	72.6 (67.8)				11.9			61 (51)
VSP-C30-15F (FH)□-4		4	81.3 (76.5)		43.3 (38.5)	25	11.2	15	3.3 to 10.4	65 (55)
VSP-C30-15F (FH)□-6		6	82.6 (77.8)				11.9			66 (56)
VSP-C30-20F (FH)□-4		4	97.3 (92.5)		50.3 (45.5)	34	11.2	20	2.0 to 8.7	71 (61)
VSP-C30-20F (FH)□-6		6	98.6 (93.8)				11.9			72 (62)

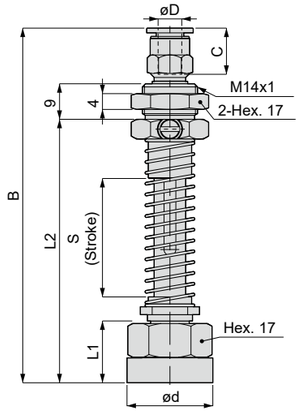
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting without Spring Cover)

●VSP-C10, 15-□F (FH)□-4C/6C



●VSP-C20 to 30-□F (FH)□-4C/6C



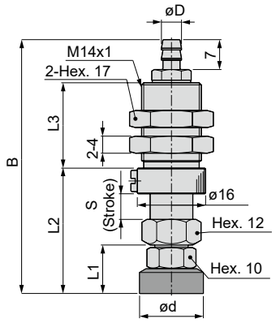
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C10-20F (FH)□-4C	10	4	69.9 (68.1)	11.4 (9.6)	47.9 (46.1)	11.2	20	1.5 to 4.9	47 (46)
VSP-C10-20F (FH)□-6C		6	71.2 (69.4)			11.9			48 (47)
VSP-C10-30F (FH)□-4C		4	82.9 (81.1)		60.9 (59.1)	11.2	30	1.1 to 4.8	53 (52)
VSP-C10-30F (FH)□-6C		6	84.2 (82.4)			11.9			54 (53)
VSP-C10-40F (FH)□-4C		4	95.9 (94.1)		73.9 (72.1)	11.2	40	1.0 to 4.5	58 (57)
VSP-C10-40F (FH)□-6C		6	97.2 (95.4)			11.9			59 (58)
VSP-C10-50F (FH)□-4C		4	108.9 (107.1)		86.9 (85.1)	11.2	50	0.9 to 4.5	63 (62)
VSP-C10-50F (FH)□-6C		6	110.2 (108.4)			11.9			64 (63)
VSP-C15-20F (FH)□-4C	15	4	69.9 (68.1)	11.4 (9.6)	47.9 (46.1)	11.2	20	1.5 to 4.9	49 (48)
VSP-C15-20F (FH)□-6C		6	71.2 (69.4)			11.9			50 (49)
VSP-C15-30F (FH)□-4C		4	82.9 (81.1)		60.9 (59.1)	11.2	30	1.1 to 4.8	55 (54)
VSP-C15-30F (FH)□-6C		6	84.2 (82.4)			11.9			56 (55)
VSP-C15-40F (FH)□-4C		4	95.9 (94.1)		73.9 (72.1)	11.2	40	1.0 to 4.5	60 (59)
VSP-C15-40F (FH)□-6C		6	97.2 (95.4)			11.9			61 (60)
VSP-C15-50F (FH)□-4C		4	108.9 (107.1)		86.9 (85.1)	11.2	50	0.9 to 4.5	65 (64)
VSP-C15-50F (FH)□-6C		6	110.2 (108.4)			11.9			66 (65)
VSP-C20-20F (FH)□-4C	20	4	74.3 (69.5)	14.3 (9.5)	52.3 (47.5)	11.2	20	1.5 to 4.9	66 (56)
VSP-C20-20F (FH)□-6C		6	75.6 (70.8)			11.9			67 (57)
VSP-C20-30F (FH)□-4C		4	87.3 (82.5)		65.3 (60.5)	11.2	30	1.1 to 4.8	71 (61)
VSP-C20-30F (FH)□-6C		6	88.6 (83.8)			11.9			72 (62)
VSP-C20-40F (FH)□-4C		4	100.3 (95.5)		78.3 (73.5)	11.2	40	1.0 to 4.5	77 (67)
VSP-C20-40F (FH)□-6C		6	101.6 (96.8)			11.9			78 (77)
VSP-C20-50F (FH)□-4C		4	113.3 (108.5)		91.3 (86.5)	11.2	50	0.9 to 4.5	82 (72)
VSP-C20-50F (FH)□-6C		6	114.6 (109.8)			11.9			83 (73)
VSP-C25-20F (FH)□-4C	25	4	74.3 (69.5)	14.3 (9.5)	52.3 (47.5)	11.2	20	1.5 to 4.9	67 (57)
VSP-C25-20F (FH)□-6C		6	75.6 (70.8)			11.9			68 (58)
VSP-C25-30F (FH)□-4C		4	87.3 (82.5)		65.3 (60.5)	11.2	30	1.1 to 4.8	72 (62)
VSP-C25-30F (FH)□-6C		6	88.6 (83.8)			11.9			73 (63)
VSP-C25-40F (FH)□-4C		4	100.3 (95.5)		78.3 (73.5)	11.2	40	1.0 to 4.5	78 (68)
VSP-C25-40F (FH)□-6C		6	101.6 (96.8)			11.9			79 (69)
VSP-C25-50F (FH)□-4C		4	113.3 (108.5)		91.3 (86.5)	11.2	50	0.9 to 4.5	83 (73)
VSP-C25-50F (FH)□-6C		6	114.6 (109.8)			11.9			84 (74)
VSP-C30-20F (FH)□-4C	30	4	74.3 (69.5)	14.3 (9.5)	52.3 (47.5)	11.2	20	1.5 to 4.9	67 (57)
VSP-C30-20F (FH)□-6C		6	75.6 (70.8)			11.9			68 (58)
VSP-C30-30F (FH)□-4C		4	87.3 (82.5)		65.3 (60.5)	11.2	30	1.1 to 4.8	72 (62)
VSP-C30-30F (FH)□-6C		6	88.6 (83.8)			11.9			73 (63)
VSP-C30-40F (FH)□-4C		4	100.3 (95.5)		78.3 (73.5)	11.2	40	1.0 to 4.5	78 (68)
VSP-C30-40F (FH)□-6C		6	101.6 (96.8)			11.9			79 (69)
VSP-C30-50F (FH)□-4C		4	113.3 (108.5)		91.3 (86.5)	11.2	50	0.9 to 4.5	83 (73)
VSP-C30-50F (FH)□-6C		6	114.6 (109.8)			11.9			84 (74)

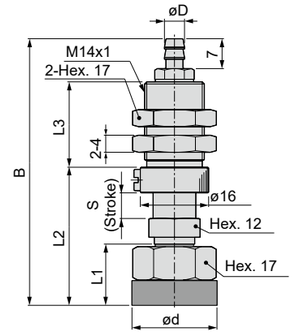
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C10, 15F (FH)□-4T/6T
●VSP-C10, 15-□F (FH)□-4T/6T



●VSP-C20 to 30F (FH)□-4T/6T
●VSP-C20 to 30-□F (FH)□-4T/6T



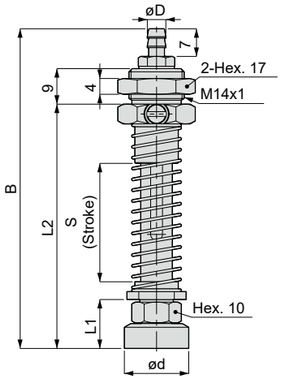
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-C10F (FH)□-4T	10	4	59.5 (57.7)	11.4 (9.6)	29.4 (27.6)	20	6	4.0 to 7.1	34 (33)
VSP-C10F (FH)□-6T		6							
VSP-C10-10F (FH)□-4T		4	64 (62.2)		33.9 (32.1)		10	2.0 to 5.2	35 (34)
VSP-C10-10F (FH)□-6T		6							
VSP-C10-15F (FH)□-4T		4	74 (72.2)		38.9 (37.1)	25	15	2.0 to 5.9	41 (40)
VSP-C10-15F (FH)□-6T		6							
VSP-C10-20F (FH)□-4T		4	90 (88.2)		45.9 (44.1)	34	20	1.1 to 4.8	48 (47)
VSP-C10-20F (FH)□-6T		6							
VSP-C15F (FH)□-4T	15	4	59.5 (57.7)	11.4 (9.6)	29.4 (27.6)	20	6	7.0 to 12.6	38 (37)
VSP-C15F (FH)□-6T		6							
VSP-C15-10F (FH)□-4T		4	64 (62.2)		33.9 (32.1)		10	3.3 to 10.0	40 (39)
VSP-C15-10F (FH)□-6T		6							
VSP-C15-15F (FH)□-4T		4	74 (72.2)		38.9 (37.1)	25	15	3.3 to 10.4	45 (44)
VSP-C15-15F (FH)□-6T		6							
VSP-C15-20F (FH)□-4T		4	90 (88.2)		45.9 (44.1)	34	20	2.0 to 8.7	52 (51)
VSP-C15-20F (FH)□-6T		6							
VSP-C20F (FH)□-4T	20	4	62.4 (57.6)	14.3 (9.5)	32.3 (27.5)	20	6	7.0 to 12.6	42 (32)
VSP-C20F (FH)□-6T		6							
VSP-C20-10F (FH)□-4T		4	68.4 (63.6)		38.3 (33.5)		10	3.3 to 10.0	44 (34)
VSP-C20-10F (FH)□-6T		6							
VSP-C20-15F (FH)□-4T		4	78.4 (73.6)		43.3 (38.5)	25	15	3.3 to 10.4	49 (39)
VSP-C20-15F (FH)□-6T		6							
VSP-C20-20F (FH)□-4T		4	94.4 (89.6)		50.3 (45.5)	34	20	2.0 to 8.7	56 (46)
VSP-C20-20F (FH)□-6T		6							
VSP-C25F (FH)□-4T	25	4	62.4 (57.6)	14.3 (9.5)	32.3 (27.5)	20	6	7.0 to 12.6	50 (40)
VSP-C25F (FH)□-6T		6							
VSP-C25-10F (FH)□-4T		4	68.4 (63.6)		38.3 (33.5)		10	3.3 to 10.0	53 (43)
VSP-C25-10F (FH)□-6T		6							
VSP-C25-15F (FH)□-4T		4	78.4 (73.6)		43.3 (38.5)	25	15	3.3 to 10.4	58 (48)
VSP-C25-15F (FH)□-6T		6							
VSP-C25-20F (FH)□-4T		4	94.4 (89.6)		50.3 (45.5)	34	20	2.0 to 8.7	64 (54)
VSP-C25-20F (FH)□-6T		6							
VSP-C30F (FH)□-4T	30	4	62.4 (57.6)	14.3 (9.5)	32.3 (27.5)	20	6	7.0 to 12.6	57 (47)
VSP-C30F (FH)□-6T		6							
VSP-C30-10F (FH)□-4T		4	68.4 (63.6)		38.3 (33.5)		10	3.3 to 10.0	59 (49)
VSP-C30-10F (FH)□-6T		6							
VSP-C30-15F (FH)□-4T		4	78.4 (73.6)		43.3 (38.5)	25	15	3.3 to 10.4	64 (54)
VSP-C30-15F (FH)□-6T		6							
VSP-C30-20F (FH)□-4T		4	94.4 (89.6)		50.3 (45.5)	34	20	2.0 to 8.7	71 (61)
VSP-C30-20F (FH)□-6T		6							

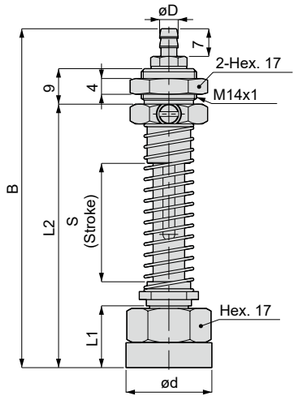
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting without Spring Cover)

●VSP-C10, 15-□F (FH)□-4TC/6TC



●VSP-C20 to 30-□F (FH)□-4TC/6TC



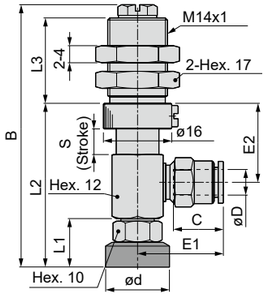
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C10-20F (FH)□-4TC	10	4	67 (65.2)	11.4 (9.6)	47.9 (46.1)	20	1.5 to 4.9	45 (44)
VSP-C10-20F (FH)□-6TC		6						
VSP-C10-30F (FH)□-4TC		4	80 (78.2)		60.9 (59.1)	30	1.1 to 4.8	51 (50)
VSP-C10-30F (FH)□-6TC		6						
VSP-C10-40F (FH)□-4TC		4	93 (91.2)		73.9 (72.1)	40	1.0 to 4.5	56 (55)
VSP-C10-40F (FH)□-6TC		6						
VSP-C10-50F (FH)□-4TC		4	106 (104.2)		86.9 (85.1)	50	0.9 to 4.5	61 (60)
VSP-C10-50F (FH)□-6TC		6						
VSP-C15-20F (FH)□-4TC	15	4	67 (65.2)	11.4 (9.6)	47.9 (46.1)	20	1.5 to 4.9	47 (46)
VSP-C15-20F (FH)□-6TC		6						
VSP-C15-30F (FH)□-4TC		4	80 (78.2)		60.9 (59.1)	30	1.1 to 4.8	53 (52)
VSP-C15-30F (FH)□-6TC		6						
VSP-C15-40F (FH)□-4TC		4	93 (91.2)		73.9 (72.1)	40	1.0 to 4.5	58 (57)
VSP-C15-40F (FH)□-6TC		6						
VSP-C15-50F (FH)□-4TC		4	106 (104.2)		86.9 (85.1)	50	0.9 to 4.5	63 (62)
VSP-C15-50F (FH)□-6TC		6						
VSP-C20-20F (FH)□-4TC	20	4	71.4 (66.6)	14.3 (9.5)	52.3 (48.5)	20	1.5 to 4.9	65 (55)
VSP-C20-20F (FH)□-6TC		6						
VSP-C20-30F (FH)□-4TC		4	84.4 (79.6)		65.3 (61.5)	30	1.1 to 4.8	70 (60)
VSP-C20-30F (FH)□-6TC		6						
VSP-C20-40F (FH)□-4TC		4	97.4 (92.6)		78.3 (74.5)	40	1.0 to 4.5	75 (65)
VSP-C20-40F (FH)□-6TC		6						
VSP-C20-50F (FH)□-4TC		4	110.4 (105.6)		91.3 (87.5)	50	0.9 to 4.5	81 (71)
VSP-C20-50F (FH)□-6TC		6						
VSP-C25-20F (FH)□-4TC	25	4	71.4 (66.6)	14.3 (9.5)	52.3 (48.5)	20	1.5 to 4.9	66 (56)
VSP-C25-20F (FH)□-6TC		6						
VSP-C25-30F (FH)□-4TC		4	84.4 (79.6)		65.3 (61.5)	30	1.1 to 4.8	71 (61)
VSP-C25-30F (FH)□-6TC		6						
VSP-C25-40F (FH)□-4TC		4	97.4 (92.6)		78.3 (74.5)	40	1.0 to 4.5	76 (66)
VSP-C25-40F (FH)□-6TC		6						
VSP-C25-50F (FH)□-4TC		4	110.4 (105.6)		91.3 (87.5)	50	0.9 to 4.5	82 (72)
VSP-C25-50F (FH)□-6TC		6						
VSP-C30-20F (FH)□-4TC	30	4	71.4 (66.6)	14.3 (9.5)	52.3 (48.5)	20	1.5 to 4.9	66 (56)
VSP-C30-20F (FH)□-6TC		6						
VSP-C30-30F (FH)□-4TC		4	84.4 (79.6)		65.3 (61.5)	30	1.1 to 4.8	71 (61)
VSP-C30-30F (FH)□-6TC		6						
VSP-C30-40F (FH)□-4TC		4	97.4 (92.6)		78.3 (74.5)	40	1.0 to 4.5	76 (66)
VSP-C30-40F (FH)□-6TC		6						
VSP-C30-50F (FH)□-4TC		4	110.4 (105.6)		91.3 (87.5)	50	0.9 to 4.5	82 (72)
VSP-C30-50F (FH)□-6TC		6						

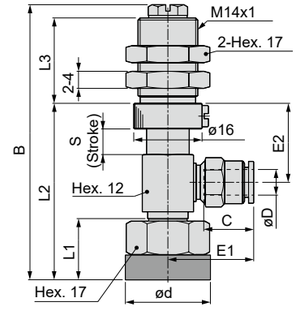
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D10, 15F (FH)□-4/6
●VSP-D10, 15-□F (FH)□-4/6



●VSP-D20 to 30F (FH)□-4/6
●VSP-D20 to 30-□F (FH)□-4/6



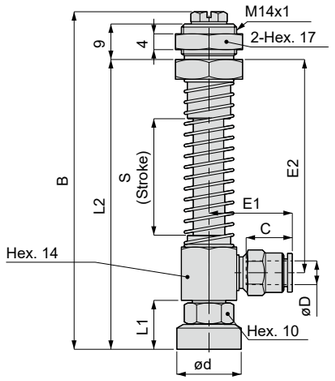
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D10F (FH)□-4	10	4	61.5 (59.7)	11.4 (9.6)	38.4 (36.6)	20	11.2	18.8	18.5	6	4.0 to 7.1	50 (49)
VSP-D10F (FH)□-6		6					11.9	20.1				51 (50)
VSP-D10-10F (FH)□-4		4	66.5 (64.7)		43.4 (41.6)		11.2	18.8	25	10	2.0 to 5.2	53 (52)
VSP-D10-10F (FH)□-6		6					11.9	20.1				54 (53)
VSP-D10-15F (FH)□-4		4	76.5 (74.7)		48.4 (46.6)	25	11.2	18.8	30	15	2.0 to 5.9	59 (58)
VSP-D10-15F (FH)□-6		6					11.9	20.1				60 (59)
VSP-D10-20F (FH)□-4		4	92.5 (90.7)		55.4 (53.6)	34	11.2	18.8	37	20	1.1 to 4.8	69 (68)
VSP-D10-20F (FH)□-6		6					11.9	20.1				70 (69)
VSP-D15F (FH)□-4	15	4	61.5 (59.7)	11.4 (9.6)	38.4 (36.6)	20	11.2	18.8	18.5	6	4.0 to 7.1	51 (50)
VSP-D15F (FH)□-6		6					11.9	20.1				52 (51)
VSP-D15-10F (FH)□-4		4	66.5 (64.7)		43.4 (41.6)		11.2	18.8	25	10	2.0 to 5.2	54 (53)
VSP-D15-10F (FH)□-6		6					11.9	20.1				55 (54)
VSP-D15-15F (FH)□-4		4	76.5 (74.7)		48.4 (46.6)	25	11.2	18.8	30	15	2.0 to 5.9	60 (59)
VSP-D15-15F (FH)□-6		6					11.9	20.1				61 (60)
VSP-D15-20F (FH)□-4		4	92.5 (90.7)		55.4 (53.6)	34	11.2	18.8	37	20	1.1 to 4.8	70 (69)
VSP-D15-20F (FH)□-6		6					11.9	20.1				71 (70)
VSP-D20F (FH)□-4	20	4	64.4 (59.6)	14.3 (9.5)	41.3 (36.5)	20	11.2	18.8	18.5	6	7.0 to 12.6	68 (58)
VSP-D20F (FH)□-6		6					11.9	20.1				69 (59)
VSP-D20-10F (FH)□-4		4	70.4 (65.6)		47.3 (42.5)		11.2	18.8	24.5	10	3.3 to 10.0	71 (61)
VSP-D20-10F (FH)□-6		6					11.9	20.1				72 (62)
VSP-D20-15F (FH)□-4		4	80.4 (75.6)		52.3 (47.5)	25	11.2	18.8	29.5	15	3.3 to 10.4	78 (68)
VSP-D20-15F (FH)□-6		6					11.9	20.1				79 (69)
VSP-D20-20F (FH)□-4		4	96.4 (91.6)		59.3 (54.5)	34	11.2	18.8	36.5	20	2.0 to 8.7	88 (78)
VSP-D20-20F (FH)□-6		6					11.9	20.1				89 (79)
VSP-D25F (FH)□-4	25	4	64.4 (59.6)	14.3 (9.5)	41.3 (36.5)	20	11.2	18.8	18.5	6	7.0 to 12.6	69 (59)
VSP-D25F (FH)□-6		6					11.9	20.1				70 (60)
VSP-D25-10F (FH)□-4		4	70.4 (65.6)		47.3 (42.5)		11.2	18.8	24.5	10	3.3 to 10.0	72 (62)
VSP-D25-10F (FH)□-6		6					11.9	20.1				73 (63)
VSP-D25-15F (FH)□-4		4	80.4 (75.6)		52.3 (47.5)	25	11.2	18.8	29.5	15	3.3 to 10.4	79 (69)
VSP-D25-15F (FH)□-6		6					11.9	20.1				80 (70)
VSP-D25-20F (FH)□-4		4	96.4 (91.6)		59.3 (54.5)	34	11.2	18.8	36.5	20	2.0 to 8.7	89 (79)
VSP-D25-20F (FH)□-6		6					11.9	20.1				90 (80)
VSP-D30F (FH)□-4	30	4	64.4 (59.6)	14.3 (9.5)	41.3 (36.5)	20	11.2	18.8	18.5	6	7.0 to 12.6	69 (59)
VSP-D30F (FH)□-6		6					11.9	20.1				70 (60)
VSP-D30-10F (FH)□-4		4	70.4 (65.6)		47.3 (42.5)		11.2	18.8	24.5	10	3.3 to 10.0	72 (82)
VSP-D30-10F (FH)□-6		6					11.9	20.1				73 (63)
VSP-D30-15F (FH)□-4		4	80.4 (75.6)		52.3 (47.5)	25	11.2	18.8	29.5	15	3.3 to 10.4	79 (69)
VSP-D30-15F (FH)□-6		6					11.9	20.1				80 (70)
VSP-D30-20F (FH)□-4		4	96.4 (91.6)		59.3 (54.5)	34	11.2	18.8	36.5	20	2.0 to 8.7	89 (79)
VSP-D30-20F (FH)□-6		6					11.9	20.1				90 (80)

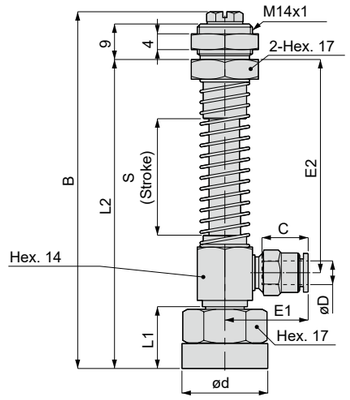
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in Fitting without Spring Cover)

●VSP-D10, 15-□F (FH)□-4C/6C



●VSP-D20 to 30-□F (FH)□-4C/6C



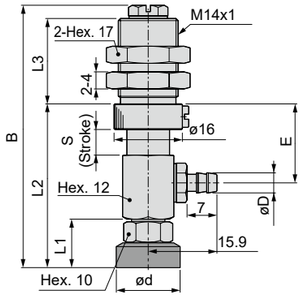
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D10-20F (FH)□-4C	10	4	71.5 (69.7)	11.4 (9.6)	59.4 (57.6)	11.2	19.8	40.5	20	1.5 to 4.9	71 (70)
VSP-D10-20F (FH)□-6C		6				11.9	21.1				72 (71)
VSP-D10-30F (FH)□-4C		4	84.5 (82.7)		72.4 (70.6)	11.2	19.8	53.5	30	1.1 to 4.8	78 (77)
VSP-D10-30F (FH)□-6C		6				11.9	21.1				79 (78)
VSP-D10-40F (FH)□-4C		4	97.5 (95.7)		85.4 (83.6)	11.2	19.8	66.5	40	1.0 to 4.5	84 (83)
VSP-D10-40F (FH)□-6C		6				11.9	21.1				85 (84)
VSP-D10-50F (FH)□-4C		4	110.5 (108.7)		98.4 (96.6)	11.2	19.8	79.5	50	0.9 to 4.5	91 (90)
VSP-D10-50F (FH)□-6C		6				11.9	21.1				92 (91)
VSP-D15-20F (FH)□-4C	15	4	71.5 (69.7)		59.4 (57.6)	11.2	19.8	40.5	20	1.5 to 4.9	72 (71)
VSP-D15-20F (FH)□-6C		6				11.9	21.1				73 (72)
VSP-D15-30F (FH)□-4C		4	84.5 (82.7)		72.4 (70.6)	11.2	19.8	53.5	30	1.1 to 4.8	79 (78)
VSP-D15-30F (FH)□-6C		6				11.9	21.1				80 (79)
VSP-D15-40F (FH)□-4C		4	97.5 (95.7)		85.4 (83.6)	11.2	19.8	66.5	40	1.0 to 4.5	85 (84)
VSP-D15-40F (FH)□-6C		6				11.9	21.1				86 (85)
VSP-D15-50F (FH)□-4C		4	110.5 (108.7)		98.4 (96.6)	11.2	19.8	79.5	50	0.9 to 4.5	92 (91)
VSP-D15-50F (FH)□-6C		6				11.9	21.1				93 (92)
VSP-D20-20F (FH)□-4C	20	4	75.9 (71.1)	14.3 (9.5)	63.8 (59)	11.2	19.8	41	20	1.5 to 4.9	76 (66)
VSP-D20-20F (FH)□-6C		6				11.9	21.1				77 (67)
VSP-D20-30F (FH)□-4C		4	88.9 (84.1)		76.8 (72)	11.2	19.8	54	30	1.1 to 4.8	83 (73)
VSP-D20-30F (FH)□-6C		6				11.9	21.1				84 (74)
VSP-D20-40F (FH)□-4C		4	101.9 (97.1)		89.8 (85)	11.2	19.8	67	40	1.0 to 4.5	100 (90)
VSP-D20-40F (FH)□-6C		6				11.9	21.1				101 (91)
VSP-D20-50F (FH)□-4C		4	114.9 (110.1)		102.8 (98)	11.2	19.8	80	50	0.9 to 4.5	107 (97)
VSP-D20-50F (FH)□-6C		6				11.9	21.1				108 (98)
VSP-D25-20F (FH)□-4C	25	4	75.9 (71.1)	14.3 (9.5)	63.8 (59)	11.2	19.8	41	20	1.5 to 4.9	77 (67)
VSP-D25-20F (FH)□-6C		6				11.9	21.1				78 (68)
VSP-D25-30F (FH)□-4C		4	88.9 (84.1)		76.8 (72)	11.2	19.8	54	30	1.1 to 4.8	84 (74)
VSP-D25-30F (FH)□-6C		6				11.9	21.1				85 (75)
VSP-D25-40F (FH)□-4C		4	101.9 (97.1)		89.8 (85)	11.2	19.8	67	40	1.0 to 4.5	101 (91)
VSP-D25-40F (FH)□-6C		6				11.9	21.1				102 (92)
VSP-D25-50F (FH)□-4C		4	114.9 (110.1)		102.8 (98)	11.2	19.8	80	50	0.9 to 4.5	108 (98)
VSP-D25-50F (FH)□-6C		6				11.9	21.1				109 (99)
VSP-D30-20F (FH)□-4C	30	4	75.9 (71.1)	14.3 (9.5)	63.8 (59)	11.2	19.8	41	20	1.5 to 4.9	77 (67)
VSP-D30-20F (FH)□-6C		6				11.9	21.1				78 (68)
VSP-D30-30F (FH)□-4C		4	88.9 (84.1)		76.8 (72)	11.2	19.8	54	30	1.1 to 4.8	84 (74)
VSP-D30-30F (FH)□-6C		6				11.9	21.1				85 (75)
VSP-D30-40F (FH)□-4C		4	101.9 (97.1)		89.8 (85)	11.2	19.8	67	40	1.0 to 4.5	101 (91)
VSP-D30-40F (FH)□-6C		6				11.9	21.1				102 (92)
VSP-D30-50F (FH)□-4C		4	114.9 (110.1)		102.8 (98)	11.2	19.8	80	50	0.9 to 4.5	108 (98)
VSP-D30-50F (FH)□-6C		6				11.9	21.1				109 (99)

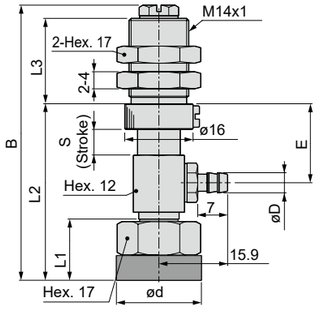
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D10, 15F (FH)□-4T/6T
●VSP-D10, 15-□F (FH)□-4T/6T



●VSP-D20 to 30F (FH)□-4T/6T
●VSP-D20 to 30-□F (FH)□-4T/6T



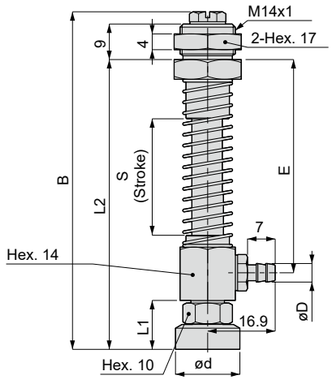
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D10F (FH)□-4T	10	2.5	61.5 (59.7)	11.4 (9.6)	38.4 (36.6)	20	18.5	6	4.0 to 7.1	49 (48)
VSP-D10F (FH)□-6T		4								
VSP-D10-10F (FH)□-4T		2.5	66.5 (64.7)		43.4 (41.6)		25	10	2.0 to 5.2	53 (52)
VSP-D10-10F (FH)□-6T		4								
VSP-D10-15F (FH)□-4T		2.5	76.5 (74.7)		48.4 (46.6)	25	30	15	2.0 to 5.9	58 (57)
VSP-D10-15F (FH)□-6T		4								
VSP-D10-20F (FH)□-4T		2.5	92.5 (90.7)		55.4 (53.6)	34	37	20	1.1 to 4.8	69 (68)
VSP-D10-20F (FH)□-6T		4								
VSP-D15F (FH)□-4T	15	2.5	61.5 (59.7)		38.4 (36.6)	20	18.5	6	4.0 to 7.1	50 (49)
VSP-D15F (FH)□-6T		4								
VSP-D15-10F (FH)□-4T		2.5	66.5 (64.7)		43.4 (41.6)		25	10	2.0 to 5.2	53 (52)
VSP-D15-10F (FH)□-6T		4								
VSP-D15-15F (FH)□-4T		2.5	76.5 (74.7)		48.4 (46.6)	25	30	15	2.0 to 5.9	58 (57)
VSP-D15-15F (FH)□-6T		4								
VSP-D15-20F (FH)□-4T		2.5	92.5 (90.7)		55.4 (53.6)	34	37	20	1.1 to 4.8	69 (68)
VSP-D15-20F (FH)□-6T		4								
VSP-D20F (FH)□-4T	20	2.5	64.4 (59.6)	14.3 (9.5)	41.3 (36.5)	20	18.5	6	7.0 to 12.6	66 (56)
VSP-D20F (FH)□-6T		4								
VSP-D20-10F (FH)□-4T		2.5	70.4 (65.6)		47.3 (42.5)		24.5	10	3.3 to 10.0	71 (61)
VSP-D20-10F (FH)□-6T		4								
VSP-D20-15F (FH)□-4T		2.5	80.4 (75.6)		52.3 (47.5)	25	29.5	15	3.3 to 10.4	77 (67)
VSP-D20-15F (FH)□-6T		4								
VSP-D20-20F (FH)□-4T		2.5	96.4 (91.6)		59.3 (54.5)	34	36.5	20	2.0 to 8.7	87 (77)
VSP-D20-20F (FH)□-6T		4								
VSP-D25F (FH)□-4T	25	2.5	64.4 (59.6)		41.3 (36.5)	20	18.5	6	7.0 to 12.6	67 (57)
VSP-D25F (FH)□-6T		4								
VSP-D25-10F (FH)□-4T		2.5	70.4 (65.6)		47.3 (42.5)		24.5	10	3.3 to 10.0	72 (62)
VSP-D25-10F (FH)□-6T		4								
VSP-D25-15F (FH)□-4T		2.5	80.4 (75.6)		52.3 (47.5)	25	29.5	15	3.3 to 10.4	78 (68)
VSP-D25-15F (FH)□-6T		4								
VSP-D25-20F (FH)□-4T		2.5	96.4 (91.6)		59.3 (54.5)	34	36.5	20	2.0 to 8.7	88 (78)
VSP-D25-20F (FH)□-6T		4								
VSP-D30F (FH)□-4T	30	2.5	64.4 (59.6)		41.3 (36.5)	20	18.5	6	7.0 to 12.6	68 (58)
VSP-D30F (FH)□-6T		4								
VSP-D30-10F (FH)□-4T		2.5	70.4 (65.6)		47.3 (42.5)		24.5	10	3.3 to 10.0	72 (62)
VSP-D30-10F (FH)□-6T		4								
VSP-D30-15F (FH)□-4T		2.5	80.4 (75.6)		52.3 (47.5)	25	29.5	15	3.3 to 10.4	78 (68)
VSP-D30-15F (FH)□-6T		4								
VSP-D30-20F (FH)□-4T		2.5	96.4 (91.6)		59.3 (54.5)	34	36.5	20	2.0 to 8.7	88 (78)
VSP-D30-20F (FH)□-6T		4								

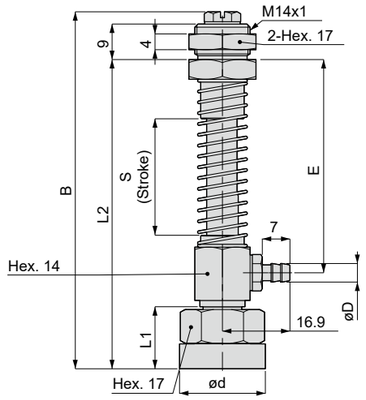
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D10, 15-□F (FH)□-4TC/6TC



●VSP-D20 to 30-□F (FH)□-4TC/6TC



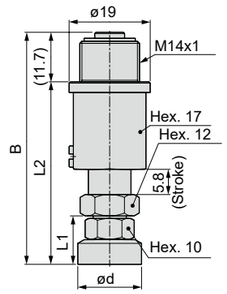
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D10-20F (FH)□-4TC	10	2.5	71.5 (69.7)	11.4 (9.6)	59.4 (57.6)	40.5	20	1.5 to 4.9	68 (67)
VSP-D10-20F (FH)□-6TC		4							
VSP-D10-30F (FH)□-4TC		2.5	84.5 (82.7)		72.4 (70.6)	53.5	30	1.1 to 4.8	75 (74)
VSP-D10-30F (FH)□-6TC		4							
VSP-D10-40F (FH)□-4TC		2.5	97.5 (95.7)		85.4 (83.6)	66.5	40	1.0 to 4.5	81 (80)
VSP-D10-40F (FH)□-6TC		4							
VSP-D10-50F (FH)□-4TC		2.5	110.5 (108.7)		98.4 (96.6)	79.5	50	0.9 to 4.5	88 (87)
VSP-D10-50F (FH)□-6TC		4							
VSP-D15-20F (FH)□-4TC	15	4	71.5 (69.7	11.4 (9.6)	59.4 (57.6)	41	20	1.5 to 4.9	69 (68)
VSP-D15-20F (FH)□-6TC		6							
VSP-D15-30F (FH)□-4TC		4	84.5 (82.7)		72.4 (70.6)	54	30	1.1 to 4.8	76 (75)
VSP-D15-30F (FH)□-6TC		6							
VSP-D15-40F (FH)□-4TC		4	97.5 (95.7)		85.4 (83.6)	67	40	1.0 to 4.5	82 (81)
VSP-D15-40F (FH)□-6TC		6							
VSP-D15-50F (FH)□-4TC		4	110.5 (108.7)		98.4 (96.6)	80	50	0.9 to 4.5	89 (88)
VSP-D15-50F (FH)□-6TC		6							
VSP-D20-20F (FH)□-4TC	20	4	75.9 (71.1)	14.3 (9.5)	63.8 (59)	41	20	1.5 to 4.9	85 (75)
VSP-D20-20F (FH)□-6TC		6							
VSP-D20-30F (FH)□-4TC		4	88.9 (84.1)		76.8 (72)	54	30	1.1 to 4.8	92 (82)
VSP-D20-30F (FH)□-6TC		6							
VSP-D20-40F (FH)□-4TC		4	101.9 (97.1)		89.8 (85)	67	40	1.0 to 4.5	99 (89)
VSP-D20-40F (FH)□-6TC		6							
VSP-D20-50F (FH)□-4TC		4	114.9 (110.1)		102.8 (98)	80	50	0.9 to 4.5	106 (96)
VSP-D20-50F (FH)□-6TC		6							
VSP-D25-20F (FH)□-4TC	25	4	75.9 (71.1)	14.3 (9.5)	63.8 (59)	41	20	1.5 to 4.9	86 (76)
VSP-D25-20F (FH)□-6TC		6							
VSP-D25-30F (FH)□-4TC		4	88.9 (84.1)		76.8 (72)	54	30	1.1 to 4.8	93 (83)
VSP-D25-30F (FH)□-6TC		6							
VSP-D25-40F (FH)□-4TC		4	101.9 (97.1)		89.8 (85)	67	40	1.0 to 4.5	100 (90)
VSP-D25-40F (FH)□-6TC		6							
VSP-D25-50F (FH)□-4TC		4	114.9 (110.1)		102.8 (98)	80	50	0.9 to 4.5	107 (97)
VSP-D25-50F (FH)□-6TC		6							
VSP-D30-20F (FH)□-4TC	30	4	75.9 (71.1)	14.3 (9.5)	63.8 (59)	41	20	1.5 to 4.9	86 (76)
VSP-D30-20F (FH)□-6TC		6							
VSP-D30-30F (FH)□-4TC		4	88.9 (84.1)		76.8 (72)	54	30	1.1 to 4.8	93 (92)
VSP-D30-30F (FH)□-6TC		6							
VSP-D30-40F (FH)□-4TC		4	101.9 (97.1)		89.8 (85)	67	40	1.0 to 4.5	100 (90)
VSP-D30-40F (FH)□-6TC		6							
VSP-D30-50F (FH)□-4TC		4	114.9 (110.1)		102.8 (98)	80	50	0.9 to 4.5	107 (97)
VSP-D30-50F (FH)□-6TC		6							

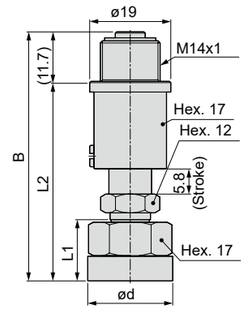
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Buffer Type, Direct Mount Type, VSP-F, Male Thread)

●VSP-F10, 15F (FH)□



●VSP-F20 to 30F (FH)□



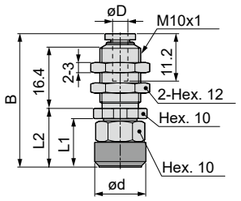
Unit: mm

Model No.	Pad Diameter ød	B	L1	L2	Spring Force (N)	Weight (g)
VSP-F10F (FH)□	10	54.4 (52.6)	11.4 (9.6)	42.7 (40.9)	7.9 to 15	59 (58)
VSP-F15F (FH)□	15	54.4 (52.6)	11.4 (9.6)	42.7 (40.9)	7.9 to 15	60 (59)
VSP-F20F (FH)□	20	58.4 (53.6)	14.3 (9.5)	46.7 (41.9)	7.9 to 15	76 (60)
VSP-F25F (FH)□	25	58.4 (53.6)	14.3 (9.5)	46.7 (41.9)	7.9 to 15	77 (67)
VSP-F30F (FH)□	30	58.4 (53.6)	14.3 (9.5)	46.7 (41.9)	7.9 to 15	77 (67)

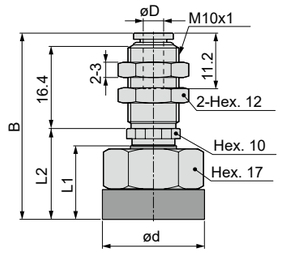
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Push-in fitting)

●VSP-MA10, 15F (FH)□-4



●VSP-MA20 to 30F (FH)□-4



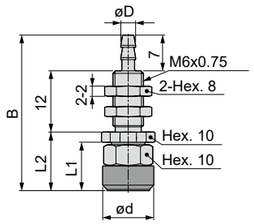
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Weight (g)
VSP-MA10F (FH)□-4	10	4	32.4 (30.6)	11.4 (9.6)	13.4 (11.6)	10 (9)
VSP-MA15F (FH)□-4	15	4	32.4 (30.6)	11.4 (9.6)	13.4 (11.6)	10 (9)
VSP-MA20F (FH)□-4	20	4	36.9 (32.1)	14.3 (9.5)	17.9 (13.1)	29 (19)
VSP-MA25F (FH)□-4	25	4	36.9 (32.1)	14.3 (9.5)	17.9 (13.1)	31 (21)
VSP-MA30F (FH)□-4	30	4	36.9 (32.1)	14.3 (9.5)	17.9 (13.1)	31 (21)

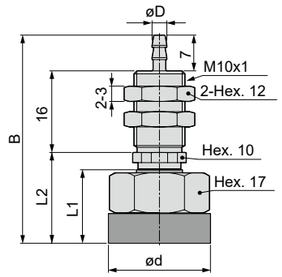
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Barb Fitting)

●VSP-MA10, 15F (FH)□-4T



●VSP-MA20 to 30F (FH)□-4T/6T



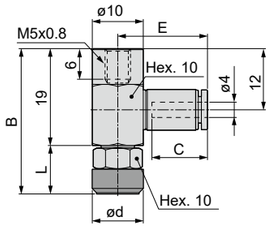
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Weight (g)
VSP-MA10F (FH)□-4T	10	2.5	32.4 (30.6)	11.4 (9.6)	13.4 (11.6)	7 (6)
VSP-MA15F (FH)□-4T	15	2.5	32.4 (30.6)	11.4 (9.6)	13.4 (11.6)	8 (7)
VSP-MA20F (FH)□-4T	20	2.5	40.9 (36.1)	14.3 (9.5)	17.9 (13.1)	29 (19)
VSP-MA20F (FH)□-6T		4				
VSP-MA25F (FH)□-4T	25	2.5	40.9 (36.1)	14.3 (9.5)	17.9 (13.1)	31 (21)
VSP-MA25F (FH)□-6T		4				
VSP-MA30F (FH)□-4T	30	2.5	40.9 (36.1)	14.3 (9.5)	17.9 (13.1)	31 (21)
VSP-MA30F (FH)□-6T		4				

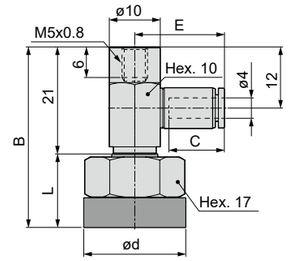
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Push-in fitting)

●VSP-MB10, 15F (FH)□-2/4/6



●VSP-MB20 to 30F (FH)□-2/4/6



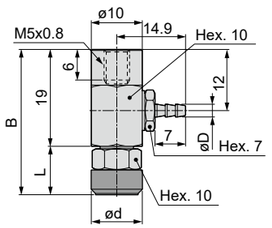
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-MB10F (FH)□-2	10	1.8	30.4 (28.6)	11.4 (9.6)	8.4	13.7	11 (10)
VSP-MB10F (FH)□-4		4			11.2	17.8	12 (11)
VSP-MB10F (FH)□-6		6			11.9	19.6	13 (12)
VSP-MB15F (FH)□-2	15	1.8	30.4 (28.6)	11.4 (9.6)	8.4	13.7	11 (10)
VSP-MB15F (FH)□-4		4			11.2	17.8	12 (11)
VSP-MB15F (FH)□-6		6			11.9	19.6	13 (12)
VSP-MB20F (FH)□-2	20	1.8	35.5 (30.7)	14.3 (9.5)	8.4	13.7	29 (19)
VSP-MB20F (FH)□-4		4			11.2	17.8	30 (20)
VSP-MB20F (FH)□-6		6			11.9	19.6	31 (21)
VSP-MB25F (FH)□-2	25	1.8	35.5 (30.7)	14.3 (9.5)	8.4	13.7	31 (21)
VSP-MB25F (FH)□-4		4			11.2	17.8	32 (22)
VSP-MB25F (FH)□-6		6			11.9	19.6	33 (23)
VSP-MB30F (FH)□-2	30	1.8	35.5 (30.7)	14.3 (9.5)	8.4	13.7	32 (22)
VSP-MB30F (FH)□-4		4			11.2	17.8	33 (23)
VSP-MB30F (FH)□-6		6			11.9	19.6	34 (24)

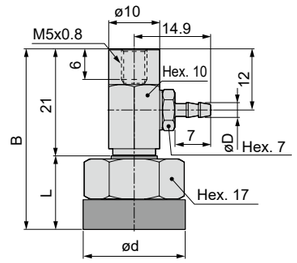
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Barb Fitting)

●VSP-MB10, 15F (FH)□-4T/6T



●VSP-MB20 to 30F (FH)□-4T/6T



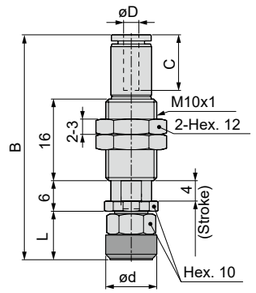
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-MB10F (FH)□-4T	10	2.5	30.4 (28.6)	11.4 (9.6)	10 (9)
VSP-MB10F (FH)□-6T		4			
VSP-MB15F (FH)□-4T	15	2.5	30.4 (28.6)	11.4 (9.6)	11 (10)
VSP-MB15F (FH)□-6T		4			
VSP-MB20F (FH)□-4T	20	2.5	35.5 (30.7)	14.3 (9.5)	29 (19)
VSP-MB20F (FH)□-6T		4			
VSP-MB25F (FH)□-4T	25	2.5	35.5 (30.7)	14.3 (9.5)	31 (30)
VSP-MB25F (FH)□-6T		4			
VSP-MB30F (FH)□-4T	30	2.5	35.5 (30.7)	14.3 (9.5)	31 (30)
VSP-MB30F (FH)□-6T		4			

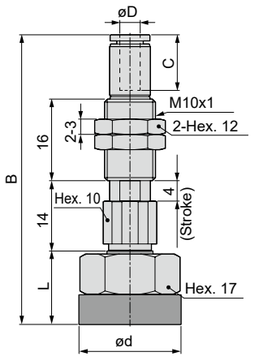
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Push-in fitting)

●VSP-MC10, 15F(FH) □-2/4



●VSP-MC20 to 30F(FH)□-2/4



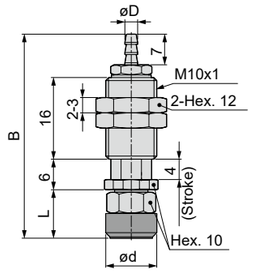
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	Spring Force (N)	Weight (g)
VSP-MC10F(FH)□-2	10	1.8	42.3 (40.5)	11.4 (9.6)	8.4	1 to 1.3	19 (18)
VSP-MC10F(FH)□-4		4	46.4 (44.6)		11.2		20 (19)
VSP-MC15F(FH)□-2	15	1.8	42.3 (40.5)	11.4 (9.6)	8.4	1 to 1.3	19 (18)
VSP-MC15F(FH)□-4		4	46.4 (44.6)		11.2		20 (19)
VSP-MC20F(FH)□-2	20	1.8	53.2 (49.4)	14.3 (9.5)	8.4	1 to 1.3	40 (30)
VSP-MC20F(FH)□-4		4	57.3 (52.5)		11.2		41 (31)
VSP-MC25F(FH)□-2	25	1.8	53.2 (49.4)	14.3 (9.5)	8.4	1 to 1.3	42 (32)
VSP-MC25F(FH)□-4		4	57.3 (52.5)		11.2		43 (33)
VSP-MC30F(FH)□-2	30	1.8	53.2 (49.4)	14.3 (9.5)	8.4	1 to 1.3	42 (32)
VSP-MC30F(FH)□-4		4	57.3 (52.5)		11.2		43 (33)

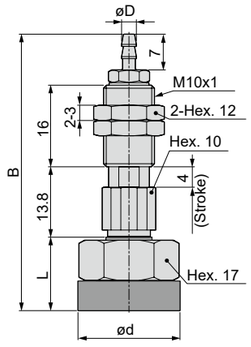
*Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Barb Fitting)

●VSP-MC10, 15F(FH)□-4T/6T



●VSP-MC20 to 30F(FH)□-4T/6T



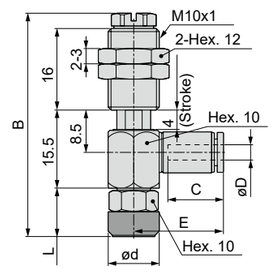
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MC10F(FH)□-4T	10	2.5	43.5 (41.7)	11.4 (9.6)	0.5 to 0.6	18 (17)
VSP-MC10F(FH)□-6T		4				
VSP-MC15F(FH)□-4T	15	2.5	43.5 (41.7)	11.4 (9.6)	0.5 to 0.6	19 (18)
VSP-MC15F(FH)□-6T		4				
VSP-MC20F(FH)□-4T	20	2.5	54.4 (49.6)	14.3 (9.5)	1 to 1.3	40 (30)
VSP-MC20F(FH)□-6T		4				
VSP-MC25F(FH)□-4T	25	2.5	54.4 (49.6)	14.3 (9.5)	1 to 1.3	42 (32)
VSP-MC25F(FH)□-6T		4				
VSP-MC30F(FH)□-4T	30	2.5	54.4 (49.6)	14.3 (9.5)	1 to 1.3	42 (32)
VSP-MC30F(FH)□-6T		4				

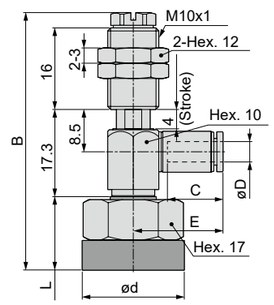
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Push-in fitting)

●VSP-MD10, 15F(FH)□-2/4/6



●VSP-MD20 to 30F(FH)□-2/4/6



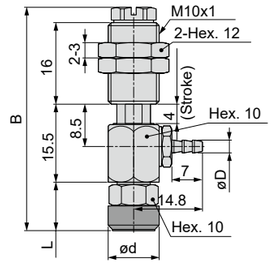
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Spring Force (N)	Weight (g)
VSP-MD10F(FH)□-2	10	1.8	45.9 (44.1)	11.4 (9.6)	8.4	13.6	1 to 1.3	26 (25)
VSP-MD10F(FH)□-4		4			11.2	17.7		27 (26)
VSP-MD10F(FH)□-6		6			11.9	19.5		28 (27)
VSP-MD15F(FH)□-2	15	1.8	45.9 (44.1)	11.4 (9.6)	8.4	13.6	1 to 1.3	27 (26)
VSP-MD15F(FH)□-4		4			11.2	17.7		28 (27)
VSP-MD15F(FH)□-6		6			11.9	19.5		29 (28)
VSP-MD20F(FH)□-2	20	1.8	50.6 (45.8)	14.3 (9.5)	8.4	13.6	1 to 1.3	44 (34)
VSP-MD20F(FH)□-4		4			11.2	17.7		45 (35)
VSP-MD20F(FH)□-6		6			11.9	19.5		46 (36)
VSP-MD25F(FH)□-2	25	1.8	50.6 (45.8)	14.3 (9.5)	8.4	13.6	1 to 1.3	45 (35)
VSP-MD25F(FH)□-4		4			11.2	17.7		46 (36)
VSP-MD25F(FH)□-6		6			11.9	19.5		47 (37)
VSP-MD30F(FH)□-2	30	1.8	50.6 (45.8)	14.3 (9.5)	8.4	13.6	1 to 1.3	45 (35)
VSP-MD30F(FH)□-4		4			11.2	17.7		46 (36)
VSP-MD30F(FH)□-6		6			11.9	19.5		47 (37)

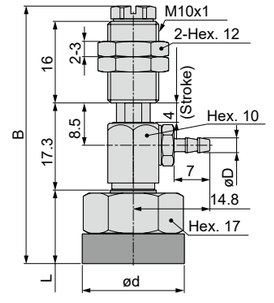
*Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Barb Fitting)

●VSP-MD10, 15F(FH)□-4T/6T



●VSP-MD20 to 30F(FH)□-4T/6T



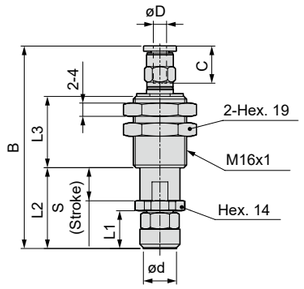
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MD10F(FH)□-4T	10	2.5	45.9 (44.1)	11.4 (9.6)	1 to 1.3	26 (25)
VSP-MD10F(FH)□-6T		4				
VSP-MD15F(FH)□-4T	15	2.5	45.9 (44.1)	11.4 (9.6)	1 to 1.3	26 (25)
VSP-MD15F(FH)□-6T		4				
VSP-MD20F(FH)□-4T	20	2.5	50.6 (45.8)	14.3 (9.5)	1 to 1.3	43 (33)
VSP-MD20F(FH)□-6T		4				
VSP-MD25F(FH)□-4T	25	2.5	50.6 (45.8)	14.3 (9.5)	1 to 1.3	45 (35)
VSP-MD25F(FH)□-6T		4				
VSP-MD30F(FH)□-4T	30	2.5	50.6 (45.8)	14.3 (9.5)	1 to 1.3	45 (35)
VSP-MD30F(FH)□-6T		4				

* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC10, 15-□F(FH)□-2/4/6



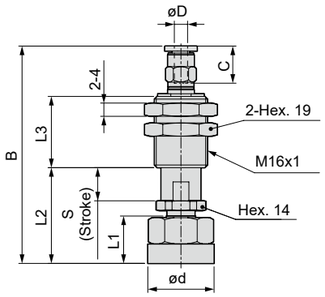
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10-10F(FH)□-2	10	1.8	57 (55.2)	11.4 (9.6)	24.4 (22.6)	21.5	8.4	10	1.0 to 2.4	26 (25)
VSP-HC10-10F(FH)□-4		4	61.1 (59.3)				11.2			27 (26)
VSP-HC10-10F(FH)□-6		6	62.4 (60.6)				11.9			28 (27)
VSP-HC10-15F(FH)□-2		1.8	67 (65.2)		29.4 (27.6)	26.5	8.4	15	1.0 to 2.7	28 (27)
VSP-HC10-15F(FH)□-4		4	71.1 (96.3)				11.2			29 (28)
VSP-HC10-15F(FH)□-6		6	72.4 (70.6)				11.9			30 (29)
VSP-HC10-20F(FH)□-2		1.8	77 (75.2)		34.4 (32.6)	31.5	8.4	20	1.0 to 3.0	30 (29)
VSP-HC10-20F(FH)□-4		4	81.1 (79.3)				11.2			31 (30)
VSP-HC10-20F(FH)□-6		6	82.4 (80.6)				11.9			32 (31)
VSP-HC10-25F(FH)□-2		1.8	87.5 (85.7)		39.4 (37.6)	37	8.4	25	1.0 to 3.0	32 (31)
VSP-HC10-25F(FH)□-4		4	91.6 (89.8)				11.2			33 (32)
VSP-HC10-25F(FH)□-6		6	92.9 (91.1)				11.9			34 (33)
VSP-HC10-30F(FH)□-2		1.8	98.5 (96.7)		44.4 (42.6)	43	8.4	30	1.0 to 3.0	34 (33)
VSP-HC10-30F(FH)□-4		4	102.6 (100.8)				11.2			35 (34)
VSP-HC10-30F(FH)□-6		6	103.9 (102.1)				11.9			36 (35)
VSP-HC10-40F(FH)□-2		1.8	120.5 (118.7)		54.4 (52.6)	55	8.4	40	1.0 to 3.0	38 (37)
VSP-HC10-40F(FH)□-4		4	124.6 (122.8)				11.2			39 (38)
VSP-HC10-40F(FH)□-6		6	125.9 (124.1)				11.9			40 (39)
VSP-HC10-50F(FH)□-2		1.8	142 (140.2)		64.4 (62.6)	66.5	8.4	50	1.0 to 3.1	43 (42)
VSP-HC10-50F(FH)□-4		4	146.1 (144.3)				11.2			44 (43)
VSP-HC10-50F(FH)□-6		6	147.4 (145.6)				11.9			45 (44)
VSP-HC15-10F(FH)□-2	15	1.8	57 (55.2)	11.4 (9.6)	24.4 (22.6)	21.5	8.4	10	1.0 to 2.4	27 (26)
VSP-HC15-10F(FH)□-4		4	61.1 (59.3)				11.2			28 (27)
VSP-HC15-10F(FH)□-6		6	62.4 (60.6)				11.9			29 (28)
VSP-HC15-15F(FH)□-2		1.8	67 (65.2)		29.4 (27.6)	26.5	8.4	15	1.0 to 2.7	29 (28)
VSP-HC15-15F(FH)□-4		4	71.1 (96.3)				11.2			30 (29)
VSP-HC15-15F(FH)□-6		6	72.4 (70.6)				11.9			31 (30)
VSP-HC15-20F(FH)□-2		1.8	77 (75.2)		34.4 (32.6)	31.5	8.4	20	1.0 to 3.0	31 (30)
VSP-HC15-20F(FH)□-4		4	81.1 (79.3)				11.2			32 (31)
VSP-HC15-20F(FH)□-6		6	82.4 (80.6)				11.9			33 (32)
VSP-HC15-25F(FH)□-2		1.8	87.5 (85.7)		39.4 (37.6)	37	8.4	25	1.0 to 3.0	33 (32)
VSP-HC15-25F(FH)□-4		4	91.6 (89.8)				11.2			34 (33)
VSP-HC15-25F(FH)□-6		6	92.9 (91.1)				11.9			35 (34)
VSP-HC15-30F(FH)□-2		1.8	98.5 (96.7)		44.4 (42.6)	43	8.4	30	1.0 to 3.0	35 (34)
VSP-HC15-30F(FH)□-4		4	102.6 (100.8)				11.2			36 (35)
VSP-HC15-30F(FH)□-6		6	103.9 (102.1)				11.9			37 (36)
VSP-HC15-40F(FH)□-2		1.8	120.5 (118.7)		54.4 (52.6)	55	8.4	40	1.0 to 3.0	39 (38)
VSP-HC15-40F(FH)□-4		4	124.6 (122.8)				11.2			40 (39)
VSP-HC15-40F(FH)□-6		6	125.9 (124.1)				11.9			41 (40)
VSP-HC15-50F(FH)□-2		1.8	142 (140.2)		64.4 (62.6)	66.5	8.4	50	1.0 to 3.1	44 (43)
VSP-HC15-50F(FH)□-4		4	146.1 (144.3)				11.2			45 (44)
VSP-HC15-50F(FH)□-6		6	147.4 (145.6)				11.9			46 (45)

* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC20, 25-□F(FH)□-2/4/6



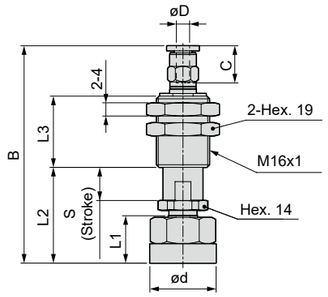
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20-10F(FH)□-2	20	1.8	61.5 (56.7)	14.3 (9.5)	28.9 (24.1)	21.5	8.4	10	1.0 to 2.4	44 (34)
VSP-HC20-10F(FH)□-4		4	65.6 (60.8)				11.2			45 (35)
VSP-HC20-10F(FH)□-6		6	66.9 (62.1)				11.9			46 (36)
VSP-HC20-15F(FH)□-2		1.8	71.5 (66.7)		33.9 (29.1)	26.5	8.4	15	1.0 to 2.7	46 (36)
VSP-HC20-15F(FH)□-4		4	75.6 (70.8)				11.2			47 (37)
VSP-HC20-15F(FH)□-6		6	76.9 (72.1)				11.9			48 (38)
VSP-HC20-20F(FH)□-2		1.8	81.5 (76.7)		38.9 (34.1)	31.5	8.4	20	1.0 to 3.0	48 (38)
VSP-HC20-20F(FH)□-4		4	85.6 (80.8)				11.2			49 (39)
VSP-HC20-20F(FH)□-6		6	86.9 (82.1)				11.9			50 (40)
VSP-HC20-25F(FH)□-2		1.8	92 (87.2)		43.9 (39.1)	37	8.4	25	1.0 to 3.0	50 (40)
VSP-HC20-25F(FH)□-4		4	96.1 (91.3)				11.2			51 (41)
VSP-HC20-25F(FH)□-6		6	97.4 (92.6)				11.9			52 (42)
VSP-HC20-30F(FH)□-2		1.8	103 (98.2)		48.9 (44.1)	43	8.4	30	1.0 to 3.0	52 (42)
VSP-HC20-30F(FH)□-4		4	107.1 (102.3)				11.2			53 (43)
VSP-HC20-30F(FH)□-6		6	108.4 (103.6)				11.9			54 (44)
VSP-HC20-40F(FH)□-2		1.8	125 (120.2)		58.9 (54.1)	55	8.4	40	1.0 to 3.0	56 (46)
VSP-HC20-40F(FH)□-4		4	129.1 (124.3)				11.2			57 (47)
VSP-HC20-40F(FH)□-6		6	130.4 (125.6)				11.9			58 (48)
VSP-HC20-50F(FH)□-2		1.8	146.5 (141.7)		68.9 (64.1)	66.5	8.4	50	1.0 to 3.1	60 (50)
VSP-HC20-50F(FH)□-4		4	150.6 (145.8)				11.2			61 (51)
VSP-HC20-50F(FH)□-6		6	151.9 (147.1)				11.9			62 (52)
VSP-HC25-10F(FH)□-2	25	1.8	61.5 (56.7)	14.3 (9.5)	28.9 (24.1)	21.5	8.4	10	1.0 to 2.4	45 (35)
VSP-HC25-10F(FH)□-4		4	65.6 (60.8)				11.2			46 (36)
VSP-HC25-10F(FH)□-6		6	66.9 (62.1)				11.9			47 (37)
VSP-HC25-15F(FH)□-2		1.8	71.5 (66.7)		33.9 (29.1)	26.5	8.4	15	1.0 to 2.7	47 (37)
VSP-HC25-15F(FH)□-4		4	75.6 (70.8)				11.2			48 (38)
VSP-HC25-15F(FH)□-6		6	76.9 (72.1)				11.9			49 (39)
VSP-HC25-20F(FH)□-2		1.8	81.5 (76.7)		38.9 (34.1)	31.5	8.4	20	1.0 to 3.0	49 (39)
VSP-HC25-20F(FH)□-4		4	85.6 (80.8)				11.2			50 (40)
VSP-HC25-20F(FH)□-6		6	86.9 (82.1)				11.9			51 (41)
VSP-HC25-25F(FH)□-2		1.8	92 (87.2)		43.9 (39.1)	37	8.4	25	1.0 to 3.0	51 (41)
VSP-HC25-25F(FH)□-4		4	96.1 (91.3)				11.2			52 (42)
VSP-HC25-25F(FH)□-6		6	97.4 (92.6)				11.9			53 (43)
VSP-HC25-30F(FH)□-2		1.8	103 (98.2)		48.9 (44.1)	43	8.4	30	1.0 to 3.0	53 (43)
VSP-HC25-30F(FH)□-4		4	107.1 (102.3)				11.2			54 (44)
VSP-HC25-30F(FH)□-6		6	108.4 (103.6)				11.9			55 (45)
VSP-HC25-40F(FH)□-2		1.8	125 (120.2)		58.9 (54.1)	55	8.4	40	1.0 to 3.0	57 (47)
VSP-HC25-40F(FH)□-4		4	129.1 (124.3)				11.2			58 (48)
VSP-HC25-40F(FH)□-6		6	130.4 (125.6)				11.9			59 (49)
VSP-HC25-50F(FH)□-2		1.8	146.5 (141.7)		68.9 (64.1)	66.5	8.4	50	1.0 to 3.1	61 (51)
VSP-HC25-50F(FH)□-4		4	150.6 (145.8)				11.2			62 (52)
VSP-HC25-50F(FH)□-6		6	151.9 (147.1)				11.9			63 (53)

* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC30-□F(FH)□-2/4/6



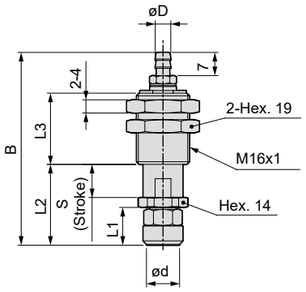
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC30-10F(FH)□-2	30	1.8	61.5 (56.7)	14.3 (9.5)	28.9 (24.1)	21.5	8.4	10	1.0 to 2.4	46 (36)
VSP-HC30-10F(FH)□-4		4	65.6 (60.8)				11.2			47 (37)
VSP-HC30-10F(FH)□-6		6	66.9 (62.1)				11.9			48 (38)
VSP-HC30-15F(FH)□-2		1.8	71.5 (66.7)		33.9 (29.1)	26.5	8.4	15	1.0 to 2.7	48 (38)
VSP-HC30-15F(FH)□-4		4	75.6 (70.8)				11.2			49 (39)
VSP-HC30-15F(FH)□-6		6	76.9 (72.1)				11.9			50 (40)
VSP-HC30-20F(FH)□-2		1.8	81.5 (76.7)		38.9 (34.1)	31.5	8.4	20	1.0 to 3.0	50 (40)
VSP-HC30-20F(FH)□-4		4	85.6 (80.8)				11.2			51 (41)
VSP-HC30-20F(FH)□-6		6	86.9 (82.1)				11.9			52 (42)
VSP-HC30-25F(FH)□-2		1.8	92 (87.2)		43.9 (39.1)	37	8.4	25	1.0 to 3.0	52 (42)
VSP-HC30-25F(FH)□-4		4	96.1 (91.3)				11.2			53 (43)
VSP-HC30-25F(FH)□-6		6	97.4 (92.6)				11.9			54 (44)
VSP-HC30-30F(FH)□-2		1.8	103 (98.2)		48.9 (44.1)	43	8.4	30	1.0 to 3.0	54 (44)
VSP-HC30-30F(FH)□-4		4	107.1 (102.3)				11.2			55 (45)
VSP-HC30-30F(FH)□-6		6	108.4 (103.6)				11.9			56 (46)
VSP-HC30-40F(FH)□-2		1.8	125 (120.2)		58.9 (54.1)	55	8.4	40	1.0 to 3.0	58 (48)
VSP-HC30-40F(FH)□-4		4	129.1 (124.3)				11.2			59 (49)
VSP-HC30-40F(FH)□-6		6	130.4 (125.6)				11.9			60 (50)
VSP-HC30-50F(FH)□-2		1.8	146.5 (141.7)		68.9 (64.1)	66.5	8.4	50	1.0 to 3.1	62 (52)
VSP-HC30-50F(FH)□-4		4	150.6 (145.8)				11.2			63 (53)
VSP-HC30-50F(FH)□-6		6	151.9 (147.1)				11.9			64 (54)

* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC10, 15-□F(FH)□-4T/6T



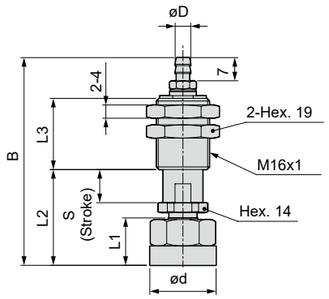
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10-10F(FH)□-4T	10	2.5	58.2 (56.4)	11.4 (9.6)	24.4 (22.6)	21.5	10	1.0 to 2.4	25 (24)
VSP-HC10-10F(FH)□-6T		4							
VSP-HC10-15F(FH)□-4T		2.5	68.2 (66.4)		29.4 (27.6)	26.5	15	1.0 to 2.7	27 (26)
VSP-HC10-15F(FH)□-6T		4							
VSP-HC10-20F(FH)□-4T		2.5	78.2 (76.4)		34.4 (32.6)	31.5	20	1.0 to 3.0	29 (28)
VSP-HC10-20F(FH)□-6T		4							
VSP-HC10-25F(FH)□-4T		2.5	88.7 (86.9)		39.4 (37.6)	37	25	1.0 to 3.0	32 (31)
VSP-HC10-25F(FH)□-6T		4							
VSP-HC10-30F(FH)□-4T		2.5	99.7 (97.9)		44.4 (42.6)	43	30	1.0 to 3.0	34 (33)
VSP-HC10-30F(FH)□-6T		4							
VSP-HC10-40F(FH)□-4T		2.5	121.7 (119.9)		54.4 (52.6)	55	40	1.0 to 3.0	38 (37)
VSP-HC10-40F(FH)□-6T		4							
VSP-HC10-50F(FH)□-4T		2.5	143.2 (141.4)		64.4 (62.6)	66.5	50	1.0 to 3.1	42 (41)
VSP-HC10-50F(FH)□-6T		4							
VSP-HC15-10F(FH)□-4T	15	2.5	58.2 (56.4)	11.4 (9.6)	24.4 (22.6)	21.5	10	1.0 to 2.4	26 (25)
VSP-HC15-10F(FH)□-6T		4							
VSP-HC15-15F(FH)□-4T		2.5	68.2 (66.4)		29.4 (27.6)	26.5	15	1.0 to 2.7	28 (27)
VSP-HC15-15F(FH)□-6T		4							
VSP-HC15-20F(FH)□-4T		2.5	78.2 (76.4)		34.4 (32.6)	31.5	20	1.0 to 3.0	30 (29)
VSP-HC15-20F(FH)□-6T		4							
VSP-HC15-25F(FH)□-4T		2.5	88.7 (86.9)		39.4 (37.6)	37	25	1.0 to 3.0	33 (32)
VSP-HC15-25F(FH)□-6T		4							
VSP-HC15-30F(FH)□-4T		2.5	99.7 (97.9)		44.4 (42.6)	43	30	1.0 to 3.0	35 (34)
VSP-HC15-30F(FH)□-6T		4							
VSP-HC15-40F(FH)□-4T		2.5	121.7 (119.9)		54.4 (52.6)	55	40	1.0 to 3.0	39 (38)
VSP-HC15-40F(FH)□-6T		4							
VSP-HC15-50F(FH)□-4T		2.5	143.2 (141.4)		64.4 (62.6)	66.5	50	1.0 to 3.1	43 (42)
VSP-HC15-50F(FH)□-6T		4							

* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC20 to 30-□F(FH)□-4T/6T



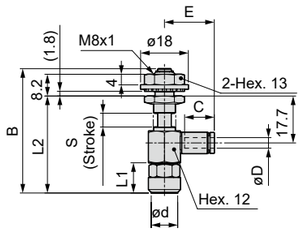
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20-10F(FH)□-4T	20	2.5	62.7 (57.9)	14.3 (9.5)	28.9 (24.1)	21.5	10	1.0 to 2.4	43 (33)
VSP-HC20-10F(FH)□-6T		4							
VSP-HC20-15F(FH)□-4T		2.5	72.7 (67.9)		33.9 (29.1)	26.5	15	1.0 to 2.7	44 (35)
VSP-HC20-15F(FH)□-6T		4							
VSP-HC20-20F(FH)□-4T		2.5	82.7 (77.9)		38.9 (34.1)	31.5	20	1.0 to 3.0	47 (37)
VSP-HC20-20F(FH)□-6T		4							
VSP-HC20-25F(FH)□-4T		2.5	93.2 (89.4)		43.9 (39.1)	37	25	1.0 to 3.0	49 (39)
VSP-HC20-25F(FH)□-6T		4							
VSP-HC20-30F(FH)□-4T		2.5	104.2 (99.4)		48.9 (44.1)	43	30	1.0 to 3.0	52 (42)
VSP-HC20-30F(FH)□-6T		4							
VSP-HC20-40F(FH)□-4T		2.5	126.2 (121.4)		58.9 (54.1)	55	40	1.0 to 3.0	56 (46)
VSP-HC20-40F(FH)□-6T		4							
VSP-HC20-50F(FH)□-4T		2.5	147.7 (142.9)		68.9 (64.1)	66.5	50	1.0 to 3.1	60 (50)
VSP-HC20-50F(FH)□-6T		4							
VSP-HC25-10F(FH)□-4T	25	2.5	62.7 (57.9)	14.3 (9.5)	28.9 (24.1)	21.5	10	1.0 to 2.4	44 (34)
VSP-HC25-10F(FH)□-6T		4							
VSP-HC25-15F(FH)□-4T		2.5	72.7 (67.9)		33.9 (29.1)	26.5	15	1.0 to 2.7	46 (36)
VSP-HC25-15F(FH)□-6T		4							
VSP-HC25-20F(FH)□-4T		2.5	82.7 (77.9)		38.9 (34.1)	31.5	20	1.0 to 3.0	48 (38)
VSP-HC25-20F(FH)□-6T		4							
VSP-HC25-25F(FH)□-4T		2.5	93.2 (89.4)		43.9 (39.1)	37	25	1.0 to 3.0	50 (40)
VSP-HC25-25F(FH)□-6T		4							
VSP-HC25-30F(FH)□-4T		2.5	104.2 (99.4)		48.9 (44.1)	43	30	1.0 to 3.0	53 (43)
VSP-HC25-30F(FH)□-6T		4							
VSP-HC25-40F(FH)□-4T		2.5	126.2 (121.4)		58.9 (54.1)	55	40	1.0 to 3.0	57 (47)
VSP-HC25-40F(FH)□-6T		4							
VSP-HC25-50F(FH)□-4T		2.5	147.7 (142.9)		68.9 (64.1)	66.5	50	1.0 to 3.1	61 (51)
VSP-HC25-50F(FH)□-6T		4							
VSP-HC30-10F(FH)□-4T	30	2.5	62.7 (57.9)	14.3 (9.5)	28.9 (24.1)	21.5	10	1.0 to 2.4	45 (35)
VSP-HC30-10F(FH)□-6T		4							
VSP-HC30-15F(FH)□-4T		2.5	72.7 (67.9)		33.9 (29.1)	26.5	15	1.0 to 2.7	47 (37)
VSP-HC30-15F(FH)□-6T		4							
VSP-HC30-20F(FH)□-4T		2.5	82.7 (77.9)		38.9 (34.1)	31.5	20	1.0 to 3.0	49 (39)
VSP-HC30-20F(FH)□-6T		4							
VSP-HC30-25F(FH)□-4T		2.5	93.2 (89.4)		43.9 (39.1)	37	25	1.0 to 3.0	51 (41)
VSP-HC30-25F(FH)□-6T		4							
VSP-HC30-30F(FH)□-4T		2.5	104.2 (99.4)		48.9 (44.1)	43	30	1.0 to 3.0	54 (44)
VSP-HC30-30F(FH)□-6T		4							
VSP-HC30-40F(FH)□-4T		2.5	126.2 (121.4)		58.9 (54.1)	55	40	1.0 to 3.0	58 (48)
VSP-HC30-40F(FH)□-6T		4							
VSP-HC30-50F(FH)□-4T		2.5	147.7 (142.9)		68.9 (64.1)	66.5	50	1.0 to 3.1	62 (52)
VSP-HC30-50F(FH)□-6T		4							

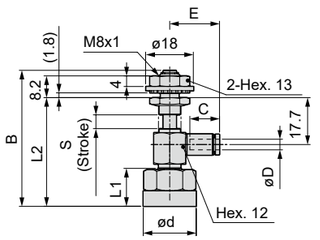
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side ,VSP-HD, Push-in fitting)

●VSP-HD10, 15F(FH)□-2/4/6



●VSP-HD20 to 30F(FH)□-2/4/6



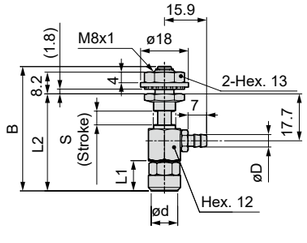
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HD10F(FH)□-2	10	1.8	46.9 (45.1)	11.4 (9.6)	36.6 (34.8)	8.4	14.7	5.2	1.6 to 2.9	36 (35)
VSP-HD10F(FH)□-4		4				11.2	18.8			37 (36)
VSP-HD10F(FH)□-6		6				11.9	20.6			38 (37)
VSP-HD15F(FH)□-2	15	1.8				8.4	14.7			37 (36)
VSP-HD15F(FH)□-4		4				11.2	18.8			38 (37)
VSP-HD15F(FH)□-6		6				11.9	20.6			39 (38)
VSP-HD20F(FH)□-2	20	1.8	51.3 (46.5)	14.3 (9.5)	41 (36.2)	8.4	14.7			49 (39)
VSP-HD20F(FH)□-4		4				11.2	18.8			50 (40)
VSP-HD20F(FH)□-6		6				11.9	20.6			51 (41)
VSP-HD25F(FH)□-2	25	1.8				8.4	14.7			50 (40)
VSP-HD25F(FH)□-4		4				11.2	18.8			51 (41)
VSP-HD25F(FH)□-6		6				11.9	20.6			52 (42)
VSP-HD30F(FH)□-2	30	1.8	51.3 (46.5)	14.3 (9.5)	41 (36.2)	8.4	14.7			51 (41)
VSP-HD30F(FH)□-4		4				11.2	18.8			52 (42)
VSP-HD30F(FH)□-6		6				11.9	20.6			53 (43)

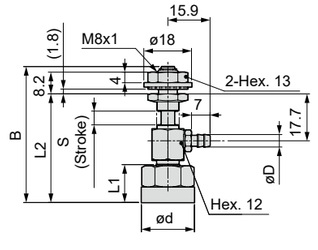
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side ,VSP-HD, Barb Fitting)

●VSP-HD10, 15F(FH)□-4T/6T



●VSP-HD20 to 30F(FH)□-4T/6T



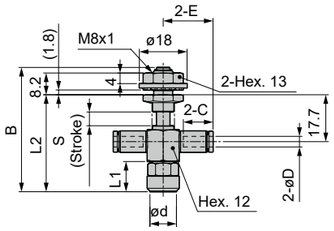
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HD10F(FH)□-4T	10	2.5	46.9 (45.1)	11.4 (9.6)	36.6 (34.8)	5.2	1.6 to 2.9	35 (34)
VSP-HD10F(FH)□-6T		4						
VSP-HD15F(FH)□-4T	15	2.5	46.9 (45.1)	11.4 (9.6)	36.6 (34.8)	5.2	1.6 to 2.9	36 (35)
VSP-HD15F(FH)□-6T		4						
VSP-HD20F(FH)□-4T	20	2.5	51.3 (46.5)	14.3 (9.5)	41 (36.2)	5.2	1.6 to 2.9	53 (52)
VSP-HD20F(FH)□-6T		4						
VSP-HD25F(FH)□-4T	25	2.5	51.3 (46.5)	14.3 (9.5)	41 (36.2)	5.2	1.6 to 2.9	54 (53)
VSP-HD25F(FH)□-6T		4						
VSP-HD30F(FH)□-4T	30	2.5	51.3 (46.5)	14.3 (9.5)	41 (36.2)	5.2	1.6 to 2.9	55 (54)
VSP-HD30F(FH)□-6T		4						

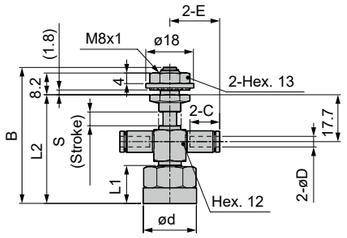
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides VSP-HDW, Push-in fitting)

●VSP-HDW10, 15F(FH)□-2/4/6



●VSP-HDW20 to 30F(FH)□-2/4/6



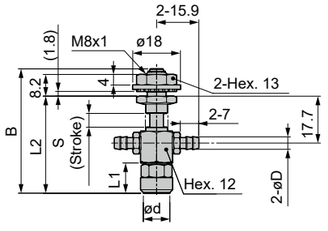
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW10F(FH)□-2	10	1.8	46.9 (45.1)	11.4 (9.6)	36.6 (34.8)	8.4	14.7	5.2	1.6 to 2.9	37 (36)
VSP-HDW10F(FH)□-4		4				11.2	18.8			39 (38)
VSP-HDW10F(FH)□-6		6				11.9	20.6			41 (40)
VSP-HDW15F(FH)□-2	15	1.8	46.9 (45.1)	11.4 (9.6)	36.6 (34.8)	8.4	14.7	5.2	1.6 to 2.9	38 (37)
VSP-HDW15F(FH)□-4		4				11.2	18.8			40 (39)
VSP-HDW15F(FH)□-6		6				11.9	20.6			42 (41)
VSP-HDW20F(FH)□-2	20	1.8	51.3 (46.5)	14.3 (9.5)	41 (36.2)	8.4	14.7	5.2	1.6 to 2.9	55 (45)
VSP-HDW20F(FH)□-4		4				11.2	18.8			57 (47)
VSP-HDW20F(FH)□-6		6				11.9	20.6			59 (49)
VSP-HDW25F(FH)□-2	25	1.8	51.3 (46.5)	14.3 (9.5)	41 (36.2)	8.4	14.7	5.2	1.6 to 2.9	56 (46)
VSP-HDW25F(FH)□-4		4				11.2	18.8			58 (48)
VSP-HDW25F(FH)□-6		6				11.9	20.6			60 (50)
VSP-HDW30F(FH)□-2	30	1.8	51.3 (46.5)	14.3 (9.5)	41 (36.2)	8.4	14.7	5.2	1.6 to 2.9	57 (47)
VSP-HDW30F(FH)□-4		4				11.2	18.8			59 (49)
VSP-HDW30F(FH)□-6		6				11.9	20.6			61 (51)

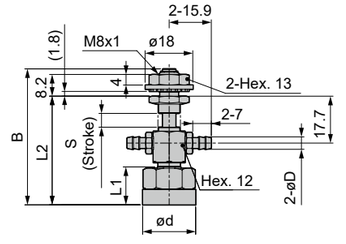
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides VSP-HDW, Barb Fitting)

●VSP-HDW10, 15F(FH)□-4T/6T



●VSP-HDW20 to 30F(FH)□-4T/6T



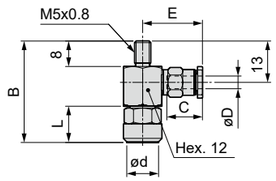
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW10F(FH)□-4T	10	2.5	46.9 (45.1)	11.4 (9.6)	36.6 (34.8)	5.2	1.6 to 2.9	36 (35)
VSP-HDW10F(FH)□-6T		4						
VSP-HDW15F(FH)□-4T	15	2.5	46.9 (45.1)	11.4 (9.6)	36.6 (34.8)	5.2	1.6 to 2.9	37 (36)
VSP-HDW15F(FH)□-6T		4						
VSP-HDW20F(FH)□-4T	20	2.5	51.3 (46.5)	14.3 (9.5)	41 (36.2)	5.2	1.6 to 2.9	54 (44)
VSP-HDW20F(FH)□-6T		4						
VSP-HDW25F(FH)□-4T	25	2.5	51.3 (46.5)	14.3 (9.5)	41 (36.2)	5.2	1.6 to 2.9	55 (45)
VSP-HDW25F(FH)□-6T		4						
VSP-HDW30F(FH)□-4T	30	2.5	51.3 (46.5)	14.3 (9.5)	41 (36.2)	5.2	1.6 to 2.9	56 (46)
VSP-HDW30F(FH)□-6T		4						

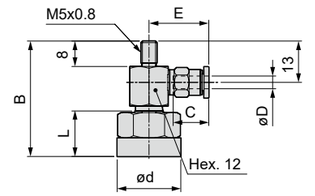
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side ,VSP-HE, Push-in fitting)

●VSP-HE10, 15F(FH)□-2/4/6



●VSP-HE20 to 30F(FH)□-2/4/6



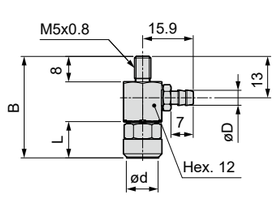
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HE10F(FH)□-2	10	1.8	31.9 (30.1)	11.4 (9.6)	8.4	14.7	22 (21)
VSP-HE10F(FH)□-4		4			11.2	18.8	23 (22)
VSP-HE10F(FH)□-6		6			11.9	20.6	24 (23)
VSP-HE15F(FH)□-2	15	1.8	31.9 (30.1)	11.4 (9.6)	8.4	14.7	23 (22)
VSP-HE15F(FH)□-4		4			11.2	18.8	24 (23)
VSP-HE15F(FH)□-6		6			11.9	20.6	25 (24)
VSP-HE20F(FH)□-2	20	1.8	36.3 (31.5)	14.3 (9.5)	8.4	14.7	38 (28)
VSP-HE20F(FH)□-4		4			11.2	18.8	39 (29)
VSP-HE20F(FH)□-6		6			11.9	20.6	40 (30)
VSP-HE25F(FH)□-2	25	1.8	36.3 (31.5)	14.3 (9.5)	8.4	14.7	39 (29)
VSP-HE25F(FH)□-4		4			11.2	18.8	40 (30)
VSP-HE25F(FH)□-6		6			11.9	20.6	41 (31)
VSP-HE30F(FH)□-2	30	1.8	36.3 (31.5)	14.3 (9.5)	8.4	14.7	40 (30)
VSP-HE30F(FH)□-4		4			11.2	18.8	41 (31)
VSP-HE30F(FH)□-6		6			11.9	20.6	42 (32)

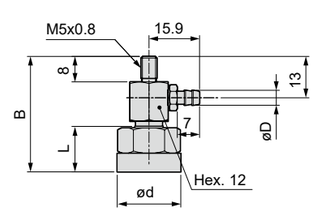
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side ,VSP-HE, Barb Fitting)

●VSP-HE10, 15F(FH)□-4T/6T



●VSP-HE20 to 30F(FH)□-4T/6T



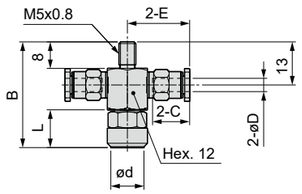
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HE10F(FH)□-4T	10	2.5	31.9 (30.1)	11.4 (9.6)	21 (20)
VSP-HE10F(FH)□-6T		4			
VSP-HE15F(FH)□-4T	15	2.5	31.9 (30.1)	11.4 (9.6)	22 (21)
VSP-HE15F(FH)□-6T		4			
VSP-HE20F(FH)□-4T	20	2.5	36.3 (31.5)	14.3 (9.5)	38 (28)
VSP-HE20F(FH)□-6T		4			
VSP-HE25F(FH)□-4T	25	2.5	36.3 (31.5)	14.3 (9.5)	39 (29)
VSP-HE25F(FH)□-6T		4			
VSP-HE30F(FH)□-4T	30	2.5	36.3 (31.5)	14.3 (9.5)	40 (30)
VSP-HE30F(FH)□-6T		4			

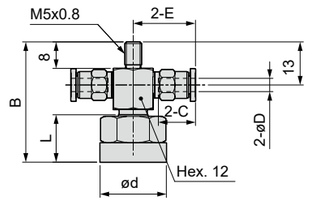
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Push-in fitting)

●VSP-HEW10, 15F(FH)□-2/4/6



●VSP-HEW20 to 30F(FH)□-2/4/6



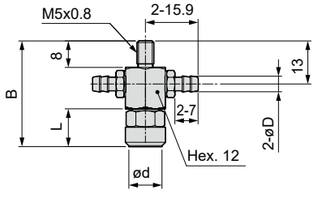
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HEW10F(FH)□-2	10	1.8	31.9 (30.1)	11.4 (9.6)	8.4	14.7	23 (22)
VSP-HEW10F(FH)□-4		4			11.2	18.8	25 (24)
VSP-HEW10F(FH)□-6		6			11.9	20.6	27 (26)
VSP-HEW15F(FH)□-2	15	1.8	31.9 (30.1)	11.4 (9.6)	8.4	14.7	24 (23)
VSP-HEW15F(FH)□-4		4			11.2	18.8	26 (25)
VSP-HEW15F(FH)□-6		6			11.9	20.6	28 (27)
VSP-HEW20F(FH)□-2	20	1.8	36.3 (31.5)	14.3 (9.5)	8.4	14.7	40 (30)
VSP-HEW20F(FH)□-4		4			11.2	18.8	42 (32)
VSP-HEW20F(FH)□-6		6			11.9	20.6	44 (34)
VSP-HEW25F(FH)□-2	25	1.8	36.3 (31.5)	14.3 (9.5)	8.4	14.7	41 (31)
VSP-HEW25F(FH)□-4		4			11.2	18.8	43 (33)
VSP-HEW25F(FH)□-6		6			11.9	20.6	45 (35)
VSP-HEW30F(FH)□-2	30	1.8	36.3 (31.5)	14.3 (9.5)	8.4	14.7	42 (32)
VSP-HEW30F(FH)□-4		4			11.2	18.8	44 (34)
VSP-HEW30F(FH)□-6		6			11.9	20.6	46 (36)

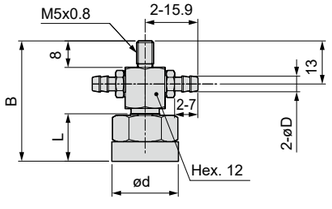
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Barb Fitting)

●VSP-HEW10, 15F(FH)□-4T/6T



●VSP-HEW20 to 30F(FH)□-4T/6T



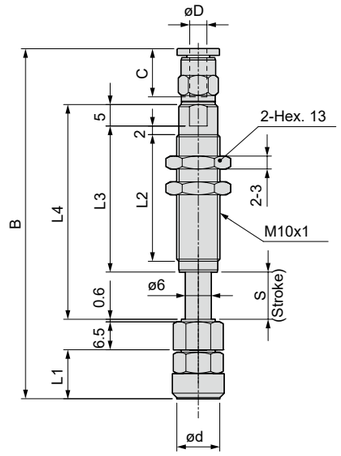
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HEW10F(FH)□-4T	10	2.5	31.9 (30.1)	11.4 (9.6)	22 (21)
VSP-HEW10F(FH)□-6T		4			
VSP-HEW15F(FH)□-4T	15	2.5	31.9 (30.1)	11.4 (9.6)	23 (22)
VSP-HEW15F(FH)□-6T		4			
VSP-HEW20F(FH)□-4T	20	2.5	36.3 (32.5)	14.3 (10.5)	39 (29)
VSP-HEW20F(FH)□-6T		4			
VSP-HEW25F(FH)□-4T	25	2.5	36.3 (32.5)	14.3 (10.5)	40 (30)
VSP-HEW25F(FH)□-6T		4			
VSP-HEW30F(FH)□-4T	30	2.5	36.3 (32.5)	14.3 (10.5)	41 (31)
VSP-HEW30F(FH)□-6T		4			

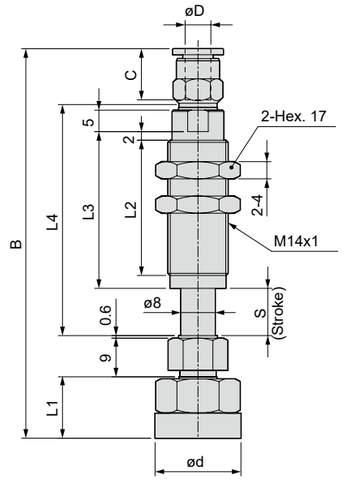
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC10, 15-□F(FH)□-4



●VSP-LFC20 to 30-□F(FH)□-4/6



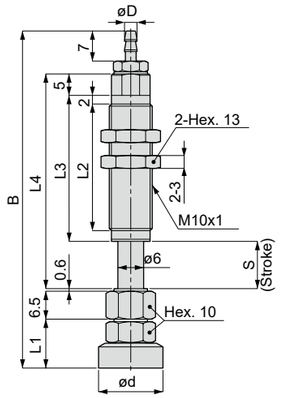
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC10-2F(FH)□-4	10	4	65.5 (63.7)	11.4 (9.6)	21.5	26	34	11.2	2	1.3 to 1.8	32 (31)
VSP-LFC10-5F(FH)□-4			71.5 (69.7)		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	34 (33)
VSP-LFC10-10F(FH)□-4			81.5 (79.7)		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	36 (35)
VSP-LFC10-15F(FH)□-4			91.5 (89.7)		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	38 (37)
VSP-LFC10-20F(FH)□-4			101.5 (99.7)		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	40 (39)
VSP-LFC15-2F(FH)□-4	15	4	65.5 (63.7)	11.4 (9.6)	21.5	26	34	11.2	2	1.3 to 1.8	33 (32)
VSP-LFC15-5F(FH)□-4			71.5 (69.7)		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	35 (34)
VSP-LFC15-10F(FH)□-4			81.5 (79.7)		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	37 (36)
VSP-LFC15-15F(FH)□-4			91.5 (89.7)		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	39 (38)
VSP-LFC15-20F(FH)□-4			101.5 (99.7)		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	41 (40)
VSP-LFC20-5F(FH)□-4	20	4	79.4 (74.6)	14.3 (9.5)	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	75 (65)
VSP-LFC20-5F(FH)□-6		6	80.7 (75.9)					11.9			76 (66)
VSP-LFC20-10F(FH)□-4		4	89.4 (84.6)		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	77 (67)
VSP-LFC20-10F(FH)□-6		6	90.7 (85.9)					11.9			78 (68)
VSP-LFC20-15F(FH)□-4		4	99.4 (94.6)		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	80 (70)
VSP-LFC20-15F(FH)□-6		6	100.7 (95.9)					11.9			81 (71)
VSP-LFC20-20F(FH)□-4		4	109.4 (104.6)		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	83 (73)
VSP-LFC20-20F(FH)□-6		6	110.7 (105.9)					11.9			84 (74)
VSP-LFC25-5F(FH)□-4	25	4	79.4 (74.6)	14.3 (9.5)	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	76 (66)
VSP-LFC25-5F(FH)□-6		6	80.7 (75.9)					11.9			77 (67)
VSP-LFC25-10F(FH)□-4		4	89.4 (84.6)		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	78 (68)
VSP-LFC25-10F(FH)□-6		6	90.7 (85.9)					11.9			79 (69)
VSP-LFC25-15F(FH)□-4		4	99.4 (94.6)		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	81 (71)
VSP-LFC25-15F(FH)□-6		6	100.7 (95.9)					11.9			82 (72)
VSP-LFC25-20F(FH)□-4		4	109.4 (104.6)		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	84 (74)
VSP-LFC25-20F(FH)□-6		6	110.7 (105.9)					11.9			85 (75)
VSP-LFC30-5F(FH)□-4	30	4	79.4 (74.6)	14.3 (9.5)	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	78 (67)
VSP-LFC30-5F(FH)□-6		6	80.7 (75.9)					11.9			79 (68)
VSP-LFC30-10F(FH)□-4		4	89.4 (84.6)		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	80 (69)
VSP-LFC30-10F(FH)□-6		6	90.7 (85.9)					11.9			81 (70)
VSP-LFC30-15F(FH)□-4		4	99.4 (94.6)		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	83 (72)
VSP-LFC30-15F(FH)□-6		6	100.7 (95.9)					11.9			84 (73)
VSP-LFC30-20F(FH)□-4		4	109.4 (104.6)		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	86 (75)
VSP-LFC30-20F(FH)□-6		6	110.7 (105.9)					11.9			87 (76)

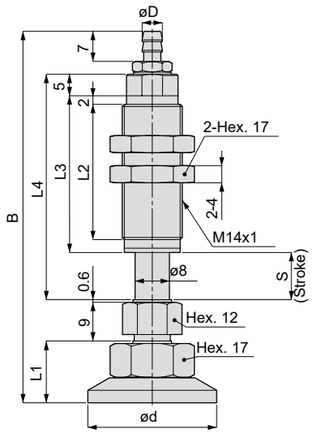
*1: Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.
*2: Figures in [ ] indicate load for the Low Load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC10, 15-□F(FH)□-4T/6T



●VSP-LFC20 to 30-□F(FH)□-4T/6T



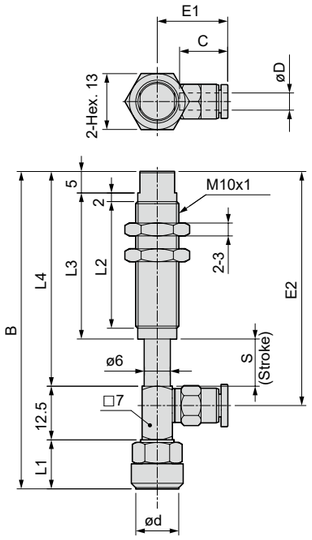
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC10-2F(FH)□-4T	10	2.5	62.6 (60.8)	11.4 (9.6)	21.5	26	34	2	1.3 to 1.8	30 (29)
VSP-LFC10-2F(FH)□-6T		4								
VSP-LFC10-5F(FH)□-4T		2.5	68.6 (66.8)		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	32 (31)
VSP-LFC10-5F(FH)□-6T		4								
VSP-LFC10-10F(FH)□-4T		2.5	78.6 (76.8)		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	34 (33)
VSP-LFC10-10F(FH)□-6T		4								
VSP-LFC10-15F(FH)□-4T		2.5	88.6 (86.8)		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	36 (35)
VSP-LFC10-15F(FH)□-6T		4								
VSP-LFC10-20F(FH)□-4T		2.5	98.6 (96.8)		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	38 (37)
VSP-LFC10-20F(FH)□-6T		4								
VSP-LFC15-2F(FH)□-4T	15	2.5	62.6 (60.8)		21.5	26	34	2	1.3 to 1.8	31 (30)
VSP-LFC15-2F(FH)□-6T		4								
VSP-LFC15-5F(FH)□-4T		2.5	68.6 (66.8)		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	33 (32)
VSP-LFC15-5F(FH)□-6T		4								
VSP-LFC15-10F(FH)□-4T		2.5	78.6 (76.8)		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	35 (34)
VSP-LFC15-10F(FH)□-6T		4								
VSP-LFC15-15F(FH)□-4T		2.5	88.6 (86.8)		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	37 (36)
VSP-LFC15-15F(FH)□-6T		4								
VSP-LFC15-20F(FH)□-4T		2.5	98.6 (96.8)		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	39 (38)
VSP-LFC15-20F(FH)□-6T		4								
VSP-LFC20-5F(FH)□-4T	20	2.5	76.5 (71.7)	14.3 (9.5)	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	70 (60)
VSP-LFC20-5F(FH)□-6T		4								
VSP-LFC20-10F(FH)□-4T		2.5	86.5 (81.7)		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	72 (62)
VSP-LFC20-10F(FH)□-6T		4								
VSP-LFC20-15F(FH)□-4T		2.5	96.5 (91.7)		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	75 (65)
VSP-LFC20-15F(FH)□-6T		4								
VSP-LFC20-20F(FH)□-4T		2.5	106.5 (101.7)		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	78 (68)
VSP-LFC20-20F(FH)□-6T		4								
VSP-LFC25-5F(FH)□-4T	25	2.5	76.5 (71.7)	14.3 (9.5)	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	71 (61)
VSP-LFC25-5F(FH)□-6T		4								
VSP-LFC25-10F(FH)□-4T		2.5	86.5 (81.7)		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	73 (63)
VSP-LFC25-10F(FH)□-6T		4								
VSP-LFC25-15F(FH)□-4T		2.5	96.5 (91.7)		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	76 (76)
VSP-LFC25-15F(FH)□-6T		4								
VSP-LFC25-20F(FH)□-4T		2.5	106.5 (101.7)		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	79 (69)
VSP-LFC25-20F(FH)□-6T		4								
VSP-LFC30-5F(FH)□-4T	30	2.5	76.5 (71.7)	14.3 (9.5)	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	73 (62)
VSP-LFC30-5F(FH)□-6T		4								
VSP-LFC30-10F(FH)□-4T		2.5	86.5 (81.7)		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	75 (64)
VSP-LFC30-10F(FH)□-6T		4								
VSP-LFC30-15F(FH)□-4T		2.5	96.5 (91.7)		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	78 (67)
VSP-LFC30-15F(FH)□-6T		4								
VSP-LFC30-20F(FH)□-4T		2.5	106.5 (101.7)		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	81 (70)
VSP-LFC30-20F(FH)□-6T		4								

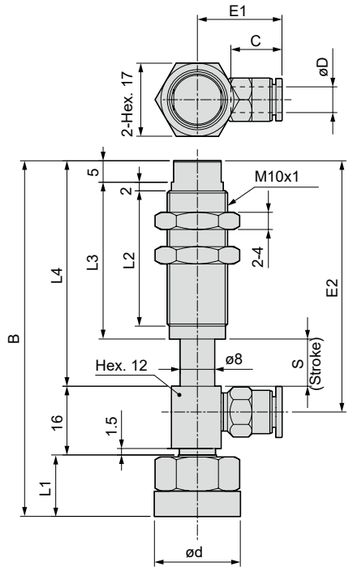
*1: Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.
*2: Figures in [ ] indicate load for the Low Load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side ,VSP-LFD, Push-in fitting)

●VSP-LFD10, 15-□F(FH)□-4



●VSP-LFD20 to 30-□F(FH)□-4/6



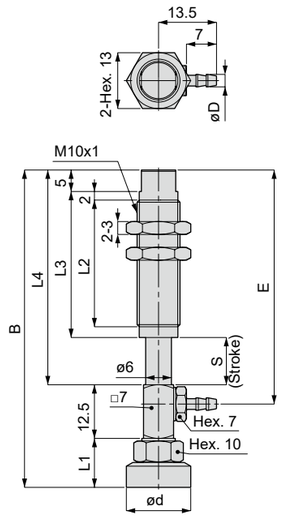
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD10-5F(FH)□-4	10	4	63.9 (62.1)	11.4 (9.6)	24.5	29	40	11.2	16.4	44.5	5	1.3 to 2.4	30 (29)
VSP-LFD10-10F(FH)□-4			73.9 (72.1)		29.5	34	50			54.5	10	1.3 to 3.3	32 (31)
VSP-LFD10-15F(FH)□-4			83.9 (82.1)		34.5	39	60			64.5	15	1.3 to 4.2	34 (33)
VSP-LFD10-20F(FH)□-4			93.9 (92.1)		39.5	44	70			74.5	20	1.3 to 5.1	36 (35)
VSP-LFD15-5F(FH)□-4	15	4	63.9 (62.1)	11.4 (9.6)	24.5	29	40	11.2	16.4	44.5	5	1.3 to 2.4	31 (30)
VSP-LFD15-10F(FH)□-4			73.9 (72.1)		29.5	34	50			54.5	10	1.3 to 3.3	33 (32)
VSP-LFD15-15F(FH)□-4			83.9 (82.1)		34.5	39	60			64.5	15	1.3 to 4.2	35 (34)
VSP-LFD15-20F(FH)□-4			93.9 (92.1)		39.5	44	70			74.5	20	1.3 to 5.1	37 (36)
VSP-LFD20-5F(FH)□-4	20	4	72.8 (68)	14.3 (9.5)	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	76 (66)
VSP-LFD20-5F(FH)□-6								11.9	19.7				77 (67)
VSP-LFD20-10F(FH)□-4			82.8 (78)		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	80 (70)
VSP-LFD20-10F(FH)□-6								11.9	19.7				81 (71)
VSP-LFD20-15F(FH)□-4			92.8 (88)		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	84 (74)
VSP-LFD20-15F(FH)□-6								11.9	19.7				85 (75)
VSP-LFD20-20F(FH)□-4			102.8 (98)		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	88 (78)
VSP-LFD20-20F(FH)□-6								11.9	19.7				89 (79)
VSP-LFD25-5F(FH)□-4	25	4	72.8 (68)	14.3 (9.5)	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	77 (67)
VSP-LFD25-5F(FH)□-6								11.9	19.7				78 (68)
VSP-LFD25-10F(FH)□-4			82.8 (78)		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	81 (71)
VSP-LFD25-10F(FH)□-6								11.9	19.7				82 (72)
VSP-LFD25-15F(FH)□-4			92.8 (88)		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	85 (75)
VSP-LFD25-15F(FH)□-6								11.9	19.7				86 (76)
VSP-LFD25-20F(FH)□-4			102.8 (98)		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	89 (79)
VSP-LFD25-20F(FH)□-6								11.9	19.7				90 (80)
VSP-LFD30-5F(FH)□-4	30	4	72.8 (68)	14.3 (9.5)	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	79 (68)
VSP-LFD30-5F(FH)□-6								11.9	19.7				80 (69)
VSP-LFD30-10F(FH)□-4			82.8 (78)		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	83 (72)
VSP-LFD30-10F(FH)□-6								11.9	19.7				84 (73)
VSP-LFD30-15F(FH)□-4			92.8 (88)		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	87 (76)
VSP-LFD30-15F(FH)□-6								11.9	19.7				88 (77)
VSP-LFD30-20F(FH)□-4			102.8 (98)		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	91 (80)
VSP-LFD30-20F(FH)□-6								11.9	19.7				92 (81)

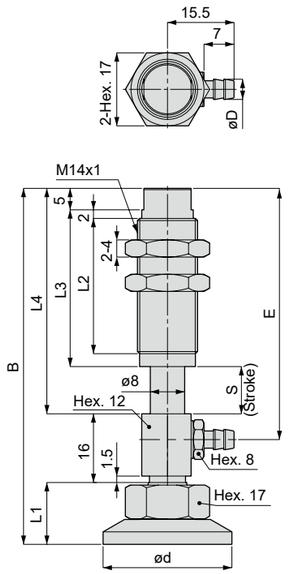
* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side ,VSP-LFD, Barb Fitting)

●VSP-LFD10, 15-□F(FH)□-4T/6T



●VSP-LFD20 to 30-□F(FH)□-4T/6T



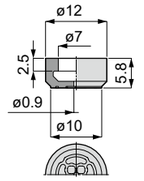
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD10-5F(FH)□-4T	10	2.5	63.9 (62.1)	11.4 (9.6)	24.5	29	40	44.5	5	1.3 to 2.4	29 (28)
VSP-LFD10-5F(FH)□-6T		4									
VSP-LFD10-10F(FH)□-4T		2.5	73.9 (72.1)		29.5	34	50	54.5	10	1.3 to 3.3	31 (30)
VSP-LFD10-10F(FH)□-6T		4									
VSP-LFD10-15F(FH)□-4T		2.5	83.9 (82.1)		34.5	39	60	64.5	15	1.3 to 4.2	33 (32)
VSP-LFD10-15F(FH)□-6T		4									
VSP-LFD10-20F(FH)□-4T		2.5	93.9 (92.1)		39.5	44	70	74.5	20	1.3 to 5.1	35 (34)
VSP-LFD10-20F(FH)□-6T		4									
VSP-LFD15-5F(FH)□-4T	15	2.5	63.9 (62.1)	11.4 (9.6)	24.5	29	40	44.5	5	1.3 to 2.4	30 (29)
VSP-LFD15-5F(FH)□-6T		4									
VSP-LFD15-10F(FH)□-4T		2.5	73.9 (72.1)		29.5	34	50	54.5	10	1.3 to 3.3	32 (31)
VSP-LFD15-10F(FH)□-6T		4									
VSP-LFD15-15F(FH)□-4T		2.5	83.9 (82.1)		34.5	39	60	64.5	15	1.3 to 4.2	34 (33)
VSP-LFD15-15F(FH)□-6T		4									
VSP-LFD15-20F(FH)□-4T		2.5	93.9 (92.1)		39.5	44	70	74.5	20	1.3 to 5.1	36 (35)
VSP-LFD15-20F(FH)□-6T		4									
VSP-LFD20-5F(FH)□-4T	20	2.5	72.8 (68)	14.3 (9.5)	26.5	31.5	42.5	48.5	5	4.5 to 6.5	72 (62)
VSP-LFD20-5F(FH)□-6T		4									
VSP-LFD20-10F(FH)□-4T		2.5	82.8 (78)		31.5	36.5	52.5	58.5	10	4.5 to 8.2	75 (65)
VSP-LFD20-10F(FH)□-6T		4									
VSP-LFD20-15F(FH)□-4T		2.5	92.8 (88)		36.5	41.5	62.5	68.5	15	4.5 to 9.9	79 (69)
VSP-LFD20-15F(FH)□-6T		4									
VSP-LFD20-20F(FH)□-4T		2.5	102.8 (98)		41.5	46.5	72.5	78.5	20	4.5 to 14.9	83 (73)
VSP-LFD20-20F(FH)□-6T		4									
VSP-LFD25-5F(FH)□-4T	25	2.5	72.8 (68)	14.3 (9.5)	26.5	31.5	42.5	48.5	5	4.5 to 6.5	73 (63)
VSP-LFD25-5F(FH)□-6T		4									
VSP-LFD25-10F(FH)□-4T		2.5	82.8 (78)		31.5	36.5	52.5	58.5	10	4.5 to 8.2	76 (66)
VSP-LFD25-10F(FH)□-6T		4									
VSP-LFD25-15F(FH)□-4T		2.5	92.8 (88)		36.5	41.5	62.5	68.5	15	4.5 to 9.9	80 (70)
VSP-LFD25-15F(FH)□-6T		4									
VSP-LFD25-20F(FH)□-4T		2.5	102.8 (98)		41.5	46.5	72.5	78.5	20	4.5 to 14.9	84 (74)
VSP-LFD25-20F(FH)□-6T		4									
VSP-LFD30-5F(FH)□-4T	30	2.5	72.8 (68)	14.3 (9.5)	26.5	31.5	42.5	48.5	5	4.5 to 6.5	75 (64)
VSP-LFD30-5F(FH)□-6T		4									
VSP-LFD30-10F(FH)□-4T		2.5	82.8 (78)		31.5	36.5	52.5	58.5	10	4.5 to 8.2	78 (67)
VSP-LFD30-10F(FH)□-6T		4									
VSP-LFD30-15F(FH)□-4T		2.5	92.8 (88)		36.5	41.5	62.5	68.5	15	4.5 to 9.9	82 (71)
VSP-LFD30-15F(FH)□-6T		4									
VSP-LFD30-20F(FH)□-4T		2.5	102.8 (98)		41.5	46.5	72.5	78.5	20	4.5 to 14.9	86 (75)
VSP-LFD30-20F(FH)□-6T		4									

* Figures in ( ) indicate dimensions for the Flat Increased Suction Flow Rate-type.

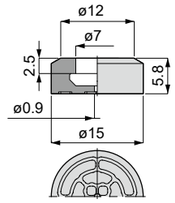
Pad Rubber Only External Dimension Diagram (Flat)

●VSPG-10F□



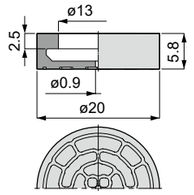
Weight: 0.6 g [0.9 g]

●VSPG-15F□



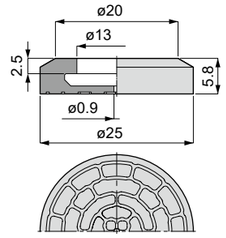
Weight: 1.1 g [1.7 g]

●VSPG-20F□



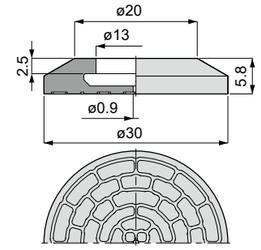
Weight: 1.4 g [2.3 g]

●VSPG-25F□



Weight: 2.6 g [4.1 g]

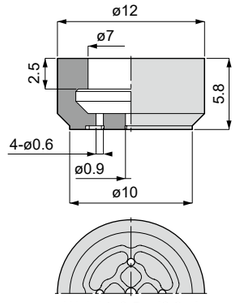
●VSPG-30F□



Weight: 3.5 g [5.1 g]

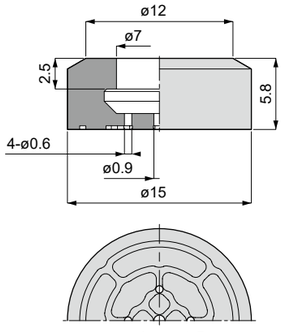
Pad Rubber Only External Dimension Diagram (Flat Increased Suction Flow RatE-type)

●VSPG-10FH□



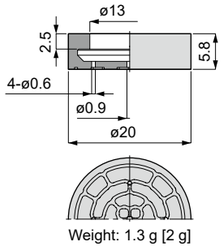
Weight: 0.5 g [0.8 g]

●VSPG-15FH□



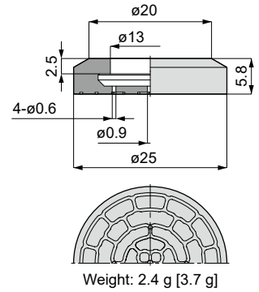
Weight: 1 g [1.5 g]

●VSPG-20FH□



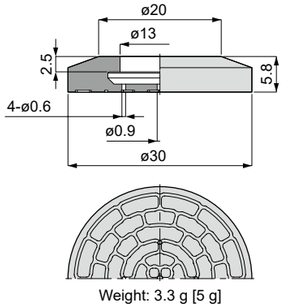
Weight: 1.3 g [2 g]

●VSPG-25FH□



Weight: 2.4 g [3.7 g]

●VSPG-30FH□

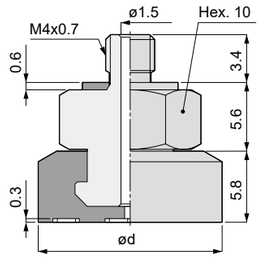


Weight: 3.3 g [5 g]

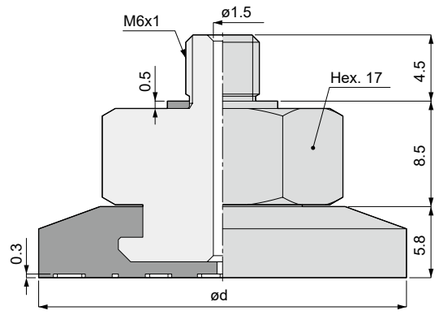
Weight: Values in [ ] are for fluororubber only.

Pad Rubber + Set with Fixing Screw External Dimension Diagram (Flat)

●VSPG-10, 15F□A



●VSPG-20 to 30F□A

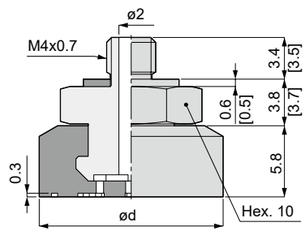


Unit: mm

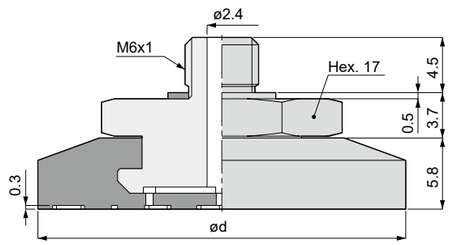
Model No.	Pad Diameter ød	Weight (g)
VSPG-10F□A	10	5.6 [5.9]
VSPG-15F□A	15	6.1 [6.7]
VSPG-20F□A	20	23.4 [24.3]
VSPG-25F□A	25	24.6 [26.1]
VSPG-30F□A	30	25.5 [27.1]

Pad Rubber + Set with Fixing Screw External Dimension Diagram (Flat Increased Suction Flow RatE-type)

●VSPG-10, 15FH□A



●VSPG-20 to 30FH□A



Unit: mm

Model No.	Pad Diameter ød	Weight (g)
VSPG-10FH□A	10	4.3 [4.6]
VSPG-15FH□A	15	4.8 [5.3]
VSPG-20FH□A	20	13.3 [14]
VSPG-25FH□A	25	14.4 [15.7]
VSPG-30FH□A	30	15.3 [17]

Weight: Values in [ ] are for fluororubber only.

MEMO

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Suction Pad, Flat Type / Flat Increased Suction Flow Rate-type, VSP-□F□, □FH□ Series

Design / Selection

Caution

Flat types may have difficulty adsorbing breathable workpieces or workpieces that deform easily under their own weight during suction. When using, please select after conducting actual suction tests.

MEMO

Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechanical Break Function
Ending



Suction Pad, Suction Mark Prevention Type

VSP-□Q□ Series

Suction pad using resin material for the pad, resistant to suction marks.

RoHS

Ideal for transporting liquid crystal glass, in painting processes, and for semiconductor manufacturing equipment.

Abundant holder variations

Shape	16 types

- Standard.... 5 types
- Compact... Class 4
- Low dust generation ..... 2 types
- Lightweight ... 3 types
- Low back 2 types

Piping Connection	5 types

- Push-in fitting (ø1.8 to ø6) ..... 3 types
- Barbed fitting (M3, M5).... 2 types

Stroke	11 types

2 mm to 50 mm
(Depends on pad diameter, holder)

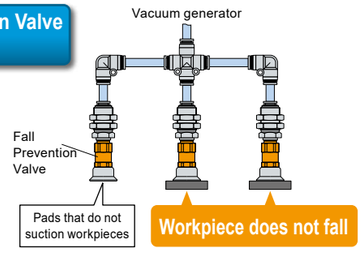
Low particle generation holders (LFC, LFD) with less abrasion powder from sliding and low noise are available

Flexible holder and resin pad allow suction of inclined workpieces.

Workpiece release properties during vacuum breaking are also good.

Assembly option for drop prevention valve (V) that reduces vacuum drop in separate circuits even without a workpiece is supported

Drop Prevention Valve (V)

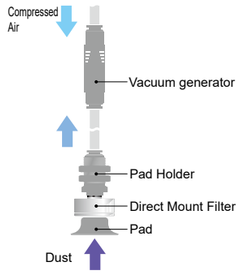


Removes dust during workpiece suction

Direct Mount Filter (T1, T2)

Filtration Area
T1: 1.7 cm², T2: 7 cm²





Adopts resin pads, preventing rubber material transfer that causes suction marks.

3 types of resin materials available for the pad part. Easily replaceable without removing the main body using a spanner and hexagon wrench.

	K	M	KE
Material	PEEK	POM	Conductive PEEK
			
Features	Excellent chemical resistance and heat resistance, also high mechanical strength. Ideal for liquid crystal/semiconductor manufacturing equipment.	Good wear resistance, self-lubricating properties, and excellent cost balance. Applicable to various manufacturing lines such as food-related and packaging machinery.	In addition to PEEK's material properties, it has conductivity and dissipates static electricity. Also applicable to electronic component manufacturing equipment.

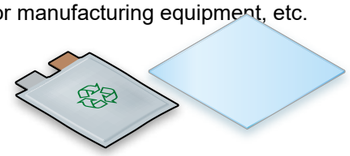
Pad Shape



Standardly equipped with a flexible holder, allowing suction of inclined workpieces.

Recommended Workpiece

Ideal for liquid crystal glass, painting processes, semiconductor manufacturing equipment, etc.



Pad Diameter

3 types	10	20	30

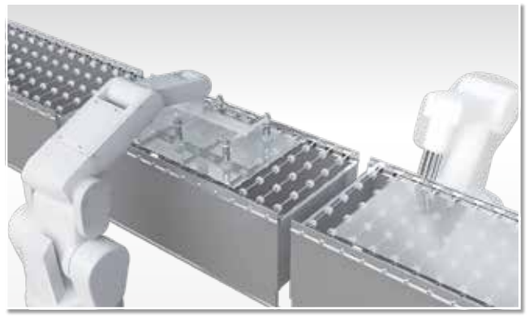
Pad Material

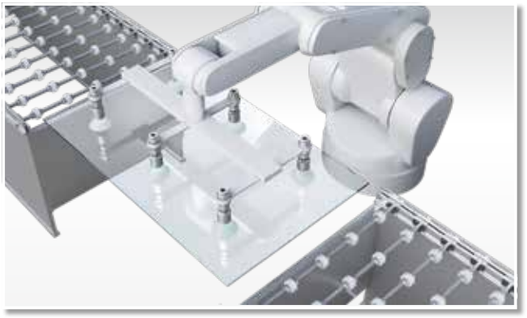
3 types	PEEK	POM	Conductive PEEK

Solution Examples

Workpieces sensitive to suction marks

Hard pads using resin instead of rubber allow handling of glass substrates, solar cells, etc., without leaving suction marks.





Model No. Notation

●Suction Mark Prevention Type

Suction Pad

VSP	C	10	-20	Q	K	4		V	T1
Model No.	❶ Holder Shape	❷ Pad Diameter	❸ Stroke Option	❹ Pad Shape	❺ Pad Material	❼ Connection Port Shape	❽ Buffer Load	❾ Drop Prevention Valve	❿ Direct Mount Filter

Resin Pad Only

VSPG	10	Q	K	RP
Model No.	❷ Pad Diameter	❹ Pad Shape	❺ Pad Material	❻ Flexible Holder

❶ Holder Shape

Buffer Present/Absent	Type	Vacuum Outlet	Code	
Fixed Type	Standard	Top Direction	A	
	Compact		MA	
	Standard	Side ,Direction	B	
	Compact		MB	
	Low Profile		HE	
	Low Profile	Both Sides Direction	HEW	
Buffer Type	Standard	Top Direction	C	
	Compact		MC	
	Low Particle Generation		LFC	
	Lightweight		HC	
	Standard	Side ,Direction	D	
	Compact		MD	
	Low Particle Generation		LFD	
	Lightweight		HD	
	Lightweight	Both Sides Direction	HDW	
	Standard	Direct Mount Type	F	

❷ Pad Diameter

Code	Content
10	ø10
20	ø20
30	ø30

❸ Stroke Option

Content	Holder Shape C	D	HC	LFC	LFD	Code	
Specified Stroke, or No Buffer	●	●				Blank	*1, *2
Stroke 2 mm				●		-2	*3
Stroke 5 mm				●	●	-5	
Stroke 10 mm	●	●	●	●	●	-10	
Stroke 15 mm	●	●	●	●	●	-15	
Stroke 20 mm	●	●	●	●	●	-20	
Stroke 25 mm			●			-25	
Stroke 30 mm	●	●	●			-30	
Stroke 40 mm	●	●	●			-40	
Stroke 50 mm	●	●	●			-50	

*1: For ❶ Holder Shape other than C, D, HC, LFC, and LFD, ❸ is 'Blank'.
*2: For the specified stroke of ❸ 'Blank', please confirm the stroke dimension on the external dimension drawing.
*3: When ❷ Pad Diameter is 10, -2 can be selected for ❸.

❹ Pad Shape

Code	Content	
Q	Suction Mark Prevention Type	

❺ Pad Material

Code	Content	
K	PEEK	
M	POM	
KE	Conductive PEEK	

❻ Flexible Holder

Code	Content
Blank	Resin Pad + With Flexible Holder
RP	Resin Pad Only

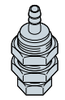
Model No. Notation

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

●Design compatible with rechargeable battery manufacturing process

VSP – ..... – P4□

❼ Connection Size/Shape

Content	Holder Shape A	B	C	D	MA	MB	MC	MD	LFC	LFD	HC	HD	HDW	HE	HEW	Code	
(❶: When F)																Blank	
ø1.8, Push-in fitting						●	●	●			●	●	●	●	●	2	
ø4, Push-in fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4	
ø6, Push-in fitting	●	●	●	●		●		●	●	●	●	●	●	●	●	6	
ø4, Push-in fitting, without spring cover			●	●												4C	
ø6, Push-in fitting, without spring cover			●	●												6C	
ø4, Barb fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4T	
ø6, Barb fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	6T	
ø4, Barb fitting, without spring cover			●	●												4TC	
ø6, Barb fitting, without spring cover			●	●												6TC	

*1: For ❶ Holder Shape C and D with ❸ Stroke Option -20 to -50, options 4C, 6C, 4TC, and 6TC can be selected for (7). Additionally, for (3) Stroke Option -30 to -50, only 4C, 6C, 4TC, and 6TC can be selected for ❼.
*2: The selectable Port Size/Shape varies depending on the ❷ Pad Diameter. Please check the combination table below.

❽ Buffer Load

Code	Content	
Blank	Standard Load or No Buffer	*1 *2
L	Low Load (1/4 of Standard Load)	

*1: For ❶ Holder Shape other than LFC, ❽ is 'Blank'.
*2: For ❸ Stroke Option -2, ❽ is 'Blank'.

❾ Drop Prevention Valve

Code	Content	
Blank	None	
V	With Drop Prevention Valve	 Drop Prevention Valve

*1: For dimensions with the drop prevention valve, please refer to P. 1083 and P. 1084.

❿ Direct Mount Filter

Code	Content	
Blank	None	
T1	With Direct Mount Filter (Filtration Area 1.7 cm²)	 Direct Mount Filter
T2	With Direct Mount Filter (Filtration Area 7 cm²)	*1

*1 ❿T2 can be selected when ❷ Pad Diameter is 20 or 30.
*2: For dimensions with the direct mount filter, please refer to P. 1064.

Holder Shape - Pad Diameter - Pad Shape - Connection Size/Shape Combination Table

Holder Shape	Pad Diameter	Push-in fitting ø4 4	ø4 4C	ø6 6	ø6 6C	Barb fitting ø4 4T	ø4 4TC	ø6 6T	ø6 6TC
A	ø10			●				●	
	ø20, ø30	●		●		●		●	
B	All sizes	●		●		●		●	
C	All sizes	●	●	●	●	●	●	●	●
D	All sizes	●	●	●	●	●	●	●	●

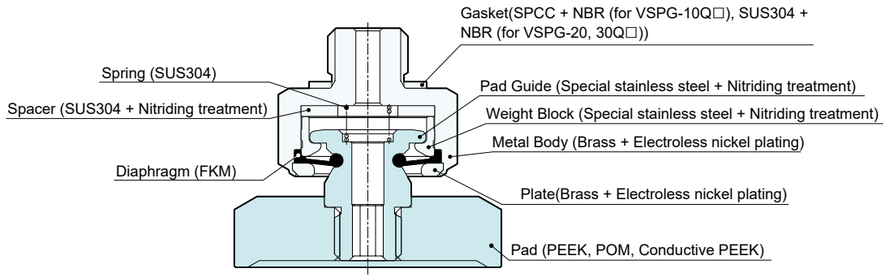
Holder Shape	Pad Diameter	Thread M14	Thread Blank
F	All sizes		●

Holder Shape	Pad Diameter	Push-in fitting ø1.8 2	ø4 4	ø6 6	Barb fitting ø4 4T	ø6 6T
MA	ø10		●		●	
	ø20, ø30		●		●	●
MB	All sizes	●	●	●	●	●
MC	All sizes	●	●		●	●
MD	All sizes	●	●	●	●	●
LFC	ø10		●		●	●
	ø20, ø30		●	●	●	●
LFD	ø10		●		●	●
	ø20, ø30		●	●	●	●
HC	All sizes	●	●	●	●	●
HD	All sizes	●	●	●	●	●
HDW	All sizes	●	●	●	●	●
HE	All sizes	●	●	●	●	●
HEW	All sizes	●	●	●	●	●

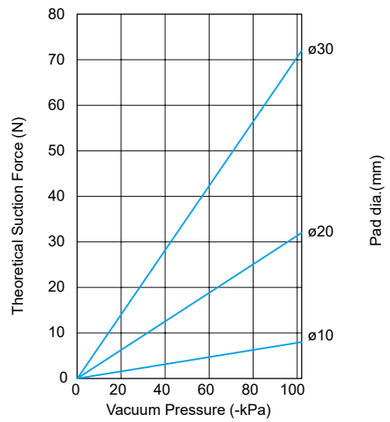
Flexible Holder Part Specifications

Item	Flexible Holder Part
Operating Fluid	Air
Operating Vacuum Pressure	-100 to 0 kPa
Operating Temperature Range	0 to 60°C (No freezing)

Internal Structure Diagram



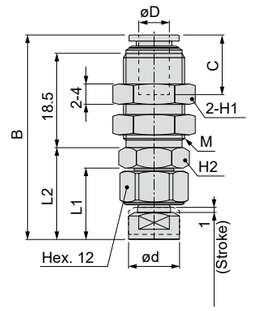
Theoretical Suction Force



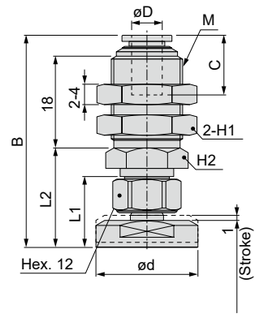
*Theoretical suction force is a value under static conditions. For actual use, apply a safety factor of 1/4 for horizontal lifting and 1/8 for vertical lifting.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Push-in fitting)

●VSP-A10Q□-6



●VSP-A20, 30Q□4/6

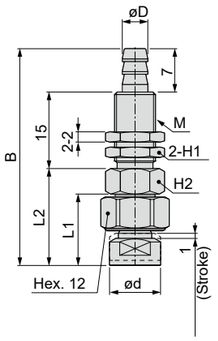


Unit: mm

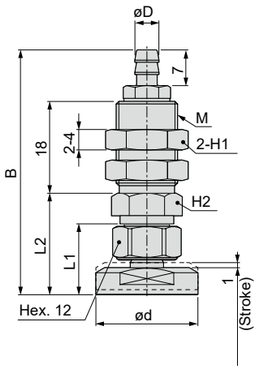
Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	Tube End C	Width Across Flats H1	Width Across Flats H2	Weight (g)
VSP-A10Q□-6	10	6	M12x1	40.3	14	18	11.9	14	12	27
VSP-A20Q□-4	20	4	M12x1	50.8	13.9	19.9	11.2	14	12	35
VSP-A20Q□-6		6	M14x1	41.8		19.5	11.9	17	14	41
VSP-A30Q□-4	30	4	M12x1	50.8	13.9	19.9	11.2	14	12	39
VSP-A30Q□-6		6	M14x1	41.8		19.5	11.9	17	14	45

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Barb fitting)

●VSP-A10Q□-6T



●VSP-A20, 30Q□-4T/6T

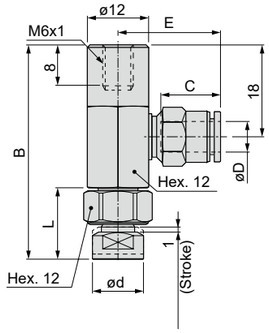


Unit: mm

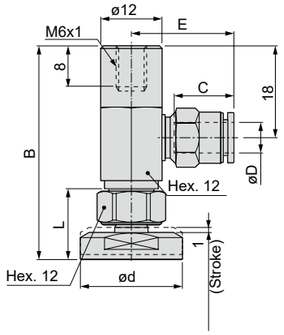
Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	Width Across Flats H1	Width Across Flats H2	Weight (g)
VSP-A10Q□-6T	10	6	M8x0.75	41	14	19	10	10	17
VSP-A20Q□-4T	20	4	M12x1	47.9	13.9	19.9	14	12	34
VSP-A20Q□-6T		6							
VSP-A30Q□-4T	30	4	M12x1	47.9	13.9	19.9	14	12	36
VSP-A30Q□-6T		6							

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Push-in fitting)

●VSP-B10Q□4/6



●VSP-B20, 30Q□4/6

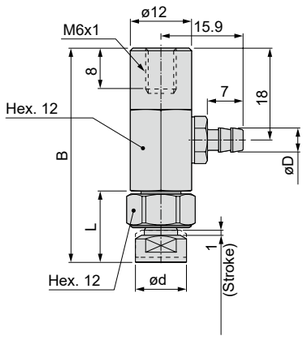


Unit: mm

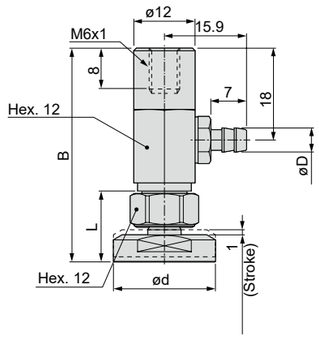
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-B10Q□-4	10	4	42	14	11.2	18.8	35
VSP-B10Q□-6		6			11.9	20.1	36
VSP-B20Q□-4	20	4	41.9	13.9	11.2	18.8	37
VSP-B20Q□-6		6			11.9	20.1	38
VSP-B30Q□-4	30	4	41.9	13.9	11.2	18.8	41
VSP-B30Q□-6		6			11.9	20.1	42

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Barb Fitting)

●VSP-B10Q□-4T/6T



●VSP-B20, 30Q□-4T/6T

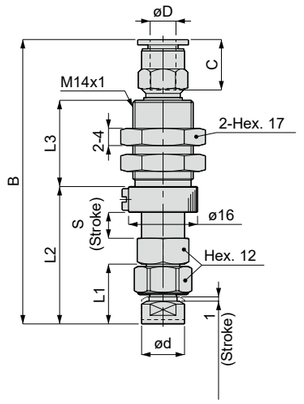


Unit: mm

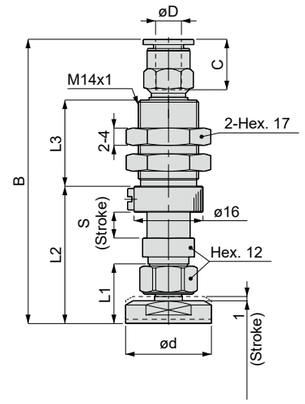
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-B10Q□-4T	10	2.5	42	14	34
VSP-B10Q□-6T		4			
VSP-B20Q□-4T	20	2.5	41.9	13.9	36
VSP-B20Q□-6T		4			
VSP-B30Q□-4T	30	2.5	41.9	13.9	38
VSP-B30Q□-6T		4			

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C10Q□4/6
●VSP-C10-□Q□-4/6



●VSP-C20, 30Q□4/6
●VSP-C20, 30-□Q□-4/6

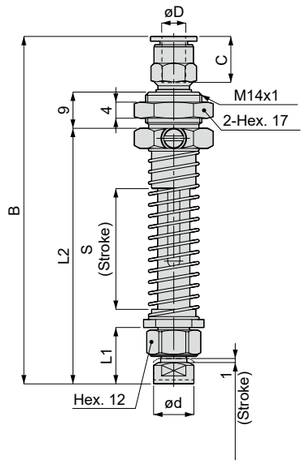


Unit: mm

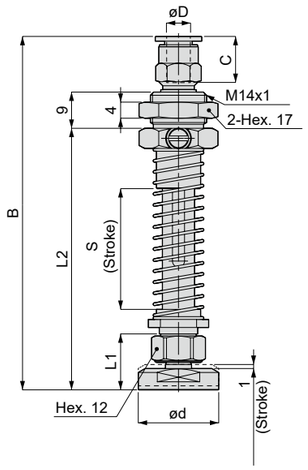
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C10Q□-4	10	4	65	14	32	20	11.2	6	4.0 to 7.1	40
VSP-C10Q□-6		6	66.3				11.9			41
VSP-C10-10Q□-4		4	69.5		36.5		11.2	10	2.0 to 5.2	41
VSP-C10-10Q□-6		6	70.8				11.9			42
VSP-C10-15Q□-4		4	79.5		41.5	25	11.2	15	2.0 to 5.9	46
VSP-C10-15Q□-6		6	80.8				11.9			47
VSP-C10-20Q□-4		4	95.5		48.5	34	11.2	20	1.1 to 4.8	54
VSP-C10-20Q□-6		6	96.8				11.9			55
VSP-C20Q□-4	20	4	64.9	13.9	31.9	20	11.2	6	7.0 to 12.6	43
VSP-C20Q□-6		6	66.2				11.9			44
VSP-C20-10Q□-4		4	70.9		37.9		11.2	10	3.3 to 10.0	45
VSP-C20-10Q□-6		6	72.2				11.9			46
VSP-C20-15Q□-4		4	80.9		42.9	25	11.2	15	3.3 to 10.4	50
VSP-C20-15Q□-6		6	82.2				11.9			51
VSP-C20-20Q□-4		4	96.9		49.9	34	11.2	20	2.0 to 8.7	57
VSP-C20-20Q□-6		6	98.2				11.9			58
VSP-C30Q□-4	30	4	64.9	13.9	31.9	20	11.2	6	7.0 to 12.6	47
VSP-C30Q□-6		6	66.2				11.9			48
VSP-C30-10Q□-4		4	70.9		37.9		11.2	10	3.3 to 10.0	49
VSP-C30-10Q□-6		6	72.2				11.9			50
VSP-C30-15Q□-4		4	80.9		42.9	25	11.2	15	3.3 to 10.4	54
VSP-C30-15Q□-6		6	82.2				11.9			55
VSP-C30-20Q□-4		4	96.9		49.9	34	11.2	20	2.0 to 8.7	61
VSP-C30-20Q□-6		6	98.2				11.9			62

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting without Spring Cover)

●VSP-C10-□Q□-4C/6C



●VSP-C20, 30-□Q□-4C/6C

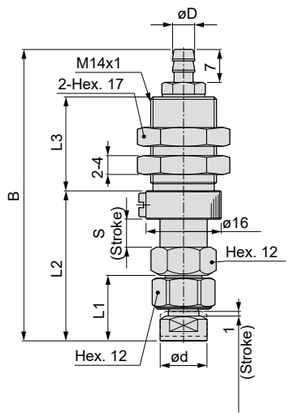


Unit: mm

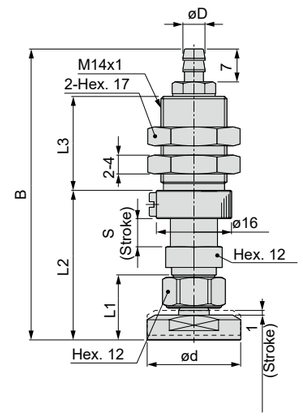
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C10-20Q□-4C	10	4	72.5	14	50.5	11.2	20	1.5 to 4.9	49
VSP-C10-20Q□-6C		6	73.8			11.9			50
VSP-C10-30Q□-4C		4	85.5		63.5	11.2	30	1.1 to 4.8	54
VSP-C10-30Q□-6C		6	86.8			11.9			55
VSP-C10-40Q□-4C		4	98.5		76.5	11.2	40	1.0 to 4.5	59
VSP-C10-40Q□-6C		6	99.8			11.9			60
VSP-C10-50Q□-4C		4	111.5		89.5	11.2	50	0.9 to 4.5	64
VSP-C10-50Q□-6C		6	112.8			11.9			65
VSP-C20-20Q□-4C	20	4	73.9	13.9	51.9	11.2	20	1.5 to 4.9	53
VSP-C20-20Q□-6C		6	75.2			11.9			54
VSP-C20-30Q□-4C		4	86.9		64.9	11.2	30	1.1 to 4.8	58
VSP-C20-30Q□-6C		6	88.2			11.9			59
VSP-C20-40Q□-4C		4	99.9		77.9	11.2	40	1.0 to 4.5	63
VSP-C20-40Q□-6C		6	101.2			11.9			64
VSP-C20-50Q□-4C		4	112.9		90.9	11.2	50	0.9 to 4.5	68
VSP-C20-50Q□-6C		6	114.2			11.9			69
VSP-C30-20Q□-4C	30	4	73.9	13.9	51.9	11.2	20	1.5 to 4.9	57
VSP-C30-20Q□-6C		6	75.2			11.9			58
VSP-C30-30Q□-4C		4	86.9		64.9	11.2	30	1.1 to 4.8	62
VSP-C30-30Q□-6C		6	88.2			11.9			63
VSP-C30-40Q□-4C		4	99.9		77.9	11.2	40	1.0 to 4.5	67
VSP-C30-40Q□-6C		6	101.2			11.9			68
VSP-C30-50Q□-4C		4	112.9		90.9	11.2	50	0.9 to 4.5	72
VSP-C30-50Q□-6C		6	114.2			11.9			73

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C10Q□-4T/6T
●VSP-C10-□Q□-4T/6T



●VSP-C20, 30Q□-4T/6T
●VSP-C20, 30-□Q□-4T/6T

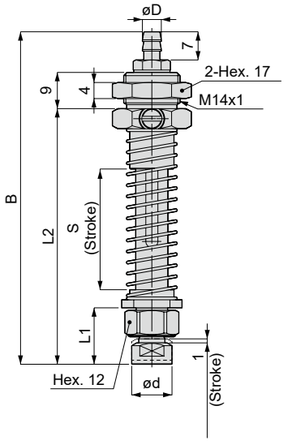


Unit: mm

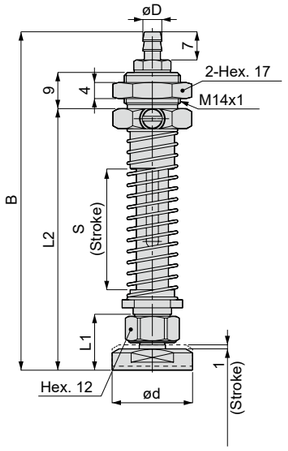
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-C10Q□-4T	10	4	62.1	14	32	20	6	4.0 to 7.1	39
VSP-C10Q□-6T		6							
VSP-C10-10Q□-4T		4	66.6		36.5		10	2.0 to 5.2	40
VSP-C10-10Q□-6T		6							
VSP-C10-15Q□-4T		4	76.6		41.5	25	15	2.0 to 5.9	45
VSP-C10-15Q□-6T		6							
VSP-C10-20Q□-4T		4	92.6		48.5	34	20	1.1 to 4.8	53
VSP-C10-20Q□-6T		6							
VSP-C20Q□-4T	20	4	62	13.9	31.9	20	6	7.0 to 12.6	43
VSP-C20Q□-6T		6							
VSP-C20-10Q□-4T		4	68		37.9		10	3.3 to 10.0	44
VSP-C20-10Q□-6T		6							
VSP-C20-15Q□-4T		4	78		42.9	25	15	3.3 to 10.4	49
VSP-C20-15Q□-6T		6							
VSP-C20-20Q□-4T		4	94		49.9	34	20	2.0 to 8.7	56
VSP-C20-20Q□-6T		6							
VSP-C30Q□-4T	30	4	62	13.9	31.9	20	6	7.0 to 12.6	46
VSP-C30Q□-6T		6							
VSP-C30-10Q□-4T		4	68		37.9		10	3.3 to 10.0	48
VSP-C30-10Q□-6T		6							
VSP-C30-15Q□-4T		4	78		42.9	25	15	3.3 to 10.4	53
VSP-C30-15Q□-6T		6							
VSP-C30-20Q□-4T		4	94		49.9	34	20	1.1 to 4.8	60
VSP-C30-20Q□-6T		6							

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting without Spring Cover)

●VSP-C10-□Q□-4TC/6TC



●VSP-C20, 30-□Q□-4TC/6TC

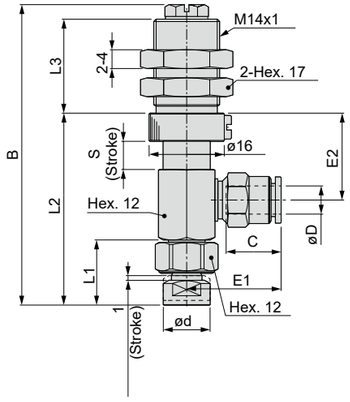


Unit: mm

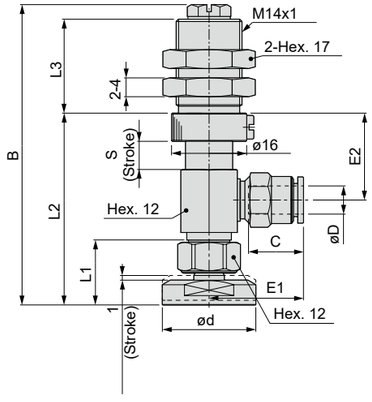
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C10-20Q□-4TC	10	4	69.6	14	50.5	20	1.5 to 4.9	47
VSP-C10-20Q□-6TC		6						
VSP-C10-30Q□-4TC		4	82.6		63.5	30	1.1 to 4.8	53
VSP-C10-30Q□-6TC		6						
VSP-C10-40Q□-4TC		4	95.6		76.5	40	1.0 to 4.5	58
VSP-C10-40Q□-6TC		6						
VSP-C10-50Q□-4TC		4	108.6		89.5	50	0.9 to 4.5	63
VSP-C10-50Q□-6TC		6						
VSP-C20-20Q□-4TC	20	4	71	13.9	51.9	20	1.5 to 4.9	52
VSP-C20-20Q□-6TC		6						
VSP-C20-30Q□-4TC		4	84		64.9	30	1.1 to 4.8	57
VSP-C20-30Q□-6TC		6						
VSP-C20-40Q□-4TC		4	97		77.9	40	1.0 to 4.5	62
VSP-C20-40Q□-6TC		6						
VSP-C20-50Q□-4TC		4	110		90.9	50	0.9 to 4.5	67
VSP-C20-50Q□-6TC		6						
VSP-C30-20Q□-4TC	30	4	71	13.9	51.9	20	1.5 to 4.9	56
VSP-C30-20Q□-6TC		6						
VSP-C30-30Q□-4TC		4	84		64.9	30	1.1 to 4.8	61
VSP-C30-30Q□-6TC		6						
VSP-C30-40Q□-4TC		4	97		77.9	40	1.0 to 4.5	66
VSP-C30-40Q□-6TC		6						
VSP-C30-50Q□-4TC		4	110		90.9	50	0.9 to 4.5	71
VSP-C30-50Q□-6TC		6						

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D10Q□4/6
●VSP-D10-□Q□-4/6



●VSP-D20, 30Q□4/6
●VSP-D20, 30-□Q□-4/6

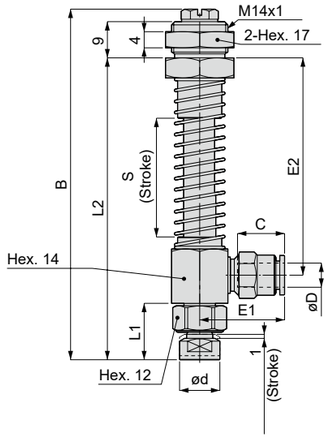


Unit: mm

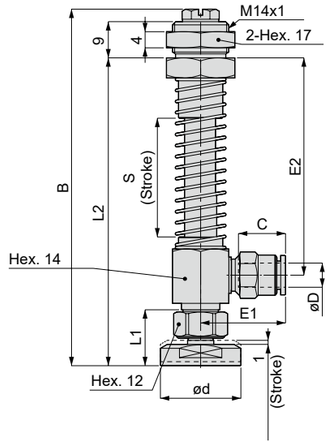
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D10Q□-4	10	4	64.1	14	41	20	11.2	18.8	18.5	6	4.0 to 7.1	52
VSP-D10Q□-6		6					11.9	20.1				53
VSP-D10-10Q□-4		4	69.1		46		11.2	18.8	25	10	2.0 to 5.2	55
VSP-D10-10Q□-6		6					11.9	20.1				56
VSP-D10-15Q□-4		4	79.1		51	25	11.2	18.8	30	15	2.0 to 5.9	61
VSP-D10-15Q□-6		6					11.9	20.1				62
VSP-D10-20Q□-4		4	95.1		58	34	11.2	18.8	37	20	1.1 to 4.8	71
VSP-D10-20Q□-6		6					11.9	20.1				72
VSP-D20Q□-4	20	4	64	13.9	40.9	20	11.2	18.8	18.5	6	7.0 to 12.6	55
VSP-D20Q□-6		6					11.9	20.1				56
VSP-D20-10Q□-4		4	70		46.9		11.2	18.8	24.5	10	3.3 to 10.0	58
VSP-D20-10Q□-6		6					11.9	20.1				59
VSP-D20-15Q□-4		4	80		51.9	25	11.2	18.8	29.5	15	3.3 to 10.4	65
VSP-D20-15Q□-6		6					11.9	20.1				66
VSP-D20-20Q□-4		4	96		58.9	34	11.2	18.8	36.5	20	2.0 to 8.7	75
VSP-D20-20Q□-6		6					11.9	20.1				76
VSP-D30Q□-4	30	4	64	13.9	40.9	20	11.2	18.8	18.5	6	7.0 to 12.6	59
VSP-D30Q□-6		6					11.9	20.1				60
VSP-D30-10Q□-4		4	70		46.9		11.2	18.8	24.5	10	3.3 to 10.0	62
VSP-D30-10Q□-6		6					11.9	20.1				63
VSP-D30-15Q□-4		4	80		51.9	25	11.2	18.8	29.5	15	3.3 to 10.4	69
VSP-D30-15Q□-6		6					11.9	20.1				70
VSP-D30-20Q□-4		4	96		58.9	34	11.2	18.8	36.5	20	2.0 to 8.7	79
VSP-D30-20Q□-6		6					11.9	20.1				80

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in Fitting without Spring Cover)

●VSP-D10-□Q□-4C/6C



●VSP-D20, 30-□Q□-4C/6C

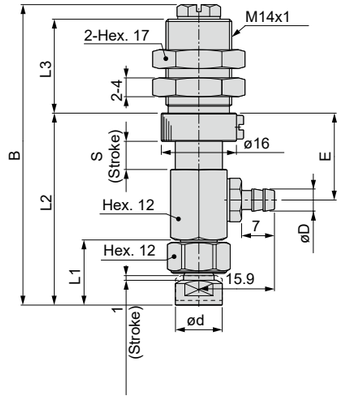


Unit: mm

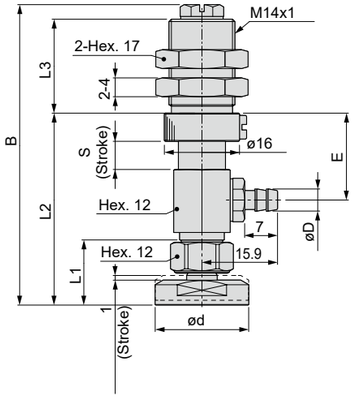
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D10-20Q□-4C	10	4	74.1	14	62	11.2	19.8	40.5	20	1.5 to 4.9	70
VSP-D10-20Q□-6C		6				11.9	21.1				71
VSP-D10-30Q□-4C		4	87.1		75	11.2	19.8	53.5	30	1.1 to 4.8	77
VSP-D10-30Q□-6C		6				11.9	21.1				78
VSP-D10-40Q□-4C		4	100.1		88	11.2	19.8	66.5	40	1.0 to 4.5	83
VSP-D10-40Q□-6C		6				11.9	21.1				84
VSP-D10-50Q□-4C		4	113.1		101	11.2	19.8	79.5	50	0.9 to 4.5	90
VSP-D10-50Q□-6C		6				11.9	21.1				91
VSP-D20-20Q□-4C	20	4	75.5	13.9	63.4	11.2	19.8	41	20	1.5 to 4.9	73
VSP-D20-20Q□-6C		6				11.9	21.1				74
VSP-D20-30Q□-4C		4	88.5		76.4	11.2	19.8	54	30	1.1 to 4.8	80
VSP-D20-30Q□-6C		6				11.9	21.1				81
VSP-D20-40Q□-4C		4	101.5		89.4	11.2	19.8	67	40	1.0 to 4.5	86
VSP-D20-40Q□-6C		6				11.9	21.1				87
VSP-D20-50Q□-4C		4	114.5		102.4	11.2	19.8	80	50	0.9 to 4.5	93
VSP-D20-50Q□-6C		6				11.9	21.1				94
VSP-D30-20Q□-4C	30	4	75.5	13.9	63.4	11.2	19.8	41	20	1.5 to 4.9	77
VSP-D30-20Q□-6C		6				11.9	21.1				78
VSP-D30-30Q□-4C		4	88.5		76.4	11.2	19.8	54	30	1.1 to 4.8	84
VSP-D30-30Q□-6C		6				11.9	21.1				85
VSP-D30-40Q□-4C		4	101.5		89.4	11.2	19.8	67	40	1.0 to 4.5	90
VSP-D30-40Q□-6C		6				11.9	21.1				91
VSP-D30-50Q□-4C		4	114.5		102.4	11.2	19.8	80	50	0.9 to 4.5	97
VSP-D30-50Q□-6C		6				11.9	21.1				98

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D10Q□-4T/6T
●VSP-D10-□Q□-4T/-6T



●VSP-D20, 30Q□-4T/6T
●VSP-D20, 30-□Q□-4T/-6T

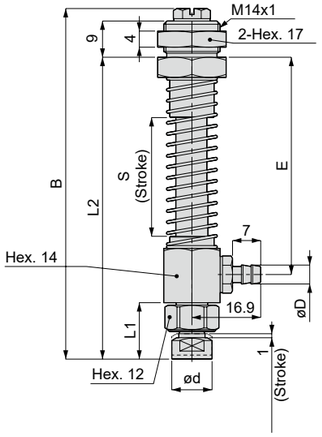


Unit: mm

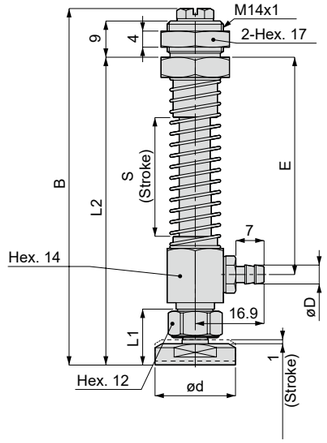
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D10Q□-4T	10	2.5	64.1	14	41	20	18.5	6	4.0 to 7.1	51
VSP-D10Q□-6T		4								
VSP-D10-10Q□-4T		2.5	69.1		46		25	10	2.0 to 5.2	56
VSP-D10-10Q□-6T		4								
VSP-D10-15Q□-4T		2.5	79.1		51	25	30	15	2.0 to 5.9	62
VSP-D10-15Q□-6T		4								
VSP-D10-20Q□-4T		2.5	95.1		58	34	37	20	1.1 to 4.8	72
VSP-D10-20Q□-6T		4								
VSP-D20Q□-4T	20	2.5	64	13.9	40.9	20	18.5	6	7.0 to 12.6	53
VSP-D20Q□-6T		4								
VSP-D20-10Q□-4T		2.5	70		46.9		24.5	10	3.3 to 10.0	59
VSP-D20-10Q□-6T		4								
VSP-D20-15Q□-4T		2.5	80		51.9	25	29.5	15	3.3 to 10.4	66
VSP-D20-15Q□-6T		4								
VSP-D20-20Q□-4T		2.5	96		58.9	34	36.5	20	2.0 to 8.7	76
VSP-D20-20Q□-6T		4								
VSP-D30Q□-4T	30	2.5	64	13.9	40.9	20	18.5	6	7.0 to 12.6	57
VSP-D30Q□-6T		4								
VSP-D30-10Q□-4T		2.5	70		46.9		24.5	10	3.3 to 10.0	63
VSP-D30-10Q□-6T		4								
VSP-D30-15Q□-4T		2.5	80		51.9	25	29.5	15	3.3 to 10.4	70
VSP-D30-15Q□-6T		4								
VSP-D30-20Q□-4T		2.5	96		58.9	34	36.5	20	2.0 to 8.7	80
VSP-D30-20Q□-6T		4								

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D10-□Q□-4TC/6TC



●VSP-D20, 30-□Q□-4TC/6TC

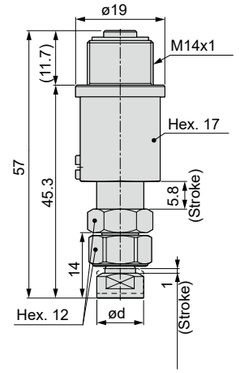


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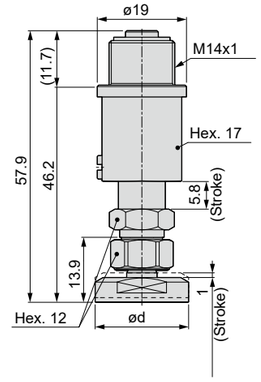
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D10-20Q□-4TC	10	2.5	74.1	14	62	40.5	20	1.5 to 4.9	69
VSP-D10-20Q□-6TC		4							
VSP-D10-30Q□-4TC		2.5	87.1		75	53.5	30	1.1 to 4.8	76
VSP-D10-30Q□-6TC		4							
VSP-D10-40Q□-4TC		2.5	100.1		88	66.5	40	1.0 to 4.5	82
VSP-D10-40Q□-6TC		4							
VSP-D10-50Q□-4TC		2.5	113.1		101	79.5	50	0.9 to 4.5	89
VSP-D10-50Q□-6TC		4							
VSP-D20-20Q□-4TC	20	4	75.5	13.9	63.4	41	20	1.5 to 4.9	72
VSP-D20-20Q□-6TC		6							
VSP-D20-30Q□-4TC		4	88.5		76.4	54	30	1.1 to 4.8	79
VSP-D20-30Q□-6TC		6							
VSP-D20-40Q□-4TC		4	101.5		89.4	67	40	1.0 to 4.5	85
VSP-D20-40Q□-6TC		6							
VSP-D20-50Q□-4TC		4	114.5		102.4	80	50	0.9 to 4.5	92
VSP-D20-50Q□-6TC		6							
VSP-D30-20Q□-4TC	30	4	75.5	13.9	63.4	41	20	1.5 to 4.9	76
VSP-D30-20Q□-6TC		6							
VSP-D30-30Q□-4TC		4	88.5		76.4	54	30	1.1 to 4.8	83
VSP-D30-30Q□-6TC		6							
VSP-D30-40Q□-4TC		4	101.5		89.4	67	40	1.0 to 4.5	89
VSP-D30-40Q□-6TC		6							
VSP-D30-50Q□-4TC		4	114.5		102.4	80	50	0.9 to 4.5	96
VSP-D30-50Q□-6TC		6							

External Dimension Diagram (Direct Mount, Fixed Type, VSP-F, Male Thread)

●VSP-F10Q□



●VSP-F20, 30Q□

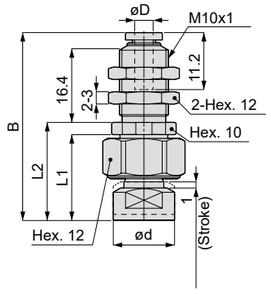


Unit: mm

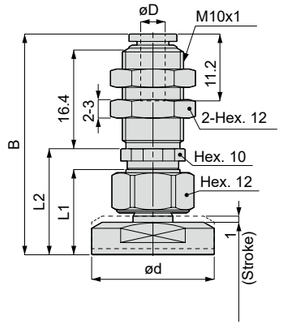
Model No.	Pad Diameter ød	Spring Force (N)	Weight (g)
VSP-F10Q□	10	7.9 to 15	61
VSP-F20Q□	20	7.9 to 15	63
VSP-F30Q□	30	7.9 to 15	67

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Push-in fitting)

●VSP-MA10Q□-4



●VSP-MA20, 30Q□-4

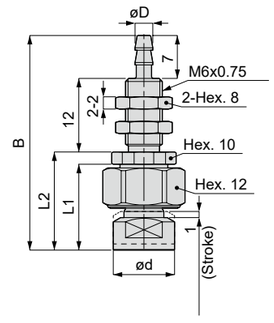


Unit: mm

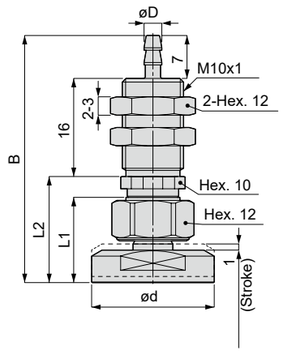
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Weight (g)
VSP-MA10Q□-4	10	4	35	14	16	12
VSP-MA20Q□-4	20	4	36.5	13.9	17.5	16
VSP-MA30Q□-4	30	4	36.5	13.9	17.5	20

External Dimension Diagram (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MA, Barb Fitting)

●VSP-MA10Q□-4T



●VSP-MA20, 30Q□-4T/6T

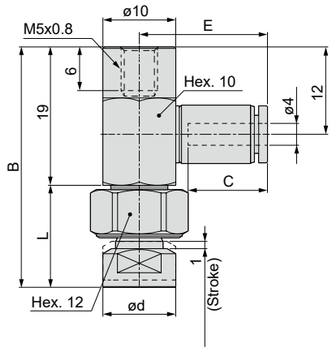


Unit: mm

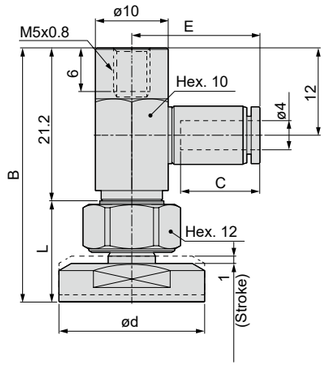
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Weight (g)
VSP-MA10Q□-4T	10	2.5	35	14	16	9.1
VSP-MA20Q□-4T	20	2.5	40.5	13.9	17.5	16
VSP-MA20Q□-6T		4				
VSP-MA30Q□-4T	30	2.5	40.5	13.9	17.5	20
VSP-MA30Q□-6T		4				

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Push-in fitting)

●VSP-MB10Q□-2/4/6



●VSP-MB20, 30Q□-2/4/6

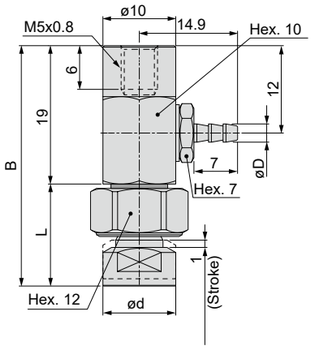


Unit: mm

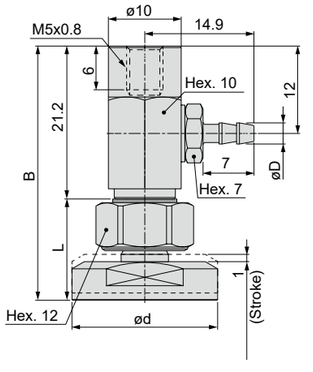
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-MB10Q□-2	10	1.8	33	14	8.4	13.7	13
VSP-MB10Q□-4		4			11.2	17.8	14
VSP-MB10Q□-6		6			11.9	19.6	15
VSP-MB20Q□-2	20	1.8	35.1	13.9	8.4	13.7	16
VSP-MB20Q□-4		4			11.2	17.8	17
VSP-MB20Q□-6		6			11.9	19.6	18
VSP-MB30Q□-2	30	1.8	35.1	13.9	8.4	13.7	20
VSP-MB30Q□-4		4			11.2	17.8	21
VSP-MB30Q□-6		6			11.9	19.6	22

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Barb Fitting)

●VSP-MB10Q□-4T/6T



●VSP-MB20, 30Q□-4T/6T

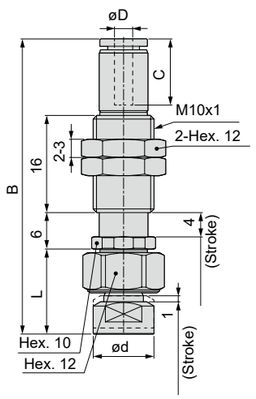


Unit: mm

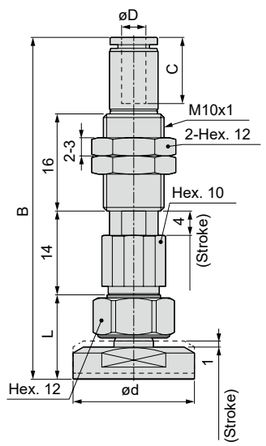
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-MB10Q□-4T	10	2.5	33	14	13
VSP-MB10Q□-6T		4			
VSP-MB20Q□-4T	20	2.5	35.1	13.9	16
VSP-MB20Q□-6T		4			
VSP-MB30Q□-4T	30	2.5	35.1	13.9	20
VSP-MB30Q□-6T		4			

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Push-in fitting)

●VSP-MC10Q□-2/4



●VSP-MC20, 30Q□-2/4

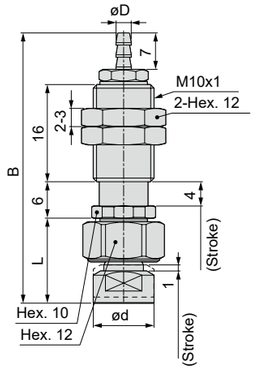


Unit: mm

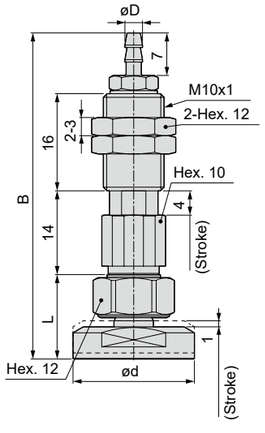
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	Spring Force (N)	Weight (g)
VSP-MC10Q□-2	10	1.8	44.9	14	8.4	1 to 1.3	21
VSP-MC10Q□-4		4	49		11.2		22
VSP-MC20Q□-2	20	1.8	52.8	13.9	8.4	1 to 1.3	27
VSP-MC20Q□-4		4	56.9		11.2		28
VSP-MC30Q□-2	30	1.8	52.8	13.9	8.4	1 to 1.3	31
VSP-MC30Q□-4		4	56.9		11.2		32

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Barb Fitting)

●VSP-MC10Q□-4T/6T



●VSP-MC20, 30Q□-4T/6T

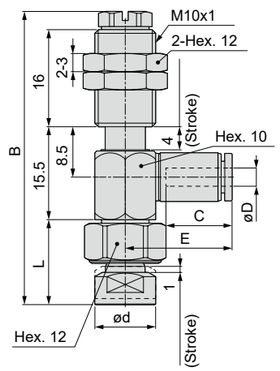


Unit: mm

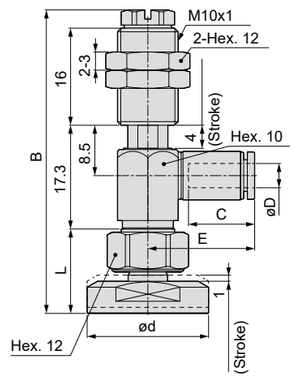
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MC10Q□-4T	10	2.5	46.1	14	0.5 to 0.6	20
VSP-MC10Q□-6T		4				
VSP-MC20Q□-4T	20	2.5	53.8	13.9	1 to 1.3	27
VSP-MC20Q□-6T		4				
VSP-MC30Q□-4T	30	2.5	53.8	13.9	1 to 1.3	31
VSP-MC30Q□-6T		4				

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Push-in fitting)

●VSP-MD10Q□-2/4/6



●VSP-MD20, 30Q□-2/4/6

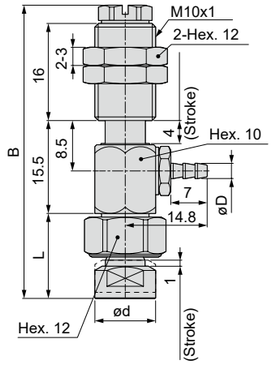


Unit: mm

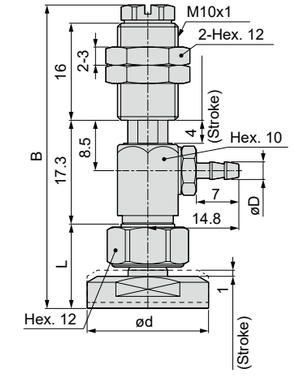
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Spring Force (N)	Weight (g)
VSP-MD10Q□-2	10	1.8	48.5	14	8.4	13.6	1 to 1.3	28
VSP-MD10Q□-4		4			11.2	17.7		29
VSP-MD10Q□-6		6			11.9	19.5		30
VSP-MD20Q□-2	20	1.8	50.2	13.9	8.4	13.6	1 to 1.3	31
VSP-MD20Q□-4		4			11.2	17.7		32
VSP-MD20Q□-6		6			11.9	19.5		33
VSP-MD30Q□-2	30	1.8	50.2	13.9	8.4	13.6	1 to 1.3	35
VSP-MD30Q□-4		4			11.2	17.7		36
VSP-MD30Q□-6		6			11.9	19.5		37

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Barb Fitting)

●VSP-MD10Q□-4T/6T



●VSP-MD20, 30Q□-4T/6T

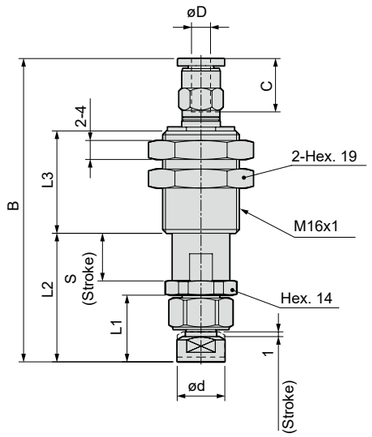


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MD10Q□-4T	10	2.5	48.5	14	1 to 1.3	28
VSP-MD10Q□-6T		4				
VSP-MD20Q□-4T	20	2.5	50.2	13.9	1 to 1.3	30
VSP-MD20Q□-6T		4				
VSP-MD30Q□-4T	30	2.5	50.2	13.9	1 to 1.3	34
VSP-MD30Q□-6T		4				

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC10-□Q□-2/4/6

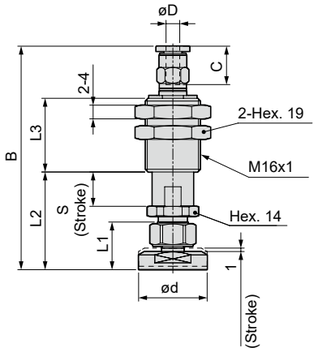


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10-10Q□-2	10	1.8	59.6	14	27	21.5	8.4	10	1.0 to 2.4	28
VSP-HC10-10Q□-4		4	63.7				11.2			29
VSP-HC10-10Q□-6		6	65				11.9			30
VSP-HC10-15Q□-2		1.8	69.6		32	26.5	8.4	15	1.0 to 2.7	30
VSP-HC10-15Q□-4		4	73.7				11.2			31
VSP-HC10-15Q□-6		6	75				11.9			32
VSP-HC10-20Q□-2		1.8	79.6		37	31.5	8.4	20	1.0 to 3.0	32
VSP-HC10-20Q□-4		4	83.7				11.2			33
VSP-HC10-20Q□-6		6	85				11.9			34
VSP-HC10-25Q□-2		1.8	90.1		42	37	8.4	25		34
VSP-HC10-25Q□-4		4	94.2				11.2			35
VSP-HC10-25Q□-6		6	95.5				11.9			36
VSP-HC10-30Q□-2		1.8	101.1		47	43	8.4	30		36
VSP-HC10-30Q□-4		4	105.2				11.2			37
VSP-HC10-30Q□-6		6	106.5				11.9			38
VSP-HC10-40Q□-2		1.8	123.1		57	55	8.4	40		40
VSP-HC10-40Q□-4		4	127.2				11.2			41
VSP-HC10-40Q□-6		6	128.5				11.9			42
VSP-HC10-50Q□-2		1.8	144.6		67	66.5	8.4	50	1.0 to 3.1	45
VSP-HC10-50Q□-4		4	148.7				11.2			46
VSP-HC10-50Q□-6		6	150				11.9			47

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC20, 30-□Q□-2/4/6

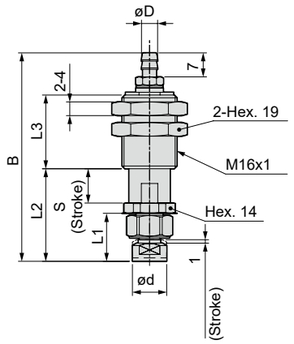


Unit: mm

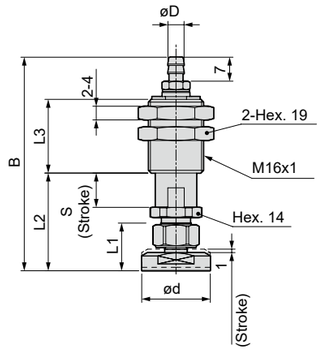
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20-10Q□-2	20	1.8	61.1	13.9	28.5	21.5	8.4	10	1.0 to 2.4	37
VSP-HC20-10Q□-4		4	65.2				11.2			38
VSP-HC20-10Q□-6		6	66.5				11.9			39
VSP-HC20-15Q□-2		1.8	71.1		33.5	26.5	8.4	15	1.0 to 2.7	39
VSP-HC20-15Q□-4		4	75.2				11.2			40
VSP-HC20-15Q□-6		6	76.5				11.9			41
VSP-HC20-20Q□-2		1.8	81.1		38.5	31.5	8.4	20	1.0 to 3.0	41
VSP-HC20-20Q□-4		4	85.2				11.2			42
VSP-HC20-20Q□-6		6	86.5				11.9			43
VSP-HC20-25Q□-2		1.8	91.6		43.5	37	8.4	25		43
VSP-HC20-25Q□-4		4	95.7				11.2			44
VSP-HC20-25Q□-6		6	97				11.9			45
VSP-HC20-30Q□-2		1.8	102.6		48.5	43	8.4	30		45
VSP-HC20-30Q□-4		4	106.7				11.2			46
VSP-HC20-30Q□-6		6	108				11.9			47
VSP-HC20-40Q□-2		1.8	124.6		58.5	55	8.4	40		49
VSP-HC20-40Q□-4		4	128.7				11.2			50
VSP-HC20-40Q□-6		6	130				11.9			51
VSP-HC20-50Q□-2		1.8	146.1		68.5	66.5	8.4	50	1.0 to 3.1	53
VSP-HC20-50Q□-4		4	150.2				11.2			54
VSP-HC20-50Q□-6		6	151.5				11.9			55
VSP-HC30-10Q□-2	30	1.8	61.1	13.9	28.5	21.5	8.4	10	1.0 to 2.4	47
VSP-HC30-10Q□-4		4	65.2				11.2			48
VSP-HC30-10Q□-6		6	66.5				11.9			49
VSP-HC30-15Q□-2		1.8	71.1		33.5	26.5	8.4	15	1.0 to 2.7	49
VSP-HC30-15Q□-4		4	75.2				11.2			50
VSP-HC30-15Q□-6		6	76.5				11.9			51
VSP-HC30-20Q□-2		1.8	81.1		38.5	31.5	8.4	20	1.0 to 3.0	51
VSP-HC30-20Q□-4		4	85.2				11.2			52
VSP-HC30-20Q□-6		6	86.5				11.9			53
VSP-HC30-25Q□-2		1.8	91.6		43.5	37	8.4	25		53
VSP-HC30-25Q□-4		4	95.7				11.2			54
VSP-HC30-25Q□-6		6	97				11.9			55
VSP-HC30-30Q□-2		1.8	102.6		48.5	43	8.4	30		55
VSP-HC30-30Q□-4		4	106.7				11.2			56
VSP-HC30-30Q□-6		6	108				11.9			57
VSP-HC30-40Q□-2		1.8	124.6		58.5	55	8.4	40		59
VSP-HC30-40Q□-4		4	128.7				11.2			60
VSP-HC30-40Q□-6		6	130				11.9			61
VSP-HC30-50Q□-2		1.8	146.1		68.5	66.5	8.4	50	1.0 to 3.1	63
VSP-HC30-50Q□-4		4	150.2				11.2			64
VSP-HC30-50Q□-6		6	151.5				11.9			65

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC10-□Q□-4T/6T



●VSP-HC20, 30-□Q□-4T/6T

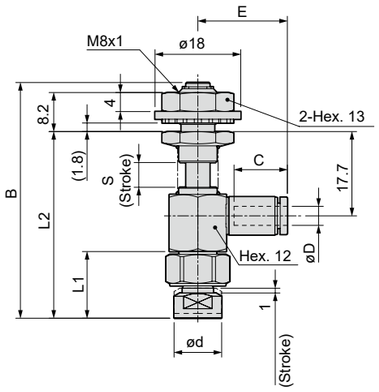


Unit: mm

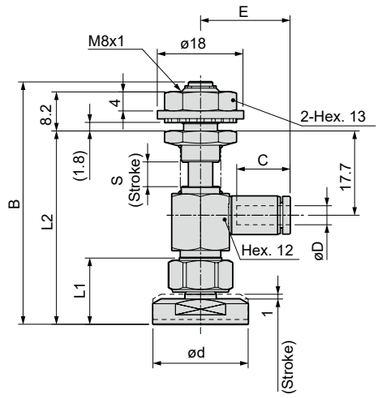
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10-10Q□-4T	10	2.5	60.8	14	27	21.5	10	1.0 to 2.4	27
VSP-HC10-10Q□-6T		4							
VSP-HC10-15Q□-4T		2.5	70.8		32	26.5	15	1.0 to 2.7	29
VSP-HC10-15Q□-6T		4							
VSP-HC10-20Q□-4T		2.5	80.8		37	31.5	20	1.0 to 3.0	31
VSP-HC10-20Q□-6T		4							
VSP-HC10-25Q□-4T		2.5	91.3		42	37	25		34
VSP-HC10-25Q□-6T		4							
VSP-HC10-30Q□-4T		2.5	102.3		47	43	30		36
VSP-HC10-30Q□-6T		4							
VSP-HC10-40Q□-4T		2.5	124.3		57	55	40		40
VSP-HC10-40Q□-6T		4							
VSP-HC10-50Q□-4T		2.5	145.8		67	66.5	50	1.0 to 3.1	44
VSP-HC10-50Q□-6T		4							
VSP-HC20-10Q□-4T	20	2.5	62.3	13.9	28.5	21.5	10	1.0 to 2.4	36
VSP-HC20-10Q□-6T		4							
VSP-HC20-15Q□-4T		2.5	72.3		33.5	26.5	15	1.0 to 2.7	38
VSP-HC20-15Q□-6T		4							
VSP-HC20-20Q□-4T		2.5	82.3		38.5	31.5	20	1.0 to 3.0	48
VSP-HC20-20Q□-6T		4							
VSP-HC20-25Q□-4T		2.5	92.8		43.5	37	25		51
VSP-HC20-25Q□-6T		4							
VSP-HC20-30Q□-4T		2.5	103.8		48.5	43	30		53
VSP-HC20-30Q□-6T		4							
VSP-HC20-40Q□-4T		2.5	125.8		58.5	55	40		57
VSP-HC20-40Q□-6T		4							
VSP-HC20-50Q□-4T		2.5	147.3		68.5	66.5	50	1.0 to 3.1	61
VSP-HC20-50Q□-6T		4							
VSP-HC30-10Q□-4T	30	2.5	62.3	13.9	28.5	21.5	10	1.0 to 2.4	46
VSP-HC30-10Q□-6T		4							
VSP-HC30-15Q□-4T		2.5	72.3		33.5	26.5	15	1.0 to 2.7	48
VSP-HC30-15Q□-6T		4							
VSP-HC30-20Q□-4T		2.5	82.3		38.5	31.5	20	1.0 to 3.0	58
VSP-HC30-20Q□-6T		4							
VSP-HC30-25Q□-4T		2.5	92.8		43.5	37	25		61
VSP-HC30-25Q□-6T		4							
VSP-HC30-30Q□-4T		2.5	103.8		48.5	43	30		63
VSP-HC30-30Q□-6T		4							
VSP-HC30-40Q□-4T		2.5	125.8		58.5	55	40		67
VSP-HC30-40Q□-6T		4							
VSP-HC30-50Q□-4T		2.5	147.3		68.5	66.5	50	1.0 to 3.1	71
VSP-HC30-50Q□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side ,VSP-HD, Push-in fitting)

●VSP-HD10Q□-2/4/6



●VSP-HD20, 30Q□-2/4/6

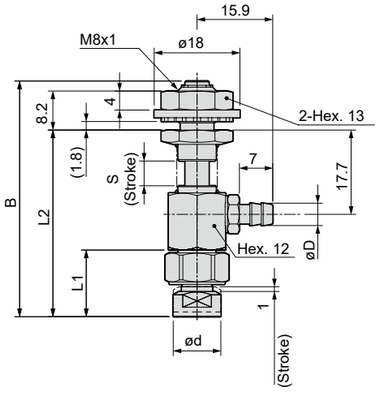


Unit: mm

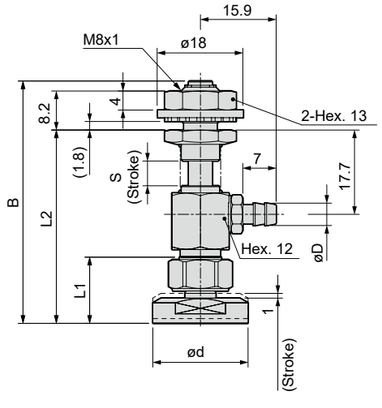
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HD10Q□-2	10	1.8	49.5	14	39.2	8.4	14.7	5.2	1.6 to 2.9	36
VSP-HD10Q□-4		4				11.2	18.8			37
VSP-HD10Q□-6		6				11.9	20.6			38
VSP-HD20Q□-2	20	1.8	50.9	13.9	40.6	8.4	14.7	5.2	1.6 to 2.9	47
VSP-HD20Q□-4		4				11.2	18.8			48
VSP-HD20Q□-6		6				11.9	20.6			49
VSP-HD30Q□-2	30	1.8	50.9	13.9	40.6	8.4	14.7	5.2	1.6 to 2.9	56
VSP-HD30Q□-4		4				11.2	18.8			57
VSP-HD30Q□-6		6				11.9	20.6			58

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side ,VSP-HD, Barb Fitting)

●VSP-HD10Q□-4T/6T



●VSP-HD20, 30Q□-4T/6T

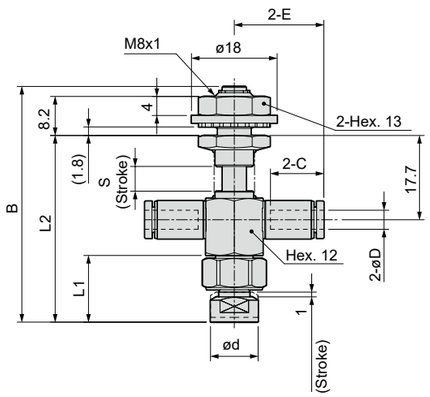


Unit: mm

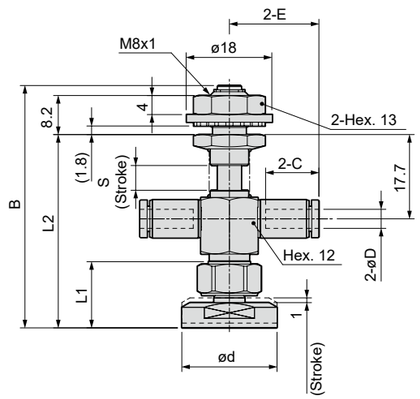
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HD10Q□-4T	10	2.5	49.5	14	39.2	5.2	1.6 to 2.9	37
VSP-HD10Q□-6T		4						
VSP-HD20Q□-4T	20	2.5	50.9	13.9	40.6	5.2	1.6 to 2.9	46
VSP-HD20Q□-6T		4						
VSP-HD30Q□-4T	30	2.5	50.9	13.9	40.6	5.2	1.6 to 2.9	56
VSP-HD30Q□-6T		4						

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides VSP-HDW, Push-in fitting)

●VSP-HDW10Q□-2/4/6



●VSP-HDW20, 30Q□-2/4/6

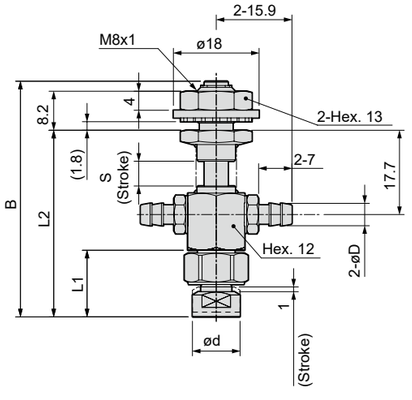


Unit: mm

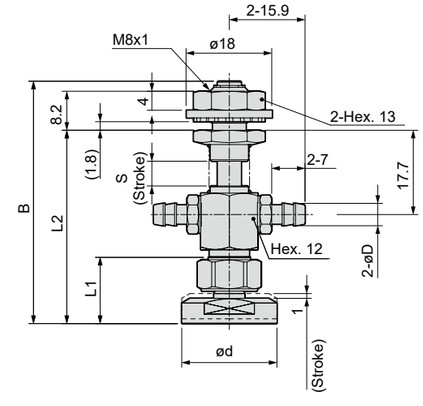
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW10Q□-2	10	1.8	49.5	14	39.2	8.4	14.7	5.2	1.6 to 2.9	39
VSP-HDW10Q□-4		4				11.2	18.8			41
VSP-HDW10Q□-6		6				11.9	20.6			43
VSP-HDW20Q□-2	20	1.8	50.9	13.9	40.6	8.4	14.7	5.2	1.6 to 2.9	48
VSP-HDW20Q□-4		4				11.2	18.8			50
VSP-HDW20Q□-6		6				11.9	20.6			52
VSP-HDW30Q□-2	30	1.8	50.9	13.9	40.6	8.4	14.7	5.2	1.6 to 2.9	58
VSP-HDW30Q□-4		4				11.2	18.8			60
VSP-HDW30Q□-6		6				11.9	20.6			62

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides VSP-HDW, Barb Fitting)

●VSP-HDW10Q□-4T/6T



●VSP-HDW20, 30Q□-4T/6T

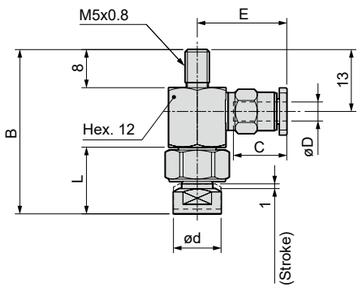


Unit: mm

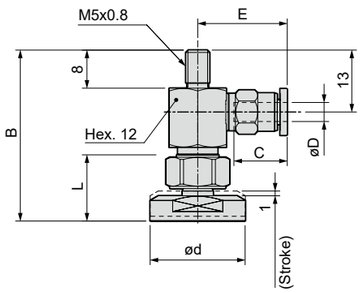
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW10Q□-4T	10	2.5	49.5	14	39.2	5.2	1.6 to 2.9	38
VSP-HDW10Q□-6T		4						
VSP-HDW20Q□-4T	20	2.5	50.9	13.9	40.6	5.2	1.6 to 2.9	47
VSP-HDW20Q□-6T		4						
VSP-HDW30Q□-4T	30	2.5	50.9	13.9	40.6	5.2	1.6 to 2.9	57
VSP-HDW30Q□-6T		4						

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side ,VSP-HE, Push-in fitting)

●VSP-HE10Q□-2/4/6



●VSP-HE20, 30Q□-2/4/6

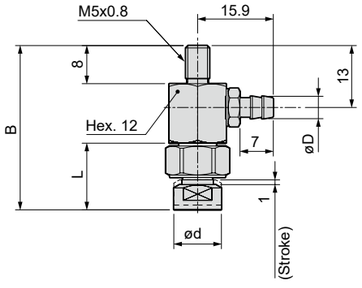


Unit: mm

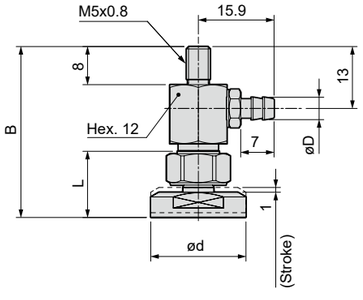
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HE10Q□-2	10	1.8	34.5	14	8.4	14.7	23
VSP-HE10Q□-4		4			11.2	18.8	24
VSP-HE10Q□-6		6			11.9	20.6	25
VSP-HE20Q□-2	20	1.8	35.9	13.9	8.4	14.7	31
VSP-HE20Q□-4		4			11.2	18.8	32
VSP-HE20Q□-6		6			11.9	20.6	33
VSP-HE30Q□-2	30	1.8	35.9	13.9	8.4	14.7	41
VSP-HE30Q□-4		4			11.2	18.8	42
VSP-HE30Q□-6		6			11.9	20.6	43

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side ,VSP-HE, Barb Fitting)

●VSP-HE10Q□-4T/6T



●VSP-HE20, 30Q□-4T/6T

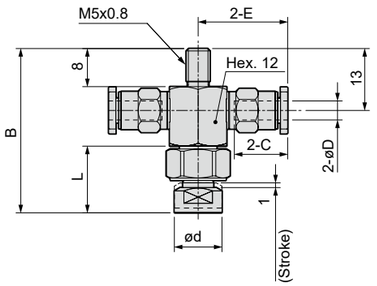


Unit: mm

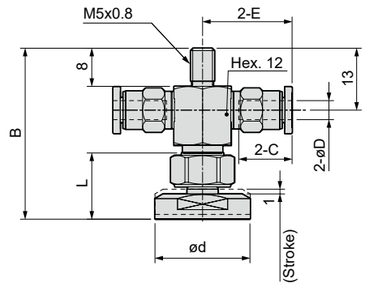
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HE10Q□-4T	10	2.5	34.5	14	23
VSP-HE10Q□-6T		4			
VSP-HE20Q□-4T	20	2.5	35.9	13.9	31
VSP-HE20Q□-6T		4			
VSP-HE30Q□-4T	30	2.5	35.9	13.9	41
VSP-HE30Q□-6T		4			

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Push-in fitting)

●VSP-HEW10Q□-2/4/6



●VSP-HEW20, 30Q□-2/4/6

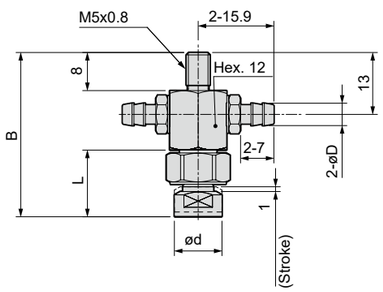


Unit: mm

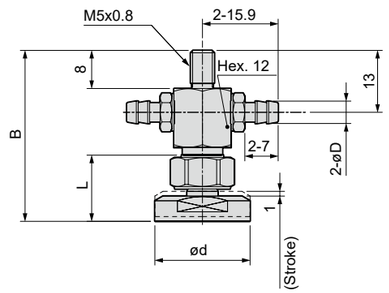
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HEW10Q□-2	10	1.8	34.5	14	8.4	14.7	25
VSP-HEW10Q□-4		4			11.2	18.8	27
VSP-HEW10Q□-6		6			11.9	20.6	29
VSP-HEW20Q□-2	20	1.8	35.9	13.9	8.4	14.7	33
VSP-HEW20Q□-4		4			11.2	18.8	35
VSP-HEW20Q□-6		6			11.9	20.6	37
VSP-HEW30Q□-2	30	1.8	35.9	13.9	8.4	14.7	43
VSP-HEW30Q□-4		4			11.2	18.8	45
VSP-HEW30Q□-6		6			11.9	20.6	47

External Dimension Diagram (Low Profile, Fixed Type, Vacuum Outlet Both Sides, VSP-HEW, Barb Fitting)

●VSP-HEW10Q□-4T/6T



●VSP-HEW20, 30Q□-4T/6T

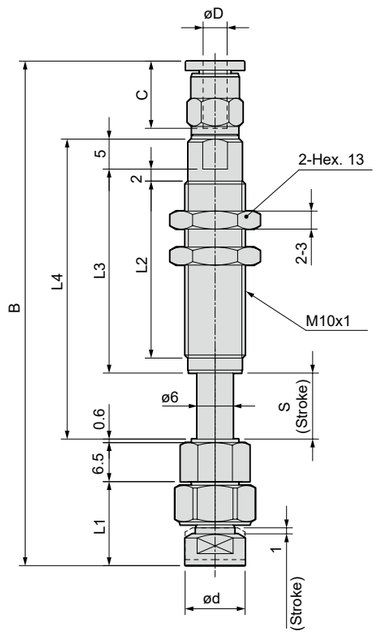


Unit: mm

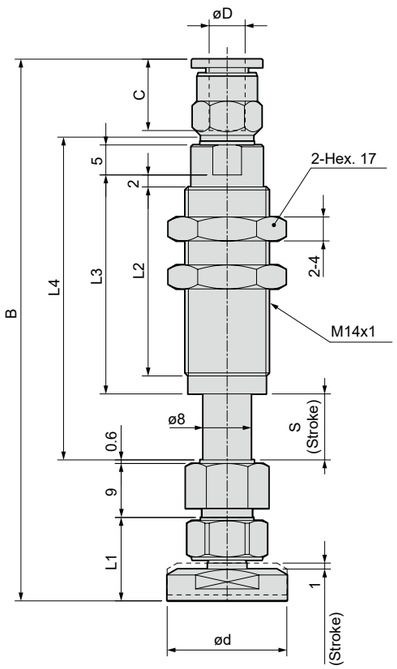
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HEW10Q□-4T	10	2.5	34.5	14	24
VSP-HEW10Q□-6T		4			
VSP-HEW20Q□-4T	20	2.5	35.9	13.9	32
VSP-HEW20Q□-6T		4			
VSP-HEW30Q□-4T	30	2.5	35.9	13.9	42
VSP-HEW30Q□-6T		4			

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC10-□Q□-4



●VSP-LFC20, 30-□Q□-4/6



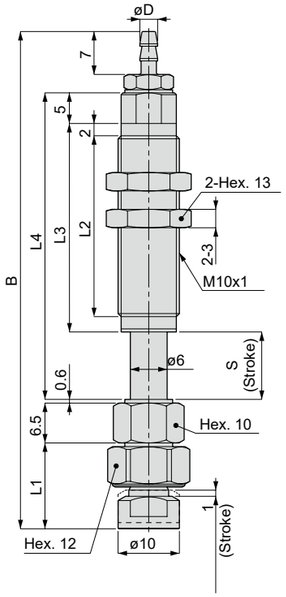
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC10-2Q□-4	10	4	68.1	14	21.5	26	34	11.2	2	1.3 to 1.8	33
VSP-LFC10-5Q□-4			74.1		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	35
VSP-LFC10-10Q□-4			84.1		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	37
VSP-LFC10-15Q□-4			94.1		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	39
VSP-LFC10-20Q□-4			104.1		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	41
VSP-LFC20-5Q□-4	20	4	79	13.9	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	61
VSP-LFC20-5Q□-6		6	80.3					11.9			62
VSP-LFC20-10Q□-4		4	89		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	63
VSP-LFC20-10Q□-6		6	90.3					11.9			64
VSP-LFC20-15Q□-4		4	99		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	66
VSP-LFC20-15Q□-6		6	100.3					11.9			67
VSP-LFC20-20Q□-4		4	109		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	69
VSP-LFC20-20Q□-6		6	110.3					11.9			70
VSP-LFC30-5Q□-4	30	4	79	13.9	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	65
VSP-LFC30-5Q□-6		6	80.3					11.9			66
VSP-LFC30-10Q□-4		4	89		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	67
VSP-LFC30-10Q□-6		6	90.3					11.9			68
VSP-LFC30-15Q□-4		4	99		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	70
VSP-LFC30-15Q□-6		6	100.3					11.9			71
VSP-LFC30-20Q□-4		4	109		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	73
VSP-LFC30-20Q□-6		6	110.3					11.9			74

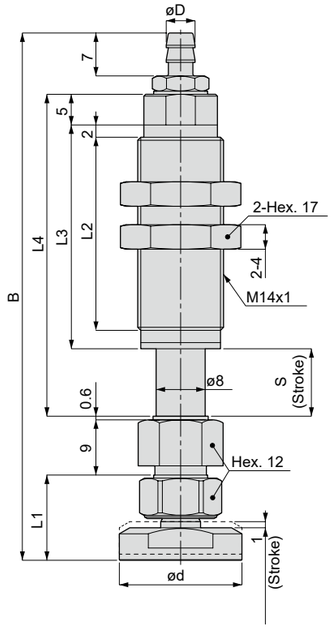
* Values inSide ,brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC10-□Q□-4T/6T



●VSP-LFC20, 30-□Q□-4T/6T



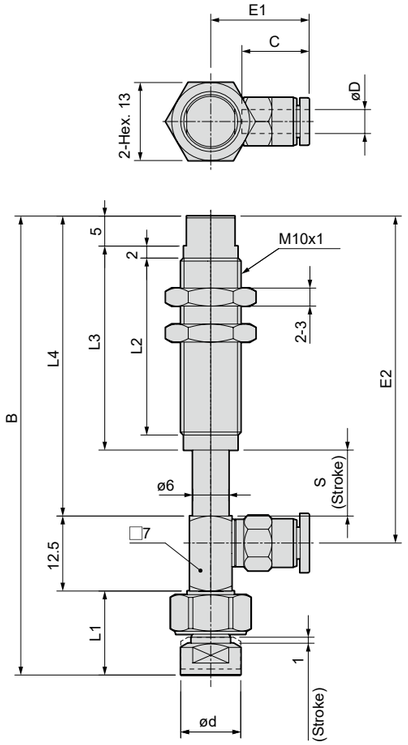
Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC10-2Q□-4T	10	2.5	65.2	14	21.5	26	34	2	1.3 to 1.8	31
VSP-LFC10-2Q□-6T		4								
VSP-LFC10-5Q□-4T		2.5	71.2		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	33
VSP-LFC10-5Q□-6T		4								
VSP-LFC10-10Q□-4T		2.5	81.2		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	35
VSP-LFC10-10Q□-6T		4								
VSP-LFC10-15Q□-4T		2.5	91.2		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	37
VSP-LFC10-15Q□-6T		4								
VSP-LFC10-20Q□-4T		2.5	101.2		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	39
VSP-LFC10-20Q□-6T		4								
VSP-LFC20-5Q□-4T	20	2.5	76.1	13.9	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	56
VSP-LFC20-5Q□-6T		4								
VSP-LFC20-10Q□-4T		2.5	86.1		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	58
VSP-LFC20-10Q□-6T		4								
VSP-LFC20-15Q□-4T		2.5	96.1		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	61
VSP-LFC20-15Q□-6T		4								
VSP-LFC20-20Q□-4T		2.5	106.1		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	64
VSP-LFC20-20Q□-6T		4								
VSP-LFC30-5Q□-4T	30	2.5	76.1	13.9	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	60
VSP-LFC30-5Q□-6T		4								
VSP-LFC30-10Q□-4T		2.5	86.1		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	62
VSP-LFC30-10Q□-6T		4								
VSP-LFC30-15Q□-4T		2.5	96.1		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	65
VSP-LFC30-15Q□-6T		4								
VSP-LFC30-20Q□-4T		2.5	106.1		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	68
VSP-LFC30-20Q□-6T		4								

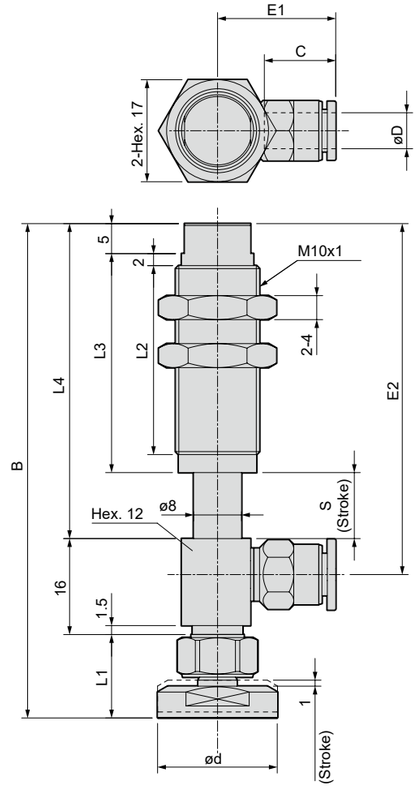
* Values inSide ,brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side ,VSP-LFD, Push-in fitting)

●VSP-LFD10-□Q□-4T



●VSP-LFD20, 30-□Q□-4/6

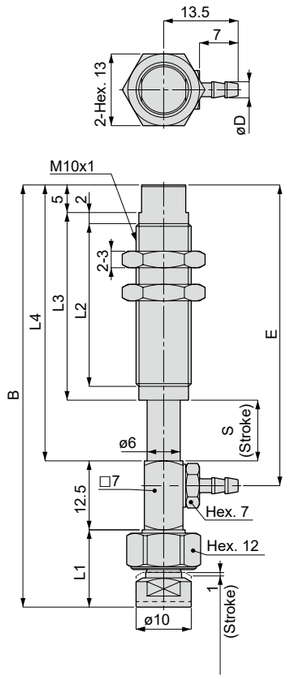


Unit: mm

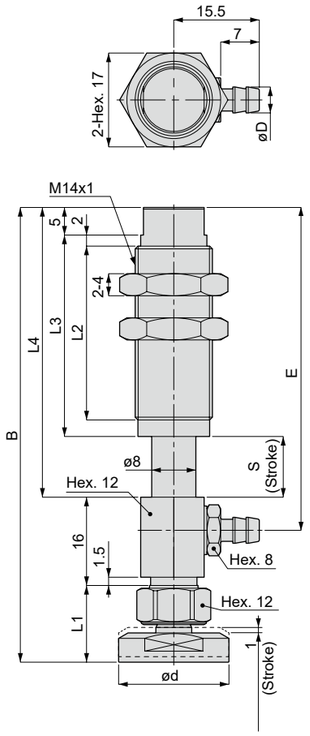
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD10-5Q□-4	10	4	66.5	14	24.5	29	40	11.2	16.4	44.5	5	1.3 to 2.4	31
VSP-LFD10-10Q□-4			76.5		29.5	34	50			54.5	10	1.3 to 3.3	33
VSP-LFD10-15Q□-4			86.5		34.5	39	60			64.5	15	1.3 to 4.2	36
VSP-LFD10-20Q□-4			96.5		39.5	44	70			74.5	20	1.3 to 5.1	39
VSP-LFD20-5Q□-4	20	4	72.4	13.9	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	62
VSP-LFD20-5Q□-6		6						11.9	19.7				63
VSP-LFD20-10Q□-4		4	82.4		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	66
VSP-LFD20-10Q□-6		6						11.9	19.7				67
VSP-LFD20-15Q□-4		4	92.4		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	70
VSP-LFD20-15Q□-6		6						11.9	19.7				71
VSP-LFD20-20Q□-4		4	102.4		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	74
VSP-LFD20-20Q□-6		6						11.9	19.7				75
VSP-LFD30-5Q□-4	30	4	72.4	13.9	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	66
VSP-LFD30-5Q□-6		6						11.9	19.7				67
VSP-LFD30-10Q□-4		4	82.4		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	70
VSP-LFD30-10Q□-6		6						11.9	19.7				71
VSP-LFD30-15Q□-4		4	92.4		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	74
VSP-LFD30-15Q□-6		6						11.9	19.7				75
VSP-LFD30-20Q□-4		4	102.4		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	78
VSP-LFD30-20Q□-6		6						11.9	19.7				79

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side ,VSP-LFD, Barb Fitting)

●VSP-LFD10-□Q□-4T/6T



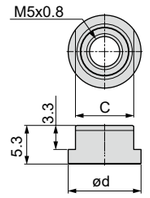
●VSP-LFD20, 30-□Q□-4T/6T



Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD10-5Q□-4T	10	2.5	66.5	14	24.5	29	40	44.5	5	1.3 to 2.4	30
VSP-LFD10-5Q□-6T		4									
VSP-LFD10-10Q□-4T		2.5	76.5		29.5	34	50	54.5	10	1.3 to 3.3	32
VSP-LFD10-10Q□-6T		4									
VSP-LFD10-15Q□-4T		2.5	86.5		34.5	39	60	64.5	15	1.3 to 4.2	34
VSP-LFD10-15Q□-6T		4									
VSP-LFD10-20Q□-4T		2.5	96.5		39.5	44	70	74.5	20	1.3 to 5.1	36
VSP-LFD10-20Q□-6T		4									
VSP-LFD20-5Q□-4T	20	2.5	72.4	13.9	26.5	31.5	42.5	48.5	5	4.5 to 6.5	58
VSP-LFD20-5Q□-6T		4									
VSP-LFD20-10Q□-4T		2.5	82.4		31.5	36.5	52.5	58.5	10	4.5 to 8.2	61
VSP-LFD20-10Q□-6T		4									
VSP-LFD20-15Q□-4T		2.5	92.4		36.5	41.5	62.5	68.5	15	4.5 to 9.9	65
VSP-LFD20-15Q□-6T		4									
VSP-LFD20-20Q□-4T		2.5	102.4		41.5	46.5	72.5	78.5	20	4.5 to 14.9	69
VSP-LFD20-20Q□-6T		4									
VSP-LFD30-5Q□-4T	30	2.5	72.4	13.9	26.5	31.5	42.5	48.5	5	4.5 to 6.5	62
VSP-LFD30-5Q□-6T		4									
VSP-LFD30-10Q□-4T		2.5	82.4		31.5	36.5	52.5	58.5	10	4.5 to 8.2	64
VSP-LFD30-10Q□-6T		4									
VSP-LFD30-15Q□-4T		2.5	92.4		36.5	41.5	62.5	68.5	15	4.5 to 9.9	69
VSP-LFD30-15Q□-6T		4									
VSP-LFD30-20Q□-4T		2.5	102.4		41.5	46.5	72.5	78.5	20	4.5 to 14.9	73
VSP-LFD30-20Q□-6T		4									

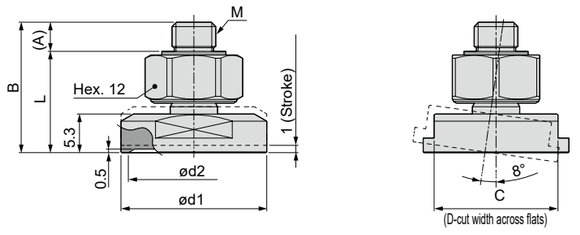
Resin Pad Only External Dimension Diagram

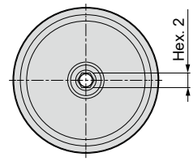


Unit: mm

Resin Pad Single Unit Model No.	Pad Diameter ød	C	Weight (g)	Applicable Pad Model No.
VSPG-10Q□-RP	10	8	0.4	VSP-□10Q□
VSPG-20Q□-RP	20	17	2	VSP-□20Q□
VSPG-30Q□-RP	30	27	4.6	VSP-□30Q□

Pad with Flexible Holder External Dimension Diagram





Unit: mm

Model No.	Pad Diameter ød1	Effective Diameter ød2	M	A	B	L	C	Weight (g)
VSPG-10Q□	10	8	M4x0.7	2.9	16.9	14	8	7
VSPG-20Q□	20	18	M6x1	4	17.9	13.9	17	10
VSPG-30Q□	30	28	M6x1	4	17.9	13.9	27	14

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Suction Pad, Suction Mark Prevention Type, VSP-□Q□Series

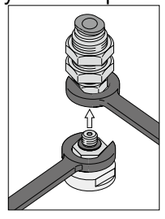
Design / Selection

Warning

■If the workpiece is at risk of falling off, be sure to provide a preventive measure for safety.
■When mounting the pad holder, be sure to fix it securely. Loosening can risk causing trouble.
■Malfunctions may occur due to leakage or clogging in the vacuum circuit as well as abrasion, cracking or deterioration of the pad, galling of the sliding part of the pad holder, or loose connections. Perform maintenance checks regularly.
■When performing transport with the pad, consider the acceleration, impact and wind pressure. The workpiece may detach during transport.

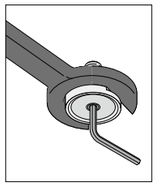
Caution

■Compared to conventional rubber suction pads, the suction mark prevention resin attachment for the lip portion reduces suction marks; however, confirm with an actual device the effects to the suction marks on the workpieces are acceptable.
■Keep the flow rate of the vacuum source as large as possible. Also, vacuum holding usage is not possible.
■Select a sensor suitable for the working conditions.
■The interior of the flexible holder for the suction mark prevention Suction Pads may wear depending on its structure and usage. When adopting for use in a clean environment, please confirm there is no impact from dust generation due to wear before use.
■This product has a 1 mm stroke on the flexible holder, allowing it to track even subtle workpiece inclinations. If a buffer function is necessary, use it in conjunction with a spring-type holder. Also, when using a spring-type holder, minimize the lateral force applied to the sliding parts. Holder wear may cause operational failure or dust generation.
■There is no rotation-stop structure between the suction mark prevention Suction Pads flexible holder and the resin pad. Please note that it is not suitable for rotational transport.
■Suction mark prevention Suction Pads generate more vacuum pressure leakage from the lip than rubber pads. Please note that it cannot be used for vacuum holding. Also, secure the vacuum flow rate as large as possible to minimize pressure drop due to leakage.
■Clean the suction surface of the Suction Pads before use. Adhered substances may remain as suction marks. When cleaning, be careful not to scratch the suction surface and do not use organic solvents.
■Special stainless steel is used for this product, but it is not intended to prevent rust. Rust may occur depending on the operating environment.
■When attaching the flexible holder to the actual device or the pad holder, tighten using an appropriate tool with reference to the following tightening torque and confirm that there is no looseness.



Thread Size	Tightening Torque
M4x0.7	0.7 to 0.8 N·m
M6x1	1.5 to 2.0 N·m

■The resin pad mounting screws on the flexible holder may loosen due to creep. Perform regular checks for looseness. If looseness occurs, refer to the tightening torque below and perform regular tightening or replace the suction pad part as appropriate.



Vacuum Pad Material	Thread Size	Tightening Torque
PEEK	M5x0.8	1.4 to 2.1 N·m
Conductive PEEK	M5x0.8	2.0 to 2.3 N·m
POM	M5x0.8	0.6 to 0.7 N·m

MEMO

Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechanical Break Function
Ending



Suction Pad, Packaging Bag Type

VSP-□PB□ Series

Suction pad compatible with various bagged workpieces, adopting a 2-layer structure for the pad part.

RoHS

Compatible with general bagged workpieces, offering 2 types of bellows stages and 2 types of lip hardness.

Abundant holder variations

Shape	2 types

●Standard..... 2 types

Piping Connection	6 types

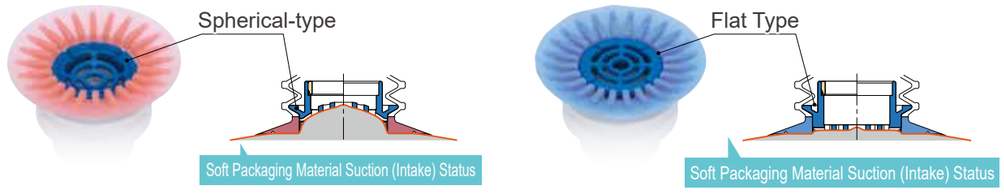
●Push-in fitting (ø4 to ø12) .....5 types
●Screw-in (M5)..... 1 type

Achieves workpiece conformity and posture stabilization during transport.

Soft material used for the lip part, hard material used for the bellows part.

Suction prevention adapter selectable from spherical-type and flat type. Also selectable with stainless steel mesh.

*Resin for suction prevention adapter conforms to Food Sanitation Act, FDA compliant.



Suction prevention adapter also selectable with stainless steel mesh.

Prevents suction of foreign matter, preventing trouble in the vacuum system.



Pad surface treatment (option) available, applying special processing to reduce suction marks.

	-FG
Surface Treatment	Fluorine Coating 
Compatible Material	Silicone Conductive Silicone
Features	Surface modification with special treatment prevents sticking to the workpiece. Improved pad durability and abrasion resistance.

Pad Shape







Pad Cross-sectional Diagram

2 types of lip hardness available.

Ultra Soft Material (Pink): For easily deformable packaging bags
Soft Material (Blue): For thick vinyl/sheet-like packaging bags



Lip Hardness: 20°



Lip Hardness: 40°

Recommended Workpiece

Bags containing liquids, pouch packs, etc.



2 types of bellows stages available.

5 Stages: For packaging bags with workpiece inclination or uneven steps
3 Stages: For space saving or suppressing workpiece wobble

Pad Diameter

4 types 20 25 30 40

Pad Material

4 types

- Silicone (Bellows 3 Stages) Hardness 20°
- Silicone (Bellows 3 Stages) Hardness 40°
- Silicone (Bellows 5 Stages) Hardness 20°
- Silicone (Bellows 5 Stages) Hardness 40°

Conforms to Food Sanitation Act, FDA compliant. (Holder is not compliant / Suction pad is compliant only for workpiece contact area)

Solution Examples

Food manufacturing lines, etc.
Transport process for general bagged workpieces

Soft Lip



Soft — Compatible with bags containing liquids

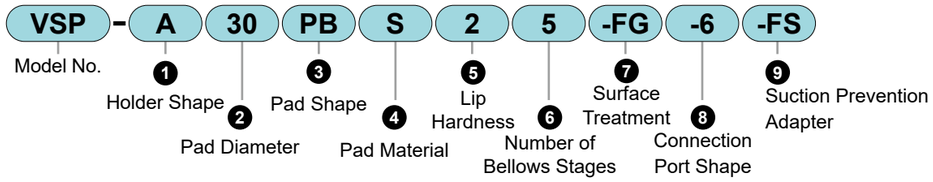
Hard Lip



Hard — Compatible with pouch packs

Model No. Notation

●For Packaging Bags Type



1 Holder Shape

Buffer Present/Absent	Type	Vacuum Outlet	Code	
Fixed Type	Standard	Top Direction	A	
		Direct Mount Type	E	

2 Pad Diameter

Code	Content
20	ø20
25	ø25
30	ø30
40	ø40

3 Pad Shape

Code	Content	
PB	For Packaging Bags Type	

4 Pad Material

Code	Content
S	Silicone Rubber

5 Lip Hardness

Hardness	Color	Code	
20°	Pink	2	
40°	Blue	4	

6 Number of Bellows Stages

Code	Content	
3	Stages 3	
5	Stages 5	

7 Surface Treatment

Content	Compatible Pad Material	Compatible Pad Diameter	Code
None	S	All sizes	Blank
Fluorine Coating			-FG

8 Connection Size/Shape

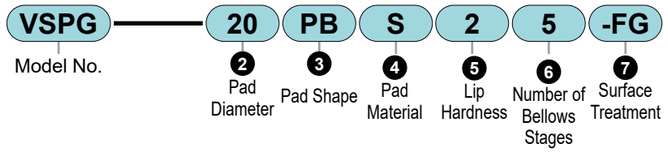
Content	Holder Shape A	Holder Shape E	Code	
Metric Male Thread M5 x 0.8		●	Blank	
ø4 Push-in fitting	●		-4	
ø6 Push-in fitting	●		-6	
ø8 Push-in fitting	●		-8	
ø10 Push-in fitting	●		-10	
ø12 Push-in fitting	●		-12	

*1: For ❷ Pad Diameter 20 and 25, options -4, -6, -8, and Blank can be selected for ❽.
*2: For ❷ Pad Diameter 30 and 40, any option except -4 can be selected for ❽.

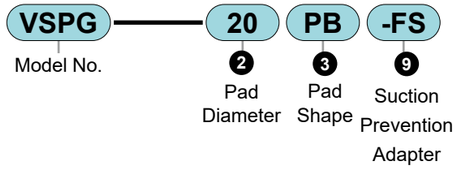
9 Suction Prevention Adapter

Code	Content	
-FS	Spherical-type - Without Stainless Steel Mesh	
-MS	Spherical-type - With Stainless Steel Mesh	
-FF	Flat Type - Without Stainless Steel Mesh	
-MF	Flat Type - With Stainless Steel Mesh	

●Pad Rubber Only

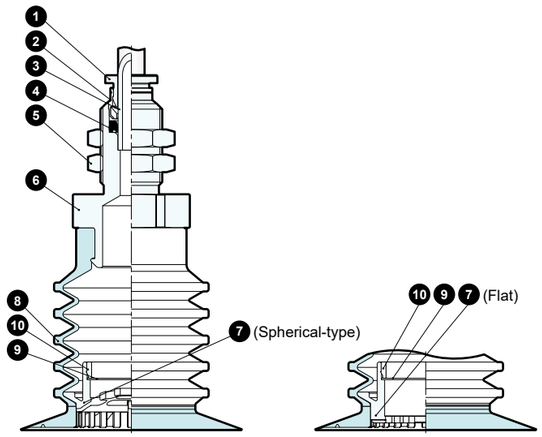


●Suction prevention adaptor only



Internal Structure Diagram

●Fixed vacuum outlet: Top (VSP-A) Case

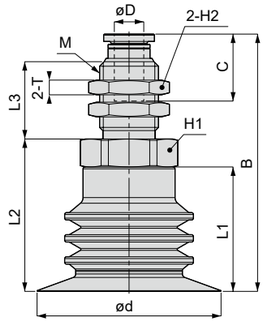


Part No.	Part Name	Material (Treatment)	Part No.	Part Name	Material (Treatment)
1	Release Ring	Acetal Resin	6	Metal Body	Aluminum alloy
2	Guide Ring	Brass (Electroless nickel plating)	7	Suction Prevention Adapter	Polypropylene
3	Locking Finger	Stainless steel	8	Vacuum Pad for Packaging Bags	Silicone Rubber
4	Elastomer Sleeve	Ethylene Propylene Rubber	9	Stainless Steel Mesh	Stainless Steel (SUS316)
5	Nut	Carbon Steel (Trivalent chromate)	10	Mesh Retainer	Aluminum alloy

MEMO

Dimensions diagram (fixed, vacuum Outlet on Top, VSP-A, bellows stage No.: 3 steps)

●VSP-E20, 25PBS□3-4/6/8
●VSP-E30, 40PBS□3-6/8/10/12

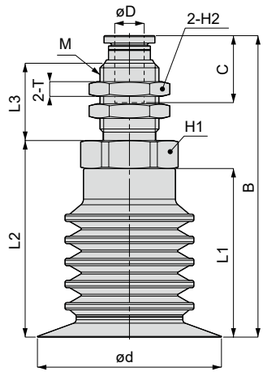


Unit: mm

Model No.	Pad Outer Diameter ød	Tube O.D. øD	M	B	L1	L2	L3	Tube End C	Width across flats H1	Width across flats H2	T	Weight (g)
VSP-A20PBS□3-4	20	4	M12x1	52.4	21.5	29.1	16.5	15.2	17	14	4	19
VSP-A20PBS□3-6		6	M14x1	56.3			20.5	17.2		17		24
VSP-A20PBS□3-8		8	M16x1	57.6			21	18.2		19		27
VSP-A25PBS□3-4	25	4	M12x1	53.4	22.5	30.1	16.5	15.2	17	14	4	19
VSP-A25PBS□3-6		6	M14x1	57.3			20.5	17.2		17		24
VSP-A25PBS□3-8		8	M16x1	58.6			21	18.2		19		27
VSP-A30PBS□3-6	30	6	M14x1	59.8	25	32.6	20.5	17.2	24	17	4	32
VSP-A30PBS□3-8		8	M16x1	61.1			21	18.2		19		35
VSP-A30PBS□3-10		10	M20x1	64			22.5	20.7		24	5	47
VSP-A30PBS□3-12		12	M22x1	68.3			25.5	23.3		27	6	62
VSP-A40PBS□3-6	40	6	M14x1	64.1	29.3	36.9	20.5	17.2	24	17	4	35
VSP-A40PBS□3-8		8	M16x1	65.4			21	18.2		19		38
VSP-A40PBS□3-10		10	M20x1	68.3			22.5	20.7		24	5	50
VSP-A40PBS□3-12		12	M22x1	72.6			25.5	23.3		27	6	65

Dimensions diagram (fixed, vacuum Outlet on Top, VSP-A, bellows stage No.: 5 steps)

●VSP-E20, 25PBS□5-4/6/8
●VSP-E30, 40PBS□5-6/8/10/12

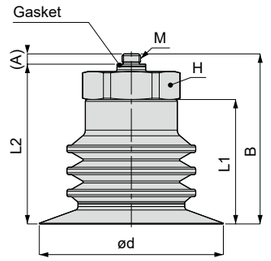


Unit: mm

Model No.	Pad Outer Diameter ød	Tube O.D. øD	M	B	L1	L2	L3	Tube End C	Width across flats H1	Width across flats H2	T	Weight (g)
VSP-A20PBS□5-4	20	4	M12x1	58.4	27.5	35.1	16.5	15.2	17	14	4	19
VSP-A20PBS□5-6		6	M14x1	62.3			20.5	17.2		17		24
VSP-A20PBS□5-8		8	M16x1	63.6			21	18.2		19		27
VSP-A25PBS□5-4	25	4	M12x1	60.4	29.5	37.1	16.5	15.2	17	14	4	20
VSP-A25PBS□5-6		6	M14x1	64.3			20.5	17.2		17		25
VSP-A25PBS□5-8		8	M16x1	65.6			21	18.2		19		28
VSP-A30PBS□5-6	30	6	M14x1	67.8	33	40.6	20.5	17.2	24	17	4	33
VSP-A30PBS□5-8		8	M16x1	69.1			21	18.2		19		36
VSP-A30PBS□5-10		10	M20x1	72			22.5	20.7		24	5	48
VSP-A30PBS□5-12		12	M22x1	76.3			25.5	23.3		27	6	63
VSP-A40PBS□5-6	40	6	M14x1	74.1	39.3	46.9	20.5	17.2	24	17	4	37
VSP-A40PBS□5-8		8	M16x1	75.4			21	18.2		19		40
VSP-A40PBS□5-10		10	M20x1	78.3			22.5	20.7		24	5	52
VSP-A40PBS□5-12		12	M22x1	82.6			25.5	23.3		27	6	67

Dimensions diagram (fixed, direct mounting, VSP-E bellows stage No.: 3 steps)

●VSP-E20 to 40PBS□3

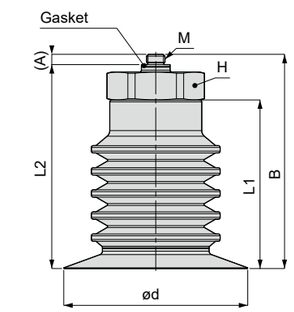


Unit: mm

Model No.	Pad Outer Diameter ød	A	B	L1	L2	Width across flats H	Weight (g)
VSP-E20PBS□3	20	2.8	33.9	21.5	31.1	17	9.7
VSP-A25PBS□3	25	2.8	34.9	22.5	32.1	17	11
VSP-A30PBS□3	30	2.8	37.4	25	34.6	24	19
VSP-A40PBS□3	40	2.8	41.7	29.3	38.9	24	22

Dimensions diagram (fixed, direct mounting, VSP-E bellows stage No.: 5 steps)

●VSP-E20 to 40PBS□5



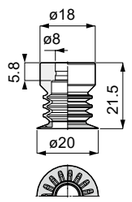
Unit: mm

Model No.	Pad Outer Diameter ød	A	B	L1	L2	Width across flats H	Weight (g)
VSP-A20PBS□5	20	2.8	39.9	27.5	37.1	17	10
VSP-A25PBS□5	25	2.8	41.9	29.5	39.1	17	11
VSP-A30PBS□5	30	2.8	45.4	33	42.6	24	20
VSP-A40PBS□5	40	2.8	51.7	39.3	48.9	24	24

VSPG-□PB□ Series

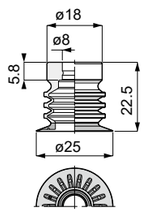
Pad Rubber Only External Dimension Diagram (Number of Bellows Stages: 3 steps)

●VSPG-20PBS□3



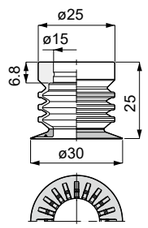
Weight: 2.8 g

●VSPG-25PBS□3



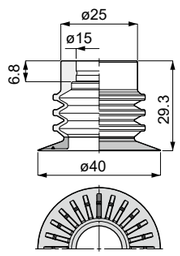
Weight: 3.1 g

●VSPG-30PBS□3



Weight: 4.8 g

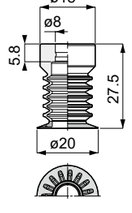
●VSPG-40PBS□3



Weight: 7.2 g

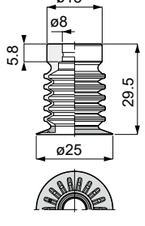
Pad Rubber Only External Dimension Diagram (Number of Bellows Stages: 5 steps)

●VSPG-20PBS□5



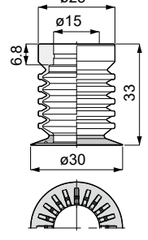
Weight: 3.1 g

●VSPG-25PBS□5



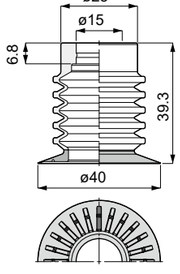
Weight: 3.6 g

●VSPG-30PBS□5



Weight: 5.7 g

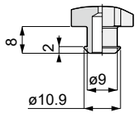
●VSPG-40PBS□5



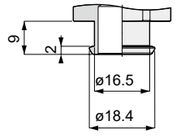
Weight: 8.8 g

Pad Fitting Part Dimensions

●VSPG-20, 25PBS□



●VSPG-30, 40PBS□



MEMO

Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechanical Break Function
Ending

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions,Intro 15 for details.

Individual Precautions: Suction Pad, Packaging Bag Type, VSP-□PB□Series

Design / Selection

Warning

■When mounting the Suction Pads holder for the partition on the actual device, refer to the following mounting nut tightening torque for the pad holder partition and tighten using an appropriate tool to prevent looseness.

●Pad holder partition mounting nut tightening torque

Nut Size	Tightening Torque
M12x1	12 to 14 N·m
M14x1	18 to 21 N·m
M16x1	18 to 21 N·m
M20x1	19 to 21 N·m
M22x1	19 to 21 N·m

■When installing the direct mounting Suction Pads holder on the actual machine, refer to the following tightening torque and tighten using an appropriate tool, and check that there are no looseness.

●Tightening Torque

Thread Size	Tightening Torque
M5x0.8	1 to 1.5 N·m

■The direct mounting Suction Pads holder has a gasket seal. When mounting to the actual machine, confirm that the gasket contact surface is smooth and free from scratches, dents, etc.

■Due to the pad characteristics, the theoretical suction force of the packaging bag type pads may exceed the strength of the pads themselves depending on the degree of vacuum. Use the safety factor at 1/16 or more when lifting horizontally and 1/25 or more when lifting vertically. Always perform tests on the actual machine before use.

Caution

■Use the pressing allowable stroke as a guide for the packaging bag type and take care not to overcrush it. Excessive crushing may accelerate wear of the bellows part, cause cracks in the lip part, or lead to deformation due to strain, potentially causing suction failure.

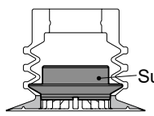
■Be sure to attach a suction prevention adapter to the packaging bag type pad. Using without the suction prevention adapter may deform the suction pad, potentially causing suction failure.

■When attaching or detaching the suction prevention adaptor to/from the vacuum pad for the packaging bag, the lip may be damaged if the lip is pulled too much.

■Since the suction prevention adapter with stainless steel mesh structure reduces the suction flow rate, perform suction test using the actual device.

■Check the clogging regularly for the suction prevention adapter with stainless steel mesh. Clogging can cause performance degradation or trouble. Clean or replace with a new one as necessary.

■Refer to the figure and install the suction prevention adapter in the appropriate position. Failure to mount in the correct position may cause suction failure.



■The spherical type of the suction prevention adapter is installed deeper than the pad's suction surface. Therefore, when suctioning a flat, rigid workpiece, the ribs on the pad surface can tilt in one direction, applying a rotational load. This rotational force can cause screws to loosen or the mounting to break. When suctioning flat, rigid workpieces, please use the flat type of the suction prevention adapter.

MEMO



Suction Pad, Metal Detector Compatible-type

VSP-□BE□, □BD□ Series

Suction pad that reacts to metal detectors when contamination occurs due to fallen pad rubber fragments.

RoHS

Silicone rubber blended with metal powder, ideal for production lines such as for food.

Abundant holder variations

Shape 16 types
- Standard ....5 types
- Compact.....Class 4
- Low dust generation .....2 types
- Lightweight3 types
- Low back 2 types

Piping Connection 15 types
- Push-in fitting (ø1.8 to ø6) .... 3 types
- Barbed fitting (ø4, ø6) ..... 2 types

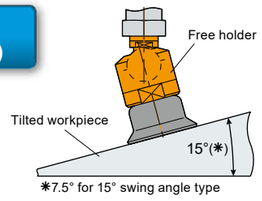
Stroke 11 types

2 mm to 50 mm
(Depends on pad diameter, holder)

Low particle generation holders (LFC, LFD) with less abrasion powder from sliding and low noise are available

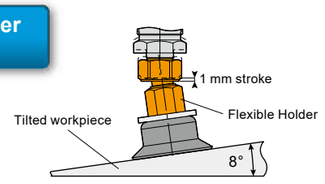
Assembly option for swing (free holder, flexible holder) that follows inclined workpiece surfaces is supported

Free holder (F1:30°, F2:15°)



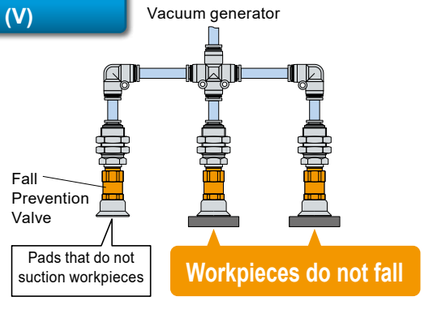
Flexible Holder (CF)

After removing the workpiece, returns to the normal position (vertical)



Assembly option for drop prevention valve (V) that reduces vacuum drop in separate circuits even without a workpiece is supported

Drop Prevention Valve (V)

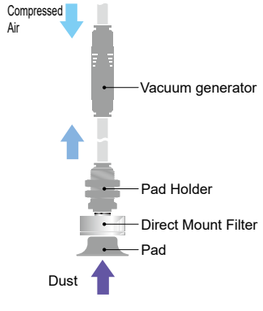


Removes dust during workpiece suction

Direct Mount Filter (T1, T2)

Filtration Area
T1: 1.7 cm², T2: 7 cm²





Pad Shape

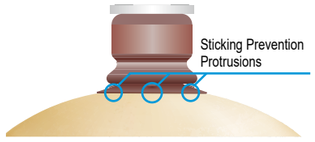




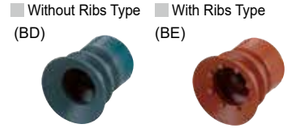
Pad Cross-sectional Diagram

Bellows Shape

With protrusions to suppress sticking between the lip and bellows part



Suction surface available with ribs and without ribs suitable for spherical workpieces.



Recommended Workpiece

Processes where contamination by foreign matter is undesirable, such as food manufacturing lines.



Iron powder specification and SUS powder specification available.

- Iron Powder... Response ratio twice that of competitors (according to our research)
- SUS Powder... Rubber wear powder is resistant to rusting

Pad Diameter

3 types 10 15 20

Pad Material

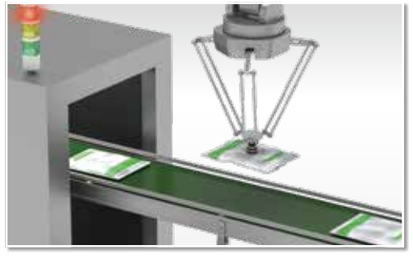
4 types
- Metal Detection Silicone (Iron Powder Spec.) Hardness 30°
- Metal Detection Silicone (Iron Powder Spec.) Hardness 50°
- Metal Detection Silicone (SUS Spec.) Hardness 30°
- Metal Detection Silicone (SUS Spec.) Hardness 50°

Conforms to Food Sanitation Act, FDA compliant. (Holder is not compliant / Suction pad is compliant only for workpiece contact area)

Solution Examples

Food manufacturing lines, etc.

Reacts to metal detectors, preventing the outflow of contaminated products.



Workpieces with uneven suction surfaces

Flexibly handles workpieces with irregularities such as retort pouches.





Model No. Notation

●For Metal Detectors Type

Suction Pad

VSP – C – 20 – -20 – BE – SF3 – 6 – [ ] – F1 – V – T1

VSP	C	20	-20	BE	SF3	6	[ ]	F1	V	T1
Model No.	❶ Holder Shape	❷ Pad Diameter	❸ Stroke Option	❹ Pad Shape	❺ Pad Material	❻ Connection Port Shape	❼ Buffer Load	❽ Pad Swing	❾ Drop Prevention Valve	❿ Direct Mount Filter

Pad Rubber Only

VSPG — 20 — BE — SF3

VSPG	20	BE	SF3
Model No.	❷	❹	❺

Pad Rubber + Set with Fixing Screw

VSPG — 20 — BE — SF3 A

VSPG	20	BE	SF3	A
Model No.	❷ Pad Diameter	❹ Pad Shape	❺ Pad Material	

❶ Holder Shape

Buffer Present/Absent	Type	Vacuum Outlet	Code	
Fixed Type	Standard	Top Direction	A	
	Compact		MA	
	Standard	Side Direction	B	
	Compact		MB	
	Low Profile		HE	
		Both Sides Direction	HEW	
Buffer Type	Standard	Top Direction	C	
	Compact		MC	
	Low Particle Generation		LFC	
	Lightweight		HC	
	Standard	Side Direction	D	
	Compact		MD	
	Low Particle Generation		LFD	
	Lightweight		HD	
		Both Sides Direction	HDW	
	Standard	Direct Mount Type	F	

❷ Pad Diameter

Code	Content
10	ø10
15	ø15
20	ø20

❸ Stroke Option

Content	Holder Shape C	D	HC	LFC	LFD	Code	
Specified Stroke, or No Buffer	●	●				Blank	*1, *2
Stroke 2 mm				●		–2	*3
Stroke 5 mm				●	●	–5	
Stroke 10 mm	●	●	●	●	●	–10	
Stroke 15 mm	●	●	●	●	●	–15	
Stroke 20 mm	●	●	●	●	●	–20	
Stroke 25 mm			●			–25	
Stroke 30 mm	●	●	●			–30	
Stroke 40 mm	●	●	●			–40	
Stroke 50 mm	●	●	●			–50	

*1: For ❶ Holder Shape other than C, D, HC, LFC, and LFD, ❸ is 'Blank'.
*2: For the specified stroke of ❸ 'Blank', please confirm the stroke dimension on the external dimension drawing.
*3: When ❷ Pad Diameter is 10 or 15, -2 can be selected for ❸.

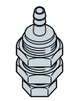
❹ Pad Shape

Code	Content		
BE	Bellows Type (With Protrusions)	With Ribs	
BD		Without Ribs	

❺ Pad Material

Code	Content			
SF3	Metal Detection Silicone Rubber	Iron Powder Specification	Hardness 30°	Reddish Brown
SF5			Hardness 50°	Dark Green
SS3		SUS Powder Specification	Hardness 30°	Brown
SS5			Hardness 50°	Green

❻ Connection Size/Shape

Content	Holder Shape A	B	C	D	MA	MB	MC	MD	LFC	LFD	HC	HD	HDW	HE	HEW	Code	
(❶: When F)																Blank	
ø1.8 Push-in fitting						●	●	●			●	●	●	●	●	2	
ø4 Push-in fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4	
ø6 Push-in fitting	●	●	●	●		●		●	●	●	●	●	●	●	●	6	
ø4 Push-in fitting, without spring cover			●	●												4C	
ø6 Push-in fitting, without spring cover			●	●												6C	
ø4, Barb fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4T	
ø6, Barb fitting	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	6T	
ø4, Barb fitting, without spring cover			●	●												4TC	
ø6, Barb fitting, without spring cover			●	●												6TC	

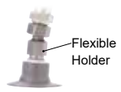
*1: For ❶ Holder Shape C and D with ❸ Stroke Option -20 to -50, options 4C, 6C, 4TC, and 6TC can be selected for ❻. Additionally, for ❸ Stroke Option -30 to -50, only 4C, 6C, 4TC, and 6TC can be selected for ❻.
*2: The selectable Port Size/Shape varies depending on the ❷ Pad Diameter. Please check the combination table below.

❼ Buffer Load

Code	Content	
Blank	Standard Load or No Buffer	*1, *2
L	Low Load (1/4 of Standard Load)	

*1: For ❶ Holder Shape other than LFC, ❼ is 'Blank'.
*2: For ❸ Stroke Option -2, ❼ is 'Blank'.

❽ Pad Swing

Code	Content	
Blank	None	
F1	With Free Holder (Angle 30°)	 Free Holder
F2	With Free Holder (Angle 15°)	
CF	With Flexible Holder (Angle 8°)	 Flexible Holder

*1: For dimensions with the pad swivel function, please refer to P. 1060 and P. 1062.

❾ Drop Prevention Valve

Code	Content	
Blank	None	
V	With Drop Prevention Valve	 Drop Prevention Valve

*1: For dimensions with the drop prevention valve, please refer to P. 1083 and P. 1084.

❿ Direct Mount Filter

Code	Content	
Blank	None	
T1	With Direct Mount Filter (Filtration Area 1.7 cm²)	 Direct Mount Filter
T2	With Direct Mount Filter (Filtration Area 7 cm²)	

*1: ❿T2 can be selected when ❷ Pad Diameter is 20.
*2: For dimensions with the direct mount filter, please refer to P. 1064.

Holder Shape - Pad Diameter - Pad Shape - Connection Size/Shape Combination Table

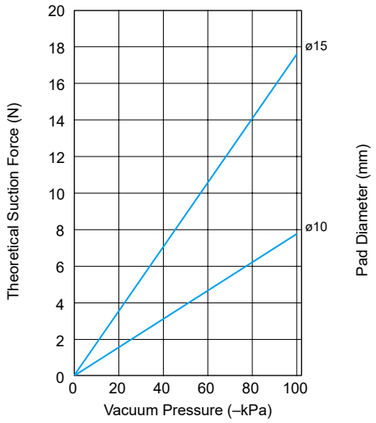
Holder Shape	Pad Diameter	Push-in fitting ø4 4	ø4 4C	ø6 6	ø6 6C	Barb fitting ø4 4T	ø4 4TC	ø6 6T	ø6 6TC
A	ø10, ø15			●				●	
	ø20	●		●		●		●	
B	All sizes	●		●		●		●	
C	All sizes	●	●	●	●	●	●	●	●
D	All sizes	●	●	●	●	●	●	●	●

Holder Shape	Pad Diameter	Thread M14 Blank
F	All sizes	●

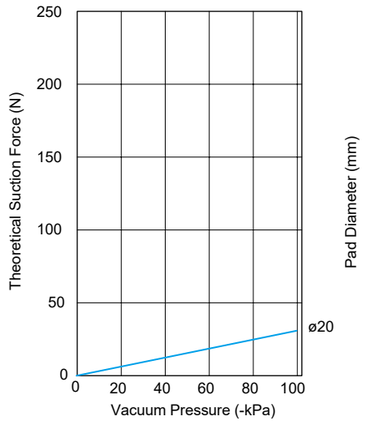
Holder Shape	Pad Diameter	Push-in fitting ø1.8 2	ø4 4	ø6 6	Barb fitting ø4 4T	ø6 6T
MA	ø10, ø15		●		●	
	ø20		●		●	●
MB	All sizes	●	●	●	●	●
MC	All sizes	●	●		●	●
MD	All sizes	●	●	●	●	●
LFC	ø10, ø15		●		●	●
	ø20		●	●	●	●
LFD	ø10, ø15		●		●	●
	ø20		●	●	●	●
HC	All sizes	●	●	●	●	●
HD	All sizes	●	●	●	●	●
HDW	All sizes	●	●	●	●	●
HE	All sizes	●	●	●	●	●
HEW	All sizes	●	●	●	●	●

Theoretical Suction Force

●Pad diameter: ø10mm, ø15 mm



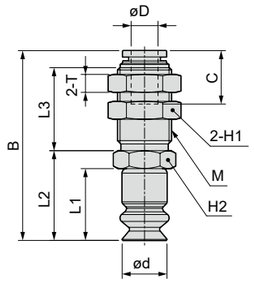
●Pad diameter: ø20 mm



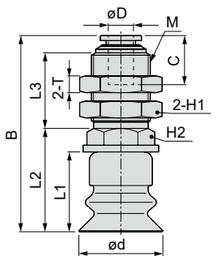
Theoretical suction force is a value under static conditions. For actual use, consider a safety factor of 1/4 for horizontal lifting and 1/8 for vertical lifting. Regarding the suction force of the metal detector compatible-type, due to pad characteristics, it may not be possible to secure the calculated suction force (theoretical suction force x safety factor) due to factors such as vacuum level, pad material, and adsorbed object. For selection, refer to "How to select Suction Pads" (P. 412) Use the suction force obtained with this formula as a guide, and make sure that there is no problem with the suction capacity on the actual machine.

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Push-in fitting)

●VSP-A10, 15BE (BD)□-6



●VSP-A20BE (BD)□-4/6

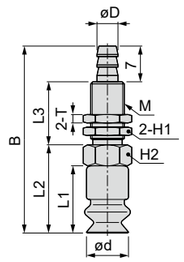


Unit: mm

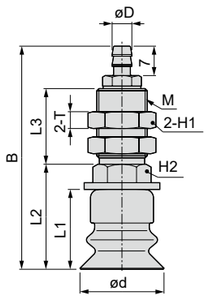
Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L1	L2	L3	Tube End C	Width Across Flats H1	Width Across Flats H2	T	Weight (g)
VSP-A10BE (BD)□-6	10	6	M12x1	42.3	16	20	18.5	11.9	14	12	4	22
VSP-A15BE (BD)□-6	15	6	M12x1	42.3	16	20	18.5	11.9	14	12	4	22
VSP-A20BE (BD)□-4	20	4	M12x1	55.9	19	25	18	11.2	14	12	4	31
VSP-A20BE (BD)□-6		6	M14x1	46.9		24.6		11.9	17	14		37

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Top, VSP-A, Barb fitting)

●VSP-A10, 15BE (BD)□-6T



●VSP-A20BE (BD)□-4T/6T

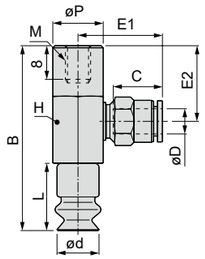


Unit: mm

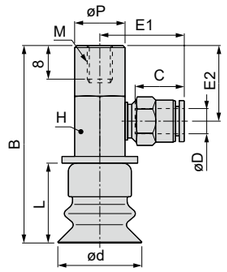
Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	L3	Width Across Flats H1	Width Across Flats H2	T	Weight (g)
VSP-A10BE (BD)□-6T	10	4	M8x0.75	43	16	21	15	10	10	2	12
VSP-A15BE (BD)□-6T	15	4	M8x0.75	43	16	21	15	10	10	2	13
VSP-A20BE (BD)□-4T	20	2.5	M12x1	53	19	25	18	14	12	4	30
VSP-A20BE (BD)□-6T		4									

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Push-in fitting)

●VSP-B10, 15BE (BD)□-4/6



●VSP-B20BE (BD)□-4/6

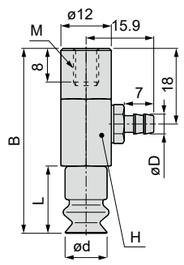


Unit: mm

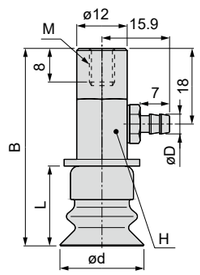
Model No.	Pad Diameter ød	Tube O.D. øD	Mounting screw M	B	L	Tube End C	øP	E1	E2	Width Across Flats H	Weight (g)
VSP-B10BE (BD)□-4	10	4	M6x1	44	16	11.2	12	18.8	18	12	30
VSP-B10BE (BD)□-6		6				11.9		20.1			31
VSP-B15BE (BD)□-4	15	4	M6x1	44	16	11.2	12	18.8	18	12	30
VSP-B15BE (BD)□-6		6				11.9		20.1			31
VSP-B20BE (BD)□-4	20	4	M6x1	47	19	11.2	12	18.8	18	12	33
VSP-B20BE (BD)□-6		6				11.9		20.1			34

Outline Dimension Drawing (Fixed Type, Vacuum Outlet on Side, VSP-B, Barb Fitting)

●VSP-B10, 15BE (BD)□-4T/6T



●VSP-B20BE (BD)□-4T/6T

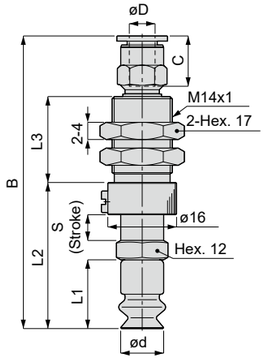


Unit: mm

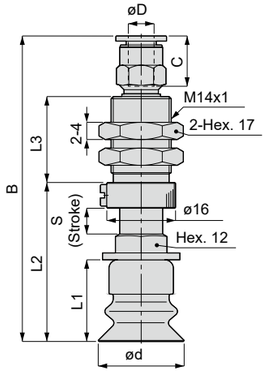
Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L	Width Across Flats H	Weight (g)
VSP-B10BE (BD)□-4T	10	2.5	M6x1	44	16	12	29
VSP-B10BE (BD)□-6T		4					
VSP-B15BE (BD)□-4T	15	2.5	M6x1	44	16	12	30
VSP-B15BE (BD)□-6T		4					
VSP-B20BE (BD)□-4T	20	2.5	M6x1	47	19	12	32
VSP-B20BE (BD)□-6T		4					

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting)

●VSP-C10, 15BE (BD)□-4/6
●VSP-C10, 15-□BE (BD)□-4/6



●VSP-C20BE (BD)□-4/6
●VSP-C20-□BE (BD)□-4/6

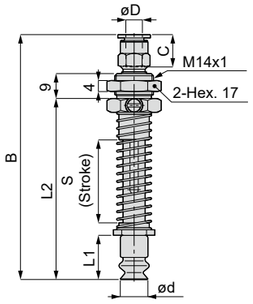


Unit: mm

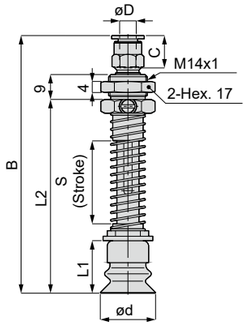
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C10BE (BD)□-4	10	4	67	16	34	20	11.2	6	4.0 to 7.1	35
VSP-C10BE (BD)□-6		6	68.3				11.9			36
VSP-C10-10BE (BD)□-4		4	71.5		38.5		11.2	10	2.0 to 5.2	36
VSP-C10-10BE (BD)□-6		6	72.8				11.9			37
VSP-C10-15BE (BD)□-4		4	81.5		43.5	25	11.2	15	2.0 to 5.9	41
VSP-C10-15BE (BD)□-6		6	82.8				11.9			42
VSP-C10-20BE (BD)□-4		4	97.5		50.5	34	11.2	20	1.1 to 4.8	49
VSP-C10-20BE (BD)□-6		6	98.8				11.9			50
VSP-C15BE (BD)□-4	15	4	67	16	34	20	11.2	6	4.0 to 7.1	36
VSP-C15BE (BD)□-6		6	68.3				11.9			37
VSP-C15-10BE (BD)□-4		4	71.5		38.5		11.2	10	2.0 to 5.2	37
VSP-C15-10BE (BD)□-6		6	72.8				11.9			38
VSP-C15-15BE (BD)□-4		4	81.5		43.5	25	11.2	15	2.0 to 5.9	42
VSP-C15-15BE (BD)□-6		6	82.8				11.9			43
VSP-C15-20BE (BD)□-4		4	97.5		50.5	34	11.2	20	1.1 to 4.8	49
VSP-C15-20BE (BD)□-6		6	98.8				11.9			50
VSP-C20BE (BD)□-4	20	4	70	19	37	20	11.2	6	7.0 to 12.6	39
VSP-C20BE (BD)□-6		6	71.3				11.9			40
VSP-C20-10BE (BD)□-4		4	76		43		11.2	10	3.3 to 10.0	41
VSP-C20-10BE (BD)□-6		6	77.3				11.9			42
VSP-C20-15BE (BD)□-4		4	86		48	25	11.2	15	3.3 to 10.4	46
VSP-C20-15BE (BD)□-6		6	87.3				11.9			47
VSP-C20-20BE (BD)□-4		4	102		55	34	11.2	20	2.0 to 8.7	53
VSP-C20-20BE (BD)□-6		6	103.3				11.9			54

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Push-in fitting without Spring Cover)

●VSP-C10, 15-□BE (BD)□-4C/6C



●VSP-C20-□BE (BD)□-4C/6C

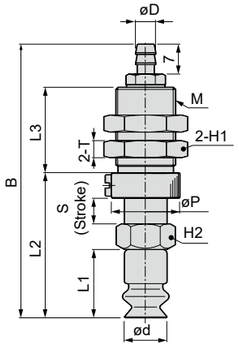


Unit: mm

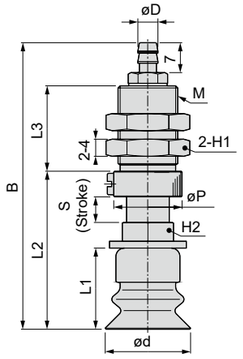
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-C10-20BE (BD)□-4C	10	4	74.5	16	52.5	11.2	20	1.5 to 4.9	43
VSP-C10-20BE (BD)□-6C		6	75.8			11.9			44
VSP-C10-30BE (BD)□-4C		4	87.5		65.5	11.2	30	1.1 to 4.8	48
VSP-C10-30BE (BD)□-6C		6	88.8			11.9			49
VSP-C10-40BE (BD)□-4C		4	100.5		78.5	11.2	40	1.0 to 4.5	54
VSP-C10-40BE (BD)□-6C		6	101.8			11.9			55
VSP-C10-50BE (BD)□-4C		4	113.5		91.5	11.2	50	0.9 to 4.5	59
VSP-C10-50BE (BD)□-6C		6	114.8			11.9			60
VSP-C15-20BE (BD)□-4C	15	4	74.5	16	52.5	11.2	20	1.5 to 4.9	43
VSP-C15-20BE (BD)□-6C		6	75.8			11.9			44
VSP-C15-30BE (BD)□-4C		4	87.5		65.5	11.2	30	1.1 to 4.8	48
VSP-C15-30BE (BD)□-6C		6	88.8			11.9			49
VSP-C15-40BE (BD)□-4C		4	100.5		78.5	11.2	40	1.0 to 4.5	54
VSP-C15-40BE (BD)□-6C		6	101.8			11.9			55
VSP-C15-50BE (BD)□-4C		4	113.5		91.5	11.2	50	0.9 to 4.5	59
VSP-C15-50BE (BD)□-6C		6	114.8			11.9			60
VSP-C20-20BE (BD)□-4C	20	4	79	19	57	11.2	20	1.5 to 4.9	49
VSP-C20-20BE (BD)□-6C		6	80.3			11.9			50
VSP-C20-30BE (BD)□-4C		4	92		70	11.2	30	1.1 to 4.8	54
VSP-C20-30BE (BD)□-6C		6	93.3			11.9			55
VSP-C20-40BE (BD)□-4C		4	105		83	11.2	40	1.0 to 4.5	59
VSP-C20-40BE (BD)□-6C		6	106.3			11.9			60
VSP-C20-50BE (BD)□-4C		4	118		96	11.2	50	0.9 to 4.5	64
VSP-C20-50BE (BD)□-6C		6	119.3			11.9			65

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting)

●VSP-C10, 15BE (BD)□-4T/6T
●VSP-C10, 15-□BE (BD)□-4T/6T



●VSP-C20BE (BD)□-4T/6T
●VSP-C20-□BE (BD)□-4T/6T

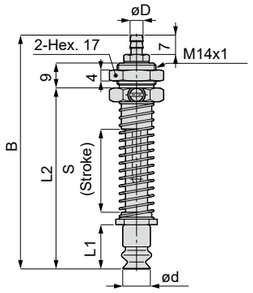


Unit: mm

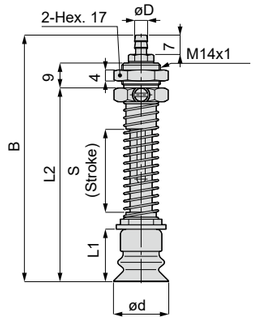
Model No.	Pad Diameter ød	Tube I.D. øD	Mounting screw M	B	L1	L2	L3	øP	Width Across Flats H1	Width Across Flats H2	T	Stroke S	Spring Force (N)	Weight (g)
VSP-C10BE (BD)□-4T	10	2.5	M14xx1	64.1	16	34	20	16	17	12	4	6	4.0 to 7.1	34
VSP-C10BE (BD)□-6T		4												
VSP-C10-10BE (BD)□-4T		2.5		68.6		38.5						10	2.0 to 5.2	35
VSP-C10-10BE (BD)□-6T		4												
VSP-C10-15BE (BD)□-4T		2.5		78.6		43.5	25					15	2.0 to 5.9	40
VSP-C10-15BE (BD)□-6T		4												
VSP-C10-20BE (BD)□-4T		2.5		94.6		50.5	34					20	1.1 to 4.8	48
VSP-C10-20BE (BD)□-6T		4												
VSP-C15BE (BD)□-4T	15	2.5	M14xx1	64.1	16	34	20	16	17	12	4	6	4.0 to 7.1	35
VSP-C15BE (BD)□-6T		4												
VSP-C15-10BE (BD)□-4T		2.5		68.6		38.5						10	2.0 to 5.2	36
VSP-C15-10BE (BD)□-6T		4												
VSP-C15-15BE (BD)□-4T		2.5		78.6		43.5	25					15	2.0 to 5.9	41
VSP-C15-15BE (BD)□-6T		4												
VSP-C15-20BE (BD)□-4T		2.5		94.6		50.5	34					20	1.1 to 4.8	48
VSP-C15-20BE (BD)□-6T		4												
VSP-C20BE (BD)□-4T	20	2.5	M14xx1	67.1	19	37	20	16	17	12	4	6	7.0 to 12.6	38
VSP-C20BE (BD)□-6T		4												
VSP-C20-10BE (BD)□-4T		2.5		73.1		43						10	3.3 to 10.0	40
VSP-C20-10BE (BD)□-6T		4												
VSP-C20-15BE (BD)□-4T		2.5		83.1		48	25					15	3.3 to 10.4	45
VSP-C20-15BE (BD)□-6T		4												
VSP-C20-20BE (BD)□-4T		2.5		99.1		55	34					20	2.0 to 8.7	52
VSP-C20-20BE (BD)□-6T		4												

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Top, VSP-C, Barb Fitting without Spring Cover)

●VSP-C10, 15-□BE (BD)□-4TC/6TC



●VSP-C20-□BE (BD)□-4TC/6TC

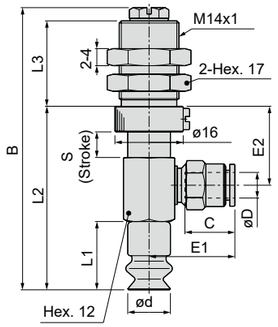


Unit: mm

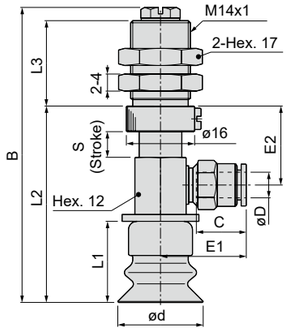
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-C10-20BE (BD)□-4TC	10	2.5	71.6	16	52.5	20	1.5 to 4.9	43
VSP-C10-20BE (BD)□-6TC		4						
VSP-C10-30BE (BD)□-4TC		2.5	84.6		65.5	30	1.1 to 4.8	48
VSP-C10-30BE (BD)□-6TC		4						
VSP-C10-40BE (BD)□-4TC		2.5	97.6		78.5	40	1.0 to 4.5	53
VSP-C10-40BE (BD)□-6TC		4						
VSP-C10-50BE (BD)□-4TC		2.5	110.6		91.5	50	0.9 to 4.5	59
VSP-C10-50BE (BD)□-6TC		4						
VSP-C15-20BE (BD)□-4TC	15	2.5	71.6	16	52.5	20	1.5 to 4.9	43
VSP-C15-20BE (BD)□-6TC		4						
VSP-C15-30BE (BD)□-4TC		2.5	84.6		65.5	30	1.1 to 4.8	48
VSP-C15-30BE (BD)□-6TC		4						
VSP-C15-40BE (BD)□-4TC		2.5	97.6		78.5	40	1.0 to 4.5	53
VSP-C15-40BE (BD)□-6TC		4						
VSP-C15-50BE (BD)□-4TC		2.5	110.6		91.5	50	0.9 to 4.5	59
VSP-C15-50BE (BD)□-6TC		4						
VSP-C20-20BE (BD)□-4TC	20	2.5	76.1	19	57	20	1.5 to 4.9	48
VSP-C20-20BE (BD)□-6TC		4						
VSP-C20-30BE (BD)□-4TC		2.5	89.1		70	30	1.1 to 4.8	53
VSP-C20-30BE (BD)□-6TC		4						
VSP-C20-40BE (BD)□-4TC		2.5	102.1		83	40	1.0 to 4.5	58
VSP-C20-40BE (BD)□-6TC		4						
VSP-C20-50BE (BD)□-4TC		2.5	115.1		96	50	0.9 to 4.5	63
VSP-C20-50BE (BD)□-6TC		4						

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in fitting)

●VSP-D10, 15BE (BD)□-4/6
●VSP-D10, 15-□BE (BD)□-4/-6



●VSP-D20BE (BD)□-4/6
●VSP-D20-□BE (BD)□-4/-6

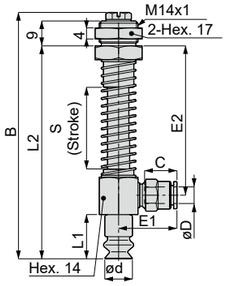


Unit: mm

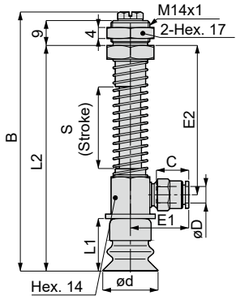
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D10BE (BD)□-4	10	4	66.1	16	43	20	11.2	18.8	18.5	6	4.0 to 7.1	47
VSP-D10BE (BD)□-6		6					11.9	20.1				48
VSP-D10-10BE (BD)□-4		4	71.1		48		11.2	18.8	25	10	2.0 to 5.2	50
VSP-D10-10BE (BD)□-6		6					11.9	20.1				51
VSP-D10-15BE (BD)□-4		4	81.1		53	25	11.2	18.8	30	15	2.0 to 5.9	56
VSP-D10-15BE (BD)□-6		6					11.9	20.1				57
VSP-D10-20BE (BD)□-4		4	97.1		60	34	11.2	18.8	37	20	1.1 to 4.8	66
VSP-D10-20BE (BD)□-6		6					11.9	20.1				67
VSP-D15BE (BD)□-4	15	4	66.1	16	43	20	11.2	18.8	18.5	6	4.0 to 7.1	48
VSP-D15BE (BD)□-6		6					11.9	20.1				49
VSP-D15-10BE (BD)□-4		4	71.1		48		11.2	18.8	25	10	2.0 to 5.2	51
VSP-D15-10BE (BD)□-6		6					11.9	20.1				52
VSP-D15-15BE (BD)□-4		4	81.1		53	25	11.2	18.8	30	15	2.0 to 5.9	56
VSP-D15-15BE (BD)□-6		6					11.9	20.1				57
VSP-D15-20BE (BD)□-4		4	97.1		60	34	11.2	18.8	37	20	1.1 to 4.8	67
VSP-D15-20BE (BD)□-6		6					11.9	20.1				68
VSP-D20BE (BD)□-4	20	4	69.1	19	46	20	11.2	18.8	18.5	6	7.0 to 12.6	51
VSP-D20BE (BD)□-6		6					11.9	20.1				52
VSP-D20-10BE (BD)□-4		4	75.1		52		11.2	18.8	24.5	10	3.3 to 10.0	54
VSP-D20-10BE (BD)□-6		6					11.9	20.1				55
VSP-D20-15BE (BD)□-4		4	85.1		57	25	11.2	18.8	29.5	15	3.3 to 10.4	61
VSP-D20-15BE (BD)□-6		6					11.9	20.1				62
VSP-D20-20BE (BD)□-4		4	101.1		64	34	11.2	18.8	36.5	20	2.0 to 8.7	71
VSP-D20-20BE (BD)□-6		6					11.9	20.1				72

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Push-in Fitting without Spring Cover)

●VSP-D10, 15-□BE (BD)□-4C/6C



●VSP-D20-□BE (BD)□-4C/6C

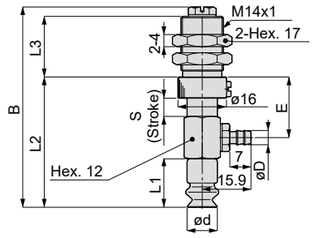


Unit: mm

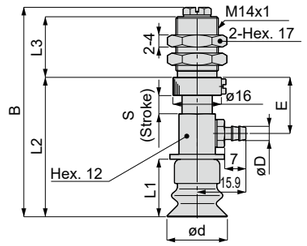
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-D10-20BE (BD)□-4C	10	4	76.1	16	64	11.2	19.8	40.5	20	1.5 to 4.9	69
VSP-D10-20BE (BD)□-6C		6				11.9	21.1				70
VSP-D10-30BE (BD)□-4C		4	89.1		77	11.2	19.8	53.5	30	1.1 to 4.8	75
VSP-D10-30BE (BD)□-6C		6				11.9	21.1				76
VSP-D10-40BE (BD)□-4C		4	102.1		90	11.2	19.8	66.5	40	1.0 to 4.5	82
VSP-D10-40BE (BD)□-6C		6				11.9	21.1				83
VSP-D10-50BE (BD)□-4C		4	115.1		103	11.2	19.8	79.5	50	0.9 to 4.5	89
VSP-D10-50BE (BD)□-6C		6				11.9	21.1				90
VSP-D15-20BE (BD)□-4C	15	4	76.1	16	64	11.2	19.8	40.5	20	1.5 to 4.9	69
VSP-D15-20BE (BD)□-6C		6				11.9	21.1				70
VSP-D15-30BE (BD)□-4C		4	89.1		77	11.2	19.8	53.5	30	1.1 to 4.8	75
VSP-D15-30BE (BD)□-6C		6				11.9	21.1				76
VSP-D15-40BE (BD)□-4C		4	102.1		90	11.2	19.8	66.5	40	1.0 to 4.5	82
VSP-D15-40BE (BD)□-6C		6				11.9	21.1				83
VSP-D15-50BE (BD)□-4C		4	115.1		103	11.2	19.8	79.5	50	0.9 to 4.5	89
VSP-D15-50BE (BD)□-6C		6				11.9	21.1				90
VSP-D20-20BE (BD)□-4C	20	4	80.6	19	68.5	11.2	19.8	41	20	1.5 to 4.9	70
VSP-D20-20BE (BD)□-6C		6				11.9	21.1				71
VSP-D20-30BE (BD)□-4C		4	93.6		81.5	11.2	19.8	54	30	1.1 to 4.8	77
VSP-D20-30BE (BD)□-6C		6				11.9	21.1				78
VSP-D20-40BE (BD)□-4C		4	106.6		94.5	11.2	19.8	67	40	1.0 to 4.5	82
VSP-D20-40BE (BD)□-6C		6				11.9	21.1				83
VSP-D20-50BE (BD)□-4C		4	119.6		107.5	11.2	19.8	80	50	0.9 to 4.5	90
VSP-D20-50BE (BD)□-6C		6				11.9	21.1				91

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting)

●VSP-D10, 15BE (BD)□-4T/6T
●VSP-D10, 15-□BE (BD)□-4T/6T



●VSP-D20BE (BD)□-4T/6T
●VSP-D20-□BE (BD)□-4T/6T

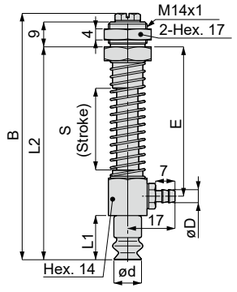


Unit: mm

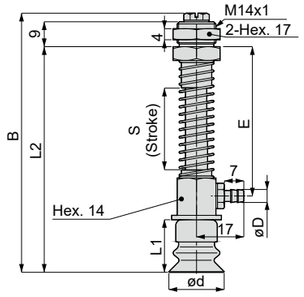
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D10BE (BD)□-4T	10	2.5	66.1	16	43	20	18.5	6	4.0 to 7.1	47
VSP-D10BE (BD)□-6T		4								
VSP-D10-10BE (BD)□-4T		2.5	71.1		48		25	10	2.0 to 5.2	50
VSP-D10-10BE (BD)□-6T		4								
VSP-D10-15BE (BD)□-4T		2.5	81.1		53	25	30	15	2.0 to 5.9	55
VSP-D10-15BE (BD)□-6T		4								
VSP-D10-20BE (BD)□-4T		2.5	97.1		60	34	37	20	1.1 to 4.8	66
VSP-D10-20BE (BD)□-6T		4								
VSP-D15BE (BD)□-4T	15	2.5	66.1	16	43	20	18.5	6	4.0 to 7.1	47
VSP-D15BE (BD)□-6T		4								
VSP-D15-10BE (BD)□-4T		2.5	71.1		48		25	10	2.0 to 5.2	50
VSP-D15-10BE (BD)□-6T		4								
VSP-D15-15BE (BD)□-4T		2.5	81.1		53	25	30	15	2.0 to 5.9	55
VSP-D15-15BE (BD)□-6T		4								
VSP-D15-20BE (BD)□-4T		2.5	97.1		60	34	37	20	1.1 to 4.8	66
VSP-D15-20BE (BD)□-6T		4								
VSP-D20BE (BD)□-4T	20	2.5	69.1	19	46	20	18.5	6	7.0 to 12.6	50
VSP-D20BE (BD)□-6T		4								
VSP-D20-10BE (BD)□-4T		2.5	75.1		52		24.5	10	3.3 to 10.0	54
VSP-D20-10BE (BD)□-6T		4								
VSP-D20-15BE (BD)□-4T		2.5	85.1		57	25	29.5	15	3.3 to 10.4	61
VSP-D20-15BE (BD)□-6T		4								
VSP-D20-20BE (BD)□-4T		2.5	101.1		64	34	36.5	20	2.0 to 8.7	71
VSP-D20-20BE (BD)□-6T		4								

Outline Dimension Drawing (Buffer Type, Vacuum Outlet on Side, VSP-D, Barb Fitting without Spring Cover)

●VSP-D10, 15-□BE (BD)□-4TC/6TC



●VSP-D20-□BE (BD)□-4TC/6TC

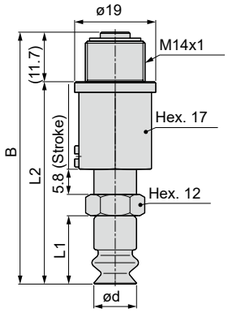


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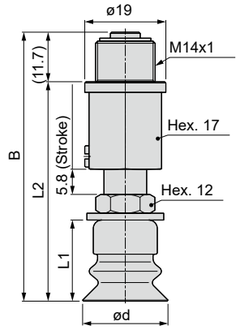
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	E	Stroke S	Spring Force (N)	Weight (g)
VSP-D10-20BE (BD)□-4TC	10	2.5	76.1	16	64	40.5	20	1.5 to 4.9	60
VSP-D10-20BE (BD)□-6TC		4							
VSP-D10-30BE (BD)□-4TC		2.5	89.1		77	53.5	30	1.1 to 4.8	67
VSP-D10-30BE (BD)□-6TC		4							
VSP-D10-40BE (BD)□-4TC		2.5	102.1		90	66.5	40	1.0 to 4.5	74
VSP-D10-40BE (BD)□-6TC		4							
VSP-D10-50BE (BD)□-4TC		2.5	115.1		103	79.5	50	0.9 to 4.5	80
VSP-D10-50BE (BD)□-6TC		4							
VSP-D15-20BE (BD)□-4TC	15	2.5	76.1	16	64	40.5	20	1.5 to 4.9	61
VSP-D15-20BE (BD)□-6TC		4							
VSP-D15-30BE (BD)□-4TC		2.5	89.1		77	53.5	30	1.1 to 4.8	68
VSP-D15-30BE (BD)□-6TC		4							
VSP-D15-40BE (BD)□-4TC		2.5	102.1		90	66.5	40	1.0 to 4.5	75
VSP-D15-40BE (BD)□-6TC		4							
VSP-D15-50BE (BD)□-4TC		2.5	115.1		103	79.5	50	0.9 to 4.5	81
VSP-D15-50BE (BD)□-6TC		4							
VSP-D20-20BE (BD)□-4TC	20	4	80.6	19	68.5	41	20	1.5 to 4.9	68
VSP-D20-20BE (BD)□-6TC		6							
VSP-D20-30BE (BD)□-4TC		4	93.6		81.5	54	30	1.1 to 4.8	75
VSP-D20-30BE (BD)□-6TC		6							
VSP-D20-40BE (BD)□-4TC		4	106.6		94.5	67	40	1.0 to 4.5	81
VSP-D20-40BE (BD)□-6TC		6							
VSP-D20-50BE (BD)□-4TC		4	119.6		107.5	80	50	0.9 to 4.5	88
VSP-D20-50BE (BD)□-6TC		6							

Outline Dimension Drawing (Buffer Type, Direct Mount Type, VSP-F, Male Thread)

●VSP-F10, 15BE (BD)□



●VSP-F20BE (BD)□

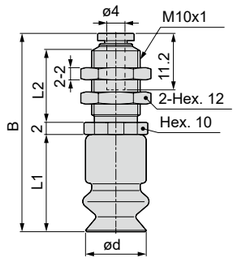


Unit: mm

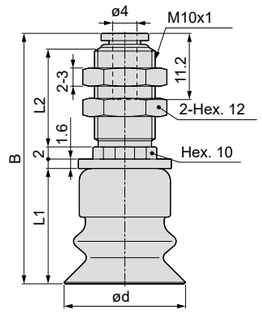
Model No.	Pad Diameter ød	B	L1	L2	Spring Force (N)	Weight (g)
VSP-F10BE (BD)□	10	59	16	47.3	7.9 to 15	58
VSP-F15BE (BD)□	15	59	16	47.3	7.9 to 15	58
VSP-F20BE (BD)□	20	63	19	51.3	7.9 to 15	62

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Push-in fitting)

●VSP-MA10, 15BE (BD)□-4



●VSP-MA20BE (BD)□-4

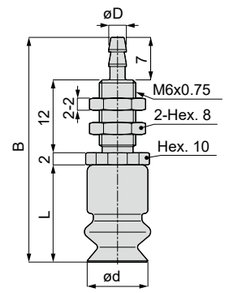


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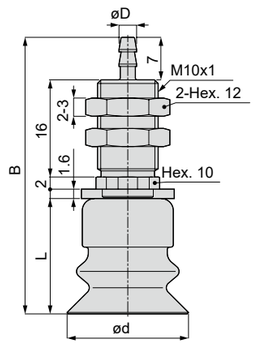
Model No.	Pad Diameter ød	B	L1	L2	Weight (g)
VSP-MA10BE (BD)□-4	10	37	16	16.4	6.6
VSP-MA15BE (BD)□-4	15	37	16	16.4	7.1
VSP-MA20BE (BD)□-4	20	41.6	19	16.4	12

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Top, VSP-MA, Barb Fitting)

●VSP-MA10, 15BE (BD)□-4T



●VSP-MA20BE (BD)□-4T/6T

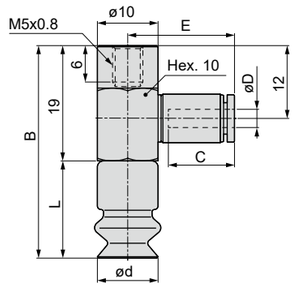


Unit: mm

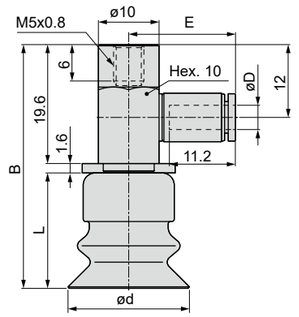
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-MA10BE (BD)□-4T	10	2.5	37	16	3.8
VSP-MA15BE (BD)□-4T	15	2.5	37	16	4.3
VSP-MA20BE (BD)□-4T	20	2.5	45.6	19	12
VSP-MA20BE (BD)□-6T		4			

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Push-in fitting)

●VSP-MB10, 15BE (BD)□-2/4/6



●VSP-MB20BE (BD)□-2/4/6

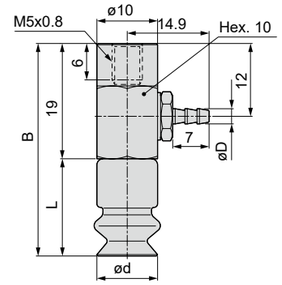


Unit: mm

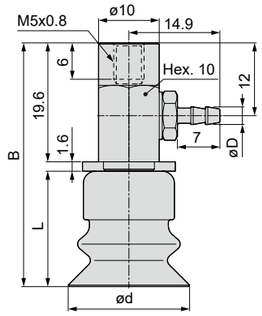
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-MB10BE (BD)□-2	10	1.8	35	16	8.4	13.7	7.7
VSP-MB10BE (BD)□-4		4			11.2	17.8	8.4
VSP-MB10BE (BD)□-6		6			11.9	19.6	9.8
VSP-MB15BE (BD)□-2	15	1.8	35	16	8.4	13.7	8.2
VSP-MB15BE (BD)□-4		4			11.2	17.8	8.9
VSP-MB15BE (BD)□-6		6			11.9	19.6	10.3
VSP-MB20BE (BD)□-2	20	1.8	40.2	19	8.4	13.7	12
VSP-MB20BE (BD)□-4		4			11.2	17.8	13
VSP-MB20BE (BD)□-6		6			11.9	19.6	14

Outline Dimension Drawing (Compact, Fixed Type, Vacuum Outlet on Side, VSP-MB, Barb Fitting)

●VSP-MB10, 15BE (BD)□-4T/6T



●VSP-MB20BE (BD)□-4T/6T

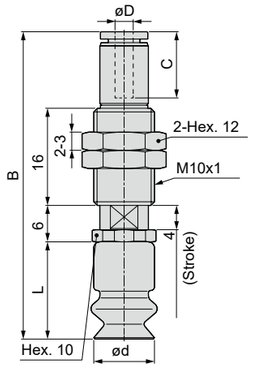


Unit: mm

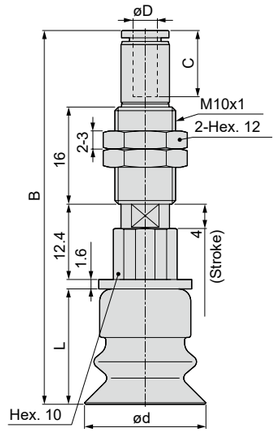
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Weight (g)
VSP-MB10BE (BD)□-4T	10	2.5	35	16	7.2
VSP-MB10BE (BD)□-6T		4			
VSP-MB15BE (BD)□-4T	15	2.5	35	16	7.7
VSP-MB15BE (BD)□-6T		4			
VSP-MB20BE (BD)□-4T	20	2.5	40.2	19	12
VSP-MB20BE (BD)□-6T		4			

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Push-in fitting)

●VSP-MC10, 15BE (BD)□-2/4



●VSP-MC20BE (BD)□-2/4

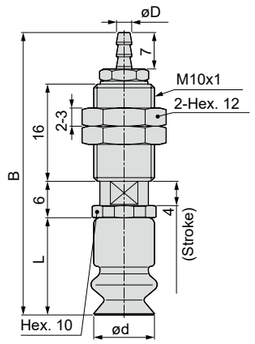


Unit: mm

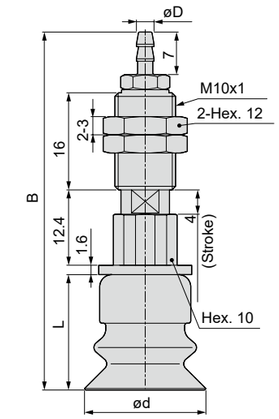
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	Spring Force (N)	Weight (g)
VSP-MC10BE (BD)□-2	10	1.8	46.9	16	8.4	0.5 to 0.6	15
VSP-MC10BE (BD)□-4		4	51		11.2		16
VSP-MC15BE (BD)□-2	15	1.8	46.9	16	8.4	0.5 to 0.6	16
VSP-MC15BE (BD)□-4		4	51		11.2		17
VSP-MC20BE (BD)□-2	20	1.8	57.9	19	8.4	1 to 1.3	23
VSP-MC20BE (BD)□-4		4	62		11.2		24

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Top, VSP-MC, Barb Fitting)

●VSP-MC10, 15BE (BD)□-4T/6T



●VSP-MC20BE (BD)□-4T/6T

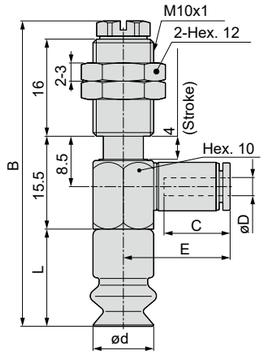


Unit: mm

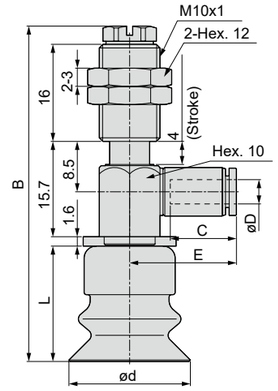
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MC10BE (BD)□-4T	10	2.5	48.1	16	0.5 to 0.6	15
VSP-MC10BE (BD)□-6T		4				
VSP-MC15BE (BD)□-4T	15	2.5	48.1	16	0.5 to 0.6	16
VSP-MC15BE (BD)□-6T		4				
VSP-MC20BE (BD)□-4T	20	2.5	59.1	19	1 to 1.3	23
VSP-MC20BE (BD)□-6T		4				

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Push-in fitting)

●VSP-MD10, 15BE (BD)□-2/4/6



●VSP-MD20BE (BD)□-2/4/6

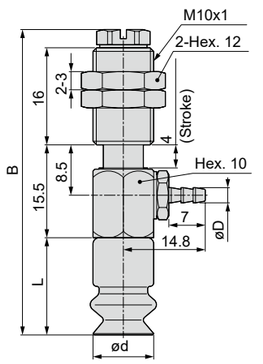


Unit: mm

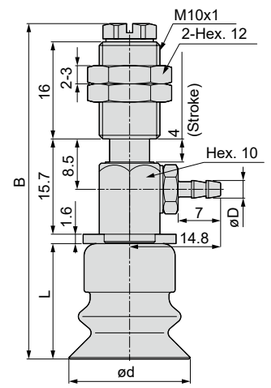
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Spring Force (N)	Weight (g)
VSP-MD10BE (BD)□-2	10	1.8	50.5	16	8.4	13.6	1 to 1.3	23
VSP-MD10BE (BD)□-4		4			11.2	17.7		24
VSP-MD10BE (BD)□-6		6			11.9	19.5		25
VSP-MD15BE (BD)□-2	15	1.8	50.5	16	8.4	13.6	1 to 1.3	24
VSP-MD15BE (BD)□-4		4			11.2	17.7		25
VSP-MD15BE (BD)□-6		6			11.9	19.5		26
VSP-MD20BE (BD)□-2	20	1.8	55.3	19	8.4	13.6	1 to 1.3	27
VSP-MD20BE (BD)□-4		4			11.2	17.7		28
VSP-MD20BE (BD)□-6		6			11.9	19.5		29

Outline Dimension Drawing (Compact, Buffer Type, Vacuum Outlet on Side, VSP-MD, Barb Fitting)

●VSP-MD10, 15BE (BD)□-4T/6T



●VSP-MD20BE (BD)□-4T/6T

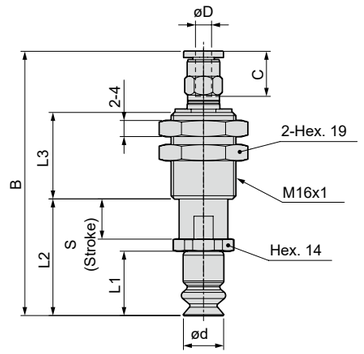


Unit: mm

Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Spring Force (N)	Weight (g)
VSP-MD10BE (BD)□-4T	10	2.5	50.5	16	1 to 1.3	22
VSP-MD10BE (BD)□-6T		4				
VSP-MD15BE (BD)□-4T	15	2.5	50.5	16	1 to 1.3	23
VSP-MD15BE (BD)□-6T		4				
VSP-MD20BE (BD)□-4T	20	2.5	55.3	19	1 to 1.3	27
VSP-MD20BE (BD)□-6T		4				

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC10, 15-□BE (BD)□-2/4/6

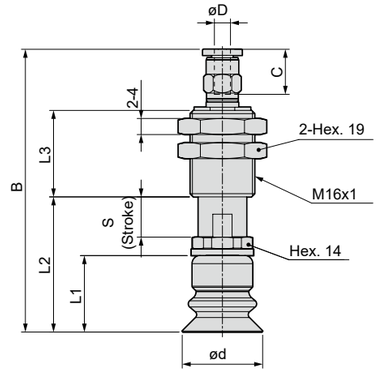


Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10-10BE (BD)□-2	10	1.8	61.6	16	29	21.5	8.4	10	1.0 to 2.4	22
VSP-HC10-10BE (BD)□-4		4	65.7				11.2			23
VSP-HC10-10BE (BD)□-6		6	67				11.9			24
VSP-HC10-15BE (BD)□-2		1.8	71.6		34	26.5	8.4	15	1.0 to 2.7	24
VSP-HC10-15BE (BD)□-4		4	75.7				11.2			25
VSP-HC10-15BE (BD)□-6		6	77				11.9			26
VSP-HC10-20BE (BD)□-2		1.8	81.6		39	31.5	8.4	20	1.0 to 3.0	26
VSP-HC10-20BE (BD)□-4		4	85.7				11.2			27
VSP-HC10-20BE (BD)□-6		6	87				11.9			28
VSP-HC10-25BE (BD)□-2		1.8	92.1		44	37	8.4	25	1.0 to 3.0	28
VSP-HC10-25BE (BD)□-4		4	96.2				11.2			29
VSP-HC10-25BE (BD)□-6		6	97.5				11.9			30
VSP-HC10-30BE (BD)□-2		1.8	103.1		49	43	8.4	30	1.0 to 3.0	30
VSP-HC10-30BE (BD)□-4		4	107.2				11.2			31
VSP-HC10-30BE (BD)□-6		6	108.5				11.9			32
VSP-HC10-40BE (BD)□-2		1.8	125.1		59	55	8.4	40	1.0 to 3.0	34
VSP-HC10-40BE (BD)□-4		4	129.2				11.2			35
VSP-HC10-40BE (BD)□-6		6	130.5				11.9			36
VSP-HC10-50BE (BD)□-2		1.8	146.6		69	66.5	8.4	50	1.0 to 3.1	39
VSP-HC10-50BE (BD)□-4		4	150.7				11.2			40
VSP-HC10-50BE (BD)□-6		6	152				11.9			41
VSP-HC15-10BE (BD)□-2	15	1.8	61.6	16	29	21.5	8.4	10	1.0 to 2.4	22
VSP-HC15-10BE (BD)□-4		4	65.7				11.2			23
VSP-HC15-10BE (BD)□-6		6	67				11.9			24
VSP-HC15-15BE (BD)□-2		1.8	71.6		34	26.5	8.4	15	1.0 to 2.7	24
VSP-HC15-15BE (BD)□-4		4	75.7				11.2			25
VSP-HC15-15BE (BD)□-6		6	77				11.9			26
VSP-HC15-20BE (BD)□-2		1.8	81.6		39	31.5	8.4	20	1.0 to 3.0	26
VSP-HC15-20BE (BD)□-4		4	85.7				11.2			27
VSP-HC15-20BE (BD)□-6		6	87				11.9			28
VSP-HC15-25BE (BD)□-2		1.8	92.1		44	37	8.4	25	1.0 to 3.0	28
VSP-HC15-25BE (BD)□-4		4	96.2				11.2			29
VSP-HC15-25BE (BD)□-6		6	97.5				11.9			30
VSP-HC15-30BE (BD)□-2		1.8	103.1		49	43	8.4	30	1.0 to 3.0	30
VSP-HC15-30BE (BD)□-4		4	107.2				11.2			31
VSP-HC15-30BE (BD)□-6		6	108.5				11.9			32
VSP-HC15-40BE (BD)□-2		1.8	125.1		59	55	8.4	40	1.0 to 3.0	34
VSP-HC15-40BE (BD)□-4		4	129.2				11.2			35
VSP-HC15-40BE (BD)□-6		6	130.5				11.9			36
VSP-HC15-50BE (BD)□-2		1.8	146.6		69	66.5	8.4	50	1.0 to 3.1	39
VSP-HC15-50BE (BD)□-4		4	150.7				11.2			40
VSP-HC15-50BE (BD)□-6		6	152				11.9			41

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Push-in fitting)

●VSP-HC20-□BE (BD)□-2/4/6

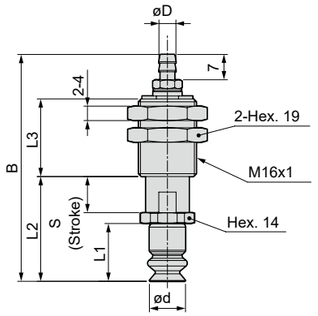


Unit: mm

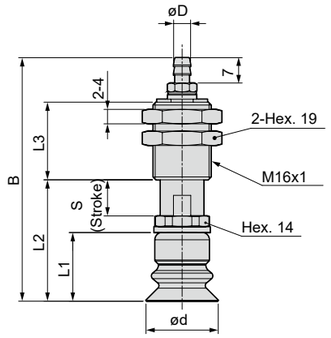
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-HC20-10BE (BD)□-2	20	1.8	66.2	19	33.6	21.5	8.4	10	1.0 to 2.4	27
VSP-HC20-10BE (BD)□-4		4	70.3				11.2			28
VSP-HC20-10BE (BD)□-6		6	71.6				11.9			29
VSP-HC20-15BE (BD)□-2		1.8	76.2		38.6	26.5	8.4	15	1.0 to 2.7	29
VSP-HC20-15BE (BD)□-4		4	80.3				11.2			30
VSP-HC20-15BE (BD)□-6		6	81.6				11.9			31
VSP-HC20-20BE (BD)□-2		1.8	86.2		43.6	31.5	8.4	20	1.0 to 3.0	31
VSP-HC20-20BE (BD)□-4		4	90.3				11.2			32
VSP-HC20-20BE (BD)□-6		6	91.6				11.9			33
VSP-HC20-25BE (BD)□-2		1.8	96.7		48.6	37	8.4	25	1.0 to 3.0	33
VSP-HC20-25BE (BD)□-4		4	100.8				11.2			34
VSP-HC20-25BE (BD)□-6		6	102.1				11.9			35
VSP-HC20-30BE (BD)□-2		1.8	107.7		53.6	43	8.4	30	1.0 to 3.0	35
VSP-HC20-30BE (BD)□-4		4	111.8				11.2			36
VSP-HC20-30BE (BD)□-6		6	113.1				11.9			37
VSP-HC20-40BE (BD)□-2		1.8	129.7		63.6	55	8.4	40	1.0 to 3.0	39
VSP-HC20-40BE (BD)□-4		4	133.8				11.2			40
VSP-HC20-40BE (BD)□-6		6	135.1				11.9			41
VSP-HC20-50BE (BD)□-2		1.8	151.2		73.6	66.5	8.4	50	1.0 to 3.1	43
VSP-HC20-50BE (BD)□-4		4	155.3				11.2			44
VSP-HC20-50BE (BD)□-6		6	156.6				11.9			45

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Top, VSP-HC, Barb Fitting)

●VSP-HC10, 15-□BE (BD)□-4T/6T



●VSP-HC20-□BE (BD)□-4T/6T

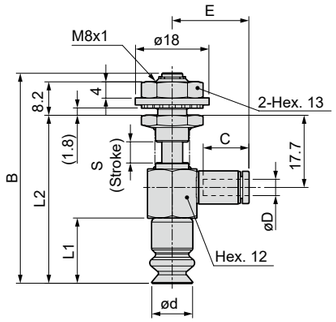


Unit: mm

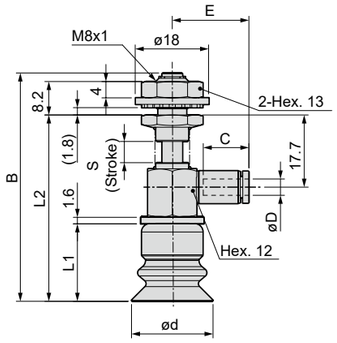
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	Stroke S	Spring Force (N)	Weight (g)
VSP-HC10-10BE (BD)□-4T	10	2.5	62.8	16	29	21.5	10	1.0 to 2.4	21
VSP-HC10-10BE (BD)□-6T		4							
VSP-HC10-15BE (BD)□-4T		2.5	72.8		34	26.5	15	1.0 to 2.7	23
VSP-HC10-15BE (BD)□-6T		4							
VSP-HC10-20BE (BD)□-4T		2.5	82.8		39	31.5	20	1.0 to 3.0	25
VSP-HC10-20BE (BD)□-6T		4							
VSP-HC10-25BE (BD)□-4T		2.5	93.3		44	37	25	1.0 to 3.0	28
VSP-HC10-25BE (BD)□-6T		4							
VSP-HC10-30BE (BD)□-4T		2.5	104.3		49	43	30	1.0 to 3.0	30
VSP-HC10-30BE (BD)□-6T		4							
VSP-HC10-40BE (BD)□-4T		2.5	126.3		59	55	40	1.0 to 3.0	34
VSP-HC10-40BE (BD)□-6T		4							
VSP-HC10-50BE (BD)□-4T		2.5	147.8		69	66.5	50	1.0 to 3.1	38
VSP-HC10-50BE (BD)□-6T		4							
VSP-HC15-10BE (BD)□-4T	15	2.5	62.8	16	29	21.5	10	1.0 to 2.4	21
VSP-HC15-10BE (BD)□-6T		4							
VSP-HC15-15BE (BD)□-4T		2.5	72.8		34	26.5	15	1.0 to 2.7	23
VSP-HC15-15BE (BD)□-6T		4							
VSP-HC15-20BE (BD)□-4T		2.5	82.8		39	31.5	20	1.0 to 3.0	25
VSP-HC15-20BE (BD)□-6T		4							
VSP-HC15-25BE (BD)□-4T		2.5	93.3		44	37	25	1.0 to 3.0	28
VSP-HC15-25BE (BD)□-6T		4							
VSP-HC15-30BE (BD)□-4T		2.5	104.3		49	43	30	1.0 to 3.0	30
VSP-HC15-30BE (BD)□-6T		4							
VSP-HC15-40BE (BD)□-4T		2.5	126.3		59	55	40	1.0 to 3.0	34
VSP-HC15-40BE (BD)□-6T		4							
VSP-HC15-50BE (BD)□-4T		2.5	147.8		69	66.5	50	1.0 to 3.1	38
VSP-HC15-50BE (BD)□-6T		4							
VSP-HC20-10BE (BD)□-4T	20	2.5	67.4	19	33.6	21.5	10	1.0 to 2.4	25
VSP-HC20-10BE (BD)□-6T		4							
VSP-HC20-15BE (BD)□-4T		2.5	77.4		38.6	26.5	15	1.0 to 2.7	27
VSP-HC20-15BE (BD)□-6T		4							
VSP-HC20-20BE (BD)□-4T		2.5	87.4		43.6	31.5	20	1.0 to 3.0	29
VSP-HC20-20BE (BD)□-6T		4							
VSP-HC20-25BE (BD)□-4T		2.5	97.9		48.6	37	25	1.0 to 3.0	31
VSP-HC20-25BE (BD)□-6T		4							
VSP-HC20-30BE (BD)□-4T		2.5	108.9		53.6	43	30	1.0 to 3.0	34
VSP-HC20-30BE (BD)□-6T		4							
VSP-HC20-40BE (BD)□-4T		2.5	130.9		63.6	55	40	1.0 to 3.0	38
VSP-HC20-40BE (BD)□-6T		4							
VSP-HC20-50BE (BD)□-4T		2.5	152.4		73.6	66.5	50	1.0 to 3.1	42
VSP-HC20-50BE (BD)□-6T		4							

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side, VSP-HD, Push-in fitting)

●VSP-HD10, 15BE (BD)□-2/4/6



●VSP-HD20BE (BD)□-2/4/6

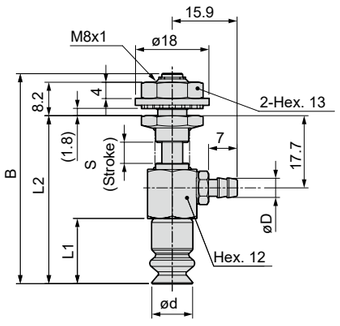


Unit: mm

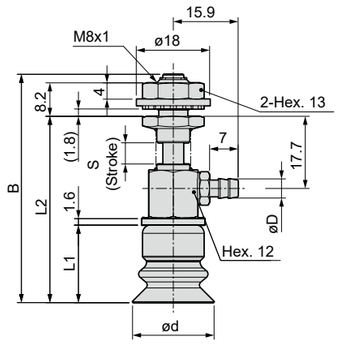
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HD10BE (BD)□-2	10	1.8	51.5	16	41.2	8.4	14.7	5.2	1.6 to 2.9	32
VSP-HD10BE (BD)□-4		4				11.2	18.8			33
VSP-HD10BE (BD)□-6		6				11.9	20.6			34
VSP-HD15BE (BD)□-2	15	1.8	51.5	16	41.2	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HD15BE (BD)□-4		4				11.2	18.8			34
VSP-HD15BE (BD)□-6		6				11.9	20.6			35
VSP-HD20BE (BD)□-2	20	1.8	56	19	45.7	8.4	14.7	5.2	1.6 to 2.9	36
VSP-HD20BE (BD)□-4		4				11.2	18.8			37
VSP-HD20BE (BD)□-6		6				11.9	20.6			38

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet on Side, VSP-HD, Barb Fitting)

●VSP-HD10, 15BE (BD)□-4T/6T



●VSP-HD20BE (BD)□-4T/6T

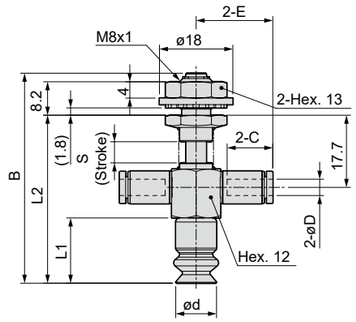


Unit: mm

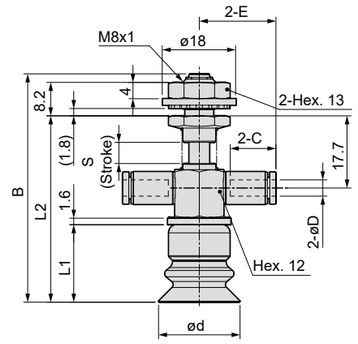
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HD10BE (BD)□-4T	10	2.5	51.5	16	41.2	5.2	1.6 to 2.9	31
VSP-HD10BE (BD)□-6T		4						
VSP-HD15BE (BD)□-4T	15	2.5	51.5	16	41.2	5.2	1.6 to 2.9	32
VSP-HD15BE (BD)□-6T		4						
VSP-HD20BE (BD)□-4T	20	2.5	56	19	45.7	5.2	1.6 to 2.9	36
VSP-HD20BE (BD)□-6T		4						

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides VSP-HDW, Push-in fitting)

●VSP-HDW10, 15BE (BD)□-2/4/6



●VSP-HDW20BE (BD)□-2/4/6

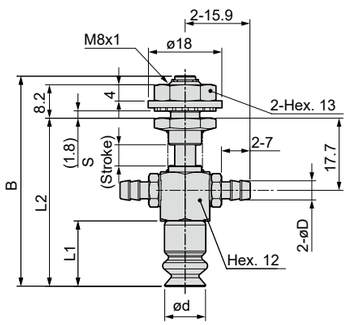


Unit: mm

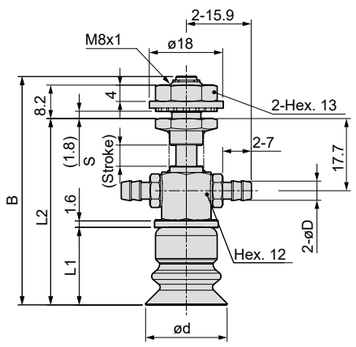
Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	Tube End C	E	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW10BE (BD)□-2	10	1.8	51.5	16	41.2	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HDW10BE (BD)□-4		4				11.2	18.8			35
VSP-HDW10BE (BD)□-6		6				11.9	20.6			37
VSP-HDW15BE (BD)□-2	15	1.8	51.5	16	41.2	8.4	14.7	5.2	1.6 to 2.9	33
VSP-HDW15BE (BD)□-4		4				11.2	18.8			35
VSP-HDW15BE (BD)□-6		6				11.9	20.6			37
VSP-HDW20BE (BD)□-2	20	1.8	56	19	45.7	8.4	14.7	5.2	1.6 to 2.9	37
VSP-HDW20BE (BD)□-4		4				11.2	18.8			39
VSP-HDW20BE (BD)□-6		6				11.9	20.6			41

Outline Dimension Drawing (Lightweight Buffer Type, Vacuum Outlet Both Sides VSP-HDW, Barb Fitting)

●VSP-HDW10, 15BE (BD)□-4T/6T



●VSP-HDW20BE (BD)□-4T/6T

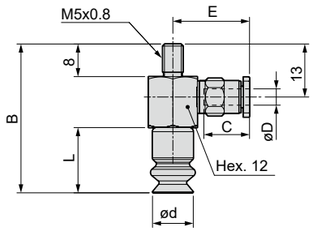


Unit: mm

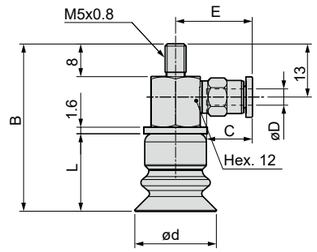
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	Stroke S	Spring Force (N)	Weight (g)
VSP-HDW10BE (BD)□-4T	10	2.5	51.5	16	41.2	5.2	1.6 to 2.9	32
VSP-HDW10BE (BD)□-6T		4						
VSP-HDW15BE (BD)□-4T	15	2.5	51.5	16	41.2	5.2	1.6 to 2.9	32
VSP-HDW15BE (BD)□-6T		4						
VSP-HDW20BE (BD)□-4T	20	2.5	56	19	45.7	5.2	1.6 to 2.9	37
VSP-HDW20BE (BD)□-6T		4						

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side, VSP-HE, Push-in fitting)

●VSP-HE10, 15BE (BD)□-2/4/6



●VSP-HE20BE (BD)□-2/4/6

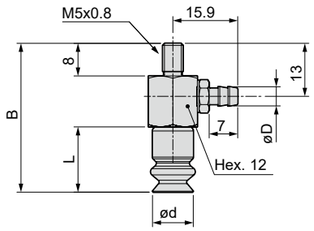


Unit: mm

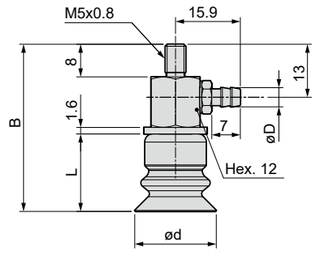
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HE10BE (BD)□-2	10	1.8	36.5	16	8.4	14.7	17
VSP-HE10BE (BD)□-4		4			11.2	18.8	18
VSP-HE10BE (BD)□-6		6			11.9	20.6	19
VSP-HE15BE (BD)□-2	15	1.8	36.5	16	8.4	14.7	17
VSP-HE15BE (BD)□-4		4			11.2	18.8	18
VSP-HE15BE (BD)□-6		6			11.9	20.6	19
VSP-HE20BE (BD)□-2	20	1.8	41	19	8.4	14.7	22
VSP-HE20BE (BD)□-4		4			11.2	18.8	23
VSP-HE20BE (BD)□-6		6			11.9	20.6	24

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet on Side, VSP-HE, Barb Fitting)

●VSP-HE10, 15BE (BD)□-4T/6T



●VSP-HE20BE (BD)□-4T/6T

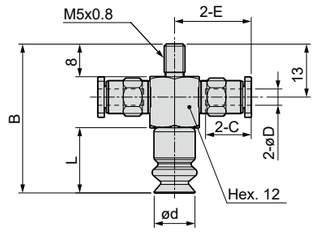


Unit: mm

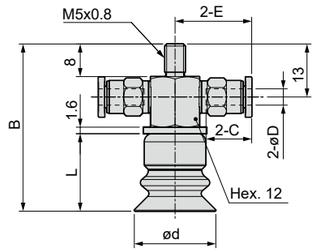
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HE10BE (BD)□-4T	10	2.5	36.5	16	16
VSP-HE10BE (BD)□-6T		4			
VSP-HE15BE (BD)□-4T	15	2.5	36.5	16	16
VSP-HE15BE (BD)□-6T		4			
VSP-HE20BE (BD)□-4T	20	2.5	41	19	21
VSP-HE20BE (BD)□-6T		4			

Outline Dimension Drawing (Low Profile Fixed Type, Vacuum Outlet Both Sides VSP-HE, Push-in fitting)

●VSP-HEW10, 15BE (BD)□-2/4/6



●VSP-HEW20BE (BD)□-2/4/6

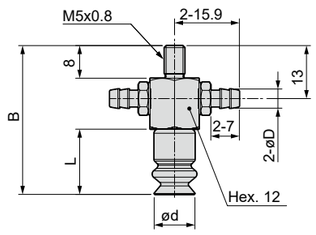


Unit: mm

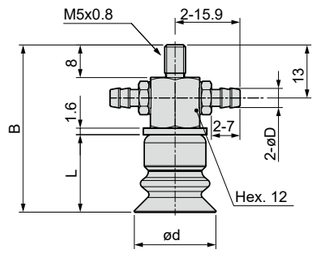
Model No.	Pad Diameter ød	Tube O.D. øD	B	L	Tube End C	E	Weight (g)
VSP-HEW10BE (BD)□-2	10	1.8	36.5	16	8.4	14.7	19
VSP-HEW10BE (BD)□-4		4			11.2	18.8	21
VSP-HEW10BE (BD)□-6		6			11.9	20.6	23
VSP-HEW15BE (BD)□-2	15	1.8	36.5	16	8.4	14.7	20
VSP-HEW15BE (BD)□-4		4			11.2	18.8	22
VSP-HEW15BE (BD)□-6		6			11.9	20.6	24
VSP-HEW20BE (BD)□-2	20	1.8	41	19	8.4	14.7	23
VSP-HEW20BE (BD)□-4		4			11.2	18.8	25
VSP-HEW20BE (BD)□-6		6			11.9	20.6	27

Outline Dimension Drawing (Low Profile Buffer Type, Vacuum Outlet Both Sides VSP-HEW, Barb Fitting)

●VSP-HEW10, 15BE (BD)□-4T/6T



●VSP-HEW20BE (BD)□-4T/6T

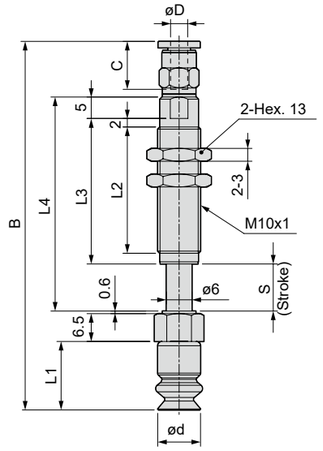


Unit: mm

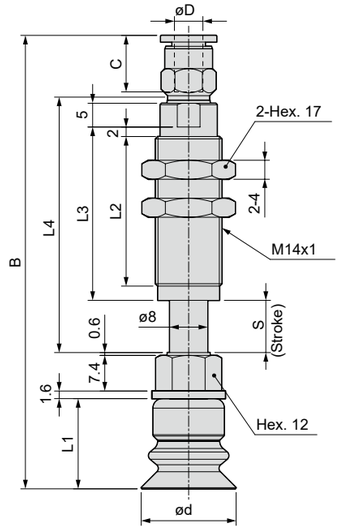
Model No.	Pad Diameter ød	Tube I.D. øD	B	L	Weight (g)
VSP-HEW10BE (BD)□-4T	10	2.5	36.5	16	17
VSP-HEW10BE (BD)□-6T		4			
VSP-HEW15BE (BD)□-4T	15	2.5	36.5	16	17
VSP-HEW15BE (BD)□-6T		4			
VSP-HEW20BE (BD)□-4T	20	2.5	41	19	21
VSP-HEW20BE (BD)□-6T		4			

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Push-in fitting)

●VSP-LFC10, 15-□BE (BD)□-4



●VSP-LFC20-□BE (BD)□-4/6



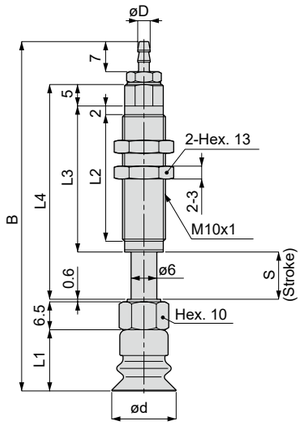
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC10-2BE (BD)□-4	10	4	70.1	16	21.5	26	34	11.2	2	1.3 to 1.8	28
VSP-LFC10-5BE (BD)□-4			76.1		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	30
VSP-LFC10-10BE (BD)□-4			86.1		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	32
VSP-LFC10-15BE (BD)□-4			96.1		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	34
VSP-LFC10-20BE (BD)□-4			106.1		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	36
VSP-LFC15-2BE (BD)□-4	15	4	70.1	16	21.5	26	34	11.2	2	1.3 to 1.8	28
VSP-LFC15-5BE (BD)□-4			76.1		24.5	29	40		5	1.3 to 2.4 [0.33 to 0.6]	30
VSP-LFC15-10BE (BD)□-4			86.1		29.5	34	50		10	1.3 to 3.3 [0.33 to 0.83]	32
VSP-LFC15-15BE (BD)□-4			96.1		34.5	39	60		15	1.3 to 4.2 [0.33 to 1.05]	34
VSP-LFC15-20BE (BD)□-4			106.1		39.5	44	70		20	1.3 to 5.1 [0.33 to 1.28]	36
VSP-LFC20-5BE (BD)□-4	20	4	84.1	19	26.5	31.5	42.5	11.2	5	4.5 to 6.5 [1.13 to 1.63]	57
VSP-LFC20-5BE (BD)□-6		6	85.4					11.9			58
VSP-LFC20-10BE (BD)□-4		4	94.1		31.5	36.5	52.5	11.2	10	4.5 to 8.2 [1.13 to 2.05]	59
VSP-LFC20-10BE (BD)□-6		6	95.4					11.9			60
VSP-LFC20-15BE (BD)□-4		4	104.1		36.5	41.5	62.5	11.2	15	4.5 to 9.9 [1.13 to 2.48]	62
VSP-LFC20-15BE (BD)□-6		6	105.4					11.9			63
VSP-LFC20-20BE (BD)□-4		4	114.1		41.5	46.5	72.5	11.2	20	4.5 to 14.9 [1.13 to 3.73]	65
VSP-LFC20-20BE (BD)□-6		6	115.4					11.9			66

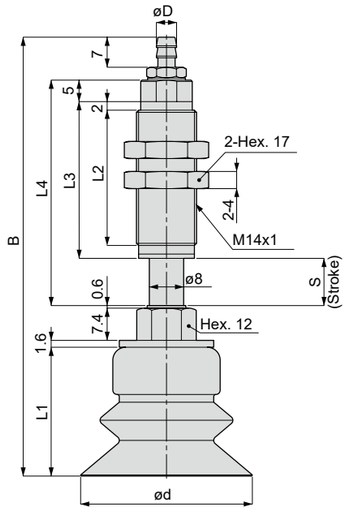
* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Top, VSP-LFC, Barb Fitting)

●VSP-LFC10, 15-□BE (BD)□-4T/6T



●VSP-LFC20-□BE (BD)□-4T/6T



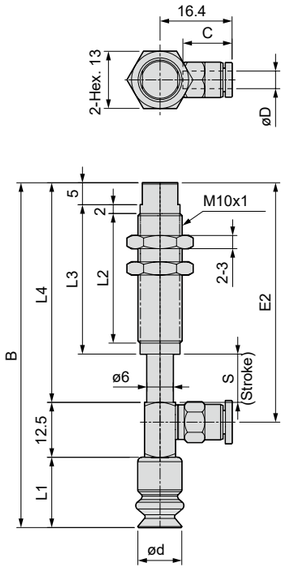
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Stroke S	Spring Force (N)	Weight (g)
VSP-LFC10-2BE (BD)□-4T	10	2.5	67.2	16	21.5	26	34	2	1.3 to 1.8	27
VSP-LFC10-2BE (BD)□-6T		4								
VSP-LFC10-5BE (BD)□-4T		2.5	73.2		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	29
VSP-LFC10-5BE (BD)□-6T		4								
VSP-LFC10-10BE (BD)□-4T		2.5	83.2		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	31
VSP-LFC10-10BE (BD)□-6T		4								
VSP-LFC10-15BE (BD)□-4T		2.5	93.2		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	33
VSP-LFC10-15BE (BD)□-6T		4								
VSP-LFC10-20BE (BD)□-4T		2.5	103.2		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	35
VSP-LFC10-20BE (BD)□-6T		4								
VSP-LFC15-2BE (BD)□-4T	15	2.5	67.2	16	21.5	26	34	2	1.3 to 1.8	27
VSP-LFC15-2BE (BD)□-6T		4								
VSP-LFC15-5BE (BD)□-4T		2.5	73.2		24.5	29	40	5	1.3 to 2.4 [0.33 to 0.6]	29
VSP-LFC15-5BE (BD)□-6T		4								
VSP-LFC15-10BE (BD)□-4T		2.5	83.2		29.5	34	50	10	1.3 to 3.3 [0.33 to 0.83]	31
VSP-LFC15-10BE (BD)□-6T		4								
VSP-LFC15-15BE (BD)□-4T		2.5	93.2		34.5	39	60	15	1.3 to 4.2 [0.33 to 1.05]	33
VSP-LFC15-15BE (BD)□-6T		4								
VSP-LFC15-20BE (BD)□-4T		2.5	103.2		39.5	44	70	20	1.3 to 5.1 [0.33 to 1.28]	35
VSP-LFC15-20BE (BD)□-6T		4								
VSP-LFC20-5BE (BD)□-4T	20	2.5	81.2	19	26.5	31.5	42.5	5	4.5 to 6.5 [1.13 to 1.63]	53
VSP-LFC20-5BE (BD)□-6T		4								
VSP-LFC20-10BE (BD)□-4T		2.5	91.2		31.5	36.5	52.5	10	4.5 to 8.2 [1.13 to 2.05]	55
VSP-LFC20-10BE (BD)□-6T		4								
VSP-LFC20-15BE (BD)□-4T		2.5	101.2		36.5	41.5	62.5	15	4.5 to 9.9 [1.13 to 2.48]	58
VSP-LFC20-15BE (BD)□-6T		4								
VSP-LFC20-20BE (BD)□-4T		2.5	111.2		41.5	46.5	72.5	20	4.5 to 14.9 [1.13 to 3.73]	61
VSP-LFC20-20BE (BD)□-6T		4								

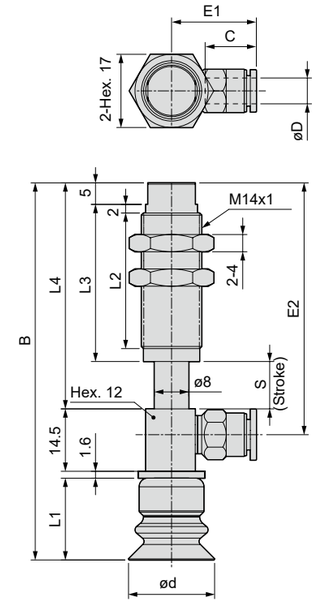
* Values inside brackets [ ] are loads for the low load type.

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Push-in fitting)

●VSP-LFD10, 15-□BE (BD)□-4



●VSP-LFD20-□BE (BD)□-4/6



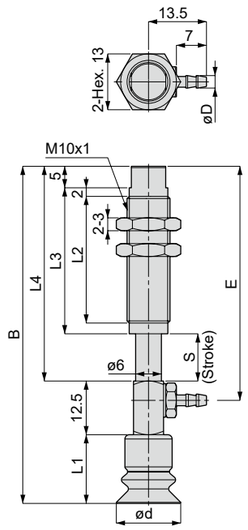
Unit: mm

Model No.	Pad Diameter ød	Tube O.D. øD	B	L1	L2	L3	L4	Tube End C	E1	E2	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD10-5BE (BD)□-4	10	4	68.5	16	24.5	29	40	11.2	16.4	44.5	5	1.3 to 2.4	26
VSP-LFD10-10BE (BD)□-4			78.5		29.5	34	50			54.5	10	1.3 to 3.3	28
VSP-LFD10-15BE (BD)□-4			88.5		34.5	39	60			64.5	15	1.3 to 4.2	30
VSP-LFD10-20BE (BD)□-4			98.5		39.5	44	70			74.5	20	1.3 to 5.1	32
VSP-LFD15-5BE (BD)□-4	15	4	68.5	16	24.5	29	40	11.2	16.4	44.5	5	1.3 to 2.4	26
VSP-LFD15-10BE (BD)□-4			78.5		29.5	34	50			54.5	10	1.3 to 3.3	28
VSP-LFD15-15BE (BD)□-4			88.5		34.5	39	60			64.5	15	1.3 to 4.2	30
VSP-LFD15-20BE (BD)□-4			98.5		39.5	44	70			74.5	20	1.3 to 5.1	32
VSP-LFD20-5BE (BD)□-4	20	4	77.5	19	26.5	31.5	42.5	11.2	18.4	48.5	5	4.5 to 6.5	58
VSP-LFD20-5BE (BD)□-6		6						11.9	19.7				59
VSP-LFD20-10BE (BD)□-4		4	87.5		31.5	36.5	52.5	11.2	18.4	58.5	10	4.5 to 8.2	62
VSP-LFD20-10BE (BD)□-6		6						11.9	19.7				63
VSP-LFD20-15BE (BD)□-4		4	97.5		36.5	41.5	62.5	11.2	18.4	68.5	15	4.5 to 9.9	66
VSP-LFD20-15BE (BD)□-6		6						11.9	19.7				67
VSP-LFD20-20BE (BD)□-4		4	107.5		41.5	46.5	72.5	11.2	18.4	78.5	20	4.5 to 14.9	70
VSP-LFD20-20BE (BD)□-6		6						11.9	19.7				71

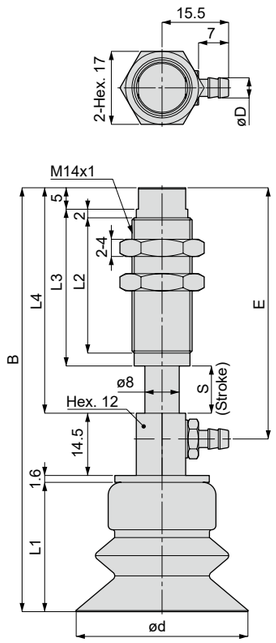
VSP-□BE, BD□ Series

Outline Dimension Drawing (Low Dust Generation Buffer Type, Vacuum Outlet on Side, VSP-LFD, Barb Fitting)

●VSP-LFD10, 15-□BE (BD)□-4T/6T



●VSP-LFD20-□BE (BD)□-4T/6T



Unit: mm

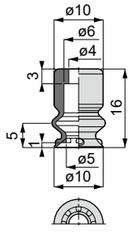
Model No.	Pad Diameter ød	Tube I.D. øD	B	L1	L2	L3	L4	E	Stroke S	Spring Force (N)	Weight (g)
VSP-LFD10-5BE (BD)□-4T	10	2.5	68.5	16	24.5	29	40	44.5	5	1.3 to 2.4	26
VSP-LFD10-5BE (BD)□-6T		4									
VSP-LFD10-10BE (BD)□-4T		2.5	78.5		29.5	34	50	54.5	10	1.3 to 3.3	27
VSP-LFD10-10BE (BD)□-6T		4									
VSP-LFD10-15BE (BD)□-4T		2.5	88.5		34.5	39	60	64.5	15	1.3 to 4.2	29
VSP-LFD10-15BE (BD)□-6T		4									
VSP-LFD10-20BE (BD)□-4T		2.5	98.5		39.5	44	70	74.5	20	1.3 to 5.1	31
VSP-LFD10-20BE (BD)□-6T		4									
VSP-LFD15-5BE (BD)□-4T	15	2.5	68.5	16	24.5	29	40	44.5	5	1.3 to 2.4	26
VSP-LFD15-5BE (BD)□-6T		4									
VSP-LFD15-10BE (BD)□-4T		2.5	78.5		29.5	34	50	54.5	10	1.3 to 3.3	27
VSP-LFD15-10BE (BD)□-6T		4									
VSP-LFD15-15BE (BD)□-4T		2.5	88.5		34.5	39	60	64.5	15	1.3 to 4.2	29
VSP-LFD15-15BE (BD)□-6T		4									
VSP-LFD15-20BE (BD)□-4T		2.5	98.5		39.5	44	70	74.5	20	1.3 to 5.1	31
VSP-LFD15-20BE (BD)□-6T		4									
VSP-LFD20-5BE (BD)□-4T	20	2.5	77.5	19	26.5	31.5	42.5	48.5	5	4.5 to 6.5	54
VSP-LFD20-5BE (BD)□-6T		4									
VSP-LFD20-10BE (BD)□-4T		2.5	87.5		31.5	36.5	52.5	58.5	10	4.5 to 8.2	57
VSP-LFD20-10BE (BD)□-6T		4									
VSP-LFD20-15BE (BD)□-4T		2.5	97.5		36.5	41.5	62.5	68.5	15	4.5 to 9.9	61
VSP-LFD20-15BE (BD)□-6T		4									
VSP-LFD20-20BE (BD)□-4T		2.5	107.5		41.5	46.5	72.5	78.5	20	4.5 to 14.9	65
VSP-LFD20-20BE (BD)□-6T		4									

VSPG-□BE, BD□ Series

External Dimension Drawings

Pad Rubber Only External Dimension Diagram (Bellows Type with Projection and Ribs)

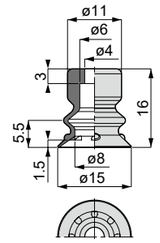
●VSPG-10BE□



Weight: 1.5 g

Allowable Pressing Stroke: 2.9 mm

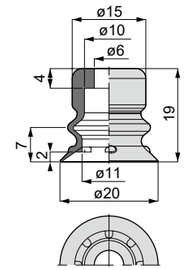
●VSPG-15BE□



Weight: 1.9 g

Allowable Pressing Stroke: 3.7 mm

●VSPG-20BE□

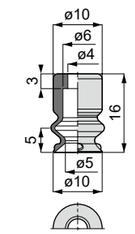


Weight: 3.8 g

Allowable Pressing Stroke: 4.5 mm

Pad Rubber Only External Dimension Diagram (Bellows Type with Projection, without Ribs)

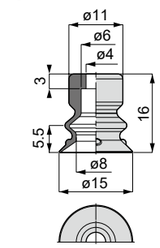
●VSPG-10BD□



Weight: 1.5 g

Allowable Pressing Stroke: 2.9 mm

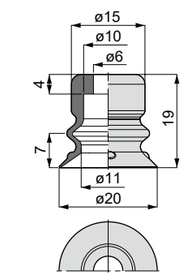
●VSPG-15BD□



Weight: 1.9 g

Allowable Pressing Stroke: 3.7 mm

●VSPG-20BD□

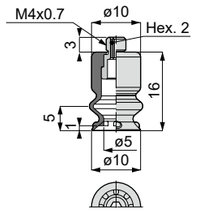


Weight: 3.7 g

Allowable Pressing Stroke: 4.5 mm

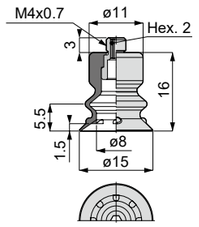
Pad Rubber + Set with Fixing Screw External Dimension Diagram (Bellows Type with Projection and Ribs)

●VSPG-10BE□A



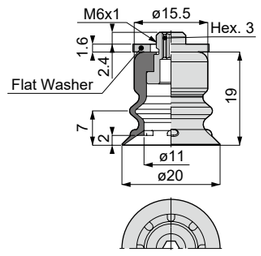
Allowable Pressing Stroke: 2.9 mm

●VSPG-15BE□A



Allowable Pressing Stroke: 3.7 mm

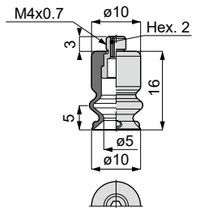
●VSPG-20BE□A



Allowable Pressing Stroke: 4.5 mm

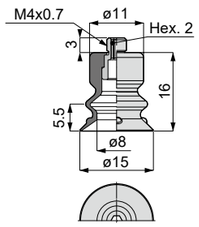
Pad Rubber + Set with Fixing Screw External Dimension Diagram (Bellows Type with Projection, without Ribs)

●VSPG-10BD□A



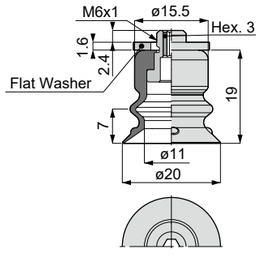
Allowable Pressing Stroke: 2.9 mm

●VSPG-15BD□A



Allowable Pressing Stroke: 3.7 mm

●VSPG-20BD□A



Allowable Pressing Stroke: 4.5 mm

Pneumatic Components

To Use This Product Safely

Please read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Suction Pad, Metal Detector Compatible-type, VSP-□BE/BD□Series

Design / Selection

Warning

■ Because of the characteristics of the bellows pad material, the pads may stick to each other, so please check with the actual device. Also, tackiness may increase depending on the operating environment or pad wear. Review the pad shape, material, quantity, etc., as necessary.

■ Use the bellows so that it does not overcrush. Excessive crushing may accelerate wear of the bellows part, cause cracks in the lip part, or lead to deformation due to strain, potentially causing suction failure.

Caution

When selecting, please pay attention to the following and conduct suction tests with the actual machine.
① Metal detector compatible pads are made with blended metal powder.
② Durability deteriorates due to adsorption of heavy workpieces or excessive pressing adsorption, so be careful with selection.
③ Due to material properties, color unevenness may occur on the pad, but there are no performance issues.

■ Clean the suction surface of the Suction Pads before use. Adhered substances may remain as suction marks. When cleaning, be careful not to scratch the suction surface, and do not use organic solvents.

MEMO

Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechanical Break Function
Ending



Suction Pad, Mechanical Break Function Type

VSP-KE□Y□ Series

Suction pad with workpiece release function to prevent blow-off of small/lightweight workpieces

RoHS

Ideal for suction transport of small/lightweight workpieces that stick to the pad rubber due to static electricity, etc.

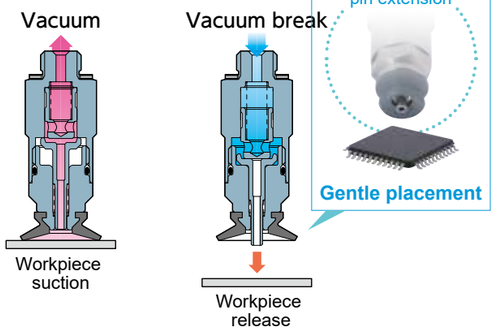
Piping Connection **3 types**

●Screw-in (M3, M4, M5)....Class 3

After releasing the workpiece with vacuum break air, the pin built into the holder pushes out to release the workpiece

Prevents workpiece blow-off

After pin extension, vacuum break air is not discharged, preventing workpiece blow-off



Pad Diameter

6 types 2.5 3 4 6 8 10

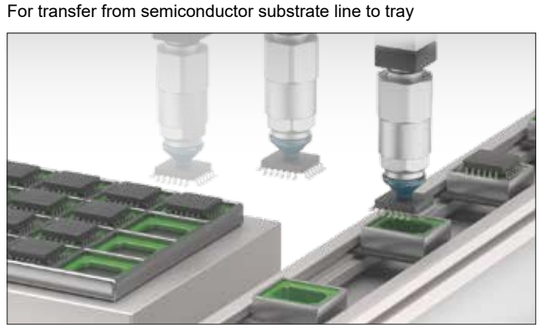
Pad Material

4 types Nitrile Silicone Conductive Silicone Fluorine

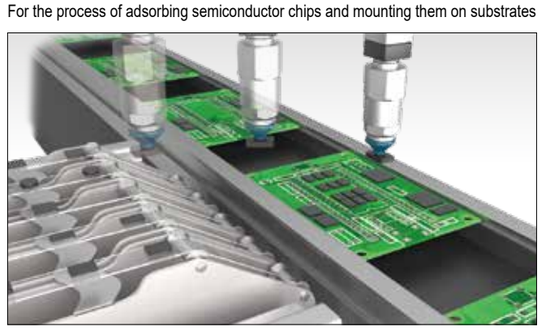
Solution Examples

Semiconductor production line

For transfer from semiconductor substrate line to tray



For the process of adsorbing semiconductor chips and mounting them on substrates



Model No. Notation

●With Mechanical Break Function

VSP - KE 6 Y N -M3

VSP	KE	6	Y	N	-M3
Model No.	❶ Holder Shape	❷ Pad Diameter	❸ Pad Shape	❹ Pad Material	❺ Connection Size/Shape

❶ Holder Shape

Code	Content	
KE	Direct Mount Type, Mechanical Break Function	

❷ Pad Diameter

Code	Content
2.5	ø2.5
3	ø3
4	ø4
6	ø6
8	ø8
10	ø10

❸ Pad Shape

Code	Content	
Y	For Mechanical Break Function Type	

❹ Pad Material

Code	Content
N	Nitrile rubber
S	Silicone Rubber
F	Fluororubber
SE	Conductive Silicone Rubber

❺ Connection Size/Shape

Code	Content
-M3	Metric Male Thread M3 x 0.5
-M4	Metric Male Thread M4 x 0.7
-M5	Metric Male Thread M5 x 0.8

●Pad Rubber Only

VSPG - 6 Y N

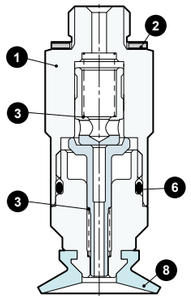
VSPG	6	Y	N
Model No.	❷ Pad Diameter	❸ Pad Shape	❹ Pad Material

Specifications

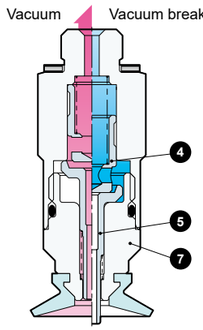
Item		VSP-KE□Y□
Operating Fluid		Air
Operating Pressure Range	Positive Pressure	0.03 to 0.5 MPa
	Negative Pressure	-101 to -30 kPa
Operating Temperature Range		0 to 60°C (No freezing)
Suction Flow Rate		4 L/min (ANR)(*1)
Break Valve Body Operating Pressure		30 kPa
Vacuum Valve Body Operating Pressure		-30 kPa

*1: When supply pressure is ≤ -80 kPa

Internal Structure Diagram



Non-energized state



Energized state

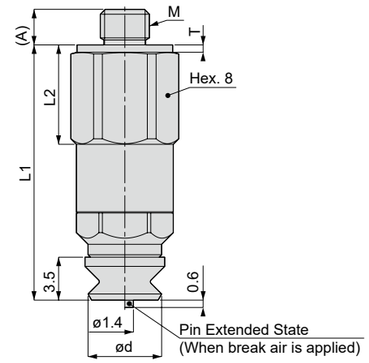
Valve body operation in vacuum break air energized state

When vacuum break air is applied, the vacuum valve body (Fig. ❹ above) and the break valve body (pin)(Fig. ❺ above) are pushed out and protrude. Simultaneously, the break valve body (pin)(Fig. ❺ above) hits the recess of the holder (Fig. ❼ above) and blocks the flow of break air. This suppresses workpiece blow-off.

Part No.	Part Name	Material	Part No.	Part Name	Material
1	Metal Body	Special Stainless Steel	5	Break Valve Body (Pin)	Special Stainless Steel
2	Gasket	Stainless Steel + Nitrile Rubber	6	O-ring	Special Stainless Steel
3	Spring	Stainless steel	7	Holder	Special Stainless Steel
4	Vacuum Valve Body	Special Stainless Steel			

Dimensions diagram (fixed, vacuum Outlet on Top, VSP-A, bellows stage No.: 3 steps)

●VSP-KE□Y□-M3/M4/M5

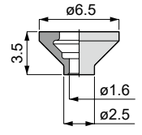


Unit: mm

Model No.	Pad Outer Diameter ød	Mounting screw M	A	L1	L2	T	Weight (g)
VSP-KE2.5Y□-M3	2.5	M3x0.5	2.5	20.7	8	0.5	5.3
VSP-KE2.5Y□-M4		M4x0.7	2.9	20.8	8.1	0.6	5.7
VSP-KE2.5Y□-M5		M5x0.8	3	20.4	7.7	0.5	5.8
VSP-KE3Y□-M3	3	M3x0.5	2.5	20.7	8	0.5	5.3
VSP-KE3Y□-M4		M4x0.7	2.9	20.8	8.1	0.6	5.7
VSP-KE3Y□-M5		M5x0.8	3	20.4	7.7	0.5	5.8
VSP-KE4Y□-M3	4	M3x0.5	2.5	20.7	8	0.5	5.3
VSP-KE4Y□-M4		M4x0.7	2.9	20.8	8.1	0.6	5.7
VSP-KE4Y□-M5		M5x0.8	3	20.4	7.7	0.5	5.8
VSP-KE6Y□-M3	6	M3x0.5	2.5	20.7	8	0.5	5.3
VSP-KE6Y□-M4		M4x0.7	2.9	20.8	8.1	0.6	5.7
VSP-KE6Y□-M5		M5x0.8	3	20.4	7.7	0.5	5.8
VSP-KE8Y□-M3	8	M3x0.5	2.5	20.7	8	0.5	5.4
VSP-KE8Y□-M4		M4x0.7	2.9	20.8	8.1	0.6	5.8
VSP-KE8Y□-M5		M5x0.8	3	20.4	7.7	0.5	5.9
VSP-KE10Y□-M3	10	M3x0.5	2.5	20.7	8	0.5	5.4
VSP-KE10Y□-M4		M4x0.7	2.9	20.8	8.1	0.6	5.8
VSP-KE10Y□-M5		M5x0.8	3	20.4	7.7	0.5	5.9

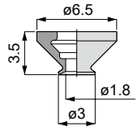
Pad Rubber Only External Dimension Diagram (Pad Dedicated to Mechanical Break Function)

●VSPG-2.5Y□



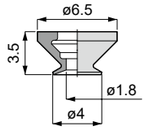
Weight: 0.1 g

●VSPG-3Y□



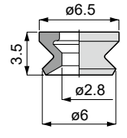
Weight: 0.1 g

●VSPG-4Y□



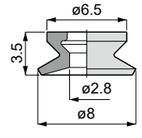
Weight: 0.1 g

●VSPG-6Y□



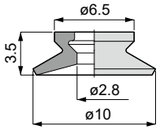
Weight: 0.1 g

●VSPG-8Y□



Weight: 0.2 g

●VSPG-10Y□



Weight: 0.2 g

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Suction Pad, Mechanical Break Function Type, VSP-□KE□Y□ Series

Design / Selection

Warning

■Suction of foreign matter may cause a significant reduction in performance. Use the workpiece and operating environment in a clean state.

Caution

■The pin protruding load is 1 N or less (when using 0.2 MPa). If there is risk of damage or scratches to the workpiece due to contact, lower the vacuum burst pressure and check with the actual device before use.
■When mounting the product, refer to the tightening torque in the table below. Failure to tighten with the proper torque may cause malfunction, reduced service life, and loosening.

Thread Size	Tightening Torque(N·m)
M3x0.5	0.7
M4x0.7	0.9 to 1.1
M5x0.8	1.0 to 1.5

MEMO

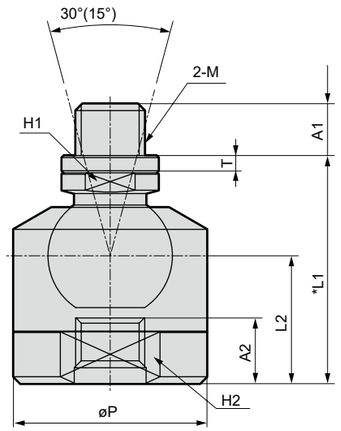
Regarding Suction Pad Option / Free Holder (Swivel) [Code; F1, F2]

Applicable Pad List Table

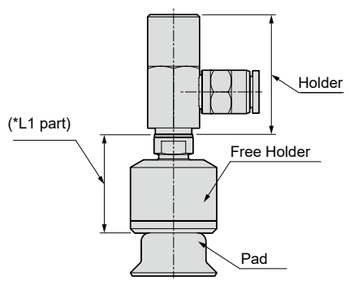
Pad Shape	Free Holder Part Model No.(Custom Product) *1		
	VSP-FH10-F□	VSP-FH20-F□	VSP-FH60-F□
Standard Type General-type: R	ø10, ø15	ø20 to ø50	ø60 to ø100
Standard Type Deep Type: A	ø15	ø20 to ø50	ø60 to ø100
Sponge-type: S	-	ø10 to ø50	ø70, ø100
Bellows Type: B	ø10, ø15	ø20 to ø50	ø60, ø80, ø100
Multi-stage Bellows: W	ø10	ø20 to ø50	-
Oval-type: E	-	All sizes	-
Soft Type: L	ø4 to ø15	ø20 to ø40	-
Soft Bellows Type: LB	ø6 to ø15	ø20	-
Anti-slip Type: K	ø10	ø20 to ø50	-
Flat Type: F, FH	ø10, ø15	ø20 to ø30	-
Metal Detector Compatible-type: BE, BD	ø10, ø15	ø20	-

*1: For the □ mark, select the Code below.
1: Swivel Angle 30° Type
2: Swivel Angle 15° Type

External Dimension Drawings



Free Holder Mounting Example



*When selecting the option with a free holder using the suction pad product model No., the total pad length will be the dimension obtained by adding *L1 from the dimension table below.

Part Model No.	M	A1	A2	*L1	L2	øP	Width across flats H1	Width across flats H2	T	Weight (g)
VSP-FH10-F□	M4x0.7	3.4	7	19.7	11.1	15	4	-	0.6	10
VSP-FH20-F□	M6x1	5.5	6.6	22.9	12.4	20	7	-	0.5	20
VSP-FH60-F□	M10x1.5	7.5	9.5	33	18.5	28	12	24	2.5	60

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Suction Pad Option / Free Holder (Swivel) F1, F2

Design / Selection

Warning

■Do not use the free holder in combination with other than CKD Suction Pads or for other than the intended use. It is designed for our suction pads, and improper use may cause main body damage.
■When transporting via the free holder, consider the acceleration, impact and wind pressure. Adsorbed objects may detach during transport, potentially causing main body damage.
■Do not apply excessive force to the free holder. This may cause main body damage.

Caution

■Note the orientation of the free holder during suction. Posture changes depending on the Weight after suction or acceleration/impact during transport.
■When mounting or replacing the free holder, refer to the tightening torque in the table below, and use an appropriate tool to tighten the holder using the outer-diameter dihedral cut section.

Tightening Torque

Thread Size	Tightening Torque
M4x0.7	0.6 to 0.7 N·m
M6x1	1.5 to 2 N·m
M10x1.5	5 to 7 N·m

Vacuum Components
Suction Pad
Standard
Sponge
Bellows
Multi-stage Bellows
Oblong
Soft
Soft Bellows
Non-slip
Thin Workpiece
Flat
Suction Mark Prevention
For Packaging Bags
For Metal Detectors
With Mechanical Break Function
Ending

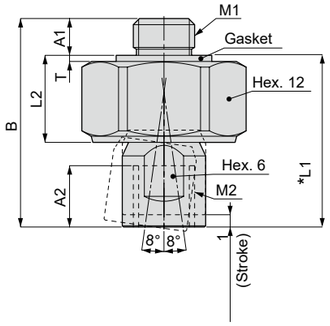
Regarding Suction Pad Option / Flexible Holder (Swivel) [Code; CF]

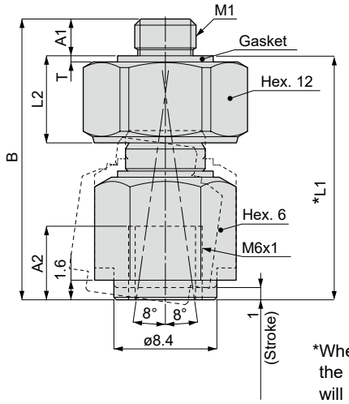
Applicable Pad List Table

Pad Shape	Flexible Holder Part Model No.(Custom Product)		
	VSP-CF4-M4	VSP-CF6-M6	VSP-CF5-M5 *1
Standard Type General-type: R	ø10, ø15	ø20 to ø50	ø1 to ø8
Standard deep: A	ø15	ø20 to ø50	-
Standard Type Compact: RM	-	-	ø0.7 to ø4
Sponge-type: S	-	ø10 to ø50	-
Bellows Type: B	ø10, ø15	ø20 to ø50	ø2 to ø8
Multi-stage Bellows Type: W	ø10	ø20 to ø50	ø6, ø8
Oval-type: E	-	All sizes	-
Soft Type: L	ø4 to ø15	ø20 to ø40	-
Soft Bellows Type: LB	ø6 to ø15	ø20	-
Anti-slip Type: K	ø10	ø20 to ø50	-
Thin Object Type: P	-	-	ø8 to ø20
Flat Type: F, FH	ø10, ø15	ø20 to ø30	-
Metal Detector Compatible-type: BE, BD	ø10, ø15	ø20	-

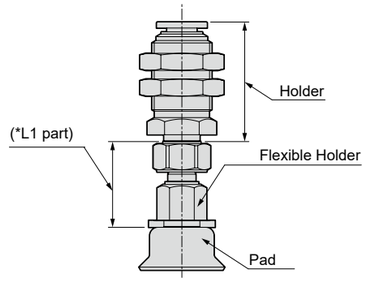
*1) Limited to holder shape ME, E M5 connection.

External Dimension Drawings





Flexible Holder Mounting Example



*When selecting the option with a flexible holder using the suction pad product model No., the total pad length will be the dimension obtained by adding *L1 from the dimension table below.

Part Model No.	M1	M2	A1	A2	B	*L1	L2	T	Weight (g)
VSP-CF4-M4	M4X0.7	M4X0.7	2.9	4	16	13.1	7.2	0.6	6.1
VSP-CF5-M5	M5 x 0.8	M5 x 0.8	3	5	17	14	7.1	0.5	6.1
VSP-CF6-M6	M6X1	M6X1	4	6	24	20	7.1	0.5	12

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Suction Pad Option / Flexible Holder (Swivel) CF

Design / Selection

Caution

- The interior of the flexible holder may wear depending on its structure and usage. When using in a clean environment, confirm that there is no dust generation impact due to wear.
- There is no rotation-stop structure between the flexible holder and the vacuum pad. Please note that it is not suitable for rotational transport.
- Special stainless steel is used for this product, but it is not intended to prevent rust. Rust may occur depending on the operating environment.
- When attaching the flexible holder to the actual device or the pad holder, tighten using an appropriate tool with reference to the tightening torque in the table below and confirm that there is no looseness.

Tightening Torque

Thread Size	Tightening Torque
M4x0.7	0.7 to 0.8 N·m
M5x0.8	1.0 to 1.5 N·m
M6x1	1.5 to 2.0 N·m

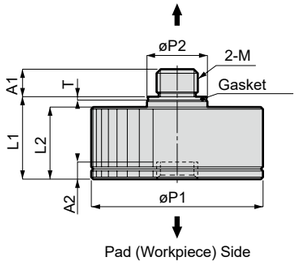
Regarding Suction Pad Option / Direct Mount Filter [Code; T1, T2]

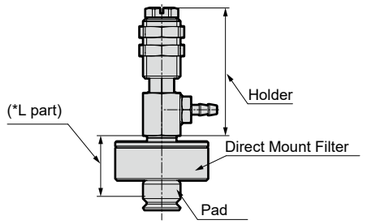
Applicable Pad List Table

Pad Shape	Filter Part Model No.		
	VSP-T1-M4	VSP-T1-M6	VSP-T2-M6
Standard Type General-type: R	ø10, ø15	ø20 to ø50	
Standard deep: A	ø15	ø20 to ø50	
Sponge-type: S	-	ø10 to ø50	
Bellows Type: B	ø10, ø15	ø20 to ø50	
Multi-stage Bellows Type: W	ø10	ø20 to ø50	
Oval-type: E	-	All sizes	
Soft Type: L	ø4 to ø15	ø20 to ø40	
Soft Bellows Type: LB	ø6 to ø15	ø20	
Anti-slip Type: K	ø10	ø20 to ø50	
Flat Type: F, FH	ø10, ø15	ø20 to ø30	
Suction mark prevention: Q	ø10, ø15	ø20 to ø30	
Metal Detector Compatible-type: BE, BD	ø10, ø15	ø20	

External Dimension Drawings

Filter Mounting Example

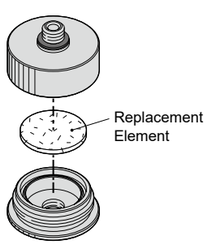




*When selecting the option with a filter using the suction pad product model No., the total pad length will be the dimension obtained by adding L from the dimension table below.

Part Model No.	M	A1	A2	L	øP1	øP2	Filtration Area (cm²)	Weight (g)
VSP-T1-M4	M4x0.7	2.9	2.5	12.1	25	7.8	1.7	20
VSP-T1-M6	M6x1	4		12		8.8		21
VSP-T2-M6	M6x1	4	3.8	15.5	40	8.8	7	59

Maintenance Parts



Part Model No.	Replacement Element
VSP-T1-M4	VSP-T1-E
VSP-T1-M6	
VSP-T2-M6	VSP-T2-E

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Suction Pad Option / Direct Mount Filter T1, T2

Design / Selection

Warning

■Regularly perform maintenance and inspection for the filter element of the direct mounting filter. Clogging of the element causes performance degradation or trouble. For element replacement work, understand the dust removal method and vacuum filter replacement element in the main text well, set the internal pressure of the filter to atmospheric pressure, confirm safety, and then proceed.

Caution

■Precautions for body mounting and removal
① Use an appropriate tool to mount/remove the product.
② When mounting, tighten referring to the tightening torque for each screw size (table below).

Tightening Torque

Thread Size	Tightening Torque
M4x0.7	0.6 to 0.7 N·m
M6x1	1.5 to 2 N·m

Vacuum Related Components

■ Vacuum Components



CONTENTS

System Table	1068
●Ring blow vacuum generator (VSRL)	1072
●Position locking valve (VSECV)	1,082
●Compact vacuum regulator (VSRVV)	1,088
●Vacuum Regulators (VRA2000)	1,098
●Vacuum burst unit (VSLF)	1,102
●Vacuum filter large capacity union (VSFB)	1,106
●Vacuum filter compact union (VSFU)	1,106
●Compact vacuum filter socket type (VSFJ)	1,106
●Inline filter (FSL)	1,118
●Vacuum Filters (VFA1000/3000/4000)	1,124
●Vacuum pressure switch (VSUS)	1,130
●Air tweezers (VST)	1,136

[Ring Blower Type Vacuum Generator]

Series Name	Model No.	Vacuum Level kPa	Suction Flow Rate L/min (ANR)	Minimum Flow Path Diameter mm	Page Listed
VSRL Series • Can transfer small workpieces such as granules, powder, fibers • Model selection possible from 4 sizes depending on the size of the transported workpiece 	VSRL-50	-53	50	ø2.8	1072
	VSRL-100	-53	100	ø4.1	
	VSRL-200	-53	200	ø6	
	VSRL-300	-53	300	ø7.5	

[Drop Prevention Valve]

Series Name	Model No.	Connection Port Size		Page Listed
		Vacuum Generator Side	Workpiece Side	
VSECV Series • Even if a workpiece detaches, workpieces in other circuits maintain vacuum. • Applicable to Cellvax Suction Pad Series. 	VSECV-M3	M3		1,082
	VSECV-M4	M4		
	VSECV-M5	M5		
	VSECV-M6	M6		
	VSECV-M10	M10		
	VSECV-6A	R1/8		

[Compact Vacuum Regulator]

Series Name	Model No.	Connection Port Size		Remarks	Page Listed
		ø6	ø8		
VSRVV Series • Controls not only source pressure but also end-of-line pressure. • Selection of vacuum pressure switch with digital display or vacuum pressure gauge is also possible. 	VSRVV-□ZA□	○	○	Elbow (Output: Male thread)	1,088
	VSRVV-□ZB□	○	○	Elbow (Supply: Male thread)	
	VSRVV-□ZU□	○	○	Union Type	

[Vacuum Regulator]

Series Name	Model No.	Connection Port Size		Page Listed
		Rc1/4	Rc3/8	
VRA Series • Compact and high flow rate • Lock/Non-lock changeable • Modular connection possible with vacuum filter 	VRA2000	○		1,098

[Vacuum Break Unit]

Series Name	Model No.	Connection Port Size		Page Listed
		Vacuum Generator Side	Workpiece Side	
VSLF Series • Controls vacuum break air while maintaining the vacuum characteristics of the vacuum ejector. • Achieves shorter vacuum break time through vacuum break circuit relief function. 	VSLF-44	ø4	ø4	1,102
	VSLF-66	ø6	ø6	
	VSLF-46A	ø4	R1/8	
	VSLF-66A	ø6	R1/8	

[Filter for Vacuum]

●: Standard equipment ○: Option Selection

Series Name	Model No.	Connection Port Size								Filtration Area	Page Listed
		M3	M5	ø1.8	ø4	ø6	ø8	ø10	ø12		
VSFB Series Large Capacity Union Type • Removes dust and water droplets using cyclone effect and element. • Entire dust case can be removed with one touch, preventing dust scattering. 	VSFB-66					●				20 cm²	1,106
	VSFB-88						●			20 cm²	
	VSFB-1010							●		20 cm²	
	VSFB-1212								●	20 cm²	
VSFU Series Compact Union Type • Element replacement and cleaning require no tools. • Inline-type easily mountable mid-piping. • Small capacity type added. 	VSFU-M	○		○						1.4 cm²	
	VSFU-1S		○		○	○				2.8 cm²	
	VSFU-1L		○		○	○				4.7 cm²	
	VSFU-2				○	○				7.5 cm²	
	VSFU-3					○	○	○		12.5 cm²	
VSFJ Series Compact Socket Type • Ideal for single unit ejectors without a built-in vacuum filter. 	VSFJ-44				●					0.8 cm²	
	VSFJ-66					●				1.1 cm²	
FSL Series InlinE-type • Compact, lightweight, space-saving inline-type • Usable for both positive and negative pressure 	FSL100				●	●				4.7 cm²	1,118
	FSL200				●	●				7.5 cm²	
	FSL500					●	●	●		12.7 cm²	

Vacuum Related Components

MEMO

[Vacuum Filter]

Series Name		Model No.	Connection Port Size				Page Listed
			Rc1/8	Rc1/4	Rc3/8	Rc1/2	
VFA Series • Long service life • Water removal possible • Element can be used repeatedly		VFA1000	○	○			1,124
		VFA3000		○	○		
		VFA4000			○	○	

[Pressure Switch for Vacuum]

Series Name		Model No.	Connection Port Size					Remarks	Page Listed
			M5	ø4	ø6	ø8	Direct Mount		
VSUS Series • 2 types available: 2-point output and analog output. • 3 types of piping connections available: Push-in fitting, M5 female thread, Direct mount.		VSUS-NW	○	○	○	○	○	NPN 2-point Output	1,130
		VSUS-NA	○	○	○	○	○	NPN: Analog Output	
		VSUS-PW	○	○	○	○	○	PNP 2-point Output	
		VSUS-PA	○	○	○	○	○	PNP: Analog Output	

[Air Tweezers]

Series Name		Model No.	Pad Diameter				Pad Rubber Material	Holder Shape	Page Listed
			ø2	ø4	ø6	ø8			
VST Series • Pen-shaped main body with built-in suction pad and ejector. • Ideal for assembly of small parts, etc. • Package-type also available.		VST-A□N	○	○	○	○	Nitrile rubber	Without Valve-type	1,136
		VST-A□S	○	○	○	○	Silicone Rubber	Without Valve-type	
		VST-B□N	○	○	○	○	Nitrile rubber	Built-in Valve-type	
		VST-B□S	○	○	○	○	Silicone Rubber	Built-in Valve-type	



Ring Blow Type Vacuum Generator

VSRL-□ Series

Ring blow type vacuum generator with Push-in fitting for transferring small and irregularly shaped workpieces

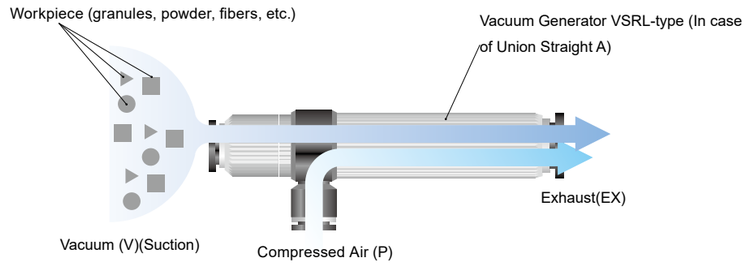
●Port size: ø6 to ø12, R1/8 to R1/2

RoHS

High flow rate vacuum generator capable of suction ➡ transfer of granules, powder, fibers, etc.

Intake port and exhaust port are aligned, enabling workpiece transport

Workpiece is sucked from the intake port, passes through the vacuum generator interior, and is discharged from the exhaust port, allowing workpiece transport through tubing.



Model selection possible based on size and quantity of transported workpiece

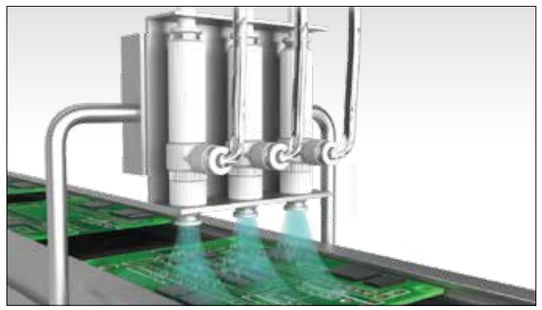
Suction Flow Rate (L/min (ANR))	50	100	200	300
Minimum Flow Path Diameter (mm)	ø2.8	ø4.1	ø6	ø7.5

Also ideal for suction transport of breathable lightweight workpieces

Solution Examples

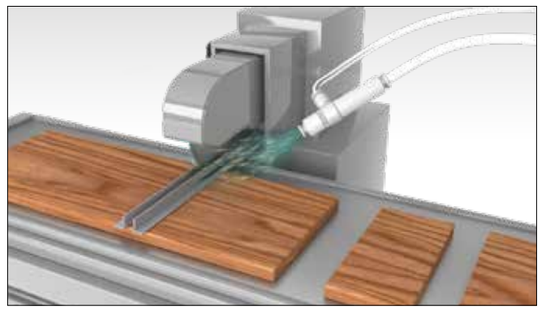
Semiconductor production line

For sucking up dust on semiconductor substrates



Wood manufacturing site

For collecting chips generated during board cutting process



Model No. Notation

●Ring Blow Type Vacuum Generator

VSRL - 50 - 6 - 6 - 6A

- VSRL: Model No.
- ❶ 50: Performance
- ❷ 6: Suction Port Size (V)
- ❸ 6: Air Supply Port Size (P)
- ❹ 6A: Air Exhaust Port Size (EX)

❶ Performance

Code	Suction Flow Rate
50	50 L/min (ANR)
100	100 L/min (ANR)
200	200 L/min (ANR)
300	300 L/min (ANR)

❷ Suction Port Size (V)

Code	Content
6	ø6 Push-in fitting
8	ø8 Push-in fitting
10	ø10 Push-in fitting
12	ø12 Push-in fitting
6A	R1/8
8A	R1/4
10A	R3/8
15A	R1/2

*1: When ❶ Performance is 50, options 6, 8, and 6A can be selected for ❷.
*2: When ❶ Performance is 100, options 10, 12, and 8A can be selected for ❷.
*3: When ❶ Performance is 200 or 300, options 12, 10A, and 15A can be selected for ❷.

❸ Air Supply Port Size (P)

Code	Content
6	ø6 Push-in fitting
8	ø8 Push-in fitting
10	ø10 Push-in fitting
6A	R1/8
8A	R1/4

*1: When ❶ Performance is 50, options 6, 8, and 6A can be selected for ❸.
*2: When ❶ Performance is 100, options 8, 10, and 8A can be selected for ❸.
*3: ❶When ❶ Performance is 200 or 300, options 10 and 8A can be selected for ❸.

❹ Air Exhaust Port Size (EX)

Code	Content
8	ø8 Push-in fitting
12	ø12 Push-in fitting
6A	R1/8
8A	R1/4
15A	R1/2

*1: When ❶ Performance is 50, options 8 and 6A can be selected for ❹.
*2: When ❶ Performance is 100, options 12 and 8A can be selected for ❹.
*3: When ❶ Performance is 200 or 300, 15A can be selected for ❹.

Specifications

Item		VSRL
Operating Fluid		Air
Operating Pressure	MPa	0 to 0.9
Operating Temperature	°C	0 to 60 (However, no freezing)

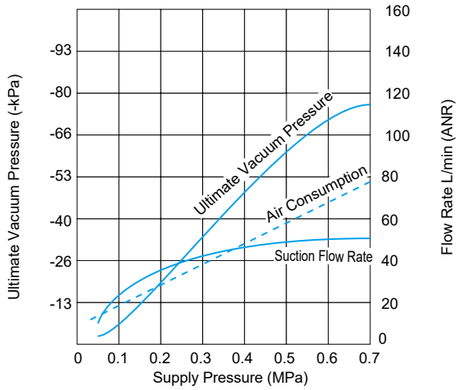
Performance

Model No.	Rated Supply Pressure (MPa)	Suction Flow Rate (L/min (ANR))	Ultimate Vacuum Pressure (-kPa)	Minimum Flow Path Diameter (mm)
VSRL-50	0.5	50	53	ø2.8
VSRL-100		100		ø4.1
VSRL-200		200		ø6
VSRL-300		300		ø7.5

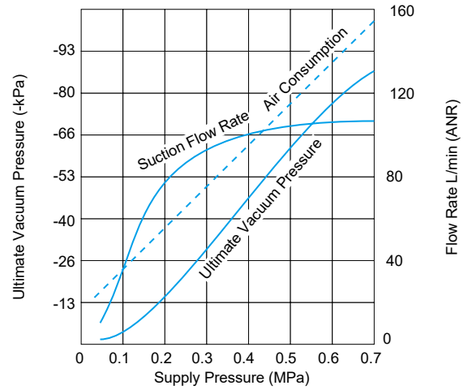
Vacuum Characteristics

Supply Pressure - Ultimate Vacuum Pressure, Suction Flow Rate, Air Consumption

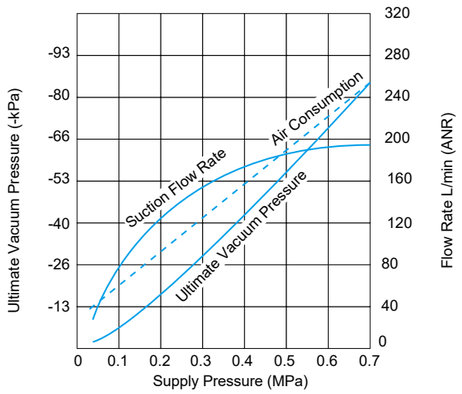
●VSRL-50



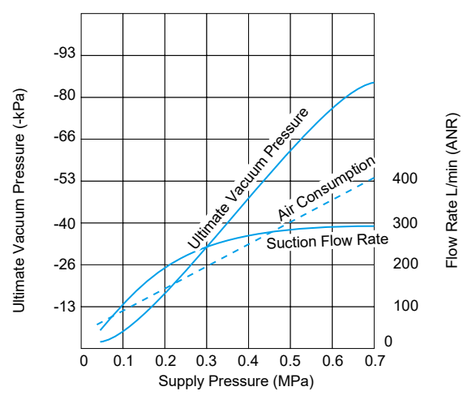
●VSRL-100



●VSRL-200



●VSRL-300



*The above data are actual measured values and not guaranteed values. Also, these are values measured under conditions with zero piping resistance; performance will slightly decrease if there is piping resistance on the exhaust side.

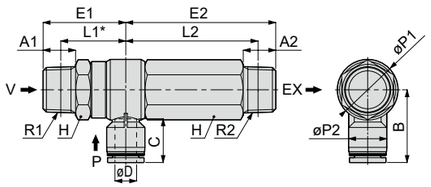
MEMO

Vacuum Components
Vacuum Related Components
VSRL
VSECV
VSRVV
VRA2000
VSLF
VSFB, VSFU, VSFJ
FSL
VFA
VSUS
VST
Ending

External Dimension Drawings

●Connection Port Size

• V Port (Male Thread) - P Port (Push-in fitting) - EX Port (Male Thread)

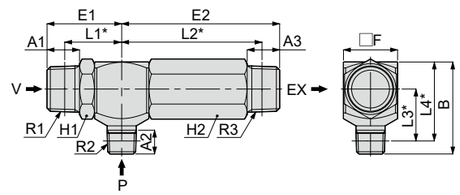


Unit: mm

Model No.	Tube O.D. øD	R1	R2	A1	A2	B	E1	E2	L1	L2	øP1	øP2	C	Width across flats H1	Width across flats H2	Weight (g)
VSRL-50-6A66A	6	R1/8	R1/8	8	8	25.7	22.8	36.2	18.8	32.2	12.6	18.4	17.2	14	14	41
VSRL-50-6A86A	8					28.4	21.8	37.2	17.8	33.2	14.4		18.1			43
VSRL-100-8A88A	8	R1/4	R1/4	11	11	28.9	29.5	52.5	23.5	46.5	14.5	22	18.1	17	17	81
VSRL-100-8A108A	10					31.2	28.2	53.8	23.2	47.8	17.6		20.2			84
VSRL-200-10A1015A	10	R3/8	R1/2	12	15	33.6	35.2	69.3	28.9	61.1	17.6	28	20.2	24	24	190
VSRL-200-15A1015A		R1/2		15			38.2		30							204
VSRL-300-10A1015A	10	R3/8	R1/2	12	15	33.6	35.2	69.3	28.9	61.1	17.6	28	20.2	24	24	179
VSRL-300-15A1015A		R1/2		15			38.2		30							193

*L1, L2 dimensions are reference dimensions after screw tightening.

• V Port (Male Thread) - P Port (Male Thread) - EX Port (Male Thread)

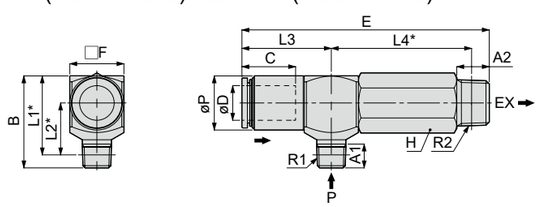


Unit: mm

Model No.	R1	R2	R3	A1	A2	A3	B	L1	L2	L3	L4	E1	E2	Width across flats H1	Width across flats H2	□F	Weight (g)
VSRL-50-6A6A6A	R1/8	R1/8	R1/8	8	8	8	28	24	16	17	34	21	38	14	14	16	37
VSRL-100-8A8A8A	R1/4	R1/4	R1/4	11	11	11	35	29	19	21	49	27	55	17	17	20	79
VSRL-200-10A8A15A	R3/8	R1/4	R1/2	12	11	15	42.5	36.5	24	25.2	64.8	31.5	73	22	24	25	180
VSRL-200-15A8A15A	R1/2			15						26.3		34.5		24			194
VSRL-300-10A8A15A	R3/8	R1/4	R1/2	12	11	15	42.5	36.5	24	25.2	64.8	31.5	73	22	24	25	170
VSRL-300-15A8A15A	R1/2			15						26.3		34.5		24			184

*L1, L2, L3, L4 dimensions are reference dimensions after screw tightening.

• V Port (Push-in fitting) - P Port (Male Thread) - EX Port (Male Thread)



Unit: mm

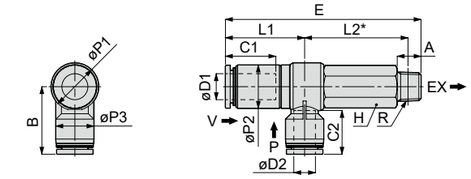
Model No.	Tube O.D. øD	R1	R2	A1	A2	B	L1	L2	L3	L4	E	øP	C	Width across flats H1	□F	Weight (g)
VSRL-50-66A6A	6	R1/8	R1/8	8	8	28	24	16	27.8	34	65.6	16	17.2	14	16	34
VSRL-50-86A6A	8								27.9		65.9		18.2			
VSRL-100-108A8A	10	R1/4	R1/4	11	11	35	29	19	32.8	49	87.8	20	18.1	17	20	75
VSRL-100-128A8A	12								35.4		90.4		20.2			76
VSRL-200-128A15A	12	R1/4	R1/2	11	15	42.5	36.5	24	39.9	64.8	112.9	25	20.2	24	25	172
VSRL-300-128A15A	12	R1/4	R1/2	11	15	42.5	36.5	24	39.9	64.8	114.3	25	20.2	24	25	162

*L1, L2, L4 dimensions are reference dimensions after screw tightening.

External Dimension Drawings

●Connection Port Size

• V Port (Push-in fitting) - P Port (Push-in fitting) - EX Port (Male Thread)

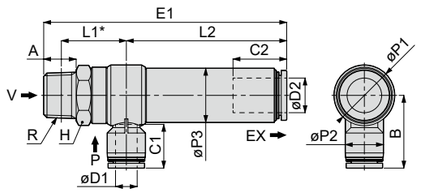


Unit: mm

Model No.	Tube O.D. øD1	Tube O.D. øD2	R	A	B	E	L1	L2	øP1	øP2	øP3	C1	C2	Width across flats H	Weight (g)
VSRL-50-666A	6	6	R1/8	8	25.5	65.8	29.4	32.2	16	12.4	18.4	17.2	17.2	14	38
VSRL-50-866A	8					65.9	29.7					18.2			
VSRL-50-686A	6	8			28.4	65.8	28.4	33.2		14.4		17.2	18.1		40
VSRL-50-886A	8					65.9	28.7					18.2			39
VSRL-100-1088A	10	8	R1/4	11	28.9	87.8	35.3	46.5	20	14.5	22	20.7	18.1	17	77
VSRL-100-1288A	12					90.4	37.9					23.3			79
VSRL-100-10108A	10	10			31.2	87.8	34	47.8		17.6		20.7	20.2		80
VSRL-100-12108A	12					90.4	36.6					23.3			82
VSRL-200-121015A	12	10	R3/8	15	33.6	112.9	43.6	61.1	26	17.6	28	20.2	20.2	24	182
VSRL-300-121015A	12	10	R3/8	15	33.6	112.9	43.6	61.1	26	17.6	28	20.2	20.2	24	172

*L2 dimension is a reference dimension after screw tightening.

• V Port (Male Thread) - P Port (Push-in fitting) - EX Port (Push-in fitting)



Unit: mm

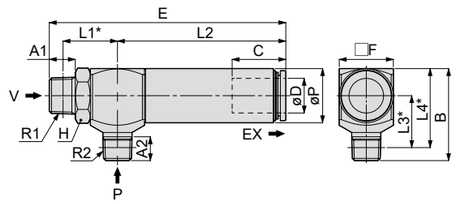
Model No.	Tube O.D. øD1	Tube O.D. øD2	R	A	B	E	L1	L2	øP1	øP2	øP3	C1	C2	Width across flats H	Weight (g)
VSRL-50-6A68	6	8	R1/8	8	25.5	78.1	18.8	55.1	12.4	16	18.4	17.2	18.2	14	52
VSRL-50-6A88	8				28.4		17.8	56.1	14.4			18.1			54
VSRL-100-8A812	6	12	R1/4	10	28.9	105.4	23.5	75.9	14.5	20	22	18.1	23.3	17	105
VSRL-100-8A1012	8				31.2		22.2	77.2	17.6			20.2			108

*L1 dimension is a reference dimension after screw tightening.

External Dimension Drawings

●Connection Port Size

• V Port (Male Thread) - P Port (Male Thread) - EX Port (Push-in fitting)

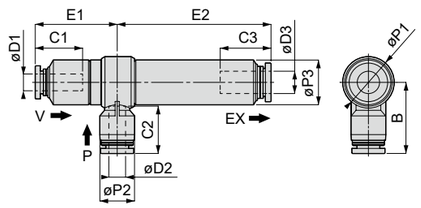


Unit: mm

Model No.	Tube O.D. øD1	R1	R2	A1	A2	B	L1	L2	L3	L4	E	C	øP	Width across flats H	□F	Weight (g)
VSRL-50-6A6A8	8	R1/8	R1/8	8	8	28	24	16	17	56.9	77.9	18.2	16	14	16	49
VSRL-100-8A8A12	12	R1/4	R1/4	11	11	35	29	19	21	78.4	105.4	23.3	20	17	20	103

*L1, L2, L3 dimensions are reference dimensions after screw tightening.

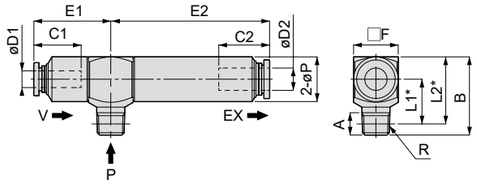
• V Port (Push-in fitting) - P Port (Push-in fitting) - EX Port (Push-in fitting)



Unit: mm

Model No.	Tube O.D. øD1	Tube O.D. øD2	Tube O.D. øD3	B	øP1	øP2	øP3	C1	C2	C3	E1	E2	Weight (g)
VSRL-50-668	6	6	8	25.7	16	18.4	12.4	17.2	17.2	18.2	29.6	55.1	49
VSRL-50-688		8		28.6			14.4		18.1		28.6	56.1	51
VSRL-50-868	8	6		25.5			12.4	18.2	17.2		29.7	55.1	49
VSRL-50-888		8		28.4			14.4		18.1		28.7	56.1	51
VSRL-100-10812	10	8	12	28.9	20	22	14.5	20.7	18.1	23.3	35.3	75.9	102
VSRL-100-12812	12							23.3			37.9		103
VSRL-100-101012	10	10		31.2			17.6	20.7	20.2		34	77.2	105
VSRL-100-121012	12							23.3			36.6		106

• V Port (Push-in fitting) - P Port (Male Thread) - EX Port (Push-in fitting)



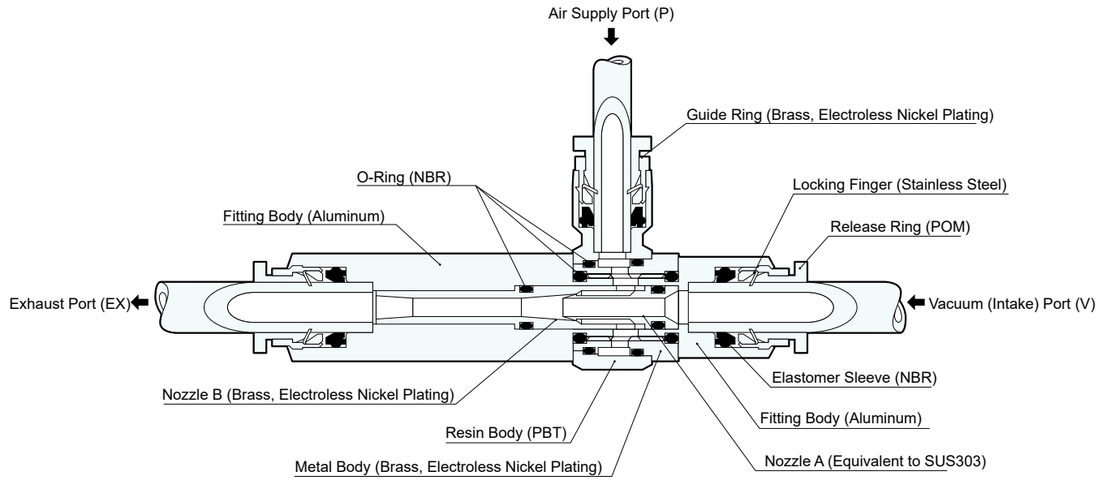
Unit: mm

Model No.	Tube O.D. øD1	Tube O.D. øD2	R	A	B	L1	L2	øP	C1	C2	E1	E2	□F	Weight (g)
VSRL-50-66A8	6	8	R1/8	8	28	20	16	16	17.2	18.2	27.6	56.9	16	45
VSRL-50-86A8	8								18.2		27.9			
VSRL-100-108A12	10	12	R1/4	11	35	25	19	20	20.7	23.3	32.8	78.4	20	99
VSRL-100-128A12	12								23.3		35.4			106

*L1, L2 dimensions are reference dimensions after screw tightening.

Internal Structure Diagram

• In case of V Port (Push-in fitting) - P Port (Push-in fitting) - EX Port (Push-in fitting)



Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Ring Blow Type Vacuum Generator VSRL Series

Design / Selection

Warning

■When transporting particles, powder or fibers with the vacuum generator VSRL, the product may not be usable depending on conditions. Contact the nearest CKD Sales Office.

MEMO

Vacuum Components
Vacuum Related Components
VSRL
VSECV
VSRVV
VRA2000
VSLF
VSFB, VSFU, VSFJ
FSL
VFA
VSUS
VST
Ending



Maintains vacuum on workpieces in separate circuits even if one workpiece detaches
Drop Prevention Valve

VSECV Series

●Connection Port Size: M3, M4, M5, M6, M10, R1/8

RoHS

■When two or more pads are used, pads that suction normally reduce the vacuum decline even if other pads are not suctioning. Thus, they prevent the normally suctioned workpiece from falling.

Model No. Notation

●Drop Prevention Valve

VSECV - M4

Model No. / ❶ Connection Thread Size

❶ Connection Thread Size

Code	Content
M3	M3x0.5
M4	M4x0.7
M5	M5x0.8
M6	M6x1
M10	M10x1.5
6A	R1/8, Rc1/8

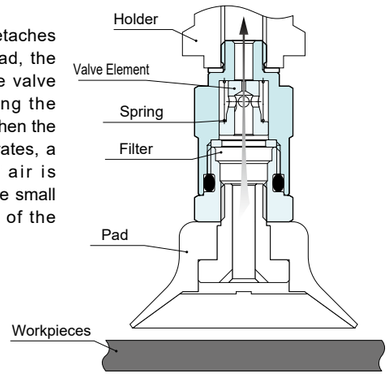
Specifications

Item			VSECV
Operating Fluid			Air
Operating Pressure	Positive Pressure	MPa	0 to 0.7
	Negative Pressure	kPa	-100 to 0
Operating Temperature °C			0 to 60

Drop Prevention Valve Operation Explanation

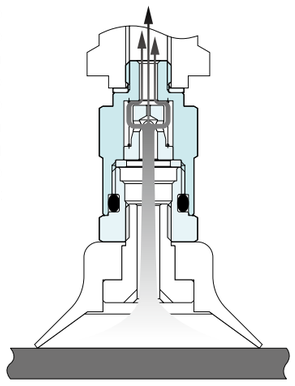
●Position locking valve operational status

If the workpiece detaches from the suction pad, the air flow pushes the valve element up, closing the suction passage. When the valve element operates, a small amount of air is drawn in through the small hole in the center of the valve element.



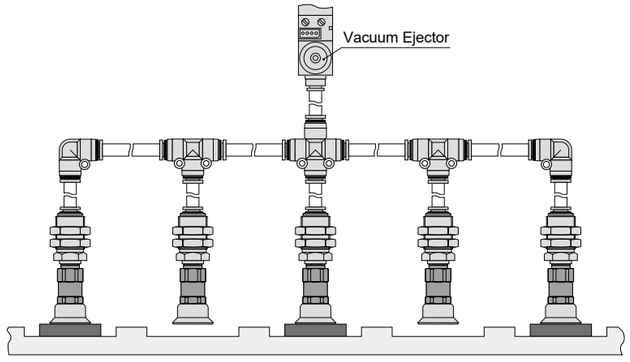
●Workpiece suction status

When the workpiece adheres closely to the suction pad, the vacuum suction flow rate decreases, and the valve element is pushed down by spring force, opening the suction passage between the valve element and the main body.



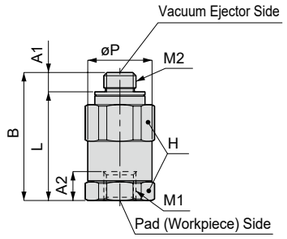
Piping Example

■ When using multiple vacuum pads with one vacuum ejector or vacuum pump, if a workpiece detaches from a pad or a pad is not contacting a workpiece within an acceptable number range, the suction at that location is automatically reduced. This mitigates vacuum reduction in the overall system, preventing issues such as handling operations stopping. When adopting this system, determine the number of pads that can be detached without causing problems during transport. Also, if the number of detached pads hinders transport, ensure the system issues an NG judgment and incorporates safety measures.

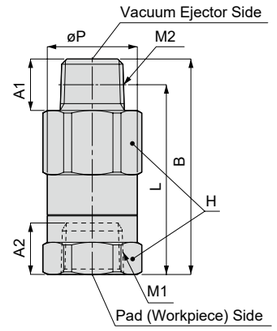


External Dimension Drawings

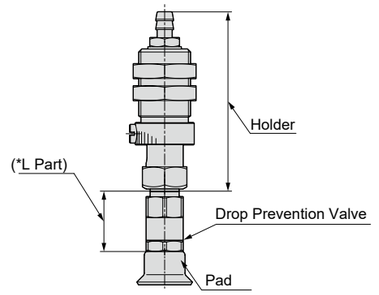
Drop Prevention Valve Mounting Example



For Metric Threads



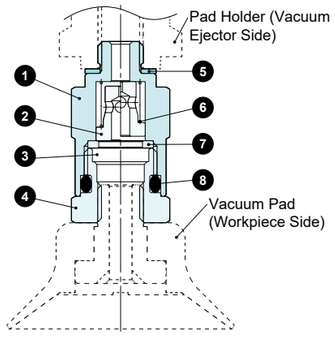
For Tapered Pipe Threads



Note: When selecting the option with a drop prevention valve for the suction pad product model No., the total length of the pad will be the dimension obtained by adding *L from the dimension table below.

Model No.	M1	M2	A1	A2	B	*L	øP	Width across flats H	Valve Element Minimum Operating Suction Flow Rate (L/min (ANR))	Suction Flow Rate After Valve Element Operation (L/min (ANR))	Effective Area (mm²) Free Flow	Weight (g)
VSECV-M3	M3x0.5	M3x0.5	2.5	4.5	18.4	15.9	8	8	2	1.3	0.7	4.9
VSECV-M4	M4x0.7	M4x0.7	2.9	4.5	19.9	17	10	10	5	1.3	1.6	7.9
VSECV-M5	M5x0.8	M5x0.8	3	4.5	19.9	16.9	10	10	5	1.3	1.6	6.6
VSECV-M6	M6x1	M6x1	4	5	28.1	24.1	12	12	13	1.3	4.0	13
VSECV-M10	M10x1.5	M10x1.5	7.5	10	40	32.5	14	14	13	1.3	4.8	11
VSECV-6A	Rc1/8	R1/8	8	8	33.5	29.5	14	14	13	1.3	4.8	10

Internal Structure Diagram



Part No.	Part Name	Material				
		VSECV-M3	VSECV-M4	VSECV-M5	VSECV-M6	VSECV-M10 VSECV-6A
1	Metal Body A	Stainless Steel		Brass, Electroless nickel plating		Aluminum Alloy, Electroless Nickel Plating
2	Valve Element	Aluminum alloy				
3	Filter	Polyvinyl formal				
4	Metal Body B	Brass, Electroless nickel plating			Aluminum Alloy, Electroless Nickel Plating	
5	Gasket	Stainless Steel + Nitrile Rubber				
6	Spring	Stainless Steel				
7	Stopper	Brass, Electroless nickel plating				
8	O-ring	Nitrile rubber				

Applicable Pad List

Model No.	Pad Shape	Pad Size (mm)	Holder Shape					
			VSP-A	VSP-B	VSP-C	VSP-D	VSP-E	VSP-F
			VSP-MA	VSP-MB	VSP-MC	VSP-MD	VSP-ME	-
			-	-	VSP-LFC	VSP-LFD	-	-
			-	VSP-HE*	VSP-HC	VSP-HD*	-	-
VSECV-M3	Standard Type	ø0.7, ø1, ø1.5, ø2, ø3, ø4	-				○	-
	Bellows Type	ø2, ø4	-				○	-
VSECV-M4	Standard Type	ø10, ø15	○				-	○
	Bellows Type	ø10, ø15	○				-	○
	Multi-stage Bellows Type	ø10	○				-	○
	Soft Type	ø4, ø6, ø8, ø10, ø15	○				-	○
	Soft Bellows Type	ø6, ø8, ø10, ø15	○				-	○
	Anti-slip Type	ø10	○				-	○
	Flat Type	ø10, ø15	○				-	○
	Suction Mark Prevention Type	ø10	○				-	○
	For Metal Detectors Type	ø10, ø15	○				-	○
VSECV-M5	Standard Type	ø6, ø8	-				○	-
	Bellows Type	ø6, ø8	-				○	-
	For Thin Objects Type	ø8, ø10, ø15, ø20	-				○	-
VSECV-M6	Standard Type	ø20, ø25, ø30, ø40, ø50	○				-	○
	Sponge-type	ø10, ø15, ø20, ø25, ø30, ø35, ø50	○				-	○
	Bellows Type	ø20, ø25, ø30, ø40, ø50	○				-	○
	Multi-stage Bellows Type	ø20, ø30, ø40, ø50	○				-	○
	Oval-type	2x4 to 8x30	○				-	○
	Soft Type	ø20, ø30, ø40	○				-	○
	Soft Bellows Type	ø20	○				-	○
	Anti-slip Type	ø20, ø30, ø40, ø50	○				-	○
	Flat Type	ø20, ø25, ø30	○				-	○
	Suction Mark Prevention Type	ø20, ø30	○				-	○
	For Metal Detectors Type	ø20	○				-	○
VSECV-M10	Standard Type	ø60, ø80, ø100	○				-	-
	Sponge-type	ø70, ø100	○				-	-
	Bellows Type	ø60, ø80, ø100	○				-	-

MEMO

Selection Method

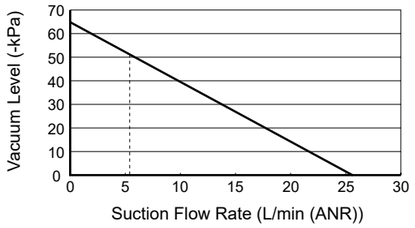
Determine the maximum number of drop prevention valves that can be mounted on one vacuum generator based on the valve element minimum operating suction flow rate in the table below and the example graph.

Item	VSECV-M3	VSECV-M4	VSECV-M5	VSECV-M6	VSECV-M10	VSECV-6A
Valve Element Minimum Operating Suction Flow Rate L/min (ANR)	2.0	5.0	5.0	13.0	13.0	13.0
Vacuum Reduction Amount during Non-Suction kPa	2.0	2.0	2.0	2.0	2.0	2.0

Example 1.
VSJ-L07...(Catalog Data)

Ultimate Vacuum Level (-kPa)	Suction Flow Rate (L/min (ANR))
66.5	26

Referring to the completed diagram on the right based on catalog data, the-type and maximum usable quantity of drop prevention valves can be determined from the valve element minimum operating suction flow rate table above.



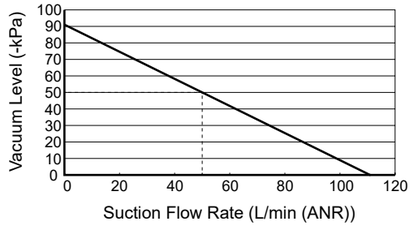
■When using at vacuum degree of -50 kPa

Since the intake flow rate is about 6 L/min (ANR), operable position locking valve model No.: VSECV-M3, VSECV-M4, and VSECV-M5 are required.
No. of valves used and non-suctioned locations for VSECV-M3: 3 units,
No. of valves used and non-suctioned locations for VSECV-M4, VSECV-M5: It is required to allow up to 1 unit.

Example 2. VSQ-H2O
(Catalog Data)

Ultimate Vacuum Level (-kPa)	Suction Flow Rate (L/min (ANR))
93	110

Referring to the completed diagram on the right based on catalog data, the-type and maximum usable quantity of drop prevention valves can be determined from the valve element minimum operating suction flow rate table above.



■When using at vacuum degree of -50 kPa

Since the intake flow rate is about 52 L/min (ANR), operable position locking valve model No.: VSECV-M3, VSECV-M4, VSECV-M5 VSECV-M6, VSECV-M10, and VSECV-6A are required.
No. of valves used and non-suctioned locations for VSECV-M3: No. of valves used and non-suctioned locations for 21 units (*1), VSECV-M4, and VSECV-M5: No. of valves used and non-suctioned locations for 10 units, VSECV-M6, VSECV-M10, and VSECV-6A: Up to 4 units must be allowed.

*1: VSECV-M3 is calculated by suction flow rate alone, theoretical: 2 kPa Up to 25 units can be supported. However, considering that all 25 units are not suctioned, the degree of vacuum is: -93 +(2 x 25) = -43 kPa. Therefore, when using -50 kPa: -93 +(2xx) ≤ -50 x≤21.5 ∴ Max. non-suctioned area: That's 21 units.

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Drop Prevention Valve VSECV Series

Selection / Design Notes

Warning

■Since it is not a Check Valves, vacuum is not held unless there is a hold function on the vacuum source side. Do not use for the purpose of vacuum holding.

■The design allows multiple suction pads to be mounted on a single ejector, but before using the product, confirm the performance with an actual device.

■When using a sponge pad, if the valving element is operated under conditions where leakage exceeding the valving element operating intake flow rate occurs, the workpiece may fall.

Caution

■Precautions for body mounting and removal
①Use appropriate tools for mounting and removing the product.
②During mounting, tighten by referring to the recommended tightening torque for each thread size (table below).

Recommended Tightening Torque

Thread Size	Tightening Torque
M3x0.5	0.5 N·m
M4x0.7	1.0 to 1.2 N·m
M5x0.8	1.0 to 1.5 N·m
M6x1	1.5 to 2.0 N·m
M10x1	5.0 to 7.0 N·m
R1/8, Rc1/8	4.5 to 6.5 N·m

■Precautions for body screw tightening position
①When mounting the male thread side of the drop prevention valve to equipment or a holder, use the hexagonal width across flats on the male thread side for tightening and confirm there is no looseness. Also, tighten by referring to the recommended tightening torque in the table above.
②When mounting equipment or a pad to the female thread side of the drop prevention valve, use the hexagonal width across flats on the female thread side for tightening and confirm there is no looseness. Also, tighten by referring to the recommended tightening torque in the table above.
③Regarding body part screw tightening during element replacement, also tighten by referring to the recommended tightening torque in the table above.

■Since the pressure drop of this product is very small even when the workpiece is not being suctioned, when checking suction in a pressure sensor, etc., be sure to thoroughly confirm with actual devices before use. Also, clogging of the filter element further minimizes the pressure drop during workpiece non-suction, so exercise sufficient caution when configuring pressure sensors, etc.



Compact Vacuum Regulator

VSRVV Series

●Port size: ø6, ø8, R1/4

Circuit Diagram Symbol



RoHS

Capable of controlling not only source pressure but also end-point pressure

Easy adjustment improves workability!



Contributes to equipment weight reduction

Achieves 50%* weight reduction

Body is resin, metal part material is aluminum.

Weight
Up to 50% Reduced

øCompared to our conventional product (Elbow type)

Copper-based metals not used

Ideal for rechargeable battery manufacturing processes

SUS, aluminum alloy used in flow path section. Ideal for applications sensitive to copper ions.

Flow Path
Copper-free Material Restriction

Ozone-resistant materials used as standard

Special nitrile rubber adopted

Valve section, diaphragm section standardly adopt ozone-resistant materials for deterioration prevention.

Ozone Resistant
Special Nitrile Rubber Adopted

Abundant piping variations *Excluding pressure gauges and sensors

Elbow A Type

Direct connection possible to the vacuum port of the vacuum source.



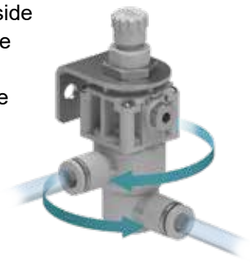
Elbow B Type

Connection possible to the vacuum pad holder.



Union Type

Primary and secondary side fittings rotate individually, allowing free piping.



Model No. Notation

●Compact Vacuum Regulator

VSRVV - 6 Z A RA - B

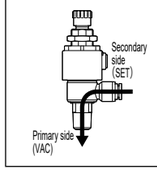
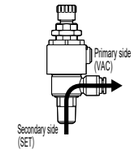
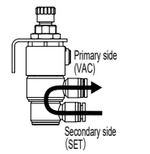
Model No. | ❷ Shape/Flow Direction | ❹ Bracket | ❶ Connection Size | ❸ Pressure Display

❶ Connection Size

Code	Content
6	ø6 Push-in fitting
8	ø8 Push-in fitting

❷ Shape/Flow Direction

Code	Content
A	Elbow A Type (R1/4)
B	Elbow B Type (R1/4)
*1 U	Union Type

A	B	U
		

*1: In the case of U, only 'Blank' can be selected for ❹ Bracket. (Bracket is standard equipment.)

*2: The A-type and B-type have the same external dimensions, but they cannot be changed after ordering.

❸ Pressure Display

Code	Content
Blank	No Pressure Display(With Plug)
M	No Pressure Display(M5 x 0.8 Female Thread Spec.)
G	With Pressure Display(*30 Vacuum Pressure Gauge)
RA	With Digital Pressure Display(NPN SW 2 points + Analog Output)
RAP	With Digital Pressure Display(PNP SW 2 points + Analog Output)
RC	With Digital Pressure Display(NPN SW 2 points + Copy Function)
RCP	With Digital Pressure Display(PNP SW 2 points + Copy Function)

❹ Bracket

Code	Content
Blank	None
B	With Bracket

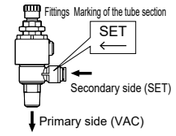
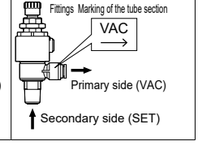
*1

*1: When ❷ Shape/Flow Direction is U, only 'Blank' can be selected for ❹. (Bracket is standard equipment.)

Blank	M	G	RA/RAP/RC/RCP
			
No Pressure Display, With Plug	No Pressure Display, M5 x 0.8 Female Thread Spec.	ø30mm Vacuum Pressure Gauge with Pressure Display	With Digital Pressure Display

Regarding Elbow Type Control Direction

Elbow types are classified as A type and B type depending on the control direction. A type and B type can be distinguished by the marking on the fitting part.

Control Direction	
A type	B type
	

Dedicated Part Model No.

●Dedicated Bracket

VSRVV - B

Model No.

Regulator Section Specifications

Item	VSRVV		
Pressure Display	Without Pressure Gauge	Large Digital Display Vacuum Pressure Switch	ø30 Vacuum Pressure Gauge
Operating Fluid	Air		
Operating Pressure kPa	-100 to 100		-100 to 0
Set Pressure kPa	-100 to -1.3		
Suction Flow Rate L/min (ANR)	30		
Operating Temperature °C	0 to 50 (However, no freezing)		0 to 40 (However, no freezing)

Pressure Sensor with Digital Display Specifications

Item		Pressure Sensor with Digital Display			
		Analog Output (RA)	With Copy Function(RC)	Analog Output (RAP)	With Copy Function(RCP)
Operating Pressure		-100 to 100 kPa			
Proof Pressure		300 kPa			
Environmental Resistance	Protection Structure	Equivalent to IEC Standard IP40			
	Ambient Temperature (During Storage)	-10 to 60°C(No condensation and no freezing)			
	Ambient Temperature (During Operation)	0 to 50°C (No condensation and no freezing)			
	Ambient Humidity(Storage/ Operating)	35 to 85% RH (No condensation)			
Power Supply Voltage		12 VDC to 24 VDC ±10% Ripple (P-P) ±10% or less			
Current Consumption		≤40 mA (No load)			
Pressure Display	Display Update Rate	5 times/sec			
	Display Accuracy	±2% F.S. ±1 digit			
	Digital Display	Main Display: 2 Colors (red, green) Sub-display: Orange			
Switch Output	Number of Output Points	2 points			
	Output Method	NPN Open Collector		PNP Open Collector	
	Switch Rating	≤30 VDC 125 mA		≤24 VDC 125 mA	
	Internal Voltage Drop	≤1.5 V			
Analog Output	Output Voltage	1 to 5V: ±2.5% F.S. or less, Linearity: ±1% F.S. or less, Output Impedance: approx. 1 kΩ			
Temperature Characteristics		≤ ±2.5% F.S.(0 to 50°C, at 25°C)			
Repeatability		±0.2% F.S. ±1 digit			
Differential (Hysteresis)		Adjustable			
Response Time		Selectable (2.5 or less/25/100/250/500/1000/1500 ms)			

Display Magnification(Unit)	Pressure Range(Rated Display Range)
x1 (kPa)	-100 to 100
x1 (MPa)	-
x0.75 (cmHg)	-75 to 75
x0.01 (bar)	-1.00 to 1.00
x0.145 (psi)	-14.5 to 14.5

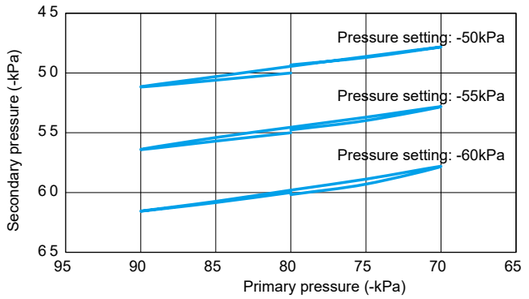
Vacuum Pressure Gauge Section Specifications

Item	Vacuum Pressure Gauge
Pressure Display (kPa)	-100 to 0
Pressure Display Accuracy	5% F.S.(at 25°C)

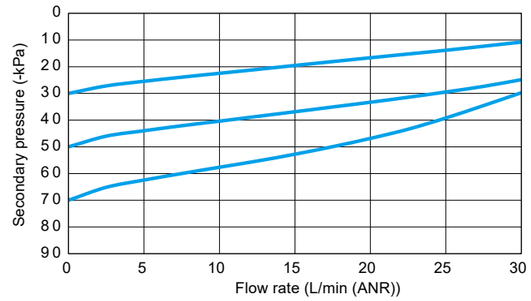
Pressure Characteristics / Flow Characteristics

Elbow A Type

Pressure Characteristic Diagram

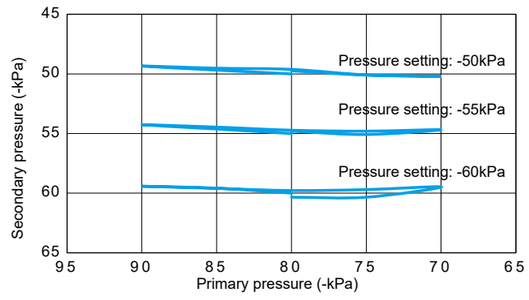


Flow Characteristic Diagram

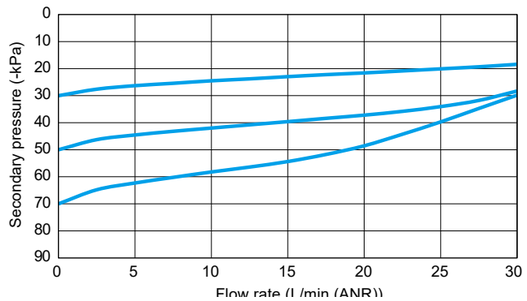


Elbow B Type

Pressure Characteristic Diagram

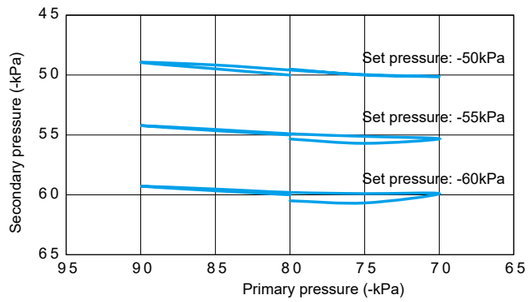


Flow Characteristic Diagram

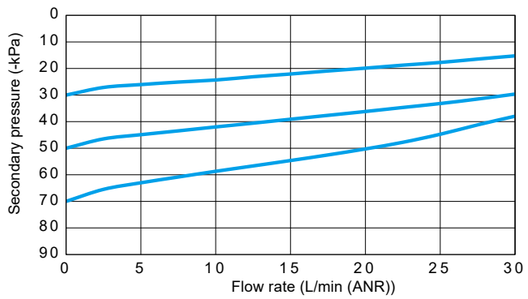


Union Type

Pressure Characteristic Diagram

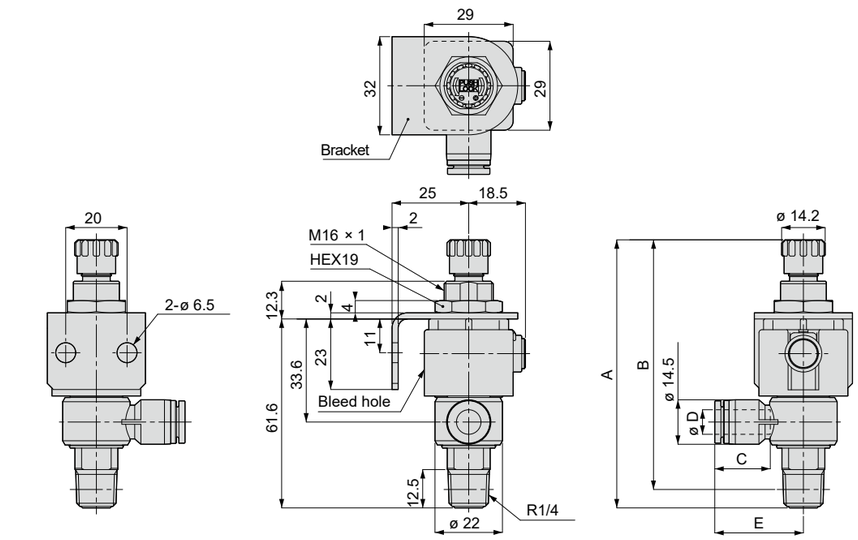


Flow Characteristic Diagram



External Dimension Drawings

●Elbow Type, No Pressure Display (With Plug) VSRVV-□A / VSRVV-□B



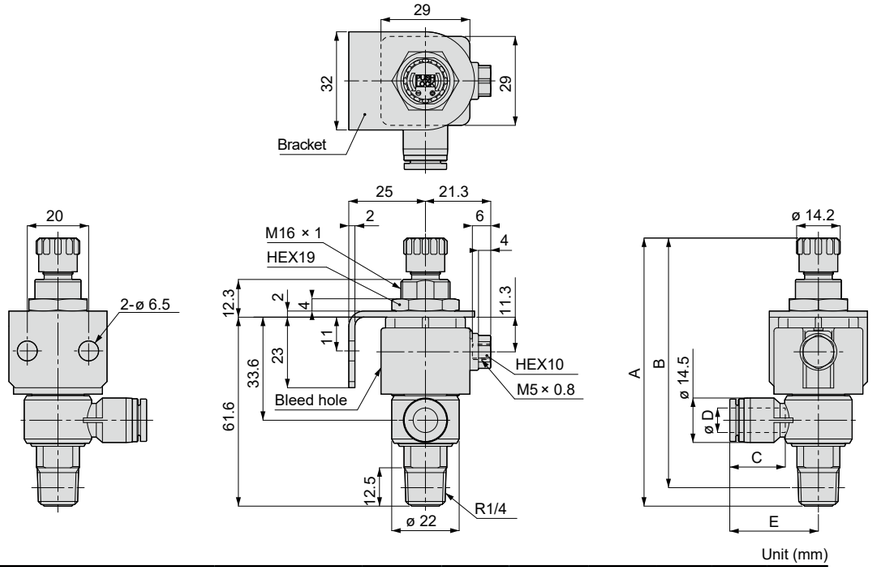
* The external dimension diagram on the left is for the type with bracket.

Unit (mm)

Model No.	Applicable Tube O.D. øD	A		B		C	E	Weight (g)
		Locked	Adjusting	Locked	Adjusting			
VSRVV-6ZA/6ZB	6	84.9	87.4	81.4	78.9	17	29	63
VSRVV-6ZA/6ZB-B								87
VSRVV-8ZA/8ZB	8					18.1	28.9	63
VSRVV-8ZA/8ZB-B								88

*B dimension is a reference dimension after screw tightening.

●Elbow Type, No Pressure Display (M5×0.8 Female Thread Specification) VSRVV-□AM/VSRVV-□BM



* The external dimension diagram on the left is for the type with bracket.

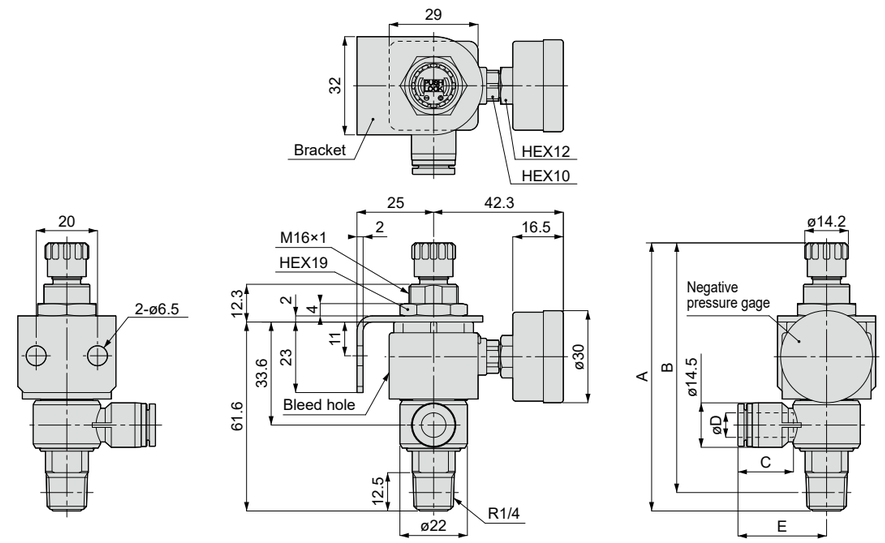
Unit (mm)

Model No.	Applicable Tube O.D. øD	A		B		C	E	Weight (g)
		Locked	Adjusting	Locked	Adjusting			
VSRVV-6ZAM/6ZBM	6	84.9	87.4	81.4	78.9	17	29	64
VSRVV-6ZAM/6ZBM-B								88
VSRVV-8ZAM/8ZBM	8					18.1	28.9	64
VSRVV-8ZAM/8ZBM-B								89

*B dimension is a reference dimension after screw tightening.

External Dimension Drawings

●Elbow Type, With Pressure Display (ø30 Vacuum Pressure Gauge) VSRVV-□AG / VSRVV-□BG



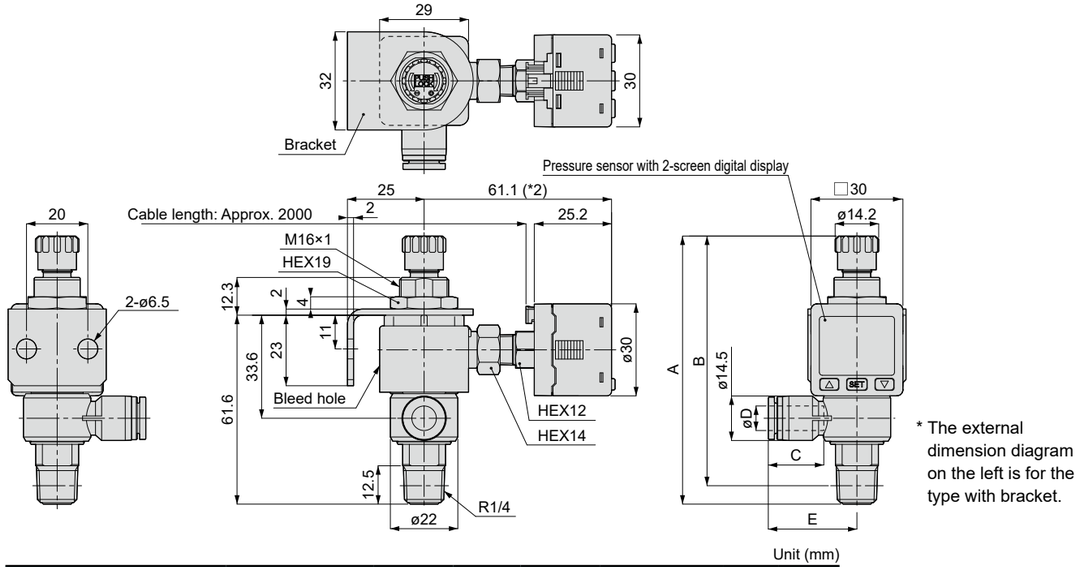
* The external dimension diagram on the left is for the type with bracket.

Unit (mm)

Model No.	Applicable Tube O.D. øD	A		B		C	E	Weight (g)
		Locked	Adjusting	Locked	Adjusting			
VSRVV-6ZAG/6ZBG	6	84.9	87.4	81.4	78.9	17	29	120
VSRVV-6ZAG/6ZBG-B								145
VSRVV-8ZAG/8ZBG	8					18.1	28.9	120
VSRVV-8ZAG/8ZBG-B								145

*B dimension is a reference dimension after screw tightening.

●Elbow Type, With Pressure Display (With Digital Display Pressure Sensor) VSRVV-□AR□ / VSRVV-□BR□



* The external dimension diagram on the left is for the type with bracket.

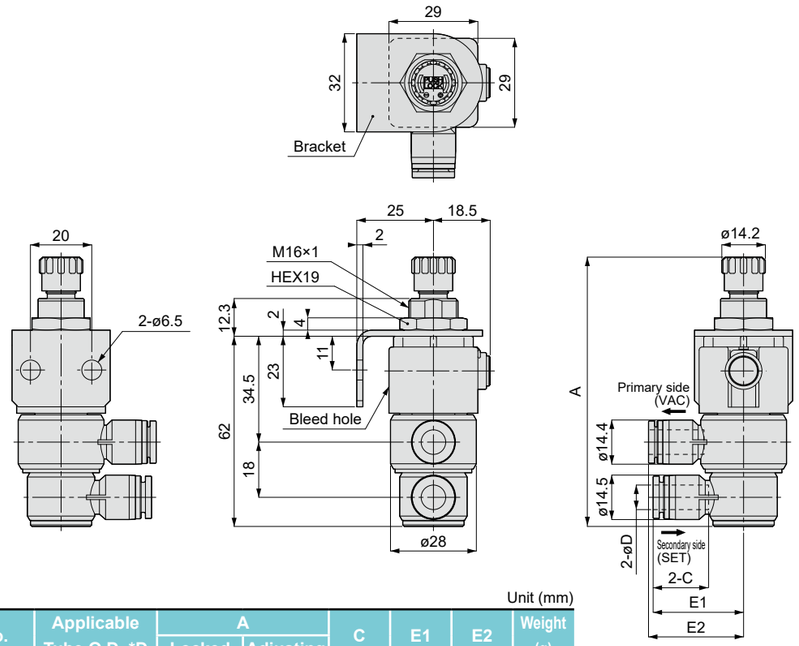
Unit (mm)

Model No.	Applicable Tube O.D. øD	A		B		C	E	Weight (g)
		Locked	Adjusting	Locked	Adjusting			
VSRVV-6ZAR□/6ZBR□	6	84.9	87.4	81.4	78.9	17	29	146
VSRVV-6ZAR□/6ZBR□-B								170
VSRVV-8ZAR□/8ZBR□	8					18.1	28.9	146
VSRVV-8ZAR□/8ZBR□-B								170

*1: B dimension is a reference dimension after screw tightening. *2: For handling the pressure sensor, please refer to the instruction manual.

External Dimension Drawings

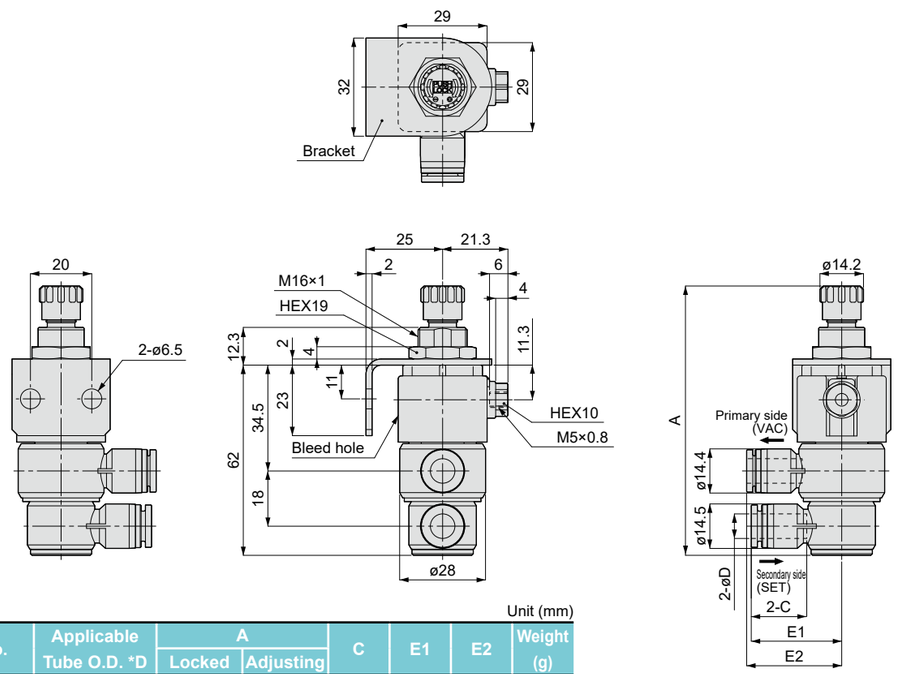
●Union Type, No Pressure Display (with Stop Plug) VSRVV-□U



Unit (mm)

Model No.	Applicable Tube O.D. *D	A		C	E1	E2	Weight (g)
		Locked	Adjusting				
VSRVV-6ZU	6	85.3	87.8	17	29	31.1	108
VSRVV-8ZU	8			18.1	29.5	31	109

●Union Type, No Pressure Display (M5 x 0.8 Female Thread Spec.) VSRVV-□UM

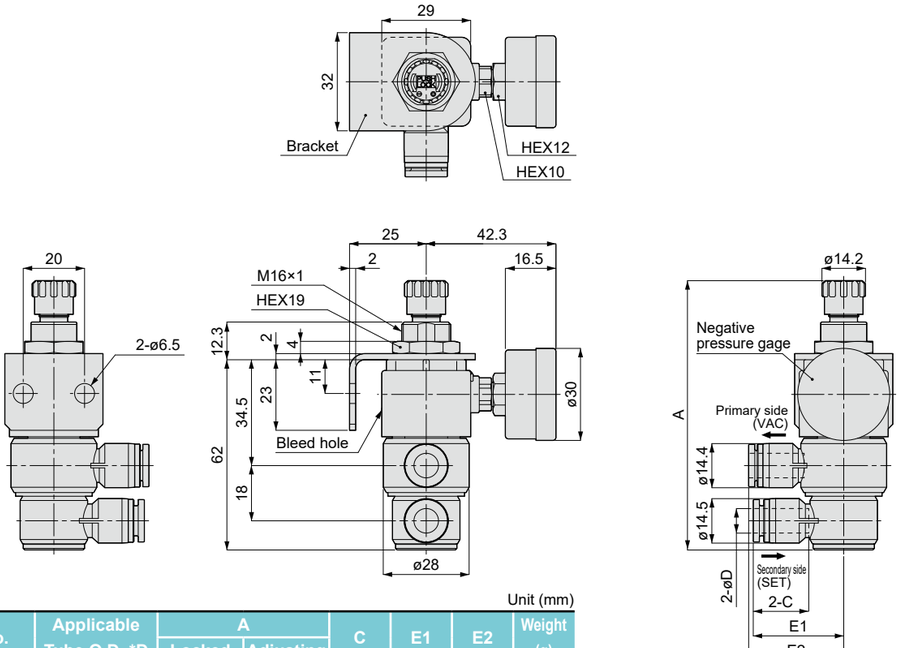


Unit (mm)

Model No.	Applicable Tube O.D. *D	A		C	E1	E2	Weight (g)
		Locked	Adjusting				
VSRVV-6ZUM	6	85.3	87.8	17	29	31.1	109
VSRVV-8ZUM	8			18.1	29.5	31	110

External Dimension Drawings

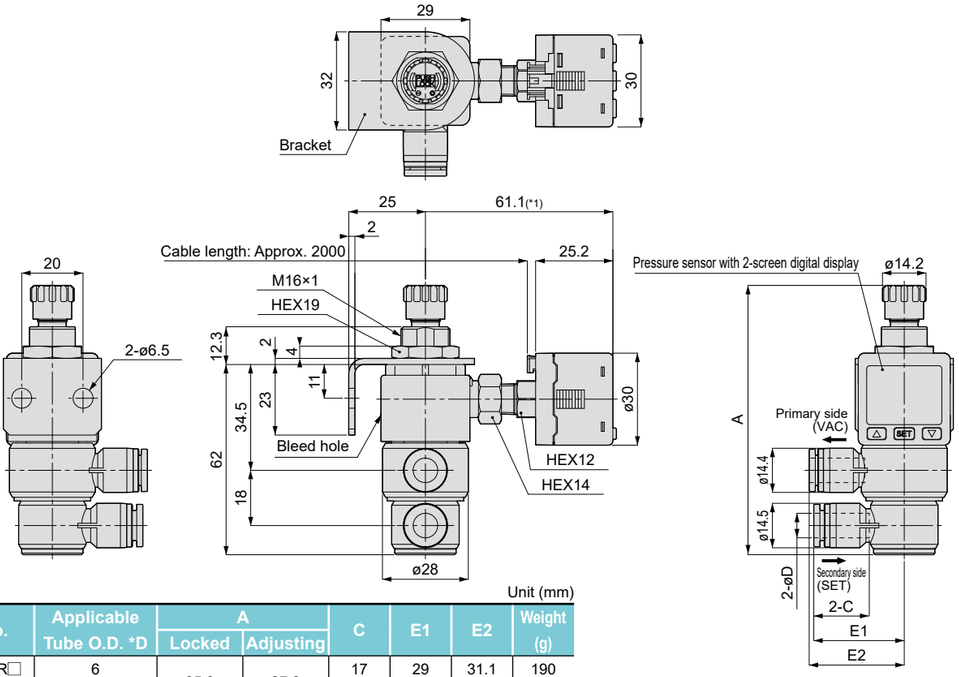
●Union Type, With Pressure Display (ø30 Vacuum Pressure Gauge) VSRVV-□UG



Unit (mm)

Model No.	Applicable Tube O.D. *D	A		C	E1	E2	Weight (g)
		Locked	Adjusting				
VSRVV-6ZUG	6	85.3	87.8	17	29	31.1	137
VSRVV-8ZUG	8			18.1	29.5	31	138

●Union Type, With Pressure Display (With Digital Display Pressure Sensor) VSRVV-□UR□

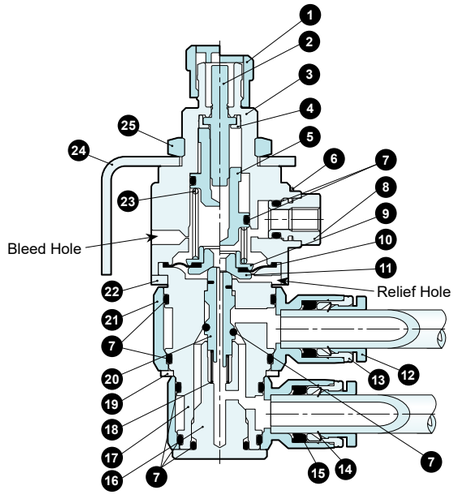


Unit (mm)

Model No.	Applicable Tube O.D. *D	A		C	E1	E2	Weight (g)
		Locked	Adjusting				
VSRVV-6ZUR□	6	85.3	87.8	17	29	31.1	190
VSRVV-8ZUR□	8			18.1	29.5	31	191

*For handling the pressure sensor, please refer to the instruction manual.

Internal Structure Diagram/Materials



Part No.	Part Name	Material
1	Adjusting Knob	Acetal Resin
2	Adjusting Screw	Steel (Electroless Nickel Plating)
3	Bonnet	Polybutylene terephthalate resin
4	Guide Bushing	Aluminum alloy
5	Adjusting Bushing	Aluminum alloy
6	Stop Pin	Stainless steel
7	O-ring	Special Nitrile Rubber
8	Cartridge	Aluminum alloy
9	Center Disc A	Aluminum alloy
10	Diaphragm	Special Nitrile Rubber
11	Center Disc B	Aluminum alloy
12	Release Ring	Acetal Resin
13	Guide Ring	Special Stainless Steel
14	Locking Finger	Special Stainless Steel
15	Elastomer Sleeve	Special Nitrile Rubber
16	Plug	Aluminum alloy
17	Metal Body	Aluminum alloy
18	Valve Spring	Stainless steel
19	Plate	Aluminum alloy
20	Valve	Aluminum alloy
21	Resin Body	Polybutylene terephthalate resin
22	Body Plate	Aluminum alloy
23	Adjusting Spring	Stainless steel
24	Bracket	Steel (Electroless Nickel Plating)
25	M16 x 1 Hex Nut	Steel (Zinc Plated)

Regarding Product Fixing Method

① Elbow Type Fixing Method

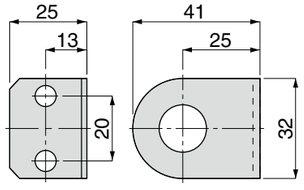
For the elbow type fixing method, use the square part(width across flats: 14 mm) and secure with a tightening torque of 12 to 14 N·m using an appropriate tool. Ensure sufficient space for rotating with tools during mounting. Also, for types with gauges and sensors, ensure sufficient space for rotation with the gauge and sensor attached.

② Fixing Method Using Bracket

●Bracket Fixing Method

Union type and elbow type with bracket are fixed by tightening with M6 screws(customer-supplied) using the bracket fixing holes.

Bracket Mounting Dimensions



Unit: mm

●Body Fixing Method

For union type and elbow type with bracket, after fixing the bracket, use the bracket's body fixing holes and tighten the included M16×1 nut to a torque of 3 to 4 N·m using an appropriate tool.
Ensure sufficient space for rotating with tools during mounting.

③ Fixing Method Using Bulkhead Mounting Hole

When fixing using the bulkhead mounting hole, tighten the included M16×1 nut to a torque of 3 to 4 N·m using an appropriate tool.
Ensure sufficient space for rotating with tools during mounting.

[Applicable Mounting Hole Dimensions]
nner Diameter: 16.5 mm to 17 mm
Thickness: 8 mm or less

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Compact Vacuum Regulator VSRVV Series

Design / Selection

Warning

■ When applying positive pressure to the regulators, do not use the ø30 vacuum pressure gauge. For positive pressure use, use the large digital display vacuum pressure switch. Applying excessive positive pressure poses a risk of equipment damage.

■ Before use, carefully read the instruction manual of the vacuum source to be connected and perform sufficient tests before operating.

Caution

■ Do not apply excessive load or impact to the pressure gauge, pressure switch, or gauge port. Accurate setting is not possible in the direction of decreasing vacuum level (counterclockwise).

■ Do not apply excessive load or impact to the pressure gauge, pressure switch, or gauge port. There is a risk of equipment damage or decreased display accuracy.

■ When attaching a gauge, piping, etc., to the gauge port, use a wrench or similar tool on the hexagonal part of the gauge port(width across flats: 12 mm) to tighten it. Also, for tightening to M5 x 0.8 ports, tighten by referring to the recommended tightening torque in the table below. There is a risk of equipment damage or decreased display accuracy due to leaks.

Recommended Tightening Torque

Thread Size	Tightening Torque
M5 x 0.8 mm	1.0 to 1.5 N·m

■ If there is a possibility of inhaling dust or particulate matter, be sure to install a vacuum filter on the pressure regulating side (work side) of the vacuum regulator. Malfunction may occur due to suction of foreign matter.

■ Do not block the bleed hole or relief hole, as this will make the secondary pressure unstable.

■ When applying positive pressure to the regulator, air will flow out from the bleed hole. Exercise caution when using in cleanrooms, etc.

■ When applying break air, consider the amount of leakage from the bleed hole when setting.

■ Do not excessively turn the pressure adjusting knob counterclockwise from the fully open state, or clockwise from the fully closed state. This can cause damage to the adjusting knob and body. (The product is shipped in a fully closed state.)

■ The pressure adjusting knob is locked when pushed and released when pulled. Always lock it after adjustment. Using it unlocked may cause the adjusting knob to rotate and the pressure to change.

■ When pushing in the pressure adjusting knob, it may stop at an intermediate position between the locked state and the unlocked state depending on the rotational position. In this state, it is not completely locked, so confirm that the adjusting knob is pushed in to the locked position.

■ Forcibly rotating the adjusting knob when it is locked may damage the locking mechanism.

■ Do not use the ø30 mm negative pressure gauge in locations with large pressure fluctuations (high cycle).

■ For handling of the pressure sensor with digital display, please check the common precautions for pressure gauges and sensors in the product catalog, as well as the individual precautions for each.

■ When fixing the product, carefully read the product fixing method in the included instruction manual and tighten the appropriate locations at the specified torque. If other parts are tightened or tightened beyond the specified torque, there is a risk of body damage.

■ Adjust the elbow gauge position using the tightening position. Parts other than the fitting part and adjusting knob do not rotate. Forcibly rotating them poses a risk of body damage.



Vacuum Regulator

VRA2000 Series

● Connection Port Size: Rc1/4, Rc3/8, G1/4, G3/8, 1/4NPT, 3/8NPT

Circuit Diagram Symbol



RoHS

Model No. Notation

VRA2000 – 8 – GB

Model No.

1 Connection Port Size

2 Option

1 Connection Port Size

Code	Content
8	Rc1/4
10	Rc3/8
8 g	G 1/4
10 g	G 3/8
8N	1/4 NPT
10N	3/8 NPT

2 Option

	Code	Content	
	Blank	None	
*2	G	Pressure Gauge	
*2	P	Pressure Switch	
	B	C-Bracket	
	B3	L-Bracket	
	B4	B-Bracket	
*2	R2	Digital Pressure Sensor	

Specifications

Model No.		VRA2000-8	VRA2000-10
Set Pressure	(kPa)	-100 to -1	
Ambient/Fluid Temperature	°C	5 to 50	
Balance Leak Flow Rate	L/min (ANR)	1 *3	
Max. Flow Rate	L/min (ANR)	200 *1	
Connection Port Size	IN/OUT	1/4	3/8
	Gauge	1/8	
Weight	kg	0.29	

*1: Max. flow rate is the flow rate when the secondary side is fully opened after closing the secondary side completely, adjusting primary pressure to -101.3 kPa and secondary pressure to -100 kPa.
*2: Selectable only when the connection port size is Rc thread.
*3: This is the flow rate when the secondary pressure is set to closed state, primary pressure is ≤ -95 kPa, and secondary pressure is set to -45 kPa.

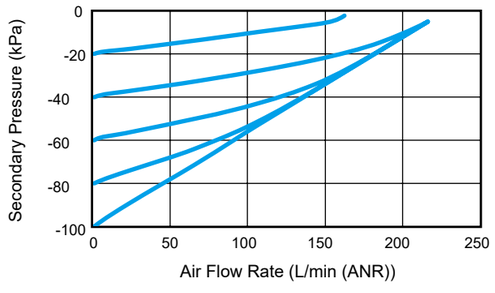
Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

• Structure usable in rechargeable battery manufacturing processes

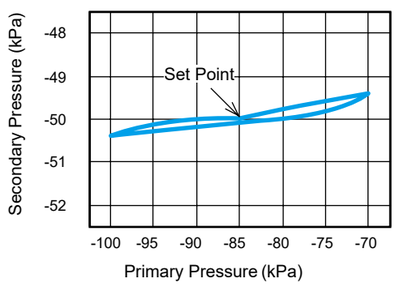
VRA2000 – ····· – P4*

*Please inquire for details.

Flow Characteristics

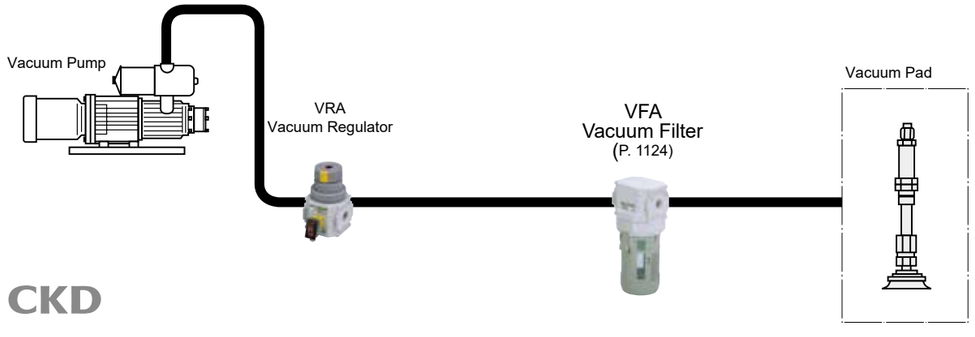


Pressure Characteristics



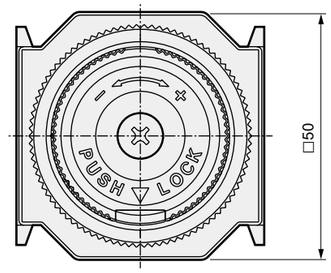
*1: Measured using a primary side vacuum pump with an exhaust capacity of 500 L/min.

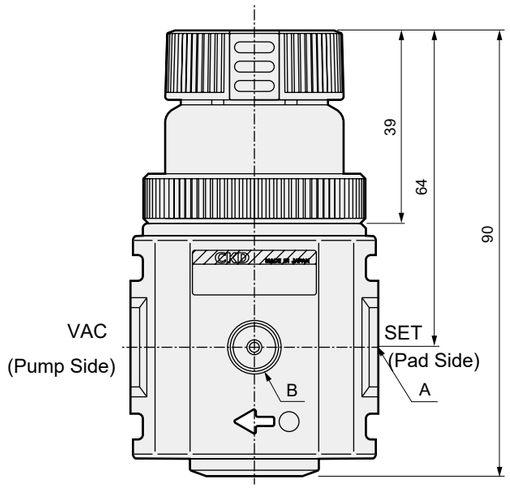
Application Example



External Dimension Drawings

● VRA2000-8, VRA2000-10

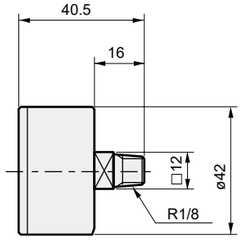




Panel mounting hole dimensions during panel mount: ø38.5

Model No.	A	B
VRA2000-8	Rc1/4	Rc1/8
VRA2000-10	Rc3/8	Rc1/8

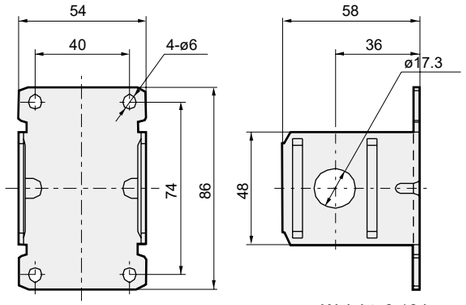
● Pressure gauge(G)
VG41D-6-P01



With Limit Mark
-100 to 0 kPa

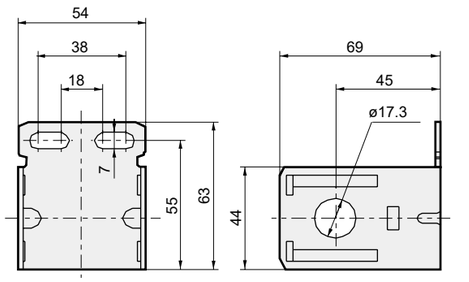
Weight: 82 g

● B-bracket(B4)
B240



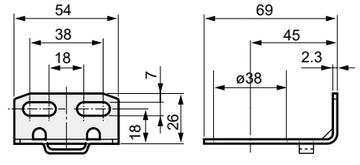
Weight: 0.16 kg
Material: Steel
Zinc Plated
Treatment

● C-bracket(B)
B220



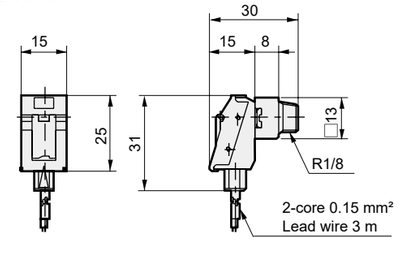
Weight: 0.15 kg
Material: Steel
Zinc Plated
Treatment

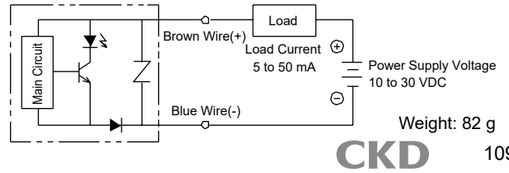
● L-bracket(B3)
B230



Weight: 60 g
Material: Steel
Zinc Plated
Treatment

● Pressure switch(P)
PPE-V01-6

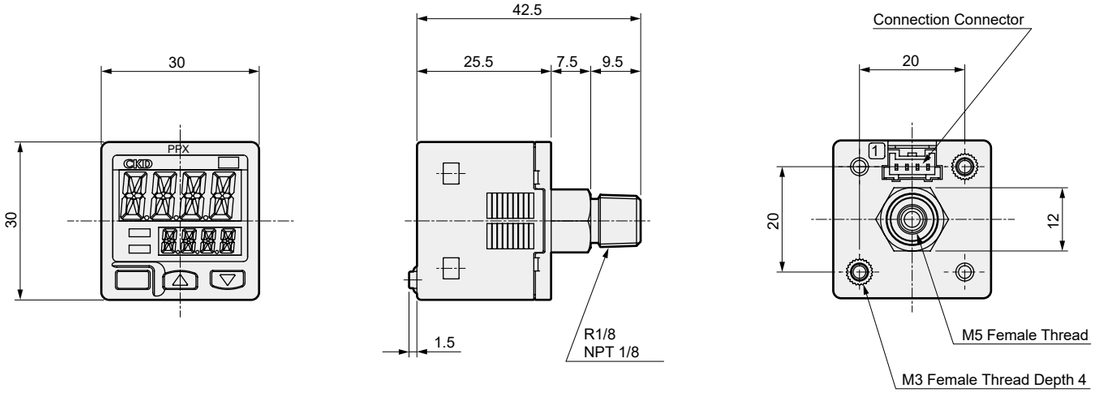




Weight: 82 g

External Dimension Drawings

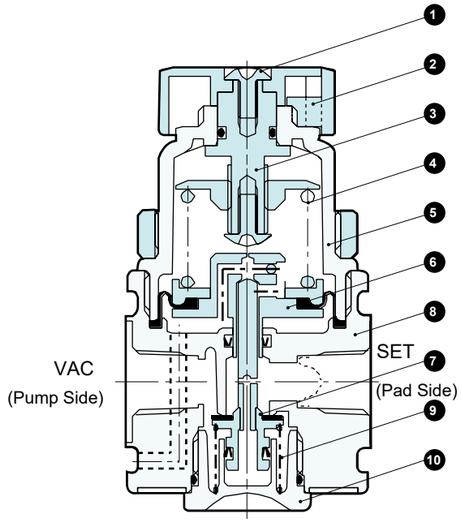
● Digital Pressure Sensor
PPX-R01N-6M



Weight: 40 g

* For details on the Digital Pressure Sensor PPX series, please refer to "Sensors/Controllers" (No. RJ-008AA).

Internal Structure Diagram/Materials



No.	Part Name	Material
1	Phillips truss head machine screw	Steel
2	Knob Assembly	Polybutylene terephthalate
3	Adjusting Screw Assembly	Copper Alloy / Steel / Nitrile Rubber
4	Adjusting Spring	Stainless steel
5	Cover Assembly	Aluminum Alloy / Polybutylene terephthalate
6	Diaphragm Assembly	Aluminum Alloy / Steel / Nitrile Rubber
7	Valve Assembly	Aluminum Alloy / Copper Alloy / Hydrogenated Nitrile Rubber
8	Body Assembly	Aluminum Alloy / Stainless Steel / Nitrile Rubber
9	Bottom Spring	Stainless steel
10	Bottom Plug Assembly	Polybutylene terephthalate / Nitrile Rubber

Precautions for Use

Warning

1 Use the product within the specified range.

2 The product is a vacuum regulator. Cannot be used for pressurization.

3 Install the product avoiding direct sunlight.

4 Do not use the product in atmospheres containing corrosive gases, chemicals, or seawater, or in locations where these may adhere, nor in vacuum circuits intended for sucking these substances.

5 Avoid mounting in locations subject to vibration or shock.

6 Turning the knob in the + direction from the set pressure 0 activates the stopper, preventing the knob from turning. Be careful, as applying excessive torque in the + direction can lock the knob, making it inoperable.

7 Tighten with the appropriate torque during piping connection.

8 During installation, ensure the bending moment due to piping load is ≤ 50 N·m.

Connection Thread	Tightening Torque N·m
Rc1/4	6 to 8
Rc3/8	13 to 15

Caution

1 The set pressure changes from the initial set value due to the operating environment, conditions, aging of component materials, etc. Check the pressure periodically and reset it if it has changed.

2 This product regulates pressure by constantly leaking air, so when using a small-capacity vacuum pump, the vacuum pressure may not rise. Please be careful.

3 An O-ring groove for module connection is provided on the pump side of the product. Select piping that can seal with a diameter less than or equal to the O-ring groove diameter.

Series Name	VRA2000
Groove Diameter	ø25.4



Vacuum Break Control Valve with Break Air Flow Rate & Relief Pressure Adjustment Needle
Vacuum Break Unit

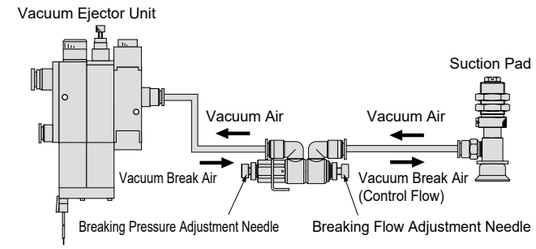
VSLF Series

●Port size: ø4, ø6, R1/8

RoHS

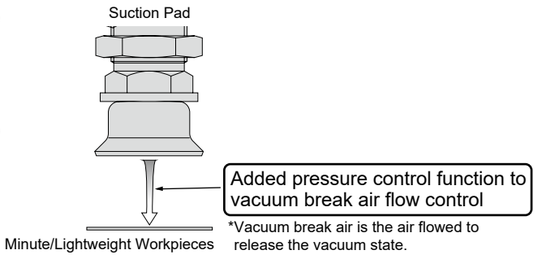
■Vacuum burst unit for vacuum ejector with vacuum burst mechanism.

■Control vacuum burst air while maintaining the vacuum characteristics of the vacuum ejector.



■Pressure control is added to vacuum burst air flow rate control to prevent workpieces from being blown away.

■Shortening of vacuum burst time is realized by providing a relief function in the vacuum burst circuit (function to relieve extra pressure).

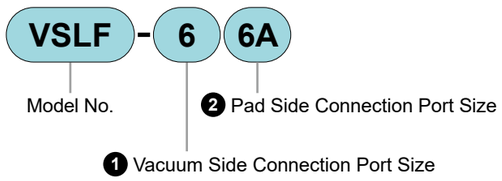


■Burst time can be shortened by mounting to the end of the vacuum burst circuit.

■Fittings Tube removal direction is free, due to the rotation of resin body and tube part.

Model No. Notation

●Vacuum Break Unit



❶ Vacuum Side Connection Port Size

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

❷ Pad Side Connection Port Size

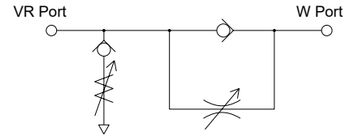
Code	Content	Vacuum generator side port size	
		4	6
4	ø4 Push-in fitting	●	
6	ø6 Push-in fitting		●
6A	R1/8	●	●

indicates not available.

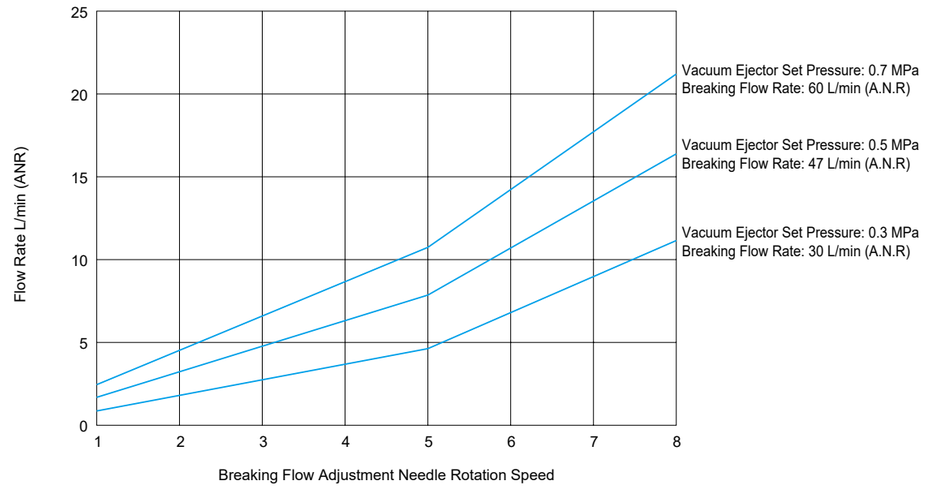
Specifications

Item		VSLF
Operating Fluid		Air
Operating Pressure	MPa	0 to 0.7
Relief Valve Operating Pressure Setting Range	MPa	-0.015 to 0.015
Vacuum pressure	kPa	0 to -101
Operating Temperature	°C	0 to 60 (However, no freezing)

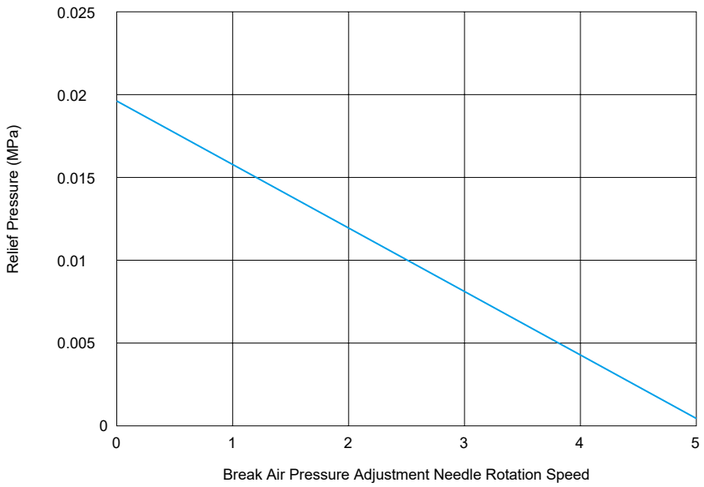
Circuit Diagram



Vacuum Break Air Discharge Flow Characteristic

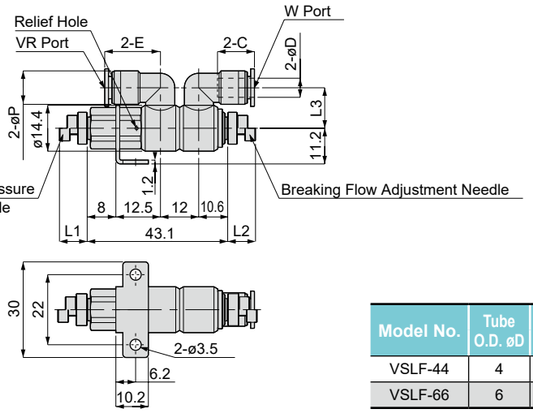


Vacuum Break Air Pressure Characteristic



External Dimension Drawings

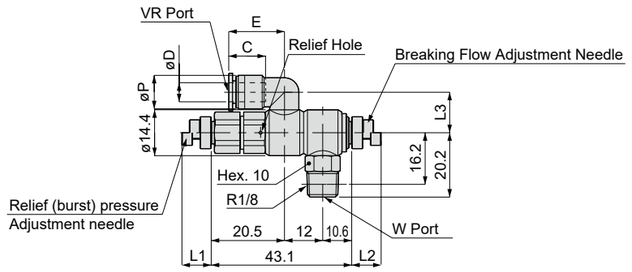
●Vacuum side (VR) port: Push-in fitting, Pad Side (W) Port: Push-in fitting Type



Unit: mm

Model No.	Tube O.D. øD	C	E	L1		L2		L3	øP	Weight (g)
				max.	min.	max.	min.			
VSLF-44	4	11.3	16.4	11.8	8	13.4	9.7	12.2	8	36
VSLF-66	6	11.8	17.7	11.8	8	13.4	9.7	12.7	10.5	37

Vacuum side (VR) port: Push-in fitting, Pad Side (W) Port: Tapered Thread Type

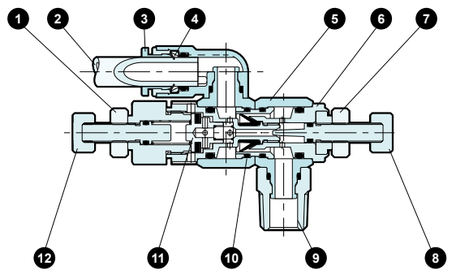


Unit: mm

Model No.	Tube O.D. øD	C	E	L1		L2		L3	øP	Weight (g)
				max.	min.	max.	min.			
VSLF-46A	4	11.3	16.4	11.8	8	13.4	9.7	12.2	8	36
VSLF-66A	6	11.8	17.7	11.8	8	13.4	9.7	12.7	10.5	37

Internal Structure Diagram/Materials

●VR Port: Push-in fitting, W Port: Tapered Thread Type



Part No.	Part Name	Material	Part No.	Part Name	Material
1	Lock Nut	Aluminum alloy	7	Lock Nut	Aluminum alloy
2	Vacuum Port (VR)		8	Vacuum Break Flow Adjustment Needle	Brass (Electroless nickel plating)
3	Release Ring	Acetal Resin	9	Pad Side Port (W)	
4	Locking Finger	Stainless Steel	10	Check Packing	Nitrile rubber
5	Resin Body	Polybutylene terephthalate resin	11	Valve Element	Aluminum alloy
6	Metal Body	Brass (Electroless nickel plating)	12	Vacuum Break Relief Pressure Adjustment Needle	Brass (Electroless nickel plating)

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Vacuum Break Unit VSLF Series

Design / Selection

Warning

■Since the vacuum breaker unit has air control direction, read the catalog carefully before use. Incorrect control direction poses a risk of personal injury or equipment damage.

■Do not use with fluids other than air. Regarding the use of fluids other than air, please inquire.

■Do not apply tensile, torsion, or bending loads to the body. Do not drop or apply excessive impact. There is a risk of body damage.

■Without using tools, tighten the lock nut securely by hand. Tightening with tools may cause damage to the lock nut or body. Also, if not securely tightened, the lock nut may loosen, potentially disrupting the initial setting.

■Do not use in such a way that the internal pressure between the vacuum ejector and the vacuum burst unit is usually 0.2 MPa more. This can cause vacuum ejector damage.

Caution

■Read the catalog carefully regarding flow rate adjustment and vacuum burst relief pressure adjustment for vacuum burst air.

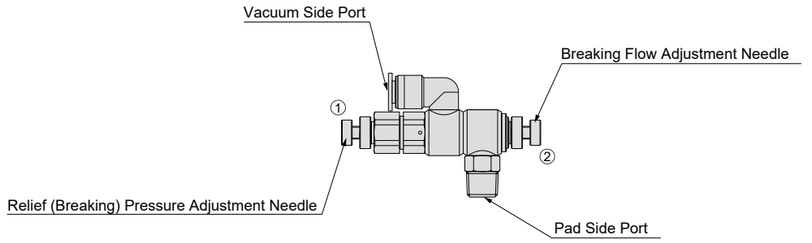
■Be careful when the piping resistance or required flow rate is large. Insufficient breaking flow rate may cause trouble. Check the specifications carefully before use.

■Be sure to install a Vacuum Filters on the pad side port (limited to filters usable with positive pressure for vacuum burst). Also, if not installed, avoid sucking in dust, salt, iron powder, etc., as much as possible, and perform internal cleaning periodically.

How to Use

Vacuum Break Unit Adjustment Method

1. First, install port VR(vacuum side port) to the vacuum ejector side and port W (pad side port) to the pad side, fully open the relief pressure adjustment needle ① in the figure and fully close the burst air flow rate adjustment needle ②
2. Generate vacuum of the vacuum ejector, gradually tighten the needle in Fig. ①so that the degree of vacuum rises, and check that there is no delay in the rising time of the vacuum. Then, repeatedly generate vacuum, and if there are no problems, proceed to setting 3.
3. Generate vacuum of the vacuum ejector, gradually tighten the needle in Fig.②so that the degree of vacuum rises, and check that there is no delay in the rising time of the vacuum.





Vacuum Filters Compatible with Various Vacuum Piping
Vacuum Filter

VSFB, VSFU, VSFJ Series

●Connection Port Size: M3, M5, ø1.8, ø4, ø6, ø8, ø10, ø12

RoHS

Features

Compact Union Type VSFB/VSFU

■Dust and water droplets suctioned by the vacuum ejector are removed by cyclone effect and element.
(Large capacity union: VSFB)

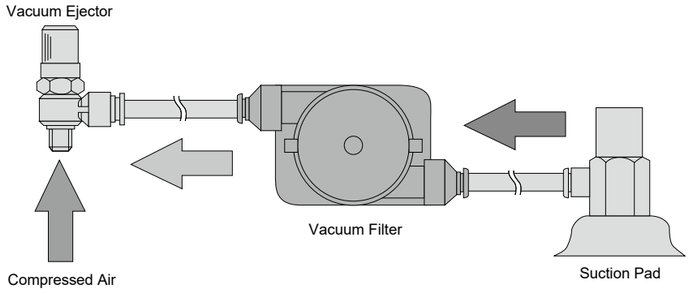
■Since the dust case is large, maintenance frequency is reduced.

■Dust scattering is prevented because the entire dust case can be detached with one touch.
(Large capacity union: VSFB)

■The small vacuum filter is ideal for applications where a high cycle vacuum system is required.
(Compact Union Type: VSFU)

Piping Example

■Lay piping between the vacuum ejector and the Suction Pads to remove dust and dirt from the pad and prevent the vacuum ejector from breakdown.



Socket Type VSFJ

■Since body and nipple are integrated and resin material is used, small size and light weight are realized.

■Now with filter function inside the socket.

■Ideal for Discrete vacuum ejectors such as VSH that do not have a built-in filter.

Specifications

Item	VSFB, VSFU, VSFJ
Operating Fluid	Air
Working pressure kPa	-100 to 0
Filtration Rating μm	10
Operating Temperature °C	0 to 60 (However, no freezing)

Model No. Notation

●Large capacity union

VSFB - 1010
Model No.
① Vacuum Side Connection Port Size - Pad Side Connection Port Size

① Vacuum Side Connection Port Size - Pad Side Connection Port Size

Code	Content
66	ø6 Push-in fitting - ø6 Push-in fitting
88	ø8 Push-in fitting - ø8 Push-in fitting
1010	ø10 Push-in fitting - ø10 Push-in fitting
1212	ø12 Push-in fitting - ø12 Push-in fitting

Maintenance Part Model No.

●Filter Element

VSFB - E
Model No.

●Compact Union Type

VSFU - 3 - 1010
Model No.
① Filter Size
② Vacuum Side Connection Port Size - Pad Side Connection Port Size

① Filter Size

Code	Content
M	Filtration Area 1.4 cm²
1S	Filtration area 2.8 cm² (element length: 15 mm)
1L	Filtration area 4.7 cm² (element length: 25 mm)
2	Filtration Area 7.5 cm²
3	Filtration Area 12.5 cm²

●Filter size - port size combination table

Connection Port Size / Model No.	22	44	66	88	1010	M33	M55
VSFU-M	●					●	
VSFU-1S		●	●				●
VSFU-1L		●	●				●
VSFU-2		●	●				
VSFU-3			●	●	●		

② Vacuum Side Connection Port Size - Pad Side Connection Port Size

Code	Content
22	ø1.8 Push-in fitting - ø1.8 Push-in fitting
44	ø4 Push-in fitting - ø4 Push-in fitting
66	ø6 Push-in fitting - ø6 Push-in fitting
88	ø8 Push-in fitting - ø8 Push-in fitting
1010	ø10 Push-in fitting - ø10 Push-in fitting
M33	M3 x 0.5- M3 x 0.5
M55	M5 x 0.8 - M5 x 0.8

Maintenance Part Model No.

●Bracket

VSFU - 3 - B
Model No. ① Size

●Filter Element

VSFU - 3 - E
Model No. ① Filter Size

① Size

Code	Content
M	For Filter Size M
1	Common for Filter Size 1S, 1L
2	For Filter Size 2
3	For Filter Size 3

① Filter Size

Code	Content
M	Filtration Area 1.4 cm²
1S	Filtration area 2.8 cm² (element length: 15 mm)
1L	Filtration area 4.7 cm² (element length: 25 mm)
2	Filtration Area 7.5 cm²
3	Filtration Area 12.5 cm²

●Socket Type

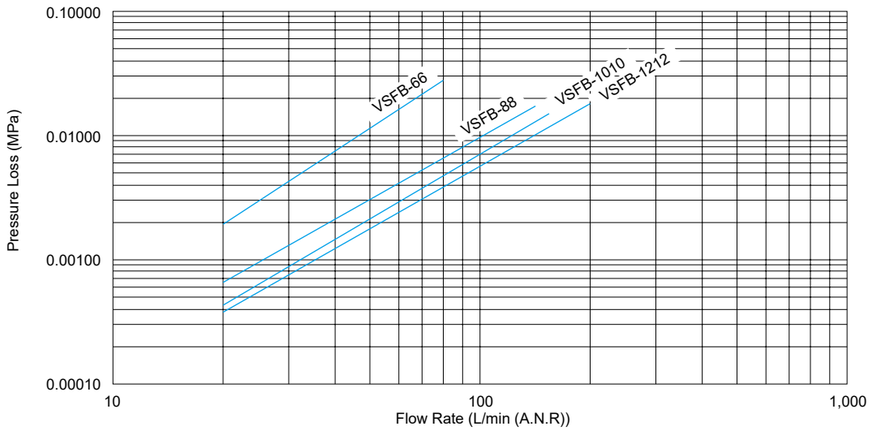
VSFJ - 44
Model No. ① Port Size

① Port Size

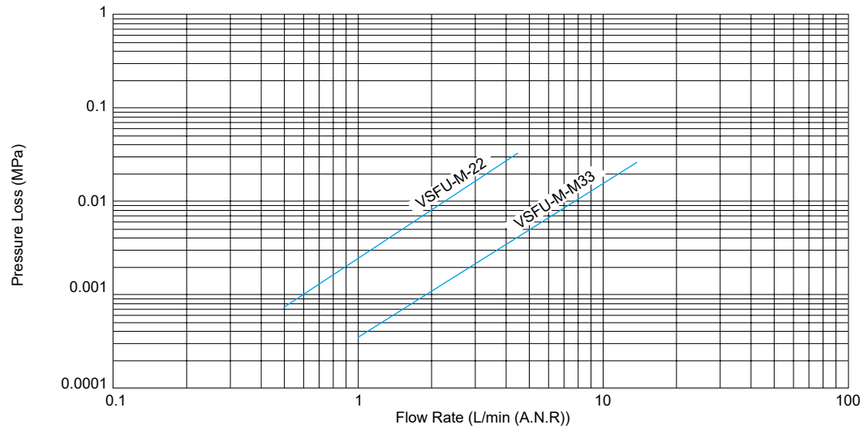
Code	Content
44	ø4 Push-in fitting
66	ø6 Push-in fitting

Pressure Loss

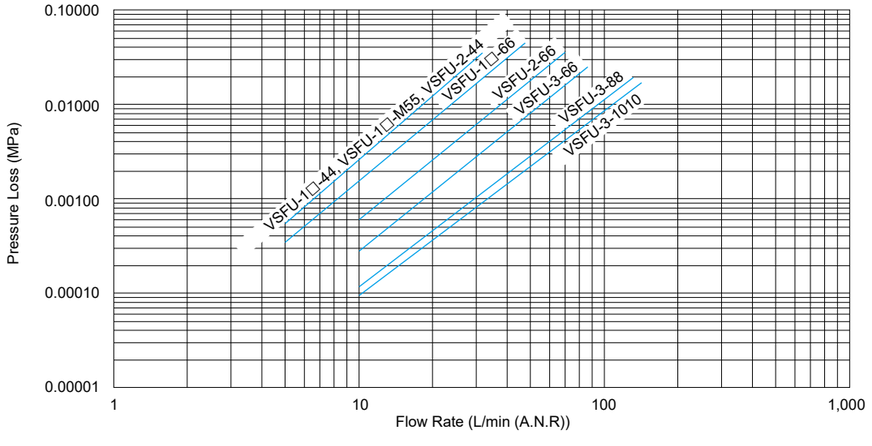
●Large capacity union VSFB



●Compact union VSFU-M

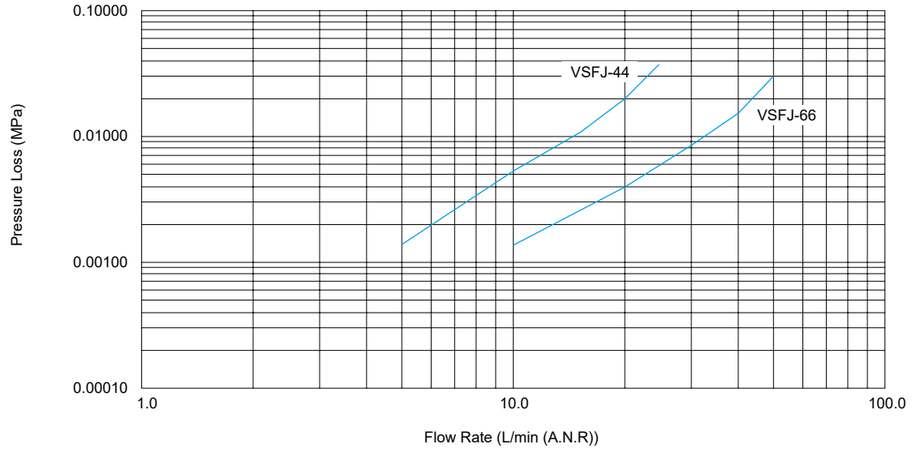


●Compact union VSFU-1□/-2/-3



Pressure Loss

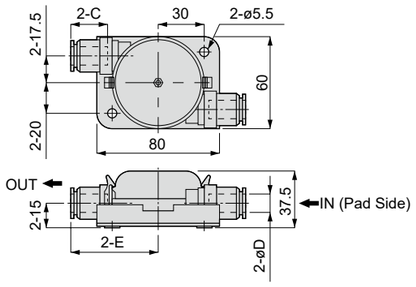
●Socket Type VSFJ



*This data is based on actual measurements and is not guaranteed.

External Dimension Drawings

●Large capacity union VSFB



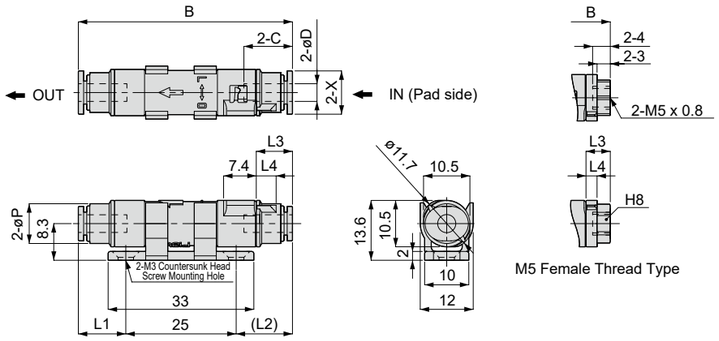
Unit: mm

Model No.	Tube O.D. øD	C	E	Filtration Area (cm²)	Weight (g)
VSFB-66	6	17	52.6	20	208
VSFB-88	8	18.2	53.9		207
VSFB-1010	10	20.7	54.8		201
VSFB-1212	12	23.3	57.4		198

*Replacement Element: VSFB-E

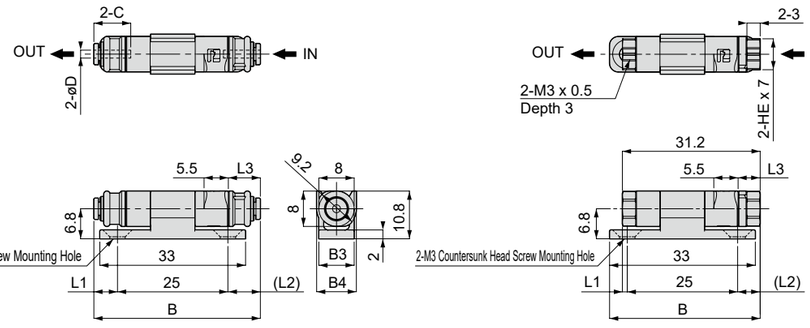
●Compact Union Type

• VSFU-1□



M5 Female Thread Type

• VSFU-M



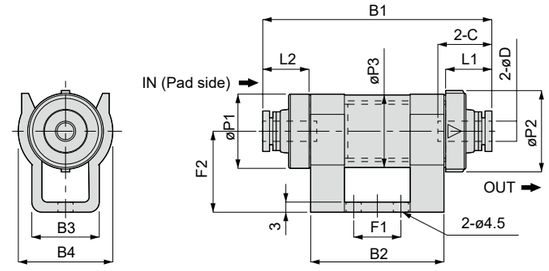
Unit: mm

Model No.	Tube O.D. øD	B	C	L1	L2	L3	L4	øP	X	Element Length	Filtration Area (cm²)	Weight (g)
VSFU-M-22	2	37.7	8.4	5.4	7.4	7.3	-	-	4.8	-	1.4	3
VSFU-1S-44	4	49.1	11.3	11.1	13.0	8.5	4	10.5	9.8	15	2.8	5.1
VSFU-1L-44		59.1		17.1	17.0					25	4.7	5.4
VSFU-1S-66	6	53.8	11.8	13.4	15.4	10.8	4.5	10.5	11.8	15	2.8	6
VSFU-1L-66		63.8		19.4	19.4					25	4.7	6.4
VSFU-M-M33	-	34.1	-	1.1	5.1	5	-	-	-	-	1.4	4.7
VSFU-1S-M55	-	40.6	-	5.6	10	5.5	2.5	10.5	-	15	2.8	7.6
VSFU-1L-M55		50.6		11.6	14					25	4.7	8

External Dimension Drawings

●Compact Union Type

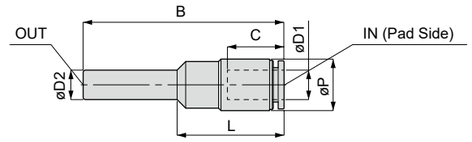
• VSFU-$\frac{2}{3}$



Unit: mm

Model No.	Tube O.D. øD	B1	B2	B3	B4	L1	L2	øP1	øP2	øP3	C	F1	F2	Filtration Area (cm²)	Weight (g)
VSFU-2-44	4	58	33	18	24	11.9	11.9	18.2	20	17.5	14.9	10	20	7.5	18
VSFU-2-66	6	60				13	13				16				19
VSFU-3-66	6	67.7	39.5	20	28	13.5	13.8	22.1	24	21.5	16.5	14	24	12.5	27
VSFU-3-88	8	70.1				14.9	14.7				17.9				29
VSFU-3-1010	10	72.7				16.2	16.0				19.2				32

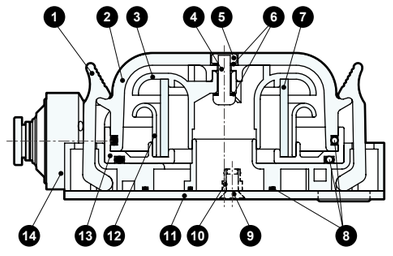
●Socket Type VSFJ



Model No.	Tube O.D. øD1	Tube O.D. øD2	B	L	C	øP	Weight (g)	Filtration Area (cm²)
VSFJ-44	4	4	38.9	21.8	11.3	8	1.5	0.8
VSFJ-66	6	6	41.2	22	11.8	10.5	2.5	1.1

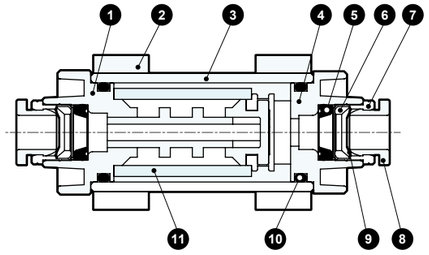
Internal Structure Diagram/Materials

●Large capacity union VSFB



Model No.	Part Name	Material	Remarks
1	Fastener	Acetal Resin	
2	Case	Polycarbonate resin	
3	Air Guide	Acetal Resin	
4	Pan head machine screw		
5	Hex nut		
6	Gasket	Stainless steel + Nitrile rubber	
7	Filter Element	Polyvinyl formal	
8	O-ring	Nitrile rubber	
9	Countersunk head screw		
10	Socket	Brass	Electroless nickel plating
11	Bottom Plate	Brass	Electroless nickel plating
12	Dust Guide	Acetal Resin	
13	Case Cover	ABS Resin	
14	Resin Body		

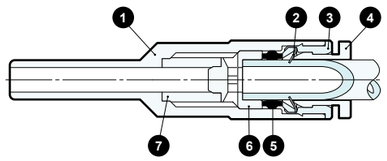
●Compact union VSFU



Model No.	Part Name	Material	Remarks
1	Resin Body A	Polybutylene terephthalate resin	
2	Holder	Acetal Resin	
3	Cover	Polyamide resin *1	For VSFU-1
4	Resin Body B	Polybutylene terephthalate resin	
5	Elastomer Sleeve	Nitrile rubber	
6	Lock Ring	Brass	Electroless nickel plating
7	Guide Ring	Brass	Electroless nickel plating
8	Release Ring	Acetal Resin	
9	Locking Finger	Stainless steel	
10	O-ring	Nitrile rubber	
11	Filter Element	Polyvinyl formal	

*1: For VSFU-2, -3: Special polycarbonate resin

●Socket Type VSFJ



Model No.	Part Name	Material
1	Resin Body	Polypropylene resin
2	Locking Finger	Stainless steel
3	Guide Ring	Brass (Electroless nickel plating)
4	Release Ring	Acetal Resin
5	Elastomer Sleeve	Nitrile rubber
6	Element Retainer	Acetal Resin
7	Filter Element	Polyvinyl formal

MEMO

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Vacuum Filter VSFB/VSFU Series

Design / Selection

Warning

■Large capacity union: Never apply positive pressure for vacuum burst to the VSFB vacuum filter. It does not have an explosion-proof structure. Also, due to low pressure resistance, there is a risk of personal injury due to main body damage.

■Compact union, union: VSFU is a vacuum filter. Avoid use in locations where a pressurized state continues. As it does not have an explosion-proof structure, there is a risk of personal injury due to main body damage.

Caution

■The working environment of the vacuum filter is Intro 20 Check the ⚠precautions described in.

■Connect piping after checking the body text or the IN or OUT on the body. Reverse connection will prevent the filter function from being satisfactory.

■After removing the dust and replacing the element, securely fix the case and confirm that there is no vacuum leak.

Individual Precautions: Vacuum Filter VSFJ Series

Design / Selection

Warning

■Compact socket type: VSFJ is a vacuum filter. Avoid use in locations where a pressurized state continues. As it does not have an explosion-proof structure, there is a risk of personal injury due to main body damage.

■Compact socket type: Inspect the filter element periodically. Clogging of the element causes performance degradation or trouble. During replacement, the element cannot be replaced individually, so replace the entire vacuum filter with a new one.

■Since the filter body material is PP, the resin may deteriorate due to direct sunlight or ultraviolet rays. When using in an atmosphere of or in locations where chemicals adhere, refer to our chemical resistance data, confirm the presence or absence of effects on the material, and then use the product.

Caution

■Compact socket type: For piping connections, the nipple side is the vacuum ejector side port, and the fitting side is the workpiece side port. It can be used even with reverse connection, but the filter surface area will be smaller. Also, confirmation of element clogging is not possible.

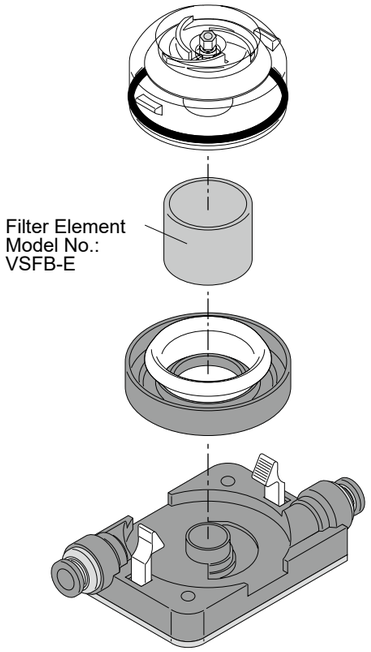
MEMO

Vacuum Components
Vacuum Related Components
VSRL
VSECV
VSRVV
VRA2000
VSLF
VSFB, VSFU, VSFJ
FSL
VFA
VSUS
VST
Ending

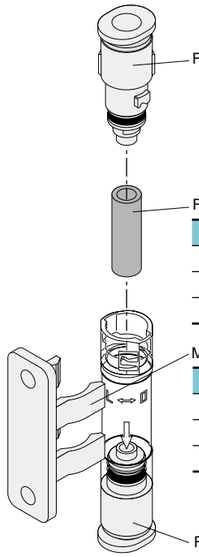
How to Use

Replacement Element for Vacuum Filter

●Large capacity union VSFB



●Compact union VSFU-1□

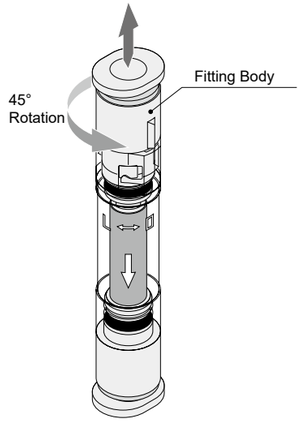


Model No.	Filter Element
VSFU-M-□□	VSFU-M-E
VSFU-1S-□□	VSFU-1S-E
VSFU-1L-□□	VSFU-1L-E

Model No.	Mounting Bracket
VSFU-M-□□	VSFU-M-B
VSFU-1S-□□	VSFU-1-B
VSFU-1L-□□	

Compact Union Type Element Replacement Method

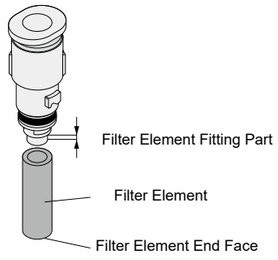
①Rotate the fitting body 45° in the direction of the letter "O". (After replacement is complete, rotate the fitting body in the "L" direction until it locks.)



②Remove the rotated fitting body from the filter cover and replace the filter element. During replacement, insert the filter element halfway into the filter element fitting part, and insert it into fitting body A so as not to crush the filter element end face.

*1. There are two types of replacement elements, 15 mm and 25 mm, so be sure to check before replacement.

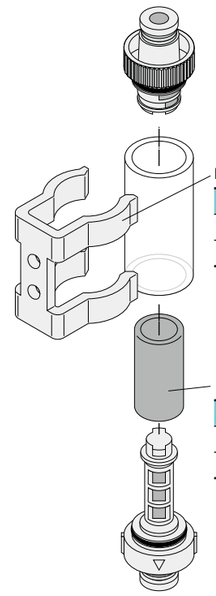
*2. After replacement is complete, install following the reverse procedure above and securely lock the fitting body.



How to Use

Replacement Element for Vacuum Filter

●Union VSFU-$\frac{2}{3}$



Model No.	Fixing Holder
VSFU-2-□□	VSFU-2-B
VSFU-3-□□	VSFU-3-B

Model No.	Filter Element
VSFU-2-□□	VSFU-2-E
VSFU-3-□□	VSFU-3-E

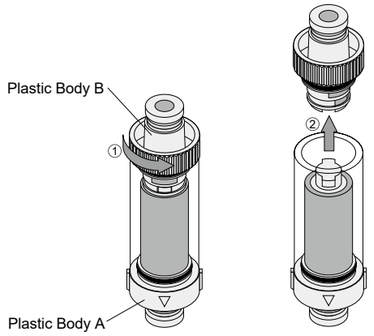
Union Type Element Replacement: Body Removal and Locking Method

■Removing

①Rotate plastic body B counterclockwise 45 degrees*.

②Pull out plastic body B.

*When rotating plastic body B, absolutely do not rotate more than 45 degrees. Doing so may damage the main body.



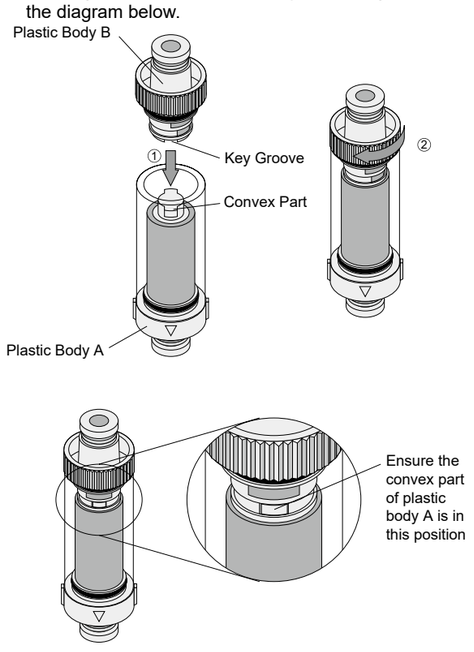
■Locking method

①Align the convex part of plastic body A with the key groove of plastic body B and push in until it stops.

②Rotate plastic body B clockwise 45 degrees *1 to lock.

*1. When rotating plastic body B, absolutely do not rotate more than 45 degrees. Doing so may damage the main body.

*2. When locking, ensure the convex part of plastic body A is securely centered in the hole of plastic body B as shown in the diagram below.





Inline Filter

FSL Series

● Port size: ø4 to ø10

RoHS

■ Compact, lightweight and space saving inline-type
Resin body achieves light weight and compactness

■ Diverse range of model variations
3 series available by flow rate (100, 200, 500), selectable connection port sizes ø4, ø6, ø8, ø10

■ Use either positive or negative pressure
Retains the ease of use of conventional inline vacuum filters while also being usable with positive pressure

■ Easy Maintenance
Maintenance is easy as main body removal and installation during element replacement can be done easily without tools

Model No. Notation

●Inline Filter

FSL **500** - **1010** - **B**

- FSL: Model No.
- 500: ❶ Series
- 1010: ❷ Vacuum Side Connection Port Size - Pad Side Connection Port Size
- B: ❸ Attached Option

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

●Design compatible with rechargeable battery manufacturing process

FSL□00 - ..... - P4*

*Please inquire for details.

❶ Series

Code	Content
100	FSL100 Series
200	FSL200 Series
500	FSL500 Series

❷ Vacuum Side Connection Port Size - Pad Side Connection Port Size

Code	Content
44	ø4 Push-in fitting - ø4 Push-in fitting
66	ø6 Push-in fitting - ø6 Push-in fitting
88	ø8 Push-in fitting - ø8 Push-in fitting
1010	ø10 Push-in fitting - ø10 Push-in fitting

❸ Attached Option

Code	Content
Blank	None
B	Bracket

◆ Series - Connection Port Size Combination Table

Connection Port Size / Model No.	44	66	88	1010
FSL100	●	●		
FSL200	●	●		
FSL500		●	●	●

indicates not available.

Specifications

Model No. / Item		FSL100		FSL200		FSL500		
Port size	mm	ø4	ø6	ø4	ø6	ø6	ø8	ø10
Operating Fluid		Air						
Operating Temperature	°C	0 to 50 (However, no freezing)						
Max. working pressure	MPa	0.8 (*1)						
Vacuum working pressure	kPa	-100						
Proof Pressure	MPa	1.2						
Nominal filtration rating	µm	10 (Collection efficiency 95%)						
Filtration Area	cm²	4.7		7.5		12.7		
Recommended processing flow rate (*2)	L/min (ANR)	10		15	20	25	50	60
Weight	g	8	8.5	21	22	35	34	39

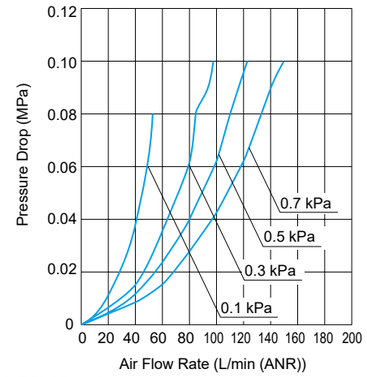
*1: Maximum operating pressure is the value at 20°C. When using in other temperature ranges,P. 1119 Refer to the "Relation of operating ambient temperature and max. working pressure" for .

*2: Initial flow rate at an initial pressure loss of 3 kPa or less during negative pressure. Use with positive pressure is P. 1119 Refer to the "flow characteristics".

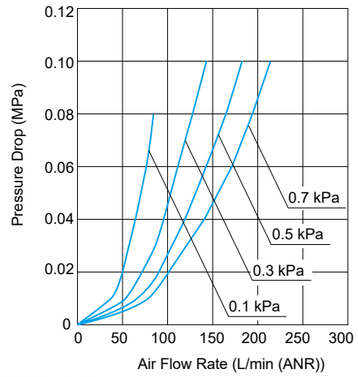
Flow Characteristics

*The flow characteristic graphs are reference values and do not guarantee the values.

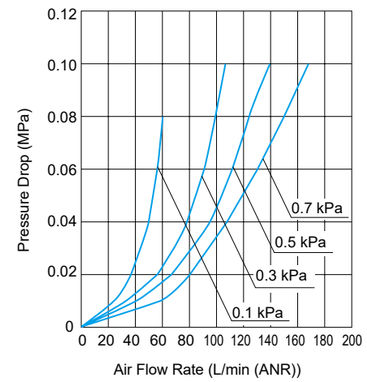
●FSL100-44



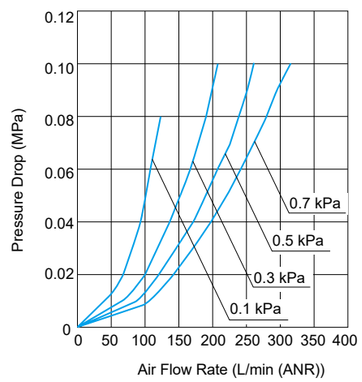
●FSL100-66



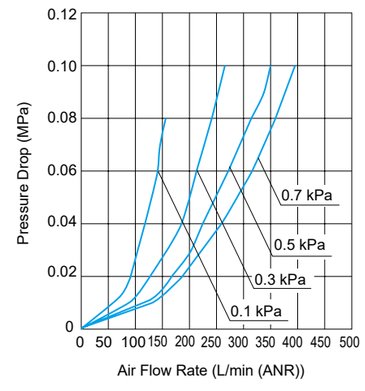
●FSL200-44



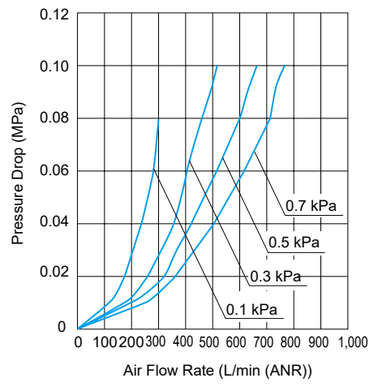
●FSL200-66



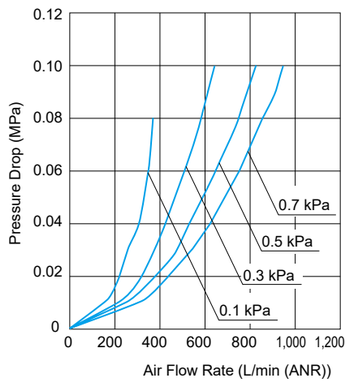
●FSL500-66



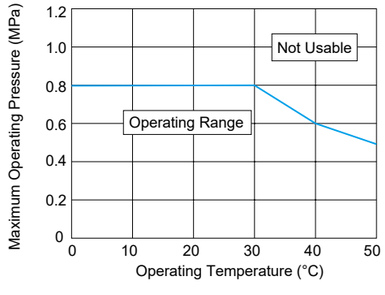
●FSL500-88



●FSL500-1010



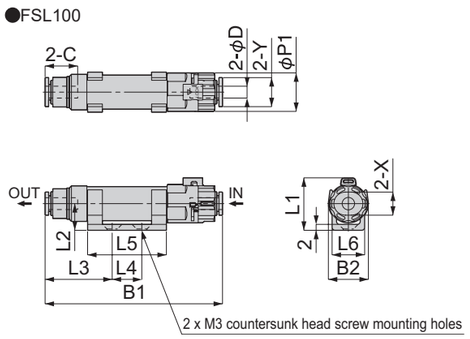
Operating Temperature and Maximum Operating Pressure Relationship Diagram



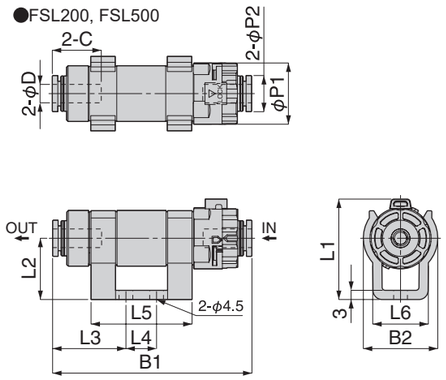
External Dimension Drawings

*The external dimension diagrams below are for the case with the attached option bracket.

●FSL100



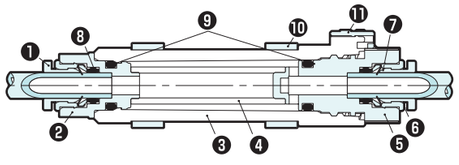
●FSL200, FSL500



Unit: mm

Model	Tube Outer Diameter øD	C	B1	B2	L1	L2	L3	L4	L5	L6	øP1	øP2	X	Y
FSL100-44-□	4	11.3	60.7	13.5	17.9	9	22.95	10	26.6	11	13	-	7.8	9.8
FSL100-66-□	6	11.8	64.8	13.5	17.9	9	25.25	10	26.6	11	13	-	9.8	11.8
FSL200-44-□	4	14.9	61.1	24.3	33	20	20.2	10	33	18.2	20	9.9	-	-
FSL200-66-□	6	16	65.3	24.3	33	20	23.95	10	33	18.2	20	11.8	-	-
FSL500-66-□	6	17	71.9	28.3	39.5	24	19.5	14	39.5	20.2	25	11.8	-	-
FSL500-88-□	8	17.9	71.1	28.3	39.5	24	20.75	14	39.5	20.2	25	13.8	-	-
FSL500-1010-□	10	19.2	77.3	28.3	39.5	24	26.65	14	39.5	20.2	25	16.8	-	-

Internal Structure Diagram/Materials



Part No.	Part Name	Material
1	Release Ring	Acetal Resin
2	Resin Body A	Polybutylene terephthalate resin
3	Cover	Special polycarbonate resin
4	Filter Element	Polyvinyl formal
5	Resin Body B	Polybutylene terephthalate resin
6	Guide Ring	Brass (Electroless nickel plating)
7	Locking Finger	Stainless Steel
8	Elastomer Sleeve	Nitrile rubber
9	O-ring	Nitrile rubber
10	Bracket	Acetal Resin
11	Slide Lock	Acetal Resin

●Maintenance Parts

• Filter Element (Part No. 4)

Filter Element Model No.	Applicable Model No.	Element Size
VSFU-1L-E	FSL100	ø6 x ø4 x L25
FSL200-E	FSL200	ø11 x ø7 x L22
FSL500-E	FSL500	ø15 x ø11 x L27

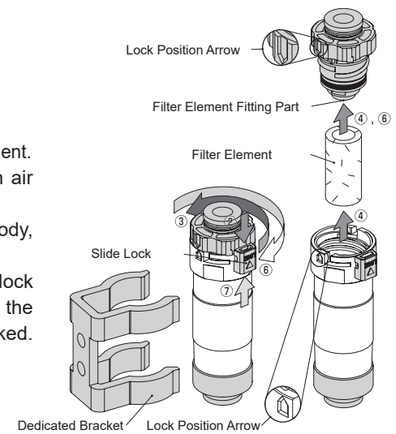
• Bracket(Part No. 11)

Bracket Model No.	Applicable Model No.
FSL100-B	FSL100
VSFU-2-B	FSL200
VSFU-3-B	FSL500

How to Use

1. Regarding Filter Element Replacement Method

①. Bring the internal pressure of the filter to atmospheric pressure.
②. Release the red slide lock. (Opposite direction to the LOCK arrow)
③. Rotate the fitting body counterclockwise 180°.
④. Remove the rotated fitting body from the filter cover and replace the filter element.
⑤. If necessary, remove dust, etc., adhering inside the filter cover with an air blow, etc.
⑥. Attach the element to the filter element fitting part, insert it into the main body, then rotate the fitting body clockwise until it stops.
⑦. After confirming that the lock position arrow of the fitting body and the lock position arrow of the filter cover are aligned in the tightened state, raise the slide lock (in the LOCK arrow direction) and confirm that it is securely locked.

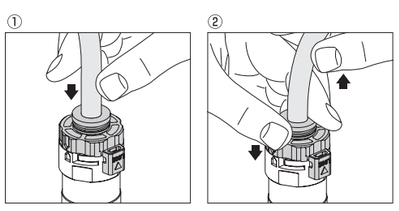


2. Regarding Connection Part Attaching/Detaching Method

1. Tube Attaching/Detaching Method

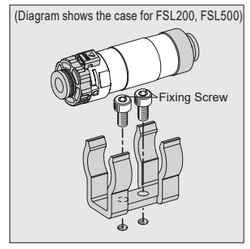
①. Tube Attachment
For the Inline Filter FSL(filter with push-in fitting), simply insert the tube to the tube end, and the locking fingers will fix it, and the elastomer sleeve will seal the outer circumference of the tube.

②. Tube Detachment
To detach the tube, push the release ring, which opens the locking fingers, allowing the tube to be pulled out. When detaching, always stop the air supply first.



2. Screw Tightening Method

①. Screw Tightening
Use the fixing holes on the dedicated bracket and tighten and fix with the screws below.
(Refer to the Dimensions diagram for the fixing hole pitch.)
Fixing Screw ►FSL100: M3 countersunk head screw, FSL200, FSL500: M4 screw



To Use This Product Safely

Be sure to read this before use.

For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Inline Filter FSL Series

Design / Selection

Warning

■Do not apply tensile, torsion, or bending loads to the body. Do not drop or apply excessive impact. The main body may be damaged or disassembled.

■Always lock the slide lock during use.

Caution

■Avoid installing this product where it is subject to direct sunlight.

■Note that when using in a circuit where vacuum and vacuum burst air are alternately applied, the dust removed by the element could be discharged by the burst air.

■Check the arrow indicating the air flow on the body before connecting the pipes. Reverse connection will prevent the filter function from being satisfactory.

■After removing the dust and replacing the element, securely fix the case and confirm that there are no leaks.

■When disassembling or assembling for maintenance, make sure that the O-ring is not damaged. Using a damaged O-ring may cause problems such as leakage.

■When rotating the fitting body for disassembly or assembly, make sure not to apply excessive force with the tools, etc. The main body may be damaged.

MEMO

Vacuum Components
Vacuum Related Components
VSRL
VSECV
VSRVV
VRA2000
VSLF
VSFB, VSFU, VSFJ
FSL
VFA
VSUS
VST
Ending



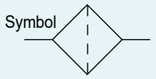
Vacuum Filter

VFA1000, 3000, 4000 Series

Removes dust and moisture sucked in together during air intake of vacuum pumps or ejectors

● Connection Port Size: Rc1/8 to Rc1/2

Circuit Diagram Symbol



RoHS

Model No. Notation

VFA3000 - 8 - M - B

1 Model No. 3 Option 2 Connection Port Size 4 Attachment

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

●Design compatible with rechargeable battery manufacturing process

VFA□000 - ..... - P4*

*Please inquire for details.

1 Model No.

2 Connection Port Size

Code	Content	VFA1000	VFA3000	VFA4000
6	Rc1/8	●		
8	Rc1/4	●	●	
10	Rc3/8		●	●
15	Rc1/2			●

3 Option

Code		Content	
Bowl Material	Blank	Polyamide (Nylon)	
	M	Aluminum alloy (Metal) *2	
Element	Blank	40 µm Polyamide	
	Y5	5 µm Polypropylene	

*1: List options in the order of Bowl Material, Element.
*2: For option "M", VFA1000 cannot be selected.

4 Attachment

Code	Content
Blank	None
B	C-Bracket

Bracket Single Item Model No.

Model No.	Bracket Model No.	
VFA1000	B120	
VFA3000	B320	
VFA4000	B420	

Specifications

Model No.		VFA1000		VFA3000		VFA4000	
Working pressure	kPa	-100 to 0					
Proof Pressure	MPa	0.5					
Ambient Temperature/Fluid Temperature	°C	5 to 50					
Bowl capacity	cm^3	10		45		80	
Port size	Rc	1/8	1/4	1/4	3/8	3/8	1/2
Weight	kg	0.1		0.3		0.5	
Recommended Flow Rate *1	L/min (ANR)	60	80	100	200	250	400

*1: Flow rate at initial pressure loss ≤ 3 kPa (when using standard element).
*2: For element, average 40 µm mesh is used in filtration section (material: Polyamide), optional 5 µm Degree of filtration equivalent fiber (material: polypropylene) is used.

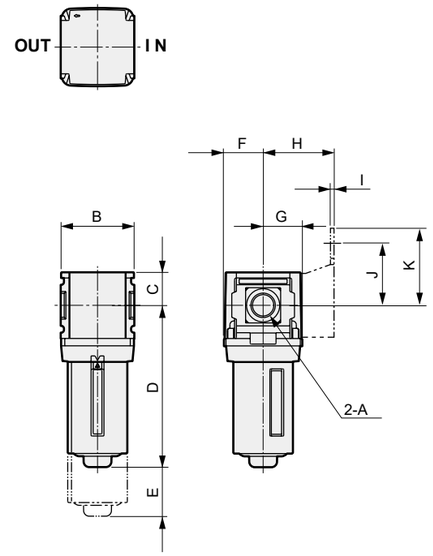
Option Weight Table

øAdd to the Weight of the standard equipment. Unit: kg

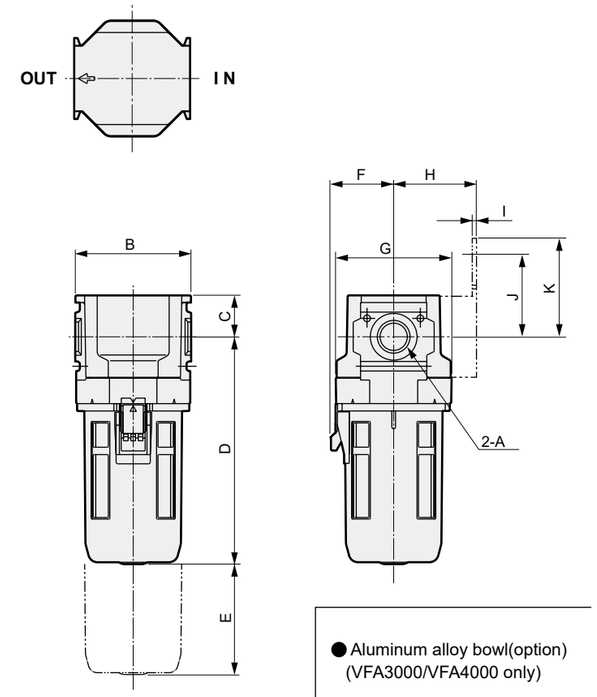
	Bowl Material	Bracket
Code	M	BW
VFA1000		0.1
VFA3000	0.1	0.17
VFA4000	0.1	0.21

External Dimension Drawings

● VFA1000

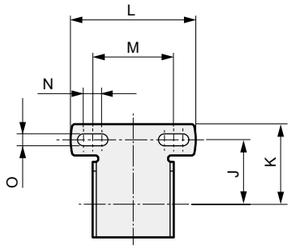


● VFA3000
● VFA4000



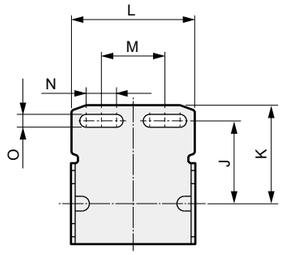
● Aluminum alloy bowl(option)
(VFA3000/VFA4000 only)

● C-bracket(attachment)
Model No. B120 (VFA1000)
• Material: Steel Zinc Plating Treatment

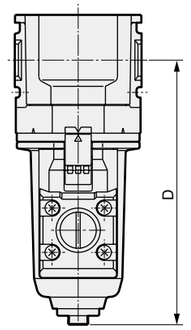


Weight: 0.1 kg
Material: Steel

● C-bracket(attachment)
Model No. B320 (VFA3000)
Model No. B420 (VFA4000)
• Material: Steel Zinc Plating Treatment



Weight: 0.17 kg (B320)
0.21 kg (B420)
Material: Steel

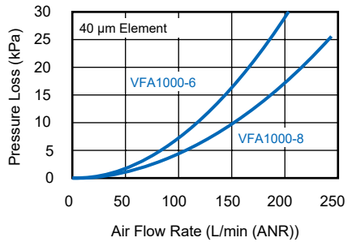


Model No.	D
VFA3000	129
VFA4000	152

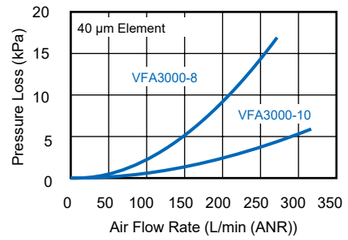
Model No.		A	B	C	D	E	F	G	C-Bracket Dimensions							
									H	I	J	K	L	M	N	O
VFA1000	-6	Rc1/8	40	18	88	40	21.5	21.5	40	2	35	43.5	68	44	10	6.5
	-8	Rc1/4														
VFA3000	-8	Rc1/4	63	22.5	123.5	60	(34.5)	63	45	2.3	45	53.5	67	34.5	16.5	7
	-10	Rc3/8														
VFA4000	-10	Rc3/8	80	22.5	149	60	(42.5)	79	55	2.3	45	53.5	84	55	14	7
	-15	Rc1/2														

Flow Characteristics

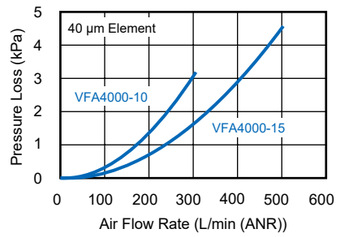
● VFA1000



● VFA3000



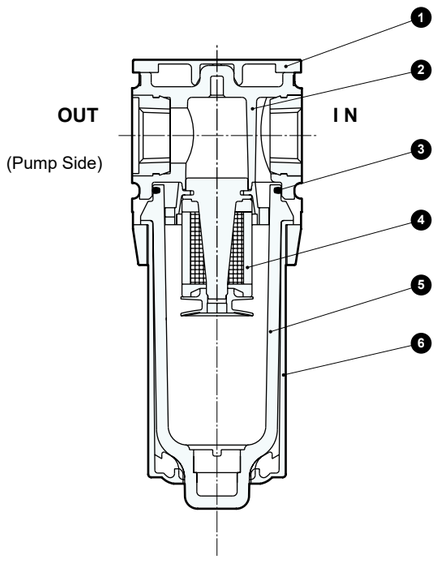
● VFA4000



*: For the 5 µm element, the flow rate is 80% of the 40 µm element.

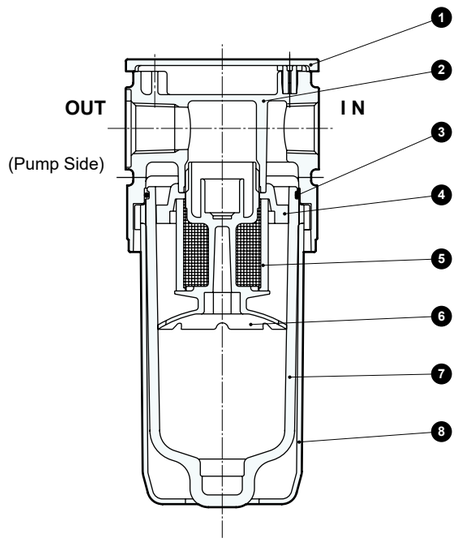
Internal Structure Diagram/Materials

● VFA1000



Part No.	Part Name	Material
1	Plate Cover	ABS Resin
2	Body Assembly	Polyamide resin / Steel
3	Packing	Special Nitrile Rubber
4	Element Assembly	Polyamide resin Polyacetal resin
5	Bowl	Polyamide resin
6	Bowl Guard	Polyamide resin

● VFA3000
● VFA4000



Part No.	Part Name	Material
1	Plate Cover	ABS Resin
2	Body	Aluminum alloy die-cast
3	O-ring	Special Nitrile Rubber
4	Louver	Polypropylene resin
5	Element	Polyamide resin
6	Baffle	Polyacetal resin
7	Bowl	Polyamide resin
8	Bowl Guard	Polyamide resin

For maintenance parts, please visit the CKD Equipment Product Site
(https: //www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts

MEMO

To Use This Product Safely

Be sure to read this before use.
General precautions are Intro 15 and refer to "⚠Safety precautions" for detailed precautions for individual series.

Individual Precautions: Vacuum Filter VFA Series

Design / Selection

⚠Warning

■ Use the product within specifications range.

■ The product is a vacuum filter. Do not use under pressure except for instantaneous pressurization due to vacuum breaking.
(Do not use exclusively for pressurization.)

■ Install the product avoiding direct sunlight.

■ Do not use this product in an atmosphere containing corrosive gases, chemicals, or sea water, or where the product could come in contact with these, and do not use as a vacuum circuit for these substances.

■ When using a polyamide bowl, do not use this product for vacuum circuits that could come in contact with acids, alcohols, carboxylic acids, other organic compounds, screw locking agents, or air containing these substances. The bowl may break, which is dangerous.

■ For chemical resistance of the polyamide bowl, refer to "Chemical resistance of plastic bowl" in "Air Preparation Units/Auxiliary Components " (Catalog No.RJ-007AA). If a polyamide bowl cannot be used, use the optional aluminum alloy bowl. (VFA3000/4000 series only)

■ Avoid mounting in locations subject to vibration or shock.

■ Piping load torque
Ensure no bending moment due to piping load is applied to the body and piping parts.

	VFA1000 Series	VFA3000/4000 Series
Allowable Bending Moment (N·m)	15	50

Avoid cantilever fixed piping, as excessive force can easily cause damage.

■ Each product has an O-ring groove for modular connection on its OUT side. Select piping that can seal with a diameter less than or equal to the O-ring groove diameter.

Series Name	VFA1000	VFA3000/VFA4000
Groove Diameter	ø17.6	ø25.4

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

MEMO



Digital display adopted for vacuum pressure switch indication, improving visibility Digital Vacuum Pressure Switch with Display

VSUS Series

●Connection Port Size: M5, ø4, ø6, ø8

RoHS

■Digital display of set pressure and applied pressure.

■2-point and analog outputs are available for the vacuum pressure switch, selectable according to the application. Also, a connector method is adopted for wiring, enabling easy wiring layout.

■3 types of pipe connection are available: push-in fitting, M5 meter thread(female thread), and direct mount. Select according to the application.

■Accuracy is stable due to pressure detection by electronic switch.

Model No. Notation

●Vacuum Pressure Switch

VSUS - P W - M5

- VSUS: Model No.
- P: ❷ Switch Specifications
- W: ❷ Switch Specifications
- M5: ❸ Connection Port Size

❶ Switch Output Form

❷ Switch Specifications

❸ Connection Port Size

❶ Switch Output Form

Code	Content
N	NPN Output
P	PNP Output

❷ Switch Specifications

Code	Content
W	Output 2 points
A	Output 1 point + Analog Output

❸ Connection Port Size

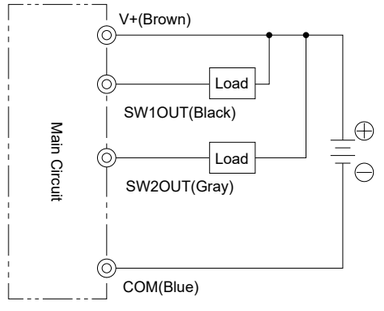
Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
8	ø8 Push-in fitting
M5	M5x0.8
F	Direct Mount Type

Specifications

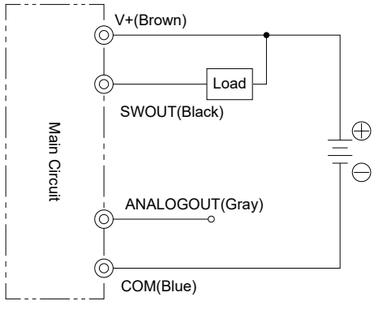
Item		Output 2 points (NW)	With Analog Output (NA)	Output 2 points (PW)	With Analog Output (PA)
Factory Set Pressure kPa		-50 (SW1), -10 (SW2)	-50	-50 (SW1), -10 (SW2)	-50
Current Consumption mA		≤ 40			
Pressure Sensing Element		Diffused Semiconductor Pressure Switch			
Working pressure kPa		-100 to 0			
Set Pressure kPa		-99 to 0			
Proof Pressure MPa		0.2			
Storage Temperature °C		-20 to 70 (Atmospheric pressure, ≤ 60% RH humidity)			
Operating Temperature °C		0 to 50 (No freezing or condensation)			
Operating Humidity		35 to 85% RH (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	2	1
Repeatability		±3% F.S. max(at Ta = 25°C)			
Differential		Fixed (≤ 2% F.S.)	Variable (Approx. 0 to 15% F.S.)	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		PNP Transistor Open Collector Output Power Supply Voltage ≤ 80 mA Residual Voltage ≤ 0.8 V	
Analog Output	Output Voltage V	-	1 to 5	-	1 to 5
	Zero Point Voltage V	-	1±0.1	-	1±0.1
	Span Voltage V	-	4±0.1	-	4±0.1
	Output Current mA	-	≤ 1 (Load resistance ≥ 5 kΩ)	-	≤ 1 (Load resistance ≥ 5 kΩ)
	Linearity/Hysteresis	-	±0.5% F.S. or less	-	±0.5% F.S. or less
Response time ms		Approx. ≤ 2			
Display kPa		0 to -99 (2-digit Red LED display)			
Display Update Rate		Approx. 4 times/sec			
Display Accuracy		±3% F.S. ±2 digit			
Resolution		1 digit			
Operation Indicator		SW1: Red LED lights up at or above set pressure SW2: Green LED lights up at or above set pressure	Red LED lights up at or above set pressure	SW1: Red LED lights up at or above set pressure SW2: Green LED lights up at or above set pressure	Red LED lights up at or above set pressure
Functions		1. MODE Switch(ME or S1 or S2) 2. S1 Setting Trimmer(2/3 turn trimmer) 3. S2 Setting Trimmer(2/3 turn trimmer)	1. MODE Switch (ME or SW) 2. SW Setting Trimmer (2/3 turn trimmer) 3. HYS Setting Trimmer (Approx. 0 to 15% of set value)	1. MODE Switch(ME or S1 or S2) 2. S1 Setting Trimmer(2/3 turn trimmer) 3. S2 Setting Trimmer(2/3 turn trimmer)	1. MODE Switch(ME or SW) 2. SW Setting Trimmer(2/3 turn trimmer) 3. HYS Setting Trimmer(Approx. 0 to 15% of set value)

Electrical Circuit

●Vacuum pressure switch with 2-point switch output

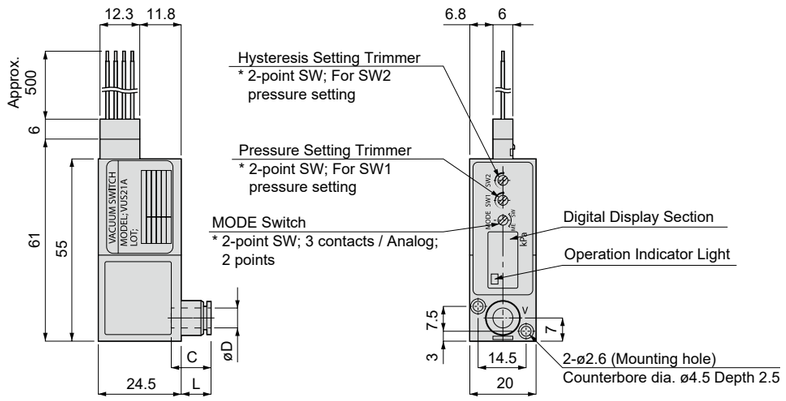


●Vacuum pressure switch with analog output



External Dimension Drawings

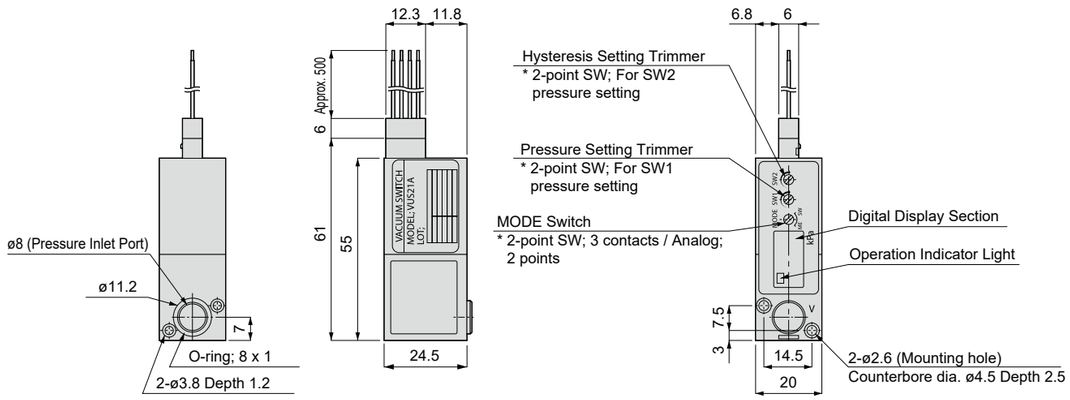
●Push-in fitting Type



Unit: mm

Model No.	Tube O.D. øD	L	C	Weight (g)
VSUS-□□-4	4	6.1	11.2	28
VSUS-□□-6	6	8.9	11.9	28
VSUS-□□-8	8	17.3	18.2	35

●Direct Mount Type

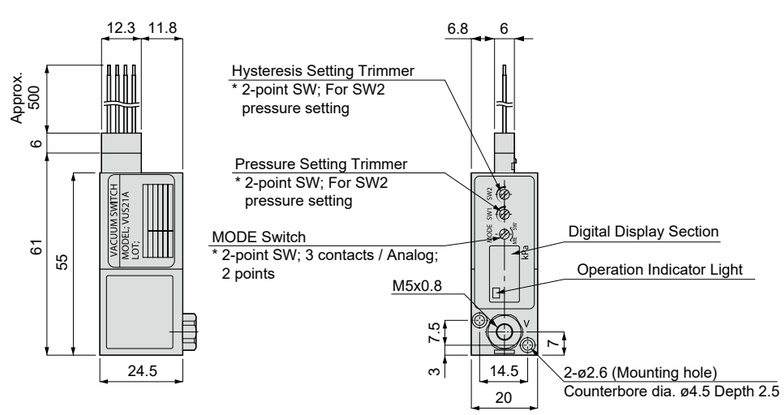


Unit: mm

Model No.	Weight (g)
VSUS-□□-F	19

External Dimension Drawings

●Female Thread Type



Unit: mm

Model No.	Weight (g)
VSUS- □□-M5	29

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Digital Vacuum Pressure Switch with Display VSUS Series

Design / Selection

Caution

■When setting the pressure and hysteresis, use a small Drivers and gently turn within the rotation range of the trimmer, without applying excessive force. Applying excessive force during adjustment may cause trimmer or board damage.

■Use a stable DC power supply.

■When using a unit power supply such as switching power supply, ground the F.G. (frame ground).

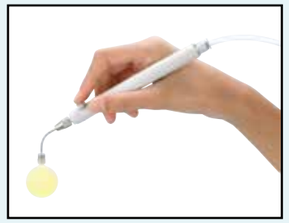
■Do not short-circuit the output terminal(black/gray lead wire) with other terminals.

■Do not apply strong external impact or excessive force to the switch body.

■Since mounting holes for M2.5 screws are available for mounting the switch body, tighten with the recommended tightening torque of 0.3 to 0.31 N·m when mounting.

MEMO

Vacuum Components
Vacuum Related Components
VSRL
VSECV
VSRVV
VRA2000
VSLF
VSFB, VSFU, VSFJ
FSL
VFA
VSUS
VST
Ending



Suction Pad with Built-in Vacuum Ejector
Air Pincette

VST Series

RoHS

■Air tweezers with built-in Suction Pads and vacuum ejector in pen-shaped body. Ideal for assembling small parts, etc.

■Built-in Valve-type: VST-B has less noise and saves energy as air flows only when used.

Model No. Notation

●Air tweezers package set Model No.

VST - A - SET
Model No. ❶ ❷

●Model No. of air tweezers only

VST - A - 6RS
Model No. ❷ Pad Size, Shape and Material
❶ Holder Shape

❶ Holder Shape

Code	Content
A	Without Valve
B	Built-in Valve

❷ Pad Size, Shape and Material

Code		Content			
	Nitrile rubber	2RN	4RN	6RN	8RN
	Silicone rubber	2RS	4RS	6RS	8RS
Pad Size (mm)		ø2 mm	ø4 mm	ø6 mm	ø8 mm

*Air Pincette Package Set Contents
Air Pincette: 1 pc., pad rubber: 4 pcs.(material: Silicone), pad O.D.: ø2 mm, ø4 mm, ø6 mm, ø8 mm, pad adaptor: 2 pcs.
(for ø2/4 mm, ø6/8 mm) Coiling Tubes: 1 pc

Maintenance Part Model No.

●Filter Element

VST - A - E
❶ Holder Shape
Model No.

❶ Holder Shape

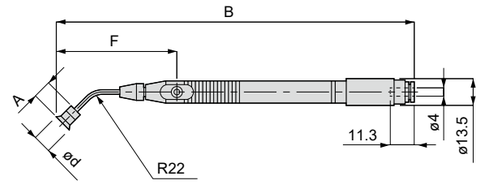
Code	Content
A	Without Valve
B	Built-in Valve

Specifications

Item		VST
Operating Fluid		Air
Operating Pressure	MPa	0.15 to 0.7
Rated supply pressure	MPa	0.5
Achieved vacuum pressure	kPa	-85 (VST-B: –80)
Suction Flow Rate	L/min (ANR)	2
Operating Temperature	(°C)	0 to 60 (However, no freezing)

External Dimension Drawings

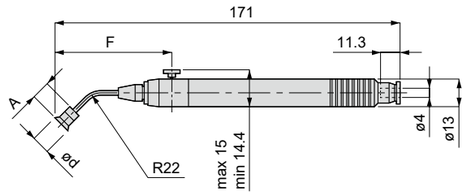
●Without valve VST-A



Unit: mm

Model No.	Pad Diameter ød	A	B	F	Weight (g)
VST-A-2R□	2	8	182.7	62.4	21.5
VST-A-4R□	4	8	182.7	62.4	21.5
VST-A-6R□	6	11	188.7	68.4	22.5
VST-A-8R□	8	9.5	187.2	66.9	22.5

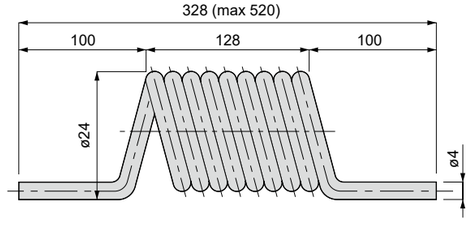
●Integrated valve VST-B



Unit: mm

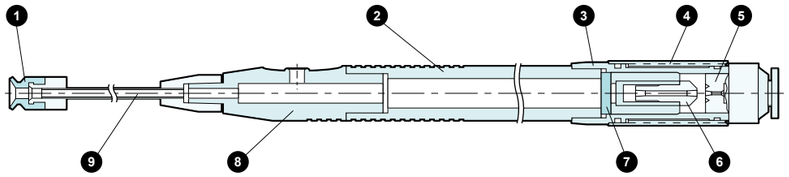
Model No.	Pad Diameter ød	A	F	Weight (g)
VST-B-2R□	2	8	59.9	16
VST-B-4R□	4	8	59.9	16
VST-B-6R□	6	11	65.9	17
VST-B-8R□	8	9.5	64.4	17

●Coiling tube for air tweezers



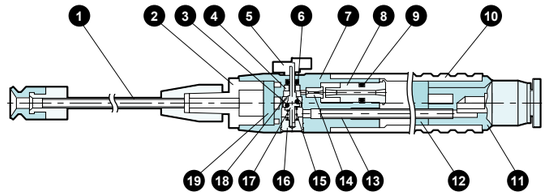
Internal Structure Diagram/Materials

●Without valve VST-A



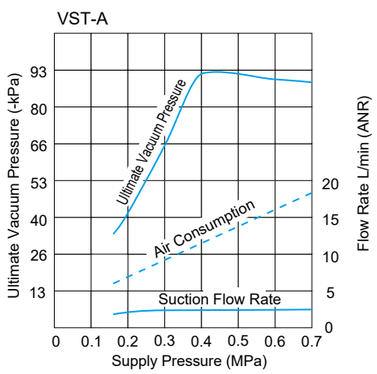
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Standard Type Pad			6	Diffuser	Brass (Electroless nickel plating)	
2	Resin Body B	Polyamide resin		7	Filter Element		
3	Resin Body C	Acetal Resin		8	Resin Body A	ABS Resin	
4	Cover	ABS Resin		9	Pad Holder	Brass (Electroless nickel plating)	
5	Nozzle Assembly						

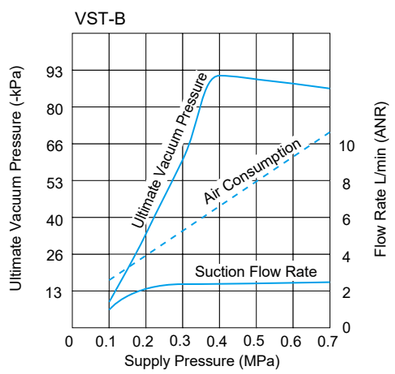
●Integrated valve VST-B



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Pad Holder B	Brass (Electroless nickel plating)		11	Fitting Body	Polybutylene terephthalate resin	
2	Pad Holder A	ABS Resin		12	Silencer Element		
3	O-ring	Nitrile rubber		13	Pipe	Brass (Electroless nickel plating)	
4	O-ring Retainer	Brass (Electroless nickel plating)		14	Nozzle	Brass (Electroless nickel plating)	
5	Push Button	ABS Resin		15	Spring	Stainless Steel	
6	O-ring	Nitrile rubber		16	Valve Body Guide	Brass (Electroless nickel plating)	
7	Resin Body A	Polybutylene terephthalate resin		17	Valve Element	Brass (Electroless nickel plating)	
8	Diffuser	Brass (Electroless nickel plating)		18	Valve Body Ring	Brass (Electroless nickel plating)	
9	O-ring	Nitrile rubber		19	Filter Element		
10	Resin Body B	Polyamide resin					

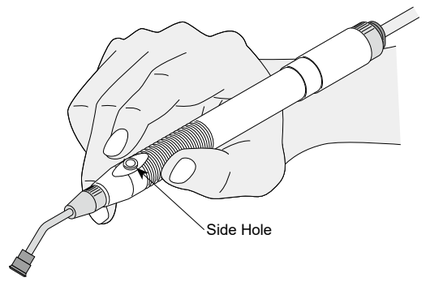
Vacuum Characteristics



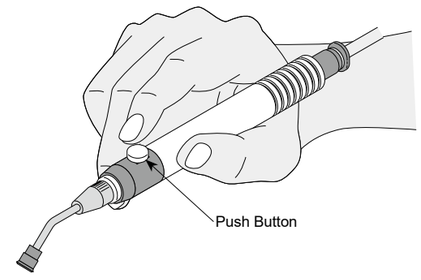


How to Use

●For type without valve VST-A
While flowing compressed air (0.5 MPa) into the air pincette, cover the side hole to adsorb the workpiece. To release the workpiece, uncover the side hole.

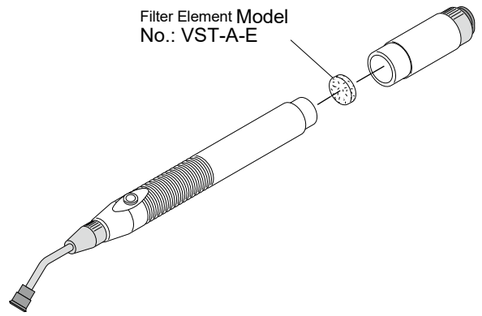


●For integrated valve VST-B
While flowing compressed air (0.5 MPa) into the air pincette, press the push button to adsorb the workpiece. To release the workpiece, release the push button.

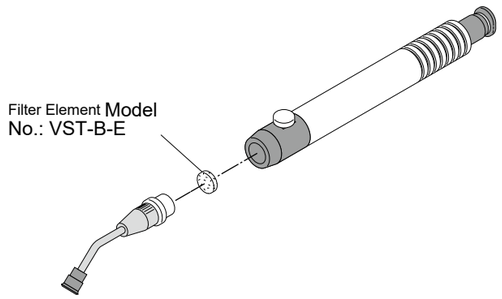


Replacement Element for Air Pincette

●Without valve VST-A



●Integrated valve VST-B



Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions,Intro 15 for details.

Individual Precautions: Air Pincette VST Series

Design / Selection

Caution

■Do not carry out pushbutton operation of the integrated valve mechanically. Doing so may cause button damage.

■The filter element is replaced by the ejector(without valve: VST-A) or pad holder (integrated valve: VST-B). Since this can be done by removing it, periodically perform maintenance and inspection. Clogging can cause performance degradation.

■Note that the silencer element of integrated valve cannot be replaced.

■When piping to the air tweezers, use a Coiling Tubes Fittings and minimize the load on the tube.

MEMO

Vacuum Components
Vacuum Related Components
VSRL
VSECV
VSRVV
VRA2000
VSLF
VSFB, VSFU, VSFJ
FSL
VFA
VSUS
VST
Ending

Technical Data

Page Listed

Selection Method for Vacuum Components 1144

Vacuum Generator Model Selection Method

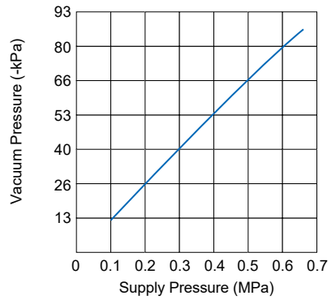
Basically, the CKD vacuum generator has H-type: High vacuum, L-type: Large flow rate (efficiency emphasized), E-type: [Omitted repetition]

●Deciding between H(high vacuum) type and E(low supply pressure high vacuum) type
Use H-type when high vacuum is needed and 0.5 MPa supply pressure can be secured. When 0.5 MPa cannot be secured or when wanting to save air consumption, use E-type at 0.35 to 0.4 MPa.

●Deciding between H(high vacuum) type and L(large flow(efficiency emphasized)) type
Use H-type when high vacuum is needed. When wanting to adjust the vacuum pressure, use L-type and set the desired vacuum pressure by adjusting the supply pressure with a regulator, etc.
The vacuum pressure characteristic of the L-type is almost proportional to the supply pressure, and is set as shown in Fig. 1 between 0.2 to 0.6 MPa. However, although a difference of about -5 to +15% relative to the target value may occur, vacuum pressure setting is possible using the supply pressure as a guideline.

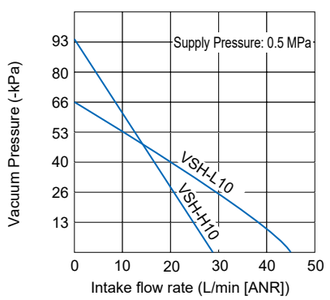
●When the pad does not make complete contact
For workpieces where the suction pad cannot adhere completely, the criterion for deciding whether to use H-type or L-type is determined by the vacuum pressure level in the vacuum system. According to the Vacuum Pressure - Suction Flow Rate diagram in Fig. 2, if the vacuum pressure of the vacuum system is -53 kPa or higher, H-type is advantageous; if it is -40 kPa or lower, L-type is more advantageous.

L-type Ultimate Vacuum Characteristic



(Fig. 1)

Vacuum Pressure - Suction Flow Rate for VSH-H10, VSH-L10



(Fig. 2)

Other Points to Note

●Valve used
When using solenoid valves, etc., use ones that allow sufficient flow rate.
(Use a valve with an effective area at least 3 times the cross-sectional area of the nozzle.)

●Vacuum piping
Piping resistance in vacuum systems can be surprisingly large. Make vacuum piping as short as possible and use piping with a larger inner diameter. Especially when using vacuum switches, etc., excessive piping resistance can cause malfunctions. Also, the ejector's suction flow rate decreases, leading to performance degradation due to insufficient flow.

●Supply side piping
Sufficient consideration is also necessary for the air supply side piping. Perform piping so that the specified pressure is secured at the ejector input section.

What is Vacuum?

■What is Vacuum?
Compared to pressure higher than atmospheric pressure, generally called "positive pressure," a pressure state lower than atmospheric pressure is called "vacuum" or "negative pressure."

Vacuum Pressure

The meaning of pressure is used in two ways:
• Absolute Pressure... Pressure based on a perfect vacuum state
• Gauge Pressure... Broadly categorized as pressure based on atmospheric pressure.
When the vacuum pressure is not very high, it is common to express it in gauge pressure. In the case of high vacuum close to a perfect vacuum, perfect vacuum is defined as -101.3 kPa when atmospheric pressure is standard atmospheric pressure. However, since atmospheric pressure (barometric pressure) constantly fluctuates, the perfect vacuum pressure at that time becomes unknown, making it impossible to express in gauge pressure. For this reason, in the case of high vacuum, it is common to express it in absolute pressure. Our company's vacuum generators are in the low vacuum range, and the vacuum pressure notation for products uses gauge pressure.

Atmospheric Pressure and Vacuum Pressure

Since air is "matter," it has Weight. On Earth, anything with Weight is attracted by gravity, so the atmosphere is also attracted by gravity, generating a force (weight) pressing on the Earth's surface. This is atmospheric pressure, meaning atmospheric pressure is the force due to the weight of the atmosphere applied per unit area. Atmospheric pressure fluctuates due to changes in altitude. Also, it constantly fluctuates due to weather conditions. Therefore, when using gauge pressure, differences in atmospheric pressure occur due to altitude differences and weather conditions, meaning that even if the same vacuum pressure is applied, the value indicated by the gauge will differ depending on the altitude and weather conditions. From this, corrected values converted to standard atmospheric pressure are used for gauge pressure readings. Standard atmospheric pressure is expressed as a value based on the atmospheric pressure at sea level (0 m altitude).
The conversion method is as follows:

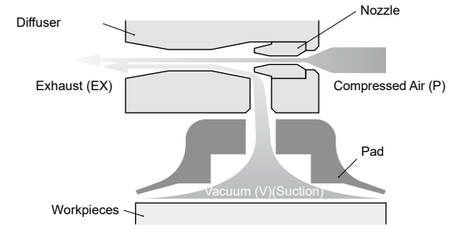
Standard atmospheric pressure converted value(-kPa) =
1013.25 (hPa)/atmospheric pressure (hPa) at measurement location x measured achieved vacuum pressure (-kPa)

Principle of Vacuum Generator

■The vacuum generator is a device that generates vacuum by feeding compressed air.

■Compressed air is restricted by the nozzle, discharged at high speed and fed into the diffuser. When jetted at high speed, the pressure drops, generating vacuum, which can be used for workpiece transport.

■In order to obtain a high speed jet and high degree of vacuum, structures called nozzle and diffuser are constructed, with shapes and sizes determining the achieved vacuum pressure, intake flow rate and consumption flow rate.



Regarding Notation Units for Vacuum Components

■Vacuum components parameters
The following three parameters are used as performance indicators for Vacuum Components:
· Ultimate Vacuum Pressure…Vacuum pressure in vacuum circuit(unit: -kPa)
· Suction Flow Rate…Flow rate in vacuum circuit(unit: L/min (ANR))
· Air Consumption…Flow rate of supply air (unit: L/min (ANR))

■Pressure parameters

kPa	MPa	bar	kgf/cm²	mmHg
1	1×10^{-3}	1×10^{-2}	1.01972×10^{-2}	7.50062
1×10^{3}	1	1 x 10	1.01972 x 10	7.50062×10^{3}
1×10^{2}	1×10^{-1}	1	1.01972	7.50062×10^{2}
9.80665 x 10	9.80665×10^{-2}	9.80665×10^{-1}	1	7.35559×10^{2}
1.33322×10^{-1}	1.33322×10^{-4}	1.33322×10^{-3}	1.35951×10^{-3}	1

■Force parameters

N	kgf
1	1.01972×10^{-1}
9.80665	1

Selection Method for Vacuum Components

When performing suction transport of workpieces using vacuum, select suction pads, vacuum generators, and vacuum switching valves according to the following Vacuum Components selection method. This Vacuum Components selection method should be used strictly as a guideline for selecting equipment. For actual use, perform sufficient confirmation through actual machine evaluation and according to the selection precautions, and use only after confirming there are no problems.

Selection Method for Vacuum Components

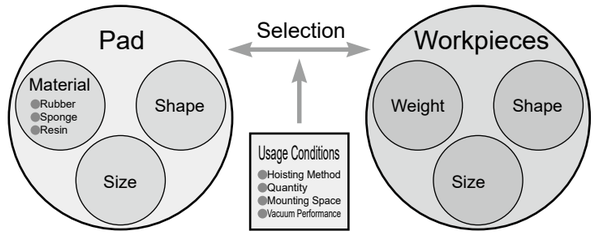
1. Selecting the pad
   - ① How to Determine Suction Force
   - ② Method for Calculating Pad Diameter from Workpiece Lifting Load
   - ③ Pad Shape Selection
   - ④ Pad Material Selection
   - ⑤ Selection Precautions

2. Selecting the vacuum generator/vacuum switching valve
   - ① Collection of Each Usage Condition
   - ② Selection Procedure
   - ③ Selection Precautions

1 ▲ Pad Selection

The three major items required for selecting a pad (Pad, Workpiece, Usage Conditions) are listed on the right.
Select the pad after fully understanding these points.

Pad size (diameter) is determined by calculating the pad's suction force.



① How to Determine Suction Force

●Calculation Method from Formula

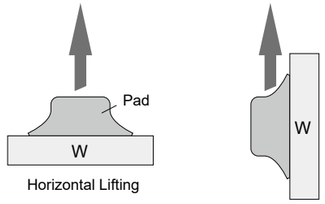
The suction force of the suction pad can be calculated by substituting values into the following formula:

$$W = \frac{CxP}{101} \times 10.13 \times f$$

W: Suction Force (N), C: Pad area (cm²), P: Vacuum Pressure (–kPa)
f: Safety factor(during horizontal lifting: [Omitted repetition] 1/8 or more)

●Selecting from the theoretical suction force table

The theoretical suction force of the suction pad can be obtained from the table below. However, the safety factor is not included in the table values below. When determining the suction force, please use it considering the safety factor.
Suction Force (N) = Theoretical Suction Force (N) ÷ f (Safety Factor)



*The basic lifting method should be horizontal lifting.

1 Theoretical suction force table (suction force = $\frac{C \times P}{101} \times 10.13$)

■ For circular pad

Unit: N

Pad Dia.(ømm)		0.7	1	1.5	2	3	4	6	8	10	15	20	25	30	35	40	50	60	70	80	100	150	200
Suction Area (cm²)		0.004	0.008	0.018	0.031	0.071	0.126	0.283	0.502	0.785	1.766	3.14	4.906	7.065	9.616	12.56	19.63	28.26	38.47	50.24	78.5	176.6	314
Vacuum Pressure (kPa)	-85	0.034	0.068	0.153	0.264	0.604	1.07	2.41	4.27	6.67	15.01	26.7	41.7	60.05	81.74	106.8	166.9	240.2	327	427	667.3	1501	2669
	-80	0.032	0.064	0.144	0.248	0.568	1.01	2.26	4.016	6.28	14.13	25.1	39.25	56.52	76.93	100.5	157	226.1	307.8	401.9	628	1413	2512
	-75	0.03	0.06	0.135	0.233	0.533	0.945	2.12	3.765	5.89	13.25	23.6	36.8	52.99	72.12	94.2	147.2	212	288.5	376.8	588.8	1,325	2355
	-70	0.028	0.056	0.126	0.217	0.497	0.882	1.98	3.514	5.5	12.36	22	34.34	49.46	67.31	87.92	137.4	197.8	269.3	351.7	549.5	1236	2198
	-65	0.026	0.052	0.117	0.202	0.462	0.819	1.84	3.263	5.1	11.48	20.4	31.89	45.92	62.5	81.64	127.6	183.7	250.1	326.6	510.3	1148	2041
	-60	0.024	0.048	0.108	0.186	0.426	0.756	1.7	3.012	4.71	10.6	18.8	29.44	42.39	57.7	75.36	117.8	169.6	230.8	301.4	471	1,060	1884
	-55	0.022	0.044	0.099	0.171	0.391	0.693	1.56	2.761	4.32	9.713	17.3	26.98	38.86	52.89	69.08	108	155.4	211.6	276.3	431.8	971.3	1727
	-50	0.02	0.04	0.09	0.155	0.355	0.63	1.42	2.51	3.93	8.83	15.7	24.53	35.33	48.08	62.8	98.15	141.3	192.4	251.2	392.5	883	1570
	-45	0.018	0.036	0.081	0.14	0.32	0.567	1.27	2.259	3.53	7.95	14.1	22.08	31.79	43.27	56.52	88.34	127.2	173.1	226.1	353.3	794.7	1413
	-40	0.016	0.032	0.072	0.124	0.284	0.504	1.13	2.008	3.14	7.064	12.6	19.62	28.26	38.46	50.24	78.52	113	153.9	201	314	706.4	1256

■ In the case of an oblong pad

Unit: N

Pad Dia.(ømm)		2x4	3.5x7	4x10	4x20	4 x 30	5x10	5 x 20	5 x 30	6x10	6 x 20	6 x 30	8 x 20	8 x 30
Suction Area (cm²)		0.071	0.219	0.365	0.765	1.165	0.446	0.946	1.446	0.522	1.122	1.722	1.462	2.262
Vacuum Pressure (kPa)	-85	0.605	1.867	3.103	6.503	9.903	3.791	8.041	12.29	4.437	9.537	14.64	12.43	19.23
	-80	0.57	1.757	2.92	6.12	9.32	3.568	7.568	11.57	4.176	8.976	13.78	11.7	18.1
	-75	0.534	1.647	2.738	5.738	8.738	3.345	7.095	10.85	3.915	8.415	12.92	10.97	16.97
	-70	0.499	1.538	2.555	5.355	8.155	3.122	6.622	10.12	3.654	7.854	12.05	10.23	15.83
	-65	0.463	1.428	2.373	4.973	7.573	2.899	6.149	9.399	3.393	7.293	11.19	9.503	14.7
	-60	0.427	1.318	2.19	4.59	6.99	2.676	5.676	8.676	3.132	6.732	10.33	8.772	13.57
	-55	0.392	1.208	2.008	4.208	6.408	2.453	5.203	7.953	2.871	6.171	9.471	8.041	12.44
	-50	0.356	1.098	1.825	3.825	5.825	2.23	4.73	7.23	2.61	5.61	8.61	7.31	11.31
	-45	0.32	0.988	1.643	3.443	5.243	2.007	4.257	6.507	2.349	5.049	7.749	6.579	10.18
	-40	0.285	0.879	1.46	3.06	4.66	1.784	3.784	5.784	2.088	4.488	6.888	5.848	9.048

Selection Method for Vacuum Components

1 ▲ Pad Selection

② Method for Calculating Pad Diameter from Workpiece Lifting Load

●Calculation Method from Formula

The vacuum pad diameter can be calculated from the actually required suction force.

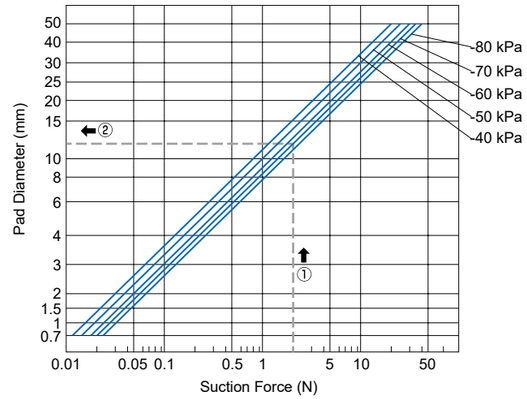
$$D = \sqrt{\frac{4}{3.14} \times \frac{1}{P} \times \frac{W}{n} \times \frac{1}{f} \times 1000}$$

D: Pad diameter (mm), n: Number of pads for workpiece, W: Suction force (N), P: Vacuum pressure (-kPa), f: Safety factor(during horizontal lifting: 1/4 or greater, when lifting vertically: 1/8 or more)

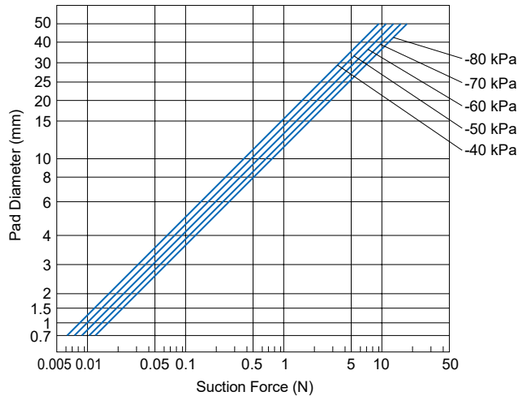
●Selection Method from Selection Graph

The vacuum pad diameter can be determined from the table below based on the lifting method used(vertical lifting, horizontal lifting) and the required suction force per vacuum pad.

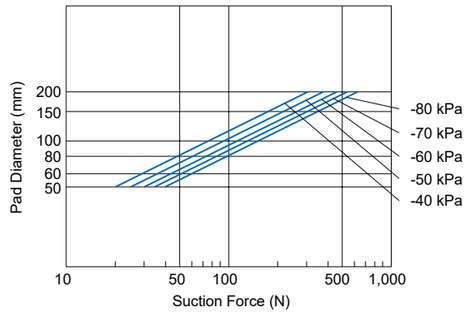
Selection Graph 1-1 Pad Diameter Selection Graph by Suction Force
Horizontal Lifting (ø2 to ø50)



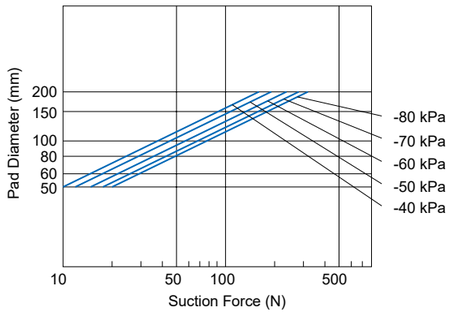
Selection Graph 2-1 Pad Diameter Selection Graph by Suction Force
Vertical Lifting (ø2 to ø50)



Selection Graph 1-2 Pad Diameter Selection Graph by Suction Force
Horizontal Lifting (ø50 to ø200)



Selection Graph 2-2 Pad Diameter Selection Graph by Suction Force
Vertical Lifting (ø50 to ø200)



Example (Pad Diameter Selection)

For a workpiece Weight of 8 N and the following operating conditions:
- · Number of pads: 4 pcs
- · Vacuum Pressure: -70 kPa
- · Suspension method: Horizontal Lifting

Obtain the vacuum pad diameter.

Calculation Method

$$D = \sqrt{\frac{4}{3.14} \times \frac{1}{P} \times \frac{W}{n} \times \frac{1}{f} \times 1000} = \sqrt{\frac{4}{3.14} \times \frac{1}{70} \times \frac{8}{4} \times 4 \times 1000} = 12.06$$

Therefore, select a pad with ø15 mm or more.

Selection Graph Method

From the conditions, the suction force per pad is found to be 2 N(8 N ÷ 4 pads = 2 N).
For suspension method, select horizontal (selection graph 1) and vacuum pressure: From the fact that -70kPa is obtained (horizontal axis of the selection graph), we see that the pad diameter is appropriate for 12mm øor equivalent. Therefore, select a pad with diameter ø15 mm or more. (Order of 1 ①→② in the selection graph)

③ Pad Shape Selection

Select the pad shape based on the workpiece shape and material. If it is necessary to perform suction tests with actual samples, please consult your nearest sales office.

Pad Shape List

Pad Shape		Application Example	Features	Pad Size
Standard	Standard Type	Flat workpieces (Optimal for workpieces that are hard and not flimsy)	The most versatile and common shape pad type. Wide lineup of pad sizes, pad materials, and holder shapes available. Three pad shapes available(Standard, Deep, Compact).	1 2 3 4 6 8 / 10 15 20 25 30 40 / 50 60 80 100 150 200
	Deep Type	Optimal for spherical workpieces (apples or balls)		15 20 25 30 40 50 / 60 80 100
	Compact Type	Optimal for small semiconductor components		0.7 1 1.5 2 3 4
Sponge-type		Optimal for workpieces like building exterior materials, small stones, or seashells	Workpieces with uneven surfaces (Building exterior materials, small stones, seashells)	10 15 20 25 30 35 / 50 70 100
Bellows Type		Optimal for bags containing retort pouches, food items, etc.	Bellows pad with a bellows structure that softly conforms to the workpiece. By attaching the suction mark prevention resin attachment, it is suitable for transporting FPDs, glass substrates, etc.	2 4 6 8 10 15 / 20 25 30 40 50 60 / 80 100
Multi-stage Bellows Type			Bellows pad with a bellows structure that softly conforms to the workpiece. The 4-stage bellows structure allows the pad suction surface to swing widely and conform to the workpiece.	6 8 10 20 30 40 / 50
Oval-type		Optimal for workpieces with limited suction space (substrates, semiconductors, round bars)	Convenient oval-shaped pad for cases where a circular suction surface cannot be secured. Lineup includes small sizes(from 2x4) compatible with workpieces having small suction surfaces.	2x4 3.5x7 / 4x10 4x20 4 x 30 / 5x10 5 x 20 5 x 30 / 6 x 10 6 x 20 6 x 30 / 8 x 20 8 x 30
Soft Type		Optimal for removing molded products or for easily scratched workpieces	Pad with excellent flexibility, gentle on workpieces.Gentle only on easily scratched workpieces, with few suction marks.	4 6 8 10 15 20 / 30 40
Soft Bellows Type			Pad with excellent flexibility, gentle on workpieces. Bellows structure allows use when the workpiece is tilted.	6 8 10 15 20
Anti-slip Type		Optimal for workpieces with adhered oil, such as pressed parts	Pad with grip grooves on the suction surface to prevent slipping during transport of oiled steel sheets.	10 20 30 40 50
For Thin Objects Type		Optimal for thin workpieces such as sheets or vinyl	Suction pad with thinner rib sections on the suction surface for improved adhesion to the workpiece. Suitable for adsorbing thin workpieces, also reduces double feeding (picking up two sheets).	8 10 15 20
Flat Type			Suction pad designed to suppress workpiece deformation during suction and reduce wrinkles by having a flat suction surface.	10 15 20 25 30
Suction Mark Prevention Type		Ideal for liquid crystal glass, painting processes, semiconductor manufacturing equipment, etc.	Type using resin material for the pad. Standard equipped with a flexible holder that follows minute inclinations of the workpiece. Resistant to suction marks, and workpiece release performance during vacuum breaking is also good.	10 20 30
For Packaging Bags Type		Optimal for bags containing liquids, pouch packs, etc.	Suction pad compatible with various bagged workpieces, adopting a 2-layer structure for the pad part.	20 25 30 40
Metal Detectable-type		Optimal for processes where foreign object contamination is undesirable, such as food production lines	Suction pad that reacts to metal detectors when contamination occurs due to fallen pad rubber fragments.	10 15 20
Mechanical-type with Break Function		Optimal for small, lightweight items	Suction pad with workpiece release function to prevent small/lightweight workpieces from being blown away	2.5 3 4 6 8 10

Selection Method for Vacuum Components

1 ▲ Pad Selection

④ Pad Material Selection

Each Rubber Material

Item	Ordering Code	Nitrile rubber	Food Sanitation Act Compliant NBR	HNBR	Silicone Rubber	Conductive Silicone Rubber	Extra Soft Silicone Rubber Hardness 20°	Extra Soft Silicone Rubber Hardness 40°	Urethane rubber	Fluororubber	Fluorosilicone Rubber	EPDM	Conductive NBR (Low Resistance-type)	Metal Detectable Silicone: Iron Powder Specification	Metal Detectable Silicone: Iron Powder Specification	Metal Detectable Silicone: SUS Powder Specification	Metal Detectable Silicone: SUS Powder Specification
		N, NH (Note1)	G	HN	S	SE	YS2	YS4	U	F	FS	EP	NE	SF3	SF5	SS3	SS5
Application		Cardboard Plywood Steel Plate Food Related Other General Workpieces	Cardboard, Plywood, Steel Plate, Food Related, Other General Workpiece, Low Concentration Ozone, Use in Environment		Semiconductor Mold Ejection Thin Workpieces Food Related		Food Related		Cardboard Plywood Steel Plate	Chemical Atmosphere, High Temperature Workpieces	Mold Ejection	Applications requiring light/ozone resistance, use in humid atmospheres	Semiconductor	For processes sensitive to foreign matter contamination, such as food production lines			
Pad Color		Black	Light Gray	Black	Clear White	Black	Pink	Blue	Dark Blue	Gray	Dark Orange	Black	Black	Reddish Brown	Dark Green	Brown	Green
Various Properties: Surface Hardness by Pad Shape (Shore A)	Standard Type	50° to 80°	60° to 70°	50° to 70°	50°	60°	–	–	55° to 70°	60° to 70°	-	50° to 70°	60° to 70°	–	–	–	–
	Bellows Type	50°	–	50°	50°	60°	20°	40°	55°	60°	-	50°	60°	–	–	–	–
	Multi-stage Bellows Type	50°	50°	50°	50°	–	20°	40°	55°	50°	-	50°	60°	–	–	–	–
	Oval-type	40° to 50°	–	50°	40° to 50°	50° to 60°	–	–	55°	50°	–	50°	70°	–	–	–	–
	Soft Type	40°	–	–	40°	60°	–	–	–	–	40°	–	50°	–	–	–	–
	Soft Bellows Type	40°	–	50°	40°	60°	–	–	55°	–	–	50°	60°	–	–	–	–
	Anti-slip Type	50°	–	–	50°	–	–	–	55°	60°	–	–	60°	–	–	–	–
	Flat Type	60°	–	–	40°	40°	–	–	50°	50°	–	–	60°	–	–	–	–
	For Thin Objects Type	40°	–	–	40°	–	–	–	55°	50°	40°	–	60°	–	–	–	–
	Metal Detector Type	–	–	–	–	–	–	–	–	–	–	–	–	30°	50°	30°	50°
Various Properties	High Temp. Operating Limit	110°C		140°C	180°C		–	–	60°C	230°C	180°C	150°C	110°C	180°C			
	Low Temp. Operating Limit	-30°C		-30°C	-40°C		–	–	-20°C	-10°C	-50°C	-40°C	-30°C	-40°C			
	Weather Resistance	△		○	◎		–	–	○	○	○	◎	△	◎			
	Ozone Resistance	x		○	◎		–	–	◎	◎	◎	◎	x	◎			
	Acid Resistance	△		△	○		–	–	x	◎	○	◎	△	○			
	Alkali Resistance	○		○	◎		–	–	x	x	◎	◎	○	◎			
	Oil Resistance (Gasoline/Diesel)	◎		◎	△		–	–	◎	◎	△	x	◎	△			
	Oil Resistance (Benzene/Toluene)	△		x	△		–	–	△	◎	△	x	△	△			
	Volume Resistivity	–		–	–	≤10^8 Ω·cm	–	–	–	–	–	–	≤200 Ω·cm	–			

Evaluation Guide → ◎: Optimal, ○: Suitable, △: Good, x: Unsuitable
Note1: Pad material order code: NH is only available for the non-slip type.
*1: Various properties indicate the characteristics of general synthetic rubber used for the pad material.
*2: Actual use at the high temperature operating limit is instantaneous; if continuing for a certain period, please confirm sufficiently before use.
*3: If the fiber flocked type surface treatment (option) is selected, the high temperature operating limit for fluororubber becomes 200°C.

Sponge Material

Item	Ordering Code	Chloroprene Rubber (Sponge-type)	Silicone Rubber (Sponge-type)
		Blank	S
Application		Workpieces with uneven surfaces	Workpieces with uneven surfaces Food Related
Pad Color		Black	Dark Orange
Various Properties	High Temp. Operating Limit	80°C	180°C
	Low Temp. Operating Limit	-45°C	-40°C
	Weather Resistance	○	◎
	Ozone Resistance	○	◎
	Acid Resistance	△	○
	Alkali Resistance	◎	◎
	Oil Resistance (Gasoline/Diesel)	x	△
	Oil Resistance (Benzene/Toluene)	△	△
	Volume Resistivity	–	–

Each Resin Material

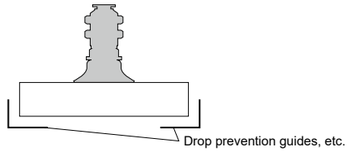
Item	Ordering Code	PEEK	POM	Conductive PEEK
		K	M	KE
Application		Semiconductor/LCD manufacturing equipment	Various production lines Food Related Equipment Packaging Machinery	Semiconductor/LCD manufacturing equipment Electronic equipment parts
Pad Color		Beige	White	Black
Various Properties	High Temp. Operating Limit	250°C	95°C	250°C
	Low Temp. Operating Limit	-50°C	-60°C	-50°C
	Weather Resistance	◎	x	◎
	Acid Resistance	◎	x	◎
	Alkali Resistance	◎	△	◎
	Self-lubricating	○	◎	○
	Abrasion resistant	◎	◎	◎
	Volume Resistivity	–	–	10^3 to 10^5 Ω·cm

Evaluation Guide → ◎: Optimal, ○: Suitable, △: Good, x: Unsuitable
*1: Various properties pertain to the pad section resin material and do not include the characteristics of the adsorption mark prevention pad holder section. Please select considering the specifications of the vacuum pad holder used and the adsorption mark prevention pad holder section.
*2: Various properties are general characteristics of each material and are not guaranteed values. Please confirm with actual equipment before use.
*3: Actual use at the high-temperature usage limit temperature is instantaneous; if continued for a certain period, please confirm sufficiently before use.
*4: Volume resistivity is a representative value published by the material manufacturer and is not a guaranteed value.

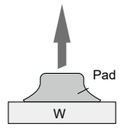
⑤ Selection Precautions

Caution 1. Precautions for Suction Pad Selection

●If the suctioned workpiece is at risk of falling off, be sure to provide a preventive measure for safety.



●Consider horizontal suspension the basic method and select with a sufficient safety factor.



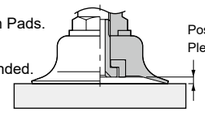
Horizontal Lifting

●Calculate the suction force with consideration of not only the weight of the workpiece but the acceleration and impact as well.
●When setting the pad diameter, number of pads and suction position, be sure to fully understand the suction force in the catalog and select with a sufficient margin.
●Depending on the operating environment and usability, select the pad material with reference to the selection method in the catalog.
●The suitable pad shape (type) depends on the suctioned object and its shape, so read the Selection Method carefully before selection.

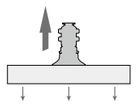
Caution 2. Precautions for Suction Pad Operating Conditions

●When two or more pads are piped to a single vacuum source in a vacuum circuit, if one pad suffers suction failure (leakage), there is a danger that the other pads may be detached due to a decrease in vacuum pressure.
As countermeasures, 1. Position locking valve
2. Needle Valve
3. Vacuum Switching Valve
Installation of these is effective.
Also, when using a vacuum pump, installing a chamber (tank) in addition to the above 3 items is also effective.

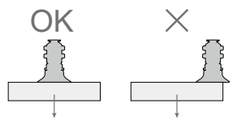
●When suctioning a workpiece, do not apply excessive impact or load to the Suction Pads. This can cause a significant decrease in suction pad durability.
As a guideline, setting within the lip deformation range or light contact is recommended.



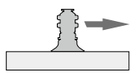
●The workpiece suction position by the Suction Pads
Please mount it so that the moment does not occur.



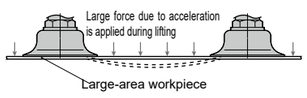
●Mount so that the Suction Pads does not protrude from the workpiece. Workpiece may fall due to decreased vacuum level.



●Reduce the acceleration of the lateral movement of the workpiece as much as possible. Depending on the workpiece's coefficient of friction, the workpiece may slip sideways.

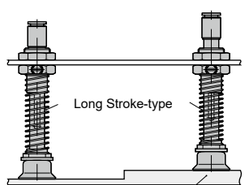


●When using a large, thin workpiece such as a glass plate or mounting substrate, be sure to consider the placement and moving acceleration of the Suction Pads. Workpiece deformation or damage may occur due to the suction pad arrangement position and the effects of acceleration.



●In environments where the workpiece may fall, please use an aid such as a position locking guide.

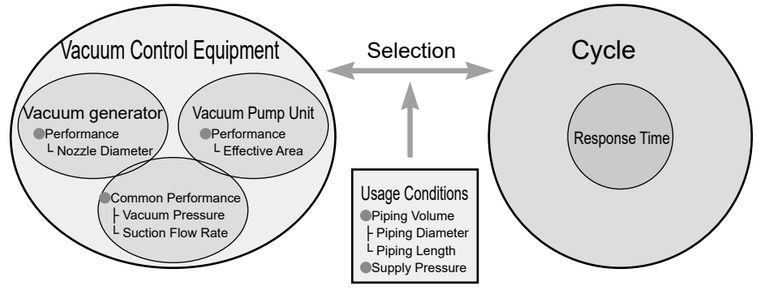
●The spring holder or long stroke holder is suitable for the suction of objects with irregular height, those with height difference, or those prone to damage due to external force.



Selection Method for Vacuum Components

2 ▶ Selection of Vacuum Generator / Vacuum Switching Valve

The three major items required for selecting a vacuum generator/ vacuum pump compatible unit(Vacuum Control Equipment, Cycle, Operating Conditions) are listed on the right. Select the vacuum generator / vacuum switching valve after fully understanding these points.



① Collection of Each Usage Condition

A. Vacuum Piping Volume

●How to calculate from formula

The piping volume of the vacuum system can be calculated by substituting values into the following formula.

Piping Volume

$$V = \frac{3.14}{4} D^2 \times L \times \frac{1}{1000}$$

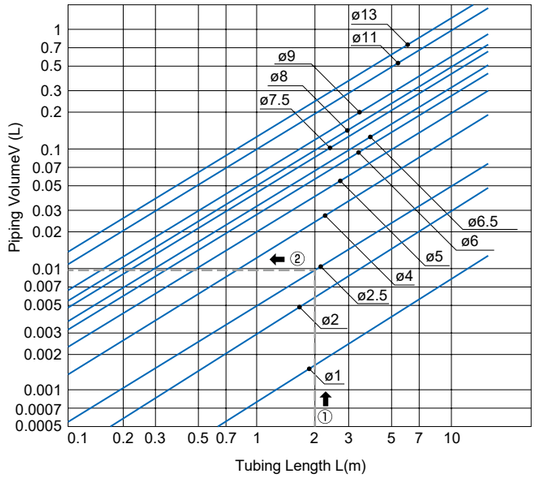
D: Piping Inner Diameter (mm)
L: Length from vacuum generator and switching valve to pad (m)
V: Piping volume from vacuum generator and switching valve to pad (L)

●Selection Method from Selection Graph

■ Calculating Vacuum System Tubing Volume

Piping volume can be determined from the table below.

Selection Graph 3 Tubing Volume by Inner Diameter



B. Vacuum Control Equipment Information

Representative performance (information) of vacuum control equipment (vacuum generator/vacuum pump compatible units) is listed here. (For detailed information, refer to the ejector characteristics in the main catalog text.)

●For vacuum generator (VSH, VSU, VSB, VSC)

Vacuum Characteristics List

Nozzle Diameter (mm)	High Vacuum Type: H		Large flow rate type: L		Low supply pressure high vacuum type: E	
	Vacuum pressure (kPa)	Suction flow rate (L/min (ANR))	Vacuum pressure (kPa)	Suction flow rate (L/min (ANR))	Vacuum pressure (kPa)	Suction flow rate (L/min (ANR))
0.3	–90	2	-66	3 to 4	–88	1
0.4	–90	4	-66	7 to 7.5	–90	2
0.5	–90	7	-66	12	–90	3
0.7	–92 to –93	12.5 to 13	-66	22 to 26	–90 to –92	10 to 10.5
1	-93	28	-66	42	-92	21
1.2	-93	38	-	-	-92	27
1.5	-93	63	-66	95	-92	42
2	-93	110	-66	180	-92	84

*1. Supply pressure is high vacuum (H)/large flow(L) type: 0.5 MPa, Low supply pressure high vacuum (E): 0.35 MPa.
*2. If you require a vacuum generator other than those listed above, please refer to the main catalog text.

●For vacuum pump compatible units

Vacuum Pump Compatible Switching Valve Effective Area List

Type	Effective Area (mm²)		
	Solenoid Valve for Vacuum Supply		
VSJP	PV Port Size	ø4 mm	3.5
		ø6 mm	5
VSXP	PV Port Size	ø4 mm	3.5
		ø6 mm	4.5
VSXP-T	PV Port Size	ø4 mm	3
		ø6 mm	3.6
VSZPM	4.5		
VSQP	16.5		
VSNP	0.9		

Example

▶When obtaining the volume of tubes with bore size ø2.5 mm (tube outer diameter ø4 mm) and length 2 m.

Calculation Method

$$V = \frac{3.14}{4} D^2 \times L \times \frac{1}{1000} = \frac{3.14}{4} \times 2.5^2 \times 2 \times \frac{1}{1000} = 0.0098 \approx 0.01\ (L)$$

Selection Graph Method

From the intersection of horizontal axis tubing length 2 m and the line for tubing inner diameter ø2.5 mm (outer diameter ø4 mm), extend left to find the vertical axis piping volume ≈ 0.01 L.
Piping Volume ≈ 0.01 L

① Collection of Each Usage Condition

C. Consideration for Cases with Leakage

If leakage occurs between the pad and the workpiece, it is necessary to consider this when quantifying the response time and selecting vacuum control equipment. Note that if there is leakage, the vacuum pressure will inevitably decrease, so this must also be taken into account.

Even in actual use, leakage may occur depending on the workpiece, causing the vacuum pressure to drop. When selecting vacuum generators and vacuum switching valves, it is necessary to select considering the leakage amount.



Below are two methods: "Method for determining leakage amount when the effective area of the workpiece is known" and "Method for determining leakage amount through suction test".

●How to calculate the amount of leakage when the effective cross-sectional area of the workpiece is known

If the effective area(SL) of the opening between the workpiece and the suction pad is known in advance, the leakage amount can be calculated using the following formula.

Leakage Amount $Q_L = 11.1 \times S_L$

Q_L: Amount of leakage (L/min (ANR))
S_L: Clearance between the workpiece and pad, and effective cross-sectional area of the opening of the workpiece (mm²)

From the calculated leakage amount and the flow characteristic diagrams of the used vacuum generator/vacuum pump, it is possible to predict how much the value will drop in gauge pressure.

Example

When using a vacuum generator (VSC-E12) and the effective area of the opening between the workpiece and suction pad is 0.4 mm², determine the actually securable vacuum pressure.

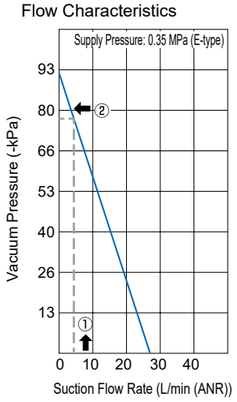
Point

Since the effective area of the opening between the workpiece and suction pad is known, calculate the leakage amount using the formula.
$Q_L = 11.1 \times S_L = 11.1 \times 0.4 = 4.4$L/min (ANR)
Determine the actual vacuum pressure from the flow characteristics of the vacuum generator used.

Answer

From the leakage amount calculation formula above,
QL = 11.1 × SL = 11.1 × 0.4 = 4.4 L/min (ANR)

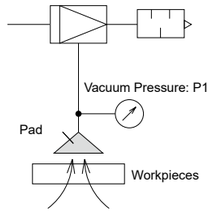
From the flow characteristics of VSC-E12 (right diagram), if a leakage of 4.4 L/min (ANR) occurs, it can be predicted that a vacuum pressure of -77 kPa will be obtained.



*The vacuum pressure notation in the catalog for VSC-E12 is -90 to -92 kPa, but due to the effective area of the opening between the workpiece and vacuum pad, it is understood that the actual vacuum pressure can drop to -77 kPa. Therefore, select Vacuum Components considering the effective area of the opening between the workpiece and suction pad.

●How to calculate leakage by suction test

If the effective area of the opening between the workpiece and the suction pad is unknown, perform an actual machine test and measure the leakage amount using the method shown in the diagram below.



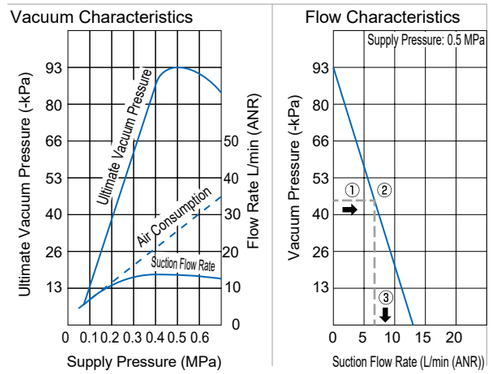
Example

When adsorbing a leaking workpiece with a vacuum generator (VSB-H07) at a supply pressure of 0.5 MPa, the vacuum gauge indicated a pressure of -45 kPa. Determine the leakage amount from the workpiece in this case.

Answer

From the flow characteristics of the vacuum generator VSB-H07, the suction flow rate at -45 kPa is found to be approximately 7 L/min (ANR). (Order of ①→ ②→③)
Leakage Amount ≈ 7 L/min (ANR)

VSB-H07



*Regarding the flow characteristics of vacuum generators other than VSB-H07 above, please refer to the characteristics of each product in the main text.

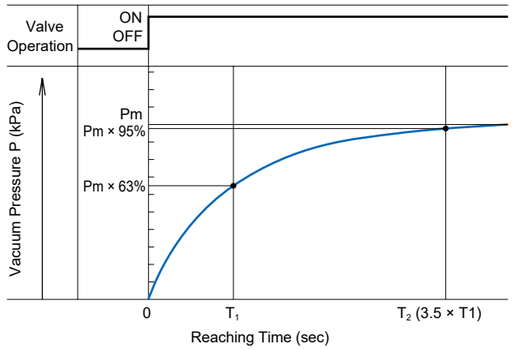
Selection Method for Vacuum Components

2 ▶ Selection of Vacuum Generator / Vacuum Switching Valve

② Selection Procedure

A. Determining Response Time(No Leakage Case)

If the vacuum control equipment and operating conditions are clear, an approximate response time (guideline value) can be quantified from that information.



Pm: Final vacuum pressure T_1: Time to reach 63% of final vacuum pressure Pm
T2: Time to reach 95% of ultimate vacuum pressure Pm

●How to calculate from the formula

Suction response times T_1, T_2 can be calculated from the formula below.

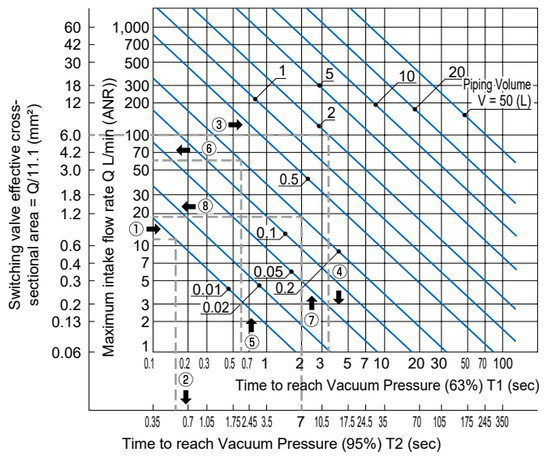
Suction response time $T_1 = \frac{V \times 60}{Q}$

Suction response time $T_2 = 3.5 \times T_1$

T1: Time to reach 63% of ultimate vacuum pressure P_m(sec)
T2: Time to reach 95% of ultimate vacuum pressure P_m(sec)
V: Piping volume from vacuum generator, switching valve to pad (L)
Q: Average Suction Flow Rate (L/min (ANR))
How to Determine Average Suction Flow Rate
For Vacuum Generator ▶ Q =(1/3) × Max. Vacuum Generator Suction Flow Rate (L/min (ANR))
For Vacuum Pump ▶ Q =(1/2) × 11.1 × Switching Valve Effective Area (mm²)

●Obtaining from the selection graph

Suction response times T_1, T_2 can be determined from the table below.
Graph④ Suction Response Time



*From the suction response time, conversely, the size of the vacuum generator or the size of the switching valve in the vacuum pump system can also be determined.

Example①

Calculating the suction response time when using a vacuum generator (VSU-H07) with a maximum suction flow rate of 12 L/min (ANR) to reach an ultimate vacuum pressure of -87 kPa in a piping system with a piping volume of 0.01 L.

Point

Piping volume P. 1151 by referring to the formulaor selection graph③.
From -87 kPa ≈ -92 (kPa) × 95 (%), it can be calculated by finding the suction response time T2 using the formula above.
In addition, the average intake flow rate isP. 1151Use the vacuum characteristics list and Q =(1/3)×12 = 1/3 × 12 = 4L/min (ANR).

Calculation Method

$T1 = \frac{V \times 60}{Q} = \frac{0.01 \times 60}{4} = 0.15$ (sec)
The time actually sought is:
$T_2 = 3.5 \times T_1 = 3.5 \times 0.15 = 0.525$ (sec)
It is understood that a suction response time of approximately 0.5 (sec) is required.

Selection Graph Method

From the intersection of the vacuum generator (VSU-H07) max suction flow rate 12 L/min (ANR) and piping volume 0.01 L, the suction response time T_2 to reach 95% of the maximum vacuum pressure can be determined. (Order of ①→② in the selection graph④)
$T_2 \approx 0.5$ (sec)

Example②

Calculating the suction response time when using a valve with an effective area of 6 mm² to raise the internal pressure of a 2 L tank to 63% of the ultimate vacuum pressure.

Calculation Method

$T_1 = \frac{V \times 60}{1/2 \times 11.1 \times S} = \frac{2 \times 60}{1/2 \times 11.1 \times 6} = \frac{120}{33.3} = 3.6$ (sec)

Selection Graph Method

From the intersection of valve effective area 6 mm² and piping volume 2 L, the response time T1 to reach 63% of the maximum vacuum pressure can be determined.
(Order of ③→④ in the selection graph④)
$T_1 \approx 3.5$ (sec)

B. Selection of Vacuum Generator, Vacuum Pump Compatible Unit

If the response time and operating conditions are clear, the optimal vacuum generator or vacuum pump compatible unit can be selected from that information.

1. Size of Vacuum Generator, Vacuum Switching Valve (No Leakage Case)

●Using the formula

a Average Suction Flow Rate

$$Q = \frac{V \times 60}{T_1}$$

$$T_2 = 3.5 \times T_1$$

Q: Average Suction Flow Rate (L/min (ANR))
V: Piping Volume (L)
T1: Time to reach 63% of stable pressure P after suction (sec)
T2: Time to reach 95% of stable pressure P after suction (sec)

b Max. Suction Flow Rate (Specification suction flow rate of Vacuum Components)

For vacuum generator ▶Qmax = 3 × Q [L/min (ANR)]

For vacuum pump ▶ Qmax = 2 × Q [L/min (ANR)]

Point

■For vacuum generator

It is necessary to select a vacuum generator with a suction flow rate greater than Qmax in the formula above.

■For Vacuum Switching Valve

$$\text{Effective Area } S = \frac{Qmax}{11.1} (mm^2)$$

*It is necessary to select a switching valve with an effective area larger than that in the formula above.

●Method by Selection Graph

a Tubing Volume

Selection graph3 (P. 1151) Calculate using "piping volume by tube inside diameter".

b Max. Suction Flow Rate Qmax

Selection graph4 (P. 1153) From the suction response time (T_1, T_2) and tube volume, obtain the required maximum intake flow rate Q.

Example

Using a tank with piping volume of 0.2L, vacuum pressure in about 0.6 seconds: Which vacuum generator should be selected to achieve max. speed of -58kPa (Supply pressure secured at 0.5 MPa)

Point

-58kPa = -93 (kPa) × 63 (%)

Also, supply pressure: "H-type" is considered suitable when compared with our catalog value, given that 0.5MPa is likely to be secured.

Calculation Method

■a From the calculation formula of average intake flow rate

$$Q = \frac{V \times 60}{T_1} = \frac{0.2 \times 60}{0.6} = 20$$

■b From the calculation formula of maximum intake flow rate

Qmax = 3 × Q = 3 × 20 = 60 L/min (ANR)

From the calculation formula above, it is understood that a vacuum generator with a suction flow rate of 60 L/min (ANR) should be selected.

Selection Graph Method

From the intersection of suction response time 0.6 seconds and piping volume 0.2 L, the maximum suction flow rate can be determined. (Order of ⑤→⑥ in the selection graph4)

Q ≈ 60 L/min (ANR)

*From the points above, we already know that the "H-type" is appropriate. Comparing this with our catalog values, we can see from the calculated value selection graph that the vacuum characteristics of the H15 (Suction flow rate: 63 L/min (ANR)) are optimal.

Point

■For vacuum generator

It is necessary to select a vacuum generator with a maximum suction flow rate greater than Q obtained from the graph.

■For vacuum switching valve

It is necessary to select a vacuum switching valve with an effective area larger than that obtained from the graph.

MEMO

Selection Method for Vacuum Components

2 ▶ Selection of Vacuum Generator / Vacuum Switching Valve

② Selection Procedure

B. Selection of Vacuum Generator, Vacuum Pump Compatible Unit

2. Size of Vacuum Generator, Vacuum Switching Valve (Leakage Case)

If there is leakage from the workpiece, the required size of the vacuum generator/vacuum switching valve can be determined by adding the leakage amount to the maximum suction flow rate.

●Using the formula

a Average Suction Flow Rate Considering Leakage Amount

$$Q = \frac{V \times 60}{T_1} + Q_L$$

$$T_2 = 3.5 \times T_1$$

Q: Average Suction Flow Rate (L/min (ANR))

V: Piping Volume (L)

T_1: Time to reach 63% of stable pressure P after suction(sec)

T_2: Time to reach 95% of stable pressure P after suction(sec)

Q_L: Leakage Amount during Workpiece Suction (L/min (ANR))

b Max. Suction Flow Rate (Specification suction flow rate of Vacuum Components)

For vacuum generator ▶Qmax = 3 × Q [L/min (ANR)]

For vacuum pump ▶ Qmax = 2 × Q [L/min (ANR)]

Point

■For vacuum generator

It is necessary to select a vacuum generator with a suction flow rate greater than Qmax in the formula above.

■For vacuum switching valve

Effective Area $S = \frac{Qmax}{11.1}$ (mm²)

*It is necessary to select a switching valve with an effective area larger than S in the formula above.

●Method using the selection graph

a Tubing Volume

Selection graph 3 (P. 1151) Calculate using "piping volume by tube inside diameter".

b Max. Suction Flow Rate Qmax

Selection graph 4 (P. 1153) From the suction response time (T_1, T_2) and tube volume, obtain the required maximum intake flow rate Q that does not include the leakage amount QL.

Max. Suction Flow Rate

For Vacuum Generator ▲ Qmax = Q +(2 × Q_L)

For Vacuum Pump ▲ Qmax = Q +(3 × Q_L)

Q: Selection graph 4 (P. 1153) Found in (L/min [ANR])

Q_L: Leakage (L/min (ANR))(P. 1152) 2-Values taking into consideration leakage during ② workpiece suction

Point

■For vacuum generator

It is necessary to select a vacuum generator with a maximum suction flow rate greater than Q obtained from the graph.

■For vacuum switching valve

It is necessary to select a vacuum switching valve with an effective area larger than that obtained from the graph.

Example

Want to satisfy a leakage amount of 4.4 L/min (ANR) from the workpiece and vacuum pad opening, and a piping volume of 0.2 L. Time to reach 95% of stable pressure Pm after suction is 7 sec. Determine what kind of vacuum generator should be selected.

Point

For the piping volume, refer to the example in "Extraction of Operating Conditions" on P. 1151 For the leakage amount after workpiece suction, refer to "Method for Cases with Leakage" on P. 1152 .

Calculation Method

From $T_2 = 3.5 \times T_1$,

$$T_1 = \frac{T_2}{3.5} = \frac{7}{3.5} = 2 \text{ (sec)}$$

$$Q = \frac{V \times 60}{T_1} + QL = \frac{0.2 \times 60}{2} + 4.4 = 10.4 \text{ (L/min (ANR))}$$

Therefore, the maximum suction flow rate is:

Qmax = 3 × Q = 3 × 10.4 = 31.2 L/min (ANR)

From the calculation formula above, it is understood that a vacuum generator with performance of suction flow rate ≥ 31.2 L/min (ANR) should be selected.

Selection Graph Method

From the intersection of time to reach vacuum pressure (95%) 7 sec and piping volume 0.2 L, the maximum suction flow rate can be determined. (P. 1153 Order of ⑦ → ⑧ in the selection graph 4)

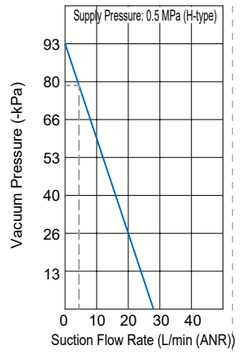
Q ≈ 20 L/min (ANR)

Qmax = 20 +(3 × 4.4) = 33.2 L/min (ANR)

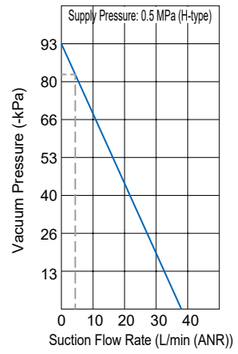
[Supplement]

*If the maximum intake flow rate is about 33 L/min (ANR), and the supply pressure is 0.5 MPa, the nozzle diameter øof the high vacuum type (H-type) is 1 mm or ø1.2 mm appropriate. Based on the workpiece and opening of the vacuum pad (4.4 L/min (ANR) and the flow characteristics in the figure below, the max. vacuum pressure is -79 kPa for H10 and -83 kPa for H12. Therefore, the vacuum components must be selected with consideration of the required max. pressure.

Flow Characteristics (For H10)



Flow Characteristics (For H12)



③ Selection Precautions

Caution 1. Precautions for Vacuum Components Selection

- Be careful of vacuum pressure drop due to trouble with supply air and power supply.
- As there is a danger of the suctioned object falling due to decreased suction force, be sure to take safety measures.
- Remove drainage and foreign materials from the ejector supply air and use clean air. Also, do not lubricate with a lubricator. Impurities and oil contained in compressed air can potentially cause malfunction or performance degradation.
- Supply pressure (catalog specification value) of the ejector is the value when the ejector is in operation. Consider pressure drops and ensure the specification value in the text is maintained. Failure to satisfy specifications may cause the ejector to emit abnormal noise at specific supply pressures, leading to unstable characteristics, affecting sensors, etc., and potentially causing trouble.
- Vacuum retention function type and check valve function type allow vacuum leakage, so take other safety measures if the vacuum state needs to be maintained for long periods.
- If energization to the valve continues for long periods, heat is generated from the coil. Heat generation can potentially lead to reduced product life, operational malfunctions, etc. There is also a risk of burns due to heat and effects on surrounding equipment.
- When the manifold specification is used, the combination of manifold stations and mounting units may degrade performance or affect other station vacuum ports.

Caution 2. Precautions for Vacuum Generator Nozzle Diameter Selection

- With regard to the effective cross-sectional area on the ejector supply pressure side, carry out piping and components selection with 3 times the effective cross-sectional area of the nozzle diameter cross-sectional area as a guideline. Insufficient supply flow rate can cause performance degradation.

Caution 3. Precautions for Selecting Equipment for Vacuum Lines

- Select related products according to the maximum flow rate of the vacuum source.
  Regarding the effective cross-sectional area of related products,
  S(effective cross-sectional area) = Qmax(max. flow rate: L/min (ANR)/11.1 (mm²)
  Calculate the total effective cross-sectional area and select the components according to the calculation given in Note). This formula is a guideline applicable to vacuum lines and cannot be applied to positive pressure lines.

  * For calculation in positive pressure lines, apply the following formula.

  ■MPa unit $P_1 > 1.89P_2$

  $$Q = 113 \times S \times P_1 \left(S = \frac{Q}{113 \times P1}\right)$$

  ■kgf/cm² Unit $P_1 > 1.89P_2$

  $$Q = 11.1 \times S \times P_1 \left(S = \frac{Q}{11.1 \times P1}\right)$$

  P1: Primary side absolute pressure
  P2: Secondary side absolute pressure

Caution 4. Precautions for Selecting Vacuum Filters

- Never apply positive pressure for vacuum burst to the vacuum filter. It does not have an explosion-proof structure. Also, due to low pressure resistance, damage to the main body poses a risk of personal injury.

Caution 5. Precautions for Vacuum Components Operating Conditions

- When operating the valve, make sure that the leakage current is no greater than 1 mA. There is a risk of malfunction due to leakage current.
- Do not apply pressure of 0.1MPa or more to the vacuum circuit side of the vacuum generator or vacuum pump unit. Vacuum Components is not explosion-proof, so there is a risk of main body damage.
- When two or more pads are piped to a single ejector in a vacuum circuit, if one pad suffers suction failure (leakage), there is a danger that the workpiece may be detached due to decreased vacuum pressure.
- Do not use the product so as to block the exhaust port of the ejector or increase the exhaust resistance. This can prevent vacuum generation or cause a drop in vacuum pressure.

Information on Custom Products

Based on standard port sizes, "Inch specification" for connection tube sizes, "NPT specification" for connection threads, and modifications to standard product model Nos. are possible. Additionally, we also support products with other special specifications. For details, please contact your nearest sales office.

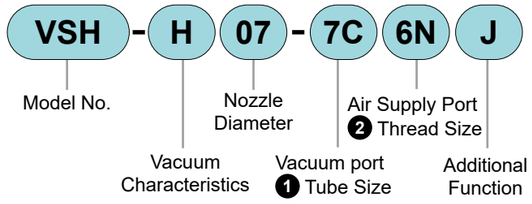
Information on Custom Products

Inch Size Specification / NPT Specification

Features

■We will manufacture by changing millimeter-size fittings to inch-size fittings, and R threads to NPT threads.

Model No.(Example)



❶ Tube Size

Tube Size		Inch Size				
Code		3C	7C	9C	11C	13C
Size	(Inch)	5/32	1/4	5/16	3/8	1/2
	(Millimeter)	ø3.97	ø6.35	ø7.94	ø9.53	ø12.7

❷ Thread Size

Thread Size	Unified Thread	NPT Thread	
Code	32U	6N	8N
Size	10-32UNF	NPT 1/8	NPT1/4

Applicable Models

●Vacuum Ejector: VSH, VSU, VSC, VSB, VSG, VSK, VSKM

●Suction Pad: VSP

●Vacuum Filter: VSFU

*Depending on the product, manufacturing may not be possible. Please contact your nearest sales office.

MEMO

Standard-Compliant Products, ISO

Listed Page

Regarding CE Marking — Ending 2

Regarding RoHS Compliance — Ending 4

Regarding ISO9001/ISO14001 Certification Acquisition — Ending 6

Regarding CE Marking

CKD offers a variety of European standard compliant equipment to support customers in achieving CE Marking for their machinery products.



CE : Displayed on European standard compliant products

What is CE Marking?

- CE Marking is a mark that proves a product conforms to the essential requirements of all applicable EC directives.
- CE marking is a product passport within the EU, and products displaying the CE marking can be freely circulated within the EU.
- Machinery exported to the EU is required to comply with the Machinery Directive, EMC Directive, Low Voltage Directive, etc., but since CE marking is, in principle, mandatory for final products that flow directly to the market, marking on built-in components is not originally required. However, if built-in components (CKD equipment products) are certified for European standards, it makes CE Marking easier for the final product (your machinery product).

Content of Each EC Directive

CKD's main products, such as solenoid valves, sensors, and ABSODEX, are required to conform to the following directives, and many models are European standard compliant.

Directive	Requirements	Applicable
Machinery Directive (2006/42/EC)	Essential safety requirements for machinery	■ Machinery with drive parts Equipment such as solenoid valves are not subject to this, but ensuring compliance with standards makes CE Marking easier for customers.
EMC Directive (2014/30/EU)	Measures for both the generation of electromagnetic disturbance (EMI/emission) and the ability to eliminate electromagnetic disturbance (EMS/immunity)	■ Equipment that generates electromagnetic disturbance or equipment that is affected by electromagnetic disturbance Solenoid valves composed of simple solenoids do not generate electromagnetic disturbance, but ensuring compliance with standards makes CE Marking easier for customers.
Low Voltage Directive (2014/35/EU)	Electrical safety regarding electric shock, etc.	■ Components operating at 50 VAC to 1000 VAC and 75 VDC to 1500 VDC
Pressure Equipment Directive (2014/68/EU)	Safety regarding the hazards of fluid energy possessed by pressure equipment	■ When certain conditions are exceeded within pressure equipment
Simple Pressure Vessels Directive (2014/29/EU)	Safety regarding leakage and explosion of containers	■ Welded containers where the product of maximum operating pressure and volume (PV·S) exceeds 50 bar-liters Our air tanks (AT type) do not conform, so they cannot be exported to the EU.
RoHS Directive (2011/65/EU)	Restriction of 6 environmentally hazardous substances	■ Electrical/Electronic Equipment
2011/65/EU and (EU) 2015/863	Restriction of 10 environmentally hazardous substances	■ Electrical/Electronic Equipment

The countries to which CE marking applies are EU (European Union) member states, EFTA (European Free Trade Association) member states, and Turkey.

CKD's Compliance with European Standard Compliant Products

⚠Compliant products may not be available depending on the specification and detailed model number combination; for details, please contact our sales representative. For the latest information, please visit our website.
Home Page Address https://www.ckd.co.jp/en/productinfo/eu/

Regarding CKD RoHS Compliance

At CKD, our theme is the development of environmentally friendly products.

RoHS

RoHS is the abbreviation for Restriction Of the use of certain Hazardous Substances in electrical and electronic equipment. This is the directive prohibiting use of certain hazardous substances issued by the EU.



- CKD products are approved as in conformity to RoHS directive in order of priority from July 1, 2006.
- RoHS-compliant products are designed to reduce environmental load and can be distributed in the EU countries.

Environmental Policy

Based on the CKD Environmental Policy established in 2001, our company is engaged in environmental management system activities company-wide to protect the global environment.

CKD's Environmental Policy

1. Promote development and sales of low environmental load
2. Clarify and comply with the requirements of environmental laws and regulations, and promote the realization of carbon neutrality and the prevention of environmental pollution.
   a) Reduce CO_2 emissions b) Promote resource conservation
   c) Reduce waste d) Reduce environmental pollutants

Response to RoHS of CKD

For our main equipment products, we have been progressively implementing RoHS compliance since July 2006. This catalog indicates RoHS-compliant products with the "RoHS-compliant" mark.

(Note) For the latest compliance status, please check our website.

Technical Data

RoHSDirective

(Directive 2011/65/EU of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment)

This directive assimilates laws related to limiting the use of hazardous substances in electrical and electronics components set forth by each EU member state, contributes to the protection of human health, and provides sufficient means for processing and recycling waste electrical and electric products.

1 Scope of Application

1. Large household electrical appliances
2. Small appliances
3. IT Components and Telecommunications Components
4. Civilian Components
5. Lighting Components
6. Electric tools
7. Toys, leisure goods and sports components
8. Medical components, in-vitro diagnostics components
9. Monitoring and control components, industrial monitoring and control equipment
10. Vending machines
11. Other electrical and electronic equipment not falling into the above categories

Our components products mainly correspond to category 9, industrial monitoring and control equipment. (Some medical devices in Category 8 and non-applicable products also exist)

2 Directive Contents

Regulated substances (2011/65/EU)
- Lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBBs)
- Polybrominated diphenyl ethers (PBDE)

Additional regulated substances ((EU) 2015/863)
- Specific phthalates (DEHP, DBP, BBP, DIBP)

Electrical and electronic equipment containing the above substances, products in Categories 8 and 9, will not be able to be brought into the EU from July 22, 2021, and other categories from July 22, 2019, in principle.

Regarding ISO9001/ISO14001 Certification Acquisition

We deliver reliable quality that is gentle to people, machines, and the environment.

CKD has obtained ISO 9001 and ISO 14001 certification and established a quality and environmental management system. With safety, the environment, and energy saving as our primary themes, our entire company is dedicated to creating safe, reliable products and quality that pose no harm to people, machinery, society, or the global environment.




ISO 9001
マネジメントシステム登録証
CKD株式会社
JQA


ISO 14001
マネジメントシステム登録証
CKD株式会社
JQA

MEMO

MEMO

MEMO

Ending

Model No. [Alphabetical Index]

Model No.	Model Name	Catalog No./Page
HS	Fluid Actuated Valve for Gas Combustion System	1024
HSV	(SV) Manual Valve/Standard	RJ-012AA

Listed Page
This is the specification/model number page for models listed in this catalog.

Listed Catalog No.

RJ-002AA ... Pneumatic Cylinder ①
RJ-003AA ... Pneumatic Cylinder ②
RJ-004AA ... Pneumatic Cylinder ③
RJ-005AA ... Pneumatic Cylinder ④
RJ-006AA ... Pneumatic Cylinder ⑤
RJ-007AA ... Air Preparation, Pressure Control, and Auxiliary Components
RJ-008AA ... Sensors/Controllers
RJ-009AA ... Main Line Equipment/Gas Generators
RJ-010AA ... Precision Components/Vacuum Components
RJ-011AA ... Directional Control Valve ①
RJ-012AA ... Directional Control Valve ②
RJ-013AA ... Fluid Control Valve
RJ-014AA ... Electric Actuator ROBODEX Pluse
RJ-015AA ... Electric Actuator ROBODEX Std.
RJ-016AA ... Dry Fine Equipment
CB-019SAA ... Indexman General
CB-031AA ... Wet Fine Equipment General
CB-054AA ... ABSODEX General
CB-055AA ... Electric Actuator Motorless General
CC-1055AA ... Life Science Equipment
CC-1276AA ... Outdoor Products WP Series
CC-1590AA ... Gas Combustion System
CC-1637AA ... Pharmaceutical Manufacturing Process Equipment
CC-297AA ... Automatic Watering Control Equipment

Others list the single item catalog No. for each series.

Symbols
(SV)...Single Valve (WR)…Wiring Reduced Manifolds (IM) …Individual Manifold
(MX)...Mixed Manifold (BM)…Block Manifolds (MN)…Manifold

Model No.	Model Name	Catalog No./Page
1		
1219	Micro-mist Separator/Micro Naught Type (For Oil Mist Removal)	RJ-007AA
1238	Micro-mist Separator/Micro Naught Type (For Oil Mist Removal)	RJ-007AA
1326	Heavy Duty Air Filter	RJ-007AA
1126-□-□Y	Submicron Air Filter (For Tar Removal)	RJ-007AA
1126-□-E	Air Filter	RJ-007AA
1138-□-□Y	Submicron Air Filter (For Tar Removal)	RJ-007AA
1138-□-E	Air Filter	RJ-007AA
1226(J)	Micro-mist Separator/Micro Naught Type (For Oil Mist Removal)	RJ-007AA
1226(J)-□-X	Micro-mist Separator/Odor Naught Type (For Odor Removal)	RJ-007AA
1238-□-X	Micro-mist Separator/Odor Naught Type (For Odor Removal)	RJ-007AA
1326-□-□Y	Submicron Air Filter (For Tar Removal)	RJ-007AA
2		
2215	Regulator	RJ-007AA
2216	Regulator	RJ-007AA
2302 to **2304-□C**	Dial Air Regulator	RJ-007AA
2302 to **2304-□C-R**	Remote Control Dial Air Regulator	RJ-007AA
2415	Reverse Regulator (Built-in Check Valve)	RJ-007AA
2415-P11	Reverse Regulator (Built-in Check Valve)/Ozone Resistant	RJ-007AA
2419	Reverse Regulator (Built-in Check Valve)	RJ-007AA
2619	Regulator	RJ-007AA
2QV	Quick Valve with One-touch Fitting	RJ-007AA
3		
3003E to **3005E**	Lubricator/Economist Type	RJ-007AA
3003E-□C-V	Lubricator/Auto Fill Type	RJ-007AA
3GA1/2/3	(SV)Pilot Operated 3-Port Valve/Direct Piping	RJ-012AA
3GA1/2/3	(SV)Air Operated 3-Port Valve (Master Valve)/Direct Piping	RJ-012AA
3GB1/2	(SV)Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-012AA
3GD1/2/3	(SV)Pilot Operated 3-Port Valve/Direct Piping	RJ-012AA
3GD1/2□ 0EJ	(SV)Intrinsically Safe Explosion-proof Pilot Operated 3-Port Valve/Direct Piping	RJ-012AA
3GD1/2□ 0EX	(SV)Intrinsically Safe Explosion-proof Pilot Operated 3-Port Valve/Direct Piping	RJ-012AA
3GE1/2	(SV)Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-012AA
3GE1/2□ 0EJ	(SV)Intrinsically Safe Explosion-proof Pilot Operated 3-Port Valve/Base Piping	RJ-012AA
3GE1/2□ 0EX	(SV)Intrinsically Safe Explosion-proof Pilot Operated 3-Port Valve/Base Piping	RJ-012AA
3KA1	(SV)Pilot Operated 3-Port Valve/Direct Piping	RJ-012AA
3KA1	(SV)Air Operated 3-Port Valve (Master Valve)/Direct Piping	RJ-012AA
3MA0	(SV)Direct Acting 3-Port Valve/Direct Piping	RJ-012AA
3MB0	(SV)Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
3PA1/2	(SV)Direct Acting 3-Port Valve/Direct Piping	RJ-012AA
3PB1/2	(SV)Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
3QB1	(SV)Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
3QE1	(SV)Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
3QRA1	(SV)Direct Acting 3-Port Valve/Direct Piping	RJ-012AA
3QRB1	(SV)Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
3QV	Quick Valve with One-touch Fitting	RJ-007AA
4		
4001, 4002	Desiccant Air Dryer/Manual Air Dryer	RJ-009AA
4F0/1/2/3	(SV)Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
4F0/1/2/3	(SV)Air Operated 5-Port Valve (Master Valve)/Direct Piping	RJ-012AA
4F2/3	(SV)Pilot Operated 5-Port Valve Outdoor Specification	CC-1276AA
4F3□□0EX	(SV)Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
4F3□□0E	(SV)Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
4F4/5/6/7	(SV)Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-012AA
4F4/5/6/7	Air Operated 5-Port Valve (Master Valve)/Sub-plate Piping	RJ-012AA
4F4/5/6/7□□ 0EX	(SV)Explosion-proof Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-012AA
4F4/5/6/7□□ 0E	(SV)Explosion-proof Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-012AA
4GA1/2/3	(SV)Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
4GA1/2/3	(SV)Air Operated 5-Port Valve (Master Valve)/Direct Piping	RJ-012AA
4GA4	(SV)Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
4GB1/2/3	(SV)Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
4GB1/2/3	(SV)Air Operated 5-Port Valve (Master Valve)/Base Piping	RJ-012AA
4GB4	(SV)Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
4GD1/2/3	(SV)Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
4GD1/2/3/4□ 0EJ	(SV)Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
4GD1/2/3/4□ 0EX	(SV)Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
4GE1/2/3	(SV)Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
4GE1/2/3/4□ 0EJ	(SV)Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Base Piping	RJ-012AA
4GE1/2/3/4□ 0EX	(SV)Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Base Piping	RJ-012AA
4KA1/2/3/4	(SV)Pilot Operated 5-Port Valve Direct Piping	RJ-012AA
4KA1/2/3/4	(SV)Air Operated 5-Port Valve (Master Valve)/Direct Piping	RJ-012AA
4KB1/2/3/4	(SV)Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-012AA
4KB1/2/3/4	(SV)Air Operated 4, 5-Port Valve (Master Valve)/Sub-plate Piping	RJ-012AA
4SA0	(SV)Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
4SB0	(SV)Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-011AA
5		
5100-4C	Heavy Duty Drain	RJ-009AA
6		
6119-2C	Moisture Indicator	RJ-009AA
A		
A100 to **800-W**	Piping Adapter/Standard White Series	RJ-007AA
A101 to **801-W**	L-type Piping Adapter/Standard White Series	RJ-007AA
A1019	Air Filter	RJ-007AA
A1338	Heavy Duty Air Filter	RJ-007AA
A1338-□Y	Submicron Air Filter (For Tar Removal)	RJ-007AA
A2-3400	Cryogenic 2-Port Solenoid Valve	RJ-013AA
A2-5201	Direct Acting 2-Port Solenoid Valve (For High Frequency Operation)	RJ-013AA
A2-5202	Pilot Operated 2-Port Solenoid Valve (For High Frequency Operation)	RJ-013AA
A2-5800	Cryogenic 2-Port Solenoid Valve	RJ-013AA
A3019	Lubricator/Economist Type	RJ-007AA
AB21	Direct Acting 2-Port Solenoid Valve (Multilex)	RJ-013AA
AB31	Direct Acting 2-Port Solenoid Valve Single Unit (Multilex)	RJ-013AA
AB31-ZAA	Direct Acting 2-Port Solenoid Valve for Dry Air (Multilex)	RJ-013AA
AB41	Direct Acting 2-Port Solenoid Valve Single Unit (Multilex)	RJ-013AA
AB41E2	Explosion-proof Direct Acting 2-Port Solenoid Valve (Multilex)/d2G2	RJ-013AA
AB41E4	Explosion-proof Direct Acting 2-Port Solenoid Valve (Multilex)/d2G4	RJ-013AA

Model No. [Alphabetical Index]

Model No.	Model Name	Catalog No./Page
A		
AB41E4-ZAA	Explosion-proof Direct Acting 2-Port Solenoid Valve for Dry Air (Multilex)/d2G4	RJ-013AA
AB41EX2	Explosion-proof Direct Acting 2-Port Solenoid Valve (Multilex)/Exd II BT2	RJ-013AA
AB41EX4	Explosion-proof Direct Acting 2-Port Solenoid Valve (Multilex)/Exd II BT4	RJ-013AA
AB41-ZAA	Direct Acting 2-Port Solenoid Valve for Dry Air (Multilex)	RJ-013AA
AB42	Direct Acting 2-Port Solenoid Valve Single Unit (Multilex)	RJ-013AA
AB42E4	Explosion-proof Direct Acting 2-Port Solenoid Valve (Multilex)/d2G4	RJ-013AA
AB71	Direct Acting 2-Port Solenoid Valve (Multilex)/Large Bore	RJ-013AA
ABP	Air Booster	RJ-007AA
AD11	Pilot Operated 2-Port Solenoid Valve (Multilex)/ Diaphragm Driven	RJ-013AA
AD11E4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, d2G4	RJ-013AA
AD11EX4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, Exd II BT4	RJ-013AA
AD12	Pilot Operated 2-Port Solenoid Valve (Multilex)/ Diaphragm Driven	RJ-013AA
AD12E4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, d2G4	RJ-013AA
AD21	Pilot Operated 2-Port Solenoid Valve (Multilex)/ Diaphragm Driven	RJ-013AA
AD21E4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, d2G4	RJ-013AA
AD21EX4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, Exd II BT4	RJ-013AA
AD22	Pilot Operated 2-Port Solenoid Valve (Multilex)/ Diaphragm Driven	RJ-013AA
AD22E4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, d2G4	RJ-013AA
ADK11	Pilot Kick Operated 2-Port Solenoid Valve (Multilex)/ Diaphragm Driven	RJ-013AA
ADK11E4	Explosion-proof Pilot Kick Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, d2G4	RJ-013AA
ADK11EX4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, Exd II BT4	RJ-013AA
ADK11-ZAA	Pilot Kick Operated 2-Port Solenoid Valve for Dry Air (Multilex)	RJ-013AA
ADK12	Pilot Kick Operated 2-Port Solenoid Valve (Multilex)/ Diaphragm Driven	RJ-013AA
ADK12E4	Explosion-proof Pilot Kick Operated 2-Port Solenoid Valve (Multilex)/Diaphragm Driven, d2G4	RJ-013AA
ADK21	Pilot Kick Operated 2-Port Solenoid Valve (Multilex)/ Diaphragm Driven	RJ-013AA
AES (Facilea)	Image Processing Visual Programming Tool	CC-1548AA
AES (Facilea AI)	Image Processing AI Tool	CC-1623AA
AESM (ExiaStudio)	Device Visual Programming Tool	CC-1579AA
AF2	Medium Size Main Line Filter	RJ-009AA
AF30□□	Large Size Main Line Filter (Standard Type)	RJ-009AA
AF40□□	Medium Size Main Line Filter (For Oil-Free)	RJ-009AA
AF50□□	Large Size Main Line Filter (For Oil-Free)	RJ-009AA
AFB-RB	Active Fine Buffer	93
AG3□-Z	Direct Acting 3-Port Solenoid Valve for Dry Air (Multilex)	RJ-013AA
AG3□	Direct Acting 3-Port Solenoid Valve Single Unit (Multilex)	RJ-013AA
AG4□E4-Z	Explosion-proof Direct Acting 3-Port Solenoid Valve for Dry Air (Multilex)/d2G4	RJ-013AA
AG4□-Z	Direct Acting 3-Port Solenoid Valve for Dry Air (Multilex)	RJ-013AA
AG41	Direct Acting 3-Port Solenoid Valve Single Unit (Multilex)	RJ-013AA
AG41E4	Explosion-proof Direct Acting 3-Port Solenoid Valve (Multilex)/d2G4	RJ-013AA
AG41EX4	Explosion-proof Direct Acting 3-Port Solenoid Valve (Multilex)/Exd II BT4	RJ-013AA
AG43	Direct Acting 3-Port Solenoid Valve Single Unit (Multilex)	RJ-013AA
AG43E4	Explosion-proof Direct Acting 3-Port Solenoid Valve (Multilex)/d2G4	RJ-013AA
AG43EX4	Explosion-proof Direct Acting 3-Port Solenoid Valve (Multilex)/Exd II BT4	RJ-013AA
AG44	Direct Acting 3-Port Solenoid Valve Single Unit (Multilex)	RJ-013AA
AG44E4	Explosion-proof Direct Acting 3-Port Solenoid Valve (Multilex)/d2G4	RJ-013AA
AG44EX4	Explosion-proof Direct Acting 3-Port Solenoid Valve (Multilex)/Exd II BT4	RJ-013AA
AGD	Air Operated Valve for Process Gas	RJ-016AA
AHB	Air-Hydro Booster	RJ-002AA, 003AA, 004AA, 005AA, 006AA
AL	Air Lamp/Logic Valve	RJ-007AA
AM4F0	Ⓜ Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
AMD	Air Operated Valve for Chemicals (2-Port)	CB-031AA
AMDS	Air Operated Valve for Chemicals/Integrated Suck-back Type	CB-031AA
AMG	Air Operated Valve for Chemicals (3-Port)	CB-031AA
AMS	Suck-back Valve for Chemicals	CB-031AA
AP11	Pilot Operated 2-Port Solenoid Valve (Multilex)/ Piston Driven	RJ-013AA
AP11E2	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, d2G2	RJ-013AA
AP11E4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, d2G4	RJ-013AA
AP11EX2	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, Exd II BT2	RJ-013AA
AP11EX4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, Exd II BT4	RJ-013AA
AP12	Pilot Operated 2-Port Solenoid Valve (Multilex)/ Piston Driven	RJ-013AA
AP12E2	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, d2G2	RJ-013AA
AP12E4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, d2G4	RJ-013AA
AP21	Pilot Operated 2-Port Solenoid Valve (Multilex)/ Piston Driven	RJ-013AA
AP21E2	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, d2G2	RJ-013AA
AP21EX2	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven/ Exd II BT2	RJ-013AA
AP21E4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, d2G4	RJ-013AA
AP21EX4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, Exd II BT4	RJ-013AA
AP22	Pilot Operated 2-Port Solenoid Valve (Multilex)/ Piston Driven	RJ-013AA
AP22E2	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/Piston Driven, d2G2	RJ-013AA
AP22E4	Explosion-proof Pilot Operated 2-Port Solenoid Valve (Multilex)/ Piston Driven, d2G4	RJ-013AA
APE	Mechanical Pressure Switch	RJ-007AA
APK11	Pilot Kick Operated 2-Port Solenoid Valve (Multilex)/ Piston Driven	RJ-013AA
APK21	Pilot Kick Operated 2-Port Solenoid Valve (Multilex)/ Piston Driven	RJ-013AA
APS	Compact Mechanical Pressure Switch	RJ-007AA
ASU	Portable Air Supply Unit	CC-1363AA
AT	Air Tank	RJ-007AA
AVB	Air Operated Valve for High Vacuum	RJ-016AA
AX1000T, 2000T, 4000T	Direct Drive Actuator ABSODEX	CB-054AA
AX1R, 2R, 4R	Direct Drive Actuator ABSODEX	CC-1614AA
AX6000M	Direct Drive Actuator ABSODEX	CB-054AA
AX9000TS, TH, MU	Driver for ABSODEX	CB-054AA
AXD	Driver for ABSODEX	CC-1614AA
AZ	Tube Cutter	RJ-007AA
B		
B	Booster	RJ-002AA, 003AA, 004AA, 005AA, 006AA
B□P51□	Ⓜ Pilot Operated 2, 3, 5-Port Valve/Metal Base	RJ-012AA
B110 to **820-W**	Bracket/For Selex F.R.L/ Standard White Series	RJ-007AA
B2019	Regulator	RJ-007AA
B2019-P11	Regulator/Ozone Resistant	RJ-007AA
B513□	Ⓢⓥ Pilot Operated 3-Port Valve/Sub-base Type	RJ-012AA
B5142	Ⓢⓥ Pilot Operated 5-Port Valve/Sub-base Type	RJ-012AA
B6061	Relief Valve	RJ-007AA
B7019	F.R. Unit	RJ-007AA
BBS-A	Balancer Unit Automatic Pressure Adjustment Type	RJ-005AA
BBS-O	Balancer Unit Fixed Pressure Adjustment Type	RJ-005AA
BHA	Compact Cross Roller Parallel Gripper	RJ-006AA
BHA-FC	Mechanical Gripper	RJ-006AA
C1000 to **8000-P6**	F.R.L. Combination/Copper Ion Restricted (No copper/ PTFE Specification)	RJ-005AA
C1000 to **8000-W**	F.R.L. Combination/Standard White Series	RJ-006AA

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Model No.	Model Name	Catalog No./Page
C		
C1010 to **8010-W**	W.L. Combination/Standard White Series	RJ-005AA
C1020 to **8020-W**	F.R. Combination/Standard White Series	RJ-006AA
C1030 to **8030-W**	F.M.R. Combination/Standard White Series	RJ-005AA
C1040 to **8040-W**	W.M. Combination/Standard White Series	RJ-007AA
C1050 to **8050-W**	R.M. Combination/Standard White Series	RJ-007AA
C1060 to **8060-W**	F.M. Combination/Standard White Series	RJ-007AA
C25N-B	Governor for Medium Pressure Gas	RJ-007AA
C3070 to **8070-W**	F.F.M. Combination/Standard White Series	RJ-006AA
CAC4	Clamp Cylinder/Double Acting, Single Rod Type	CC-1276AA
CAC-N32/40	Lightweight Clamp Cylinder/ Double Acting, Single Rod Type	RJ-007AA
CAT	Cartridge Cylinder/Single Acting, Push Type	RJ-007AA
CAU30	Clean Air Unit	RJ-007AA
CAV2	Cell Cylinder/With Valve, Double Acting, Lubricated Type	RJ-007AA
CAW	Compact Arm	RJ-007AA
CCH	Check Valve for Liquids	RJ-007AA
CCN	Check Valve for Liquids (Nozzle Type)	RJ-007AA
CG	Air Fiber One-touch Fitting (Clean Type)	RJ-007AA
CHB	Air Operated Ball Valve 2-Port (Compact Rotary Valve)	CC-1590AA
CHBF	Air Operated Ball Valve 2-Port (Compact Rotary Valve)/Full Bore	RJ-007AA
CHC	Auto Gripper Changer	RJ-005AA
CHG	Air Operated Ball Valve 3-Port (Compact Rotary Valve)	RJ-005AA
CHL	Check Valve with One-touch Fitting	RJ-003AA
CHV2	Check Valve	RJ-007AA
CK	3-Jaw Long Stroke Chuck	RJ-005AA
CKA	3-Jaw Thin Chuck	CC-1613AA
CKF	Hollow Chuck	RJ-013AA
CKG	3-Jaw Bearing Chuck	RJ-013AA
CKH2	High Gripping Force Powerful Chuck	RJ-007AA
CKJ	Ultra Long Stroke Chuck	RJ-013AA
CKL2	Powerful Chuck	RJ-013AA
CKL2-FC	Mechanical Chuck	RJ-006AA
CKLB2	Bidirectional Powerful Chuck	RJ-013AA
CKS	Low Profile Chuck	RJ-007AA
CKV2	Compact cylinder with valve/ With Valve, Double Acting, Single Rod Type	RJ-007AA
CKW-HP1	3-Jaw Chuck	RJ-006AA
CKWL-HP1	3-Jaw Chuck	RJ-006AA
CMA2	Small Bore Size Cylinder/ Double Acting, Single Rod Type	RJ-006AA
CMK2	Small Bore Size Cylinder/ Double Acting, Single Rod Type	RJ-006AA
COV□2	Cell Cylinder/With Valve, Double Acting, Lubricated Type	RJ-006AA
CPD	Electronic Pressure Switch for Coolant (with Digital Display)	RJ-006AA
CPE	Mechanical Pressure Switch for Coolant (Low Pressure Type)	RJ-006AA
CSB	Air Operated Ball Valve 2-Port for Steam (Compact Rotary Valve)	RJ-006AA
CSBF	Air Operated Ball Valve 2-Port for Steam (Compact Rotary Valve)	RJ-006AA
CV3E	Low Pressure Air Operated 3-Port Valve (Coolant Valve)	RJ-006AA
CVE2, CVE22	Air Operated 2-Port Valve (Coolant Valve)	RJ-005AA
CVE3	Air Operated 3-Port Valve (Coolant Valve)	RJ-006AA
CVS3E	Low Pressure Air Operated 3-Port Valve (Coolant Valve)/ Solenoid Valve Mounted Type	RJ-006AA
CVSE2, CVSE22	Air Operated 2-Port Valve (Coolant Valve)/Solenoid Valve Mounted Type	RJ-002AA
CVSE3	Air Operated 3-Port Valve (Coolant Valve)/Solenoid Valve Mounted Type	RJ-002AA
CXU	Air Unit	RJ-005AA
CPD	Electronic Pressure Switch for Coolant (with Digital Display)	RJ-008AA
CPE	Mechanical Pressure Switch for Coolant (Low Pressure Type)	RJ-008AA
CSB	Air Operated Ball Valve 2-Port for Steam (Compact Rotary Valve)	RJ-013AA
CSBF	Air Operated Ball Valve 2-Port for Steam (Compact Rotary Valve)	RJ-013AA
CV3E	Low Pressure Air Operated 3-Port Valve (Coolant Valve)	RJ-013AA
CVE2, CVE22	Air Operated 2-Port Valve (Coolant Valve)	RJ-013AA
CVE3	Air Operated 3-Port Valve (Coolant Valve)	RJ-013AA
CVS3E	Low Pressure Air Operated 3-Port Valve (Coolant Valve)/ Solenoid Valve Mounted Type	RJ-013AA
CVSE2, CVSE22	Air Operated 2-Port Valve (Coolant Valve)/Solenoid Valve Mounted Type	RJ-013AA
CVSE3	Air Operated 3-Port Valve (Coolant Valve)/Solenoid Valve Mounted Type	RJ-013AA
CXU	Air Unit	RJ-007AA
D		
D101 to **801-W**	Distributor/For Selex F.R.L/ Standard White Series	RJ-007AA
DB1000, 3000	Super Drain	RJ-009AA
DBS1006	Drain Sensor	RJ-009AA
DCKW	Electric Actuator with Motor Specification 3-Finger Gripper Type	RJ-014AA
DLSH	Electric Actuator with Motor Specification D Series 2-Finger Gripper Type	RJ-014AA
DMSDG	Electric Actuator with Motor Specification D Series Compact Guided Type	RJ-014AA
DSC	Speed Controller with Dial	RJ-007AA
DSG	Solenoid Valve for Gas Combustion System	CC-1590AA
DSG-W	Solenoid Valve for Gas Combustion System	CC-1590AA
DSSD2	Electric Actuator with Motor Specification D Series Rod Type	RJ-014AA
DSTG	Electric Actuator with Motor Specification D Series Guided Type	RJ-014AA
DSTK	Electric Actuator with Motor Specification D Series Stopper Type	RJ-014AA
DSTL	Electric Actuator with Motor Specification D Series Guided Type	RJ-014AA
DSTS	Electric Actuator with Motor Specification D Series Guided Type	RJ-014AA
DT3000, 3010-W	Snap Drain	RJ-009AA
DT4000, 4010-W	Snap Drain	RJ-009AA
DVL	Needle Valve with Dial	RJ-007AA
E		
E0, ET0	Cylinder Switch/Heat Resistant, Reed 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
EBS-L	Electric Actuator Motorless Specification Slider	RJ-015AA
EBS-G, -M	Electric actuator Motor specification Slider	RJ-014AA
EBR-L	Electric Actuator Motorless Specification Rod	RJ-015AA
EBR-G, -M	Single Axis Controller for Electric Actuator	RJ-014AA
CVSE3	Air Operated 3-Port Valve (Coolant Valve)/Solenoid Valve Mounted Type	RJ-013AA
CXU	Air Unit	RJ-007AA
D		
D101 to **801-W**	Distributor/For Selex F.R.L/ Standard White Series	RJ-007AA
DB1000, 3000	Super Drain	RJ-009AA
DBS1006	Drain Sensor	RJ-009AA
DCKW	Electric Actuator with Motor Specification 3-Finger Gripper Type	RJ-014AA
DLSH	Electric Actuator with Motor Specification D Series 2-Finger Gripper Type	RJ-014AA
DMSDG	Electric Actuator with Motor Specification D Series Compact Guided Type	RJ-014AA
DSC	Speed Controller with Dial	RJ-007AA
DSG	Solenoid Valve for Gas Combustion System	CC-1590AA
DSG-W	Solenoid Valve for Gas Combustion System	CC-1590AA
DSSD2	Electric Actuator with Motor Specification D Series Rod Type	RJ-014AA
DSTG	Electric Actuator with Motor Specification D Series Guided Type	RJ-014AA
DSTK	Electric Actuator with Motor Specification D Series Stopper Type	RJ-014AA
DSTL	Electric Actuator with Motor Specification D Series Guided Type	RJ-014AA
DSTS	Electric Actuator with Motor Specification D Series Guided Type	RJ-014AA
DT3000, 3010-W	Snap Drain	RJ-009AA
DT4000, 4010-W	Snap Drain	RJ-009AA
DVL	Needle Valve with Dial	RJ-007AA
E		
E0, ET0	Cylinder Switch/Heat Resistant, Reed 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
EBS-L	Electric Actuator Motorless Specification Slider	RJ-015AA
EBS-G, -M	Electric actuator Motor specification Slider	RJ-014AA
EBR-L	Electric Actuator Motorless Specification Rod	RJ-015AA
EBR-G, -M	Single Axis Controller for Electric Actuator	RJ-014AA
ECG	Single Axis Controller for Electric Actuator	RJ-014AA
ECMG	Multi Axis Controllers for Electric Actuators	RJ-014AA
ECR	Single Axis Controller for Electric Actuator	RJ-014AA
ECS	Electric Actuator Motorless Specification Slider Type (Ball Screw Driven, Low Dust Generation Specification)	RJ-015AA
ECV	Electric Actuator Motorless Specification Slider type (belt drive/low dust specifications)	RJ-015AA
EH	Fiber Tube Clean-room Type (For push-in fitting)	RJ-007AA
EKS-L	Electric Actuator Motorless Specification Slider Type (Ball Screw Driven)	RJ-015AA
EKS-M	Electric Actuator with Motor Specification Slider Type	CC-1457AA
EMB21, 41, 51	Metal-free 2-Port Solenoid Valve	RJ-013AA
EJSG	Electric Actuator with Motor Specification Slider Type	RJ-014AA
ESC4	Single Axis Controller for Electric Actuator	RJ-014AA
ESM	Electric Shuttle Mover (Belt Driven)	RJ-015AA
ETS	Electric Actuator Motorless Specification Slider Type (Ball Screw Driven)	RJ-015AA
ETV	Electric Actuator Motorless Specification Slider Type (Belt Driven)	RJ-015AA
EV2100V, 2109V	Electro-Pneumatic Regulator/ Solenoid Valve Type Vacuum Compatible	RJ-007AA
EVR	Electro-Pneumatic Regulator/ Solenoid Valve Type Medium Flow	RJ-007AA
EVD	Digital Electro-Pneumatic Regulator	RJ-007AA
EVL	Low Pressure Electro-Pneumatic Regulator	RJ-007AA
EVS2	Electro-Pneumatic Regulator/ Solenoid Valve Type Compact	RJ-007AA
EVT	Low Profile Electro-Pneumatic Regulator/Single Unit	RJ-007AA
EXA	Pilot Operated 2-Port Solenoid Valve for Compressed Air	RJ-013AA
ExiaStudio (AESM)	Device Visual Programming Tool	CC-1579AA
F		
F□	Soft nylon tube	RJ-007AA
F0V/H	Cylinder Switch/1-Color Indicator, Reed 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA

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Model No.	Model Name	Catalog No./Page
F		
F1000 to **8000-P6**	Air Filter/Copper Ion Restricted (No copper/PTFE Specification)	RJ-007AA
F1000 to **8000-W**	Air Filter/Standard White Series	RJ-007AA
F2S, F3S	Cylinder Switch/1-Color Indicator, Solid State 2/3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
F2, 3V/H	Cylinder Switch/1-Color Indicator, Solid State 2/3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
F3PH/V	Cylinder Switch/PNP Output Type Solid State 3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
F2, 3Y V/H	Cylinder Switch/2-Color Indicator, Solid State 2/3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
F3000 to **8000-G4**	Air Filter/Flame Resistant Series	RJ-007AA
FA□	Ultra Compact Joint/ Adjustable Socket	RJ-007AA
FA331 to **831**	Exhaust Cleaner	RJ-007AA
FAC	Clean Exhaust Filter	RJ-007AA
Facilea (AES)	Image Processing Visual Programming Tool	CC-1548AA
Facilea AI (AES)	Image Processing AI Tool	CC-1623AA
FAW	Flex Arm	CC-1615AA
FBS	Ultra Compact Joint/Bushing	RJ-007AA
FBU2	Fine Buffer	67
FC□	Ultra Compact Joint/Clamp Fitting	RJ-007AA
FCD	Flat Cylinder Compact Demi/ Double Acting, Single Rod Type	RJ-003AA
FCH	Flat Cylinder Compact Demi/ Single Acting, Retracting Type	RJ-003AA
FCK	Shock Absorber, Adjustable Type	RJ-005AA
FCM	Compact Flow Controller Rapiflow	RJ-008AA
FCS	Flat Cylinder Compact Demi/ Single Acting, Push Type	RJ-003AA
FCS1000	Inline Clean Filter	RJ-007AA
FCS500	Inline Clean Filter	RJ-007AA
FFB	Direct Acting 2-Port Solenoid Valve Multi-fit	RJ-013AA
FFBM	Direct Acting 2-Port Solenoid Valve Multi-fit	RJ-013AA
FFG	Direct Acting 3-Port Solenoid Valve Multi-fit	RJ-013AA
FFGM	Direct Acting 3-Port Solenoid Valve Multi-fit	RJ-013AA
FFLD	Electric Actuator with Motor F Series 2-Finger Gripper Type (Built-in Controller)	RJ-014AA
FGRC	Electric Actuator with Motor F Series Rotary Type	RJ-014AA
FGS	Ultra Compact Joint/Gasket	RJ-007AA
FH100	Feather Gripper (Mini Parallel Gripper)	RJ-006AA
FH500	Feather Gripper (Mini Pivot Gripper)	RJ-006AA
FJ	Free Joint	RJ-005AA
FK	Simple Flow Controller	RJ-005AA
FLCR	Electric Actuator with Motor Specification F Series Table Type	RJ-014AA
FLS	Ultra Compact Joint/ Extension	RJ-007AA
FLSH	Electric Actuator with Motor Specification F Series 2-Finger Gripper Type	RJ-014AA
FM□	Ultra Compact Joint/Manifold	RJ-007AA
FM3000 to **8000**	Air Filter/Medium Pressure Series	RJ-007AA
FMD	Flow Control Valve	CB-031AA
FMS	Metering Valve with Silencer	RJ-007AA
FNS	Ultra Compact Joint/Double Nipple	RJ-007AA
FPL	Ultra Compact Joint/Plug	RJ-007AA
FPV	Block Valve	RJ-007AA
FS□	Ultra Compact Joint/Socket	RJ-007AA
FSL100	Inline Filter	1118
FSL200	Inline Filter	1118
FSL500	Inline Filter	1118
FSM2-D	Compact Flow Sensor Rapiflow	RJ-008AA
FSM3	Compact Flow Sensor Rapiflow	RJ-008AA
FSM-V	Ultra Compact Flow Sensor Rapiflow	RJ-008AA
FSM-V-D	Separate Display Unit Rapiflow	RJ-008AA
FSM-VFM	Compact Flow Sensor/Inline Filter	RJ-008AA
FSM-X	Ultra Compact Flow Switch Rapiflow	RJ-008AA
FT□	Ultra Compact Joint/Barb Fitting	RJ-007AA
FWD	Compact Pilot Operated Solenoid Valve for Water	RJ-013AA
FWS	Ultra Compact Joint/Partition Wall	RJ-007AA
FW4000, 8000	Air Filter/Outdoor Series	CC-1276AA
FX	Drain Separator	RJ-007AA
G		
G29D	Ultra Compact Pressure Gauge	RJ-007AA
G39D	Round Pressure Gauge	RJ-007AA
G401-W	Thin Pressure Gauge	RJ-007AA
G40D	Pressure Gauge with Safety Mark	RJ-007AA
G45D	Pressure Gauge with Limit Mark	RJ-007AA
G49D, 59D	General Purpose Pressure Gauge	RJ-007AA
G49D, 59D-P6	Pressure Gauge/Copper Ion Restricted (No copper/PTFE Specification)	RJ-007AA
G52D	Pressure Gauge with Switch	RJ-007AA
G53D	Pressure Gauge for Panel Mount	RJ-007AA
GA400	Differential Pressure Gauge	RJ-007AA
GAB312/352	Direct Acting 2-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAB312/352-Z	Direct Acting 2-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAB412	Direct Acting 2-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAB412-Z	Direct Acting 2-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAB422	Direct Acting 2-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAB452	Direct Acting 2-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAB452-Z	Direct Acting 2-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAG31□	Direct Acting 3-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAG31□**-Z**	Direct Acting 3-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAG33□	Direct Acting 3-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAG33□**-Z**	Direct Acting 3-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAG34□	Direct Acting 3-Port Solenoid Valve Actuator (Multilex)	RJ-013AA
GAG34□**-Z**	Direct Acting 3-Port Solenoid Valve for Dry Air Actuator (Multilex)	RJ-013AA
GAG35□	Direct Acting 3-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAG35□**-Z**	Direct Acting 3-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAG41□	Direct Acting 3-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAG41□**-Z**	Direct Acting 3-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAG43□	Direct Acting 3-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAG43□**-Z**	Direct Acting 3-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAG44□	Direct Acting 3-Port Solenoid Valve Actuator (Multilex)	RJ-013AA
GAG44□**-Z**	Direct Acting 3-Port Solenoid Valve for Dry Air Actuator (Multilex)	RJ-013AA
GAG45□	Direct Acting 3-Port Solenoid Valve Manifold/Actuator (Multilex)	RJ-013AA
GAG45□**-Z**	Direct Acting 3-Port Solenoid Valve for Dry Air Manifold/ Actuator (Multilex)	RJ-013AA
GAMD	Air Operated Valve for Chemicals (Manifold/Branch Valve)	CB-031AA
GCKW	Electric Actuator with Motor Specification G Series 3-Finger Gripper	RJ-014AA
GCVE2	Modular Coolant Valve Air Operated Type	RJ-013AA
GCVSE2	Modular Coolant Valve Solenoid Valve Mounted Type	RJ-013AA
GEXA	Pilot Operated 2-Port Solenoid Valve Manifold with One-touch Fittings for Compressed Air	RJ-013AA
GFM	Float Star	15
GHV	Gas Combination Valve	CC-1590AA
GLC	Guideless Cylinder/Double Acting Type	RJ-005AA
GMF1	Ⓜ Pilot Operated 5-Port ISO Compliant Valve/DIN Terminal Box Type/ISO Size ①	RJ-012AA
GMF1	Ⓜ Pilot Operated 5-Port ISO Compliant Valve/I/O Connector Type/ISO Size ①	RJ-012AA
GMF2	Ⓜ Pilot Operated 5-Port ISO Compliant Valve/DIN Terminal Box Type/ISO Size ②	RJ-012AA
GMF2	Ⓜ Pilot Operated 5-Port ISO Compliant Valve/I/O Connector Type/ISO Size ②	RJ-012AA
GMFZ	Ⓜ Pilot Operated 5-Port ISO Compliant Valve/DIN Terminal Box Type/ISO Size ① & ②	RJ-012AA
GMFZ	Ⓜ Pilot Operated 5-Port ISO Compliant Valve/I/O Connector Type/ISO Size ① & ②	RJ-012AA
GMMD	Manual Valve Manifold for Chemicals	CB-031AA
GNAB□	Air Operated 2-Port Valve Manifold (Compact Cylinder Valve)	RJ-013AA
GNAD□	Diaphragm Cylinder Valve Manifold	RJ-013AA
GPS2	Seating Confirmation Switch/ Single Unit	RJ-008AA
GPS3	Digital Gap Switch/Single Unit	RJ-008AA
GRC	Table Type Rotary Actuator/ Basic Type	RJ-005AA

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Model No.	Model Name	Catalog No./Page
G		
GRV	Medium Pressure Gas Combination Valve	CC-1590AA
GSSD2	Electric Actuator with Motor Specification G Series Rod Type	RJ-014AA
GSTG	Electric Actuator with Motor Specification G Series Guided Type	RJ-014AA
GSTK	Electric Actuator with Motor Specification G Series Stopper Type	RJ-014AA
GSTL	Electric Actuator with Motor Specification G Series Guided Type	RJ-014AA
GSTS	Electric Actuator with Motor Specification G Series Guided Type	RJ-014AA
GSV	Solenoid Valve for Automatic Watering Control	CC-297AA
GSV2	Solenoid Valve for Automatic Watering Control	CC-297AA
GT9000	Refrigerated Air Dryer/	RJ-009AA
GW49D	Outdoor Pressure Gauge	CC-1276AA
GW	New Joint	RJ-007AA
GX3200D	Refrigerated Air Dryer/ Compact For Equipment Installation, Standard Inlet Air (35°C) Type	RJ-009AA
GX5200D	Refrigerated Air Dryer/ Compact For Direct Compressor Connection, High Inlet Air (55°C) Type	RJ-009AA
H		
H0	Cylinder Switch/1-Color Indicator, Reed	RJ-002AA, 003AA, 004AA, 005AA, 006AA
H0Y	Cylinder Switch/2-Color Indicator, Reed	RJ-002AA, 003AA, 004AA, 005AA, 006AA
HAP-1C	Parallel Gripper	RJ-006AA
HAP-2 to **4CS**	Parallel Gripper	RJ-006AA
HB	High Corrosion Resistance Direct Acting 2-Port Solenoid Valve	RJ-013AA
HBL	Pivot Gripper	RJ-006AA
HCA	High Speed Cylinder/Double Acting, Single Rod Type	RJ-005AA
HCM	High Energy Absorption Cylinder/Double Acting, Single Rod Type	RJ-005AA
HCP	Horizontal Parallel Gripper	RJ-006AA
HD-0.5 to **9**	Desiccant Air Dryer/Compact Heatless Dryer	RJ-009AA
HDL	Wide Angle Gripper	RJ-006AA
HFP	Wide Parallel Gripper	RJ-006AA
HGP	Long Stroke Parallel Gripper	RJ-006AA
HJL	Toggle Gripper	RJ-006AA
HK1	Fluid Actuated Valve for Gas Combustion System	CC-1590AA
HKP	Cross Roller Parallel Gripper	RJ-006AA
HLA	Low Profile Parallel Gripper	RJ-006AA
HLB	Low Profile Parallel Gripper	RJ-006AA
HLC	Low Profile Long Stroke Parallel Gripper	RJ-006AA
HLD	Ultra Thin Parallel Gripper	RJ-006AA
HLF2	Low Profile Long Stroke Gripper	RJ-006AA
HMD	Low Profile Wide Angle Gripper	RJ-006AA
HMC-HP1	Wide Parallel Gripper	RJ-006AA
HMF	Compact Wide Parallel Gripper	RJ-006AA
HMFB	Large Wide Parallel Gripper with LM Guide	RJ-006AA
HMTB1	Metal-free Compact Lever Type 2-Port Solenoid Valve for Medical Equipment	CC-1055AA
HMTG1	Metal-free Compact Lever Type 3-Port Solenoid Valve for Medical Equipment	CC-1055AA
HMV	(SV)Manual Valve/Miniature	RJ-012AA
HMVE	(SV)Manual Valve/Miniature	RJ-012AA
HNB1	Compact Direct Acting 2-Port Solenoid Valve	RJ-013AA
HNG1	Compact Direct Acting 3-Port Solenoid Valve	RJ-013AA
HO	Worm Reducer	CC-1601AA
HPS	Adhesion Confirmation Switch/Single Unit	RJ-008AA
HRL-1	Hybrid Robot/Single Axis Unit Element for Pneumatic Robot	RJ-005AA
HS	Fluid Actuated Valve for Gas Combustion System	CC-1590AA
HSV	(SV)Manual Valve/Standard	RJ-012AA
HSVE	(SV)Manual Valve/Standard	RJ-012AA
HVB□12	High Vacuum Solenoid Valve	RJ-013AA
HVL12	Delayed Vacuum Solenoid Valve	RJ-013AA
HYA	Fine Pinch Valve	CC-1055AA
HYN	Direct Acting 2, 3-Port Valve (Fine Pinch Valve)	CC-1055AA
I		
IAGD□	Integrated Gas Supply System	RJ-016AA
IAVB	Vacuum Pressure Control System	RJ-016AA
J		
J100 to **800-W**	Joiner/For Selex F.R.L/ Standard White Series	RJ-007AA
JL	Fitting (Elbow Joint)	RJ-007AA
JSB3	Brake Unit	RJ-005AA
JSC3(-N) JSC4(-N)	Brake Cylinder (Medium/ Large Bore)/Double Acting, Single Rod Type	RJ-005AA
JSG	Tie Rod Cylinder with Brake/ Double Acting, Single Rod Type	RJ-005AA
JSK2	Brake Cylinder (Small Bore ø20 to 40, Crimped Type)/ Double Acting Type	RJ-005AA
JSM2	Brake Cylinder (Small Bore ø20 to 40, Serviceable Type)/ Double Acting Type	RJ-005AA
K		
K0V/H	Cylinder Switch/1-Color Indicator, Reed 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
K2, 3 V/H	Cylinder Switch/1-Color Indicator, Solid State 2/3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
K2, 3Y V/H	Cylinder Switch/2-Color Indicator, Solid State 2/3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
K3P V/H	Cylinder Switch/PNP Output Type, Solid State 3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
K5V/H	Cylinder Switch/No Indication, Reed 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
K60570	F.R.L. Kit	RJ-007AA
KBX	Electric Actuator with Motor Specification Slider Type Rod Type R-axis Type	CC-1275AA
KCA	Controller	CC-1275AA
KHE	SCARA Robot	CC-1436AA
KHL	SCARA Robot	CC-1436AA
KML	Fine Level Switch	CB-031AA
KX	Coiling Tube	RJ-007AA
KZV3	Pilot Operated 2-Port Solenoid Valve	RJ-013AA
L		
L1000 to **8000-W**	Lubricator/Copper Ion Restricted (No copper/PTFE Specification)	RJ-007AA
L1000 to **8000-W**	Lubricator/Standard White Series	RJ-007AA
LAD	Diaphragm Cylinder Valve	RJ-013AA
LBC	Air Bearing Actuator	3
LCG	Linear Slide Cylinder/Double Acting, Single Rod Type	RJ-004AA
LCM	Linear Slide Cylinder/Double Acting, Single Rod Type	RJ-004AA
LCR	Linear Slide Cylinder/Double Acting, Single Rod Type	RJ-004AA
LCW	Linear Slide Cylinder/Double Acting, Single Rod Type	RJ-004AA
LCX	Linear Slide Cylinder/Double Acting, Single Rod Type	RJ-004AA
LFC-KL	Lifter Cylinder	CC-902AA
LGD	Air Operated Valve for Process Gas	RJ-016AA
LHA	Linear Guide Gripper	RJ-006AA
LHAG	Linear Guide Gripper with Rubber Cover	RJ-006AA
LMB	Linear Guide Lock	RJ-005AA
LML	Linear Guide Lock	RJ-005AA
LN	Cylinder with Linear Norm Sensor/Sensor, Amplifier, Indicator	RJ-005AA
LSH	Linear Slide Gripper	RJ-006AA
LSH-HP1	Linear Slide Gripper	RJ-006AA
LSHL-HP1	Linear Slide Gripper	RJ-006AA
LSHM-HP2	Linear Slide Gripper with Length Measurement Function	RJ-006AA
LST-HP1	Low Profile Long Stroke Gripper	RJ-006AA
LSTM-HP2	Low Profile Long Stroke Gripper with Length Measurement Function	RJ-006AA
LW4000/ LW8000	Lubricator Outdoor Series	CC-1276AA
LYX	Air Operated Valve for Chemicals	CB-031AA
M		
M0V/H	Cylinder Switch/1-Color Indicator, Reed 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
M1000 to **8000-P6**	Oil Mist Filter/Copper Ion Restricted (No copper/PTFE Specification)	RJ-007AA
M1000 to **8000-W**	Oil Mist Filter/Standard White Series	RJ-007AA
M2, 3V/H	Cylinder Switch/1-Color Indicator, Solid State 2/3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
M2, 3WV	Cylinder Switch/2-Color Indicator, Solid State 2/3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
M3GA1/2/3	(IM)Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
M3GA1/2/3	(VR)Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
M3GA1/2/3	(MN)Air Operated 3-Port Valve (Master Valve)/Direct Piping	RJ-012AA
M3GB1/2	(IM)Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
M3GB1/2	(VR)Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
M3GD1/2/3	(IM)Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
M3GD1/2/3	(VR)Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
M3GD1/2□ 0EJ	(IM)Intrinsically Safe Explosion-proof Pilot Operated 3-Port Valve/Direct Piping	RJ-012AA
M3GD1/2□ 0EX	(IM)Intrinsically Safe Explosion-proof Pilot Operated 3-Port Valve/Direct Piping	RJ-012AA
M3GE1/2	(IM)Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
M3GE1/2	(VR)Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA

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M		
M3GE1/20EJ	Ⓜ Intrinsically Safe Explosion-proof Pilot Operated 3-Port Valve/Base Piping	RJ-012AA
M3GE1/20EX	Ⓜ Intrinsically Safe Explosion-proof Pilot Operated 3-Port Valve/Base Piping	RJ-012AA
M3KA1	Ⓜ Pilot Operated 3-Port Valve/Direct Piping	RJ-012AA
M3KA1	ⓂⓃ Air Operated 3-Port Valve (Master Valve)/Direct Piping	RJ-012AA
M3MA0	Ⓜ Direct Acting 3-Port Valve/Direct Piping	RJ-012AA
M3MB0	Ⓜ Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
M3P V/H	Cylinder Switch/1-Color Indicator, PNP Output Type, Solid State 3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
M3PA1/2	Ⓜ Direct Acting 3-Port Valve/Direct Piping	RJ-012AA
M3PB1/2	Ⓜ Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
M3QB1	Ⓜ Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
M3QE1	Ⓜ Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
M3QZ1	Ⓜ Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
M3QRA	Ⓜ Direct Acting 3-Port Valve/Direct Piping	RJ-012AA
M3QRB	Ⓜ Direct Acting 3-Port Valve/Sub-plate Piping	RJ-012AA
M4F0/1/2/3	Ⓜ Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
M4F0/1/2/3	ⓂⓃ Air Operated 5-Port Valve (Master Valve)/Direct Piping	RJ-012AA
M4F3□□0EX	Ⓜ Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
M4F3□0E	Ⓜ Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
M4F4/5/6/7	Ⓜ Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-012AA
M4F4/5/6/7	Air Operated 5-Port Valve (Master Valve)/Sub-plate Piping	RJ-012AA
M4F4/5/6/7□0EX	Ⓜ Explosion-proof Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-012AA
M4F4/5/6/7□0E	Ⓜ Explosion-proof Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-012AA
M4GA1/2/3	Ⓜ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
M4GA1/2/3	Ⓦ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
M4GA1/2/3	ⓂⓃ Air Operated 5-Port Valve (Master Valve)/Direct Piping	RJ-012AA
M4GA4	Ⓜ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
M4GA4	Ⓦ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
M4GB1/2/3	Ⓜ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
M4GB1/2/3	Ⓦ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
M4GB1/2/3	ⓂⓃ Air Operated 5-Port Valve (Master Valve)/Base Piping	RJ-012AA
M4GB4	Ⓜ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
M4GB4	Ⓦ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
M4GD1/2/3	Ⓜ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
M4GD1/2/3	Ⓦ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
M4GD1/2/3/40EJ	Ⓜ Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
M4GD1/2/3/40EX	Ⓜ Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
M4GE1/2/3	Ⓜ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
M4GE1/2/3	Ⓦ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
M4GE1/2/3/40EJ	Ⓜ Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Base Piping	RJ-012AA
M4GE1/2/3/40EX	Ⓜ Intrinsically Safe Explosion-proof Pilot Operated 5-Port Valve/Base Piping	RJ-012AA
M4KA1/2/3/4	Ⓜ Pilot Operated 5-Port Valve/Direct Piping	RJ-012AA
M4KA1/2/3/4	ⓂⓃ Air Operated 5-Port Valve (Master Valve)/Direct Piping	RJ-012AA
M4KB1/2/3/4	Ⓜ Pilot Operated 4, 5-Port Valve/Sub-plate Piping	RJ-012AA
M4KB1/2/3/4	ⓂⓃ Air Operated 4, 5-Port Valve (Master Valve)/Sub-plate Piping	RJ-012AA
M4SA0	Ⓜ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
M4SB0	Ⓜ Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-011AA
M4SB0	Ⓦ Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-011AA
M512□	Ⓢⓥ Pilot Operated 2-Port Valve/Direct Type	RJ-012AA
M513□	Ⓢⓥ Pilot Operated 3-Port Valve/Direct Type	RJ-012AA
M5V/H	Cylinder Switch/No Indication, Reed 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
MAB1/MAG1	Metal-free 2-Port Solenoid Valve	CC-1055AA
MAVL	Large Mechanical Valve/Detector	RJ-007AA
MCP	Mechanical Power Cylinder	RJ-005AA
MD	Multi Monitor	RJ-008AA
MDC2	Compact Direct Cylinder/Double Acting, Single Rod Type	RJ-003AA
MDV	Compact Direct Cylinder	CC-905AA
MEB2/MEG2	Metal-free 2-Port Solenoid Valve	CC-1055AA
MEVT	Low Profile Electro-Pneumatic Regulator/Wiring-saving Manifold Type	RJ-007AA
MGD	Manual Valve for Process Gas	RJ-016AA
MGPS2	Seating Confirmation Switch/Manifold	RJ-008AA
MGPS3	Digital Gap Switch/Manifold	RJ-008AA
MHB4	Miniature Electric Ball Valve 2-Port (Motor Valve)	RJ-013AA
MHG4	Miniature Electric Ball Valve 3-Port (Motor Valve)	RJ-013AA
MHPS	Adhesion Confirmation Switch/Manifold	RJ-008AA
MJB3	Metal-free Direct Acting 2-Port Solenoid Valve	CC-1055AA
MJL□	Compression Joint/Elbow Type	RJ-007AA
MJN□	Compression Joint/Sleeve	RJ-007AA
MJS□	Compression Joint/Straight Type	RJ-007AA
MJT□	Compression Joint/Tee Type	RJ-007AA
MJU□	Compression Joint/Insert Ring	RJ-007AA
MKB3	Metal-free 2-Port Solenoid Valve	CC-1055AA
MKML	Fine Level Switch Manifold	CB-031AA
MM	Medium Mechanical Valve/Detector	RJ-007AA
MM3000 to 8000	Oil Mist Filter/Medium Pressure Series	RJ-007AA
MMD	Manual Valve for Chemicals	CB-031AA
MN3E0	Ⓦ Pilot Operated 3, 4-Port Valve	RJ-011AA
MN3E00	Ⓦ Pilot Operated 3, 4-Port Valve	RJ-011AA
MN3GA1/2	Ⓜ, Ⓑ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GA1/2	Ⓦ, Ⓑ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GAX12	Ⓦ, Ⓧ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GB1/2	Ⓜ, Ⓑ Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
MN3GB1/2	Ⓦ, Ⓑ Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
MN3GD1/2	Ⓜ, Ⓑ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GD1/2	Ⓦ, Ⓑ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GDX12	Ⓦ, Ⓧ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MN3GE1/2	Ⓜ, Ⓑ Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
MN3GE1/2	Ⓦ, Ⓑ Pilot Operated 3-Port Valve Dual Unit/Base Piping	RJ-011AA
MN3Q	Ⓦ Direct Acting 3-Port Valve	RJ-012AA
MN4E0	Ⓦ Pilot Operated 3, 4-Port Valve	RJ-011AA
MN4E00	Ⓦ Pilot Operated 3, 4-Port Valve	RJ-011AA
MN4EX0	Ⓦ/Ⓧ Pilot Operated 4-Port Valve	RJ-011AA
MN4GA1/2	Ⓜ/Ⓑ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GA1/2	Ⓦ/Ⓑ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GAX12	Ⓦ/Ⓧ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GB1/2	Ⓜ/Ⓑ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4GB1/2	Ⓦ/Ⓑ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4GBX12	Ⓦ/Ⓧ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4GD1/2	Ⓜ/Ⓑ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GD1/2	Ⓦ/Ⓑ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GDX12	Ⓦ/Ⓧ Pilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MN4GE1/2	Ⓜ/Ⓑ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4GE1/2	Ⓦ/Ⓑ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4GEX12	Ⓦ/Ⓧ Pilot Operated 5-Port Valve/Base Piping	RJ-011AA
MN4KB1/2	Ⓑ Pilot Operated 5-Port Valve/Sub-plate Piping	RJ-012AA
MNRB500	Block Manifold Regulator	RJ-007AA
MNRB500-P11	Block Manifold Regulator/Ozone Resistant	RJ-007AA
MNRJB500	Block Manifold Compact Direct Acting Precision Regulator	RJ-007AA
MNV	Flow Control Valve	CB-031AA
MR10R	Metal-free Compact 2, 3-Port Solenoid Valve	CC-1055AA
MR16	Metal-free Compact 2, 3-Port Solenoid Valve	CC-1055AA
MRG2	Magnet Type Rodless Cylinder/Double Acting Type	RJ-005AA
MRL2	Magnet Type Rodless Cylinder/Basic Type	RJ-005AA
MS	Compact Mechanical Valve/Detector	RJ-007AA
MSB1□	Electric Ball Valve 2-Port for Steam (Motor Valve)	RJ-013AA
MSD	Compact Cylinder/Double Acting, Single Rod Type	RJ-003AA
MSDG-L	Compact Cylinder/Double Acting, Guided Type, with Switch	RJ-004AA
MTLPS	Tool Breakage Detection Switch/Manifold	RJ-008AA
MV3QRA	3QR Negative Pressure Switching Unit Direct Piping	RJ-012AA
MV3QRB	3QR Negative Pressure Switching Unit Sub-plate Piping	RJ-012AA
MXKML	Fine Level Switch Manifold	CB-031AA
MVB	Manual Valve for High Vacuum	RJ-016AA
MVC	Compact Cylinder with Vacuum Pad/Double Acting, Single Rod Type	RJ-005AA
MW3GA2	Ⓜ Pilot Operated 3-Port Valve/Direct Piping	RJ-011AA

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Model No.	Model Name	Catalog No./Page
M		
MW3GA2	ⓌⓇPilot Operated 3-Port Valve/Direct Piping	RJ-011AA
MW4GA2	ⓂPilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MW4GA2	ⓌⓇPilot Operated 5-Port Valve/Direct Piping	RJ-011AA
MW4GB2	ⓂPilot Operated 5-Port Valve/Base Side Piping	RJ-011AA
MW4GB2	ⓌⓇPilot Operated 5-Port Valve/Base Side Piping	RJ-011AA
MW4GB4	ⓂPilot Operated 5-Port Valve/Base Side Piping	RJ-011AA
MW4GB4	ⓌⓇPilot Operated 5-Port Valve/Base Side Piping	RJ-011AA
MW4GZ2	ⓂPilot Operated 5-Port Valve/Base Bottom Piping	RJ-011AA
MW4GZ2	ⓌⓇPilot Operated 5-Port Valve/Base Bottom Piping	RJ-011AA
MW4GZ4	ⓂPilot Operated 5-Port Valve/Base Bottom Piping	RJ-011AA
MW4GZ4	ⓌⓇPilot Operated 5-Port Valve/Base Bottom Piping	RJ-011AA
MW4000, 8000	Oil Mist Filter/Outdoor Series Outdoor Series	CC-1276AA
MWD	Wear Type Diaphragm Valve	CC-1637AA
MX1000 to **8000-W**	High Performance Oil Mist Filter/Standard White Series	RJ-007AA
MXB1□	Electric Ball Valve 2-Port (Motor Valve)	RJ-013AA
MXB1D-N	Electric Oil-free Ball Valve 2-Port (Motor Valve)	RJ-013AA
MXB1F	Electric Ball Valve 2-Port (Motor Valve)/Full Bore	RJ-013AA
MXB1-N	Electric Oil-free Ball Valve 2-Port (Motor Valve)	RJ-013AA
MXBC2	Proportional Control Electric Ball Valve 2-Port (Motor Valve)	RJ-013AA
MXG1□	Electric Ball Valve 3-Port (Motor Valve)	RJ-013AA
MXG1D-N	Electric Oil-free Ball Valve 3-Port (Motor Valve)	RJ-013AA
MXG1-N	Electric Oil-free Ball Valve 3-Port (Motor Valve)	RJ-013AA
MXGC2	Proportional Control Electric Ball Valve 3-Port (Motor Valve)	RJ-013AA
MYB□	Metal-free 2-Port Solenoid Valve	CC-1055AA
MYG□	Metal-free 3-Port Solenoid Valve	CC-1055AA
N		
N□P51□	ⒷⓂPilot Operated 2, 3, 5-Port Valve/Block Manifold	RJ-012AA
NAB□	Air Operated 2-Port Valve Single Unit (Compact Cylinder Valve)	RJ-013AA
NAD□	Diaphragm Cylinder Valve	RJ-013AA
NAP11	Air Operated 3-Port Valve	RJ-012AA
NCK	Shock Absorber, Fixed Type	RJ-005AA
NHS-H	New Handling System/Z-axis Module HRL	RJ-005AA
NHS-S	New Handling System/Z-axis Module STL-B	RJ-005AA
NP13R/14R	Internal Pilot Operated 3-Port Valve Solenoid Valve Mounted Type	RJ-012AA
NPV2	Direct Air Pressure Automatic Pinch Valve	RJ-013AA
NS	Nitrogen Extraction Unit/Unit Type	RJ-009AA
NSU	Nitrogen Extraction Unit/ System Type	RJ-009AA
NSR	New Handling System/X-axis Module	RJ-005AA
NU	New Urethane Tubing	RJ-007AA
NVP11R	Air Operated 3-Port Valve/ Solenoid Valve Mounted Type	RJ-012AA
NX4	ABSODEX	CC-1456AA
NXD	Driver	CC-1456AA
O		
OGD	Manual Valve for Process Gas	RJ-016AA
OMC2	Sequential Controller for Pulse Jet Valve (Pulse Jet Controller)	RJ-013AA
P		
P1100-W	Reed Switch, Contact Type Compact Mechanical Pressure Switch	RJ-007AA
P4000-W	Mechanical Pressure Switch/ Standard White Series	RJ-007AA
P4100-W	Reed Switch, Contact Type Compact Mechanical Pressure Switch	RJ-007AA
P512□	ⓈⓋPilot Operated 2-Port Valve/Pilot Type	RJ-012AA
P513□	ⓈⓋPilot Operated 3-Port Valve/Pilot Type	RJ-012AA
P5142	ⓈⓋPilot Operated 5-Port Valve/Pilot Type	RJ-012AA
P8100-W	Reed Switch, Contact Type Compact Mechanical Pressure Switch	RJ-007AA
PAW	Powerful Arm	CC-1418AA
PCC	Pin Clamp Cylinder Double Acting, Single Rod Type	RJ-005AA
PCIS/PCOS	Parallel cam unit	CB-019SAA
PD2	Pilot Operated 2-Port Air Operated Valve for Dust Collector	RJ-013AA
PD3	Pilot Operated 2-Port Air Operated Valve for Dust Collector	RJ-013AA
PDV2	Pilot Operated 2-Port Valve with Solenoid for Dust Collector	RJ-013AA
PDV3	Pilot Operated 2-Port Valve with Solenoid for Dust Collector	RJ-013AA
PDVE4	Explosion-proof 2-Port Solenoid Valve for Dust Collector (Explosion-proof Pulse Jet Valve)	RJ-013AA
PE	Pressure Switch/Logic Valve	RJ-007AA
PFD	Flow Sensor for Compressed Air/ Separate Display Type Flurex	RJ-008AA
PG	Air Fiber One-touch Fitting (Standard Type)	RJ-007AA
PGM	Regulator for Process Gas	RJ-016AA
PG-P2-B	Blank Plug	RJ-007AA
PJVB	Box Type Manifold Solenoid Valve for Operation (2-Port Solenoid Valve for Pulse Jet Control)	RJ-013AA
PKA	Pilot Kick Operated 2-Port Solenoid Valve for Air	RJ-013AA
PKS	Pilot Kick Operated 2-Port Solenoid Valve for Steam	RJ-013AA
PKW	Pilot Kick Operated 2-Port Solenoid Valve for Water	RJ-013AA
PLE-B12	Side Block/Integrated Type	RJ-007AA
PLJ-C12	YES Element/Relay Type	RJ-007AA
PLK-A11	OR Element/Line Type	RJ-007AA
PLK-B12	OR Element/Integrated Type	RJ-007AA
PLK-C12	OR Element/Relay Type	RJ-007AA
PLL-A11	AND Element/Line Type	RJ-007AA
PLL-B12	AND Element/Integrated Type	RJ-007AA
PLL-C12	AND Element/Relay Type	RJ-007AA
PLM	Memory Element/Relay Type	RJ-007AA
PLN-B12	NOT Element/Integrated Type	RJ-007AA
PLN-C12	NOT Element/Relay Type	RJ-007AA
PLN-D12	Threshold Element/Relay Type	RJ-007AA
PMM	Fine Regulator	CB-031AA
PMP	Fine Regulator	CB-031AA
PNA	Oxygen Concentration Meter	RJ-009AA
PPD3	Electronic Pressure Switch/ Sensor/Amplifier Integrated Type with Display	RJ-008AA
PPD3-S	Electronic Pressure Switch, Stainless Steel Diaphragm Sensor Type/Sensor/Amplifier Integrated Type with Display	RJ-008AA
PPE	Electronic Compact Pressure Switch/Sensor/Amplifier Integrated Type without Display	RJ-008AA
PPE-□A	Electronic Compact Pressure Switch/Sensor/Amplifier Integrated Type without Display, Analog Output Type	RJ-008AA
PPEV-□A	Electronic Compact Pressure Switch/Sensor/Amplifier Integrated Type without Display, Analog Output Type	RJ-008AA
PPG-D	Electronic Pressure Sensor with Digital Display	RJ-008AA
PPLX	Linear Pick & Place Unit	CB-019SAA
PPR	Electronic Pressure Sensor with Digital Display	RJ-008AA
PPX	Digital Pressure Sensor	RJ-008AA
PRD	Amplifier/Elements and Sensors	RJ-007AA
PRE-A12	Pressure Switch/Relay Type	RJ-007AA
PRF-A2	Booster/Elements and Sensors	RJ-007AA
PRS-A12	Solenoid Valve/Relay Type	RJ-007AA
PRT	Timer/Relay Type	RJ-007AA
PSD	Sequencer Branch Block	RJ-007AA
PSE	Sequencer Input/Output Block	RJ-007AA
PSL	Sequencer AND Element	RJ-007AA
PSM	Sequencer Element	RJ-007AA
PSV	Sequencer Sub-base V-Type	RJ-007AA
PTN2	Dedicated Fitting for Air Fiber	RJ-007AA
PV5	ⓈⓋPilot Operated 5-Port ISO Compliant Valve/I/O Connector Type/ISO Size ①	RJ-012AA
PV5G	ⓈⓋPilot Operated 5-Port ISO Compliant Valve/DIN Terminal Box Type/ISO Size ①	RJ-012AA
PV5S-0	ISO Compliant Master Valve	RJ-012AA
PVP	Precision Suction Plate	51
PVS	Pilot Operated 2-Port Solenoid Valve	RJ-013AA
PWS	Threshold Sensor	RJ-007AA
PXB-B3	Push Button Switch/Switch Body/Separate Type	RJ-007AA
PXC-K	Limit Switch	RJ-007AA
PXC-M	Miniature Limit Switch	RJ-007AA
PXC-M	Compact Limit Switch	RJ-007AA
PXD	Proximity Sensor/Elements and Sensors	RJ-007AA
PXF	Limit Sensor/Elements and Sensors	RJ-007AA
PXV	Air Lamp	RJ-007AA
PYM	Fine Regulator	CB-031AA
PZM	Mounting Bracket/Line Type	RJ-007AA
PZU	Sub-base/Input Block/Relay Type Sub-base	RJ-007AA
Q		
QEL	Quick Exhaust Valve	RJ-007AA
QEV2	Quick Exhaust Valve	RJ-007AA
R		
R0, 3, 4, 6	Cylinder Switch/1-Color Indicator, Reed 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
R1, 2	Cylinder Switch/1-Color Indicator, Solid State 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
R1000 to **8000-P11**	Regulator/Ozone Resistant	RJ-007AA

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R		
R1000 to **8000-P6**	Regulator/Copper Ion Restricted (No copper/PTFE Specification)	RJ-007AA
R1000 to **8000-W**	Regulator/Standard White Series	RJ-007AA
R1100 to **8100-P11**	Reverse Regulator/Ozone Resistant	RJ-007AA
R1100 to **8100-P6**	Reverse Regulator/Copper Ion Restricted (No copper/ PTFE Specification)	RJ-007AA
R1100 to **R8100-W**	Reverse Regulator/Standard White Series	RJ-007AA
R2, 3Y	Cylinder Switch/2-Color Indicator, Solid State 2/3-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
R3000 to **8000-G4**	Regulator/Flame Resistant Series	RJ-007AA
R3100 to **8100-G4**	Reverse Regulator/Flame Resistant Series	RJ-007AA
R5	Cylinder Switch/No Indication, Reed 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
RA800	Compact Regulator/Compact Piston Type	RJ-007AA
RB500	Compact Regulator	RJ-007AA
RB500-P11	Compact Regulator/Ozone Resistant	RJ-007AA
RC2000	Clean Regulator	RJ-007AA
RCC2	Rotary Clamp Cylinder Double Acting, Single Rod Type	RJ-005AA
RCKL	Gripper for Collaborative Robot 3-Jaw Type	RJ-006AA
RCS2	Rotary Clamp Cylinder (Single Guide Type) Double Acting, Single Rod Type	RJ-005AA
RG	One-touch Fitting for Air Fiber (Flame Resistant Type)	RJ-007AA
RHLF	Gripper for Collaborative Robot Long Stroke Type	RJ-006AA
RJB500	Compact Direct Acting Precision Regulator	RJ-007AA
RJF	Rotary Joint	RJ-007AA
RLSH	Gripper for Collaborative Robot Compact Type	RJ-006AA
RM3000, 4000	Regulator/Medium Pressure Series	RJ-007AA
RN3000 to **8000**	Oil-free Regulator	RJ-007AA
RP1000	Precision Regulator	RJ-007AA
RPE1000	Precision Regulator	RJ-007AA
RP2000	Precision Regulator	RJ-007AA
RRC	Selex Rotary/Rack & Pinion Type	RJ-005AA
RS-6	Rain Sensor for Automatic Watering Control	CC-297AA
RSC	Automatic Watering Controller	CC-297AA
RSV	Solenoid Valve for Automatic Watering Control	CC-297AA
RT	Remote I/O	RJ-011AA
RTD-3A	Air Timer/Logic Valve	RJ-007AA
RW4000, 8000	Regulator/Outdoor Series Outdoor Series	CC-1276AA
RV3□	Selex Rotary/Vane Type	RJ-005AA
RVC	Shock Absorber	RJ-005AA
S		
SAB□□	Air Operated 2-Port Valve (Cylinder Valve)	RJ-013AA
SAL	Compact Air Lamp/Logic Valve	RJ-007AA
SC1	Speed Controller/Medium Bore Type	RJ-007AA
SC-20A to **50A**	Speed Controller/Large Bore Type	RJ-007AA
SC3P	Speed Controller/Stainless Steel Corrosion Resistant Type	RJ-007AA
SC3R	Speed Controller/Direct Port Connection, Elbow Type	RJ-007AA
SC3U	Speed Controller/Universal Type with One-touch Fitting	RJ-007AA
SC3W	Speed Controller/Elbow Type with One-touch Fitting	RJ-007AA
SCA2	Medium Bore Size Cylinder (Medium Bore ø40 to 100)/Double Acting, Single Rod Type	RJ-002AA
SCD	Speed Controller/Ultra Compact In-Out Type	RJ-007AA
SCD2	Speed Controller/In-Out Line Type with One-touch Fitting	RJ-007AA
SCG	Tie Rod Cylinder/Double Acting, Single Rod Type	RJ-002AA
SCK	Shock Absorber, Adjustable Type	RJ-005AA
SCL2	Speed Controller/Line Type with One-touch Fitting	RJ-007AA
SCL2-N	Needle Valve/Line Type with One-touch Fitting	RJ-007AA
SCM	Round shaped cylinder/Double Acting, Single Rod Type	RJ-002AA
SC-M3/ M5(-F)	Speed Controller/Ultra Compact	RJ-007AA
SCPD3	Pencil Shaped Cylinder/Double Acting, Single Rod Type	RJ-002AA
SCPH3	Pencil Shaped Cylinder/Single Acting, Retracting Type	RJ-002AA
SCPS	Pencil Shaped Cylinder/ Single Acting, Push Type	RJ-002AA
SCPS3	Pencil Shaped Cylinder/ Single Acting, Push Type	RJ-002AA
SCS2	Medium Bore Size Cylinder (Large Bore ø125 to 250)/ Double Acting, Single Rod Type, Lubricated Type	RJ-002AA
SD301, 302D	Membrane Air Dryer/Single Unit	RJ-009AA
SD301, 302E	Membrane Air Dryer/Single Unit	RJ-009AA
SD3015 to **3075**	Membrane Air Dryer/Single Unit	RJ-009AA
SD401, 402D	Membrane Air Dryer/Single Unit	RJ-009AA
SD401, 402E	Membrane Air Dryer/Single Unit	RJ-009AA
SD4050 to **4100**	Membrane Air Dryer/Single Unit	RJ-009AA
SDM4050 to **4100**	Membrane Air Dryer/Super Dryer Modular Series (Large Size)	RJ-009AA
SFC□	Antibacterial/Germ-removing Filter	RJ-007AA
SFS10	Germ-removing Filter/Inline Type	RJ-007AA
SFR/SFRT	Super Fan Rotary	CC-984AA
SFX	Siloxane/Ozone Remover	RJ-007AA
SHD	Desiccant Air Dryer/Medium/ Large Heatless Dryer	RJ-009AA
SHV2	Shuttle Valve	RJ-007AA
SKAC	Contact Protection Circuit Box (For AC Circuit)	RJ-002AA, 003AA, 004AA, 005AA, 006AA
SKDC	Contact Protection Circuit Box (For DC Circuit)	RJ-002AA, 003AA, 004AA, 005AA, 006AA
SKH	Shockless Valve	RJ-012AA
SKL	Shock Absorber	RJ-005AA
SL	Silencer/Metal Body Type	RJ-007AA
SLM	Silencer/Ultra Compact Type	RJ-007AA
SLW	Silencer/Small Bore, Resin Body Type	RJ-007AA
SM-25	Shuttle Mover Standard Type/ High Load Type	RJ-005AA
SMG	Compact Cylinder/Double Acting, Single Rod Type	RJ-003AA
SMW	Metering Valve with Silencer	RJ-007AA
SMW2	Metering Valve with Silencer	RJ-007AA
SNP	3-Port Solenoid Valve with Spool Position Detection Function	RJ-007AA
SNS	Residual Pressure Exhaust Valve with Spool Position Detection Function	RJ-007AA
SP	Thin Pilot Operated 2-Port Solenoid Valve for Compressed Air	RJ-013AA
SPD	Poppet Type Diaphragm Valve	CC-1637AA
SPK	Pilot Kick Operated 2-Port Solenoid Valve for Steam	RJ-013AA
SR	Flame Resistant Tubing	RJ-007AA
SRG3	High Precision Guided Rodless Cylinder (Single Guide)/Double Acting Type	RJ-005AA
SRL3	Rodless Cylinder/Double Acting Type	RJ-005AA
SRM3	High Precision Guided Rodless Cylinder (Double Guide)/Double Acting Type	RJ-005AA
SRT3	Rodless Cylinder with Brake/ Double Acting Type	RJ-005AA
SSD	Compact Cylinder/Double Acting, Single Rod Type	RJ-003AA
SSD2	Compact Cylinder/Double Acting, Single Rod Type	RJ-003AA
SSD-LN	With Linear Norm Sensor	RJ-005AA
SSG	Guided Compact Cylinder/ Double Acting, Single Rod Type	RJ-003AA
STG	Guided Cylinder/Double Acting, Single Rod Type	RJ-004AA
STK	Stopper Cylinder/Double Acting, Round Rod End Type	RJ-005AA
STL-□	Guided Cylinder (Long Stroke Type)/Double Acting, Single Rod Type	RJ-004AA
STM-M/B	Guided Cylinder/Double Acting, Single Rod Type	RJ-004AA
STR2-□	Twin Rod Cylinder/Double Acting, Single Rod Type	RJ-004AA
STS-□	Guided Cylinder (Short Stroke Type)/Double Acting, Single Rod Type	RJ-004AA
SU301, 302D	Membrane Air Dryer/Unit	RJ-009AA
SU301, 302E	Membrane Air Dryer/Unit	RJ-009AA
SU3015 to **3075**	Membrane Air Dryer/Unit	RJ-009AA
SU401, 402D	Membrane Air Dryer/Unit	RJ-009AA
SU401, 402E	Membrane Air Dryer/Unit	RJ-009AA
SU4050, 4100	Membrane Air Dryer/Unit	RJ-009AA
SVB□□	Air Operated 2-Port Valve Solenoid Valve Mounted Type (Cylinder Valve)	RJ-013AA
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T0Y	Cylinder Switch/Reed 2-wire for Magnetic Environments	RJ-002AA, 003AA, 004AA, 005AA, 006AA
T1 V/H	Cylinder Switch/1-Color Indicator, Solid State 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
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T2J V/H	Cylinder Switch/Off-delay Type, Solid State 2-wire	RJ-002AA, 003AA, 004AA, 005AA, 006AA
T2YD(T)	Cylinder Switch/Solid State 2-wire for Strong Magnetic Fields	RJ-002AA, 003AA, 004AA, 005AA, 006AA
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UCAC-N32/40	Lightweight Clamp Cylinder/ With Fall Prevention, Double Acting, Single Rod Type	RJ-005AA
UFCD	Flat Cylinder with Free Position Fall Prevention/Double Acting, Single Rod Type	RJ-005AA
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UGPS3	Digital Gap Switch/Unit	RJ-008AA
UHPS	Adhesion Confirmation Switch/Unit	RJ-008AA
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UMG1	High Corrosion Resistance Ultra Compact Direct Acting 3-Port Solenoid Valve for Medical Equipment	CC-1055AA
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UP-□□-F1/ F2	Antistatic Tubing	RJ-007AA
UP-9102-20-□-F1	Air Fiber Antistatic Type	RJ-007AA
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USB□	Compact Direct Acting 2-Port Solenoid Valve	RJ-013AA
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USG□	Compact Direct Acting 3-Port Solenoid Valve	RJ-013AA
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Precision Equipment/Vacuum Equipment —— Catalog No.RJ-010AA 1

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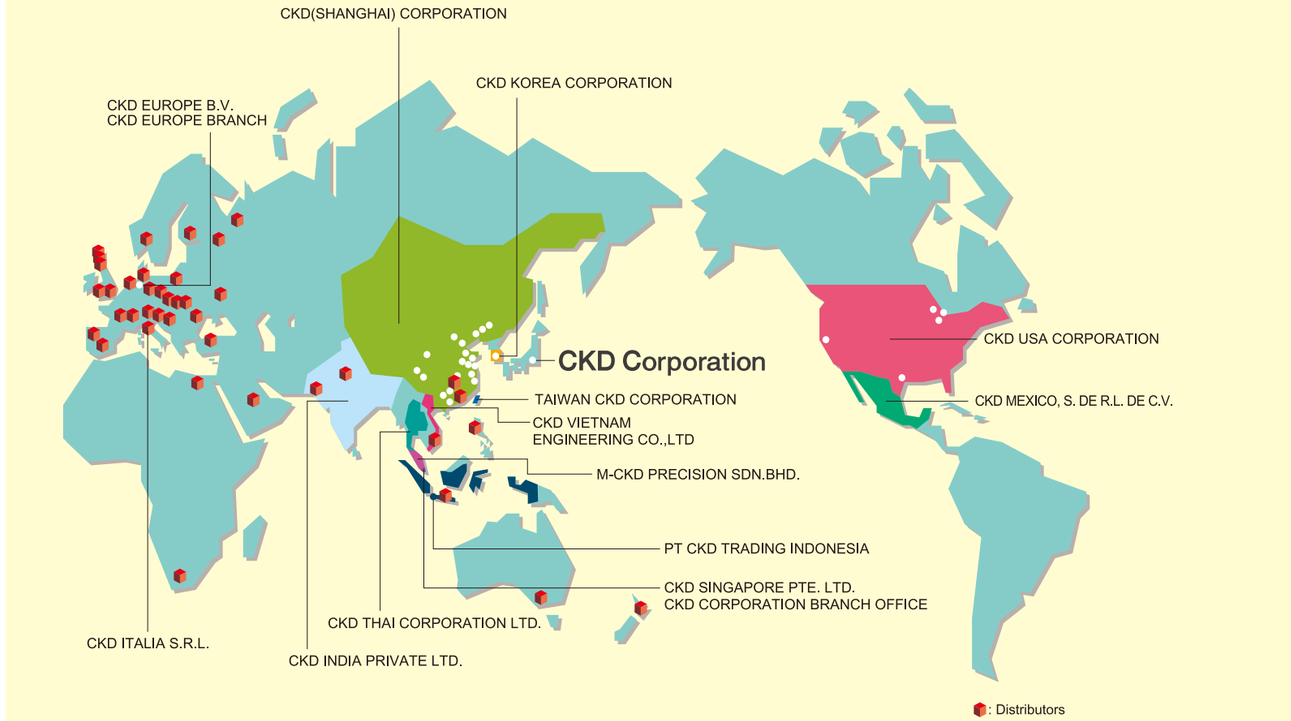
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